THE GRANT AND VALIDITY OF BRITISH PATENTS FOR INVENTIONS

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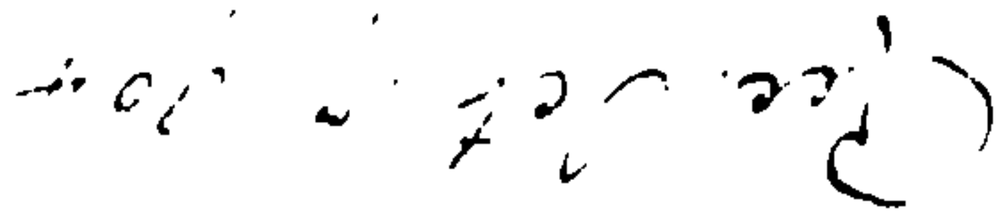
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WITH MANY DIAGRAMS

LONDON
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TO

THE RIGHT HONOURABLE

LORD ALVERSTONE, LL.D., G.C.M.G.

LORD CHIEF JUSTICE OF ENGLAND

THIS WORK IS

BY HIS LORDSHIP'S KIND PERMISSION

RESPECTFULLY DEDICATED

PREFACE.

ANY work on the subject of Patents for Inventions must of necessity be a law book. This work has been written for, and from the point of view of, inventors. It is hoped nevertheless that the full statement of Principles with references to the authorities and the Abstracts of Cases will render it useful to practising lawyers.

It has been ascertained by an official inquiry that of the Patents for Inventions granted in England no fewer than 42 per cent., that is, about 5780 per annum, are invalid on the ground of having been already patented in this country. An examination of the results of litigation shows that, of such patents as are commercially worth infringing, no less than 51 per cent. are invalid. The invalidity of these patents is in many cases not discovered till after the lapse of years; but, even assuming that no invalid patent is renewed, sums amounting to £23,120 per annum are paid for patents which give no legal protection to the patentees. This state of affairs brings discredit upon all British patents, and diminishes the market value even of those which are valid.

Although the new procedure shortly to be brought into operation will prevent the grant of a large proportion of bad patents, many will still exist, as it deals only with one cause of invalidity.

This work has been undertaken to enable the inventor to confine his claims to what can be supported, and to avoid errors in drawing his specification. Under the new procedure there will arise questions of alleged anticipations, which hitherto have only been brought to the notice of the inventor during the progress

of litigation; the inventor will therefore have to consider such questions in future before the grant is made. The work accordingly deals with the subject up to the grant of the patent and the amendment of specifications. Although the action for infringement is not included, yet it will be found that this work bears fully upon it.

The First Part consists of the Principles and Rules affecting the Grant and Validity of Patents, and the practice respecting the Amendment of Specifications, both before the Comptroller-General and Law Officers of the Crown; the Second, of Abstracts of Cases illustrating the applications of the principles; and the Third, of the Statutes and Rules.

One method of ascertaining the general rules of law is to seek in each case the underlying principle on which it was decided. Owing to the technical nature of the subjects of litigation, the mistake has sometimes been made of taking a passage of general phraseology out of connection with the facts of the particular case. In the present instance, all the reported cases in which the validity of patents came in question have been examined—first the facts, and then the effect of each case on subsequent decisions. From a comparison of the results of these investigations the First Part has been compiled. Of these cases a large number of abstracts has been given by way of illustrations in the Second Part; the reader's attention being called more to what the Courts have done than to what individual judges have said. In all the abstracts the facts of each case have been set out as shortly and clearly as possible, the object being to give the reader a guide as to the application of the legal rules in practice. In many cases recourse has been had to original documents and exhibits the sources of which have been indicated.

In addition to the usual reports of the older cases, I am indebted to the Patent Office publications—Specifications and Reports—for a large amount of the material used; and to the Comptroller-General and members of his staff for their assistance in certain

minor matters. I am indebted to the well-known works of Mr. Ralph Griffin for many of the cases relating to procedure before the Law Officers from which abstracts have been made. The work of research was materially lightened by the use of the American Reprint of English Patent Cases (up to 1842), kindly placed at my disposal by Mr. James Swinburne. And I have had the advantage of perusing Dr. W. Martin's pamphlet on the Construction or Interpretation of Specifications of Letters Patent.

Mr. Allan Davidson and Mr. Alfred R. Shawe gave me much assistance in the reproduction of the drawings. I have had the benefit of the perusal and criticism, by Mr. J. W. Gordon, of part of the manuscript and proofs; and I am also indebted to Mr. D. M. Kerly and Mr. J. D. White for assistance with the proofs.

JAMES ROBERTS.

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ABBREVIATIONS.

A. C., or Ap. Ca. ..	Appeal Cases, 1875-
A.-G.	Attorney-General.
Arn.	Arnold's Common Pleas Reports, 1838-41.
B. & Ald.	Barnewall & Alderson's King's Bench Reports, 1817–22.
B. & S.	Best & Smith's Queen's Bench Reports, 1862–69.
B. & Cr.	Barnewall & Cresswell's King's Bench Reports, 1822–25.
Beav.	Beavan's *Rolls Court Reports, 1838–66.*
Bell, or Bell A. C. ..	Bell's Appeal Cases, Scotland, 1842–50.
Bing. N. C.	Bingham's New Cases, Common Pleas, &c., 1835–40.
Br. & Bi. . ..	Broderip & Bingham's Common Pleas Reports, 1819–22.
Bu. N. P.	*Buller's Nisi Prius, 7th Edition, 1817.*
C. & K.	Carrington & Kirwan's Nisi Prius Reports, 1851.
C. & P.	Carrington & Payne's Nisi Prius Reports, 1823–41.
C. A.	Court of Appeal.
C. A. I.	Court of Appeal, Ireland.
C. B.	Common Bench Reports, 1845–56.
C. B. N. S.	Common Bench Reports, New Series, 1856–65.
C. G.	Comptroller-General of Patents, &c.
C. P.	Court of Common Pleas.
C. L. R.	Common Law Reports, 1854–55.
C. S., or Ct. Sess. ..	Court of Session, Scotland.
Carp.	Carpmael's Patent Cases.
Ch.	Chancery, or Court of Chancery.
Ch. D.	Chancery Division of the High Court, and Law Reports of Cases in 1876-90.
Ch. D. I.	Chancery Division, &c., Ireland, 1878-
Ch. Ap.	Chancery Appeal Cases in Law Reports, 1866–74.
Cl. & F.	Clark & Finelly's House of Lords' Reports, 1831–46.
Cr. M. & R.	Crompton, Meeson & Roscoe's Exchequer Reports, 1834–36.
D.	Dunlop, Second Series Court of Session Cases, 1838–62.
Dan. & Ll.	*Danson & Lloyd's Mercantile Cases, 1828–29.*
Dav.	Davies' Patent Cases, 1785–1816.
De G. F. & J.	De Gex, Fisher & Jones's Chancery Reports, 1859–62.
De G. J. & S.	De Gex, Jones & Smith's Chancery Reports, 1863–65.
De G. M. & G. ..	De Gex, Macnaghten & Gordon's Chancery Reports, 1851–57.
Dow. & Ry.	Dowling & Ryland's King's Bench Reports, 1822–27.
E. & B.	Ellis & Blackburn's Queen's Bench Reports, 1852–58.
E. & E.	Ellis & Ellis's Queen's Bench Reports, 1858–61,
East	East's King's Bench Reports, 1791–1812.
Eq.	Equity.
Eq. Ca.	Equity Cases, Law Reports, 1865–75.
Ex.	Court of Exchequer, or Exchequer Reports, 1847–56.
Ex. Ch.	Court of Exchequer Chamber.

F. D.	First Division of the Court of Session.
Giff.	Giffard's Chancery Reports, 1857–65.
Good.	Goodeve's Patent Cases.
Gr.	Griffin's Patent Cases.
Gr. L. O. C.	Griffin's Cases before the Law Officers.
H. & N.	Hurlstone & Norman's Exchequer Reports, 1856–62.
H. Bl.	Hy. Blackstone's Common Pleas Reports, 1788–96.
H. L.	House of Lords.
H. L. Ca.	House of Lords Cases (Clark & Finelly), 1847–66.
Holt N. P.	Holt's Nisi Prius Reports, 1815–17.
I. H.	Inner House, Court of Session.
Jur.	Jurist Reports, 1837–54.
Jur. N. S.	Jurist Reports, New Series, 1855–66.
Joh.	Johnson's Chancery Reports, 1858–60.
K. B.	Court of King's Bench, or King's Bench Division of the High Court.
L. C.	Lord Chancellor.
L. C. B.	Lord Chief Baron (Ireland).
L. C. I.	Lord Chancellor of Ireland.
L.J. and L.JJ. ..	Lord Justice, and Lords Justices.
L. J. (O. S.)	Law Journal (Old Series) Reports, 1823–31.
L. J. Ch.	Law Journal Reports, Chancery, 1832– (similarly for King's Bench, Common Pleas, and Exchequer).
L. R.	The Law Reports, 1866–76.
L. R. I.	Law Reports, Ireland, 1878–93.
L. T.	*Law Times* Reports, 1859–
M. & W.	Meeson & Welsby's Exchequer Reports, 1836–47.
M. & Gr.	Manning & Granger's Common Pleas Reports, 1840–44.
M. & R.	Manning & Ryland's King's Bench Reports, 1827–30.
M.R.	Master of the Rolls.
M.R.I.	Master of the Rolls, Ireland.
Mac.	Macrory's Patent Cases.
Marsh.	Marshall's Common Pleas Reports, 1813–16,
Mer.	Merivale's Chancery Reports, 1815–17.
Mo. & Sc.	Moore & Scott's Common Pleas Reports, 1832–34.
Moo.	Moore's Common Pleas Reports, 1817—27.
Mur. & H.	Murphy & Hurlstone's Exchequer Reports, 1836–37.
My. & Cr.	Mylne & Craig's Chancery Reports, 1835–41.
N. P.	Nisi Prius; Cases heard at Nisi Prius.
N. R.	New Reports, Common Pleas, 1804–7.
Noy	Noy's King's Bench Reports, 2nd Edition, published 1669.
P. C.	Privy Council.
Q. B.	Queen's Bench Reports, 1841–52; or, Court of Queen's Bench.
Q. B. D.	Queen's Bench Division of the High Court, and Law Reports of ditto, 1876–90.
R.	Rettie, 4th Series, Court of Session Cases, 1873–98.
R. P. C.	Reports of Patent Cases, issued by the Patent Office, 1884–
Russ.	Russell's Chancery Reports, 1826–29.
S. C.	Same Case.
S. G.	Solicitor-General.
Salk.	Salkeld's King's Bench Reports, 1689–1712.
Sc.	Scott's Common Pleas Reports, 1834–40.
Scott N. R.	Scott's New Reports, 1841–45.

T. R.	Term Reports, King's Bench (Durnford & East), 1785-1800.
Taunt.	Taunton's Common Pleas Reports, 1808–19.
Tyr.	Tyrwhit's Exchequer Reports, 1830–35.
V. C.	Vice-Chancellor.
V. C. C. P.	Vice-Chancellor of County Palatine of Lancaster.
V. C. I.	Vice-Chancellor of Ireland.
Ves. & B.	Vesey & Beames' Chancery Reports, 1812–14.
W. R.	Weekly Reporter, 1853-
Web.	Webster's Patent Cases.
West A. C.	West's House of Lords Cases, 1839–41.

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The page references printed in heavier type are to those in which the facts are more fully set out.

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THE GRANT AND VALIDITY OF PATENTS.

PART I.

CHAPTER I.

INTRODUCTORY—TREATMENT OF THE SUBJECT.

Introductory.

FROM very early times the English Courts held that trade monopolies granted by the Royal Prerogative were contrary to the public good, as tending to deprive persons already trading of their means of livelihood, and to raise the prices of commodities. But these considerations did not apply to monopolies granted with respect to new manufactures introduced into, or invented within, the realm, and it was in the public interest that the introducers and inventors of new manufactures should be rewarded for their share in developing the trade of the country. Hence when monopolies were declared illegal by the Statute of Monopolies, 21 Jac. 1, c. 3, an exception was made in sect. 6 in favour of inventions, in the following terms:—

> 6. Provided also . . . that any declaration before mentioned shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made of the sole working or making of any manner of new manufactures within this realm,[1] to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law nor

[1] The realm for this purpose now includes the United Kingdom and the Isle of Man. British Colonies are places "abroad" within the meaning of the Patents Acts. *Rolls* v. *Isaacs*, 19 Ch. D. 268; 45 L. T. 704.

mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient; the said fourteen years to be accomplished from the date of the first letters patent or grant of such privilege hereafter to be made, but that the same shall be of such force as they should be as if this Act had never been made, and of none other.

The grants of monopolies are made by "letters patent," *i.e.* *litteræ patentes*,—"letters open" or not sealed up, and addressed to all subjects of the King. "Letters patent" are used for other grants, such as titles, appointments, and so forth, but the abbreviation "Patent" is, in connection with manufactures, used for "letters patent for an invention."[1] To "patent" an invention means, therefore, to obtain, by complying with the law, letters patent granting a monopoly with respect to the invention in question. An invention which is the subject of such a grant is usually termed "patented," or "protected." But any representation that an article is the subject of a "patent" when it is not is now an offence punishable by fine and imprisonment.[2] The usual form of a "patent" is given *post*, p. 569.

The grant of a patent is now regulated by the Patents, Designs, and Trade Marks Act, 1883, and subsequent Acts. But the definition of an "invention" in sect. 46 of the Act of 1883 (*post*, p. 502), refers to the sixth section of the Statute of Monopolies, hence the limits placed by the law on a "patentable invention" are the same as those under and since the Statute of Monopolies, which, from the concluding words of sect. 6, include the limits recognized at common law at the date of that Act (1624).

There have been a large number of decisions on the meanings and limitations of the terms "new," "manufacture," "true and first inventor," "others shall not use," in the Statute of Monopolies. Besides the limitations imposed by such interpretations of the statute, other conditions have been defined; namely, that the alleged invention to be patentable must be useful for the purpose intended by the patentee; that it must not be of too simple a nature, or the grant of a monopoly for it would unduly hamper skilled workmen in using and applying their knowledge in their respective trades to new conditions, or to overcome new difficulties; and also that it

[1] See sect. 46 of the Patents Act, 1883, *post*, p. 502.

[2] Sect. 2 (1 *d*) (3) and sect. 3 (1 *e*) of the Merchandise Marks Act, 1887, 50 & 51 Vict. c. 28: and sect. 105 of the Patents, &c., Act, 1883: 46 & 47 Vict. c. 57, *post*, p. 510.

must not be one for effecting any purpose that is contrary to law or morality.[1]

The term "manufacture" is a very wide one. As the monopoly is permitted to promote the industries of the country, a "manufacture" must consist of something by which the industrial wealth of the country is increased.[2] The monopoly is for the "sole working or making of any manner of new manufacture," hence a "manufacture" must be capable of being "worked" or "made," and as it must be something that others at the time of the grant "shall not use," it must be capable of being "used." For these reasons such things as schemes of co-operation or methods of conducting business, ideas embodied in literary form, such as the contents of a book, are not manufactures within the meaning of the statute. Although the embodiment of ideas in writing or print is the subject of copyright, and not a patent, yet the physical, as distinguished from intellectual, means, such as printing processes, binding, &c., of producing a book, are "manufactures" because producing a vendible article—a book;[3] and these means are independent of the contents (*i.e.* the embodied ideas) of the book.

When an inventor has an invention for which he desires a patent, he must comply with certain conditions laid down by statute. Inasmuch as the patent is of the nature of a reward for the introduction of a new manufacture, it is granted conditionally on the inventor making a true and full disclosure of his invention and the mode of performing it, so that men skilled in the particular art may, without having to investigate or to solve the problem of overcoming difficulties, know how to carry it out for their own benefit after the fourteen years have expired.[4] For this purpose the inventor must file at the Patent Office a "specification" setting forth clearly what his invention is and the mode of performing it.

The rules on the several matters alluded to in the foregoing paragraphs have been evolved through a long series of decisions, and are now fairly well ascertained and defined. But there is immense difficulty in applying these rules in various cases as they arise. From the technical nature of the facts in each case and the difficulty of

[1] Sect. 86 of the Act of 1883, *post*, p. 504.

[2] *R.* v. *Arkwright*, 1 Web. 71 (per *Buller*, J., supported by *Tindal*, C.J., in *Crane* v. *Price*, 1 Web. 409; 12 L. J. C. P. 86).

[3] *Cooper's App.*, 19 R. P. C. 53; *Johnson's App.*, 19 R. P. C. 56. [4] See *post*, p. 400.

taking a comprehensive view of previous decisions, these rules are not of easy application. In the following pages the reader's attention is directed to the application of the rules as well as to their enunciation.

Treatment of the Subject.

In dealing with the question of the Grant and Validity of Patents for Inventions from the point of view of the inventor, it must be borne in mind that, according to the English law and practice, the question of validity (save in a few cases) [1] cannot be entertained or decided by the authorities whose duty it is to grant such patents. The inventor takes his patent at his own risk, and the validity of the grant may be contested in subsequent proceedings in the High Court, either by a Petition for Revocation being presented, or by the Defence in an action for infringement. A "patentable invention" and a "valid claim" mean, therefore, not merely those for which a grant may be obtained, but those which will be upheld and supported in subsequent litigation. It appears that at least 42 per cent. of the patents granted in England are invalid on the ground of want of novelty alone.[2]

The rules on which the questions affecting the grant and validity of patents depend are derived from various sources: (1) the common law and considerations of public policy; (2) the Statute of Monopolies, 1624; (3) a long series of decisions elucidating the foregoing; (4) the Patents, &c., Acts, 1883 to 1902, and cases thereon; and (5) the rules made under the provisions of those Acts. Although the rules relating to validity are mainly found in actions for infringement and petitions for revocation of patents, yet a knowledge of them is necessary in order to avoid taking out a patent which cannot be subsequently maintained when challenged.

Under the new practice introduced [3] by the Act of 1902, the applicant will be informed by the Comptroller of such previous specifications as appear to anticipate the invention in respect of which a patent is applied for. He must therefore, with professional assistance in most cases, decide whether he will modify his application, and if so, in

[1] See further, *post*, p. 102.

[2] The Comptroller's estimate of the number anticipated by earlier specifications is 42 per cent. (see Par. Rep. 1901, Cd. 506, par. 6); of 213 contested in the Courts from 1893-1902 inclusive, 110 were found invalid.

[3] The date on which the new procedure comes into operation will be fixed by an order of the Board of Trade, probably early in 1905.

what manner. This decision cannot be arrived at without a knowledge of the principles upon which the Courts decide on the validity of patents, and the mode of application of those principles.

The rules and their application are treated of in the following pages under *four* main heads or divisions :—

I. The consideration of the "manufacture" or "invention" for which a patent may be granted, distinguishing it on the one hand from the principles involved, the application of which constitutes the "invention," and on the other from the resulting advantages and uses to which it may be put ;—that is to say, where the monopoly begins and ends in relation to the *manufacture*.

II. The relations arising from the development of the knowledge of the art in question, and the consideration of the "invention" of the manufacture in regard to *time*. On the one hand, there are the questions of novelty, prior user, prior grant to a rival inventor, and the question of the extent to which the proposed grant might interfere with workmen at the time by reason of the slight amount of ingenuity required to produce the invention in question. On the other hand, there is the relation of the patentee to *subsequent* inventors involving the question of how far the inventor can anticipate subsequent inventors, by including that which he had not actually devised at the date of his application.[1]

III. The persons to whom and the conditions on which the grant will be made. Under this head come the filing of specifications disclosing the method of performing the invention and making distinct claim or claims thereto, and also questions arising from the policy of the law and the rules of construction or interpretation of specifications.

IV. The procedure to be followed, the drafting of specifications, the amendment of specifications, and opposition to the final sealing of the patent.

[1] It will be seen that, though logically distinct, this cannot be considered altogether apart from the Specification under the next head.

CHAPTER II.

LIMITS OF "MANUFACTURE" IN PATENT LAW.

Distinction between Principles and Inventions, p. 9—Distinction between Inventions and their Objects, p. 11—Patents for Improvements, p. 14—Master Patents, p. 15—Combination Patents, p. 16.

Limits of "Manufacture" in Patent Law.

THE term "manufacture" is one that is necessarily wide. Subject to what has been already stated (*ante*, p. 3), almost any new means whereby the production of wealth in the country is increased, may be a manufacture for which a patent may be obtained, provided the trade so introduced be not an unlawful one. It will be more convenient first to consider the limits to the subjects comprised in the term "manufacture" within the Statute of Monopolies.

The term "subject-matter" properly denotes that for which the patent is granted, and in order that the patent may be valid it must satisfy the conditions discussed hereafter. For instance, if an invention lack that amount of ingenuity required to make it patentable, the patent is said to be invalid "for want of subject matter."

The term "invention" is used in connection with Patent Law in more senses than one. It is commonly used in specifications and elsewhere to denote the subject of the monopoly granted by a patent, *e.g.* "My invention consists in, &c."—in such cases it denotes a *manufacture*.

All "inventions" (using the term in the sense just indicated) consist in the application of the laws of nature, the properties of bodies, elements, or other substances to produce certain results or attain certain objects for the benefit of mankind. Hence there are four natural divisions, or stages, to be considered in regard to any invention :—

I. The *principles* or laws of nature, *i.e.* natural phenomena, or properties of substances or things employed.

II. The *method* of application of those principles, *e.g.* a *process* of manufacture.

III. The immediate result, or vendible article, or substance produced.

IV. The ultimate result, that is, the object to be attained, or use to which the more immediate result is applied.

The nature of this division will be more fully understood by referring to a few elementary examples :—

In the invention of the pendulum there are involved—

(i.) the principles of gravitation and inertia involved in the period of oscillation of the pendulum ;

(ii.) the forms, the mode of suspension and attachment ;

(iii.) the complete article produced ; and

(iv.) the resulting property of the device in being capable of isochronous motion, and consequently of being able by suitable attachments to impart such motion to other mechanism.

In the balance-wheel of a watch there are—

(i.) the principles determining the oscillations of a rigid body, the period of which depends on the mass, shape, and size of the wheel ;

(ii.) the mode of manufacture and attachment to the rest of the mechanism ;

(iii.) the complete article produced ; and

(iv.) the property of being capable of isochronous motion, and of being used .o impart such to other mechanism.

In the case of an explosive such as ordinary gunpowder there are—

(i.) the chemical laws involved in the ignition and combination of the elements of sulphur and carbon with the oxygen of the nitre ;

(ii.) the process of mixing the ingredients under safe conditions ;

(iii.) the gunpowder produced ; and

(iv.) the force due to the sudden production of gases at a high temperature.

In the case of a dye there are—

(i.) the chemical laws involved in the reactions produced by certain substances under certain conditions ;

(ii.) the mode of applying these laws in making the dye ;

(iii.) the colouring-matter produced ; and

(iv.) the ultimate result of this substance dispersing certain waves of light and not others, producing thereby a "colour."

In the case of an electric glow-lamp installation there are—

(i.) the known laws of the heating effects of a current, and the conditions affecting the development of heat in different parts of the circuit;

(ii.) the choice of materials and mode of joining and combining the same to produce success;

(iii.) the lamp itself; and

(iv.) the production of light by incandescence of part of a circuit on turning *on* a current.

In the foregoing divisions and examples those numbered II. or III. may constitute "manufactures," but not I. or IV.

Patentable inventions may be therefore roughly divided into two great (but not necessarily exclusive) classes:—Processes or methods of production, and vendible articles.

The four stages of development exist in all cases, but are not of the same importance. For instance, in the majority of mechanical inventions, the "manufacture" is the machine produced (III.) whose parts perform certain functions, the mode of putting the machine together (II.) being a comparatively minor matter; but in inventions of chemical processes the reverse is the case, the resulting product (III.) being in many cases old, and the novelty being in the mode of producing the known substance. In many cases both II. and III. are of importance.

One of the commonest methods of increasing the wealth of the country is by cheapening the cost of production, hence it was very soon recognized that a *process* or *method* of producing old and known articles could be the subject of a patent although there was nothing permanent in the article produced to distinguish it from former results. If the manufacture were of a permanent nature it was termed an "engine" or "device," if of a fugitive nature a "method."[1]

The one "invention" may therefore comprise two "manufactures," the vendible result and the mode by which it is produced; each may be separately claimed. The same rules and legal principles apply to both classes, but some are more frequently invoked in regard to one class, and others to the other.

[1] *Boulton* v. *Bull*, 2 H. Bl. 494, 495; *Hornblower* v. *Boulton*, 8 T. R. 95; *R.* v. *Wheeler*, 2 B. & Ald. 349, 350; *Gibson* v. *Brand*, 1 Webs. 633.

Distinction between Principles and Inventions.

The laws of nature made use of in any invention are the underlying principles of that invention; the manufacture which constitutes the invention itself is the application or use of those principles.[1] It is contrary to public policy that the discoverer of a previous unknown "law" of nature, substance, or natural phenomenon (such as X rays) should be able to restrain others from applying such to various purposes or utilizing it for the purpose of making fresh discoveries; but a monopoly may be granted for the *means* used to produce the phenomenon or extract the element. Hence it has always been held that a "principle" cannot be the subject of a patent, the reason being *that a principle is not a manufacture.*[2]

In the preceding elementary illustrations the underlying principles are marked (i.), and in no case are patentable, the "invention," *i.e.* the *manufacture*, consisting in the application of those principles as shown in (ii.) and (iii.).

The following illustrations of the distinction are taken from actual decisions:—

Illustrations of Principles as distinguished from Manufactures.

The specification of *Watts'* invention of the separate condenser in a steam-engine was described by him as his "*method* of lessening the consumption of steam, and consequently fuel in fire-engines," consisting of "the following *principles*, &c." This was a misuse of words. The *principles underlying the invention* were the laws relating to the pressure and temperature of steam, and the dissipation of energy by radiation from the steam cylinder; the *invention* lay in the method of retarding the cooling of the cylinder and condensing the steam in a separate vessel, causing a fall in pressure of the steam in the cylinder. The *result* of the invention was the economy of fuel. *Boulton* v. *Bull*, 2 H. Bl. 463, 496.

In *Hartley's* patent for a *method* of rendering buildings fire-proof, the principles were the properties of iron and other substances to resist combustion, the *result* the negative property of the building being fire-proof. The *manufacture* was the *method* or arrangement of materials alone. 2 H. Bl. 493.

[1] Per Lord *Hatherley*, L.C., in *Cannington* v. *Nuttall*, *post*, p. 248.

[2] Discussed in *Boulton* v. *Bull*, 2 H. Bl. 463, 486, and *Hornblower* v. *Boulton*, 8 T. R. 95. *Otto* v. *Linford*, 46 L. T. (per *Jessel*, M.R., at p. 39), *post*, p. 288.

In the invention of the hot blast for smelting, the principles are the laws of chemical combustion as to production of heat; the *manufacture* consisted in the mode of placing and forming the air-chamber so as to be heated. *Neilson* v. *Harford*,[1] *post*, p. 189.

In an invention of an "improved mode of manufacturing gas," the *principles* consisted in the power of hydrated ferric oxide to absorb hydrogen sulphide, and in the oxidation of the ferric sulphide by the air, and the *manufacture* in the mode of applying those principles. *Hills* v. *London Gas Light Co.*, *post*, pp. 208, 211.

An improvement in a gas-engine consisted in admitting to the cylinder an explosive mixture of gas and air separate from a charge of air or incombustible gas previously introduced to act as a cushion. The *principles* were the known properties of gases, and the *manufacture* consisted in the *method* of so applying them to produce the desired result in an old engine requiring only slight alterations in the mechanical construction. *Otto* v. *Linford*, *post*, p. 288.

A patent was granted for the *manufacture* of "improvements in pavement lights." The improvement consisted in sending the light after it had entered the prism from above directly or with refraction in a definite direction, by so shaping the prisms that the light was reflected *internally* from the face of the prism. The *principle* here was that of internal reflection of light. *Hayward* v. *Hamilton*, *post*, pp. 277, 280.

An improved means of disinfecting consisted in a chamber surrounded by a casing so constructed that the casing could be filled with superheated steam under a very high pressure, and then the internal chamber could be similarly filled, the contents being thereby rapidly heated. Here the *principles* are the properties and use of superheated steam, the *manufacture* the contrivance itself so constructed as to stand the required pressure. *Goddard* v. *Lyon*, *post*, pp. 358, 361, 362.

Illustrations such as those given might be indefinitely multiplied, for every manufacture is based on underlying principles which are not themselves patentable.

In mechanical inventions a new principle is extremely rare; such manufactures consist in new applications or arrangements of old contrivances. The principles are general statements concerning such forces as weight and friction, and such properties as elasticity, rigidity, and inertia; these principles are brought to bear upon the

[1] Those who are not previously acquainted with the subject will find it more expedient to postpone referring to the details given in the abstracts of cases until the First Part of this work has been read.

purpose of invention by means of specific directions as to the use of such devices as levers, screws, pulleys, &c.

In the domain of physics the principles consist of natural phenomena and laws such as those pertaining to the ether and its vibrations, light and actinic rays, electric and magnetic waves, the laws governing the expansion of metals, the creation and transmission of sound, &c., and from these result as inventions such arts and manufactures as photography, the machines used in wireless telegraphy, balance-wheels of chronometers, telephones, &c.

In chemical inventions the laws governing the constitution of bodies and their chemical and physical properties are not patentable, but give rise to all kinds of manufactures, *e.g.* beverages, dyes, explosive powders, &c.

It is most important always to distinguish between the manufacture which constitutes the invention patented and the principles underlying it. A true appreciation of the latter is frequently necessary to understand in what the invention described and claimed really consists. The cases of *Goddard* v. *Lyon* (*post*, p. 358) and *Gormully* v. *N. B. Rubber Co.* (*post*, p. 414) are striking instances of this; the former has already been alluded to, and the latter consisted of a *method* of retaining the cover of a pneumatic tyre in its place in the rim by means of a *grip* produced by the action of the air and road-pressure on a certain arrangement of tubes and flanges.

Indeed, in many cases it is absolutely necessary to inquire into and distinguish the principles in order to understand the essence of the invention under consideration.[1]

Distinction between Inventions and their Objects.

As a "manufacture" must be distinguished from a *principle* on the one hand, so it must be from an *ultimate result* or *use* on the other. A manufacture to be a patentable invention must consist in the application of principles, or the mode of carrying them into effect (classed as II. above), or the resulting substances or things of a vendible nature, which are produced by such application or use of principles (classed as III. above). One must here distinguish between the manufacture itself and the ultimate purpose or object

[1] *Thomson* v. *Moore*, 6 R. P. C. 450, l. 37.

it is intended to attain. The *immediate* purpose, object, or result may be the manufacture itself, such as a new dye substance, or a simpler form of a machine, and the *ultimate* purpose, or object, be something the manufacture is intended to attain, such as a new colour, or the saving of time by more rapid working of machine. The manufacture that constitutes invention does not include the object to be attained by the invention, that is to say, all the resulting effects.[1]

The *mere application* of an old thing to a new purpose is not patentable, because the novel application is not a "manufacture,"[2] unless it amount to a new machine or mode of production, *i.e.* a new manufacture. For instance, the discovery that an old wheel had certain advantages and the explanation of such does not constitute a manufacture.[3] But where the manufacture is a process or method (II. above), it may consist in the *use* of certain old things or processes.

In the preceding classification and elementary examples given *ante*, p. 7, the *ultimate* results, objects, or uses are marked IV.; those are not manufactures. The distinction here made may be further illustrated from actual cases:—

Illustrations of Results as distinguished from Manufactures.

The saving of fuel and steam effected by *Watts'* invention is not included in his monopoly, only those means by which such saving is effected. The *result* of power to resist fire effected by *Hartley's* patent is not included in his monopoly. See *ante*, p. 9.

A patent was granted for an expanding table of circular or oval form of which parts could be moved outwards radially, and sectors inserted. The manufacture there protected was the device by which the result was accomplished, and did not extend to include the same result achieved by other means. *Jupe* v. *Pratt*, 1 Webs. 143 (as explained by *Cotton*, L.J., in *Automatic Weighing Machine* v. *Knight*, 6 R. P. C. 304).

An invention consisted of a machine for clipping horses; by means of it the process of clipping could be more conveniently performed. The manufacture protected by the patent did not include the mode

[1] See *Neilson* v. *Harford*, 1 Webs. 355; *Curtis* v. *Platt* (per *Wood*, V.C.), *post*, p. 239; *Goddard* v. *Lyon* (per Lord *Halsbury*, L.C.), 11 R. P. C. 358, l. 50; *Moser* v. *Marsden* (per Lord *Watson*), *post*, p. 376.

[2] *Reg.* v. *Cutler & Ors*, Mac. P. C. 134; *Bush* v. *Fox*, Mac. P. C. 164, 176 (approved by the House of Lords, 5 H. L. Ca. 713).

[3] *Tetley* v. *Easton*, 2 C. B. N. S. 739.

of clipping, but only the machine itself. *Clark* v. *Adie* (No. 1) (as explained in *Vorwerk* v. *Evans*), *post*, pp. 259, 263.

An invention consisted of a method of enlarging boiler-tubes by rolling. A tool consisting of three cylindrical rollers capable of being forced out by a central conical roller or plug enlarged the end of the tubes, the inner surface of the tube being rolled slightly conical. The *manufacture* was the device and the *result* the enlarging of the tube. The same result (*i.e.* conical extension of the tube by rolling) was produced by other means which were not the same *manufacture*. *Dudgeon* v. *Thomson*, 3 App. Ca. 34, *post*, p. 263.

A patent was granted for "improvements in weighing-machines." These consisted in certain arrangements of mechanism which enabled a person to ascertain his weight by standing on a platform and putting a penny in a slot whereby an indicator on a dial showed his weight. These results are not included in the *manufacture* patented, which consisted of the machine alone, *i.e.* the means whereby the result was attained. *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 297.

A new ticket-punch was patented in which the insertion of a ticket unlocked the mechanism. On pushing a rod further the punching was effected, also the registering of the punching and the ringing of a bell. These results were no part of the manufacture for which the monopoly was granted, and others might effect the same results by different mechanism in which the ticket when inserted itself formed part of the mechanism. *Ticket-Punch Register Co.* v. *Colley's Patents*, 12 R. P. C. 171, 185.

The same invention may be sometimes looked at from more than one point of view. For instance, *Watts'* device of the separate condenser in the steam-engine was described in the specification and claimed as a "method for reducing the consumption of fuel" in fire-engines; it might have been described as "an improved engine" or as "improvements in engines." In every case, the inventor should, before applying for a patent, have a clear idea as to what is the *manufacture* he has devised, whether it be a *process* or *vendible article* or both.

Illustration.

Kay discovered that maceration of flax broke up the fibre, and invented the process of wet-spinning of flax, but he did not patent the process, but claimed only the machinery. In claiming the use of old machinery adjusted for spinning flax as "improved" machinery he only claimed an old use and not the new process. His patent was invalid. *Kay* v. *Marshall*, *post*, p. 190.

Patents for Improvements.

The development of arts and manufactures is a gradual one. Nearly every invention is a step in advance of what was the common knowledge of skilled persons. It was held at an early date that an improvement in an existing manufacture might be the subject of a patent for a "new" manufacture under the Statute of Monopolies. Patents may therefore be obtained for improvements in existing manufactures, both in processes and in vendible articles, and although the manufacture so improved is itself the subject-matter of an existing patent,[1] the ultimate customer or user paying royalties to both inventors in an increased price.

Illustrations of Improvements.

To obviate the necessity of altering the length of a pendulum to correct for elongation or shortening due to a rise or fall in temperature, a method was devised by which the property of unequal expansion of metals was made use of. The bob of the pendulum was suspended from a "gridiron" arrangement, and was lifted by the expansion of some rods of metal, thus counteracting the lengthening due to the expansion of the main rod.

In balance-wheels the principle of unequal expansion of metals is used for the same object. The effect of the lengthening of the radii of the wheel on the time of oscillation is counteracted by constructing the rim in segments, with the more expansible metal outside; on expansion of the wheel "warping" ensues, thereby bending the masses of the segments more towards the centre.

In both these cases the same principles are used for the same object, but in a different manner. The improvements are therefore different inventions.

No matter how great the improvement may be from a commercial point of view, it must come within the term "manufacture" as used in Patent Law. "It is not every useful discovery that can be made the subject of a patent, but you must show that the discovery can be brought within a fair extension of the words, 'a new manufacture.'"[2] An improvement must be capable of being described and specified.[3] It is a fallacy to assume that every

[1] *Crane* v. *Price*, *post*, p. 197; *Fox*, *ex parte*, 1 V. & B. 67; 1 Webs. 431 (*n*).
[2] Per Lord *Cranworth* in *Ralston* v. *Smith*, 11 H. L. Ca. 250 (*post*, p. 230).
[3] *Dudgeon* v. *Thomson*, *post*, p. 268.

improvement in a known patentable article is necessarily of itself a patentable improvement.[1]

In the above illustrations of the compensating pendulum and balance-wheel it will be seen that the improved articles are different from the old; they are different articles, and possess a new property, viz. that of automatic correction. They are therefore distinct manufactures.

Where the invention constitutes a "new manufacture" in the popular sense of the term, that is, when it gives rise to a new industry or trade, it is usually termed a "pioneer" invention. In modern times these usually consist of applications of newly discovered principles, or laws, of nature; *e.g.* the incandescent electric lamp, incandescent gas mantles, the first coal-tar dyes, &c. A pioneer invention is, in the nature of things, a comparatively wide one, and a patent for such may control those for improvements, so that the users of the latter are liable to two royalties. Owing to the subdivision of labour and manufactures, what is an improvement in one manufacture may itself give rise to a separate industry.

Master Patents.

Where improvements are made in manufactures for which patents have already been granted, and which come within their claims, the earlier patents are termed "Master" or "Governing Patents," and the patents granted for the later inventions "Patents for Improvements." But a patent for an improvement in an existing invention—say a complicated machine—may be sufficiently wide to include various improvements thereon, and in that case would be a "master patent" as well as a "patent for an improvement."

The case of *Boyd* v. *Horrocks* (too complicated for insertion here) may be referred to as an illustration. See report of that case in the House of Lords, 9 R. P. C. 77.

Hence it will be seen that the term "master patent" is a relative one. Inventions cannot be distinctly classified as "pioneer" or "improvements," although they are frequently so described as constituting two loosely defined classes.

[1] *Kynochs* v. *Webb*, 17 R. P. C. 100, per Lord *Halsbury*, L.C., p. 107 (*post*, p. 428), and Lord *Davey*, p. 115 (*post*, p. 430).

The simpler manufacture in one case may become a part, or element, in another more complex or advanced.

> For instance, a manufacture may consist of a process for (1) the making of pure glycerine. The glycerine in its turn is an ingredient used in (2) the manufacture, by treating it with nitric acid, of the powerful explosive nitroglycerine. Nitroglycerine in its turn is an ingredient used in (3) another manufacture, that of a certain class of smokeless powders.

In the foregoing instance there are three distinct patentable manufactures, and if patents for each be in existence at the same time, the ultimate purchaser pays royalties for all either directly or in the increased price of the materials used by the last manufacturer, and in the price of the ultimate article.

Combination Patents.

Referring to the elementary illustrations given above (*ante*, p. 7), it will be seen that each manufacture is founded on certain simpler elements. In the pendulum and balance-wheel are used certain metals of different coefficients of expansion. In the making of gunpowder the "principles" are applied by the use of certain concrete substances—charcoal, sulphur, and nitre, and so on. The "principles," or natural laws, are applied by means of such things or proximate elements of the new manufacture. In more advanced cases the proximate elements of the manufacture, by the use of which the ultimate principles are applied, are more complex, *e.g.* nitroglycerine in the manufacture of smokeless powders.

It is only in comparatively few and the simpler cases that patentable inventions consist of the direct application of "principles," or natural laws, or phenomena. In general the ultimate principles are applied by means of known manufactures, either things or processes; thus in relation to mechanical inventions the terms "principle of the lever," "principle of the rack and pinion," are frequently used to denote the principles underlying and applied in the devices of the lever and rack and pinion respectively.

In very many cases the application of principles, which constitute a new manufacture, takes the form of using or combining known previous applications of principles in a new manner or for a new purpose. Attention is then mainly directed to the *proximate*

elements employed—*i.e.* known devices or processes—and the invention is termed a "combination," the known applications of the principles being termed the "elements" of the combination. In such cases the new manufacture is the *combining together* of the old elements producing either a new process or a new article. All machines are of this class, and many processes of manufacture.

Illustrations.

A meter to measure the supply of gas or electricity by time would be a combination of a meter and clockwork mechanism, the result being a new meter—a new manufacture.

The invention of heating the air in its passages to a smelting furnace in combination with the use of anthracite coal constitutes a new process of smelting iron, although the hot blast and anthracite coal had been separately used before. *Crane* v. *Price*, *post*, p. 195.

In cases of combinations of things or processes the elements, if old, are not patentable, but the combining together of them may be, if the other conditions required in new inventions are complied with. Combination inventions present special features which are considered *post*, p. 38. But on a close examination it will appear that the legal principles underlying the question of validity are the same in all cases, although in one class of inventions one principle may be more frequently applied than in another class.

CHAPTER III.

INVENTIONS IN RELATION TO THE HISTORY AND DEVELOPMENT OF THE ARTS.

Rights of the Public—Prior User, p. 21—Prior Publication, p. 23—by others, p. 24—by the Patentee, p. 24—by documents, p. 25—Amount of Disclosure in Prior Publications, p. 27—Exhibitions, p. 29—Identity of Inventions, pp. 30–33—Minimum of Addition to Public Knowledge essential, pp. 34–37—Proof of Ingenuity, p. 37—Cases of Combination Patents, pp. 38–46—Rights of Subsequent Inventors, p. 47.

Rights of the Public.

THE Statute of Monopolies declaring, but not extending, the law, permits of the granting of monopolies for "any manner of new manufacture" " . . . which others at the time . . . shall not use, so as also they be not . . . mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient . . . the same shall be of such force as they should be as if this Act had never been made, and of none other" (*ante*, p. 1). But, save in certain excepted cases, the question of refusal of the grant of a patent on the ground of invalidity from want of novelty or insufficiency of inventive ingenuity is not entertained, the applicant taking the patent at his own risk.[1] The question of the validity of a patent is raised either in proceedings taken for the revocation of a patent, or by way of defence to an action for infringement. The rules relating to validity are therefore to be found in such cases. The inventor, however, does not commonly look at the questions involved from quite the same point of view as the lawyer. But it is necessary for him to do so, for the problems presented to him are those of ascertaining whether the step in addition to the public knowledge which constitutes his "invention"

[1] This subject is dealt with, *post*, Chap. VII., p. 100.

is one that can support a valid patent, and the procedure to be observed to obtain such.

Having satisfied himself that his invention (whether a mere improvement or not) comes within the description "manufacture," as before explained, the next consideration is that of the rights of the public in regard to the existing knowledge of the art in question. The general principle constituting the test may be conveniently expressed in the following introductory statement:[1]—

A patent, to be valid, must not be such that the monopoly granted by it would preclude any member of the public from doing that which at the date of the patent he or other members of the public have been in a position to do by reason of the common knowledge of the art, prior user, or publication of the invention. Publication, however, does not include information given to persons confidentially consulted or employed.

The subject is here dealt with alone as regards "the realm," *i.e.* the United Kingdom and the Isle of Man; the "public" is the British public — persons residing within the realm. The earliest patents were granted almost in every case for manufactures imported from abroad; hence an importer of a new manufacture is in the same position as one who devises an invention within the realm. [This will be further considered, *post*, Chap. IV. p. 48.]

This branch of the subject naturally consists of several subdivisions. A "member of the public" may be "in a position to do" a certain thing because—

(*a*) *He has done it before*,[2] in which case he comes within the words of the Statute of Monopolies, "which others at the time . . . shall not use," and a subsequent patent for the same manufacture would be invalid on the ground of "prior user" (*post*, p. 21), the acts performed in a process, or the thing produced (as the case may be), being termed "an anticipation;" or,

[1] The question of invalidity on account of want of utility and prior commercial user by the inventor himself depend on considerations of public policy. See *post*, pp. 79–83.

[2] That this is the ground on which patents have been held invalid, and therefore forms a test of validity, is apparent from *Heath* v. *Smith* (per Lord Campbell, C.J.), 3 E. & B. 273; *Patterson* v. *Gas Light and Coke Co.* (per Lord *Blackburn*), 3 App. Ca. 244, 247; *Haddan's Patent*, 2 R. P. C. 218; *Cassel Gold Extracting Co.* v. *Cyanide Gold Recovery Synd.*, 11 R. P. C. 652. The public, when once possessed of an invention, cannot be deprived of it by a subsequent patent. *Harris* v. *Rothwell*, 4 R. P. C. 234.

(*b*) *he knows how to do it* from having read a description in the realm, or from having seen in the realm the invention itself, or models, or machines, &c., in which case the patent would be invalid on account of "prior publication;" the description, or process, or result seen being termed an "anticipation."[1]

[Each of these grounds of invalidity constitute "want of novelty."]

or (*c*) *he can, from his knowledge of his trade or art, do it as soon as* his attention is called to the subject, in which case the patent is invalid, because it is in the words of the Statute of Monopolies "mischievous by hurt of trade by raising the price of commodities *or generally inconvenient*." A patent held invalid on this ground is said to be invalid for "want of invention" or "want of sufficient inventive ingenuity," and also for "want of subject-matter."[2]

[One may here add the exceptional case where (*d*) *one has protected the thing himself, having either devised or imported it*, in which case a subsequent patent would, apparently,[3] be invalid by reason of a "prior grant," as two monopolies cannot co-exist in respect of the same invention, and the later applicant, although a true, is not the first inventor (*post*, p. 51).

As the earlier invention in this case is not published, "prior grant" will be considered, *post*, p. 51.]

The inquiry into the application of the foregoing principles as affecting the validity of patents involves, therefore, three questions.

I. What is the nature and amount of *prior user* of a manufacture that would invalidate a subsequent patent for the same invention?

II. What constitutes *publication* of an invention so as to invalidate a subsequent patent for the same?

[1] When the description is in a document alone, the invention not having been used or made, the term "paper anticipation" is frequently used in litigation; it is not a term of art, and is generally used in argument in a disparaging sense.

[2] See *post*, p. 355. This use of the term "subject-matter" is only a particular application of the term defined *ante*, p. 6. If it be recognized that an invention to be patentable must be a "manufacture" as defined *ante*, pp. 3, 6, and that it must not be so simple as to interfere with existing trades, then the term "subject-matter" may be dropped altogether. Apart from "*want of invention*," the use of the term was condemned by Lord *Esher*, M.R., in *Edison-Bell, &c.* v. *Smith*, 11 R. P. C. 398, l. 37.

[3] It does not appear that an actual decision has yet been given on this point.

III. What addition to the stock of public knowledge is sufficient to constitute a patentable invention as distinguished from a new use or application of existing knowledge?

I.—*Prior User.*

As to the first question, although the statute refers to manufactures "which *others* at the time of making such letters patent and grants shall not use," yet a patent may be held invalid on account of prior user by the inventor himself on two grounds: (*a*) As being contrary to public policy, since secret commercial user before the patent would extend to monopoly beyond the limits of fourteen years; and (*b*) as constituting a "publication" of the invention. The former of these points will be considered *post*, p. 79; the latter comes under the head of "publication."

As regards persons other than the patentee, the term "prior user" means prior public [1] use; that is, user *in* public although not necessarily *by* [2] the public generally, user by one member of the public being sufficient. It must be actual commercial user as distinguished from what is purely experimental.[3] It need not be a user continued up to the date of the patent; [4] the discontinuance, however, would be some evidence on the question whether the user were experimental or not.[5] The manufacture openly of the anticipation without actual sale is sufficient [6] user to publish an invention.

Illustrations.

In the case of a patent for bleaching it was proved that a bleacher had for five or six years previously used the same process commercially, but kept it a trade secret, known only to his partners and two servants. The patent was held invalid. *Tennant's Case*, *post*, p. 182.

The patent in question was for a lock. It was proved that a similar one had been used for several years on a certain gate. This was sufficient prior user to invalidate the patent. *Carpenter* v. *Smith*, 1 Webs. 543.

[1] *Lewis* v. *Marling*, 10 B. & C. 27; 1 Webs. 496.

[2] *Carpenter* v. *Smith*, 1 Webs. 534, 542.

[3] *Walton* v. *Bateman*, 1 Webs. 619; *Cornish* v. *Keene*, 1 Webs. 508; *Galloway* v. *Bleaden*, 1 Webs. 525.

[4] *Household Co.* v. *Neilson*, 1 Webs. 692 (Lord *Lyndhurst*, p. 710); *Dick* v. *Tullis*, 13 R. P. C. 157.

[5] *Household Co.* v. *Neilson* (per Lord *Campbell*), 1 Webs. 716; *Morgan* v. *Windover*, 5 R. P. C. 303 (per *Cotton*, L.J.).

[6] *Betts* v. *Neilson* (per Lord *Chelmsford*), L. R. 3 Ch. Ap. 431, 435, *post*, p. 220

The Provisional Specification of an invention was dated the 14th of November, 1853. A rival manufacturer invented the same device at an earlier date. His machine was capable of being used, but was not used in his trade at the above date. This was not publication, and the patent was upheld. *Smith* v. *Davidson* (1857), 19 Crt. Sess. 691.

See also the case of *Hoe* v. *Foster*, *post*, p. 25.

As the reason for invalidating a patent for prior user is because a monopoly cannot be granted having the effect of restraining others from doing what they are in a position to do, cases may occur in which the prior user does not fully disclose the alleged subsequent discovery, but yet prevents it from being patentable. Thus, if a new method of carrying out a process does not amount to anything more than a new way of carrying out an old process, but with the machinery or vessels cleaned or emptied oftener, then the latter is not patentable although it gives much better results.

Prior User invalidating without disclosing.

Gas had been purified by being passed over lime and oxide of iron. Lime absorbed CO_2 and H_2S, forming $CaCO_3$ and CaS. The iron oxide absorbed H_2S. Impurities also existed consisting of other sulphur compounds, chiefly CS_2. Lime did not absorb CS_2 directly, but CaS would do so. $CaCO_3$ did not absorb either. These facts were known. The practice had been to pass the gas through a series of purifiers containing lime, and renewing them one by one in turn so each became "foul." The patentee arranged his purifiers and process so that the gas could be tested between the purifiers, and remained sufficiently long in the first one not only to form $CaCO_3$ and CaS, but for the latter to be decomposed by more gas forming $CaCO_3$ and expelling H_2S to the next purifier. The latter purifiers were filled with CaS to absorb the CS_2. The process was the same in method and effect as if the first purifier in the old method were emptied and refilled oftener. The patent was held invalid by the Court of Appeal. *Patterson* v. *Gas Light and Coke Co.*, 2 Ch. D. 835.

The patent in question was one for improvements in the treatment of "sulphite pulp" in paper manufacture, consisting in the use of petroleum or paraffin oil at a certain stage, whereby specks from pitchy or resinous matter were avoided, and the machinery kept clean. The paper by the improved process was more valuable than the old Others had previously used petroleum in the same quantities and stage, but for another purpose, viz. to clean the slits

in the grids, so enabling smaller slits to be used and saving labour. But on starting with their machinery clean (after the date of the patent), they found they got rid of specks also. *Held*, that the alleged invention merely amounted to the discovery that by cleaning the machinery new and better results could be obtained. *Partington and others* v. *The Hartlepool Pulp, &c., Co., Ltd.*, 12 R. P. C. 295.

II.—*Prior Publication.*

As to the second question of what constitutes a publication within the realm [1] sufficient to invalidate a patent, the general rule is that it is such a disclosure as puts a "member of the public" in possession of the invention without such a one having to make discovery or research in order to complete the invention,[2] for when once the public are possessed of an invention they cannot be deprived of it, so a subsequent patent for the same will be invalid;[3] even when the prior knowledge is imported from abroad and the patentee did not gain it from that source, but devised the invention himself.[4] The question of publication is a question of fact, and it will be sufficient to prove circumstances such that the public may reasonably be presumed to know of it.[5] The question of fact must in all cases be reasonably considered.[6]

For convenience of illustration, cases of publication may be classified under the following heads:—

(1) By user by persons other than the patentee.
(2) By user by the patentee; and
(3) By documents, such as books, drawings, specifications.

Cases on publication are mere illustrations of the application of the foregoing rules; a question of fact in one case cannot be a precedent for a question of fact in another.

[1] *Household Co.* v. *Neilson*, 1 Webs. 718 (*n*).

[2] Abandoned unsuccessful experiments are not publications; *Jones* v. *Pearce*, 1 Webs. 124; *Cornish* v. *Keene*, 1 Webs. 519, as explained by Lord *Lyndhurst*, L.C., in *Household Co.* v. *Neilson*, 1 Webs. 709.

[3] Per Lord *Blackburn* in *Patterson* v. *Gas Light and Coke Co.*, 3 App. Ca. 244.

[4] *Stead* v. *Williams* (per *Tindal*, C.J.), 13 L. J. C. P. 220; 8 Scott's N. R. 472.

[5] Per *Jessel*, M.R., in *Plimpton* v. *Malcomson*, 3 Ch. D. 556, approved in *Harris* v. *Rothwell*, 3 R. P. C. 388 and 4 R. P. C. 230 (by *Lindley*, L.J.), in *Gadd* v. *Mayor of Manchester* (by *Lindley*, L.J.), 9 R. P. C. 528, and in *Guilbert Martin* v. *Kerr*, 4 R. P. C. 22.

[6] *Newall* v. *Elliott*, and notes, *post*, p. 204.

(1) *Publication by Persons other than the Patentee.*

Where the invention has been previously used or worked by others it is, in most cases, known to them, hence is not "new."

Articles the same as those subsequently patented were manufactured by persons other than the patentee and deposited in a warehouse for sale, but not actually sold. The knowledge of these was confined to the maker and his *employés*. These constitute an anticipation. *Mullins* v. *Hart*, 3 C. & K. 297.

Manufacture of an article by workmen in a shop, who are not put under an obligation of secrecy, is publication. *Humpherson* v. *Syer* (per *Fry*, L.J.), 4 R. P. C. 415; *Westly Richards & Co.* v. *Perkes*, 10 R. P. C. 193.

But where the member of the public who knew of the invention is a rival inventor who gained his knowledge by discovery, or from abroad, and did not protect or publish his invention, then his knowledge is not "public" so as to invalidate a subsequent patent,[1] even although he disclosed it *in confidence* to his own workmen or advisers.[2] (See *post*, p. 25.)

(2) *Cases affecting Publication by the Patentee himself.*

Lending a newly invented machine to a friend to be tested in a mill is not necessarily publication. *Bentley* v. *Fleming*, 1 C. & K. 587.

Experimental user, by testing an invention for laying cables, although in the execution of a contract, is not publication. *Newall* v. *Elliott*, 4 C. B. N. S. 295, *post*, p. 201.

The inventor of a new machinery for a crane for building harbour works used it on a contract in which he was engaged for several months prior to his application for a patent; his workmen and others could see it at work. This was publication. *Adamson's Patent*, 25 L. J. Ch. 456.

Sending a traveller round with samples of a new invention for the purpose of soliciting custom is publication. *Hancock* v. *Somervell*, New Lond. Journ. Vol. 39, p. 158.

The patentee was appointed along with two other gentlemen under the provisions of an Act of Parliament, as a referee, to make inquiries into the question of gas-purification. It was their duty to inquire as to how far gas could be practically purified by certain companies. If they found that by any means the amount of impurity could be limited to a certain amount, they were to prescribe the maximum

[1] *Dollond's Patent*, *post*, p. 50.

[2] *Gadd* v. *Mayor of Manchester*, *post*, p. 354.

amount accordingly. The discharge of this duty necessitated the publication of the means of limiting the impurity, otherwise the companies could not comply with the proposed regulations. The patentee thought that a method devised by him was novel. He disclosed it in confidence to his colleagues, who consented to keep it secret for a short time. Consequently the report containing a description of the alleged new method, although drawn up on the 31st of January, 1872, was not sent to the Board of Trade until the 27th of March, meanwhile the patentee applied for a patent on the 9th of March. His complete specification was filed in due course. *Held* by the House of Lords that the alleged invention was published on being communicated to the patentee's colleagues and embodied in the report of the 31st of January, 1872. *Patterson* v. *Gas Light and Coke Co.*, 3 App. Ca. 239.

A patent for an improvement in the folding mechanism of a printing-machine was granted from the 5th of December, 1885. The invention had been successfully worked in America. On the 26th of June, 1885, the patentees agreed to supply and set up the invention in the offices of the *Liverpool Mercury*. The work was to be completed by and under the supervision of the patentees. It was worked on days between the 19th and 21st of November, and defects were then remedied; and again from the 26th to 28th for printing the paper. Defects were again remedied, and it worked all right. It was run again successfully from the 3rd to the 5th of December. *Held* (by the Court of Appeal) that the patent was invalid. *Hoe* v. *Foster*, 16 R. P. C. 33.

It is not publication for the inventor to disclose his invention in confidence to professional or expert advisers or workmen employed by him to make experiments with the invention,[1] but if any of these persons, in breach of his duty, disclose the invention to others, then it becomes published.[2]

(3) *Publication by Documents.*

The foregoing general rule as to publication applies also to the third mode of publication, namely, by means of documents, whether they be descriptions in a book, drawings, or specifications for patents.[3] In the case of specifications, however, there is this difference, that when a specification is available to the public it is published in law as well as in fact.[4] A specification of a prior

[1] *Morgan* v. *Seaward*, 1 Webs. 194.
[2] Per *Fry*, L.J., in *Humpherson* v. *Syer*, 4 R. P. C. 4-5.
[3] See *Lang* v. *Gisborne*, and notes thereto, *post*, p. 221.
[4] *King & Co.* v. *Anglo-American Brush Corp.* (per Lord *Watson*), *post*, p. 344.

patent describing the same invention has always been regarded as an anticipation, not only because it shows the want of novelty in the later invention, but that the later patentee is not the *first* (although he may be a *true*) inventor.[1]

But no invention for which an application for a patent is made after sect. 1 of the Act of 1902 comes into force, will be held invalid *merely* because it has been described in a specification deposited in pursuance of an application more than fifty years old.[2]

The circumstances of each case must be separately considered,[3] and also the probability of persons wanting to read the publications as soon as brought out.[4] The fact that the documentary anticipations are the result of the patentee's own labour does not affect the issue.[5]

Illustrations of Documentary Publications.

Sale of a few copies of a foreign book in England. See *Lang* v. *Gisborne*, and notes thereto, *post*, p. 221.

The patent in question was for a roller skate. The claims of the American specification with editor's comments and explanations were published in the *Scientific American* and sent over to the British Patent Office, but the description was not sufficient to make the skate from. One copy of a book by a Mr. *Jewitt* was sent to the Patent Office Library on the 20th of July, 1865. The book was never entered in the donor's list nor in the catalogue, it was placed in a private room, and never asked for till 1875. It was discovered in the library before Christmas, 1875. *Held*, that this was no evidence of publication in March, 1875. *Plimpton* v. *Malcomson*, 3 Ch. D. 531.

In addition to the evidence in the preceding case it was proved that in or about the year 1867 the sub-librarian of the Patent Office saw *Jewitt's* book on a shelf in the corridor leading to the public room, the corridor being open to the public. Subsequently in the new library it was placed in a room upstairs where other American books were kept. The officials were never asked for it, nor was it entered in any catalogue. *Held*, that there was no evidence of publication. *Plimpton* v. *Spiller*, 6 Ch. D. 412. (The copy was

[1] *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), 1 Webs. 86, and note thereto. Per Lord *Campbell* in *Household Co.* v. *Neilson*, 1 Webs. 718 *n*.

[2] 2 Ed. VII. c. 34, s. 2, *post*, p. 524.

[3] See notes to *Lang* v. *Gisborne*, *post*, p. 222.

[4] *Pickard* v. *Prescott*, *post*, p. 339.

[5] For two instances of this, see *Pickard* v. *Prescott*, *post*, p. 339, and *The Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 435.

proved *not* to have been known to the public. *Harris* v. *Rothwell*, 4 R. P. C. 231, 282.)

Publication by means of diagrams annexed to a German description. See *United Tel. Co.* v. *Harrison*, *post*, p. 282.

One copy of a book written in French containing an alleged description of an invention reached England, and was placed in the library of the British Museum. It was indexed under the author's name. Enquirers in any branch of study might as a favour be allowed to see the books relating to a particular subject on the shelves, otherwise they must write a docket giving the index reference. The work in question was mentioned in two catalogues in England. *Held*, that there was no evidence of the publication of the contents of the book. *Otto* v. *Steel*, 3 R. P. C. 109.

The patent in question was dated the 16th of April, 1880. On the 9th of December, 1878, and the 5th of February, 1880, two German specifications were received at the Patent Office. These were according to the usual course kept in boxes in numercial order and accessible for use by the public. In due course they were bound with others and placed on the shelves of the Patent Office library for public use. *Held* by the Court of Appeal that there was evidence proving publication of the invention described in the German specification. *Harris* v. *Rothwell*, 4 R. P. C. 225.

A patentee sent instructions to have his invention made in Paris. A description of it was inserted in a French Ophthalmic Journal usually sent to certain subscribers in the United Kingdom. As to what is evidence of their having read the description, see *Pickard* v. *Prescott*, *post*, p. 339.

Amount of Disclosure in Prior Publications.

Publication to constitute anticipation must be such that it fully discloses to those who are presumed to see or read it the invention in question.[1] If the alleged anticipating invention be not complete so as to be workable it is no disclosure at all, for it tends to lead the public to think that the device or process in part disclosed is based on wrong principles to effect the object desired, and so tends to discourage further attempts in the same direction.[2] But a distinction must be observed between the invention and the means for

[1] See *Betts* v. *Mensies*, and *Betts* v. *Neilson*, and notes, *post*, pp. 218, 219, 220; *Otto* v. *Linford* (per *Brett*, L.J.), and notes, *post*, p. 289; *Pneumatic Tyre Co.* v. *Casswell* (per Lord *Macnaghten*), 16 R. P. C. 542, l. 46.

[2] *Galloway* v. *Bleaden*, 1 Webs. 525. *Jones* v. *Pearce*, 1 Webs. 124, followed in *Household Co.* v. *Neilson*, 1 Webs. 709, 716. *Heath* v. *Unwin*, 2 Webs. 277. See *Murray* v. *Clayton*, *post*, p. 349; *Hills* v. *London Gas Light Co.*, and notes, *post*, pp. 208, 210, 212.

performing it; the former may be fully disclosed without sufficient information having been given under the latter head to enable workmen to put the invention to actual use.[1]

Illustrations.

For illustration of the failure of a model to anticipate, see *Hills* v. *London Gas Light Co.*, *post*, p. 211.

A new rolled metal was described in a specification in 1804. It was not put into commercial use. Skilled workmen by reading the specification could not produce a metal of similar manufacture patented in 1849. The patent for the latter was valid. *Betts* v. *Menzies*, *post*, p. 218.

An alleged anticipation described a lamp with a circular wick, but it was unworkable. The substitution of a flat wick, so that, as used in the lamp, it was folded into a circular shape, is a patentable invention. See *Hinks* v. *Safety Lighting Co.*, *post*, p. 257.

See also facts in *Murray* v. *Clayton*, *post*, p. 249, and *Otto* v. *Linford*, *post*, pp. 283, 289.

In 1877 a patent was taken out for a door-fastener. On pulling a handle the bolt was withdrawn, but on pushing the door to close it the bolt projected too soon. The device was abandoned as useless. This did not anticipate a similar contrivance in 1888, in which by a slight alteration the difficulty was successfully overcome. See *Kaye* v. *Chubb*, *post*, p. 315.

The patent in question was that for Dr. *Hopkinson's* "three-wire" system of distributing electricity in incandescent lighting, constancy of pressure in the consumer's part of the mains being important. It consisted of joining up two dynamos in series one for each set of installations and employing a "middle wire" to convey the difference of the currents between the junction of the dynamos and the main common to the installation. An alleged anticipation consisted of an installation at the *Alexandra Palace*, in which two arc lamps were set up, the current to each from a separate dynamo returning by a common conductor. The dynamos were at first "in parallel," but one of them immediately (owing to instability of electrical equilibrium) became "reversed" (field magnets becoming de- and re-polarized), so that the dynamos ran "in series." The discovery of this did not convey to the mind of the engineer the means of reducing conductors or maintaining the pressure in parallel incandescent lighting. It was no anticipation. *Hopkinson* v. *Kensington and Knightsbridge, &c.*, 10 R. P. C. 61.

The patent in question was for a new basic dye stuff. The invention

[1] Discussed in notes to *Hills* v. *Evans*, *post*, p. 224, and in *King & Co.* v. *Anglo-American Brush Corp.*, *post*, pp. 341, 345.

was based on the discovery that rhodamine acted as an acid. The alleged anticipation contained the statement of an erroneous theory to explain the process therein claimed. This erroneous specification pointed away from the use of the unconverted rhodamine base, although the inventor in fact used it thinking it was another substance. This is not an anticipation. See *Badische Anilin, &c.* v. *La Societé Chimique des Usines du Rhone*, *post*, p. 407.

The patent in question (*Haddan's*, 1878) was one for "compound winding" of dynamos. The alleged anticipation consisted of a passage in *Varley's* specification, 1876, but there was no claim therein for compound winding, nor illustrations of it, nor directions for doing it in practice. *Clark's* specification, 1875, disclosed shunt winding, but was unknown to (nent electricians at that date. It was proved that *Varley* knew of it, hence that other electricians might have known of it also. *Held*, that *Varley's* specification, when read with the knowledge disclosed in *Clark's* specification of 1875, disclosed *Haddon's* invention. See *King & Co.* v. *Anglo-American Brush Corporation*, *post*, pp. 340, 344, 345.

Exhibitions.

Special provisions are made for the benefit of inventors who wish to exhibit their most recent discoveries at industrial or international exhibitions. To obtain this benefit the exhibitor must give the Comptroller notice of his intention to exhibit. The application for the patent must be made within six months of the opening of the exhibition.[1]

His Majesty may by Order in Council declare at any time that the foregoing provisions shall be extended to any industrial or international exhibition held out of the United Kingdom and mentioned in the Order. The condition of giving notice to the Comptroller may by such Order be suspended or made subject to conditions.[2]

The effect of the provisions are that the right of the inventor or his representative to obtain provisional protection is not prejudiced by the exhibition of his invention at the industrial or international exhibition, or to publication of any description of the invention during the period of the exhibition, or the use of the invention for the purpose of and in the place of the exhibition, or the use by others without the priority or consent of the inventor elsewhere during the holding of the exhibition.[3]

[1] Sect. 39 of the Act of 1883, *post*, p. 499. [2] Sect. 3 of the Act of 1886, *post*, p. 518.
[3] Sect. 39 of the Act of 1883, *post*, p. 499.

Identity of Inventions.

Under the new procedure (*post*, p. 116) the applicant for a patent, or his agent, will have to consider in many cases whether the inventions disclosed in prior specifications are included in the claims he puts forward in his specification. He should be satisfied, and should be prepared to satisfy the Comptroller if necessary, that his claims, either as originally drafted or as amended on consideration of alleged anticipations, do not include inventions disclosed in previous specifications. In addition to the principles affecting publication generally, those relating to "documentary anticipations" (*ante*, pp. 25–27) must be considered. The following considerations should also be borne in mind in comparing an invention with an alleged anticipation :—

A patent being invalid if the claim include any invention already published[1] or protected, it becomes important to consider the conditions under which two inventions are to be considered "identical." An invention for this purpose "includes" one already known if the claim be such that the monopoly granted by it would cover the earlier manufacture, so that the patentee could prevent others from doing what had been known before.

The comparison in any given case is between the alleged anticipation and a single claim in the specification under consideration ; the point to be considered is whether the claim in question claims the earlier invention, that is, includes it in the monopoly claimed.

A patentable invention has been defined (*ante*, p. 9) as the *application of principles* to produce certain results,[2] or the new results if vendible themselves. Hence the first step in comparing two inventions is to ascertain in the case of each (1) what are the principles applied, (2) the mode of application, and (3) the immediate result or thing produced. Two inventions will be identical when the same principles are applied in the same manner. For instance, in combinations the same principles are applied in the same manner when the elements of the combination (*ante*, p. 16) discharge or

[1] *R.* v. *Else*, *post*, p. 180; per Lord *Eldon*, L.C., in *Hill* v. *Thompson & Forman*, and notes, *post*, p. 184.

[2] See *ante*, p. 9, and also Lord *Hatherley*, L.C., in *Cannington* v. *Nuttall*, *post*, p. 248.

perform the same functions in the same way. If the manufactures compared together (the subjects of the claim and alleged anticipation respectively) be vendible articles as distinguished from the mode of producing them, then they are identical when they consist of the same article or substance. If the inventions be processes or methods, then the similarity of the principles and the mode of their application must be compared together, as the resulting products may be the same although the modes of making—that is, the inventions—may be different.

Inventions may be similar in outward form and yet different in the principles applied, or apparently different in form and yet similar in principles and their application.

Claims including what was old.

One claim out of twelve in a specification was for a certain mode of construction of ships with iron frames; it was wide enough to include what was previously known, hence the patent was invalid. See *Jordan* v. *Moore*, *post*, p. 243.

A patentee claimed "a mode of producing or preparing stripes" of certain materials in a certain manner, "and of reweaving" them to produce certain results. This constituted two separate claims for producing and weaving; the former being old, the patent was invalid. *Templeton* v. *MacFarlane*, 1 H. L. Ca. 595.

Webb's process (1891) of concentrating sulphuric acid gave results commercially very superior to those of *Chance's* process (1871), but both consisted of the application of the same principles and the claim in *Webb's* specification was wide enough to include *Chance's* method. *Webb's* patent was invalid. See *Kynochs, Ltd.* v. *Webb*, *post*, pp. 425, 428.

If the differences between the old and new inventions be such as to introduce a new principle into operation in the later invention they cannot be identical. This difference of principle may be apparent in the result attained, or in cases of a new process or method for producing an old result or attaining an old object it may be apparent in some distinctive feature in the method, such as greater speed. It is this difference of function, and not the mere form of the inventions, that must be looked to as affording evidence of the new or different principle.

Inventions almost similar in Form, but different in Principle.

Pavement lights, like those used in decks of ships, had been made of such form that the light passing through was refracted and so spread in the space below. An improvement consisted in so shaping the glass prisms that one side acted as a reflector. Thus the principle of internal reflection of light was brought into play. See *Hayward* v. *Hamilton*, *post*, p. 277.

A new disinfector consisted of an inner disinfecting chamber and an outer chamber, to both of which steam could be introduced. The alleged anticipation consisted of the same elements. But the new one was constructed of such strength that superheated steam under considerable pressure could be employed, thereby greatly accelerating the process. The invention was novel. See *Goddard* v. *Lyon*, *post*, p. 358.

See *Chamberlain* v. *Bradford (Mayor of)*, *post*, p. 467.

On the other hand, if the same principles be applied, and in the same manner, then the inventions will be identical, although their outward form may at first sight appear quite different.

Inventions different in Form, but identical in Principle.

The invention in question was Messrs. *Gaulard & Gibbs'* system of distributing electricity. It consisted in having an alternating current of high tension in the main, from which branch currents of low tension for use were taken off by means of transformers. The anticipation consisted of the use of transformers in *Jablochkoff's* system, in which the transformers were used for giving high tension currents to each lamp, so that each might be independent of the others. The later patent was invalid. See *Gaulard & Gibbs' Patent*, *post*, p. 329.

A mechanical stoker was constructed so that the coal was projected over the fire by means of doors on a shaft and moved intermittently so that when in operation they moved radially. The operating mechanism was applied to the shaft. Another stoker was constructed in which the door was replaced by a curved arm having a flap at its lower end. It was moved intermittently by mechanism inside the curved part instead of outside on the shaft. The radial action against the coal was the same. The second invention was held to be a mere colourable imitation of the first. See *Proctor* v. *Bennis*, *post*, p. 305.

In the more complex or "combination" inventions the ultimate principles may be the same, but the *manner of their application* in

the old methods or processes and in the new combination may not be the same. In such cases the comparison is made between the proximate principles or "elements" of the combination. If the elements be so combined in each case that the corresponding parts perform the same functions, then the inventions are identical, otherwise not. As the respective inventions consist of the *combining* together of certain elements, the nature of the combination is tested by the result of that *combining*, that is, by the functions discharged by the elements in the two combinations respectively.

Inventions in which the Combinations were apparently identical, but in which the Parts performed Different Functions.

The patent in question was for improvements in fire-proof floors. Flanged tubular lintels were so shaped and laid across the girders that the latter were covered with the concrete subsequently poured in. Alleged anticipations were similar. But owing to the lintels being placed askew they enabled the concrete to form in part a self-supporting arch from girder to girder. The older ones did not perform this function. The patent was upheld. See *Fawcett* v. *Homan*, *post*, p. 383.

In *Welch's* patent for securing rubber tyres wires were employed embedded in the cover and lying in the rim of the wheel. An alleged anticipation showed a similar contrivance. But *Welch's* wire operated by resisting extension due to air-pressure or by exercising contractile force on being screwed up. The other did not exercise this function. The patent was held valid. See the *Pneumatic Tyre Co.* v. *East London Rubber Co.*, *post*, p. 425.

Another form in which there may be a difference in the manner of the application of the same principle is in the extent to which the principle may be applied. If carried further in one case than another so as to produce different results, then the manufactures may be different.

Application of Same Principles, but to a Greater or Less Extent to produce a Different Result.

The patent was for an improved grooved tyre for wheels. The object was to produce by a cheap method an iron tyre with a dovetailed section for holding a rubber tyre. The method consisted in passing iron through a series of rolls, finally rolling the base flat to produce the required result. An alleged anticipation consisted of rolling by a similar method iron trough-shaped beams in which

no dovetailed section was required. This alleged anticipation did not carry the principle of successive rollings far enough, nor did the claim for the new tyre include the earlier stages of the process. See *Shrewsbury & Talbot Cab Co.* v. *Sterckx*, *post*, p. 377. [The article produced was a different one, *i.e.* a new manufacture.]

A dye substance was made by a certain process. It was discovered that if the process were stopped at a certain stage, a dye substance was produced possessing different properties but giving substantially the same colour. The shorter process was a patentable invention. *Leonhardt* v. *Kalle*, *post*, p. 362. [The resulting new dye substance possessed properties different to the old, and the newer method constituted a different process or manufacture.]

Minimum of Addition to Public Knowledge essential.

The consideration of that addition to the stock of public knowledge which is necessary and sufficient to constitute a patentable invention is a question of considerable difficulty. As has already been pointed out (*ante*, p. 20), a patent would be to "the hurt of trade,"[1] and "generally inconvenient," if it were granted for inventions (although actually "new manufactures") of so simple a nature that the monopoly so created would prevent skilled workmen from making the best use of the knowledge they already possessed. All new inventions must be the outcome of the inventive faculty of the mind (unless discovered accidentally or imported from abroad), hence it becomes a question of degree[2] as to the amount of ingenuity required to support a patent. This amount of ingenuity is frequently termed "invention."[3]

The term "invention" is therefore used in more senses than one, and very generally to denote the *manufacture* patented (*ante*, p. 6) and also in recent years to denote the *amount of ingenuity required* to support a patent. In each case the context will show in which way the term is to be understood. There is a distinction between "discovery" and "invention" used in the latter sense. One may discover either (1) a new principle, or (2) a new quality of a body, or (3) a new use to which old appliances may be put. Whether the

[1] *Harwood* v. *G. N. Ry. Co.* (per Lord *Westbury*, L.C.), 11 H. L. Ca., at p. 682; *Murray* v. *Clayton*, L. R. 7 Ch. Ap. 577 *n*; *Saxby* v. *Gloucester Wagon Co.*, 7 Q. B. D. 312.

[2] Per *Blackburn* and *Shee* JJ., in *Harwood* v. *G. N. Ry. Co.*, *post*, p. 207. See note to *Morgan* v. *Windover*, *post*, p. 324.

[3] See remarks of *Bramwell* and *Brett*, L.JJ., in *Hayward* v. *Hamilton*, *post*, p. 280; also of *Smith*, L.J., in *Brooks* v. *Lamplugh*, *post*, p. 410; and cases reviewed by *Lindley*, L.J., in *Gadd* v. *Manchester*, 9 R. P. C. 524, *post*, p. 354.

subject of a "discovery" be a patentable invention or not depends on whether it be a new *manufacture*[1] (*ante*, p. 9), and one not obvious to skilled workmen when their attention is called to the necessity of producing a desired result;[2] or whether it be merely a principle or new use of an old manufacture.

The existence of inventive ingenuity is a matter of evidence. If there be evidence that skilled workmen could effect the invention in question without difficulty as soon as their attention is called to the need of it, then there is obviously no "invention." On the other hand, the fact that skilled persons sought in vain to solve the problem solved by the patentee is proof of sufficiency of ingenuity.[3] But the large majority of cases are those in which such evidence is not directly available, hence the necessity for ascertaining the sufficiency of ingenuity by other considerations, and by comparing the invention itself with what was known before.

Since, for the protection of skilled workmen, a certain *minimum* amount of knowledge is required to be added to the public stock by an inventor to maintain his patent, it is from the point of view of the workman that the question is to be considered. Therefore it does not matter if the patentee imported his invention from abroad (*post*, p. 48), or discovered it accidentally, or only arrived at it after prolonged experiment.[4] On the other hand, an inventor may, after much trouble and experiment, only arrive at a result that is not patentable, because it is no advance on what others, unknown to him, had already achieved.[5]

Illustrations.

The invention in question consisted in the mode of supporting the front of a carriage by C springs, formerly used at the back. It was proved that carriage-builders could effect this without any difficulty. The patent was invalid. See *Morgan* v. *Windover*, *post*, p. 323.

An invention, very simple when known, consisted of a mechanical combination for turning heavy forgings. Many unsuccessful attempts

[1] As to discovery of qualities of a new alloy: *Tindal*, C.J., in *Munts* v. *Foster*, 2 Webs. 103; *Pirrie* v. *York St. Flax Spinning Co.*, 11 R. P. C. 449.

[2] See generally the remarks of *Lindley*, L.J., in *Lane Fox* v. *Kensington*, &c., *post*, p. 350, and in *Gadd* v. *Mayor of Manchester*, and notes, *post*, pp. 354, 355.

[3] See Lord *Herschell's* observations in *Vickers* v. *Siddell*, *post*, p. 328, and those of Lord *Halsbury*, L.C., in *Taylor* v. *Annand*, *post*, p. 449; also *Gosnell* v. *Bishop* (per *Bowen*, L.J.), 5 R. P. C. 158.

[4] *Crane* v. *Price*, *post*, p. 197.

[5] For an example, see *Riekmann* v. *Thierry* (per Lord *Davey*), *post*, p. 394.

had been made to "meet the want" supplied by the device in question. The patent was upheld. See *Vickers* v. *Siddell*, and notes, *post*, pp. 324, 329.

A patent for an invention consisting of very simple mechanical improvements was upheld by the Inner House of the Court of Session on the ground that other inventive minds had been at work and failed to get over the difficulties surmounted by the patentee. *White* v. *Bertrams*, 14 R. P. C. 746.

See also *Taylor* v. *Annand* (per *Romer*, L.J. and Lord *Halsbury*, L.C.), *post*, p. 449, in which the existence of sufficiency of inventive ingenuity was proved in a similar way.

This necessary addition to the amount of public knowledge may be apparently very little—the alteration in shape (or the introduction of an equivalent [1]) in a mechanical contrivance producing new and better results by causing a difference in the operation of mechanical forces; or alteration in shape or strength of mechanical devices bringing new physical principles into operation; or alteration in physical conditions giving rise to new chemical reactions and improvements in processes or the production of new substances. But a large number of inventions consist in new combinations (*ante*, p. 16), arrangements, or applications of old and well-known things or processes. These it will be found more convenient to consider separately (*post*, pp. 38–46).

In those cases in which previous failures have been turned into successful processes or results, the amount of ingenuity may be apparently very little, but the invention itself be great;[2] for the previous attempts may not be "knowledge" at all (*ante*, p. 27).

Alterations of Shape or Strength constituting New Invention.

A new form of "flyer" for roving cotton applied known forces in a different way, producing steadier working of the machine. See *Seed* v. *Higgins*, *post*, p. 212.

New effects in pavement lights produced by alteration in shape bringing into play a different natural phenomenon. See *Hayward* v. *Hamilton*, *post*, p. 277.

Strengthening the structure of a disinfector to utilize dry steam under high pressure. See *Goddard* v. *Lyon*, *post*, p. 358.

[1] Per Lord *Halsbury*, L.C., in *Vickers* v. *Siddell*, 7 R. P. C. 303, l. 17.

[2] *Hinks* v. *Safety Lighting Co.*, *post*, p. 257. For instances of the application of this principle, see cases noted, *ante*, p. 28; also *Duckett* v. *Whitehead*, *post*, p. 370.

Compare also *Edison & Swan* v. *Woodhouse*, *post*, pp. 293, 297, in which the essence of the invention consisted partly in alteration of shape to avoid breakage by expansion of carbon.

See *Duckett* v. *Whitehead*, *post*, pp. 41 and 370.

Alterations in Physical Conditions producing New Chemical Inventions or Improved Results.

Heating a blast of air on its passage to a furnace. See *Neilson* v. *Harford*, *post*, p. 187.

Using a *dilute* instead of a stronger solution of cyanide of potassium to dissolve gold from ore, whereby gold is separated from baser metals, which the stronger solution could not do. See (as to claim 2) in *The Cassel Gold Extracting Co.* v. *Cyanide Gold Recovery Syndicate*, *post*, p. 369.

Toluene when treated with chloro-sulphonic acid was converted as to one half into toluene sulpho-chlorides and as to the other half into toluene sulphonic acids. Of the toluene sulphochloride only about one half was "ortho-" and useful, the other "para-" and useless. A chemist discovered that, by employing a large excess of chloro-sulphonic acid and keeping the temperature down to between 0° C. and 5° C., a much larger proportion of orthotoluene-sulphochloride —93 per cent. (instead of 25)—would be produced. Thus—

$$C_7H_8 + SO_2(OH)Cl = C_7H_7SO_2Cl + H_2O$$

The reduction of the temperature was not before suggested. *Held*, that the discovery of the new process was a patentable invention. *The Saccharine Corp., Ltd.* v. *The Chemicals and Drug Co., Ltd.*, 17 R. P. C. 28.

Proof of Ingenuity.

No general rule can be laid down as to the amount of ingenuity or of additional knowledge required to support a patent. From the reason for this minimum amount of ingenuity it follows that the existence of it can be proved by direct evidence if skilled persons can be proved to have attempted and failed to produce the result in question.[1] On the other hand, its absence is proved by showing that skilled persons could produce the desired result without difficulty as soon as they direct their minds to the subject.[2] Or skilled persons may give expert evidence as to whether or not a certain result could be attained without research or experiment on their part.[3]

[1] See cases of *Vickers* v. *Siddell*, *post*, pp. 324, 329; *White* v. *Bertrams*, 14 R. P. C. 746.

[2] *E.g.* cases of *Morgan* v. *Windover*, *post*, p. 323. See *Penn* v. *Bibby* (per Lord *Chelmsford*, L.C.), L. R. 2 Ch. Ap. 135, 136.

[3] See case of *The Lancashire Explosives Co.* v. *The Roburite, &c., Co.*, *post*, p. 396.

In the absence of such direct evidence the fact that the new invention met with a large sale and proved useful, *coupled with* the existence for some time of a previous demand for the alleged invention, will be evidence tending to show a sufficiency of inventive ingenuity, for it is to be presumed that skilled persons would, if they could, have supplied the want.

But novelty, great utility,[1] and a large sale alone do not prove inventive ingenuity, for the large sale may be due to changes of fashion, or to a large development in some other manufacture creating a demand for the article in question.

Illustrations.

Prior to *Gaulard & Gibbs'* Patent for distributing electricity, transformers were so wound as to take off a local current of higher tension than that in the mains. In the patentees' system transformers were constructed to take off low-tension currents from high-tension currents in the mains. The need of the new transformers arose merely from the development of electric lighting by glow-lamps. *Gaulard & Gibbs' Patent*, *post*, p. 329.

An invention consisted in the application to ladies' hats of a comb to secure the hat on the head. A large sale was proved, which was due to the coming into fashion of a mode of wearing hats in which the use of a skewer-like pin, or its equivalent, became necessary. The patent was invalid for want of sufficient ingenuity. *Savage* v. *Harris* (per *Kay*, L.J.), 13 R. P. C. 374.

For another illustration of great utility and large sale not being sufficient to establish sufficiency of inventive ingenuity, see *Cooper* v. *Baedeker*, *post*, p. 433.

For an example of a new application of an old thing meeting a long-felt want, see *Brooks* v. *Lamplugh*, *post*, p. 410.

Cases of Combination Patents.

By far the most numerous class of inventions are those which consist in the applications of principles, not directly, but indirectly, by the *combining together* of old things or processes, either by the bringing together of the old elements in a new way, or by altering the arrangement of the old elements, or by the application of old things to new uses (see *ante*, p. 16). In these cases it is the new

[1] Per Lord *Halsbury*, L.C., in *Rickmann* v. *Thierry*, *post*, p. 393; per *Rigby*, L.J., in *Castner-Kellner Alkali Corp.* v. *Commercial Development Corp.*, 16 R. P. C. 268, l. 40.

combination, as distinguished from the sum of its elements, that constitutes the addition to public knowledge,[1] that is to say, the invention in question.

Like all other inventions, to be patentable they must, besides others, fulfil these two conditions: (1) They must be "new manufactures," *i.e.* besides being a "manufacture," the claims must not include an old manufacture in the monopoly;[2] and (2) the invention must not be of such an elementary character as to interfere with skilled workmen making the best use of their knowledge.

With regard to the first of these conditions, the difficulty is to distinguish a "new" manufacture, *i.e.* the combination, from a mere rearrangement of the elements of an old manufacture or combination, which may only amount to a particular mode of using an old machine, or process. Hence it is of the greatest importance to ascertain in what the old "manufacture" consisted, whether it was a vendible machine, or a product, or a process as distinguished from *principles* (*ante*, p. 9), and *results* (*ante*, pp. 11–13). Similarly, the nature of the alleged new manufacture must be considered. One principal criterion is the comparison of the functions discharged by the several elements respectively in the old and new combinations. If they be the same, and no new function is attributable to the combination,[3] then the combination is not a new manufacture, but a mere rearrangement of old manufactures. Another criterion is the increased utility of the new combination.[4] This test is not conclusive, but is of great value.[5] Utility here mentioned is essentially comparative utility, and must be distinguished from that amount of utility necessary to support a patent, which is discussed *post*, p. 80.

As regards the second condition, the principles on which the presence or absence of sufficient ingenuity is ascertained have been dealt with *ante*, pp. 37, 38. In the case of combination patents, the requisite amount of ingenuity frequently consists in the *idea* of putting the old elements together; when done it may appear very

[1] *Cannington* v. *Nuttall*, *post*, p. 248; *Pneumatic Tyre Co.* v. *Casswell*, *post*, p. 381.

[2] *Hill* v. *Thompson* (per Lord *Eldon*), *post*, p. 184; *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), Dav. P. C. 279, 1 Webs. 87; *Bateman* v. *Gray*, Mac. 101.

[3] *Allen* v. *Oates & Green*, 15 R. P. C. 303.

[4] See *dictum* of *Tindal*, C.J., in *Crane* v. *Price*, *post*, p. 195, and notes; *Cannington* v. *Nuttall* (per Lord *Hatherley*, L.C.), *post*, p. 248.

[5] For illustration of its application see *Penn* v. *Bibby*, L. R. 2 Ch. Ap., 137, and as to its not being conclusive, see *Cooper* v. *Baedeker*, *post*, pp. 44, 431.

simple. This simplicity itself is apt to mislead,[1] unless one considers the state of the art or manufacture in question before and after the new combination was produced,[2] *i.e.* from the point of view of the skilled workman. Comparative utility is here again a great aid.[3] In the cases of the application of old things to new uses it is necessary to consider whether the old thing or combination is in the track of development of the art under consideration, for a skilled workman may have all the "common knowledge" of the art he practises, and yet not be presumed to know of the discoveries in other cognate manufactures.[4]

The applications of old things to new uses fall within the definition of combination patents (*ante*, p. 16). They may amount to new processes or methods, but must fulfil the same conditions as other combination patents.[5]

The application of the foregoing rules to a number of illustrative cases will now be considered. For convenience of reference they are arranged under the following heads, or divisions:—

Patentable.

1. Mechanical combinations of old elements amounting to new methods or inventions.
2. Combinations and rearrangements of processes constituting new manufactures.
3. Applications of old things to new purposes involving sufficient ingenuity to constitute invention.
4. Selections from known things or processes amounting to patentable inventions.

Not Patentable.

5. Combinations of old elements not amounting to patentable inventions.
6. New modes of manufacture falling short of patentable inventions.

[1] *Vickers* v. *Siddell* (per Lord *Herschell*), *post*, p. 328 and notes; *Fawcett* v. *Homan* (per *Rigby*, L.J.), *post*, p. 388.

[2] *Taylor* v. *Annand* (per *Romer*, L.J., and Lord *Halsbury*, L.C.), *post*, p. 449.

[3] *E.g. Vickers* v. *Siddell*, *post*, p. 324.

[4] *Penn* v. *Bibby* (per Lord *Chelmsford*), L. R. 2 Ch. Ap. 136. For illustrations, see *Gadd* v. *Manchester*, *post*, p. 351 and the *Shrewsbury and Talbot Cab Co.* v. *Sterckx*, *post*, p. 377.

[5] *Losh* v. *Hague*, 1 Webs. 208; *Harwood* v. *G. N. Ry. Co.*, *post*, p. 207; *Brooks* v. *Lamplugh* *post*, p. 410.

7. New uses of old means and processes not constituting patentable inventions.
8. New uses that are not manufactures.
9. Result only in question, insufficiency of invention in the results.

1. *Mechanical Combinations of Old Elements amounting to New Methods or Inventions.*

A machine was invented for singeing lace by passing it over rollers and across a gas-flame, between it and the chimney. Each of the parts was old. The gas-flame, however, replaced an oil one. The result was a machine of great utility. *Hall* v. *Jarvis*, *post*, p. 186. This is an instance of a new manufacture by making a new machine.

An appliance for turning forgings consisted of a very simple combination of old mechanical parts. *Vickers* v. *Siddell*, *post*, p. 324. Here the satisfying of a want proved inventive ingenuity, that is, that the invention was not obvious.

A hoist for heavy bodies consisted in a combination of an arrangement of expanding segments and a certain form of brake. The segments allowed of rotation of an axle in one direction and stopped it in the other. They performed this function in older machines. But as applied to hoists the segments did not perform the same function as regards raising and lowering as other and similar ones did in former hoists. The whole constituted a new hoist. See *Morris & Bastert* v. *Young*, *post*, p. 371. Here the function discharged by the respective parts in the old and new machines differed.

An invention consisted in removing a partition and altering the shape and relative positions of old parts in a water-closet to produce successful results. See *Duckett* v. *Whitehead*, *post*, p. 370. Here the alterations enabled natural laws to work more effectively; failure being turned into success proved ingenuity.

A new combination consisted of alterations in a gig-mill so that a new mechanical result was obtained, viz. the power to obtain a known *and* variable motion for the raising rollers as required. Previously known *or* variable motion could be obtained, but not both combined. See *Moser* v. *Marsden*, *post*, p. 374. Here the altered machine performed new functions, hence was a "new" manufacture; new mechanism being introduced, it became a new machine. Compare *Kay* v. *Marshall*, *post*, p. 190.

A valve for inflating tyres consisted of an arrangement of old elements which had been used to perform the same functions in other valves, but not all in the same valve, nor for the same purpose. The

new valve was very useful and a great success. The combination itself formed the addition to public knowledge. See *The Pneumatic Tyre Co.* v. *Casswell*, *post*, p. 381.

Old means, lintels, girders, and concrete or cement were so arranged that the concrete formed a self-supporting arch, which was a new result. See *Fawcett* v. *Homan*, *post*, p. 383. The parts here fulfilled functions different from those in old floors, hence the new floor was a new manufacture, natural forces of weight and reaction acting differently.

A machine for inserting "stop-press" news consisted in a combination of old mechanical parts. When done it appeared simple. Nothing like it had been attempted to supply a long-felt want. See *Taylor* v. *Annand*, *post*, p. 445. The test was the state of the art before as compared with it after the invention.

2. *Combinations and Rearrangements of Processes constituting New Manufactures.*

The invention consisted in waterproofing fabrics. By the old method fabrics were immersed in a solution of alum and soap. The novelty consisted in first immersing the fabrics in a solution of alum with some carbonate of lime, which neutralized the alum, and then a second immersion in a soap solution which gave the requisite oily quality to each fibre. The result left the fabric pervious to air: the old process waterproofed the surface only instead of the separate fibres. *Helliwell* v. *Dearman*, 1 Webs. 401 (*n*). The new properties of the result proved novelty of manufacture.

A rearrangement of old things and parts in a glass furnace so as to effect an improved process, by making former defects cure themselves, is a patentable combination. See *Cannington* v. *Nuttall*, *post*, p. 245. Here the currents of air performed new functions.

A gas-lamp was so constructed that the air was heated before reaching the flame. In a new arrangement the heated air was directed to a particular part of the flame. The lamp was so arranged that the glass was kept cool and from cracking by a cooling current of air. The new lamp was a great improvement. *Wenham Gas Co.* v. *Champion Gas Co.*, *post*, p. 336.

Ingredients were treated in a way described in previous specifications. Chemists conversant with the subject would have known that the result would be an explosive. But experts testified that research and experiment were necessary to produce the powder made. There was no evidence that chemists would have foreseen that the result would possess the qualities necessary for a useful powder. This was a new manufacture of great ingenuity. See *The Lancashire Explosives Co.* v. *The Roburite, &c., Co.*, *post*, p. 394.

3. *Applications of Old Things to New Purposes involving Sufficient Ingenuity to constitute Invention.*

Tubular braided wire was old, and had been used for pillows, handles, etc. A method of clamping it to make a new article, viz. a lady's bustle, which was both novel and useful, was *held* to amount to a patentable invention. See *Thomson* v. *American Braided Wire Co.*, *post*, p. 319.

A certain arrangement for automatically keeping pontoons level was applied to a gas-holder to keep it level without the aid of pillars above ground. The forces to be considered in each case were different. See *Gadd* v. *Mayor of Manchester*, *post*, p. 351. Here the older application was in a different branch of engineering.

Paper tubes had been used in dry spinning of cotton, wools, etc. They were slipped on rigid pirns which were attached to the spindles. The paper tubes and yarns wound thereon (*i.e.* "cops") were removed from the pirns and used in shuttles for weaving. In wet spinning of flax rigid pirns were used on which the spun flax was wound, both were removed from the spindles and dried. The flax became slack on the pirns, which had to be extended by screws. The invention consisted in applying paper tubes to wet spinning. All were removed from the spindles as before, the pirn preventing the tube from collapsing during the drying process. That process shrank the pirns and made them removable from the tubes then able to maintain the flax *in situ*. *Pirrie* v. *York Street Flax Spinning Co.*, 11 R. P. C. 429. The use of the tubes was different in the new mode; the parts discharged different functions; a new difficulty had to be met.

An old device for allowing a shaft to rotate in one direction and not in the other was applied in a hoist for raising and lowering heavy bodies. This application constituted a patentable invention of the particular form of hoist produced, that particular mode of application being new. *Morris & Bastert* v. *Young*, *post*, p. 371.

4. *Selections from Known Things or Processes amounting to Patentable Inventions.*

Earlier processes (which were disclaimed) depended on the use of "oxides of iron" in gas purification. Only one kind, the hydrated ferric oxide, would do. The discovery of this fact and the method of its application constitute a patentable invention. See *Hills* v. *London Gas Light and Coke Co.*, *post*, p. 208.

Ascertaining, by laborious experiment, a particular class of material amongst many, and of particular processes amongst many, for the production of paraffin oil, thereby creating a useful public trade, is

a "manufacture" and "invention." Something had, at the date of the patent, to be ascertained to render the discovery of paraffin oils useful to the public. *Young* v. *Fernie*, 10 L. T. N. S. 861; 33 L. J. Ch. 192.

5. *Combinations of Old Elements not amounting to Patentable Inventions.*

A combination of a grooved or roughened handle (an old contrivance) with a knob at the end (formerly used in hammers) in a tennis-racquet, is a mere alteration of old things in a known way. *Slazenger* v. *Feltham*, 6 R. P. C. 234.

In a known class of mincing-machines a screw arrangement of blades performed the double function of pressing the meat against knives and forcing it forwards slowly into the skins. In another class a screw forced the meat against a perforated plate, where it was cut by revolving knives mounted on the same shaft as the screw, but the screw did not go further than the plate. A combination, in which the screw on same shaft was continued to the other side of the plate, so as to press the meat into the skins as in the first class of machines, proved to be a very useful machine, but there was no difficulty to be overcome in so placing the old parts together, hence no patentable invention. *Williams* v. *Nye*, 7 R. P. C. 62. The parts so arranged performed the same respective functions as in the older machines.

Improvements in reels for holding fabrics consisted of a combination of the reel or frame with hooks made in a particular way. The new articles were largely used in preference to the old. *Held*, that there was no sufficient ingenuity shown, although there was an improved result. *Longbottom* v. *Shaw*, *post*, p. 332.

Pince-nez, or double eyeglasses, constituted a combination of old parts. The new glasses had the additional feature of the added part. The parts performed together the same functions they did before. No new quality was given to the glasses by the addition, and there was no difficulty in making the combination. See *Wood* v. *Raphael*, *post*, p. 398. There were here no new results due to the *combining* of the old elements.

6. *New Modes of Manufacture falling short of Patentable Inventions.*

Improvements in felt handles for bicycles, etc., consisted in grooving sheet felt, making it flexible so as to bend round the handles. The old method consisted in boring out solid blocks of felt. Some of these had been grooved on the outside. There was great utility and a large sale. See *Cooper* v. *Baedeker*, *post*, p. 431.

Alleged improvements in attaching ferrules which were of little or no utility were held not to constitute invention in *Wilson Bros. Bobbin Co.* v. *Wilson & Co.*, *post*, p. 463.

7. *New Uses of Old Means and Processes not constituting Patentable Inventions.*

A method of forming cases of rush or straw for the protection of bottles consisted in the use of a mandril shaped like a bottle. The use of mandrils for other and similar purposes was well known. This is not an "invention." *Patent Bottle Envelope Co.* v. *Seymer*, 28 L. J. C. P. 22. This is simply a case of "analogous use."

A specification described strengthening and polishing linen and cotton yarns by friction-brushes. The patentee of a subsequent alleged invention described in his specification the same process applied to yarns of wool, hair, etc. This is not a "new manufacture," but only the application of a known process to new material. *Brooke* v. *Aston*, 28 L. J. Q. B. 175 (followed in *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 135; *Rushton* v. *Crawley*, L. R. 10 Eq. Ca. 529; *Tickle-penny* v. *A. and N. Co-op. Soc.*, 5 R. P. C. 408; *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 524, and other cases).

Fish-plates for railways formerly had the heads of bolts secured from turning by being squared and sunk in square holes. Grooving the plate to effect this by the sides of the grooves holding the opposite sides of bolt-heads constituted the novelty. Channelled iron had been used similarly on bridges. This is the mere application of a known device to an analogous purpose, not amounting to a patentable invention. See *Harwood* v. *G. N. Ry. Co.*, *post*, p. 204.

Facts compared and last case followed in *Horton* v. *Mabon*, *post*, p. 221.

An alleged invention consisted in using old electrical elements, viz. alternating dynamo, high-tension currents in the mains, and transformers to produce a new result of drawing off *low-tension* currents for lighting purposes. See *Gaulard & Gibbs' Patent*, *post*, p. 329. Here there had been no previous demand for such a combination.

8. *New Uses that are not "Manufactures."*

A new mode of using a machine already known, by altering the relative distances of its parts is not patentable. Before maceration and wet-spinning of flax were introduced machines were adjusted according to the length of fibre, in cotton not over 1¼ inches, in flax 14 to 36 inches. *Kay* invented new machinery for preparing flax by maceration, and made "wet-spinning" successful. Part of his claim was for "new machinery" for spinning flax. This new machinery was simply the old rearranged so that the retaining and drawing rollers were placed 2½ inches apart instead of the old distance of 14 inches or more. This is only a new mode of using the old machine, and not a new machine. *Kay* v. *Marshall*, 5 Bing. N. C. 492. (Compare *Moser* v. *Marsden*, noted *ante*, p. 41,

and *post*, p. 374). In this case the "manufacture" claimed in the specification was the *machine*, not a process. See *post*, p. 190.

The discovery that by using machinery in a particular way a new pattern and lustre could be produced on embossed fabrics is not the discovery of a *new manufacture*. See *Ralston* v. *Smith*, *post*, p. 230.

See *Partington and others* v. *The Hartlepool Pulp Co.*, noted *ante*, p. 22.

A more skilled and experienced application of old known tools to a particular purpose, viz. cutting necktie linings out of swansdown, is not a patentable invention. See *Dredge* v. *Parnell*, *post*, p. 420.

A transmitting printing sheet made of special paper and prepared by waxing was claimed for use in a typewriter. Waxing paper was known before. The claims were wider than for the mere mode of preparing the paper. The patent was invalid. See *Dick* v. *Ellams' Duplicator Co.*, *post*, p. 430.

It must be remembered that it is the invention *as claimed* that is to be considered in all cases. For the extent of the monopoly depends on the claims,[1] and the consideration of validity, as regards prior knowledge, depends ultimately (*ante*, p. 19) on the extent to which the monopoly affects the public. The importance of the actual claim is seen in the two following illustrations:—

9. *Results only in Question, insufficiency of Invention in the Results.*

The invention was one for casting a tubular boiler (such as is used in hothouses) in one piece. It was "causing the upright tubes and the lower hollow ring to be all cast at one time, and thus to form one casting." The hollow ring joined the upright tubes together at their lower ends. The claim was for "casting a boiler such as described in one piece." Boilers had previously been cast in parts: tubes, hollow rings, &c., and subsequently cemented together. *Held*, that there was no subject-matter, the whole thing being only a difficult piece of casting (32 L. J. C. P. 9). It might have been otherwise had the claim been confined to an "improved mode of casting" the boiler, instead of one for the boiler itself cast in one piece (32 L. J. C. P. 291). *Ormson* v. *Clarke*, 32 L. J. C. P. 8, 291. (Followed in *Newsum* v. *Mann*, 7 R. P. C. 307.)

A new eyelet coated with celluloid for boots was claimed, but not the mode of manufacture. It was an improved eyelet and useful, but the finished article as regards the attachment of the celluloid was analogous to hooks used previously. See *Riekmann* v. *Thierry*, *post*, p. 391.

See also *R.* v. *Else*, *post*, p. 180.

[1] *Parkes* v. *Stevens*, L. R. Ch. Ap. 38, 39; *Hinks* v. *Safety*, &c., 4 Ch. D. 612; *Gibson* v. *Brand*, 11 L. J. C. P. 162.

Rights of Subsequent Inventors.

As a patentee must not obtain such a monopoly as would interfere with the persons making use of the knowledge they already possess, so, too, he cannot interfere with subsequent inventors by obtaining a monopoly for more than he has actually invented. The risk of claiming something that may not prove workable is too great to be frequently attempted. This question cannot be well discussed at this stage, for it cannot be severed from the consideration of the disclosures which the patentee is bound to make in his specification for the information of the public, and as a condition of obtaining his grant. But a difficulty arises from the fact that the interests of rival inventors, and interference with them, date from the commencement of the monopoly, that is, the date of the application, whereas the time for filing the complete specification is some months later. On the one hand, the interests of certain members of the public (*i.e.* rival inventors) require that the patentee's monopoly be confined to what he had invented at the date of his application; and, on the other hand, the interests of others (*i.e.* the manufacturers) require that his knowledge at the date of his final specification be fully disclosed. The full discussion of this subject is reserved until the question of the specifications is considered.

CHAPTER IV.

THE PERSONS TO WHOM PATENTS MAY BE GRANTED.

Importers of inventions—True and first Inventor, p. 49—Assistance of Workmen, p. 50—Prior grant, p. 51.

Importers of Inventions.

As patents are granted as rewards for improving industries within the realm by introducing new manufactures, it was settled, even before the Statute of Monopolies, that the first importer of a new manufacture could obtain a patent in the same way and on the same conditions as a first inventor.[1] Hence persons can obtain patents for inventions "communicated from abroad."[2] They may hold these patents as trustees for the inventors abroad or in their own right according to the nature of the transactions, if any, between them and the foreign inventors.[3] An "importer" therefore comes within the definition of an "inventor."

If the inventor abroad be a patentee in certain foreign countries, or in any British dominions oversea, he has a priority of the right of application over residents within the realm.[4] This right of priority must be exercised within twelve months.[5] The method of exercising it is discussed *post*, p. 176.

A patent may be granted to foreigners as well as British subjects, to two or more persons, one of whom at least must be the "true and first inventor."[6] This last provision meets the difficulties of those

[1] *Edgebury* v. *Stephens*, 2 Salk. 447; 1 Webs. 35; 1 Hawk. P. Cr. i. c. 79, s. 20 (quoting *Noy*, 182, 183).

[2] "Abroad" includes British Colonies. *Rolls* v. *Isaacs*, 19 Ch. D. 268; 45 L. T. 704.

[3] *Beard* v. *Egerton*, 3 C. B. 97. As to breach of trust by agent, see *Milligan* v. *Marsh*, Jur. N. S. 1083; *Nickels* v. *Ross*, 8 C. B., at p. 723.

[4] Sect. 103 of the Act of 1883, *post*, p. 508.

[5] Art. 4 of the International Convention, *post*, p. 582, 1 Ed. VII. c. 18.

[6] Sect. 4 of the Act of 1883 (as explained by sect. 5 of the Act of 1885). *post*, p. 486. For example of failure of this condition, see *Marshall's Appl.*, 5 R. P. C. 661.

inventors who are unable to perfect their inventions without the aid, financial or other, of persons not inventors.

The point has been raised but not decided that a foreigner who is an alien enemy cannot be a patentee ;[1] but as licences to trade may be granted by the Crown to alien enemies,[2] there appears to be no reason why a patent should not be granted.[3] An "alien enemy" is a person who is the subject of a monarch, or citizen of a state that is at war with His Britannic Majesty, although such an one be a resident within the United Kingdom. At all events such an alien enemy has no right to sue for infringements, or seek any redress in British Courts ; but if he be licensed to trade he may sue by a trustee.[4]

It was thought that a clergyman engaged in spiritual work could not be a patentee, inasmuch as he is prohibited from trading by 1 & 2 Vict. c. 106, s. 29 ; but it must be observed that the prohibition extends only to trading "in person," and does not prohibit one from being a shareholder in a trading company : see 4 & 5 Vict. c. 14. There can be no doubt that he may be a patentee in the capacity of representative of a deceased inventor.

True and First Inventor.

The "true and first inventor" (or importer) is the person who first actually makes and publishes the invention which is protected by the patent. If a prior inventor have made the same invention and kept it to himself, neither using it commercially, publishing it, nor applying for a patent, the second inventor who makes the same invention is entitled to a patent as being the true and first inventor ;[5] the same rule applies to inventions imported from abroad.[6] Hence in the case of contemporaneous inventors it is the one who first makes application who succeeds in obtaining the monopoly,[7] even against a second inventor who completes his specification and has his patent sealed before the earlier applicant.[8]

[1] *Bloxam* v. *Elsee*, 1 Carp. P. C. 436.
[2] Halleck, ii. 364, 374.
[3] *Beard* v. *Egerton*, 3 C. B. 97, at p. 130.
[4] Lord *Ellenborough* in *Kensington* v. *Inglis*, 8 East, 289, 290.
[5] *Dollond's* Patent, *infra* ; *Lewis* v. *Marling*, 1 Webs. 496 ; *Carpenter* v. *Smith*, 1 Webs. 543.
[6] *Lewis* v. *Marling* (per *Bayley*, J.), 4 C. & P. 58 ; 1 Webs. 496.
[7] Chitty's Prerog. Crown, 182 ; *Forsyth* v. *Riviere*, 1 Webs. 97 ; *Cornish* v. *Keene* (per *Tindal*, C.J.), 1 Webs. 508 ; *Ex parte Henry*, L. R. 8 Ch. Ap. 170.
[8] *Saxby* v. *Hennell*, L. R. 8 Ex. 210.

Illustration.

Dollond's invention consisted in so combining lenses of different kinds of glass, one convex and the other concave, that the *dispersion* in one corrected that in the other, while the difference in *diffraction* was sufficiently large to make the combined lens of sufficient power to be employed in telescopes. The patent was objected to on the ground that Dr. *Hall* had made the same discovery before him. "But it was holden that as Dr. *Hall* had confined it to his closet, and the public were not acquainted with it, *Dollond* was to be considered as the inventor." *Dollond's Patent* in 1 Webs. 43; 2 H. Bl. 470.

Assistance of Workmen.

An inventor may avail himself of suggestions of persons employed by him, ... agents or servants, to carry out and perfect the invention, so long as such suggestions are confined to minor or subordinate parts.[1] An employer is not entitled to the inventions of his servants,[2] but only to embody improvements made or suggested by them when employed to perfect and carry out the invention.[3] But if he adopt suggestions which are essential[4] to his invention and come within the principle and object[5] of it, then he is no longer the "true and first inventor;" nor is he if he take his invention from some source other than his own mind, such as an old book;[6] this rule is to be understood as applying to information derived from sources within the realm and not to information imported from abroad and unpublished within the realm, for one so acquiring knowledge of an invention from abroad is an importer of it, and therefore entitled to a patent. To distinguish between suggestions that are essential and those that are not one must analyze the invention to distinguish what are its principles and objects as distinguished from the *application* of the former to attain the latter: *ante*, pp. 9, 11. A patent granted to one who is not really the "true and first inventor," but represents himself as such, is invalid, because the Crown has been deceived in its grant.[7]

[1] *Minter* v. *Wells* (per *Alderson*, B.), 1 Webs. 132; *Bloxam* v. *Elsee*, 1 Carp. P. C. 436, 438.
[2] *Heald's Application*, 8 R. P. C, 430.
[3] *David and Woodley's Application*, Gr. L. O. C. 26.
[4] *Tennant's Case*, 1 Webs. 125, *post*, p. 182; *R.* v. *Arkwright*, 1 Webs. 72.
[5] *Allen* v. *Rawson* (per *Tindal*, C.J.), 1 C. B. 574.
[6] *Gibson* v. *Brand*, 1 Webs. 628; *Munts* v. *Foster*, 2 Webs. 102.
[7] Comyn's Digest, cc. 8 & 9; *Lewis* v. *Marling*, 1 Webs. 491, 492; *R.* v. *Wheeler*, 2 B. & Ald. 349, *post*, p. 186; *Minter* v. *Wells*, 1 Webs. 129.

A patentee may be not the true and first inventor because the invention itself is not new. That aspect of the question is included in the considerations of prior user, prior publication, *ante*, pp. 18–46.

Illustration.

In the specification of a patent for the use of calcareous earths in bleaching, the agitation by mechanical means was described as the spirit of that part of the invention. This had been suggested to the inventor by a chemist in conversation. The patent was invalid. *Tennant's Case*, 1 Webs. 125, *post*, p. 182.

Prior Grant.[1]

The date of a patent for an invention in English Law is the date of the application. Hence, if a rival inventor apply for a patent after another applicant for one for the same invention, the later applicant, although a "true," is not "the first inventor."

Again, as a monopoly is an *exclusive* right to make, vend, and use an invention, it is a contradiction in terms to say that two monopolies can exist for the same invention; hence it would seem that the latter of two applicants, although perhaps in fact the earlier inventor, cannot obtain a valid patent. Moreover, his patent, if granted, will be invalid, not by reason of prior use or prior publication, but by reason of the invention being the subject of a "prior grant." Such a case may occur either by no opposition being raised, or by reason of a patentee of a foreign patent having his application antedated under the provisions of the International Convention and sect. 103 of the Act of 1883 (*post*, p. 176).

The Crown cannot, by the grant of the monopoly, deprive the public of the right to use the patented invention for a longer period than fourteen years, unless it be extended on the recommendation of the Privy Council. On the expiration of the fourteen years the public would be deprived, for a few months perhaps, of their right to use the invention, the subject of the prior grant, if the second one were held valid. In the nature of things such cases must be very rare. They might occur in relation to inventions relating to war that are not published, *post*, p. 117.

Contemporaneous applications, *i.e.* on the same day, are considered *post*, p. 158.

[1] As no actual decisions are to be found, the three following paragraphs must only be taken as presenting one view of the question. See Coke's Institutes, vol. 4, p. 88.

CHAPTER V.

THE CONDITIONS ON WHICH PATENTS ARE GRANTED.

Statutory Requirements—The Period before 1852—From 1852 to 1883, p. 54—The Act of 1883, p. 54—The Provisional Specification, p. 55—The Complete Specification, p. 56—Extent of Invention, p. 59—Limits of Claims, p. 63—Disconformity, p. 64—Sufficiency of Specification, p. 72—Utility, p. 80.

Statutory Requirements.

IN considering the questions arising from the conditions upon which patents are granted to the true and first inventors (the conditions as to novelty and inventive ingenuity being complied with) a short review of the history of the subject is necessary, for as statutory requirements and powers have varied from time to time, the precise weight to be given to authorities and examples is changed accordingly. For this purpose one may consider three periods. I. From the Statute of Monopolies to the Act of 1852. II. From 1852 to the Act of 1883. III. Since 1883.

I. *The Period before* 1852.

When patents for inventions were first granted under the Statute of Monopolies, no specifications were required. The only information given to the public was a very meagre description contained in a sentence or two recited in the patent itself. During the reign of Queen Anne a change was made. The grant was made conditional, and a proviso was inserted requiring the patentee to particularly describe and ascertain the nature of his invention and the manner in which it was to be performed in an instrument under his hand and seal. This was enrolled in Chancery, and became known as a "specification." The time allowed for this to be done was

four or six months, according as the application was for England only, or the applicant intended to proceed for a patent in Scotland also. But the patent was granted for the invention *as limited and described by its title;* that is, the sentence describing it in the petition for the patent and in the patent itself, and which became the heading or title of the specification. Hence the specification and patent were read together.[1]

During this period an objection might be taken to the title on the part of the Crown before the patent was granted, but the vagueness in the title, so that it included more than the specification described as the real invention, could not be relied on by the public to invalidate a patent.[2] But it was otherwise when the specification exceeded or described an invention different from that denoted by the title; then the patent became invalid, the invention not being duly "specified" according to the proviso,[3] or the invention specified being other than that for which the patent was granted.

The validity, therefore, of a patent very often depended on the description in the title, which occupied a position in some respects analogous to that of the Claims at the present day, as it declared the extent or "ambit" of the monopoly. If part of the invention described and specified was subsequently discovered to be one for which a valid patent could not be granted, the whole was invalid (see *post*, p. 63). The Patents Act of 1835 (5 & 6 Will. 4, c. 83, sect. 1) enabled the patentee in such a case to keep his patent by entering a disclaimer or memorandum of alteration of any part of either the title or specification, "not being such disclaimer or such alteration as shall extend the exclusive right granted by the said Letters Patent." The custom arose of adding to such disclaimer a positive statement of what was claimed.

In order to satisfy the requirements of the law as to not claiming what was old, or more than the patentee had actually invented, it became the custom to make titles long and precise.

During this period the monopoly of fourteen years ran from the *sealing of the patent.* The earliest date as to which the patent could be sealed was that on which the warrant from the Crown for

[1] *Hornblower* v. *Boulton*, 8 T. R. 105; Dav. P. C. 230.
[2] *Cooke* v. *Pearce*, 8 Q. B. 1064.
[3] *R.* v. *Wheeler*, 2 B. & Ald. 345; *Campion* v. *Benyon*, 6 Moo. 82.

the Letters Patent was delivered into Chancery,[1] usually several weeks after the application was made, and hence arose a risk of others making and publishing the same invention. The specification was not filed for some time afterwards.

II. *From* 1852 *to* 1883.

The Patent Law Amendment Act, 1852 (15 & 16 Vict. c. 83), introduced further changes. The deposit of the specification was required by that Act, as well as by the proviso in the patent itself. The necessity for long titles was removed by the provision (sect. 6) enabling the applicant to lodge with his petition a provisional specification "describing the nature of" the invention for which protection was sought.[2] By sect. 9 the applicant could lodge a complete specification at once with his petition, or if he preferred to lodge a provisional he could lodge the complete six months later. This allowed time for an inventor during that period to make experiments and perfect his invention. Hence the title as a means for defining the "ambit" or extent of the monopoly was superseded. It is still part of the specification, and has to be taken into consideration in ascertaining the meaning of the document as a whole.

Another important change was introduced by this Act (sects. 23 & 24). It was left optional with the law officer to seal the patent, either as of the date of application, or of actual sealing, or of any intermediate date. The usual custom was to seal the patent as of the date of application, unless it was opposed by a rival inventor who, being a later applicant, duly lodged his complete specification during the six months, and before the first applicant lodged his.[3] The rights of rival inventors who were subsequent applicants were thus preserved.

III. *The Act of* 1883.

Under the present law the respective functions (sect. 5 of the Act of 1883, *post*, p. 486) of the provisional and complete specifications are the same as they were under the Act of 1852,[4] with the

[1] 18 Hen. 6, c. 1.

[2] As the functions of the provisional are the same under the Act of 1883 as under that of 1852, they are given below.

[3] *Ex parte Bates & Redgate*, L. R. 4 Ch. Ap. 579; *Saxby* v. *Hennett*, L. R. 8 Ex. 210.

[4] *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248.

additional provision that the complete specification must end "with a distinct statement of the invention claimed." The extent or "ambit" of the monopoly granted is now precisely determined by the claims. It will be seen, therefore, that the provisional specification and claim now fulfil the functions discharged by the original title. The cases deciding the invalidity of patents through defects of titles have now a bearing on the question of conformity of the complete with the provisional specification. Objections to the validity of patents with regard to the title alone have not been seriously entertained since 1883.

The time for lodging the complete specification has been extended to nine months (or ten in exceptional cases),[1] and the patent is sealed as of the date of application [2] (original or amended),[3] instead of formerly as under the Act of 1852. This is important in connection with the rights of subsequent rival inventors (*post*, pp. 64, 607).

The periods allowed after the Act of 1902 comes into operation will be six and seven months respectively, instead of nine and ten. See 2 Ed. VII. c. 34, sect. 1, *post*, p. 523.

The Provisional Specification.

The function, therefore, of the provisional specification as amplifying the title is to give information to the Crown (now representing the public interests) as to what was the invention found or devised by the applicant at the date of his application; so that he could not include at a later date a new invention in his complete specification.[4] This is now an important consideration, for the monopoly will date from the application, and there is no longer any power on the part of the Comptroller to seal the patent as of the date of the complete specification.

Such being the object of the provisional specification, its office is to describe generally and fairly the nature of the invention and not to give the mode of carrying it into practice;[5] for it is in respect of the invention described therein that the patent is granted,

[1] Sect 8 (1) of the Act of 1883, *post*, p. 487; and 48 & 49 Vict. c. 63, sect. 3, *post*, p. 515.
[2] Sect. 13 of the Act of 1883, *post*, p. 490.
[3] Sect. 7 (1) of the Act of 1883, as amended by 51 & 52 Vict. c. 50, sect. 2 (1), *post*, p. 487.
[4] *Cooke* v. *Pearce*, 8 Q. B. 1064; *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 133.
[5] *Newall* v. *Elliott* (27 L. J. C. P. 341), and notes, *post*, p. 204.

and not in respect of a different invention which the applicant may subsequently discover when perfecting his original invention.[1]

It must commence with a title,[2] that is, a phrase indicating the subject-matter of the invention. The title should not be too narrow, for any part of the invention described in the provisional may be omitted from the complete specification.

If the applicant choose he may state in his provisional the objects of his invention or the mode of carrying it out; but it is not advisable to do so, as such statements may affect the interpretation of the document, and so lead to a narrower construction being put upon it than might otherwise be done. Drawings must be supplied when required by the Comptroller.[3] The specification must deal with one invention only,[4] as a patent will be granted for one only.

The Complete Specification.

The complete specification "must particularly describe and ascertain the nature of the invention, and in what manner it is to be performed." It must commence with the title and end "with a distinct statement of the invention claimed."[5] If drawings be required to elucidate it they must be furnished, or reference may be made to the drawings, if any, of the provisional specification.[6] These two functions or offices of the specification (1) describing and ascertaining the nature of the invention, and (2) describing and ascertaining in what manner it is to be performed, are essentially distinct,[7] and are more conveniently considered separately. The claims are more conveniently considered in connection with the former function, for the better discharge of which they are required.

Description of the Nature of the Invention.

Formerly the patent was granted for the invention as limited by its title, but after the introduction of specifications the two were read together, claims were frequently inserted, and under the Act

[1] *Bailey* v. *Roberton* (per Lord *Cairns*, L.C.), 3 App. Ca. 1061, *post*, p. 272.
[2] Sect. 5 (5) of Act of 1883, *post*, p. 486.
[3] Sect. 5 (3) of Act of 1883, *post*, p. 486.
[4] Sect. 33 of Act of 1883, *post*, p. 498.
[5] Sect. 5 (4, 5) of Act of 1883, *post*, p. 486.
[6] Sect. 2 of Act of 1886, *post*, p. 517.
[7] *Philpott* v. *Hanbury*, 2 R. P. C. 38; *Edison* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 279.

of 1883, sect. 5 (5) the "complete specification must end with a distinct statement of the invention claimed." It must be remembered, therefore, that the patent is granted for the invention *as claimed*, and not merely *as described* in the body of the specification. The duty of the patentee may be stated under two heads:—

I. To "particularly describe and ascertain the nature of the invention," so that persons reasonably skilled in the subject-matter can tell from the specification itself what the invention is for which the patent is granted.[1]

II. Not to include in the claims more than he is entitled to claim. He must not claim what is old or already known to the public; and his complete specification must not claim an invention different from that included in the provisional specification, or so far an advance upon it as to amount to a distinct invention, as distinguished from a fair development.

Claims.

The claims are to define the limits of the monopoly, and therefore complete the description of the "ambit," or extent, of the invention. They must be read and construed as part of the whole specification,[2] and must not add to the description of the nature of the invention given in the body of the specification.[3] (See Construction of Specifications, *post*, pp. 84, 89.)

Before dealing in detail with the foregoing rules it will be convenient to draw attention to the nature of the claims for combination inventions.

Claims for Combinations.

A combination invention (discussed *ante*, pp. 16, 38) consists essentially of the combining together of old things or processes, or of applying an old thing to a new use, or combining an old thing with a new one.

Hence there are at least two elements in a combination, both of which may be old. If one be new, say A, and another old, say B, then the combination consists of A and B acting together,

[1] *Harmar* v. *Playne*, *post*, p. 182.
[2] *Edison & Swan* v. *Woodhouse*, *post*, p. 299.
[3] *Kay* v. *Marshall*, 2 Webs. 39 (*post*, p. 193); *Plimpton* v. *Malcomson*, 3 Ch. D. 563.

and A and B separately are termed "subordinate integers" of the combination. Or again, a new combination may consist of three or more old elements, X, Y, and Z. Besides the combination XYZ, there are "subordinate combinations," XY, XZ, and YZ. Now, if each of these combinations be new, the whole four combinations are parts of the original invention, and should be separately claimed; for the combination XY is not the same thing as the combination XYZ.[1] Whether this is actually so in any case is a matter of evidence, for an invention of a nominal combination XYZ may in reality be a combination of XY together with Z as a mere adjunct. The real substance, and not the mere form of the claim must always be considered (*post*, p. 87).

It will be seen, therefore, that if A be claimed as a new invention, and also the combination AB, B being old, then the monopoly granted for AB is included in A; no one could use the combination AB without infringing, at the same time, the patent so far as it related to A alone. In such a case the claim to A is a "principal claim," and that to AB a "subsidiary claim." Similarly, if the whole invention be a combination XYZ, and the "subordinate integer" or "subordinate combination" XY be also claimed, then no one could infringe by using XYZ without at the same time infringing as regards XY. Here the claim for XY would be a "principal claim," and that for XYZ a "subsidiary claim." A "subsidiary claim," may be defined as "a claim for a monopoly for something that is already included in the monopoly claimed by another—a principal claim."

Illustrations.

The claim to the strip of plush in *Lewis* v. *Marling*, *post*, p. 76, is a subsidiary claim.

An invention consisted of the manufacture of a new substance termed "Albion metal;" a claim to the use of it in making capsules is a "subsidiary claim." See *Betts* v. *Neilson*, *post*, p. 220.

In a specification for a patent for a roller skate there was a second claim for the mode of securing the runners to the skate. The claim for this being confined to the principal invention is a subsidiary claim. See *Plimpton* v. *Spiller*, *post*, p. 258.

Dynamite requires some mode of ignition to make it of use; a claim for a mode of ignition is a "subsidiary claim" to that for the main

[1] For an illustration see *Parkinson's Patent*, *post*, p. 165.

invention of the explosive itself. See *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

As a general rule subsidiary claims are useless, as they do not give the patentee any further protection than he has already under his principal claims. In some cases where the patentee is in doubt whether his principal or larger claim be valid, he frequently introduces a subsidiary claim confined to the special form of the invention shown, so that should it be necessary to save the patent by disclaiming the original principal claim, the subsidiary will become a principal claim.

I. *The Nature and Ambit, or Extent, of the Invention.*

If the definition of the invention do not fulfil this condition of giving the public precise information of the limits of the invention, the patent will be void for ambiguity. Compliance with this condition is of much importance where the inventions consist of improvements in old machines,[1] or combination of old elements.[2] The rule is generally expressed by saying that the specification must "sufficiently distinguish between what is new and what is old" in the invention claimed. This rule is equivalent to two others, (1) that the description and claim must be clear as to what is claimed, and (2) that what is claimed must not be old. The first of these rules is sufficiently complied with if the precise nature of the invention and claim are apparent from reading the whole document; it is not necessary to specify each part of a combination, say a machine, as "old" or "new," as the case may be.[3] The absence of an express statement of the novelty of the invention in the claim will not invalidate a patent.[4] The second rule falls under the second head (*post*, p. 63). In distinguishing "new" from "old" one may either confine the claim in express terms to the new parts, or, in cases of improvements on the patentee's previous inventions, refer by year and number to the original invention,[5] or other otherwise disclaim what is old. (Illustrative cases of disclaimer are mentioned under "Construction of Specifications," *post*, p. 87.)

[1] *Foxwell* v. *Bostock*, *post*, pp. 225, 229.
[2] *Harrison* v. *Anderston Foundry Co.*, *post*, pp. 249, 254.
[3] See cases noted to *Foxwell* v. *Bostock* and *Harrison* v. *Anderston Foundry Co.*, *post*, pp. 229 and 253.
[4] *Siddell* v. *Vickers*, *post*, p. 328 (approved in *Tubes, Ltd.* v. *Perfecta, &c.*, *post*, p. 461).
[5] See *Harmar* v. *Playne*, *post*, p. 182; *Tubes, Ltd.* v. *Perfecta, &c.*, *post*, pp. 460, 461.

Illustrations.

See *Hastings* v. *Brown*, *post*, p. 75.

The real invention lay in the combination of certain parts in a sewing-machine. The claim was wider for the whole combination of various parts of the machinery. The patent was invalid. See *Foxwell* v. *Bostock*, *post*, p. 225.

A claim for the construction and arrangements of parts of mechanism in a manner described and shown in the specification and drawings in the absence of any evidence that it included what was old is *primâ facie* a good claim. The combination itself may be the novelty. See *Harrison* v. *Anderston Foundry Co.*, *post*, p. 249.

An invention consisted in improvements in belts for machinery. The claim was one for constructing belts as described. The real invention consisted in finding out which of several classes of material would suit. The patent was invalid. See *Gandy* v. *Reddaway*, *post*, p. 292.

The novelty in an invention of a steam disinfector lay in the use of steam of very high pressure. This was the feature that distinguished it from an older disinfector. That this was the essence of the invention was apparent only from the drawings, taken with the letter-press of the specification; it was not explicitly mentioned. Had it been specifically mentioned, much litigation would have been averted. *Held*, that the patent was valid. See *Goddard* v. *Lyon*, *post*, p. 358.

An invention consisted in certain improvements in adjusting the driving-chains of safety bicycles. One of the claims was for the adjusting mechanism in combination with a new step. The new step not being in the provisional could not be claimed alone. Although the monopoly claimed by the other claims was not enlarged by this one, it was *held* that the claim was improper, embarrassing to the trade, and should never have been made. The patent was declared invalid. *Osmonds* v. *Balmoral Cycle Co.* (per *Lindley*, L. J.), *post*, pp. 418, 420.

Theories in Specifications.

As the invention (*i.e.* the manufacture) protected consists in the application of principles and not the principles themselves (*ante*, pp. 6–11), it is not necessary to explain the principles or theory of the action of an invention. Although there is no objection to the theory being given, as being the simplest way of describing the invention, yet it may subsequently be discovered to be an erroneous one. The false theory given in the specification does not of itself

render the patent invalid; but it will do so if the claim be held by the Court to include the false theory, or if the false theory would lead persons astray in putting the invention to actual use. Theories are therefore better omitted.

Illustrations of False Theories.

In *Medlock's* specification for aniline dyes the treatment of aniline with arsenic acid constituted the invention. The dye was really produced by a combination of aniline and toluidine, the latter substance being present as an impurity in the ordinary aniline of commerce. No objection to the patent was raised on that ground. See *Simpson* v. *Holliday*, *post*, p. 244.

A specification for distributing electricity by means of transformers originally contained the erroneous idea that there was no drop in potential where the main circuit was "tapped" by the transformers. The Court of Appeal held that the amendment striking this statement out altered the nature of the invention claimed, but this view was not accepted by the House of Lords. *Gaulard & Gibbs' Patent*, 7 R. P. C. 367, *post*, p. 329.

In *Monnet's* specification for certain dyes a theory of the chemical reactions was given. It was erroneous, and alleged substances to be formed and used which never in fact existed. The claims included this non-existent substance. The patent was invalid. *Monnet* v. *Beck*, *post*, p. 401. [This specification should be contrasted with *Lake's*, *post*, p. 362, in which neither theory nor formula was given.]

In a specification for "a process of treating incandescents for use with" gas-burners, the theory stated that certain substances could be used because they were good conductors of heat. An amendment was allowed striking out all reference to the erroneous theory on the ground that it was "by no means essential to the validity of a patent that the patentee should put forward any theory as to how the process which he describes works." *Dellwick's Patent*, 15 R. P. C. 687.

It has also been shown (*ante*, p. 11) that the advantages of an invention, and the uses to which it may be put, are no part of the "manufacture" patented, consequently they need not be described in the specification at all. But if they are mentioned, the claims should be worded so as to exclude them. Cases may occur in which the production of certain results, the possession of certain advantages, or the possibility of certain modes of using are mentioned as criteria to show the extent of the monopoly claimed; these are usually combination inventions of old elements.

Pioneer Inventions.

The claim may be a wide one if the invention itself be such a new application of newly discovered principles as to justify it. Provided the claim does not go beyond the actual invention, it cannot be objected to on account of being too wide.[1] Inventions of this class are known as "Pioneer Inventions" (*ante*, p. 15). The ambit, or extent, of the claim is wide, not because the specifications are construed in a more favourable manner on account of the great utility of the invention, but simply because the invention has produced an entirely new thing, and the monopoly for it is consequently of a wide extent.[2] But although such a claim be very wide, yet it is limited by the actual discovery and knowledge of the inventor at the time.[3]

Illustrations of Pioneer Inventions.

The first successful electric glow-lamp produced a new industry. The claim for the lamp, the combination of the filament, the glass receiver through which pass the leading wires, and the vacuum, includes all lamps although made by means other than those mentioned in the specification. See *Edison* v. *Woodhouse*, *post*, p. 293.

A claim for the whole process of producing an incandescent gas lamp by means of a mantle impregnated with oxides of zirconium, lanthanum, and yttrium, was a wide claim not confined to the precise proportions mentioned (*Incandescent Co.* v. *De Mare*, *post*, p. 390), but did not extend to include a subsequent discovery that zirconia with ½ per cent. of cerium would effect a similar result. *Welsbach, &c.* v. *The Daylight Incandescent Mantle Co.*, *post*, p. 391.

On the other hand, as a general rule, where the invention relates to some subject which is not new, but deals with a new method of producing an old result, or an improvement in an existing method or machine, the claim is confined to that method, and cannot be generalized by extending the language.[4] The inventor of one method of producing a certain result cannot, in such cases, claim a monopoly so as to exclude others from working on similar lines, but he can

[1] *Househill Co.* v. *Neilson*, 1 Webs, 673. 683; *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), *post*, p. 319.

[2] *Neilson* v. *Harford*, 1 Webs., notes on p. 342.

[3] *Welsbach, &c.* v. *The Daylight, &c., Co.* (per *Romer*, L.J.), *post*, p. 391.

[4] *Bovill* v. *Pimm*, 11 Ex. R. 739; *Proctor* v. *Bennis*, L. R. 36 Ch. D. 757. 764; *The Welsbach Incandescent Gas Light* v. *The Daylight, &c.*, 17 R. P. C. 146.

exclude others from taking his method or improvement and substituting various modifications for parts of it.[1] The extent to which the patentee may claim is bounded by the state of the art at the time he takes out his patent (see Construction of Specifications, *post*, p. 84); the more numerous the previous successful attempts have been to achieve the same object, the smaller the "ambit" of his invention.

II. *The Claims must not include anything to which the Patentee is not entitled.*

In the preceding pages (*ante*, pp. 34–38) the question of the amount of addition to the stock of public knowledge necessary to support a patent has been discussed. If any principal claim be for anything that is not a manufacture, or by including what is known[2] or not of sufficient merit to support a patent interfere with others in the exercise of their trade, the patent will be void altogether. Each claim must in itself be sufficient to support the patent.[3] The rules on this point which formerly obtained with regard to different inventions in the same patent now apply to the different claims of the same specification, for the monopoly limited by each principal claim is a different one. The failure of part of the consideration for the grant renders it invalid. When a patent has been declared invalid on account of one claim, it may be amended by Disclaimer (see Amendment of Specifications, *post*, p. 160).

But it rarely occurs that a claim which is "subsidiary" (as defined[4] *ante*, pp. 57, 58) to a good principal claim is itself a bad one. For a subsidiary claim does not include anything that is not already included in a principal claim. If a subsidiary claim be held invalid, and then struck out by disclaimer, the monopoly of the patentee and the rights of the public remain the same; but if a principal claim be invalid and disclaimed, the monopoly of the patentee is diminished and the rights of the public consequently enlarged. Hence it is of no benefit to the public to hold a subsidiary claim invalid. Where

[1] *Boyd* v. *Horrocks*, 9 R. P. C. 77, 84, l. 53.
[2] *R.* v. *Else*, *post*, p. 180.
[3] *Hill* v. *Thompson & Forman*, *post*, pp. 184, 185; *Gibson* v. *Brand*, 1 Webs. 640; *Morgan* v. *Seaward*, 1 Webs. 196.
[4] See *Betts* v. *Neilson*, *post*, p. 220; *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

patents have been held invalid by reason of a subsidiary claim, invalidity is also attributable to some ground other than want of novelty, want of inventive ingenuity, or want of utility, such as false suggestion, or false representation, or ambiguity.

Illustrations of Subsidiary Claims.

In *Lewis* v. *Marling* (*post*, p. 76), the patent was upheld because the inclusion of the subsidiary claim to the plush "brush" was made in good faith as a substitute for the brush that was formerly required.

In *Betts* v. *Neilson* (*post*, p. 220), the subsidiary claim was for the manufacture of capsules out of the metal claimed in the principal claim, hence did not extend it, and afforded no ground for questioning the validity of the patent.

In *Plimpton* v. *Spiller* (*post*, p. 258), the claim for affixing the roller to the skate was confined to its application to the new skate, and hence, although itself an old method, did not invalidate.

The claim for the mode of igniting a new substance, dynamite, although formerly applied to other explosives, did not invalidate the patent. *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

See also *Osmonds* v. *Balmoral Cycle Co.*, *post*, p. 418.

In *Parker & Smith* v. *Satchwell & Co., Ltd.* (18 R. P. C. 299), the invention was an improved device for holding ladies' hair. Two combs were hinged so that the prongs coincided when closed; there were curved parts attached, the whole being a foundation for a coiffure. Two claims were for modes of fastening the comb together when closed by springing the projection so as to interlock. These were held to be confined and subsidiary to the first claim.

Disconformity.

As one cannot include what is old, so one cannot include and claim[1] a new invention that is not in the provisional specification, either mentioned or a fair development of what is mentioned. The invention specified and described must be that which the applicant represented to the Crown that he had invented. If an invention be included in the complete distinct from that mentioned in the provisional, there is said to be "disconformity" or "variance" between the complete and provisional specifications; or the complete is said to "disconform to" the provisional specification. The provisional

[1] If not *claimed*, the inclusion of a new invention is no objection. See *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 127, 135.

took the place of the original title, but now no objection can be taken to the provisional when it has not been objected to, or has been approved of, by the Comptroller and Law Officer.[1]

An invention claimed in the complete may be distinct from that foreshadowed in the provisional in two ways: (1) it may either be outside the scope and "ambit" of the provisional, or (2) it may be such an advance upon the invention mentioned therein as to amount to a distinct invention as distinguished from a "fair development."

Illustrations of Fair Developments.

A provisional described improvements in laying down telegraph cables. These consisted in a method of coiling the cable in a tank, and a brake-wheel to be used in paying it out. The complete described in addition a device consisting of rings suspended over the coil to prevent kinks. This was not a distinct invention, but an addition to enable the invention to be better carried into practice. See *Newall* v. *Elliott*, *post*, p. 201.

A provisional was taken out for an invention consisting of the employment of wood in the bearings of screw-propellers to diminish friction. A statement was made in the complete specification (in addition to a proper description of the invention) that a like effect could be obtained if pieces of wood were fixed to the shaft instead of the bearings. The claim was for the employment of "wood in the construction of the bearings and bushes," &c., "as herein described." *Held*, that if the wood used on the shaft was a "bearing," it was included in the provisional, and if not, it was not claimed. *Penn* v. *Bibby*, L. R. Ch. Ap. 127, 135.

A bicycle lamp was described in the provisional as being so constructed that it, on being unhinged in the middle, could pass between the spokes, and be suspended over the axle, the parts next the hinge being a cylindrical barrel, split and shaped for this purpose. In the complete an improved rim, by means of which washers could be slid into the barrel was described. This was *held* to be within the specification, being a matter of detail in one element of the combination. *Lucas* v. *Miller*, 2 R. P. C. 155.

The provisional specification for "improvements in spring tip-vans" began as follows: "This invention relates to the construction of tip-vans or waggons, by which means vans or waggons may be made to tip their loads with the same facility as at present obtains in the case of two-wheel tip-carts." The tip-waggon was then described as consisting "for this purpose" of two main parts, the

[1] *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 133.

frame borne by the wheels and the upper body. The mechanism whereby the upper body could be tilted independently of the lower part was described. The complete specification described the mechanism in detail by means of drawings. The claims were: "First, the application of a four- or two-wheeled van or waggon to act as a tip-van or waggon, with the slotted links or levers, with parts hereinbefore described, &c.;" and, "Second, the application of a tip-van or waggon on two or four wheels by means of the side-slot or groove-guards with parts hereinbefore described, &c." *Held* (by the Court of Appeal), that the essence of the invention had no relation to the number of wheels of the vehicle, and consequently no distinct additional invention was introduced in the complete specification. *Wallings* v. *Stevens*, 3 R. P. C. 147.

A provisional specification described a pencil-case which acted by gravity by means of a pusher-tube which released a pin from a slot; the tube holding the lead with the pin attached then dropped down, the pin extending into two then coincident slots, and being again locked at the bottom. The complete showed in addition another device in which the relative actions of the parts was interchanged, the pin remaining fixed and a slot slipping over it. The principles employed in the locking device and mode of releasing the mechanism were the same. See *Woodward* v. *Sansum*,[1] *post*, p. 300.

A provisional specification describing mechanism for turning forgings read as if the whole action were automatic. The complete showed the device with an addition to a lever so that it could be worked by hand. It was alleged that automatic action was useless. The provisional, although clumsily framed, sufficiently indicated the nature of the invention. See *Vickers* v. *Siddell*, *post*, p. 324.

The provisional specification for an invention "relating to electric bells and alarm-clocks and apparatus to be used therewith," described a system whereby the bells could be actuated by less battery-power than had before been used. In the complete were three claims for things not mentioned in the provisional; two of these were for details of the mechanism included in other claims, and the third was a claim for the combination of the improved bell with an indicator (a subsidiary claim). The patent was upheld. *Crampton* v. *Patents Investment Co.*, 6 R. P. C. 287.

The title of a provisional and a complete specification was for "improvements in the method of weaving tinned steel or other wire for use in the construction of mattresses," shutters, mats, &c. A claim for "a mattress woven as described, and made in sections instead of a single piece," was *held* to be within the provisional. *Dowling* v. *Billington*, 7 R. P. C. 191.

[1] See note to *Castner-Kellner Alkali Co.* v. *Commercial, &c.*, *post*, p. 71.

A false theory being given in effect that an electric current could be "tapped" by transformers without loss of energy in the main current, the complete specification was amended by striking out the false theory. The Court of Appeal held that the amended specification described in consequence an invention different from the provisional, and that the patent was invalid on that ground, but the majority of the members in the House of Lords dissented from this view of disconformity. See *Gaulard & Gibbs' Patent*, *post*, p. 329.

A new form of gasholder was invented in which the gasholder was kept level without posts over ground. The provisional described it as arranged with *torsional* gearing only. The complete included *tensional*. See *Gadd* v. *Mayor of Manchester*, *post*, p. 351.

A provisional specification for "an improved clip for mounting the lamps of velocipedes" described an arrangement in which *one side* of the clip was *fixed* to the lamp, the *other* was attached loosely to the lamp, and was *capable of being moved* laterally to fit brackets of different sizes. The movable half was kept in position by a spring or screw. Any system of lateral adjustment was included. In the complete specification one modification showed the movable part capable of adjustment laterally by means of rotation being mounted on a screw which, when turned, caused the movable part to fit into the bracket. Another arrangement consisted in hinging *both* halves of the clip, and moving them simultaneously by means of a screw threaded right- and left-handed; this was not disconformity. *Miller* v. *Scarle Barker*, 10 R. P. C. 106.

A provisional specification for self-centering ships' telegraphs thus described the sounding mechanism: "In telegraphic apparatus of the kind or type herein referred to, gongs or bells are employed, and according to this invention the gong is sounded and the pointer moves up to the central or proper position as described practically simultaneously. By so operating the apparatus the instant attention is called to the instrument by the sounding of the gong the pointer will be in its central and proper position, and therefore the notification transmitted cannot be mistaken on the ground of want of correctness of the movement of the pointer. In the ordinary form of telegraphic apparatus, such as the example above described, these combined operations may take place as the pointer commences to move into the field of the adjacent order or notification on the dial." The complete specification described a duplex sounding mechanism, and claimed for "two or more soundings of the sounding device," and also for the employment of duplex sounding mechanism adapted to sound a gong "at or near the commencement of the movement of the pointer . . . and also to sound a gong or the like towards the completion of

such movement." This was merely carrying out the invention in the best way discovered by the time the complete was drafted. *Chadburn* v. *Mechan*, 12 R. P. C. 120.

A provisional specification described a method of obtaining gold from its ores by dissolving it out with a solution of cyanide of potassium. The complete contained two claims, one for the use of cyanide of potassium, and the other for a process in which a *dilute* solution was used (*post*, p. 369). The dilute solution possessed the property of "selective action," *i.e.* of dissolving out the gold, leaving baser metals in solution. This was a useful discovery, and the second claim was held valid and to be within the provisional. But the patent was invalid owing to the first claim having been anticipated. *Cassel Gold, &c., Co.* v. *Cyanide, &c.*, 12 R. P. C. 232, and *post*, p. 367.[1]

The provisional specification described a method of securing outer rubbers on tyres to wheels by means of two wire hoops of slightly smaller diameter across than the tyres to be covered, and screwed up outside the rims. The complete, in addition to that, showed endless wire hoops not screwed up, nor outside the rims. These latter operated by resisting extension of pneumatic tyres, and lay inside the edges of the rims. See *Pneumatic Tyre Co.* v. *Leicester Pneumatic Tyre Co.*, *post*, p. 422.

An invention consisted in making a socket for candlesticks by stamping it out of one sheet and then forming it circular. On it there were three prongs which served as springs to grip the candle when inserted in the socket. There were inserted three small prongs, or tits, all stamped out, between the three larger prongs. These were turned outwards, and prevented the device from going down too far in the tube of the candlestick. The addition of the additional little prongs did not constitute disconformity. *Carter* v. *Leyson*, 18 R. P. C. 508.

The provisional specification described a pneumatic tyre consisting of an annular hollow ring or pneumatic tube placed in the groove of the wheel, over which an annular split cover, or envelope, went over the tube, and was secured under the rim by means of hooks or similar fasteners, so that when pumped up the whole was taut. "In some cases instead of bringing the cover round the back of the wheel-rim as described, I might bring the cover round within the rim, and secure it to the rim by inner fastenings or by expansion against the overhanging sides of the rim." The complete specification showed different methods of catching the cover by the

[1] In this case, like *Nuttall* v. *Hargreaves*, *post*, p. 334, and *Cera Light Co.* v. *Dobbie*, *post*, p. 71, the provisional merely described what was old, the whole merit lay in the new development, but here the latter had a separate claim, and the patent was held invalid on another claim for want of novelty, *post*, p. 369.

edges of the rim. But there were also shown and claimed modes of attaching the edges of the cover to each other. The inventor discovered that he could dispense with the fastenings and overhanging edges of the rim by overlapping the edges of the cover to an extent equal to the width of the rim, and that the air-pressure was sufficient to keep on the tyre owing to the friction of the edges of the cover against each other, and the one against the hollow of the rim. There was no disconformity. *Birmingham Pneumatic Tyre Synd.* v. *Reliance Tyre Co.*, 19 R. P. C. 298.

Illustrations of Distinct Inventions invalidating the Patent, (1) *being outside the Provisional.*

A provisional specification described means of preserving animal substances by means of a solution of gelatine and bisulphite of lime. The complete contained a claim for the use of bisulphite of lime alone, and several for it in combination with gelatine and other substances. The claim for bisulphite of lime alone, if a principal claim (and not a mere foundation for other claims), would enlarge the monopoly and invalidate the patent. See *Bailey* v. *Roberton*, *post*, p. 270.

The provisional specification described a means of reproducing electrically sounds at a distance—a telephone. A claim in the complete for reproducing sounds mechanically—a phonograph—is one for a distinct invention. See *United Telephone Co.* v. *Harrison & Co.*, *post*, p. 281.

In a provisional specification for "improvements in machinery or arrangements for doubling and winding, and doubling, twisting, and winding yarns or threads," the prime object of the whole invention was to arrest the machinery by means of detector mechanism on the breaking of a thread. In the complete was included a claim for a prop which had to do with a distinct portion of the mechanism, *viz.* to sustain oscillating mechanism enabling the broken thread to be joined and the winding started. *Horrocks* v. *Stubbs*, 3 R. P. C. 235.

A provisional specification for "improvements in apparatus for the generation and application of electricity for lighting," &c., described four divisions of the invention. One was "constructing commutators cylindrical with an insulating hub or body to which are attached metallic sub-segments placed in electrical connection with the general mechanism in which the commutator is employed, and metallic wearing segments detachably attached to said sub-segments." The metallic sub-segments were made of gun-metal, the wearing segments attached to them were of steel. When worn by use they could easily be replaced. There were two claims for these, one for their use and the other for the mode of attachment

to the gun-metal sub-segments. The inventor found that there was considerable advantage electrically to be derived by enlarging the gap between the segments so as to cut off the contact-brush or plate entirely when passing the gap. He filled the gap with insulated metal segments. These "insulating segments" were claimed separately—"the commutator having metallic insulating segments, substantially as shown in Division 3." At the trial the claim to the commutator was objected to on the ground of want of novelty, but the learned judge *held* that there was sufficient improvement to support a patent for it as covered by the provisional, but that this new claim constituted disconformity; because (1) the two other commutator claims covered all that was in the provisional, which described (2) *constructing* a commutator cylindrical as distinguished from *maintaining* it so; (3) the insulating segments performed an electrical function different from that of the original wearing segments; and (4) the insulating segments were not essential, and were in one form of commutator shown dispensed with at one gap only. The learned judge also found the patent invalid as to the other claims for want of novelty. On appeal the First Division of the Court of Session held the patent invalid, mainly on the ground of want of novelty, treating disconformity as a minor issue. The House of Lords (*post*, p. 340) dealt with want of novelty only. *King & Co.* v. *Anglo-American Brush Corp.*,[1] 6 R. P. C. 414.

See *Lane Fox* v. *Kensington, &c.*, *post*, p. 345, and note thereto, *post*, p. 349.

The provisional specification described improved mechanical means of connecting cycle-saddles to their vertical pillars. Another mechanical method of achieving the same object was introduced into the complete as a mechanical equivalent to that form which was included in the provisional; it was described as a "modification." See *Brooks* v. *Lamplugh*, *post*, p. 413.

The provisional specification described certain improvements in adjusting the driving-chains of safety bicycles. These improvements necessitated the removal of the step. In the complete a new step was introduced, which was never alluded to in the provisional. This step was claimed, but only *in combination with* the other novel mechanism. It was *held* to be an embarrassing and improper claim. *Osmonds* v. *The Balmoral Cycle Co.*,[2] *post*, p. 418.

A provisional described a pneumatic tyre without an inner tube. One

[1] This decision, not being the ground on which the patent was finally held invalid, cannot be considered as final. For the other issue, see *post*, p. 340.

[2] This appears to be the only instance of the invalidity of a *subsidiary* claim (*ante*, pp. 58, 63) rendering the patent invalid. The decision appears to be based (*post*, p. 420) not so much on disconformity as on the ground that the claim was embarrassing. It would be equally embarrassing if otherwise valid.

form had ridges on the outside to engage in the rim, the inner edges folding or lying, one on the other, rubber on rubber, to produce an airtight joint; another form consisted of a single rubber band lying inside the tube and overlapping the edges of the outer band. The complete in addition described a tyre consisting of an endless band, the edges of which did not overlap, but were intended to be air-tight by being pressed by the air against the metal, not rubber. *The Tubeless Pneumatic, &c., Co.* v. *The Trench Tubeless, &c.*, 16 R. P. C. 291.

Various means of carrying out by electrolysis the extraction of sodium from its salts, by forming an amalgam with the mercury cathode were known. A provisional specification described a new method in which a bell containing a solution of the salt was moved, the mercury remaining stationary. The complete included a claim for an arrangement in which the mercury was made movable and the bell stationary. See *The Castner-Kellner Alkali Co.* v. *Commercial Development Corp.*,[1] *post*, p. 436.

Illustration of Distinct Invention invalidating the Patent (2) being Improvements on Provisional.

The provisional specification describing a method of tapping beer-barrels. Owing to the state of knowledge there was no patentable invention disclosed. In the complete a strainer was also described in which lay the whole merit of the device. See *Nuttall* v. *Hargreaves*, *post*, p. 334.

An invention consisted of "improvements in ships' lamps." The object was to provide for the burning of oils that freeze at low temperatures. The provisional described the improvement as bringing a copper plate from *near* the wick-tube upwards to be heated by the flame, so as to keep the oil liquid next the plate. The complete described this plate as being *soldered to* the wick-tube. The invention of bringing the plate merely near the wick-tube was anticipated, the whole merit lay in the soldering on to the tube. *Held*, that there was disconformity if the claim meant soldering to the wick-tube, if it only meant proximity the patent was anticipated. *Cera Light Co.* v. *Dobbie*, 11 R. P. C. 10.

Test of Disconformity.

The method of ascertaining whether disconformity exists or not is first to construe the complete specification to ascertain what

[1] This case should be compared with *Woodward* v. *Sansum*, *post*, p. 300. In both the alleged disconformity consisted in introducing an arrangement in which the relative motion was the same; the stationary and moving parts being reversed. In the present case, owing to the state of knowledge, the provisional was confined to a special form of the appliance, in *Woodward* v. *Sansum* the ambit of provisional was wider, the mechanical action being new.

are the *inventions*[1] not merely there described but claimed[2] (see Construction of Specifications). After the extent of the invention has been thus ascertained, then the provisional is to be examined in order to see whether the inventions claimed are there foreshadowed, or are fair developments of the invention the nature of which is therein described. The examination is not in the reverse order.[3] The provisional is to be looked at for this purpose only; it is not to be considered along with the complete in order to construe the latter.[4] As it is important to know the "ambit" of the provisional, the state of knowledge of the art must be looked to; for if there be only room for the inventor to devise a particular form of mechanical arrangements (see *post*, pp. 97, 98), then mechanical equivalents for the arrangement so described cannot be included as "fair developments." It is otherwise when the provisional describes a method of achieving a new result. The following cases may be cited as examples of the application of this rule :—

Wider Inventions.

Woodward v. *Sansum*, *ante*, p. 66, and (per *Cotton*, L.J.) *post*, p. 304.
Gadd v. *Mayor of Manchester*, *ante*, p. 67, and *post*, p. 351.
Pneumatic Tyre Co. v. *Leicester Pneumatic Tyre Co.*, *ante*, p. 68, and *post*, p. 422.

Narrower Inventions excluding Modifications.

King & Co. v. *Anglo-American Brush Corp.*, *ante*, pp. 69, 70.
Brooks v. *Lamplugh*, *ante*, p. 70, and (per *Smith*, L.J.), *post*, p. 413.
The Castner Kellner Alkali Co. v. *Commercial Development Corp.*, *ante*, p. 71, and (per Lord *Halsbury*, L.C.) *post*, p. 442.
See Appendix, *post*, p. 607.

Sufficiency of the Specification.

The second function the complete specification is required to perform is that of describing and ascertaining in what manner the invention is to be performed. One object—in fact, the original object—of the specification is to give the public such information

[1] Per *Smith*, L.J., in *Gadd* v. *Mayor of Manchester*, *post*, p. 356.
[2] *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 127; *Presto Gear Case, &c.* v. *Simplex, &c.*, 15 R. P. C. 640, l. 46.
[3] See notes to *Newall* v. *Elliott*, *post*, p. 204; *Bailey* v. *Roberton*, *post*, p. 274; and *United Telephone Co.* v. *Harrison & Co.*, *post*, p. 282.
[4] *Bailey* v. *Roberton*, as explained in *Hocking* v. *Hocking*, 4 R. P. C. 260.

that on the expiry of the monopoly they may know how to carry out the new manufacture without the necessity for any further instruction, invention, or discovery.[1]

The first question is to determine the amount of knowledge the public, or the class of persons to whom the specification is for this purpose addressed, is supposed to have. This question has been discussed in a long series of decisions, the result of which is that the specification is to be drawn so as to be understood by the "ordinary skilled workman," not a scientist nor inventor such as skilled engineers, chemists, or even foremen who possess superior intelligence and power of developing unfinished directions,[2] but a skilled workman conversant with the practice of the art, not a mere *employé* or ordinary workman;[3] *e.g.* a specification for a new dye would be addressed to one having a large amount of chemical knowledge.

The amount of detail to be given will depend on the nature of the invention. One that is absolutely new—a "pioneer invention"—will necessarily require more explicit directions than one that is a mere improvement in an existing process or machine.[4] It is sufficient if it can be shown that the skilled workman can perform the invention without difficulty by the aid of the specifications alone, although he may have to correct errors from his own knowledge of the subject.[5] The evidence of workmen may be conclusive on the question of sufficiency.[6]

Frequently in describing how an invention is to be carried into practice the class of persons to whom the working directions are to be addressed is not the same as those to whom the nature of the invention is described, although the same passages in the specification may serve both purposes.[7] This is the natural result of the

[1] *R. v. Arkwright*, 1 Webs. 66, approved in *Morgan* v. *Seaward*, 1 Webs. 173, and *Thomas* v. *Welch*, L. R. 1 C. P. 203.

[2] *Plimpton* v. *Malcomson*, 3 Ch. D. 568, 9, followed in *Bray* v. *Gardner*, 4 [illegible] P. C. 406.

[3] *Arkwright* v. *Nightingale*, 1 Webs. 61; *Edison & Swan* v. *Holland*, 6 R. P. C. 277, 278, *post*, p. 318. See also *Neilson* v. *Harford*, 1 Webs. 314; *Stonor* v. *Todd*, 4 Ch. D. 61.

[4] *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 280, l. 20, *post*, p. 318, l. 43.

[5] *Ibid.* Also *Otto* v. *Linford*, 46 L. T. 39, *post*, p. 388; *Moser* v. *Marsden* (per *Smith*, L.J.), 10 R. P. C. 363, 364.

[6] *Beard* v. *Egerton*, 8 C. B. 216; *Edison* v. *Woodhouse* (per *Lindley*, L.J.), 4 R. P. C. 108, *post*, p. 299, l. 38; *Shaw* v. *Jones*, 6 R. P. C. 335, l. 30.

[7] *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 280, *post*, p. 319. For the same distinction in anticipating specifications, see *King* v. *Anglo-American Brush Corp.* *post*, p. 340.

development of, and specializing in, scientific discovery, especially in chemical cases.

The duties of the patentee to make full disclosure of the method of carrying out his invention may be summed up in two rules :—

(1) He must make an honest and *bonâ fide* disclosure of all his knowledge [1] as to the best method or means of performing his invention, including improvements and fair developments made after the provisional specification has been filed,[2] even if such involve the exercise of inventive ingenuity.[3]

(2) The information given must be sufficient to enable skilled workmen [4] (as above described) to perform the invention without having to make further discoveries, or inventions, or experiments [5] except such as are necessary to acquire facility in performing new operations.[6]

In illustrating the first of these rules it must be borne in mind that the ground on which a patent may be declared invalid is that of misrepresentation as to the patentee having made a *full* disclosure, for the public must not be misled in any way ;[7] as for instance by —a non-essential part being described as essential ;[8] an intentional ambiguity ;[9] a material concealment ;[10] the omission of essentials or of what the patentee knows to be useful.[11] In cases where the patentee is the importer of an invention from abroad it is *his* best knowledge, and not that of the original inventor that is required.[12]

Patents held Invalid for want of Full Disclosure.

A patent for making verdigris was held invalid because the patentee did not disclose the fact that the use of *aqua fortis* would accelerate

[1] *R.* v. *Arkwright*, 1 Webs. 66 ; *Morgan* v. *Seaward*, 1 Webs. 173, 174 ; *Thomas* v. *Welch*, L. R. 1 C. P. 203.

[2] *Crossley* v. *Beverley*, 1 Webs. 117.

[3] *Bailey* v. *Roberton*, as explained in *Brooks* v. *Lamplugh*, *post*, p. 274.

[4] *Ante*, p. 73.

[5] *Plimpton* v. *Malcomson*, 3 Ch. D. 569, 570, 576 ; *Edison & Swan* v. *Holland*, 6 R. P. C. 282, *post*, p. 318 ; *Lane Fox* v. *Kensington*, 9 R. P. C. 247, 248 ; *Lewis* v. *Sterckler*, 14 R. P. C. 36.

[6] *Edison & Swan* v. *Holland*, 6 R. P. C. 282, *post*, p. 319.

[7] *Turner* v. *Winter* and note, *post*, p. 181 ; *R.* v. *Wheeler* and notes, *post*, p. 186.

[8] *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), 1 Webs. 93.

[9] *Galloway* v. *Bleadon*, 1 Webs. 524 (per Sir *N. Tindal*, C.J.).

[10] *Walton* v. *Bateman*, 1 Webs. 622.

[11] *Neilson* v. *Harford*, 1 Webs, 317, 321.

[12] *Plimpton* v. *Malcomson*, 3 Ch. D. 582.

the process, although the resulting substance was no better. *Wood* v. *Zimmer*, 1 Webs. 82.

A patent was granted for trusses. The omission to state that tallow should be used (which was material) to facilitate the tempering was *held* to invalidate the patent (*Liardet* v. *Johnson*, 1 Webs. 53 as explained in *Turner* v. *Winter*, 1 Webs. 82, and *Morgan* v. *Seaward*, 1 Webs. 175), it being understood that the specification was addressed to "persons of reasonably competent skill in such matters" (*Harmar* v. *Playne*, Dav. P. C. 318).

For an illustration of ambiguity and false suggestion invalidating a patent, see *Turner* v. *Winter*, *post*, p. 181.

A patent was granted for machinery for drying paper. The specification stated that the invention consisted "in conducting the paper, by means of cloth or cloths, against the heated cylinder, which cloth may be made of *any suitable material*, but I *prefer* it to be made of linen warp and woollen weft." It was proved that the inventor had tried linen cloth and woollen cloth, and that both had failed. *Held*, that the patent was void, as the patentee should have given the public the benefit of this knowledge. *Crompton* v. *Ibbotson*, Dan. & Ll. 33.

A patent was for improvements in copper and other plate printing. In the specification the directions were to use the "finest and purest chemical white lead." There was no such substance known in the trade. Ordinary white lead would not do. The only material that would suit was a pure kind of white lead imported from abroad and sold in one particular shop in London. *Held* that the patent was void. *Sturtz* v. *De La Rue*, 3 Russ. 322 (approved in *Coles* v. *Baylis*, 3 R. P. C. 180).

A patent was granted for certain "improved arrangements for raising ships' anchors and other purposes." The supposed invention consisted in constructing a windlass with a V-shaped groove, scalloped with shell-like indentations to grip the chain-cable. It was proved that a windlass for a chain-cable of a given size was not new, but none was known capable of holding chain-cables of different sizes. The specification did not assert more than that the windlass would grip more than one size of cable. It was doubtful that the words of the specification could mean that the windlass would grip cables of different sizes. *Held*, that the patent was invalid, for the specification, being equivocal, was insufficient. *Hastings* v. *Brown*, 1 E. & B. 453.

The patent in question was for an improved manufacture of artificial stone. It consisted of treating certain materials with water (deprived of air) under high pressure. The specification alleged that previous processes failed because of cracks produced in the stone by the admission of air into the moulds, that it was impossible to get a higher temperature than 281° to 292° F., which was

insufficient to produce reliable stone. These difficulties the patentee alleged he overcame by working at a much higher temperature, 400° F. It was proved that the stone could be produced of quite as good a quality by working at 240° F., and that working at the higher temperature was commercially disadvantageous, being more expensive. *Held* that the patent was invalid for false suggestion to the Crown. *Owen's Patent*, 17 R. P. C. 78.

See also *Osmonds* v. *Balmoral Cycle Co.*, *ante*, p. 60.

Patent upheld, though misleading.

The patent was for improvements in shearing-machines for cloth. A complicated machine was described with diagrams. Before the date of the patent the wool had to be raised by means of a brush. In the specification the brush was described incidentally: "A narrow strip of plush is fixed on the surface of A" (the top cylinder) "parallel with the wire B" (a helix round A) "to answer the purpose of a brush for raising up the wool which is to be shorn off the cloth," &c.; but it was not mentioned as being essential. It was claimed in a separate claim in the following terms: "Third, the application of a proper substance, fixed on or in the cylinder A, to brush the surface of the cloth to be shorn."[1] The patentee subsequently found that it was unnecessary. No machine was ever made with it on. *Held* that the patent was valid, the patentee having acted in good faith. *Lewis* v. *Marling*, 1 Webs. 490 (followed in *Poupard* v. *Fardell*, 18 W. R. 129).

Illustrations of the latter part of the first rule relating to what additions may be included as "fair developments" are given, *ante*, pp. 65–69.

Sufficiency of Practical Directions.

The illustrations above given to illustrate the necessity of an *honest* disclosure include several which also illustrate the necessity of a *sufficient* disclosure. There are a large number of cases in which the *honesty* of the patentee is not in question, but which turned on the *sufficiency* of the directions. The following cases illustrate the question of sufficiency of disclosure within the meaning of the second of the above rules. There is no obligation on the patentee to go so far as to point out and warn against all the errors a workman might make.[2] Inaccurate use of terms, due to errors in translation or want

[1] As the brush could not be used without using the machine, the claim was a "subsidiary one, as to which see *ante*, pp. 58, 63.

[2] *Edison & Swan* v. *Holland* (per *Cotton*, L.J.), 6 R. P. C. 282, l. 16.

of knowledge of English, will not render a patent invalid so long as the meaning be clear. If a specification discloses the presence of foreign matter in a substance, it must show that it is not injurious or may be easily removed.[1] Equivalents need not be mentioned if well known to those skilled persons to whom the specification is addressed, but if the equivalents be not previously known as such they should be mentioned, otherwise they will not be included in the claim.[2]

Errors, unless they are purposely inserted, will not vitiate a patent if the ordinary skilled workman can correct them at once without having to make experiments and further inquiry, for such errors would not mislead.[3] But if intentionally inserted there is not an *honest* disclosure.

Illustrations of Insufficiency in Directions.

The specification for a method of sharpening "knives, razors, scissors, and other cutting instruments" described a contrivance about four inches long, consisting of two parallel cylinders with alternate bosses and recesses. These were placed so that the distance between the axes of the cylinders was less than double the radius of the bosses, hence these, on each cylinder, fitted into the recesses of the other. The sharpening process was carried out by drawing the edge of the cutting instrument along a V, formed by the intersection of the circumferences of the bosses. For scissors it was necessary to have one set of bosses smooth, or else both of Turkey stone. This information was not given in the specification. *Felton* v. *Greaves*, 3 C. & P. 611.

A patent for a lamp was held invalid because neither letterpress nor drawings showed holes to admit air on one side of the wick; these were necessary. *Hinks* v. *The Safety Lighting Co.*, *post*, p. 254.

As to absence of directions to apply a certain solution for preserving meat, see *Bailey* v. *Roberton*, *post*, p. 270.

A patent was taken out for improvements in the manufacture of bread and biscuits. Certain proportions and directions were given in the specifications. The patentee, when instructing his workmen, gave them further directions and other proportions of ingredients. A baker, an agent of the patentee, testified that he required such extra directions to enable him to make the bread. *Pooley* v. *Pointon*, 2 R. P. C. 171, 172.

[1] *Derosne* v. *Fairie*, 1 Webs. 161, 162.
[2] *Heath* v. *Unwin*, 2 Webs. 245.
[3] Per Lord *Westbury*, L.C., in *Simpson* v. *Holliday*, 12 L. T. N. S. 99, 100.

In a patent for, amongst other things, regulating, by means of storage batteries, the pressure in the mains for electric lighting purposes, the apparatus would not work by reason of no directions being given as to switching cells in or out of the circuit. The invention as described was therefore useless. See *Lane Fox* v. *Kensington, &c.*, *post*, p. 345.

A patentee of a process of manufacture of new dyes claimed a product substantially pure. He gave the fullest directions to the best of his knowledge. The purity of the result was due partly to the use of an iron vessel in the process, the iron of the vessel combining with the acid. If an enamelled vessel were used the process would not produce the pure result claimed. Enamelled vessels were frequently used in such-like operations. The directions were not sufficient. *Badische Anilin, &c.* v. *La Société Chimique des Usines du Rhone*, *post*, p. 405.

Alleged Insufficiency disproved.

In a specification describing an apparatus for making gas there was no direction to use a condenser which was necessary. But no workman who could make a gas apparatus would leave it out. Nor was there any direction so to do. *Crossley* v. *Beverley*, 3 C. & P. 515.

In the first patent for a process of photography five operations were described. The first was that of preparing the surface of the plate for the coating with iodine. The second the iodine process. The third, which was to follow *immediately* on the second, was the exposing of the plate in the camera. At the end of the directions for the first operation the reader was told that it was "indispensable just before the moment of using the plates in the camera . . . to put once more some acid on the plate." If this were done after the iodine process no image could be produced. At the trial a verdict was directed for the defendant (3 C. B. 97). On appeal, after further examination, it was held that the obscurity was "cleared away by consideration of the whole," and that it was "sufficiently plain to be understood by an operator of fair intelligence" that the direction was to be taken as referring to the process of preparing the plate some time in advance, and the third application of the acid was to be just before the iodine process. The patent was upheld. *Beard* v. *Egerton*, 8 C. B. 165.

Absence of mention of proportions is not material where they depended on the substance chosen, and enough information is given to produce the required result by simple trial. See *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

Drawings of slides in a gas-engine were incorrect, and if followed exactly

the engine would not work. The letterpress contained no information to correct the error. Workmen would easily make the required correction. No evidence was produced that any had been misled. See *Otto* v. *Linford*, *post*, p. 283.

The use of the term "carbon gas" in a claim where the process shewed that neither CO nor CO_2 was meant, but only gases containing H, did not mislead any workman. *Edison & Swan* v. *Woodhouse* (and Action), *post*, p. 297.

Directions for making carbon "filaments" for glow-lamps out of a kneaded combination of tar and lampblack were sufficient because the workman could continue the process till the specified result was obtained. No special directions were given how to avoid diffusion during carbonisation. *Edison*, &c. v. *Holland*, *post*, p. 317.

A strained construction will not be put on a specification in order to interpret the directions so as to include substances that will not suit, *e.g.* by taking the technical instead of commercial meaning of the words; or including extremes of a class of acids. Directions as to how to produce dyes are not insufficient because the precise shades to be produced are not expressed in words. To ascertain the shade actual experiment was necessary. See *Badische Anilin*, &c. v. *Levinstein*, *post*, p. 311.

Lord *Kelvin's* mariners' compass comprised several novelties. As it swung on knife edges some brake was necessary. It was thus described: "Instead of the rubbing surfaces, I use the large bowl, A, attached to the bottom of the glazed case, the bottom forming the roof of the bowl, which is nearly filled with liquid; thus, when there is any motion of the bowl, energy is consumed by the frictional or viscous action of the liquid." It was proved that the effect and utility would be much less if the bowl were fully filled. The claim for this bowl described it as "being filled or partially filled" with oil or other viscous fluid. This claim was only for a minor part of the larger invention. *Thomson* v. *Batty*, 6 R. P. C. 87, 97.

In a specification for a new dye it is sufficient if practical directions be given by which persons can, by trial, find out how to produce any required shade in a given range. The patentee need not enumerate those substances that will not do of a class if he give sufficient directions as to others of the class that will suit. See *Leonhardt* v. *Kallé*, *post*, p. 362.

Besides the reason already given for full disclosure by the patentee, namely, to enable the public to use the invention after the monopoly has expired, there is another, viz., that it is contrary to public policy that an inventor should have all the benefit of a monopoly by law, and in addition have the benefit of a trade secret

in the manufacture ; for he might thereby secure a longer monopoly than the fourteen years allowed by statute. So, too, if he commercially use the invention as a trade secret before he applies for a patent the same result would follow.[1] Prior secret commercial (as distinguished from experimental) user of the invention by the inventor himself has been considered a ground for holding a patent to be invalid. But an inventor may keep the invention secret but unused for a long period before he applies for his patent without invalidating it.[2]

Illustrations.

A new process of manufacturing an old product was invented. The inventor sold considerable quantities of the product made by his new but undisclosed method. He subsequently took out a patent for the process. The patent was invalid. *Wood* v. *Zimmer*,[3] Holt, N. P. 58.

Manufacture by the patentee and his servants, without publication, of a patented article made by the patented method, for the purpose of having a large stock on hand ready for sale when the patent is obtained, is not prior user. *Betts* v. *Menzies*, 28 L. J. Q. B. 365.

Racquets were made in November, 1883, for sale, but not sold nor exhibited till May, 1884. The patent was dated the 1st of January, 1884. It was a valid patent. *Moss* v. *Malings*, 3 R. P. C. 378.

Utility.

Another question connected with sufficiency of directions in the specification is that of "Utility." This condition of utility is not imposed in so many words by the Statute of Monopolies, but rests on it and other grounds. A patent may be held void for want of utility on the grounds of—

I. Public policy. This is implied by the statute.
II. False suggestion to the Crown.
III. Insufficiency of invention, *i.e.* the invention as *made and described* being useless *for the purpose* described.

The first ground rests on the common law. As the object of the

[1] *Betts* v. *Menzies* (Lord *Campbell*), 28 L. J. Q. B. 365.
[2] *Bentley* v. *Fleming*, 1 C. & K. 588.
[3] This case was decided on two grounds, that here mentioned and insufficiency (*ante*, p. 74). Each ground may be regarded as the basis of the decision and the other a *dictum*, according as the necessity of the argument requires. Hence the point has recently been regarded as an open one. See *Miller's Patent*, 15 R. P. C. 213 ; see also *Webster* on Subject Matter (1841), p. 39.

monopoly is to benefit trade and the industries of the country,[1] it will not be granted for an invention that is useless. Were this not the rule an inventor of a useless method or process might exact royalties from the users of subsequent inventions which, although coming within his patent, owe their utility and success to some subsequent improvement invented by another;[2] or might, on the other hand, prevent such useful improvements from being made. In such a case the earlier monopoly would come within the terms of the 6th section of the Statute of Monopolies (*ante*, p. 1), as being "mischievous to the State . . . or generally inconvenient."[3]

As to the second ground, if the invention be represented as useful when it is of no use at all, the patent will be invalid because of the false representation made to the Crown;[4] but in the absence of such false suggestion the uselessness of only a part of the invention claimed is no objection.[5]

There are some *dicta* to the effect that utility must include some useful advance on what was known to the trade, *i.e.* that an invention fails for want of utility unless it is in some way more useful than that which is already known.[6] But the majority of *dicta* are to the contrary effect.[7]

Neither comparative[8] nor commercial[9] utility is to be taken as the test of validity.

Illustrations.

See *Lewis* v. *Marling*, *ante*, p. 76, as to an unnecessary part.

For an example of small utility see *Neilson's Patent*, *post*, pp. 187, 190.

An electric glow-lamp was patented. Some were made, and lasted for a considerable time. Very soon improvements were made in the mode of manufacture by which the lamps were "standardized"

[1] *Case of Monopolies*, Noy, 182; *Edgebury* v. *Stephens*, 1 Webs. 35; 1 Hawk Pl. Cr. Ch. 79, sect. 20; *R.* v. *Wheeler*, 2 B. & Ald. 349.

[2] *Morgan* v. *Seaward* (per *Parke*, B.), 2 M. & W. 562; 1 Webs. 197; *Crossley* v. *Potter*, Mac. 240 (per *Pollock*, C.B. 245); *Walton* v. *Bateman*, 1 Webs. 623.

[3] The rule is put on this ground by *Alderson*, B., in *Morgan* v. *Seaward*, 1 Webs. 197.

[4] Bac. Abr. Prer. F. 2 (7th ed. vol. vi. p. 514), and notes to *R.* v. *Mussary*; Gordon on Monopolies, p. 268.

[5] *Morgan* v. *Seaward*, 1 Webs. 197; *Lewis* v. *Marling*, 1 Webs. 495, 7.

[6] *Cornish* v. *Keene*, 1 Webs. 506; *Lash* v. *Hague*, 1 Webs. 203, 204; *Young* v. *Rosenthal*, 1 R. P. C. 29.

[7] *Lewis* v. *Marling*, 1 Webs. 497; *Morgan* v. *Seaward*, 1 Webs. 172; *Otto* v. *Linford*, 46 L. T. 41; *Plimpton* v. *Malcomson*, 3 Ch. D. 582; *Tetley* v. *Easton*, Mac. P. C. 63; *Philpott* v. *Hanbury*, 2 R. P. C. 37; *Pirrie* v. *York Street Flax Co.*, 10 R. P. C. 39.

[8] *Fawcett* v. *Homan*, 13 R. P. C. 411.

[9] *Badische Anilin u. Soda Fabrik* v. *Levinstein*, *post*, pp. 312, 314.

and otherwise improved. None were sold on a commercial scale except those made with the improvements. *Held*, there was utility at the date of the patent, which was therefore valid. *Edison & Swan* v. *Holland*, 6 R. P. C. 277, 283 (*post*, p. 319), 285.

A patent was obtained for producing dyes from certain substances. Out of a series of colours the dye for one colour only had a sale. The other dyes were not therefore useless. *Badische Anilin, &c.* v. *Levinstein*, *post*, p. 311.

The third ground for the rule is the most important in practice. If the invention be not fully developed so as to obtain the result intended by the patentee, then the invention is entirely useless for that purpose when made as described, and the patent will be invalid. Much more so if the invention be useless for every purpose; or if, in addition to its failure to accomplish the intended purpose, it be dangerous to the public.

There is no case reported of a patent being held invalid for the want of utility alone in an invention that produced the result, or accomplished the object, described by the patentee. Patents that have been held invalid for want of utility were either also invalid on other grounds, or failed to work as described, or were impracticable [1] or "useless for the avowed purpose." [2]

Utility as a test for, or as evidence of, ingenuity or novelty has been dealt with, *ante*, pp. 38, 39.

Illustrations.

An invention consisted in an alleged improvement in the construction of fowling-pieces and small arms. It consisted of a hole so perforated as to let the air and not the powder pass out from the barrel to the pan. The specification contained the following passage:—"Now the intention of this improvement in perforating the hammer, grooving or hollowing out the seat, is to let the air out of the barrel and pan; in putting down the wadding the powder in the barrel, by the air being allowed to pass, is forced into the perforated receiver A, so that the touch-hole is always full of powder, and by these means firearms of all kinds are prevented from flashing or hanging fire." So far from preventing "hanging fire," the gun, with this improvement, would not fire at all; but by enlarging the hole, so as to allow powder out as well as air, it would work well. *Held* that the patent was invalid because the utility of the

[1] *United Horsenail Co.* v. *Stewart*, 2 R. P. C. 132.
[2] *United Horsenail Co.* v. *Swedish Horsenail Co.*, 6 R. P. C. 8.

invention and purpose of the patent wholly failed. *Manton* v. *Parker*, Dav. P. C. 327. ['This is the first case (1814) of want of utility since the Statute of Monopolies.]

A process, in which heating was necessary and was not so stated, was held a useless invention. *Simpson* v. *Holliday*, *post*, p. 244.

An invention consisted of a system for signalling on railways. The ultimate object was to secure the safety of the travelling public. According to the specification this was secured, "it being impossible to set the points and signals antagonistic to each other." It was proved, however, that it was quite possible for signalmen using the system to turn several trains on one line without difficulty. The patent was invalid for want of utility.[1] *Easterbrook* v. *G. W. Ry. Co.*, 2 R. P. C. 207.

In a system of distribution of electricity *Planté* cells were used for the purpose of *automatically* keeping the pressure in the mains at a certain amount. Owing to the cells discharging at a potential difference less than that required to charge them, this effect, as intended by the patentee, could not be produced. But the cells were useful when a switch was used to add extra cells to compensate for the change in the potential difference of the cells. The patent was invalid. *Lane Fox* v. *Kensington*, &c., *post*, p. 345.

The last case and the first (*Manton* v. *Parker*) are very similar. Neither invention would work when made as described and claimed, but a slight alteration made each workable and useful. Cases of patents being held invalid for want of utility alone are very rare.

Utility, as essential to validity, is therefore utility for the purpose indicated by the patentee.[2] Want of utility to defeat a patent must be want of utility in the invention as claimed,[3] and not that of auxiliary or alternative things mentioned in the specification. The existence of utility does not depend on whether the invention is practically used in the form in which it is specified, or is superseded by improvements.[4] It may exist in cases where, owing to commercial reasons, the manufacture cannot be successfully worked.[5] As with other grounds for invalidating a patent, if the claim to one monopoly fail for want of utility, the whole patent fails.[6]

[1] This case is also an illustration of a patent being invalid as being, in the words of the Statute, "generally inconvenient," *i.e.* dangerous to the public.

[2] *Lane Fox* v. *Kensington* (per *Lindley*, L.J.), *post*, p. 350.

[3] *Cornish* v. *Keene*, 1 Webs. 506.

[4] *Edison* v. *Holland*, 6 R. P. C. 277, 283, 285.

[5] *Badische Anilin*, &c. v. *Levinstein*, 4 R. P. C. 462, 466.

[6] *United Horsenail Co.* v. *Swedish Horsenail Co.*, 6 R. P. C. 8, following *Templeton* v. *Macfarlane*, 1 H. L. Ca. 595. As to subsidiary claims, see *ante*, pp. 58, 63; *Lewis* v. *Marling*, *ante*, p. 76.

CHAPTER VI.

CONSTRUCTION OF SPECIFICATIONS.

General Principles—Proportions, p. 88—Claims, p. 89—Benevolent Construction, p. 93—Doctrine of Equivalents, p. 96—Amended Specifications, p. 99.

General Principles.

If a patent be granted, members of the public (who are interested, as provided in sect. 26 of the Act of 1883, *post*, p. 494) or the law officers may present a petition for revocation on grounds on which formerly a patent might be repealed by *scire facias*.

When a patentee sues in an action for infringement of his patent, the defendant may plead that the patent is invalid on the same grounds. The validity of a patent is therefore, in the majority of cases, tested when a petition for revocation is presented or an action brought for infringement.

Hence, logically, in an action for infringement, the extent of the monopoly claimed should be ascertained before the alleged infringement is considered.[1]

Again, with regard to novelty, a question frequently arises as to whether the claim includes what has been published before. As it is quite possible for a patentee, through ignorance, to claim what is old, the meaning and extent of his claim should be ascertained without regard to the allegation of anticipation.[2] The importance of a correct construction or interpretation of the specification is therefore manifest, for on the extent of the claim the validity of the patent very often depends, and also, on the other hand, the question whether a certain manufacture be an infringement or not. As earlier specifications and other publications have to be looked to as part of the

[1] See *Seed* v. *Higgins* (as explained in *Potter* v. *Parr*), *post*, p. 216.

[2] Per *Blackburn*, J., in *Betts* v. *Menzies*, 31 L. J. Q. B. 237, and *post*, p. 219.

knowledge of the time,[1] and as the questions of construction and validity frequently are only raised as part of the defendant's case, it is found in practice that the question of interpretation cannot be severed entirely from those of novelty and infringement, as the logic of the case would strictly require. The actual issue frequently depends only on the interpretation and extent of one or two claims out of many. Hence the attention of the Court is necessarily directed to these issues before the actual interpretation of the claims and specification is undertaken; this course avoids unnecessary discussion. But, beyond so narrowing the field of inquiry, one's mind ought not to be influenced by issues of validity or infringement. The modern practice is thus defined by Lord *Alverstone*, L.C.J., in *Presto Gear-case Co.* v. *Orme, Evans & Co.* (18 R. P. C. 23)—

> "In patent cases I have always felt that there is a line of thought which is most likely to lead you to the right result in the speediest way. The first thing, assuming you understand the alphabet of the science or art, is to understand clearly what was the previous state of knowledge. Having got, either by agreement or deduction from the evidence, a clear view as to what was the previous state of knowledge, you must then construe the specification with reference to that, disregarding issues of novelty or subject-matter which may arise in the particular case, and you then have to consider whether or not the infringement comes within the fair meaning of the claims, not anything else, but the claims read in the light of the previous state of knowledge,[2] and without altering their words unduly in favour of the patentee or the infringer. I will say one word more with regard to the law; that in my judgment, be it a combination claim or be it not, you are only allowed to follow the words of the claim, but you are not to permit mere mechanical equivalents,[3] or mere colourable alterations, to prevent a thing being an infringement, having regard to what the meaning of the claim is."

The interpretation of specifications like all other documents is a question of law for the Court.[4] But in cases of controversy[5] the

[1] See *post*, pp. 86, 87.

[2] The "state of knowledge" in cases of *ambiguity* of language or ambit of claim involves the question of novelty, and such has been taken into consideration by the House of Lords on the principle of Benevolent Construction, *post*, pp. 93, 94.

[3] Equivalents are discussed *post*, pp. 96–99.

[4] *Bush* v. *Fox*, 5 H. L. Ca. 707; *Hills* v. *Evans* (per Lord *Westbury*, L.C.), 4 De Gex, F. & J. 294, *post*, p. 223; *Simpson* v. *Holliday*, *post*, p. 245; *British Dynamite Co.* v. *Krebs* (per Lord *Cairns*), 13 R. P. C. 192, *post*, p. 275.

[5] *Betts* v. *Menzies*, 31 L. J. Q. B. 239.

Court must be informed by evidence of the state of knowledge of the art in question, the meaning of technical terms, &c., at the date of the specification,[1] and not including subsequent knowledge.[2]

Illustration.

An alleged anticipating specification was forty-five years earlier than the one the validity of which was in question. Evidence was admissible to show whether the same terms in the two documents at these different periods (1804 and 1849) referred to the same things. *Betts* v. *Menzies*, *post*, p. 217 (per Lord *Westbury*, L.C.), *post*, p. 219.

Where, however, the matter or language is not of a technical nature, or describes a very simple invention, there is no need of expert evidence, and the whole question is one of law.[3]

Illustrations.

As to whether directions to heat were included in the term "or I accelerate the operation by heating," see *Simpson* v. *Holliday*, *post*, p. 244.

In a case in which the invention consisted of a comb to be sewn in ladies' hats, the issue of validity depended on the description in an antecedent specification. *Savage* v. *Harris*, 13 R. P. C. 368.

The knowledge of the time at the date of the specification includes what persons in the trade actually do—descriptions published in books and other publications under circumstances that lead to the conclusion that persons have become acquainted with their contents.[4] Specifications, however, are considered as published in fact as well as in law.

Illustration.

The question at issue was the validity of *Haddan's* patent for series-shunt winding of dynamos. An alleged anticipation was contained in *Varley's* specification (1876). In construing the latter the knowledge of shunt winding disclosed by *Clark's* specification (1875) was considered. Although it was unknown to Lord *Kelvin* at the date of *Varley's* invention, yet as it was proved to have been

[1] *Crossley* v. *Beverley*, 1 Webs. 107, 108.

[2] *Heath* v. *Unwin*, *post*, p. 200 (followed in *Badische Anilin, &c. v. Levinstein*, 2 R. P. C. 90).

[3] *Simpson* v. *Holliday*, *post*, p. 245.

[4] *Harris* v. *Rothwell* (per *Lindley*, L.J.), 4 R. P. C. 231. Also Publication, *ante*, pp. 23–29.

known to *Varley*, it may have been known to other electricians. *King* v. *Anglo-American Brush Corp.*, *post*, p. 340, (per Lord *Watson*) p. 344.

In construing a specification in the light of previous knowledge and publications, due regard must be had to disclaimers. The power to amend specifications by amendment and disclaimer was granted by the Act of 1834 (5 & 6 Will. 4, c. 83, sect. 1) ; it is now exercised under the Act of 1883, by way of disclaimer, correction, or explanation.[1] A specification of which part has been struck out by disclaimer will very often bear a different meaning to what it would have done had it originally been drawn as amended. Illustrations of the effect of disclaimers will be more conveniently considered below in connection with claims and equivalents. A disclaimer was never intended to enable an inventor to make a bad patent good by altering it to something requiring research and experiment.[2]

The "nature of the invention," as described and claimed in a specification, is in all cases a question of construction for the Court, assisted by evidence as to the knowledge of the time and surrounding circumstances ;[3] it must be ascertained from the whole specification (including drawings[4]), all the facts of the discovery being first ascertained.[5] An invention consists in the application of principles and not merely in their enunciation (*ante*, p. 9). In all cases it is the real merit, and not the mere description, that must be looked to.[6]

Illustrations.

The absence of any mention of a previous use in the specification caused the claim to be read to include more than the actual invention in *Hill* v. *Thompson*, *post*, p. 185.

The real merit in *Lyon's* disinfector lay in the strength of the door of the machine. This was not pointed out in the letterpress, but was apparent from the drawings. See *Lyon* v. *Goddard*, *post*, p. 362.

The manner of the application in the way described of hydrated ferric oxide to the manufacture of coal gas was held to be an invention in *Hills* v. *London Gas Light Co.*, *post*, p. 208, 211.

[1] *Post*, Ch. IX., p. 160.
[2] See *Ralston* v. *Smith*, post, p. 229.
[3] Per Lord *Cairns* in *British Dynamite Co.* v. *Krebs*, 13 R. P. C. 192.
[4] *Poupard* v. *Fardell*, 18 W. R. 129.
[5] *Siddell* v. *Vickers*, *post*, p. 329, l. 23; *Newton* v. *Grand Junction Ry. Co.*, 5 Ex. 334; *Lister* v. *Leather*, 8 E. & B. 1022.
[6] Per *Lindley*, L.J., in *Benno Jaffé*, &c. v. *J. Richardson & Co.*, *post*, p. 357.

Admitting mixed gas and air to the cylinder of *Otto's* gas engine, and compressing the charge as described and claimed in the specification, were applications of principles. See *Otto* v. *Linford*, *post*, p. 283.

For a good example of the importance and application of this principle of interpretation, see *Gormully, &c., Co.* v. *North British Rubber Co.*, *post*, p. 414.

See *Gaulard & Gibbs' Patent* for a general illustration, *post*, p. 332 *n.*

See *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

The specification will not be read in a narrow and technical manner, but in a practical and commercial sense ;[1] the sense in which those to whom it is addressed (*ante*, p. 73) would read it.

Illustrations.

In a specification for the manufacture of aniline dyes the term "dry arsenic" was interpreted as the arsenic of commerce physically dry, and not the anhydrous acid, which was not then an article of commerce. *Simpson* v. *Holliday*, *post*, p. 245.

In a specification dealing with the manufacture of glow lamps the term "carbon gas" in the claim was read in connection with the whole specification in which "hydro-carbon gas" was mentioned, and it was held that "carbon gas" did not include CO or CO_2, but substances containing carbon and hydrogen, even along with other elements; although technically the term "hydro-carbon" referred to compounds of C and H only. *Edison & Swan* v. *Woodhouse*, 4 R. P. C. at p. 107, and *post*, p. 299.

In a specification for smokeless powder the term "soluble nitrocellulose" meant that known commercially as soluble in an ether-alcohol mixture, and excluded the "insoluble nitrocellulose" or gun-cotton. *Nobel* v. *Anderson*, *post*, p. 366.

Proportions.

Questions frequently arise in connection with the mention of, or absence of allusion to, precise proportions of ingredients. In this respect there can be no general rule. On reading the specification as a whole, assisted by evidence as to the knowledge of the art, in some cases the essence of the invention may consist in the discovery of the properties arising from the combination of substances in certain proportions ; or the proportions may be important only as regards directions to workmen, or may depend altogether on the use to which the invention is to be put, *e.g.* shades of colour in dyeing.

[1] *Crossley* v. *Beverley*, 3 C. & P. 515.

Illustrations.

Proportions of metals used for making capsules were held to be not essential, but only relative, as showing how to obtain the best results in *Neilson* v. *Betts*, L. R. 5 H. L. 21, *post*, p. 220.

Nitro-glycerine and gun-cotton were mixed "in, or about in" certain proportions to make a smokeless powder. The essence of the invention lay in keeping within those limits. *Maxim Nordenfelt, &c.* v. *Anderson*, *post*, p. 418.

Suitable limits of proportions were given for ingredients used in mantles for incandescent gas lighting. It was subsequently discovered that proportions far outside those given would suit. The claim did not include the later discovery. See *Welsbach, &c.* v. *Daylight Inc. Mantle Co.*, *post*, p. 391.

See *Heath* v. *Unwin*, note 2, *post*, p. 201.

Claims.

Questions arising out of the construction of claims frequently present some special features. The claim must be construed as part of the whole document [1] (including the title).[2] The description of the invention given in the specification should first be read, and then the claims to see how much of the invention described is claimed.[3] This is the rule whether the words "substantially as described" are in the claim or not.

A claim for every form of applying a principle would amount to a claim to the principle itself, hence it can only extend to include the applications of the principle — that is, the manufacture or invention itself—in one or more of the forms described.[4] So, too, the claim must be read in the light of the function the thing described was to perform.[5]

Illustrations.

One claim for the *Wheatstone* telegraph was for improvements in communicating angular motions to magnetic needles "by means of currents transmitted through metallic circuits." Construing the claim in connection with the whole invention, it was held to include

[1] *Newton* v. *Grand Junction Ry. Co.*, 5 Ex. 334; *Lister* v. *Leather*, 8 E. & B. 1022.

[2] *Oxley* v. *Holden* (per *Erle*, C.J.), 8 C. B. N. S. 707.

[3] *Arnold* v. *Bradbury*, L. R. 6 Ch. Ap. 706, 712; *Edison, Bell, &c.* v. *Smith*, 11 R. P. C. 395; *Tubes, &c.* v. *Perfecta Seamless, &c.*, 17 R. P. C. 588.

[4] *Neilson* v. *Harford* (per *Alderson*, B.), 1 Webs. 355; *Nobel* v. *Anderson*, 11 R. P. C. 525, 527, 532; *Ticket Punch Reg. Co.* v. *Colley's Patents*, 12 R. P. C. 185.

[5] *Fawcett* v. *Homan*, 13 R. P. C. 410.

the essential conducting wire, but not necessarily the return wire. The use of earth returns as equivalents for wires was not known at the date of the specification. *Electric Telegraph Co.* v. *Brett*, 10 C. B. 838, *post*, p. 199.

Claims to the *Otto* gas-engine, apparently for a principle, were construed in connection with the whole document as for applications only. *Otto* v. *Linford*, *post*, p. 283.

In a claim for a method of treating liquors including the use of a centrifugal machine, the machine, in the light of the whole invention, was held not to be essential, ordinary "skimming" being an equivalent. *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

A claim for an improved lintel was not taken by itself, but in connection with an improved mode of making fireproof floors in *Fawcett* v. *Homan*, *post*, pp. 383, 388.

Whether the mention of proportions in the body of a specification limits the claim to the proportions mentioned depends on the real nature of the invention (*ante*, pp. 87, 88).[1] But if the proportions are given by way of illustration, or are merely mentioned as giving the best results, they do not necessarily limit the claim.[2]

In claims for inventions that are combinations (*ante*, p. 57), the presumption is that the parts constituting the elements of the combination are old.[3] Hence when no distinction is made the claim is *primâ facie* one for the whole combination; but if claims be made to some subordinate integers of the combination, then the others are excluded and are presumed not to be novel.[4]

Illustrations.

The claim for an arrangement of parts constituting a horse-clipper possessing certain advantages, is a claim only to the whole combination, and not one for subordinate integers. See *Clark* v. *Adie*, *post*, p. 259.

In a machine for trimming brushes the claim was for the combination of parts. This was a claim only for the whole combination, and did not cover the use of cutter-plates without guiding-rods. See *Moore* v. *Bennett*, *post*, p. 289.

[1] For illustrations of the mention of proportions narrowing the claim, see *Heath* v. *Unwin*, *post*, p. 201; *Welsbach, &c.* v. *Daylight, &c.*, *post*, p. 391; *Maxim, Nordenfelt, &c.* v. *Anderson*, *post*, p. 417.

[2] *Patent Typefounding Co.* v. *Richard*, 6 Jur. N. S. 39; Joh. 384.

[3] *Clark* v. *Adie*, *post*, p. 263.

[4] *Tetley* v. *Ecston*, 2 E. & B. 966, 968; Mac. P. C. 86, 87; *Harrison* v. *Anderston Foundry Co.*, *post*, p. 252.

Many instances occur in which the claim fairly construed is a narrow one, and is sometimes not so wide as the patentee might have made it. The extent of the claim is limited by the extent of the invention.[1] In some cases the claim may extend beyond the actual mode of manufacture described in the specification; in others, if the claim be so extended, the patent will be invalid. The real issue is whether the patentee has claimed more than his invention warrants.

Illustrations: Narrow Claims.

A claim for an incandescent mantle for gas-burners was made narrower than what the patentee might have claimed in *Welsbach, &c.* v. *Daylight, &c., post*, p. 391.

A claim was purposely made narrow, and therefore a wider construction rejected in *Lancashire Explosives Co.* v. *Roburite, &c., post*, p. 397.

A specification describing the manufacture of a new dye confined the claim to a pure dye. The process *as described* would not produce a pure dye, but one of considerable impurity. The patentee was confined to the pure dye, and the patent was held invalid. *Badische Anilin, &c.* v. *La Soc. Chim. des Usines du Rhone, post*, p. 407.

Wide Claims.

The claim for Edison's electric lamp extended to lamps made otherwise than by the process described. As the resulting lamp was new, the claim was not too wide. See *Edison* v. *Woodhouse, post*, p. 297.

A claim for a process of condensing sulphuric acid was drawn wide enough to include an older method. The patent was invalid. See *Kynochs, Ltd.*, v. *Webb, post*, p. 425.

An invention consisted in the use of a certain kind of transmitting paper with a typewriter. The claims included one for the paper apart from its use in the machine; the coated paper alone was not subject-matter. The patent was invalid. See *Dick* v. *Ellams Duplicator Co., post*, p. 430.

A claim for a ferrule apart from the mode described of fastening it to a bobbin was held to invalidate a patent. See *Wilson Bros.* v. *Wilson & Co., post*, p. 463.

The effect generally of disclaimers on the construction of specifications has been alluded to. The extent of a claim is frequently affected by a disclaimer in the body of a specification. A disclaimer may properly be employed to cut out something that leaves a perfect

[1] See *R.* v. *Else, post*, p. 180.

claim behind, but it was never intended that the power of disclaimer should be used to cut down a vague description so as to leave something which was really the result of experiment and research.[1]

Illustrations.

By disclaimer the claim to certain auxiliary devices was dropped by striking out certain words in the claim, which was left more general in character. But some of the corresponding descriptions were retained in the body of the specification. The effect was to retain these in the combination claimed, and so invalidate the patent. See *Foxwell* v. *Bostock*, *post*, p. 228.

A disclaimer narrowed the claim to a machine grooved in a particular way. The beneficial results from the use of this was an accidental and new discovery. The effect of disclaimer was to leave a claim for something that was not a "manufacture." See *Ralston* v. *Smith*, *post*, p. 229.

A disclaimer in connection with one claim was held to apply to the other claims, in which the subject of the first claim was included in *Bailey* v. *Roberton*, *post*, p. 270.

A specification described a mode of making eyelets for boots. The mode of manufacture was disclaimed. The effect was to enlarge the claim to the eyelet to an eyelet of the same kind, however made. The wide claim included what was old. *Thierry* v. *Rickmann*, *post*, pp. 391, 393.

As each claim must be read in connection with the whole specification, and as each claim limits a separate, although sometimes subsidiary, monopoly, it follows that there are cases in which the extent of one claim depends on the presence of other claims. For instance, if one claim comprise something that is already included in another, then the wider cannot be construed to comprise only the same invention as limited by the narrower one. A claim cannot be limited by reading into it, in order to avoid invalidity, words that are not there, and so alter the plain meaning.[2]

Illustrations.

One claim was for constructing ships with iron frames. Another was for constructing them with iron frames as described. As the two claims could not be for the same thing the former received a wide construction. See *Jordon* v. *Moore*, *post*, p. 243, and notes thereto.

[1] *Seed* v. *Higgins*, *post*, p. 212, and *Ralston* v. *Smith*, *post*, p. 229, and notes to those cases.

[2] See last note to *Plimpton* v. *Spiller*, *post*, p. 259; *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

A specification described a mode of dissolving gold from ores. One claim mentioned the use of a solution of a cyanide, the other a dilute solution of a cyanide. As there was nothing to limit each claim to a separate part of the description, it was held that the former was for the use of cyanides generally. See *Cassel Gold Co.* v. *Cyanide Gold Recovery Synd.*, *post*, p. 369.

Two claims for an electric motor-car were in almost similar terms, but one mentioned springs, the other not. The claim in which springs were omitted was therefore one for the arrangement *without* springs. See *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

One claim was for securing type in a box-holder. Another was for the box-holder in combination with a printing-drum. A third was for the combination of the drum with printing machinery. The last was held not to be confined to the drum as described in the other two claims. *Taylor* v. *Annand*, *post*, p. 445.

The Doctrine of Benevolent Construction.

In the early history of Patent Law, and down to the beginning of the nineteenth century, the Courts frequently took objections of a technical nature to patents, regarding a monopolist patentee as one whose interests were hostile to the public at large.[1] But, as early as 1787, *Buller*, J., in *Turner* v. *Winter*,[2] expressed his strong bias in favour of a patentee who made a full disclosure as against a defendant who attempted to evade a patent. From that expression of opinion many *dicta* have followed in subsequent cases, in which it was freqently said that a meritorious inventor should not be criticised too closely with a view to upset his patent.[3] But finally the rule at the present day avoids both these extremes. The specification is to be construed fairly and reasonably as between the patentee and the public, not putting on forced constructions, or straining the language, either in favour of a supposed meritorious inventor or to defeat a patent.[4] The rule is simply an application of the principle "*verba debent intelligi cum effectu ut res magis valeat quam pereat.*"[5] In

[1] Per *Parke*, B., in *Neilson* v. *Harford*, 1 Webs. 310.

[2] 1 T. R. 606.

[3] Per *Jessel*, M.R., in *Hinks* v. *Safety Lighting Co.*, *post*, p. 257; *Plimpton* v. *Spiller*, and notes, *post*, p. 258; *Otto* v. *Linford*, *post*, p. 288.

[4] Per *Parke*, B., in *Neilson* v. *Harford*, 1 Webs. 310; per Lord *Westbury*, in *Simpson* v. *Holliday*, 13 W. R. 578; per Lord *Blackburn*, in *Dudgeon* v. *Thomson*, *post*, p. 268; per *Kay*, J., in *Edison* v. *Holland*, 5 R. P. C. 475; *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 307.

[5] *Cropper* v. *Smith*, 1 R. P. C. (per *Cotton*, L.J.), 89, (per *Bowen*, L.J.), 90; *Boulton* v. *Bull*, 2 H. Bl., p 500.

actual practice it merely comes to this: That when there is a reasonable doubt as to whether a wider or narrower ambit is to be given to a claim, and the wider would render the patent invalid, the narrower is to be preferred. In such cases the wider construction should not be adopted unless the patentee showed he clearly intended to make it.[1] But there must be a real ambiguity, not one "manufactured" by argument.[2] There is no authority now in support of the proposition that a benevolent interpretation is to be given to a specification for a pioneer invention; in such the claim is wide because the invention is a wide one (*ante*, pp. 15, 62, 63).[3] It will be found, however, that the natural bias in favour of supporting a valuable patent is not without some effect on the decision as to what is the true construction of the whole document.

Illustrations.

See construction of *Neilson's* specification (1841), *post*, pp. 187, 190.

A specification described the application of a friction clutch to hoists.

A wide construction would include what was old, so the claim was confined to the precise combination described. See *Morris & Bastert* v. *Young*, *post*, pp. 371, 374.

In *Maxim Nordenfelt Co.* v. *Anderson* (*post*, p. 418) the principle of benevolent construction was applied to ambiguity in directions.

See also *Beard* v. *Egerton*, noted *ante*, p. 78.

An invention consisted in the manufacture of incandescent gas mantles.

The invention being a pioneer one, the claim was wide, and not confined to the precise proportions specified. (*Incandescent Gas Co.* v. *De Mare*, *post*, p. 388); but it cannot be extended to include a new discovery, *viz.* that other proportions far outside the given range would be successful. *Welsbach, &c.* v. *Daylight Incandescent, &c.*, *post*, p. 391.

In a specification for the manufacture of a dye, the directions and claim mentioned the use of an autoclave. Unless that vessel was made of iron the process would not produce the desired result. This fact was not known to the patentee. *Held*, that the adjective "iron" cannot be read into the claim. *Badische Anilin, &c.* v. *La Soc. Chim. du Rhone, &c.*, *post*, p. 407.

The question often arises whether a particular claim is to be taken in connection with the directions for putting the invention into

[1] Per *Romer*, L.J., in *Chamberlain* v. *Bradford (Mayor)*, 19 R. P. C. 92, *post*, p. 482.

[2] Per Lord *Davey*, in *Parkinson* v. *Simon*, 12 R. P. C. 411.

[3] Per Lord *Halsbury*, L.C., in *Cassel Gold, &c., Co.* v. *Cyanide, &c.*, 12 R. P. C. 242. For an illustration, see *Edison & Swan* v. *Woodhouse*, *post*, p. 297.

practice, or in a wider signification. As in the latter case, the patent might be invalid for including something that was old; the natural bias in favour of supporting a patent comes into play. Hence it has in most cases been held that on the true construction the claim is to be limited in its application; but this is by no means the rule. The fact that it would be ridiculous to make the wider claim is not conclusive in favour of the narrower construction. There is, therefore, no presumption that the patentee excluded what was old; he may have claimed it inadvertently.

Illustrations.

In *Haworth* v. *Hardcastle* (1 Webs. 484) and *Oxley* v. *Holden* (8 C. B. 705), the claim was read in the narrower sense, such being the true construction of the whole document.

The claim for fastening the rollers to a roller-skate was held to be a subsidiary one, because it would be ridiculous to hold it to be wide. See *Plimpton* v. *Spiller*, *post*, p. 258.

A claim for an improved lintel was not taken by itself, but only when used as described in fireproof floors in *Fawcett* v. *Homan*, *post*, pp. 383, 388.

A patent was taken out for an improved apparatus for concentrating sulphuric acid. The description showed a process commercially a great improvement on one of twenty years earlier date. But the claim was worded so as to include the old form. The fact that it was suicidal to frame such a claim did not prevent it from receiving a wide interpretation as opposed to a narrow one. See *Kynochs, Ltd.*, v. *Webb*, (per Lord *Davey*), *post*, p. 428.

In a claim for an electric motor-car, the fact that if construed in its natural meaning it would be an absurd one to make is not sufficient to put a strained construction on it. *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

In *Chamberlain, &c.* v. *Bradford* (*Mayor of*), *Romer*, L.J., acted in accordance with the above practice. See *post*, p. 482.

The construction of the claim should be such as will consistently with the fair import of the language used make the claim of invention co-extensive with the new discovery of the patentee, and not extend it to a wider range than the facts would warrant.[1] This is especially the case with regard to patents for improvements in the specifications of which reference is made to those of the earlier

[1] Per *Tindal*, C.J., in *Haworth* v. *Hardcastle*, 1 Webs. 485.

invention; for the later specification is to be read in the light of the earlier one referred to.[1]

The Doctrine of Equivalents.

As it is obviously impossible for a patentee to foresee the devices that will be adopted, and attempts made by others to take the benefit of his invention without infringing his monopoly, he cannot anticipate them by separate claims. The patent not only covers the precise thing claimed, but the invention substantially. Hence the claim generally includes all known equivalents for the elements comprised in it. To include equivalents undiscovered at the date of the patent would be to give the patentee a monopoly for more than he invented. The questions that arise in practice are two—

1. In what does an equivalent consist in any given case?
2. In what cases is the general rule of equivalents not applicable?

As to the first of these questions, it must not be forgotten that a patentable invention consists of the application of principles or means to attain certain ends (*ante*, pp. 9, 11), not in the principles nor in the ends themselves. To take a common illustration: A pendulum is a device used to obtain a certain motion at equal intervals of time. To produce such a result the natural laws and forces, the attraction of gravitation, the property of inertia, are so applied that there is motion of the "bob" of the pendulum in a given path in which it is constrained to move. It is the application of a law of "constrained motion." Another device to produce the same result is that of the balance-wheel. The force of a spring takes the place of that of gravity, and inertia is made use of by the oscillation of the wheel, the size and distribution of the mass of which are of importance. The pendulum can only work in one position, the balance-wheel in any. Here there are two distinct inventions. The forces or principles are not the same, nor are the immediate results; but the ultimate purpose or object is the same. One is not an equivalent for the other. But when these devices once known are made elements in a larger combination, as, for instance, a meter to supply gas or electricity by time, then one is a known equivalent for the other. If such a meter be described with a balance-wheel as part

[1] *Harmar* v. *Playne*, *post*, p. 182. For an illustration see *Tubes, Ltd.*, v. *Perfecta, &c.*, *post*, p. 453.

of the clockwork mechanism, the claim to the whole combination would include one to a combination in which the balance-wheel was replaced by a pendulum. The question of equivalents, therefore, must depend on the ambit or extent of the invention itself. The cases of equivalents must be very carefully considered in mechanical inventions, all the parts of which are necessarily old; too great a latitude as to including equivalents might have the effect of including a different machine altogether.[1]

Chemical Equivalents.

A claim was for the use of carburet of manganese in the conversion of iron into cast steel. It was subsequently discovered that a paste of black oxide of manganese and coal tar would produce the same result, probably by the formation of the carburet in the furnace. The use of paste being a new discovery, was not an equivalent within the claim. *Heath* v. *Unwin*, *post*, p. 200.

A mantle for gas lighting consisted of oxides of zirconium and lanthanum. A wide range of proportions was claimed. Cerite earth, with little cerium, might be employed instead of lanthanum. The same result could be produced with oxide of zirconium and ½ per cent. of cerium. This being a new discovery, was not an equivalent within the claim. *Welsbach, &c.* v. *Daylight Incandescent Mantle Co.*, *post*, p. 391.

Mechanical Equivalents.

A specification described a combination, an improvement upon a previous invention of clutch-box mechanism to effect certain changes in spinning machinery. The claim for the improved device included "any mechanical equivalent therefor." These words were construed narrowly, and the claim did not include mechanism in which each part was different, although the mechanical results produced in the larger machinery of which it formed a part were the same. See *Curtis* v. *Platt*, *post*, pp. 231, 236, 242.

A claim was for a process of manufacture, one step in which consisted in separating a substance by means of a centrifugal machine. This included (regarding the essential features of the process) a process of separation by gravity, *i.e.* ordinary settling and skimming. *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

There are many cases in which the claims do not include equivalents, but are confined to the precise form of the combination claimed

[1] Per *Smith*, L.J., in *Brooks* v. *Lamplugh*, *post*, p. 414; per Lord *Herschell*, in *Morris & Bastert* v. *Young*, *post*, p. 374; *Curtis* v. *Platt*, *post*, p. 239.

and described. Such claims have a narrow construction (1) if they be worded in the first instance to exclude equivalents; or (2) if from the general tenor of the specification they must be so construed.

But there is another case which frequently occurs in which equivalents may be excluded. As a claim may be worded in different ways, but be substantially the same in effect, the question of the inclusion of any given alleged equivalent is a question of construction of the claim. It frequently happens that in order to include an alleged infringement on the ground of an equivalent being taken, the claim must be so paraphrased or interpreted as to include also some other equivalent that would be an anticipation. Then the patentee is in a dilemma; his claim either includes the alleged infringement and is invalid, or excludes it and is valid. In such cases, on the doctrine of Benevolent Construction, both equivalents are excluded.

Illustrations.

In a specification for improvements in roving cotton the invention described a presser actuated by centrifugal force. A disclaimer subsequently filed disclaimed the application of centrifugal force generally. The claim was thereby confined to the particular form of presser shown. See *Seed* v. *Higgins*, *post*, p. 216.

See *Dudgeon* v. *Thomson*, *post*, p. 263, for the principles on which disclaimers and amendments are to be construed.

A claim for a smokeless powder mentioned the use of nitro-glycerine and soluble nitro-cellulose (*i.e.* dinitro-cellulose). The method of manufacture described would also succeed with insoluble nitro-cellulose (*i.e.* gun-cotton). But it was not an equivalent, because (1) unknown as such at the date of the specification and (2) excluded by use of the word "soluble." *Nobel* v. *Anderson*, *post*, p. 366.

An improved method of effecting electrolytic decomposition of alkalies consisted in keeping the mercury cathode stationary, and moving "bells" over it containing the liquid. This invention was a new application of the same principles as were used in older devices. An alleged modification consisted in rotating the mercury, keeping the bells stationary. This was not an equivalent, but a distinct invention. *Castner-Kellner Alkali Co.* v. *Commercial Development Corp.*, *post*, p. 436.

A specification described a refrigerating and condensing apparatus. The refrigerating part was disclaimed. A number of diagrams showed forms of condensers consisting of a central tube, and a series of others concentric with it. By this arrangement a series of annular concentric spaces were formed. These were alternately

steam spaces and water spaces. The steam was admitted to the steam spaces and condensed by the cold water in the water spaces. One feature mentioned was the reversibility of the apparatus by using steam as water spaces and *vice versâ*. A disclaimer noted "that no claim is made herein generally to the use of annular condensers, consisting of a series of concentric tubes, being alternate steam and water spaces, but only to such condensers as are constructed and arranged substantially as hereinbefore described." The effect of this was to exclude equivalents. The claims did not therefore include a condenser in which a steam space lay between and concentric with a central water space and an outer one, the steam space being divided so as to form a kind of helical pipe, and the parts being of such proportions as not to be reversible in action. *Hocking* v. *Hocking*, 6 R. P. C. 69.

Compare cases under "Test of Disconformity," *ante*, pp. 71, 72.

Amended Specifications.

Where the specification has been amended, the right to make the amendments cannot be questioned in subsequent proceedings.[1] As amendments are not allowed which have the effect of enlarging the scope of the original invention, it follows that an amended specification has no wider claim than an unamended one. But the original wording may be looked to, on the question of construction, what is struck out operating as a disclaimer.[2] As specifications are usually published showing the amendments by means of erased and italic type, the attention of the reader must necessarily be called to the changes, and the impression conveyed by the whole document, that is, its interpretation or meaning be affected thereby. If it be construed in a practical and commercial manner (*Crossley* v. *Beverley*, 3 C. & P. 515) these alterations cannot be ignored.

Although there are cases to be found in which the provisional specification has been quoted as an aid in determining the real invention claimed in the complete,[3] yet the rule appears to be that the complete must be construed separately, and then the provisional looked to in cases of alleged disconformity only to determine if the invention be included therein.[4]

[1] *Moser* v. *Marsden*, *post*, p. 374.

[2] *Dudgeon* v. *Thomson*, *post*, p. 263, and *Moser* v. *Marsden*, *post*, p. 374, and notes to these cases.

[3] See *Clark* v. *Adie*, *post*, p. 259.

[4] *Bailey* v. *Roberton*, as explained in *Hocking* v. *Hocking*, *post*, p. 274.

CHAPTER VII.

PROCEDURE TO OBTAIN A PATENT.

First Steps—Jurisdiction of the Comptroller-General and Law Officers, p. 101—Mode of Application, p. 104—With Provisional Specification, p. 105—Steps after Provisional Protection, p. 109—The Complete Specification, p. 110—Reference to Examiners, p. 115—The Act of 1902, p. 116—Acceptance, p. 117—Inventions relating to War, p. 117.

First Steps.

WHEN an inventor has thought of a new invention, he should, as far as possible, try it experimentally, as well as work it out theoretically, before applying for a patent, so that there be less risk of a wrong description in the first instance. In most cases, however, experiments cannot be carried c ıt, nor models made, without disclosing the nature of the invention to persons employed. Although such disclosure under a promise of secrecy is not publication, yet there is always the risk of unauthorized or accidental disclosure to others by the persons confidentially employed (*ante*, p 25).

When the inventor cannot proceed further without risk of publication, he should at once apply for a patent, and file a provisional specification.

If the invention be of such a nature that there is great probability of rival inventors being also engaged on the problem and working on the same lines, as, for instance, where it consists of the application of newly discovered natural phenomena, *e.g.* X rays, or electric vibrations of the ether, it is of the greatest importance to secure provisional protection at the earliest date possible.

The inventor should take all steps possible to ascertain if his invention is a novel one before applying for a patent, or immediately provisional protection has been obtained. He may search at the Patent Office library, where all British specifications are available

classed and abridged to facilitate reference. Specifications of United States patents, and abridgments of those of other countries, can also be seen there.[1] He should also refer to scientific and technical journals relating to the art in question. These investigations may be conducted by an agent. Such research is greatly facilitated by consulting professional advisers, as consulting engineers (electrical or mechanical), consulting chemists, and patent agents, many of whom, in addition to the knowledge of their profession, are experts in various arts and manufactures. Consulting experts keep themselves abreast of the knowledge of the day.

The Jurisdiction of the Comptroller-General and Law Officers.

Letters patent for inventions were formerly issued under the Great Seal.[2] The Lord Chancellor, as custodian of the Great Seal, was the ultimate judge as to the issue of a patent, being the sole judge of the common law branch of the Court of Chancery.[3] By the Patent Law Amendment Act of 1852, the Commissioners of Patents were empowered to make and use a seal for sealing the warrant as directed by the law officer[4] and required by the applicant for letters patent. In pursuance of the warrant the patent was prepared and ultimately sealed with the Great Seal.[5] The powers of the Lord Chancellor were by the Act of 1852 expressly reserved as before the passing of that Act.[6]

But now, under the Act of 1883 (sect. 12, *post*, p. 489), patents are sealed with the seal of the Patent Office, which has the same effect as the Great Seal. If the law officers decide that a patent be sealed there is no room for any appeal, the direction to seal (sect. 12) being mandatory. If the ultimate decision be against the applicant, the Act is silent as regards any appeal. In the absence of any provisions for that purpose, it appears that the decision is final.[7]

The duties of the Comptroller and Law Officers in relation to the grant of patents are administrative, and in part judicial. The administration of the statutes as regards the granting of patents

[1] For details, see par. 24 of Circular of Information, *post*, p. 598.
[2] 2 Bl. Com. c. 21, sect. 2.
[3] 4 Inst. 79, 80, 84; 1 Shep. Abr. 464.
[4] 15 & 16 Vict. c. 83, sects. 2, 15.
[5] *Ibid.* sect. 18.
[6] *Ibid.* sect. 15.
[7] Compare *Horseley & Knighton's Patent*, L. R. 4 Ch. Ap. 784.

and the amendment of specifications is entrusted to the Comptroller, with an appeal under certain conditions to one of the Law Officers of the Crown, that is, the Attorney- or Solicitor-General for England.

From the law officers there appears to be no appeal, nor any means of reviewing their decisions.[1]

As a general rule (the statutory exceptions to which are discussed in the following pages) neither the Comptroller nor the Law Officers *have any jurisdiction to decide questions involving the validity*[2] of patents; they cannot enter into the question generally whether the applicant's invention is novel or subject matter for a patent.[3]

But under the Act of 1902, the Comptroller investigates the question of novelty so far as the invention claimed is published within fifty years in earlier British specifications. In the event of the applicant not amending his claims so as to exclude the alleged anticipation, a reference to the earlier specification may be required, subject to appeal to the law officer (2 Edw. 7, cap. 34, sect. 1, *post*, p. 523). This procedure takes place at a later stage, and is discussed *post*, p. 116.

An invention[4] will be subject-matter if it be a "manufacture" within the meaning of the Statute of Monopolies (*ante*, p. 6), and not one of so simple a nature that a patent for it would be hurtful to trade or generally inconvenient (*ante*, p. 20). It is within the jurisdiction of the Comptroller to take the question of the invention being a manufacture into consideration and reject the application;[5] but in the case of an invention that is an improvement this is not done (except in cases of opposition to sealing); for the determination whether the *addition* to the stock of public knowledge be a manufacture or not involves the question of novelty, and an examination into what has been done before.[6] Except in the case just mentioned (and in certain cases of opposition, *post*, p. 118), neither the Comptroller nor Law Officers can inquire into subject-matter.

Cases frequently occur in which an applicant claims more than he is entitled to, sometimes by claiming that which is merely an

[1] *Van Gelder's Patent*, 6 R. P. C. 22; *The Queen* v. *Comptroller-General* (*Ex parte Tomlinson*), 16 R. P. C. 233.

[2] *Haythornwaite's App.*, 7 R. P. C. 70; *Todd's Patent*, 9 R. P. C. 487; *Thornborough & Wilks' Patent*, 13 R. P. C. 116 (45).

[3] *Jones' Patent*, Gr. L. O. C. 34; *Todd's App.*, *post*, p. 132.

[4] For definition, see sect. 46 of Act of 1883, *post*, p. 502.

[5] *Cooper's App.*, 19 R. P. C. 53; *Johnson's App.*, 19 R. P. C. 56.

[6] *Todd's Patent*, 9 R. P. C. 487.

improvement in terms more general than the extent of the invention warranted. It is not the applicant's interest to obtain an invalid patent by claiming too much. Hence there is a tendency in the interests of the applicant to insist on such amendments as would narrow the claim to what could be supported.[1] It must not be forgotten that, under the Act of 1883, there is no jurisdiction to require amendments on any such ground (the applicant being supposed to look after his own interests), but where required the jurisdiction frequently exists in consequence of the case coming within the provisions of sect. 11 (*post*, p. 135). Another ground on which such amendments are sometimes required is that it is not in the interests of the public that they should be led to suppose the description is for a claim entirely general, whereas it is only limited to the improvement.[2] But considerations of "public interest" are for the Legislature when considering the provisions of a Bill, but cannot extend the jurisdiction given by the Act as regards opposition or amendments. It is not in the "public interest" that any invalid patent should be granted; hence, if "public interest" could give jurisdiction, the Comptroller's powers might be enlarged to a great extent.

But under the Act of 1902 the powers of the Comptroller and Law Officers have been considerably enlarged with respect to examination of previous British specifications, and power is given to require insertion of references to previous specifications in the interests of the public; but power is not given to refuse the grant on the ground of anticipations disclosed by the search. That power exists only in cases of opposition (*post*, p. 119). This examination takes place after the complete specification has been filed, and is discussed *post*, p, 116, 151.

The Comptroller may refuse to grant a patent for any invention the use of which would in his opinion be contrary to law or morality,[3] *e.g.* burglars' tools, instruments of gaming, such as loaded dice, weighing appliances adjustable falsely, spring-guns or man-traps for use in grounds, or elsewhere than in a dwelling-house.

[1] *Hoskins' Patent*, Gr. 292.
[2] *Newman's Patent* (No. 2), 5 R. P. C. 281.
[3] Sect. 86 of the Act of 1883, *post*, p. 504.

Modes of Application.

When an application is made the proper forms must be used, for the application is made either by the true and first inventor (or importer of invention from abroad), with or without others, or by a patentee of an invention patented abroad who applies under the International and Colonial arrangements.[1] The latter are considered *post*, p. 176.

If the applicant be incapable, on account of infancy, lunacy, or other inability, of making the necessary declarations, or of doing anything required to be done by the Act or Rules, then the guardian, committee, or person appointed for that purpose by the Court or judge may make the necessary declarations, or do what is necessary on behalf of such incapable person.[2]

In case of the death of an inventor, his legal representative may apply for a patent within six months of the death.[3] The proper evidence of the applicant being the representative of the deceased inventor must be supplied.[4]

The following directions as to the mode of applying for a patent are given in the Circular of Information issued by the Patent Office:—

1. *Mode of applying for Patents in the United Kingdom.*

(i.) All applications and communications must be made in English. No models are required.

(ii.) Any person, whether a British subject or not, may make an application for a Patent, either by direct communication with the office or through the intervention of an agent. See paragraph 16 (*d*), *post*, p. 595.

Two or more persons may make a joint application for a patent, and a patent may be granted to them jointly. In every case the true and first inventor (or inventors) must be a party (or parties) to the application.

Applicants must apply in their real names, and not under assumed or trade names.

A company (body corporate) may apply for a patent as joint applicant with the inventor, but not as sole applicant, unless the application is made in respect of an invention communicated

[1] The persons entitled to obtain patents are mentioned *ante*, pp. 48, 49.
[2] Sect. 99 of the Act of 1883, *post*, p. 506.
[3] Sect. 34 of the Act of 1883, *post*, p. 498.
[4] Rule 6, *post*, p. 527.

from abroad, or under the International and Colonial arrangement (*see* paragraph 22, *post*, p. 596). The application should be made under the seal of the company.

A firm as such cannot apply for a patent, but a joint application may be made by all the individual members of the firm.

The application[1] on Form A (or A1 or A2) must be signed by the applicant or applicants; but all other communications may be made by or through agents duly authorized to the satisfaction of the Comptroller.

(iii.) Applications must be left at the Patent Office by hand, or sent by post,[2] addressed to the Comptroller, Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

(iv.) Every application must be accompanied by a statement of an address to which all communications from the Patent Office may be sent.

(v.) Application for a patent may be made in one of two ways: The applicant may apply in the first instance for provisional protection, and at any later period within nine[3] months may leave his complete specification, or the applicant may leave his complete specification at the time of making his application, in which case a provisional specification is unnecessary.

The form of application contains a declaration to the effect that the applicant is the true and first inventor, or if there be joint applicants, that one or more of them are the inventors.[4] The declaration may be a statutory one,[5] and must be made as prescribed by rules 25, 26, *post*, p. 531. For further details, see rules —as to address of applicant, No. 7, *post*, p. 527; as to size of documents, No. 17, *post*, p. 529; and as to agency, No. 81, *post*, p. 541.

The Provisional Specification.

As a general rule the better and safer method is to take out a provisional specification. Applications accompanied by complete specifications only are usually made in cases where the invention has already been perfected, as where it is imported from abroad

[1] Form A is for British true and first inventors only. Form A1 is for all inventions communicated from abroad, whether from corporations or individuals. Form A2 is for foreign patentees under sect. 103, whether corporations or individuals. *La Société An. du Generateur du Temple*, 13 R. P. C. 54.

[2] As to applications by post, see sect. 97 of Act of 1883, *post*, p. 505, and Rule 8, *post*, p. 527.

[3] This period will be six months after sect. 1 of the Act of 1902 comes into operation, *post*, p. 523.

[4] Sect. 5 (2) of the Act of 1883, *post*, 486.

[5] Sect. 2 of the Act of 1885, *post*, p. 515.

and foreign specifications have already been drafted. The following are the directions given in the Circular of Information :—

1. *Mode of applying for Patents in the United Kingdom (continued). Application accompanied by Provisional Specification.*

(vi.) An application for provisional protection consists of—

(*a*) The application, Form A or (for inventions communicated from abroad) A1, stamped £1, duly filled in, and signed by the applicant or applicants, and

(*b*) The provisional specification, Form B, in duplicate. Form B does not require to be stamped.

(vii.) The provisional specification must fairly describe the nature of the invention and be accompanied by drawings if required. See rules 18–24, *post*, p. 529. The applicant should in this document give a clear description of the invention, but he need not enter into minute details as to the manner in which the invention is to be carried out.

(viii.) Unless a complete specification, stamped £3, is left within nine months from the date of application (or with extension fee, ten months),[1] the application is deemed to be abandoned. The complete specification should be prepared as stated at (x.) *post*, p. 111. It should refer to the number and date of the provisional specification, and should contain a full and detailed description of the invention, independent of the description given in the provisional specification.

The provisional specification should be drawn as wide as the nature of the invention will fairly allow. The invention claimed in the complete may be narrower than that indicated in the provisional, but it may not be wider. The reason for this rule and the functions to be discharged by the provisional are discussed *ante*, pp. 54–56.

The title of the invention must be properly given. The nature and object of the title have been discussed *ante*, pp. 52, 53. Its chief use at the present day is for purposes of classification ; and it is to be examined by the examiners[2] or Comptroller.

Par. I. (xi.) of the Circular of Information is as follows :—

Titles of Inventions.

(xi.) The title of the invention should appear on the application form and at the commencement of the specification, and the wording of the title in the two documents should be identical.

[1] After sect. 1 of the Act of 1902 comes into operation, these periods will be six and seven months respectively.

[2] Sect. 2 (1) of Act of 1888, *post*, pp. 487, 519.

In the title of the invention the following forms are not allowable :—

(*a*) Fancy names or titles, *e.g.* The Simplex Wheel; The Hercules Braces.

(*b*) The use of the inventor's name, or of the word "Patent."

(*c*) The abbreviation "*etc.*" This should be replaced by words expressing the intended meaning of the term, or by the phrase "and the like."

Illustrations of sufficiency of titles are given in connection with amendment of specifications, *post*, pp. 114, 115, 167, 170.

Drawings must be supplied if required by the Comptroller.[1] Full information on this subject will be found in the Patent Rules numbered 18–24, *post*, pp. 529–531.

The application must be for one invention only ;[2] if the application be made for more than one invention it will be refused. But if by mistake, inadvertence, or otherwise, two or more inventions be included, the Comptroller will allow it (before the acceptance of the complete specification) to be amended so as to include one only, and the applicant may proceed with other applications for the other inventions, all bearing date of the original application, if the applicant so notify his desire to the Comptroller.[3] The question of what is meant or included in the term "invention" is discussed *ante*, pp. 6–17, 34–46. In addition to the information there given, the application of the rule is illustrated in the following cases.

Illustrations.

In *Jones's Patent* (Griff. 265), *Herschell*, S.-G., on appeal from the Comptroller, who refused an application on the ground that more than one invention was included, pointed out that "the *general object* of the invention is the test by which the question of one invention must be decided." Alternative and analogous devices to accomplish the same object would be one invention. "I should always allow alternative devices for producing a particular object as one invention. But if you say, 'I have invented six different kinds of railway sleepers, each of which has its own merits and purposes and object distinct,' then those are six inventions." . . . "You may get in one patent the combination, and you may get all subordinate parts of that combination, so far as you claim to use them for the one main purpose, but if you are going to claim a subordinate part, or one of the elements of the combination, for a purpose

[1] Sect. 5 (3) of Act of 1883, *post*, p. 486. [2] Sect. 33 of Act of 1883, *post*, p. 498.
[3] Sect. 2 (1) of Act of 1888, *post*, p. 487; rule 9, *post*, p. 527.

independent of the combination, then you have got an extra invention, and it is not all one."

A patent was applied for, the title of which was, "Improvements in apparatus for rapidly heating flowing water, *a part of which improvements is applicable to other purposes.*" The provisional specification described an arrangement whereby the water and gas cocks in a geyser could only be turned on in the proper order. The arrangement was also described as being applicable for an oxyhydrogen light apparatus. *Held*, that the portion of the title in italics must be struck out and the corresponding parts of the provisional, the proper course being to make a separate application for the "new and improved arrangement of cocks," *viz.* that part applicable also to limelight apparatus. Per *Davey*, S.-G., in *Hearson's Patent*, Griff. 266.

An invention was described as one for "improvements in the art of producing and utilizing induced electrical currents for telegraphy and other purposes." The Comptroller held that the title should not state that the appliance could be used for purposes other than telegraphic, and that the general use of the invention should be claimed by a separate patent. On appeal to the Law Officer, it was *held* by *Herschell*, S.-G., that the applicant should choose to refer in the title either to an improved telegraphic apparatus, consisting in the employment of the appliance therein, or to "Improvements in the art of producing and utilizing induced electrical currents," not being confined to telegraphs. The applicant chose the latter. *Robinson's Patent*, Griff. 267.

The importance of confining the applicant to one invention will be seen from considering the rights of rival inventors. This aspect of the question is discussed in connection with disconformity in the Appendix, *post*. pp. 607, 608.

The application will be referred to an examiner to report whether the nature of the invention [1] has been fairly described, and the application, drawings, etc., have been prepared in the prescribed manner, and if the title be sufficient.[2] (See *Brown's Patent*, *post*, p. 114.)

If the report be unfavourable, the application may be refused, or allowed subject to amendments.[3] This provision gives power to the Comptroller to require an amendment of the title.[4] When allowed, the application may be dated as of the date when these

[1] As to "nature of invention," see *ante*, pp. 54-56, 59.
[2] Sect. 6 of Act of 1883, *post*, p. 486.
[3] Amendments are discussed, *post*, p. 160.
[4] *Dart's Patent*, Griff. 308.

requirements are complied with.[1] It is therefore important that a proper application be made in the first instance, for during the period of delay publication of the invention may take place by documents coming from abroad or otherwise, or a rival foreign inventor may in that interval obtain protection abroad and subsequently apply under International arrangements.

When the provisional specification has been accepted, notice will be sent to the applicant and the acceptance advertised in the Official Journal.[2]

Steps after Provisional Protection.

Provisional protection is conferred by the acceptance of the application. The inventor may then proceed to perfect his invention without fear of publication, but he cannot sue for infringement until his patent is finally sealed.[3] The right to proceed against others only applies to acts of infringement committed after the publication of the complete specification. After provisional protection has been secured the inventor should make the best use of the time intervening before the complete specification has to be filed in making tests of a critical nature and experiments. These experiments should be made not only with a view to perfecting the invention and ascertaining the best mode of performing it, but also to find out if his explanation or theory of his discovery be the correct one, and also what conditions or parts are, and what are not, essential to success. He should also ascertain as far as possible during this period how near prior inventors have gone to produce his results, so that he may narrow his claims accordingly. Valuable patents have frequently been lost for want of such an investigation.

Illustrations.

Medlock's patent for aniline dye was invalid because the provisional described a process, part of which consisted in making a certain solution. Heating was necessary for success, but the complete reproduced the provisional, and apparently no experiments were made to test the process critically. See *Simpson* v. *Holliday*, *post*, p. 244.

A specification described the maintaining automatically of the pressure of electricity, or electric potential, in the mains of a system of

[1] Sect. 7 (1) of Act of 1883, as amended by sect. 2 of Act of 1888, *post*, p. 487.
[2] Rule 11, *post*, p. 528.
[3] Sects. 13, 14, 15 of the Act of 1883, *post*, p. 490.

lighting by means of storage cells. In fact the cells discharged at a lower potential difference than that produced in charging, so would not work. The patent was invalid because useless. A critical experiment would have revealed the defect. *Lane Fox* v. *Kensington*, *post*, p. 345.

The successful manufacture of a new dye depended for success on the presence of iron at a certain stage of the process. This was furnished by the use of an iron vessel. The patentee never discovered this essential until the trial of an action for infringement. The patent was invalid for insufficiency of directions. *Badische Anilin, &c.* v. *La Soc. Chimique des Usines du Rhone*, *post*, p. 405.

The Complete Specification.

The time allowed for leaving the complete specification is nine months from the date of application.[1] But where the circumstances justify it, an extension of one month may be allowed by the Comptroller,[2] on a proper application being made to him, stating and proving the circumstances and grounds of the application.[3] If the complete specification be not lodged within the nine or ten months (as the case may be) the application will be deemed to be abandoned.[4] The provisional specification of an invention that has been abandoned is not now open to public inspection.[5]

In the case of applications made after the date on which sect. 1 of the Act of 1902 (*post*, p. 523) comes into operation, the complete specification must be lodged within six months (unless extended by the Comptroller to seven), or the application will be deemed abandoned.

The complete specification is required to discharge two functions. It must particularly describe and ascertain the nature of the invention, and in what manner it is to be performed. This branch of the subject, including the relation of the complete to the provisional has already been discussed (*ante*, Chap. V. p. 52). There remains, however, to notice the requirements as to the form of the specification. An application may be made in the first instance accompanied by a complete specification. This course is pursued where the invention is of such a nature that no experiments are necessary, or

[1] Sect. 8 (1) of the Act of 1883, *post*, p. 487.
[2] Sect. 3 of the Act of 1885, *post*, p. 515.
[3] Rule 10, *post*, p. 528.
[4] Sect. 8 (2) of the Act of 1883, *post*, p. 487.
[5] Sect. 4 of the Act of 1885, *post*, p. 516.

where such can be made without risk of publication of the invention. This usually happens when the experiments have been made abroad. The following are the directions given in the Patent Office Circular of Information. Where a provisional has been lodged par. ix. (*a*) does not apply :—

Application accompanied by Complete Specification.

(ix.) An application accompanied by complete specification consists of—
(*a*) The Application Form A or (for inventions communicated from abroad) A1, or (for applications under the International and Colonial arrangements) A2, stamped £1, duly filled in, and signed by the applicant or applicants; and
(*b.*) The complete specification, Form C, stamped £3, and unstamped duplicate.

(x.) The complete specification must be begun upon Form C (bearing a £3 stamp), and continued, if necessary, on foolscap paper. The duplicate must be an exact copy, but unstamped. The specification should contain a full and detailed description of the invention, of such a nature that the invention could be carried into practical effect by a competent workman from the directions of the document alone.[1] The specification must be accompanied by drawings if required. See Rules 18–24, *post*, p. 529.

It is necessary to make a distinct and proper statement of claims in the complete specification. The claims should form in brief a clear statement of that which constitutes the invention, and inventors should be careful that their claims include neither more nor less than they desire to protect by their patent.[2] In the claims the actual novelty or noveltics in the structure, or composition, or processes, or apparatus, should be stated.[3]

Claims are not intended to be made for the efficiency or advantages of the invention.[4]

Unless the complete specification is accepted within twelve months (or with enlargement of time, thirteen, fourteen, or fifteen months) from the date of application, the application becomes void, and cannot be further proceeded with.

The complete specification must begin with the title. The nature and function of the title are explained *ante*, pp. 53–106. The title should be the same as in the application and provisional, and should not include fancy names, the inventor's name, or the terms

[1] This condition is fully discussed and illustrated *ante*, pp. 72–78.
[2] See, as to claims, *ante*, pp. 57, 63.
[3] *Ante*, pp. 89, 90.
[4] Claims are only for the *invention*; as to its extent, see *ante*, pp. 11, 61.

"patent" or "etc." (*ante*, p. 107). The sufficiency of titles is further illustrated under Amendment of Specifications, *post*, pp. 167, 170.

After the title there is frequently inserted a short statement of the objects of the invention, or of the difficulties that it is intended to overcome. The uses and advantages need not be mentioned at all (*ante*, pp. 11, 61), nor the objects to be achieved, but they are frequently inserted in the body of the specification to show the extent of the claim. A statement of the difficulties to be overcome involves a statement of prior knowledge. There is no objection to an honest statement of the state of knowledge of the day, which, of course, the applicant makes at his own peril; if incomplete it may lead to a wide construction being put on his claims, and so tend to invalidate the patent, or if misleading, will invalidate the patent.[1] He may if he choose state generally defects in earlier processes or inventions, but if such a statement be not made in a specification when originally drawn, an applicant will not be allowed by amendments to subsequently introduce a statement that an invention (for which a prior patent existed) had certain disadvantages.[2] In making such a statement previous specifications may be referred to, but not in such a manner as to give any particular construction to them; they should speak for themselves.[3]

Theories should be omitted, and enunciation of principles upon which the invention is based, unless such mention of principles be an easy way of pointing out the extent of the invention claimed (*ante*, p. 60). The form of the specification will depend on the subject-matter of the invention; for instance, in the case of dyes, the chemical principles are frequently shortly stated, and then a series of practical examples given;[4] in the case of improvements, references are frequently made to prior specifications;[5] mechanical inventions are necessarily described at length, first in general terms and then in detail, with references to drawings.[6]

Directions as to details in the preparation of the specification and drawings are given in the Patent Rules numbered 17–24, *post*, pp. 529, 530, 531.

[1] *Atherton's Patent*, 6 R. P. C. 547. See also *Owen's Patent*, *ante*, pp. 75, 76.
[2] *Hampton & Facer's Patent*, Gr. L. O. C. 14; *Guest & Barrow's Patent*, 5 R. P. C. 316.
[3] *Atherton's Patent*, 6 R. P. C. 548.
[4] See for illustration, *post*, pp. 363, 405.
[5] Instances will be found *post*, pp. 233, 370, 453, 463.
[6] For illustrations see *post*, pp. 277, 283, 300, 358, 407, 414, 437, 463.

The claims are drawn entirely at the risk of the applicant. So long as sect. 5 (5), *post*, (p. 486), is in form complied with, there is no jurisdiction on the part of the Comptroller-General or the Law Offices to require amendment, or to refuse the application because the claim is not for the invention as described.[1] But the usual practice is to call the attention of the parties, in cases of opposition, to the points to which objection might exist and leave it to them to suggest and consent to amendments.[2] The applicant should never presume on this practice, as it is his duty, in the first instance, to make the proper claims; for amendments are not allowed as of course, and should only be made somewhat sparingly.[3] Where claims have been disallowed it has been in cases of opposition on some statutory ground, the specification being accepted subject to a claim being struck out as a condition (see Opposition, *post*, p. 135). Although there can be only one invention described in the specification, there may be several claims,[4] either principal for different parts, or some subsidiary.[5]

Two difficulties always confront the applicant in framing his claims. No matter how thorough his search may be as regards prior specifications British and foreign, and other specifications within the realm, yet there may exist things made and used which may subsequently be brought to light and either invalidate the patent for want of novelty, or have the effect of narrowing the claim by the operation of the rule of benevolent construction (*ante*, pp. 93–96).

For illustrations, see *Lyon* v. *Goddard*, *post*, p. 358.

[3] *Morris* v. *Young*, *post*, p. 371.

To meet this difficulty he should frame his claims as distinct and narrow as possible, confining them to the essential elements of his invention.[6]

On the other hand, he cannot foresee the course that will be taken by members of the public in order to get the benefit of the

[1] *Smith's Patent*, Gr. 268; *Everitt's Patent*, Gr. L. O. C. 27; *Newman's Patent*, 5 R. P. C. 277.

[2] *Newman's Patent*, 5 R. P. C. 277; *Webster's Patent*, 6 R. P. C. 164.

[3] *Garnet's Application*, 16 R. P. C. 156; *Thomas and Prevost's Application*, 16 R. P. C. 70.

[4] Sect. 33 of Act of 1883, *post*, p. 498.

[5] See *ante*, pp. 58, 63.

[6] See remarks of Lord *Herschell* in *The Lancashire Explosives Co.* v. *Roburite*, &c., *post*, p. 397.

knowledge he gives in his specification without infringing his claim; nor can he foresee that his invention may be used for purposes other than those for which it was originally devised. To avoid the unfair use of his invention his claims should be as wide as possible.

Two methods are pursued in order to achieve these apparently inconsistent objects; each has its advantages and defects. One is to make a series of claims, some wider (as, for instance, for a process consisting of the application of certain principles in a certain manner, or by means of a certain machine or combination) and others narrower (as, for instance, for the mode of application; the machine, or combination itself); the latter being in most cases subsidiary claims (*ante*, p. 58). The advantage of this method is, that if it be subsequently discovered that, owing to the state of public knowledge, or to prior grants, the wider claims would invalidate the patent, they may be struck out by disclaimer, and the patent remain valid as regards the remaining claims. The defect of this method is that it tends to defeat the object for which it is pursued. For the juxtaposition of such claims, unless they be clearly expressed, affects the construction of them, and the tendency is, in cases of doubt, to construe the larger ones wider, and the minor ones narrower, than if each stood alone (*ante*, p. 92).

The second method of attempting to achieve these inconsistent objects is to draft the claims in a neutral manner, so that when subsequent events make it advisable to avoid alleged anticipation, reliance may be placed on the doctrine of Benevolent Construction (*ante*, pp. 93–96); or, if no anticipation be alleged, the doctrine of Equivalents (*ante*, pp. 96–99) may be invoked to cover the alleged infringement. The objections to this method are, that it tends to obscure the patentee's rights, so promoting litigation; and that if it appear that the claims have been drawn intentionally in an ambiguous manner, the patent will be invalid (*ante*, p. 59).

When an application is accompanied by a Complete Specification it is referred to an examiner and dealt with in the same way as a Provisional (*ante*, p. 108).

Illustration.

Application was made for a patent for "improvements in casks and tubs."

The complete stated that the invention was applicable to barrels,

casks, "and analogous vessels," in which staves were formed with a croze or groove for receiving the head or bottom. The claims were narrow and clear and related only to the manner in which the heads were fastened in. *Held* by the Law Officer that the title was sufficient, without the addition of the words "and analogous vessels." See further *Brown's Patent*, Gr. L. O. C. 1.

Reference to Examiners.

Where a complete specification is lodged after a provisional both specifications are referred to an examiner, who is to examine and report whether the invention particularly described in the complete is substantially the same as that in the provisional, and whether the complete has been prepared in the prescribed manner. If the report be unfavourable, the comptroller may refuse to accept the complete unless and until it be amended to his satisfaction.[1] But the Comptroller can also at this stage require amendments as he may think necessary without any reference to an examiner.[2] From his decision there is an appeal to the Law Officer.[3] The Law Officer's rules relating to notices, evidence, and costs are set out *post*, p. 571.

Illustration.

The title of the provisional was for "improved means for regulating the action of dynamo electric machines *and motors*." In the complete the last two words were left out. The applicants said that they found that part of the invention was inapplicable for motors, and so drew the complete on narrower lines. *Held*, by *Webster*, A. G., that if the title do not correspond with the application the Comptroller may require amendments under Sec. 7 (1), but that no amendment of the title is required when the patentee drops part of his invention. But he may lodge a complete dropping part of the title, and then request the Comptroller, after examination under Sect. 9, to amend the title in provisional under Sect. 7. "It must, however, be distinctly understood that such an amendment in the title and provisional ought in my opinion to be confined to excision only, and not to amendment or other explanation, and the excision must be such as does not extend the scope of the title." *Dart's Patent*, Gr. 307.

[1] Sect. 2 of Act of 1888, *post*, p. 487. [2] *C.'s Application*, 7 R. P. C. 250.
[3] Sect. 9 of the Act of 1883, *post*, p. 487.

The Act of 1902.

In addition to these inquiries directed by the Act of 1883, the Act of 1902 requires a much more extended and important inquiry. It applies to all applications made after sect. 1 of that Act comes into force on a date to be directed by the Board of Trade (sect. 1 (11), *post*, p. 524).[1] "Forthwith," upon the depositing of the complete specification, the examiner is to "make a further investigation for the purpose of ascertaining whether the invention claimed has been wholly or in part claimed or described in any specification (other than a provisional specification not followed by a complete specification) published before the date of application, and deposited in the Patent Office pursuant to any application for a patent made in the United Kingdom within fifty years next before the date of the application" (sect. 1 (1), *post*, p. 523).

"If on investigation it appears that the invention has been wholly or in part claimed or described in any such specification, the applicant shall be informed thereof, and the applicant may, within such time as may be prescribed, amend his specification, and the amended specification shall be investigated in like manner as the original specification" (sect. 1 (2), *post*, p. 523).

If there be no such anticipation discovered, and if there be no other lawful ground of objection, the specification will be accepted.

But "if the Comptroller is not so satisfied, he shall, after hearing the applicant, and unless the objection be removed by amending the specification to the satisfaction of the Comptroller, determine whether a reference to any, and if so what, prior specifications ought to be made in the specification by way of notice to the public." An appeal will lie to the Law Officer (sect. 1 (6) (7), *post*, p. 524).

Until the practice has been settled and decisions reported, the principles, methods of application, and effects of this enactment cannot be fully understood. However, a guide is afforded in the decisions reported in connection with the second ground of opposition discussed in Chap. VIII. *post*, p. 126 (see also *post*, p. 151). In consulting such decisions two important differences must be kept

[1] There is no time yet fixed for the section to come into operation; some time must necessarily be required to enable the Comptroller-General to increase the staff and make other arrangements.

in mind. The first is that this enactment applies not only to alleged anticipations *claimed* in previous specifications, but also to those that are merely *described*. The second difference is that at this stage of the proceedings the Comptroller has no jurisdiction to refuse the application, the statute giving power only to require amendments by way of references to earlier specifications to be inserted, whereas in the case of opposition he has power to refuse the application on its being shown that it has been anticipated by an earlier invention that is *claimed* in the earlier specification (*post*, p. 127); the power to require a reference arises from such power of rejection and affords an alternative course (see *post*, pp. 133, 135).

Acceptance.

When a complete specification is finally accepted, it is advertised in the Official Journal, and is open to the public for inspection (except as mentioned below) at the Patent Office on payment of the prescribed fee.[1]

The effect of acceptance is to give the applicant the like privileges and rights as if his patent had been sealed on the date of the complete specification, but he cannot institute any proceeding for infringement until the patent be actually sealed.[2]

Inventions relating to War.

The inventor (his executors, administrators, or assigns) of any improvement in instruments or munitions of war, may assign all benefit in any patent obtained or to be obtained for the same to the Secretary of State for the War Department. Covenants in such assignment for keeping the invention secret may be enforced against the inventor or assignor by the Secretary of State. The Secretary of State may require that the specification, and all other like documents, shall be kept secret. The difference between such specifications and others lies in the fact that they are not "published" so as to become anticipations of later inventors. But the later inventors, not being the *first* inventors, cannot obtain valid patents for the inventions comprised in the earlier secret specifications (*ante*, p. 49). See sect. 44 of the Act of 1883, *post*, p. 500.

[1] Sect. 10 of the Act of 1883, *post*, p. 488. Rules 11, 12, *post*, p. 528.
[2] Sect. 15 of the Act of 1883, *post*, p. 490.

CHAPTER VIII.

OPPOSITION TO GRANTS AND APPEALS.

Grounds of Opposition—*Evidence generally*, p. 120.—*First Ground of* Opposition and *Locus Standi*, p. 122—Joint Grants, p. 125—Importers —Second Ground of Opposition, p. 126—Sufficiency of Opponent's Interest, p. 128—*Nature of* Cases, p. 131—*Power to require* Amendments, p. 135—Insertion of Disclaimers, p. 138—Considerations affecting Disclaimers, p. 142—Exceptional Cases, p. 146—Evidence, p. 148 —The Act of 1902, p. 151—Third Ground of Opposition, p. 152— Appeal to the Law Officers, p. 155—Evidence, p. 156—Sealing of the Patent, p. 158—Contemporaneous Applications, p. 158.

Grounds of Opposition.

IN applications made after sect. 1 of the Act of 1902 (*post*, p. 523) comes into operation, the Comptroller inquires into the question whether the applicant's claims have been anticipated by previous published complete specifications. But if the applicant choose at his own risk to persevere with his claims notwithstanding the existence of such alleged anticipations, the Comptroller and Law Officers have power to require references to be inserted (sect. 1, subsect. 9, *post*, p. 524) to give the public notice of the earlier specifications. However, there is no power to reject the application on the ground of anticipation.

Although as a general rule, and subject to the above powers, the Comptroller and Law Officers are precluded from inquiring into the question whether the applicant's patent would be valid if granted as applied for, yet in a limited number of cases they can refuse to seal a patent when opposed on grounds which involve this question of validity. The several conditions or state of facts which constitute a ground for refusal to seal are such that, if proved in a petition for revocation, would involve the invalidity of the patent.

It has already been pointed out that one of the broad principles

underlying the question of validity is that a patent cannot be valid if it have the effect of preventing members of the public from doing anything that they, at the date of the patent, were in the habit of doing (*ante*, pp. 19, 20). If a patent be granted which has such an effect, any one whose business or trade is thereby interfered with has two courses open to him: either (1) to present a petition for revocation, or (2) to defend an action for infringement, and so contest the validity of the patent.

The Legislature, however, has given an opportunity to such persons to oppose the grant of a patent in certain specified cases.[1] These provisions are contained in sect. 11 of the Act of 1883 as amended by sects. 3 and 4 of the Act of 1888, and are in the following terms:—

> Sect. 11 (1). Any person may at any time within two months from the date of the advertisement of the acceptance of a complete specification give notice at the Patent Office of opposition to the grant of the patent
>
> on the ground of the applicant having obtained the invention from him, or from a person of whom he is the legal representative, or
>
> on the ground that the invention has been patented in this country on an application of prior date, or
>
> on the ground [2] that the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification,
>
> but on no other ground.

These grounds of opposition will presently be considered separately in detail.

Where notice of opposition is given under the above section the Comptroller gives notice to the applicant. Then, after hearing the applicant and opponent, and after the expiration of two months, the Comptroller decides on the case, subject to an appeal to the Law Officer.[3]

[1] The object of and reasons for the section have not yet been so decisively stated, but the trend of the latest decisions is in the direction here indicated.

[2] This ground is inserted by sect. 4 of the Act of 1888.

[3] Sect. 11 (2) of the Act of 1883, *post*, p. 489.

The proper notice must be served on Form D (*post*, p. 553), giving the grounds of opposition and signed by the opponent.[1] Where a notice was wrongfully signed by the opponent's agent in his own name, and the agent died before the hearing, the Comptroller at an adjourned hearing allowed the notice to be amended by the insertion of the opponent's name, under rule 76.[2] And where the parties were not prejudiced thereby, signing the notice at the hearing was allowed.[3] Particulars of the numbers and dates of prior specifications must be given when relied on as a ground of opposition.[4] The opponent's address must be given in the notice, which must be accompanied by an unstamped copy, to be forwarded to the applicant.[5]

Evidence generally.

Evidence in hearings before the Comptroller is given by means of statutory declarations. As there is no cross-examination of declarants the utmost good faith and lucidity must be shown; otherwise when an appeal is taken before the Law Officer costs will not be allowed.[6] If the declarations be unnecessarily numerous or prolix and an appeal be taken, the costs of such declarations will be thrown on the parties responsible for them.[7]

Except in the case where the ground of opposition is that the applicant has obtained the invention from the opponent or person of whom he is the legal representative, the declarations need not be left in connection with an opposition, but the opponent may within fourteen days after the expiration of two months from the advertisement of acceptance of the applicant's complete specification leave the statutory declarations at the Patent Office, and shall on so leaving deliver copies thereof to the applicant.[8]

When the ground of opposition is that the applicant has obtained the invention from the opponent, or the person of whom he is the legal representative, the statutory declarations containing evidence in support of the charge must be left at the Patent Office within fourteen days after the expiration of two months from the advertisement of acceptance of applicant's complete specification, or the

[1] Rule 32, *post*, p. 533.
[2] *Lake's Application*, Gr. L. O. C. 35.
[3] *Codd's Patent*, Gr. 305.
[4] Rule 35, *post*, p. 534.
[5] Rule 32, *post*, p. 533.
[6] *Anderton's Patent*, Gr. L. O. C. 25.
[7] *Brand's Patent*, 12 R. P. C. 102.
[8] Rule 35, *post*, p. 534.

opposition will be deemed to be abandoned.[1] In cases of opposition on this ground, the Comptroller may request or allow any person who has made a declaration in the matter to attend before him and make oral explanations.[2]

Fourteen days are allowed to the applicant within which to file his evidence, and another fourteen days to the opponent wherein to reply by declarations strictly confined to matters in reply; on filing each party must supply the other with copies of his declarations.[3]

If the opponent do not leave statutory declarations in support of his opposition, the applicant may, if he so desire, within three months of the advertisement of acceptance of the complete specification, leave statutory declarations in support thereof, and on so leaving shall deliver copies thereof to the opponent.[4] Within fourteen days the opponent may leave at the Patent Office declarations in answer, and the applicant within another fourteen further declarations in reply.[5]

No further evidence shall be left on either side except on the requisition, or by leave, of the Comptroller.[6] In cases where fraud is imputed, an extension of the time will not be allowed to file evidence in support of the charge after the opponent has failed on the issue of identity of the inventions.[7]

The question to be decided involves in most cases the construction of the specifications to ascertain what is the nature and extent of the invention claimed in the several specifications (see Construction of Specifications, *ante*, Ch. VI. p. 84). Hence evidence may be given by the applicant of the state of knowledge at the date of the opponent's patent (which is extremely important),[8] in order to show what his claim really is,[9] and that it is not so wide as to include the subject of the applicant's. But evidence cannot be given *merely* to show that the opponent's patent is invalid, for its invalidity does not affect the issue. It is submitted that evidence may be given to show that the earlier patent would be invalid if construed so widely as to include mechanical equivalents[10] or the applicant's invention, and so by the operation of the rule of Benevolent Construction

[1] Rule 33, *post*, p. 533. [2] Rule 34, *post*, p. 534. [3] Rule 37, *post*, p. 534.
[4] Rule 38, *post*, p. 534. [5] Rule 39, *post*, p. 534.
[6] Rule 40, *post*, p. 535. [7] *Huth's Patent*, Gr. 292.
[8] Per *Davey*, S.G., in *Jones's Patent*, Gr. L. O. C. 34.
[9] Per *Finlay*, S.G., in *Thornborough's Patent*, 13 R. P. C. 116 (50).
[10] *Smith's Application*, 13 R. P. C. 201, per *Webster*, A.G.

(*ante*, pp. 93-96) to confine the claims to the precise thing described.

In the absence of such evidence, or of mutual admissions as to the state of knowledge, the Comptroller must decide on the specifications alone.[1]

The question as to what parties are entitled to be heard in opposition to the grant depends on the grounds of opposition. These grounds will now be considered separately.

First Ground of Opposition—Locus standi.

I. **That the applicant has obtained the invention from the opponent, or from a person of whom he is the legal representative.**

A patent will be invalid if granted to one who is not the "true and first inventor" or importer of the invention in question (see *ante*, pp. 48, 49). But the Comptroller and Law Officers are precluded from refusing to grant on that ground, except in the special case here mentioned. It is not at all clear as to what interest the opponent must have in the invention obtained from him. In *Thwaites's Application*,[2] *Webster*, A.G., did not go into the question whether the opponent was legally entitled to a patent for the invention; the application was refused on the ground that the applicant was not (as regards the opposed claims) the inventor, but obtained the invention indirectly from the opponent through his servant. On the other hand, *Smith*, L.J., in *The Queen* v. *Comptroller-General* (ex p. *Tomlinson*),[3] held that the words of the section clearly pointed "to a person having an interest in the patent, because he says he has been defrauded of his patent, and that the patent had been taken from him or filched from him, and therefore of course he has an interest in the patent. . . . It is quite clear that 'any person' in this section would be any person who has had his invention taken from him; that means a person who has an interest." As the Attorney-General in *Thwaites's Application* did not express any opinion to the effect that the opponent was *not* the inventor, and, as the later decision rested also on another ground, the question as to the opponent's interest is not finally decided. If he be not the inventor, or, although the inventor, have given his invention to the

[1] *Southwell and Head's Application*, 16 R. P. C. 362.
[2] 9 R. P. C. 515.
[3] 16 R. P. C. 242 (45).

public, it is difficult to see what interest he has in it beyond that of a user of the invention, and why he should have a right to oppose which is not enjoyed by other users of the invention. The words "or from a person of whom he is the legal representative" have no meaning as regards a mere communication, but refer to the provisions of sect. 34 as to the grant of a patent to the personal representative of a deceased inventor; the term "legal representative" means the representative of a deceased person, and not an assignee,[1] or one holding a power of attorney.[2]

The stricter rule as to persons entitled to be heard in opposition under this head has been considerably enlarged by the decision in *Hetherington's Application*, 7 R. P. C. 419.

The applicant's alleged invention was for "improvements in apparatus for controlling the grinding of carding-engine flats." The opponents made an application thirteen days later in respect of an invention of "improvements in carding engines for carding cotton and other fibrous materials," and opposed on the ground that *Hetherington*, the applicant, had obtained his invention from them. In his specification *Hetherington* described, as part of a previous invention of his own, a certain construction of machinery which, in fact, he knew of by inspection of the opponents' machines. This alleged previous invention of *Hetherington's* was not in his prior patent, and his statement was therefore untrue. But the statement was made in order to illustrate his present improvements, and the portion so taken from opponents' and described formed no part of his claim.

The applicant contended that, as his portion was not claimed, the opponents had no *locus standi*.

The Comptroller refused to seal unless the specification were amended in accordance with the facts.

On appeal, *Clarke*, S.G., reviewed the facts, and he, in dealing with the contention as to *locus standi*, said: "It was contended that the words in Sect. 11 of the Act of 1883, 'having obtained the invention from him,' must be read as applying solely to the invention claimed in the specification to which the objection is made. Even if this construction were sound, I should not hold myself bound to permit the sealing of a patent which bore upon its face a statement untrue in fact and injurious to the interests of the person to whom a prior patent had been granted. But the function of the specification is to describe and ascertain the nature of the alleged invention, and the words in this case purport to be part of that

[1] *Spiel's Patent*, 5 R. P. C. 281. [2] See *Edmund's Patent*, Gr. 281.

description. I am of opinion that the opponents were entitled to be heard in opposition to the grant, and I affirm the decision of the Comptroller, and order the appellant to pay five guineas costs."

As the decision of the Law Officer on the question of the right of parties to be heard is final,[1] this case must be taken to be of authority. It illustrated the necessity for enlarging the jurisdiction of the Comptroller and Law Officers as to the examination and rejection of specifications.

Evidence.

The evidence required in these cases is not a mere balance of probability. If there be a reasonable doubt the applicant will have the benefit of that doubt, so that the real issue can be decided in subsequent proceedings and in a court better adapted to that purpose. In *Stuart's Application*, 9 R. P. C. 452, *Clarke*, S.G., laid down the general rule:—

"I think that the Law Officer is only entitled to stop the issue of a patent, having examined all the evidence given on one side or the other, if he is so clearly of opinion that the opponent has made out his case that he would, if a jury were to find in favour of the applicant, refuse to accept it, and overrule the decision on the ground that it was perverse and contrary to the obvious weight and effect of the evidence. That is the proposition I keep before my mind."

Cases on this ground of opposition turn on questions of evidence and facts. The questions involved are those of the identity of the inventions, and the taking of the opponent's invention by the applicant. The question of identity of inventions has been discussed *ante*, pp. 30–34. Where the inventions are independent, the only remedy is under the second or third grounds of opposition. Where there is a doubt as to the inventions being identical, or the one an improvement on the other, the patent is usually allowed with a disclaiming reference to the opponent's specification. This can be done, for where the circumstances justify the refusal of a patent, the sealing may be allowed on condition of amendments being made.[2] Cases of this class usually arise when a workman leaves one

[1] *The Queen* v. *Comptroller-General*, 16 R. P. C. 233.
[2] *L'Oiseau & Pierrard*, Gr. L. O. C. 39; *Marsden's Patent*, *post*, p. 135.

employer and goes to another, carrying with him the ideas of the former employer.

Illustrations.

Hoskins had been employed to make a sample of an invention of N.'s, and subsequently applied for a patent for an improved form of it. N. opposed the sealing on the grounds (1) that the invention had been taken from him, and (2) had been patented by him on an application of prior date. The Comptroller decided that the invention was not obtained from the opponent. On appeal the Law Officer, *Herschell*, S.G., said, "*Hoskins* got that cot, and he finds that there is a cot which has certain advantages. All the elements which are to be found and which are described as the essential elements of N.'s invention are to be found in what *Hoskins* has produced. Of course the parts differ, and the mode of carrying out the idea differs, but there is not a single idea to be found in the one that is not to be found in the other modified. . . . As far as he has made it better he is entitled to a patent for the improvement." The grant was allowed subject to the insertion of a clause describing the invention as an improvement on the opponent's. *Hoskins's Patent*, Gr. 291.

David and *Woodley* were applicants. *Jones* the opponent. *Jones* had invented improvements in sewing machines, he (or he and *David* conjointly) employed *Woodley* to make a model of *Jones's* invention. While so employed *Woodley* made suggestions that were adopted and included in *Jones's* patent. *David* and *Woodley* now applied for a patent for an invention consisting of the suggestions made by *Woodley*. *Held* that, under the circumstances, *Woodley's* suggestions became part of *Jones's* invention (see *ante*, p. 51), and the grant to *David* and *Woodley* was refused. *David & Woodley's Patent*, Gr. L. O. C. 26.

Joint Grants.

It is under this ground of opposition that cases frequently occur in which the parties are acting honestly, and both are given an interest in the patent or patents granted.

Illustrations.

Where the idea which was the basis of an applicant's invention was shown to have been communicated to him by the opponent, the patent was sealed to both as a joint invention. *Eadie's Patent*, Gr. 279.

In a case where the evidence was conflicting, the Comptroller decided to seal in order to afford an opportunity of cross-examination

before the Law Officer. It was a joint application of *E.* (inventor) and *C.* (capitalist). The parties admitted the inventions were identical. *Webster*, A.G., decided to allow the sealing on the condition that *E.* and the opponent each assigned a half-share to the other. As *O.* was a necessary party, and could not be found, the opponent's only was sealed on the condition that a half-share was assigned to *E.*, and each to pay half the costs of maintaining the patent. *Evans's & Otway's Patent*, Gr. 279.

Garthwaite applied for a patent. Five weeks afterwards *K.* applied for a patent for the same invention. *G.* obtained part of his invention from *K.* *K.'s* was alleged to have an improvement not in *G.'s*. Separate patents granted upon each assigning half-share to the other. *Garthwaite's Patent*, Gr. 284.

In a case where the opponent relied on this ground, and the evidence was very conflicting, after cross-examination before the Law Officer it was found that a part only of the applicant's invention was taken from the opponent, and it was ordered that the applicant should take out his patent and give half of all his rights thereunder to the opponent, who should undertake not to petition for revocation. O. this agreement being filed the grant was to be made, and each party to pay their own costs. If the applicant refused, he was to pay all costs and have no grant; if the opponent refused, the grant was to be made and opponent to pay all costs. *Luke's Patent*, Gr. 294.

Importers.

As the importer of an invention into the realm is in law an inventor (*ante*, pp. 1, 48, 49), it is immaterial whether the person abroad from whom he obtained the invention got it from the opponent by fraud or not,[1] or if fraud be alleged against the applicant himself who is an importer, there is no power on the part of the Comptroller or Law Officer to inquire into what took place abroad between the parties.[2]

The Second Ground of Opposition.

II. **That the invention has been patented in this country on an application of prior date.**

It has already been pointed out that a patent will be invalid if it claim any invention that has already been published (*ante*, p. 19) or

[1] *Edmunds's Patent*, Gr. 281; followed by *Spiel's Patent*, 5 R. P. C. 281; *Bairstow's Patent*, 5 R. P. C. 288; *Lake's Patent*, 5 R. P. C. 415.

[2] *Higgins's Patent*, 9 R. P. C. 74.

the subject of a prior grant (*ante*, p. 51) within the Realm. But it is not every patent that would be invalid on these grounds that can be opposed. In order to enable the grant of such a patent to be successfully opposed two conditions are necessary.

First Condition: An earlier Claim.

The first of these conditions is that the applicant's specification must claim something that is already the subject of a claim [1] and not merely described in a British patent (*i.e. patented* in this country), including the case in which the application of prior date has reached the stage of the acceptance of the complete specification.[2] (As to a "prior grant," see *ante*, p. 51).

> One may here note the exceptional case in which it would appear that a patent which would be otherwise valid may be successfully opposed. This occurs where the earlier specification is not merely insufficient in practical directions, but the claim is for an alleged invention that was incomplete and a failure. Such a specification would not render the subsequent patent invalid, and the applicant would be in law entitled to a patent for the whole invention (*ante*, pp. 27, 28). But as the Comptroller has no jurisdiction to inquire into the validity of the earlier patent, it appears that he must regard it as valid, and consequently confine the applicant to his improvement only as shown. See also *post*, pp. 148, 152.

Illustrations.

In *Von Buch's* application a claim was made for an invention described but not claimed in the opponent's earlier specification, viz. *Von Welsbach's* patent. The Comptroller directed that words should be inserted to the effect that the applicant's invention was for supporting "caps of hoods such as those for which Letters Patent were granted to *Von Welsbach*, No. 15,286 of 1885." *Held*, that the patent must be sealed, the earlier invention not having been *claimed*.[3] Gr. L. O. C. 42.

Nahnsen's Pat., 17 R. P. C. 203.

The applicant's patent was for improvements in nitro-glycerine safety blasting explosives. The claim was for "the manufacture of a

[1] *Von Buch's Application*, Gr. L. O. C. 42; *Bailey's Patent*, Gr. 270; *Bartlett's Application*, 9 R. P. C. 511; *Gozney's Application*, 5 R. P. C. 598.

[2] *L'Oiseau & Pierrard*, Gr. L. O. C. 37. See the Act of 1883, sect. 15, *post*, p. 490.

[3] There being no ground of opposition, *query* was there power of amendment? This point was not argued.

safety explosive from nitro-glycerine and a powder admixture containing 38 parts cellulose and 32 parts Chili saltpetre." The specification contained a statement that the applicant found that certain additions were useless, and that "only the proportions of the ingredients can improve the effec of the explosives without lowering their safety in the presence of fire-damp and coal-dust. . . . My new explosive is, as regards its composition, very similar to the *coal carbonite* 2, but is shows very great differences as regards its properties"

The opponents relied on *Newton's* Patent (No. 442 of 1869) of *Nobel's* invention. It claimed explosives made out of a certain range of proportions of ingredients. The claim was of a wide nature, and included apparently the applicant's invention. But the earlier specification did not disclose the very narrow invention of the applicant, nor how his powder could be made, nor that it would have the property of being "safe" as regards fire-damp. Nor did it disclose how "carbonite," which the opponents manufactured, could be made.

The opponents contended that, inasmuch as (1) the applicant's powder *came within their claim*, and (2) *the grant* would actually interfere with their manufacturing business, the patent should be refused.

Held, by the Deputy Comptroller, and on appeal by the Law Officer, that the invention was not "patented on an application of prior date," and that therefore the second ground did not avail to stop the patent.

Webster, A.G. (at p. 208), "The opponents have not satisfied me, nor, as far as I know, is there any authority, that the Comptroller or the Law Officer advising the Crown has got the right of stopping patents upon the ground that it has been called to their attention that the invention may be ultimately invalidated on the ground that it is not new; but the ground on which I am entitled to stop, and on which the Comptroller is entitled to stop, a patent, is that the invention sought to be protected has been patented on a previous application, that matter being brought to his attention by one of the class of persons who is entitled to appear, as laid down years and years ago by Lord *Herschell*, and subsequently reaffirmed by the decision of the Court of Appeal *in Tomlinson's* case a few months ago." [1]

Second Condition: Of Opponent's Interest.

The second condition is that the opponent must have some interest in the earlier invention. This condition is not expressed in terms in the Act, but has been implied, because (1) the object of the

[1] See *ante*, p. 122.

enactment is to protect persons interested even as manufacturers,[1] and (2) the two other grounds of opposition are confined to persons interested.[2]

Illustrations before 1899.

Insufficiency of Interest.

Where opposition was entered in the name of the agent of the grantee of the earlier patent, it was *held*, that the opponent could not be heard; and leave to amend by inserting the name of the grantee was refused. *Heath & Frost's Pat.*, Gr. 290 (followed in *Hookham's Pat.*, Gr. L. O. C. 32).

Where the opponent manufactured under one of the earlier patents, both of which had run out, he was held not to be entitled to oppose (*Murray's Pat.*, 5 R. P. C. 285). So too the intention to work the invention claimed in the earlier patents has been held to be insufficient. *Bairstow's Pat.*, 5 R. P. C. 289.

Sufficiency of Interest.

The opponent had manufactured for eighteen years under a patent granted in 1872, but which had lapsed before the date of application. The patent of 1872 was put forward as the ground of opposition to an application in 1884. *Held*, that the opponent was entitled to be heard. *Glossop's Pat.*, Gr. 285.

An opponent who relied on an earlier patent of his own that had expired was held entitled to oppose in *Lancaster's Pat.*, Gr. 294.

When an opponent is entitled to be heard on the ground that he is or has been interested in one of the earlier patents, he can rely on the others, although he has no interest in them that would justify him in opposing on them alone. *Stewart's Application*, 13 R. P. C. 628 (in which the earlier decisions were approved).

Under the foregoing decisions it was possible for the patentee of an earlier patent to oppose a subsequent grant after his patent had expired and when he had no financial or legal interest in the earlier invention, and no interests at all that would be prejudicially affected by the proposed grant. Such a person did not oppose in fact, because he had nothing to lose. On the other hand, a manufacturer who produced articles made in accordance with the earlier expired patent (but never had an interest in the patent itself) had no *locus standi* to

[1] *Glossop's Patent*, Gr. 285; *Heath & Frost's Patent*, Gr. 290; *Hookham's Patent*, Gr. L. O. C. 32.

[2] *The Queen* v. *C. G. of Patents* (Ex parte *Tomlinson*), 16 R. P. C. 242.

oppose, although all his trade might be interfered with by the subsequent grant; his only remedy was to present a Petition for Revocation, or invalidate the earlier patent by his defence in an action for infringement. It was shown by *Tomlinson's* case (16 R. P. C. 240) that no right of an uninterested member of the public to oppose existed. After that decision the question of *Tomlinson's* interest was discussed in *Meyer's Application* (16 R. P. C. 526).

In 1898 *Meyer* applied for a patent for improvements in looms. *Tomlinson*, the opponent, had been asked to manufacture and alter looms in accordance with an earlier *Meyer's* Patent of 1897. He proceeded so to do, but stopped work on finding that a licence was necessary under the Patent of 1897. He then searched and discovered *Austin's* patent of 1879. *T.* alleged that this patent of 1879 anticipated *Meyer's* of 1897, and would anticipate the proposed patent. *Webster*, A.G., held that *T.* had a right to oppose: "I intend to lay down no general rule which will in any way differ from the grounds of my decision in *Stewart's* case, or from those laid down by the Court of Appeal, namely, that a member of the public, as such, has not the right to walk into the Patent Office and say a patent ought not to be granted because the invention sought to be protected is the same as that covered by some previous earlier Letters Patent. . . . I do not intend to lay down any general rule; every case must be determined on its merits." After reviewing the facts, the learned Law Officer continued: "He" (*Tomlinson*) "has an interest in showing that they are identical, and I think that in such a case he is entitled to come before the Comptroller and say, 'This is a case in which I had commenced to work under an existing patent, but I find myself stopped; I am in danger of having that prohibition extended for a further period.' In my opinion, therefore, he has an interest with reference to that question, and I think that he is a person who is entitled to be heard, and as far as I lay down any rule, I lay down the rule that if there has been a *bonâ fide* attempt to carry out the invention sought to be protected by the person who desires to be heard in opposition, and proof that he may be damnified or affected by the application which he desires to oppose, he is entitled to be heard."

Although the learned Law Officer was careful not to express dissent from previous decisions (to which he had expressly assented in *Stewart's* case), it appears that this case completely alters the practice. It is submitted that the real object of the whole section allowing of opposition to grants of patents is to enable persons to stop a patent in

certain cases in which their trade, business, or interests would be interfered with, instead of leaving such to the tedious and expensive remedy of presenting a petition for Revocation. In the case of the second ground of opposition, the interest interfered with may be a manufacturing interest in making the invention that is the subject of the earlier claim, but a manufacturing interest in making the article proposed to be patented, if it do not include the subject of an earlier claim, is in itself not sufficient.[1] It appears that the decision in *Meyer's* case is really based on this ground, for the existence of *Meyer's* patent of 1897 did not affect the opponent's claim for consideration. The narrower propositions of the earlier cases appear to have arisen from not recognizing the intimate connection between the question of validity in Patent Law and the grounds of opposition under sect. 11.[2] Where the first and second grounds of opposition are both relied on and the opponent fail to establish the first, then the second is treated independently, and he cannot rely on it unless he show an interest in the alleged prior specifications.[3]

Nature of Cases.

This ground of opposition that the applicant's invention has already been *patented* (*i.e.* the subject of a claim) in the country.[4]

Cases will logically fall into three classes, as the applicant's invention as claimed may be—

(1) An improvement only on the earlier invention, but of such a nature that it cannot be used without it;

(2) Identical with the earlier one relied on by the opponent; or

(3) An improvement on, but including, the earlier invention.

In the first class, where it is found on the evidence and true construction of both specifications that there is no claim in the applicant's to anything the subject of a claim in the earlier patent, then there is no power to refuse to seal or to impose conditions, as the question of infringement is not within the jurisdiction of the Comptroller or

[1] *Vahnsen's App.*, *ante*, p. 127, in which *Glossop's* case (*ante*, p. 129) was approved.

[2] It is not clear whether the effects of the decisions in *Macevoy's Patent*, 5 R. P. C. 285, and *Lancaster's Patent*, G. 294 (both based on the supposition that the reason for opposition depended on interest as *patentee* instead of interest as *manufacturer*), can be obviated without legislation. The new procedure under the Act of 1902 will diminish the importance of this question.

[3] *J. & J.'s Appl.*, 19 R. P. C. 555.

[4] The case of foreign inventions antedated under sect. 103 is considered separately, *post*, p. 176.

Law Officers.[1] Nor is the opponent injured, as his manufacture would not be subject to the new monopoly, and he can sue for infringement when the applicant's invention is put into practice.[2]

Exceptional cases of doubt are dealt with *post*, p. 146.

In the second class the cases are comparatively rare; for unless the inventions be obviously identical it is almost impossible to decide against there being such an improvement or alteration as would constitute a new invention: differences, apparently small, may involve great results. For illustrations see "Identity of Invention," *ante*, pp. 30–34. Where such identical inventions come before the Comptroller, they may be frequently traced to a common source, and so come under the first ground of opposition, *viz.* that the applicant's invention is alleged to be taken from the opponent. It is also useless for the applicant (from the point of view of his own interests) to proceed with a patent that would obviously be invalid.

It is only when the inventions are clearly identical that the sealing of a patent will be refused;[3] in other cases it is allowed subject to such amendments as will exclude the earlier inventions from the applicant's claim. In *Todd's App.* (9 R. P. C. 487) *Webster*, A.G., stated the rule thus:

> "*In cases where the Law Officer is forced to the conclusion that there* is no substantial difference between the invention or combination described in the applicant's specification and an earlier specification, it has not only been the practice, but it is the duty of the Law Officer to refuse the patent. . . . I have always, since I held my present position, acted on the principle that it is only in the clearest possible case that a patent ought to be stopped."

The learned Law Officer then discussed the alleged differences between the two inventions, and continued, "I have not to deal with subject-matter properly so called; that is to say, supposing *Todd's* invention to have been the first invention brought before me, it would not matter whether it showed no subject-matter, if it was a claim to that which had not been done before; I quite agree I have not to consider whether it is subject-matter or not. But when there is a previous anticipatory patent, it is necessary then to consider indirectly the differences, and without saying whether

[1] *Jones's Patent*, Gr. L. O. C. 34.

[2] *Newman's Patent*, Gr. L. O. C. 40.

[3] *Stubbs' Patent*, Gr. 298. For examples, see *Aire & Calder's App.*, 5 R. P. C. 345; *Daniels' App.*, 5 R. P. C. 413; *Wallis & Ratcliffs*, 5 R. P. C. 347; *Todd's App.*, 9 R. P. C. 487.

those differences form subject-matter or not, to decide whether the differences are sufficient to differentiate that which has gone before from that which is now claimed." [1]

The learned Law Officer did not think the Comptroller's general disclaimer sufficient, and refused the patent.

As soon as it is proved that the applicant's claim appropriates the earlier invention put forward by the opponent, then the jurisdiction to refuse the sealing arises,[2] and in deciding whether the patent may be sealed subject to amendments (the power to allow which is inherent in the power to refuse [3]) the Comptroller may take the question of subject-matter incidentally into consideration. "It is only in cases in which the Law Officer is satisfied that there is no difference which can be regarded as amounting to invention that the later patent can be stopped." [4] This difference may be apparently very small provided only that it involves invention (*ante*, pp. 34–37, 39, 45). Investigating such issues comes under the rule in *Todd's App.* (*supra*), and requires not only hearing evidence as to the state of knowledge, but deciding questions of mechanical equivalents.[5]

Illustrations.

The case of *Webb* v. *Kynochs* (*post*, p. 425) is a good illustration of considerable improvements not amounting to a new manufacture.

Boult's Application, 10 R. P. C. 275.

The application (No. 9139 of 1891) was for improvements in or relating to cellulose manufacture. The cellulose was treated as in paper-making, and at a certain stage of the process it was scraped off the drying cylinder. It might subsequently be used for wadding, antiseptic bandages, &c. The opponent's earlier specification claimed an invention of a similar nature in which the material was scraped off the drying cylinder when dry as a flimsy tissue.

The *Chief Examiner* (as deputy Comptroller) decided to seal the patent subject to reference and disclaimer.

On appeal to the Law Officer the sealing was refused on the ground of identity of invention.

Rigby, S.G.: "The only question before me is whether or not Letters

[1] If the differences distinguish the inventions, then the opponent is only entitled to have such a disclaimer as will exclude the inventions claimed in the earlier specifications.

[2] See *post*, p. 135.

[3] *L'Oiseau & Pinard*, Gr. L. O. C. 39; *Marsden's Patent*, *post*, p. 135.

[4] *Smith's App.*, 13 R. P. C. 201 (20), per *Webster*, A.G.

[5] *Ibid.*, p. 201 (22).

Patent have been granted for this invention in respect of which Letters Patent are now applied for." After dealing with alleged differences in the material, the learned Law Officer continued: "Again, I do not think I have anything to do with the uses to which the substances may be applied. You cannot patent uses. You may advertise your material by pointing out a great number of uses, and trying to point out all the uses, if you think it worth while, to which it can be applied; but if once the material is given to the world, any one may use it for any purposes possible."[1]

The learned Law Officer then discussed the specifications, and pointed out that the real issue was whether there was invention in taking off the pulp at the precise moment indicated, and held that the ascertaining of that proper time by practice was not a matter of invention at all.

See also *Wylie & Morton's Application*, *post*, p. 138.

Bridge's Application, 18 R. P. C. 257.

The applicant's claims included what was old. It was admitted that amendment was necessary, and the insertion of a single combinative claim instead of the separate claims. The Comptroller decided that the specification should be amended to indicate more clearly the restricted scope of the invention; that there should be inserted a disclaimer setting forth what had been done before, and that a combination claim should be substituted for the two original claims. On appeal, the Law Officer refused to seal the patent on the ground that the difference between the applicant's and the opponent's earlier inventions, *i.e.* the new combination, was a mere putting together of old things without invention.[2]

Mills's Application, 18 R. P. C. 322.

The applicant claimed the manufacture of a certain ammoniated derivative from pure saccharin. The opponent showed this was anticipated by the earlier specification relied on. The applicant desired to be allowed to amend by claiming the manufacture from crude saccharin or saccharin of commerce. This latter invention was nowhere foreshadowed in the provisional. The sealing of the patent was refused both by the Comptroller and Law Officer.

See also *Harrild & Parkins's Application*, 17 R. P. C. 617.

Where the latter inventions may include improvements,[3] or are not obviously identical with the earlier ones, they fall into the third

[1] The Law Officer was here dealing with the question whether a use is a *manufacture*, not with the prohibition in the patent itself against others *using* the manufacture; see *ante*, pp. 1, 11 and Form of Patent, *post*, p. 569.

[2] See cases referred to, *ante*, pp. 44–46.

[3] E.g. *Sielaff's App.*, 5 R. P. C. 487.

class, for it has always been a general rule to allow the applicant the benefit of the doubt, as the opposite course might constitute an irreparable injustice.[1]

Power to require Amendments.

The third class of cases are by far the most numerous and important. As soon as it is found that the claims in the applicant's specification appropriate something claimed in the earlier specification put forward by the opponent, the power to refuse to seal arises under section 11 (1). But in practice, in the majority of cases such grants are not refused; for there is a power of allowing the offending claims to be amended or disclaimers to be inserted so as to protect the opponent, by confining the claims to the improvements only.[2] This power of amendment "arises inherently from the statutory right to refuse the grant;"[3] it is exercised, even in cases where the amended claim is of doubtful validity, because a refusal to seal being final, if based on erroneous views, might work great injustice, but the grant would leave the question open for future decision.[4]

But where it is not proved that the applicant's claims appropriate the earlier invention, the question of public interest gives no ground for amending a specification. Neither has the Comptroller or Law Officer authority to amend by striking out a claim because it invites people to infringe an earlier patent, or because it includes more than the applicant is entitled to claim; but when once it has been proved that one of the applicant's claims appropriates what has been already patented, it is thereupon open to the Comptroller to strike out the claim objected to as disclosing no subject-matter, as a condition of allowing the patent.[5]

The rule has been more recently enunciated by *Finlay*, S.G., in *Marsden's Patent*, 13 R. P. C. 88, in the following terms:—

> "There are certain specified grounds of opposition mentioned in the Act, upon which the sealing of a patent may be refused if they are established. If the patent of the applicant is framed in such a

[1] *Russell's Patent*, 2 De G. & J. 132; *Spence's Patent*, 3 De G. & J. 523; *Tolson's Patent*, 6 De G. M. & G. 422; *Welch's Patent*, Gr. 301; *Cumming's Patent*, Gr. 277.

[2] *Veroman's Patent*, Gr. L. O. C. 40; *Adams's App.*, 13 R. P. C. 549.

[3] *L'Oiseau & Pierrard*, Gr. L. O. C. 40.

[4] *Stubbs's Patent*, Gr. 298.

[5] *Webster's Patent*, 6 R. P. C. 164.

way as to make it improper that it should be sealed as it stands, then the Comptroller or the Law Officer is perfectly entitled to say, 'I shall direct the sealing of this patent only on condition that the specification is amended by reference to a previous patent; so as to render it proper that it should be sealed;' but I do not see what jurisdiction I should have to direct a reference to a previous patent, except under such circumstances as those I have indicated."

(*The three preceding paragraphs have no application to amendments under the Act of 1902, ante*, p. 116.)

Amendments may be allowed even in the title, description, and claims, to confine the claims to the differences between the inventions, so long as there is "in the provisional a reasonably direct indication of the actual improvement which it is ultimately desired to protect."[1]

But in cases where the claims in the applicant's specification differ slightly from a number of claims in the earlier specification, a number of amendments will not be allowed to save a small difference between the applicant's and the earlier invention; there is no rule that amendments will always be allowed in order to save a patent.[2] If it be doubtful whether the small differences really constitute an invention at all, the patent may be allowed lest an injustice be done to the applicant; but in such a case claims which, by the use of general words, appear to cover earlier inventions will be struck out, and the applicant confined to his claims for the differences.[3] But if the specification be so framed that the claims include the earlier specifications, amendments will not be allowed to confine the claims to the small differences to which the applicant might have confined his claims in the first instance.[4] Nor will amendments be allowed which have the effect of making the claim be for something not in the provisional specification.[5] It is the duty of the patentee to frame his claims properly; if he claim more than he has described in the body of the specification, and thereby include the earlier invention, it is within the discretion of the Comptroller to refuse the patent instead of allowing it with a disclaimer.[6]

[1] *Chandler's Patent*, Gr. 272.
[2] *Thomas & Prevost's App.*, 16 R. P. C. 70.
[3] *Hamilton's App.*, 19 R. P. C. 35.
[4] *Lupton & Place's App.*, 14 R. P. C. 261.
[5] *Lancaster's App.*, 20 R. P. C. 368.
[6] *Garnett's App.*, 16 R. P. C. 156.

Illustrations.

In *Tattersall's Patent* (9 R. P. C. 150) the application (*No.* 5429 of 1890) was for "A new or improved air-compressor or blower." This blower consisted of a V-shaped chamber in the apex of which a vibrating flap was suspended, the oscillation of which drew in the air at one side and expelled it at the other. To discharge the air at an approximately uniform pressure, the air was passed through a surrounding casing or receiver. The claim was for "An air-compressor or blower constructed with a vibrating blade within a vee-shaped chamber communicating with a receiver, substantially as herein shown and described and illustrated in the accompanying drawings."

The opponent relied on a prior patent (No. 10,759 of 1884) for "improvements in apparatus for ventilating purposes." The earlier patent had inlet and outlet valves of an exhaust chamber, with an oscillating shaft and vane. The Chief Examiner (as deputy Comptroller) decided to seal the patent, but with a specific reference to and disclaimer of the opponent's patent, on the ground that the earlier patent was confined to ventilating purposes, whereas the applicant's was not.

The opponent appealed in order to have the sealing refused altogether. The applicant argued on appeal that his receiver to render the pressure of air uniform was a distinguishing improvement.

Webster, A.G.: "I consider this an extremely difficult case, and if I had to support the decision of the Chief Examiner for the reasons given by him I should not agree with him, for I certainly come to the conclusion that if we are to take the apparatus as being identical in the sense that it is identical in all its parts, the apellant's case would be a very strong one for saying that this patent ought not to be sealed. I shall never hesitate to stop a patent in a case in which I think there is no substantial difference; but I must remember the governing principle which has operated upon the minds of law officers for a very long time, namely, that if they can preserve and safeguard the interests of prior patentees in a case in which it is doubtful as to whether or not the second patent does cover exactly the same ground as the first, they ought to do so for the reason that the granting of a second patent, though it may, and undoubtedly does, at times commercially do harm to an earlier patent, yet still it is not anything like so serious an injury as to stop a patent." The learned Law Officer then expressed an opinion that the receiver was of the essence of the combination as the applicant's claim; that, it might be an improvement on and also an infringement of the earlier one. He also held it to be a case for express disclaimer by reference of the

earlier patent.[1] As he did not approve of the grounds on which the Examiner had acted, no costs were given.

Wylie v. *Morton's Application*, 13 R. P. C. 97.

The applicant's specification described an alleged invention for "improvement in dyeing certain colours on cotton yarns and fabrics." The specification described a process in which oxide of chromium and oxide of iron were used in certain proportions, and the materials were to be treated with mixed solutions of bisulphite of chromium and bisulphite of iron. The claim was for "The use of bisulphite of chromium and bisulphite of iron, substantially in the manner and for the purposes hereinbefore described." The earlier specification (*Gatty's*, No. 11,456 of 1884) put forward by the opponent described the dyeing of fast shades from olive and brown by fixing thereon oxides of chromium and iron in various proportions. The materials were treated with mixed solutions of any soluble salt of chromium with any soluble salt of iron; the claim was for "dyeing certain fast and permanent colours on cotton yarns and fabrics by fixing upon the said yarns or fabrics a mixture of oxide of chromium and oxide of iron, substantially in the manner described."

The Comptroller found that the applicants' claim included the earlier invention, but there were certain improvements in the use of bisulphites not in the opponent's. He allowed the patent subject to a specific disclaiming reference.

On appeal, the Law Officer, *Finlay*, S.G., found on the evidence that the applicants had not shown such advantages in their process as to constitute it a patentable improvement on the earlier invention. "It seems to me that all that the applicants have done is to take one out of the many salts of chromium, and one out of the many salts of iron, namely, the bisulphite in each case, and to propose to use that with results which they suggest are better, and which the opponent says are worse, than those obtained by the salts of chromium and of iron which are used by *Gatty*." Sealing refused. Five guineas costs.

Insertion of Disclaimers.

When an amendment or disclaimer is drawn that has the effect of excluding from the applicant's claims the opponent's invention, the opponent's interests are satisfied;[2] for, had the specification been originally drawn as amended, the opponent's case would have failed.

[1] The question whether the differences between the inventions constituted a patentable manufacture (*ante*, p. 39) was, of course, unaffected by this decision.

[2] For illustration, see *Cooper & Ford's Patent*, Gr. 275.

and no power to amend have arisen. Amendments or disclaimers may be drawn in several ways. The most scientific method is to amend the specification directly by altering the language of the specification,[1] or by striking out a claim, or part of a claim. Another plan is to insert a disclaimer by means of a general reference to what has been previously claimed in prior specifications. A third is by a specific reference to prior specifications, quoting their numbers and names of the patentees. The effect of amendment by a general reference will be generally to narrow the construction of the claims.[2]

A specific reference is usually in the following form: "I am aware of Letters Patent No. — of 19—, granted to A. B., for, &c., and I do not claim anything claimed therein, but what I claim is, &c."

The advantages of a specific reference are, first, it is the *easiest* method of disclaiming anything covered by the earlier patent;[3] secondly, it does not prejudice the rights of either party from the point of view of validity or infringement, for if it subsequently appear that the earlier claims were not as wide as the opponent believed them to be, the specific reference to a corresponding extent has a narrower effect, and leaves the applicant a wider field if he find it advisable thereafter to seek for a wider interpretation for his claims.

On the other hand, it is not a satisfactory method of protecting earlier rights.[4] The fact of the reference having been given shows that as it originally stood the specification claimed something included in the earlier patent and was therefore "subject" to it. Hence a specific reference depreciates commercially the applicant's rights,[5] for the probability is that the claims, although narrowed by the reference, are for something that cannot be used without using the original invention put forward by the opponent. Now, if it subsequently appear that the alleged "master patent," to which the specific reference is given, was not so wide as was thought, then an injustice would have been done to the applicant by the depreciation of his invention, and also to the public by giving people reason to think that in the opinion of the officials the users of the later invention would be liable for royalties to the patentee of the earlier. Again, if one master patent alone be put forward and a reference be given

[1] See *ante*, pp. 87, 91, 97, 98.
[2] *Adam's App.*, 13 R. P. C. 549.
[3] *Ibid.*
[4] *Anderson & McKinnell*, Gr. L. O. C. 25.
[5] *Wallace's Patent*, 6 R. P. C. 134.

to it, people will be apt to think that there are none others in a like position. When a general reference is given to the earlier invention, and a disclaimer is inserted by quoting the actual words of the earlier claim without identifying the earlier specification, the public cannot be misled into thinking that the earlier patent is the only master one, and the opponent's interests are protected. To justify a specific reference there should be either evidence,[1] or an admission by the applicant,[2] that the earlier specification governs the later one. In doubtful cases such a course should be taken as will most effectually safeguard the interests of both parties.[3]

Illustrations.

In the case of *Everitt's Patent* (No. 16,433 of 1884), which was treated as a "master patent," references were required in some later patents, *e.g. Lynde's Application*, 5 R. P. C. 664, *Wallace's Patent*, 6 R. P. C. 134. It was then decided in *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 299, that *Everitt's* patent could not bear the wide construction claimed for it. Yet in *Hoffman's Patent*, 7 R. P. C. 93, a reference was again allowed on the ground that the above decision of the Court of Appeal might be reversed by the House of Lords. The result was that in protecting *Everitt's* interests an injustice was done to other patentees. Not only was the judgment of the C.A. not appealed from, but it has been followed in other cases (see *ante*, p. 13).

Hill's Application, 5 R. P. C. 601.

L. Hill applied (No. 12,133 of 1886) for a patent for improvements in wire ropes. *Elliott & Co.* opposed on the ground that the claim included what was claimed in *Batchelor's* specification (No. 5724 of 1884). The Comptroller decided to seal on the claim being amended directly. On appeal to the Law Officer the opponent asked only for a special reference. The appeal was dismissed.

Webster, A. G.: "... In order to be entitled to a disclaiming clause, I must be satisfied that the description in *Hill's* specification in terms includes and purports to claim a part of the invention described in *Batchelor's* specification. I will assume ... that *Batchelor's* patent is the master or governing patent with regard to interlocking. I should not insert a specific reference to *Batchelor's* patent unless I was satisfied of that; because it is not prudent nor desirable to insert special references to particular prior patents unless there is, practically speaking, no question that the earlier patent is what I may call a master patent."

[1] *Stell's Patent*, 8 R. P. C. 237 (8). [2] *Welch's Patent*, 8 R. P. C. 443 (55).
[3] *Lynde's Patent*, 5 R. P. C. 664.

The position on the whole is that, in questions raised in opposition to the grant, no amendment can be required, or general or specific reference, unless the applicant's claim appropriates something that is already the subject of a claim in the earlier patent.[1] If the inventions or specifications be such that it is impossible to differentiate the applicant's specification without a specific reference, then the opponent is entitled to have such inserted, or the sealing of the patent refused. But if the applicant's invention can be differentiated without a specific reference, then the mode of differentiation—by direct amendment, or general disclaimer, or specific reference—is within the discretion of the Comptroller; if the applicant decline to accept the amendment, the sealing must be refused.

The practice has been thus described by *Finlay*, S.G., in *Adam's App.*, 13 R. P. C. 548:—

> "I do not like the insertion of references to prior patents merely by way of calling attention to the existence of those prior patents relating to the same subject-matter to which the patent of the applicant is directed; but in some cases a reference to a prior patent may be desirable for the purpose of explaining what the claim of the applicant is. The applicant's claim may be worded in such a general way as to include not merely the improvement which he has effected, or thinks he has effected, but also details of construction which have formed the subject of a prior patent. It is a ground of opposition to the grant of a patent that the claim relates to matter which has already formed the subject of the grant of a patent, and if a claim is worded in a general way, it might be necessary to refuse the patent altogether, unless the claim were amended in such a way as to show that it is not directed to those matters which have formed the subject of a prior grant.
>
> The amendment of a claim might be done, and it would be the most satisfactory and scientific way of doing it, by altering the language, so as to direct the claim merely to those parts of the apparatus described which the applicant considers as his improvement (*l.* 14).
>
> (*l.* 33) "The same object which might have been achieved by properly limiting the claim in the first instance, or by embodying a proper amendment of the claim may in substance be achieved by a reference to the prior patent. I do that, not for the purpose of making this specification and patent the means of making the earlier patent known, but solely for the purpose of showing clearly that the claim which is in general terms here, is not to be read as

[1] See *Stell's Patent*, 8 R. P. C. 236 (20); *Marsden's Patent* (No. 2), 14 R. P. C. 175. As to exceptional cases, see *post*, p. 146.

involving a claim to anything which was covered by the prior patent."

In *Gozney's App.*, 5 R. P. C. 598, *Clarke*, S.G., expressed the view that amendments should deal only with the claims, not mere descriptions, in the earlier specification :—

What a disclaiming claim is intended to guard against is the claiming in a new patent of something included in the claim of the old patent —not of something mentioned in the old patent, but of something which has not only been described in the old patent, but has been claimed as a part of the previous invention.

[The three preceding paragraphs have no application to amendments required under the Act of 1902 (see *ante*, p. 116) in which the Comptroller can, in certain cases, require references to earlier specifications to be inserted in the interests of the public.]

Considerations affecting disclaimers.

When the right to a disclaimer has arisen, the Comptroller and Law Officers, in the exercise of their discretion as to the form of the amendment, take into consideration the interests of the public,[1] as well as of the applicant.[2]

Illustrations.

The object and effect of the insertion of disclaimers is thus stated by *Webster*, A. G., in *Guest and Barrow's Patent*, 5 R. P. C. 315 : "The insertion of these disclaimers does not affect the rights of the prior patentee at all. They are inserted for the purpose of preventing the subsequent patentee from alleging that his invention is wider than he is entitled to claim, both in his own interests, in order that his specification may not be considered as being too wide, and, in the interests of the public, on the ground that the public are entitled to know what a subsequent patentee may claim, and to have a fair description of the existing state of knowledge. It is not because a particular patentee or a prior inventor has made a broad claim that he is entitled to have limiting words inserted ; unless he can show, upon the fair view of the evidence before the Law Officer, or before the Comptroller, that such words are really necessary to protect him." As to the question of a

[1] *Stell's Patent*, 8 R. P. C. 237 (11).

[2] See *Lorrain's Patent*, 5 R. P. C. 143 ; *Newman's Patent* (No. 2), 5 R. P. C. 280. Under the Act of 1902 (*ante*, p. 116), references are required in the public interest. These considerations will apply to such references.

specific reference to one (the opponent's) earlier specification, the learned Attorney-General said: "It might do the applicants very great harm, because it might be said you referred to *Laming*, and not referred to the others, and therefore it must be assumed that you intended to exclude the others, or did not know of the others; and I have never considered that a prior patentee has any right to be specially named, unless the applicants are willing to name him, and unless it is clear there is no other publication except the one that is mentioned. The name is generally inserted for the purpose of the protection of the patentee, or, as I said before, the protection of the public."

Van Gelder's Patent, 9 R. P. C. 325.

The application was for a patent (No. 20,030 of 1889) for "improvements in or appertaining to machines for separating dust or like particles from air or other gases." The applicant alleged that his invention was an improvement upon one in an expired patent (No. 6873 of 1884). The opponent alleged that it was merely a colourable imitation of his invention (No. 9423 of 1886). The Comptroller found that the most important feature of the opponent's invention as compared with that of the expired patent of 1884 had been adopted by the applicant with certain modifications partly derived from the expired patent of 1884. The applicant described his as an improvement upon the expired patent, entirely neglecting to mention the opponent's patent. The Comptroller required a specific reference to and disclaimer of the opponent's patent.

On appeal, it was held by *Webster*, A.G., that "The Comptroller directed a disclaimer to be inserted which would, practically speaking, have indicated on the face of it that Mr. *Van Gelder's* claims might be construed so as to include something which was in Mr. *Lake's* claims under the patent (No. 9423 of 1886), and under the circumstances of the case,[1] I think the insertion of a disclaimer might unfairly prejudice the patent." He decided that the disclaimer should be struck out, leaving a reference to the opponent's specification as another form of machine of the type of that for which the expired patent had been granted. This was on the ground that the public should have a fuller statement of prior knowledge. As the disclaimer was ordered by the Comptroller and was not insisted upon by the opponent, who had not appealed, no costs were given.

[1] The point was not taken that as soon as it was found the applicant's claim did not include the opponent's, the right to amend did not exist.

Maxim & Silverman's Patent, 11 R. P. C. 314.

In this case the Deputy-Comptroller was of opinion that the applicant's claim, although an improvement, included the invention claimed by the opponent's earlier specification. He allowed sealing subject to a specific reference and disclaimer. But the learned Law Officer, *Russell*, A.G., was not satisfied that the resemblance and identity of result aimed at amounted to identity of invention. He therefore struck out the disclaimer, but allowed the reference to opponent's patent, as sufficient to meet the justice of the case and the public interest.

Levinstein's Patent, 11 R. P. C. 348.

The applicant's invention was for improvements in the method of and apparatus for concentrating sulphuric acid and other liquids. During the proceedings before the Comptroller the applicant consented to cancel five claims and limit the scope of two of the remaining five claims. These claims were thus confined to mere improvements on the opponent's invention, and did not include the invention claimed by the opponent. The Comptroller, "in view of all the circumstances of the case," [1] required a reference to the opponent's specification.

On appeal, *Russell*, A.G., decided that the reference should remain, in justice to the opponent and in the public interest.

The distinction between the circumstances under which a specific reference should be given or a general disclaimer has been drawn by *Webster*, A.G., in *Newton's Application* (17 R. P. C. 123).

In that case the learned Law Officer was not satisfied on the evidence that the inventions were identical. There appeared to be a difference between the ways in which certain difficulties were got over by the applicant and by the earlier inventor. On further evidence and examination it might appear that the inventions were very different inventions. In his judgment (p. 124) *Webster*, A.G., said: "Under these circumstances, as far as I can form an opinion, it seems to me that there is a difference between the way in which the difficulties are proposed to be got over by *Newton* and the way in which the difficulties are proposed to be got over by *Brookes*" (the earlier inventor). "Now, that being so, I do not think there is that degree of identity between the two inventions as to justify a specific reference. I have often laid down the rule as to the cases in which I think specific references

[1] The inclusion originally of opponent's invention gave jurisdiction to the Comptroller to require amendments. The power of the Comptroller to determine the form of amendments could not be affected by the applicant anticipating him by proposing one form of amendment.

are right—viz. where there is substantial identity between the fundamental parts of the two inventions, but a difference which can only be justified upon the ground of improvement and it being right to protect, in that case, both the public and the prior patentee by a specific reference to his invention. In order to make up one's mind whether or not a specific reference or a general disclaimer is required, you must to a certain extent endeavour to grasp what is the invention in each case. . . . When (p. 125, l. 14) it was suggested to Mr. *Gordon* by the Comptroller that the justice of the case would be met by incorporating or inserting as a disclaimer the substantial words of the claim, he objected to it on the ground that it was equivalent to a specific reference. I do not think that is so. I do not consider that a statement of public knowledge in the terms of the claim has by any means the same effect as a specific reference. It seems to me that it then becomes a statement of general knowledge. It allows no inference that the ambit of invention is the same in the one as the other; on the contrary, it leaves the question of invention to be determined from the consideration of that which the earlier patentee and the later patentee have respectively described. Therefore, though I think, as I have said, substantially the decision of the Comptroller was right, I think he was wrong in inserting a specific reference simply to the number and name of the specification, because I am satisfied that there is, at any rate, ground for contending that the inventions, when they come to be understood, are very different inventions." The statement inserted was, "I wish it to be understood that I am aware that it has been proposed to use, &c." (continuing with the words of the earlier claim), "and I declare that what I claim is . . ."

Sachse's Application, 18 R. P. C. 221.

The applicant's specification contained three claims. Two of the claims in the opponent's earlier specification were for the same invention as the first claim of the applicant's. The third claim of the applicant could not be supported without the first. The opponent claimed to have a master patent. The Comptroller ordered the insertion of a general disclaimer, and refused a specific reference. On appeal, the Law Officer inserted a specific reference, on the ground that the earlier patent was of great commercial importance, and the applicant's, when amended, had only a claim for a minimum of invention.

References to opponent's specifications not published at the date of application, are not on the same footing as those to specifications

which have already been made public.[1] The applicant's specification must be construed in the light of public knowledge, including earlier published specifications when proved to have been known.[2] Hence a mere reference to earlier specifications without disclaimer is surplusage, but it is different where the earlier specification referred to was not common knowledge at the date of application.

Some Exceptional Cases.

If the applicant's *claim* does not include the invention put forward by the opponent, no hampering of his trade can take place, and the application will be allowed. But in cases of doubt references have been inserted; when the applicant's claims, as originally drafted, included the opponent's invention, amendments were made, not only in excising the claims which included the opponent's, but in giving specific reference to the earlier patent. The reason for this course was given by *Webster*, A.G., in *Newman's Patent* (No. 1) (5 R. P. C. 277):—

> "The Law Officers have always recognized that where there is an existing patent, and they can see fair ground for supposing that the construction of the later specification would interfere with the rights of the existing patent, the existing patentee is entitled to be protected."

This practice is supported in consideration of the difficulty in construing the claim in many cases depending on an exhaustive examination into the knowledge of the Art,[3] for which the procedure before the Comptroller and Law Officers is not adapted.[4]

Illustration.

A specification was for certain improvements in rock drills. To show the application of the invention, certain drawings were given in the description, but were not included in the claims. These parts formed the subject of a claim in the opponent's earlier patent. The Law Officer allowed (subject to the consent of the opponent) the sealing with a disclaiming clause with a specific reference; or, if he did not consent, then sealing with the omission of the description of the earlier invention. The opponent adopted the latter

[1] *Greenhalgh's App.*, 14 R. P. C. 388.
[2] *King & Co.* v. *Anglo-American Brush Corporation*, *post*, p. 340.
[3] See *ante*, pp. 86, 121.
[4] See cases cited, *post*, pp. 149, 150.

course, and the parties agreed upon the form of the amendment.[1] *Teague's Patent*, Gr. 298.

In *Ross's Patent* (8 R. C. P. 477) the question was raised whether an opponent could succeed on two earlier specifications by showing that by putting two claims together, one from each, the applicant's invention would be anticipated. The Attorney-General alluded to the problem in the following terms:—

"This is a case of some difficulty, and it involves a question of fact, as well as, to a certain extent, a rather difficult question of law. It will be convenient, I think, that I should say a word or two on the question of law. Mr. *Terrell*" (who appeared for the opponent) "does not produce any specification which identically claims that which is the subject of *Ross's* first claim: but he suggests that by putting together two claims in the specifications, Nos. 10,084 (1888) and 2784 (1889), he anticipates claim 1 of *Ross's* specification. Well, I confess I should require a very clear case to stop a patent on such a ground. It by no means follows that the combination of two previous arrangements will not require invention, and although I do not lay down any rule that where you have to combine and piece together the clairas in the two specifications, the combination cannot amount to such a prior claim as would prevent a subsequent patent being sealed, yet having regard to the direction given in sect. 11 (1), I think it would require a very clear case, and I am not myself satisfied that if it had been the only objection to this application, I could have entertained the contention of Mr. *Terrell's* clients.

It is submitted that the true test in such a case is whether the monopoly granted by the applicant's patent would prevent the opponents from manufacturing the inventions claimed in the earlier specifications. If the applicant's alleged invention be merely the combination of the earlier ones, it could not be successfully opposed; but if in addition to claims for the new combination there be also claims for subordinate integers, one of which is identical with one of the earlier inventions, then the condition of successful opposition is fulfilled. The questions whether the alleged new combination is subject-matter, or would be an infringement of the earlier claims to its subordinate integers, are not open to the Comptroller or Law Officer.

[1] In the absence of agreement, there does not appear to be power to require an amendment (*ante*, p. 103).

Evidence.

In the absence of any evidence, the Comptroller and Law Officer must decide the issue on the wording of the specifications alone.[1] The issue always is, under this ground of objection, whether the applicant claims what has already been patented by being included in the claims of the earlier specification. The validity of the earlier specification is not in issue at all. The Comptroller and Law Officer cannot inquire into it, hence cannot receive evidence as to alleged disconformity in the earlier specification; for the purpose it is presumed to be a good patent.[2] In the case of disconformity this rule works no injustice to the applicant, for the publication of an earlier specification, although disconforming, would equally render the applicant's patent invalid for want of novelty.

On the other hand, it is material to inquire into the knowledge of the art at the dates of the earlier specifications, in order to ascertain the true construction of the claim. For instance, it may be a claim to a new process, and the specification may describe one form of arrangement or mechanism to carry out that process; or the application of the principles involved in the process may be old, and the claim necessarily be confined to the precise means described of carrying it out. In the former case the manufacture which is the subject of the patent may be claimed as the process, and therefore include equivalents for the means disclosed;[3] in the latter the means would constitute the patented manufacture, and the claim would include only equivalents or modifications of the same means. Hence the rule obtains that an opponent seeking to include in the earlier claim more than the actual description covers, should produce evidence of the state of the art in support of his wider claim.[4] In *Southwell & Head's App.* (16 R. C. P. 362), *Webster*, A.G., thus expresses this rule:—

> "It has been pointed out that the Comptroller and the Law Officer have nothing before them but the two specifications. It seems to me that, unless the parties before the Comptroller agree on a

[1] *Southwell & Head's App.*, 16 R. P. C. 361.
[2] *Haythornwaite's App.*, 7 R. P. C. 71.
[3] This question of equivalents is open to the Law Officer: *Haythornwaite's App.*, 7 R. P. C. 71; *Smith's App.*, 13 R. P. C. 201.
[4] *Hill's App.*, *ante*, p. 140; *Sielaff's App.*, 5 R. P. C. 487. See also *Stell's Patent*, 8 R. P. C. 237 (8).

state of knowledge which is to be assumed to be the basis of both inventions, if an opponent is coming to say that a claim in an earlier patent is to be construed as being a pioneer or master claim to such an extent that he is entitled to a wide construction for the purpose of stopping future patents, he is bound to bring the state of knowledge before the Comptroller. I do not think that any person who, describing in specific language a method of arriving at a given end, afterwards seeks to say that the language is to include something which is on the face of it different, can ask the Comptroller so to act without clearly establishing that for the purpose of the Comptroller's decision the earlier patent is to be regarded as being a master patent."

In cases in which difficult scientific issues are raised, and the evidence is necessarily of a highly technical nature, the patent is not refused, but such amendments or references are inserted as will best protect the interests of both parties. The Law Officer may, if he think fit, obtain the assistance of an expert (*post*, p. 489); but this course has been rarely if ever adopted. These difficulties are illustrated in the following cases.

Illustrations.

Pitt's Patent, 5 R. P. C. 343.

The application was for the manufacture (*inter alia*) of a certain organic acid and dye stuffs therefrom.

The opponent set up a prior patent (No. 5846 of 1886), alleging that an acid therein described was identical with the applicant's acid, and consequently the dyes were identical too.

The Comptroller had to decide whether the new acid of the applicant could be prepared by the opponent's process. If it could, then the applicant would not be entitled to frame his claim so as to include the new acid as prepared. It was admitted that the new acid, before purification by the opponent's process, was a mixture of sulpho-acids. No mention of this was made in the opponent's specification. Conflicting declarations were filed as to the possibility of obtaining the applicant's acid pure by the opponent's process, or as to the acid being mixed with others and inseparable according to the opponent's process.

The Comptroller found that a chemist would not produce the acid by working according to opponent's specification, and decided to seal the applicant's patent.

On appeal to the Law Officer the decision was upheld.

The Solicitor-General said that he would have spared no trouble if he could arrive at a juster conclusion, that the subject was exceedingly

difficult, that there were ample opportunities for declarations, that he did not feel he could deal better with evidence given on cross-examination than with the declarations, but should require an expert's assistance. "There would be exactly the same controversy before me, and that controversy is one which I do not think, as Law Officer, dealing with the preliminary stage, as it were, of the matter, I ought to take upon myself to decide." He said that he had considered the declaration, and came to the same conclusion as the Comptroller. "But I cannot say that in these circumstances I should be justified, with very scanty scientific knowledge of my own, in reversing the decision of the Comptroller-General, who, in his turn, of course, was advised by those whose duty it is to express an opinion, and to advise him on such subjects." [1]

Lake's Patent, 6 R. P. C. 548.

The application was for a patent for improvements in the manufacture of alphanaphthol disulpho acid, and in the production of colouring matters therefrom. The grant was opposed on the ground of seven earlier patents. The sealing was allowed by the Comptroller with a disclaimer embodying a description of the process described in one of the specifications cited.

The Solicitor-General declined to have a conflict of technical evidence before him by calling one expert chemist on each side. He offered to allow the applicants to cross-examine the opponent's declarants; or would call in an expert to assist him. "Whatever advice that expert gave me upon the matter, it would have to be my judgment, and the responsibility of that judgment is a considerable one in a case of this character, and I do not think that, even if advised by an expert, I should consider it right, in view of a strongly controverted question of scientific anticipation, to decide that in a way which would put a stop to the patent now asked for." In the end the Comptroller's decision was upheld. Twenty guineas costs.

Curtis and André's Application, 9 R. P. C. 495.

The applicants' specification claimed—"(1) The manufacture of smokeless gunpowder consisting of a nitrocellulose base composed of soluble and insoluble nitrated cotton in combination with nitroglycerine in or about the proportions named and with or without modifying agents, substantially as set forth. (2) In the manufacture of nitroglycerine explosives suitable for firearms, the application

[1] The appellant was entitled to a rehearing, and to have witnesses cross-examined. The course here pursued amounts to an admission that in difficult cases the machinery for the administration of the Act is unable to discharge the duties imposed on it by the Legislature.

and use of soluble and insoluble nitrocellulose in or about the proportions named substantially as set forth." The opposition of Messrs. *Lundholm & Sayers*, was based upon their patent (No. 12,338 of 1889), in which the claim was—"The improvements in the manufacture of explosives, consisting in combining nitroglycerine with so-called insoluble nitrocellulose and with or without soluble nitrocellulose, nitro-oxycellulose, or nitro-hydrocellulose, with the aid of heat and pressure combined, substantially as hereinbefore described."

The Comptroller decided to seal the patent.

For the opponents it was argued that as heat and pressure were not excluded from the applicant's process, and as insoluble nitrocellulose had commercially a certain amount of the soluble with it, it was possible for the applicants to claim to cover their product. The applicants contended that their claim was confined to certain proportions, two of soluble to one of guncotton, and that it was a new invention. The applicants' specification contained a distinct statement that their proportions produced "a product differing materially in its physical qualities from the use of one variety of nitrated cotton alone."

The Law Officer *held* that the case was too difficult to justify a refusal of the patent; that the opponents' claim was for a combination of nitroglycerine and insoluble nitrocellulose, the presence of soluble not being in the claim;[1] that the applicants must so amend as to make it clear that their claims were for a combination of soluble and insoluble, each variety as pure as could be obtained.

The Act of 1902.

Under the Act of 1902 it appears that this ground of opposition will cease to be of as much importance as hitherto, although still existing. For under sect. 1 (1) (2) (*ante*, p. 116), at an earlier stage of the procedure the Comptroller will have informed the applicant of any earlier specifications in which the invention claimed by him appears to have been claimed *or described*. The applicant will have an opportunity of amending his specification to avoid the alleged anticipations. As has been pointed out (*ante*, p. 138), this may be effected either by altering the claims to avoid the earlier inventions, or by the insertion of a specific reference to the earlier specifications. In the majority of cases the former method will probably be adopted. But in cases in which the applicant does not,

[1] A similar view was taken with regard to *Nobel's* invention by the House of Lords in *Nobel* v. *Anderson*, *post*, p. 367.

on scientific grounds, accept the view that his invention is identical with the alleged anticipation, wholly or in part, a reference may be framed so as to leave the question an open one for future decision in the High Court.

The cases which will create most difficulty are those in which the applicant has reason to believe that the earlier anticipation was a failure—not by reason merely of insufficient description as to the method of its performance, but because the invention itself was incomplete, through the omission of some essential feature (see *ante*, pp. 27, 36). The Comptroller cannot, it appears, inquire into that issue (*ante*, pp. 102, 127). The solution of this difficulty will depend partly on the true construction of the words "wholly or *in part* claimed" in sect. 1 of the Act of 1902. If "in part" means that one claim out of several of the applicant's has been anticipated by a complete earlier invention, there will only remain the difficulty arising from the inability of the Comptroller to test the question of success or failure of the anticipation; but if "in part claimed" includes the case of an earlier alleged invention only partially carried out, and therefore misleading, an applicant who has turned failure into success will be required to give references to earlier specifications which do not affect the validity of his grant.

Third Ground of Opposition.

The third ground of opposition is—

III. **That the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between leaving of the provisional specification and the leaving of the complete specification.** (51 & 52 Vict. c. 50, s. 4, *post*, pp. 489, 520.)

A patent will be invalid if the complete specification claim something that is not included in, or a fair development of the invention as described in the provisional. Such a patent would fail on the ground of disconformity. The conditions necessary to raise disconformity have been discussed (*ante*, pp. 47, 64–72). But an opponent has no power to rely on that ground except in the case here mentioned, viz. where the different invention that constitutes the disconformity is the subject of an application for a patent by

the opponent, after the date of the applicant's provisional specification and before that of his complete.

The rules relating to the tests for disconformity in questions of validity also apply to proceedings under this section. In *Edwards's Patent* (11 R. P. C. 463), *Reid*, S.G., expressed the rule in the following terms:—

> "It is possible that the language of the Act of 1888 may not be very clear, but I think that under the law prior to the Act of 1888 an inventor might develop his invention in the interval between the provisional and complete specifications, but he might not claim a different, or other invention in the complete specification, and it is admitted that this is a fair development. Sect. 4 of the Act of 1888 gives a new ground of opposition, provided that the complete specification describes an invention other than that described in the provisional specification. I consider that this does not refer to a mere development; and I do not think it was intended that this was to alter or limit the right previously existing."

In one direction the rights previously existing seem to be limited. The words in the subsection quoted above are "describes *or* claims," not merely "describes *and* claims an invention." For, as has been already pointed out (*ante*, p. 64), the introduction of a new invention, *unless claimed*, does not invalidate because it does not extend to monopoly, and therefore cannot interfere with manufacturers or rival inventors. The words "describes or claims an invention" cannot obviously be taken in their widest meaning, or "describes . . . an invention" might refer to auxiliary matter already known; they must mean "describes . . . *as* an invention," and refer to descriptions of new devices which, although not technically claimed, would mislead the public, or render the patent invalid on the ground of ambiguity. (For an illustration of such an ambiguity, see *Osmond* v. *Balmoral Cycle Co.*, *post*, p. 418.) A specification that is misleading invalidates the patent (*ante*, pp. 59, 74). Besides, if a description of a new invention, although not claimed, were allowed in the complete specification (which would not be invalidated thereby) an injustice, or at least embarrassment, would be caused to a rival inventor who devised or discovered the same invention at an earlier date and wished to patent it.

The cases under this head of opposition are no exception to the general rule (*ante*, p. 135), that in cases of doubt the sealing will not

be refused. It frequently happens that an opponent who fails in his opposition on the third ground is, when he has filed his own complete specification, opposed by the former applicant on the ground that the alleged new invention has been patented on an application of prior date. Care is therefore required both as to allowing mere descriptions of alleged disconforming inventions to be inserted,[1] or references to an earlier patent, the specification of which was not published at the date of the application for the patent in question; in the latter case the proper form of reference, if one be required, has not been settled.[2] The object is to secure the later patent from being prejudiced, should the earlier prove to be invalid for disconformity.

Where an applicant discovers, by working out a fair development after filing his provisional specification, that the ambit of his invention, if claimed as described in the provisional, would be too wide, he may cut down his description and claims in the complete specification.[3] But it should not be forgotten that where the alleged fair development constitutes in reality the whole patentable invention, by reason of the invention as described in the provisional being anticipated, disconformity will ensue (see *ante*, pp. 65, 71).

Illustration.

In the case of a patent for "improvements in treating hides and skins," the provisional specification described a method of treating them with formalin to produce the same result as by tanning, and also stated that in some cases the hides and skins may be superficially tanned or treated in the ordinary way with bark before the application of formalin, and "may be finished by any suitable known process or combination of processes." At that time the inventor believed the skins would be leather before the finishing process. They subsequently discovered that their process was not so complete as this. The introduction of formalin into tanning operations was new. *Held*, that a claim for "the treating of hides and skins with formalin in combination with the treating of them with tanning (*sic*) or like substances substantially as hereinbefore described" was a fair development. *Webster*, A.G., said (p. 720), "I am clearly of opinion that if the fair development shows that the invention described in the provisional specification, though

[1] See *Bartlett's App.*, 9 R. P. C. 511.
[2] *Gaunt's & Greenhalgh's Apps.*, 14 R. P. C. 387.
[3] *Millar & Miller's Patent*, 15 R. P. C. 720.

> really there, would be too widely stated if the claim was to be repeated in the form in which the invention was described in the provisional specification, it is within the rights of a patentee to cut down his claim as well as to cut down his description. In other words, the object, or one of the objects, of the period of time allowed under the Act of 1852 and the Act of 1883, is to meet this kind of difficulty, namely, the case of that which was believed to be an invention having a certain ambit, turning out to have a lesser ambit. Of course the patentee must not go outside the four corners of the general description which has been given in the provisional specification." *Millar & Miller's Patent*, 15 R. P. C. 718.

In deciding cases under this head of opposition, it is necessary to construe the provisional specification. The rule for comparing the specifications to ascertain if disconformity exist is given *ante*, pp. 71, 72. It is the duty of the Law Officer to see that the applicant does not construe his specification to mean that which in fact he did not mean when writing it; hence evidence such as the production of original drawings may be required.[1]

Appeal to the Law Officers.

The appellant must file, within fourteen days of the Comptroller's decision, in the Patent Office a notice of his intention to appeal.[2] In cases where the Comptroller decides to seal a patent subject to amendments being made, the time runs from when the Comptroller settles the specific words of the amendment, instead of the date of the actual decision to allow sealing.[3]

The notice must state the nature of the decision appealed against, and whether the appeal is from the whole or part only, and if so, what part of such decision.[4] If the Comptroller's decision be against both parties and one only appeals, the other cannot at the hearing reopen that part of the decision that was against him; but if the notice of appeal was given close to the expiration of the fourteen days, the time can be extended to allow of a counter notice being given.[5] The agent of the applicant may sign the notice on his behalf.[6] Where the notice of hearing before the Comptroller was

[1] *Birt's App.*, per *Webster*, A.G., 9 R. P. C. 491 (35).
[2] L. O. R. 1, *post*, p. 571.
[3] *Chandler's Patent*, Gr. 270.
[4] L. O. R. 2, *post*, p. 571.
[5] *Bairstow's Patent*, 5 R. P. C. 289.
[6] *Anderson & McKinnell*, Gr. L. O. C. 23.

duly posted and miscarried, and consequently the latter did not appear, a rehearing was ordered on the opponent appealing to the Law Officer and explaining the facts.[1]

Copies of the notice of intention to appeal must be sent to the Law Officer's clerk at room 549, Royal Courts of Justice, to the opponent, and, when the Comptroller has refused to seal on the ground that a previous application is pending, to the prior applicant.[2] Although not so required by the rules, when the opponent appeals notice will be given to the applicant.[3] Notices and other documents required to be given to the Law Officer's clerk may be sent by post.[4] On the notices being filed, the papers in the matter are sent to the Law Officer's clerk.[5] No appeal shall be entertained if the requisite notice be not given within fourteen days, unless the time be extended by the Comptroller, or by special leave of the Law Officer.[6] In a case in which the respondent (the applicant) did not appear on the appeal, but before the decision was given, gave a satisfactory explanation of his absence, the Law Officer allowed a rehearing of the appeal, the applicant paying the costs of the adjournment.[7] Where an opponent gave notice of appeal and did not appear, five guineas costs were given to applicant;[8] and where an applicant withdrew his appeal after giving notice to his opponent, costs were given to the latter.[9] Seven days' notice of the time and place of hearing the appeal are given by the Law Officer's clerk, unless a shorter time be allowed by special leave of the Law Officer.[10] This notice is given to the Comptroller and the parties entitled to have notice of the intention to appeal.[11]

Evidence.

The evidence used must be the same as that before the Comptroller, unless as to what has come to the knowledge of either party since the hearing, or unless leave be given by the Law Officer upon application for that purpose.[12] Where fraud is imputed, an extension of time will not be allowed to the opponent to adduce evidence in

[1] *Warman's App.*, Gr. L. O. C. 43.
[2] L. O. R. 3, *post*, p. 571.
[3] *Hill's App.*, 5 R. P. C. 601.
[4] L. O. R. 14, *post*, p. 572.
[5] L. O. R. 4, *post*, p. 571.
[6] L. O. R. 5, *post*, p. 571.
[7] *Ainsworth's Patent*, Gr. 269.
[8] *Dietz's Patent*, 6 R. P. C. 297.
[9] *Knights' App.*, Gr. L. O. C. 35.
[10] L. O. R. 6, *post*, p. 571.
[11] L. O. R. 7, *post*, p. 571.
[12] L. O. R. 8, *post*, p. 572.

support of that charge after he has failed on another issue.[1] But there is a power to order the attendance of any person who has made a declaration in order to be cross-examined upon it;[2] the party requiring the attendance has to provide the witness with conduct money.[3] The Law Officer may also examine witnesses on oath, and make orders as to costs.[4] The Law Officers, in cases of doubt, do not reverse the decision of the Comptroller.[5]

Appeals are rehearings, but should not therefore be encouraged, so costs as a general rule will follow the event.[6] But in many cases special orders are made. Costs to a very large amount to cover all expense will not necessarily be given, lest appeals be discouraged.[7] A statement of the amount of fees paid should be handed in at the hearing, so that the proper costs may be allowed.[8] The Comptroller, in the absence of very special circumstances, neither pays nor receives costs.[9]

Costs refused.

Because the applicant's specification might, in its original form, have misled the public. *Welch's Patent*, Gr. 302.

Where the declarations of the successful party were not full enough, and therefore cross-examination became necessary. *Anderton's Patent*, Gr. L. O. C. 25.

Where applicant departed from an arrangement made before the Comptroller. *Guest & Barrow's App.*, 5 R. P. C. 316.

If the costs be not paid within fourteen days (or other time allowed by the Law Officer) after they have been ascertained or fixed, an order for payment may be applied for.[10]

The persons entitled to be heard in opposition before the Law Officers are the same as those so entitled before the Comptroller.[11] The Law Officers' decision as to what persons are entitled to be heard is final.[12]

[1] *Huth's Patent*, Gr. 292. [2] L. O. R. 9, *post*, p. 572.
[3] L. O. R. 10, *post*, p. 572.
[4] Sect. 38 of Act of 1883, *post*, p. 498; L. O. R. 11, *post*, p. 572.
[5] *Glossop's Patent*, Gr. 285.
[6] *Stubb's Patent*, Gr. 298; *Anderton's Patent*, Gr. L. O. C. 25.
[7] *Stuart's App.*, 9 R. P. C. 453. [8] *Sielaff's App.*, 5 R. P. C. 487.
[9] *Lake's App.*, Gr. L. O. C. 36.
[10] L. O. R. 12, *post*, p. 572; Sect. 38 of the Act of 1883, *post*, p. 4 8.
[11] *Stewart's App.*, 13 R. P. C. 628.
[12] Sect. 11 (3), *post*, p. 489; and *The Queen* v. *Comptroller-General*, 16 R. P. C. 242.

Sealing of the Patent.

In the absence of any opposition, or after the determination in favour of the applicant, the patent will be sealed.[1] Where the sealing is delayed by an appeal to the Law Officer, or by opposition to the grant, the patent may be sealed at such time as the Law Officer may direct, in other cases within fifteen months of the date of application, unless the time be extended to nineteen months.[2] If the applicant die before the period allowed for sealing expire, his legal personal representative may have the patent sealed up to twelve months after the death of the applicant.[3]

In the case of *Kitson's Patent*, 7 R. P. C. 388, there was a delay of nearly a year from the date of opposition. But as it did not appear to be due to the applicant altogether, and as the decision did not rest on the declarations that were delayed, the sealing was allowed.

In *A. & B.'s Application*, 13 R. P. C. 63, there was a delay due to mere inadvertence of one year and ten months in complying with the Comptroller's decision. During this period the time for sealing expired. As the delay was not due to either appeal or opposition, the patent could not be sealed.

In *A. B.'s Application*, 19 R. P. C. 403, 556, considerable delay was caused by the parties for ulterior purposes (viz. to save the patent in the United States); opposition was filed at the last moment, and extension of time obtained to file evidence, but none was filed, and there was no appearance by either party before the Comptroller. An appeal was lodged, but no appearance made before the Law Officer. He held he had no jurisdiction to extend the time, the delay not being *caused* by opposition, and refused to direct the patent to be sealed.

Contemporaneous Applications.

Many of these cases are those in which one party is alleged to have obtained the invention from the other (*ante*, pp. 124–126); or in which the earlier applicant, having secured the acceptance of his complete specification, opposes the grant to the second on the ground that the invention was patented in the country on an application of prior date (*ante*, p. 126); or in which the earlier applicant is opposed

[1] Sect. 12 of Act of 1883, *post*, p. 489.
[2] Sect. 3 of Act of 1885, *post*, p. 515.
[3] Sect. 12 of Act of 1883, *post*, p. 489; and sect. 3 of Act of 1885, *post*, p. 515.

by the later on the third ground of opposition (*ante*, p. 152). In the second class of cases the Comptroller may, on the application of the second applicant within two months of the grant to the earlier applicant, decline to proceed with the application or allow the surrender of the patent if granted thereon.[1]

But if the second applicant secure the sealing of his patent first, the Comptroller may seal the patent of an earlier applicant for the same invention.[2] The parties are then left to their remedies at law.

If the earlier applicant obtain the invention in fraud of the later, who is the true and first inventor, then such application and consequent publication does not invalidate the patent granted to the true inventor.[3] When joint inventors file a provisional specification and subsequently quarrel, there is no power to decide between them.[4] In a case in which the inventor was one of joint applicants, the other being a purchaser, the latter obtained an injunction restraining the former from abandoning the application.[5]

[1] Sect. 2 (5) of Act of 1888, *post*, pp. 487, 519.
[2] Sect. 13 of Act of 1883, *post*, p. 490.
[3] Sect. 35 of Act of 1883, *post*, p. 498.
[4] *Apostoleff's App.*, 13 R. P. C. 275.
[5] *Wool, &c., Syndicate* v. *Riches*, 19 R. P. C. 127.

CHAPTER IX.

AMENDMENT OF SPECIFICATIONS—CONVENTION APPLICATIONS.

Occasions for Amendment—General Considerations, p. 163—Amendments refused, p. 164—Amendments allowed, p. 167—Amendments during Legal Proceedings, p. 172—Terms usually imposed, p. 174—Illustrations, p. 174—Foreign and Colonial Applications, p. 176.

Occasions for Amendment.

THERE are four stages or occasions in which a specification may be amended.

1. During the period which elapses between the filing and acceptance of the complete specification at the instance of the Comptroller, in order to make it comply with the rules, and under the provisions of the Act of 1902.

   Amendments of this class have been discussed, Ch. VII.

2. After filing[1] of the complete specification at the request of the applicant or person for the time being entitled to the benefit of the patent when an action for infringement, or petition for revocation is not pending.
3. In cases of opposition amendments may be required as a condition for sealing.

   The practice in such cases has already been considered under the head of Opposition.

4. Amendments may be made when an action for infringement or petition for revocation is pending.

The first and third classes of amendments have already been considered. The proceedings with respect to the second class of amendments is regulated by Sect. 18 of the Act of 1883, which is in the following terms :—

[1] *Jones's Patent*, Gr. 313.

18. (1) An applicant or a patentee may, from time to time, by request in writing left at the Patent Office, seek leave to amend his specification, including drawings forming part thereof, by way of disclaimer, correction, or explanation, stating the nature of such amendment and his reasons for the same.

The term "patentee" includes assignee (see sect. 46, *post*, p. 502).

The request for leave must be signed by the applicant, contain an address for service in the United Kingdom, and be accompanied by a duly certified copy of the original specification and drawings, showing amendments proposed in red ink. If the patent be sealed, the request must contain a statement that no action for infringement or petition for revocation is pending (Rule 42, *post*, p. 535).

(2) The request and the nature of such proposed amendment shall be advertised in the prescribed manner, and at any time within one month from its first advertisement any person may give notice at the Patent Office of opposition to the amendment.

The request and nature of the amendments are advertised in the Patent Office Journal, and as the Comptroller may otherwise direct (Rule 42, *post*, p. 535). The notice of opposition, on form G, must give grounds of opposition, an address for service of the opponent, be signed by him, and be accompanied by an unstamped copy (Rule 44, *post*, p. 536).

(3) When such notice is given the Comptroller shall give notice of the opposition to the person making the request, and shall hear and decide the case subject to an appeal to the Law Officer.

The copy of the opponent's notice is sent to the applicant (Rule 44, *post*, p. 536). The evidence is by declarations, which the opponent leaves at the Patent Office, and of which he gives copies to the applicant (Rule 45, *post*, 536). The further proceedings are subject to the same rules as in cases of opposition to grants (Rule 46, *post*, 536; also *ante*, p. 118). The applicant, if successful, must, within a time named by the Comptroller, leave at the Patent Office a new specification and drawings as amended (Rule 49, *post*, 536). The amendments allowed are to be forthwith advertised (Rule 50, *post*, p. 536).

To "hear and decide" involves the power, in cases where the amendment is opposed, to grant subject to conditions—a partial grant (*Hearson's Patent*, Gr. 309). But a monetary allowance to the opponent cannot be made a condition of allowing an amendment. *Pietschmann's Patent*, Gr. 314.

(4) The Law Officer shall, if required, hear the person making the request and the person so giving notice, and being in the opinion of the Law Officer entitled to be heard in opposition to the request, and shall determine whether and subject to what conditions, if any, the amendment ought to be allowed.

Before an action had terminated, the applicants obtained leave to amend under sect. 19. They applied for certain amendments on the 7th of March. The action was discontinued prior to the 9th of April. On the 9th of April a second application was made for the same amendments, and the former application was withdrawn on the 20th of April. The opponents (who were defendants in the action) had incurred costs as to the earlier application, and asked for them to be refunded as a condition of the amendment being allowed. *Held* by *Clarke*, S.G., that, although the patent as amended would conflict with the earlier ones relied on, the amendment should be allowed, because (1) the claim was narrower and not larger than or different from its earlier form; and (2) the opponents had no interest in the earlier patents which had expired.[1] The proceedings in the action could not be considered as regards costs. *Bell's Patent*, Gr. L. O. C. 11.

In the applicants' patent there were two distinct claims. One proved to be invalid. The applicants requested to amend by disclaiming the invalid claim, but through an inadvertence the matter was not proceeded with. Three years later they again applied. Their opponents had infringed the valid claim, relying on invalidity due to the second claim; they asked for terms to be imposed on account of the delay. *Held* that, in view of the protection afforded by sect. 20, there were no special circumstances justifying the imposition of terms. *Ainsworth's Patent*, 13 R. P. C. 76.

No conditions will be imposed on disclaiming a number of invalid claims (even late in the life of a patent) unless it be proved that the applicant, by his conduct, induced the opponent to treat the patent as invalid. *Allison's Patent*, 15 R. P. C. 411.

(5) Where no notice of opposition is given, or the person so giving notice does not appear, the Comptroller shall determine whether and subject to what conditions, if any, the amendment ought to be allowed.

(6) When leave to amend is refused by the Comptroller, the person making the request may appeal from his decision to the Law Officer.

[1] As to this ground see now *ante*, pp. 126, 128.

(7) The Law Officer shall, if required, hear the person making the request and the Comptroller, and may make an order determining whether, and subject to what conditions, if any, the amendment ought to be allowed.

(8) No amendment shall be allowed that would make the specification, as amended, claim an invention substantially larger than or substantially different from the invention claimed by the specification as it stood before amendment.

(9) Leave to amend shall be conclusive as to the right of the party to make the amendment allowed, except in case of fraud; and the amendment shall in all Courts and for all purposes be deemed to form part of the specification.

See *Moser* v. *Marsden* and notes thereto, *post*, p. 374.

(10) The foregoing provisions of this section do not apply when, and so long as any action for infringement or *proceeding for revocation of* a patent is pending.

The words in italics, by sect. 5 of the Act of 1888, are substituted for "other legal proceeding in relation to."

"Pending" means pending in the High Court, and does not include appeals. *Cropper* v. *Smith*, 1 R. P. C. 254. A petition for revocation is not "pending" if presented in the interval between the application to amend and the hearing by the Comptroller. *Woolfe* v. *Aut. Picture Gallery, Ltd.*, 20 R. P. C. 177.

General Considerations.

It is the persons for the time being entitled to the benefit of the patent who are authorized to apply to amend.[1] Amendments may be made from time to time, but second applications are not encouraged;[2] so, when an amendment was refused, and the applicant did not appeal, the Law Officer, on hearing an appeal two years afterwards on a second application, refused it on the ground that the amendment was practically the same as the earlier one refused by the Comptroller.[3] So when the application is made late in the life of the patent, the proposed amendments must be critically examined, lest fresh knowledge be imported,[4] or lest an insufficient

[1] Sect. 46 of Act of 1883, *post*, p. 502; *Church's Patent*, 3 R. P. C. 100.
[2] *Haddan's Patent*, Gr. L. O. C. 13.
[3] *Arnold's Patent*, Gr. L. O. C. 6.
[4] *Beck & Justice's Patent*, Gr. L. O. C. 10.

description be made sufficient after the public had relied on the insufficiency as a ground of invalidity, the object of the amendments being to make the patentee's meaning clear.[1]

Illustrations.

Amendments refused.

In a specification for "improvements in nozzles for the escape of steam or gas under pressure," no mention was made of gas-engines. An amendment was refused relating to the proper size of the chamber in the case of gas-engines, which were not mentioned in the original specification. *Beck & Justice's Patent*, Gr. L. O. C. 10.

A specification for "improvements in the manufacture of castings from wrought iron and steel" contained directions for the introduction of aluminium into the metal shortly before it was poured out, and contained a statement that this "addition might, however, be made earlier." It was proposed to strike out these words and insert a long statement explaining the action of the aluminium in lowering the melting-point. In refusing the insertion of the new matter, *Webster*, A.G., said: "If the putting in the aluminium into the molten iron or steel was the proper subject-matter of an invention, and was not a mere example of a known scientific fact, as far as I can judge, the specification sufficiently describes and claims the invention, but under any circumstances, whether that be so or not, it is the duty of the patentee to fulfil the condition of the patent, and to file a proper and sufficient specification. Of course, I am well aware that when a disclaimer is required it is because there is a defect on the face of the specification, but in my opinion that defect must be one which must be consistent with the patentee intending to fulfil the condition of the grant by properly describing his invention, and I cannot see, if that condition is fulfilled in this case, that the amendment is required." *Nordenfelt's Patent*, Gr. L. O. C. 21.

Heath & Frost applied for a patent for "an improved method of blasting and shot-firing in mines." The provisional described the advantages of the new cartridge — dynamite preferably used — the charge was enclosed "in a case surrounded by a water-tight cartridge containing water and sealed up." The complete described two cases—the inner and outer; the former could be dispensed with when dynamite impervious to water was used. The first claim was for "the construction of a simple and practicable water-tight cartridge for blasting purposes, in which the explosive substance is entirely surrounded by and in immediate contact with water, substantially as and for the purposes hereinbefore described, set forth.

[1] *Johnson's Patent*, 13 R. P. C. 660; *Nordenfelt's Patent*, Gr. L. O. C. 20.

and fully illustrated, &c." Opposition to the grant was entered by *Settle*, on the ground of a previous patent of his own. This invention was a blasting cartridge with a double case, in which water was put to extinguish the flame of explosion. An application was then made by *Heath & Frost* to amend by confining the first claim to a cartridge without an inner case, and by striking out the other claims. The grounds of opposition to the amendments were: (1) that they would make it a different invention, (2) would introduce disconformity, and (3) the amended claim would be one for *Settle's* invention. The application for amendment was heard first by arrangement. The amendment was refused on the ground that the invention would be substantially different from that in the original specification. The case for opposition was then heard. Sealing was refused on the ground that the inventions were substantially the same, the use of the inner case being immaterial. *Heath & Frost's App.*, Gr. 310.

The invention was to support the top clearing rollers in spinning machinery to prevent them from rolling off. Pivots from the centres of the clearers rested on inclined bearers. "The said bearers may either be fixed to any hook, or they may be attached to any other fixing or part of the frame, in which case they form adjustable inclined planes." The claim was for the "inclined bearers or supports, &c." One amendment asked for was the insertion of the word "adjustable" before "bearer" or "bearers" throughout the specification; it was refused, as it would enlarge the claim. *Walker's Patent*, Gr. L. O. C. 22.

It was sought by amendments to introduce a long description of details (by way of further explanation) in carrying out an invention for printing floor-cloths, by movement of blocks across the piece. The amendments were not allowed, because, if the patent were good and the specification sufficient, they were unnecessary for the protection of the patentee, and the insertion of such detailed explanation might lead a reader to construe the claim as for such detailed means of carrying out the new process. *Webster*, A.G., thought (p. 445 (30)) that it was "going too far to say that . . . where a patentee has chosen to claim an improved method apart from particular means, you can allow him practically to rewrite his specification by inserting all the particular means with considerable doubt as to whether they would not be made the subject of a claim." *Nairn's Patent*, 8 R. P. C. 444.

Parkinson's Patent, 13 R. P. C. 509.

A patent (No. 4176 of 1890) was granted to Messrs. *Parkinson* for "improvements in or relating to sieves, applicable for purifying, grading, or separating grain and other substances." The invention

consisted in an oscillating sieve, of which a comparatively narrow portion was used for sieving, and the remainder formed surfaces upon which the dust fell when no longer carried upwards by the air on expanding after passing through the sieve. A hood or deflector, situated above and over the sieve, also received the dust. The first three claims were for the combination of sieve and side depositing surfaces—the former tapering or parallel, and the latter fixed or moving with the sieve. The fourth claim was for the combination of sieve, surfaces, and deflector or hood over the sieve.

The House of Lords had decided, in *Parkinson* v. *Simon* (12 R. P. C. 403) that the first three claims were too wide, and the patent was therefore invalid.

The amendments proposed were: (1) the insertion of a disclaiming note, viz. "We do not desire to claim broadly the use of narrow sieves and side deposit surfaces, but we desire to confine our claims to apparatus in which narrow sieves and side deposit surfaces are arranged in combination with the other portions of the apparatus substantially in the manner hereinbefore described, so as practically to free the escaping air from particles of dust;" (2) to amend the first three claims so as to bring each of them "subject to the disclaiming note."

Simon opposed on several grounds.

The Chief Examiner held (as deputy Comptroller) that the main features in the claims remained the same, that the effect of the amendments was to narrow the claims to those of the general class of apparatus such as described, and to those members of that class in which the "other portions" were the same, and dustlessness was secured; he allowed the amendments.

On appeal to the Law Officer, this decision was reversed.

Finlay, S.G. (p. 513): "It appears to me that this amendment ought not to be allowed, and that I must reverse the decision of the Comptroller in this matter, and for these reasons: To my mind, the specification, as amended, if this application were allowed, would be for something substantially different from what the patent originally claimed. The House of Lords has decided that what these three first claims mean is this — the patentee claims the combination of sieve with the side deposit surfaces, tapering or not tapering. That is the effect of these claims. What would be the effect of the patent as amended? It would be really for a new combination, for the combination of the sieve and the side deposit surfaces with the other parts of the apparatus indicated by the words in the proposed amendment, 'other portions of the apparatus substantially in the manner hereinbefore described, so as practically to free the escaping air from particles of dust.' That may or may not be a good claim; but, to my mind, it is perfectly

impossible to say that it is not substantially different from the naked claim contained in the first three claims of the original patent for the combination of the sieve with the side deposit surfaces. There is, further, to my mind, this objection—that it seems to me, having regard to the wording of the amendment, it is very much claiming the discovery of a new advantage in an old apparatus; because I do not find in the specification any other portions of the apparatus which can be referred to there unless it be the deflector. Well, if it is the deflector that is referred to, that is the fourth claim, and obviously the first three claims should not be allowed so as to put forward that claim in another form."

Amendments allowed.

A patent was for "the use of earthenware pipes of novel form in the place of brickwork or other material in the formation of self-flushing water-closets." The claim mentioned the "use of pipes of novel form." The proposed amendments consisted in the omission of the words "of novel form" from the title and the insertion of a disclaimer as to novelty in the form of the pipes, and to alter the claim to one for an arrangement of pipes "of the above form." The application was opposed on the ground that the amendments would enlarge the invention. The applicant declared he had framed the specification in good faith, but had inadvertently claimed the *form*. On considering the whole specification and declarations, the Law Officer considered that the claim was one substantially for the *arrangement* of the pipes in combination. He therefore allowed the amendments. *Allen's Patent*, Gr. L. O. C. 3.

A specification described an invention of improvements in moulds for cooling and discharging slag. The core of the mould was shown so constructed as to be angular or wedge-shaped on one side and rounded on the other. That form was "preferred," but the claim was only for the wedge shape. Amendments were proposed to confine the claim to the preferred form, wedge-shaped on one side and rounded on the other. *Held* by the Law Officer that the amended claim was one for a part (a particular form) of the original invention claimed, and was not for an invention different from that originally claimed. *Cochrane's Patent*, Gr. 304.

In *Cheesbrough's Patent* (*post*, p. 297) certain words were allowed to be struck out from the title. Some of these (*i.e.* "purifying the same") were not advertised as part of the proposed amendment. On appeal to the Law Officer, the opponent objected to such being struck out, as they were not advertised. But the Law Officer allowed the amendment, because (1) the opponent consented to it before the Comptroller; and (2) it did not enlarge, but narrowed, the invention claimed. *Cheesbrough's Patent*, Gr. 303.

In a patent relating to improvements in wire cards, the first claim was ambiguous, *viz.* "the manufacture of the dents or teeth of cards from a continuous length of hardened and tempered steel wire as set forth and indicated, &c." It was amended by alterations to read ". . . continuous length of steel wire hardened and tempered in the manner substantially as set forth and indicated, &c.," the Law Officer holding that the drawings indicated only the method of hardening, which was therefore the real invention. The second claim was restricted by the addition of the words "substantially as set forth and indicated." *Ashworth's Patent*, Gr. L. O. C. 9.

An amendment was allowed in a specification for improvements in the manufacture of a dye. The amendment consisted of a statement that the series of colours could be enlarged by mixing the colours together, by altering the reagents so that, instead of two molecules of one substance, one of each of two substances should enter into the reactions, both "being successively combined with the tetraazo body." There was no opposition; but the Comptroller refused the amendment on the ground that the invention would be enlarged or different. No alteration in the claim was proposed. The Law Officer allowed the amendment, the case being doubtful, and "if the patentee persists in an amendment, he persists at his peril; and if the patent is bad, so much the worse for him."[1] He said he was not convinced the grant was extended. "In the absence of very special circumstances, the Comptroller should neither give nor receive costs." *Lake's Patent*, Gr. L. O. C. 16.

The specification was ten years old. An amendment was allowed inserting a verbal description of one of the original diagrams representing a form of the invention that, in the opinion of the Law Officer, came within the description in the provisional. *Morgan's Patent*, Gr. L. O. C. 18.

A specification described improvements in packing-cases. Grooves were to be made round the case, in which wires were to be inserted. "Small wire loops, pointed at the ends, *may be* used instead of nails." It was amended by narrowing the claims to cases in which the wires were *secured by loops*. The Law Officer held that the idea of the invention was the grooving, and that the patentee could limit it to one of the ways shown for carrying it out. Where a specification is obviously open to two constructions, no declaration is necessary where the patentee desires to limit it to one construction only. *Ryland's Patent*, 5 R. P. C. 665.

[1] Since *Moser* v. *Marsden* (*post*, p. 374) this reason no longer holds.

Applications allowed in Part.

Hampton & Facer's Patent, Gr. L. O. C. 13.

The specification of a patent (No. 8981 of 1885) for "improvements in the method of casting steel ingots" described a method of casting by conveying the metal in channels (shown covered in) to the centre of each mould. The advantage of using a cover was alleged to be the exclusion of air. Suitable conduits, either "covered *or uncovered*, might be employed." The first claim was in the following terms: "In casting a number of steel ingots simultaneously and in groups, directing the molten metal from a central or common gate or opening, by means of gutters or passages, to holes or inlets situated centrally over each ingot mould in the group, whereby the metal is poured into the centre of each mould substantially as described and shown."

The amendments asked for were: (1) the excision of the statement that the object of the invention was simultaneous casting in several moulds; (2) the insertion of a statement that no separate claim was made to directing the metal to the centre of the moulds; (3) striking out the statement that "uncovered" passages might be used; (4) by the insertion of the following passage before the claims: "We are aware that the casting of steel ingots simultaneously through centrally situated nozzles or outlets is not new, as such simultaneous casting has been already put in practice with the aid of ladles, or open intermediate receivers held above or resting upon the moulds, and having a number of nozzles or outlets through which a number of moulds were filled simultaneously," &c. (the second part of the suggested paragraph alleged that the said intermediate receivers had the disadvantage of exposing the metal to the atmosphere); and (5) by amending the claim so that it read as follows: "In casting a number of steel ingots simultaneously and in groups, directing the molten metal from a central or common gate or opening, by means of *covered in* [1] gutters or passages, to holes or inlets situated centrally over each ingot mould in the group, whereby the metal is *led through covered passages to* [2] the centre of each mould substantially as described and shown."

Melling opposed, on the ground that the amendments would prejudicially affect his rights under Patent 13022 of 1884, which was of ten months' earlier date, in which he claimed casting clusters of ingots by means of an intermediate receiver running centrally into the moulds.

The Comptroller allowed all the amendments except the second part of

[1] These words were inserted by the amendment.
[2] These words were substituted for "poured into."

the fourth. This was refused, because it reflected on *Melling's* patent, and there was no evidence that the earlier patent had the alleged disadvantages.

On appeal, the applicants were not allowed to file such evidence, having accepted the decision.

The Law Officer struck out the first part of the fourth amendment, and substituted the words: "We do not claim the casting of steel ingots simultaneously through centrally situated nozzles or outlets." No costs to either side.

Serrell's Patent, 6 R. P. C. 101.

A patent (No. 14983 of 1886) was granted for the "application of a solenoid for reinforcing electrical contacts." The invention was described as consisting "in reinforcing the actual contact between two contact-pieces of an electric circuit, by means of a solenoid."

The drawings showed a contact consisting of one part movable horizontally, to which was attached an arm, bearing on its end a contact surface, C, rounded (in section) in an arc of about 60°. The other surface, C', was semicircular in section, and attached to the end of an arm hinged and pressing against a spring. On the arm being moved horizontally, the first quadrant, C, rubbed against the second arm, the round contact-pieces, CC', sliding against each other. The solenoid, X, surrounded part of the horizontal part, so that when the current began to pass the solenoid drew the sliding part closer against the hinged portion.

The claim was for "the employment of a solenoid X and core A, for the purpose of reinforcing the contact between the contact-pieces CC' of an electrical circuit."

Amendments were asked to (*a*) alter the title to "Improvements in electrical contact devices; (*b*) to describe the invention as "an improved electrical contact device, the main purpose of which is to keep the contact-pieces clean;" and (*c*) to alter the claim to "the production of a scraping, and consequently cleaning, motion between the contact-pieces CC', by means of magnetic attraction created by the current passing between them, after said contact-pieces have been made to touch in any known manner."

The amendments as proposed were refused by the Comptroller and Law Officer. The Law Officer permitted the insertion of the words "in the manner hereinafter described" after the words "by means of a solenoid" (*supra*), and the variation of the claim so that it should read, "The employment of a solenoid X and core A for reinforcing the contact between the contact-pieces CC' of an electrical circuit in the manner hereinbefore described."

Webster, A.G.: "I think it would be beyond what is intended by the power of amendment under the Act of 1883, that there being a

distinct and specific claim to the operation of what is believed to be new, and there being no claim to the minor arrangement of the contact-pieces, the patentee should be allowed to strike out the whole of his claim, and insert an independent claim to a subordinate part. It is said this is justified on the ground that the patentee is afraid the patent would be held invalid, because *Hedges*, in a previous specification" (No. 719 of 1883) "has disclosed a method of reinforcing the contact by the action of a solenoid. As to that no amendment would make the claim good, and at any rate it is not the proper form of amendment to effect that purpose. The only way of dealing with it would be by, on the face of it, disclaiming what I may call the general use of solenoids and cores, and applying it to the particular mode herein described. It is for that reason, and because I think no harm will be done to the public, that I am willing, as part of my judgment, to allow the applicant to have a disclaimer in the form I have already indicated."

Johnson's Patent, 13 R. P. C. 659.

The specification (No. 6626 of 1885) was for the manufacture of saccharine. The specification described this new sweet compound as "anhydro-ortho-sulphamine benzoic acid" or "benzoic sulphinide," and the inventors called it saccharine.

Two methods of manufacture were described. The first consisted in converting, by a series of reactions, a mixture of two isomeric toluene-monosulphonic acids into the corresponding isomeric ortho- and para-sulphochlorides. The para compound was a solid, and was separated by means of a centrifugal machine. Directions were given for removing "the last traces" of it by cooling and again using the machine. The ortho compound was liquid, and when further operated on as directed produced anhydro-ortho-sulphamine benzoic acid or benzoic sulphinide. A second method was also described.

The first claim was: The process described as the first method for manufacturing anhydro-ortho-sulphamine benzoic acid or benzoic sulphinide or saccharine with employment of one or all of the reactions set forth in the specification.

The second, third, and fourth claims related to the second process.

The fifth and sixth claims were for the "production of anhydrous-ortho-sulphamine benzoic acid or benzoic sulphinide or saccaharine" having the properties, and by means of the methods, described.

The proposed amendments consisted in: (*a*) minor corrections and the excision of the second method and its claims; (*b*) the excision of the words "anhydro-ortho-sulphamine benzoic acid or benzoic sulphinide or" from the other claims and corresponding parts of the

specification; (*c*) the substitution of the words "as much as possible" for "the last traces" in the directions as to removing the para compound; (*d*) the insertion of words showing that the sweet compound was not quite pure as implied in the specification; and (*e*) after the word "saccharine" the insertion of the following words: "but as its sweetening qualities depend solely on the presence of anhydro-ortho-sulphamine benzoic acid (it being a mixture of the same with an inert body, viz. para-sulphamine benzoic acid), the name 'saccharine' is also applied by them to that substance when isolated. In this specification the word will be used only for the mixed body, the other being designated by its scientific name," and the addition of a statement to the reactions.

The learned Law Officer rejected the chief amendments, being satisfied that the inventor did not at the date of the specification know of the presence of the inert para body in his saccharine; ". . . disclaimer is not to be used solely for the mere purpose of turning an insufficient description into a sufficient description. Of course it is to be used for the purpose of turning an ambiguous specification into a clear specification, but not for the purpose of turning an insufficient description into a sufficient description, especially if the amendment introduces subsequent knowledge." The substitution of the words "as much as possible" for the last traces was allowed, also the minor amendments and excision of the second process (*a* and *c*).

Amendment during Legal Proceedings.

When an action for infringement or a petition for revocation is pending, the specification can only be amended by obtaining leave of the Court. An application to amend by way of explanation or correction made to the Comptroller under sect. 18 is not suspended or stayed by reason of the subsequent presentation of a petition for revocation before the hearing by the Comptroller.[1] Where there are more actions than one, or a petition and an action, leave need not be obtained in each proceeding before any amendment can be made.[2] The provisions on the subject are contained in sect. 19 of the Act of 1883:—

> 19. In an action for infringement of a patent, and in a proceeding for revocation of a patent, the Court or a judge may at any time order that the patentee shall, subject to such terms as to costs or other-

[1] *Woolfe* v. *Automatic Picture Gallery, Ltd.*, 20 R. P. C. 177.
[2] *Re Hall*, 5 R. P. C. 307.

> wise as the Court or a judge may impose, be at liberty to apply at the Patent Office for leave to amend his specification by way of disclaimer, and may direct that in the meantime the trial or hearing of the action shall be postponed.

This section is enacted by way of proviso to sect. 18, and deals with the case exempted by sub-sect. 10.[1] Hence the provisions of sect. 18 apply in all respects to applications under sect. 19 as if the words "correction or explanation" were omitted from the first sub-section ;[2] only a real disclaimer with consequential corrections will be allowed.[3] The section applies only to actions and petitions before judgment in the High Courts of Justice[4] and in the Palantine Court of Lancaster.[5]

On the application for leave to amend the Court will go into the question of the proposed amendments in order to see if a *prima facie* case has been made out for amending at all ;[6] it will not go into or decide on the admissibility of the proposed amendments, but leave that duty to the Comptroller and Law Officers.[7] But the Court may go into the question of the proposed amendments and the merits of the case with a view to judge of what are the proper conditions to impose.[8] The Court is not limited by the provisions of sect. 20 (*post*, p. 492) limiting the damages (unless the "original claim was framed in good faith and with reasonable skill and knowledge") to infringements after amendment, but may order that no damages shall be recovered nor injunction granted for acts committed before the disclaimer.[9] Nor is the Law Officer so limited.[10]

Where a petition for revocation has been presented, and it is held that the patent is invalid, the order of the Court usually includes a stay of proceedings[11] in order to give the applicant an opportunity of amending the specification, or appealing, before the patent is struck off the Register under sect. 20 (*post*, p. 492) and

[1] *Singer* v. *Stassen*, 1 R. P. C. 123.
[2] *Lang's Patent*, 7 R. P. C. 471 (8) ; *Armstrong's Patent*, 14 R. P. C. 754 (44).
[3] *Owen's Patent*, 15 R. P. C. 760.
[4] *Cropper* v. *Smith*, 1 R. P. C. 254 ; *Lawrence* v. *Perry*, 2 R. P. C. 180.
[5] *Winter* v. *Baybut*, 1 R. P. C. 76.
[6] *Armstrong's Patent*, 14 R. P. C. 755 (15). See also *Re Hall*, 5 R. P. C. 310 (25).
[7] *Dellwik's Patent*, 13 R. P. C. 591.
[8] Per *Webster*, M.R., in *Allison's Patent*, 17 R. P. C. 516.
[9] *Lang* v. *Whitecross, &c.*, 7 R. P. C. 389.
[10] *Ludington, &c., Co.* v. *Baron, &c.*, per *Rigby*, L.J., 17 R. P. C. 217.
[11] See *Deeley* v. *Perkes*, 13 R. P. C. 589 ; *Armstrong's Patent*, 14 R. P. C. 755.

Rule 60 (*post*, p. 538). When the request for amendment is made at the Patent Office, an official or verified copy of the order of the Court must be left too.[1]

The Terms usually imposed.

As the Court exercises a judicial discretion when leave is applied for, the Judge cannot be fettered by any rule or precedents as to the mode in which that discretion is exercised in any particular case;[2] and, unless the decision be clearly wrong the Court of Appeal will not interfere with it.[3] "It requires a very strong case to show that the judges invested with that discretion have either exceeded the limits of the discretion given to them or have exercised it upon some principle which is inconsistent with the general law."[4]

The exercise of the discretion of the Court does not interfere with the exercise of the discretion of the Law Officer under sect. 18 (7).

The general rule followed is that the terms imposed must allow of full compensation to those against whom leave to amend is asked, such as the payment of costs up to the time of leave being granted.[5] Then again arises the question of allowing the amended specification to be sued upon in the action. In the absence of evidence of the applicant's knowledge of the invalidity of his patent and of such conduct as induced the defendants to set up an infringing trade, no condition has been imposed as to not taking an action on the amended claims.[6] In cases of petitions for revocation the conditions are imposed as much in the interests of manufacturers generally as in those of the party presenting the petition.

Although not creating precedents, the following cases may be referred to as illustrating the application of the foregoing principles :—

Illustrations.

Where the applicants had patented "improvements in the construction of wire ropes," which consisted in laying the strands in the rope by the same lay as the wires in the strand, and sought to amend

[1] Rule 43, *post*, p. 536.
[2] *Allen* v. *Doulton*, per Lord *Esher*, M.R., 4 R. P. C. 383.
[3] *Armstrong's Patent*, 14 R. P. C. 747.
[4] *Ludington, &c., Co.* v. *Baron, &c.* (per Lord *Halsbury*, L.C.), 17 R. P. C. 748.
[5] *Gaulard* v. *Lindsay*, 5 R. P. C. 192; *Meyer* v. *Sherwood*, 7 R. P. C. 283.
[6] *Codd* v. *Brathy*, 1 R. P. C. 210.

by confining their claim to such when made by machinery in use at the date of the patent, it was *held* that the alteration was not mere disclaimer, but a different invention for the use of existing machinery to produce an old result. *Lang's Patent*, 7 R. P. C. 469.

At the hearing of an action for infringement, a patent was held invalid in respect of four claims. On appeal this decision was supported as to three of them, the other not being argued. An application was made to disclaim the three claims and explain the other. A petition for revocation was then presented. The Court gave leave to go before the Comptroller, and adjourned the hearing of the petition for revocation. *Deeley's Patent*, 11 R. P. C. 72.

A patent was obtained for improvements in the process of treating incandescents for use in gas lamps or burners. The description in the specification was based on an erroneous theory. It described the coating of those parts of bad heat-conducting incandescents (made with lime, zircon, or magnesia) from which light was to be disseminated with substances that are better conductors of heat, *e.g.* chromium, niobium, wolfram, cobalt, copper, platinum, iridium, &c., or their oxides; the latter not being quite so good. The amendments consisted in discarding all the coating materials except oxide of chromium. Three claims were to be struck out, and the first altered as follows (the bracketed words to be omitted and the italics inserted):—"The herein described process of treating incandescents [which are non-conducters of heat, such as], *made of* the oxides of calcium, magnesium, aluminium, zirconium [and similar metals of this group], or compounds of these oxides, by covering or saturating them with a coating of [refractory] *chromium* oxide [of a heavy metal or metals]." The opponents relied on a patent owned by them for the use of chromium as indicated by the proposed amendments, and alleged that the proposed changes constituted a claim for what was a new invention—one by selection. *Held* that the proposed alterations amounted to merely disclaimer of the use of certain substances, retaining one, as there was no need to give any theory at all as to the action of the substances used. *Dellwik's Patent*, 15 R. P. C. 682.

A patentee claimed the use of pipes of novel form in a certain class of water-closets. His particulars of breaches were drawn with respect to alleged breaches of the patent with respect to these pipes. He applied for leave to apply to the Comptroller for leave to amend and confine his claim to the precise combination described. The amendments would necessitate amendments in the particulars, and leave only the writ and statement of claim as before. Leave was granted upon the condition that the amended specification should not be used in evidence at the trial. *Allen* v. *Doulton*, 4 R. P. C. 385.

Where the action was taken for alleged infringement of one claim, and leave was asked to apply at the Patent Office for leave to disclaim another claim before delivery of the statement of claim, the plaintiffs were allowed to use the amended specification in the action, which was stayed until a proper disclaimer had been made. The plaintiffs were to pay the defendants' costs up to the disclaimer. *Fusee Vesta Co.* v. *Bryant & May*, 4 R. P. C. 72.

But where the pleadings were closed, and the patent was held invalid in another action, leave to apply for disclaimer was given, and to proceed upon the amended specification, subject to the condition that the plaintiff paid all costs up to time of disclaimer, except the costs of such of the original pleadings as would be utilized in the trial. *Haslam, &c.* v. *Goodfellow*, 5 R. P. C. 30.

A condition was imposed in *Chatwood, &c., Co.* v. *Ratner Safe Co.*, that the plaintiffs should discontinue threats until the amendment was made. 16 R. P. C. 450.

Where, after a petition for revocation had been presented, it was sought to disclaim twenty claims out of twenty-two, a condition was imposed that no action should be brought for the making of machines or *parts* of machines prior to the order. The two claims retained related to parts of the machine in question. *Held* (by the House of Lords) that this was not an improper exercise of discretion. *Ludington, &c., Co.* v. *Baron, &c., Co.*, 17 R. P. C. 747 (followed in *Allison's Patent*, 17 R. P. C. 513). But on hearing the application the Law Officer refused to impose a similar condition asked for up to date of amendment, on the ground that the opponents knew of the intended amendment and acted at their own risk. *Pitt's Patent*, 18 R. P. C. 480.

Foreign and Colonial Applications.

Persons resident outside the United Kingdom (whether British subjects or not) can obtain British patents by means of an agent within the realm, who is the "importer" of the invention and trustee for the real inventor (*ante*, p. 48).

In addition to those opportunities, the Act of 1883 gives power to persons resident in certain foreign countries and in British Possessions, to apply directly for a British patent, and have the same dated as of the date of the first protection obtained abroad in any of the specified countries.

The provisions with respect to foreign countries are contained in sect. 103 (*post*, p. 508) and in the International Convention (*post*, p. 576), those relating to British Possessions are contained in sect. 104.

The countries to which the 103rd section applies are set out (*post*, p. 596). The provisions of that section are applied from time to time to British Possessions by Order in Council, with, where necessary, variations or additions. In connection with this branch of the subject the terms "foreigner" or "foreign patentee" include British subjects and citizens of foreign states resident in British Possessions.

The foreign or colonial applicant must file his application within twelve months of the date of application for the foreign or colonial patent he has obtained. The application must be accompanied by a complete specification.[1] Protection is given as from the date of the foreign or colonial application, but no damages can be recovered for infringement committed before the acceptance of the specification.[2] The protection of the section cannot be extended to cases where an applicant applies in the ordinary way during the twelve months, and after that period but before the grant applies to have the patent antedated.[3]

This privilege is only granted by the Act to the patentee, and cannot be exercised by his agent.[4] The foreign or colonial patentee may be a corporation.[5]

The application must also contain a declaration that foreign or colonial application has been made to protect the same invention, and must specify all foreign states or British Possessions in which such applications have been made, and the official dates thereof. It must be signed by the person or persons by whom such foreign or colonial applications have been made. If one or more such persons be dead, the application must be signed by their legal representatives.[6] Form A 2 (*post*, p. 549) must be used, and copies be furnished with the application of the foreign specifications and drawings, and other documents filed or deposited by the applicant abroad in respect of the first foreign or colonial application, duly certified by the proper official or otherwise verified to the satisfaction of the Comptroller. If the deposited documents be in a foreign language, all

[1] Sect. 103 (1) of Act of 1883, *post*, p. 508; 1 Edw. 7 c. 18, *post*, p. 522.
[2] Sect. 103 (2) of Act of 1883, *post*, p. 509.
[3] *British Tanning Co.* v. *Groth*, 8 R. P. C. 113; *Acetylene Illuminating Co.* v. *Un. Alkali Co.*, 20 R. P. C. 161.
[4] *Shallenberger's App.*, 6 R. P. C. 550.
[5] *Cirez App.*, 6 R. P. C. 552.
[6] Rule 13, *post*, p. 528.

translations must be annexed thereto and verified by statutory declaration or otherwise to the satisfaction of the Comptroller.[1]

If the complete specification left with the application be not accepted within twelve months from the date of the first foreign application, it will be open to public inspection.[2]

This section (103) applies to persons who have applied for patents abroad, although such be not granted at the date of application in England.[3]

In cases in which the applicant under this section applies in England *after* an application is made for a British patent by another in the usual way, he cannot oppose the grant of the British patent,[4] although under the provisions of sect. 103 his patent will be dated earlier than the British one.[5] In granting the application under this section there is no power to impose terms.[6]

Persons registered under this enactment must, in case amendments be required, proceed in the same way as in the case of a British patent. For instance, an amendment to substitute "the manufacture of" for "a process of preparing" in the specification relating to dyes was not allowed on the ground that it might enlarge the claim, although such amendment might be necessary to give the same protection in the kingdom as abroad.[7]

Where, between the date of the foreign application abroad and the date of the application for ante-dating under this enactment, a British patent is applied for and granted to some other person, it is open to argument that the rights of the latter are not interfered with.[8] The resident in a foreign state or British colony, which comes under the convention after the date of the foreign application, may apply for registration under the Convention if within the prescribed time from his original application abroad.[9]

The Comptroller enters the patent on the Register of Patents as of the date of the first foreign application.[10]

Where a foreign application has proved abortive, and no rights have been secured under it, the twelve months run from the date of a second and successful application abroad.[11]

[1] Rule 14, *post*, p. 529.
[2] Rule 15, *post*, p. 529; 1 Ed. 7 c. 18, s. 1 (2), *post*, p. 522.
[3] *Carez App.*, 6 R. P. C. 552.
[4] *Everitt's Patent*, Gr. L. O. C. 28.
[5] *L'Oiseau & Pierrard*, Gr. L. O. C. 39.
[6] *Ibid.*
[7] *Vidal's Patent*, 15 R. P. C. 721.
[8] *Main's Patent*, 7 R. P. C. 15 (40).
[9] *Ibid.*, p. 13.
[10] Rule 52, *post*, p. 537.
[11] *Van de Poele's Patent*, 7 R. P. C. 69.

PART II.

ABSTRACTS OF LEADING AND ILLUSTRATIVE CASES.

BEFORE any selection of the following cases was made all the reported cases (about 350 in number) in which the validity of a patent was in issue were examined, each being separately compared with every reported judgment in which it was mentioned. The results of such investigations are (in the cases of which abstracts are here given) embodied in the notes to each. The precise weight attached to any authority by the learned judges in the subsequent cases can thus be easily ascertained.

The foregoing method of procedure enabled the author to ascertain those cases which are the most suitable for illustrating the principles on which the validity of a patent depends, as, for instance, those in which any rule was first enunciated or modified.

As to the practice of referring to cases as authorities for, or as illustrations of, the application of legal principles, one may here quote the Lord Chancellor's remarks in recent cases: "There are two observations of a general character which I wish to make, and one is to repeat what I have very often said before, that every judgment must be read as applicable to the particular facts proved, or assumed to be proved, since the generality of the expressions which may be found there are not intended to be expositions of the whole law, but governed and qualified by the particular facts of the case in which such expressions are to be found. The other is that a case is only authority for what it actually decides. I entirely deny that it can be quoted for a proposition that may seem to follow logically from it."[1] And again:—"Occasional observations made by a learned Judge upon the subject of the facts in a particular case have been from time to time misunderstood, as conveying some opinion upon the subject of the general law, and have given rise to confusion."[2] Hence the importance of being acquainted with the facts of the cases relied on as authorities. In the following pages the facts are given as fully as can conveniently be done, and especially in cases on Disconformity and Sufficiency, which are of importance to the inventor. The effect of the decisions is given, and in some cases extracts from the judgments. The latter are either those that have become

[1] Per Lord *Halsbury*, L.C., in *Quinn* v. *Leathem* (1901), A. C. 506.
[2] Per Lord *Halsbury*, L.C., in *Pickard* v. *Prescott*, R. P. C. 200.

classical through subsequent decisions, or such as explain the reasons for the decisions arrived at.

The cases are selected from those decided in the Courts of Appeal or the House of Lords; some have been omitted as being of such a technical character that they could not be conveniently explained in the space at the author's disposal; a few decided in the Courts of First Instance, of special application, have been included. The earlier cases have been selected as above mentioned, and the later ones as being "on the border line," and therefore useful as examples of the limits of the rules.

In making the following abstracts, no trouble has been spared to elucidate the facts; in addition to the usual reports, the original specifications have always been used, and the author has had the advantage of frequent reference to the cases and appendices of the parties in cases before the House of Lords collected in the library of the Inner Temple.

In many cases, however, he has been enabled to use original *verbatim* reports and exhibits by the courtesy of the proper custodians of them.

An analytical list of the abstracted cases will be found in the Table of Contents.

1785. R. *v.* ELSE, 1 Webs. 76.

Claim too wide.

A patent was granted to *A. Else* (1779) for "a certain new invented manufacture of lace, called French or wire-ground lace, which is much stronger than any hitherto invented or found out, and also of an entire new construction." The specification described the mixing of silk, or other substance, to accomplish the same purpose with thread, flax, cotton, etc., so as to produce an even lace.

It was proved in proceedings for a *scire facias* to repeal the patent that silk and cotton threads had been mixed before on the same frame, but that the resulting product had not the same evenness, firmness, or strength as that produced by the newer process.

Per *Buller*, J.: The patent claims the exclusive liberty of making lace, composed of silk and cotton thread mixed; not of any particular mode of mixing it; and therefore, as it has been clearly proved and admitted that silk and cotton thread were before mixed on the same frame for lace, in some mode or other, the patent is clearly void, and the jury must find for the Crown."

Bull. N. P. 76.

"The patent must not be more extensive than the invention; therefore if the invention consist in an addition or improvement only, and the patent is for the whole machine or manufacture, it is void. Per Lord *Mansfield* in different cases, and by *Buller*, J., in *R.* v. *Else*, sittings at Westminster after M 1785."

Note.

The last paragraph was quoted by *Park*, J., in *Bovill* v. *Moore*, 2 Marsh 214; by Lord *Denman*, C.J., in *Cooke* v. *Pearce*, 8 Q. B. 1052; and regarded as settled law by Lord *Penzance*, in *Harrison* v. *Anderston Foundry Co.*, 1 App. Ca. 591, but as inapplicable to a case where the Court has no evidence before it but the specification itself.

1787. TURNER *v.* WINTER, 1 Webs. 77; 1 T. R. 602.

False Suggestion—Insufficiency—Misleading.

The patent was granted for "a method of producing a yellow colour for painting in oil or water, making white lead, and separating the mineral alkali from common salt, all to be performed in a single process."

The specification contained directions (1) to "take any quantity of lead and calcine it, or minium, or red lead"—whereas minium would not produce the result required without calcination and fusion; (2) to "add half the weight of sea salt, with a sufficient quantity of water to dissolve it, or rock salt, or sal gem, or fossil salt, or any marine salt, or salt water, proper for the purpose"—whereas "fossil salt" was a generic term, and included sal gem, which was the only one mentioned that would serve the purpose; and (3) white lead could not be produced, but a substance very like it.

It was proved that scientific persons would know or discover the necessity of prolonging the process until fusion took place; that "marine salt" was the basis of the process, and no scientific person would take a "fossil salt" that was not also a "marine salt;" that the substance called "white lead," although not common ceruse, was a white substance with a basis of lead.

On a motion for a new trial the following propositions were laid down:—

By *Ashurst*, J.: The specification must be unequivocal; if ambiguity be introduced or anything tending to mislead the public the patent is void. 1 Webs. 80; 1 T. R. 605 (followed in *Coles* v. *Baylis*, 3 R. P. C. 180).

By *Buller*, J.: "If the patentee says that by one process he can produce three things, and he fails in any one, the consideration of his merit and for which the patent was granted fails, and the Crown has been deceived in the grant. Slight defects in the specification will be sufficient to vacate the patent." *Liardet* v. *Johnson* (*ante*, p. 75) was then referred to as an example of this.

The patent was held void for false suggestion and insufficiency.

Note.

This case has been followed in *Boulton* v. *Bull*, 2 H. Bl. 492; *Hill* v. *Thompson*, 1 Webs. 243; *Crompton* v. *Ibbotson*, D. & Ll. 34; *Derosne* v. *Fairie*, 1 Webs. 164; *Walton* v. *Bateman*, 1 Webs. 622; *Wegman* v. *Corcoran*, 13 Ch. D. 77; *Coles* v. *Baylis*, 3 R. P. C. 178. It has never been questioned.

1802. TENNANT'S CASE, 1 Webs. 125.

Patentee adopted Suggestion from Another—Prior Secret Use.

Plaintiff's patent was dated 1798, for a method of using certain calcareous earths in bleaching. The defendant proved that a bleacher had used the same means of preparing his bleaching liquor five or six years previously, but had kept it a secret from all persons save his two partners and two servants connected with preparing it. A chemist deposed that, in conversation, he suggested to the plaintiff as an improvement, agitation of the bleaching liquids. This the plaintiff subsequently declared in his specification to be the spirit of that part of the invention. Lord *Ellenborough*, C.J., nonsuited the plaintiff on the grounds (1) of prior user and (2) that the plaintiff was not the true inventor of the process of agitation of the lime water, which process he had claimed.

Note.

This case as to the second point was followed by *Dalles*, J., in *Hill* v. *Thompson & Forman*, 1 Webs. 245.

1809. HARMAR *v.* PLAYNE, 11 East, 101.

Sufficiency—Improvement—Distinguishing New from Old.

The plaintiff obtained a patent in 1787 for a machine for dressing woollen cloths. The specification was duly enrolled.

In 1794 a second patent was granted to *Harmar*. This patent recited the first, but not the first specification, and also "that he had invented considerable improvements in the said machine," and granted him the monopoly "to make, use, and vend *his said invention*."

The specification of this second invention gave, by letterpress and drawings, a full description of the *whole* of the machine, and concluded: "And I do hereby declare that my said invention is intended to be worked in the manner hereinbefore particularly mentioned." The specification did not distinguish what was new from what was old, the improvements could only be ascertained by a comparison of the two specifications.

During the argument for the plaintiff it was urged that the specification need not give everything at length, but might refer to sources of knowledge which persons of reasonable skill ought to know.

Lord *Ellenborough*, C.J., pointed out that references to standard works would be inconvenient for those who did not possess them, and leave the specification wholly unintelligible if the description were confined to the newly invented parts, the object of the specification being "to enable persons of reasonable intelligence and skill in the subject-matter to tell from the inspection of the specification itself what the invention was for which the

patent was granted."[1] The specification might mislead as to inclusion of old machine.

Le Blanc, J. (p. 111), pointed out that a mere description of the new parts would be unintelligible unless the reader was familiar with the first specification.

Lord *Ellenborough*, C.J. (p. 113), agreed with this proposition. "Reference must, indeed, often necessarily be made in these cases, to matters of general science, or the party must carry a reasonable knowledge of the subject-matter with him in order to clearly comprehend specifications of this nature."

The Court [Lord *Ellenborough*, C.J., *Grose*, *Le Blanc*, and *Bayley*, JJ.] subsequently decided that the specification had duly described and ascertained the nature of the invention.

Notes.

This case was quoted as an authority that a patent may be taken out which includes the subject-matter of one still running: *Tindal*, C.J., in *Crane* v. *Price*, 12 L. J. C. P., 88.

In *Foxwell* v. *Bostock* (4 De G. J. & S. 312) Lord *Westbury* distinguished *Harmar* v. *Playne* because the previous patent and specification were recited in the second, and treated it as an exception to the rule that the specification of an "improvement" invention must describe the novel improvement; but in *Parkes* v. *Stevens* Lord *Hatherley*, L.C. (L. R. 5 Ch. Ap. 37) remarked on the divergence between this case and *Foxwell* v. *Bostock* (*post*, p. 225), and said, "I think there is so much good sense and justice in the doctrines established by *Harmar* v. *Playne* that it is not a case that ought to be easily impeached by a later decision."

1817–18. HILL *v.* THOMPSON & FORMAN, 1 Webs. 225.

Construction—Absence of Reference to Previous Use—Failure of Part is Failure of Consideration.

The patent was for "certain improvements in the smelting and working of iron."

The specification described in detail three improvements. First: The process by which the iron contained in various sorts of slags or cinders is made into bar iron. Secondly: "In the use and application of lime to iron, subsequently to the operations of the blast furnace, whereby that quality in iron from which iron is called 'cold short,' howsoever and from whatever substance such iron be obtained, is sufficiently prevented or remedied, and by which such iron is rendered more tough when cold." Details of the methods employed with quantitative proportions were given. Thirdly: "And I do further declare that I have discovered that the addition

[1] Referred to with approval by Lord *Westbury*, L.C., in *Foxwell* v. *Bostock*, 4 De G. J. & S. 312.

of lime to limestone, or other substances consisting chiefly of lime, and free or nearly free from any ingredient known to be hurtful to the quality of iron, will sufficiently prevent or remedy that quality in iron, from which iron is called 'cold short,' and will render such iron more tough when cold." Details of the application of this principle were given.

An injunction was obtained against the defendants (3 Mer. 622).

The plaintiff having obtained a verdict moved to revive the injunction. (p. 626). But the defendants intended to move for a new trial. In refusing the injunction [1]:—

Lord *Eldon*, L.C., said (1 Webs. 237): "In [2] his direction to the jury, the judge has stated it as the law on the subject of patents—first, that the invention must be novel; secondly, that it must be useful; and thirdly, that the specification must be intelligible. I will go further, and say, that not only must the invention be novel and useful, and the specification intelligible, but also that the specification must not attempt to cover more than that which, being both matter of actual discovery, and of useful discovery, is the only proper subject for the protection of a patent. And I am compelled to add, that if a patentee seeks by his specification any more than he is strictly entitled to, his patent is thereby rendered ineffectual, even to the extent to which he would otherwise be fairly entitled. On [4] the other hand, there [6] may be a valid patent for a new combination of materials previously in use for the same purpose, or for a new method of applying such materials. But in order to its being effectual, the specification must clearly express that it is in respect of such new combination or application,[5] and of that only, and not lay claim to the merit of original invention in the use of the materials.[3] If there be a patent both for a new machine and for an improvement in the use of it, and it cannot be supported for the machine, although it might be for the improvement merely, it is good for nothing altogether, on account of its attempting to cover too much." . . .

"The (p. 238) question of law, upon the whole matter, is, whether this is a specification by which the patentee claims the benefit of the actual discovery of lime as a preventive of 'cold short,' or whether he claims no more than the invention of that precise combination, and those peculiar processes which are described in the specification."

A rule nisi was obtained to set aside the verdict, enter a nonsuit, or

[1] Owing to the present procedure being quite different (*Bacon*, V.C., in *Coles* v. *Bayliss*, 3 R. P. C. 182), as "there is no other Court than that in which the action is brought to which any recourse can be had," only a portion of the judgment is now in point.

[2-3] This passage was quoted and followed by *Best*, J., in *Brunton* v. *Hawkes*, 4 B. & Ald. 555.

[4-5] Quoted and followed by *Tindal*, C.J., in *Crane* v. *Price*, 12 L. J. C. P. 86, also by *Hill*, J., in *Harwood* v. *G. N. Ry. Co.*, 29 L. J. Q. B. 200. In *Clark* v. *Adie*, L. R. 2 Ap. Ca. 334, Lord *Blackburn* distinguished that case from this, saying that in this case Lord *Eldon* first enunciated the principle that "old things used in a combination producing different or new results may be the subject of a patent." This case and principle were expressly followed by *Bristowe*, V.C., in *Proctor* v. *Bennis*, 4 R. P. C. 339.

[6-7] This passage is quoted by Lord *Denman*, C.J., in *Cooke* v. *Pearce*, 8 Q. B. 1053, along with *R.* v. *Else*, *ante*, p. 180, and *Jessop's* Case (2 H. Bl. 463), as containing an authoritative statement of the law.

have a new trial, on (1) the grounds urged at the trial, and also (2) that the verdict was against the weight of evidence, as lime had previously been used to prevent "cold short," and as bar iron had been produced from slags and mine-rubbish before the date of the patent.

The rule was granted and judgment delivered by *Dallas*, J., who first dealt with the want of evidence as to infringement; he then commented on the cases of *Dollond* (*ante*, p. 50) and *Tennant* (*ante*, p. 182), contrasting them and illustrating want of novelty (including question of true and first inventor) by the case of *Arkwright's* roller and crank, and applying those precedents to the case before him. He then commented on the evidence of want of novelty in the use of lime, as described, to prevent "cold short," and continued: "So far, therefore, the application of lime is, in terms, claimed as an improvement, and nothing is said of any previous use, of which the use proposed is averred to be an improvement; it is therefore, in substance, a claim of entire and original discovery. The recital should have stated, supposing a previous use to have been proved in the case, that 'whereas lime has been in part, but improperly, made use of, etc.,' and then a different mode of application and use should have been suggested as the improvement claimed."

The learned judge discussed the specification with respect to the alleged discovery of the prevention of "cold short" by the use of lime, and held it was (1 Webs. 247) "a claim of discovery in the most extensive sense, of the effect of lime applied to iron to prevent brittleness not qualified and restrained by what follows as to the preferable mode of applying it under various circumstances; and therefore rendering the patent void, if lime had been made use of for this purpose before, subject to the qualification only of applying it subsequently to the operations in the blast furnace." The learned judge referred to *Arkwright's* case and *Aiken's* Dictionary and evidence of witnesses, and continued (p. 249): "On this part of the case I will only further remark, that if any part of the alleged discovery, being a material part, fail (the discovery in its entirety forming one entire consideration) the patent is altogether void; and to this point, which is so clear, it is unnecessary to cite cases." *Held* that the patent was invalid.

Notes.

In *Brunton* v. *Hawkes* (4 B. & Ald. 541) the patent was for improvements in the construction of anchors, windlasses, and chain cables. The improvements in anchors had been anticipated. In that case *Abbott*, C.J. (at p. 551), and *Best*, J. (at p. 555), referred to the facts and judgments in *Hill* v. *Thompson* as being decisive on the question that a patent taken out for more than the patentee was entitled to is void altogether. Baron *Parke*, in *Morgan* v. *Seaward* (1 Webs. 196), puts the avoiding of the patent on the ground of false suggestion. "It is on the same principle" (that a false suggestion of the grantee avoids an ordinary grant of lands from the Crown) "that a patent for two or more inventions, when one is not new is void altogether, as was held in *Hill* v. *Thompson* and *Brunton* v. *Hawkes*."

1819. R. *v.* WHEELER, 2 B. & Ald. 345.

Disconformity—Sufficiency.

Scire facias to repeal a patent for "a new and improved method of drying and preparing malt."

The specification was as follows:—

"My invention consists in the heating of malt to 400° F. and upwards, according to a process or processes hereafter described, and in so heating it that the greater part of the saccharine and amylaceous principles of the grain become changed into a substance resembling gum and extractive matter, of a deep-brown colour, readily soluble in hot or cold water." Different kinds of apparatus and methods were next described. "The proper degree of heat and time of exposure will be easily learned by experience, the colour of the internal part of the prepared grain affording the best criterion."

No statement was made as to what was the colour which was to be the criterion.

In delivering the judgment of the Court, *Abbott*, C.J., pointed out that the patent was for "*preparing*" (*i.e.* making) malt, and the specification described only a method of drying malt already made. Hence there is a false suggestion to the Crown. "Manufacture" includes processes.[1] The patentee in his specification claims to be the inventor of a process for making malt more soluble in water and colouring the liquor, the latter being the object in view. He does not describe a process of "preparing" malt.[2]

If this process was in truth a "preparing" of malt for a particular purpose, that purpose should have been mentioned. The patentee has not described any certain or precise process; nor the state in which the malt was to be used; nor the length of the process; nor maximum temperature. "A specification which casts upon the public the expense and labour of experiment and trial is undoubtedly bad."[3] But if these points would be known to persons of competent skill, then the patentee has not discovered anything.

1822. HALL *v.* JARVIS, 1 Webs. 100.

Inventive Ingenuity—Combination of Old Things.

In 1817 a patent was granted to *J. S. Hall* for "a method of improving every kind of lace or net, or any description of manufactured goods whose fabric is composed of holes, or interstices, made from thread or yarn, etc."

[1] See also *Gibson* v. *Brand* (1 Webs. 633); *Crane* v. *Price*, 12 L. J. C. P. 86; and *Harwood* v. *G. N. Ry. Co.*, 29 L. J. Q. B. 200.

[2] This is the real ground of decision. See *Veilson* v. *Harford*, 1 Webs. 312, 373, where this case is distinguished from that one.

[3] Quoted as authority in *Stevens* v. *Keating*, 2 Webs. 194, and in *Lane Fox* v. *Kensington, &c.*, 9 R. P. C. 248.

The machine consisted in an arrangement whereby the lace or other fabric was passed by means of rollers in an endless band over a flame of gas. The flame was drawn through the interstices by a chimney above the fabric singed. The rate of motion required in each case could only be determined by an actual experiment which could be easily performed.

It was proved that singeing had previously been done by means of oil and other flames, but not gas-flames; that gas-flames were well known and used for other purposes; that it was well known that flame would not (as in the Davy safety-lamp) ordinarily penetrate interstices; that bellows had been used for the purpose of singeing; and that the combination of a flame and chimney to ensure combustion by promoting draught (as in the Argand lamp) was also known.

Held, that the patent was valid.

Notes.

The above case was referred to in *Losh* v. *Hague* (1 Webs. 207) by Lord *Abinger*, C.B., as being the application of a new contrivance to the same purpose as was effected by an old one, and by *Tindal*, C.J., in *Crane* v. *Price* (12 L. J. C. P. 86) as an illustration of "the use of things already known, and acting with them in a manner already known, but producing those effects so as to be more economically or beneficially enjoyed by the public."

It will be observed that at this date the necessity of a certain amount of ingenuity, in addition to novelty and utility, to support a patent had not been generally discussed.

1841. NEILSON *v.* HARFORD, 1 Webs. 295.

Benevolent Construction— Utility.

The plaintiff's patent (No. 5701 of 1828) was for the "improved application of air to produce heat in fires, forges, and furnaces, where bellows or other blowing apparatus are required." The specification stated that the blast of air might be made by any known means, and was "to be passed from the bellows or blowing apparatus into an air-vessel or receptacle made sufficiently strong to endure the blast, and through or from that vessel or receptacle by means of a tube, pipe, or aperture into the fire, forge, or furnace. The air-vessel or receptacle must be air-tight or nearly so, except the apertures for the admission and emission of the air, and at the commencement and during the continuance of the blast it must be kept artificially heated to a considerable temperature. It is better that the temperature be kept to a red heat or nearly so, but so high a temperature is not absolutely necessary to produce a *beneficial effect*. The vessel or receptacle may be conveniently made of iron, but as the *effect* does not depend on the nature of the material, other metals or convenient materials may be used. The

size of the air-vessel must depend upon the blast and on the heat necessary to be produced." Dimensions in cubic contents were then given for forges, iron-founders' cupolas, and blast furnaces. "The form or shape of the vessel or receptacle is immaterial to the *effect*, and may be adapted to the local circumstances or situation." The air-vessel may be heated from any source, and preferably enclosed in brickwork; "the manner of applying the heat to the air-vessel is, however, immaterial to the *effect* if it be kept at a proper temperature."

At the trial of this action for infringement several pleas were set up, amongst others insufficiency of the specification was alleged, and want of utility.

Parke, B., in his address to the jury referred to the former practice of construing specifications strictly as against the patentee, and continued (1 Webs. 310): "Within the last ten years or more, the Courts have not been so strict in taking objections to the specification; and they have endeavoured to hold a fair hand between the patentee and the public, willing to give the patentee, on his part, the reward of a valuable patent, but taking care to secure to the public, on the other hand, the benefit of that proviso which is introduced into the patent for their advantage, so that the right to the patent may be fairly and properly expressed in the specification."[1]

The learned judge then dealt with the questions of infringement, objections to the title, and the extent of the claim.

On the question of sufficiency (p. 314): "You are not to ask yourselves the question whether persons of great skill—a first-rate engineer, or a second-class engineer—whether they would do it: because generally those persons are men of great science and philosophical knowledge, and they would upon a mere hint in the specification probably invent a machine which should answer the purpose extremely well; but that is not the description of persons to whom this specification may be supposed to be addressed—it is supposed to be addressed to a practical workman, who brings the ordinary degree of knowledge and the ordinary degree of capacity to the subject."[2]

The learned judge reviewed the evidence at length and explained the law as to sufficiency of directions.

Certain questions were left to the jury.

The jury found "that the shape and form are material to the effect, simply, that is to the extent of beneficial effect produced, not to producing some effect, for some beneficial result would be produced from any shape, and as to producing the extent of beneficial effect, the form and shape are material." They also found that the specification gave sufficient directions to enable an ordinary workman who knew of the old blowing apparatus to produce a beneficial result taking expense into consideration. They also found that no one would be misled by the specification.

The learned judge directed that judgment be entered for the defendants

[1] Quoted as the rule by *May*, J., in *Edison & Swan* v. *Holland*, 5 R. P. C. 474.
[2] This passage is quoted as the rule by *Jessel*, M.R., in *Stoner* v. *Todd*, 4 Ch. D. 61.

on the issue of insufficiency of the specification, as, on his construction of the specification, there was a misdirection (viz. that the form and shape were immaterial to the extent of the effect) in the specification itself, and that such could not be cured by parole evidence.

The plaintiffs appealed to the Exchequer Chamber.

During the argument Baron *Alderson* thus described the invention (p. 337): "What he really discovered is, that it would be better for you to apply air heated up to a red heat or nearly so, instead of cold air as you have hitherto done. That is the principle; that is the real discovery; but in order to take out a patent, you must have an embodiment of the principle, and his embodiment of the principle is the heating of the air in a separate vessel, intermediary between the blowing apparatus and the point where it enters the furnace."

During the argument on infringement and extent of the claim it was urged that every shape of vessel was included in the claim. Per *Alderson*, B. (p. 355): "Then I think that is a principle, if you claim every shape. If you claim a specific shape and go to the jury and say that which other people have adopted is a colourable imitation, then I can understand it. If you claim every shape you claim a principle. There is no difference between a principle to be carried into effect in any way you will and claiming the principle itself. You must detail some specific mode of doing it." [1]

The point at issue was thus stated by *Parke*, B., during the argument (p. 363): "Whether this Court is of opinion, comparing the specification with the fact that there is a clear misrepresentation in any part of it. The question is, whether that can be corrected by the evidence of men acquainted with the subject, who say they would be themselves able to correct that error by their knowledge of the subject. . . . That is the question I reserved for the opinion of the Court." [2]

The Court made the rule absolute to enter judgment for the plaintiff.

Parke, B., in dealing with the question of construction (p. 370): "The construction of all written instruments belongs to the Court alone, whose duty it is to construe all written instruments, as soon as the true meaning of the words in which they are couched, and the surrounding circumstances, if any, have been ascertained by the jury; and it is the duty of the jury to take the construction from the Court, either absolutely, if there be no words to construe as words of art, or phrases used in commerce, and the surrounding circumstances to be ascertained, or conditionally, where those words or circumstances are necessarily referred to them." [3]

The learned judge referred to his construction at the trial that the

[1] This is the real state of the law as it at present stands: per *Lindley*, L.J., in *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 308. It is the proper limitation of the generality of the dictum in *Jupe* v. *Pratt*. *Nobel* v. *Anderson*, per *Kay*, L.J., 11 R. P. C. 527. Followed also in *The Ticket Punch, &c.* v. *Colley's Patent*, 12 R. P. C. 185.

[2] This question was not decided in this appeal, but in subsequent cases. See *ante*, pp. 76, 77.

[3] Quoted and followed by Lord *Westbury*, L.C., in *Hills* v. *Evans*, 31 L. J. Ch. 462.

specification meant that the shape was immaterial to the degree of effect in heating the blast—a statement that the jury found was not literally true. He continued: "But my lord and my brothers, after considerable hesitation, are of opinion that a construction may reasonably be put upon this clause which will support the patent; and though I myself still entertain great doubt whether such is the true construction, I am not prepared to say that it is not, and I am very glad, that in so meritorious an invention as this is admitted to be, in this view of the case the inventor will not be deprived of his reward." The Court held that the word "effect" meant the beneficial effect of the blast in the furnace, and that consequently the statement was not contradicted by the finding of the jury.

Notes.

Neilson v. *Harford* has been regarded as an authority that questions of construction determined from the specification above are for the Court exclusively: *Allen* v. *Rawson*, 1 C. B. 571. Per *Blackburn*, J., in *Betts* v. *Menzies*, 31 L. J. Q. B. 239.

It also illustrates the rule that a small amount of utility will suffice to support a patent. Per *Jessel*, M.R., in *Plimpton* v. *Malcomson*, 3 Ch. D. 582.

In *Young* v. *Hermand Oil Co.*, 9 R. P. C. 382, it was suggested by Lord *Herschell* that *Neilson* v. *Harford* showed that change of temperature in one retort might constitute a new process. As to this see *ante*, pp. 36, 37.

1841. KAY *v.* MARSHALL, 2 Webs. 34; 8 Cl. & F. 245.

New Use of Old Machine—Real Invention wrongly described.

In 1825 a patent (No. 5226) was granted to *J. Kay* for "new and improved machinery for spinning flax, hemp, and other fibrous substances by power."

The specification was as follows:—

"I do hereby declare the nature of my said Invention to consist in new machinery for macerating flax and other similar fibrous substances previous to drawing and spinning it, which process I call preparing it; and also in improved machinery for spinning the same after having been so prepared. And in further compliance with the said proviso, I do hereby describe the manner in which I perform my said Invention by the following description; first, of the new machinery for macerating, and, secondly, of the improved machinery for spinning; reference being had to the drawing annexed, and the figures and letters marked thereon, that is to say—

"DESCRIPTION OF THE DRAWING.

"I will first describe the new machinery for the purposes of maceration."

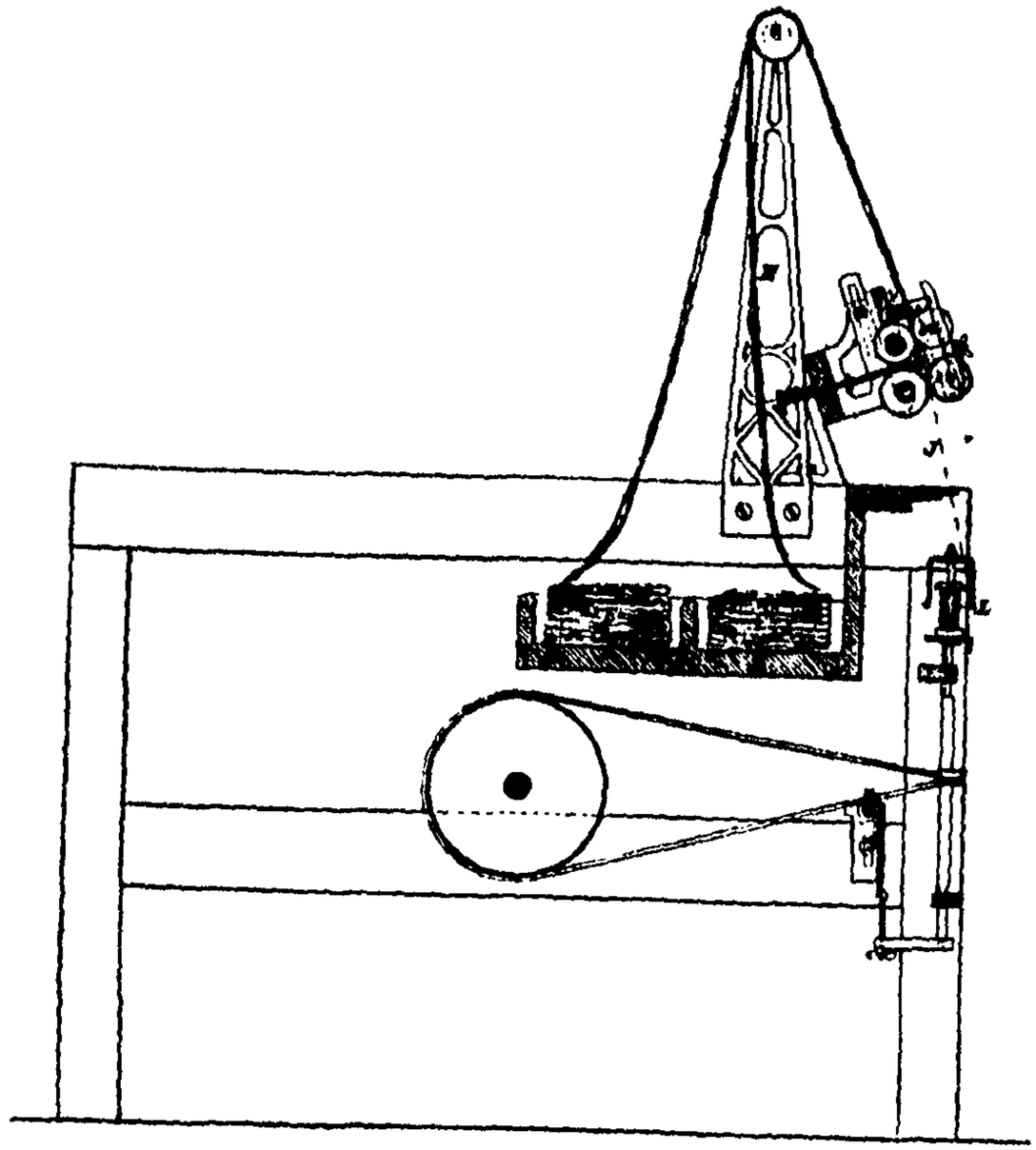
The description was continued by references to Figs. 1 and 2 of the drawings showing how the flax is prepared and macerated by means of rollers and the roving or sliver received into vessels through which water

permeated, and in which the roving was left for some hours. The specification continued :—

"Having now described the new machinery for the purposes of maceration, and which consists only of the vessels marked B, and the trough of water marked C, I will proceed to describe the improved machinery for spinning flax and other similar fibrous substances.

"Fig. 3 represents a side view in section of my improved spinning frame to be worked by power in any of the ordinary methods. D, D, is a wooden or other trough divided into compartments, each compartment having the contents of one of the macerating vessels emptied into it, in such manner that the said contents, when so emptied into it, may have the appearance represented in this Figure, and the best mode which I have found of doing this has been to turn the macerating vessel upside down carefully over the compartment, when the end of the roving or sliver will be easily found. E, E, represent the contents of two of the macerating vessels emptied as aforesaid. The ends of the roving or sliver being found, they are led over the roller G at the top of the frame H. From this roller G the roving or sliver is led between an ordinary pair of retaining rollers *e*, *e*, and a pair of drawing rollers *c*, *c*. The drawing rollers *c*, *c*, move at a pace eight times faster than the retaining rollers *e*, *e*, which retaining rollers I find answer better to be fluted. I place the drawing rollers only 2½ inches from the retaining rollers, and this constitutes the principal improvement in the said spinning machinery; for the roving being so completely macerated would not hold together to be drawn out while in such a state to the ordinary length of the staple, but this very state, when drawn in so short a length as here represented, enables it to be spun very fine and evenly; for it should be stated that there is no elasticity in the fibre of flax, hemp, nettle-weed, or other the like substances, but when drawn by rollers so placed as aforesaid, and moving at the relative speeds aforesaid, and in the completely saturated state aforesaid, the fibres themselves are pulled asunder, and require to be twisted immediately, or the continuity of the thread would be destroyed. This position of the rollers is not necessary in the ordinary mode of spinning such substances as aforesaid, for in the ordinary process the elongation of the skim only is effected by the process of drawing, and not the elongation of the fibres themselves which compose the skim; J is the thread or staple in its twisted or spun state, and L is the ordinary bobbin and fly.

"Now whereas I hereby declare that what I claim as my Invention in respect of new machinery for preparing flax, hemp, and other fibrous substances, are the macerating vessels marked B, and trough of water marked C; and that which I claim as my Invention in respect of improved machinery for spinning flax, hemp, or other fibrous substances, is the wooden or other trough marked D, for holding the rovings when taken from the macerating vessels, and the placing of the retaining rollers *e*, *e*, and the drawing rollers *c*, *c*, nearer to each other than they have ever before been placed, say within 2½ inches of each other, for the purpose aforesaid."



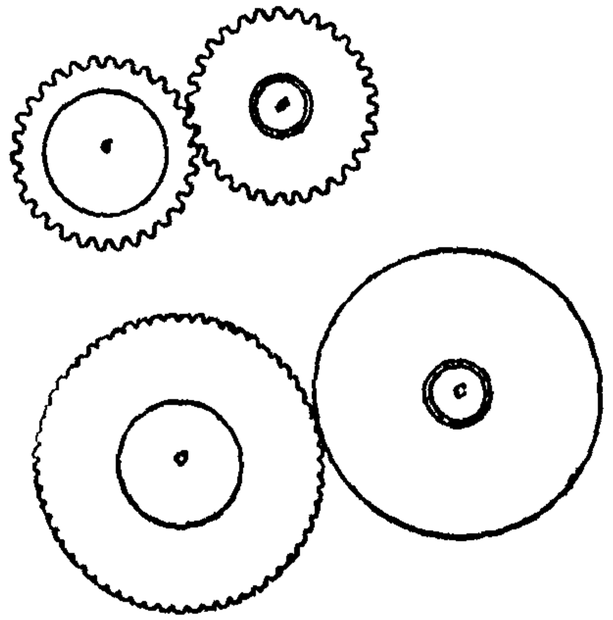


Fig. 3 of Kay's specification (5226 of 1835) with enlarged elevation of drawing-rollers, *c*, *c*, and retaining-rollers *e*, *e*.

A bill in Chancery was filed, claiming an injunction against the defendants for using machinery constructed and used according to the specification for spinning wet flax at a short reach as described, and other relief was sought.

The bill recited that the plaintiff discovered that by wetting and maceration and spinning with a short "ratch" or "reach" of 2½ inches; that by means of further improvements the process of maceration described in the specification could be dispensed with, if the flax were passed through a trough of water before being drawn out and spun; that the plaintiff's invention of machinery for spinning flax by means of placing the drawing rollers as described within a short distance of the retaining rollers was a new invention of great public utility; and that the patent had been held valid in previous actions at law.

The time for demurring having expired, special leave of the Court was obtained to file a general demurrer to the bill. It was argued before the Vice-Chancellor who ordered the demurrer to stand over for twelve months with liberty to bring an action.

On appeal from the above order Lord *Cottenham*, L.C., overruled the demurrer and discharged the order. In the opening of his judgment the following passage occurs (2 Webs. 39; 1 My. & Cr. 383):—

"Upon the face of his bill, he alleges that he did by his specification do all that his patent required him to do, namely, describe and ascertain the nature of his invention, and in what manner the same was to be performed. What follows is merely the claim, not intended to be any description of the means by which the invention is to be performed, but introduced for the security of the patentee, that he may not be supposed to claim more than what he can support as an invention. It is introduced, lest in describing and ascertaining the nature of his invention, and by what means the same is to be performed (particularly in the case of a patent for an improvement), the patentee should have inadvertently described something which is not new, in order to render his description of the improvement intelligible. The claim is not intended to aid the description, but to ascertain the extent of what is claimed as new." [1]

The defendants raised two pleas, alleging that the principle of wet spinning was not new, and that the process of maceration described was unnecessary and useless.

A trial at law was ordered.

The case was tried at the Assizes. Evidence was given of the revolution created in the manufacture by the plaintiff's process, and of the action of his machine and earlier ones.

The jury found a verdict in favour of the plaintiff on both issues. The following statement of facts was endorsed:—

"That before the granting of the patent, hemp, flax, and other fibrous substances were spun by machines with slides by which the reach was varied

[1] This passage is quoted and referred to with approval by *Jessel*, M.R., in *Plimpton* v. *Malcomson*, 3 Ch. D. 563, and by *Wills*, J., in *Easterbrook* v. *G. W. Ry. Co.*, 2 R. P. C. 208.

according to the length of the staple or fibre of the article to be spun; and that has been the fundamental principle of dry spinning known and used before the granting of the patent; the reach having varied—in cotton spinning between, $\frac{7}{8}$ inch to $1\frac{1}{4}$; in flax or line spinning, from 14 to 36 inches; in tow spinning, from 4 to 9 inches; in worsted spinning, from 5 to 14 inches; but before the granting of the patent it was not known that flax could be spun by means of maceration, as having a short fibre, at a reach of $2\frac{1}{2}$ inches or about these limits; but before that time Horace Hall had taken out a patent for 'an improved method of preparing and spinning hemp, flax, and other substances containing fibre,' with a specification referring to it, and the machines manufactured according to that patent were constructed with a reach of $4\frac{3}{4}$ inches."

An order was subsequently made by Lord *Langdale*, M.R., that a case be made for the opinion of the judges of the Court of Common Pleas upon the question of the validity of the patent.

It was held by the Court of Common Pleas: that the invention consisted of two parts, viz. new machinery for macerating flax, and "improved machinery for spinning the same;" that the real subject-matter of the improved machinery was "the placing and retaining of the respective rollers within $2\frac{1}{2}$ inches from each other;" that this was merely "the application of a piece of machinery already known and in use to the new macerated state of the flax;" and that the patent was therefore invalid.

Sir *N. C. Tindal*, C.J., in the conclusion of the judgment of the Court, said (2 Webs. 76): "The answer given to this objection on the part of the plaintiff has been, that the invention for which the patent has been taken out does not consist of two distinct parts, but has but one entire single object only, namely, the object of macerating and spinning that macerated flax, on a machine where the rollers are retained at the prescribed distance from each other. But this appears to be at variance with the specification itself, which divides the invention and the subject-matter of the patent into two distinct parts; and even if it is to be considered as one entire invention, if part of what is claimed is not properly the subject of a patent, or not new, the whole must be void."

The Master of the Rolls concurred with this judgment and dismissed the bill with costs.

The plaintiff appealed to the House of Lords.

The appeal was dismissed.

Lord *Cottenham*, L.C., in delivering judgment, reviewed the facts and the history of the litigation, and continued (p. 81): "All the variation which the plaintiff introduced into the ordinary spinning machine, which he claims as his invention, is fixing the rollers at $2\frac{1}{2}$ inches distance from each other; and that he states is such an improvement to the ordinary spinning machine as entitles him to be protected from the rest of the world against their using spinning machines with the rollers at that distance. It is not, as was argued at the bar, one invention, namely, the macerating of flax and using flax as mace-

rated with a particular machine."[1] The earlier part of the invention he does not say is infringed, the defendants do not use it; another mode of maceration has been adopted. "If the patent be good, so far as the spinning machine is concerned, that is to say, if the plaintiff has a right to tell the defendants, and all the rest of the world, that they shall not use the common spinning machine with rollers at $2\frac{1}{2}$ inches distance, then the existence of the patent deprives the defendant and all the rest of the world of the right of using the ordinary spinning machine in the form in which they had the right to use it before the patent was granted. Now that is not the object of the patent. If he has discovered any means of using the machine which the world had not known before, the benefit of that he has a right to secure to himself by means of a patent; but if this mode of using the spinning machine was known before (and the endorsement upon the *postea* states that it was known before), then the plaintiff cannot deprive them of having the benefit of that which they enjoyed before."

Notes.

Kay v. *Marshall* has been referred to as an illustration of the want of subject-matter by *Fry*, L.J., in *Edison* v. *Woodhouse*: "The invention was for the use of a well-known machine in a manner in which it could have previously been used" (4 R. P. C. 92). A similar view was expressed by *Charles*, J., in *Herrburger* v. *Squire*, 5 R. P. C. 592.

Lord *Penzance* commented on this decision in *British Dynamite Co.* v. *Krebs*, and distinguished the two cases. See *post*, p. 277.

1842. CRANE *v.* PRICE, 4 M. & Gr. 580; 12 L. J. C. P. 81; 1 Webs. 393.

Manufacture—Subject-matter—Combination Process.

A patent was granted Sept. 28, 1836, to *G. Crane* for "an improvement in the manufacture of iron."

The specification reviewed the existing methods of the production of iron from ore by means of bituminous coal, and also the advantages of using anthracite or stone coal, when possible, the result being the production of "a quality of iron more nearly resembling iron obtained by the aid of vegetable charcoal. Now, the object of my invention is, the application of such anthracite, or stone coal, combined with a hot-air blast in the smelting or manufacture of iron from iron stone, mine, or ore." Full directions were given as to the mode of using the anthracite. The claim was in the following terms: "I would have it understood, that I do not claim the using of a hot-air blast separately in the smelting and manufacture of iron as of my invention,

[1] This was the real discovery of the plaintiff which revolutionized the industry. Had it been properly described and claimed as a *method* or *process* of wet spinning by means of maceration and a shortened reach, a valid patent could have been obtained.

when uncombined with the application of anthracite, or stone coal, or culm; nor do I claim the application of anthracite, or stone coal, in the manufacture or smelting of iron, when uncombined with using the hot-air blast. *But what* I do claim as my invention is, the application of anthracite, or stone coal, or culm, combined with the using of hot-air blast in the smelting and manufacture of iron from iron stone, mine, or ore, as above described."

This was an action on the case for infringement.

The evidence at the trial was to the following effect :—

The hot blast used was *Neilson's* and that the invention lay in using it with anthracite coal.

Previous to *Crane's* invention, many attempts had been made without success to use anthracite in the smelting of iron. *Neilson's* patent had been known for eight years. Seventy patents had been taken out to effect the same object, and all were useless.

The results of the new process were immense. The breaking-weight of a bar of iron was increased in the ratio of 1 to 1·211, and the resistance to bending under a transverse strain from 1 to 1·3. The whole smelting industry in South Wales was revolutionized, iron being obtained equal to the best Swedish charcoal iron.

At the trial a formal verdict was taken, Sir *N. C. Tindal*, C.J., expressing the opinion that it was a question of law at the last: "I have been listening with great attention to it; it must come at last to what is the meaning of the word 'manufacture' under the statute; whether the application of a known mode of working the blast, applying it to all purposes, when applied to a known purpose is a manufacture; and then you come to the other—whether he was the true and first inventor."

The case came on as a special case before *Tindal*, C.J., *Erskine*, *Coltman*, and *Maule*, JJ.

Several issues were raised by the case, the most important being that suggested by *Tindal*, C.J., at the trial.

In delivering the judgment of the Court, *Tindal*, C.J., reviewed the issues, the specification, the claim with its disclaimers, and continued: "And the question, therefore, becomes this—whether, admitting the using of the hot-air blast to have been known before in the manufacture of bituminous coal, and the use of anthracite, or stone coal, to have been known before in the manufacture of iron with the cold blast, but that the combination of the two together (the hot blast and the anthracite) were not known to be combined before in the manufacture of iron, whether such combination can be the subject of a patent."

"We [1] are of opinion that if the result produced by such a combination is either a new article, or a better article, or a cheaper article to the public,

[1] The passage quoted in this paragraph has been frequently (and is the only one) quoted by learned judges in subsequent judgments. See *Murray* v. *Clayton*, L. R. 7 Ch. Ap. 584; *Lyon* v. *Goddard*, 10 R. P. C. 346; *Lister* v. *Norton*, 3 R. P. C. 205; *Morgan* v. *Windover*, 4 R. P. C. 425.

than that produced before by the old method, that such combination is an invention or manufacture intended by the statute, and may well become the subject of a patent." The learned judge supported this view by quotations from *R.* v. *Wheeler*, 2 B. & Ald. 349 (*ante*, p. 186), and *Hill* v. *Thompson*, 1 Webs. 237 (*ante*, p. 184).

He reviewed the facts of previous cases, and the evidence taken at the trial.

He continued: "It was objected, in the course of the argument, that the quality or degree of invention was so small, that it could not become the subject-matter of a patent; that a person who could procure a license to use the hot-air blast under Neilson's patent, had a full right to apply that blast to coal of any nature whatever, whether bituminous or stone coal. But we think if it were necessary to consider the labour, pains, and expense, incurred by the plaintiff, in bringing his discovery to perfection, that there is evidence in this cause that the expense was considerable, and the experiments numerous. But in point of law, the labour of thought, or experiments, and the expenditure of money, are not the essential grounds of consideration on which the question, whether the invention is or is not the subject-matter of a patent, ought to depend. For if the invention be new and useful to the public, it is not material whether it be the result of long experiments and profound research, or whether by some sudden and lucky thought or mere accidental discovery.

"The Case of Monopolies states the law to be, that where a man, by his own charge or industry, or by his own wit and invention, brings a new trade into the realm, or any engine tending to the furtherance of a trade that never was used before, and that was for the good of the realm, that the King may grant him the monopoly of a patent for a reasonable time. If the combination now under consideration be, as we think it is, a manufacture within the statute of James, there was abundant evidence in the cause, that it had been a great object and desideratum, before the granting of the patent, to smelt iron stone by means of anthracite coal, and that it had never been done before; there was no evidence on the part of the defendants to meet that which the plaintiff brought forward. These considerations, therefore, enable us to direct that the verdict ought to be entered for the plaintiff on the third issue; that it was a new manufacture—new as to the public use and exercise thereof within England and Wales." [1]

It was also decided that the use of *Neilson's* hot blast, although the subject of a patent still running, could form part of a process or combination the subject of another patent.

Notes.

The main issue decided in this case was that the process described by *Crane* was a "manufacture," and that a "manufacture" may be new although

[1] The passage here quoted gives the real ground of the decision. The test of the *minimum* amount of ingenuity necessary to support a patent was never discussed at all.

the several processes then combined for the first time may be severally old.

Several *dicta* will be found in the reports of subsequent cases to the effect that *Crane* v. *Price* is of doubtful authority at the present day. A close examination, however, reveals the fact that such *dicta* occur chiefly in cases in which *Crane* v. *Price* has been relied on in argument in support of the proposition that, if the conditions mentioned in the paragraph above noted (*ante*, p. 196) be fulfilled, the invention is patentable, ignoring the facts proved in the case showing the failure of preceding inventors who laboured at the same problem. This occurred in the following cases. In *Morgan* v. *Windover*, 4 R. P. C. 425,[1] it was followed by *Kekewich*, J. (whose decision was subsequently reversed); in *Lister* v. *Norton*, 3 R. P. C. 205, it was similarly quoted by *Chitty*, J.; in *Rushton* v. *Crawley*, 10 L. R. Eq. 524, it was so referred to and subsequently doubted by *Malins*, V.C. (at p. 529); in *Blakey* v. *Latham*, 6 R. P. C. 187; and in *Rickmann* v. *Thierry*, 12 R. P. C. 548 and 14 R. P. C. 114.[2] In none of these cases was there such evidence of invention from the workman's point of view as was given in *Crane* v. *Price*.

The presence of "invention" in *Crane's* process has been recognized by Lord (then Mr. Justice) *Blackburn* in *Harwood* v. *G. N. Ry. Co.*, 11 H. L. Ca. 667,[3] and subsequently in *Clark* v. *Adie*, 2 App. Ca. 335. In the cases in which *Crane* v. *Price* has been approved and followed there were facts showing invention from the workman's point of view:—*Murray* v. *Clayton*, L. R. 7 Ch. Ap. 584;[4] *Lyon* v. *Goddard*, 10 R. P. C. 346.[5]

If the presence of sufficient ingenuity to support a patent be tested (as is submitted is the proper course, *ante*, p. 35) from the workman's point of view by comparing the state of the art before and after the disclosure of the invention in question, then the evidence of "invention" in *Crane* v. *Price* is abundant; but if it be allowed to test the necessary amount of ingenuity by an *ex post facto* examination of the problem, then the amount of ingenuity so tested appears at first sight not to be such as would support a patent at the present day. But, in applying this mental process, it is frequently forgotten that, owing to scientific discoveries and generalizations—the mechanical equivalent of heat, the conservation of energy, the inter-dependence of physical, chemical, and electrical phenomena—minds at the present time are better trained and more ready to perceive analogies and devise new methods than they were in 1842. It is dangerous in applying the *ex post facto* process to rely on early cases.

Crane's invention has been sometimes described as a "combination" (*Morgan* v. *Windover*, 4 R. P. C. 425), but not without doubt (per *James*, L.J., in *Murray* v. *Clayton*, L. R. 7 Ch. Ap. 584). It appears to be the invention of a process for smelting iron in which an old invention, *Neilson's*

[1] For facts, see *post*, p. 323.
[2] For facts, see *post*, p. 391.
[3] For facts, see *post*, pp. 204, 207.
[4] For facts, see *post*, p. 249.
[5] For facts, see *post*, p. 358.

blast, was used with anthracite coal, the result being substantially a new process resulting in an improved kind of iron. In *Vickers* v. *Siddell*, 7 R. P. C. 302, Lord *Halsbury*, L.C., remarked that the judges in *Crane* v. *Price* seemed to have confused a patent for a process with a principle.

1851. ELECTRIC TELEGRAPH CO. *v.* BRETT & LITTLE, 10 C. B. 838.

Construction of Specification—Essence of the Invention.

The specification was that which described the *Cooke & Wheatstone* telegraph dated Dec. 12, 1837.

The title was "Improvements in giving signals and sounding alarms in distant places by means of electric currents transmitted through metallic circuits." The specification described the invention fully with diagrams. Throughout metallic circuits were mentioned, earth-returns being then unknown. The action of a magnetic needle in the centre of a coil of conducting wire was known, and also that it could be operated from a distant battery. The novelty lay in the arrangement and use of two or more needles worked through two or more circuits, to produce different signals by combinations. The needles oscillated between stops in vertical planes, and were weighted to ensure stability.

There were several claims. The first included the placing of the needles on horizontal axes, weighting them at one end, and limiting the oscillations by stops. The second was for the improvement in placing several needles on the same dial so as to give signals by combinations. The third included the combinations of wires, sending-buttons, and receiving-dials. The fourth was for the arrangements of sending-keys. The fifth included duplicate stations on the line. The sixth and seventh were for details as to the employment of temporary magnetism to influence the needles. The eighth and ninth related to the employment of local or relay batteries.

Throughout the whole specification and in the claims the conductors were spoken of in the plural. Reference was made in the claims to communicating angular motions to vertical needles "by means of electric currents transmitted through metallic circuits."

It was subsequently discovered that an earth-return could be used, and thereby only *one* metallic conductor in each circuit was required.

It was held that the claims were for certain *improvements*, and that the use of a *complete* metallic circuit was no part of the improvements; hence the claims included cases in which only a single conductor and earth-returns were used, although the possibility of earth-returns was unknown at the date of the patent.

Notes.

This case was regarded as an authority in the Lane Fox case (*post*, p. 345). The specification of Mr. *Lane Fox* described a system of distribution of electricity for glow-lamps. In such a system it is material to supply the

current at a constant pressure; so far as the lamps were concerned it was immaterial whether a return conductor was used or the earth. Throughout the specification the "earth" was spoken of. *Held*, on the authority of the above case, that an earth-return was not claimed as essential to the system of distribution. *Lane Fox* v. *Kensington, &c.*, 9 R. P. C. 242. The decision in *El. Tel. Co.* v. *Brett* did not turn on the allegation that the earth-return was an "equivalent" for the metallic, but that the metallic return, not being an *essential*, was not necessarily included in the claim.

1855. HEATH *v.* UNWIN, 5 H. L. Ca. 505.

Construction—Chemical Equivalents.

In 1839 a patent was granted to *J. M. Heath* for "certain improvements in the manufacture of iron and steel." The nature of these inventions was: (1) extraction of pure cast iron and formation of slag, (2) forming cast steel from the cast iron by fusing with malleable iron and certain oxides, (3) the use of oxide of manganese in puddling, and (4) "the use of carburet of manganese in any process whereby iron is converted into cast steel." The several processes were described in detail, including the use of oxide of manganese in the puddling furnace, and, "lastly, I propose to make an improved quality of cast steel, by introducing into a crucible bars of common blistered steel, broken as usual into fragments, or mixtures of cast and malleable iron and carbonaceous matters, along with from one to three per cent, of their weight of carburet of manganese, and exposing the crucible to the proper heat for melting the materials, which are, when fluid, to be poured into an ingot mould in the usual manner; but I do not claim the use of any such mixture of cast and malleable iron, or malleable iron and carbonaceous matter, as any part of my invention, but only the use of carburet of manganese in any process for the conversion of iron into steel, I claim . . . and, fourth, the employment of carburet of manganese in preparing an improved cast steel."

Carburet of manganese was a substance manufactured by heating at a high temperature oxide of manganese and carbon.

It was subsequently discovered, but not known at the date of the specification, that if black oxide of manganese and coal tar were made into a paste in suitable proportions and introduced into the furnace, the result would be the same as the direct use of carburet of manganese. There was no direct evidence that carburet of manganese was actually formed in the melting process, but such was the opinion of experts.

The opinion of the judges was called for by the House of Lords.

Parke, B. (p. 538): "The specification must be read as persons acquainted with the subject would read it *at the time* it was made; and if it could be construed as containing any chemical equivalents, it must be such as are known to such persons at that time; but those which are not known at the time as

equivalents, and afterwards are found to answer the same purpose, are not included in the specification; they are new inventions." [1]

Held, by the House of Lords (reversing the Court below): That the specification claimed only the use of the carburet of manganese, and did not include the use of the coal tar and oxide paste.[2]

Notes.

This decision was one in a case where the patent was for a new process (use of carburet of manganese) for attaining an old result (formation of steel); there is no analogy between it and a case where the chemical combination is part of a larger novel combination. *Incandescent Gas Co.* v. *De Mare, &c.*, 13 R. P. C. 332.

1858. NEWALL *v.* ELLIOTT, 4 C. B. N. S. 269; 27 L. J. C. P. 337.

Prior User and Publication—Disconformity.

In 1855 a patent (No. 1091) was granted to *R. S. Newall* for "improvements in apparatus employed in laying down submarine electric telegraph wires." The provisional specification was in the following terms:—

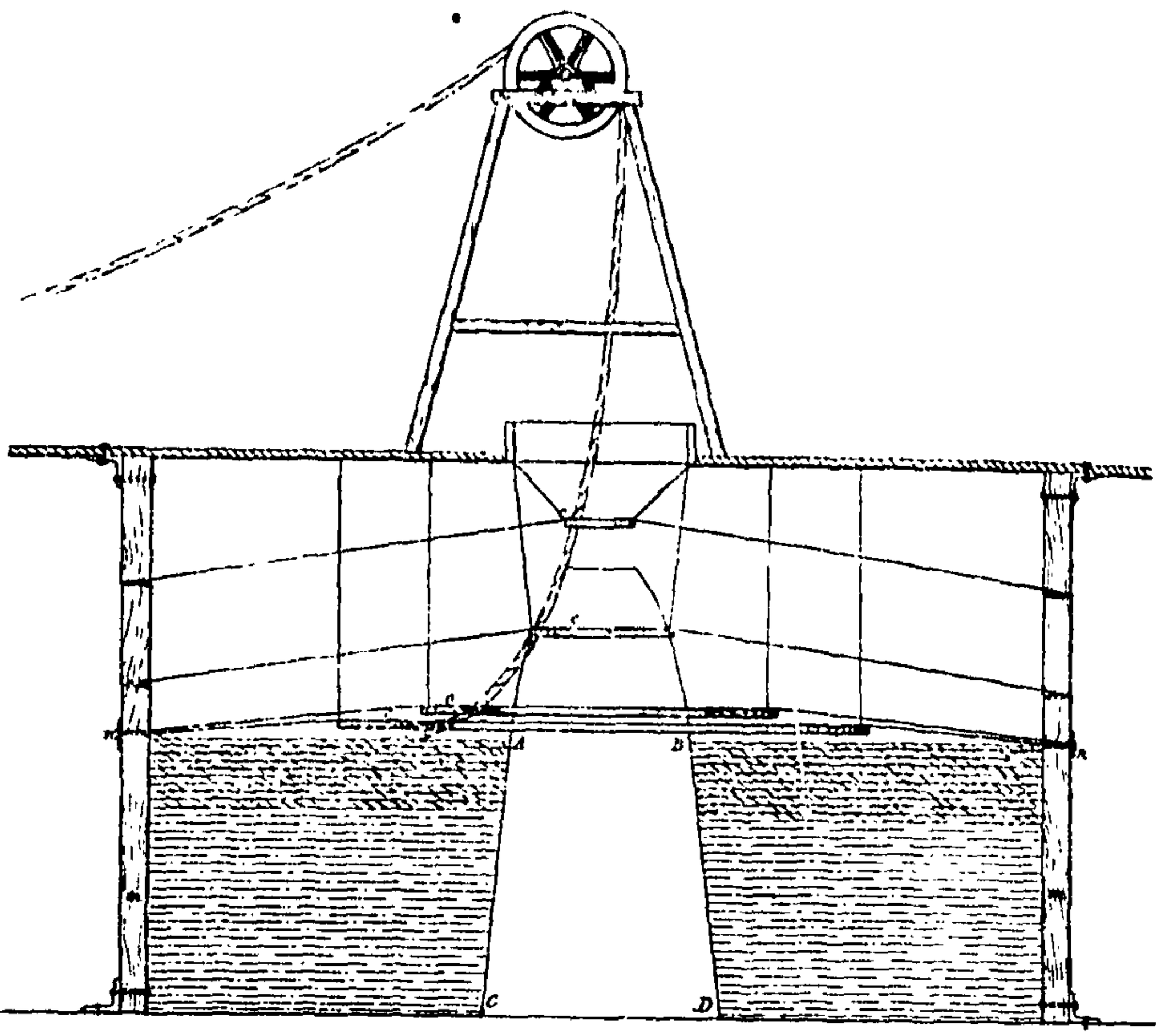
"This invention consists of apparatus combined and acting in the following manner: The cable or rope containing the insulated wire or wires is passed round a cone, or, if it is a long cable, round several cones, so that the cable in being drawn off the coil is prevented from kinking by means of the cone, and there is a cylinder on the outside which prevents the coil from shifting in its place. The cable passes over a pulley above the cone and on to a brake-wheel, round which it takes several turns to obtain sufficient holding, and from the brake-wheel it passes over the stern of the vessel on board which the cable or rope is placed; or I use two or more brake-wheels, the one behind the other; the cable or rope comes up from the hold of the vessel and round the first brake-wheel several times, then on to the second brake-wheel, round which it also takes several turns. When the brake is applied to the first wheel it increases the friction on the second, and so on, according to the number of brake-wheels used; or I use two brake-wheels, coupled together either by spur gear or cranks and connecting-rods; the cable in such case passes round only a part of the circumference of each. There are grooves in the wheels, which guide the cable or rope from one to the other, and prevent its getting foul; or a guide is used to push the cable from one side of the wheel to the other, so as always to keep one part from riding over another."

The complete specification began by a repetition of the provisional, and then continued:—

[1] Quoted as authority in *Badische Anilin, &c.* v. *Levinstein*, 24 Ch. D. 170; 2 R. P. C. 90.

[2] The decision turned in a great measure on the construction of the specification, inasmuch as the precise proportions of carburet and iron to be introduced were given.

"The greatest difficulty in laying down submarine telegraph wires or cables hitherto has been the limit to speed in paying them out, arising from the necessity of the leading off part of the coil being kept clear of the others, by a great number of men handling it to prevent its getting into kinks or becoming entangled one part with another. This is remedied by coiling the wire or cable round a cone (or several cones if required), so that the wire in being drawn off the coil is prevented from kinking by means of the cone. The apparatus I employ is shown in the accompanying drawings,[1] which represent a section and plan. A, B, C, D



Part of drawing of Newall's specification (1091 of 1855).

is the cone; it is formed of wood, or it may be of iron, so as to present an even surface on the outside, so that the wire in passing round it may not be caught by any projection. This cone is firmly fastened to the bottom of the vessel, and reaches at least as high as the top of the coil. Around the cone is formed a cylinder or series of uprights *m*, strongly fastened to the bottom and deck, so as to prevent the coil of wire or cable which is coiled around the cone from shifting in its place. A strong iron ring or

[1] For the present purpose it is only necessary to show the elevation in part. The original showed brake-wheels on the left. The error in the drawing showing a ring too close on the cone was introduced into the 2nd edition of the specification published by the Patent Office.

hoop is fastened outside the supports to brace them together at *n*. Over the cone is placed a pulley, one side of it being in a line with the axis of the cone."

The position, strength, and proportions of the brake-wheels were next described, and then the coiling of the cable, as follows :—

"The cable is carefully coiled round the cone in horizontal layers, beginning from the outside next the cylinder and coiling towards the cone. When the space is filled up, the bight of the rope is taken to the outside of the coil at *b*, and another layer is coiled, and so on, until the whole length is coiled round the cone.

"When the wire or cable is to be laid down, I place over the cone an apex or top, which is conoidal, as shown in the drawing, or conical, and around this I suspend several rings of iron or other metal by means of cords, so as to admit of adjustment at various heights over the cone, as at *c*. The use of these rings is to prevent the bight of the rope from flying out when going at a rapid speed, and the combination of these parts of the apparatus prevents the wire or cable from running into kinks. The two rings nearest the coil are lowered, so as to be about six inches and a foot respectively above the coil as it is being paid out."

Directions were next given for leading the cable through the rings over the pulley and round the brake-wheels. The action of the latter when the cable was paid out was described.

The claims were :—

"First, coiling the wire or cable round a cone.

"Second, the supports placed cylindrically outside the coil round the cone.

"Third, the use of rings in combination with the cone, as described."

Before the date of the patent solid cores had been used in the process of manufacture and for keeping the cables in position during transit, but not when being paid out. Before being laid cables were coiled in circular tanks for testing purposes. When being laid, successive layers were tied together in coils in the hold. As the cable was running out men were employed to cut these fastenings and handle the cable to prevent kinks.

It was found necessary to have an experimental test made at sea, and laying the cable in deep water, before it could be regarded as a successful invention. In fulfilment of a contract with the Government (to be carried out under the supervision of a naval officer, and to be certified by an engineer), the plaintiffs stowed the cable in the manner described in the specification on board the *Black Sea*. Having to return through stress of weather, the cable was shipped from the *Black Sea* to the *Argus* in the Thames, and similarly coiled on board the latter vessel. In spite of precautions for secrecy, persons other than *employés* had opportunities of seeing the invention. No use, however, was made of such knowledge.

The apparatus was used in laying a cable in pursuance of the contract in the Black Sea, and subsequently the patent was applied for.

At the trial, amongst other objections to the validity of the patent, those

of prior user for profit, and disconformity between the provisional and complete specifications were raised.

Held: That the prior user being experimental, although incidentally for profit, did not invalidate the patent;[1] and that the claim for the use of the rings came within the invention as shown in the provisional specification.

Per *Byles*, J., in delivering the judgment of the Court: "But the office of the provisional specification is only to describe generally and fairly the *nature* of the invention, and not to enter into all the minute details as to the manner in which the invention is to be carried out: otherwise the provisional specification must be as full as the complete specification, and drawn with as much care and deliberation."[2]

Notes.

The facts in this case were referred to in deciding a question of anticipation in *Vinby* v. *Manchester, &c., Street Tram. Co.*, 6 R. P. C. 364. The question of publication in such a case as this is a "question of fact to be reasonably considered with reference to all the circumstances and the reasonable conduct of prudent men:" *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 258. The experiment of laying the cable was made to ascertain if the invention was useful and would work; it was not a mere question of seeing that the machine was in working order (per *Lindley*, M.R., in *Hoe* v. *Foster*, 16 R. P. C. 39); though authorities on questions of this kind of facts are of great assistance, yet each case must be determined on its own facts: per *Chitty*, L.J., in *Hoe* v. *Foster*, 16 R. P. C. 40.

This decision as to disconformity and the function of the provisional specification has been followed in many cases, *e.g. Penn* v. *Bibby*, L. R. 2 Ch. Ap. 133, and the dictum of *Byles*, J., has been quoted as authority in *United Telephone Co.* v. *Harrison*, 21 Ch. D. 745; *Lucas* v. *Miller*, 2 R. P. C. 159; *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248. The way to test disconformity is to read the complete specification first, and then to see if the provisional covers the same ground; this case being an instance of such method: *Siddell* v. *Vickers*, 5 R. P. C. 98. The rings were an adjunct, and not a separate invention, which distinguishes this case from that of *Nuttall* v. *Hargreaves*, 8 R. P. C. 456 (per *Bowen*, L.J.).

1865. HARWOOD *v.* G. N. RAILWAY CO., 11 H. L. Ca. 654; 31 L. J. Q. B. 198; 29 L. J. Q. B. 193.

Inventive Ingenuity—Analagous Use.

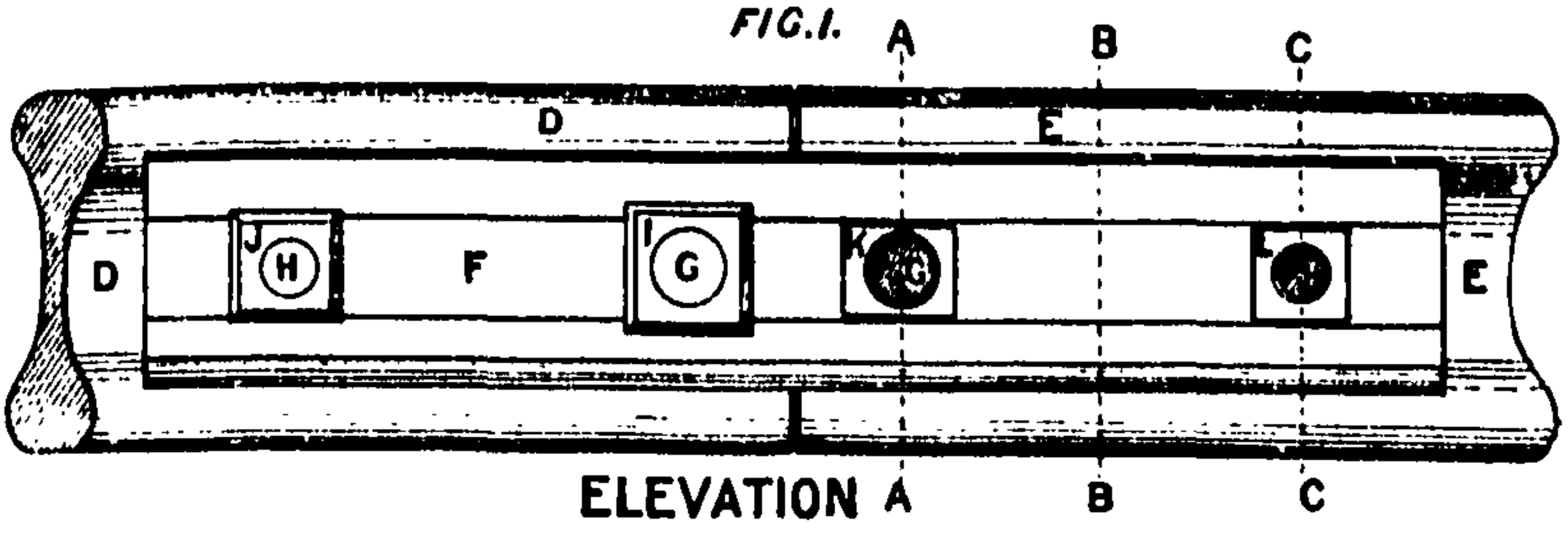
In 1853 a patent (No. 651 of 1853) was granted to *C. H. Wild* for "improvements in fishes and fish-joints for connecting the rails of railways."

[1] The point was not taken that the alleged publication and user in the Black Sea was not within the United Kingdom. In another case between the same parties the point was suggested by Baron *Bramwell* with respect to an infringement at Malta. 10 Jurist, N.S., 958.

[2] 4 C. B. N. S. 293; 27 L. J. C. P. 341.

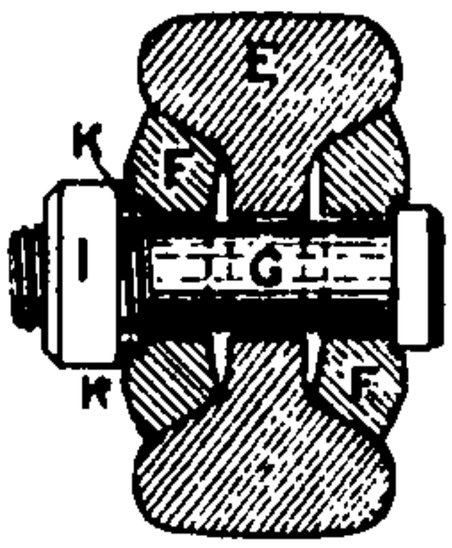
The specification described the fish-plates and chairs in detail.[1] Fig. 1 is the elevation of the fish-plate joint. D, E are the rails, F, F the fishes, G and H the bolts, J, I and J the nuts, and K and L washers placed between the rails and the nuts. Figs. 2, 3, and 4 show sections of the joint at AA, BB, and CC respectively; the same letters are used for same parts. The bolts have square heads, and are thereby prevented from turning (when the nuts are being screwed on or off) by the grooves, into which they fit. The washers are used to keep the nuts out of the groove so that they may be screwed round, or "the fish on this side may be made without the groove." If

FIG. 1.



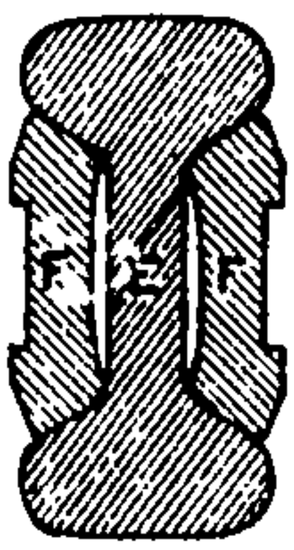
ELEVATION A B C

FIG. 2.



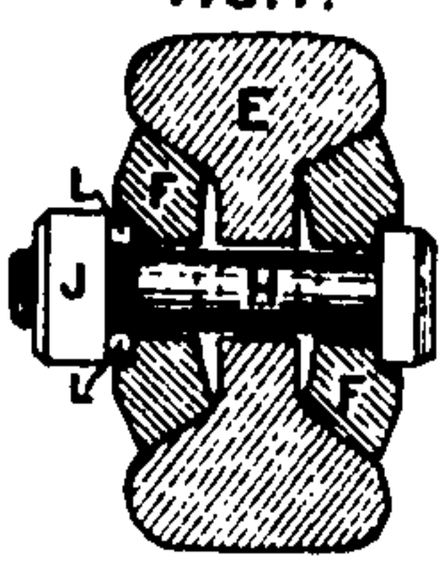
SECTION AT AA

FIG. 3.



SECTION AT BB

FIG. 4.



SECTION AT CC

Diagrams redrawn from Wild's specification (No. 651 of 1853).

preferred, the nuts may be fitted into the grooves and the bolt-heads kept out by washers or an ungrooved fish used on that side. "The groove renders the fish lighter for equal strength, or stronger for an equal weight of metal, than a fish which is made of equal thickness throughout." The tops and bottoms of the fishes are shaped to fit the rails, as shown in diagrams. The central bolts were stronger than the outer to resist greater strain. The grooved fishes were made of wrought-iron by rolling, as wrought-iron railway and other bars are made.

The claims were :—

"Firstly, the constructing fishes for connecting the rails of railways with a groove adapted for receiving the heads of the bolts or rivets employed for

[1] Only those parts are alluded to which are necessary to understand the case. The sketches of diagrams here given were taken from the Appendix to the case in the House of Lords through the courtesy of Mr. *Hill Dawe*, solicitor to G. N. Ry. Co.

securing such fishes, and the application of such fishes for connecting the rails of railways in manner hereinbefore described."

The second, third, and fourth claims applied to joints for split rails, the strengthening of the fish by centre-bolts, and certain supports for rails.

It was proved at the trial that fish-joints were old. Flat fishes with round-headed bolts and cup-shaped nuts were well known. In some cases the holes were of square section to correspond with bolts made with square necks; in others there was a square recess about a quarter of an inch in depth made to hold the square head of the bolt.[1] But there were none made grooved along the whole length to hold the bolt and lighten the fish.

Bridges had been constructed in which horizontal beams of timber one above the other were secured by being bolted through, horizontal bars of iron being placed underneath and grooved or channelled iron to receive the square heads of bolts; but there was no corresponding bar on the other side and no fishing. The channels were formed to give increased strength.

In 1847, on a bridge on the South Devon Railway over the Teign Canal (called the "Hackney Bridge"), there was a scarf joint of longitudinal beams of timber. Underneath the beams there were cross-beams to form the floor of the bridge. These cross-beams were secured by means of longitudinal bars of iron, one on each side of the bridge, running underneath (parallel to the upper beams) the whole length of the bridge, with channels downwards. Bolts with square heads passed through the channelled iron bars, the transverse planking, and the longitudinal beams. The square heads of the bolts were prevented from turning by the channel, and the bolts were secured by nuts on the upper beam. At and over the scarf joint, and a few feet on each side thereof, was an iron plate, through which the bolts passed at that part of the bridge. The iron bars were constructed to, and did, prevent the bolts from turning, and give increased strength for the same weight of metal as solid ones.

The jury found at the trial:—

First, that channel-iron upon railway bridges had been used for the double purpose of obtaining increased strength and preventing the bolt-heads from turning, but were not used for fishing.

Secondly, that the fastening of the joint at the "Hackney Bridge" was a fishing of that joint; that the channel-iron was already there for another purpose, and not adopted by Mr. *Brunel* (the architect of the bridge) in contemplation of the special advantages of fishing, as in *Wild's* patent.[2]

At the trial the verdict was for the plaintiff, but leave was reserved to apply to the Queen's Bench for a new trial. The new trial was refused by the Court (29 L. J. Q. B. 193).

[1] The alleged invention was simply cutting or grooving from one of these recesses to the rest.

[2] *Willes*, J., in delivering the judgment of the Court of Exchequer Chamber, said that the first anticipation was sufficient, but Lord *Westbury*, L.C., in the House of Lords on appeal in this case, and *Lindley*, L.J., in *Deutsche Nahmaschinen Fabrik* v. *Pfaff*, 7 R. P. C. 258, said that the alleged invention was only applying the fish for a bridge to a rail-joint.

On appeal to the Exchequer Chamber it was *held* that the patent was invalid, the invention having been already given to the world in the first of the above anticipations (31 L. J. Q. B. 198).

Per *Willes*, J. (in delivering the judgment of the Court): "In our opinion, quite independent of the use at that bridge, the use of grooves in pieces of iron for holding materials together by means of bolts and nuts had been given to the world together with all its advantages before the date of the patent, and the alleged invention was a mere application of that old contrivance in the old way to an analogous subject without any novelty or invention in the mode of applying such old contrivance to the new purpose, and an application such as this does not make a valid subject-matter of a patent"[1] (31 L. J. Q. B.).

An appeal was taken to the House of Lords.

The opinions of the judges were asked for.

Mr. Justice *Blackburn* (p. 666) delivered the joint opinion of Mr. Justice *Shee* and himself to the following effect. They agreed with the Court of Exchequer Chamber "that a *mere* application of an old contrivance in the old way to an analogous subject *without any novelty or invention* in the mode" of application is not subject-matter, but that there are two questions of fact involved. (1) Is there any *invention* in the new contrivance as compared with the old, and (2) whether there is any *invention* in the new application. "It always must be a question of degree—a question of more or less—whether the analogy or cognateness of the purposes is so close as to prevent their being invention in the application."[2] Following *Crane* v. *Price* (*ante*, p. 195),[3] they were of opinion that in this case there was invention, as the strain on the "fish" was in its plane, *i.e.* vertical, and consequently the centre of the plates could be grooved without affecting the resisting power of the "fish," and that the invention lay in the grooving, and so economizing material; the channelled iron in the anticipations being shaped to resist strain in a plane perpendicular to that of the irons themselves instead of in the same plane.

Mr. Baron *Channell* delivered the opinion of Justices *Keating*, *Pigott*, and himself. They adopted the rule of law as laid down by the Exchequer Chamber (*supra*), and held on the facts that the application of the plates to "fishes" involved no invention, and that the invention as suggested by the two other judges was never claimed by the patentee, seeing that grooving was said to be unnecessary for the inside fish.

Lord *Westbury*, L.C. (p. 681), followed the latter opinion, holding that the patent was "limited entirely to the introduction and use of fishes of a particular shape and configuration." (P. 682) "No sounder or more wholesome doctrine was ever established than . . . that you cannot have

[1] This is the real rule adopted by the House of Lords: *Pirrie* v. *York St. Flax Spinning Co.*, 11 R. P. C. 436, 444, 456; *Riekmann* v. *Thierry*, 14 R. P. C. 121; *Brooks* v. *Lamplugh*, 15 R. P. C. 48.

[2] Quoted in *Case* v. *Cressy*, 17 R. P. C. 261.

[3] See notes, *ante*, pp. 197, 198.

a patent for a well-known mechanical contrivance *merely* when it is applied in a manner or to a purpose which is not quite the same, but is analogous to the manner or the purpose in or to which it has been hitherto notoriously used." [1]

Lords *Cranworth* and *Wensleydale* based their judgments on the first anticipation, and all approved of the rule laid down by the judges in the Exchequer Chamber.

Notes.

The principle of the foregoing case is undisputed: "the application of it is a matter for the Court in each case" (per *Bowen*, L.J., in *Cropper* v. *Smith*, 1 R. P. C. 90). The facts of it were discussed and compared with those under discussion respectively in *Jordan* v. *Moore*, L. R. 1 C. P. 635; *White* v. *Toms*, L. J. 37 Ch. 207; *Lister* v. *Norton*, 3 R. P. C. 205; *Williams* v. *Nye*, 7 R. P. C. 68; *Wenham Gas Co.* v. *The Champion*, &c. (the amount of invention compared with *Harwood* v. *G. N. Ry.*), 9 R. P. C. 54; *Lane & Fox* v. *Kensington*, &c., 9 R. P. C. 416.

In *British Dynamite Co.* v. *Krebs*, 13 R. P. C. 199, Lord *Penzance* distinguished that case from *Harwood* v. *G. N. Ry.* on the ground that the old igniter was applied to the new material dynamite, whereas in the case of *Harwood* v. *G. N. Ry.* the object was old as well as the material. In *Morgan* v. *Windover*, 4 R. P. C. 426, *Kekewich*, J., considered that the amount of ingenuity displayed in that case was greater than that in *Harwood* v. *G. N. Ry.*, and upheld the patent, his decision being subsequently reversed. See *post*, p. 323.

1860. HILLS *v.* LONDON GAS LIGHT CO., 5 H. & N. 312.

Construction of Specification—Invention by Selection.

The plaintiff was patentee of "an improved mode of manufacturing gas" (No. 1286—1849).

The specification [2] described methods of purifying gas from sulphuretted hydrogen, cyanogen, and ammonia, by passing the gas through certain porous materials which could be used over again. The patentee effected this by taking "the subsulphates, the oxychlorides, or the hydrated or precipitated oxides of iron (which I prefer to use in a rather damp state), either by themselves or mixed with sulphate of lime or sulphate or muriate of magnesia, baryta, strontia, potash, or soda, and absorb them into or mix

[1] This passage has been frequently quoted as authoritative: *Morgan* v. *Windover*, 7 R. P. C. 136; *Thomson* v. *American Braided Wire Co.* (per Lord *Watson*), 6 R. P. C. 525; *Williams* v. *Nye* (per *Cotton*, L.J.), 7 R. P. C. 68; *Elias* v. *Gravesend Tin Plate Co.*, 7 R. P. C. 468; *Moser* v. *Marsden*, 10 R. P. C. 214; *Thierry* v. *Riekmann*, 12 R. P. C. 426; *Ibid.* (per Lord *Davey*), 14 R. P. C. 121; *Case* v. *Cressy*, 17 R. P. C. 261.

[2] It is here given summarized as amended.

them with sawdust or peat charcoal in coarse powder, or breeze or other porous or absorbent material, so as to make a very porous substance easily permeable by gas." The gas on passing through it was described as being deprived of sulphuretted hydrogen, cyanogen, and a part of its ammonia, "water being at the same time formed by the union of the oxygen of the oxide and the hydrogen of the sulphuretted hydrogen absorbed."[1] As soon as the material ceased to purify from sulphuretted hydrogen, the gas was to be shut off from the purifier and "a communication is to be opened to the external air which is to be admitted to the purifying material, and by the agency of which it will be renovated, and the uncombined gases which have been absorbed will be driven off." The best means of effecting this was given. "The air will at the same time reoxidise the iron of the sulphuret of iron which has been formed, and the sulphur will be precipitated, and a small but variable quantity of sulphuric acid will be formed."[2] Other details and modifications were mentioned, such as removing the ammonia first by scrubbers. "Hydrated or precipitated oxides of iron may be conveniently prepared for these purposes by decomposing sulphate or muriate of iron with hydrosulphuret of ammonia, or with lime, magnesia, potash, or soda; they may then be absorbed, &c." The mechanical contrivances to supply water or ammoniacal liquor were next described.

The claims were:—

"Firstly, the purifying coal-gas from sulphuretted hydrogen, cyanogen, and more or less perfectly from ammonia, by passing it through the precipitated or hydrated oxides of iron, or the subsulphates or oxychlorides of iron, from whatever source obtained, either by themselves, or, which is much better, made into a more porous material by being absorbed into or mixed with sawdust or breeze or peat-charcoal in coarse powder, or other porous or absorbent material, so as to be readily permeable by the gas, and either used alone or mixed with sulphate of lime or sulphate or muriate of magnesia, potash, or soda, or in conjunction with any other purifying material at present in use for a similar purpose. But I do not claim peroxide of iron or manganese made at a red heat, or the oxide of iron mixed with chloride of calcium, or with the muriates and sulphates of manganese, iron, and zinc, and absorbed into sawdust, etc.[3]

"Secondly, repeatedly renovating or reoxidizing the said purifying materials by the action of the air whenever they from time to time cease to absorb sulphuretted hydrogen, so that they may be used over and over again to purify the gas."

[1] This case turned on the process for removing the hydrogen sulphide. In modern notation the process substantially consists of the combination of hydrated ferric oxide with hydrogen sulphide—

$$Fe_2O_3, H_2O + 3H_2S = Fe_2S_3 + 4H_2O$$

[2] The renovation of the material used is substantially—

$$2Fe_2S_3 + 3O_2 = 2Fe_2O_3 + 3S$$

[3] This disclaimer covered what *Croll* and *Laming* had shown.

A third claim was for the means of supplying the purifying liquid to the scrubbers or purifiers at intervals.

At the trial, in addition to other evidence of alleged anticipations, two specifications were relied on.

Croll's (No. 8577 of 1840) described improvements in the manufacture of gas. He described purifying coal-gas from ammonia, and continued: "The third part of my improvements in the manufacture of coal-gas consists in the application of the black oxide of manganese to remove or free coal-gas of sulphuretted hydrogen, which is accomplished in the following manner: After the gas has been freed from ammonia as above described, it is then to be passed through a vessel similar to those now in use for the purification of coal-gas by what is denominated dry lime, and charged in a similar manner with black oxide of manganese in powder, moistened with water to about the same consistency. The period required for each charge is to be ascertained and regulated by the same tests as if dry lime were used, and which is well understood, in short, requiring no further alterations, except in the materials I employ for the absorption of the sulphuretted hydrogen. This material, after it has ceased to absorb the sulphuretted hydrogen, is to be removed from the purifying vessel and wasted in an oven to expel the sulphur which it then contains. After this material has become thoroughly red in the oven, I have found two or three hours' further time to be sufficient to accomplish this object, taking care that whilst it is being raised it will be stirred about in the oven. After this operation is completed the material is fit again to be employed, by being placed in the purifier moistened with water as in the first instance. The same effect may be produced by the application of the oxide of zinc and the oxides of iron, and treated precisely in the same way as above described."

It was proved by evidence that *Croll* as a matter of fact did not know whether he used hydrated or anhydrous oxides of iron, but that following his method hydrated oxides alone could be used, the roasting not being at a temperature high enough to dehydrate the oxide. The specification, however, included both hydrated and anhydrous oxides of iron.

Laming's specification (No. 11944 of 1847) described various processes of purifying coal-gas. Amongst other materials chloride of calcium was used, also muriate and sulphate of iron. It was pointed out that "under certain circumstances it may, however, be desirable to make it, for the purposes of gas-purifying, by decomposing muriate of manganese, iron, or zinc, by means of lime, or of chalk when the latter will suffice. In such cases the oxides or carbonates which result are useful for the said purification, and need not be removed." He also claimed the use of oxides of manganese, iron, zinc, or lead (by preference, manganese) with chloride of lime. The preparation of black oxide of manganese by heating the carbonate "to a heat gradually increased to near redness, with access of air for an hour or two."

Evidence was also given of the known action of sulphuretted hydrogen on hydrated oxides of iron, and of the air on the former. It was also

proved that all oxides of iron would not do, but only the hydrated oxides artificially prepared by precipitation.

The jury found that the plaintiff's invention was new.

A rule *nisi* was obtained to enter a verdict for the defendants, or a non-suit on the following amongst other grounds :—

Anticipation by *Croll's* and *Laming's* specifications ;

Insufficiency for not specifying what oxides would answer, or for claiming all hydrated oxides, some being useless for the purpose ;

That the mere application of hydrated oxide of iron to absorb sulphuretted hydrogen from gas was not subject-matter, its properties and effects being well known ;

That the renovation of hydrated oxides by exposure to the air being well known, its application to gas-purification was not subject-matter.

The rule was discharged by the Court of Exchequer.

Held: That the terms "hydrated" and "precipitated" in the specification were synonymous ; that the specifications were such that the Court could not decide on them alone whether the invention was novel, and that it was rightly left to the jury.[1] Also that the application of the known chemical properties of substances to gas-purification was subject-matter.

Per Baron *Bramwell*, in delivering the judgment of the Court (at p. 369) : "It appears to us, upon looking at the specification, that the plaintiff uses these as equivalent expressions because he says 'hydrated or precipitated,' and that oxide of iron may be conveniently *prepared* for these purposes, and so on ; and therefore it is obvious that when he uses that word 'hydrated,' he uses it as synonymous with 'precipitated ;' and consequently, when he speaks of using hydrated or precipitated oxides, he means such oxides as are precipitated. That is the construction we put upon the specification, and therefore we think that objection fails.

"It is said that the mere application of the hydrated oxides to absorb the sulphuretted from coal-gas is not the subject of a patent, that property of it being previously well known. With that we do not agree. The answer is that the question is not properly stated. The application of the hydrated oxide is the principle. If a man were to say, 'I claim the use of hydrated oxide of iron for the purification of coal-gas' without saying how it is to be applied, it is possible that the objection might be well founded ; but here the plaintiff says, 'I claim it in the manufacture of gas in the way I have described,' and he shows how it may be used. Therefore this objection fails."

Notes.

This case was referred to as an authority to show the insufficiency of a model to anticipate an invention : *Winby* v. *Manchester Tramways Co.*,

[1] It was therefore unnecessary to go into the question of anticipation by these specifications ; but the material parts of them are here set out in view of *Hills* v. *Evans*, *post*, p. 222.

6 R. P. C. 364. It was also cited and followed by *Wright*, J., in *Lyon* v. *Goddard* (10 R. P. C. 135) to show that a machine which does its work more or less badly does not invalidate a subsequent patent for an invention which turns "failure into success."

The facts in this case are referred to by Lord *Halsbury*, L.C., in *The Cassel Gold Extracting Co.* v. *Cyanide Gold Recovery Syn.*, 12 R. P. C. 242, as being very similar to those in that case; and *Smith*, L.J., quoted (p. 256) the passage of Baron *Bramwell's* cited above as being directly in point.

But in *Wylie & Morten's* application (13 R. P. C. 98) *Finlay*, S. G., pointed out that the above case can only be cited for the proposition that if the earlier patent mentioned oxides of iron generally, and the subsequent patentee *by invention* found that certain particular oxides had advantages, the latter patent was valid.[1]

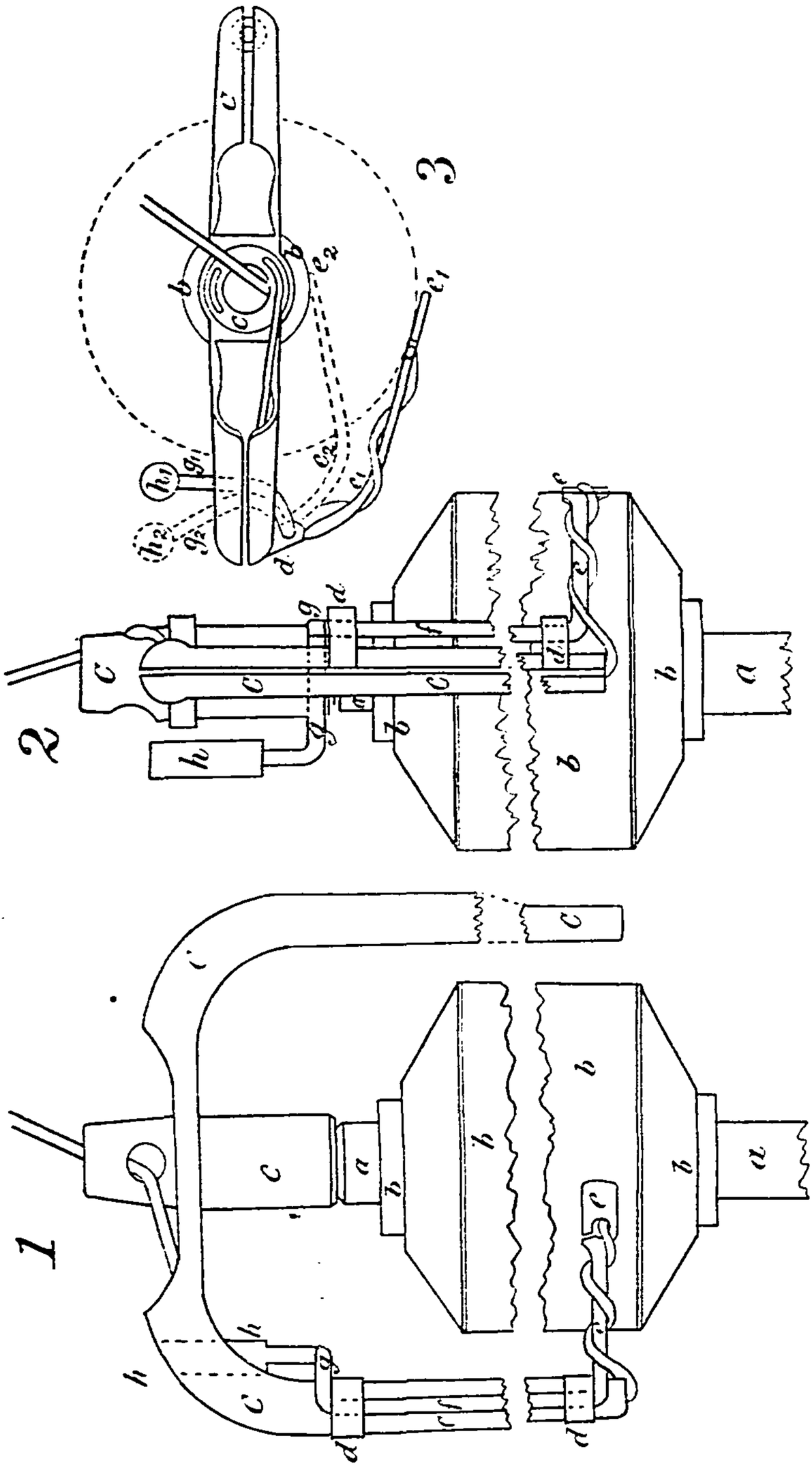
1860. SEED *v.* HIGGINS, 8 H. L. Ca. 550.

Construction—Effect of Disclaimer.

In 1846 a patent (No. 11293) was granted to *W. Seed* for "certain improvements in machinery or apparatus for preparing, slubbing, and roving cotton and other fibrous substances."

The specification was as follows: "My improvements in machinery or apparatus for preparing, slubbing, and roving cotton and other fibrous substances, apply solely to that part of such machinery called the flyer, which is employed in connection with the spindle for the purpose of winding the sliver or roving upon the bobbin. My invention consists in the application of the principle of centrifugal force to the flyers employed in the above-mentioned machinery, for the purpose of producing the required elasticity or pressure upon the bobbin, by causing the small spur or lever, which conducts the sliver of cotton or other fibrous material on to the bobbin, to press or bear against the same simply by the action of such force, instead of being effected by springs or such other mechanical pressure. By the application of this invention the bobbin of rovings will not only be made hard, but equally compressed throughout, as the pressure upon the same will be found to decrease slightly as the diameter of the bobbin increases, and thus equalize the formation thereof, instead of having the outer or finished diameter made harder than the interior, which has hitherto been the case." Then follows an explanation of the drawings, in which the same letters denote corresponding parts throughout. "Fig. 1 is a front elevation of the flyer; Fig. 2 is a side or edge view of the same; and Fig. 3 is a plan or horizontal view as seen from above. *a*, *a*, is the spindle; *b*, *b*, the bobbin; and *c*, *c*, the flyer. To one or both of the legs of the flyer *c*, *c*, are attached two or more fixed bearings *d*, *d*, supporting the guide or pressing apparatus *e*, *f*, *g*, formed of wire. The lower part or portion *e* of this wire is bent and formed into a

[1] *Hill's* claim was for his improvements only, and expressly disclaimed what *Croll* and *Laming* had done.



1 and 2 show tops and bottoms of Figs. 1 and 2 of Seed's specification (No. 11293 of 1846); 3 shows Fig. 3.

small spur or lever, for the purpose of conducting and delivering the sliver or roving of cotton, &c., on to the bobbin, and the vertical portion of the wire swivels loosely in the bearings *d*, *d*, attached to the hollow flyer leg; the upper end *g* is also bent into the form shown in the drawing, and has a small weight *h* attached thereto. It will thus be evident that the flyer *c*, *c*, revolves at a high velocity, the weight *h* upon the upper end of the wire will b. thrown from the centre, and cause the spur or lever *e* at the lower end o the wire to bear or press against the bobbin *b*, *b*, the pressure slightly decreasing as the increasing diameter of the bobbin causes the weight *h* to app oach the centre of rotation."

"The above apparatus represents one particular and practicable mode of applying my invention; but I would here remark that I do not intend to confine myself to this particular method; but I claim, as my invention, the application of the law or principle of centrifugal force to the particular or special purpose set forth, that is, to flyers used in machinery for preparing, slubbing, and roving cotton and other fibrous materials, for the purpose of producing a hard and evenly compressed bobbin."[1]

On August 12, 1854, the patentee filed a disclaimer[2] in the following terms:—

"I do hereby disclaim all application of the law or principle of centrifugal force as being part of my said invention, or as being comprised in my claim of invention contained in the specification, except only the application of centrifugal force, by means of a weight acting upon a presser, so as to cause it to press against a bobbin, as described in the specification. And I hereby declare that the above-written disclaimer is not intended to extend

[1] The drawings here given are taken from the case submitted to the House of Lords with the centre of Figs. 1 and 2 omitted. The full drawings were continuous, and showed the full length of bobbins and flyers being about double the length of those here shown. The revolution of the flyer constrains each part thereof to move in its own circle; direct tangential motion being impossible, this constant alteration in direction of motion produces a strain radially from the axis of rotation; this gives an apparent tendency to fly out radially (but really to move tangentially), termed "centrifugal force." Where the angular velocity is the same for all parts as in this case, the amount of this force at any part is proportional to the mass (commonly called "weight") of that part and its distance from the axis of the spindle. Since the portion marked *f* of the presser turns in bearings at *g*, the mechanical action of the presser depends only on the parts *h*, *g*, *e*, as shown in plan in *Fig.* 3. This lever, *h*, *g*, *e*, has its fulcrum at *d*, and each part of it is acted on by the so-called centrifugal force; but as the weight, or mass, of *h* is considerably more than that of the wire *g*, *e*, the effect is approximately that of a mass, *h*, on a weightless wire, and is so described in the specification. In Fig. 3, h_2 shows the position of the weight at the beginning of the winding, and h_3 when the bobbin is full; the outward pressures exerted by the mass *h* in these two positions will be proportional to the distances of h_2 and h_3 from the axis of the bobbin respectively; the pressures of *e* on the bobbin will be much less, about one-half those amounts.

The effect of the redistribution of mass of the flyer and shaping it so that its length is considerable parallel to the axis of rotation is to introduce by "centrifugal force" and by reactions of supports a couple in the plane of the axis of rotation and length of flyer, which tends to turn the top outwards. In *Dyer's* device the mass of the presser being at the end of the leg of the flyer, considerable vibration was set up in the flyer, hence *Seed's* device ran much more steadily.

[2] The disclaimer appears to have been filed on the discovery of *Dyer's* presser.

the exclusive right granted by the said Letters Patent, and shall not extend the said exclusive right in any way whatsoever."

This was an action for infringement.

At the trial one device, patented by *Dyer* (No. 5909 of 1830), was alleged as an anticipation. It consisted of the application of the same principles, to achieve the same object, but in a somewhat different manner. It is thus described in *Dyer's* specification: "These arms or pressers, being made of different forms, are designed to perform the office of guiding and pressing the rovings in different methods as follows, namely, a cross arm, as shown at Fig. 11, is made to swing freely upon the guide-arm of the flyer as a centre of rotation; the open circular groove in one end of this arm serves to conduct to and press the roving upon the surface of the bobbin. A part of this pressure is produced by the drag of the roving along the said groove in the process of winding the same upon the bobbin, the bobbin having in this case an excess of motion beyond that of the flyer, sufficient to cause the rovings to be duly taken up or wound thereon as they are delivered to the flyer. A further pressure of such rovings upon the surface of the bobbin is effected by the centrifugal force acting upon the opposite and heavier end of the arm or pressing instrument, as shown in the section at Fig. 11." In this device both arms of the lever constituting the presser moved substantially in the same plane.

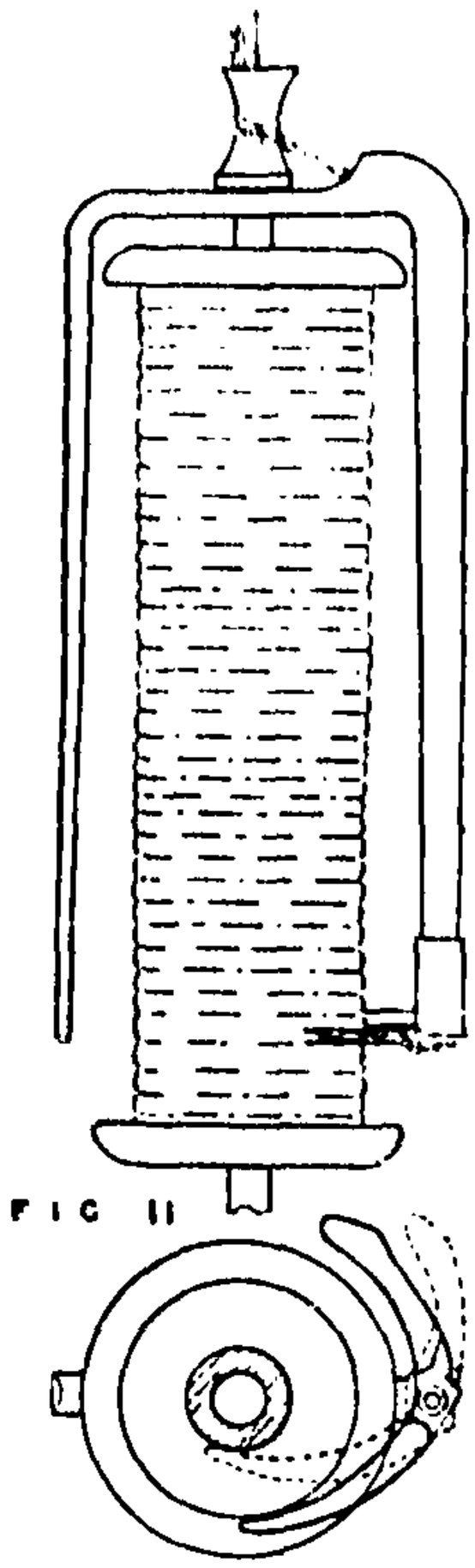

FIG 11

Fig. 11 of Dyer's specification.

The alleged infringement consisted of a device acting on the same principle, but that portion of the mass of the lever which performed the function of the "weight *h*" consisted of a casing parallel and close to the leg of the flyer, thus distributing the mass in a vertical plane. The mechanical action was almost the same as that of the plaintiff's device, but had not all its advantages of diminishing vibration, which were due to placing the greater part of the mass of the lever nearer the source of motion, and much above the plane in which the pressing-arm of the lever acted.

An objection was taken that "the disclaimer did, in fact, extend the claim, and described and claimed an invention different from that for which the patent had been granted." [1]

A verdict was given for the plaintiff (27 L. J. Q. B. 148).

An appeal was taken to the Exchequer Chamber on the ground of the

[1] The case is noted here only so far as it affects the question of validity of the patent.

above objection, and that there was no evidence of infringement to go to the jury. The patent was upheld, but a new trial was ordered on the second ground (27 L. J. Q. B. 411).

Both parties appealed to the House of Lords.

Held, that the effect of the disclaimer was to abandon the general claim and to confine the patent to the particular claim for the precise mode described by the diagrams and specification, which therefore did not include the defendant's device.

Per Lord *Cranworth* (p. 563): "I think, reading the specification in a fair spirit, we must understand the patentee to have said that he claimed as his invention the application of centrifugal force to the flyers in the mode elaborately explained in his diagrams. But then he did not confine himself to that mode; he claimed, further, the application of the principle of centrifugal force to flyers used in machinery for preparing and roving cotton, in whatever way it might be applied. The effect of the disclaimer was to strike out of the specification this latter general claim, leaving only the claim for the particular mode of application specially described. I think it would be unreasonable and hypercritical to say that on a specification so framed the patentee had not claimed as his invention, or as part of his invention, what he had described. And when, therefore, by the disclaimer the general claim is abandoned, the particular claim remains good."

Lord *Chelmsford* (p. 568): "Whether the disclaimer in this case does extend the right must depend upon the construction of the original specification. Now, I do not understand the specification to claim, as the plaintiff's invention, the application of the law or principle of centrifugal force generally to flyers, and then to describe and exhibit the particular machine as an illustration of the mode in which that general principle might be carried into effect; but it appears to me that the plaintiff first claims the particular method described, and afterwards every other application of centrifugal force to the purpose set forth. Then when he disclaims all application of the law or principle of centrifugal force, except only the application of centrifugal force as described in the specification, he does not abandon the whole of his invention, and leave himself nothing but an illustration of it; but he gives up all that is general, and limits himself to a particular method, which was a substantial and independent claim, to which the general claim had previously been superadded. In this view the disclaimer certainly does not extend the right, nor can it be said to describe a different invention."

Notes.

This case is an example of the necessity of construing the specification first before deciding the question of infringement: *Potter* v. *Parr*, 2 B. & S. 216 (*n*). It was referred to and distinguished in *Ralston* v. *Smith*, 11 H. L. Ca. 253, as showing that something may be disclaimed which leaves a perfect claim, but that a large or vague claim cannot be made good by

disclaimer. This case was again followed in *Daw* v. *Eley*, L. R. 3 Eq. Ca. 513, the narrow interpretation being in consequence of the disclaimer.

The above disclaimer left a claim only for the action of a certain weight in a given position, and did not include mechanical equivalents: per Lord *Hatherley*, in *Clark* v. *Adie*, 2 App. Ca. 332; also *Curtis* v. *Platt*, 3 Ch. D. 137 (*n*). Quoted to show that a claim to use a natural force in a prescribed manner may be a good claim: *Pirrie* v. *York St. &c.*, 11 R. P. C. 456.

1862. BETTS *v.* MENZIES, 28 L. J. Q. B. 361; 31 L. J. Q. B. 233.

Prior User—Benevolent Construction—Prior Publication, sufficiency of.

In 1804 a patent (No. 2761) was granted to one *Dobbs* for an invention thus described: "A new article of trade, which I denominate Albion metal, and which I apply to the making of cisterns, linings for cisterns, covering and gutters for buildings, boilers, vats, coffin furniture, &c." The[1] metal was formed by coating or plating lead with tin or with alloyed tin. A plate or ingot of lead or alloyed lead, and another of tin or alloyed tin, of equal or unequal thicknesses, are placed with their cleansed surfaces in close contact, and are passed together through a flatting or rolling mill, "with a hard pinch," once or oftener, so as to make the metals adhere. The rolls and metals may be heated. A plate of lead may be placed between two plates of tin, or alloys of tin, or a plate of lead coated or plated on one side may be doubled up, and rolled with the tinned surfaces outwards. A plate of lead or alloyed lead may be cast, and as soon as the metal is "set or congealed," it is coated by casting tin or alloyed tin upon and around it. The coated metal may be then rolled or pressed or wrought in the usual way.

In 1849 a patent (No. 12415) was granted to *W. Betts* for "a new manufacture of capsules, and of a material to be employed therein and for other purposes." This new manufacture "consists in combining lead with tin, by covering the lead with tin over one or both surfaces of the lead, and reducing the two metals in their conjoined state into thin sheets of a thickness suitable for the purposes to which they are to be applied." The molten lead to be cast into an ingot in a suitable mould and "of suitable internal dimensions for producing ingots of lead, which for the manufacture of the material for capsules may be about four or five inches wide by about three-quarters of an inch thick, and about thirty inches in length," gradually reduced wedge-like at the end. The tin to be cast "into similar ingots, of the same, or nearly the same, dimensions as the aforesaid ingots of lead, and between one-quarter and one-sixteenth of an inch in thickness, and several feet in length." The rolling of the lead is then described, and to be continued "as many times as may be requisite for reducing the lead to about one-fourth of an inch in thickness," the lead becoming elongated. In like manner the tin as many times "as may be requisite for reducing to about one-twentieth part of the thickness to which lead is reduced by rolling as

[1] This is a summary of the specification.

aforesaid, whatever that thickness may be." The mode of rolling was described to be repeated as often as requisite "for reducing the said strip of conjoined metals to the required thinness for the manufacture of capsules." "The said new manufacture, or compound metal of lead combined with tin on one or both sides in manner aforesaid, may also be employed for other purposes; such, for instance, for making into very thin sheets, as a substitute for what is called tin-foil," for which it might be used as a substitute. Then was described the mode of making it when one side only of the lead was to be covered with tin. The union of the metals was produced by mechanical pressure as distinguished from older processes. The described processes of casting, cutting, and rolling were not claimed "except when the same are employed for the purposes of my said invention."

The claims were:—

"Firstly, the manufacture of the new material lead combined with tin, on one or both sides of its surfaces, by rolling or other mechanical pressure, as herein described; secondly, the manufacture of capsules of the new material of lead and tin combined by mechanical pressure, as herein described."

At the trial it was proved that the patentee by his servants had manufactured large quantities of capsules before the date of his patent, but had not exposed them for sale, only making them in order to have a stock on hand by the time that the patent was sealed (27 L. J. Q. B. 154). *Held* by the Court of Queen's Bench that this was not such prior user as to invalidate a patent (28 L. J. Q. B. 361).

Lord *Campbell*, C.J.: There was no power in the Crown to grant monopolies "except with the conditions that are imposed by the reservation; but the reservation which must be relied on here is this, 'which others at the time shall not use.' Now, others had not used this before the patent was granted. It was used only by the inventor, the patentee himself; for the use of it by the servants and mechanics whom he employed must be considered his use; and therefore it was not used by others. But still, if it could be shown that the effect was really to extend the term of the monopoly, that would be fatal." [1]

The jury at the trial found that persons of ordinary skill reading *Dobbs'* specification, and having no other information on the subject, could not at once proceed to make *Betts'* metal.[2]

It was decided in the Courts of Queen's Bench [3] and Exchequer Chamber [4] that the invention disclosed by *Dobbs* in 1804 disclosed and anticipated that of the plaintiff *Betts*.

On appeal to the House of Lords.

The following questions were put to the judges:—

1. "Does it appear, on a comparison of the two specifications, that a material part of *Dobbs'* specification is claimed by *Betts* in his specification?"

[1] 28 L. J. Q. B. 365.
[2] 27 L. J. Q. B. 154.
[3] 28 L. J. Q. B. 361.
[4] 30 L. J. Q. B. 81.

2. "If so, can the Court pronounce *Betts'* patent void, simply on a comparison of the two specifications, without evidence to prove identity of invention, and also without evidence that *Dobbs'* specification disclosed a practicable mode of producing the result, or some part of the result, described in *Betts'* patent?"

It was held unanimously by the judges that (as regards the first question) the invention described by *Betts* was included in that described by *Dobbs*; but that in the absence of evidence of identity of inventions (it not being admitted that descriptions and terms of art were the same), and in the absence of evidence of *Dobbs'* specification being a sufficient description, there was no anticipation.

The following passage occurs in the reply of Mr. Justice *Blackburn*:[1] "It is therefore for the Court alone to decide what is claimed. This must be ascertained by looking at the language used in the specification, and fairly reading it, so as to see what was the intention expressed, and this should be done without any reference to the object of the inquiry. Sometimes it is necessary to construe a specification, in order to ascertain whether or not any one may, subsequently to the date of the patent, do something alleged to be comprised in it without being guilty of an infringement. In such a case it is for the interest of the patentee to contend that the true construction of the specification includes that thing. Sometimes that same thing having been publicly done before the patent, the object of the inquiry is to ascertain whether the patent is void, because that thing which is not new has been claimed as part of the invention. In such a case it is for the interest of the patentee to contend that the true construction of the specification does not include this thing; but the Court is bound to give the fair interpretation to the language used in the same instrument, and say truly what is there described as the invention, whether the effect is favourable to the patentee or not."

In delivering judgment, Lord *Westbury*, L.C., based the decision of the case in the answer to the second of the above questions, and said (p. 2[illegible]): "That answer involved two conclusions; first, that as the specification described external objects, though the language in both specifications should be identically the same, it would be impossible to predicate of the two that they described exactly the same identical external object, unless the terms of art used in both specifications could be ascertained to have been the same at the date of both the patents. The question of identity of signification belonged to the province of evidence, and not to the province of construction. The second branch of the answer involved this important conclusion, that to defeat a new patent, it must be clear that the antecedent specification disclosed a practicable mode of producing the result which was the object and effect of the subsequent discovery."[2]

[1] 31 L. J. Q. B. 237.

[2] This was quoted and followed in *Patterson* v. *Gas, Light & Coke Co.*, 3 App. Ca. 245; *Shaw* v. *Jones*, 6 R. P. C. 336; *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 516.

Lord *Cranworth*, in his judgment, said: "The two specifications might be identical, and the judge might be warranted in telling the jury not to find for novelty. But here they were not identical, and the earlier was deficient in those practical directions which constituted the essence of a valid specification. Dobbs supposed that, by pressure, tin and lead might be so combined as to form a new material. But it did not clearly explain how this was to be done, and it was therefore defective."

1868. BETTS *v.* NEILSON, L. R. 3 Ch. Ap. 429.

Construction—Subsidiary Claim—Prior Manufacture without Sale—Proportions.

In this case the same patent was sued on as in *Betts* v. *Menzies*, anticipation by *Dobbs'* specification was also alleged, and objections raised to the validity of the patent on the grounds of (1) prior user, (2) that the specification did not specify the proportions of lead and tin, (3) that the claim for the manufacture of capsules from the patented article (claim 2) was not subject-matter for a patent. Infringement was denied.

The evidence of prior user broke down, as to which Lord *Chelmsford*, L.C., said (p. 431): "If the evidence which I am about to examine establishes the fact that lead coated with tin by mechanical pressure, and capable of useful application, has upon any occasion been manufactured openly, not by way of experiment, but in the course of business, although not a single piece of that material was actually sold, I should hold that *Betts'* patent was invalidated."[1]

On appeal to the House of Lords (*Neilson* v. *Betts*, 5 H. L. 15).

Alluding to *Hills* v. *Evans* (31 L. J. Ch. 457) as to what is necessary in an anterior publication, Lord *Westbury* said: "My opinion was that the antecedent process, if it be relied on as forestalling the second, must be so clearly and distinctly described, that those who read it, bringing to it competent mechanical skill, would be enabled to work it out to the same result as that arrived at by the process described in the subsequent patent."[2]

As to the objection to the specification not specifying the proportions of lead and tin, Lord *Westbury* held that this was no objection to validity, as "he assigns these relative proportions, not as things which are in themselves unchangeable, but as being the best for the purpose which he desired to accomplish, and they are given rather as illustrations of the mode of user of the process than as certain definite termini which could not be exceeded or diminished either on the one side or the other."

As to the last objection, Lord *Westbury* pointed out that the material was claimed as the result of the process, and (as to the second claim) "the

[1] Quoted as authority in *Gill* v. *Coutts*, 13 R. P. C. 136.

[2] Authority for the proposition that a book-description must be equivalent to a specification in regard to the fulness of information given. *Plimpton* v. *Malcomson*, 3 Ch. D. 567, 568; *Haslam* v. *Hall*, 5 R. P. C. 19.

manufacture of capsules out of the material would be one purpose only to which the material could be applied; and if a claim to the material can be substantiated by the patent, the specification of a particular user of it, comprehended in the general user claimed, cannot for a moment be accepted as a ground for vitiating the patent."[1]

1862. HORTON *v.* MABON, 12 C. B. N. S. 437; 16 C. B. N. S. 141; 31 L. J. C. P. 255.

Subject-matter—No Invention.

The invention was for "improvements in the construction of gasholders." It consisted of improved pillars, vertical travelling guides, fixed instead of movable guide roller bars, and improved construction of hydraulic cups or joints. The third claim was for the mode of constructing the hydraulic cups or joints of gasholders, "in which the top or bottom of the hydraulic joint or valve is formed of plates of iron made or bent into a cup shape, so as to admit of the valve being made complete and attached to the gasholder without the necessity of employing angle iron and double sets of rivets, as is usually the case." It was proved that previously to the patent those joints were constructed of angle iron in three pieces, made to the curve of the gasholder, and fastened with four rows of rivets. Two pieces of angle iron were riveted to the bottom plate. By the patentee using double angle iron he saved two rows of rivets. Double angle iron had been substituted for two pieces of single angle iron in other cases. In this case the result was beneficial, and was a cheaper and better way of using known things.

Held, that the case was much weaker than *Harwood* v. *G. N. Ry. Co.*, and the patent could not be sustained.[2]

Confirmed on appeal, 16 C. B. N. S. 142.

1862. LANG *v.* GISBORNE, 31 L. J. Ch. 769; 31 Beav. 133.

Prior Publication—Sale of Foreign Publication in England.

The patents sued upon were applied for in February, 1860, and May, 1861.

A description of the invention had been published in a French book in 1857. One copy was sold in England to Mr. Wheatstone on December 31, 1859, another to the Cambridge University Library on May 6, 1858, others to persons during the months of August, 1858, and March, 1859.

Lord *Romilly*, M.R., held that there was publication of the invention sufficient to invalidate the patent. In his judgment the learned judge stated

[1] A subsidiary claim (one that does not extend monopoly) for a detail or particular advantage does not raise an objection to a patent: *Plimpton* v. *Spiller*, 6 Ch. D. 427, 434; followed in *British Dynamite Co.* v. *Krebs*, 13 R. P. C. 199.

[2] At the trial the learned judge, *Erle*, C.J., directed the jury that the invention was not subject-matter. The facts of the case were compared with those of *Harwood* v. *G. N. Ry. Co.*

the law generally, and continued (p. 771): "A publication, however, takes place when a person who is the inventor of any new discovery, either by himself or by his agents, makes a written description of that, prints it in a book, and sends it to a bookseller to be published in this country. It is not at all necessary to establish the fact that one volume of that book has been sold. As soon as an inventor informs the public of what his invention is and publishes that in a book, which he sends to a publisher to sell, the moment that book is exposed in the shop for the purpose of purchase, then that becomes a complete publication in point of law. . . . There is no difference when the inventor is a Frenchman or any other foreigner who publishes a book in his own language, but sends it over to a bookseller in this country for the purpose of being sold."

Notes.

In *Plimpton* v. *Malcomson* (3 Ch. D. 561, 562), *Jessel*, M.R., quoted the above remarks as a *dictum*, holding that publication was a question in each case for the judge on the facts proved. It was cited, as an authority for the proposition that the fact of the book being foreign makes no difference, by *Chitty*, J., in *Harris* v. *Rothwell* (3 R. P. C. 389); in the same case, on appeal, *Lopes*, L.J. (4 R. P. C. 234), quoted the above passage as being the law, and said that the lodging of a German specification in the Patent Office was stronger evidence of publication than sale in a shop.

The remarks of Lord *Romilly*, M.R., above, were part of his declaration of the law, "so that there should be no ambiguity" as to his view of the law. When the case was quoted in argument in the House of Lords, in *Pickard* v. *Prescott* (9 R. P. C. 200), Lord *Watson* declined to consider any case as precedent on facts. In that case Lord *Halsbury*, L.C., said that "occasional observations made by learned judges on questions of fact in a particular case have been from time to time misunderstood as carrying some opinion upon the subject of the general law, and have given rise to confusion" (p. 200). Lord *Watson* (p. 204) expressed the same opinion.

1862. HILLS *v.* EVANS, 4 De Gex F. & J. 288.

Paper Anticipation.

This was a suit in equity for an injunction against the defendant to restrain him from infringing the plaintiff's patent, which was the subject of the action of *Hills* v. *The London Gaslight Co.* (*ante*, p. 208).

In addition to the defences there raised,[1] the specification of *Heard* (No. 2941 of 1806) was put forward as an anticipation. The object of *Heard's* invention was the "withdrawal of the sulphur from the gas obtained from coal." He described a process of mixing lime with coal and the passing

[1] See specifications of *Croll* and *Laming*, *ante*, p. 210.

of the gas over lime in a heated iron tube; the fixed alkalies and alkaline earths when deprived of their carbonic acid might be substituted for lime and also such metals or their oxides as "iron, manganese, zinc, copper, lead, &c."

In delivering his judgment Lord *Westbury*, L.C., said (p. 294) that questions of expert nature as to the truth of the process described, the meaning of technical terms and significance of phrases, were matters of evidence for a jury, and that subject to such being left to them, the interpretation of the specifications was for the Court. The identity of the external things indicated by descriptions is for the jury (p. 295). There remained, therefore, the question as to "what shall be the nature of the antecedent publication which shall be held sufficient to anticipate" a subsequent patent "on the ground of want of novelty" (p. 299). A specification must necessarily be a publication (p. 300). In other respects there is no difference in the application of the rule between specifications and other publications. "The antecedent statement must be such that a person of ordinary knowledge of the subject would at once perceive, understand, and be able practically to apply the discovery without the necessity of making further experiments and gaining further information before the invention can be made useful. If something remains to be ascertained which is necessary for the useful application of the discovery, that affords sufficient room for another valid patent."[1] The invention patented must not have been "publicly known." One means of making an invention publicly known is by a specification. How much information is necessary? "The (p. 301) information as to the alleged invention given by the prior publication must, for the purposes of practical utility, be equal to that given by the subsequent patent. The invention must be shown to have been before made known. Whatever, therefore, is essential to the invention[2] must be read out of the prior publication. If specific details are necessary for the practical working and real utility[3] of the alleged invention, they must be found substantially in the prior publication." Publication of generalities or partial truths, which leave things to be discovered, cannot anticipate the subsequent complete invention. "To carry me to the place at which I wish to arrive is very different from merely putting me on the road that leads to it. . . . Upon principle, therefore, I conclude that the prior knowledge of an invention to avoid a patent must be knowledge equal to that required to be given by a specification, namely, such knowledge as will enable the public to perceive the very discovery, and to carry the invention into practical use." The alleged anticipations, *Croll's*, *Laming's*, and *Heard's*, were then discussed, and the plaintiff's patent held to be valid.

[1] His lordship was dealing with a case of an invention which was a step in advance of the alleged anticipations which were excluded from the claim (*ante*, p. 209).

[2-3] These words show that he was dealing with a question of invention. He was not dealing with a case where the alleged anticipation was an invention of the same ambit as the one attacked, but was insufficient only in directions as to carrying it out.

Notes.

Lord *Westbury's* judgment has been quoted very often in patent cases in support of two propositions that are essentially distinct. The first is that an antecedent publication to anticipate a subsequent patent must contain such a full description of the invention in question that a skilled workman need not make further discovery or invention to produce the invention of the subsequent patent; the second is, that the prior anticipating publication must not only disclose the subsequent invention fully, but also all needful directions for carrying it into effect, *i.e.* if the prior publication be a specification, it must be "sufficient" in the technical sense.

The former of these propositions is undisputed, and *Hills* v. *Evans* has been followed in this respect in *Betts* v. *Menzies*, 10 H. L. Ca. 154; *Hills* v. *Liverpool United Gas Co.*, 32 L. J. Ch. 30; *Neilson* v. *Betts*, 5 L. R. H. L. 15; *Otto* v. *Linford*, 46 L. T. (per *Brett*, L.J., at p. 46); *American Braided Wire Co.* v. *Thomson* (*Bowen*, L.J.), 5 R. P. C. 124; *Shaw* v. *Jones*, 6. R. P. C. 336; *Gaulard & Gibbs'* Patent (Lord *Halsbury*, L.C.), 7 R. P. C. 386; *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 525; *Cassel Gold, &c. Co.* v. *Cyanide Gold, &c.*, 12 R. P. C. 256; *Savage* v. *Harris*, 13 R. P. C. 366; *Lewis & Stirekler's Pat.*, 14 R. P. C. 36; *Defries* v. *Sherwood*, 14 R. P. C. 318.

The second proposition rests on a different basis. In *Hills* v. *Evans* the plaintiff's invention consisted of an improved process, the claim disclaiming what was included in the alleged anticipations, which were successful as far as they went. One process (*Laming's*) is described in comparatively recent foreign publications dealing with gas-purification hence the concluding remarks (as quoted above) in Lord *Westbury's* judgment go beyond the facts, and if intended to be taken as equivalent to the second proposition stated above, amount merely to a *dictum*. Such an interpretation was put upon the passages quoted above by Lord *Chelmsford*, L.C., in *Betts* v. *Neilson* (L. R. 3 Ch. Ap. 432), but there he does not assent to so wide a proposition (p. 432), approving of *Betts* v. *Menzies* (1 E. & E. 990), to the effect that the prior specification, although "insufficient," might show the latter to be not wholly new; his lordship was dealing in that case with an alleged "paper anticipation" which had never worked successfully. So, too, in *Neilson* v. *Betts* (L. R. 5 H. L. 15), Lord *Westbury*, in confirming his remarks in *Hills* v. *Evans* (p. 15), was dealing with the same paper anticipation which had never been proved to have been used. The distinction as to the different state of facts as regards the alleged anticipations in these cases (*Hills'* being successful and the alleged anticipation disclaimed, and in *Betts* the alleged anticipation was a failure) was not noticed by *Jessel*, M.R., in *Plimpton* v. *Malcomson* (3 Ch. D. 568), when he treated the second of the above propositions as being finally decided. Hence this *dictum* was relied on by *Holker*, L.J., in *Otto* v. *Linford*, 46 L. T. 46; by *Chitty*, J., in *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 252; in *Haslam* v. *Hall*, 5 R. P. C. 19; in

Moser v. *Marsden*, 10 R. P. C. 212, 363; by *Charles*, J., in *Thierry* v. *Rickmann*, 12 R. P. C. 428. In the last case the learned judge relied upon it, and was overruled by the House of Lords. (See *post*, p. 391.)

The last passage of Lord *Westbury's* judgment was followed by *Smith*, L.J., in *The Shrewsbury & Talbot Cab Co.* v. *Sterckx*, 13 R. P. C. 53.

In *Ehrlich* v. *Ihlee*, 5 R. P. C. 450, *Cotton*, L.J., said: "We know what is necessary if there is said to be anticipation, not by the existence of an actual thing, but by description—either in a specification or otherwise—that the description must be of such a character as to enable any one competent to make the machine for which protection is claimed by the patentee to make it from the description given. There is nothing here which it could be suggested would enable any competent workman, *or any expert*, to make from that description the machine for which the plaintiff claims protection." The foregoing passage, omitting the last sentence here quoted, has been often referred to, sometimes vaguely as supporting the proposition that "sufficiency" in an anticipating specification is necessary (*Winby* v. *Manchester, &c.*, 6 R. P. C. 363; *Moser* v. *Marsden*, 10 R. P. C. 364; *Shrewsbury, &c.* v. *Sterckx*, 13 R. P. C. 53; *Pneumatic Tyre Co.* v. *Leicester, &c.*, 16 R. P. C. 57), and at another time to show that *invention* must be fully disclosed (*Cassel Gold, &c., Co.* v. *Cyanide, &c.*, 12 R. P. C. 256).

But without referring to any of the above cases, *Grove*, J., in *Philpott* v. *Hanbury*, 2 R. P. C. 43, expressed his opinion as a *dictum* than an anticipating specification need not be "sufficient," drawing a distinction between the *disclosure of an invention* and the *directions* necessary to perform it. This view, without allusion to authorities, was also adopted by Lord *Halsbury*, L.C., and Lord *Watson* in *King & Co.* v. *Anglo-American Brush Co.*, 9 R. P. C. 317, 320 (*post*, p. 340), and followed by *Lindley*, L.J., in *Savage* v. *Harris*, 13 R. P. C. 368.

When the cases are examined in the light of the facts of each, it is submitted that the proposition that an invention can be anticipated by a description only when the latter includes all directions necessary to a workman to carry out the invention has no authority to support it.

1864. FOXWELL *v.* BOSTOCK, 4 De G. J. & S. 298.

Construction—Effect of Disclaimer—Claim for Combination—Claim too Large.

In 1852 a patent (No. 413) was granted to *C. T. Judkins* for "improvements in machinery or apparatus for sewing or stitching."

A provisional specification was filed; the complete was filed on April 15, 1853. On March 12, 1862, *D. Foxwell*, the assignee of the patent, and plaintiff, filed a disclaimer, assigning as a reason that parts of the invention were possibly old, and that he was advised it was not expedient to make a separate claim for those parts apart from the general combination.

The complete specification (as amended) began in the following terms: [1]—

"My invention relates to an improved arrangement and combination of machinery for sewing or stitching by a needle and shuttle, [and of regulating the supply of the silk or thread to the needle and shuttle, so as to keep it to a proper tension during the operation of sewing or stitching, with a means of enabling the mechanism to accommodate itself to different thicknesses of silk, thread, or material]. I work the shuttle (*i*) by a driver *actuated by a bell crank and cam* (*g*, *h*), between the ends of which *said driver* the shuttle lies with a slight play, so that when the driver acts on the back end of it to force it through the loop or bow formed by the vertical needle (*u*) [passing the silk or thread through the material, and then partially rising or returning]; there is sufficient space between the forward end of the driver and the shuttle for the passage of the thread, and at the end of this motion the shuttle remains nearly in a state of rest for an instant, whilst the driver receives a slight back movement to permit the passage of the thread between the back end of the shuttle and the driver. The shuttle remains nearly stationary whilst the needle is rising, and at the time the feed motion is given to the cloth, [by means of which there are three pulls given simultaneously, the upward pull of the needle on the needle thread, the feed motion of the cloth or material in one direction, and the strain in the other, so that the two threads are drawn together to draw the stitch tight]. The small spool or bobbin (Fig. 4) which supplies the shuttle with the silk or thread is placed in the shuttle, [and in the axle *or tube thereof is a* spring (Fig. 4) to control or regulate the supply *of* the silk or thread to the shuttle]. The thread to the vertical needle is regulated or controlled during the downward motion by means of a regulator (*u*) turning on a pin or wire (*r*), which makes a slight pressure on the silk or thread as the needle descends, which pressure may be increased or diminished as circumstances may require by simply turning the lever thereof a little up or down. [This] *The* silk or thread passes from the spool or bobbin (*k*), which is fixed on the frame (*a*) of the machine in any convenient position, through the said regulator (*u*) connected to the machine nearly opposite to the needle carrier, is guided to the bottom part of the vertical needle (Fig. 2, *f u*), and passed through an eye about half an inch from its point, so that as the needle descends it passes through the cloth, and then partially rises or returns, thus forming a loop or bow; then the shuttle carries the silk or thread through the loop or bow, and it is tightened, [as already described], thus forming a stitch."

Then followed a detailed description of the machine as illustrated by the drawings; there were some small corrections inserted by the disclaimer and amendment. The detailed description included all the machinery as shown in the drawings, presser-pad, thread-tension regulator, and those parts

[1] The references to the drawings in this passage of the specification are, to avoid prolixity or repetition, here inserted by the author of this work; the same letters denote the same parts throughout. The words introduced by the disclaimer are inserted in italics, and those struck out are shown in square brackets.

FIG. 1.

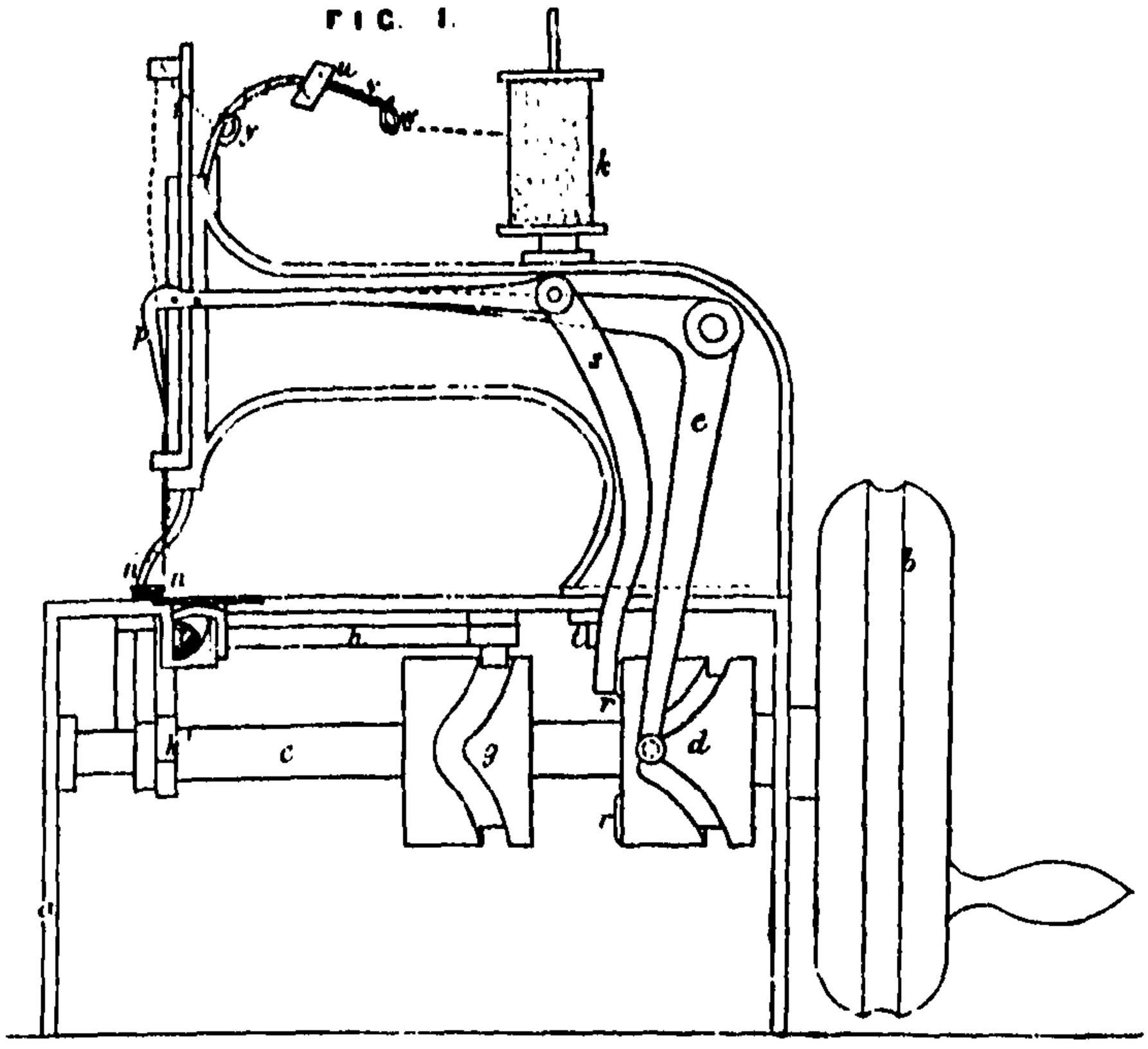


FIG 2

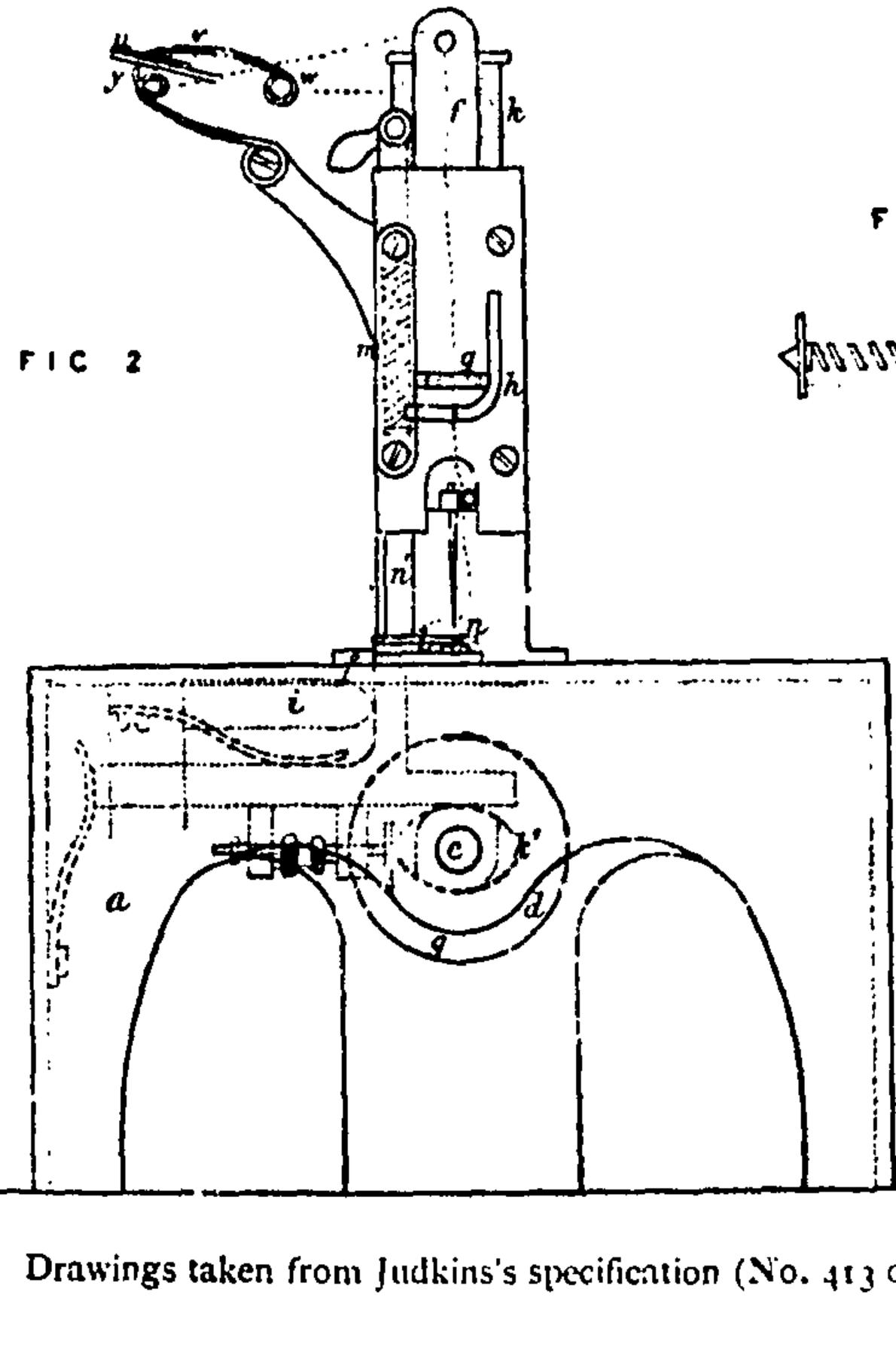


FIG 4



Drawings taken from Judkins's specification (No. 413 of 1852).

that were disclaimed from the foregoing description and from the claim below.

The amended claim [1] was as follows :—

"Having thus described the nature and particulars of my said improvements, I desire it to be distinctly understood that [I do not confine myself to the exact details herein described, as such may be varied or modified without departing from the principle thereof, but] I claim as new and of my invention, the combination and arrangement of the various parts of machinery for sewing or stitching, with the use of a needle and shuttle, [the methods of regulating the supply of the thread or silk to the needle and shuttle, the arrangement of accommodating the machinery to the differe.. thicknesses of the thread or silk, and the means of preventing the material rising, or the missing of the stitch when different thicknesses present themselves, as herein described and illustrated"].

The issue of validity was tried before Lord *Westbury*, L.C., without a jury.

The plaintiff proved that the novelty and utility of the invention lay in the arrangement of the three cams, *d*, *g*, and k^1, on the same shaft, *c*, by which the needle movement, the shuttle movement, and the feed movement were effected.

Held: (1) p. 308: Since the mechanical arrangements for the separate auxiliary inventions (which were struck out of the claim) have been retained and corrected in the description, they form part of the combination as claimed, which therefore becomes different from that for which the patent was granted; and (2) p. 313, that the patent was invalid because the specification claimed a whole combination without disclosing in what part the real novelty and invention lay, or limiting the claim to it.

Lord *Westbury*, L.C. (p. 313): "I must, therefore, lay down the rule which is consistent with and in reality a mere sequence from the decided cases, that in a patent for an improved arrangement or new combination of machinery the specification must describe the improvement and define the novelty otherwise and in a more specific form than by the general description of the entire machine: it must, to use a logical phrase, assign the *differentia* of the new combination." [2]

Notes.

The remarks of Lord *Westbury* in *Foxwell* v. *Bostock* have sometimes been quoted as supporting the proposition that in a specification for an invention of a combination it must always be pointed out what parts are old and what new; it was so dealt with in comparing details of *Judkins'*

[1] The parts struck out by disclaimer are shown in square brackets.

[2] This passage is frequently referred to as containing a correct statement of the effect of this case. See *Harrison* v. *Anderston Foundry Co.* (1 App. Ca.), per Lords *Chelmsford* and *Penzance*, pp. 580 and 592; *Webb* v. *Kynochs*, 15 R. P. C. 543 (per Lord *Ashbourne*, L.C.I.).

specification and those under discussion in the cases of *Harrison* v. *Anderston Foundry Co.* (4th Series, Court of Sess., vol. 2, p. 865) and *Moore* v. *Bennett*, 1 R. P. C. (per *Cotton*, L.J., 138, and *Lindley*, L.J., 140), both of which cases were reversed on appeal by the House of Lords.

Foxwell v. *Bostock* decides that an invention of new parts in an old machine must be claimed as a separate improvement, or in combination with old parts as a claim for a combination: per Lord *Cairns*, L.C., in *Clark* v. *Adie*, 2 App. Ca. 328, and in *Harrison* v. *Anderston Foundry Co.*, 1 App. Ca. 577. The novelty of the improvement must be stated, and not merely the whole machine claimed (*ibid.*, per Lord *Hatherley*, p. 583, per Lord *Penzance*, p. 592; *Clark* v. *Adie* (No. 2), 2 App. Ca. 433, per Lord *Hatherley*; *Leggott* v. *McGeoch*, 10 R. P. C. 435; *Kynochs* v. *Webb*, 17 R. P. C. 115, per Lord *Davey*).

Foxwell v. *Bostock* should be considered always as explained in *Harrison* v. *Anderston, &c.*: per Lord *Selborne*, L.C., in *Moore* v. *Bennett*, 1 R. P. C. 143; per *Bowen*, L.J., in *Proctor* v. *Bennis*, 4 R. P. C. 358.

The effect of *Foxwell* v. *Bostock* as given above is substantially approved in different words in the following cases: *Moore* v. *Bennett*, 1 R. P. C. (per Lord *Selborne*, L.C., and Lords *Blackburn*, *Watson*, and *Fitzgerald* at pp. 143, 149, 152, and 153); *Cartsburn* v. *Sharp*, 1 R. P. C. 185; *Rowcliffe* v. *Morris*, 3 R. P. C. 21, 24; *Webb* v. *Kynochs*, 15 R. P. C. 543.

It is not necessary that the novel parts be expressly named as such in any particular part of the specification, so long as fairly reading the whole or in comparing the claims the novelty is apparent: *Lindley*, L.J., in *Nordenfelt* v. *Gardner*, 1 R. P. C. 74.

Another way of looking at *Foxwell* v. *Bostock* is that it shows that a patentee must not claim more than his real invention: *Watling* v. *Stevens*, 3 R. P. C. 41.

If the whole combination be new, it is immaterial as regards sufficiency to specify if the respective parts of the combination are new: *Cotton*, L.J., in *Proctor* v. *Bennis*, 4 R. P. C. 351. If the invention be the whole combination itself, there is no necessity to describe and claim the novel individual parts: *Romer*, J., in *Perry* v. *La Société des Lunetiers*, 13 R. P. C. 670.

Foxwell v. *Bostock* has also been followed in *Parkes* v. *Stevens*, 8 Eq. Ca. 365; *Murray* v. *Clayton*, L. R. 7 Ch. Ap. 578, 586: *Clark* v. *Adie*, L. R. 10 Ch. Ap. 674; *Kynochs* v. *Webb*, 17 R. P. C. 110.

1865. RALSTON *v.* SMITH, 11 H. L. Ca. 223; 35 L. J. C. P. 49.

Construction—Disclaimer—New Manufacture.

In 1858 a patent (No. 2654) was granted to *W. Ralston* for "improvements in embossing and finishing woven fabrics, [and in the machinery or apparatus employed therein]." [1]

[1] These words in brackets were subsequently struck out by disclaimer.

The specification described, without drawings, an alleged method of producing in one operation the bright lustre on the surface of the fabric and impressing any desired pattern at the same time. This was to be effected by indenting the rollers, made of metal, wood, or suitable material, with any pattern desired, and by means of known suitable gearing, driving these rollers at a higher or lower speed than the bowls connected with them, so calendering and impressing a pattern at the same time.

On January 27, 1860, a disclaimer was filed. The title was abbreviated as above. All rollers were disclaimed "except those which are made of metal or other suitable material, and have circular grooves, flutes, or indentations made *around* their surfaces;" all other designs on the rollers were disclaimed. Water patterns were also disclaimed except those produced by grooves, &c., "as numerous as the warp threads in the fabric to be operated upon, or nearly so." The claim was in the following terms[1]:—"The employment of grooved, fluted, [engraved, milled,] or [otherwise] indented rollers of *hard* metal, [wood,] or other suitable material driven at a greater speed than the bowl or bowls connected with them, so as to exert a rubbing or friction upon the fabric submitted to their action, and thereby produce an indefinite variety of patterns as well as bright finish or lustre, and also reversing the operation by giving the bowl a quicker motion than the pattern roller."

The action was one for infringement.

The alleged infringement consisted in using a roller grooved spirally, the spiral being a screw-groove of sixty-eight threads to the inch—the same as the number of circular grooves required according to the specification to correspond to the warp-threads.

It was proved at the trial—that calendering by means of smooth rollers revolving at higher speeds than those of their respective bowls was well known, also the operation of impressing a pattern by means of indented rollers revolving at the same speed as the bowls; that the attempt to use the alleged invention, as originally described, would destroy the fabrics; that the plaintiff accidentally discovered that if a fabric were fed sideways into roller and bowl, the former being grooved circumferentially in circles and revolving faster, a water pattern was produced.

Held (on appeal to the House of Lords), (1) that the specification was confined to rollers grooved in circles, and not a spiral; (2) that this was an abuse of the power of disclaimer, which was not intended to enable one to specify for a particular discovery requiring research from a bad specification in general terms; and (3) that the invention described in the amended specification was not a "new manufacture."

Per Lord *Cranworth* (p. 250): "I quite agree with what was said by

[1] The original disclaimer was a separate document attached to the specification, and contained the revised description and claim. For convenience the old and new claims are shown here by the modern method. To read original claim omit all words in italics and include those in square brackets; to read amended claim omit words in brackets and include those in italics.

Mr. *Grove*, that it is not every useful discovery that can be made the subject of a patent, but you must show that the discovery can be brought within a fair extension of the words 'a new manufacture.'" A manufacturer would be stopped from employing his old rollers in the useful way discovered.

Notes.

The above decision was to the effect that the specification only showed a new use for an old machine: per *Fry*, J., in *Edison* v. *Woodhouse*, 4 R. P. C. 93. It was distinguished in *Moser* v. *Marsden*, 10 R. P. C. 362, by *Smith*, L.J., on the ground that *Ralston* only proposed to do what had been done before.

Ralston v. *Smith* was followed in *Kynochs* v. *Webb*, 17 R. P. C. 116, Lord *Davey* quoting the above extract from Lord *Cranworth's* judgment as being in point in that case.

1866. CURTIS *v.* PLATT, L. J. 35 Ch. 852.

Construction—Mechanical Equivalents—Distinction between an Invention and its Object.

The invention in question in this case related to a portion of the mechanism of self-acting spinning mules. It dealt with a method of effecting certain changes in the action of the mechanism. In it one part of the mule is movable, and travels backwards and forwards, performing certain functions. This part is termed the "carriage," and the whole journey—to and fro—"a stretch." During a stretch other portions of the mechanism had to be put in and out of gear in succession to effect the necessary changes in the operations to be performed. As it was described as "an improvement" on a previous method of *Lakin & Rhodes* (No. 12,805 of 1849), that method is here first given.

Fig. 6 is a portion[1] of the longitudinal elevation of *Lakin & Rhodes's* machine, Fig. 7 a plan, and Fig. 9 an end elevation of the same part. The same letters indicate the same parts throughout. By the operation of other parts of the machine at a certain time, the shaft Q is moved to the right in Fig. 6. In so moving, the incline on which the trigger-catch J rests lifts the lever *i* from the notch of the fixing *k* and allows the spring *l* to put into gear the clutch-box *d* by means of the lever *i* and crank-lever *h*. The left-hand side of the clutch-box slides along the shaft, but is "feathered" to it. The mechanism of the clutch-box in shown in detail in Figs. 13 and 14. To the half which revolves loose on the shaft (right-hand half in Fig. 7) is attached an eccentric boss, which passes through the lever *f*. Through this the pin *e* passes. On the fixing *g* is an incline, against which, when the

[1] The original figures showed the whole machine; the parts showing the clutch-box mechanism are alone reproduced here, about one-tenth of the whole. Enough is given to show the general nature of the mechanism used.

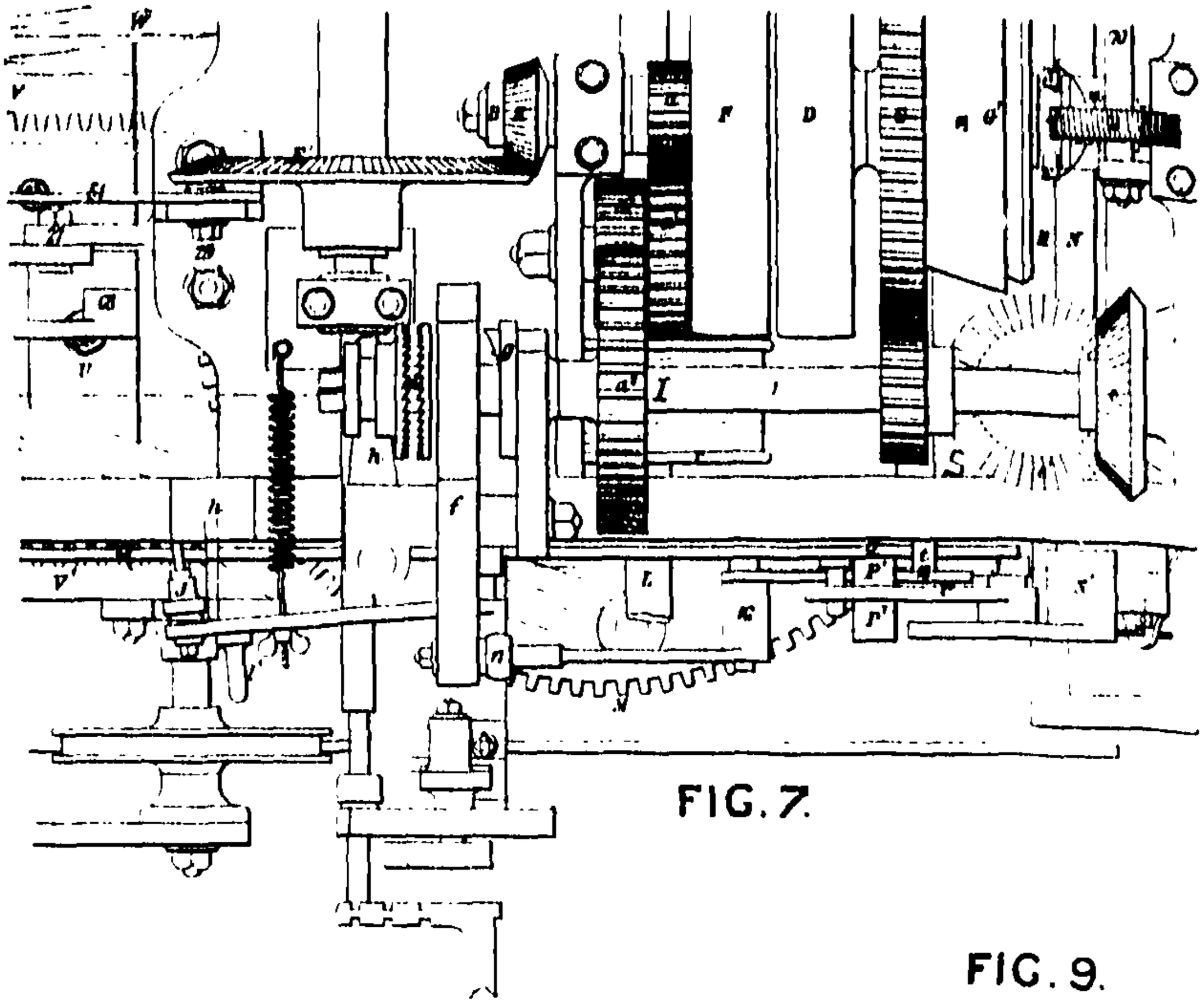
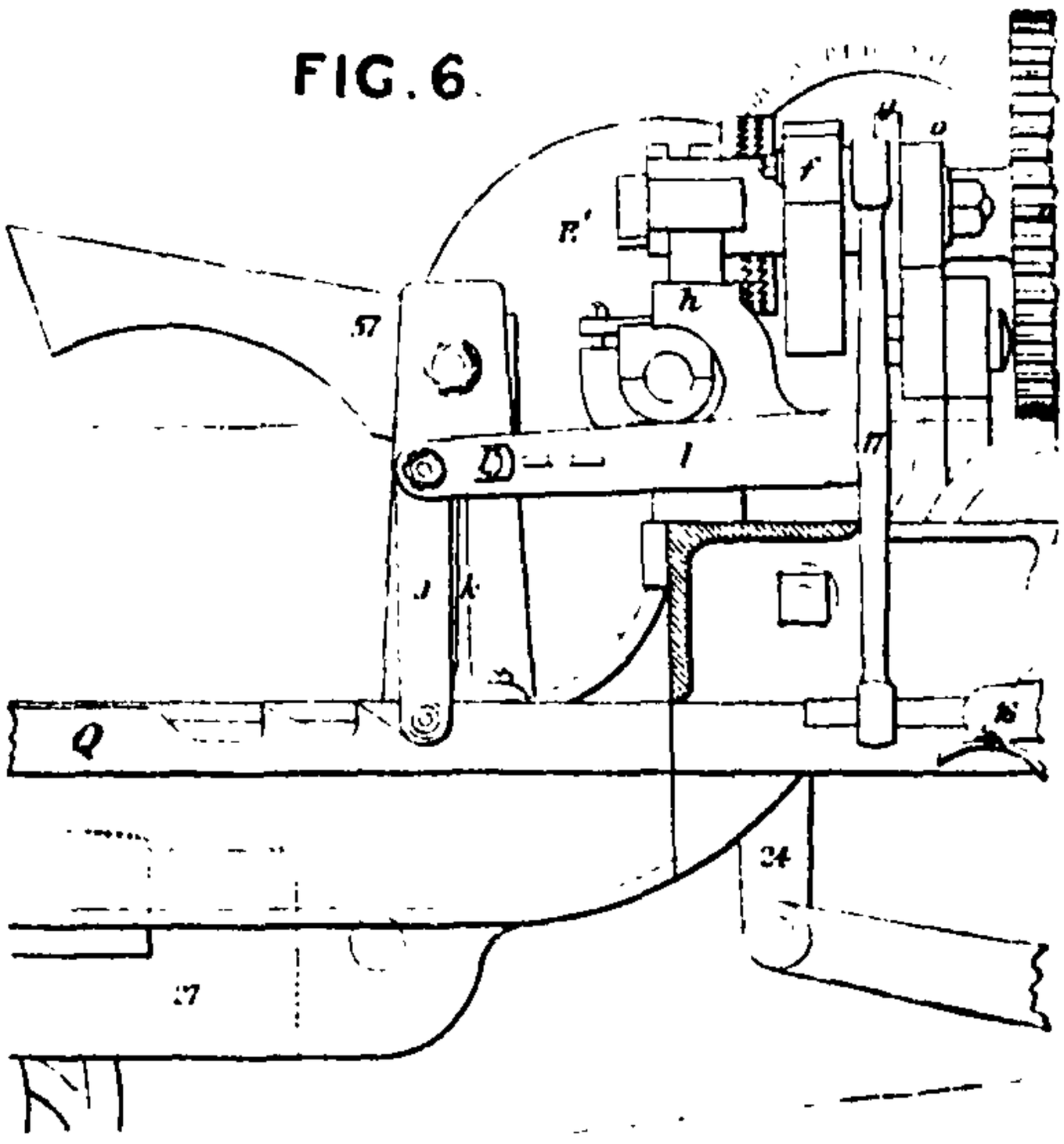
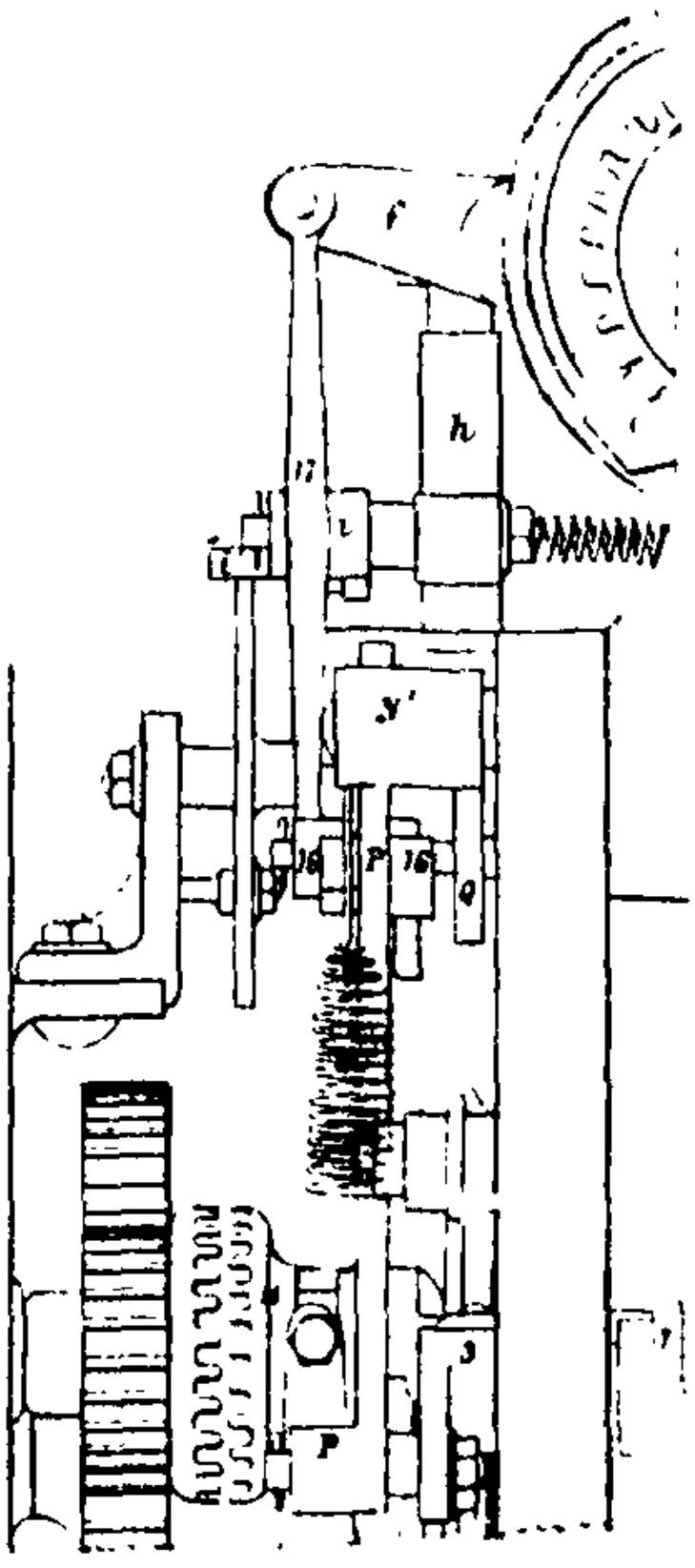


FIG. 7.

FIG. 9.

FIG. 6.





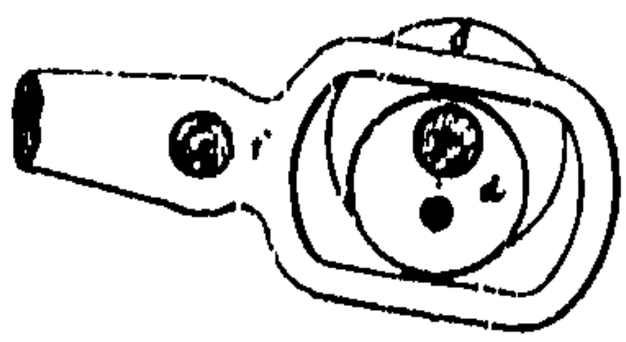
Portions of diagrams from Lakin & Rhodes's specification (No. 12805 of 1840).

clutch-box revolves, this pin is brought, and the incline acting on the pin, forces it outwards (*i.e.* towards the left in figures), and with it the other half of the clutch-box, which slides on the change-shaft I, but is prevented from turning by keys fastened thereon. On putting the mechanism into operation, as above described, the loose half of the clutch-box is carried

FIGURE 13



FIGURE 14



From Lakin and Rhodes's specification.

round, and by means of the lever *f* operates by means of another train of mechanism to effect the first change. On further revolution the clutch-box is thrown out of gear, as above described. By this method of effecting the desired result, if three "changes" had to be made in each stretch, the clutch-box completed three revolutions, one for each change effected.

A patent (No. 2393 of 1854) was granted to *J. Wain* for the invention in question, consisting of improvements in certain machines "commonly known as mules and twiners."

The complete specification included the following description [1] :—

The improvements were described as applicable to certain machines, "particularly those constructed with the improvements for which *R. Lakin* and *W. H. Rhodes* obtained Letters Patent," as above. The description of the improvements is given "with reference only to the self-acting mule constructed with the said improvements of the said" *Lakin & Rhodes*, "as any mechanic conversant with such machinery will be able to adapt them to other machines of the kind aforesaid, to which the same may be applicable of whatever suitable arrangement or construction they may be. . . ." "My said invention consists, first, in causing one-half of the catch or clutch-box described . . . in their specification, above referred to, for making the changes in the action of the mule to be connected with and to act upon the cams used for making those changes direct and without the intervention or use of the eccentric boss and rods, levers, and mechanical agents combined therewith and described by them,[2] such catch-box being marked *d* in Figs. 6, 7, 13, and 14 in . . . . their specification" above. Secondly, in an improved arrangement for putting the catch-box into gear, and in giving motion to the change-shaft.

"Fig. 1 is a side elevation of part of the headstock of a self-acting mule, exhibiting parts of my improvements as applied thereto; Fig. 2 is a plan

[1] Only so much is given as relates to the first claim, the one in dispute.

[2] The whole complicated train of mechanism is not shown here, but only that relating to putting the clutch-box into gear.

view of the same. Fig. 3 is a section, and Fig. 4 a front elevation, of the disc *p*, hereinafter described, shown detached. . . .

"I shall in the first place describe the means by which the first and second parts of my said improvements are performed.

"*a* is the side of the headstock of the mule, to which are attached the bearings *b* and $b^{\times}$. The bearing *b* supports the hollow shaft *c*, on which are cast the cams *d*, *d*, and *d*. The bearing $b^{\times}$ supports the solid shaft or 'change shaft' *e*; this shaft fits loosely, and revolves within the hollow shaft *c* and partly supports it, and is also partly supported by it and by the bearing *b*. The shaft *e* derives motion from the wheel *f*, which is fastened on it, and is driven by the backing-off wheel *g*, shown in Fig. 7, and more fully described and explained in the said specification of the said *R. Lakin* and *W. H. Rhodes*, and which is well understood. *h* and *i* are the two halves of a catch-box; the half *h* is grooved to slide on two feather keys fixed in the shaft *e*, which cause it to revolve with that shaft, but leave it loose to slide in and out of gear with the other half *i* of the catch-box, which is fastened to the hollow shaft *c*. *j* is a helical spring, coiled round the shaft *c*, and one end of which is fastened to the hoop *k* fixed on the shaft *c*, and the other end presses against the half *h* of the catch-box, tending to force it into gear with the other half *i* of the catch-box when required and at liberty, as hereinafter described. Through the boss of the half *i* of the catch-box is a hole, in which is placed a loose pin a^2, somewhat longer than the thickness of the boss, so as to project on one side or the other. The lever *l* swivels on the stud *m*, fastened in the frame side *a*. Near the several ends of this lever are bolted the adjustable tappets *n* and n^1. On the stud *o*, also bolted in the lever *l*, is the disc *p* (shown separately in Figs. 3 and 4), and in which is a slot or opening, sufficiently large to admit the shaft *c* to pass through it, and also to admit of the disc being raised and lowered when required, as hereinafter described. On the face of the disc are formed the two projecting inclines *q*, *q*. The bell-crank lever *r* swivels on the stud *s*, fixed on the framing *a*, at the end farthest from the delivering rollers. To the lower arm of this lever is attached one end of the spring *t*, the other end of which is secured to a bracket on the framing. *u* and u^1 are the 'fallers,' attached to and travelling with the mule-carriage in the usual manner. When the machine is put in operation motion is given to the wheel *f* by the backing-off wheel *g*, which causes the 'change shaft' *e* to rotate, and with it the half *h* of the catch-box, and also the spring *j*. It must be understood that the two halves of the catch-box are now out of gear, the lower projecting incline *q* on the disc *p* being in contact with the nearer end of the loose pin a^2, and forcing the other end against the half *h* of the catch-box, so as to resist the action of the spring *j*. As the carriage traverses outwards the faller *u* comes in contact with the bevilled or inclined part of the tappet *n*, and thereby depresses the nearer end of the lever *l*, by which the disc *p* near to the opposite end is raised, and the lower projecting incline *q* is thereby removed, and ceases to bear on the end of the loose pin a^2, and allows the spring *j* to act on and push forward the half *h* of the

FIGURE 2

FIGURE 1

FIGURE 3

FIGURE 4

Drawings (*Figs.* 1 and 2 in part) from Wain's specification (No. 2393 of 1854).

catch-box, which comes into gear with the other half *i*, which takes round with it the hollow shaft *c* half a revolution, thus bringing the cams into action in such manner as is necessary in order to effect the changes then required to be made, and which it is unnecessary to describe, as the successive changes, and the action of the several cams on the parts of the mule, by the intervention of which the changes are produced, are well known to all persons conversant with such or similar spinning machinery. When the shaft *c* has thus made a half-revolution, the end of the loose pin a^2 arrives at and is forced back by the upper incline *q* on the disc *p*, and puts the half *h* of the catch-box out of gear with the half *i*, and the revolution of the shaft *c* and its cams consequently ceases. When the 'backing-off' and other necessary operations common to self-acting mules at this stage are performed, the carriage makes its inward traverse, and the faller n^1 coming into contact with the bevilled or inclined part of the tappet n^1 depresses the near end of the lever *l*, by which the disc *p* is lowered, and the upper incline *q* is removed from and ceases to bear on the end of the pin a^2, which allows the halves of the catch-box again to gear and carry the hollow shaft *c* halfway round, thus completing its revolution, whereby the cams are again brought into action to produce the further changes required. It is to be observed that the spring *t* causes the upright arm of the crank lever *r* always to bear against the adjacent end of the lever *l*, whereby that lever is always retained in the position in which it is last placed by the action upon it of either of the fallers, until its position is changed by the succeeding action upon it of the other faller. . . ."

The claims were :—

"*First*, the novel construction, combination, and application of mechanism, as hereinbefore described, whereby one-half of the clutch or catch-box hereinbefore and in the said specification of the said *R. Lakin* and *W. H. Rhodes* described, or any mechanical equivalent therefor, is connected with and acts upon cams or other similar parts of mechanism for effecting the changes in the action of the mule or other machine of the description before mentioned, direct and without the intervention or use of such eccentric boss and rods, levers, or other mechanical agents combined therewith, as are described by the said *R. Lakin* and *W. H. Rhodes* in their said specification.

"*Secondly*, the arrangement and combination of the lever *l*, hereinbefore described, and the parts connected therewith, for causing the catch-box, hereinbefore described, to be put into gear; and also the means or mode hereinbefore described of giving motion to the 'change shaft.'

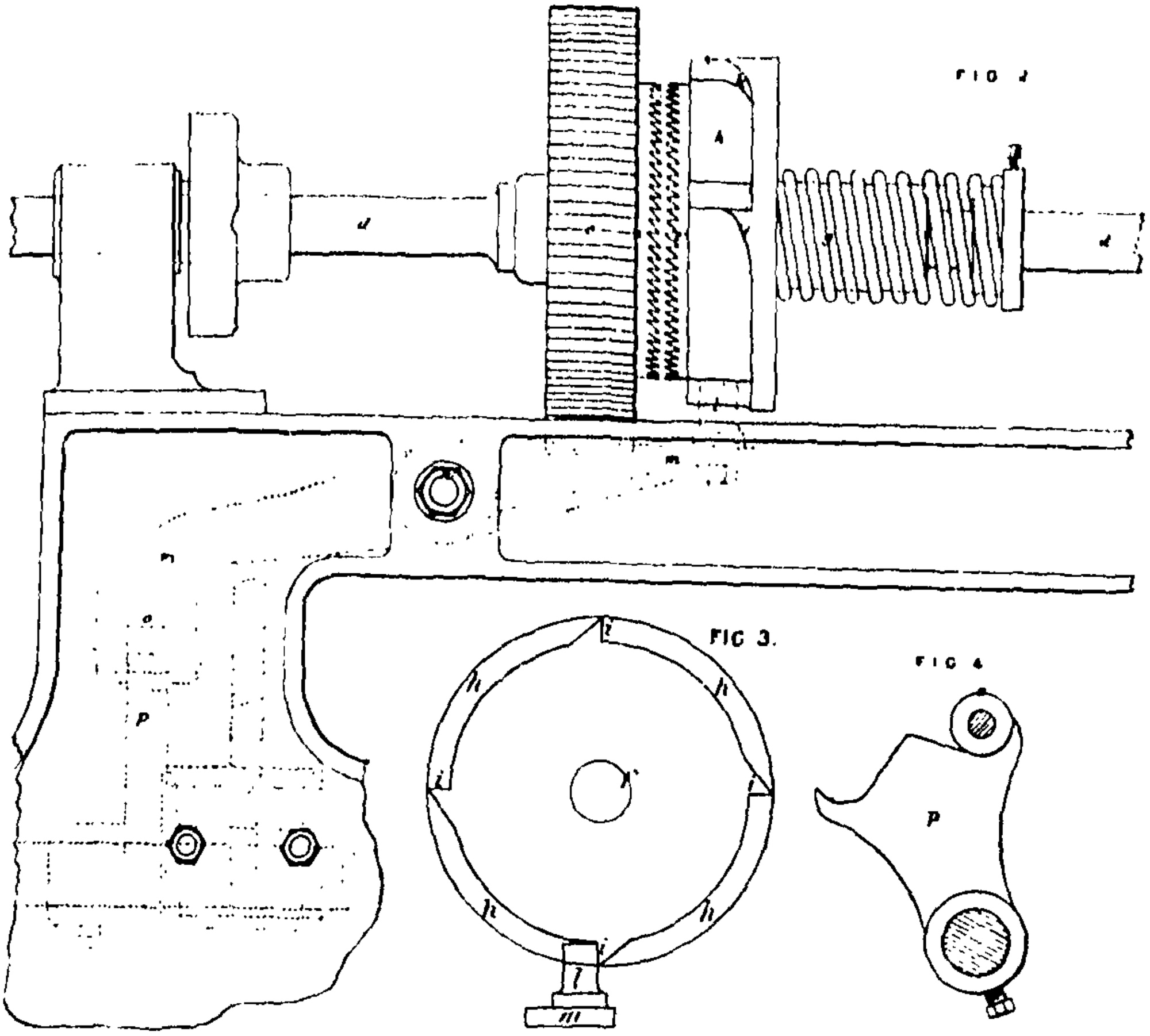
"And, *thirdly*, the means or mode of causing the backing-off friction cones, &c."

The difference in the effect of this device as compared with the former was that two changes could be effected by one rotation of the shaft. The means were altogether different, although both made use of the old device of a pin actuated by an inclined plane.

An alleged infringement consisted in a machine made according to *Platt's* specification (No. 922 of 1860).

In it was employed a clutch-box, one part being driven loosely by a toothed wheel (on a parallel shaft on which were the fast and loose pulleys), and the other when caused to revolve gave motion to a cam-shaft, thus effecting the necessary changes. It differed from the preceding in its functions and operation, since the number of changes were regulated by recesses on a wheel or disc. It was constructed and worked as follows:—

"*Fig.* 1 *represents* [1] *in plan view so much of a headstock as is necessary to illustrate the improvement, and Fig.* 2 *is an elevation thereof. The usual*



Portions of diagrams from Platt's specification (No. 922 of 1850).

shaft upon which the fast and loose pulleys are placed is shown at *a*" (Fig. 1); "upon this shaft is fixed a toothed wheel *b*" (Fig. 1), "taking into another, *c*, mounted loosely upon the cam or self-acting shaft *d*; this wheel revolves constantly, and carries upon its face one half of a clutch-box *e*; a corresponding half, *e**, is capable of sliding upon the shaft *d*, but is caused to revolve therewith by means of the usual disc and pins employed in apparatus of this description; connected to this half of the clutch-box is a plate, *f*,

[1] Fig. 1 is omitted here. It merely showed the connection whereby the wheel *c* was driven, with a plan of the whole.

forced forward by means of a spring, *g*, so that it may, when at liberty to move, cause the part *e** to be brought into gear with the part *e*; upon its face are formed a number of recesses, *h*, corresponding to the number of changes required, which recesses are bounded by radial lines, *i* (see Fig. 3), leading towards which are inclines, *k*; within the recesses *h* is situate at intervals a pin, *l*, mounted upon a lever, *m*, *m**, which turns upon a centre at *n*; the end *m** of this lever carries a bowl, *o*, resting upon a tumbler, *p*, shown detached at Fig. 4. The operation is as follows: According to the position shown, the clutch-box *e** has been disconnected (by means which will be understood when the next movement is described), and is prevented from being brought into gear through the spring *g*, by reason of the part *k* bearing against the pin *l*; the wheel *e* is therefore revolving separately, and no motion is communicated to the cam-shaft *d*; but when the time shall have arrived for a change to take place, the carriage (I will now suppose) arrives in contact with the tumbler *p*, which being thus caused to turn over upon its centre of motion, will elevate the bowl *o*, and effect a turning of the lever *m* upon its centre *n*; this operation will withdraw the pin *l* from the recess *h*, and the plate *f* being thus liberated will be forced forward by the spring *g*, so as to effect a gearing of the clutch-box *e*, *e**, and the cam-shaft will then be caused to revolve. Immediately upon the tumbler having passed the centre line, the bowl *o* will again descend, so as to allow the lever *m* to return to its former position, and bring the pin *l* into the recess *h*, next to that which it previously occupied. The plate *f* now revolving will bring one of the inclines *k* into contact with the pin *l*, which, acting as an abutment, will cause the said plate and its clutch, *e**, to slide upon the shaft so as to disconnect it from the driving power, and the radial line *i* will act as a stop for securing a correct position of the cam-shaft; in like manner the return motion of the carriage will restore the tumbler *p* to the position shown, and another change will be effected precisely as above described.

"I have mentioned but two changes, and those as derived from the running in and out of the carriage; . . . and it will be evident to all competent mechanics that other changes required may be derived from the faller or other ordinary part, &c."

A suit in Chancery was instituted to restrain the infringement of *Wain's* patent. The alleged infringement consisted of a machine made according to *Platt's* specification.

Evidence was also given of an earlier machine of *Roberts's* to achieve the same ultimate result.

There were five issues before the Court; (1) whether the invention was new, or (2) a "manufacture"; (3) the sufficiency of specification; (4) utility; and (5) infringement.

The learned judge, *Wood*, V.C., found the first four issues in favour of the plaintiffs, and the fifth in favour of the defendant.

He examined and described in his judgment the earlier contrivances in detail, and continued: "Accordingly that which *Roberts* effected by a totally different mode, namely, the spaced pulley and the other pulley,

Wain has effected through the scheme apparently first suggested by *Lakin & Rhodes* by the pin operating through the medium of the inclined plane. But he has achieved the separation and union of the two shafts once during the course of the rotation; and they do not separate in effect at the end of each rotation, but separate twice in the course of the stretch, and twice in the course of rotation of the instrument. That appears to me entirely different from *Roberts's*, and, of course, from anything in *Lakin & Rhodes's*. No one would pretend to say that it is the same thing, . . . and I think myself the invention is clearly and distinctly new, as far as regards the invention itself.[1]

"Then the question is: How far has *Wain* used this in his patent? And this is a very important part of the inquiry—as to what extent he can claim a patent right in respect to this invention. And before, therefore, reading his patent, I would say a very few words as to what my conception of the patent law is with reference to the right of an inventor to claim a patent right in respect of his discovery. In all discoveries there are two things—there is an object to be achieved, and a means of achieving that object. Now, the object to be achieved may be as old as possible, of course; hundreds of patents may be taken out for achieving objects which themselves have been, since the history of mankind, achieved by some means or other. No novelty is required as to the object. The novelty must be in order to found a right to a patent, in the means for effecting a particular object, be it old in itself or new. . . .

"Where the thing is wholly novel and one which never has been achieved in any possible way before, the machine itself which is invented necessarily partakes of a great amount of novelty in all its parts; and one looks very narrowly and very jealously upon any other machines for effecting the same object to see whether or not they are colourable contrivances for evading that which has been before done. When the object itself is one which is not new, but the means only are new, one is not inclined to say that a person who invents a particular means of doing something that has been known to all the world long before has a right to extend very largely the interpretation of those means which he has adopted for carrying it into effect. Because, otherwise, that would be to say that the whole world is to be precluded from exercising its invention for achieving some desirable and well-known object which everybody has had in view for years and years before.[2] . . . Of course, as I have stated, no patent can be taken out for effecting a new object, but only for effecting it by new means." The learned judge commented on the words in the claim, "or other mechanical equivalent," and pointed out that they were wholly useless and had much better have been omitted. "It comes simply to this: if you claim anything which is a mechanical equivalent in the largest sense, your patent must be

[1] The judgment after this continues as reported in 3 Ch. D. 136 *n.*

[2] Referred to in order to show that where the result is old the specification should be more narrowly looked at. *Murchland* v. *Nicholson*, 10 R. P. C. 423.

too large.[1] . . . If it is simply a mechanical equivalent, or a chemical equivalent, as the case may be, for doing the same thing without the slightest degree of invention on the part of the person who substitutes it, or any benefit whatever to be derived from the apparently new mode, but really the same mode of effecting the object in question, the patentee would get the advantage just as well without the insertion of those words as if he had inserted them."

The learned judge discussed the language of the specification and first claim, and continued: "He only claims that particular mechanism for joining a clutch-box, or any mechanical equivalent therefor, as being more direct, upon the shaft that effects the changes." The learned judge then referred to the case of *Seed* v. *Higgins* (*ante*, p. 212), and dealt with the question of infringement.

The plaintiffs appealed to the Lord Chancellor on the fifth issue, and the defendants on the other four.

The Lord Chancellor dismissed the plaintiffs' appeal; the cross appeal was then dismissed by consent.

The Lord Chancellor (Lord *Westbury*) commenced his judgment with a statement of the objects to be achieved by the devices described above, and contrasted the various means to effect those objects adopted by *Roberts*, *Lakin & Rhodes*, *Wain*, and *Platt*. "But it is only essential to mark that all the elements that we find in the subsequent combinations are noted in the original patent of *Lakin & Rhodes*—the clutch-box as a means of checking the rotation of the shaft—that being effected by the opening and shutting of the clutch-box, and the operation of the plane with an incline, and a movable pin traversing it in order to effect the operation of opening and shutting the clutch-box." . . . "Mr. *Wain* . . . applied himself to the construction of what he himself denominates 'an improvement upon the patent of *Lakin & Rhodes*.' . . . He himself has described it, and sought protection for it in the character of an improvement. He speaks of it as something supplemental to the original patent, and the language of his patent is such, and the effect of the patent is such, that, without the licence of the original patentees, of *Lakin & Rhodes*, it would not be competent for Mr. *Wain* to have the benefit of his invention until the natural life of the invention of *Lakin & Rhodes* had expired." . . . "The mechanism that Mr. *Wain* describes is the proximate means of making the clutch-box operate for the purpose of making a break in the rotation of the shaft; it is nothing in the world, therefore, more than a particular means for effecting a given result, and that being so, I cannot but think that, in patents of this description, the doctrine of mechanical equivalents is not by any means applicable. The thing itself is nothing in the world more than a particular agent for attaining a certain end, and if Mr. *Wain* was entitled to a patent for the

[1] The reason a wide interpretation was not given to the term "mechanical equivalents" was that the patent would not then be valid. Per *Kennedy*, J., in *Parkinson* v. *Simon*, 11 R. P. C. 254.

particular agency by which he effected in a more convenient manner the opening and shutting of the clutch-box, any other person is, on the same principle, entitled also to a patent for the means of effecting the same result, provided those means are not a colourable imitation, or a colourable evasion, of Mr. *Wain's* patent; or provided those means do not embody Mr. *Wain's* patent with an improvement."

The learned judge then dealt with the operation of *Wain's* invention in detail, comparing its action with that of *Lakin & Rhodes*. "Now, I consider, therefore, the pin, the incline, and a plane with inclines upon it, to be common elements out of which any inventor was at liberty to make or construct a machine at the time when *Wain's* patent was granted, and of necessity, therefore, at the time when *Platt's* was granted."

The learned judge then examined and discussed the mode of operation of *Platt's* machine.

"My conclusion, therefore, upon the whole of the case has been this: I have anxiously considered it, because it is extremely desirable, most particularly desirable, that when a beneficial idea has been started by one man he should have the benefit of his invention, and that it should not be curtailed and destroyed by another man simply improving upon that idea; but if the idea be nothing in the world more than the discovery of a road to attain a particular end, it does not at all interfere with another man discovering another road to attain that end, any more than it would be reasonable to say that if one man has a road to go to Brighton by Croydon, another man shall not have a road to go to Brighton by Dorking.[1] They are the roads and means of attaining the end, and unless you can prove that one is a colourable imitation of the other, or unless you can prove that one bodily incorporates the other with merely an addition, it is impossible to say that they shall not be co-existent subjects of contemporaneous patents." [2]

On appeal to the House of Lords by both parties, the question of infringement alone was argued, as before the Lord Chancellor (Lord *Westbury*), and the appeal dismissed. The cross appeal was dismissed by consent.

The Lord Chancellor (Lord *Chelmsford*) gave an exhaustive judgment in which the following passages occurred:—

35 L. J. Ch. 867: "To ascertain what is the invention which the patentee complains has been infringed, his specification must necessarily be referred to, and the construction of that specification, like that of every written document, must be the office of the Court, assisted by any explanatory evidence which may be necessary. The alleged infringement by a defendant must be a pure question of fact, because it altogether depends upon whether what has been done amounts to an invasion of the plaintiff's patent." His lordship then entered into a detailed examination of the two machines,

[1] This passage has been frequently quoted in argument as being the expression of a proposition of law, and by *Pearson*, J., in *Badische Anilin und Soda Fabrik* v. *Levinstein*, 2 R. P. C. 91.

[2] Quoted with approval by Lord *Watson* in *Miller & Co.* v. *Clyde Bridge Steel Co.*, 9 R. P. C. 479.

Wain's and *Platt's*, and discussed the question of colourable evasion, and continued (p. 869): "Comparing both machines together as entire combinations, it appears not only that the several parts of the defendant's machine are different from the plaintiff's, but that the combined action of these several parts is different. This is exhibited in a very striking manner by the working of the two machines" (*i.e.* plaintiff's two changes as compared with defendant's four). . . . "Upon a question of combination, the action of two machines with differently disposed parts, differing so materially from each other in their different effects, almost necessarily leads to the conclusion that there must be a substantial difference between them."[1]

Lord *Cranworth* considered in detail the action of the two machines, and continued (p. 871): "In spite, however, of the resemblances, I have satisfied myself, in conformity with the judgments of *Wood*, V.C., and Lord *Westbury*, that the appellant has failed to establish his ground of complaint. In the first place, neither of these parties can claim against the other the right to an exclusive use of a clutch-box as a means of communicating intermittent action to a rotating shaft."

At p. 873: "It is important to consider exactly what it is which *Wain* is entitled to claim as his invention. He cannot claim the application of a clutch-box as the means of effecting the changes required during the stretch. That had been discovered and patented by *Lakin & Rhodes*. He cannot claim the disc with a pin and an incline, as the means of opening and shutting his clutch-box. That was a mechanical contrivance well known and in frequent use, and was in fact used by *Lakin & Rhodes*. His invention consisted in placing cams on the hollow shaft, and in arresting their rotation twice during its revolution by means of the disc with the two inclines and stops, to which a vertical motion is given by the rising and falling of a lever connected with it."

At p. 874: "It was said that *Wain* claims, not only his own specific mechanism, but also 'any mechanical equivalent therefor.' And every part of *Platt's* machine is, it is said, if not identical with, at all events only a mechanical equivalent for *Wain's* machinery. There are, however, two answers to this argument; in the first place, the *claim as to mechanical equivalents, according to the fair construction of the specification, obviously relates only to the clutch-box;* and, secondly, the principle which protects a patentee against the use by others of mechanical equivalents is inapplicable to a case like the present, where the whole invention depends entirely on the particular machinery by means of which a well-known object is attained."

Notes.

The foregoing case is to be distinguished from that of *Proctor* v. *Bennis* (*post*, p. 305), because the whole machinery of which the invention formed a part was old, and the mechanical result intended was old. "The only

[1] The difference of functions performed by the respective parts constitute a difference in the machines.

novelty which there could be claimed would be the application and use of certain mechanical means in order to produce in a known machine the same result which in that known machine had been produced by other mechanical means": per *Cotton*, L.J., in *Proctor* v. *Bennis*, 4 R. P. C. 354 (*Bowen*, L.J., p. 359). A broad distinction was drawn by Lord *Hatherley* in his judgment above between old and new objects: per *Fry*, L.J., p. 361.

This distinction between old and new results was observed also in *Ticket Punch Co.* v. *Colley's Patent, &c.*, 12 R. P. C. 183, 185, which has been frequently quoted in subsequent cases.

Curtis v. *Platt* has been followed in *Nettlefolds* v. *Reynolds*, 9 R. P. C. 299.

1866. JORDAN *v.* MOORE, L. R. 1 C. P. 624; 35 L. J. C. P. 268.

Construction of Specification and Claims—Claim too wide.

The invention was for certain improvements in the construction of ships. The first improvement, as described, consisted in a suitable iron frame, of any shape or kind of iron, to which an external covering of timber planking for the sides, bilges, and bottoms was to be fastened by means of rivets, bolts, or other suitable fastening. There were four more improvements described, and the sixth described the construction of a particular iron frame adapted to the timber external planking for sides, bilges, and bottoms.

The *first* claim was for "the construction of ships with an iron frame, combined with an external covering of timber planking for the sides, bilges, and bottoms." The *sixth* was for "the construction of iron frames for ships adapted to an external covering of timber planking for the sides, bilges, and bottoms, as described."

Held, that the first claim must be read to include all iron frames, and was not confined to that described in the sixth improvement; and that the case came within *Harwood* v. *G. N. Ry. Co.*, there being no invention in the first claim.

Notes.

In *Arnold* v. *Bradbury*, L. R. 6 Ch. Ap. 712, Lord *Hatherley*, L.C., treated this case as an example of one claim showing that another must be read in a wide sense; and that the latter covered ships made before the patent.

It was pointed out by *Kay*, L.J., in the *Edison Bell Phonograph Corporation* v. *Smith & Young* (11 R. P. C. 400) that the two claims above could never be suggested to refer to the same thing, and that, contrasting them, it was obvious the first referred to any kind of iron ribs.

1866. SIMPSON & CO. *v.* HOLLIDAY, L. R. 1 H. L. 315.

Construction—Insufficiency—Utility.

In 1860 a patent (No. 126) was granted to *H. Medlock* for "improvements in the preparation of red and purple dyes."

The provisional specification was filed. The complete specification, which was almost *verbatim* identical with the provisional, was as follows:—"I mix aniline with dry arsenic acid, and allow the mixture to stand for some time, or I accelerate the operation by heating it to or near to its boiling point until it assumes a rich purple colour, and I then mix it with boiling water and allow the mixture to cool; when cold it is filtered or decanted. The aqueous solution which passes through the filter contains a red colouring-matter or dye, while a tarry substance remains on the filter; this tarry substance, dissolved in alcohol, methylated spirit, or other suitable spirit, furnishes a purple dye. These solutions of colouring-matter may be used at once in the process of dyeing, concentrated or diluted according to the tints required. The mixture of aniline and arsenic acid, after being heated, may be allowed to cool, and then forms a paste, which may be preserved. When required for use it is mixed with boiling water and heated as above described."

"I have found that the proportion of two parts by weight of aniline to one part by weight of arsenic acid yields a good result, but I do not confine myself to that proportion, as it admits of variation." The claim was for: "The manufacture or preparation of red and purple dyes by treating aniline with arsenic acid, as hereinbefore described."

The plaintiffs were assignees of the above patent.

The issues of validity and infringement were tried by *Wood*, V.C., without a jury.

It was admitted that the process described in the first words of the specification, of mixing the ingredients and allowing "the mixture to stand for some time," would not do; the application of heat was necessary to produce the combination required.

It was proved that no person was misled by the statement, because on finding that combination did not take place, one would at once naturally apply heat. Also it was found that "dry arsenic" of commerce meant arsenic physically dry, and not the "anhydrous," which latter would not produce the required result; and that "anhydrous" acid was not an article of commerce. Also that pure aniline would not do, but the aniline of commerce containing toluidine would do.[1]

[1] At the date of the patent the old chemical notation was in use. The "hydrated acid" is H_3AsO_4 in the modern notation. When physically dry it contained some water of crystallization. The "anhydrous acid" spoken of at the trial is the pentoxide As_2O_5 produced by expelling the H from the H_3AsO_4 with sufficient O to form water. In the process described

Held, by *Wood*, V.C., that the patent was valid, and the defendant had infringed.

On appeal to the Lord Chancellor.

Held, by Lord *Westbury*, L.C., that the cold process, as described, was distinct from the hot, and that the patent was therefore invalid; that "dry" was not synonymous with "anhydrous," and that that objection to the patent failed [1] (12 L. T. 99).

On appeal to the House of Lords.

It was argued *inter alia* that as questions of fact were involved in relation to the necessity of heating, and as to the properties of "dry arsenic acid," there must be a new trial.

Held, that as the cold process was admitted to be useless, the patent was void in law.

Lord *Chelmsford*, L.C. (p. 320): "The construction of a specification, like other written documents, is for the Court. If the terms used require explanation, as being terms of art or scientific use, explanatory evidence must be given, and with its aid the Court proceeds to the office of construction.[2] In this there is no necessity for any scientific evidence, as there can be no doubt of the meaning of the language used by the patentee."

Notes.

In the *United Horse Nail Co.* v. *Stewart*, 2 R. P. C. 132, the foregoing case is quoted as an example of a patent being held invalid because, of two processes given, one was a failure.

In *Edison & Swan* v. *Holland*, 6 R. P. C. 282, *Cotton*, L.J., pointed out that a specification need not point out and warn against all the errors a workman might make; but must be so clear as to leave him nothing to find out or discover.

1871. CANNINGTON *v.* NUTTALL, L. R. 5 H. L. Ca. 205.

Construction—Combination—Parts old and disclaimed.

In 1866 a patent (No. 1297) was granted to *A. Pocheron* for an invention for "improvements in the manufacture of glass," and was described in the amended specification in the following terms [3]:—

the "arsenic acid" acted as a strong oxidizing agent. The oxidation of the aniline and toluidine (present in the aniline of commerce) produced rosaniline, thus—

$$\underset{\text{aniline}}{C_6H_7N} + 2\underset{\text{toluidine}}{C_7H_9N} + O_3 = \underset{\text{rosaniline}}{C_{20}H_{19}N_3} + 3H_2O$$

Where the oxidizing agent is arsenic acid, there resulted arsenite and arseniate of the base rosaniline which formed the dyes in question.

[1] Lord *Westbury* pointed out that this case was an example of a patentee losing a patent for a valuable discovery by not availing himself of the opportunity of making experiments during the six months which elapsed before the time allowed for filing the complete specification; the provisional and complete specifications were here practically identical.

[2] Quoted and followed by *Kay, J.*, in *Edison & Swan* v. *Holland*, 5 R. P. C. 475.

[3] The original diagrams showed more of the chimney.

"My improvements relate to the melting or fusing furnaces or kilns used in glass-making, and have reference to the suppression of the fire-clay pots or crucibles hitherto in use, and to placing the materials to be fused or melted within the furnace itself, the usual inner form of the lower part of which is modified by doing away with the sieges or banks and the general levelling of the bottom, to which separately I make no claim, but according to my invention the lateral sides are constructed of a hollow form in such-wise that a current of refrigerating or cooling air may be made to circulate around and prevent any excessive heating of the sides which are to retain or enclose the materials in fusion.

"My improvements will be thoroughly understood by reference to the accompanying Sheet of Drawing, on which Fig. 1 represents a plan view

FIG 1

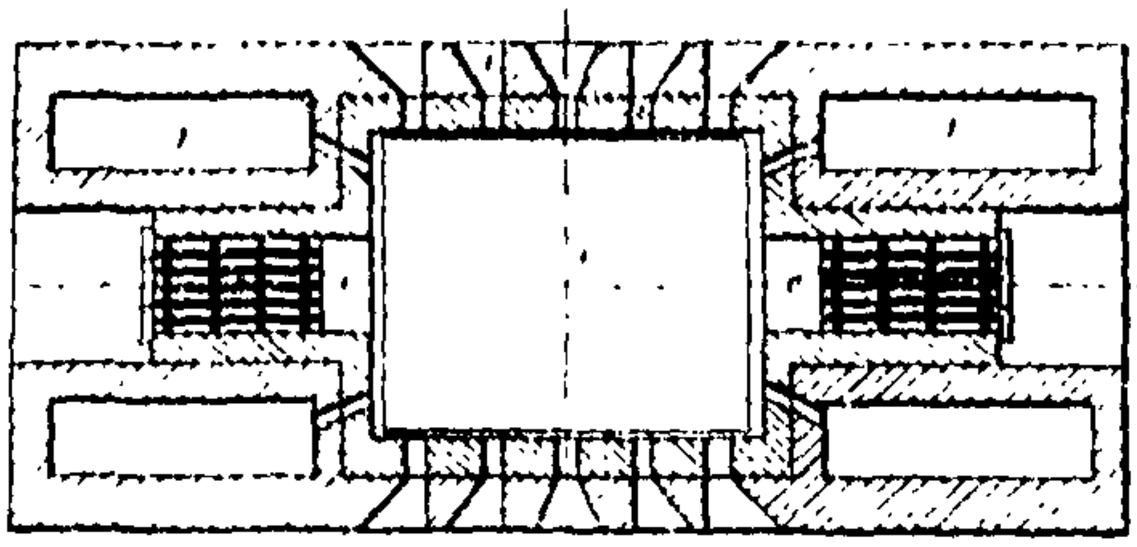


FIG 2

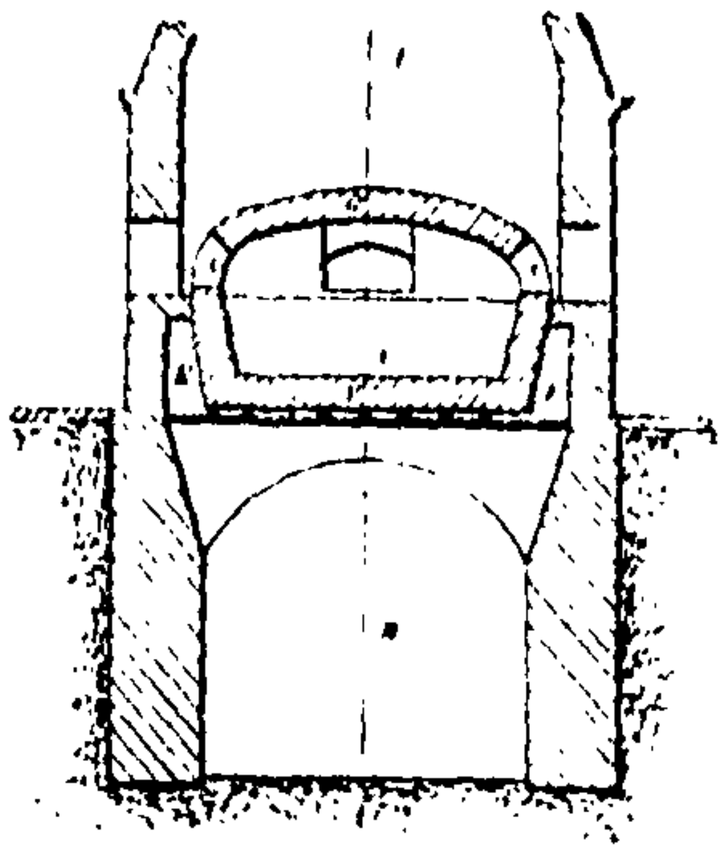
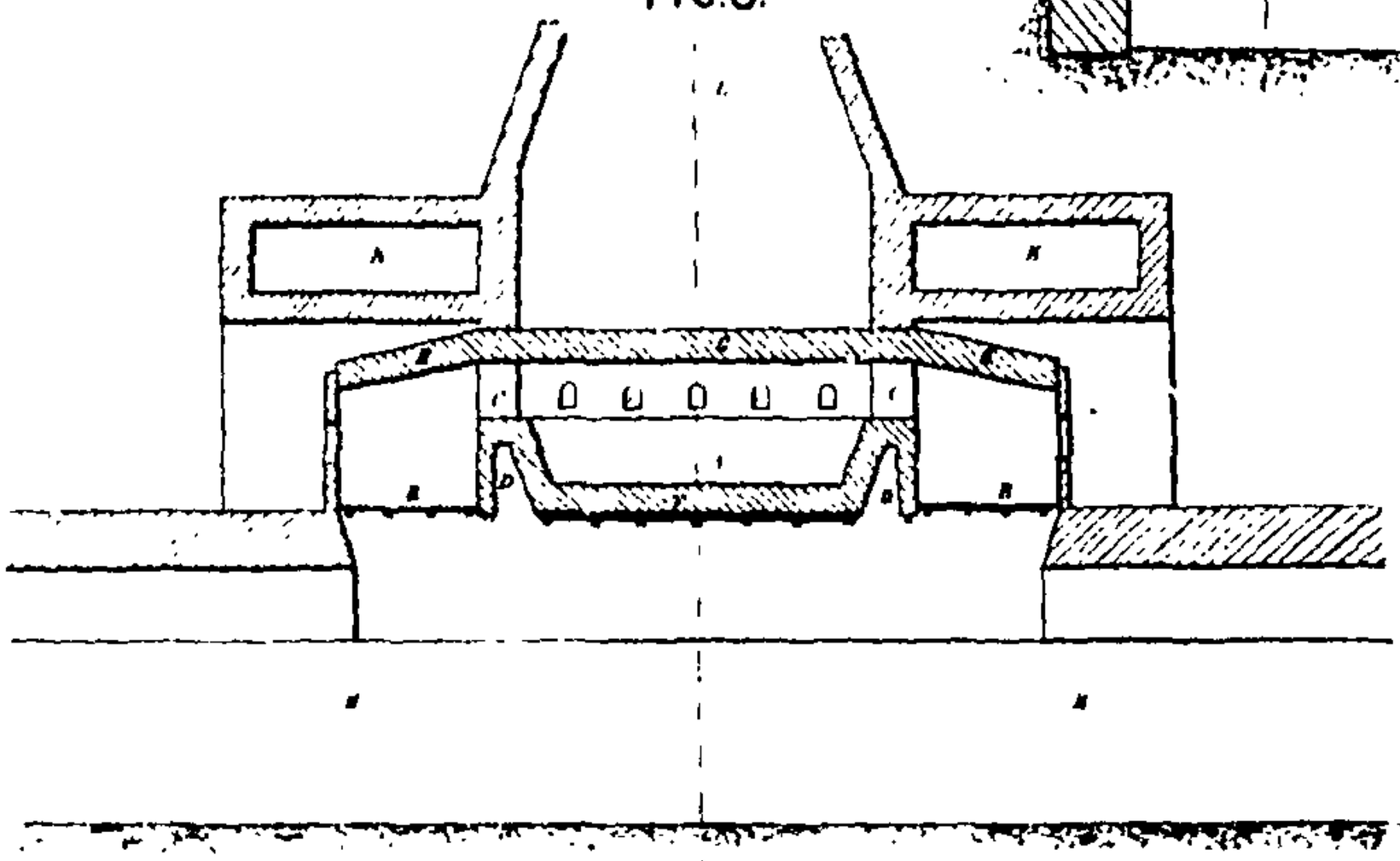


FIG.3.



Diagrams from Pocheron's specification (Figs. 2 and 3 in part), No. 1297 of 1866.

of my improved furnace or kiln taken at the height of the working-holes; Fig. 2, a transverse section; and Fig. 3, a longitudinal section.

"A indicating the basin or tank which is to contain the materials in fusion; B, gratings and fireplaces; C, sills between the basins and the gratings; these sills are made by the aid of two fire-brick walls separated

at their base and united at their summits, so as to establish between them a vacant space D, which is to serve for the current of refrigerating air; E, free space passing all round the basin or tank between the exterior walls and the inner walls or sides of the basin, and communicating with the space D between the sills for the circulation of cold air; F, bottom of the basin supported by ironwork; G, crown or arch of the furnace; H, arch of the tunnels or fireplaces; *i*, working-holes; *j*, annealing kilns; K, arches with gratings; L, chimney; M, underground compartments or cellars.

"In making plate glass the metal is run on to the table in the following manner: The table or tables are brought on rails successively to the furnace, in the side of which an opening or hole has been left, which hole is closed with clay or other adhesive material during the fusion, and opened for running the metal on to the table, after which it is again closed, and so on for each operation. The metal being run on to the table is spread in the usual manner. For other descriptions of glass this hole or opening is dispensed with, the usual working-holes only being used."

The specification then concluded with a description of the advantages (which were great) and the results produced by the new kiln.

There was no formal claim, but the amendments were prefaced by the following disclaimer: "I have been advised that the specification may be held to claim generally the suppression of the fire-clay pots or crucibles hitherto in use in glass-making, and the placing the materials to be fused or melted within the furnace itself, and as I do not wish to retain, or make any such extended claim to invention, but desire to limit my claim to the forming the sides of the tank or chamber containing the glass-making materials hollow in suchwise that a current of refrigerating air may circulate and prevent any excessive heating of the sides which retain or enclose the fused materials, I for this reason wish to disclaim, &c."

A bill was filed in Chancery by the plaintiffs, Messrs. *Cannington*, praying an injunction against infringement of the above patent. An issue as to facts was directed to be tried, and was tried before Lord *Romilly*, M.R., and a special jury.

It was proved at the trial that before the invention the flint was melted in pots or crucibles placed on sieges or benches in the furnaces. These were turned from time to time to prevent the pot from becoming overheated and allowing the molten glass to escape; molten glass frequently, on the pot being turned, congealed and closed up the pot again. Tanks had been tried before and heated from the outside. The circulation of atmospheric air had been known and used to keep cool the outer parts of puddling furnaces. By the patentee's arrangement the fire was placed at the sides so as to heat the flint from the top; the circulation of atmospheric air kept the tank cool, so as to prevent its breaking, or to cure the defect by self-sealing with the molten glass. Not only were the several parts of the invention—removal of pits, use of tank, and air-circulation—old, but the two former were expressly disclaimed in the specification, as above.

The jury found that the invention was novel, and the specification sufficient.

Motion for a new trial refused by Lord *Romilly*, M.R.

Appeal to *Giffard*, L.J. Appeal allowed (*inter alia*) on the ground that it was a misdirection to tell the jury that "the claim to each and every part of the actual combination mentioned in the original specification is still preserved," and not to tell them "that all the world had a right to use the combination of the fireplaces and tank and cave, without the hollow sides, and that the addition to them of the hollow sides as described was the subject-matter of a patent."

On appeal to the House of Lords.

Held, that the specification described an invention of a combination of the old things and methods, and constituted a claim for the combination only, which was subject-matter for a patent.

Lord *Hatherley*, L.C. (at p. 216): "With every new invention, the skill and ingenuity of the inventor are shown in the application of well-known principles. Few things come to be known now in the shape of new principles, but the object of an invention generally is the applying of well-known principles to the achievement of a practical result not yet achieved. And, I take it, the test of novelty is this: Is the product which is the result of the apparatus for which an inventor claims Letters Patent effectively obtained by means of your new apparatus, whereas it had never before been effectively obtained by any of the separate portions of the apparatus which you have now combined into one valuable whole for the purpose of effecting the object you have in view?[1] . . . This desirable end of avoiding the pots and removing the sieges and getting rid of the difficulties arising therefrom, had not been effectively obtained until this gentleman hit upon this ingenious mode of achieving the object by this invention. It appears to me that there is a fallacy in saying that because you disclaim the invention of these particular things, and you thereby (as the Lord Justice expresses it) throw them all open to the public, that therefore, when you, by means of an ingenious invention, bring all these known ideas into one valuable and useful combination by a certain application of a cooling process, you are only to be credited with the cooling process. The cooling process may be applied to anything else—it has been applied to iron and to everything else in the world. Here the cooling process was applied to this combination for a particular purpose and by particular means."

Notes.

Cannington v. *Nuttall* establishes a principle of law of the highest authority: per Lord *Halsbury*, L.C., in *Vickers* v. *Siddell*, 7 R. P. C. 302.

[1] This passage is quoted as authority in *Pirrie* v. *York St. Flax Spinning Co.*, 10 R. P. C. 37.

1872. MURRAY *v.* CLAYTON, L. R. 7 Ch. Ap. 570.

Subject-matter—Anticipation a Failure.

The invention consisted of a machine in which lengths of portions of clay were cut off by means of vertical wires capable of moving to and fro; the lengths of clay thus cut off were then, by a movable platform, pushed against and past fixed wires, which cut the lengths of clay into bricks. The claim was for "the arrangement and construction of parts herein set forth for cutting clay into bricks. I claim particularly cutting the clay into the form of bricks, by forcing the clay forwards, by means of a pushing-board, or otherwise, against a series of fixed wires, so arranged that the clay is pushed or forced past the wires on to a movable board provided with handles, so that twelve or any other convenient number of bricks may be removed at the same time."

An alleged anticipation was set up of a machine constructed on similar lines, but which was a failure, and never came into practical use.

The judge at the trial held that the several means employed and the result were all old, that the specification did not indicate the novelty claimed, and that the patent was consequently invalid.

Held, on appeal,[1] that the claim was for the whole machine,[2] which enabled the workman to make the bricks with one turn of a handle, ready to be removed for drying; that the alleged anticipation, being unworkable, could not invalidate the subsequent patent for the entire machine.[3]

1876. HARRISON *v.* ANDERSTON FOUNDRY CO., 1 App. Ca. 574; 3 Ct. Sess. (4th Series), 55.

Construction—Combination Claim—"New" and "Old."

A patent was granted (No. 3310 of 1868) to *Q.* and *J. Whyte* for "improvements in looms for weaving."

The complete specification commenced in the following terms:—

"Our said invention consists in new or improved simple and most efficient modes of and arrangements of mechanism *for actuating*[4] *the set or sets* of 'compound' or 'multiple' shuttle-boxes of looms, *for weaving* striped, checked, and other ornamental or figured fabrics, requiring two, three, or more shuttle-boxes and shuttle in each set.

[1] The Court followed *Crane* v. *Price* (*ante*, p. 195) in holding that this was invention (p. 584); and *Kay*, L.J., in *Lyon* v. *Goddard*, 10 R. P. C. 346, based both cases on the proposition in *Crane* v. *Price*, as stated (*ante*, p. 196).

[2] See also *Clark* v. *Adie*, L. R. 10 Ch. Ap. 675, where this decision was acted on.

[3] This proposition was adopted and followed in *Hasham* v. *Hall*, 5 R. P. C. 19, and *Lyon* v. *Goddard*, 10 R. P. C. 134.

[4] The italics are introduced by the author, merely to call attention to the more important points.

"Fig. 1 on Sheet 1 of the accompanying two sheets of drawings[1] is a side elevation of sufficient of a main side frame and the other parts of a three shuttle box check, and other stripe weaving power loom of an ordinary type or form, otherwise than having a modification or construction and arrangement of the *two main parts contained under or forming our said invention*, namely, the *check shuttle-box moving mechanism* (indicated by numbers 1 to 35) and *the pattern mechanism* for these or other checks or compound shuttle-box mechanism (indicated by numbers 36 to 62) and both shown in general side elevation; Fig. 2 is a back or edge elevation of the latter pattern barrel and mechanism detached, at right angles to Fig. 1, showing more particularly the general arrangement and action of the pattern barrel-pins, the reversing of the catches, and traversing actuating lever of the shuttle-box moving mechanism. While Figs. 3, 4, and 5 are respectively a side and edge elevation and a plan of the main parts to a large scale detached shown in Fig. 2, Fig. 6 is a side elevation of another modification of our improved shuttle-box mechanism from that shown in Fig. 1 constructed to actuate a four shuttle box and work in connection with a pattern barrel mechanism such as now in use."

The specification continued by giving a detailed account of the mechanism. Besides the six mentioned above, there were three supplemental diagrams [Figs. *6b*, *21b*, *24b*, and *30b*] illustrating details corresponding to those numbers in the main diagrams. After the three shuttle box mechanism (Figs. 1 to 5) was described, the following passage occurred:—

"Although *the new* check shuttle-box moving mechanism (numbers 1 to 29) has, so far, been only shown and described as applied to a three shuttle box loom, it is equally applicable for working a four, five, or six shuttle box, and it can be worked with the pattern mechanism of check looms *now in use* where these are in a good state and of a suitable construction and only the shuttle-box moving mechanism required, and many of the *improvements in the pattern mechanism* numbers 30 to 62 may be applied to *other* pattern barrels and mechanism *heretofore or now* in use for check shuttle-boxes."

The modifications required were then described with reference to Figs. 6 and *6b* in detail. With respect to the pattern mechanism, "it is to be understood that other and much simpler pattern mechanism than either of those now in use, herein shown and referred to, might for many small classes of patterns be as simply connected to control or set our improved check-box moving mechanism 1 to 29."

The claims were as follows:—

"We do not restrict ourselves to the precise details herein described or delineated, but what we believe to be novel and original, and therefore claim as the invention secured to us by the hereinbefore in part recited Letters Patent is—

[1] For the present purpose the first two diagrams are sufficient illustration.

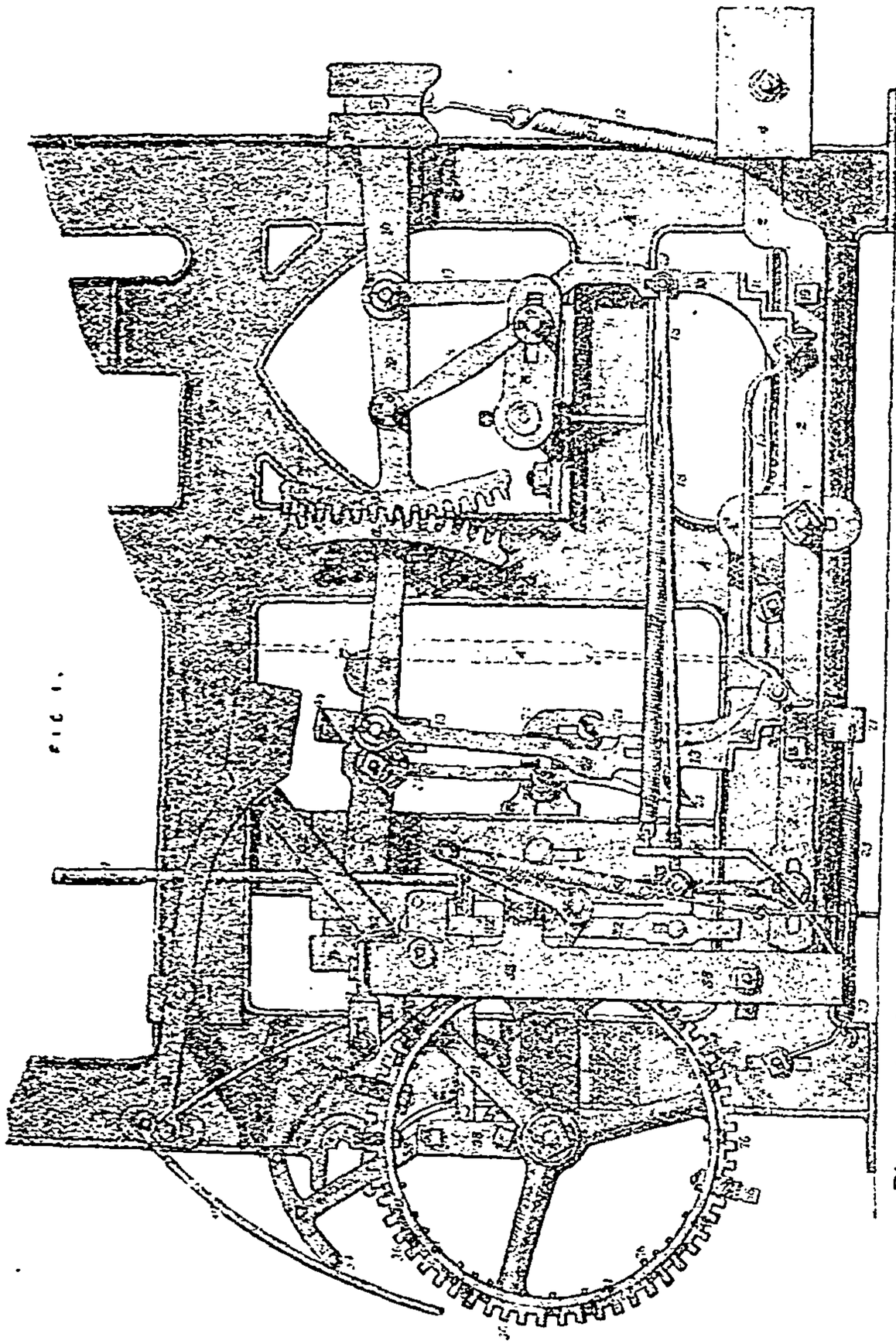


FIG. 1.

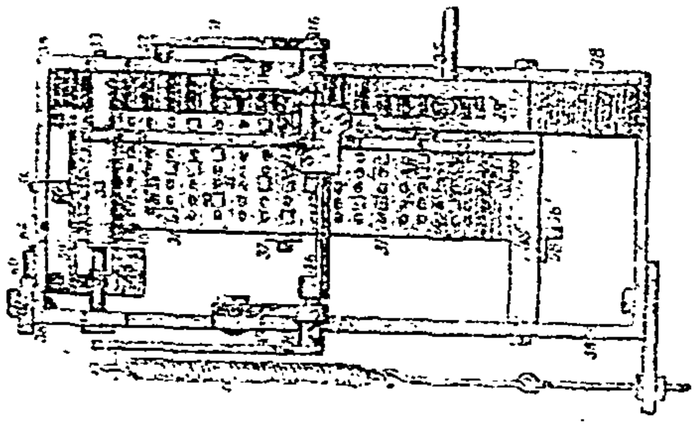


FIG. 2.

Diagrams taken from Whyte's specification (No. 3310 of 1858).

"First, the construction and arrangements of the parts of pattern mechanism and shuttle-box moving and holding mechanism as herein distinguished, generally for actuating the shuttle-boxes of power looms, all substantially in the new or improved manner herein described and shown in the accompanying drawings or any mere modification thereof."

The second claim was for the duplex depressers, acting as described in the mechanism, "substantially in the new and improved manner herein described and shown in the accompanying drawings or any mere modification thereof."

The third and fourth were claims concluded in like words for the reversing pattern barrel, with annular rows of pattern pinholes, or simply resting-pins respectively.

The appellants were assignees of the above patent.

They brought an action for suspension and interdict against the respondents for infringement of this patent.

In March and April, 1875, the case was tried before Lord *Gifford* and a jury, who found that the appellants were the true and first inventors, that the invention was both novel and useful.

Various exceptions were taken to the directions of Lord *Gifford* to the jury.

The First Division of the Court of Session set aside the verdict, and granted a new trial (2 Ct. Sess., 4th Series, 857).

At the second trial the Lord President directed the jury to find for the defenders on the ground that the patent was void in law. This direction having been excepted to, the First Division of the Court of Session disallowed the exception on the ground that the specification did not so describe the invention claimed by the *first* claim as to show "wherein the invention consists, or what is the novelty that the patentee claims."

On appeal to the House of Lords.

Held, that the first claim was one for the combination of the pattern mechanism and shuttle-box moving and holding mechanism, and that on the face of it, the whole combination being alleged a novelty, the specification sufficiently distinguished the novelty of the alleged invention.

Lord *Cairns*, L.C. (at p. 578), in commenting on *Foxwell* v. *Bostock*, said, "If[1] there be a patent for a combination, the combination itself is, *ex necessitate*, the novelty; and the combination is also the merit, if it be a merit, which remains to be proved by evidence. So also with regard to the discrimination between what is new and what is old. If it is clear that the claim is for a combination, and nothing but a combination, there is no infringement unless the whole combination is used,[2] and it is in that way

[1] Quoted by Lord *Blackburn*, in *Moore* v *Bennett*, 1 R. P. C. 149.

[2] This sentence, and a passage to the like effect in Lord *Chelmsford's* judgment (at p. 581), have been frequently quoted, apart from their context, in support of the proposition that a combination patent can only be infringed by taking the whole of it (see *Gwynne* v. *Drysdale*, 3 R. P. C. 67; *Ellington* v. *Clark*, 5 R. P. C. 140; *Miller & Co.* v. *Clyde Bridge Steel Co., Ltd.*, 9 R. P. C. 481); but Lord *Chelmsford* (at p. 581) and Lord *Penzance* (at p. 593) treat

immaterial whether any or which of the parts are new." . . . "The patentees claim, as I have said, for a combination under their first claim, . . . and in their second, third, and fourth claims they have specified the subordinate or subsidiary parts to which they lay claim as novel, and the specification of these subordinate or subsidiary parts appears to me to exclude the possibility of a claim for any other parts as novel."

Per Lord *Chelmsford* (p. 581): "This question turns entirely (as has been said) on the first claim in the specification. The office of a claim is to define and limit with precision what it is which is claimed to have been invented and therefore patented. In the construction of a specification, it appears to me that it ought not to be subject to what has been called a benign interpretation, or to a strict one.[1] The language should be construed according to its ordinary meaning—the understanding of technical words being, of course, confined to those who are conversant with the subject-matter of the invention—and if the specification is thus sufficiently intelligible, it performs all that is required of it."[2]

Lord *Penzance*, after discussing the facts and cases cited[3] dealing with claiming too much in a combination, continued (p. 591): "But it is obviously impossible to apply a doctrine of this kind to a case in which the Court has nothing before it but the specification itself, and that is the state of things in the present case. . . . The important distinction between the cases cited and the present is, that in the present case, in the stage at which it had arrived, no valid objection to the specification could be entertained which has not appeared on the face of the specification itself; whereas in the cases alluded to the specification was condemned only upon a comparison with the real invention."

Notes.

The case of *Harrison* v. *Anderston Foundry Co.* is fully discussed by Lord *Halsbury*, L.C., in *Kynochs* v. *Webb* (17 R. P. C. 110–112), who pointed out that it is no authority in cases where the facts have been

this question as wholly irrelevant. These so-called *dicta* as to infringement of a combination go too far: *Proctor* v. *Bennis*, 4 R. P. C. 344. The question of infringement of a combination was never raised in the House of Lords even indirectly.

[1] Quoted with approval in *Westinghouse* v. *Lancs. and Yorks. Ry. Co.*, 1 R. P. C. 101, and by *Walker*, L.J., in *Webb* v. *Kynochs*, 15 R. P. C. 559.

[2] The whole of this passage is quoted in *Rowcliffe* v. *Morris*, 3 R. P. C. 22, and also the judgment of Lord *Cairns*, L.C., in support of the proposition that where a claim rests on a combination, it must be so clearly made out that the public can have no doubt but that the claim is for the combination, and not for its parts.

[3] The cases relied upon (not mentioned in the report) by the respondents in their case were *Crane* v. *Price* (per *Tindall*, C.J.), 1 Webs. 409; *Carpenter* v. *Smith* (per Lord *Abinger*), 1 Webs. 532; *Hill* v. *Thompson* (per Lord *Eldon*), 1 Webs. 237; *Templeton* v. *Macfarlane*, 1 Cl. & Fin. 595; *Jordan* v. *Moore*, L. R. 1 C. P. 624; *Foxwell* v. *Bostock*, 4 De G. J. & S. 298 (per Lord *Westbury*, p. 309); 12 W. R. 723; *Clark* v. *Adie* (per *James*, L.J.), 10 Ch. 667; *Harmar* v. *Playne*, 11 East. 101; *Parkes* v. *Stevens* (per *James*, V.C.), 8 L. R. Eq. 350, 5 Ch. 36; *Thomas* v. *Welch*, L.R. 1 C. P. 192.

investigated by judge or jury, and it is found that parts of the combination *claimed* as new are, *in fact*, old, as was the case in *Foxwell* v. *Bostock*.

Harrison v. *Anderston Foundry Co.* merely decides that the specification was "in form," and that it is not necessary to recite each part as "new" or "old." So understood by *Porter*, M.R.I., in *Webb* v. *Kynochs*, 15 R. P. C. 288.

Harrison v. *Anderston Foundry Co.* has frequently been regarded as an authority to the effect that the novelty of the invention may be pointed out in the specification or in the claims (*Nordenfelt* v. *Gardner* (per *Baggallay*, L.J.), 1 R. P. C. 74); and that where the combination is a new one, it is *immaterial* on the question of *sufficiency* to specify what parts of the claim are old and what new: *Proctor* v. *Bennis* (per *Cotton* and *Bowen*, L.JJ.), 4 R. P. C. 351, 358; *Perry* v. *Société des Lunetieres*, 13 R. P. C. 670.[1]

This case was followed, as to the first claim, in *Ellington* v. *Clark*, 5 R. P. C. 135.

1876. HINKS v. [illegible]AE SAFETY LIGHTING CO., 4 Ch. D. 607.

Benevolent Construction—Claim including what is old—Insufficiency of Specification.

This action was brought to restrain infringement of a patent granted to *J.* and *J. Hinks* (No. 2787 of 1865) for "improvements in lamps for burning paraffin oil and other volatile liquid hydrocarbons."

The specification was[2] as follows:—

"Our invention consists of the improvements hereinafter described in the burners of lamps for burning paraffin oil and other volatile liquid hydrocarbons whereby two or more flat flames or one circular or nearly circular flame may be produced by the use of two or more single flat wicks. By the use of our invention the danger of breaking the chimneys which occurs from the use of a single flat wick is wholly removed or much diminished, and in the case of curved wick-cases or holders great facility in trimming and placing the wicks in the said cases or holders is obtained and a much greater length of the wick utilized than in ordinary argand or circular burners.

"Our invention consists in the employment in the same burner of two or more flat or curved wick cases or holders, in which said cases or holders single flat wicks are placed. Each of the said wick-cases is provided with an axis and pinions for raising and lowering the wick contained therein. The wick-cases or holders are either straight, or slightly curved, or of the figure of semi-ellipses, so as to produce when arranged in the burner flat or elliptical or circular flames. The cone or deflector has two or more straight or curved openings in it, through which the wicks may pass. That portion

[1] It is submitted that the facts of the above case do not go so far as to justify so wide a proposition, inasmuch as the claim was construed to be for an entire new combination.

[2] Only these parts are referred to which are necessary to appreciate the decision.

of the top of the cone between the curved openings (when curved openings and curved wick-holders are employed) serves as a substitute for the ordinary button used with circular wicks, or a circular hole may be used in the cone and the ordinary button employed. When flat wick-cases are employed straight openings are made in the cone."

Fig. 1 shows a vertical section of the lamp; *a* and *b* are two branches

FIG. 1.

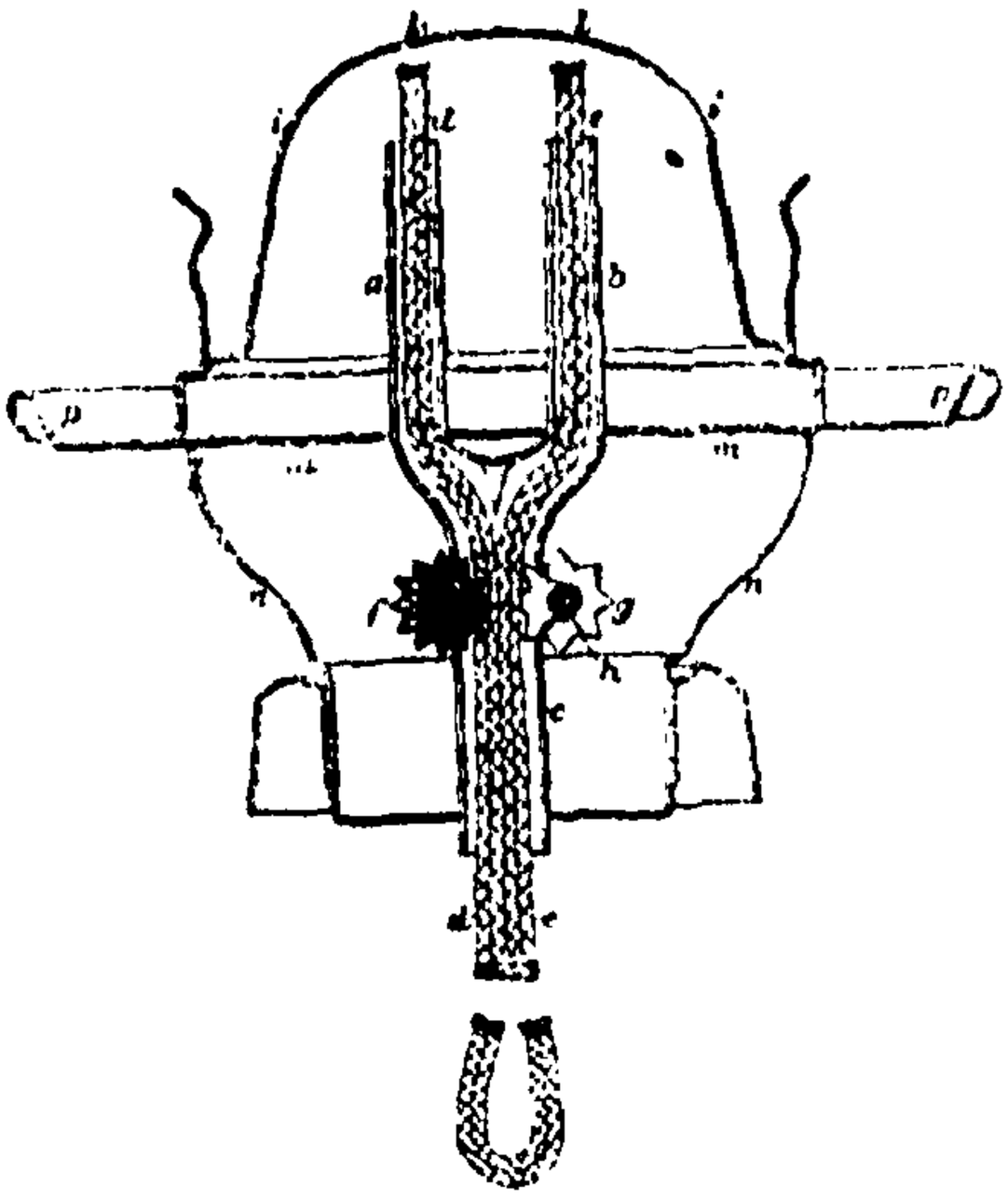


FIG. 2.

FIG. 4

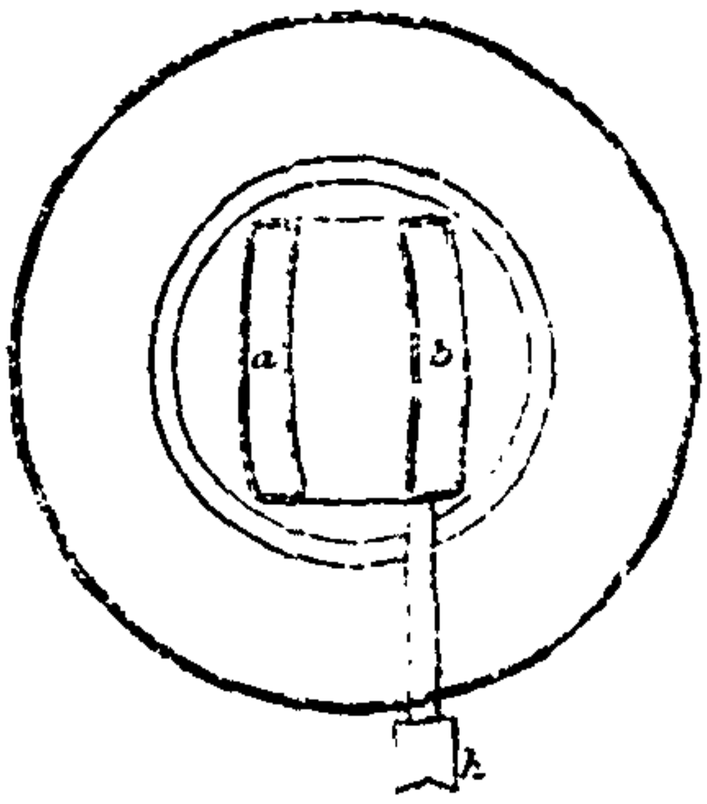


FIG. 6

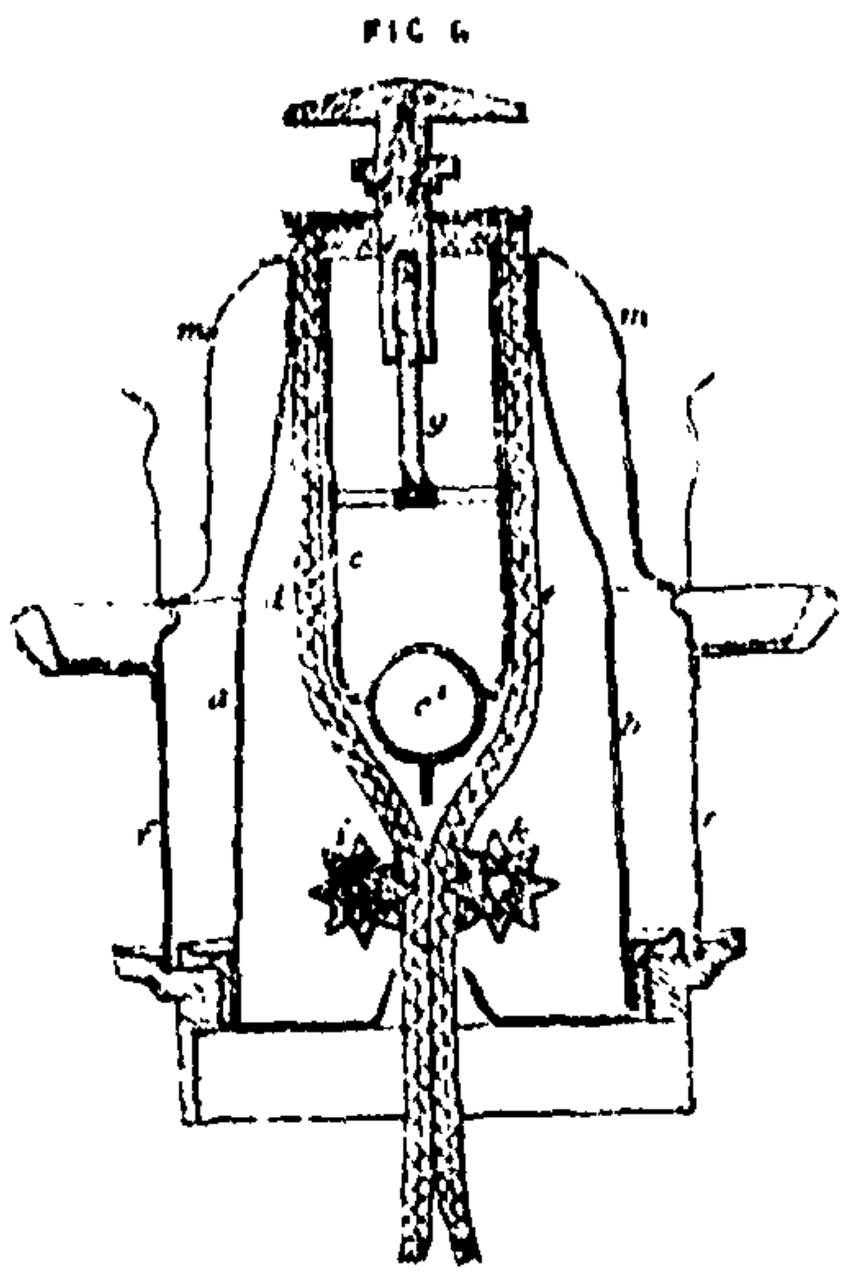
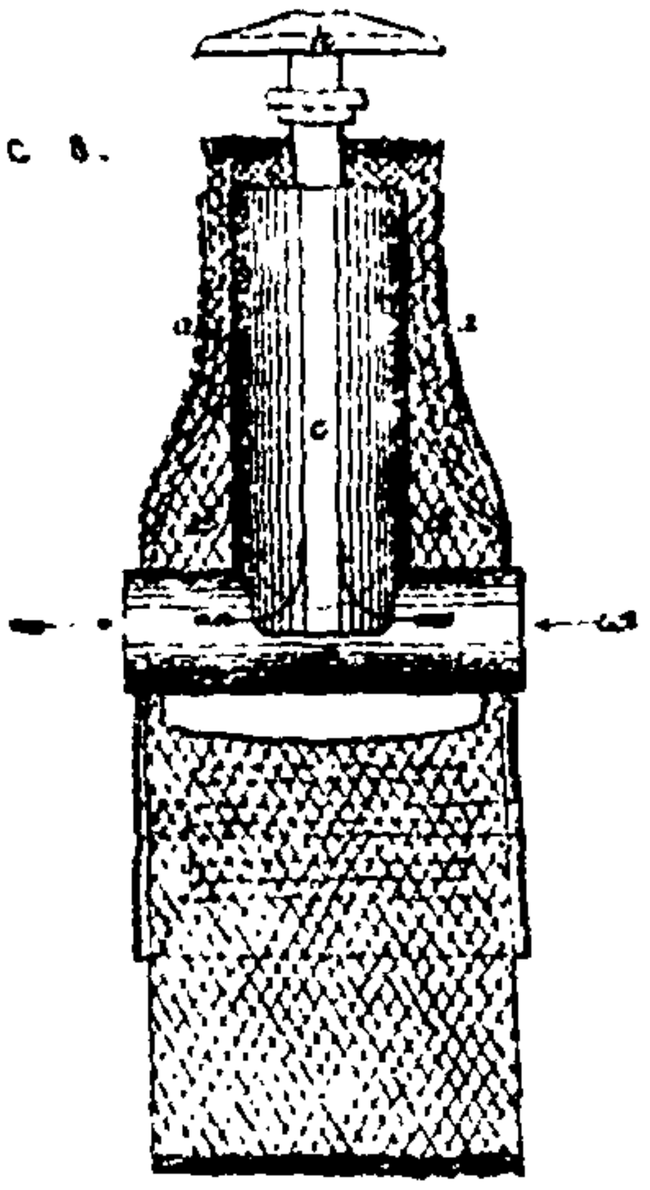


FIG. 5.



Diagrams from Hinks's specification (No. 2787 of 1865).

or forks of the wider tube *c*. The wicks *d* and *e* pass up, one through each branch, actuated by the pinions *f* and *g* in the usual way; "*i* is the cone or deflector of the lamp, the said cone *i* having two slightly curved openings,

k, *l*, in it, through which the wicks, *a*, *b*, may pass;" *m* is a perforated disc, through which air passes to the wicks. "Instead of giving to the compound wick-holder the curved figure represented in the plan (Fig. 4), each branch of the wick-holder may be curved of the figure of a semi-ellipse, or the said branches may be straight, and the compound wick-holder may be made to contain more than two flat wicks, a corresponding number of openings being made in the cone or deflector for the wicks to pass through. By the use of compound wick-holders, or a series of single wick-holders made according to our invention, two or more flat flames or elliptical or nearly circular flames may be produced by the employment of two or more single flat wicks. . . ."

"Fig. 6 represents a vertical section of a burner for producing a circular flame by the use of two single flat wicks constructed according to our invention; . . . Fig. 8 is a section of the wick-holder taken in a plane at right angles to that in which the section (Fig. 6) is taken. . . ."

In Fig. 6 *d* and *e* are the flat wicks, the holder being made in halves, and so shaped that it becomes circular near the top, the two wicks being gradually bent round till they meet; *m*, *m* is the cone or dome with a circular opening; *h* the deflector button supported on *g* and the inner tube of the holder. Fig. 8 shows the arrangement for the admission of air to the tube inside the wicks.

The claims were—

"Firstly, constructing the burners of the said lamps substantially in the manner hereinbefore described and illustrated in Figs. 1, 2, 3, 4, and 5 of the accompanying drawings, that is to say, the employment in the same burner of two or more flat or curved wick-cases or holders in which two or more flat wicks are placed so as to produce thereby two or more flat flames or elliptical or nearly circular flames.

"Secondly, constructing the burners of the said lamps substantially in the manner hereinbefore described and illustrated in Figs. 6, 7, 8, 9, 10, and 11 of the accompanying drawings, whereby a circular flame is produced by the use of two single flat wicks."

At the trial two anticipations were alleged, one a lamp made according to *Halvorsen's* American specification, which had been published in this country, and the other a specification of *W. Little* (No. 912 of 1856). *Halvorsen's* lamp differed in principle from the plaintiffs' only in having a circular opening in the dome or casing for the wick or flame to pass through, without the separation shown in the plaintiffs' between the slots *k* and *l*. *Little's* invention was not worked; it was practically a failure. The only practical difference between it and the plaintiffs' was that the latter substituted flat wicks for a solid round one.

To the second invention claimed it was objected that the specification was insufficient, inasmuch as there were no directions in the letter-press, nor indications in the drawings, to show how the air was to be admitted to the space between the dome or cone *m*, *m* (Fig. 6) and the wick-holder *a*, *b*, or from that space to the flame.

Held, that on the true construction of the specification the first claim as regards "elliptical or nearly circular flames" included the case where there was no dividing portion between *k* and *l*, and that it was therefore anticipated by *Halvorsen's* lamp;[1] that the substitution of the flat wicks for the solid round wick of *Little's* patent was sufficient invention to support a patent, *Little's* having been unworkable;[2] and that the description of the method of carrying out the second invention was insufficient because of the omission to show any air-passage.

Jessel, M.R. (p. 612): "I am anxious, as I believe every judge is who knows anything of patent law, to support honest *bona fide* inventors who have actually invented something novel and useful, and to prevent their patents from being overturned on mere technical objections, or on mere cavillings with the language of their specification so as to deprive the inventor of the benefit of his invention. This is sometimes called a 'benevolent' mode of construction. Perhaps that is not the best term to use, but it may be described as construing a specification fairly, with a judicial anxiety to support a really useful invention if it can be supported on a reasonable construction of the patent.[3] Beyond that 'benevolent' construction does not go. It never was intended to make use of ambiguous expressions with a view of protecting that which was not intended to be protected by the patentee, and which has not been claimed to be so protected by him, whether or not it was an invention unknown to himself." The learned judge discussed the specification, pointing out that there were two sets of drawings and one claim for each. As to *Little's* anticipation (p. 615), the only material difference was the substitution of a flat for a round wick. "As far as I can ascertain from the authorities, the merit very much depends on the result produced. Where a slight alteration in a combination turns that which was practically useless before into that which is very useful and very important, judges have considered that, though the invention was small, yet the result was so great as fairly to be the subject of a patent; and, as far as a rough test goes, I know of no better.[4] . . ."

"When (p. 617) you have such a little trumpery invention as the second, the whole merit of which is very small indeed, if you are to tell people how to do things better, you must tell them in a proper way, without the exercise of any invention or much trouble; and, in my opinion, this is not within the rule, and is badly specified."[5]

[1] The first claim failed because it included something that was old. *FitzGibbon*, L.J., in *Webb* v. *Kynochs*, 15 R. P. C. 555; and *Walker*, L.J. (*ibid.* p. 559).

[2] This is an example of a slight difference constituting novelty: *Haslam* v. *Hall*, 5 R. P. C. 19. This case is referred to by Lord *Halsbury*, L.C., in *Thierry* v. *Rickmann* (14 R. P. C. 115), as showing that simplicity of invention will not render a patent bad; nor utility make a bad specification good.

[3] This is quoted in *Plimpton* v. *Spiller*, 6 Ch. D. 422, where the reason for the rule is given as arising from the want of power of the patentee to amend (*post*, p. 258). "Benevolent construction" in this case did not make a bad patent good: *Walker*, L.J., in *Webb* v. *Kynochs*, 15 R. P. C. 559.

[4] This rule was quoted and followed in *Pirrie* v. *York St. Flax Co.*, 11 R. P. C. 450.

[5] Quoted and followed as regards insufficiency in *Fletcher* v. *Arden*, 5 R. P. C. 57.

1876. PLIMPTON *v.* SPILLER, 6 Ch. D. 412.

Construction—Subsidiary Claim. (As to *Publication*, see *ante*, p. 26.)

The specification (No. 2190 of 1865) described the mode of construction of a roller skate. The claims were for:—

"First, applying rollers or runners to the stock or footstand of a skate, as described, so that the said rollers or runners may be cramped or turned so as to cause the skate to run in a curved line either to the right or left by the turning, canting, or tilting laterally of the stock or footstand.

"Second, the mode of securing the runners and making them reversible, as above described."

It was proved that as to the second claim the mode of securing the runners actually described was old and well known, and that no workman would dream of claiming it as a separate invention.

Held, that the second claim was only for securing the runner to the skate, and not for the mode generally, and that it did not enlarge the monopoly of the first claim.

Jessel, M.R. (p. 422), said that "it is the duty of a judge to construe a specification fairly with a judicial anxiety to support a really useful invention if it can be supported upon a reasonable interpretation of the patent . . . and is not to be astute to find flaws in small matters in a specification with a view to overthrow it because of the want of power to amend a specification. . . ."[1]

(P. 423): "When we come to read the claim, I think it fair to say that, if it can be read in two ways, one claiming something that has a merit of novelty, and the other claiming something which would show the man to be ignorant of all the ordinary appliances used in every workshop in the world, it is the duty of the judge to adopt the construction which makes the patent reasonable and sensible, rather than that construction which makes the patent utterly absurd."

James, L.J. (p. 426), pointed out that the custom of making claims had arisen although "there is nothing in the Act or in the patent law which says anything about claims," and that the object of the claim was to disclaim what was old.[2]

P. 428: "After all, that second claim really comes to nothing more than is included in the description of the invention itself. . . . It seems to me to be perfectly idle and superfluous to the claim in the first part. They neither add to nor diminish from the patent, nor the monopoly which the patentee is seeking to obtain against the public."

[1] Followed as authority by *Fry*, J., in *Wegmann* v. *Corcoran*, 13 Ch. D. 77. As to amendment of specifications, see *ante*, Ch. IX. p. 160. Followed in *Westinghouse* v. *Lanc. & York. Ry. Co.*, 1 R. P. C. 101.

[2] This view was adopted by *Smith*, L.J., in *Edison Bell Phonographic Corporation* v. *Smith*, 11 R. P. C. 405. [This *dictum* was before the Act of 1883, which directs claims to be made. See Construction of Claims, *ante*, pp. 89-99.]

Notes.

The doctrine of "benevolent construction," as enunciated in this case, applies only where there is an ambiguity. "You must not manufacture ambiguity, but construe words according to their proper meaning." Lord *Davey* in *Parkinson* v. *Simon*, 12 R. P. C. 411. Compare *Nobel* v. *Anderson*, *post*, p. 366.

No principle of construction of claims was laid down in this case, it merely depended on the special facts and specification; had the claim been really independent the patent would have been invalid: *Fry*, L.J., in *Cropper* v. *Smith*, 1 R. P. C. 91. A subsidiary claim for a new invention combined with what is old does not invalidate, as it does not affect the extent of the monopoly: *Edison Bell, &c.* v. *Smith*, 11 R. P. C. 163. This case is no authority for the proposition that a claim, even subordinate, expressed in general terms, is limited by reading into it words that are not there because it would otherwise be invalid: per Lord *Alverstone*, M.R., and *Rigby*, L.J., in *Electric Const. Corp.* v. *Imperial Tramways Co.*, 17 R. P. C. 549.

1877. CLARK *v.* ADIE (No. 1), 2 App. Ca. 315.

Construction of Specification—Subordinate Integers.

A patent (No. 3076 of 1869) was granted to *J. R. Grayson* for "improvements in apparatus for clipping or shearing horses and other animals."

A provisional specification was filed giving an outline of the invention. It concluded as follows:—

"It may be made of various sizes, from very fine teeth for clipping horses to coarse teeth for shearing sheep or other animals, and it possesses, as stated, the advantage over all other clipping apparatus of being varied and adjusted as to cut just above the hoof, or under the flank, or the neck of the horse without difficulty or danger."[1]

The complete specification was as follows:—

"My invention relates to certain improvements in the construction of apparatus for clipping horses and for shearing or clipping other animals, the advantages consisting chiefly in the facility afforded of clipping the hair or wool at a short distance from the skin instead of shaving the animal close, in the application of the cutting blades in relation to the comb, and especially in the means of adjusting the cutter in any desired variety of position in regard to the guiding and clipping handles, whereby all parts of the animal may be operated upon with equal facility.

"The apparatus consists of a flat guide-plate (*a*)[2] on which the moving parts are carried; its upper portion is cut with a series of teeth (*l*), to form

[1] Quoted by Lord *Cairns*, L.C., in his judgment (p. 319), and also alluded to by Lord *Hatherley* (p. 329) in describing the real nature of the invention.

[2] The references to the diagrams are inserted in this part of the specification instead of reproducing the description verbatim lower down. The same letters denote the same parts throughout. In the original drawings the handles *b* and *e* were shown as of considerable length.

a comb or guide for the cutting-knives (*k*) to traverse, but the points of these teeth are so tapered as to be slightly above the under level of the plate, whereby the skin of the animal is protected from injury.

"A holder or guiding-handle (*b*) for the left hand is attached to the lower portion of the plate by means of a forked or single bar, through the ends of which and through the plate a strong pin or stud (*f*) is inserted, secured to the under side of the plate by a head or screw-nut. The plate being provided with a series of apertures (*c*) placed equidistant from the stem, it

FIG 1.

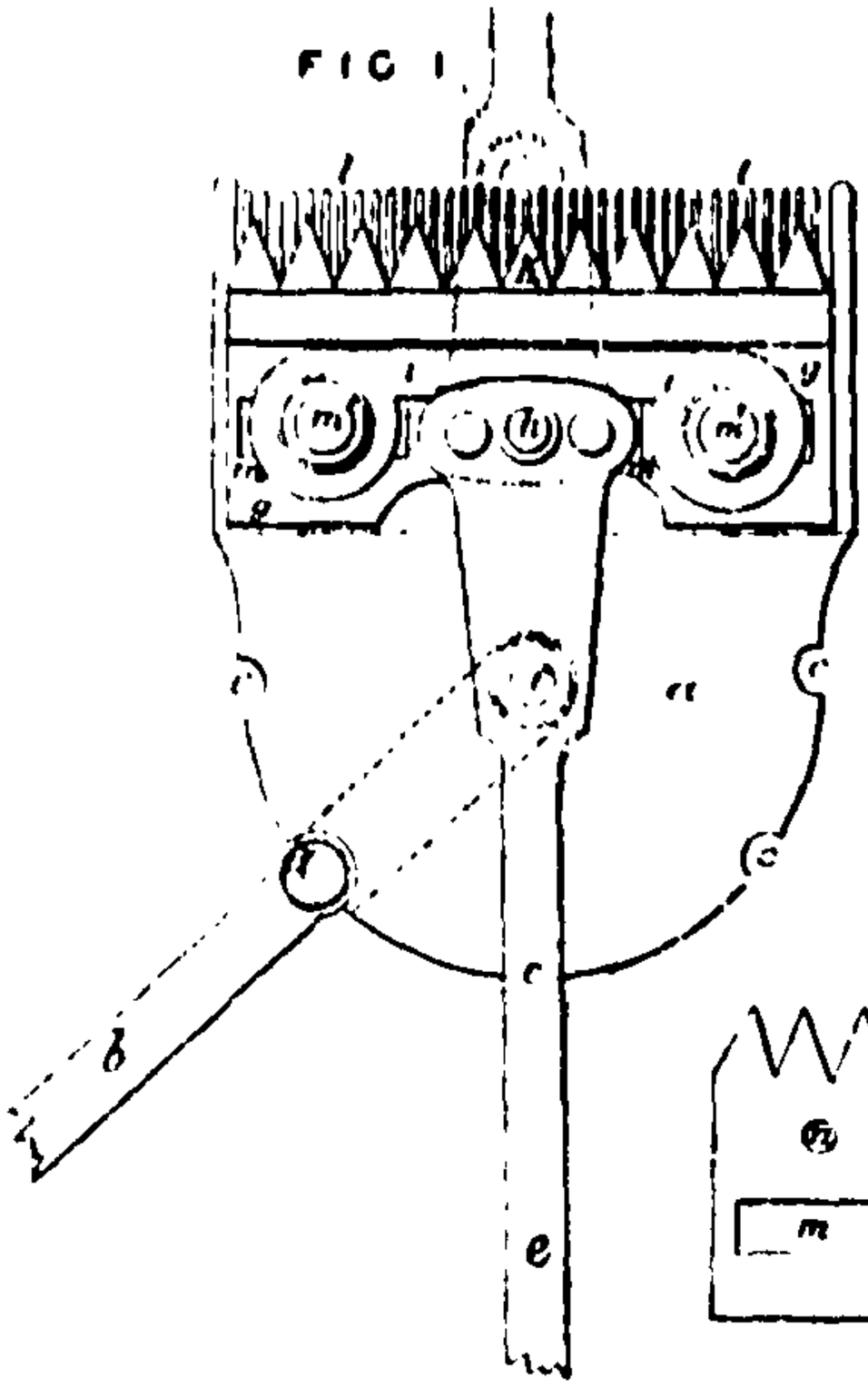


FIG 2.

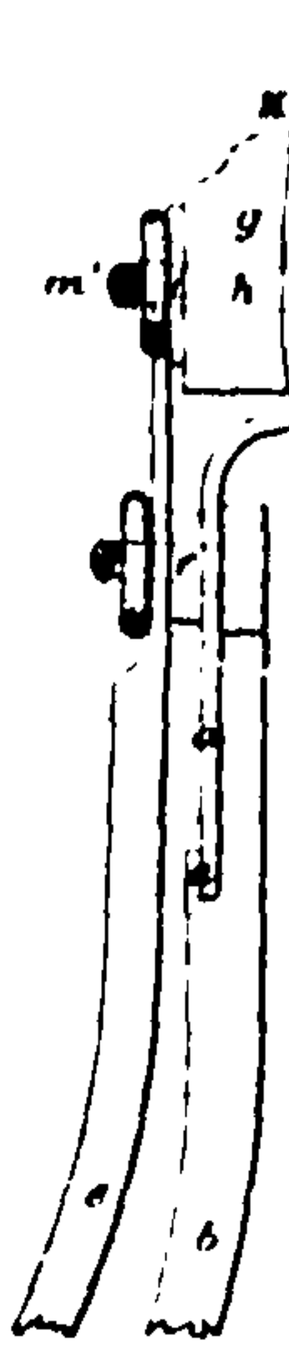
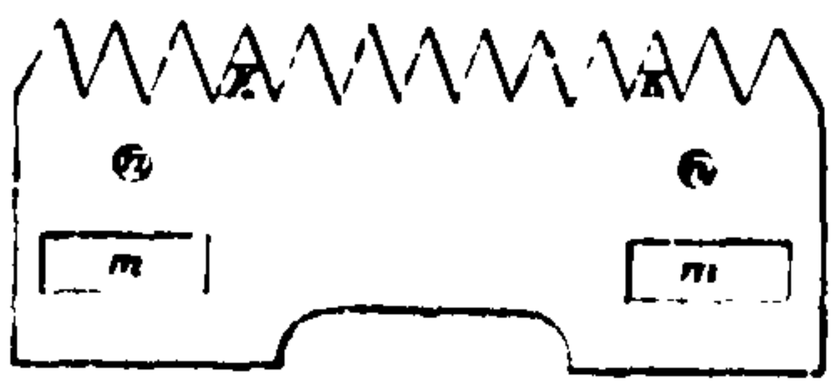


FIG 3



Diagrams from Grayson's specification (No. 3076 of 1869).

follows that the guiding-handle may be set to any angle up to 90 degrees on each side of the centre of the plate, and secured at that angle by means of a set-screw (*d*) or other equivalent passing through corresponding apertures in the forked bar. The upper surface of the plate contains two fixed stems (m^1) in line with the edge of the comb, which serve to support a horizontal bolt of metal by means of two slots (*m*), enabling the bolt to shoot to and fro by the action of the working-handle of the apparatus, which is operated by the right hand, although whenever required the left hand may be used to cut and the right to guide.

"The clipping-handle (*e*) takes its fulcrum from the central stud, working loosely thereon, and elevated clear of the sliding-bolt (*d*) by the intervention of a collar (*f*), being finally secured by a double-headed thumbscrew or milled-edged button-screw. The handle being terminated by an enlarged flat surface is pierced with a series of holes, any one of which may be made to gear with a stud (*h*) on the side of the block (*g*), so that the motion of

the handle will cause the bolt to move reciprocally in a true line on the upper surface of the guide-plate. As a consequence the working or cutting-handle can also be set to any desired angle in regard to the plate and guiding-handle as most convenient for the operator. A nut may also be applied to the bolt-stud to steady its handle-bar. A portion of the bolt may be planed or cut away so as to leave a space between it and the plate, within which space the knife-bar may be secured resting in a step along the block, and being fixed to the stud passing through the bolt or by means of two short pins (*n*). The knives (*k*) project from the cutter-bar free from the bolt, and take their bearing on the comb; they are made very strong and after the manner of triangular cutters used in mowing or reaping machines, so that there is no possibility of the teeth of the comb becoming clogged or choked by grit or other foreign substance, as is the case with knives which work by pressing or squeezing action against the comb and thus break the teeth.

"A friction-plate or washer and nut is finally placed over each stem of the slots, so that the adjustment of the knife-bolt may be regulated. The knife-bar being thus separate and distinct from the handle, it may easily be removed and another cutter applied to avoid loss of time in sharpening.

"In this apparatus no bearings are made dependent on screws set in plates, and which are so liable to become loose or broken by the undue pressure exerted on them. In place of such bearings the bearings and fulcrum are taken from stems of great strength, which cannot get out of order or be broken by any work to which the apparatus may be subjected."

Then follows a detailed description of the drawings, and a paragraph telling the advantages of the instrument, its action being described thus:—

"As the reaping-machine divides the stalk, so also this instrument takes away the desired extent of hair by the simple to-and-fro motion of the angular cutters in conjunction with the protecting and guiding comb."

The claiming paragraph recited that the inventor did not restrict himself to precise details, which might be modified:—

"For example, the angles of the cutters, their size, and number may be varied, and also the number of teeth in the comb and the dimensions and strength of the apparatus may be increased or diminished according to the purpose for which it may be required; but what I claim and desire to be secured to me by the herein in part recited Letters Patent is, the general arrangement, construction, and combination of parts whereby I am enabled to construct an apparatus for clipping or shearing horses and other animals in such manner that the apparatus may be adjusted to numerous angles or positions to suit the varying surface of the animal, and whereby the shearing or clipping may be regulated to the exact extent required without shaving the hair or wool too closely and without injuring the animal, leaving a smooth surface without marks, the apparatus being capable of being taken to pieces and adjusted for sharpening or renewing the cutter-bar, or for other purposes, all substantially as herein specified and shown."

The appellant *Clark* was a manufacturer of horse-clippers. All previous ones made on similar lines failed owing to the studs, screwed into a thin base-plate, working loose. He devised a new clipper, getting rid of that and other difficulties.

The respondent, *Adie*, was a licensee of *Clark* under a patent of *Clark's*. *Adie* copied *Clark's* improved machine, which was not made in accordance with *Clark's* patent. *Clark* found on inquiry that *Grayson's* patent was in existence, and thought that some of his improvements were infringements of *Grayson's*. He thereupon bought *Grayson's* patent.

Clark then, as assignee of *Grayson's* patent, filed a bill in Chancery to restrain *Adie* from infringing it, and prayed other relief.

It was proved at the trial that *Clark's* clipper was an undoubted improvement and success; also that none made under *Grayson's* specification had been commercially used.

The alleged infringement consisted in the use or combination of four elements—the fixed stems, the nuts and washers to adjust the friction, the arching of the cutter-plate (as shown in Fig. 2), and the mode of moving the cutter-plate in the true line of cutting.

At the trial it was held by *Bacon*, V.C., that the patent was valid, and that the respondent had infringed.

On appeal the decree of the Vice-Chancellor was reversed on the grounds that the whole machine consisted of certain improved parts, that the arching of the cutter-bar was no part of the invention, which really consisted in the angular knives and comb combination, the adaptability of the handle, and the improvements making the cutter-bar more easily removed and replaced.[1]

On appeal to the House of Lords.

Held, that on the true construction of the specification the inventor claimed the horse-clipper as a whole combination, and that there was no claim for any subordinate combination such as the alleged infringement.

Notes.

The judgments of Lord *Cairns*, L.C., p. 320, and Lord *Hatherley*, pp. 328, 329, have been referred to as authority for the proposition that a patentee may claim a subordinate combination in addition to the whole combination of which it forms a part, but at the risk of invalidating the patent should the claim for the subordinate combination be invalid: *Cropper* v. *Smith* (per *Cotton*. L.J.), 1 R. P. C. 87; *Moore* v. *Bennett*, 1 R. P. C. 137; *Webb* v. *Kynochs* (per *FitzGibbon*, L.J.), 15 R. P. C. 555; *Chamberlain* v. *Bradford*, 17 R. P. C. 507.

The judgment of Lord *Cairns*, L.C., was quoted at length in *Rowcliffe* v. *Morris*, 3 R. P. C. 25, to show that there was no claim for a subordinate

[1] All the foregoing summary is compiled from the specification and original cases and joint Appendix used in the House of Lords.

combination, and that the facts of the two cases being similar, the above decision applied.

Lord *Cairns*, L.C., pointed out in his judgment that in dealing with combination claims it is assumed that the parts are old (*Wenham Co.* v. *May*, 4 R. P. C. 308), and the difficulty in dealing with inventions of new combinations of old elements (*Proctor* v. *Bennis*, 4 R. P. C. 339).

The invention patented was not the clipping, but the particular machine described: *Vorwerk* v. *Evans*, 7 R. P. C. 171.

The passage (on p. 320) of Lord *Cairns's* judgment dealing with the modes in which a combination claim may be infringed has very often been judicially quoted:—*Sugg* v. *Bray*, 2 R. P. C. 233; *Procter* v. *Bennis*, 4 R. P. C. 345, 361; *Ellington* v. *Clark*, 5 R. P. C. 140; *Peckover* v. *Rowland*, 10 R. P. C. 239; *Muirhead* v. *Commercial Cable Co.*, 12 R. P. C. 63; *Incandescent Gas Light Co.* v. *De Mare*, 13 R. P. C. 331, 571, 579; *Presto Gear Case Co.* v. *Simplex, &c.*, 15 R. P. C. 643. To the like effect *James*, L.J., in the Court below, was quoted (10 Ch. Ap. 674) in *Thomson* v. *Moore*, 6 R. P. C. 443, 446; *Incandescent Gas, &c.* v. *De Mare*, 13 R. P. C. 331.

It has been supposed that the patent in *Clark* v. *Adie* was "not supported" (*Proctor* v. *Bennis*, 4 R. P. C. 345), and that the specification was "insufficient" (*Webb* v. *Kynochs*, 15 R. P. C. 555). Both opinions are erroneous, the sufficiency of specification and validity of the patent were never really in dispute, nor was it suggested that the inventor failed to make a sufficient claim to his invention. What was "not supported" was the argument of counsel that the specification included a claim for the subordinate integer of the combination which the defendants had adopted; and the "insufficiency" was the insufficiency of the claims to include the subordinate integer as a separate invention.

1877. DUDGEON *v.* THOMSON, 3 App. Ca. 34.

Construction of Amended Specification—Extent of Claim.

A patent (No. 699 of 1866) was granted to *G. T. Bousfield* for an invention (communicated by the plaintiff, *R. Dudgeon*, from abroad) for "improvements in apparatus for expanding boiler-tubes." The specification was amended in 1875 by the inventor, as assignee of the patent.

The specification originally contained a description of methods of expanding the ends of boiler-tubes to make their fittings steam-tight; (1) those in which there was a direct rubbing action of a tapering plug upon the metal of the tube, and (2) those in which the plug had no direct action on the tube, but *only* rolling contact with the rollers. The first class of these methods, a cutter, ratchet-handle, and screw-feed, were all disclaimed.

The specification commenced with a description of the object of the invention—"to expand the tube by rolling the metal by the application of

[one or more][1] pressure rollers to the interior of the tube" instead of the older system of hammering. Then followed a description (all struck out by disclaimer) of methods in which a tapering plug was used along with a single roller, concluding with a statement of the disadvantage resulting from the plug coming in contact with the tube.

The invention is then described in detail:—

"The roller expanding-tool for general use is [therefore] constructed, by preference, as represented at Figs.[2] 1, 2, 3, 4, and 5 of the accompanying drawings, with three or more rollers, *a*, *a*, *a*, which are held in a ring-frame or stock, B, and are operated by means of a tapering plug, C, inserted between them. The rollers should be set at equal distances apart; they should also be of equal size, and their profile should be the same as that of a longitudinal section of the interior of the extremity of a tube when properly expanded. Their journals, *c*, *c*, are also held in radial slots, which permit the rollers to move outwards from the centre of the stock. In this case the tapering plug is simultaneously forced inwards between the rollers, and turn upon its axis by the application of the hands of the operator to a wrench or spanner, D,[3] fitted to the head of the plug C, and the rollers *a*, *a*, *a*, are caused to turn by the frictional contact of the surface of the plug with their surfaces, so that the series of rollers are caused to roll within the end of the tube, and are at the same time caused to diverge by the turning and entrance of the tapering plug. The tapering plug may have a shallow, flat screw-thread formed upon its surface, so that it will draw itself inwards as it is turned by hand, but such a thread is not essential to the successful operation of the instrument; or in place of such a thread the slots which hold the journals of the rollers may be slightly skewed, so that the axes of the rollers will be slightly skewed to the axis of the tube, the effect of which is to cause the tapering plug, when turned in one direction, to draw into the tube, and when reversed to loosen itself between the rollers. In order to hold the rollers in their innermost positions when the tool is inserted in the tube, a ring-groove may be formed in the stock B, and a spring-ring, *g*, may be inserted into it, so as to bear upon the journals of the rollers *a*, *a*, *a*, and hold them in their inner positions when the tapering plug is removed."

A simpler form of the device was shown in Figs. 6 and 7: "In this example three rollers, *a*, *a*, *a*, are used, and, in place of being made solid, are bored out and arranged to turn loosely upon arbors, *c*, *c*, *c*, so that they may diverge when the expanding plug C is turned and forced in between them. The tapering plug C, shown in the example, has a screw-thread cut upon it,

[1] The amendments and disclaimer were contained in a separate document. They are here shown where necessary by the more modern method; all words omitted by amendment are enclosed in square brackets, and those inserted are shown in italics.

[2] Owing to the disclaimer of the method of turning the apparatus and the cutting device, it is unnecessary to give the drawings in full, or to include Fig. 4. The tapering plugs were three or four times the length here shown.

[3] D need not be shown. C, in Fig. 1, was prolonged upwards, about double the length of the part here shown.

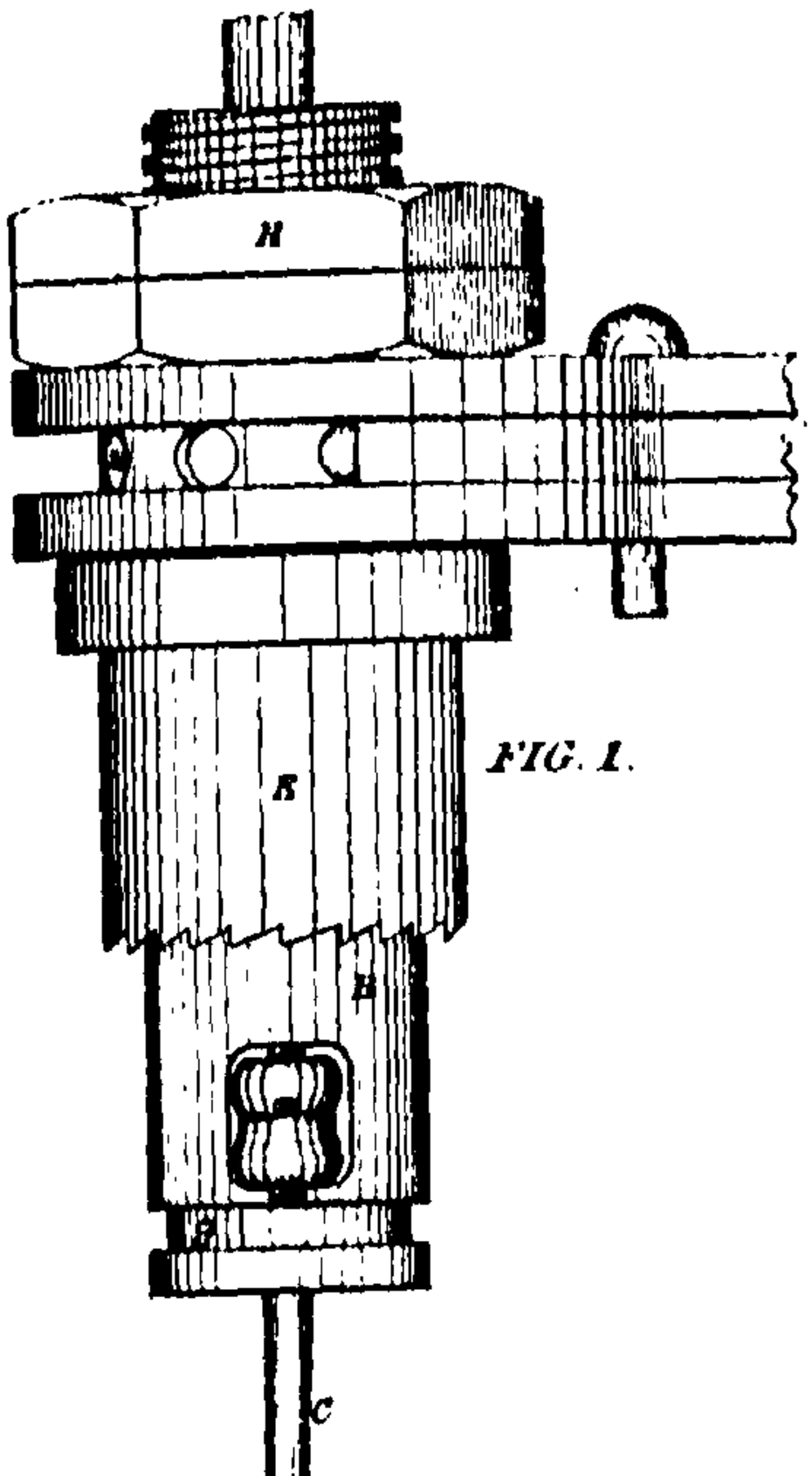


FIG. 1.

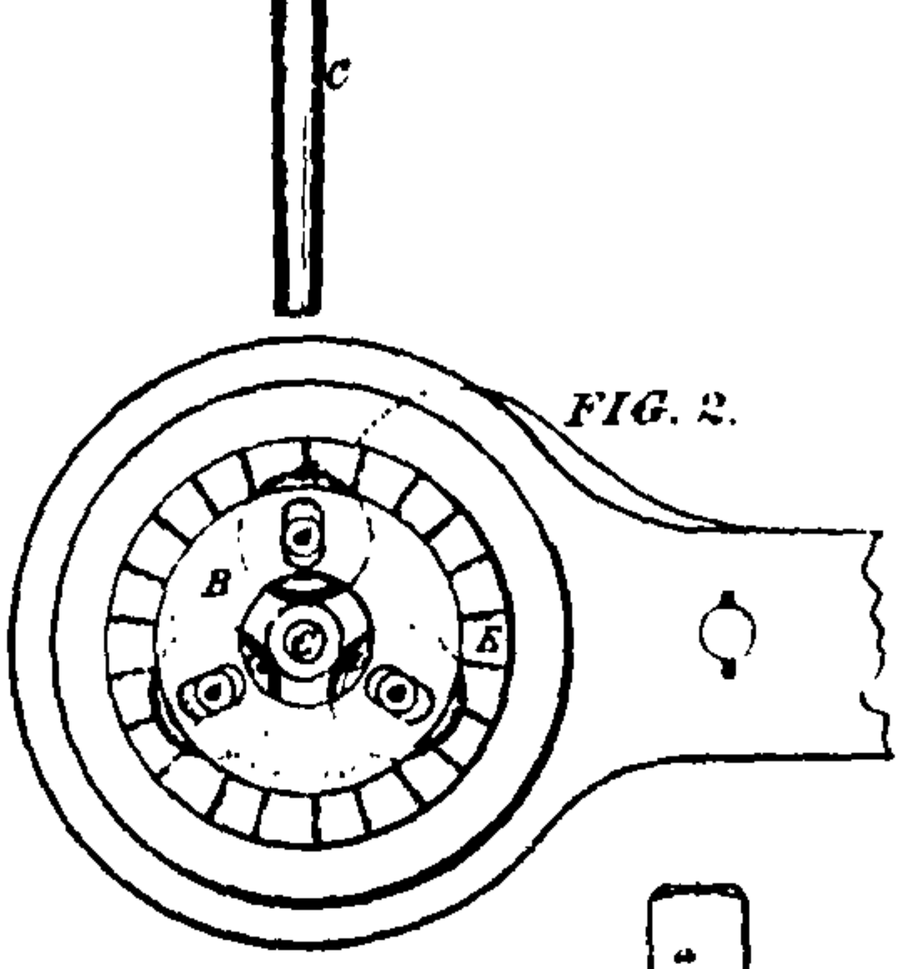


FIG. 2.

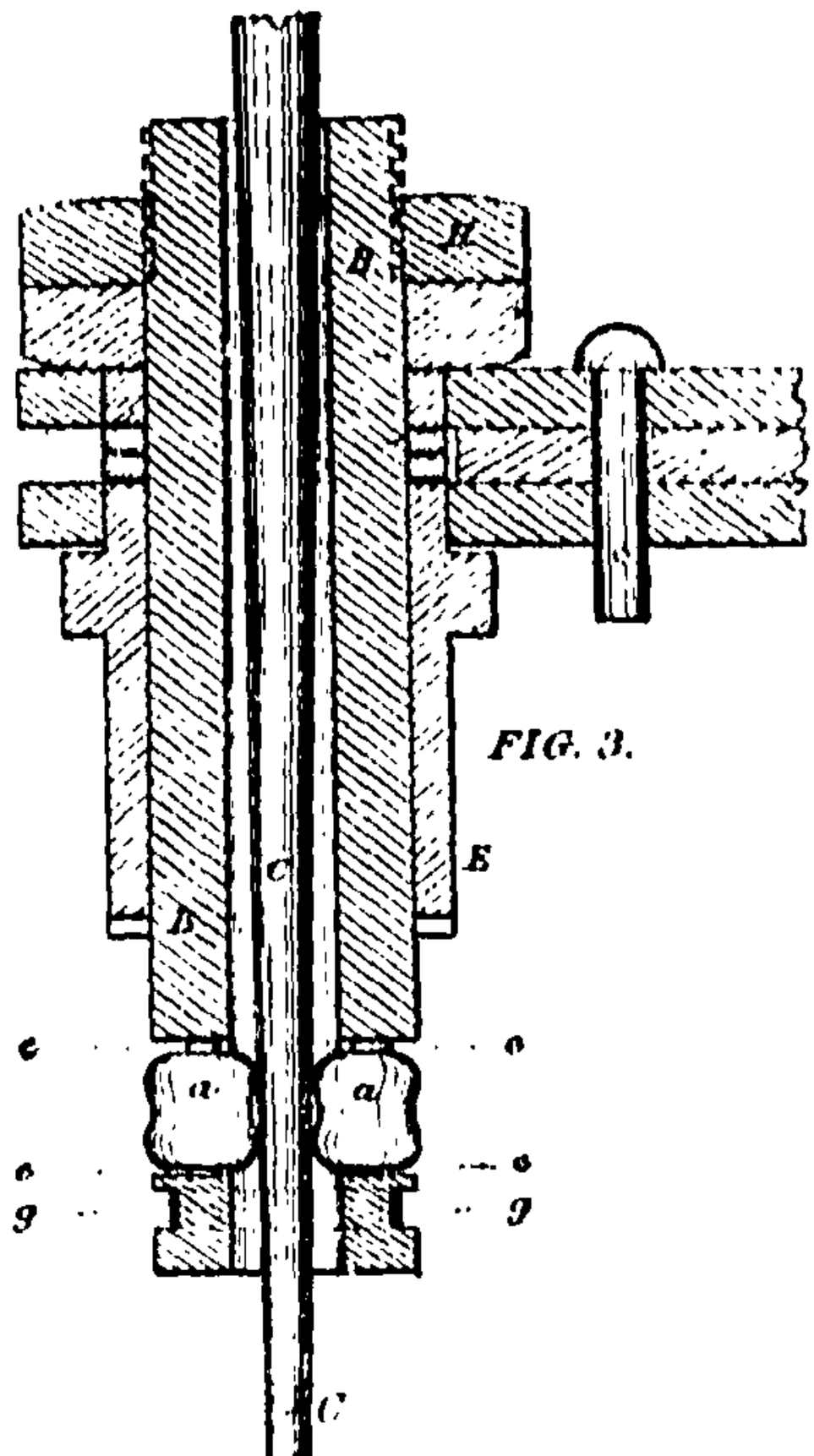


FIG. 3.

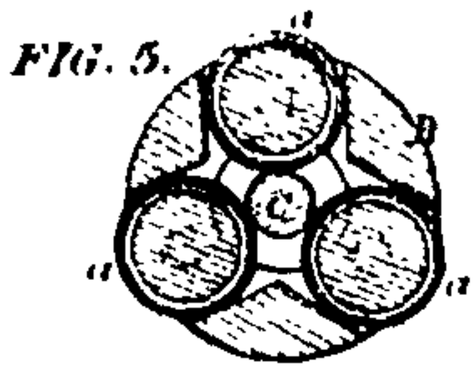


FIG. 5.

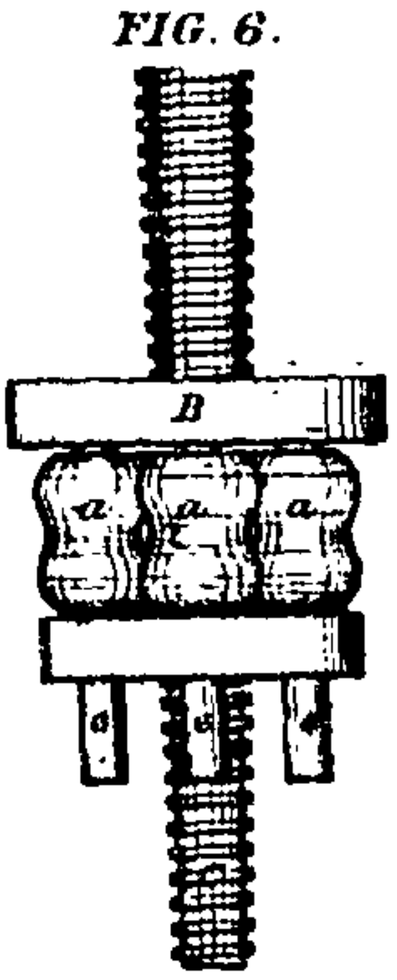


FIG. 6.

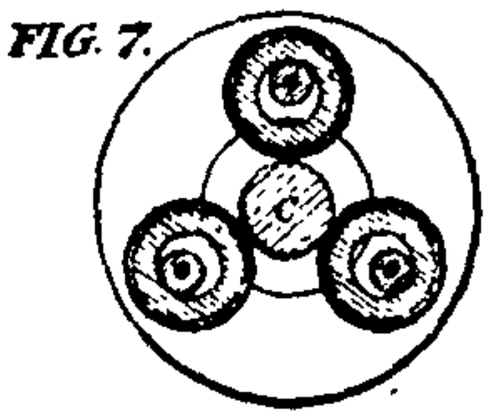


FIG. 7.

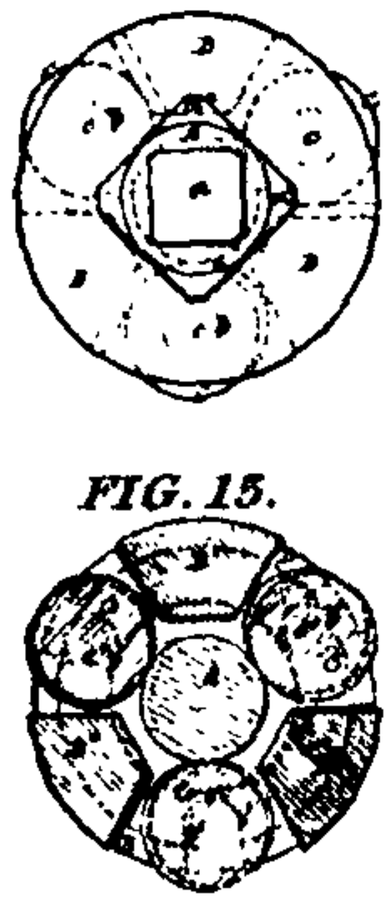
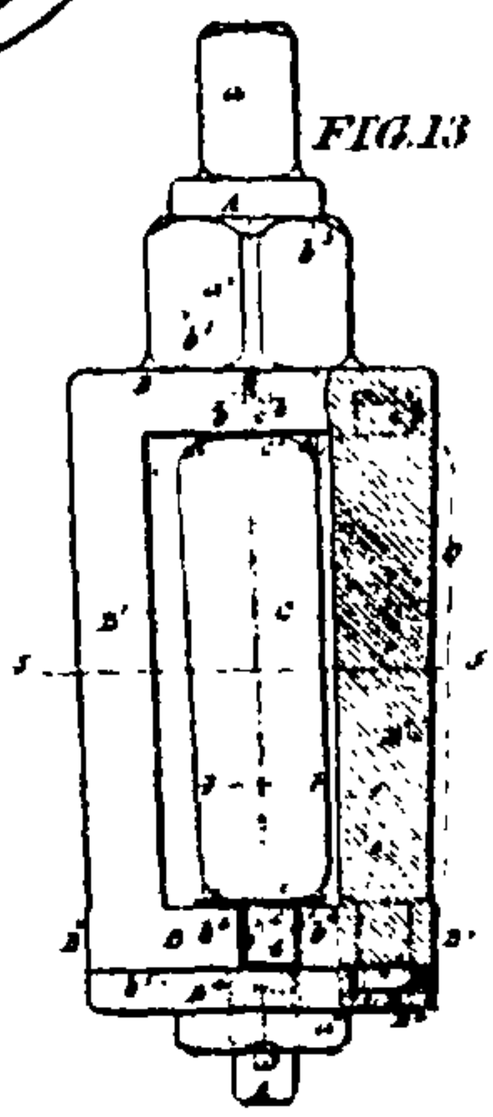


FIG. 14.

FIG. 15.

FIG. 13.





Figs. 1, 2, 3, 5, 6, and 7 are from Dudgeon's specification (No. 699 of 1866). Figs. 13, 14 and 15 are from Thomson's specification (No. 1630 of 1874). The sketch is one of defendant's exhibits.

as before described, but this is not essential to the practical operation of the instrument." New forms of profile of the rollers were suggested in order to keep them from working their way into the tube, or a gauge might be used.

The specification concluded as follows :—

"[Although a tapering or wedge-formed plug is preferred as the expanding instrument the invention is not limited to an expanding instrument of that form, as circumstances may render expedient the use of an expanding instrument of different form; thus, when a tool is sufficiently large, an arrangement of toggle-jointed levers may be inserted in it for the purpose of expanding the roller, in place of a tapering plug].

"In [all] the above-described modifications of the roller expanding-tool [at least one roller is] *rollers are* combined with a tapering plug (or its equivalent, by whose action the [roller is] *rollers are* forced outwards in the tube), and with a stock or holder, by which the roller is prevented from twisting sidewise as [it is] *they are* turned round in the tube. [These three instrumentalities are all that are absolutely essential to the construction of the roller expanding-tool, but the cutter and ratchet-handle constitute with the said instrumentalities or implements useful combinations which are supplementary to the aforesaid fundamental combination;] what is claimed, therefore, as the invention to be secured by Letters Patent is, the combination in an expanding-tool of the following implements, viz. the rollers, roller stock, and expanding instrument, these three operating in combination substantially as set forth."

There were three more claims for the combinations, comprising as distinctive elements in each respectively, a trimming-cutter, ratchet-handle, and screw-feed. All these were struck out by disclaimer.

The appellant had obtained an interdict from the Lord Ordinary against the respondent, restraining him from infringing the above patent; this interdict was adhered to by the First Division of the Court of Session on July 4, 1873.

The specification was amended in 1875.

The appellant proceeded by way of petition and complaint for breach of the interdict, and finally, on December 22, 1876, the First Division of the Court of Session held that no infringement had been committed by the respondent.

It was proved at the trial [1] that on "screwing" in the tapering plug the rollers (which were cylindrical throughout) were in contact with the "edges" of the conical plug, and consequently the axes of these rollers were nearer to the axis of the plug where the latter was of smaller diameter. The effect of the "screwing" process was, while rolling out the shorter tube, to draw in the plug relative to the rollers, and the latter relative to the tube. Hence the necessity for either grooving the rollers or using a gauge, but the endwise movement of the tapering plug was essential.

[1] Only so much of this case is noted as bears on the questions of construction of the specification and extent of the claim.

The alleged infringement consisted of a tool made under a subsequent patent (No. 1430 of 1874), the form and action of which was as follows:— Three rollers, smaller at one end than the other, were mounted in a rigid, open frame. They were placed symmetrically, much the same as in the appellant's arrangement. But they were not set so that the axis of each was parallel to the central axis of the tool, but askew. These rollers had no lateral outward motion, so they could not be displaced by a central roller. These three rollers were not cylindrical, but almost conical, being curved slightly to enable them to be in continuous contact with a central cylindrical roller.[1] The whole tool was slightly greater at one end than the other. In the accompanying diagrams and sketch, A denotes the central roller, *a* its head, *c* the three rollers set askew, B, B[1] and *b* portions of the rigid frame-work of the tool.[2] It could be used either by rotating the central cylinder A, which by frictional contact turned the rollers *C*. These, by a screw-like action, worked into the tube, enlarging it at the same time. Or the whole tool might be rotated from without with or without using the central cylinder or roller. The former method was preferable where considerable force was required. There was no endwise motion of the central roller relative to the three rollers, but (unlike the appellant's) the latter rollers had to move forward in the tube.

The petitioner appealed to the House of Lords.

It was held that the proceedings were irregular, and that a fresh action should have been brought after the amendment of the specification. In order to save expense, their lordships expressed their opinions on the merits of the case.

Lord *Cairns*, L.C., commented on the legal position of the parties under the irregular procedure, and pointed out that (p. 38) "after disclaimer and alteration, the specification is altered largely and most materially."[3] The first point was (p. 39) to satisfy one's mind "as to what it is which is the principal characteristic, the essential feature, of the appellant's invention as specified in his patent." His lordship reviewed the previous methods with their defects of enlarging the tubes by percussion. Mere insertion of a bunch of rollers, rotated by the rotation of a central roller, would not suffice to bring strong pressure to bear on the tube. Therefore it is obvious that the point and gist of the invention must be, not the insertion of friction rollers, but the mode of bringing pressure to bear on them outwards. "I will ask your lordships to look at a few sentences, both in the specification as it originally stood, and in the specification as it stands after alteration,

[1] The surface would be approximately a hyperboloid of revolution of one sheet. The author is indebted to Messrs. *Thompson & Co.* for the duplicate of an exhibit here reproduced.

[2] Defendant's specification included: "Figs. 13, 14, and 15 are respectively a side elevation partly in section, a plan of the driving end, and a transverse section taken on the centre line 5 - - - - 5 in Fig. 13, all of a modification of my said tube-expander, which may be actuated either by the central spindle or roller A, or by the rigid rolling-frame B, B[1], carrying the expanding rollers C, C, C." See diagrams and sketch, *ante*, p. 265.

[3] It was considered by *Palles*, L.C.B., in *Thomson* v. *Moore*, 6 R. P. C. 445, that this was the ground of Lord *Cairns'* decision. But see *Moser* v. *Marsden* (*post*, p. 374).

because some of the expressions in the original specification strongly bear upon the invention as it ultimately appeared." His lordship commented upon the alterations in the latter part of the specification (as set out above), and pointed out that the mention of a tapering plug as an expanding instrument *by preference* was struck out, and also the substitute of the toggle-jointed levers, leaving a tapering plug "or its equivalent by whose action the rollers are forced outwards in the tube." "The point (p. 42) which gave the characteristic to the whole, and which he justly called a point absolutely essential to his invention, was the tapering plug acting as an expander, driving out those cylindrical rollers placed around the plug, &c." At p. 43: "It would have been quite possible for the appellant, when he was specifying his invention, to have specified also a tool which would have the peculiarity of the instrument of the respondents. I have no means of knowing why he did not do so." At p. 44: "Here is a machine which is either the plaintiff's machine or differs from it only colourably. But underlying all that, there must be a taking of the invention of the plaintiff.[1] There used to be a theory in this country that persons might infringe upon the equity of a statute if it could not be shown that they had infringed the words of a *statute*; it was said that they had *infringed* the equity of the statute, and I know there is, by some confusion of ideas, a notion sometimes entertained that there may be something like an infringement of the equity of a patent.[2] My lords, I cannot think there is any sound principle of that kind in our law; that which is protected is that which is specified, and that which is held to be an infringement must be an infringement of that which is specified. But I agree it will not be the less an infringement because it has been coloured or disguised by additions or subtractions, which additions or subtractions may exist and yet the thing protected by the specification be taken notwithstanding."

Lord *Hatherley* discussed the claim, and held (p. 48) it was for an expanding-tool consisting of three elements, "the rollers, roller-stock, and stock-expanding instrument." His lordship then compared the description with that before the amendments (as given above, *ante*, pp. 264, 266).

Lord *Blackburn* (at p. 53): ". . . But whether it is for the interest of one side or the other, I apprehend the duty of the Court is fairly and truly to construe the specification, neither favouring the one side nor the other, neither putting an unfair gloss or construction upon the specification for the purpose of saving a patent if it is said that the patent is void, nor putting an unfair gloss or construction upon it in order to extend the patent and make it take in something which you may think was an unhandsome taking of the fruits of his invention from the patentee, if it is not really an infringement of the patent. . . ." In discussing the meaning of "expanding instrument" in the amended specification, his lordship said (p. 55): "But when we

[1] This does not go so far as to say that every detail of a combination must be taken in order to infringe it: *Bristowe*, V.C., in *Procter* v. *Bennis*, 4 R. P. C. 344. See also *Ellington* v. *Clark*, 5 R. P. C. 140.

[2] Quoted and followed in *The Ticket Punch Co.* v. *Colley's Patents*, 12 R. P. C. 185.

take, as I apprehend we are entitled to take, the old specification before the disclaimer in order to see what it means, that becomes still clearer. I say we are entitled to take it, for the object of a disclaimer is merely to take out and renounce part of what had been claimed before, and it would vitiate the new specification if by striking out that part you gave an extended and larger sense to what is left so as to make it embrace something which it did not embrace before." [1]

Lord *Gordon* (at p. 57): ". . . Now, any amendment or alteration of a patent is a very dangerous proceeding; and of course patentees feel that, because they are open to the observation that they are abandoning that which they claimed as their invention in a previous stage of the proceedings. I venture to think that the patentee in this case has fallen into that error, and that he has now exposed himself to the risk of having his original patent attacked by any person who can show that really he has made an improvement upon what may have been originally a valuable invention, and one which had been sought after by men of skill." His lordship referred to *Clark* v. *Adie* (*ante*, p. 259) as an illustration.

Notes.

The foregoing case has been said to support the proposition that the claim covers what are described as the characteristic features of the invention, and such only: per Lord *Field* in *Miller* v. *Clyde Bridge, &c. Co.*, 9 R. P. C. 482. On the other hand, the essential features of the invention are not necessarily those which are so described in the specification itself. (See concluding extract from Lord *Cairns'* judgment above): *Incandescent Gas Light Co.* v. *De Mare, &c.*, 13 R. P. C. 330.

By 5 & 6 Will. 4, c. 83, s. 1, a disclaimer could only be allowed when it was not "such disclaimer or such alteration as shall extend the exclusive right granted by the said Letters Patent; and such disclaimer . . . shall be deemed and taken to be part of such Letters Patent or such specification in all Courts whatever. . . ." And by s. 39 of 15 & 16 Vict. c. 83, it was enacted, "Provided also, that such filing of any disclaimer or memorandum of alteration, in pursuance of the leave of the law officer in the first-recited Act mentioned" [5 & 6 Will. 4, c. 83], "certified as therein mentioned, shall, except in cases of fraud, be conclusive as to the right of the party to enter such disclaimer and memorandum, &c."

Besides *Dudgeon's* specification, many other amended ones have been construed by reference to the previous unamended editions (*e.g. Seed's*, *ante*, p. 212). Where there is a doubt as to whether the amended claim has a wider or narrower signification, it must be presumed that the amendment, by leave of the law officer, under s. 39 of the Act of 1852, did not "extend the exclusive right granted" originally, hence the claim must be construed not

[1] It was thought by *Bowen*, L.J. (*Van Gelder's Patent*, 6 R. P. C. 28) that Lord *Blackburn* meant that the leave to amend given by the law officer did not give validity to the amendments made and disclaimer; but see final paragraph of the notes.

to go beyond the unamended one. This, it is submitted, is the principle underlying Lord *Blackburn's* observations above. The Act of 1883, s. 18 (9), replaces in different language the above provisions as to amendment; as to which see *Moser* v. *Marsden* (*post*, p. 374).

1878. BAILEY v. ROBERTON, 3 App. Ca. 1055

Construction—Disconformity—Insufficiency.

In 1866 a patent (No. 1707) was granted to *Medlock & Bailey* for "improvements in preserving animal substances."

The following was the provisional specification:—

"The object of the said invention is to preserve animal substances, such as meat, poultry, game, and fish, for a long time in a fresh state, so that when eaten they cannot be distinguished from the same when recently killed, and for the preservation of hides. For this purpose we dissolve the ordinary commercial gelatine in boiling water, using about two pounds of gelatine to ten pounds of water. We then add, while hot, a volume equal to the volume of the solution of gelatine of a solution of bisulphite of lime (usually expressed by the formula $CaO,2SO_2$) in water, of about the specific gravity of 1070. While the solution of gelatine and bisulphite of lime is still warm and liquid we coat the substance to be preserved with it, either by dipping the substance into it or by brushing it over with two or three coats of the solution. If the substance has to be transported any distance in wooden vessels, the vessels should be saturated with some of the before-mentioned solution of bisulphite of lime in water, and when dry brushed over with the said solution of gelatine and bisulphite of lime. When the solution of gelatine and bisulphite of lime has firmly solidified on the surface of the animal substance the latter may be packed, the vessel being closed as air-tight as possible. For the preservation of hides the interior surface only requires to be coated with the solution of gelatine and bisulphite of lime. The coating on the hides and the hides must be dried before they are packed. Before treating the animal substance other than hides as above, the viscera must be removed and the inside washed free from blood; it is then to be coated internally and externally as above described, and before it is cooked the coating of gelatine and bisulphite of lime must be removed by soaking it for a sufficient time in water."

The complete specification was as follows:—

"The nature of our said invention is to preserve animal substances, such as meat, poultry, game, fish, and other animal substances for a long time, and so that the same substances when so preserved, and although the animals from which the same are derived have been killed for a considerable time, cannot be distinguished when cooked from the like substances derived from similar animals which have been recently killed, and also for the preservation of hides.

"The manner in which our said invention is performed is as follows:—We employ a solution hereinafter distinguished as solution No. 1, being a solution of bisulphite of lime (usually expressed by the formula $CaO,2SO_2$) in water, of about the specific gravity of 1050, which specific gravity we find preferable to that of 1070. We sometimes form a solution, hereinafter distinguished as solution No. 2, by dissolving the ordinary commercial gelatine in boiling water, using from one part to two parts of gelatine in ten parts of water, and adding ten parts of solution No. 1." Then followed details as to the proportion of gelatine (which was to depend on the temperature of the place where the solution was to be applied), and as to the modes of application of No. 2 solution.

"For the preservation of animals without removing the skin or external covering thereof, and without removing hoofs or horns, we find it advantageous to employ a solution hereinafter distinguished as solution No. 3, formed by mixing one part of salt with ten parts of solution No. 1 and from six to ten parts of water." The proportions specified according to the temperature of the place where the solution was to be applied. Details as to application were given.

For the preservation of fish a fourth solution was described as "No. 4, formed by mixing ten parts of cold water, one part of salt, and one part of solution No. 1." Details as to its application were given, and also as to its use for preventing and arresting decomposition in meat, game, &c.

"When animal substances are to be transported dry in wooden casks or other wooden vessels, the interior of such casks or vessels should before use be saturated with solution No. 1, and then allowed to dry; but for this we make no claim."

"What we consider to be novel and improvements, and therefore we claim as the invention secured to us by the said in part recited Letters Patent, are—

"Firstly, the use of solution No. 1 for preserving animal substances."

The second, third, fourth, and fifth claims were for the uses of solutions Nos. 2, 3, and 4, "in manner hereinbefore described."

"But we do not claim the employment of gelatine or salt, nor of the processes of cleansing or injection, nor of air-tight vessels, except in connection with and in aid of solution No. 1, and for the purpose of preserving animal substances, nor do we claim the use of solution No. 1 except for the purpose of preserving animal substances."

Proceedings were taken before the Sheriff of Lanarkshire to restrain the respondent from infringing the above patent.

The alleged infringement consisted in the use of bisulphite of lime for the preservation of meat.

The chief defences were:—

1. That the use of bisulphite of lime was old, having been disclosed by *Rathay's* patent (No. 46 of 1861).

2. That there were no sufficient directions as to the application of bisulphite of lime as claimed in the first claim.

3. That there was disconformity between the complete and provisional specifications, inasmuch as the use by itself of bisulphite of lime was not disclosed in the provisional specification.

4. That if the first claim was only for the use of bisulphite of lime, as described in solutions Nos. 2, 3, and 4, there was no infringement.

The Sheriff decided in favour of the patentees on all points.

On appeal to the Court of Session.

The Court pronounced interlocutor to the following effect, *inter alia*:—

That the specification described the nature of the invention claimed by first claim, but did not describe or ascertain the manner in which it was to be performed; that the first claim claimed a different invention from that which was disclosed in the provisional specification, and that therefore the patent was invalid.

On appeal to the House of Lords.

Held, "that the complete specification, if large enough to cover the employment of bisulphite of lime for the preservation of animal substances as practised by the defenders, would claim an invention larger than and different from that disclosed in the provisional specification, and would be open to the objection of want of novelty and of want of a sufficient description of the manner in which the invention is to be performed."

Per Lord *Cairns*, L.C., at p. 1061: "What is the meaning of the provisional specification in this case? What is the invention which is described in that provisional specification? That is the foundation of the whole claim of the appellants. Whatever be the invention which is there described, that is the invention which the appellants inform the Crown they have discovered, and in respect of which they ask for the protection of a patent—that is the invention in respect of which the patent is given to them; and, whatever be that invention, it became their duty to specify it, and not another or a different invention, in the complete specification." His lordship thought that the original real invention consisted in the application of bisulphite of lime by means of gelatine. He pointed out that the use of bisulphite alone is only mentioned with regard to casks, and is expressly disclaimed. If claim one be read as merely a statement of the basis of the other claims, then there is no infringement, and the patent may be valid; but if it be construed to be a separate claim to the use of bisulphite alone, then it is too wide. He proposed the form of interlocutor above, in order that the question of construction and validity might remain open.[1]

Lord *Hatherley* pointed out (p. 1070) that the provisional specification all through dealt with the mixture of bisulphite of lime and gelatine, and "if the complete specification is really no more than carrying this invention into effect, it may, for all I know, be a fair foundation for a patent;" but in that case there would be no infringement. Hence the difficulty the patentees were in.[2]

[1] The judgment of Lord *Cairns* was fully quoted and followed in *Horrocks* v. *Stubbs* (by *Bristowe*, V.C.), 3 R. P. C. 231.

[2] Quoted and followed by *Bristowe*, V.C., in *Horrocks* v. *Stubbs*, 3 R. P. C. 231.

Lord *Blackburn* commenced his judgment (p. 1073) with a review of the reasons for the provisional specification under the Act of 1852. If the law officers were satisfied that the provisional stated the "nature of the invention," a certificate was granted, and the inventor might use the invention publicly without giving the public his discovery; "and when it came to be a question whether or no what he was doing during that six months did avoid the patent, I take it the process must have been to say, 'Look at the nature of the invention described in the provisional specification, and say whether this which you have been doing, and which you say was a part of the patent, is fairly within the nature of the invention you have described. In that case you are protected; but if it is a new and separate invention, and a different one, then you are not protected.'[1]

"I cannot but think that when that is once looked at, it becomes pretty clear that when the nature of an invention has been described in the provisional specification in the way which has been mentioned, if something were found out during the six months to make the invention work better or with respect to the mode in which the operation may be performed—a thing which is very likely to happen when, in carrying out his invention, the inventor finds that some particular bit will not work so smoothly as he expected, and it is necessary to add a little supplement to it—still the nature of his invention remains the same, and it is no objection that in the complete specification, which comes afterwards, the invention or application is described more particularly or more in detail, or even if it be shown that there has been more discovery made, and so as to make the invention which he has described in the provisional specification really workable.[2]

"If nothing more is done than that, I think it is good; but as soon as it comes to be more than that, and the patentee says, in the provisional specification, 'I describe my invention as A,' and in the complete specification he says, 'I hereby describe A, and also B,' then, as far as regards B,[3] it is void, because the Letters Patent were granted for the invention that was described in the provisional specification, and do not cover the invention that is described in the other."[4] His lordship dealt with the specifications and facts of prior user in detail, and was of opinion that the method of performing the invention as given in the first claim was insufficiently described.

[1] The rule, as given in this paragraph, has been quoted and followed in *Lucas* v. *Miller*, 2 R. P. C. 159; *Gadd* v. *Mayor of Manchester* (per *Smith*, L.J.), 9 R. P. C. 526.

[2] This paragraph was quoted and followed by *Fry*, L.J., in *Crampton* v. *Patent Investments Co.*, 6 R. P. C. 294; it and the preceding one, in *Woodward* v. *Sansum*, 4 R. P. C. 174, 178.

[3] "As far as regards B" must mean "having regard to B." Per *Bristowe*, V.C., in *Horrocks* v. *Stubbs*, 3 R. P. C. 231.

[4] This paragraph was followed by *Bristowe*, V.C., in *Horrocks* v. *Stubbs* (*ibid.*).

The whole of the beginning of Lord *Blackburn's* judgment has been quoted and followed in the *United Telephone Co.* v. *Harrison*, 21 Ch. D. 743; and has been frequently referred to as containing an express declaration of the law on disconformity: *Horrocks* v. *Stubbs* (*ibid.*); *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248.

Lord *Blackburn* laid down nothing new, but only amplified the rule of earlier cases. *Siddell* v. *Vickers*, 5 R. P. C. 98.

Notes.

The case of *Bailey* v. *Roberton* has been treated as an authority on the following points :—That if the invention in the two specifications be not the same, the patent is bad (*Nuttall* v. *Hargreaves*, 8 R. P. C. 454, per *Lindley*, L.J.); an improvement must be embodied in the complete specification, although it involve invention, unless it amounts to a distinct invention (*Brooks* v. *Lamplugh*, 14 R. P. C. 617); but one must not under cover of an "improvement" obtain protection for a new invention (*Gadd* v. *Mayor of Manchester* (per *Lindley*, L.J.), 9 R. P. C. 526).

That the test of infringement is whether use has been made of a characteristic part of the invention either as a whole, or a "subordinate whole." Per Lord *Field* in *Miller* v. *Clyde Bridge Steel Co.*, 9 R. P. C. 482.

Bailey v. *Roberton* does not authorize looking at the provisional for any purpose other than that of seeing whether the invention described in the complete is contained therein. *Hocking* v. *Hocking*, 4 R. P. C. 260.

Newall v. *Elliott* showed that logically the complete should be studied first, and provisional later; although Lord *Cairns*, L.C., and Lord *Blackburn*, above, apparently took the opposite course, they do not appear to have really done so in their reasoning. Per *Kekewich*, J., in *Siddell* v. *Vickers*, 5 R. P. C. 98.

1879. The British Dynamite Co. *v.* Krebs, 13 R. P. C. 190.

Construction of Claim—Subsidiary Claim—Sufficiency.

In 1867 a patent (No. 1345) was granted to *W. E. Newton* for an invention (communicated by *Alfred Nobel*) of "improvements in explosive compounds and in the means for igniting the same."

The specification contained the following statement :—

"This invention relates to the use of nitroglycerine in an altered condition which renders it far more practical and safe for use. The altered condition of nitroglycerine is effected by causing it to be absorbed in porous unexplosive substances, such as charcoal, silica, paper, or similar materials, whereby it is converted into a powder, which I call dynamite, or Nobel's safety powder. By this absorption of the nitroglycerine in some porous substance it acquires the property of being in a high degree insensible to shocks, and it can also be burned over fire without exploding." Then follow directions as to various methods of exploding the dynamite, one of them including the use of a strong fulminating cap. "In order to ensure a perfect stability in the nitroglycerine contained in the dynamite, the "porous substance before it is saturated with nitroglycerine is to be rendered alkaline by washing it with a solution of carbonate of soda or lime water, or analogous substance, in order to neutralize the acid and prevent any decomposition of nitroglycerine from taking place."

The claim was for: "The mode herein set forth of manufacturing the safety powder or dynamite herein described, and also the modes of firing the same by special ignition, as herein set forth."

At the trial one witness proved that his workmen made dynamite successfully from the directions in the specification alone. They first tried slate dust, and found it did not absorb a sufficient proportion of nitroglycerine; then they tried brick dust, and found it successful. No directions, other than those quoted above, were given for making dynamite. No witnesses were called to prove that they tried to make dynamite from the directions given alone and failed or were misled.

One means of explosion was well known as applied to other materials, and another had been used, by *Nobel* in 1864, for firing nitroglycerine.

It was held that the specification was sufficient, and the claim was good.

Fry, J.: "But I think the fair reading of that claim is to consider that it is a claim to the modes of user of the dynamite. Dynamite is to be used by explosion; and the modes of explosion, therefore, are merely the modes of user. I think to read otherwise would be to read it in order to defeat the patent, instead of reading it as a fair and reasonable man ought to read it."

This decision was reversed by the Court of Appeal on the grounds of insufficiency of directions, and that the claim was for a known mode of ignition, and was therefore bad.

On appeal to the House of Lords,

Held, that the specification was "sufficient;" that as the claim for modes of ignition was for igniting the dynamite made as described,[1] and as it did not enlarge the monopoly, the patent was valid.

Lord *Cairns*, L.C., alluded to the duty of the Court as regards ascertaining the nature of the invention from the specification, and continued (at p. 192): "The Court has then to inquire whether the manner in which the same is to be performed is sufficiently described in the specification to the comprehension of any workman of ordinary skill in the particular art or manufacture; and this the Court can best do by evidence of what workmen of that description have actually done under the patent. . . ." At p. 193: "The result of using slate and brick dust was this—it produced some very good dynamite. The scientific witnesses called by the appellants speak to the sufficiency, in their opinion, of the directions in the specification; but what is more material is, that I find no workman whatever, skilled or unskilled, produced on the part of the respondents, who states that he has been, or would be, misled by the specification, or unable to make dynamite by following its directions. I therefore come to the conclusion that there is no insufficiency in the specification."

As to the claim for ignition (p. 193): "An explosive substance like

[1] In *Deeley* v. *Perkes*, 13 R. P. C. 586 (5), Lord *Herschell* expressed the opinion that the finding was that the mode of ignition was not separately claimed.

dynamite would be of little or no utility unless there were means of bringing to bear upon it a method of detonating explosion which would be at once economical and easily applied. The method might be entirely new, or it might have been previously applied to other substances, but, unless the patentee could point out and place before the public some method which he could affirm by experiment to be capable of producing the desired result, he would have put before the public no complete invention at all. I look, therefore, upon the means of explosion, even assuming them to be known as applicable to other substances, to be part and parcel of the invention which the patentee was bound to give to the public as a complete invention; and I understand him to claim these means of explosion only as part and parcel of this invention. He does not, as it seems to me, claim the means of explosion *in gross*, but only as *appendant* to dynamite; and he would not be allowed, under this patent, to claim them for any other purpose." [1]

Lord *Hatherley* (at p. 196) pointed out that the use of the word "powder" intimated that the absorption was not to be carried on till a paste was produced. As regards the claim for ignition: "The worst that can be said in the way of objection to this is that there is surplusage. The objection of surplusage must be admitted to be one which ought, no doubt, to be very carefully avoided by a patentee. The worst that can be said adverse to the patent here is, that the patentee might have been quite content to sit still and say, 'Now, I have shown you how to make the dynamite, I have shown you what the dynamite is, and I have shown you how to set it off; that is the invention,' without mentioning firing in the claim. But then, as was well urged by the learned counsel in argument, it cannot be said that this claim deprives any human being, past, present, or to come, of any possible right they might otherwise acquire, because they could not acquire any right in the dynamite without laying themselves open to an infringement of the Letters Patent in respect to the use of dynamite."

Lord *Penzance* (at p. 198) pointed out that proportions could not be given, for the range of absorbent materials was so wide. The substance to be chosen would be the most absorbent relative to its cost. "This being the nature of the invention, to define proportions expressly would be impossible. They could only be defined—as they were in the specification defined—by results. These results were twofold; first, the nitroglycerine was to be completely absorbed or taken up in the porous substance; and, secondly, the result was to be a powder. . . . No doubt a trial, or perhaps more than one trial, might be necessary to ascertain how much nitroglycerine would be taken up by any given material; but this would not be experiment for discovery; it would be only working under a rule ascertained and defined by the patentee, and adjusting that general rule to the particular substance employed."

[1] Followed in *Parker* v. *Satchwell*, 18 R. P. C. 307.

As to the claim for ignition: "It was argued that the claim to it as a subject of a patent when applied to dynamite was to claim the application of an old method to a new material, within the principle of the well-known cases of *Losh* v. *Hague* (1 Webs. 202), *Kay* v. *Marshall* (*ante*, p. 190), and *Harwood* v. *G. N. Ry.* (*ante*, p. 204), and therefore rendered the patent void. But in all these and the like cases, the material or thing to which the old method or machinery was applied was itself a well-known thing, which the person using it had a right to use, and to which he had the right to apply, and would apply, without the exercise of any inventive powers, the method or machinery in question; whereas, in the present case, the mode of ignition is only claimed in its application to dynamite, which was a new substance protected by the patent, and which no one had the right to use at all except the patentee, or those acting under his assignment or license.

"In restricting, therefore, the public from firing his new material by this special form of ignition, the patentee was not excluding it from the exercise of any right it had previously possessed, or claiming a monopoly in that which was already public property. Having the right to the monopoly of all modes of using dynamite, and, which is the same thing, of all modes of firing it, of which modes this special ignition was only one, he cannot, I think, by specially claiming that one, be said to have invalidated his patent by excess of claim." [1]

His lordship expressed approval of and followed *Betts* v. *Neilson*.

Note.

This case was followed by *Farwell*, J., in *Parker & Smith v. Satchwell & Co., Ltd.*, 18 R. P. C. 307.

1881. HAYWARD *v.* HAMILTON, Griff. P. C. 121.

Construction—Combination—Ingenuity.

This was an action for infringement of a patent (No. 2014 of 1871) granted to *E. L. Hayward* for an invention entitled "Improvements in pavement lights."

The invention is thus described in the specification:—

"This invention has for its object improvements in pavement lights.

"Pavement lights are commonly used to cover the areas in front of windows in the basements of buildings, and the object of my invention is so to construct them that they may not simply allow the light to pass through, but that they may also direct the light in an inclined direction into the rooms it is desired to light. For this purpose I glaze the frame of the pavement light with glass, which is moulded so as to be of a prism-like form on the under side, resembling to some extent in this respect the glasses which are often inserted into ships' decks to give light below.

[1] The validity of the patent is here based on the fundamental principle enunciated *ante*, p. 19; the reasoning applies to all "subsidiary claims" as defined, *ante*, p. 58.

"The form and arrangement of the prism is, however, entirely altered, in order that the light may be thrown forward in one direction, as already stated. One of the sides of the prism is upright or nearly so, and the other side is inclined to it at such an angle that the light passing through the upper surface may strike this inclined side and be reflected completely, or nearly so, within the prism, and issue from the upright or nearly upright side in the direction required. The sides of the prism may be flat or curved in a horizontal plane.

"I usually form the glasses to glaze pavement lights hexagonal on the upper surface, and fit them into an iron frame with corresponding hexagonal cells, but the glass may be made rectangular or of other form on the upper surface.

"DESCRIPTION OF THE DRAWINGS.

"Fig. 1 is a plan of a pavement light consisting of a cast-iron frame, in which are a number of hexagonal recesses, or the recesses might be square, or of other form.

"In these recesses pieces of glass, marked *a*, *a*, moulded to fit the recesses, and of a peculiar form, are set.

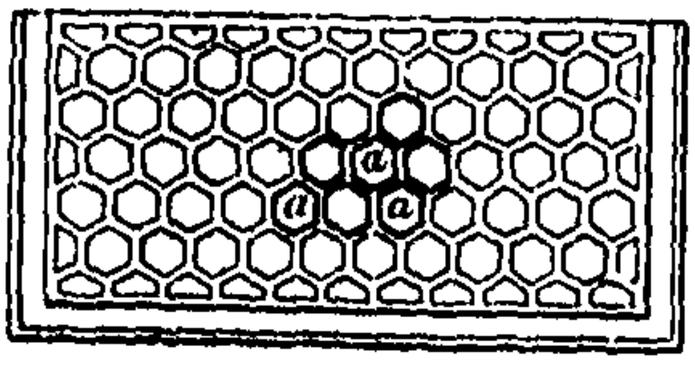


FIG. 1.

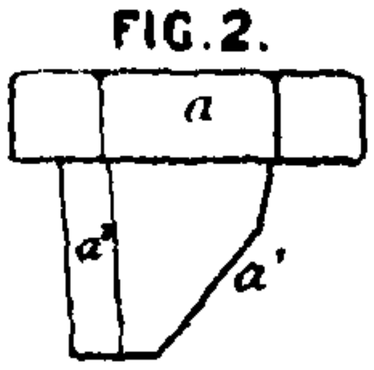


FIG. 2.

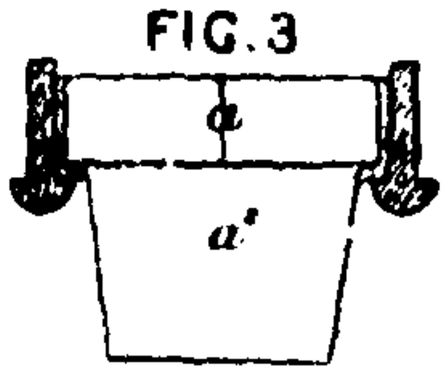


FIG. 3

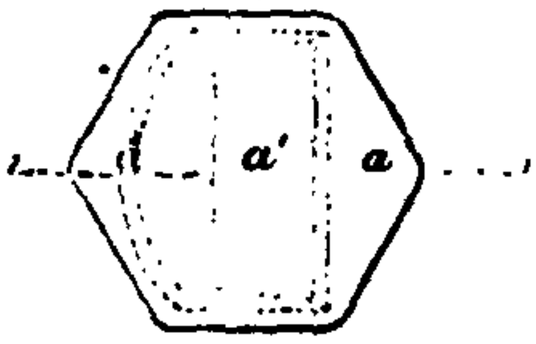


FIG. 4.

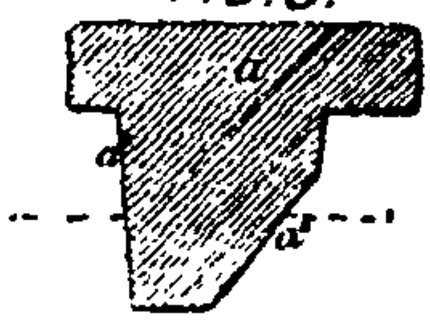


FIG. 5.

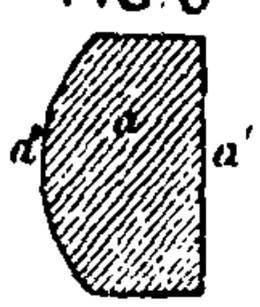


FIG. 6

Diagrams from Hayward's specification (No. 2014 of 1871).

"Fig. 2 is a side view of one of these pieces of glass. Fig. 3 is a front view and Fig. 4 a plan of the same. Fig. 5 is a vertical section (taken on the line 1, 1, Fig. 4), and Fig. 6 is a horizontal section taken on the line 2, 2, of Fig. 5. The iron frame is also shown in section in Fig. 3.

"The inclined face a^1 of the glass *a* intercepts a large proportion of the light descending through the glass, and it reflects the whole or nearly the whole of the light thus falling upon it into the room. The opposite face a^2, which is towards the room, is so formed as not to throw back the light, and so by far the larger proportion of the light falling on the face of the glass and passing through it, is directed into the room, whereas other pavement lights and deck lights allow of an equal distribution of the light in all directions.

"Figs. 7 shew a modification of the form shewn at Figs. 2 to 6, the

principle, however, remaining the same;[1] that is to say, one side of the prism is considerably inclined, and the other, which faces the room, is vertical, or nearly so, by which arrangement the larger proportion of the light is directed into the room.

"The form shewn in Figs. 2 to 6 throws the light more directly forward than the form shewn by Fig. 7."

Fig. 8 shewed a glass which is rectangular on the face, but in other respects was similar to that shown at Figs. 2 to 6.

"What I claim is the construction of pavement lights substantially as described."

It was proved at the trial that at the date of the patent it was not a new thing to use a prism for the purpose of reflecting light. The light entered one side, struck another side at an acute angle, and being reflected completely or nearly so, issued from another side in the direction required. But no application of this principle had previously been made to pavement lights. One anticipation alleged was the use by a skilled optician of prisms in similar manner to receive a beam of light through an opening in a shut of a darkened room.

On an appeal for a new trial.

Held, that on the true construction of the specification the claim was for a combination of old things—the metal frame of a pavement light, the flanges thereon, and the prism to produce the new pavement light—and that there was sufficient ingenuity to support the patent.

Bramwell, L.J. (p. 116): "I think the plaintiff is an inventor. I think he has found out and manufactured and patented a thing, an article, namely, a light directing pavement light. I do not think there is any very great quantity of invention in it; it is not as though a man had sat himself down to consider how he could make a sewing machine, or a grass-pressing machine; it is a much humbler piece of invention than that, and it may possibly be nothing more than that the idea struck him, and immediately the idea struck him he could apply it or carry it into execution by a very obvious apparatus. But still it is an invention, and it is not the less an invention because it required but small inventive powers to enable him to do it. One may take an illustration in this way—the screw propellers. I suppose everybody knew that a screw, used as it was, would act in the way a screw propeller does; but the man who thought of it and applied it to a steamboat, which I suppose anybody could have done if the idea suggested itself to him, would have been called the inventor of a screw propeller or screw-propelling steamboat, as the case may be. It does not depend upon the quantity of the invention. Nor is it in this case the patenting of an idea. He does not say, 'I thought of such and such a thing, and I claim a patent for it;' but he says, 'I have thought of such a thing, and I will show you how to carry it into execution,' and therefore it is not open to any objection such as I have indicated; nor is it open to any objection in

[1] It is unnecessary to reproduce this modification

regard to the constituent parts being old. No doubt the prism, as the plaintiff uses it, is old; it is as old as the world that a prism used as the plaintiff uses it will direct light in the way his prism does, and the other part of his invention is not new, that is to say, the particular mode in which he makes his pavement light, but the combination is a novelty.[1]

"The thing was never practised before, and undoubtedly a combination of two old things may be made the subject of a patent. It seems to me that the plaintiff really is an inventor—he has found out something. He makes an article that was not made before. This particular case may be, no doubt, upon the verge; but one cannot help making this remark, that it is very strange if it is no invention that it has never been done before. Why has it never been done before? Why, because nobody else found it out, which I take to be equivalent to inventing, and I think, therefore, that his patent is sustainable."[2]

Brett, L.J. (p. 121): "In all previous cases it had been taken for granted that if the thing were new and useful, there must have been invention in order to arrive at a thing that can be so described, and I should say that in 999 cases out of 1000 that must be so. I say, if the thing is new and useful, it is impossible to suppose there is not sufficient to make an invention, but I do not think, as a matter of law, that could be predicated as an absolute rule of law.[3] . . . I think this machine is invented by the plaintiff and claimed by him as a new machine combined of old parts, or apparatus, or commercial article, whichever you please to call it, is new, that it is claimed as new, and therefore it is the subject-matter of a patent."[4]

Notes.

This case has frequently been referred to as an example of the smallness of the amount of ingenuity necessary to support a patent (*e.g. Brereton* v. *Richardson*, 1 R. P. C. 168), and to shew that although very little may do, still there must be ingenuity involved: *Cotton*, L.J., in *American Braided Wire Co.* v. *Thomson*, 5 R. P. C. 123; *Lopes*, L.J., in *Blakey* v. *Latham*, 6 R. P. C. 189; *Cotton*, L.J., in *Williams* v. *Nye*, 7 R. P. C. 67; and *Lindley*, L.J., in *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 524.

[The main feature distinguishing this pavement light from the old ones used in ships' decks consisted in the application of the principle of internal reflection of light. In the diagram here given AB represents a section of a surface common to two media, both of which are transparent. One of these (marked D) is the denser, and the other (marked R) is the rarer; *e.g.* D might represent glass or water, and R air. If a ray of light from the rarer

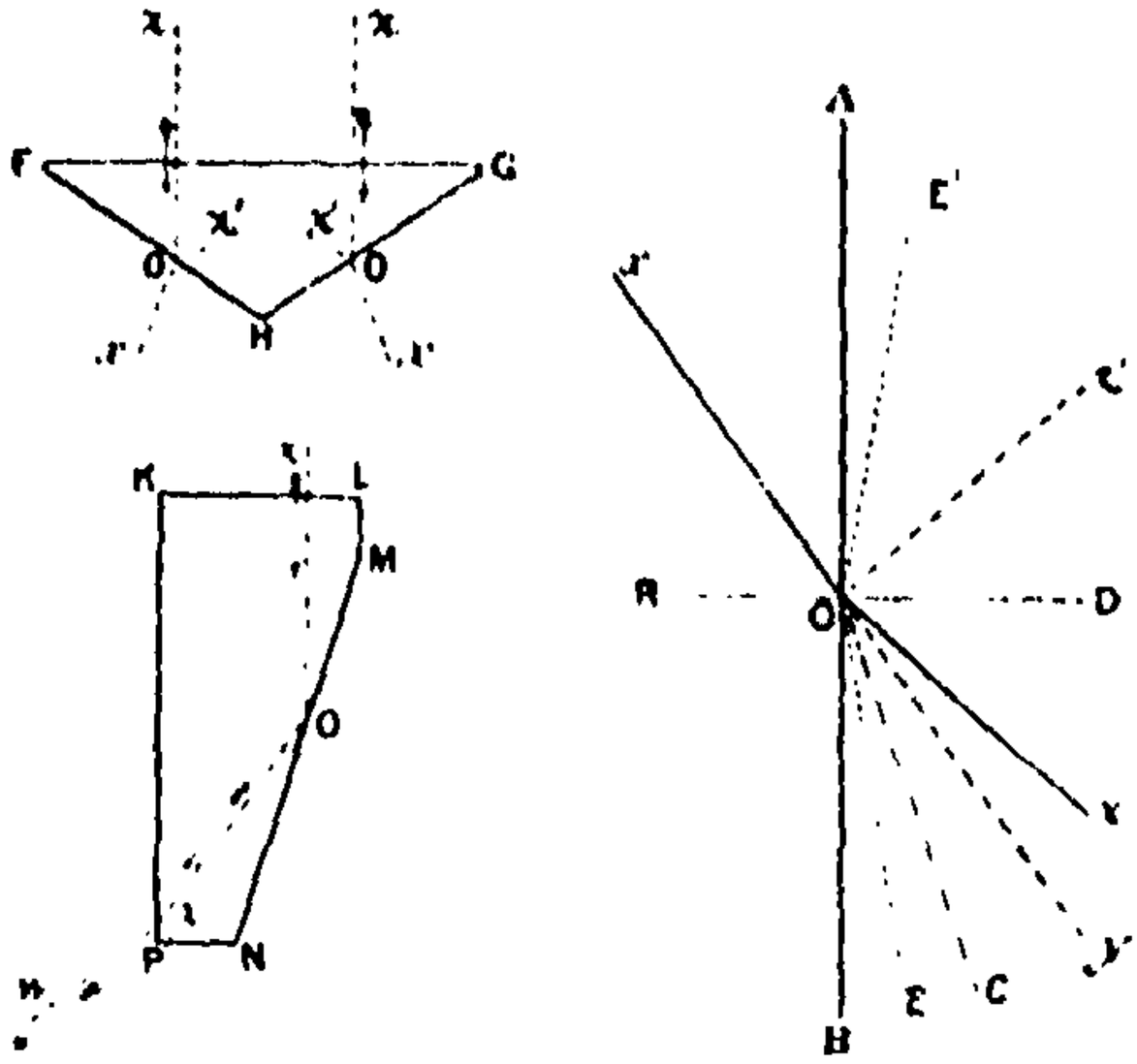
[1] This paragraph was quoted and followed by *Byrne*, J., in *Reason Mfg. Co., Ltd.* v. *F. F. Moy, Ltd.*, 19 R. P. C. 416.

[2] This second paragraph was followed by *O'Brien*, C.J., in *Pirrie* v. *York St. Flax Co.*, 11 R. P. C. 437.

[3] Quoted by *FitzGibbon*, L.J. (*ibid.*, p. 450).

[4] Quoted and followed by *Kennedy*, J., in *Ducketts* v. *Whitehead*, 12 R. P. C. 191.

medium travel along xO it will not continue along in the same direction Oy, but be bent from the common surface AB, say along Os. The amount of this change of direction depends on the coefficient of refraction of one medium as regards the other, that is, it depends on the relative velocities of light in the two media. Conversely, a ray of light travelling along sO will continue in part along Ox, and part reflected along Os^1, Os^1 and Oz making equal angles with AB. But a ray of light falling nearly along AO, in the rarer medium, will be bent along OC; no light reaching O from the rarer medium can pass along OE, that is, in the angle BOC. This angle is the "*critical angle*" *for the* two media. Conversely all light-rays reaching O from the angle BOC, as, for instance, along EO, are altogether reflected along OE^1, rays along E^1O being totally reflected along OE. The eye placed at E cannot therefore see through the apparently transparent surface OA, but that surface appears as a reflector. For example, by placing the eye slightly below the level of the surface of water in a tumbler, it will appear like the surface of mercury.



Sketches of refracting and reflecting prisms. F G H, section of deck prism. K M N, section of reflecting prism.

In the older pavement lights the prisms were shaped somewhat like FGH, FG being the surface; the light was distributed by refraction, but not reflection, rays entering along zO being refracted into the room below along Ox, the portion reflected along Oz^1 being useless. In the sketch here given, KMN, a ray along zO is totally reflected along Oz^1 and emerges into the room (after refraction) along z^1w. *Hayward's* prisms are so shaped that the sides marked a^1 act as perfect reflectors to all light-waves falling on them through the glass and within the critical angle for glass and air. But if the rays be outside that angle the greater part will still be reflected at the surfaces a^1.]

1882. UNITED TELEPHONE CO. *v.* HARRISON & CO., 21 Ch. D. 720.

Disconformity—Publication.

This was an action to restrain infringement of two patents, *Edison's* (No. 2909 of 1887), for "improvements in instruments for controlling by sound the transmission of electric currents, and the reproduction of

corresponding sounds at a distance," and the other, *Brown's* (No. 4765 of 1876), for "improvements in electro-telephony."

The former described in outline the invention in the provisional specification. Before drafting the complete *Edison* discovered the phonograph. The complete specification as amended had three claims: one for the mica diaphragm, the second for the combination of that diaphragm with "electric tension regulators," and the third for "the method herein specified of recording the undulations of the diaphragm or yielding material, and the reproduction of sound by such material acting upon a diaphragm to communicate to the same, vibrations similar to the original ones, substantially as set forth."

The objection raised to this specification was that of disconformity. The provisional specification described electrical arrangements, whereas the phonograph as claimed in the third claim had nothing to say to electricity.

An objection raised to *Brown's* patent was that it had been previously known and published in England under the following circumstances. A description of *Reis's* telephone was published in a German periodical in Berlin in 1862. This work was in the library of the Institute of Civil Engineers for seventeen or eighteen years before the date of the patent. This library was open to all members, of whom there were 1000 in 1864, and at a subsequent time 3000. The publication was entered in the catalogue only under the head "Journals." A witness proved that he saw the journal in question in 1876 in the Patent Office Library, and from his knowledge of technical terms and the drawings could (although ignorant of German) understand the invention therein described.

Held, (1) that the *Edison* patent was invalid, the phonograph not having been disclosed in the provisional specification; and (2) that, the description of *Reis's* telephone was "published" in England under the above circumstances.

Notes.

This case has been frequently referred to as an example of a patent being invalid on account of "disconformity": *Horrocks* v. *Stubbs*, 3 R. P. C. 233; *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248; *Pneumatic Tyre Co.* v. *E. London Rubber Co.*, 14 R. P. C. 98. It was quoted as illustrating the correct mode of testing disconformity, namely, to read the complete first, and then the provisional, to find if invention is there: *Siddell* v. *Vickers*, 5 R. P. C. 98, 99; and *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 260.

It is also an example of the rule that the question of "publication" is an inference from the facts proved in each case: *Harris* v. *Rothwell*, 3 R. P. C. 387. Publication to one person in this case being sufficient: *Lindley*, L.J., and *Lopes*, L.J., in same case on appeal, 4 R. P. C. 231, 233.

1882. Otto *v.* Linford, 46 L. T. 35.

Principle—Construction—Inventive Ingenuity—Combination—Sufficiency—Paper Anticipation.

In 1876 a patent (No. 2081) was granted to *C. D. Abel* for an invention (communicated from Dr. *Otto* abroad) for improvements in gas motor-engines.

The specification was as follows [1]: —

"In gas motor-engines as at present constructed, an explosive mixture of combustible gas and air is introduced into the engine cylinder, where it is ignited, resulting in a sudden expansion of the gases and development of heat, a great portion of which is lost by absorption unless special provisions are made for allowing the gases to expand very rapidly.

"According to the present invention combustible mixture of gas or vapour and air is introduced into the cylinder together with air or other gas that may or may not support combustion, in such a manner that the particles of the combustible gas are more or less dispersed in an isolated condition in the air or other gas, so that on ignition instead of an explosion ensuing, the flame will be communicated gradually from one combustible particle to another, thereby effecting a gradual development of heat, and a corresponding gradual expansion of the gases, which will enable the motive power so produced to be utilized in the most effective manner. The mode of using the gases and the arrangement of the engine may be variously modified in carrying out this invention.

"Thus according to one arrangement the gases are introduced into the engine cylinder at atmospheric pressure. The cylinder is for this purpose provided with a slide having suitable ports for the admission of air and of an intimate mixture of combustible gas or vapour and air, and the movement of the slide is so regulated by means of a cam or eccentric on the engine shaft that during the first part of the stroke of the piston air alone enters the cylinder, while during a succeeding portion of the stroke the mixture of gas and air is introduced behind the air. This mixture in entering the cylinder will become more or less dispersed in the air previously introduced, the particles of the mixture being situated nearest together at the points where they enter the cylinder, and becoming gradually more dispersed as they mix with the air in front. A communication being now established by the slide between a small external gas-flame and the contents of the cylinder at the point where the combustible mixture is most dense, this ignites and the combustion of the whole charge takes place gradually, the mixture burning with gradually decreasing rapidity as the flame extends to those particles that are more diffused among the air. The gradual expansion of the gases thus produced causes the piston to complete its stroke,

[1] *Only so much is given as is required to understand the points at issue.* This abstract is made with the aid of original documents kindly furnished by Messrs *Faithfull & Owen.*

and on the return stroke, which may be effected either by the momentum of the fly-wheel or by the introduction of a similar charge at the other end of the cylinder, the products of combustion are expelled through a valve, after which the above-described operation is repeated for the next stroke.

"According to another arrangement the combustible gas and air or other gas are employed in a compressed state in the engine. For this purpose the engine may operate either as above described, the gas and air being simply compressed to the requisite degree before being introduced into the cylinder, or by preference the compression is effected in the cylinder itself in the following manner:—The cylinder is constructed of greater length than the stroke of the piston, so that there is a space beyond the latter when it is at end-stroke. Assuming this space to be filled with a portion of the gaseous products of combustion resulting from the last stroke at atmospheric pressure, the piston in performing one part of its stroke draws in atmospheric air, after which it will draw in the combustible mixture during the remainder of its stroke. The cylinder will then be filled with three strata of different gases, more or less intermingled at their junction, namely, a stratum of products of combustion next the piston, then a stratum of air, and lastly the combustible mixture. The piston then performs its return stroke, whereby the gaseous charge is compressed into the before-mentioned space at the end of the cylinder. The gases will in this condition still retain their stratified position, the particles of combustible mixture being diffused to a certain extent through the other strata. The charge is now ignited and burns gradually, and with the same effect as described with reference to the first arrangement. On the return stroke the products of combustion are expelled with the exception of the quantity contained in the space at the end of the cylinder.

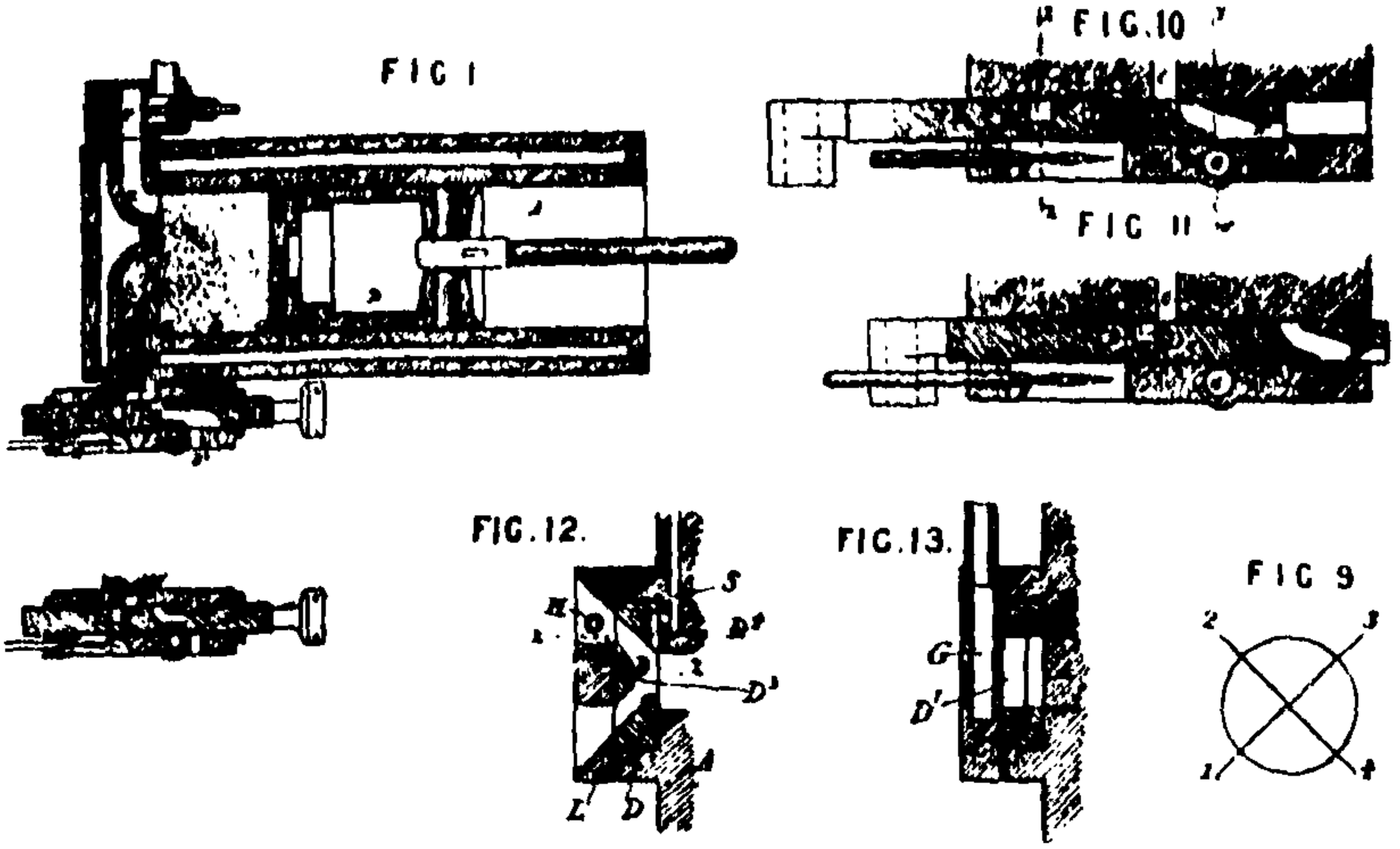
"The regulation of the power of the engines operating according to the above-described invention is effected simply by admitting more or less of the combustible gas for each charge, this being done by regulating the time of opening and closing of an admission valve on the gas supply pipe. The motion of this valve is regulated by a rotating cam capable of being adjusted longitudinally on its shaft by any suitable known arrangement of governor.

"DESCRIPTION OF THE DRAWINGS.

"In the accompanying drawings Fig. 1 shows a longitudinal section of an engine cylinder, A, having a piston, B, connected to a fly-wheel shaft, an inlet passage, C, controlled by the slide D,[1] and a passage, E, for the emission of the products of combustion closed by a valve, F. When the piston is at the end of its in-stroke, its inner surface being at *a*, the slide D is in such a position that, as the piston begins it out-stroke, air entering by the aperture D^2 passes by D and C into the cylinder. When the piston has reached the

[1] In the drawing here given, Fig. 1 is shown as in the amended drawing filed with the original by order of the Master of the Rolls on the 6th of March, 1883. The original slide as drawn was unworkable, and is shown underneath Fig. 1. The error is an obvious one.

point *b* the slide has moved so as to admit combustible gas or vapour from the passage G to mix with the entering air until the piston reaches the point *c*, when the slide has moved back to the position shown, cutting off the gas and air supply and about to establish a communication between a small gas-flame, H, and the charge in the cylinder. The combustible gaseous mixture

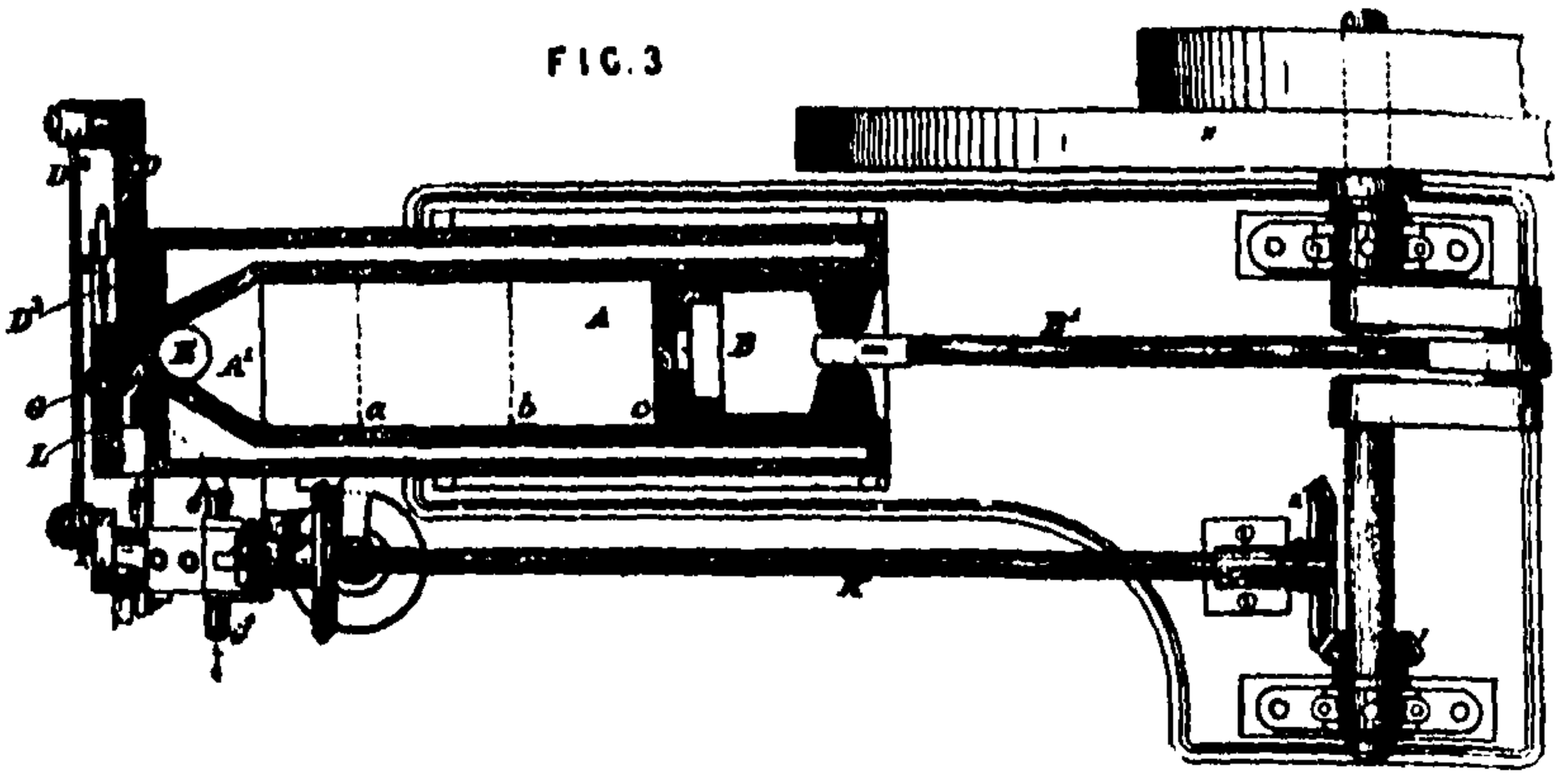


From Abel's specification (No. 2081 of 1870).

entering the cylinder behind the air previously admitted, becomes partially mixed therewith, being thus dispersed more and more towards the piston, as indicated by the dots in the drawing, which represent the combustible particles. On the ignition of the charge the combustion at and near the port C is comparatively rapid, but as the ignition extends towards the front of the charge it proceeds more and more slowly, owing to the greater dispersion of the combustible particles. The gradually increasing pressure thus produced by the gradual expansion of the products of combustion, and also of the surrounding fluid, due to the heat evolved, causes the piston to complete its out-stroke, imparting motion to the fly-wheel, the momentum of which causes the piston to perform its return stroke, expelling the products of combustion through the valve F, and also causing the piston to commence its next out-stroke and draw in a fresh charge of air and gas. In order to vary the power of the engine the charge of gas or the proportion of the air and gas or vapour may be varied, and such variations may be controlled by means of a governor, as will be presently described. . . . Fig. 3 is a sectional plan. . . . This engine being single acting, the cylinder A is open in front, at its closed back end it has, beyond the stroke of the piston B, a space, A^1, preferably of conical form, tapering to the inlet port C, and also communicating by a passage, E, with a valve, F (Fig. 3), for discharging the products of combustion. The piston B is connected by the rod B^1 to the crank shaft I, on which is a bevel pinion, I^1, in gear with a

bevel wheel, K^1, on a shaft, K. On the other end of this shaft is a crank, K^2, connected by a link, D^2, to the slide D, which governs the admission of gas and air to the cylinder. The gearing I^1, K^1, is proportioned as 2 to 1, so that the crank K^2 makes one revolution, and consequently the slide makes one to-and-fro motion while the piston makes two double strokes. When the piston is at the point *a*, the end of its in-stroke, and about to be moved outwards by the momentum of the fly-wheel M, then the slide D (the construction of which will be hereafter explained) is in a position to admit air through the passage D^1 and port C into the cylinder until the piston reaches

FIG. 3



From Abel's specification (No. 2081 of 1876).

the point *b*, when the slide attains such a position that combustible gas is drawn in together with air until the piston reaches the end of its out-stroke, as shown in Fig. 3. As before explained with reference to Fig. 1, the combustible mixture, in partially mingling with the air previously introduced, is more and more dispersed towards the front.

"The slide having now closed the inlet port C, the piston is caused by the momentum of the fly-wheel to perform its in-stroke, compressing the charge of gas and air into the space A^1 behind *a*, the combustible particles remaining in nearly the same unequally distributed condition as before compression. The slide now moves so as to admit the gas-flame H, igniting the charge, and the combustion produces a gradual development of heat and expansion of the gases, whereby the piston is caused to perform its out-stroke, imparting fresh momentum to the fly-wheel. This momentum again causes the piston to perform its in-stroke, expelling the products of combustion through the valve F, which is opened by a lever, F^1, acted on by a cam, F^3, on the shaft K. As the piston only moves back to *a*, a portion of the products of combustion remaining in the cylinder will partially mix with the air drawn in at the next out-stroke, but as the combustible mixture afterwards introduced can burn independently of the gas surrounding its particles, the presence of these products of previous combustion will merely aid in

preventing too rapid or explosive combustion and in acting as a cushion between the combustible charge and the piston. It will be evident that if the space A^1, or a separate chamber such as an air-vessel communicating therewith, be made sufficiently large to contain the whole quantity of incombustible fluid requisite for each charge, no fresh charge of air need be drawn in at the commencement of the stroke. As before stated, the power of the engine may be regulated by regulating the quantity of combustible gas introduced at each charge."

The action of the governor and the gas-slide was next described. The construction and mode of operating the slide D for admission of air and gas were described as follows:—

"Figs. 10 and 11 represent longitudinal sections on the line *z*, *z*, of Fig. 12 of the slide D and its casing, shewing the slide in two different positions. Figs. 12 and 13 are transverse sections respectively on line X, X, and Y, Y, of Fig. 10. Fig. 9 represents diagrammatically the path of the crank K^2, in which the part 1 to 2 represents the motion of the slide during the time that the piston in its out-stroke is drawing in the gaseous charge, the part from 2 to 3 the motion during the compression of the charge by the return stroke of the piston, 3 to 4 the motion during the working out-stroke of the piston, and 4 to 1 the motion during the expulsion of the products of combustion by the last in-stroke of the piston. Fig. 10 shows, first, the position of the slide at the point 1 of the crank path when the air-passage D^1 is just about to communicate with the port C; and, secondly, its position at point 2, when the gas and air supply is just cut off. Although in the first position the gas-passage G is about to open, the gas-slide P prevents the admission of combustible gas until the requisite charge of air is first introduced. Fig. 11 shows, firstly, the position of the slide at the point 3 when the flame of the gas-jet H is about to be communicated to the gaseous charge by a small quantity of ignited gas in the passage D^3; and, secondly, its position at the point 4 when the escape-valve F is about to be opened."

The mode of ignition was next given in detail.

The claims were:—

"First. Admitting to the cylinder a mixture of combustible gas or vapour with air separate from a charge of air or incombustible gas so that the development of heat and the expansion or increase of pressure produced by the combustion are rendered gradual, substantially as and for the purposes herein set forth.

"Second. Compressing by one in-stroke of the piston a charge of combustible and incombustible fluid drawn into the cylinder by its previous out-stroke, so that the compressed charge when ignited propels the piston during the next out-stroke, and the products of combustion are expelled by the next in-stroke of the piston, substantially as herein described."

The third related to the governor, and the fourth the construction of the engine as shown in the drawings.

At the trial a number of alleged anticipations were set up. These

showed that engines very like the plaintiff's had been constructed which admitted air and gas, but none of them admitted air alone at first to serve as a "cushion" to moderate the effect of the explosion.

The chief grounds on which the patent was attacked were:—

That the first two claims were for a principle and not for new machines.

That no directions were given as to the relative proportions of gas and air necessary for a successful result.

That the first engine (at atmospheric pressure) was not fully described, no eccentric on escape valve and no mode of ignition shown.

That the diagrams were misleading, inasmuch as the slide, if made as drawn,[1] would not do what was described at all.

No evidence was given to show that any competent workman failed to make an engine from the description. It was proved that a skilled workman would put in the eccentrics, and easily alter the hole for ignition in No. 1, and would cut away the slides to do what was required. Previous engines without the cushion of air had been failures.

The patent was upheld.

On appeal it was held that Claim 1 was for a mode of carrying out the principle enunciated, Claim 2 was for a combination of the process of compression, which was old, with the introduction of the cushion of air, and that the objections all failed.

Neilson v. *Harford* (*ante*, p. 187) was followed as to "invention."

Jessel, M.R. (at p. 39), defined "benevolent interpretation" as follows:—"When the judges are convinced that there is a genuine great and important invention, which, as in some cases, one might almost say, produces a revolution in a given art or manufacture, the judges are not to be astute to find defects in specifications."[2]

As regards subject-matter here: "If you have a new principle, or a new idea, as regards any art or manufacture, and then show a mode of carrying that into practice, you may patent that; though you could not patent the idea alone, and very likely could not patent the machine alone, because the machine alone would not be new."[3] The learned judge illustrated this by referring to the facts in the case of the hot blast in iron manufacture [see *Neilson* v. *Harford*, *ante*, p. 187], and continued: "Now that is a much stronger illustration than this" (*i.e.* the gas-engine) "of the validity of a patent as regards the subject-matter. For here is a complicated machine. Nobody says that this identical machine has ever been seen before; but what they do say, and I have no doubt is true, is that, given the state of knowledge as regards mechanics, you do not want much

[1] See note, *ante*, p. 284.

[2] This passage was quoted by *FitzGibbon*, L.J., in *Pirrie* v. *York St.*, &c., 11 R. P. C. 450. It was followed in the above judgment by some remarks to the effect that there ought to be a bias in construction in favour of meritorious inventions; a view which has never been judicially supported, and (when quoted in argument) has been expressly dissented from by Lord *Halsbury*, L.C., in *Cassel Gold Extracting Co.* v. *Cyanide*, &c., 12 R. P. C. 242.

[3] Quoted in *Pirrie* v. *York St.*, &c., 11 R. P. C. 450.

invention, when you are told what the idea is, to find out this machine and carry it out. That did not require invention at all. In the case of the hot blast the man did not pretend to invent anything; he said a machine of any shape in which you can heat air is sufficient. Mr. *Otto* does allege he has invented a machine. It appears that he did, although a machine which *per se* was not of sufficient novelty to support Letters Patent. It comes, therefore, to this, that we have a principle and the mode of carrying it out, and I will assume for this purpose sufficiently described; and that is a good subject for a patent." [1]

Brett, L.J. (at p. 44): "What is the rule when you rely upon a description in writing as being an anticipation? It seems to me that it is not sufficient to say that if a machine were made by a person who had read that writing, something in that machine would, if it had been really a machine used, have been by reason of that user an anticipation of the plaintiff's patent. You must go further where you allege that the anticipation is in writing, and in writing only, and you must show that a person—I mean a person conversant with such matters—reading that writing would find in the writing alone a reasonably clear description of the plaintiff's invention. . . . He has to find a description of his own invention on the face of that writing, construing that writing reasonably as describing an invention." [2]

Notes.

Although each case must be dealt with on its own merits (*Haslam* v. *Hall*, 5 R. P. C. 11), yet *Otto* v. *Linford* has been referred to as a precedent as illustrating and supporting the following propositions:—Paper anticipations must be examined critically (*Ellington* v. *Clark*, 5 R. P. C. 141); very little utility will support a subsidiary claim (*Ehrlich* v. *Ihlee* (per *Bowen*, L.J.), 5 R. P. C. 455); there may be invention in applying old things to a new use (*Gadd* v. *Mayor of Manchester*, 9 R. P. C. 264); a competent workman must be able to make the invention from the specification (*Moser* v. *Marsden* (per *Smith*, L.J.), 10 R. P. C. 363).

1884. MOORE *v.* BENNETT, 1 R. P. C. 142.

Construction—Combination—Sufficiency of Claim.

A patent (No. 3394 of 1877) was granted to *A. W. Moore* for "improvements in machines for cutting and trimming the hairs or bristles of brushes."

[1] The whole of this paragraph was quoted *in extenso* and followed by *Stirling*, L.J., in *Ashworth* v. *Eng. Card Clothing Co., Ltd.*, 19 R. P. C. 471.

[2] The rule here laid down has been quoted and acted upon in *Gadd* v. *Mayor of Manchester* (per *Smith*, L.J.), 9 R. P. C. 533; *Moser* v. *Marsden*, 10 R. P. C. 212; *Cassel Gold Extracting Co.* v. *Cyanide, &c.*, 12 R. P. C. 256; *Shrewsbury & Talbot Cab Co.* v. *Sterckx*, 13 R. P. C. 53; *Pneumatic Tyre Co.* v. *Leicester, &c.*, 16 R. P. C. 57.

The complete specification was as follows [1]:—

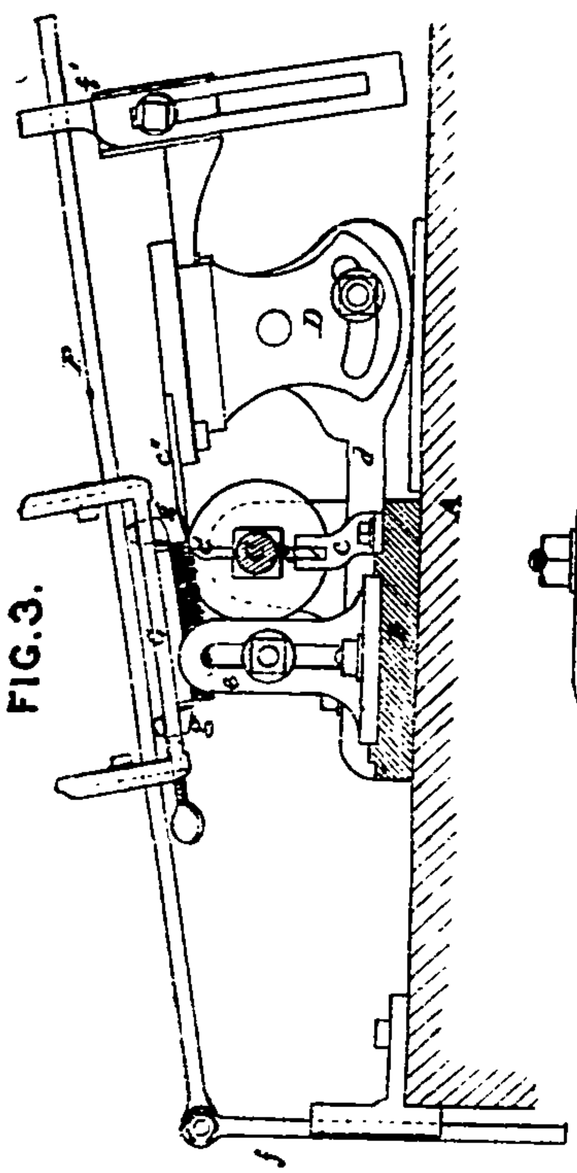
"My said invention consists in improvements in machines for cutting and trimming the hairs or bristles of brushes, whereby such operation is effected in a more expeditious, perfect, and economical manner than is the case when it is performed by hand, or by means of the apparatus at present in use.

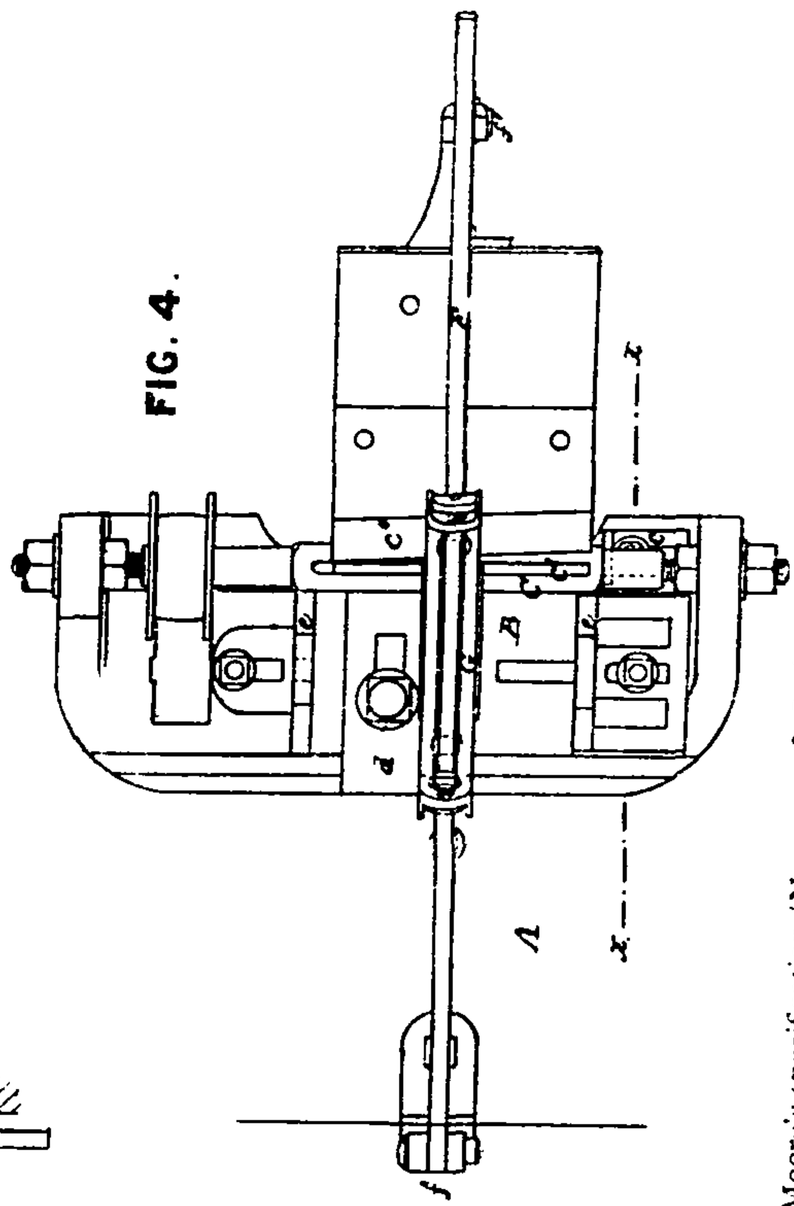
"The apparatus is, by preference, mounted on a table (*A*) of any desired form, and consists of a bed-plate (*B*) provided with bearings (*b*), having mounted therein an axle or spindle (*C*), furnished at one end with a drum or band-wheel. Through the centre of the said axle or spindle is a longitudinal slot for the reception of a metal plate, which is passed through and fixed therein in such a manner that the longitudinal edges thereof, which are shaped and formed for the purposes of cutting, project in a corresponding manner on each side of the axle. A horizontal cutting-plate (*c''*) is so arranged that on the before-described axle being caused to revolve the cutting-edges of the plate held therein will alternately come into close proximity to the cutting-edge of the said horizontal plate, the respective plates being so arranged, and the cutting-edges thereof bevelled in such a manner, that the said edges first come into close proximity only at one side, and then gradually to the other side as the axle revolves. The said horizontal cutting-plate is mounted by means of a centre pin and quadrant, so that it can be tilted as the cutting-edge wears away on a support, so constructed that the base thereof can be moved on the bed-plate of the machine and secured as required. Above the cutting-plates are provided suitable supports or guides (*E*) for the stock or frame of the brush, such supports or guides being so connected with uprights (*e*) having vertical slots therein that they may be raised, or lowered, or set at any angle, and secured in the desired position by means of screws and nuts. The said uprights may also be moved independently in a lateral groove formed in the bed-plate, in order to accommodate the supports or guides to any variation in the size of the stock or frame of the brush under treatment."

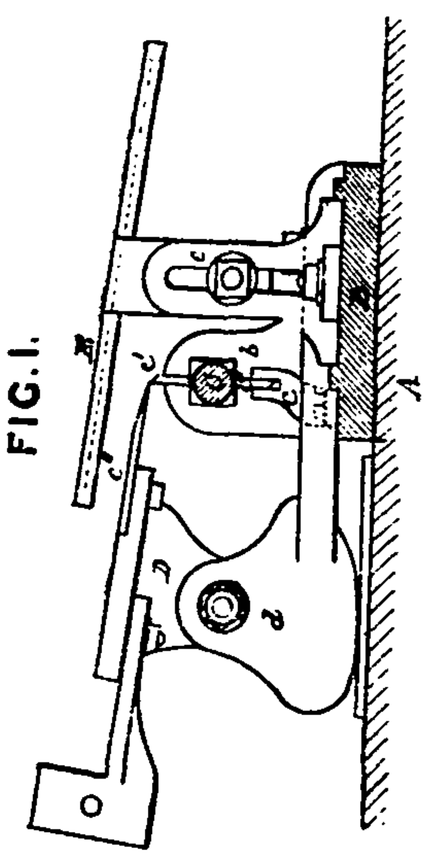
The action of the machine was then described as arranged for cutting straight brushes.

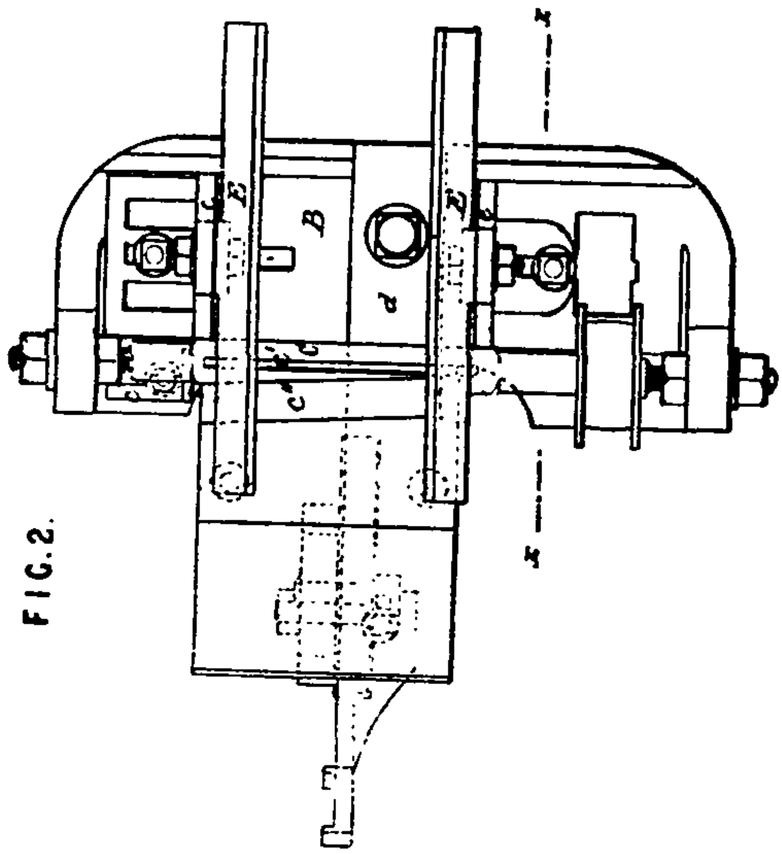
"When it is desired to give a rounded surface to the hairs or bristles of the brush, the above-described supports or guides are removed, and above the plate, and at right angles to the cutting-edges thereof, is placed an inclined rod (*F*), the lower end of which is hinged or pivoted to a vertical slotted bar (*f*), which is connected with a support attached to the front of

[1] To facilitate reference, the letters referring to the drawings are inserted in this part of the specification. Fig. 2 is a plan of the apparatus arranged for flat surfaces. Fig. 1 is a side view through *x*,*x* of Fig. 2. Figs. 3 and 4 show the apparatus for rounded surfaces, Fig. 3 being a side view through the line *x*,*x* of Fig. 4. A is the table, B bed-plate, *b* bearings; *C* the axle, *c* a stop to prevent it moving when not in use, *c'* the cutter-plate therein, and *c''* the horizontal cutter-plate. *D* the quadrant, and *d* the support. *E*,*E* are guides for the stock of the brush, which are connected with the uprights *e*,*e*. In Figs. 3 and 4 *F* is the inclined rod, hinged to bar *f*, and the other end resting on the bar *f'*. *G* is the frame for holding the brush, and *g* the holders or clutches.









Diagrams from Moore's specification (No. 3394 of 1877).

the table by means of a screw-pin and nut in such a manner that the slotted bar, and consequently the lower end of the rod, can be raised or lowered as may be desired. The upper end of the inclined rod rests in a recess in the upper part of the slotted bar (*f'*) connected with the back part of the horizontal plate, and which bar may be raised or lowered in the same manner as that already described. Upon the above-described rod is loosely placed a ring or collar, to the lower part of which is attached a frame, or the said rod may be passed through slots in bars attached to the frame, the position of the rod in such slots being regulated by means of screws or other suitable contrivances. The frame is provided on the under surface with holders or clutches (*g*) for the purpose of securing the stock or frame of the brushes, the distance between such holders or clutches being made adjustable by means of nuts and screws, for the purpose of accommodating the same to any variation in the size of brush under treatment. On the brush having been secured in the manner above described, with the hairs or bristles downwards, it is placed immediately above the cutting-edges of the plates, the machine is set in action, and by oscillating the frame on the inclined rod, and moving it up and down the same, the desired form will be given to the surface of the hairs or bristles of the brush.

"When it is desired to give a concave, convex, or corrugated surface to the brush, the inclined rod is bent or formed accordingly, as will be well understood."

The drawings were then described as in the note above (*ante*, p. 290).

The claim was for—

"The combinations and arrangements of parts and mechanism, substantially as and for the purposes hereinbefore described and set forth."

In an action for infringement it was held at the trial that the specification sufficiently, by the claim, pointed out the nature of the invention.

On appeal,

Held, by the Court of Appeal, that the claim was for the combination of the entire machine, but that the patent was invalid because the novel parts in the invention were not pointed out.

On appeal to the House of Lords,

Held, that the patent was valid; the claim being for the whole combination, it was unnecessary to specify the novel parts more particularly, and that the claim did not include the use of cutter-plates without the guiding-rods.[1]

1885. GANDY *v.* REDDAWAY, 2 R. P. C. 50.

Claim too large—Insufficiency.

A patent was granted to *M. Gandy* (No. 1809 of 1877) for "improvements in and appertaining to belts or bands for driving machinery."

The specification stated that the object of the invention was "to

[1] The essence of the invention consisted of the scissors-like action of the cutting-plates; this appeared to be the basis of the decision: *Useful Patents Co.* v. *Rylands*, 2 R. P. C. 264.

manufacture belts or bands for driving machinery of cotton canvas that will not give out by stretching, and which are not detrimentally affected by variations in the atmosphere, and at the same time are sufficiently pliable to allow of their running round small pulleys without cracking." The material to be used was described as "cotton canvas or duck, 'hard woven,' either in widths to suit the size of such belts or bands without folding, or in wider widths folded up so as to form the necessary thicknesses, &c." The size of pulley or machinery was mentioned.

The claim was for "constructing belts or bands for driving machinery of cotton or canvas duck, 'woven hard,' and stitched and saturated or soaked with oil such as linseed oil, or any combination thereof, as hereinbefore described or set forth, or any modification thereof."

It was proved at the trial for infringement that there were three kinds of cotton canvas, "woven hard," "medium," and "soft;" that there were subdivisions of each of these classes known to the trade; that out of the ten subdivisions of the "woven hard" class only No. 2 would do in practice. The inventor had used and discovered that No. 2 would do. No. 1 would crack on small pulleys, and Nos. 8, 9, and 10 would not be strong enough for large machinery. Although several numbers might be used for several kinds of belting, No. 2 was the only one that would suit for all sizes of belting.

Held, by the Court of Appeal, that the real invention was not described, and that the patent was therefore invalid.

1887. EDISON & SWAN UNITED ELECTRIC LIGHT CO. *v.* WOODHOUSE & RAWSON (1st Action), 4 R. P. C. 79.

Pioneer Invention—Construction of Claims.

A patent was granted (No. 4576 of 1879) to *T. A. Edison* for "improvements in electric lamps and in the method of manufacturing the same."

The complete specification[1] commenced with a short statement of the object and nature of the invention.

The object was the production of incandescent electric lamps having a "high resistance so as to allow of the practical subdivision of the electric light."

The invention was described as consisting of (1) "a light-giving body of carbon wire or sheets coiled or arranged" so as to offer "great resistance" to the current and present but a slight surface from which radiation could take place; (2) the placing of such light-giving body in a nearly perfect vacuum to preserve the conductor; (3) the current is conducted into the vacuum bulb through platina wires sealed into the glass; and (4) the method of manufacturing carbon conductors for the above purpose,

[1] The specification is here summarized in parts, sufficient being given *verbatim* to appreciate the decision, and that in the action of *Edison, &c.* v. *Holland* (*post*, p. 317).

and the manner of securing perfect contact between it and the leading wires.

The specification continued with a statement of what had been previously attempted in the same direction. Rods of carbon had been used of from one to four ohms' resistance, in glass vessels with a gas incapable of combining with carbon, the glass being cemented to a metallic base, and the rods clamped to the leading wires. The necessity for high resistance in the lamp compared to the rest of the circuit was pointed out, necessitating with such rods large conductors and consequent impossibility of keeping the globes air-tight. When a non-combining gas was used in the globe at atmospheric pressure, "air-washing" or attrition was produced by the passage of gas over the heated carbon.

The specification continued:—

"I have reversed this practice. I have discovered that even a cotton thread properly carbonized and placed in a sealed glass bulb exhausted to one-millionth of an atmosphere offers from one hundred to five hundred ohms' resistance to the passage of the current, and that it is absolutely stable at very high temperatures; that if the thread be coiled as a spiral and carbonized, or if any fibrous vegetable substance which will leave a carbon residue after heating in a closed chamber be so coiled, that as much as two thousand ohms' resistance may be obtained without presenting a radiating surface greater than three-sixteenths of an inch; that if such fibrous material be rubbed with a plastic compound composed of lamp-black and tar, its resistance may be made high or low according to the amount of lamp-black placed upon it. I have also discovered that carbon filaments may be made by a combination of tar and lamp-black, the latter being previously ignited in a closed crucible for several hours and afterwards moistened and kneaded until it assumes the consistency of thick putty. Small pieces of this material may be rolled out in the form of wire as small as seven one-thousandths ($\frac{7}{1000}$) of an inch in diameter, and over a foot in length, and the same may be coated with a non-conducting non-carbonizable substance and wound on a bobbin, or as a spiral, and the tar carbonized in a closed chamber by subjecting it to high heat, the spiral after carbonization retaining its form. I sometimes roll a thread within the compound of lamp-black and tar, so as to allow of greater convenience in handling the same, and the flexible carbon filament is not so liable to crack by its own weight in the act of winding.

"To increase the resistance of the compound of lamp-black and tar, I sometimes work into it a volatile powder, such as powdered camphor, oxide zinc, but to make the light insensitive to variations of the current a considerable mass of matter should be used, in order that the specific heat of the lamp may be increased so that it takes a long time to reach its full brilliancy and also to die away slowly.

"To do this it is better to have the carbon as homogeneous as possible, and obtain the requisite resistance by employing a filament several inches lon and winding the same in a spiral form, so that the external radiating

surface shall be small. All these forms are fragile, and cannot be clamped to the leading wires with sufficient force to ensure good contact and prevent heating. I have discovered that if platinum wires are used and the plastic lamp-black and tar material be molded around it, that in the act of carbonization there is an intimate union by combination and by pressure between the carbon and platina, and nearly perfect contact is obtained without the necessity of clamps, hence the light-giving body, and the platina wires are connected and ready to be placed in the vacuum bulb.

"When fibrous material is used the plastic lamp-black and tar is employed to secure it to the platina wires before carbonizing. By using the carbon wire of such high resistance, I am enabled to use fine platinum wires for leading wires, as they will have a small resistance compared to the light-giving body, hence will not heat and crack the sealed vacuum bulb.

"Platina can only be used, as its expansion is nearly the same as that of glass. By using a considerable length of carbon wire and coiling it in such a manner that only a small portion of its entire surface radiates light, I can raise the specific heat of the whole, and thus prevent the rapid reception and disappearance of the light, which on a plain wire is prejudicial, as it shows the least unsteadiness of the current by the flickering of the light, but if the current is steady, the defect does not show. I have carbonized and used cotton and linen thread, wood splints, paper coiled in various ways; also lamp-black plumbago and carbon in various forms mixed with tar and kneaded so that the same may be rolled out into wires of various lengths and diameters; each wire, however, is to be uniform in size throughout. If the carbon thread is liable to be distorted during carbonization, it is to be coiled between a helix of copper wire. The ends of the carbon or filament are secured to the platina leading wires by plastic carbonizable material, and the whole placed in the carbonizing chamber."

The copper was to be subsequently removed by nitric acid, the bulb exhausted and hermetically sealed at a high vacuum.

Substances not easily distorted in carbonizing might be coated with some non-conductor, so allowing the coils to rest on each other.

In the drawings Fig. 1 is a section of the lamp, Fig. 2 the plastic material before being wound into a spiral, Fig. 3 the spiral after carbonization; *a* is the filament, *c*, *c'* its thickened ends, *d* the platinum wires, *h* the connecting clamps, *x* the leading wires sealed in the glass, *m* the tube to the vacuum pump, and *e* the outer conductors.

The claims were—

"First, an electric lamp for giving light by incandescence consisting of a filament of carbon of high resistance, made as described and secured to metallic wires as set forth.

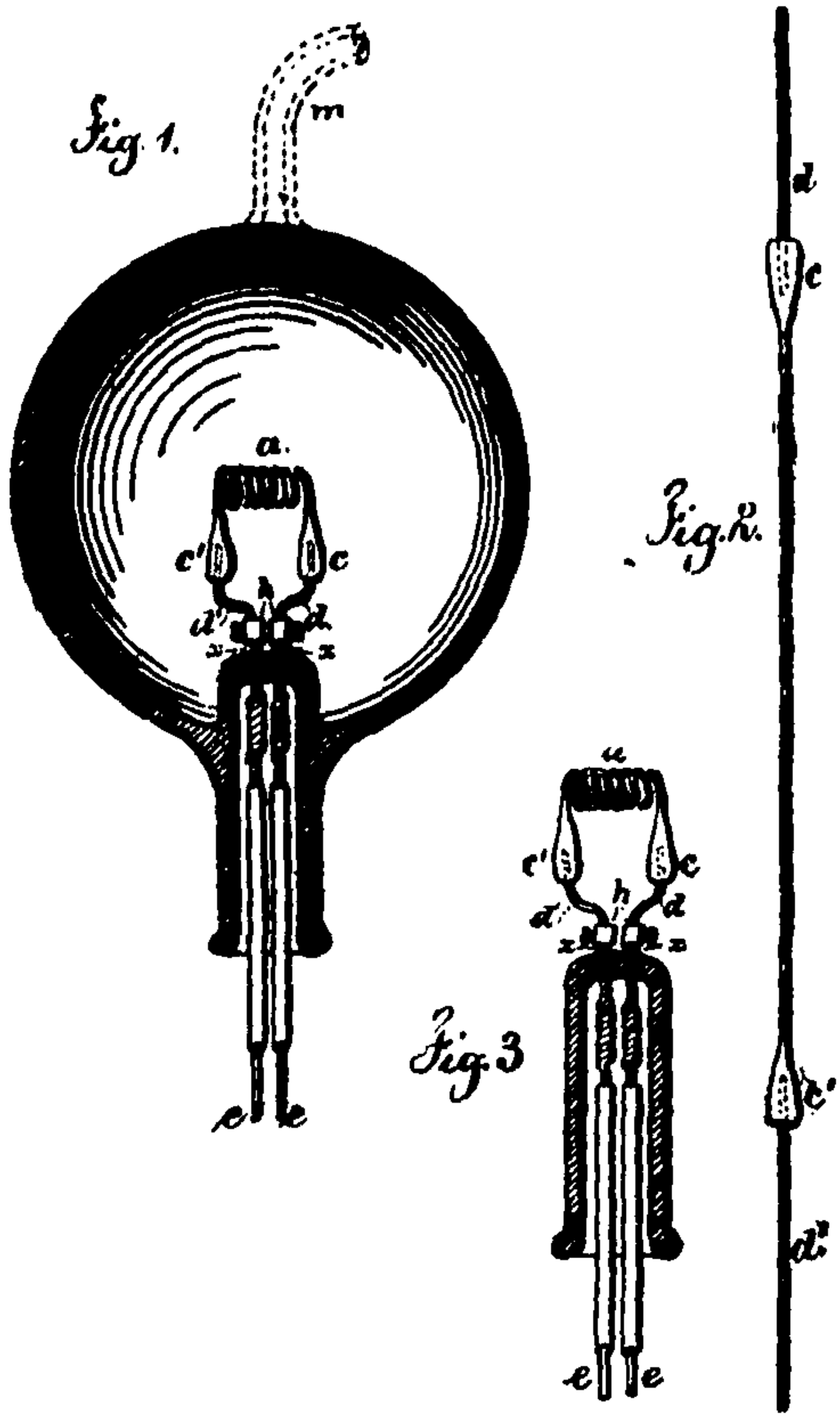
"Second, the combination of a carbon filament within a receiver made entirely of glass, through which the leading wires pass, and from which receiver the air is exhausted for the purposes set forth.

"Third, a coiled carbon filament or strip arranged in such a manner

that only a portion of the surface of such carbon conductor shall radiate light as set forth.

"Fourth, the method herein described of securing the platina contact wires to the carbon filament and carbonizing of the whole in a closed chamber, substantially as set forth."

At the trial of the action for infringement of this patent a large number of anticipations were alleged; in some the conductors were not of carbon, in



From Edison's specification (No. 4576 of 1879).

others carbon rods were used, being filed or otherwise made thin. It was proved that the conditions for success were well known, viz. that the heating of the circuit was developed in proportion to the resistance of each part, hence that of the incandescent part of the lamp must be relatively very great; that the resistance of each p... depended on its material, and was proportional to its length and inversely as its cross-section; that the lighting effected depended also upon the specific heat of the conductor; and that carbon enclosed in a vacuum was an excellent material to use.

[illegible] was no evidence that any successful lamp had previously been

made except two made and exhibited by Mr. *Swan*. These had a straight carbon rod as conductor, between platinum wires hermetically sealed in the glass, which was exhausted so that it was practically a vacuum. The rod was not fine enough to be a "filament;" it bent owing to expansion, and broke down after some time.

The chief objections were raised to the second claim, and it was contended—

(1) That it was too wide if it included conductors other than those described in the body of the specification.

(2) That there was no sufficient description of what thickness or thinness constituted a "filament."

(3) That the invention was the use of old things in a known way, and that the mere alteration in size was not "invention."

The learned judge decided all points in the plaintiff's favour (3 R. P. C. 167).

Held, on appeal by the Court of Appeal (*Cotton*, L.J., dissenting)—

That the first claim was for the entire lamp.

That the second claim was for a combination consisting of five elements: (1) a carbon conductor, (2) in the form of a filament, (3) a receiver wholly of glass, (4) a vacuum, and (5) the entrance of leading wires through the glass.

That the third and fourth claims were for the other elements of the entire lamp (claim 1), not comprised in claim 2.

That it was not confined to the filament made as described in the body of the specification.

Notes.

This case appears to be the first in which the claim in a "pioneer invention" has been construed in as wide a sense as it will bear.

The earlier failures did not point away from the use of carbon of very narrow cross-section in a vacuum, as it was well known that such a solution of the lighting problem was the true one, but they did not show a practical method of obtaining the light. The addition to public knowledge constituting the essence of the invention lay in showing the public *how to get* a carbon of the requisite thinness, and also in showing that by *adopting the horse-shoe shape* the danger of a breakdown (as in *Swan's* lamp) through expansion of the carbon could be avoided.

1887. EDISON & SWAN UNITED ELECTRIC LIGHT CO. *v.* WOODHOUSE & RAWSON (2nd Action), 4 R. P. C. 99.

Construction of Claims—Sufficiency.

A patent was granted (No. 4847 of 1878), to *F. J. Cheesbrough* for "improvements in and relating to electric lamps," [and to a method of charging such lamps with an artificial atmosphere *and purifying the same*],

and to the production of a carbon for use in electric lamps, [and for other purposes.] [1]

The object of the invention was described as twofold: an improved lamp, and the "production of a better carbon for the use of electric lamps." The drawings and lamp were described at length. The lamp consisted of a rod of carbon in an atmosphere of nitrogen. The defects in existing carbons were pointed out, the chief being want of homogeneity.

The new process of preparing carbons was then described as follows: —

"It has been found that a pencil of carbon immersed in a hydrocarbon gas or liquid, and heated to an extremely high temperature by the voltaic current, is not itself attacked, but decomposes the surrounding matter, the carbon of which enters and fills up its pores to an extent impossible except with matter in a very attenuated state, and deposits a perfectly homogeneous layer, generally of a bright grey colour, upon the exterior surface. As the carbon increases in size, more current is required to maintain its temperature, and if the current is gradually increased in accordance with the demand for it, there is appearingly no limit to the increase in mass of the homogeneous exterior deposit. Carbon pencils may be cut from this deposit, or the original pencil with its coating may be used in the lamps.

"*In* this process it will be seen that the carbon is never in contact with the liquid in which it is immersed, but surrounded by a carbonic gas of very high temperature. Beeswax, balsam, and most oils, if pure, operate satisfactorily; almost any hydrocarbon, in fact, will answer."

The mode of filling the globes with nitrogen gas had been described; the carbons were to be treated as above mentioned, thus: "let it be supposed that the pencil of carbon, held between two carbon pieces of greater mass than that of the pencil as above described, is immersed in the hydrocarbon liquid and heated in the manner already described, being then cleansed in alcohol, the pencil and its holders without having been disturbed are placed in the globe in which they are to be hermetically sealed.

"The globe is charged with pure nitrogen, and then while still allowing pure nitrogen to flow into and out of the globe, the carbon is heated to incandescence, thus driving out all impurities and occluded gases, which are carried out of the lamp by the current of nitrogen. With this operation the preparation of the carbon is completed, and the lamp now being hermetically sealed as above described, is ready for use."

The claims were—

"First, the herein-described method of preparing the illuminating part of an electric lamp consisting of electrically heating the same, while it is surrounded by a carbon gas or liquid.

"Second, a material for the manufacture of the illuminating conductors of electric lamps, produced by electrically heating carbon in a carbon gas.

[1] The specification was amended from Nov. 12, 1884. The words in brackets were struck out (as to which see *ante*, p. 167) from the title, and the description of the corresponding parts from the specification. Only so much of the amended specification is here given as is necessary to appreciate the question of "construction."

"Third, the hereinbefore described method of preparing the illuminating part of an electric lamp consisting in first obtaining a solid deposit of carbon by electric action as set forth, and subsequently when the globe containing it is charged with a carbon preservative atmosphere, before the flow of such preservative atmosphere through the lamp has ceased, and before the lamp is finally sealed, heating the illuminating part by means of the electric current, in order to expel impurities and occluded gases."

The plaintiffs were assignees of this patent and the invention in the manufacture of carbon "filament" lamps, under the Edison patent (dealt with in the preceding case). A filament not being of uniform cross-section, became hotter at some points than at others. By means of the above process, the carbon was deposited from the hydrocarbon just as required till the filament had a uniform brightness throughout.

At the trial of an action for infringement the main defence was: Invalidity on account of the specification being insufficient or misleading, as the terms "carbon gas" and "carbonic gas" would include CO and CO_2, neither of which would suit.

The directions were alleged to be insufficient, but no evidence was called to show that a workman would be misled.

Judgment was given for the plaintiffs (3 R. P. C. 183). The defendants appealed.

Held, by the Court of Appeal, that the "carbon gas or liquid" in the first claim referred to such as was described in the specification, namely, not those "hydrocarbons" strictly so-called (compounds of C and H only), but those popularly included in the term which contained other elements in addition.

Lindley, L.J. (at p. 107): ". . . It remains to consider the objections to the specifications and claim. One is that the expression 'carbon gas or liquid' in the claim is ambiguous and too wide and misleading. It is urged that the expression includes carbonic oxide and carbonic acid, neither of which will do. But every claim in every patent must be read and construed with reference to the specification, and not as if the claim was an isolated sentence having no connection with or reference to that which precedes it.[1] To see what is meant by carbon gas or liquid we must turn to the specification, and when we do so we cannot conceive that any one reading the specification fairly, with a view to understanding it, would ever dream for a moment that carbonic oxide or carbonic acid would answer the purpose or could be meant by 'carbon gas.'"[2] P. 108: ". . . No doubt it is for the Court, and not for a workman, to construe the specification; but if a workman says it is a sufficient guide to him, and the Court believes him, the Court must hold that, as regards clearness of description, the specification is in point of law sufficient."

[1] Followed by Lord *Esher*, M.R., in *Edison Bell Phonographic Corp.* v. *Smith*, 11 R. P. C. 396; and by *Kay*, L.J., in *Parkinson* v. *Simon*, 11 R. P. C. 507.

[2] This whole passage quoted and followed by *Byrne*, J., in *Reason Manufacturing Co.* v. *F. F. Moy, Ltd.*, 19 R. P. C. 415.

1887. WOODWARD v. SANSUM, 4 R. P. C. 166.

Disconformity—Inclusion of Improved Invention.

A patent[1] (No. 6209 of 1884) was granted to the plaintiff for "improvements in pen and pencil cases and other holders for like instruments and materials."

The specifications[2] were in the following terms:—

"*My invention* has reference to pen and pencil cases and other holders for like instruments and materials; that is, cases for holding pencils, crayons, solid aniline inks, knives, toothpicks, and the like, in the manner hereinafter described, whereby the part or movement carrying the writing material or instrument is projected or unsheathed by holding the case point downwards in a vertical position, and at the same time pressing a pusher-cap at the summit of the case. The nozzle of the movement carrying the lead or other instrument is projected by gravity from its case, and is held in such a position by relaxing pressure on the cap described, which then returns to its normal position, the nozzle of the movement protruding from the case or holder ready for use.

"When it is wished to enclose the nozzle of the movement within its case for protection or otherwise, it is only necessary to invert the case or holder with the nozzle pointing vertically upwards, when on again pressing the sliding-cap at the end of the holder, as described, the movement is liberated, and the part containing the lead or other instrument falls again by gravity or by its own weight into the interior of its case, and on ceasing to press the terminal sliding-cap the movement is suspended or fixed therein and the point of the lead or instrument projected.

"For convenience of description, I will describe my invention as applied to a pencil-case.

"Encased within the barrel of the pencil-case is a conductor-tube, in which the movement or part carrying the writing material freely slides or traverses. The said movement has a pin affixed at its upper part, which slides or moves within a quick spiral or helical slot running down the barrel of the said conductor-tube. This helical slot has top and bottom cross-slots, in which the pin of the movement takes for locking and suspending the said movement when in its projected or sheathed position.

"Working and sliding upon the conductor-tube described is a secondary or pusher-tube, which has at its summit a sliding-cap for operating the pencil-case. The said pusher-tube has a plain helical or spiral slot running longitudinally down its barrel, and which is of the same pitch as that in the conductor-tube; this slot in the pusher-tube has no top or bottom slots. The pin of the

[1] The action was brought for infringement of two patents. It is only necessary for the present purpose to refer to the second.

[2] To facilitate comparison, the two specifications are here given together. To read the provisional, omit all passages in square brackets and read the words in italics. The complete is read by omitting the words in italics and reading those in square brackets. The introduction of new matter and alleged disconformity are thus seen at a glance.

movement works within the coincident slots of the conductor and pusher tubes on the movement changing its position, [or the drop movement may be provided at its upper end with top and bottom cross-slots leading into a longitudinal vertical slot instead of the conductor-tube. The pin for holding the movement in its projected or sheathed position is stationary with regard to the said movement, although the said pin has a slight lateral movement sufficient for the moving of it out of the locking-slots when the movement is required to fall].

"The pusher-tube with its helical or spiral slot is incapable of rotating by a vertical slot at the bottom of the tube engaging with a long stud or pin on the fixed conductor-tube.

"A coiled spring resting upon the top of the conductor-tube gives the return movement to the cap and its pusher-tube.

"The action of the pencil-case is as follows, on the nozzle of the movement being in its sheathed position with the pin of the movement within its sheathing-slot—on pressing vertically inwards the pusher-cap, the pusher-tube is lowered, and by its downward movement causes the upper part of the left-hand side of the helical or inclined slot to act against the pin on the movement, [or the pin engaging with the movement], thereby forcing the said pin from the sheathing-slot into the *coincident helical* slots of the conductor and pusher tubes, [or into the slots of the movement and pusher tubes, as the case may be], and so freeing the pin and allowing the movement to fall out of its case the required distance by its own weight, which is fixed in this position by relaxing pressure on the sliding-cap by the right-hand side of the slot of the retiring pusher-tube forcing the pin *of the movement* into the cross locking-slot of the conductor-tube, [or into the cross locking-slot of the movement], thereby fixing the movement in its locked position.

"When it is required to sheath the nozzle of the movement within its case, it is only necessary to invert the pencil-case and again press the sliding-cap, which frees the pin from the locking-slot [either in the conductor-tube or in the movement] *and uncovers the helical slot of the pusher-tube*, and allows the movement to fall within its case, as herein first described, which is again fixed by ceasing to press the pusher-tube, which retires to its normal position, pressing the pin *of the movement* into the sheathing-slot, and holding the movement within its case.[1]

"The top and bottom cross locking-slots may be on the movement itself, and the pin which fixes the movement may have a slight lateral motion, independent of the drop movement itself.

"The liberation and fixing of the pin which holds the movement in its respective locked and sheathed positions may be operated by changing the position or positions of the inclined slot or slots which work the locking or fixing pin, without materially affecting the principle and object of my invention, as the inclined sides of the helical, locking, and releasing slots acting in a vertical direction constitute the principle or essential points of my invention.

[1] The provisional specification ends here.

"The casing which covers the body of the pencil-case may be made to slide upon the other parts, or the other parts may be made to slide within the casing without materially altering the nature or essence of my invention."

In the specification the details of the invention are given and illustrated by means of drawings.[1] The letters signify the same parts throughout. The "drop movement" is the innermost tube, or lead-carrier, *b*, to which is attached the pin b^2 (Fig. 11), which projects through the slot d_2 in the fixed conductor-tube *d*. The pin projects further into the helical slot c_2 of the pusher tube *c* (Fig. 11). The slots d_2 and c_2 are of the same pitch throughout. At each end of the slot d_2 is a cross locking-slot d_3. The pusher-tube *c* is pushed down by the cap c_3, in which is a spring that forces the tube back into its original position when the operation is over; it is guided in its motion by the pin *e* moving in the slot c_1. The pencil-case is held vertically, the pin b_2 then resting (Fig 2 and Fig. 10) in the cross-slot d_3. On pushing down the pusher-tube *c* the side *r* of the slot c_2 sliding against the pin b_2 forces it out of the slot d_3 into the slots d_2 and c_2 (Fig. 3), which then coincide. The drop movement then falls, the pin b_2 dropping to the bottom of the slot d_2 (Fig. 4). On removing the pressure the spring restores the pusher-tube *c* to its original position, the side *l* of the slot c_2 sliding against the pin b_2 forces it into the locking-slot d_4 (Fig. 5), when the operation is finished. To restore the lead to its case the pencil is held vertically point upwards; the reverse operation is then similarly performed.

The second sheet of drawings showed another modification of the invention, in which the slots were not helical, but bow-shaped, the cross locking-slots being at opposite sides of the slot. The action, however, was the same as that described.

The third form of the invention was next described.—"Figs. 20 to 32, both inclusive, represent a pencil-case constructed according to my invention, in which the drop movement carrying the lead or other instrument is fixed and released by the inclined sides of a diagonal or helical slot, which alternately act upon a pin, as in the other arrangements, for releasing and fixing the said drop movement either in its closed or projected position.

"The same letters indicate the same parts in all the figures.

"*a* is the outer casing, and *b* is the drop movement, having at its upper end a longitudinal slot, b^2, and cross locking slots, b^3, b^4; the reverse side of the movement has a horizontal opening as shown in Fig. 30. The last-named slots are the same as hereinbefore described in the conductor-tube, the difference being that in the former case the slots remain stationary, while in the latter it falls with the movement. The conductor-tube *c* has a cross-slot, c^3, on one side, and a hole, c^3, on the other. The hole c^3 constitutes the fulcrum, on which the end of the pin *d* moves laterally. The slot c^3 limits the motion of the pin at its front or locking end in being moved into and out of

[1] The description is here summarized, but enough is given to illustrate the action of the invention as originally described and the improvement introduced into the complete specification which constituted the alleged disconformity.

Diagrams from Woodward's specification (No. 6209 of 1884).

Figs. 1-6, 10, 11, shew the invention as described in the provisional specification. Figs. 20-22, 31, are of modifications constituting alleged disconformity.

the slots b^3, b^4, of the drop movement b, by the diagonal inclines of the slot f in the pusher-tube c. g is a stud working in the slot c^2 for determining the vertical movement of the inclines in locking and releasing the movement when it is required for it to be sheathed or projected."

The action is as follows :—The pusher-tube forces the pin out of the slot as in the former case (Figs. 20, 21), then the drop movement drops, the pin remaining stationary, and the slots allowing the drop movement to fall. The spring returning the pusher-tube c to its original position (Fig. 22), forces the pin into the top locking-slot b_3.

The claims were—

"First, the improvements in pen and pencil cases and other holders for like instruments and materials hereinbefore described and illustrated in Figs. 1 to 31, both inclusive of the accompanying drawings; that is to say, fixing and releasing drop movements containing the writing material or other instrument, by the direct vertical movement or thrust of the inclined sides of a diagonal or helical slot or slots constituting locking and releasing inclines, which act alternately upon a pin, which holds the movement locked when sheathed or projected, and releases the movement when change of position is required, by acting directly upon a pin or projection which is carried by, or engages with, the movement; the inclines and pin and other parts for guiding, locking, and releasing being arranged, combined, and acting in the ways and for the purpose as described and set forth."

The second claim was for the bow-shaped modification as shown in Figs. 12 to 15; and the third claim was for a form in which the tubes were fluted or ridged to diminish friction.

The patent was upheld at the trial.

On appeal it was upheld by the Court of Appeal.

The Lords Justices held that although the third mode of carrying out the invention was different from those described in the provisional specification, yet the whole came within the invention, the nature of which was described in the provisional.[1]

Cotton, L.J. (at p. 175): "It is true that in his provisional specification he has stated a different mode of carrying his invention into effect from that which he stated in sheet 3 of his complete specification; but if both are really within the same invention, described though not minutely but in general terms in the provisional specification, then the patent will not be bad simply because a different mode of carrying the same invention into operation is described in the complete specification, and even although that may be an improvement on what is described in the provisiona specification, because a patentee putting in a provisional specification showing the nature of his invention is not bound to describe the way in which that can be carried into effect and operation, but if he does describe

[1] The facts of this case were alluded to and the decision followed by *Cotton*, L.J., and *Lopes*, L.J., in *Siddell* v. *Vickers*, 5 R. P. C. 426, 433; and also in *Hookham* v. *Johnson* 14 R. P. C. 561.

a way of doing it, and before he files his complete specification he either finds out improvements in that way or a different way of carrying into effect that which is described as his invention in the provisional specification, he is bound to give the public the benefit of what he has discovered as regards the mode of carrying the invention, the nature of which must be described in the provisional specification, into effect, even although there may be improvement and even invention which was not known to him at the time." [1]

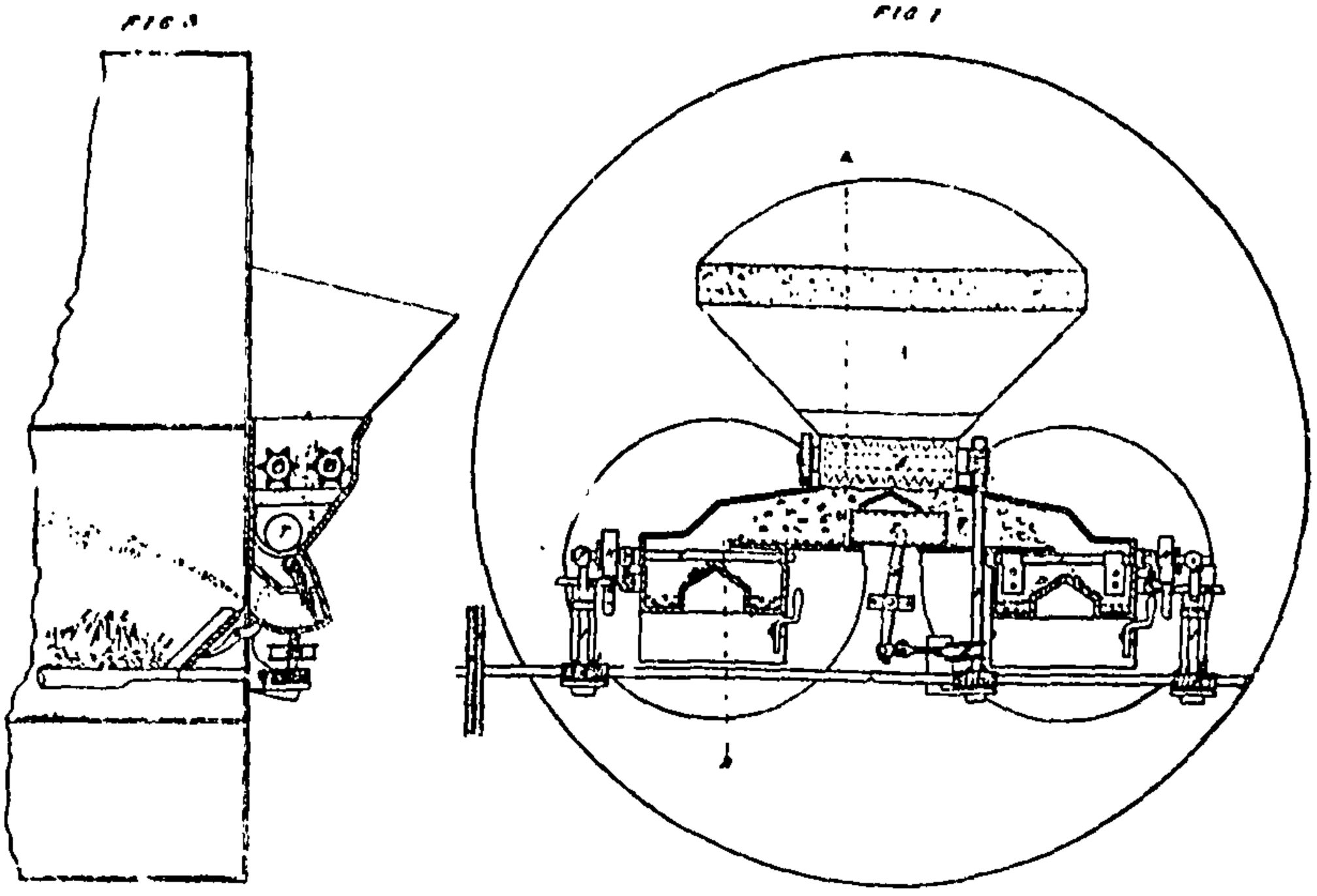
1887. PROCTOR *v.* BENNIS, 4 R. P. C. 333.

Construction—Mechanical Equivalents.

A patent was granted (No. 2047 of 1875) to *T. Proctor* for "an improved self-acting apparatus for supplying fuel to boiler and other furnaces."

The complete specification commenced with the following description of the nature and object of the invention as follows:—

"This invention has for its object improved and self-acting mechanism for supplying to and distributing fuel at intervals over the fire surface.



Diagrams from Proctor's specification (No. 2047 of 1875).

"The construction and action of the apparatus is as follows:—I employ an ordinary feed-hopper,[2] A, applied to the front of the boiler, which by

[1] This rule has been quoted with approval and followed in *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248; *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 260 (and in C. A. by *Smith*, L.J., 9 R. P. C. 529); *Brooks* v. *Lamplugh*, 14 R. P. C. 617; and *The Pneumatic Tyre Co.* v. *Leicester Pneumatic, &c., Co.*, 15 R. P. C. 164; and *Ward Bros.* v. *Hill*, 20 R. P. C. 200.

[2] The references to the diagrams are here inserted instead of reproducing the detailed description of the drawings. Only those drawings necessary to understand the case are given. Fig. 1 is a front elevation, and Fig. 3 a side view. The remaining figures (2, 4–10) showed an end view and parts in detail.

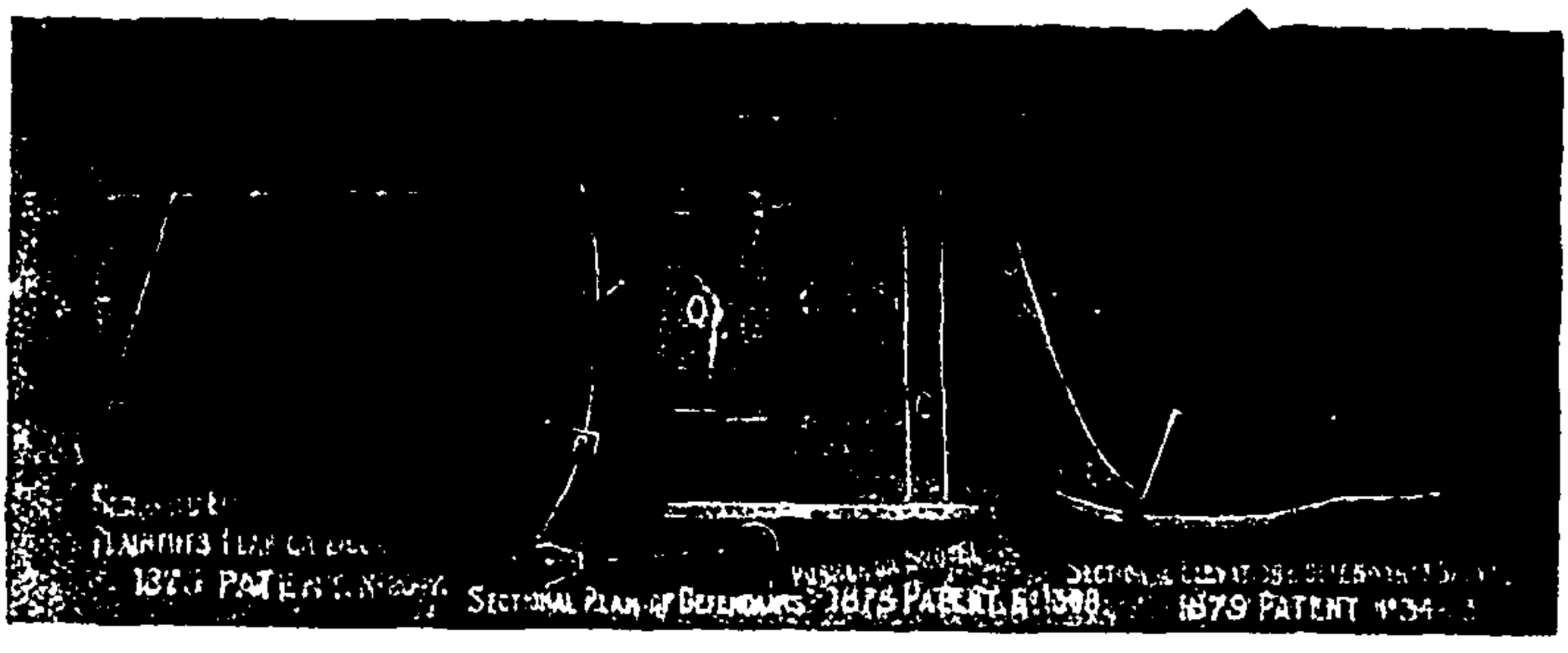
means of spiked or other rollers, BB, will give a supply of fuel, the fuel is received upon an inclined door or flap, D, working within guide-plates, the door or flap is secured to cross-shafts, EE, to which by means of lever F and tappets GG a partial turn or rotary motion is given, drawing back the door or flap until the tappet G shall have passed its throw—whereon the partial rotation of the shaft E is suddenly reversed by means of a coiled spring, H, or weight applied thereto—by such reversing action, the door or flap attached to the shaft E receives a rapid forward movement in the direction of the furnace bars, throwing and distributing the fuel over a portion of the fire. The tappet is provided with two or more varying throws, so that the spring will be coiled more or less as the fuel is to be alternately thrown on to the fire surface at the front, midway, or back of the fire surface. The tappet shaft JJ receives motion from a worm, KK, and worm-wheel K'K'."

The specification continued with a detailed description of the drawings, and concluded with the following claim :—

"I lay no claim to the hopper A, nor to the spiked rollers, nor to the shafts and worms for operating the same, but what I do claim is the employment of the tappets GG, and shafts EE, and springs H, when applied to and in connection with the doors DD, as and for the purpose herein fully described and illustrated."

This was an action for infringement of this patent.

The infringement was alleged to be a development of an earlier invention of the defendant's. Its nature can be understood from the drawings.[1] The mode of action of the parts in contact with the coal are shown in

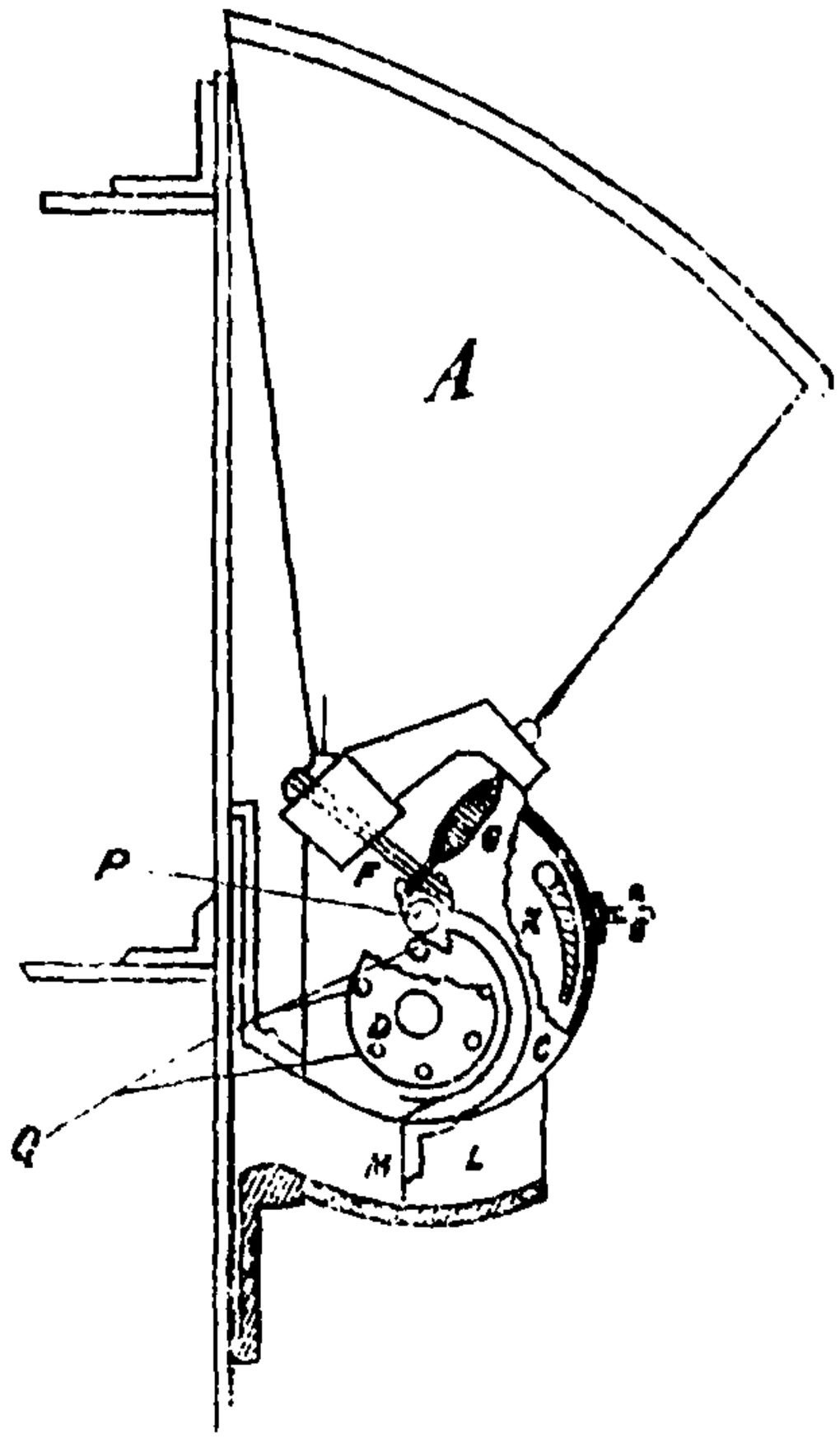


Photographs of models of Proctor's flap or door, Bennis' older pusher, and the alleged infringement.

section; on the left is the plaintiff's door in sectional elevation; in the centre is the old pusher mechanism which operated intermittently and moved rectilinearly; on the right the defendant's pusher is shown in elevation. The last consisted of a bent arm, C, having a flat piece or pusher, M, at the end of it. The motion of the latter was radial, the fulcrum,

[1] For original photographs of the models used as exhibits and shorthand report of the case the author is indebted to Messrs *Procter & Son*, the plaintiff's solicitors.

P, being the shaft above, and the motion as regards the fulcrum was geometrically the same as that of the lower end of the plaintiff's door as regards its own shaft. In the plaintiff's case the intermittent actuating mechanism was outside connected with the shaft; in the defendant's it was inside, and connected with the notch on the arm C. This is shown in the last diagram, in which D is a shaft to which cams, Q, are attached. The arm C and shovel M are pressed forward by the springs F and G. When D revolves the cams, Q, press back the arm until they pass the notch, when the arm and shovel spring forwards again, the shovel throwing the coals on the fire.



Section of defendant's pusher.

The main feature in the defence was that the defendant's pusher was mounted on a pin to act as a buffer; that the plaintiff's claim was for the combination as a whole, and that the defendant's was entirely different.

The learned Vice-Chancellor of the Palatine Court held, *inter alia*, that the patent was valid, and had been infringed.

On appeal, *held*, by the Court of Appeal, *inter alia*, that the patent was valid, and that the defendant had taken the essence of the combination.

Cotton, L.J., considered the nature of the claim to be one for a combination. After dealing with the question of novelty and allegation that the novelty of parts was not pointed out, he continued:—"Now I have referred to that so as to show that I have not omitted the argument. In my opinion, it is of necessity, without that observation and this expression of opinion by Lord *Cairns*, that where a combination is claimed to be an invention, if that invention is new, it is immaterial on the question of the validity of the specification, and the goodness of the patent, that the patentee should point out how far he does or does not claim particular portions. Of course, if the alleged infringement had been a subsidiary portion of this combination, or had been particular parts of machinery which formed the combination as a whole, that would have been material, but when I read the claim it will appear that the plaintiff does cut himself down entirely to the combination, pointing out that he does not claim the particular portions of that, but simply claims the

combination of four parts (three being lumped together)- -the combination of those with another, namely, his flaps or doors." [1] The learned judge then pointed out that there was ample evidence of invention, as no workman had been called to show that the earlier machine of the defendant's could be improved to the form of the later.

As to equivalents in view of infringement, he said: "Has the combination in substance been taken? Has the defendant, though not exactly taking the whole combination which has been patented, taken by slight variations, or by mechanical equivalents, the substance of it to produce the same result [2] by practically the same means? Has he taken the essence of it?" [3]

He continued by examining the specification and claim, and held that the defendant's machine was a colourable variation of the plaintiff's.[4]

The learned judge dealt next with the variations between the two machines, and distinguished the case of *Curtis* v. *Platt* (*ante*, p. 231).

"Then it was said that we were precluded from going into that in this case by what was laid down by three judges of great distinction, Lord *Hatherley*, Lord *Westbury*, and Lord *Cranworth*, in the case of *Curtis* v. *Platt*, in the various stages through which that case went. Of course, whatever one's view might be, one ought not to act contrary to any principle that has been laid down by them. The principle which was contended for was this, that where there is a combination claimed for improvements in machinery, there you must hold the patentee to the description which he gives of the particular means by which his invention is to be carried into effect; and that the doctrine of mechanical equivalents cannot apply in such a case, but you must hold him strictly to the particular mechanical means by which he proposes to carry out his invention. Now, in my opinion, that case does not apply to this, because those observations were applied to a case where there was a machine which had been long in use for producing a certain result. Therefore there was no novelty at all in the results to be produced even in that machine, and the only novelty which could be claimed would be the application and use of certain mechanical means in order to produce in a known machine the same result which in that known machine had been produced by other mechanical means. That, to my mind, distinguishes the case from the present—because what was the case?" [5] After calling attention to the facts in *Curtis* v. *Platt*, the learned judge continued:—"It [the invention] was specially to produce improvements into the mechanical means and arrangements which the previous patentee had used

[1] Quoted by *Porter*, M.R.I., in *Wilson* v. *Balfour*, 5 R. P. C. 253.

[2] In *Gosnell* v. *Bishop*, 5 R. P. C. 156, the same learned judge described the new result or object as spreading the coals on the fire by *intermittent radial action*.

[3] This passage was quoted by *Lopes*, L.J., in *Automatic Weighing Machine* v. *Knight*, 6 R. P. C. 309.

[4] Relied on by *Ashbourne*, L.C.I., in *Thomson* v. *Moore*, 6 R. P. C. 444, and by *Palles*, L.C.B. (*ibid.*, 447); also by *Lindley*, L.J., in *Ticket Punch, &c., Co.* v. *Colley's Patents*, 12 R. P. C. 183.

[5] Quoted and approved in *Wilson* v. *Balfour*, 5 R. P. C. 253.

to obtain well-known objects in a well-known machine. Therefore in that case, in applying those words used by the judges, we must deal with the case before him, and come to the conclusion, as I do, that what that meant was this, that where there is no novelty in the result, where the machine is not a new one, nor the result—*you* must strictly hold the patentee now claims an improvement in the machinery for producing in a known machine that result—you must tie him down strictly to the invention which he claims, and the mode of affecting the improvement which he says is his invention. But here the throwing coal on to the furnace by the intermittent radial action of a flap or door was new. Nothing of the kind had been done before. It is true there had been, though imperfect, previous machines for feeding furnaces automatically, but that had not been done previously to this machine by any intermittent radial action of a flap or door, as was done by the plaintiff, and apparently successfully done by him. In my opinion, therefore, these opinions expressed by the judges with reference to mere improvements in an old machine for an old purpose cannot lay down any law for a case like this, where the result of throwing coal on to the furnace by the intermittent radial action of the flap is first applied in a machine invented by the plaintiff." [1]

Bowen, L.J., in discussing the question of identity of inventions observed, examined the specification and continued:—" I think the truth is that the doors were, in the eye of the inventor, an extremely important part of the combination, and gave, so to speak, the key to the whole, and it is on that ground that he employs the language he does; but none here are claimed separately. Now I think it goes to the root of this case to remember that this is, as was described by one of the counsel, really a pioneer invention, and it is by the light of that that it seems to me we ought to consider the question whether there have been variations or omissions and additions which prevent the machine which is complained of from being an infringement of the plaintiff's. With regard to the variations, I take precisely the same view that the Lord Justice has taken, and I will not travel over the matter which he has gone over in detail. With regard to the additions and omissions, it is obvious that additions may be an improvement, and that omissions may be an improvement; but the mere fact that there is an addition, or the mere fact that there is an omission, does not enable you to take the plaintiff's patent. The simple question is not whether the addition is a material one, or whether the omission is material, but you must go back again and ask yourself whether what has been taken in the substance and essence of the invention." [2] The learned judge concluded by distinguishing *Curtis* v. *Platt*, and held that the plaintiff was the first to produce "instead of mere automatic feeding, an intermittent radial action of the flap of the door," and that the defendant's machine contained the substance and essence of the plaintiff's combination.

[1] These two last extracts were relied on in *Thomson* v. *Moore*, 6 R. P. C. 439.

[2] This passage quoted and relied on by *Wills*, J., in *Incandescent Gas, &c.* v. *De Mare*, 13 R. P. C. 331.

Fry, L.J., in the course of his judgment described the "pith and substance of the plaintiff's invention is, in my judgment, putting coals upon a fire by intermittent radial action, an invention which, it may be remarked, reproduces with great exactitude the action of the human arm in placing coals upon a fire." After discussing the facts and authorities, he continued :—"Was, then, the object in the present case an old one, or was it a new one? Putting coal upon a fire is, of course, an act, if not as old as Adam, I suppose as old as the time when Tubal Cain wrought in metal, or when Prometheus introduced fire to mankind. It is, therefore, as old as it can be. But is that the real object of the patent? I think that the real object of the patent must be taken to be this, the automatic placing of coal on a fire by intermittent radial action. That object is new. I think, therefore, we are bound to construe this combination as a combination to effect a new and useful object."[1] The learned judge concluded by pointing out the points of similarity in the actions of the two machines :—"In the present case we have these broad features of likeness, that in both machines the motion is a radial motion, in both machines it is an intermittent motion; in both the machines it is, of course, produced by means of a radius, in both machines that radius is moved in one direction by tappets, and the same radius is moved in the opposite direction by a spring. All those broad features of the machines are in common, but there is this difference, that in the plaintiff's machine the shaft is impelled by the tappets and by the spring, whereas, in the defendant's machine, the radius itself is impelled by the tappets and the spring. It would follow that the radius in the plaintiff's is attached to the shaft, whereas the radius in the defendant's works on a pin. That is the broad distinction between them. The result, therefore, appears to me to be substantially the same: by substituting the pin for the shaft as the centre on which the radius acts, and by impelling the radius itself instead of impelling the shaft fixed to the radius, you have produced in substance precisely the same radial action by the same means. You drive your radius in one direction by tappets, and you drive in the other direction by the spring, and you produce the same result, namely, the feeding of coal by a radial motion made intermittent in one direction by the operation of the tappets, and in the other direction by the shafts."

Notes.

This case has been followed in many cases; besides those alluded to in the notes, in *Automatic Weighing Machine Co.* v. *Combined W. M. Co.*, 6 R. P. C. 124. It shows that where the result is new, the means of obtaining that result should be more narrowly examined (*Cotton*, L.J., in *Aut. W. M. Co.* v. *Knight*, 6 R. P. C. 304); that if the important parts of an invention be taken, equivalents or variations in the rest will not differentiate (*Rigby*,

[1] Adopted by *Cotton*, L.J., in *Gosnell* v. *Bishop*, 5 R. P. C. 156, and by *Stirling*, J., in *Presto Gear Case, &c.* v. *Simplex, &c.*, 15 R. P. C. 643.

L.J., in *Muirhead* v. *Commercial Cable Co.*, 12 R. P. C. 63); that if all the combination be novel, it need not be so described (*Romer*, J., in *Perry* v. *Société des Lunetiers*, 13 R. P. C. 670). In *Aktiebolaget Separator* v. *Dairy Outfit Co.* (15 R. P. C. 334) it was followed by *Smith*, L.J. (p. 334), and by *Vaughan Williams*, L.J. (p. 338), as an authority that "the doctrine of mechanical equivalents applies to specific definite parts of a combination, definitely included in the words of a claim."

[It should not be forgotten that what was spoken of as the "result" and "object" of the invention by the learned judges included the means, viz. intermittent radial action. It does not support the proposition that where the "result" or "object" is something apart from the mechanism producing it the doctrine of equivalents applies. The "result" here included the principle of the mechanical action of the radial flap, and was therefore part of the "manufacture," that is of the machine itself; the learned judges never described the passage of the coals on to the fire, apart from the action of the radial flap, as a "result" or "object." The "result," as the term here is used, denotes the radial action, or mode of action, of the mechanism; it falls, therefore, within stage III., and not IV., in the classification, given *ante*, p. 7.]

1887. BADISCHE ANILIN UND SODA FABRIK *v.* LEVINSTEIN, 4 R. P. C. 449.

Construction—Utility—Sufficiency.

A patent (No. 786 of 1878) was granted to *J. H. Johnson* for an invention (communicated from abroad by *H. Caro*) of "improvements in the production of colouring matters suitable for dyeing and printing," and the invention described in the specification consisted in "the production of red and brown colouring matters which, in chemical language, may be termed the "sulphoacids of oxyazonaphthaline.'"

The specification then described four processes of preparing the dyes.

The first process showed how, by known methods, naphthylamine is converted into its diazo compound; then equal molecules of the diazo compound and of naphthol or naphthylic alcohol are allowed to react on one another in an alkaline solution; according as either of the isomers alphanaphthol or betanaphthol was employed, the resulting precipitate was either of two isomeric modifications of oxyazonaphthaline, "which may be termed 'alpha and beta oxyazonaphthaline' respectively." "These azo compounds are further converted into their sulphoacids by any method now in use for the preparation of organic sulphoacids, such as, for instance, by heating them with fuming sulphuric acid." The excess of acid was then to be removed and the dye obtained in a solid state by precipitation or evaporation—the brown dyes are obtained from the alphaoxyazonaphthaline, and the red from the betaoxyazonaphthaline. An example of the process

was then set out in which the proportions of the substances by weight were given.

Second process:—"Naphthylamine is converted into its diazo compound as before stated, and equal molecules of the diazo compound thus obtained and of the sulphoacids of either alphanaphthol or betanaphthol are allowed to react upon each other, by preference in an alkaline solution;" red colouring matters result, and may be obtained by precipitation or evaporation. The above sulphoacids are produced by heating naphthol with excess of sulphuric acid at a temperature of about 100° C. The product is a mixture of several naphthol sulphoacids. As the process may be applied to the other sulphoacids (besides monosulphoacid of naphthol) which result from the treatment of naphthol with sulphuric acid, the invention under the second process "is the action of the diazo naphthaline upon all sulphoacids of either alpha or beta naphthol, and substantially in the manner aforesaid." An example of the second process was then given.

Third process:—"The sulphoacids of naphthylamine are converted into their respective diazo compounds, and equal molecules of the diazo compounds thus obtained and of either alphanaphthol or betanaphthol are allowed to react upon each other, by preference in an alkaline solution, and substantially in the manner above described in the first and second processes." Alphanaphthol produces brown dyes, and betanaphthol red. No known ways of producing the said sulphoacids of naphthylamine are mentioned. "By the said methods, as is well known, several modifications of the sulphoacids of naphthylamine are obtained, chiefly differing from each other by their various degrees of solubility in water, some of them being nearly insoluble, such as the so-called naphthionic acid." Examples of this process are next given, in which naphthylamine is directed to be "mixed or dissolved" in strong muriatic acid. The colours obtained differed in a similar ratio in their various degrees of solubility.

A fourth process was then described.

The claims were—

"First, the production of red and brown colouring matters, which in chemical language may be termed the sulphoacids of oxyazonaphthaline, by the action of the diazo compounds which may be prepared from naphthylamine or from the sulphoacids of naphthylamine upon any of the isomeric naphthols, or of mixtures of the same, or upon any of the sulphoacids which may be prepared from either alphanaphthol or from betanaphthol or from mixtures of the same, substantially by the processes above described.

"Secondly, the production of similar colouring matters, and which in chemical language may be termed the sulphoacids of dioxyazonaphthaline, by substituting dioxynaphthaline for either of the two isomeric naphthols in any of the processes above described for the preparation of the sulphoacids of oxyazonaphthaline, substantially as hereinbefore described."

An objection on the ground of alleged absence of utility was based on evidence showing that out of all the dyes produced only one was commercially useful, as it was of a bright colour, and took the public fancy,

although the descriptions were correct as to the process producing other shades of colour for which there turned out to be no market. And also on the ground that there was no means of knowing beforehand the shades that would result.

At the date of the patent there were two isomeric naphthylamines, alpha-naphthylamine and beta-naphthylamine; the former would produce the required result, the latter not. The point was raised that this constituted insufficiency of direction. But it was proved that the alpha-naphthylamine had been known for fifteen years, and the beta-naphthylamine for only two; and that a chemist would ordinarily use the term naphthylamine to denote the older form, and speak of the beta-naphthylamine as the "*new* naphthylamine."

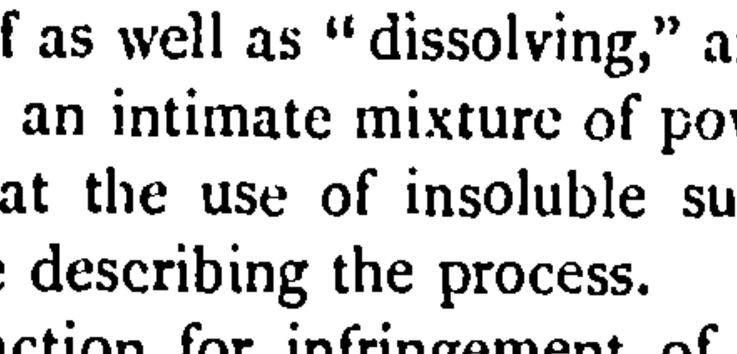
The directions as to the first process were objected to as being misleading, as there were some organic sulphoacids which could be prepared by using ordinary sulphuric acid at a temperature lower than 100° C., at which temperature the sulphuric acid would not convert the oxyazonaphthaline into sulphoacids. It was contended, however, by the patentee that it would be an unreasonable construction of language to hold that the specification asserted that every degree of strength of sulphuric acid and of temperature which would suffice for the preparation of the sulphoacid would convert the azo compounds into their sulphoacids.

The directions for the second process were alleged to be misleading, since it was stated that red dyes would result, whereas the dyes were brown or red according as alpha- or beta-naphthol was used. But shades of red and brown run into one another, and may be differently described by different people; *e.g.* "brownish red," "reddish brown," &c.

The third process was alleged to be misleading because the most useful dye, producing the brilliant red colour,[1] was formed from the insoluble sulphoacid, and the specification did not call attention to this, but tended to lead the reader away from trying the insoluble sulphoacid. Against this it was urged that the third process referred to the other two, in which "mixing" was spoken of as well as "dissolving," and that the word "solution" therefore included an intimate mixture of powdered solid dusted into the liquid; and also that the use of insoluble sulphoacids was distinctly included in the language describing the process.

At the trial of this action for infringement of the above patent it was held that it was valid, and that the defendant had infringed.

[1] This dye is that known as Fast Red B.T., which is the sodium salt of α-naphthalene-azo-β-naphthol-monosulphonic acid, *viz.* $C_{20}H_{13}N_2O_4SNa$. Its constitutional formula, according to *Schultz & Julius*, is $C_{10}H_7(a)N=N[1]C_{10}H_5\begin{cases}OH[2]\\NaSO_3[6]\end{cases}$, but is given by *Seyewetz & Sisley* as—



This decision was reversed by the Court of Appeal, on the ground that the patent was invalid, because the specification did not distinguish what was useful and what not, the third process being misleading, and the use of the term "naphthylamine" (without distinguishing "alpha" from "beta") ambiguous.

On appeal to the House of Lords.

Held, that the claims included all the different isomers described as "sulphoacids of oxyazonaphthaline," which are red or brown dyes, and which are produced from the action of the diazo compounds prepared from naphthylamine or from the sulphoacids of naphthylamine upon the isomeric naphthols, or upon any of the sulphoacids which may be prepared from either alphanaphthol or betanaphthol, or from mixtures of the same. Also that the several objections to the patent failed, and that it was valid.

Per Lord *Halsbury*, L.C. (p. 462): "There is certainly authority for saying that an invention must be useful, although that word is not found in the statute. . . . The element of commercial pecuniary success has, it appears to me, no relation to the question of utility in patent law generally, though of course where the question is of improvement by reason of cheaper production, such a consideration is of the very essence of the patent itself, and the thing claimed has not really been invented unless that condition is fulfilled."[1]

Per Lord *Herschell* (466): "I do not think it is a correct test of utility to inquire whether the invented product was at the time of the patent likely to be in commercial demand or capable of being produced at a cost which would make it a profitable speculation to manufacture it. . . . The products which result from the appellant's products are, no doubt, of varying worth, but one at least has proved to be of great commercial value, and it is not shown that any of them are incapable of being used effectually for the purpose of dyeing."[2]

As to sufficiency of directions (p. 467): "But I think the patent under consideration does show how the colouring matters are to be produced, and that what it leaves a skilled person of the class, to whom the specification is addressed, to discover is only which of these colouring matters will best answer his purpose at any particular time. There is, in my opinion, no warrant for asserting that this invalidates the patent."[3]

[1-2] The foregoing portions of judgments have been quoted in *Siddell* v. *Vickers*, 5 R. P. C. 96, and referred to in *Kurtz* v. *Spence*, 5 R. P. C. 182, as being the latest exposition of the law on this point. Also quoted and followed by *Buckley*, J., in *Atkins & Applegarth* v. *Castner-Kellner Alkali Co.*, 18 R. P. C. 296.

This case is quoted to show that "useful" means useful for the purpose indicated by the patentee: *Lane Fox* v. *Kensington, &c.* (per *Lindley*, L.J.), 9 R. P. C. 417.

[3] See also *Edison & Swan* v. *Holland*, 6 R. P. C. 284.

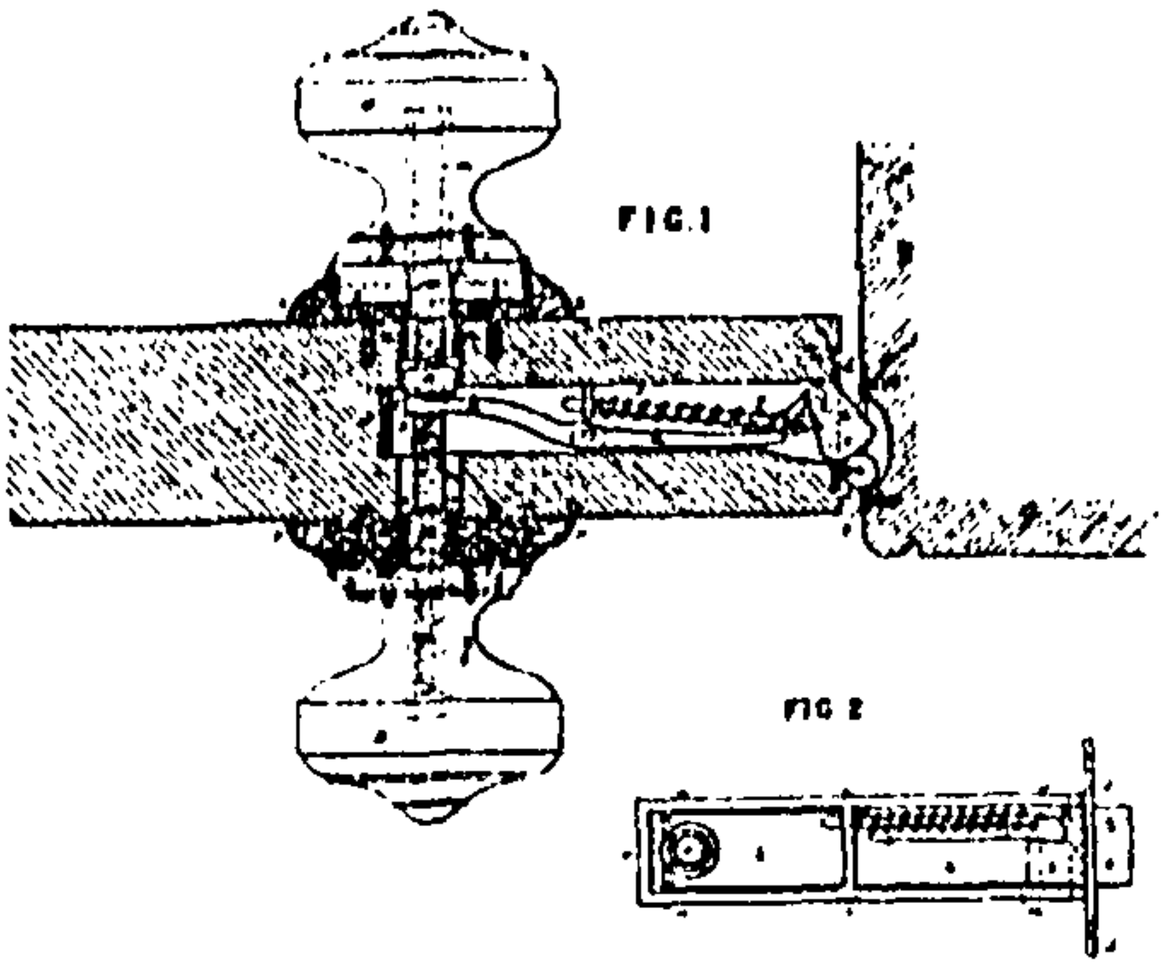
1888. KAYE *v.* CHUBB & SONS, 5 R. P. C. 641.

Alleged Anticipation—Earlier device a failure.

A patent (No. 4873 of 1877) was granted to Messrs. *Kaye* for "improvements in the means or apparatus employed for fastening and unfastening doors, gates, lids, and windows."

For the present purpose it will be sufficient to refer only to the following portions of the specification :—

"At Figs. 1 and 2 *a* is the shell or framework of the door-fastener, in which we provide the finger or segment *b*, which is fitted so as to move radially on the stud or pin *c*, and to project when at rest through the front plate *d*, as shown at *e*, for the purpose of inserting itself into the catch-plate *f*, as shown at Fig. 1, in the door-frame or jamb *g*.



From Kaye's specification (No. 4873 of 1877).

"For the purpose of actuating the finger or segment *b* we provide a lever, *h*, which is pivoted or mounted on a pin or stud, *i*, within the shell or framework *a*. In order to retain the finger or segment *b* in the projecting position, as shown at *e*, we provide the spiral spring *j*, or other equivalent means; by this arrangement the segment or finger *b* (except when moved inwards by the lever *h* in the manner hereafter described) always remains in the position shown at *e*. In all cases we avoid coupling the lever *h* by any rigid connection to the forefinger or segment *b*.

"In order to actuate the lever *h* we engage the inner end *k*, which has a projecting piece, *l*, with a spindle, *m*, on which is provided the projection or collar *n*, against which the end *k* of the lever *h* remains in contact. For the purpose of more conveniently moving the spindle *m* we provide knobs *o* and o^1, which are screwed or otherwise fastened on to the outer ends thereof. The position of such knobs *o* and o^1 on the spindle *m* varies in accordance with the thickness of the door, and in order to retain these at their required distance apart we provide on the spindle two adjustable nuts or bosses, *p*, whose position with regard to the knobs is clearly shown at Fig. 1. . . .

"The mode of operating or working the fastener is as follows:—By pulling a knob, *o*, or pushing at o^1, the spindle *m* provided with the collar *n* is moved in the direction shown by arrow. The collar *n* being in contact with the end *k* of the lever *h*, causes it to transmit motion to the finger or bolt B, and thereby withdraws it upon the catch-plate *f* and clear of the

loose runner or roller *v*, and by a continued pulling or pushing of the knobs in the direction shown the door may be opened after the finger or segment is withdrawn.

"By having no rigid connection between the segment or finger *b* and the lever *h*, the door may be closed through the means of the knobs or handles, or it (the door) may be closed without moving the knobs *o* or *o*[1]. . . .

"We hereby declare that we make no general claim to the opening of latches or fasteners by a pull or push of a spindle or knob, but we claim :— The construction of a latch or fastener wherein a lever worked by the push or pull of a spindle or knob moves in one direction only a segment or finger turning on a fulcrum and pressed in the opposite direction by a spring so as to engage with a catch-plate, substantially as and for the purposes herein set forth."

In an action for infringement against the defendants the validity of the patent was contested, *inter alia*, on the ground that the invention was anticipated by *Imray's* specification (No. 1160 of 1871).

For the present purpose the following description is sufficient [1] :—

"Another object of my invention is the construction of a spring-latch

FIG. 8.

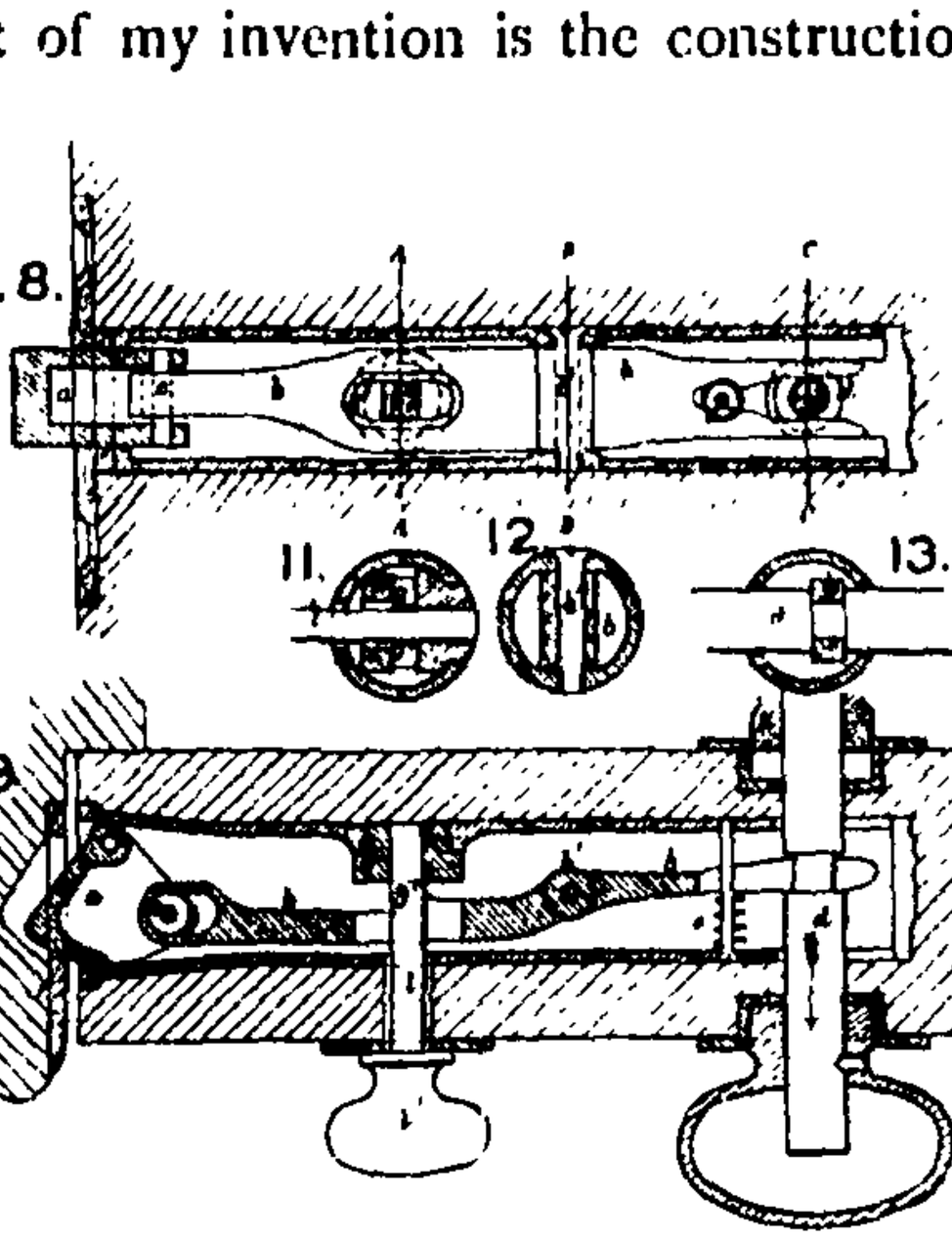


FIG. 9.

From Imray's specification (No. 1160 of 1871).

in such a manner that it is disengaged from the catch-plate (*f*) by pulling the knob or handle on the side towards which the door opens, or by pushing the knob or handle on the other side. Thus the act of pulling or pushing the knob without turning it round serves to open the door. For this purpose the knob-spindle (*d*) is made with a groove in it (*d*, *b*, Figs. 8 and 13), or with a projection or collar on it, which engages with a lever (*b*) connected to the spring-bolt (*a*). The knob-spindle being pulled or pushed in the

[1] The passage here quoted had in the original no references to the diagrams, which are given from another part of the specification.

direction of its length, moves the lever, and so causes the bolt to be retracted."

The action will be apparent from Fig. 8. There was no diagram showing "a projection or collar" on the knob-spindle *d*. In this respect it differed from *Kaye's*. On attempting to close the door by *pushing the handle* the groove *d* forced the lever *b* back, thus forcing out the latch *a* too soon and hindering the closing of the door. The evidence showed that a slight modification would have made it work successfully. The inventor did not see this, and the patent was abandoned as useless.

It was held at the trial, that *Kaye's* invention was not anticipated, and that the defendants had infringed.

On appeal, it was held by the Court of Appeal that *Imray's* specification anticipated *Kaye's*.

The plaintiffs appealed.

Held, by the House of Lords, that *Imray's* specification only disclosed as its contemplated object (so far as this case was concerned) "the opening of the door," the "projection or collar upon it" (*i.e.* the knob-spindle) being merely an equivalent for the "groove in it." The plaintiffs' patent was declared valid.

1889. EDISON & SWAN CO. *v.* HOLLAND AND OTHERS, 6 R. P. C. 243.

Sufficiency—Utility.

This was an action for infringement of the patents discussed in two previous cases, viz. *Edison's* (No. 4576 of 1879, *ante*, p. 293), and *Cheesbrough's* (No. 4847 of 1878, *ante*, p. 297). Practically the case turned on the former only.

The evidence was very voluminous. It was mainly directed to the issue of the sufficiency of the specification, the defendants alleging that the ordinary skilled workman would not know of the necessity of using in the process of carbonizing either carbon "packing," or a metal box or vessel through which oxygen would not permeate at high temperatures; and that he would not know that the tar-putty required prolonged rolling or kneading. Evidence was also called to prove that the "coating" process was a failure. It was proved that some lamps had been publicly exhibited which were made according to the specification; but that none were made or used commercially except with further improvements subsequently invented.

Judgment was in favour of the plaintiffs with regard to the *Cheesbrough* patent. The learned judge found that the *Edison* patent was invalid on the following grounds:—The second claim was too wide: the lamp could never be commercially successful; experiments and trials were necessary to enable the workmen to make the filaments; one process was injurious and another useless; and that the third claim was for a useless invention.

On appeal, it was held by the Court of Appeal that all the objections failed, and that the patent was valid.

The Lords Justices found that the learned judge was wrong in certain conclusions of fact he drew from the evidence, and as regards the law—that the Court was bound by its construction of the claim in the former case; that "commercial utility" was not the test; that the specification was sufficient if the directions enabled a person skilled in the art to carry out the invention, although he had to attempt the process several times in order to acquire the requisite facility, so long as he had not to "invent."

Per *Cotton*, L.J. (p. 277), as to sufficiency of directions: "It is necessary that this should be done so as to be intelligible, and to enable the thing to be made without further invention—not as was pressed upon us by an ordinary workman, but by a person described by Lord *Ellenborough* in *Huddart* v. *Grimshaw* (1 Webs. 85, 87) as a person skilled in the particular kind of work, or, as said by Lord *Loughborough* in *Arkwright* v. *Nightingale* (1 Webs. 60), a person conversant with the subject. But in my opinion it is not necessary that such a person should be able to do the work without any trial or experiment, which, when it is new, or especially delicate, may frequently be necessary, however clear the description may be. One of the principal subjects of attack was that part of the specification which gave directions for making a combination of lampblack and tar to form a material to make the filament to be carbonized[1] . . . the defendants contended before us, without any support from the evidence, that the material could not be effectually prepared without a trade secret. . . . It was said that the secret was the necessity of kneading the material for a length of time, and with the exercise of great pressure . . . and though there are no express directions in the specification how this tar-putty is to be prepared, it is stated that the material can be rolled into threads as small as '007 of an inch, and I think it would be obvious to any intelligent workman who wished to prepare the material that it must be kneaded so as to make it perfectly homogeneous, and to prevent any breaking of the thread in consequence of any particle of lampblack not being perfectly amalgamated with the tar."

Per *Lindley*, L.J. (p. 280): "In complying with the first condition, *i.e.* in describing the nature of his invention, the patentee does all that is necessary if he makes the nature of his invention plain to persons having a reasonably competent knowledge of the subject, although from want of skill they could not themselves practically carry out the invention. In complying with the second condition, *i.e.* in describing in what manner the invention is to be performed, the patentee does all that is necessary if he makes it plain to persons having reasonable skill in doing such things as have to be done in order to work the patent, what they are to do in order to perform his invention. If, as may happen, they are to do something the like of which has never been done before, he must tell them how to do it, if a

[1] See *ante*, p. 294, ll. 25–43.

reasonably competent workman would not himself see how to do it on reading the specification, or on having it read to him. The principle to be applied to the language used to comply with the two conditions is the same for both; but one class of persons may understand only one part of the specification, and another class only the other, and yet the patent may be valid. In a well-drawn specification, the two conditions that have to be complied with are kept distinct; but in many specifications this course is not pursued. The nature of the invention, and the manner of performing it, are often described together. It may be that one set of words sufficiently discloses both the nature of the invention and the mode of performing it, as in *Boulton* v. *Bull*. But it may be, and sometimes is, very difficult to sever the two, and to see whether both are sufficiently described. . . ."

As to the directions for rolling and coating tar-putty filaments (p. 282): "I feel the great difficulty of describing in words the distinction between an amount of practice, without which failure is *probable*, but the necessity for which does *not destroy* a patent, and an amount of experiment and invention, without which failure is *certain*, and the necessity for which destroys a patent. The test, however, by which to decide such a question is, I think, to be found by asking whether anything new has to be found out by a person of reasonably competent skill in order to succeed if he follows the directions contained in the specification. If yes, the patent is bad; if no, it is good so far as this point is concerned. Practice is one thing, experiment and trial something different."

As to utility (p. 283): "The utility of a patent must be judged by reference to the state of things at the date of the patent; if the invention was then useful, the fact that subsequent improvements have replaced the patented invention and rendered it obsolete and commercially of no value does not invalidate the patent." [1]

As to the second claim: "Whether the view here taken of the patent is correct or not, turns, in my opinion, on what Mr. *Edison* did when he introduced 'carbon filaments.' That was, I think, a new departure of the highest importance in electric lighting, and if this be so, the claim is not too wide (see *Honschill Co.* v. *Neilson*, 1 Webs. 683)." [2]

1889. AMERICAN BRAIDED WIRE CO. *v.* THOMSON, 6. R. P. C. 518.

Novelty—Subject-matter—Ingenuity.

The patent in question (No. 9073 of 1885) was granted to *W. R. Lake* for "improvements in bustles or dress-improvers."

The complete specification commenced with a general statement of the

[1] Quoted and followed in *Rockliffe* v. *Priestman*, 15 R. P. C. 158. This judgment is also referred to as showing that the invention must be useful for the purposes indicated by the patentee.' *Lane Fox* v. *Kensington, &c.* (per *Lindley*, L.J.), 9 R. P. C. 417.

[2] It was said by Lord Justice Clerk *Hope* in that case, that an invention consisting in the application of a principle was good subject-matter for a patent, although the claim was wide.

nature of the invention, "a light, cool, elastic bustle, of novel construction &c." Braided wire was spoken of as a known article, to be braided "on a braiding-machine of suitable construction so as to form a hollow cylinder or tube." The mode of construction was then described in general terms, and then more particularly as follows:—

"Fig. 1 represents a bustle-body which is composed of a single section of braided or plaited wires.

"Fig. 2 shows a bustle, the body of which consists of a plurality of sections of similar material or wire.

"Figs. 3 and 4 are details showing the clamping-plate for the ends of the wire sections of the bustle.

"The section A is crescent-shaped, being curved and of larger diameter at the middle than at the ends. The middle portion is gathered on the inner side at E, and so held by a spiral spring or helical wire, F, through the coils of which some of the wires *a* pass. A cord, G, passes through the spiral and is tied to a waistband, H, of tape or equivalent material. The ends, II, of the section A are contracted by drawing or pinching the wires *a* together, and these ends are each clamped in a plate, K. The plates K are bent lengthwise, as shown in Fig. 3, so as to form V-shaped pieces, in the troughs of which the ends of the section A are placed. The sides *kk* of the V-shaped plates K are then pressed together and again bent or doubled lengthwise, as shown in Fig. 4, clamping the wire *a* firmly between them and forming hooks on the ends of the wires, which prevent the latter from being pulled out of place. The ends of the section A, after having the clamping-plates K applied to them, are secured to the waistband by tape-hangers L,L, which form covers and give a finish to the article. By gathering the wires on the inside of the middle of the crescent, as above specified, said wires form curvilinear braces radiating towards the ends and the outside of the bustle, imparting additional strength and resisting properties.

FIG. 1

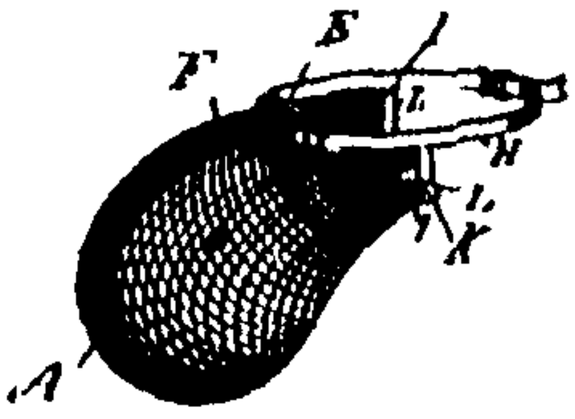


FIG. 2

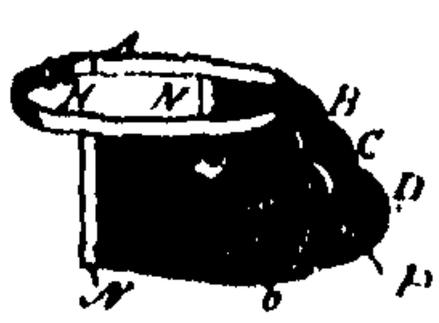


FIG 3

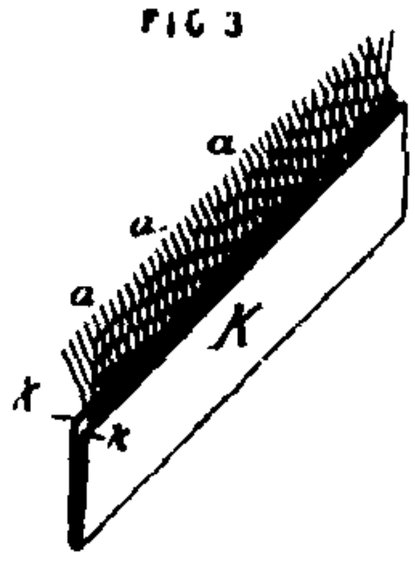
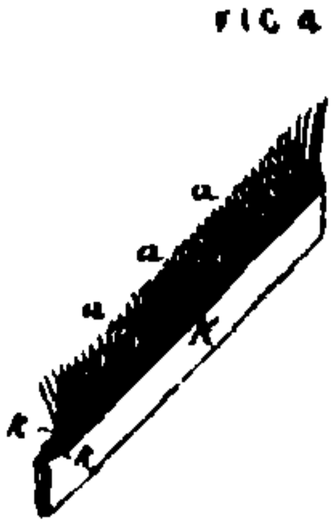


FIG 4



From Lake's specification (No. 9073 of 1885).

"When two or more wire-sections are employed to form the body of the bustle, the several ends thereof are clamped in the manner just described in bent plates, and these are also fastened to tape-hangers, NN, secured to the waistband. The middle portions of the several sections are secured to each other and to the waistband by an encircling tape, P, fastened to said waistband. By increasing the number of sections, the article will form a half-skirt, which is within the scope of this invention."

The claims were—

"(1) A bustle composed of a tubular section or piece of braided wire secured to a waistband, substantially as shown and described.

"(2) A bustle composed of two or more tubular sections of braided wire secured to a waistband, substantially as shown and described.

"(3) A bustle comprising a tubular section or sections of braided wire of crescent-shape fastened to a waistband, substantially as shown and described.

"(4) A bustle comprising a tubular section of braided wire gathered at the middle and secured by a fastening, substantially as shown and described.

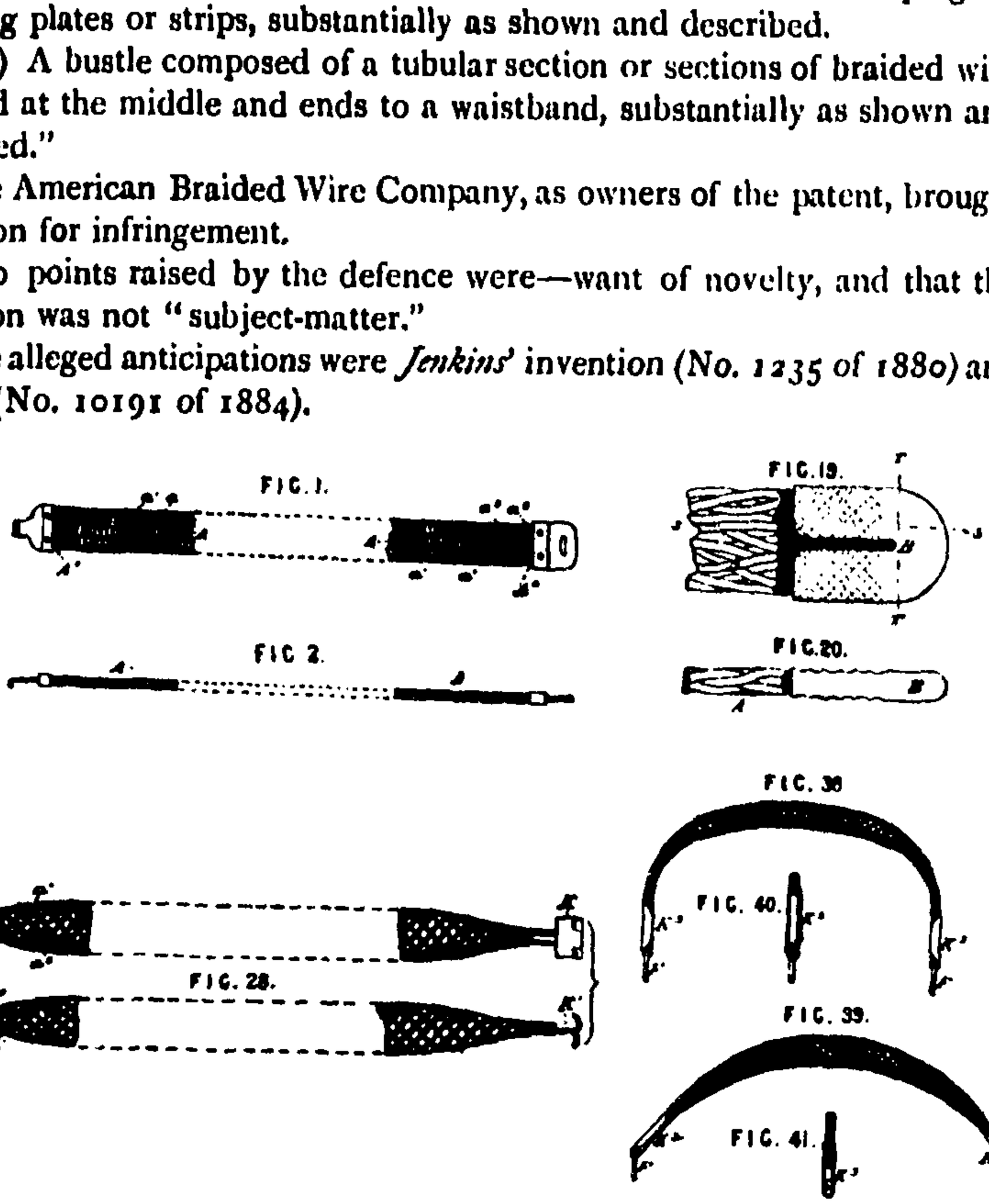
"(5) A bustle the body of which is composed of a tubular section or sections of braided wire, the ends of which are secured in clamping or retaining plates or strips, substantially as shown and described.

"(6) A bustle composed of a tubular section or sections of braided wire fastened at the middle and ends to a waistband, substantially as shown and described."

The American Braided Wire Company, as owners of the patent, brought an action for infringement.

Two points raised by the defence were—want of novelty, and that the invention was not "subject-matter."

The alleged anticipations were *Jenkins'* invention (No. 1235 of 1880) and *Lake's* (No. 10191 of 1884).



Diagrams from Jenkins's specification (No. 1235 of 1880).

Jenkins' patent was for "improvements in compound wire springs and articles made therefrom, and in machinery and apparatus for producing the same." The invention was to be applied to all sorts of articles; the ends were to be secured by soldering or riveting into clamps; an improved

method of soldering and capping was devised. The nature of the invention will be (for the present purpose) sufficiently apparent from the following diagrams :—

Figs. 1 *and* 2, *elevation and side view of a garter.*

Figs. 19 and 20, end of a braided wire spring with metal caps.

Fig. 28, perches for bird-cages.

Figs. 38 and 39, satchet handles with ends K^3 enclosed in metal.

Figs. 40 and 41, longitudinal sections of ends of these with and without rings.

A number of other applications of the braided wire were shown, but those here reproduced were most like the plaintiff's.

Lake's patent (1884) was for "improvements in and relating to pillows, cushions, or similar articles." The nature of the invention will be seen from the drawings here given. Fig. 1 is the pillow, of which Fig. 2 is a

FIG. 1.

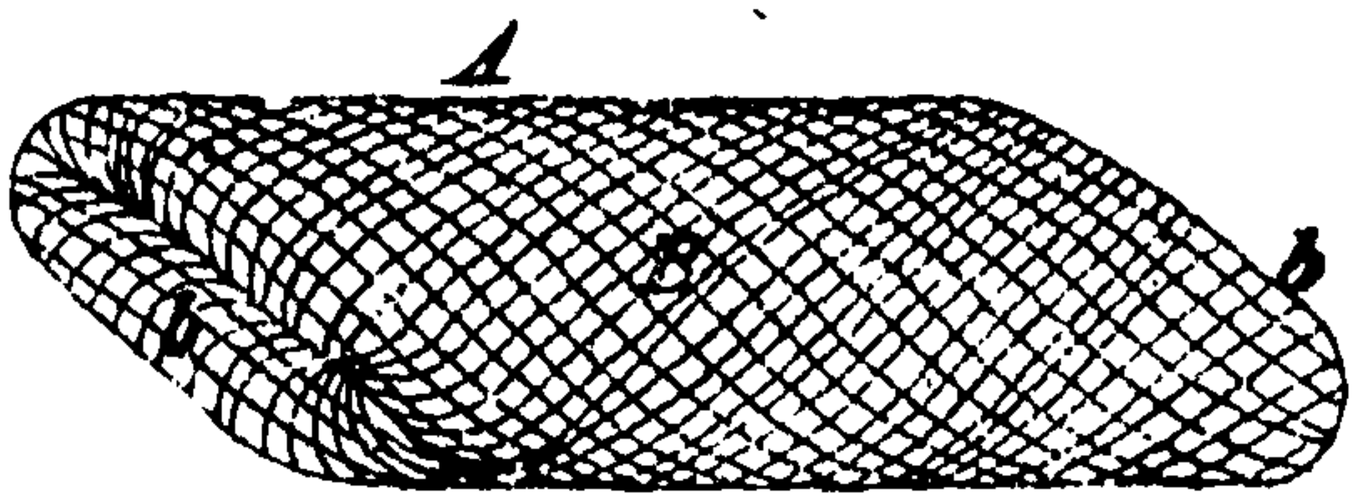
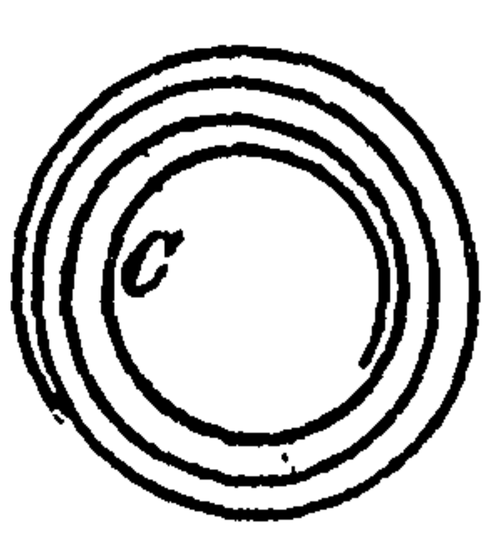


FIG. 2.



Diagrams from Lake's specification (No. 10191 of 1884).

cross-section. The wire, preferably steel, was braided or plaited in the form of a tubular section, either circular, oval, or elliptical—preferably made tapering at the ends. The wires were secured to rings at the ends, which were secured by rods or cords.

At the trial other previous uses of braided wire were proved. It was then held that the patentee's purpose was merely one analogous to that of *Jenkins'* invention, and that there was not sufficient ingenuity in the mode of clamping the wires to support a patent.

The Court of Appeal reversed that decision on both grounds (5 R. P. C. 113).

On appeal to the House of Lords.

Held, that the patent was one for two combinations or forms of bustles shown in Figs. 1 and 2, and that there was sufficient ingenuity exhibited in the application of old braided wire to that new purpose to support the patent.

Notes.

The foregoing case has been regarded as an illustration of an invention just more than the "mere adaptation" of an old thing to a new use: *Morgan* v. *Windover*, 7 R. P. C. 136. The application of the rule involves a correct estimate of the degree of ingenuity required to constitute a patentable "invention": *Gadd* v. *Mayor of Manchester* (per *Lindley*, L.J.), 9 R. P. C. 524.

The thing invented was a new article; that was the ground of the decision:[1] per Lord *Herschell*, in *Vickers* v. *Siddell*, 7 R. P. C. 302. The invention lay in the combination of the "clamping" and the tubular braided wire in the bustle: *Thierry* v. *Rickmann* (*Charles*, J.), 12 R. P. C. 427. Novelty and utility, however, in this case had been proved: *Savage* v. *Harris* (per *Chitty*, J.), 13 R. P. C. 94.

1890. MORGAN *v.* WINDOVER, 7 R. P. C. 131.

Analogous Use—No Inventive Ingenuity.

A patent (No. 4216 of 1876) was granted to *G. H. Morgan* for "improvements in carriages." The specification described the invention in detail. It consisted in placing the C-springs, formerly used at the back of a carriage in the front, in such a manner that the turning of the carriage was not interfered with. The claims were: "first, the mode herein described of supporting the front of a carriage by C-springs having their lower parts fixed to the axle and their bows connected by links or loops to bearings fixed to the bottom bed of the under carriage, substantially as and for the purposes herein shown and described; and secondly, I claim giving support to the tails of the front C-springs by connecting them to a cross-spring fixed at its centre to a stay or stays fixed to the framing pieces of the bottom bed in manner and for the purposes substantially as herein shown and described."

It was proved at the trial that these improvements consisted essentially in putting a known form of spring, which had before been used at the back of carriages, on the front. It was also proved that if a competent workman were told to substitute a composite for an elliptical spring upon the fore axle, he could carry out the order without further instructions.[2] The invention was useful, and a commercial success.

At the trial, and by the Court of Appeal, the patent was held valid.

On appeal to the House of Lords.

Held, that there was no subject-matter to support a patent, as the inventive faculty was not displayed in adapting known springs to a new position in front of the vehicle.

Notes.

The patentee did not claim the combination of the springs at the back with those at the front, but only the mode of securing them to the front of the carriage, in which operation no invention was displayed; there being no ingenuity in that, there was an end to the case: *Lyon* v. *Goddard*, 10 R. P. C. 344 (per Lord *Esher*, M.R.), 345 (per *Bowen*, L.J.); S. C. 11 R. P. C. 357 (per Lord *Halsbury*, L.C.).

[1] According to the view submitted in this book (*ante*, pp. 6–13), a new article is a new "manufacture."

[2] This was the crucial evidence in the case (see *ante*, pp. 35, 37).

Invention is a question of fact and degree; in the above case none was shown: *Pirrie* v. *York St., &c.*, 11 R. P. C. 448, 456; *Brooks* v. *Lamplugh*, 14 R. P. C. 615.

It is not the advantage gained, but the substantial amount of invention shown, that can alone decide whether there is sufficient "subject-matter." Per *Rigby*, L.J., in *Castner-Kellner Alkali Corporation* v. *Commercial Development Corporation*, 16 R. P. C. 268.

As to utility or advantages being evidence of invention, see *ante*, p. 38.

1890. VICKERS *v.* SIDDELL, 7 R. P. C. 292.

Disconformity—Inventive Ingenuity—Combination.

In 1885 a patent (No. 6205) was granted to *G. Siddell* for "an improved mechanical appliance for working or operating on large forgings in iron or steel."

The provisional specification was in the following terms:—

"This invention relates to the construction and application of an improved and more simple and effective mechanical appliance or means for working or operating on large forgings in iron or steel, being such forgings as are usually made under a hydraulic forging-press or machine.

"My improved appliance consists of a horizontal bar or bars made of suitable metal and fitted with suitable pulleys and hooks, which bar or bars can be placed or fitted on either side of the crosshead of the forging-press, or through the 'pellet' or key-way.

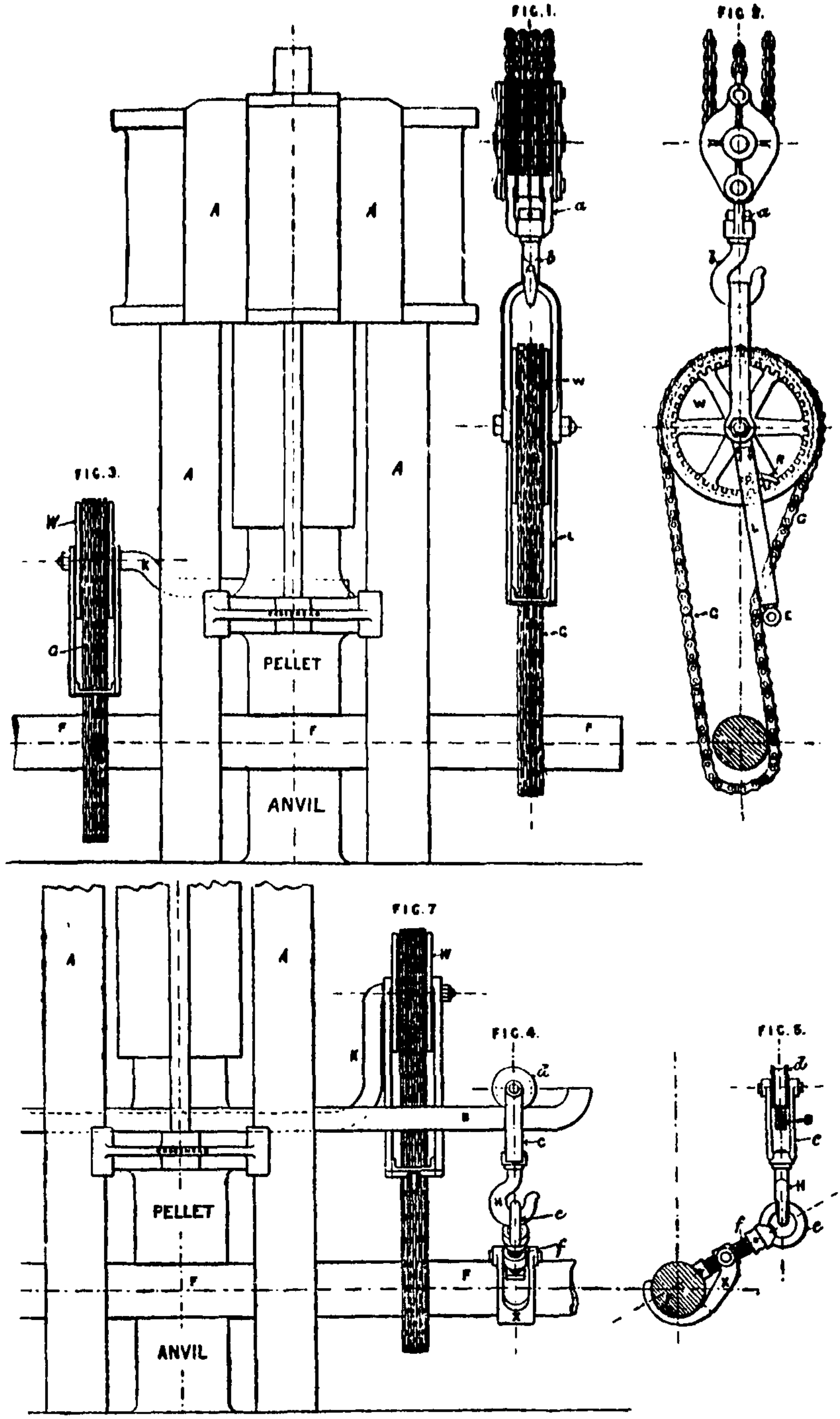
"Clips or grips or ratchets are conveniently arranged so as to fix on or hold the ingot or forging and hooked on the ratchet or clip or grip; and in operating, when the press lifts up or is raised, the ingot or forging will be turned as much as required at every stroke or operation of the press.

"The crank bar of the press in connection with the wheel and endless chain thereof will raise the forging from the anvil at the same time that the clip or grip or the ratchet is turning the forging, the ratchet being suitably fixed for turning the crane-wheel over which the endless chain passes.

"The ratchet has a chain attached to the crane girder, which will travel along a horizontal bar suitably fixed for the purpose, and will turn over the ingot or forging in the furnace."

The complete specification described the invention by the aid of diagrams.[1] For the present purpose the following is sufficient. In Fig. 2, G is an endless chain passing over the wheel W and under the forging F, on which it was to operate. In one modification the wheel W turned on an axle attached to the crosshead K of the press (shown side view in Figs. 3 and 7). The single or double lever L worked on the same axle. In another form the axle of the wheel W was suspended by the crane-hook, &c., *ab*, as shown in Fig. 1. A ratchet, R, engaged in internal

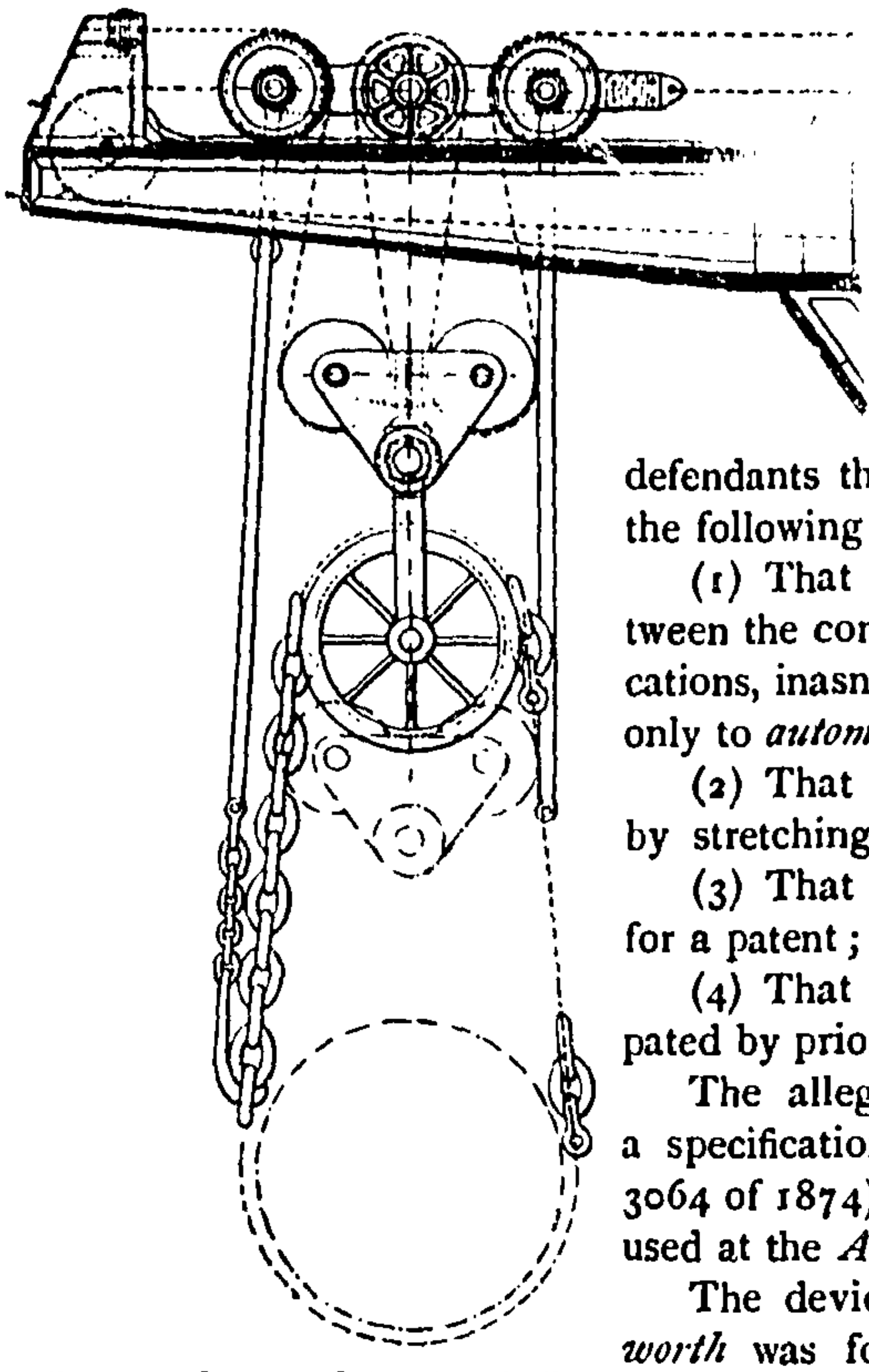
[1] These here given are in part and condensed.



Diagrams from Siddell's specification (No. 6205 of 1885).

cogs in the wheel W. When the press rose the weight of F came wholly or in part on the chain G, straightening it, thereby actuating the lever L and turning the wheel W. Instead of this automatic action, external force might be applied to the loop E, and the lever so actuated independently of the endless chain G. Another form of appliance was shown in Figs. 4 and 5, the arrangement or grip X*e* being hung by the hook H from the wheel *d*, running on a bar, B, of the crosshead. When the latter rose the "tongs" X gripped the forging F, and so turned it a corresponding amount. The arrangements could be used separately or combined (as shown in Figs. 4 and 7), and might be attached to a movable crane.

The claim was for "the general construction, adaptation or application, and the combination and use of the several parts, in the whole, constituting improved more simple and efficient appliances or means for working or operating on iron or steel forgings, substantially as hereinbefore set forth, and as illustrated on the accompanying drawings."



Drawing of a part of the Abouchoff crane.

In an action for infringement of the above patent against Messrs. *Vickers*, it was contended, *inter alia*, for the defendants that the patent was invalid upon the following grounds:—

(1) That there was disconformity between the complete and provisional specifications, inasmuch as the provisional related only to *automatic* turning of the forgings.

(2) That the supposed *automatic* action by stretching the chain was useless.

(3) That there was no subject-matter for a patent; and

(4) That the invention had been anticipated by prior appliances.

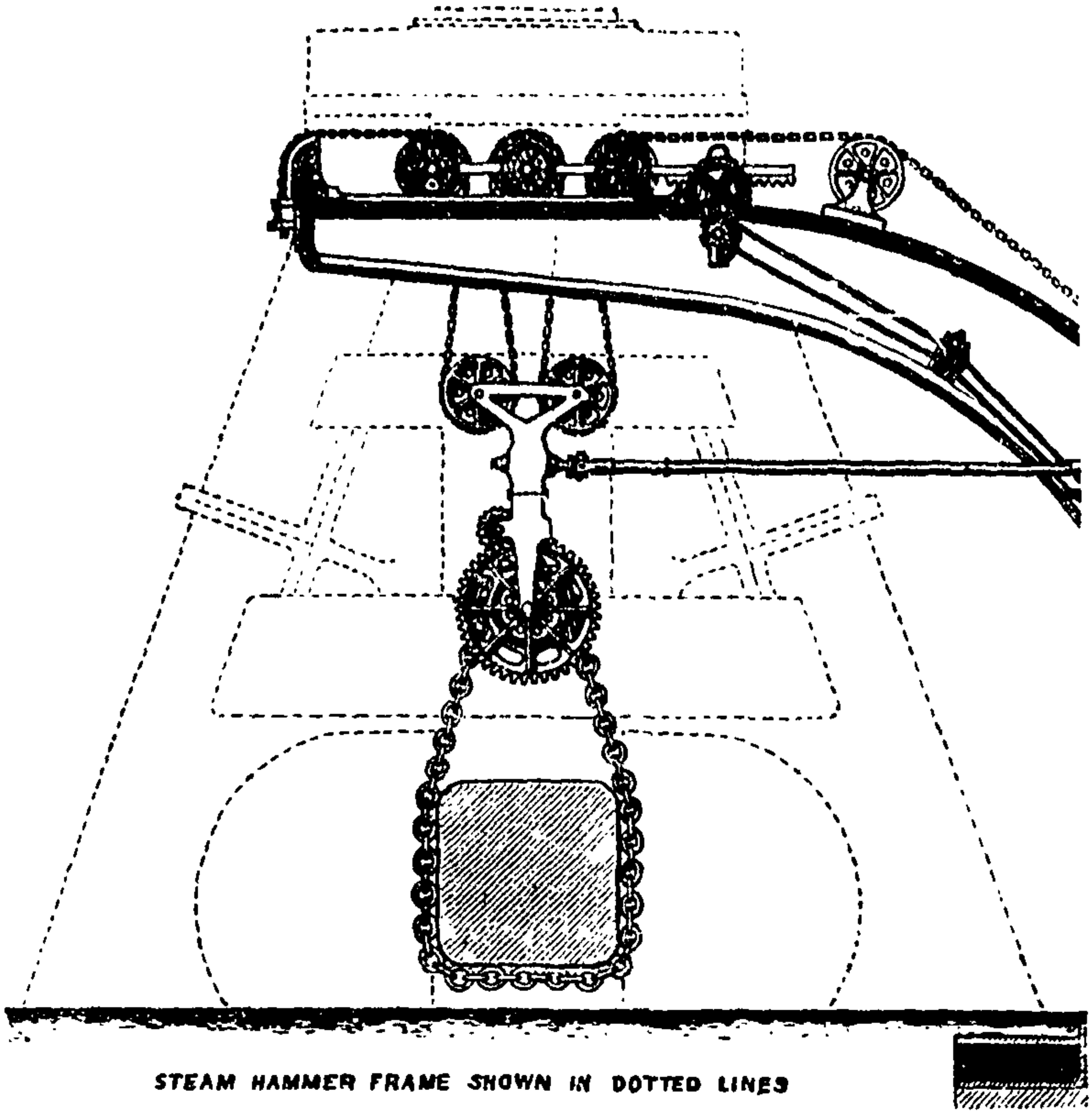
The alleged anticipations consisted of a specification of Sir *J. Whitworth* (No. 3064 of 1874), and descriptions of machines used at the *Abouchoff* and *Creuzot* works.

The device employed by Sir *J. Whitworth* was for the purpose of turning a mandril, not the forging itself, and consisted in a ratchet-wheel fixed to the mandril, and engaging with a pawl on a lever worked by a hydraulic ram. The ram could be raised either by hand or by a self-acting motion.

The "Abouchoff" machine was described in *Engineering*, Jan. 25, 1878 (Vol. 25, p. 64). The whole drawing showed a sixty-ton steam-

crane (a portion of which is only shown here)[1] with the mechanism for raising the apparatus here shown and moving it horizontally along the crane. In turning the forging it was necessary to insert by hand the hook into the chain, as shown on the left-hand side of the drawing. This device prevented the hooked link from descending, and so turned the chain and forging.

The "Creuzot" crane was one of one hundred and sixty tons, and was described in the *Engineer* of May 10, 1878. The full drawing (of



Drawing of a part of the Creuzot crane.

which a part only is here shown)[1] showed the whole crane. The steam-hammer frame is shown in dotted lines. The chain enclosing the forging was turned by means of external cog-wheels working on the chain-wheel, as shown in the drawing.

It was proved that the precise combination in question (*Siddell's*) had

[1] The exhibits used in the case in the House of Lords were the full drawings taken from the above-named publications. The author is indebted to the proprietors of those papers for the parts of the same drawings here reproduced.

not been used before, that it effected a great saving in labour and of £175 in wages per week. The defendants (*Vickers*) first claimed that they were the inventors, and that the patentee had taken the device from them; but this argument was abandoned on appeal.

At the trial, and in the Court of Appeal, the patent was held valid.

On appeal to the House of Lords.

Held, that the provisional specification sufficiently indicated the nature of the invention subsequently disclosed in the complete specification; that the combination was novel, and the patent was valid.

Per Lord *Halsbury*, L.C. (p. 303): "The objection that no distinct claim is made is one of form only, and I think the Legislature did not intend to make the direction, which undoubtedly the Act contains, a condition upon the non-compliance with which the patent should be void. There is no trace of any such intention in the statute, and there does not seem any good reason why it should be inferred from the general policy of the statute. On the contrary, the questions of mere form, I think, were intended to be dealt with under the new machinery provided." [1]

Per Lord *Herschell*, (p. 304): "The question remains whether this mode of dealing with forgings which require to be gradually turned was so obvious that it would at once occur to any one acquainted with the subject and desirous of accomplishing the end, or whether it required some invention to devise it. There is no doubt about the law applicable to such a question, though it is often difficult to apply it to the circumstances of any particular case, and its application is perhaps most difficult when the alleged invention consists of a new apparatus combining known elements. If the apparatus be valuable by reason of its simplicity, there is a danger of being misled by that very simplicity into the belief that no invention was needed to produce it. But experience has shown that not a few inventions, some of which have revolutionized the industries of this country, have been of so simple a character that, when once they were made known, it was difficult to understand how the idea had been so long in presenting itself, or not to believe that they must have been obvious to every one."

At p. 306: "The last objection taken to the patent is, that the complete specification does not 'end with a distinct statement of the invention claimed' as required by sect. 5 (5) of the Act. The Act does not provide that if this requirement is not complied with the patent shall be void, and I think it impossible to imply any such condition. There is no more warrant for doing so in this case than in the case of non-compliance with any other of the provisions of the section. The provision which immediately precedes that in question requires that a specification should 'commence with a title.' It could hardly be gravely contended that if the Comptroller accepted a specification where the title did not occupy the first place, the patent granted ought on that account to be held void.[2] It is not necessary to express any opinion whether the specification did end

[1-2] Reaffirmed in *Tubes Ld.* v. *Perfecta, &c.*, 20 R. P. C. 99, *post*, pp. 461, 462.

with a distinct statement of the invention claimed within the meaning of that statute. I should certainly not recommend it as an example to be followed."[1]

Notes.

The first of the foregoing passages from Lord *Herschell's* judgment has been frequently quoted (in whole or in part) and followed in *Shaw* v. *Barton*, 12 R. P. C. 291; *Savage* v. *Harris*, 13 R. P. C. 94; *Birch* v. *Harrap*, 13 R. P. C. 620; *Thierry* v. *Rickmann* (the whole judgment was relied on by *Charles*, J.), 12 R. P. C. 427; and *Taylor & Scott* v. *Annand & Others*, 18 R. P. C. 62.

Lord *Herschell* also pointed out that as there was evidence that various devices had been made to meet the want, the patentee's device was not so obvious as had been suggested. *Longbottom* v. *Shaw*, 8 R. P. C. 337.

Vickers v. *Siddell* decided that the rule as to "disconformity" still continued after the Act of 1883; it is restated in *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 259, 526, 529. It also shows that in ascertaining the nature of the invention the whole specification must be considered; the absence of express claim for the novel feature in the invention does not of itself invalidate a patent: *Presto Gear Case, &c.* v. *Simplex, &c.*, 15 R. P. C. 640.

This case is an example of great simplicity in a patentable invention. *Lancashire Explosives Co.* v. *Roburite, &c.*, 12 R. P. C. 399.

Vickers v. *Siddell* shows that the facts of each case must first be ascertained, and then arises the question whether there be "invention?" *Case* v. *Cressy*, 17 R. P. C. 263.

1890. GAULARD & GIBBS' PATENT, 7 R. P. C. 367.

Want of Inventive Ingenuity—Alleged Combination—Best Use of Known Tools.

In 1882 a patent (No. 4362) was granted to Messrs. *Gaulard & Gibbs* for "a new system of distributing electricity for the production of light and power."

The complete specification was as follows[2]:—

"This system consists of the employment of an alternating current produced by an electro dynamo machine, and determining by its passage through a number of electrical generators of special construction the formation of induced currents, of which the quality and the value depend only on the construction of the secondary coils of the said electrical generators.

[1] As to an inventor's duty to distinguish the novelty of his invention, see *ante*, pp. 57-60.

[2] As the decision in the House of Lords did not turn on the objection of disconformity, the extracts from the specification are here given as amended without distinguishing the amendments.

"The currents generated under these conditions are utilized either by lamps to produce light or by magneto machines to produce motive power.

"We take an alternating current dynamo machine constructed in such a manner that the resistance of the inducted system ('induit') is greater than that of the external circuit uniting its two extremities, but we do not use, or desire to use, alternating dynamo machines that produce currents *other than currents of high tension, as hereinafter firstly claimed.*

"Let us suppose the length of this circuit equal to 50 kilometres, we place (see Fig. 1) upon it, at every 500 metres, for instance, a secondary generator constructed in the following manner.

FIG. 1

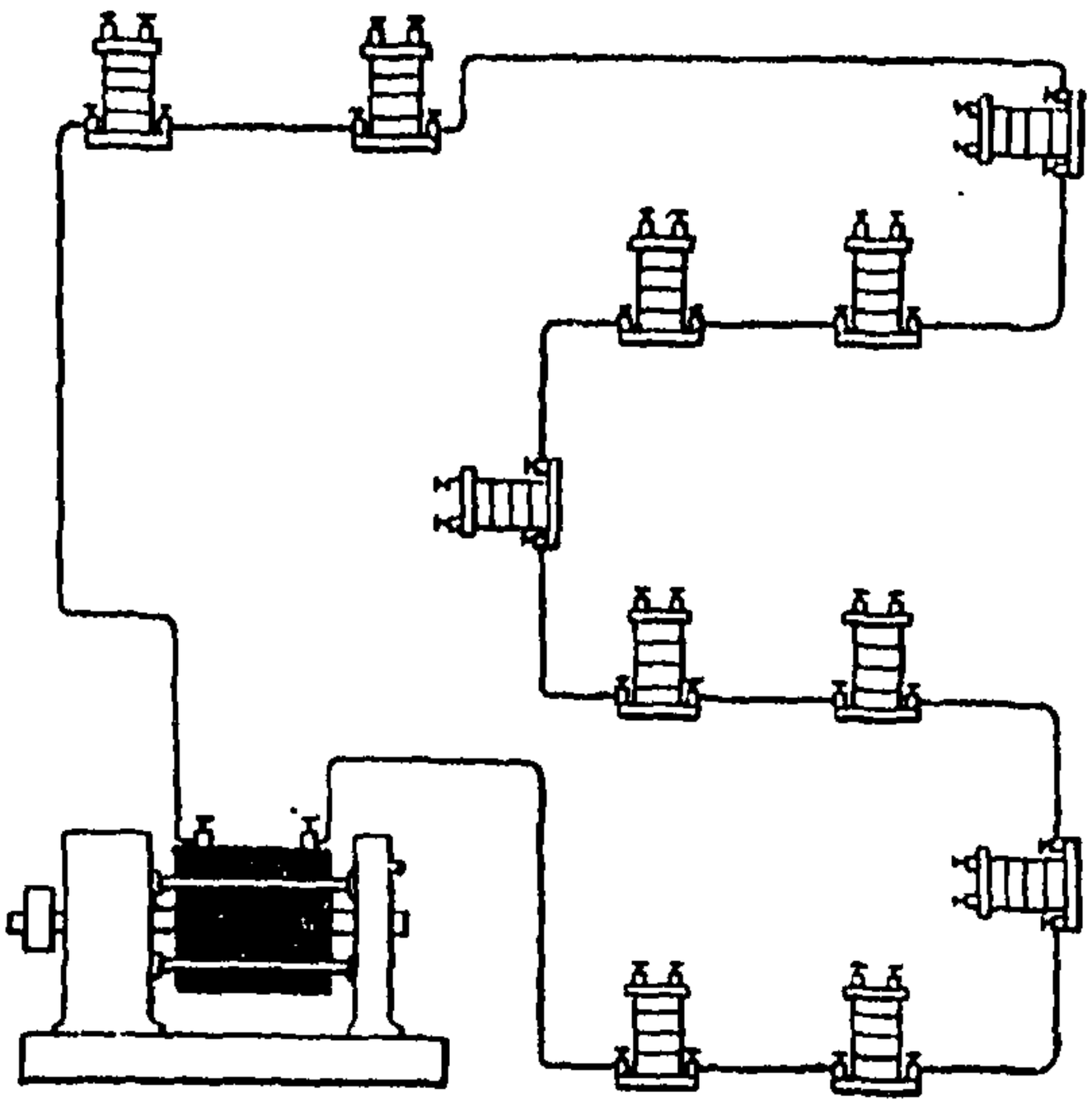
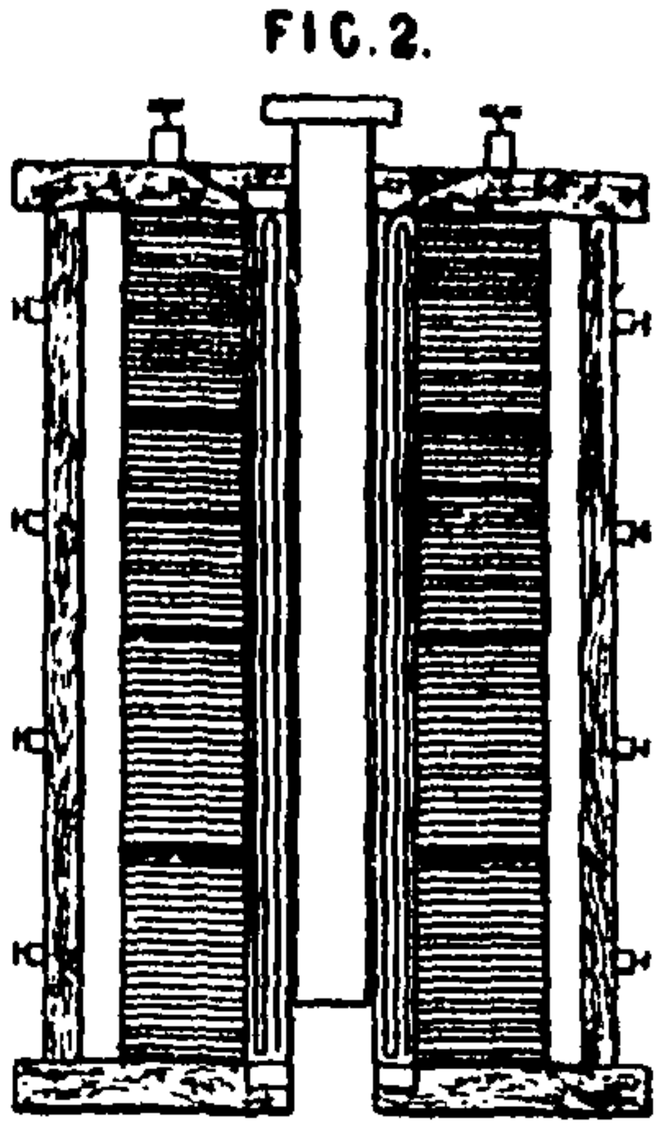


FIG. 2.



Diagrams from Gaulard & Gibbs' specification (No. 4362 of 1882).

"The secondary generator may be constructed as represented in Fig. 2."

The details of the secondary generators, with dimensions of wires, are next given: the cores were of soft iron wire, and the ends of the cables of the bobbins of the secondary coils were so placed as to allow of their being grouped either for quantity or tension. By this means the tension was to be varied to suit the requirements of the consumer.

The claims were:—

"First, the privilege of exclusively working our process of distribution characterized by the following points, as above explained; the employment of an alternating current of high tension for the generation on a number of secondary generators of induced currents individually utilized either for the production of light or motive power.

"Second, the system of electric distribution such as is laid down in the foregoing statement."

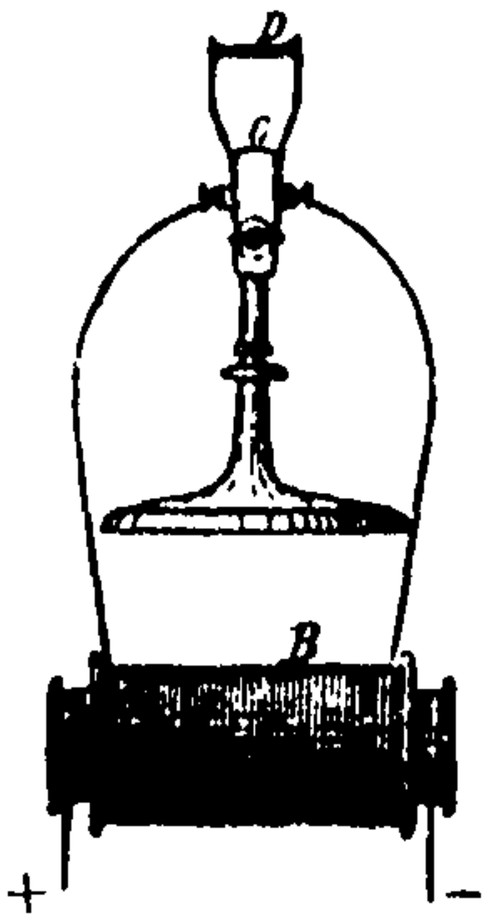
There had been a third claim for the special construction of the generators, but this was disclaimed on amendment.

A petition for revocation of the above patent was presented. Amongst other grounds alleged in the petition, that of want of subject-matter was relied on.

Evidence of the state of public knowledge and alleged anticipations was given at the hearing.

In 1877 a patent (No. 1996) was granted to *P. Jablochkoff* for a new

FIG. 1



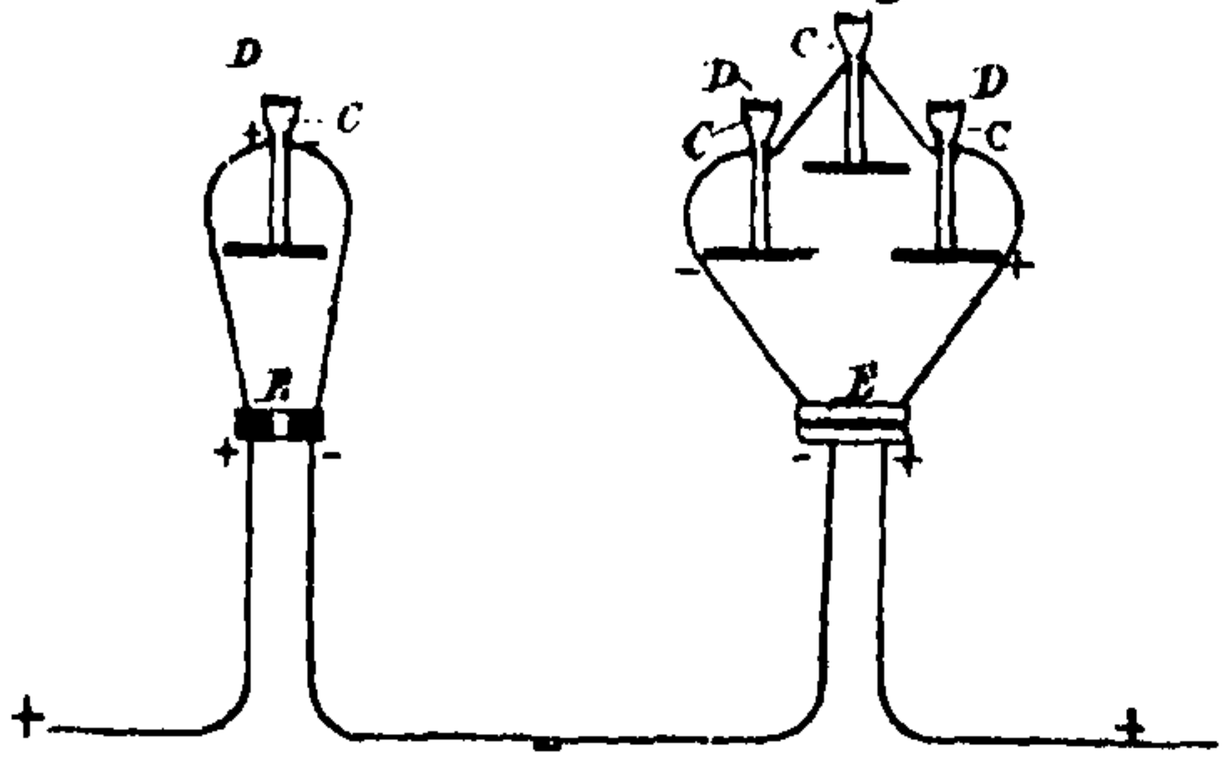
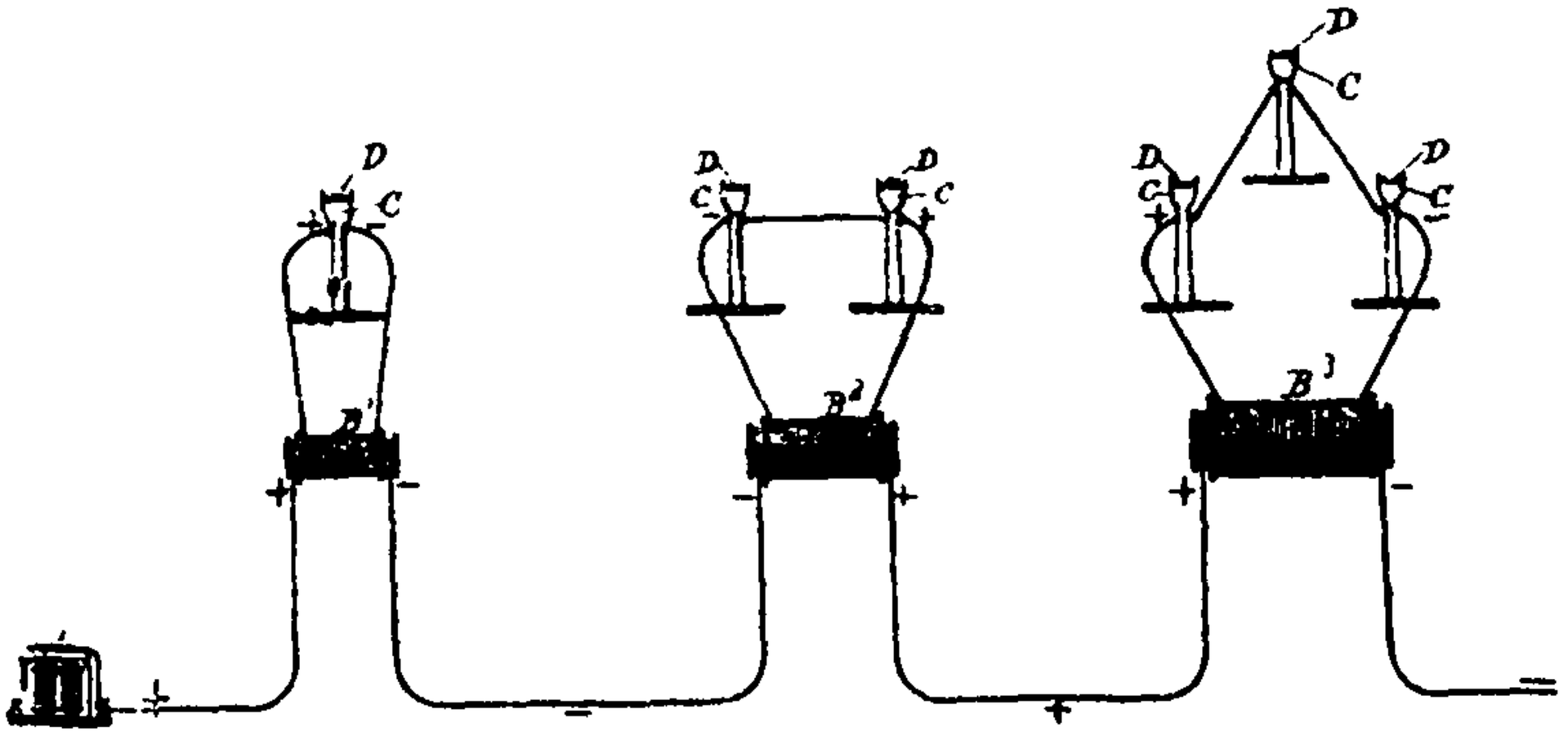


FIG. 3.

FIG 2



Diagrams from Jablochkoff's specification (No. 1996 of 1877).

method of electric lighting. His lamps of special construction were used in series. Hence it was necessary to provide means whereby the failure of one lamp would not extinguish all the rest. It was also necessary to supply the current to each lamp at a high tension, the potential difference at the poles of the lamp being comparatively great. The system is shown in Figs. 1, 2, and 3 above. In his specification the following passages occurred :—

"In carrying my invention into effect, I establish in the electric circuit employed a number of induction coils corresponding to the number of lamps to be employed, the terminals of each inner coil being connected to the said circuit, while the terminals of the outer coil are situated on each side of the slab of kaolin of the lamp. . . ."

"In cases where continuous electric currents are employed the induction coils are provided with interruptors and condensers, either one to each or one to a number of coils. In the case of alternating currents the interruptors and condensers are dispensed with." Another advantage in the use of induction coils lay in the power to extinguish one lamp without extinguishing all.

Publications were proved describing *Jablochkoff's* system; in these the *Ruhmkorff* coil was mentioned. It was well known and constructed with iron wire or split cores.

Other publications showed that for the purpose of transmitting electric energy it was known that it was economical to use transformers to change the current to one of high tension, and to change it again to one of low tension at the place where it was to be applied.

It was also proved that, until the *Edison & Swan* lamps were made, there was no occasion to use the electric current for lighting purposes at a comparatively low tension; hence no demand for a "step down" system.

It was contended that the patentee had invented the combination of the three elements, (1) an alternating dynamo supplying the main wire, (2) a current in that wire of high tension, and (3) a secondary generator such as described.

The patent was declared invalid by *Kekewich*, J., on the ground that the inventor had merely indicated the best method of using known tools (5 R. P. C. 525).

Held, by the Court of Appeal, that the invention was new and useful, but by amendment the monopoly claimed had been extended, and that the patent was bad on the latter ground (6 R. P. C. 215).

Held, by the House of Lords (not agreeing with the Court of Appeal as to disconformity), that the patent was bad for want of subject-matter, the combination consisting merely in putting well-known machines together in a manner that involved no invention.[1]

1891. LONGBOTTOM *v.* SHAW, 8 R. P. C. 333.

Analogous Use—Want of Inventive Ingenuity.

A patent was granted (No. 2695 of 1886) to *C. Longbottom* for "improvements in reels or frames for holding pile and other fabrics."

The specification described a new method of forming and attaching

[1] In *Rucker* v. *London Electric Supply Corporation*, 17 R. P. C. 294, *Farwell*, J., referred to this case as a useful illustration of the application of the principles upon which the Court acts in construing specifications.

hooks to the arms of the reels. Fig. 1 shows hooks, cast or stamped, secured to the arm of the reel by rivets through the holes B. Fig. 2 shows another method in which the strip of metal is stamped out and the hooks (Fig. 3) soldered into the transverse grooves C. When complete this is secured to the arm of the reel as above described.

FIG. 1.

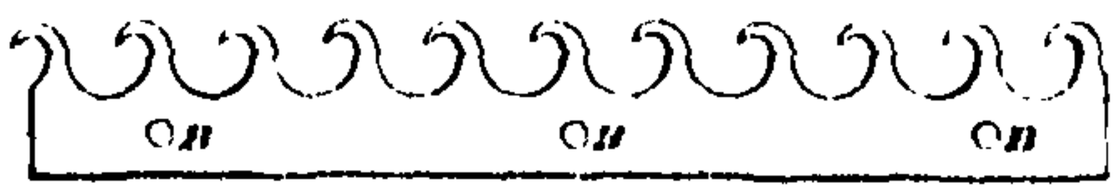


FIG. 2.



FIG 3.

Diagrams of Longbottom's specification (No. 2695 of 1886).

The claims were :—

"(1) The combination, with a reel or frame for holding pile or other fabrics, of a row of hooks formed of cast metal, substantially as herein shown and described.

"(2) The combination, with a reel or frame for holding pile or other fabrics, of a row of hooks stamped from sheet metal, substantially as herein shown and described.

"(3) The combination, with a reel or frame for holding pile or other fabrics, of a row of hooks formed by attaching hooks to a suitable foundation adapted to be secured to the arms of the reel or frame, substantially as herein shown and described.

"(4) In a reel or frame for holding pile or other fabrics, the novel method of attaching the hooks, substantially as herein shown and described."

At the date of the patent the use of a row of hooks in the plane of the reel or frame was well known, the hooks being separately attached to the frame by rivets. Rows of hooks fastened in planes at right angles to the strip or lath of metal to which they were attached, so that the whole could be used by attaching the metal where required, were known, but for other purposes, such as hanging goods up, &c. There was an improvement in the alleged invention, the new articles being largely sold in preference to the older kinds.

Held, by the Court of First Instance, the Court of Appeal, and the House of Lords, that the application of old things, as shown above, to reels for pile fabrics, although an improvement, did not require experiment or possess sufficient ingenuity to support a patent.

Note.

This case is a good example of want of subject-matter. Per *Smith*, L.J., in *Brooks* v. *Lamplugh*, 15 R. P. C. 48.

1891. NUTTALL *v.* HARGREAVES, 8 R. P. C. 450.

Disconformity—No Invention in Provisional.

A patent (No. 5059 of 1880) was granted to *F. Nuttall* for "an improved method of tapping barrels containing beer, porter, or other liquids, and preventing waste and leakage of said liquids during tapping."

The provisional specification was as follows:—

"This invention consists of an improved method of tapping barrels containing beer, porter, or other liquids, and for preventing waste and leakage of said liquids during tapping, by means of a screwed bush or plug, *a*, secured to the barrel-end *b*; the bush also carries a guide for the valve *c* and spring *d*, the valve being kept on the seating *e* in the bush by means of the spring *d*, and preventing the liquid from escaping.

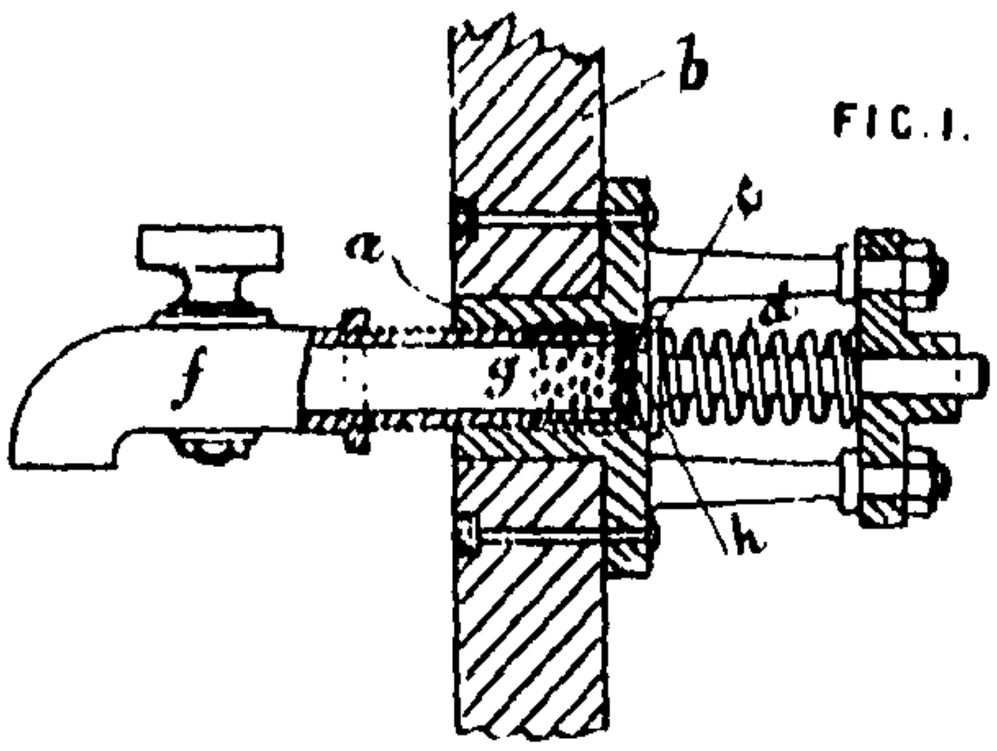


FIG. 1.

From Nuttall's provisional specification.

"To tap the barrel I use a tap, *f*, screwed to suit the bush *a*, the tap being provided with holes as shown at *g* (Figs. 1 and 2).[1] The tap is screwed into the bush until it forces the valve *c* from its seating (Fig. 2); the liquid then escapes through the holes *g* in the tap. The said tap is arranged so that it is screwed in the bush *a* a short distance (Fig. 1) before coming in contact with the valve, so as to prevent leakage through the bush before opening the valve.

"When the tap is removed or unscrewed from the bush the spring *d* presses the valve back to its seating before the threaded part of the tap leaves the bush.

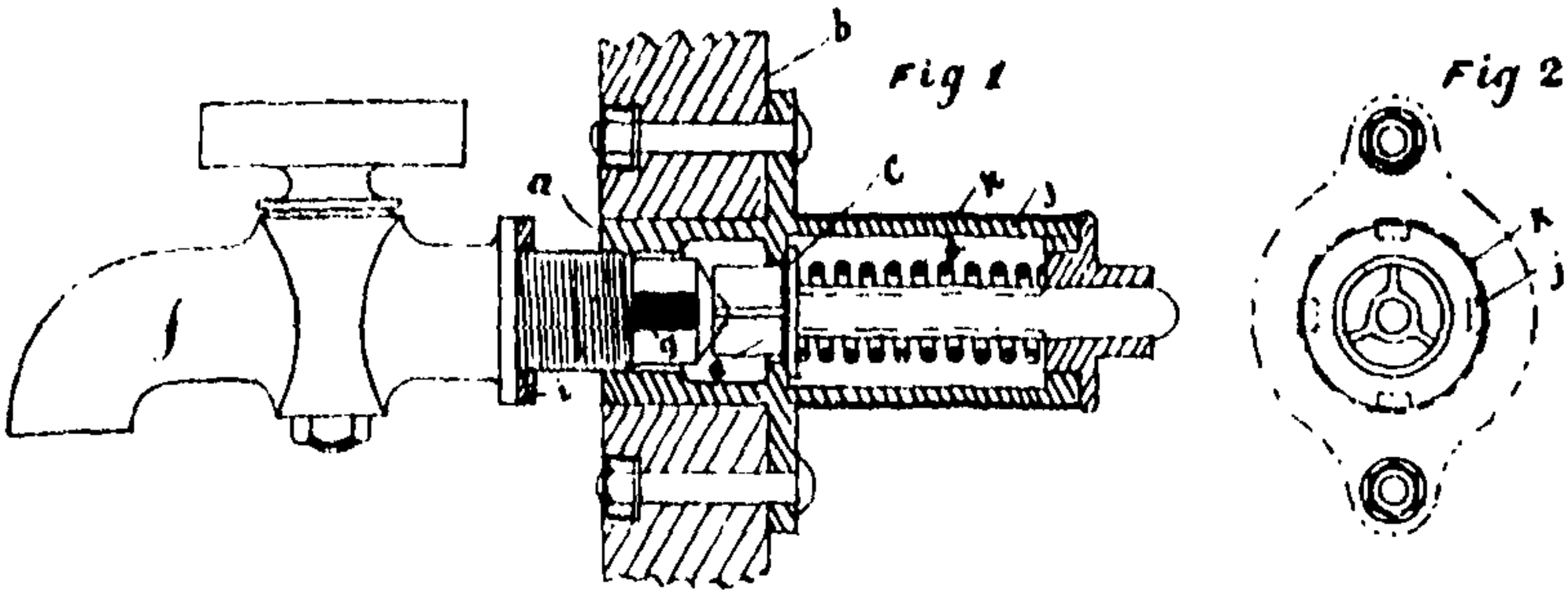
"I also provide the tap with a centre point, *h*, to engage in a corresponding recess in the valve as shown, to ensure easy and direct opening of the valve with little friction and without damaging the face of the valve."

The complete specification gave a more detailed description of the invention as shown in Figs. 1 and 2 below. The action of the tap was thus described:—

"To tap the barrel I use a tap, *f*, screwed to suit the bush *a*, the tap being provided with a hole or holes as shown at *g*, the tap is screwed into the bush until it forces the valve from its seat, the liquid then escapes through the holes *g* in the tap, the tap is arranged so that it is screwed into the bush a short distance before it commences to open the valve, so as to prevent

[1] It is unnecessary to reproduce Fig. 2, which was the same as Fig. 1, but showing the tap in position when screwed home, the spring *d* being compressed.

leakage through the bush before the valve is opened, the tap is also provided with a leather or rubber collar, *i*; the face of the valve *c* may also be provided with a similar facing of leather or other material; the valve casing or projections *j* are encircled by a gauze or strainer, *k*, to prevent hops or impurities



From Nuttall's complete specification (No. 5059 of 1880).

escaping through the tap. When the tap is removed or unscrewed from the bush the spring *d* presses the valve back to its seat before the threaded part of the tap leaves the bush. Figs. 1 and 2 show the arrangement secured to the barrel end on the inside."

Other modifications were then described by diagrams, and the claim was for :—

"A method of plugging or securing the outlet of barrel by means of an arrangement of bush or valve casing with valve and spring secured to barrel end in connection with a tap as shown, and for the purpose as hereinbefore set forth and more particularly described in specification and drawings."

It was proved at the trial that the invention of the tap described in the provisional specification had neither novelty nor utility. The patentee thought it was original.

It was also shown that the utility and novelty of the complete invention lay in the use of the strainer *k*, *j*, described in Figs. 1 and 2 of the complete specification.

It was argued for the plaintiff that the strainer was a mere adjunct and improvement in carrying out the invention (*Newall* v. *Elliott*, *ante*, p. 201).

At the trial the learned judge held that the alleged invention was neither novel nor subject matter for a patent (8 R. P. C. 273).

The plaintiff appealed.

Held, assuming that the claim was for a combination of strainer, bush and guide-valve, and screw-tap, the element of the strainer was not included in the provisional specification; the patent was therefore invalid. The objection of "disconformity" between provisional and complete specifications may be taken since the Act of 1883.

Notes.

In this case previous decisions were reviewed; the patentee need not describe details in the provisional specification: *Lane Fox* v. *Kensington, &c.*, 9 R. P. C. 238.

Nuttall v. *Hargreaves* shows that if the invention described in the two specifications be not the same, the patent is invalid: *Gadd* v. *Mayor of Manchester*, 9 R. C. P. 259.

The real invention (the strainer) was not made at the date of the provisional specification, which described a tap that was neither new nor useful. Per *Lindley*, L.J., S. C. 9 R. P. C. 527.

Nuttall v. *Hargreaves* was also followed in *Pether* v. *Shaw*, 10 R. P. C. 297.

1892. THE WENHAM GAS CO., LTD. *v.* THE CHAMPION GAS CO., 9 R. P. C. 49.

Novelty—Subject-matter—Construction.

A patent (No. 2869** of 1881) was granted to *F. W. Clark* for "improvements in railway-carriage, street, and other gas lamps."

The specification commenced with a general description of the invention, and was illustrated by diagrams. In all of these the only kind of lamp shown was that in which the flame was beneath the supply-pipe, and the light was cast downwards.

One modification of the lamp is shown in Figs. 5 and 6, Fig. 6 being a horizontal section through AB of Fig. 5, showing the three tops of the air inlet pipes alternating with three openings for the escape of the products of combustion up the chimney. It is thus described [1]:—

"In Figs. 5 and 6 of the drawing I have shown the arrangement of lamp I prefer to adopt when the inner concentric tube serves for the air inlet, a lamp of this construction being specially suitable for use as a street-lamp.

"*a* is the lamp body; *b*, the glass; *c*, the cover; *d* and *e*, the concentric tubes; *g*, the reflector; *h*, the chamber formed by the lamp body *a* and the outer tube *e*; *i*, cover to same; *j*, *j*, air inlets; *k*, *k*, the air inlets in the outer tube *e*; *u*, is the gas supply-pipe which I use in this arrangement instead of a coil as hereinbefore described; between the inner tube *d* and the gas-pipe *u* I provide an additional pipe, d^1, the space between the two tubes forming the chimney; and the space between the tube d^1 and the gas-pipe *u* forming the heated air-chamber corresponding with the chamber *f*, in the arrangement hereinbefore described and shown in Figs. 1 to 4. In this arrangement a ring, or circular burner of the kind shown in the drawing and

[1] The specification is here shown as amended without distinguishing the amendments.

marked r, may be employed; e^1 is an earthenware or metal continuation of the tube d^1, such tube e^1 being perforated if found desirable for causing a portion of the heated air to be more equally supplied to the interior surface of the flame."

The air entered at the outer circumference under the cover, part descended along the surface of the glass b, keeping it cool, as shown by the arrows, and part through the inlets k, along the reflector g, thence upwards and through openings under line AB and down the tube d^1, through per-

Fig. 6

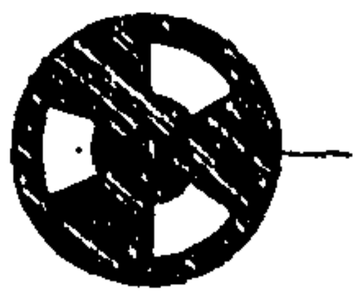
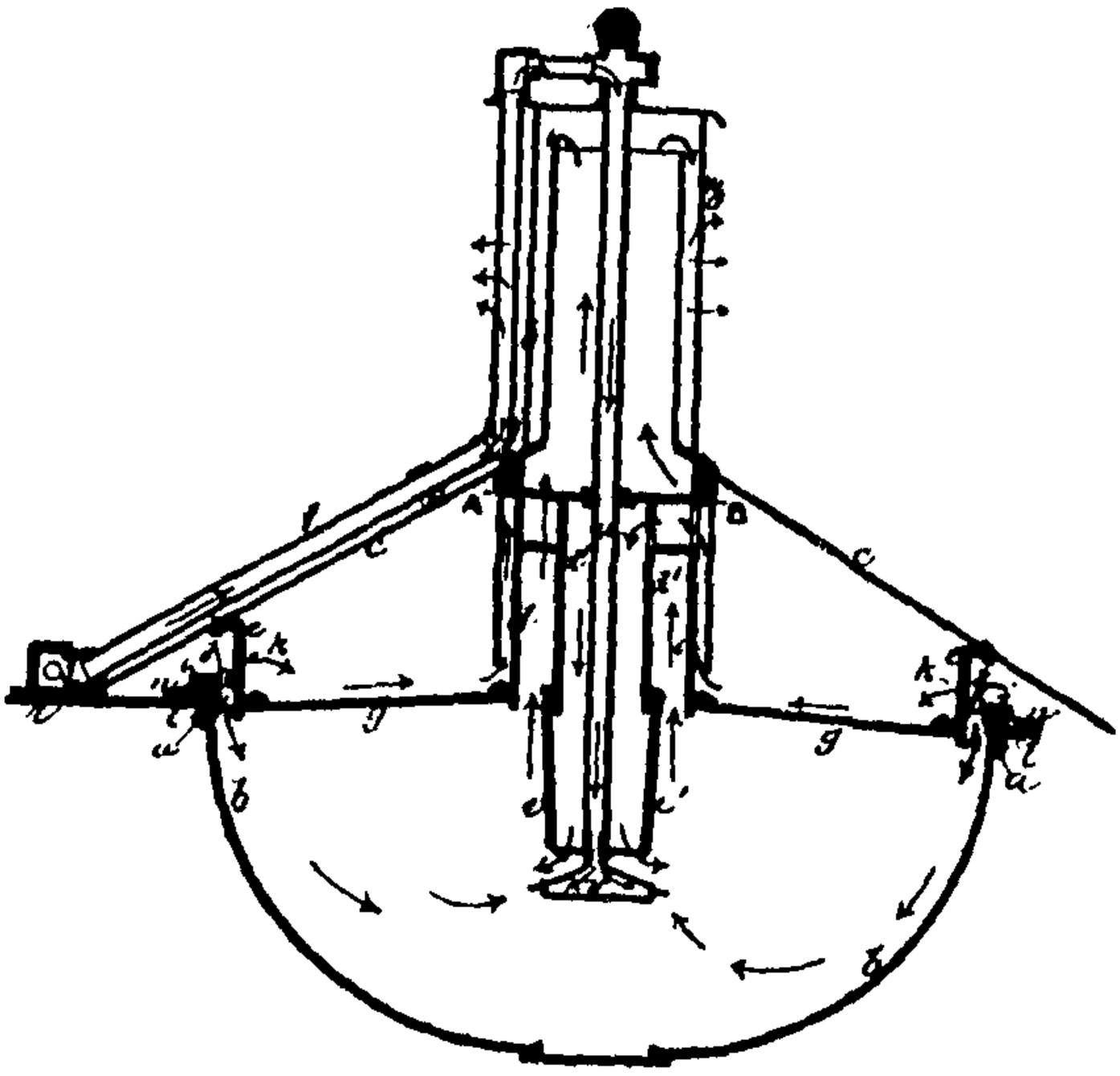


Fig. 5



Diagrams from Clark's specification (No. 2869 of 1881).

forations at bottom of e, and so on to the upper or inner side of the circular series of gas-jets from r, supplied by the central gas-pipe n.

The claims were:—

"Firstly, the general arrangement and construction of the improved lamp hereinbefore described and represented in Figs. 1 to 4 of the accompanying drawing.

"Secondly, the modified construction of lamp hereinbefore described and represented in Figs. 5 and 6 of the accompanying drawing.

"Thirdly, the method of supplying heated air to the inner surface of the flame by causing such air to pass through the chimney in its passage to the

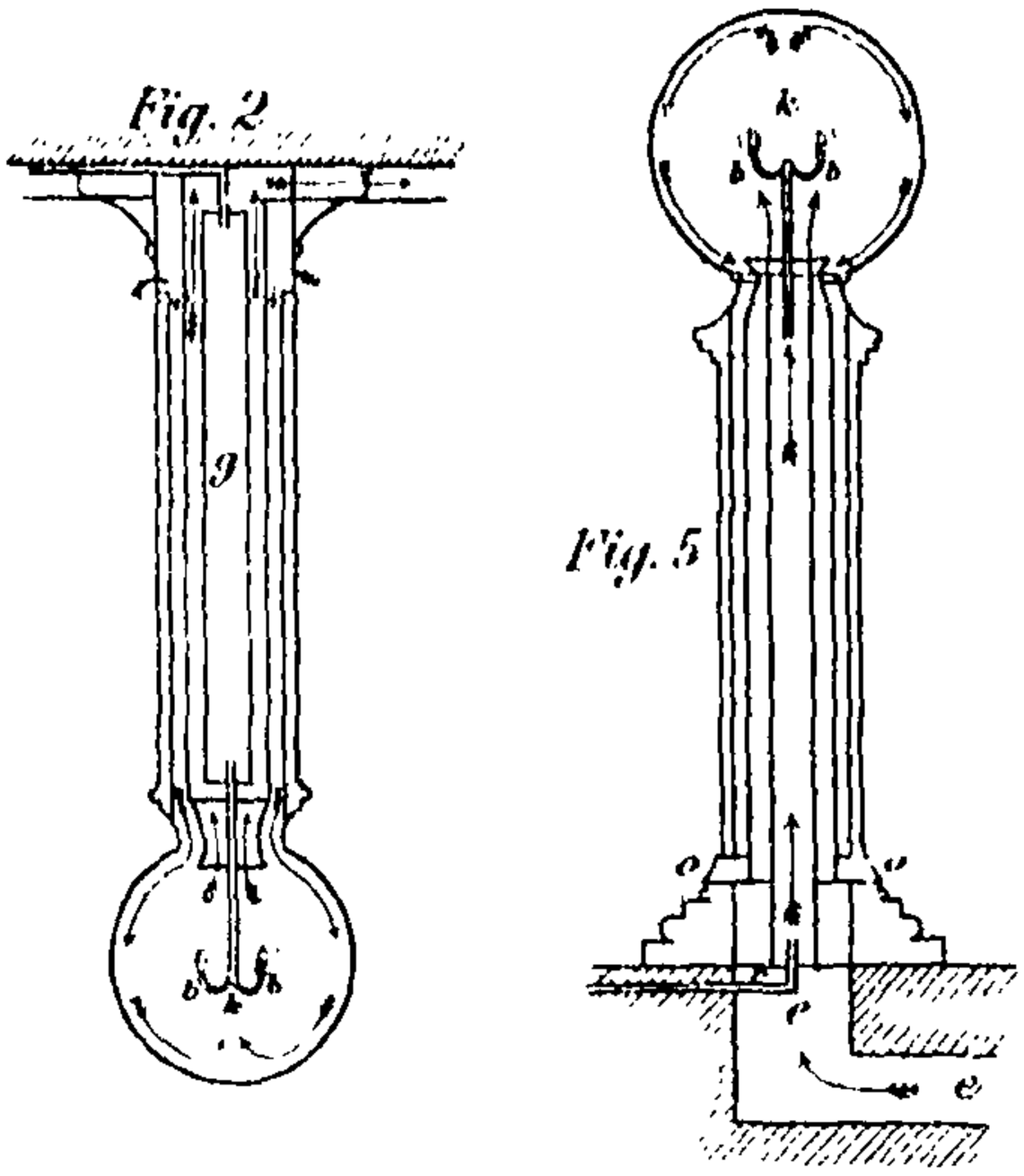
flame, substantially as hereinbefore described and represented in Figs. 5 and 6 of the accompanying drawing.

"Fourthly, the employment of the perforated continuation e^1 from the chimney for distributing the heated air over the interior surface of the flame as hereinbefore described and represented in Fig. 5 of the accompanying drawing."

The action was for infringement.

Amongst other objections, want of novelty was pleaded and want of subject-matter raised in argument.

Amongst other anticipations, *Siemens'* specification (2231 of 1879) was relied on. In Fig. 2 the incoming air was heated by passing down outside the central gas-pipe *g* and the circular chimney surrounding it. Fig. 5 shows an inverted lamp in which the air that is heated enters by inlets *o*, passes upwards along the middle concentric passage, the chimney consisting of the outer one. But there was nothing to show how an incoming downward air-current could be directed to the inner surface of the flame.



Diagrams redrawn from Siemens' specification (No. 2231 of 1879).

Wire diaphragms were also proved to be old. The device was proved to be a great improvement on former lamps.

At the trial the patent was upheld.

Held, by the Court of Appeal, that the improvements effected by the patentee constituted a patentable invention; that claim 2 included as an element in the combination the cooling current; that claim 3 was for a subordinate integer; and that claim 4 was redundant, a mere repetition of claim 3, and not a substantive claim to the use of perforations.

Lindley, L.J. (at p. 52), pointed out how *Siemens* had discovered the importance of heating the air before it reached the flame; he showed the advantages of it and how to do it. "That idea is seized upon or adopted naturally by *Clark*, who is a later inventor—a very valuable idea, because it seems obvious, now that we know all about it, that it was a very important and a very valuable suggestion. . . . *Clark's* mind was addressed to the particular method of bringing a supply of heated air to particular places on the flame. His step is in advance of *Siemens'*; he takes *Siemens'* as far as it goes, and modifies that and produces a new and very valuable result—a brighter flame and a much better result. . . . He so arranges his

concentric ring, or machinery, or tubes, as to bring his hot current down to the middle of the particular kind of flame which he selects for the purposes of his lamp. In addition to this, *Clark* has availed himself of what *Siemens* did not, that I know of, that is, the cooling current which kept the temperature of the glass down, and prevented cracking, and so on."

1892. PICKARD *v.* PRESCOTT, 9 R. P. C. 195.

Prior Publication.

A patent was granted to Messrs. *Pickard & Curry* (No. 8953 of 1885) for "improvements in the bridges of pincenez, or double eye-glasses."

The patentees brought a note of suspension and interdict in the Court of Session against the respondent, praying that he be interdicted from infringing the above patent.

The chief objection raised was that of prior publication of the patented invention.

At the hearing the following facts were proved. A description of the invention was communicated by a person employed to carry it out in *Paris* to the *Revue Générale d'Ophthalmologie*, and there published in the number for June 30, 1885. There was no evidence of the actual date of publication in *Paris*. The *Revue* circulated amongst oculists who wished to be informed of the progress made by their profession. A witness, speaking several years after the event, said that he saw the *Revue* at the time of publication immediately after June 30, 1885; but on cross-examination could not fix the date even to the month of July. It was proved that on August 25 there was a copy in the hands of a gentleman connected with the Middlesex Hospital. A witness at the time of the trial (1889) had in his possession his own copy of the *Revue*, to which he was a subscriber, and had seen three copies—one at the Royal Ophthalmic Hospital, another at the Ophthalmological Society's, and a third in the possession of a London oculist. There was an entry in the books of the agents in Edinburgh to the effect that they received their copies on July 10, 1885. It was their practice to deliver them at once to subscribers. A subscriber proved that he took the *Revue* regularly, but he could not recollect at what date he read the number in question, nor whether he was at his usual residence at the time.

Held, by the Lord Ordinary, that prior publication was not proved.

The respondent reclaimed.

Held, by the Inner House that prior publication was established, and that therefore the patent was invalid (7 R. P. C. 361).

On appeal to the House of Lords.

Held, that there was sufficient evidence of prior publication to invalidate the patent, bearing in mind the nature of the invention and the general desire of practitioners to have early information on the subject in question, and in the absence of any evidence on the other side.

1892. KING & CO. *v.* ANGLO-AMERICAN BRUSH CORPORATION, 9 R. P. C. 313.

Anticipating Specification, Construction and Sufficiency of.

In 1878 a patent (No. 2003) was granted to *J. Haddan* for "improvements in apparatus for the generation and application of electricity for lighting, plating, and other purposes."

The complete specification was as follows :— [1]

"My invention relates to electric apparatus for the generating of electricity, and for its application and use in electroplating and in the production of electric light, and for any other purpose to which electricity may be applied. In stating wherein my invention consists, it may be separated into the following divisions : . . . Fourth, a peculiar manner of disposing and arranging the insulated wires and current conductors of the machine."

With regard to the "fourth division" of the invention, the specification pointed out the defect in series-wound dynamos—the cessation of exciting magnetism "on opening" the circuit, the formation of powerful currents only when the external circuit is closed and its resistance not too large. "Such machines are not well adapted to certain kinds of work, notably that of electroplating"—in which industry a counter electromotive force is developed, and may, under certain circumstances, reverse the polarity of the machine. A moderate constant magnetic field would obviate this.

"Other useful applications of a 'permanent field' machine will readily suggest themselves. I attain my object by diverting from external work a portion of the current of the machine and using it either alone or in connection with the rest of the current for working the field magnets. I prefer the latter plan of the two just above mentioned, especially for electroplating machines. . . . In applying my invention to dynamo-electric machines, I wind the cores of the field magnets with a suitable quantity of a comparatively fine wire having a high resistance in comparison with that of the external circuit and the rest of the wire in the machine. The ends of this wire are so connected with other parts of the machine that when the latter is running a current of electricity constantly circulates in said wire, whether the external circuit be closed or not. The high resistance of this wire prevents the passage through it of more than a small proportion of the whole current capable of being evolved by the machine, therefore the available external current is not materially lessened. When this device, which I have called a 'teaser' (E),[2] is used in connection with field magnets, also wound with coarse wire (as shown in Fig. 1 of the drawings), for the purpose of still further increasing the magnetic field by employing the main current for this purpose in the usual manner, then the 'teaser' may be so arranged that the

[1] Only those portions are given which affect the ground on which the appeal was decided by the House of Lords. As to the issue of disconformity, see *ante*, pp. 69, 70.

[2] The letter "E" was not in the original, but is inserted to facilitate reference.

FIG. 1.

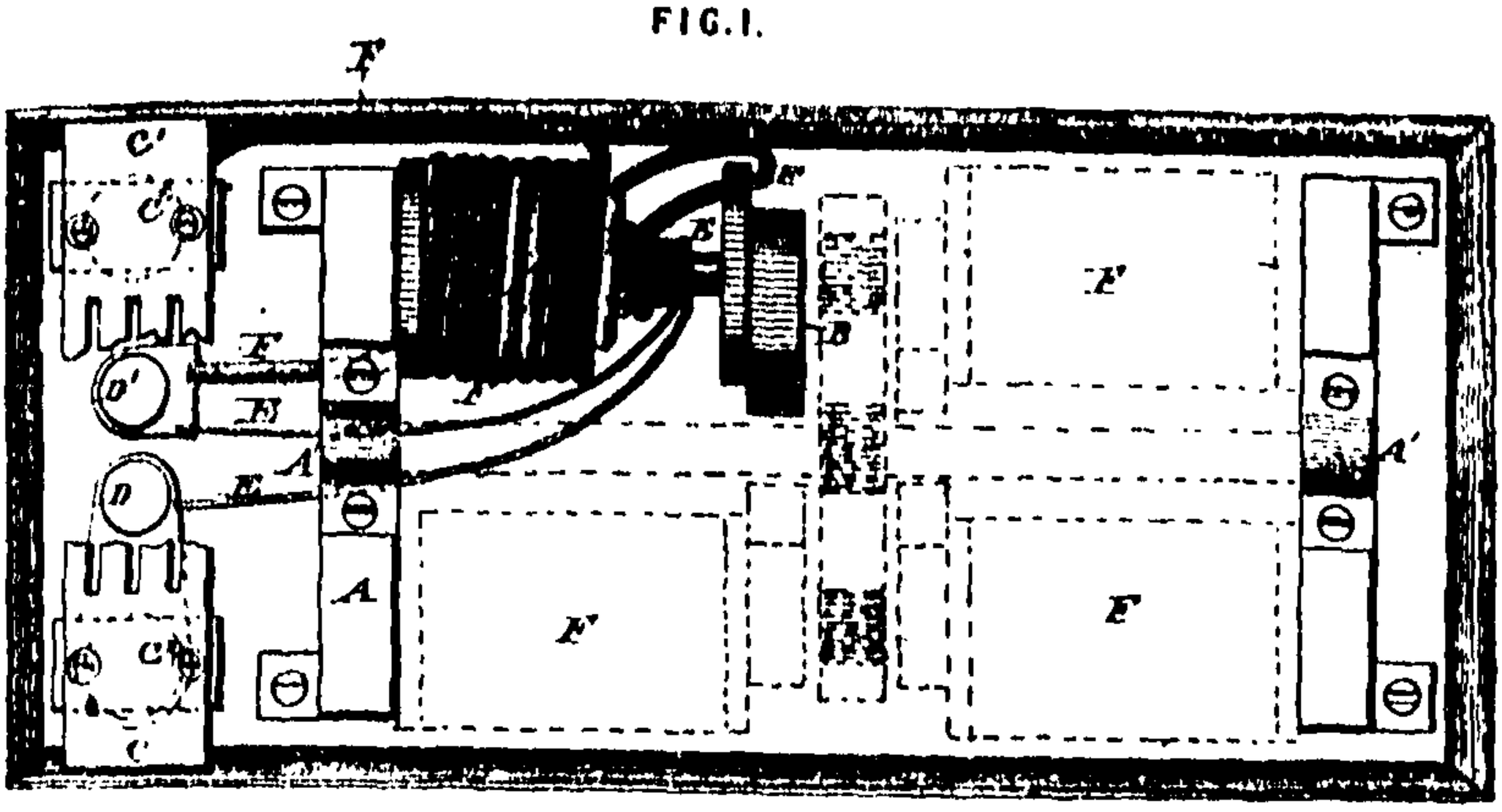


FIG. 2.

FIG. 3.

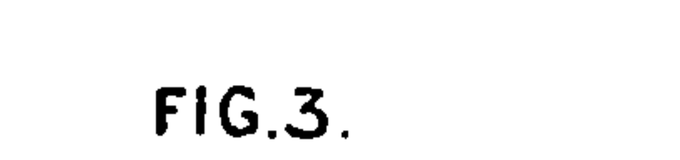
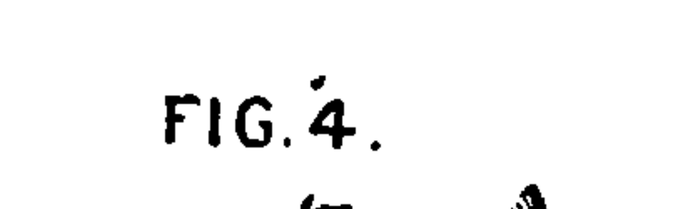


FIG. 4.



Diagrams from Haddan's specification (No. 2003 of 1878).

current which passes through it will also circulate in the coarse wire, thus increasing the efficiency of the device. This arrangement, illustrating one of the most prominent applications of my invention, is shown in Fig. 1. . . . Fig. 1 represents in plan view a portion of a dynamo-electric machine, showing one of its magnetic helices partially wound and so arranged as to exhibit the 'teaser' (E) and helix F, also to show one form of arranging the currents of the teaser and main wire. *Fig. 2 is the same, showing, how-*ever, a modified arrangement of the currents of the teaser and main wire. Fig. 3 shows a modified method of applying the teaser by wrapping it upon the outside of the main helix instead of within it, as shown in Fig. 1. Fig. 4 shows another modified form of teaser, where it may he wrapped around the magnet alongside and independent of the main helix. . . . It is not at all essential that the teaser (E) be wrapped around the magnet underneath the wire F. A variety of methods would be equally as operative as the above, the essential object being that the teaser wire shall form a helix around the field magnet; and this may be accomplished in many ways, among which may be mentioned that illustrated in Fig. 3 of the drawings, where the teaser is wrapped outside of the helix F; also that shown in Fig. 4, where the teaser is wrapped alongside the helix F, forming a separate and independent section or helix."

The seventh claim (in the amended specification) was :—

"(7) In a dynamo-electric machine the wire or helix E, having a comparatively high resistance and kept in closed circuit while the machine is running in combination with the magnet wire or helix F, as commonly employed, substantially as shown in division four."

The respondents, who were assignees of the above patent, commenced an action in Scotland against the appellants to have the patent declared null and void.

Prior publication and user were alleged. Amongst the publications, *Clark's* specification (4311 of 1875) and *Varley's* (4905 of 1876) were relied on.

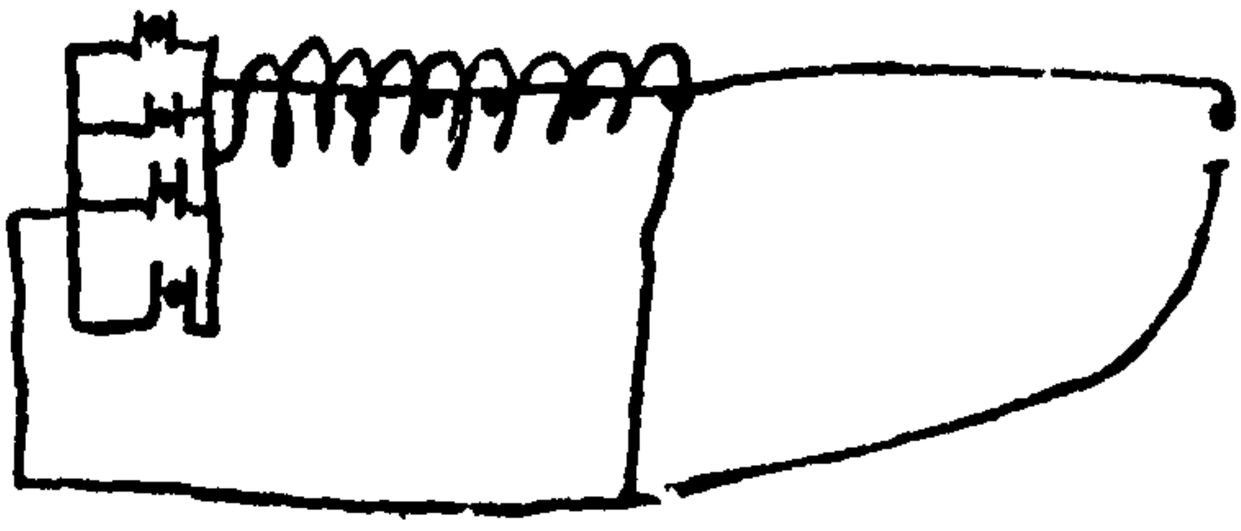
Clark's invention consisted in taking a derived current from the poles of the machine which furnishes the currents to the fixed electro-magnets, and using it for doing the external work required. Improved results were obtained where the work to be done was constant. The application of the invention of "lateral derived currents" to a *Lontin* machine was shown. In the *Lontin* machine the armature bobbins were fixed radially on an axis revolving between two fixed electro-magnets. *Clark* connected each bobbin to a separate "rubber" on the axis or commutator. They could thus be grouped for quantity or tension. One or more of them could be separately connected with the existing fixed magnets. The claim was for the employment of "lateral derived currents" for all purposes where a constant current was required.

Varley's specification described a complicated mode of constructing dynamos. In describing his machine, the following passage occurred :—

"Part of the electricity developed by the machine is diverted to

maintain the magnetism of the soft iron magnets, and the remaining portion is used to produce the electric light. There are several well-known ways of doing this, but the method I prefer is to wrap the soft iron magnets with two insulated wires, one having a larger resistance than the other. The circuit of larger resistance is always closed, and the circuit of less resistance is used for the electric light. When the electric light is being produced, the greater portion of electricity passes through the circuit of less resistance, which I term the 'electric light circuit,' maintaining the magnetism of the magnets and producing the light. When the electric light circuit is opened from any cause, the electricity developed passes through the circuit of greater resistance only, and maintains the magnetism of the magnets."

There was no claim in *Varley's* specification for series-shunt winding, nor was such winding illustrated, nor were any directions given for carrying it out, and the evidence was conflicting as to whether an ordinary skilled workman could carry out the compound winding from *Varley's* description only.



Sketch from Varley's diary.

Varley's knowledge at the date of his specification of shunt winding was proved by a rough sketch[1] of his invention that was made in his diary. Across the page was written this sentence: "It would probably be better if the cores of the bobbins were made of a bundle of wires and not a solid cylinder."

It was proved that before the introduction of parallel lighting by glow-lamps in 1882 there was no demand for a dynamo producing a current at *constant potential*, as distinguished from one producing a *constant current*. Evidence was also given as to the fall of potential in a series-wound dynamo with the increase of external resistance; and in the case of a shunt-wound machine, of the division of the current in the two circuits in a ratio the inverse of their respective resistances, whereby the potential was increased when less current was required for lighting purposes.

There was no mention in *Haddan's* specification of the maintenance of a constant potential; this could only be ensured by regulating the ratio of the resistances of the two circuits round the magnets with regard to the work the dynamo had to do.

At the trial, the Lord Ordinary held that (1) there was disconformity between the complete and provisional specifications,[2] and (2) that the invention had been anticipated by *Varley* (6 R. P. C. 414).

[1] The diagram here given is reproduced from the original exhibit given to the author by Mr. *J. C. Graham.*

[2] The report of this finding is unnecessary; a summary of it is given, *ante*, pp. 69, 70.

On appeal, the First Division held that the patent had been anticipated; no decision was given as to the alleged disconformity (7 R. P. C. 436).

On appeal to the House of Lords.

Held, that the invention claimed as above in *Haddan's* specification was disclosed in *Varley's*, and therefore the patent was invalid.

Per Lord *Halsbury*, L.C. (at p. 317): "The 'series' was known, the 'shunt' was known, and the language" (of *Varley's*, as above) "seems to me incapable of any other interpretation than that the patentee" (*Varley*) "did mean to combine the two previously known systems. If he did, and disclosed the mode of doing it, the novelty of the later patent cannot be supported. I confess I am unable to entertain a doubt that it was so disclosed. What he intended was, I think, conclusively shown by the original rough sketch produced. Distinguished electricians cavil at the mode of its disclosure, criticise the language (which is not, perhaps, the most felicitously chosen), and possibly suggest doubts as to what would have been the fate of Mr. *Varley's* patent if it had been attacked upon the ground of the insufficiency of the specification; but that is not the question to be determined here. The question is the disclosure of the invention, which consisted in the combination of two known forms or dynamo-electric machines. . . . I think it is certain that neither the one patentee nor the other had any very definite notion of the importance of the invention until a year or two later. The invention of the incandescent light brought into prominence the importance of an even uniform and continuous flow of the electric energy."

Lord *Watson* (at p. 319): "The appellants' evidence consists of oral testimony by electricians of great eminence, and is directed mainly, if not wholly, to prove (1) that on a fair construction of the specification of 1876 (*Varley's*) the words relied on do not disclose either shunt or series-shunt winding, and (2) assuming them to do so, that the specification does not contain explanations or directions which would enable a workman of ordinary skill to construct either a shunt or a series-shunt machine. . . ." At p. 320: "The testimony of their witnesses was given upon the footing that in 1876 *Clark's* invention of the previous year was still unknown, and that those who read *Varley's* specification could have no knowledge of any system other than series-winding. Upon that assumption it occurs to me that a reader, whether a man of science or skilled workman, would probably have been at a loss to discover what *Varley* meant, and might not have arrived at either shunt or series-shunt winding with some exercise of his inventive faculty. I am, however, unable to find any good reason for finding that *Clark's* shunt machine was unknown in the year 1876. It is true that Mr. *Brush* had never heard of *Clark's* invention, and also that shunt-winding was unknown to Sir *William Thomson* before 1879. But it appears to me that *Clark's* taking out a patent for his invention was, both in fact and law, a publication of it. I do not suppose that every electrician, however eminent, is by necessity personally cognizant of every invention patented within the bounds of his science; and the ignorance of two or more of them

is unavailing to prove that the knowledge of others was equally defective. I cannot therefore avoid the conclusion that, in *1876*, *Clark's* shunt-winding machine had been disclosed to the public, and must have been known to some, if not to all, electricians, and consequently that the controverted passage in *Varley's* specification ought to be construed on the footing that shunt-winding was known at its date."

"I do not think it necessary to deal with the conflict of testimony as to the sufficiency of *Varley's* specification for the guidance of a skilled workman. . . . Every patentee, as a condition of his exclusive privilege, is bound to describe his invention in such detail as to enable a workman of ordinary skill to practise it; and the penalty of non-compliance of that condition is forfeiture of his privilege. His patent right may be invalid by reason of non-compliance; but it certainly does not follow that his invention has not been published. His specification may, notwithstanding that defect, be sufficient to convey to men of science and employers of labour information which will enable them, without any exercise of inventive ingenuity, to understand his invention, and to give a workman the specific directions which he failed to communicate. In that case, I cannot doubt that his invention is published as completely as if his description had been intelligible to the workman of ordinary skill." [1]

1892. LANE FOX v. KENSINGTON & KNIGHTSBRIDGE ELECTRIC LIGHTING CO., LTD., 9 R. P. C. 221, 413.

Disconformity—Insufficiency—Want of Utility.

In 1878 a patent (No. 3988) was granted to *St. G. Lane Fox* for "improvements in obtaining light by electricity, and in conveying, distributing, measuring, and regulating the electric current for the same, and in the means or apparatus employed therein."

The provisional specification [2] began with the above title and a description of the lamp (metallic leaves or foil) employed. It continued:—"The way in which I work a number of these lamps from a single source of electricity is as follows. From one pole or electrode of the electric generator or generators proceeds a large conductor, from which branch out at various points where lights are desired smaller conductors, which again may have conductors branching off from them, and so on. The other pole or electrode of each electric generator is connected with the earth, so that the conductor and its branches and sub-branches will be perpetually in a state of electric tension, tending to develop currents in every direction to the earth. One pole of the electric lamp is connected with the earth, and this may be conveniently effected by means of gas or water pipes, where such exist, so that wherever

[1] This paragraph was quoted and followed by *Lindley*, L.J., in *Savage* v. *Harris*, 13 R. P. C. 368.

[2] Only those parts which are material for the present purpose are here given.

the circuit is complete between the earth and any one of these branches a current of electricity will pass through the thin leaf of metal, rendering it incandescent, and so produce light." The system of measurement was next described; and the specification continued:—"The electromotive force of the electric conducting mains should be kept as nearly as possible constant, at, say, 100 volts or B.A. units of E.M.F. A number of *Planté's* (lead and sulphuric acid) cells joined together in series between the main and the earth will serve as a kind of reservoir for electricity." The conductors are next described, then:—"In order to keep the E.M.F. in the mains constant, it is desirable to have in the first place several generating machines; next, it is necessary to have some regulator, such as that about to be described." The regulator consisted of a quadrant electrometer connected with the main and earth "in the usual way." The needle, on coming into contact with fixed pegs, would complete local circuits, and so actuate levers acting on valves, thereby increasing or diminishing the supply of steam to the generating engines.

The complete specification[1] was for "improvements in [obtaining light by electricity, and in conveying], distributing, [measuring], and regulating the electric current for [the same], *obtaining light by electricity* and in the means or apparatus employed therein." The lamp was first described, consisting of a platinum or platinum alloy wire or leaf. Then came the general system of distribution as mentioned in the provisional and illustrated by Fig. 3,[2] A being the generator, and the conductors being shown by the lines, terminating in lamps, from which the "earth" wires (not shown) led to "earth." The mode of connecting them to gas or water pipes was described. The measuring apparatus (a shunted voltameter) was also described. "The E.M.F. of the electric conducting mains should be kept as nearly as possible constant, say at 100 volts or B.A. units of E.M.F. A number of secondary batteries, such as *Planté's* (lead and sulphuric acid), such batteries being joined together in series between the main and the earth, will serve as a kind of reservoir for the electricity. The cells should have a very large conducting surface, and there should be several batteries connected up at various points of the mains, so that by increasing the E.M.F. during the hours when not much electricity is being used, they will become charged and the electric force will be stowed up in them, so that a sufficient supply will be available when the E.M.F. falls, owing to the draft from the mains when the force is most used and needed. The number of cells in each of these batteries will depend on the E.M.F. of the mains."

"Fig. 5 is a diagram representing a secondary battery joined up between the main and the earth for the purpose above described. E indicates earth, and *l* lamps.[3] . . . In order to keep the E.M.F. in the electric mains

[1] *Only those parts are inserted which are necessary to appreciate the decision.* The amendments made by disclaimer are shown:—the words in square brackets were omitted, and those in italics inserted.

[2] Figs. 3 and 5 are diagrammatic, and are here given.

[3] A description of the conductors were here omitted by disclaimer.

FIG. 3.



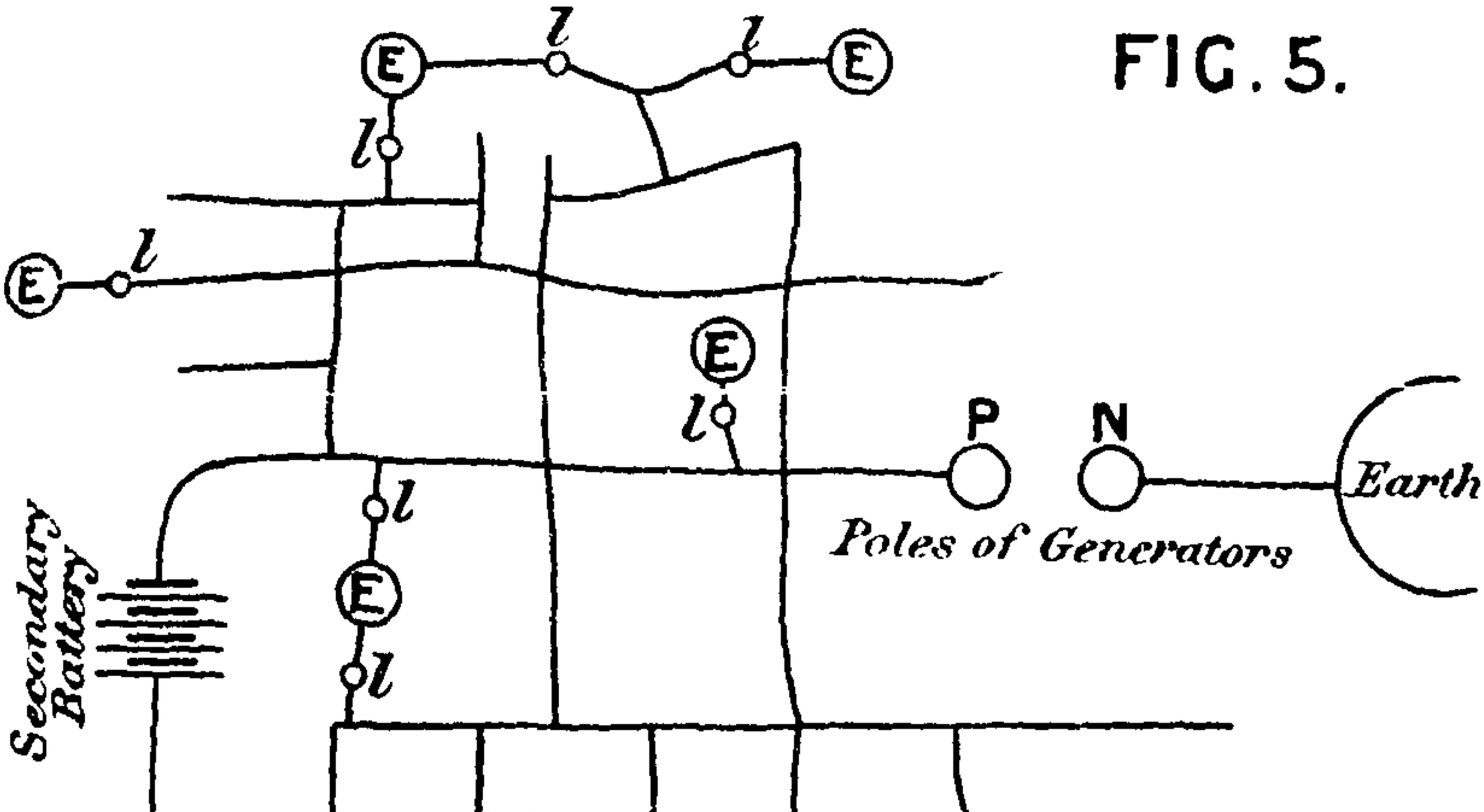


FIG. 5.

Figures from the Plaintiff's Specification
No. 3988 of 1878

constant, it is desirable to have in the first place several generating machines, also a number of reservoir batteries, as before explained; [next it is necessary to have some regulator such as that about to be described]."[1] The quadrant regulator was disclaimed and its description struck out.

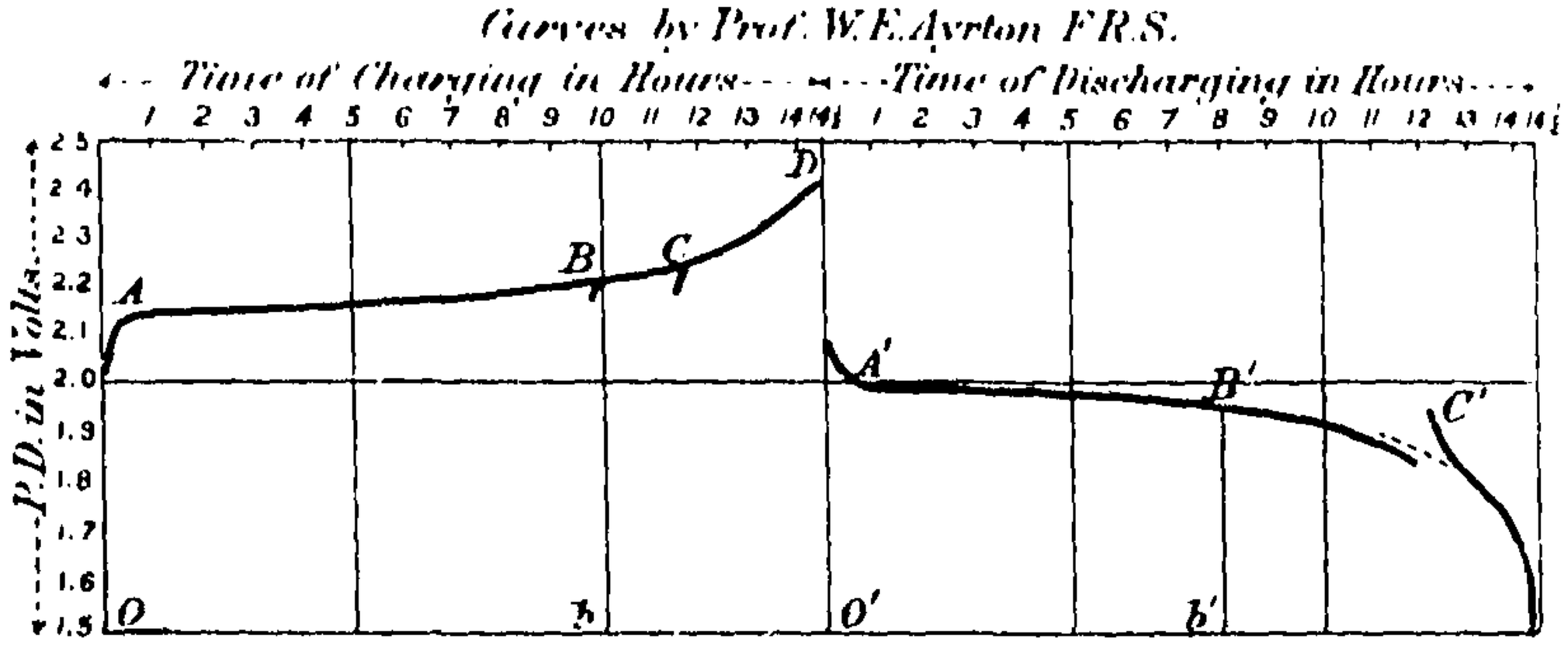
The claim in the amended specification was for "the employment as described of secondary batteries as reservoirs of electricity in combination with a mode or system of distribution such as is hereinbefore explained."

In an action for infringement against the defendants the following facts, *inter alia*, were proved:—

That *Planté* cells, when discharging, had a smaller potential difference between their terminal plates than when being charged, hence they could not act as automatic regulators of potential in the mains.

That they were useless unless used with a switch, so that the number of cells in the battery could be varied with the rise or fall in potential during charging and discharging. Without a switch the pressure necessary to charge the batteries would break down the lamps. This was illustrated by the curves here reproduced.[2] From them it appears that if the battery

Curves by Prof. W.E.Ayrton F.R.S.



Curve showing P.D. of cell being charged with a current of 9 Amperes.

Curve showing P.D. of cell while discharging a current of 10 Amperes.

(say of 50 cells) be arranged to discharge at 100 volts, it must be charged at a pressure from 105 to 115 volts, which the lamps would not bear.

But if that difficulty were overcome, it was proved that there would be considerable irregularity both in pressure and current during the discharge, so that the battery could not act as a regulator. The amount of this irregularity is shown by Prof. *Kennedy's* diagram given below.

That *Planté* cells were well known in 1878, and had been used for storage

[1] These words were struck out by disclaimer.

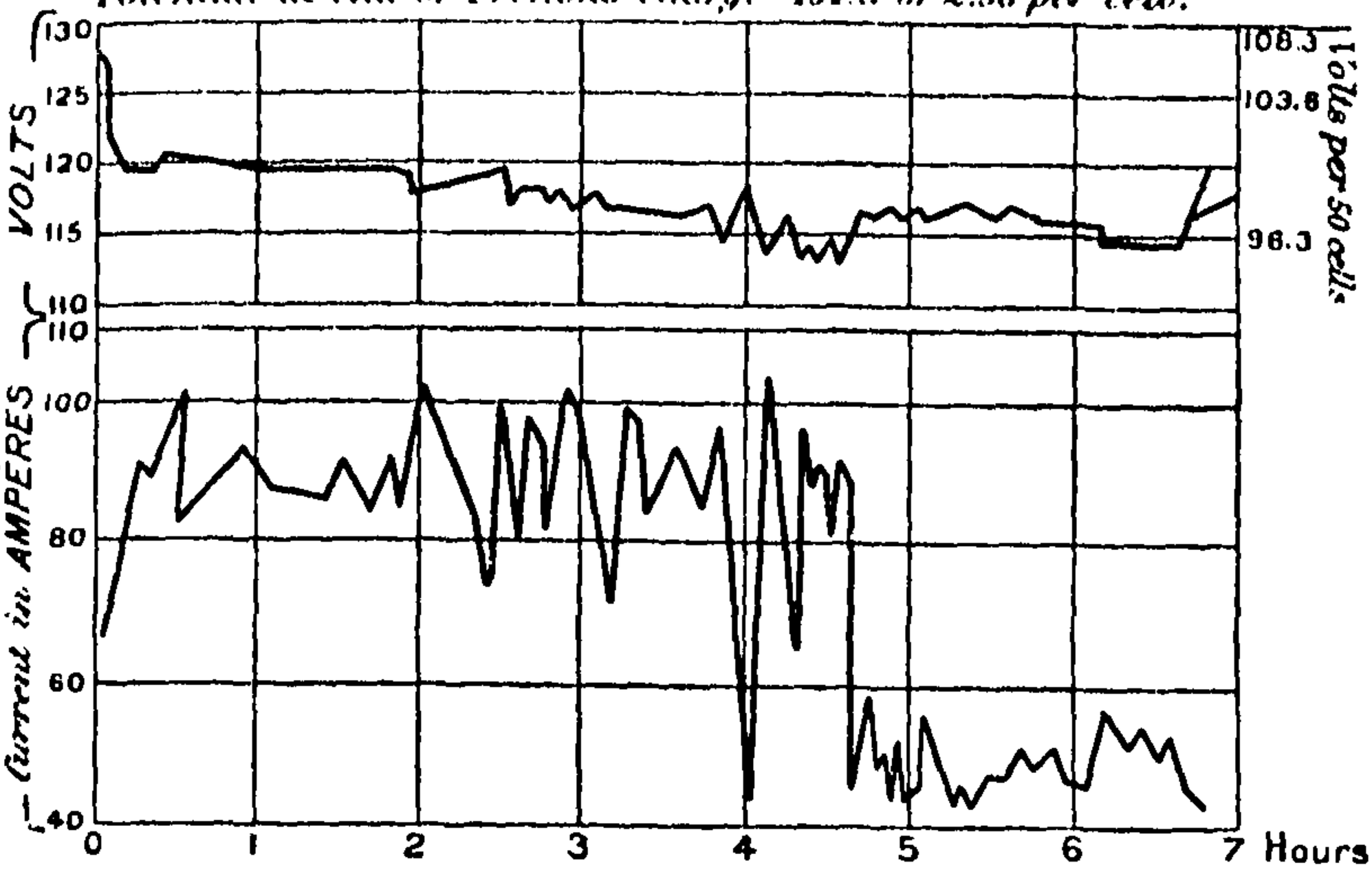
[2] In this diagram produced at the trial the descending curve was continued further. It was originally published by Prof. *Ayrton* and Messrs. *Lamb* and *Smith* to illustrate their paper on "The Chemistry of Secondary Cells." The breaks at B, C, and C′ were due to the stoppages in an experiment to remove certain test plugs. The change of potential of the battery in action is according to the continuous curve. See Vol. XIX. p. 660 of *The Journal of the Institution of Electrical Engineers.*

in connection with arc lighting, but not in connection with dynamos for incandescent lighting.

That in 1878 no successful incandescent lamp had been invented. Nor was it known that in large districts the earth could not be used as a return conductor—the term "earth" was technically used for return conductors.

Diagram I by A. KENNEDY F.R.S.

Showing irregularity of Potential & Current from a Battery of 60 32 Pl. cells discharging with variable external Resistance Potential at end of Previous Charge -154.8 or 2.58 per cell.



The patent was held invalid at the trial on the grounds of disconformity and insufficiency, and the opinion expressed that otherwise it was new, was subject-matter, and had been infringed (9 R. P. C. 221).

Both parties appealed.

Held, by the Court of Appeal—

That without further invention or experiment as regards "switching" the invention was useless for the purposes described by the patentee.

That the specification was insufficient, owing to the want of such directions as would enable a constant pressure to be maintained in the mains.[1]

The patent was therefore invalid.

That the invention claimed in the amended specification (*regulation* by *batteries*) was different from that described in the provisional (*storage* by *batteries* and *regulation* by *regulator*).[2]

[1] This follows from the preceding finding. It is looking at the same matter from a different point of view.

[2] This finding (at p. 419) was not enunciated until the patent had been declared invalid. In coming to the conclusion that the amended complete specification was disconform to the provisional, the learned Lords Justices followed the decision of the Court of Appeal in *Gaulard & Gibbs' Patent* (6 R. P. C. 215), in which case there was a strong analogy as to the facts, without noticing that the House of Lords did not approve of the

Per *Lindley*, L.J. (p. 416): "An invention is not the same thing as a discovery. When *Volta* discovered the effect of an electric current from the battery on a frog's leg, he made a great discovery, but not a patentable invention. Again, a man who discovers that a known machine can produce effects which no one knew could be produced by it before, may make a great and useful discovery; but if he does no more, his discovery is not a patentable invention:—*Britain* v. *Hirsch*, 5 R. P. C. 232; *Harwood* v. *G. N. Ry. Co.*, 11 H. L. C. 654; *Horton* v. *Mabon*, 12 C. B. N. S. 437; *Saxby* v. *Gloucester Wagon Co.*, 7 Q. B. D. 305. He has added nothing but knowledge to what previously existed. A patentee must do something more: he must make some addition, not only to knowledge, but to previously known inventions, and must so use his knowledge and ingenuity as to produce either a new and useful thing or result, or a new and useful method of producing an old thing or result. On the one hand the discovery that a known thing—such, for example, as a Planté battery—can be employed for a useful purpose for which it has never been used before is not alone a patentable invention; but, on the other hand, the discovery how to use a thing for such a purpose will be a patentable invention if there is novelty in the mode of using it, as distinguished from novelty of purpose, or if any new modification of the thing, or any new appliance is necessary for using it for its new purpose, and if such mode of user, or modification, or appliance involves any appreciable merit. It is often extremely difficult to draw the line between patentable inventions and non-patentable discoveries, but I have endeavoured to state the distinction as I understand it, and so far as is necessary for the purposes of the present case. I have, of course, been guided by the previous decisions on the subject, and especially by *Harwood* v. *G. N. Ry. Co.*, which is the most instructive of them all."[1]

At p. 417: ". . . The utility of the alleged invention depends not on whether by following the directions in the complete specification all the results now necessary for commercial success can be obtained, but on whether by such directions the effects which the patentee professed to produce could be produced, and on the practical utility of these effects. Can it be said that the invention as described in the amended specification was, in 1878, a practically useful addition to the then stock of inventions? To judge of utility, the directions in the amended specification must be followed, and, if the result is that the object sought to be attained by the patentee can be attained, and is practically useful at the time when the patent is granted, the test of utility is satisfied. Utility is often a question of degree, and always has reference to some object. 'Useful for what?' is a question which must be always asked, and the answer must be, useful for the purposes indicated by the patentee."

finding of disconformity by the Court of Appeal in that case (*ante*, p. 64). An inventor should not rely too much on this being an example of disconformity.

[1] As re-stated by *Lindley*, L.J., in *Moser* v. *Marsden*, 10 R. P. C. 358, and followed by *Smith*, L.J. (*ibid.*, p. 363). Followed in *Pirrie* v. *York St., &c.*, 11 R. P. C. 438, 453, 455: *Thierry* v. *Riekmann*, 12 R. P. C. 427; and *Acetylene Ill. Co., Ltd.* v. *United Alkali Co.*, 20 R. P. C. 173.

1892. GADD & MASON *v.* MAYOR OF MANCHESTER, 9 R. P. C. 516.

Disconformity—Inventive Ingenuity—Prior Publication.

In 1888 a patent (No. 18119) was granted to Messrs. *Gadd & Mason* for "improvements relating to the construction of gasholders."

The specifications [1] were as follows :—

"The improvements relate to the construction of gasholders, and have for object the supporting of the same in their working position, in such manner as to enable the external or upper guide framing hitherto employed for that purpose to be dispensed with, and yet to give the requisite stability; although such, or a modified form or framing, may be employed in connection with the improvements herein described, when desired.

"To accomplish this, and to effect our improvements, we fix round the face of the tank or well a series of vertical guides, which are constructed in the form of racks, or mechanical equivalents therefor, (*such as vertical screw-shafts of coarse or quick thread, or vertical endless chains or bands passing over and between pulleys or wheels at or near the top and the bottom of the tank or holder, as the case may be*). At corresponding intervals round the lower curb or ring of the holder we mount on suitable shafts or studs, pinion, mitre, or other toothed wheels or mechanical equivalents therefor (*such as notched wheels, or in some cases plain wheels or pulleys*), which gear into *or with* the racks *or equivalents* aforesaid.

"These wheels are, by preference, all likewise geared together, in such manner that when one is caused to turn, the whole will turn therewith and to the same extent. By which means, if the holder carrying *or connected with* these geared-up wheels moves upwards or downwards, it will be sustained in the same relative position at all heights.

"The like result is also obtained by fixing the vertical racks, or equivalents *as aforesaid*, to the outer face of the holder, and the pinion, mitre, or other wheels round the top of the tank; and in like manner the method may be extended to telescopic holders.

"The wheels which take into the guides may be geared together either by shafts, intermediate between *and turning* in suitable journals; or by means of intermediate wheels in train [round the circle]; or by *plain*-chain *or rope* or link-*chain* gearing; and instead of the whole of the wheels being geared together, portions thereof may be geared as a modification.

"Other variations in detail may be made without departing from the peculiar character of the invention, *which consists in connecting, by means of torsional or tensional gearing, a number of points round the bottom curb of a*

[1] The specifications are here shown together. The provisional specification can be read by omitting all the passages and words in italics, and including those words in square brackets down to the beginning of the description of the drawings. To read the complete include the words in italics and omit those in square brackets. The new matter constituting the alleged disconformity will be thus seen at a glance.

gasholder, in such manner that when one point thereof tends to rise or fall, the same tendency is transmitted, through such gearing, round the circle to every other point."

Figs. 1 and 2 show a plan and elevation of one method of carrying out the invention, in which the spur-wheels and their shafts are attached to the holder and the rack. When one pair of wheels tend to turn in their rack by reason of the gasholder rising at that point, this tendency is transmitted to the wheels on either side by the shafts, and thence by the rack to the next, and so on. A horizontal position for the gasholder is thus ensured. Other diagrams showed modifications of the same principle of torsional gearing.

Figs. 15 and 16 (plan and elevation) show another method of effecting the desired object by means of tensional gearing. Chains or ropes are attached at certain points, *c*, to the outside of the bottom of the gasholder; these pass over and under wheels fixed to the side of the tank, as shown in Fig. 16. When one point of attachment tends to rise or fall, it creates a corresponding tension in the rope or chain, which is transmitted over the wheels to the next points of attachment on either side round the gasholder. Other modifications of the tensional gearing were shown.

The claims were for :—

"(1) The employment of torsional gearing arranged round a gasholder or gasholder tank, which gearing connects or gears together points upon and at intervals around such holder, so that one point moving upwards or downwards communicates through such gearing the tendency of motion to the other points round the holder, for the purpose and in manner substantially as herein showed and described.

"(2) The employment of tensional gearing arranged round a gasholder or gasholder tank, which gearing connects or gears together points upon and at intervals around such holder, so that one point moving upwards or downwards communicates through such gearing the tendency of motion to the other points round the holder, for the purpose and in manner substantially as herein shown and described.

"(3) The employment of torsional and tensional gearing combined, arranged round a gasholder or gasholder tank, which gearing connects or gears together points upon and at intervals around such holder, so that one point moving upwards or downwards communicates through such gearing the tendency of motion to the other points round the holder, for the purpose and in manner substantially as herein shown and described."

In an action for infringement of the above patent the principal defence relied on was that the patent was invalid by reason of—

(1) Disconformity, because the invention of torsional gearing in the complete specification was not disclosed in the provisional.

(2) There being no subject-matter, considering the prior publications in the specifications of *Wild* (1850) and *Standfield* (1883).

(3) The invention had been published by being disclosed by a rival inventor to sundry persons.

FIG. 1

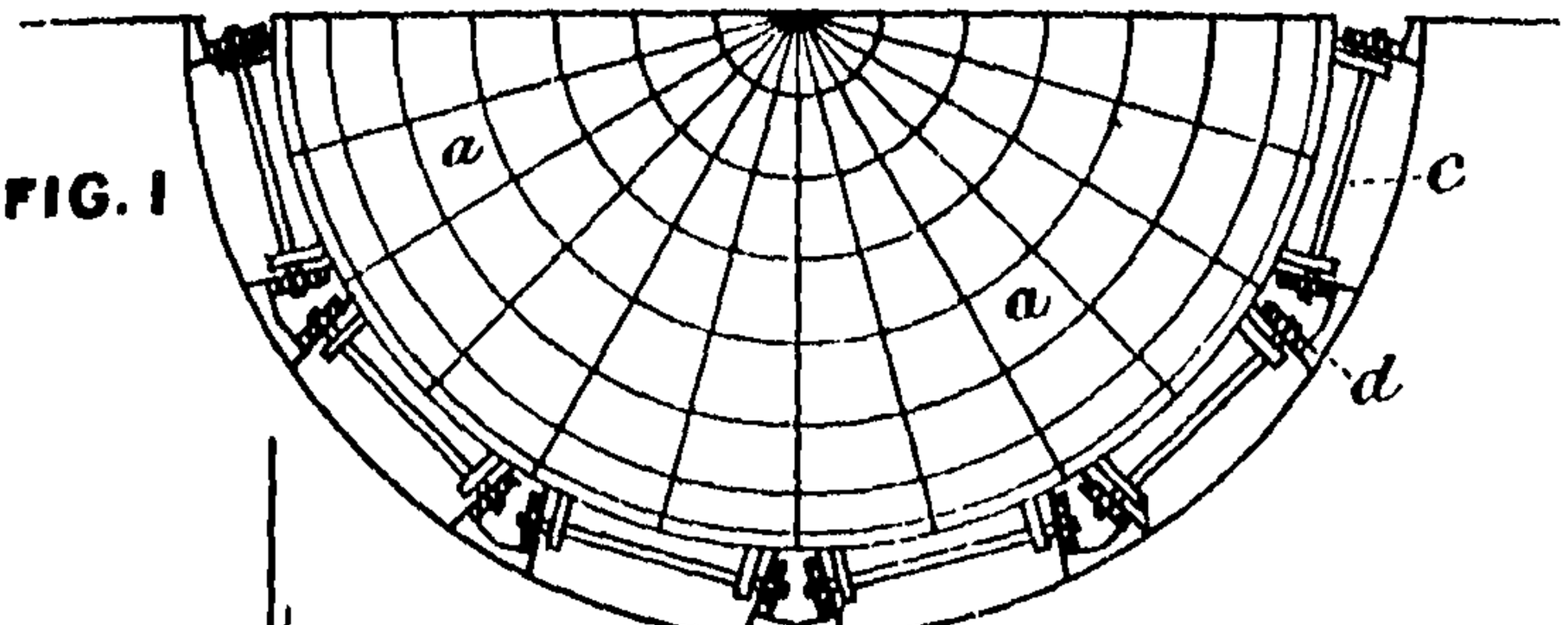


FIG. 2

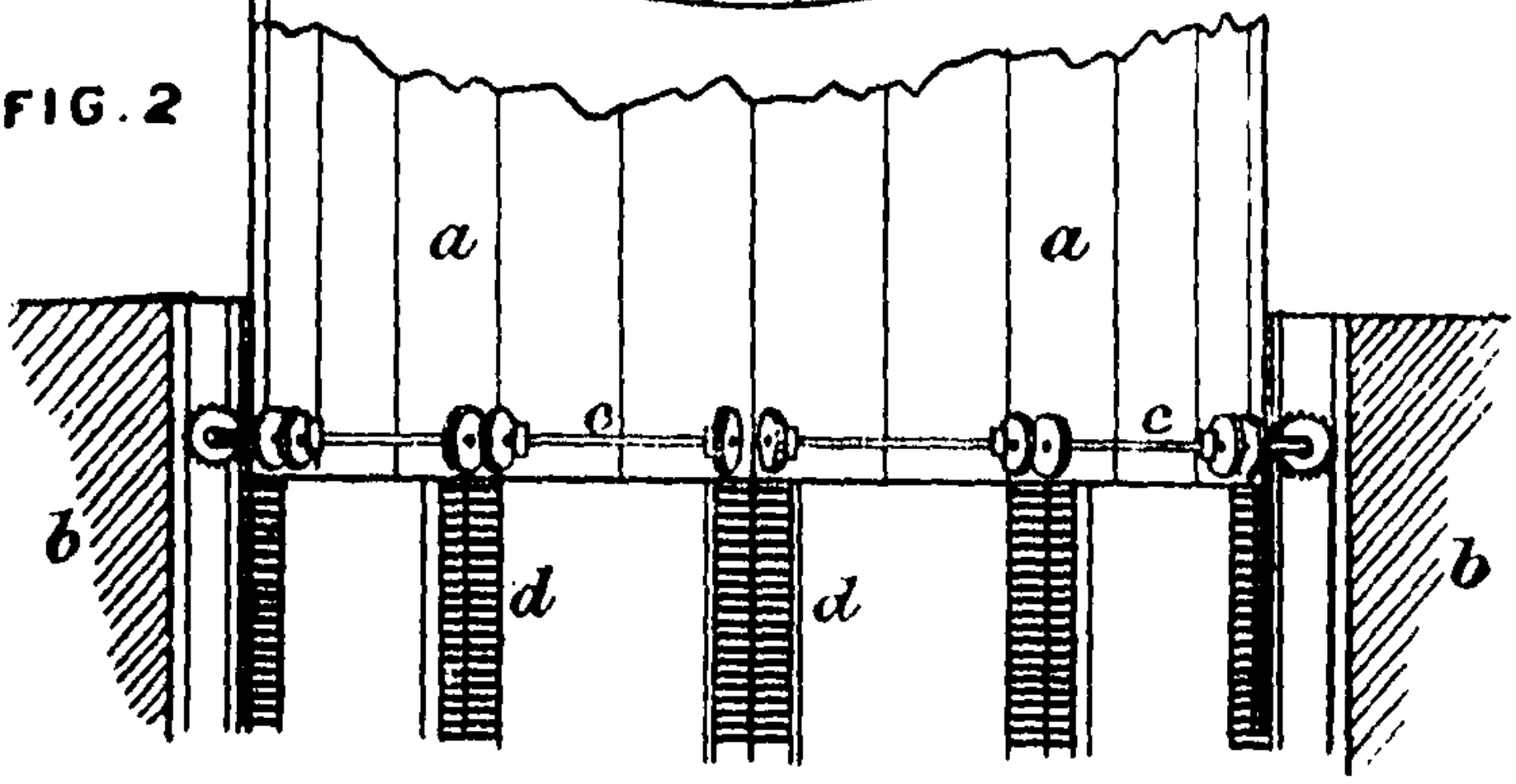


FIG. 15

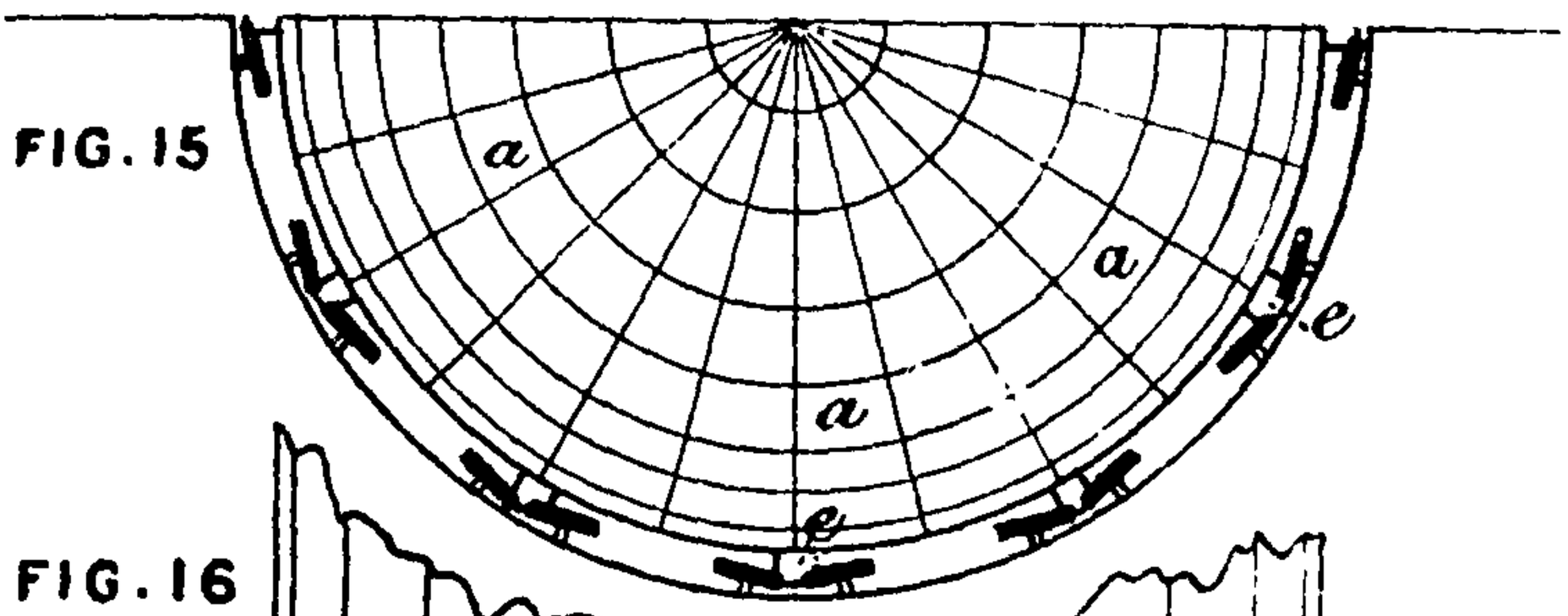
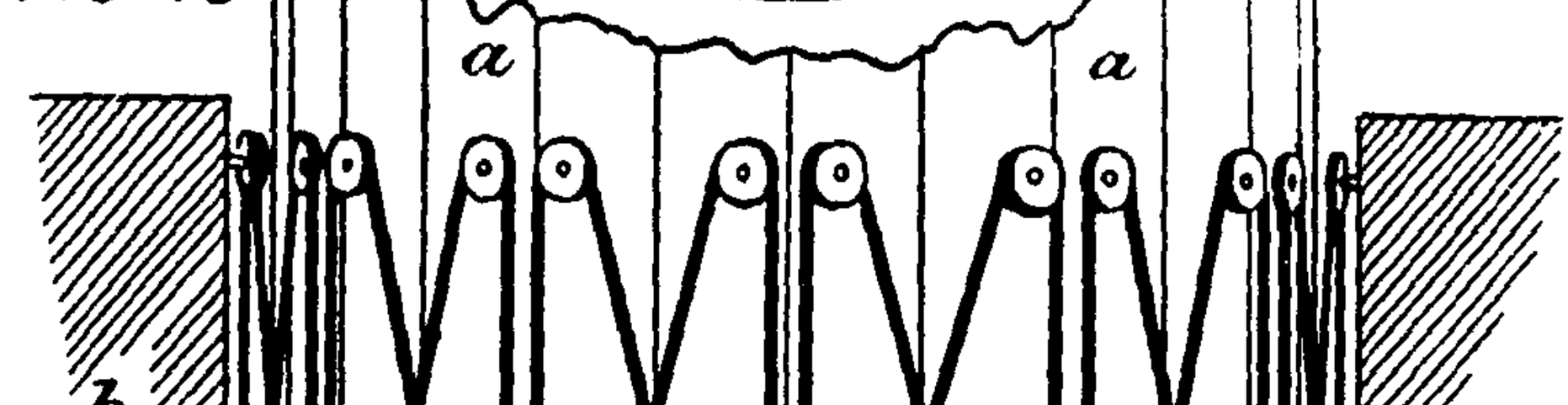


FIG. 16



Diagrams redrawn from Gadd & Mason's specification (No. 18119 of 1888).

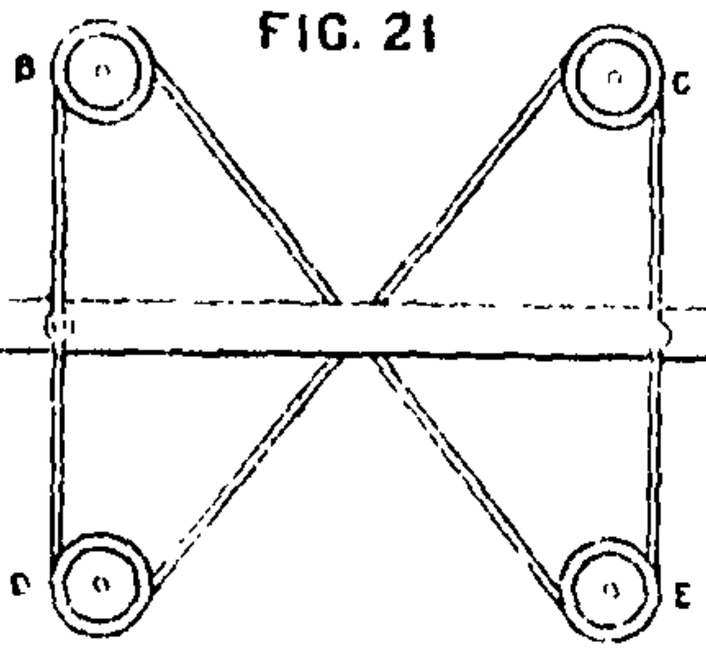
Technical and contradictory evidence was called as to what would be understood by the term "*gearing*" by mechanicians.

Wild's specification (13226 of 1850) related to floating caisson docks. It worked on the same rack and pinion principle as the plaintiffs'. It disclosed a method of preserving a horizontal position by means of cog-wheels on the top and bottom of the rectangular caisson, geared together by shaft, passing along its two inside sides, and these worked in racks fixed in the dock. But the structure never rose above the level of the dock, nor was it kept level by being held externally at the base only.

Standfield's invention (5889 of 1883) was for a similar purpose, viz. keeping floating structures level. Amongst other devices it disclosed the torsional method of keeping the pontoon level in the following terms:—

"Fig. 21 shows a mode of maintaining the horizontality of any platform, beam, or frame A A^1, which practically ensures a parallel motion. A chain is made fast to the upper side of the beam at A, passes over the pulley B and under the pulley E, and is then secured to the lower side of the beam at A^1. A second chain is made fast to the lower side of the beam at A, it passes under the pulley D and over the pulley C, and is made fast to the upper side of the beam at A^1.

FIG. 21



From Standfield's specification.

"It will be seen that this beam will pass up and down only in a horizontal position, however it is weighted with respect to the raising power."

Neither of these inventions were shown to have been actually used; nor did either of them refer to gasholders.

Evidence was given of the difference between the forces to be considered in floating structures (the upward pressure of water due to displacement) and gasholders (the expansive force of the gas and external wind-pressure).

It was also proved that a rival inventor had disclosed the same invention to several persons, some in his employment, others engineers and managers of gasworks. But all these communications were made confidentially and for the purpose of obtaining assistance and advice.

Held at the trial that the patent was invalid on the ground of disconformity between the complete and provisional specification (9 R. P. C. 249.)

Held, by the Court of Appeal—

That there was no disconformity.

That sufficient ingenuity was shown in applying the principles known in relation to floating structures to gasholders to support the patent.

That there was no "prior publication" by the rival inventor.

Per *Lindley*, L.J. (at p. 524): "These cases,[1] and many others which

[1] *Brook* v. *Aston*, 8 E. & B. 478; 5 Jur. N.S. 1025; *Harwood* v. *G. N. Ry. Co.*, 11 H. L. Ca. 654; *Morgan* v. *Windover*, 7 R. P. C. 131. Also *Penn* v. *Bibby*, 2 Ch. Ap. 127;

might be cited, establish the following propositions applicable to the present case, viz.: (1) A patent for the mere new use of a known contrivance, without any additional ingenuity in overcoming fresh difficulties, is bad, and cannot be supported. If the new use involves no ingenuity, but is in manner and purpose analogous to the old use, although not quite the same, there is no invention; no manner of 'new manufacture' within the meaning of the statute of James. (2) On the other hand, a patent for a new use of a known contrivance is good, and can be supported if the new use involves practical difficulties which the patentee has been the first to see and overcome by some ingenuity of his own. An *improved thing* produced by a new and ingenious application of a known contrivance to an old thing is a manner of new manufacture within the statute. . . .

"The difficulty of saying where invention sufficient to support a patent exists and where it does not, is well known to all persons conversant with patent law. . . . If, practically speaking, there are no difficulties to be overcome in adapting an old contrivance to a new purpose, there can be no ingenuity in overcoming them, there will be no invention, and the first rule will apply. The same rule will, I apprehend, also apply to cases in which the mode of overcoming the so-called difficulties is so obvious to every one of ordinary intelligence and acquaintance with the subject-matter of the patent as to present no difficulty to any such person. Such cases present no real difficulty to people conversant with the matter in hand and admit of no sufficient ingenuity to support a patent. If in these two classes of cases patents could be supported, they would be intolerable nuisances, and would seriously impede all improvements in the practical application of common knowledge. . . . The plaintiffs have made a new and useful thing, viz. an improved gasholder, and however obvious their invention may now seem, it was not at all obvious until they hit upon it." [1]

As to disconformity (at p. 526): "This part of the case turns entirely on the view taken of the nature of the plaintiffs' invention. My view is that they sought and obtained protection for an invention for keeping the bottoms of gasholders horizontal without the use of an external framework, but instead thereof by mechanical means such as are described in the provisional specification. But the plaintiffs were not tied to those particular means. A patentee is not prevented from improving the means of carrying out the invention for which he obtains provisional protection. . . . The only limit set to what he can do in this respect is that the invention, as finally specified, must not be a different invention from that provisionally protected." [2]

Cannington v. *Nuttall*, L. R. 5 H. L. 205; *Otto* v. *Linford*, 46 L. T. 35; and *Hayward* v. *Hamilton*, Griff. 115.

[1] The judgment of *Lindley*, L.J., is frequently quoted as to the difficulty of deciding as to subject-matter: *Savage* v. *Harris*, 13 R. P. C. 93. The application of the above rules is always a question of fact and degree: *Brooks* v. *Lamplugh*, 14 R. P. C. 615. Practical difficulties must be overcome: *Rockliffe* v. *Priestman*, 15 R. P. C. 159; *Beavis* v. *Rylands, Glass Co.*, 17 R. P. C. 98.

[2] Quoted to show that inventions must be unmistakably different to constitute disconformity in *Chadburn* v. *Mechan*, 12 R. P. C. 135.

Per *Smith*, L.J. (at p. 529): "The Patent Act of 1883, s. 5, enacts that the patentee 'must describe in his provisional specification the nature of his invention.' This does not mean that he must give a full description of his invention, but he must describe its nature so that the law officers may be informed of its subject-matter, and the identity between it and the complete may be capable of being ascertained. . . . In considering the question of 'non-conformity,' it becomes necessary to apprehend clearly what the plaintiffs' invention really is, for until this is done, it is impossible to ascertain if a new and separate invention, or only an improvement upon or different mode or modes of carrying out and developing the original invention, are set forth in the complete specification. In the first case the patent is bad. In the second it is not." [1]

Note.

At p. 532 the rule as to *paper anticipations* is again restated by *Smith*, L.J., and was followed in *Shrewsbury & Talbot Cab. Co.* v. *Stretch*, 13 R. P. C. 53; *Pneumatic Tyre Co.* v. *Leicester, &c.*, 16 R. P. C. 57.

1894. BENNO JAFFÉ UND DARMSTEDTER LANOLIN FABRIK *v.* JOHN RICHARDSON & CO., LTD., 11 R. P. C. 262.

Construction of Claim—Manufacturing Equivalent—New Process.

A patent (No. 4992 of 1882) was granted to *F. C. Glaser* for "a new or improved manufacture of fatty matter from wool-fat."

The specification described the invention as follows:—

"This invention relates to a new or improved manufacture of fatty matter from wool-fat termed 'lanolin,' which may be produced either from the waste liquors of wool-washing works or from ordinary commercial wool-fat." Lanolin was described as a combination of pure wool-fat and water. Previous attempts were reviewed and their drawbacks pointed out, more particularly the smell due to certain putrid formations. The new special method was thus described: "The still fresh undecomposed lye passes through a depositing centrifugal machine, in which the dirt and fat are separated from each other, while the cleansed soap liquor is continually drawn off by means of a pipe and led direct into the vat which serves for the acidulation. The raw 'lanolin' thus obtained is thoroughly kneaded by suitable machinery with cold flowing water, until the water which flows away is as clear as the inflowing water. The raw 'lanolin' is then heated with water, whereby it is decomposed into the elements of water and fat. The latter is skinned off from the surface and cooled, and can then be again operated upon in the centrifugal machine in a melted condition for further

[1] Frequently quoted with approval: *Cassel Gold, &c.* v. *Cyanide Recovery, &c.*, 12 R. P. C. 257.

purification," or it could be dissolved in certain solvents described, and then filtered. The fat was then kneaded with water. If commercial wool-fat were employed instead of wool-washing water, alkalies such as carbonate or hydrate of soda, had to be added before the above treatment was carried out.

The claims were:—

"*First.* The herein-described improved manufacture of fatty matter termed 'lanolin' from wool-fat, by first treating the waste liquors of wool-washing works in a depositing centrifugal machine, then purifying the raw lanolin so obtained and converting the same into wool-fat, and, if necessary, purifying the wool-fat by means of ether or other solvents or by operating upon the same when heated in a centrifugal machine, and lastly converting the wool-fat into 'lanolin' by treatment with water."

"Second. The herein-described improved manufacture of fatty matter termed 'lanolin' from wool-fat by treating commercial wool-fat with water, carbonate of soda, hydrate of soda, soap, or other alkaline substance or mixtures thereof until a thin milky fluid is obtained, which is then treated in the manner set forth in the preceding claim."

In an action for infringement brought by the plaintiffs as assignees of the above patent, it was contended—

(1) That "lanolin" had been anticipated by the manufacture of a substance named "œsipus," described by *Dioscorides* in 1598; and by *Pliny*, whose works were published in England in 1601.

(2) That the claim was for lanolin when made as described, *i.e.* by the use of a centrifugal machine only.

The evidence showed that "œsipus," was not the same product, as it would not keep. That the wool-washings in alkali contain cholesterin fats, soap, and impurities. Of these, cholesterin fats possessed the lowest specific gravity. That the inventors discovered it could be easily separated from the fatty acids by the centrifugal machine. That such a machine had been invented as a "separator," as an improvement on the older process of allowing milk to stand and then "skimming" it.

Judgment was given for the plaintiffs.

Held, on appeal by the Court of Appeal—

That the substance was a new one. That the claim, considering the whole process and specification, included the process of separating by gravity as well as that mentioned.

Per *Lindley*, L.J. (at p. 271) applying the rule in *Cropper* v. *Smith* (1 R. P. C. 89): "Now, applying that principle to this case, I am satisfied, now I understand it, although I was not when I was ignorant of it, that to construe this document as claiming the means of doing the thing is to miss the substance and mistake the principal for the accessory. I think this claim does not cover any mechanical method of effecting the separation at the stage indicated, although it may not be done by the precise machine which is selected as the best."

Per *Kay*, L.J. (at p. 273): "Now I see the result of this manufacture was to produce a perfectly new substance . . . a hitherto unknown

compound . . . Now that I see that, I am not so much impressed with the importance of using a centrifugal machine as I was before, because to say that another man may produce the very same thing, which has turned out to be an extremely valuable product, by taking every one step of the plaintiffs' process except the centrifugal machine, and substitute for it a depositing-tank, seems to me to violate the principle which has been laid down over and over again, that you cannot take every step of a process, especially where the result is a production of a hitherto unknown compound, except one, and substitute for that one that which is a manufacturing or mechanical equivalent."

1894. GODDARD *v.* LYON, 11 R. P. C. 354.

Construction—Drawings—Invention.

A patent (No. 3172 of 1880) was granted to *W. Lyon* for "improvements in the construction and arrangement of apparatus for purifying, disinfecting, drying, and heating."

The complete specification was as follows:—

"My said invention consists of improvements in the construction of apparatus for purifying and disinfecting wearing apparel, bedding, and other articles, by means of which all germs of disease, vermin, and the eggs thereof, can be effectually destroyed without the necessity of employing any destructive chemical agent. The said apparatus is also applicable for the purposes of drying and heating, all risk of burning articles submitted to such operations being entirely avoided.

"The body or main portion of the apparatus consists of a chamber constructed of wrought iron or other suitable metal or material, and provided with a door so arranged and fitted as to close in a steam-tight manner. Steam is conducted from the steam space of a high-pressure boiler into the interior of the said chamber by means of a pipe or pipes, which open or project into the lower part of the latter. The said chamber, which is hereinafter referred to as the 'inner chamber,' is surrounded, except at that part where the door is situated, by an outer casing in such a manner that a steam-tight space or chamber (hereinafter referred to as the 'outer chamber') shall exist between the said outer casing and the exterior of the inner chamber, suitable stays or supports being provided for maintaining the inner chamber in its proper position. A steam-tight door is provided for the purpose of obtaining access to the inner chamber. Pipes are arranged in the manner hereinbefore described for conducting steam to the outer chamber. Both chambers are provided with suitable pipes for conducting off any water resulting from the condensation of the steam, and also for facilitating when desired the escape of the latter.

"I will now proceed to refer to the accompanying drawings, from which the nature of my said invention will be more clearly understood. In these

drawings the apparatus is shown mounted on wheels; Fig. 1 is an end view with the door open, and Fig. 2 is a perspective view with the door closed. A is the inner chamber, and B the casing enclosing the outer chamber; C is the door, which is provided with a flange, *c*, so that when the door is closed it can be firmly secured by means of bolts and nuts to the flange *d*. On the body of the apparatus, however, although this arrangement constitutes a simple and effectual method of securing the door in a steam-tight manner, in some cases it may be desirable to employ other arrangements, for instance, clamps connected to a rod or rods, as will be well understood; *e* is an aperture provided for the purpose of introducing small articles into the inner chamber without the necessity of opening the

Figure 1

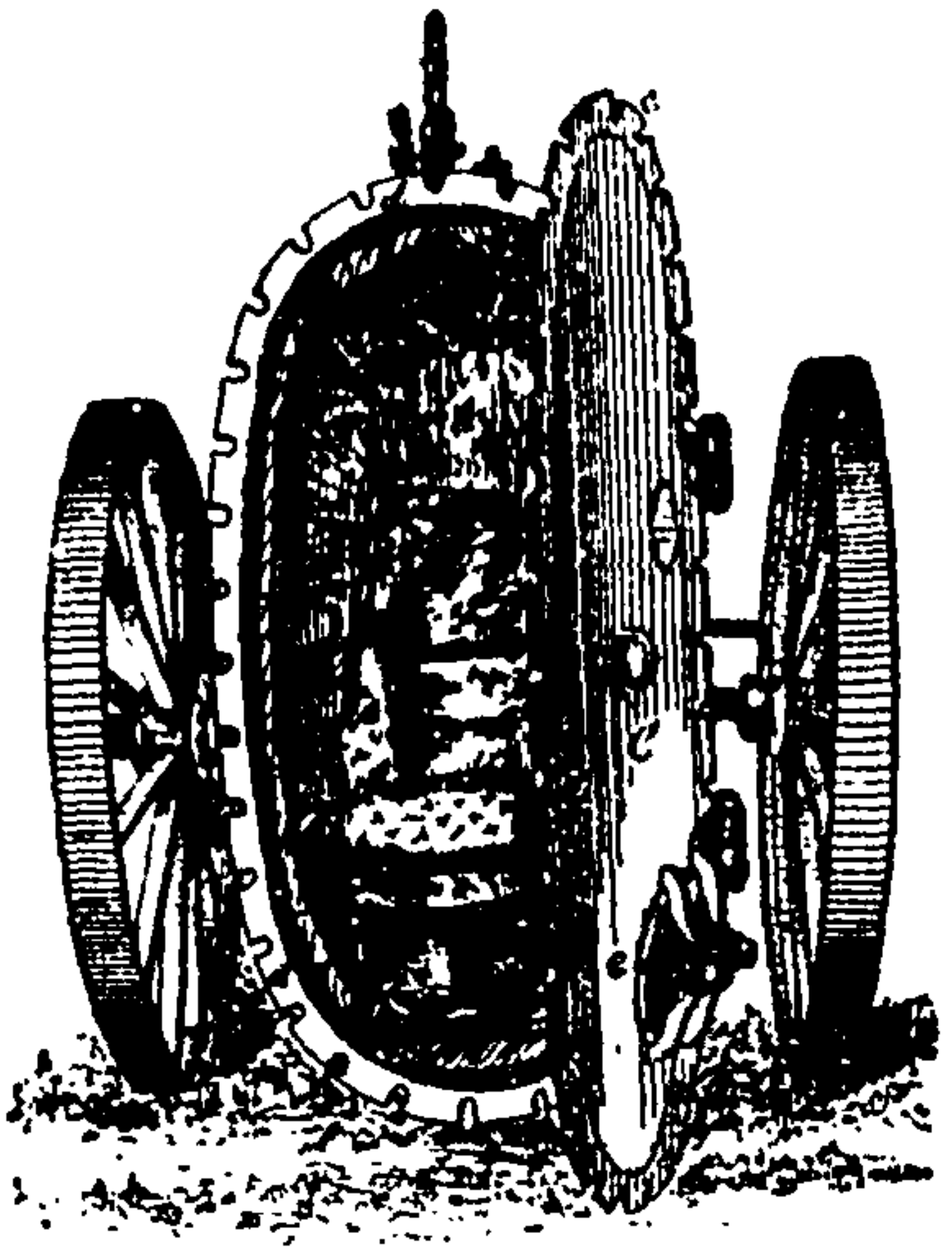
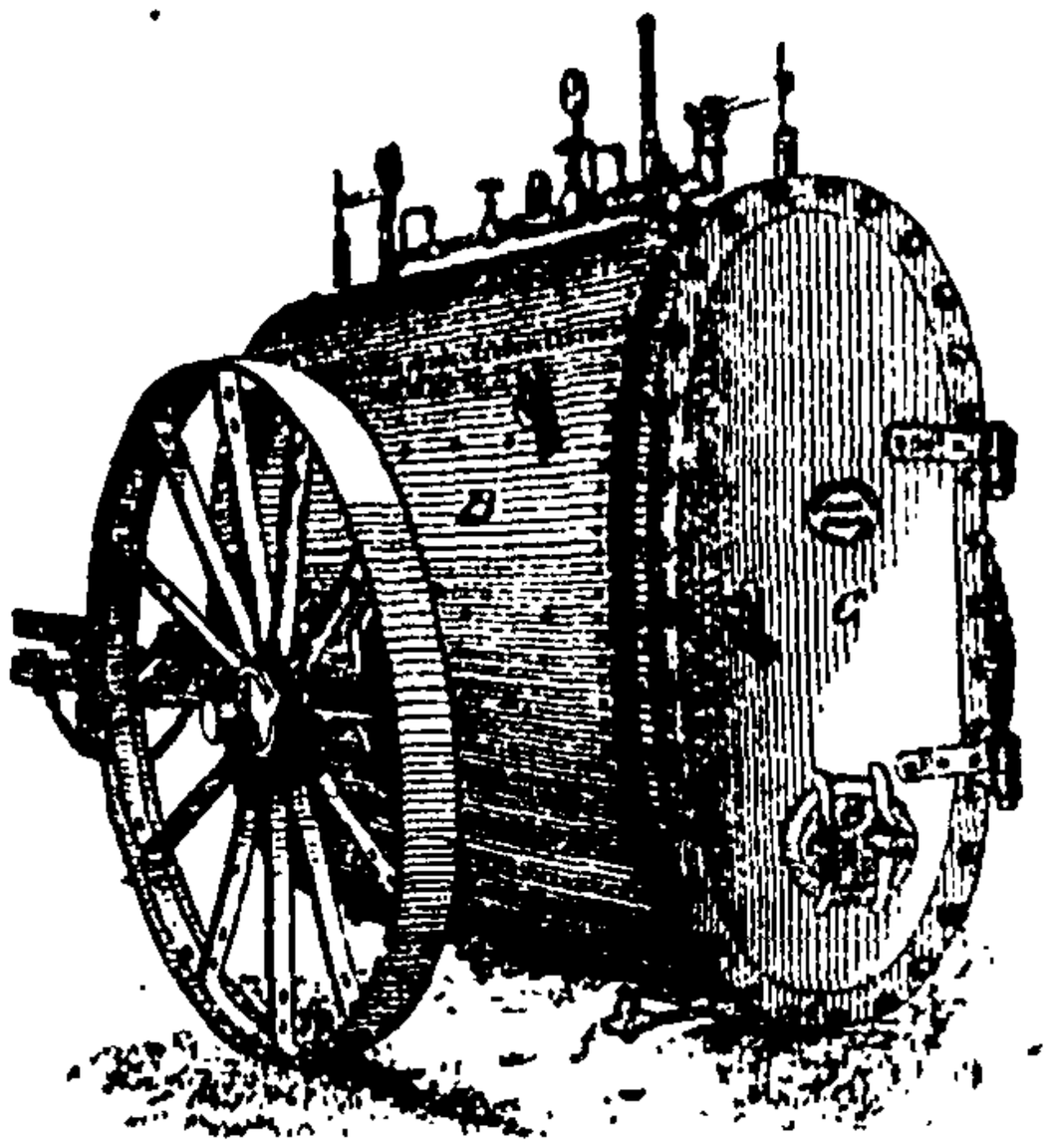


Figure 2



From Lyon's specification (No. 3172 of 1880).

door; *f* is a cock or valve for the escape of water resulting from the condensation of the steam. On the upper part of the apparatus are shown arranged safety-valves, steam-gauges, and thermometer, for the purpose of ascertaining and regulating the temperature of the interior.

"The action of the apparatus is as follows:—The wearing apparel, bedding, or other article to be operated upon is arranged on a perforated shelf, or in any other suitable manner, within the interior of the inner chamber; the door is then closed and steam is admitted into the said chamber, and is thus brought into contact with the article under treatment, which is allowed to remain exposed to the action of the same until the desired object is effected. In order to prevent condensation of the steam within the inner chamber, steam is admitted into the outer chamber by preference at a higher pressure than the steam in the inner chamber a short time before the admission of steam to the latter, which is thereby heated

and prepared for its reception. When the apparatus is to be employed for airing clothing or bedding, or for drying articles, or for any purpose where a dry heat is required, steam is only introduced into the outer chamber; but when a moist heat is required for the preservation of meat, or for cooking the same, the apparatus is used in the same manner as hereinbefore described for disinfecting."

The claim was for:—

"The combination and arrangement of the inner and outer chambers, substantially as and for the purposes hereinbefore described and set forth."

In an action for infringement the chief alleged anticipation was an apparatus used by the *Aberdeen Laundry Company*.

That apparatus worked as follows[1]:—There was an inner chamber, A, into which articles were placed to be dried. Steam was admitted through the inlet B into the steam-jacket C, surrounding the inner chamber. This jacket was furnished with a safety-valve, D, and pressure-gauge, E. These were not constructed for high pressures. There were no valves or gauges on the inner chamber. Steam could be introduced into the inner chamber from the jacket by the pipe F, but, before the date of *Lyon's* patent this was only done experimentally. Condensed steam escaped by the outlet G from the outer chamber or jacket. It was also proved that after the publication of the patent in question the front end door H was burst by undue pressure against the bar I across the door. Packing (LL) was used to render the door steam-tight. The bar and door were then strengthened and a safety-valve put on. J is the floor of the chamber, and K an exit-pipe leading to the chimney. The Aberdeen machine, in its original condition, could not be used with steam in the inner chamber under a greater pressure than 3 lbs. per square inch, whereas the plaintiff's invention would not work usefully with a less pressure than 10 lbs. per square inch in the inner chamber.

It was proved that when steam is superheated (*i.e.* dry and under pressure) its temperature depends on its pressure, and conversely (10 lbs. and 240° F., 20 lbs. and 260° F.). By first heating the outer chamber by steam under high pressure, and then introducing dry steam under pressure into the inner chamber, clothes, bedding, &c., in the latter could be rapidly disinfected by being raised to a high temperature. The dry steam under high pressure permeated the things thoroughly, and in a few minutes effectually heated them, a result which, under older processes, it took several hours to attain. Again, the articles were not destroyed, as they would be by the use of condensed steam.

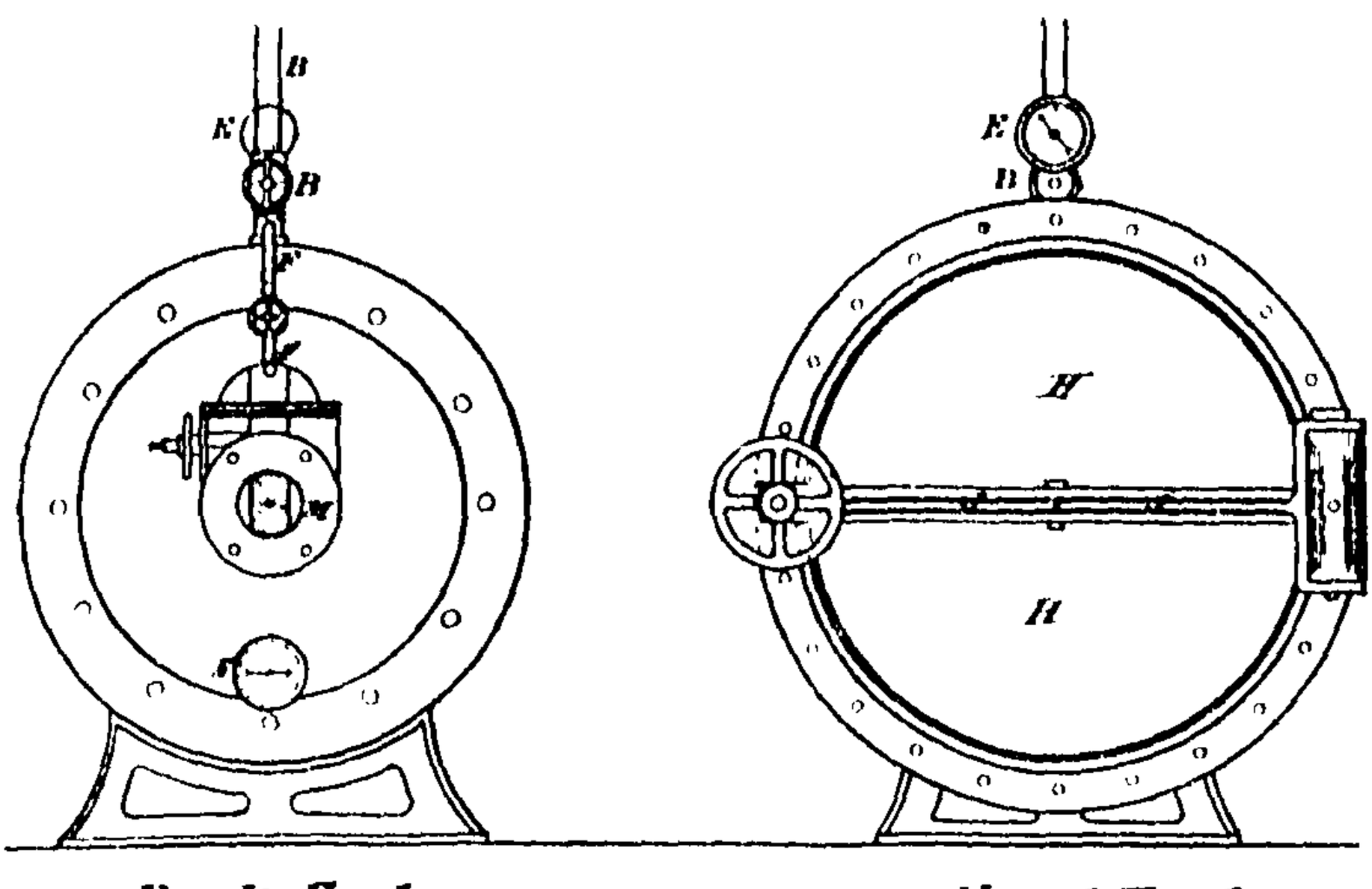
The points relied on for the defendant were chiefly—

That the specification claimed the invention for airing, &c., at low pressure, and was therefore anticipated.

That there was no subject-matter in improving a known machine to stand high pressure.

[1] The drawing here given is reproduced from the original exhibit lent to the author by Messrs. *Finney, Thomas & Co.*

Held at the trial and by the Court of Appeal, that the patent was valid.
Held, by the House of Lords—
That on considering the whole specification the claim was for the com-



Disinfector used at the Aberdeen Steam Laundry.

bination of the two chambers for the purpose of disinfecting by direct agency of steam under high pressure; that its use for mere drying was indicated, not claimed.

That it was not anticipated.

That there was a sufficient improvement on the then state of public knowledge to render the patent valid.

Per Lord *Herschell*, L.C. (at p. 360): "It is quite true that the change" (*i.e.* difference between the *Aberdeen* machine and *Lyon's*) "is but small; but if it be the case that the change was made with a view to the use of steam at a comparatively high pressure in the inner cylinder, and consequently rapid disinfection, and that the plaintiff" (*Lyon*) "for the first time put before the public a machine adapted for that purpose, although the difference between that machine and any machine in prior use might be slight, it appears to me to be none the less the subject-matter of a patent.

"But the matter which, I confess, has given me the greatest difficulty, and which has led me to entertain some doubt whether the judgment can be sustained, is that which I have indicated, namely, whether the plaintiff does, on the face of his specification, indicate the intention that the steam in the inner chamber is to be used at a considerable pressure, and that the apparatus has been devised accordingly. I confess that I think this case very near the line. I think it is unfortunate that the plaintiff was not more specific in his description on the face of his specification; because if he had been so, very possibly he might not have been subject to the difficulties which he has had to encounter in this litigation. . . ."

As to construction: "When one turns to the drawing to which those letters and figures have reference, one finds a door firmly fastened by a great number of nuts and bolts at short intervals all round the door. Now it seems to me that any one reading that specification in connection with the drawing could come to no other conclusion than this, that inside that inner chamber there was to be used steam at a considerable pressure, because safeguards are introduced to render the door capable of withstanding a considerable pressure; and it can hardly be supposed that this large number of nuts and bolts were introduced out of mere wantonness."

Lord *Watson* (at p. 363): "The only essential difference between the two apparatus appears to me to consist in this: That in the respondent's" (*Lyon's*) "the purifying chamber is fitted with a door capable of resisting, and therefore enabling the process of purification to be carried on with high-pressure steam. If the Aberdeen apparatus had been made with a door to the inner chamber, which would have permitted the use of high-pressure steam within it, the respondent's invention would, in my opinion, have been thereby anticipated."

1895. LEONHARDT & CO. *v.* KALLÉ & CO., 12 R. P. C. 103.

Inventive Ingenuity—Sufficiency of Directions.

In 1888 a patent (No. 2664) was granted to *H. H. Lake* for an invention (communicated from abroad) for "improvements relating to the production of colouring-matters."

The complete specification was as follows :—

"It has been found that from para-nitro-toluol-sulpho-acid a number of yellow, orange to brown colouring matters can be produced which have the property of dyeing cotton direct and fast to alkali without mordant.

"The formation of these colouring matters is effected in such a manner that oxidable organic or mineralic substances and free caustic alkali in a dissolving or distributing agent act under heat, upon paranitrotoluolsulpho acid or its salts.

"As such oxidable substances I mention for example : methyl alcohol ; ethyl alcohol ; glycerine ; resorcine ; xantongenate of potassium, &c. ; hydroquinone ; orcin ; naphthol ; dioxynaphthaline ; pyrogalic acid ; resorcylic acid ; oxynaphthoic acid ; gallic acid ; tannic acid and substances containing tannic acid, for example sumach, catechu, and the like ; oxyquinoline carbonic acid ; dioxynaphthalinesulpho-acid ; sulphurous acid ; arsenious acid ; antimonious acid or its salts.

"The above-mentioned substances have given good results, but other oxidable substances can be used in lieu thereof, for which reason I do not limit myself to those above enumerated.

"The process which I use for the preparation of these new colouring-matters is in general as follows : I dissolve or distribute paranitrotoluolsulpho-acid or a salt of this acid, under addition of such oxidable substances, in water, or one of the above-mentioned liquid oxidable agents, for example spirit, glycerine, and heat the same with caustic alkali until the formation of colouring-matter has terminated.

"By employing more or less of the oxidable substances the shades of the colouring-matters obtained can be greatly varied.

"In order to render the process better understood I give the following examples, to which however I do not limit myself, as they can be variously modified without departing from the nature of the invention.

"Example 1.—Upon 10 kilogrammes of the sodium salt of paranitrotoluol-sulpho-acid, or an equivalent quantity of the free acid, are poured about 30 litres of spirit or methyl alcohol and heated in a vessel provided with an agitator and a reflux-cooler. About 8 kilogrammes of caustic soda-lye of 40 degrees Baumé are then gradually added, and the whole is heated to ebullition. The colouring-matter obtained is filtered, pressed, and dried.

"Example 2.—10 kilogrammes of paranitrotoluolsulpho-acid are heated together with about 20 kilogrammes of glycerine, and to the mixture is gradually added, at about 60 degrees centigrade, about 8 kilogrammes of caustic soda-lye of 40 degrees Baumé. A powerful reaction which may occur, and which is accompanied by strong ebullition, is met by adding cold water or by externally cooling the vessel. The formation of colouring-matter is terminated in a short time. The thick paste obtained is gradually introduced into about 100 litres of boiling salt water which must be kept acid up to the end, preferably by means of acetic acid. The colouring-matter thus separated is filtered, pressed, and dried.

"Example 3.—20 kilogrammes of sodium salt of paranitrotoluolsulpho-acid and 4 kilogrammes of resorcine are dissolved in 60 litres of hot water, 20 kilogrammes of caustic soda-lye of 40 degrees Baumé are added, and the mass is boiled up to the end of the formation of the colouring-matter. The colouring-matter is precipitated by neutralization with an acid, and by the addition of common salt in the usual manner.

"Example 4.—5 kilogrammes of α naphthol are dissolved in 20 kilogrammes of caustic soda-lye of 40 degrees Baumé and 60 litres of water, 20 kilogrammes of the sodium salt of paranitrotoluolsulpho-acid are added, heat being applied until the formation of colouring-matter is terminated. The colouring-matter is then separated in the usual manner.

"The same process serves for the production of colouring-matters by means of naphthol dioxynaphthalines and its sulpho acids: pyrogallic acid; resorcylic acid; oxynaphthoic acids; gallic acid; tannic acid and substances containing tannic acid, such as sumach, mirabolane, catechu, and the like; oxyquinoline carbonic acid.

"Example 5.—10 kilogrammes of sodium sulphite are dissolved in 60 litres of water and 20 kilogrammes of caustic soda-lye, then 20 kilogrammes of the sodium salt of paranitrotoluolsulpho-acid added, and the whole boiled.

"Example 6.—6·5 kilogrammes of arsenious acid are dissolved in 150 litres of and 20 kilogrammes of caustic soda-lye, then 20 kilogrammes of the sodium salt of paranitrotoluolsulpho-acid added, the whole being heated as long as colouring-matter is formed.

"In the above directions I always speak of caustic alkali in the form of lye (aqueous solution), but it is a matter of course that in certain cases the alkali can be used in another form. In some cases, in lieu of caustic soda or caustic potash, caustic baryta or caustic strontia can be used. Furthermore, the operation can be carried out in a closed vessel with or without suitable pressure."

The claim was for:—

"The process of producing colouring-matters fast to alkali which will dye cotton yellow, orange to brown without mordant, by the action of suitable oxidable substances, and fix [1] alkalies upon paranitrotoluolsulpho-acid under heat, substantially as described."

In the action for infringement the chief defences raised were:—

(1) Insufficiency of the specification in not showing how to distinguish the *suitable* oxidable substances, in not giving proportions, in not defining how different shades of colour could be produced, and in not giving the chemical composition of the dye produced.

(2) That the claim was too wide, and would include substances such as *zinc dust* that would not do.

(3) That it was not a new invention, being anticipated in several publications, and amongst others *Lake's* specification, No. 4387* of 1886.

[1] This word "fix" should be *free* or *fixed*, more probably the latter, but it is immaterial which is correct.

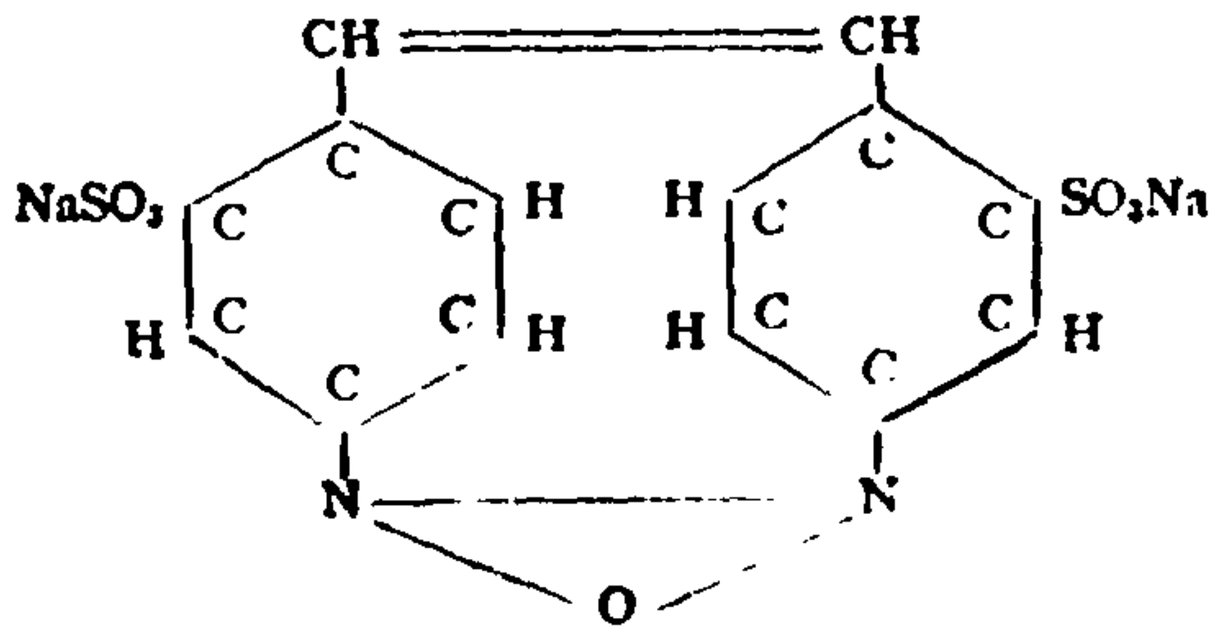
This alleged anticipation of 1886 was a new mode of producing certain dyes. The process consisted in the first place of boiling paranitrotoluolsulphonic acid with caustic soda. The result was "an intensely red fluid, from which a yellow colouring-matter [1] may be obtained by salting out," but the salting out was not done, and there was added "to the fluid as much zinc-dust as necessary to render the fluid colourless." The zinc-dust was a powerful reducing agent. The new amidosulpho acid was then purified and used with other organic substances to produce a series of dyes. The inventor subsequently discovered that by adopting a slower process of deoxidation (*e.g.* by using less active agents), and by stopping the process when colouring-matter ceased to be formed he got a new dye which was fast to alkali and could be used on cotton without a mordant. In the former and more rapid process these colouring-matters were supposed to have been made and destroyed. The specification sued on and above set out is that for this new process of slower oxidation.

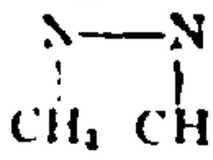
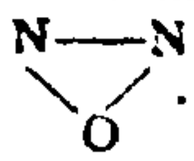
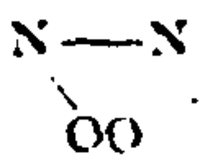
Held, that the discovery of the mode of stopping of the older process at a given stage by slower oxidation was a patentable invention, that the directions were sufficient, and that the claim was not too wide.

Mr. Justice *Romer* first dealt with the alleged anticipations, and found the process was novel and was good subject-matter for a patent.

As to other objections (at p. 116): "Objection 1 contends that the complete specification is ambiguous and misleading on certain grounds. In my opinion it is not ambiguous and not misleading. Let me deal with the various heads on which that contention is based in objection 1. Take objection (*a*), which is that the specification 'shows no means for ascertaining what oxidisable substances are not suitable.' Now with reference to that, what has the patentee done, and what really could he do more? He has pointed out numerous oxidisable substances, and admittedly those oxidisable substances he mentioned are as good, if not better, and more easily dealt

[1] The soda salt here mentioned is known commercially as "sun yellow" ($C_{14}H_8N_2S_2Na_2O_7$), and its constitution is represented by the formula—



The formula for the new dyes ("*Mikado*" *colours*) has *not been finally determined, but is*, according to *Hurst*, similar to the above, with the condensation atom of O replaced by $(CH_3)_2$, thus  instead of . A recent French work gives the change as the substitution of O_2 for the condensation O, thus: .

with, than the other oxidisable substances which are not specifically mentioned. . . . I do not think that he was bound to specify all possible oxidisable substances that could be used, or to point out which of the oxidisable substances not mentioned should rather be avoided as not being so good as those expressly mentioned."

As to the giving of proportions (at p. 117): "He has taken numerous examples and given details with regard to numerous oxidisable substances, how they are to be used, in what proportions, and with every necessary information. . . . He was not bound to apply a theory. He was bound to give the best result. If he had formed a theory the objection would have been taken against the theory. He has done what in my opinion is right. He has shown how to obtain the best result from the different oxidisable substances in fact, and not in theory."

As to the shades produced (at p. 118): "It is very difficult to define colours. . . . The patentee has pointed out what colours his dye produce. Undoubtedly all the colours that are produced from his process are rightly stated by the limits given in the specification. Practically there would be no difficulty. A person wanting to use these dyes would test the examples given." The learned judge alluded to the objection as to the absence of any formula for the product as being "another example of an unfair objection. In my opinion the patentee was not bound to state anything of the kind."

1895. NOBEL'S EXPLOSIVES CO., LTD. *v.* ANDERSON, 12 R. P. C. 164.

Construction of Specification.

A patent (No. 1471 of 1888) was granted to *A. V. Newton* for an invention (*A. Nobel's*) for "improvements in the manufacture of explosives."

The complete specification began by describing the object of the invention:—

"The object of this invention is to combine the substances nitro-glycerine and nitrated cellulose, with or without nitro-starch or nitro-dextrine, or both, so as to produce an explosive substance of a horny or semi-horny character, and capable of being reduced to grains suitable for use as a propeller of projectiles." Various processes of manufacture were described. The proportions were indicated. "The limit of variation, as regards the relative proportions of the two ingredients above named, viz. nitro-glycerine and soluble nitrated cellulose, which permits of obtaining a compound consistent enough to be granulated, is very wide. But when the proportion of nitro-glycerine exceeds two-thirds of the compound, it is rather too soft, and when, on the contrary, nitrated cellulose is in excess of two-thirds, it becomes too tough and hard to be easily granulated." Throughout the specification "insoluble" nitro-cellulose was never mentioned, but frequently the terms "soluble nitrated cellulose" and nitro-cellulose of the "well-known soluble kind" were used.

The first claim was for :—

"The manufacture from nitro-glycerine and soluble nitro-cellulose of a horny or semi-horny explosive compound, susceptible of granulation, substantially as and for the purposes herein described."

It was proved at the trial that at the date of the patent soluble [1] (*i.e.* soluble in ether alcohol mixture) nitro-cellulose and insoluble nitro-cellulose were known substances and different substances ; that they were distinguished in commerce, and by chemists. That each, as usually made, contained about 10 per cent. of the other. The processes described in the specification were equally applicable to both substances, and the results were horny and semi-horny explosives capable of granulation.

At the trial it was held that the claim did not include the insoluble nitro-cellulose, it not being at the date of the patent a known equivalent for the soluble, and hence there was no infringement.

The Court of Appeal confirmed that decision.

On appeal to the House of Lords.

Held, that the claim did not include a powder made by using the insoluble nitro-cellulose, although as manufactured it contained 10 per cent. of soluble nitro-cellulose.

Notes.

It was pointed out by *Kay*, L.J., in the *Incandescent Gas Light Co.* v. *De Mare, &c.* (13 R. P. C. 566), that the above decision turned on the fact that the patentee avoided the "insoluble" nitro-cellulose in his claim.

Lord *Herschell*, L.C., to the same effect in *Morris & Bastert* v. *Young*, 12 R. P. C. 461.

1895. CASSEL GOLD EXTRACTING CO. *v.* CYANIDE GOLD RECOVERY SYNDICATE, 12 R. P. C. 232.

Construction of Claims—Inventive Ingenuity.

In 1887 a patent (No. 14174) was granted to Messrs. *MacArthur & Forrest* for "improvements in obtaining gold and silver from ores and other compounds."

The complete specification was as follows :—

"This invention has principally for its object the obtaining of gold from its ores or other compounds, but it is also applicable for obtaining silver from its ores or compounds ; and it comprises an improved process which, whilst applicable to ores or compounds generally, is effectual with ores and compounds from which gold or silver have hitherto not been easily

[1] "Soluble" nitro-cellulose is *dinitro-cellulose*—$C_6H_8(NO_2)_2O_5$, and "insoluble" is "gun-cotton" or *trinitro-cellulose*—$C_6H_7(NO_2)_3O_5$. The plaintiff contended that these bodies were not distinct, but that "nitro-cellulose" was $C_{6n}H_{10n-m}(NO_2)_mO_{5n}$, where n and m varied according to the amount of nitration produced.

obtainable because of the presence of various other metals or their compounds, or because of the physical or chemical condition of the gold or silver in the ores or compounds."

"In carrying out the invention the ore or other compound in a powdered state is treated with a solution containing cyanogen or cyanide (such as cyanide of potassium, or of sodium, or of calcium) or other substance or compound containing or yielding cyanogen. In practice we find the best results are obtained with a very dilute solution, or a solution containing or yielding an extremely small quantity of cyanogen or a cyanide, such dilute solution having a selective action such as to dissolve the gold or silver in preference to the baser metals. In preparing the solution we proportion the cyanogen to the quantity of gold or silver or gold and silver estimated by assay or otherwise to be in the ore or compound under treatment, the quantity of a cyanide or cyanogen-yielding substance or compound being reckoned according to its cyanogen. . . ."

The mixing process was next described. "When all, or nearly all, the gold or silver is dissolved, the solution is drawn off from the ore or undissolved residue, and is treated in any suitable known way, as for example with zinc, for recovering the gold and silver." . . . Residuary cyanogen compounds to be reconverted for use again. . . .

"Any cyanide soluble in water may be used, such as ammonium, barium, calcium, potassium, or sodium cyanide, or a mixture of any two or more of them. Or any mixture of materials may be taken which will by mutual action form cyanogen or a substance or substances containing or yielding cyanogen.

"In dealing with ores or compounds containing, per ton, twenty ounces or less of gold, or silver, or gold and silver, we generally use a quantity of cyanide, the cyanogen of which is equal in weight to from one to four parts in every thousand parts of the ore or compound, and we dissolve the cyanide in a quantity of water of about half the weight of the ore. In the case of richer ores or compounds, whilst increasing the quantity of cyanide to suit the greater quantity of gold or silver we also increase the quantity of water so as to keep the solution dilute. In using free cyanogen, the cyanogen obtained as a gas in any well-known way is led into water to form the solution to be used in our process; or any suitable known mode of setting cyanogen free in solution may be employed." Higher temperature and pressure might sometimes be advisable.

The claims were:—

"(1) The process of obtaining gold and silver from ores and other compounds, consisting in dissolving them out by treating the powdered ore or compound with a solution containing cyanogen or a cyanide or cyanogen-yielding substance, substantially as hereinbefore described.

"(2) The process of obtaining gold and silver from ores and other compounds, consisting in dissolving them out by treating the powdered ore or compound with a dilute solution containing a quantity of cyanogen or a cyanide or cyanogen yielding substance, the cyanogen of which is

proportioned to the gold or silver or gold and silver, substantially as hereinbefore described."

The plaintiffs were assignees of the above patent, and sued for infringement.

It was proved at the trial that the solubility of finely divided gold in cyanide of potassium was known. Previous publications disclosed the use of cyanides in unlimited quantities in connection with electricity and carbonate of ammonium. In one specification one ounce of carbonate of ammonium was employed with each pound of cyanide of potassium, the quantity of the latter being about equivalent to the amount mentioned by the patent in question.

Eminent expert chemists gave evidence that the solution of gold in cyanide of potassium alone was generally known, but not one said that *he* knew it.

It was proved that none of the publications disclosed the fact that a *dilute* solution of cyanide of potassium would dissolve gold from crushed ore in preference to the baser metals. A strong solution would dissolve the baser metals first.

It was argued that the words "substantially as hereinbefore described" in the first claim referred to a dilute solution as mentioned in the specification, and that the second claim referred to the richer ores only.

At the trial it was held that there was no invention in the use of a dilute solution, and that the patent was invalid (11 R. P. C. 638).

Held, by the Court of Appeal—

That the first claim could not be read as applying to dilute solutions only, and was therefore anticipated.

That the second claim was for a novel and useful invention, and was valid.

Smith, L.J. (at p. 257): "It appears to us that claims 1 and 2 are independent claims, having application to the whole specification; the first making claim for the use of any cyanide of potassium in solution, irrespective of amount, substantially as therein described; and the second making claim for the uses of a dilute solution containing a specified quantity of cyanide of potassium, substantially as therein described. It appears to us impossible to discard either the one or the other, or to hold that both mean the same thing, or that claim 1 applies to one part of the specification and claim 2 to another; for this in our judgment is not the true construction of the specification as framed."

Note.

In the *Electric Construction Co.* v. *Imperial Tramways Co.* (17 R. P. C. 549), this case was referred to by Lord *Alverstone*, M.R. (*post* p. 436), as an example that one claim cannot be limited or narrowed by another.

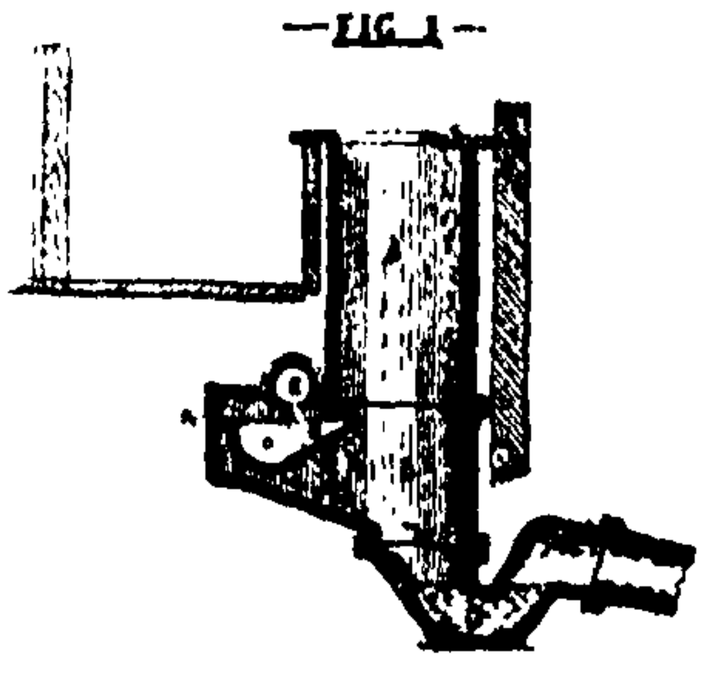
1895. DUCKETT, LTD. *v.* WHITEHEAD, 12 R. P. C. 376.

Inventive Ingenuity—Removal of Part—Turning Failure into Success.

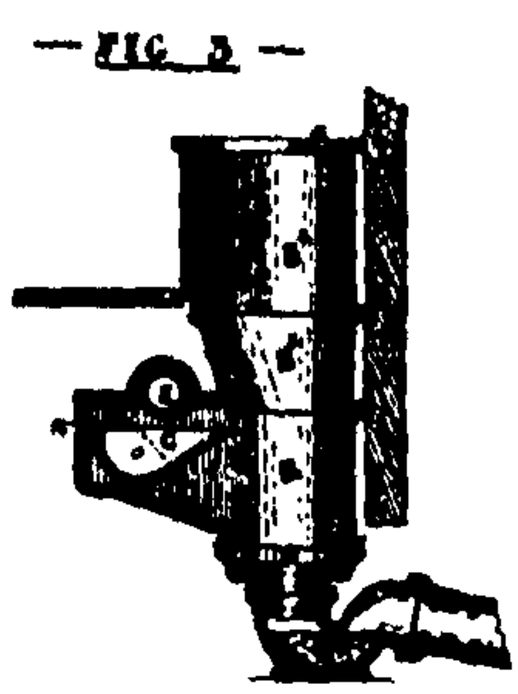
A patent (No. 17991 of 1888) was granted to Messrs. *J. & A. Duckett* for "improvements in and relating to water-closets."

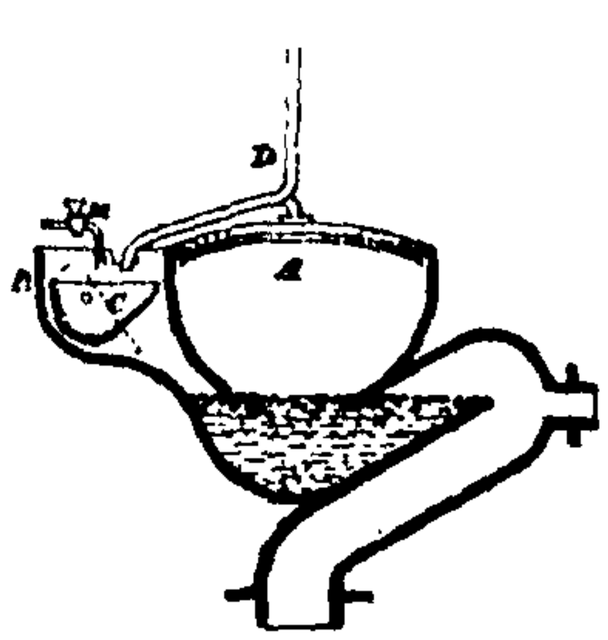
The complete specification commenced with a reference to the inventors' previous patent (No. 3431 of 1887), and continued as follows[1]:—

"The present invention has a twofold object. The first object is to combine the flushing-chamber or tank A with the closet-pan or a section or length of such pan B in one piece of earthenware. The pan is open to its full width at its point of connection with the flushing-chamber, so that the mouth of the tipper C may protrude into the interior of the pan or to a point horizontally beyond the vertical face of the pan or extension pipe above (B^2, Fig. 1). The second object is to construct the outlet from the pan (B^1 and H) (combining the flushing-chamber) circular in plan to adapt



From Duckett's specification (No. 3431 of 1887).





From Sutcliffe's specification (No. 1046 of 1884).

it to the socket of an ordinary trap, D, that the outlet from the latter may be turned in any direction to suit the main drain. . . .

"In Figs. 1 and 2 the tipper-box or chamber A is connected to the pan B or a section of the same in one piece of earthenware. The opening to the pan from the flushing tank or chamber A is in width equal to the diameter of the pan B, so that the mouth of the tipper C may protrude into it say four inches or thereabouts.

"This arrangement of the chamber A and pan B renders the former considerably less in size, and more compact in form, with less liability for leakage than when not permanently attached to each other, and with the mouth of the tipper not so protruding. Another essential qualification in this arrangement is, that when the water is discharged from the tipper it falls almost vertically with great force direct into the trap D, ensuring a

[1] To save space references are inserted in this first paragraph to the diagrams. Fig. 1 shows a vertical section, and Fig. 3 a modification of the invention. E is a section of the inlet junction conveying waste water to C.

thorough displacement of sediment, which may have a tendency to lodge therein.

"It will be obvious that paper or matter floating on the surface of the water contained in the trap will also necessarily be driven or swept effectually by the force of the flush through the trap to the main drain. . . ."

The claims were:—

"(1) The combination and arrangement of chamber A and pan B, the latter fitting the socket of an ordinary trap, substantially as described and illustrated for the purpose set forth.

"(2) The combination of chamber A, pan B, and protruding tipper C, substantially as described and illustrated."

Amongst other alleged anticipations were those of *H. Sutcliffe* (No. 1046 of 1884), and the inventors' previous specification referred to above.

Sutcliffe's invention is apparent from the diagram. The tipper C could be filled by the pipe D from the cistern (not here shown), or from the tap M, or by an ordinary waste-water pipe (not shown). As C fills, the centre of gravity of it and its contents gradually rises towards the right, until it is above the fulcrum, when the tipper tips over, as shown by the dotted line, discharging its contents into the side of the trap below.

Duckett's earlier specification showed an arrangement in which the tipper was situated some distance away from the closet. The contents were discharged through a trap and along a pipe slightly inclined, entering the water in the closet-pan just over the surface.

Neither of the alleged anti ipations was a success. *Sutcliffe's* was never used. The invention in question was sold by thousands, and was very useful in places where there was a scanty water-supply.

The patent was upheld.

Held, by the Court of Appeal, that the first claim was for the making of the two chambers into one, so that the tipper could protrude over the trap, and that there was sufficient change to constitute invention, failure having been turned into success.

1895. MORRIS & BASTERT *v.* YOUNG, 12 R. P. C. 455.

Benevolent Construction of Specification—Inventive Ingenuity.

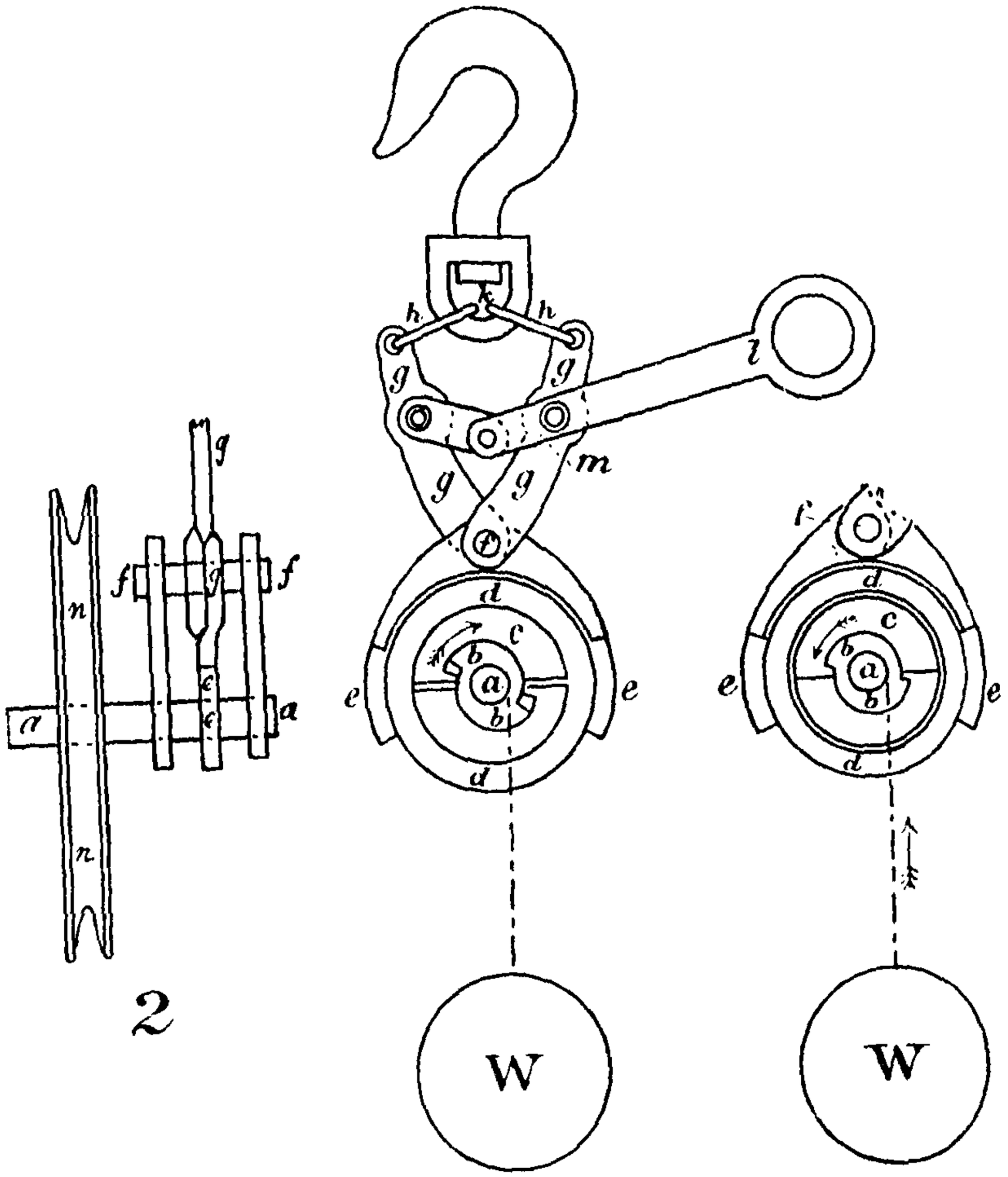
A patent (No. 2742 of 1888) was granted to Messrs. *Gay, Whitehead & Young* for "improvements in machinery for lifting heavy bodies."

The object of the invention is thus described in the complete specification:—

"Our invention consists in improvements in pulley-blocks and hoisting appliances used for the purpose of raising and lowering weights and heavy bodies, whereby the load in being raised is safely sustained when the hand-power is released, and whereby it is possible to lower either by the reverse pulling of hand-chain or rope, or by means of the brake at will. We further arrange our lifting-chain that a double lift is possible by having a

hook at each end of the same, and we allow the load to descend by brake from either hook, or we pull the same down by reverse motion of hand-chain at pleasure." The machine worked in the following manner[1]:—

From a hook is suspended by the links *h*,*h* (Fig. 1) a scissors-like appliance, whose arms, *g*, *g*, hinge at *f*. From *f* (Fig. 2) hangs the shaft *a*,



Drawings showing action of Plaintiff's hoist.

on which (Fig. 1) are the cams *b* engaging in segments, *c*, in a brake-ring, *d*. The lower ends *e* of the arms *g* close as brakes on the ring *d*.

[1] The diagrams here used are taken from exhibits before the House of Lords furnished by Messrs. *Robbins, Billing & Co.*; it is unnecessary to set out the specification in detail. The same letters denote the same parts throughout.

The action is as follows: The weight W acts vertically downwards through the shaft *a*, and thence through the hinge or fulcrum *f*, as shown in Fig. 2. The effect of the pull of the weight W vertically downwards at *f* (which thence acts through *g* and *h* pulling vertically downwards at *k*) is to pull the upper ends of the arms *g* together, thus causing the brake-blocks *e* to grip the brake-ring *d* and keep it stationary. When the body is raised by turning the shaft *a* by means of the wheel *n* (Fig. 2), the contrivance acts as shown in Fig 3; the cams *b* engage the segments *c*, which slip within the ring *d*, and so allow of the motion. On releasing the hand the weight W turns the shaft backwards, as shown in Fig. 1, the cam *b* causing the segments *c* to expand, and so be kept at rest by the friction between the segments *c* and the inner surface of the ring *d*. This friction is proportional to the weight W. The whole is then at rest.

Lowering the weight is effected by turning the shaft *a* in the direction of the arrows in Fig. 1, and so causing slipping between the ring *d* and the brake-blocks *c*, *c* by overcoming the friction. The friction here is proportional to the normal pressure of the grip, which in turn is proportional to the weight W, hence ensues the slow descent of the weight. Or by giving a downward pull to the lever *l*, the arms *g* tend to open until slipping ensues between *d* and *e* from the lessening of the friction of the grip. When a rapid descent is required, the latter method is used.

The specification showed several forms of the appliance.

The first claim was for:—

"The use in hoisting-machines of an automatic brake with cams and expanding or contracting segments acting upon an internal or external circular surface to allow free rotation of a spindle in one direction, but to seize upon rotation of the spindle in the opposite direction, substantially as and for the purpose hereinbefore described." [1]

It was proved that an automatic brake with cams, expanding or contracting segments acting upon an internal circular surface to allow of the free rotation of a shaft in one direction but to arrest its rotation in the opposite direction, was not new; it was patented by *Hubbard* for all kinds of machinery, but had not previously been adopted in a hoisting machine. *Hubbard's* device was identical with the patentees' shaft *a*, cam *b*, expanding segments *c*, and ring *d*. Its object was to enable the shaft to communicate motion to the ring when turning in one direction and not in the other. It was a substitute for a noisy ratchet.

Held at the trial that the plaintiffs claimed generally the application of the mechanism to hoisting machines, and that the patent had been infringed.

The Court of Appeal upheld the decision.

Held (on appeal, by the House of Lords, reversing the Court of Appeal), that the claim was one confined to the combination of the arrangement of the expanding segments with the external brake of the scissors-like appliance, substantially as and for the purpose described in the specification.

[1] It is unnecessary to set out the other four claims.

Lord *Herschell* (at p. 459, in argument): "When once it is admitted that the expanding segments are old, the application of them is not a great invention. The patentee is then confined to his actual claim. . . . It is well settled that when a combination is good, but made of parts that are old, the doctrine of mechanical equivalents cannot be applied in the same way as if the invention were new."

In his judgment at p. 462: "That friction-clutch or apparatus" (i.e. *Hubbard's*) "had not, however, been previously employed in a hoisting-machine; it was therefore open to the plaintiffs to obtain protection for an arrangement by which the friction-clutch was adapted to, and employed in, a hoisting-machine, but it is obvious that they could not patent the mere idea of so employing it, or obtain a monopoly of its use, in such a machine apart from the particular method of using it which they made known to the public."

Lord *Davey* (at p. 463): "But the learned judge" (at the trial) "held that the patent was for the application generally of the friction-clutch to hoists in the form of an automatic brake with cams and expanding and contracting segments. It is on this point I differ from the learned judge. In favour of the patentees, I am of opinion that we ought to adopt the narrower construction of the claim, because if the wider construction be adopted, the patent would in my opinion be invalid."

At p. 464: "But *Hubbard* describes his contrivance as applicable to all revolving shafts, including those to be used for hoisting. The Court is entitled to be informed of the state of knowledge at the date of the patent, and to apply that information in order to ascertain what it is that the patentees have invented. No doubt the plaintiffs might have a patent for a new combination for the purpose of applying *Hubbard's* friction-clutch to hoisting machinery, and I think that the plaintiffs' patent in the present case may be supported as of that character. But, if so, I am of opinion, in accordance with many well-known authorities, that the invention should be confined to the particular combination described and claimed."

1895. MOSER *v.* MARSDEN, 13 R. P. C. 24.

Effect of Amendment—Construction of Claim.

In 1885 a patent (No. 11,640) was granted to *C. E. Moser* for "improvements in gig-mills employed in the finishing of woven fabrics."

In the complete specification (which was amended)[1] the invention is thus described:—"This invention consists in the construction of a series of rollers, cards, or other suitable raising material, and arranged round a shaft at equal distances from the same, the said rollers being supported by carriers fastened on the shaft of the cylinder; these rollers carry on both

[1] The amended specification is read by omitting the words in square brackets and eading those in italics, which were inserted by the amendment.

ends pulleys, over which pass belts [and] which receive their motion from a counter-shaft. This counter-shaft is driven from the cylinder by wheels, cones, or speed-pulleys, in order to be able to obtain different speeds. When the cylinder turns, the rollers will turn with it, and also in their respective bearings, either forward or backward, to the cylinder motion and at different speeds depending upon the direction in which the counter-shaft is moved by crossing or opening the belt, which gives it its motion, and depending upon which part of the cone or speed-pulley the belt is placed. By this arrangement the rollers turn independent of the movement of the cylinder, and at a known speed they may be turned backwards so much contrary to the direction of the cylinder that the speed of the cylinder is equalized and no raising produced. In making them turn less backward or forward their action increases proportionally." References were then given to the drawing. The specification concluded: "The number of the raising rollers which form the cylinder may vary, also the manner in which the stuff to be raised is guided around them and through the rest of the machine [and there may be one, two, or more of thus-formed cylinders, and so placed as to raise the stuff on both sides at the same time]. The counter-shaft or raising rollers may also be driven by chains, wheels, or cones.

"The invention consists substantially in forming a raising cylinder by rollers covered with cards or suitable raising material, which receive by means of driven counter-shafts an independent variable but known motion from that of the cylinder itself. . . . I declare that *I make no general claim to forming raising cylinders by arranging around a shaft a series of raising rollers, but* what I claim is—

"[1]. Forming raising cylinders by arranging a series of suitably covered raising rollers round a shaft at equal distances from the same, which *rollers are made to* receive [an independent] *a* variable but known motion [from] *independent of* that of the so-called raising cylinders themselves, by means of counter-shafts or any other suitable driving motion.

"[2. The general arrangement of the machine as herein described.]"

It was proved that a method of obtaining a *known* motion of the rollers was old, that the means of obtaining a *variable* motion for the rollers was also old, but that no one had shown mechanism to regulate the speed of the rollers as required for the fabric independently of the speed of the cylinder.

It was held at the trial of this action for infringement that the (1) invention could not be subject-matter for a patent, and (2) that the amendment had enlarged the scope of the invention and thereby invalidated the patent.

This decision was reversed on both grounds by the Court of Appeal.

On appeal to the House of Lords.

Held, that section 18(9) of the Act of 1883 precluded an objection being taken that the amendment of the claim enlarged its scope; and that the amended claim was not for an invention greater than that described in the body of the specification, the concluding words "or any other suitable

driving motion" indicating that the patentee did not claim the source from which the power was taken. The patent was therefore upheld.[1]

Lord *Watson* (at p. 30) remarked on the defence that the improvements were not novel nor subject-matter, and continued: "The first and second of these objections are in my opinion devoid of substance. There could hardly be more appropriate matter for a patent than the introduction of mechanism admittedly novel into an old combination, with the practical result of converting a comparatively defective apparatus into an efficient and useful machine. Again, the anticipation upon which the appellant chiefly relied consisted in the fact that an earlier patentee had expressed the obvious truism that the motion of the individual rollers in a raising cylinder might be either accelerated or retarded, but without indicating any method by which that object could be accomplished so as to produce a useful result."[2]

At p. 31: "The very object of the Act of 1883 was to make an amended claim, when admitted by the proper authorities a complete substitute to all effects and purposes for the claim originally lodged by the patentee. The validity of the amended claim must, therefore, be determined in the same way, and on the same footing, as if it had formed part of the original specification; and the claim, as it stood before amendment, cannot be competently referred to, except as an aid in the construction of its language after amendment."

Notes.

The result of this decision is that leave to amend will not be so readily granted as before, when it was thought there was a power to review in the Courts: *Parkinson's Patent* (per *Finlay*, S.G.), 13 R. P. C. 512.

The foregoing decision does not preclude the examination of the unamended specification for the purpose of *construing* the amended one. The former law is noted in the last note to *Dudgeon* v. *Thomson* (*ante*, p. 269). The difference between the modern practice of using erased and italic type and the older one of adding to alterations in a separate document does not affect the question of principle; the public see both the amended and unamended specifications. *E.g.* a statement that a certain thing *was an essential* being struck out on amendment, amounts to a statement that it is *not an essential*; but if the specification were originally drawn as amended, the point would be left open to inference from the whole document.

It is submitted that, taking an amended specification as the basis, one may look at the unamended form in order to see the limits of the claim, it being presumed that the officials complied with the law and that the claim in the amended specification has not a wider ambit than the unamended one.

[1] The *manufacture* (*ante*, pp. 6–13) here is the machine; as in the improved machine the parts discharged new functions, the improvements constituted a new manufacture.

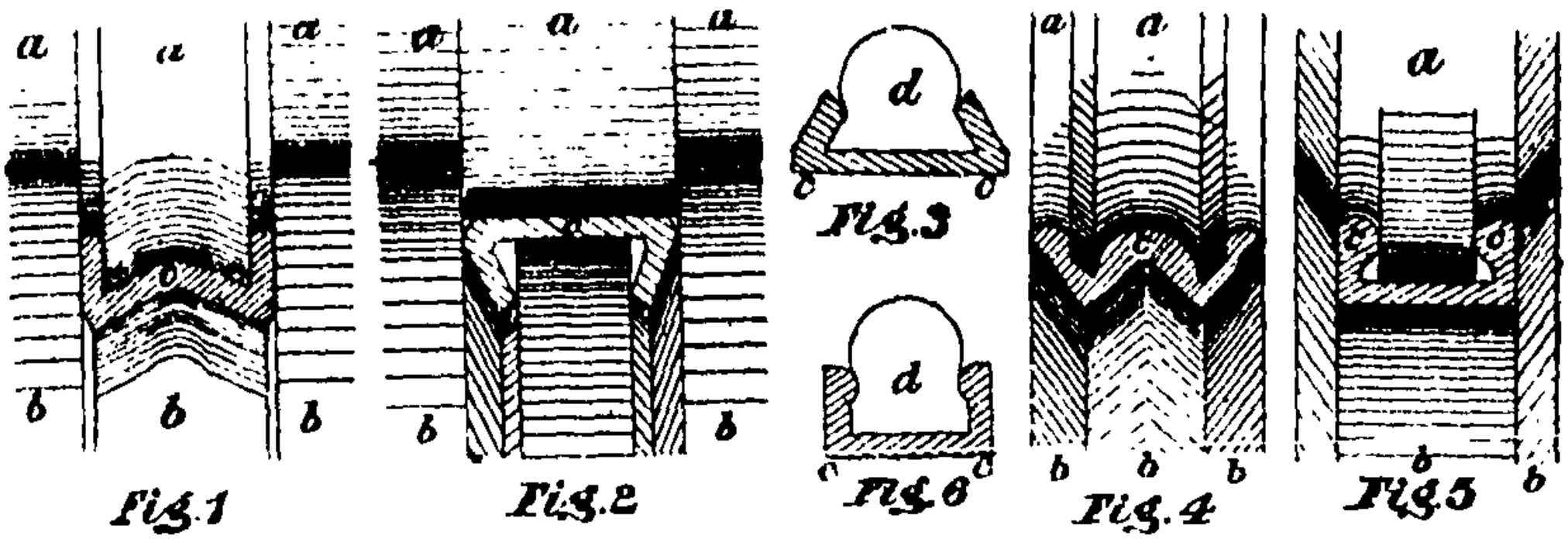
[2] This shows the distinction between the *object* to be attained and the *means* for attaining it: the latter, viz. the application of the idea, constitutes the manufacture invented.

1896. THE SHREWSBURY & TALBOT CAB CO. *v.* STERCKX, 13 R. P. C. 44.

Novelty—Inventive Ingenuity.

In 1883 a patent (No. 703) was granted to *W. H. Carmont* for "improvements in the manufacture of grooved tyres for wheels."

The specification thus described the object of the invention:—"The object of my invention is to produce tyres grooved in the form of a dove-tail for the purpose of holding or securing india-rubber or other yielding substance. In performing my invention I roll a section similar to ordinary channel-iron, but with the lower surface of the base of the section concave. I then pass it through a groove of the necessary shape in rollers that flatten the base, thereby causing the upper edges of the tyre or channel to approach one another and thus form the dove-tailed groove desired." The drawings were next described; Figs. 1, 2, and 3 show one series of rollings to form one shape of dove-tail, and Figs. 4, 5, and 6 another; *a* being the



Diagrams from Carmont's specification (No. 703 of 1883).

upper, *b* the lower, rolls; *c* the metal rolled, and *d* the rubber tyre when inserted.

The claim was for:—

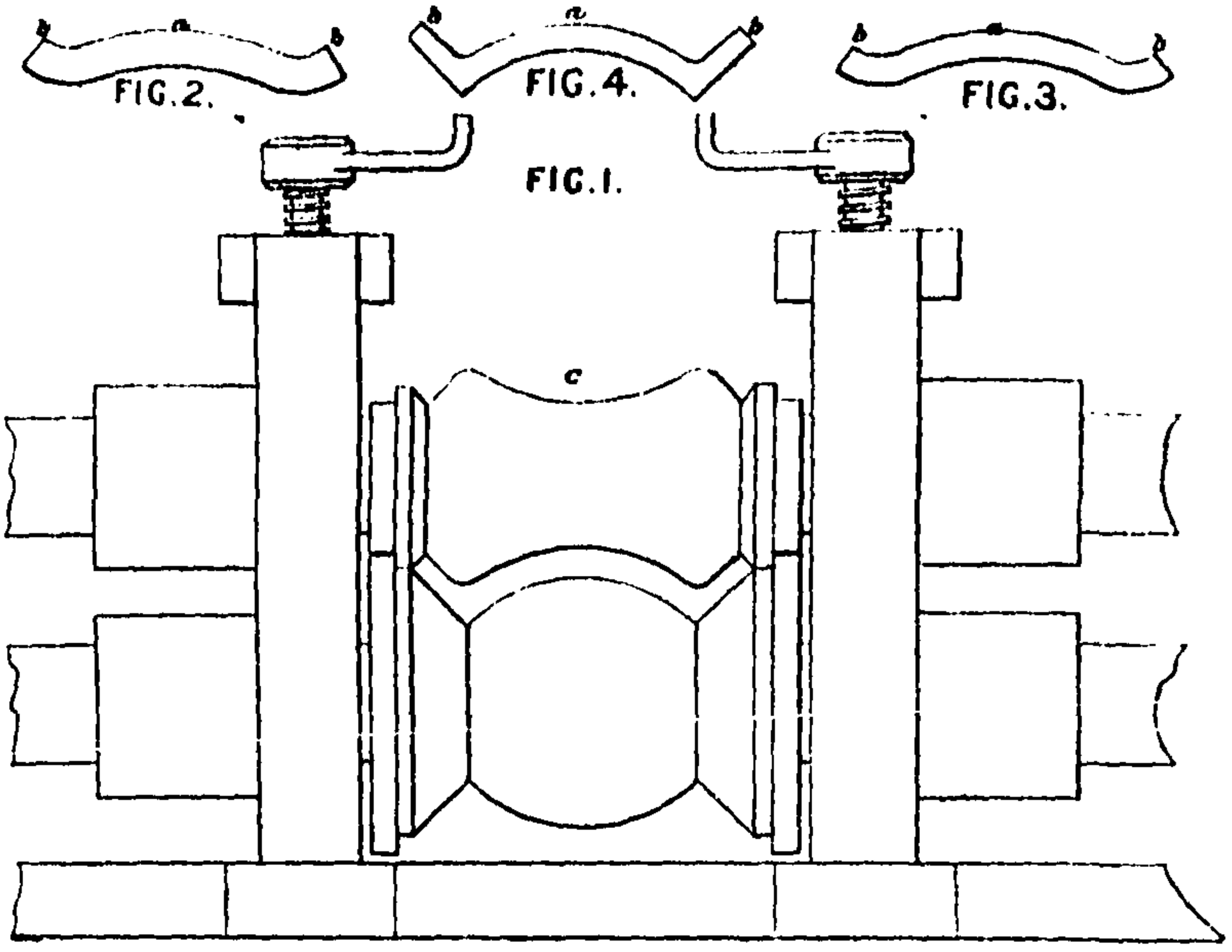
"The improvements in the manufacture of grooved tyres for wheels, substantially as and for the purposes herein shown and described."

The alleged anticipation was the specification of *Alleyne & Roberts* (No. 2412 of 1862), which was of an invention of improvements in the manufacture of flanged wrought-iron. The material portions of that specification are as follows:—

"Our invention has for its object the formation of wrought-iron or steel plates, having more or less vertical flanges at their sides, and of wrought-iron beams and frames of a more or less rectangular trough-shaped section, and more particularly when such plates are of considerable dimensions and thickness, by such a process of manufacture that the difficulties and imperfections attendant on their manufacture by processes at present known or proposed are to a considerable extent overcome."

The object of the manufacture was described as producing the "grain" in the flanges of armour plates, &c., in the proper direction. The process was for the production of "flanged plates or trough-shaped beams and frames."

This new process consisted in first forming a plate or slab by known processes; secondly, in rolling it either at once into the shape shewn in Fig. 4 by means of rolls, as shewn in Fig. 1, C, "or if the plate be of considerable thickness, we prefer to pass it first consecutively through rolls having grooves as shown at A and B, Fig. 1" (showing the rolls further apart, with room at the ends for the widening of the metal on compression),



From Alleyne & Roberts' specification.

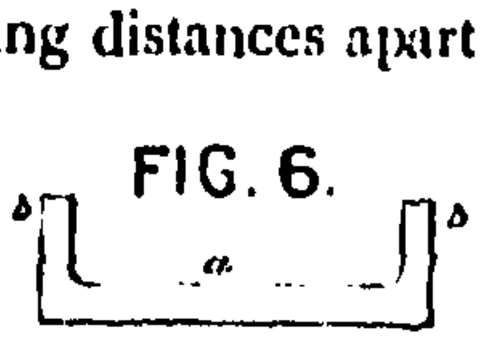
"so as to bring the flat plate by successive operations consecutively into the forms as shown in transverse section at Figs. 2 and 3, and then into the form as shown at Fig. 4, the *central*[1] portion *a* being *curved*, as shown, whilst the two side portions *b*, *b*, which are subsequently to form the flanges of the plate or the sides of the trough, are bent sharply up, being made to form such an angle with the extremities of the curved central portion *a* as the flanges *shall be required to assume when the process shall have been completed.* The kind of angle, whether a right angle or *otherwise*, will depend upon the nature of the work to which the plate, beam, or frame is to be adapted. We shall refer to the before-described peculiar formation of the plate as the 'second process.'

[1] The italics are not in the original, but are here inserted to call attention to the more important points. Only those portions of the specification which affect this case are referred to or quoted.

"The two sides, *b*, *b* of the plate, although brought by the above process into their definite position relatively to the ends of the part *a*, or nearly so, yet *diverge* by a considerable angle from one another, owing to the *curvature of the central portion*, and the position thus given to them in the rolls allows of the free passage into their grooves of the metal which is pressed into them by the simultaneous reduction of the thickness of the plate."

The third stage of the process consisted in flattening the curved portion by a pair of rolls (Fig. 5, D), or when necessary for thicker plates, by a series of rolls at different but decreasing distances apart.

FIG. 6.



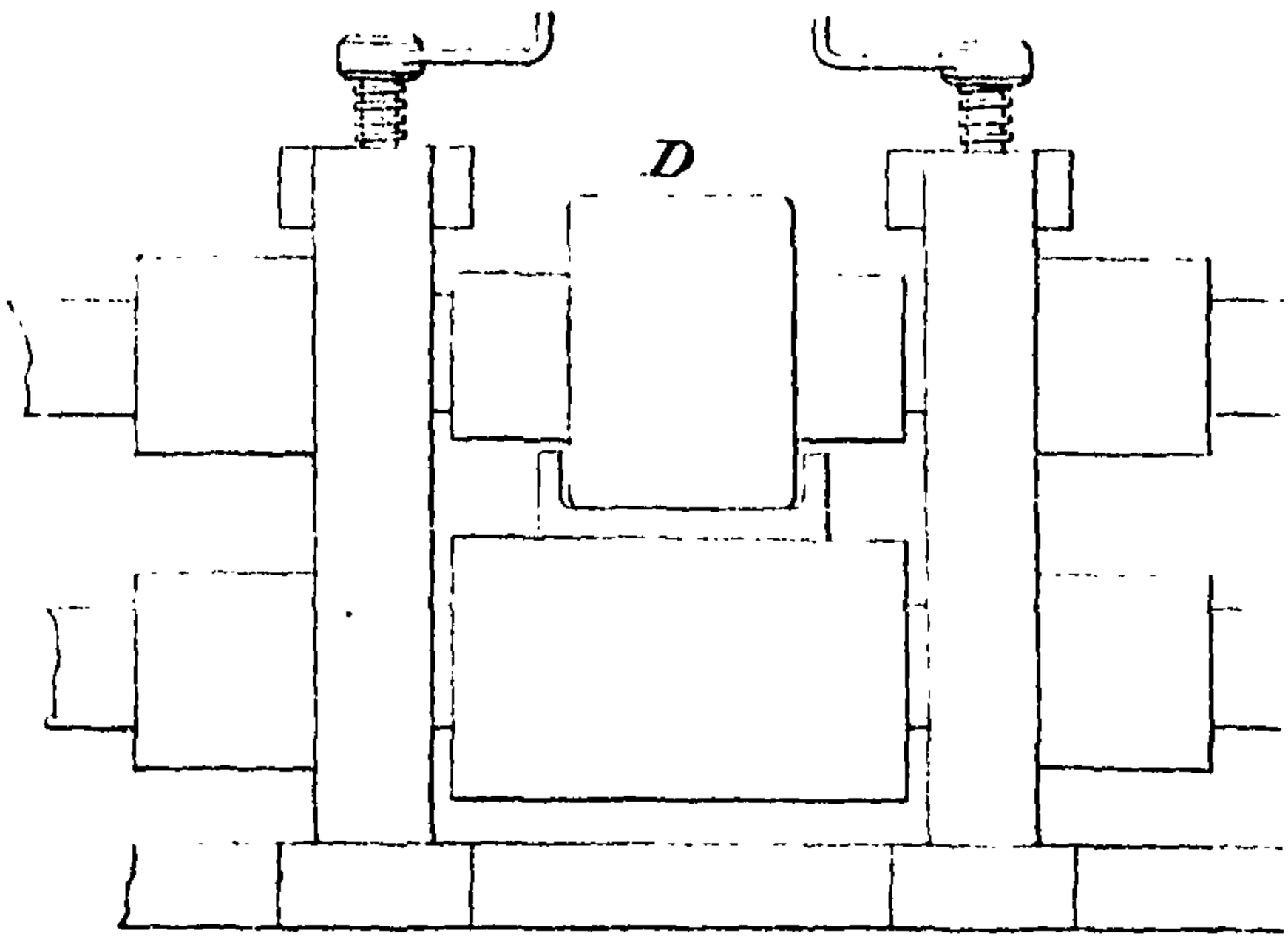


FIG. 5 D

From Alleyne & Roberts' specification.

The fourth and last part of the process was that of "finishing," as shown at (Fig. 5 E). A hammering process was next described, and subsequently a modification for the forming of a convex surface to the iron :—

"*When required*, we pass the plate, beam, or frame through a pair of rolls, formed as shown at Fig. 8, Sheet I., so as *to form the plate* somewhat *convex* on its outer surface, as shown in transverse section at Fig. 9. If it be required that the flanges *b*, *b* shall remain at right angles, or nearly so, to the face of the plate, as shown, the roller A^1 (Fig. 8) must be made of such a width as to clear the edges of the side flanges when these are made to approach each other by the bending of the plate, as shown at Fig. 8. In some cases the top roll A^1 may be formed so as to press upon the outside

FIG. 7.

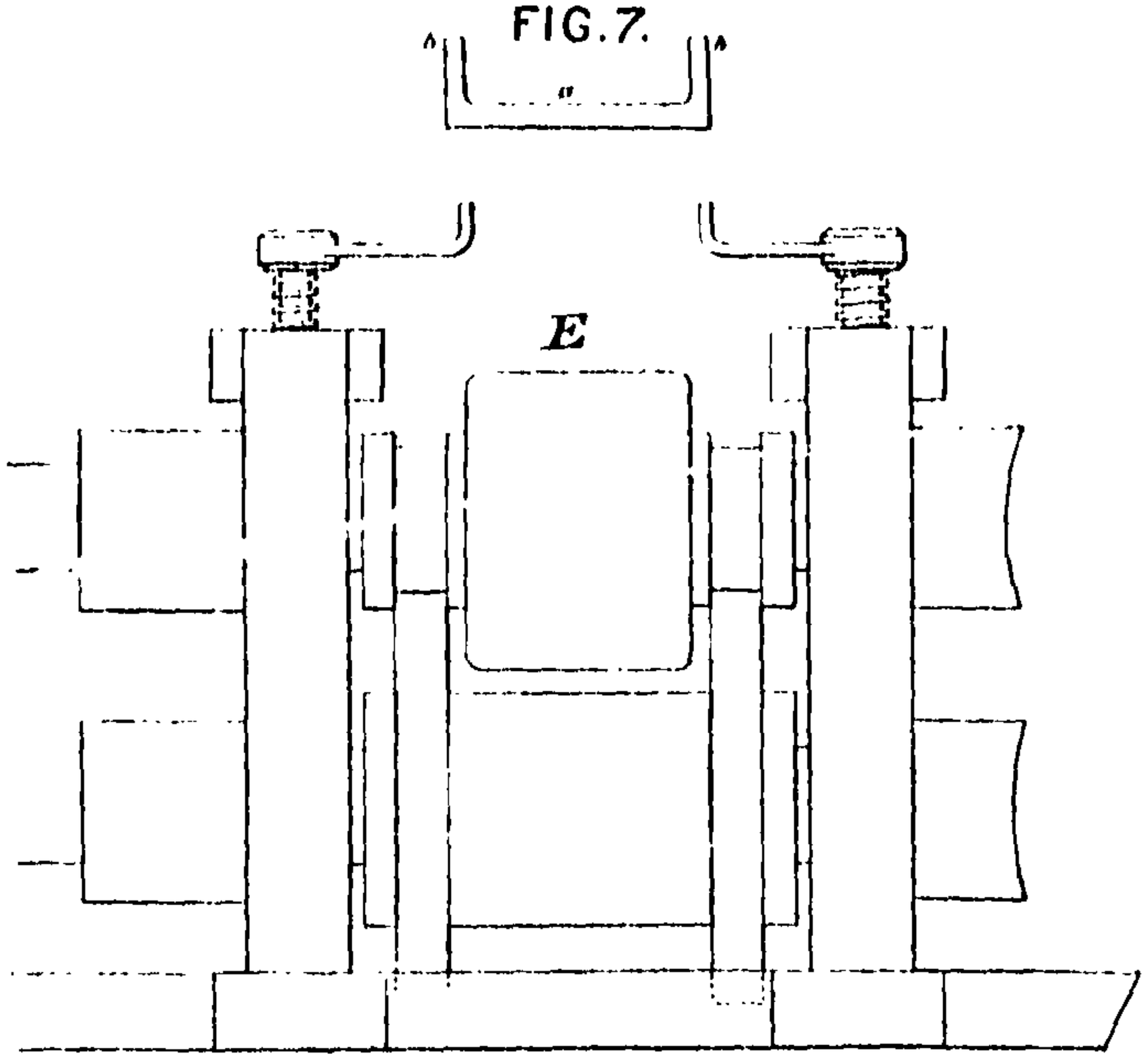


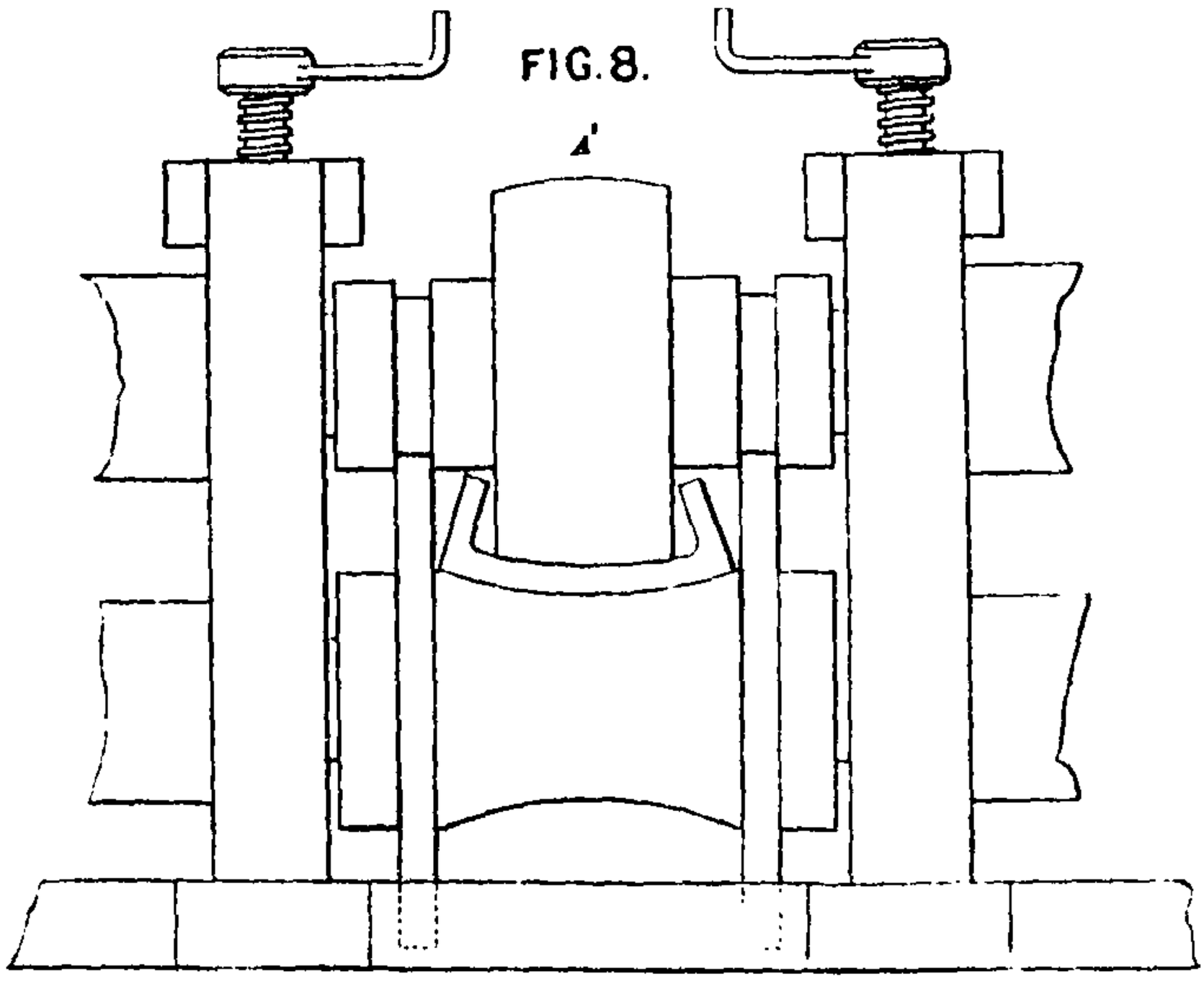
FIG. 5 E

From Alleyne & Roberts' specification.

FIG. 9.



FIG. 8.



From Alleyne & Roberts' specification.

of the flanges of the plate, in order to assist in bringing them into the requisite position."

No evidence was adduced at the trial to show that a "dovetail" had ever been rolled, or that any workman would know how to roll one from this specification. Sir *J. Alleyne* (one of the patentees) said there was nothing that would specially "lead to a dovetail," and that if trying to roll one with a flat bottom he would proceed from Fig. 3, and work on Form C, Fig. 1, *ante*, p. 378.

The result invented by *Carmont* was much desired for a considerable time before 1883.

Held, at the trial, that the patent was valid and had been infringed.

That decision was supported on appeal.

Smith, L.J. (p. 53): "The specifications and drawings of 1862 do not enable a skilled workman to perceive the very discovery to carry the invention into practical use . . . inventive ingenuity was required to bring about what Mr. *Carmont* effected, and which, be it noted, though the result was much desired, no one thought of until Mr. *Carmont* did so in the year 1883." [1]

Rigby, L.J. (at p. 54), pointed out that *Carmont* did not include what was old, as his Fig. 1 did not show a "W" with *diverging* flanges as in *Alleyne's* specification, and that the diverging flanges in Fig. 4 had the important addition of the bead.

1896. THE PNEUMATIC TYRE CO. *v.* CASSWELL, 13 R. P. C. 375.

Combination of Old Elements—Invention is addition to Public Knowledge.

A patent was granted (No. 4175 of 1891) to *C. H. Woods* for "improvements in or relating to inflated tyres of wheels for bicycles, tricycles, and other road vehicles."

The complete specification was as follows [2]:—

"This invention refers to improvements in or relating to tyres of wheels for bicycles, tricycles, and other road vehicles, wherein the said tyres are inflated by means of air, gas, or liquids under pressure, for the purpose of effecting elasticity and immunity from vibration, and consists in providing the same with a non-return valve in an economic and unique manner, which allows of the said valve being operated upon or removed without opening the tyre as hitherto. This I effect by securing to the hollow tyre (A) a tube (B) by means of a nut or its equivalent. The tube (C) is provided internally with a chamber or cavity (J), in which is disposed a conical or other stem, or valve (K), with inlet and outlet passages (N), through which the inflating medium is forced by means of a force-pump or

[1] As to this being evidence of invention, see *ante*, pp. 37, 38.

[2] It is only necessary for the present purpose to exhibit one diagram of the drawings. To save space references to it are inserted in brackets in this part of the specification. In the original the description of drawings was repeated separately.

like device. The outlets in the conical or other stem, or valve, are provided with an elastic or other suitable medium" [shown in black]; "the stem or valve being secured in the chamber or cavity by a nut (O) screwed on the outside of the said hollow tube. The other end of the conical or other stem, or valve, passes through the outside nut (O), and is provided with means for readily attaching a pipe or its equivalent connected to the force-pump or like device. When air, gas, or liquid is being forced into a hollow tyre, the elastic or other medium yields and allows the same to pass, and instantly closes the outlet passage or passages when pumping ceases by its own elasticity or other means and the pressure in the tyre. If desired, the charging-end of the stem or valve may be provided with a cap (S), to give additional security against leakage."

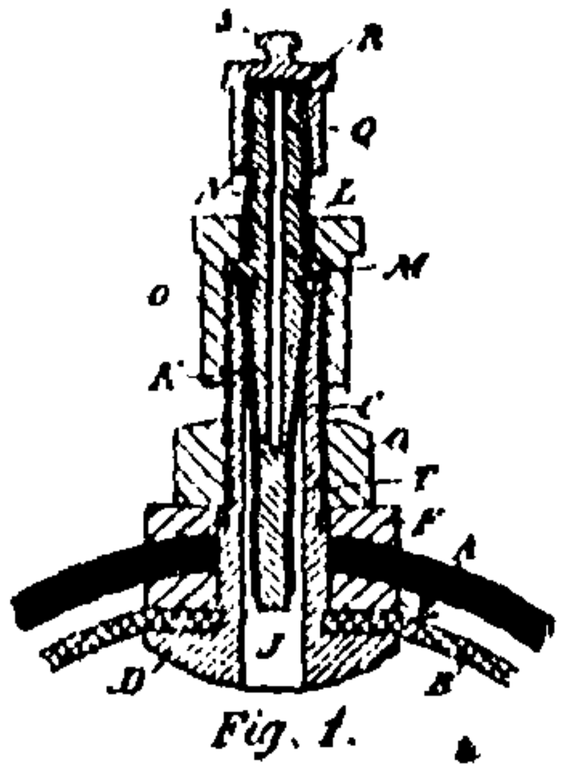


Fig. 1.

Wood's specification.

A short description of the advantages of the valve followed; and then a full description of the drawings. These showed modifications of form, but consisted substantially of the same elements as shown in Fig. 1.

The first claim was for :—

"(1) The general arrangements, constructions, and combinations of parts composing the improved non-return valve for pneumatic tyres of cycles and other road vehicles, as hereinbefore described, and as illustrated in the annexed drawings."

FIG 3.

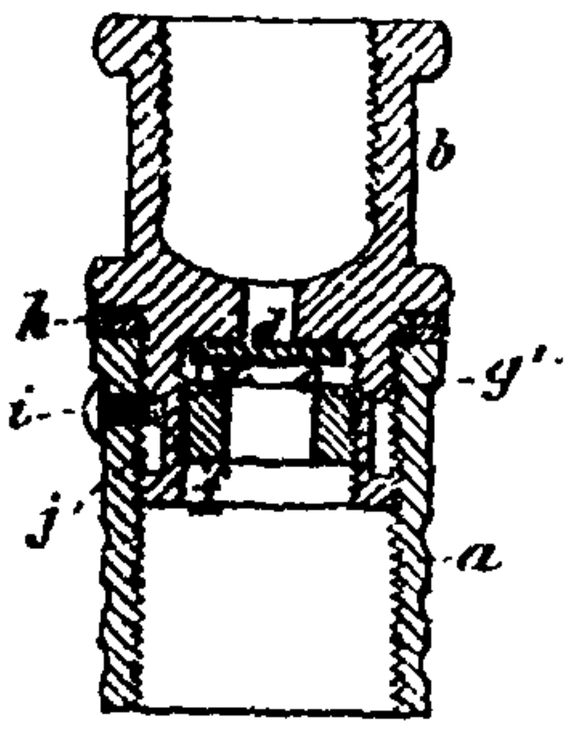


FIG 4

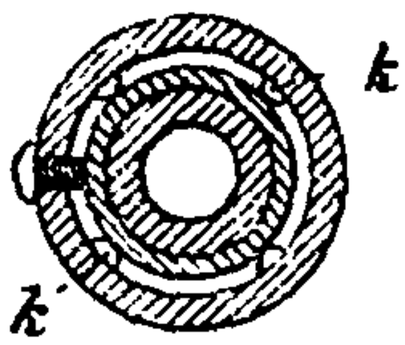
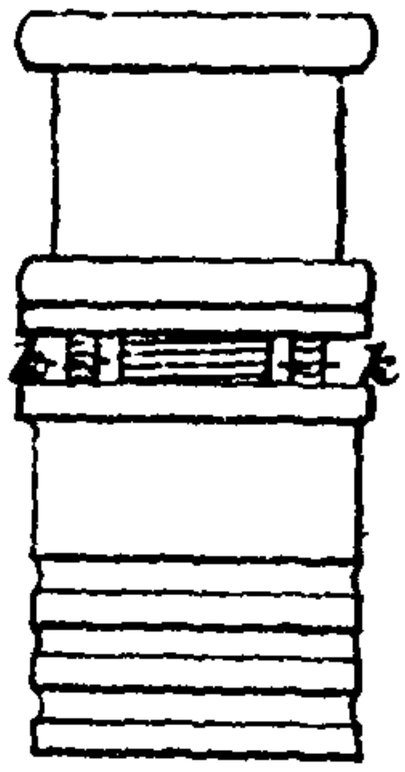


FIG. 5.



Diagrams from Parson's specification.

The second claim was for the combination of the tube C with the removable stem K; and the third claim was for the whole combination, with references to the diagrams in detail.

The chief alleged anticipation was that contained in *Parsons'* specification (No. 2996 of 1879), describing an inflation valve for life-belts, air-pillows, and the like. Fig. 3 shows this valve, in which *a* is the tube,

b the mouthpiece, *d* the non-return rubber valve. The deflation was effected by partially unscrewing the mouthpiece *b*, when the air escaped through the passages *k*, which are shown in Figs. 4 and 5.

It was proved that all the elements in *Woods'* combination were old, the valve (K, in Fig. 1) being old, but not in *Parsons'* combination.

Held, at the trial, that the invention was found in *Parsons'* specification, and that therefore the patent was invalid.

On appeal to the Court of Appeal this decision was reversed.

Kay, L.J., in delivering the judgment of the Court (at p. 380): "Assume that no separate portion of this apparatus, taken by itself, could be patented; the whole thing taken together is quite new. No such valve —to give it a comprehensive name—had ever been used or seen before. Its usefulness is abundantly proved. It has been sold by millions. It has practically driven all other inventions for the same purpose out of the field. Its ingenuity is manifest. As I understand his judgment, the learned judge says that the utility is beyond doubt; that it has great merit; that there is good subject-matter; and that the patent is clearly for a combination. But he holds that this patent adds nothing to the stock of practical knowledge. But if the combination is new, a new combination is a material addition to such knowledge."

1896. FAWCETT *v.* HOMAN, 13 R. P. C. 398.

Construction of Claim for Combination—Alleged Paper Anticipations.

A patent (*No.* 2815 of 1888) was granted to *M. Fawcett* for "improvements in the construction of fire-proof floors."

The complete specification was as follows[1]:—

"My invention relates to improvements in the construction of fire-proof floors, and has for its object to encase and so protect the iron or steel joists or girders or other load-carrying material used in such floors, to dispense with the use of centering in the construction of such floors, to reduce the dead weight of such floors, and to enable them to be constructed more expeditiously and economically than heretofore.

"My invention consists of a floor formed or constructed with flanged tubular lintels [L and *f*, Fig 3] as the special feature. These lintels are made of fire-clay or other fire-proof material, and of various sections, which are arranged to rest on the lower flanges [*a*, Figs. 2 and 3] of iron or steel joists or girders [*J*], and to pass under the lower flanges of the same, an air-space [S, Figs. 2 and 3] being formed between the under surface of the

[1] The references to the diagrams shown in brackets were not in the original, but are inserted to abbreviate the specification. Fig. 1 is a plan showing the oblique position of the lintels; Fig. 2 is a longitudinal section through and parallel to the centre of the lintel; and Fig. 3 a cross-section of the floor at right angles to the section in Fig. 2. It will be seen that a section across the line XX in Fig. 1 (not in original) will show a complete single arch.

joists or girders [*a*, Figs. 2 and 3] and the lower part of the tubular lintels. Concrete is placed between and over the tubular lintels so as to form concrete arches, which take their bearing on the lower flanges [*f*, *a*] of the joists or girders independently of the lintels.

"The functions of the tubular lintels is to protect the joists or girders from the action of fire, to act as centering until the concrete is set, and to reduce the dead weight of the floor. Dovetail grooves [*g*, Fig. 3] are formed in the under surface of the lintels to make a key for the plaster or other material of the ceiling below. . . ."

"The joists or girders J, J . . . are fixed at a suitable pitch to give the required strength, and the lintels L, L . . . are made of the proper lengths to slot in between the webs *w*, *w*^{1} . . . of the joists or girders J, J . . . and to rest on the lower flanges *a*, *a*^{1} . . . thereof. The lintels L, L^1 . . . are fixed in such a manner that their lower or flat portions *p*, *p*^{1} . . . are below the bottom flanges *a*, *a*^{1} . . . of the joists or girders, leaving an air-space, S, between the two.

"The lateral flanges *f*, *f*^{1}. . . owing to their peculiar shape, allow the concrete, which fills the space between the same and covers the lintels L, L^1 . . . , to have a direct bearing on the lower flanges *a*, *a*^{1} . . . of the said joists or girders J, J^1 . . . , this concrete supporting, when set, the flooring and the load placed thereon."

The floors and ceiling were to be finished in the usual manner.

"The joists or girders can also be perforated as shown at *d*, *d* . . . making the air-space in the upper part of the tubular lintel continuous in addition to the air-space S; the air-spaces thus formed being continuous, constitute a flue or conduit for the outward passage of foul air or heat through the walls into the open air outside.

"My improved lintel enables me to protect the load-carrying material, to dispense with centering, to considerably reduce the dead weight of the floor, while permitting floors to be constructed expeditiously and economically."

The claims were :—

"(1) The improved construction of fire-proof flooring arranged and operating substantially as and for the purpose described.

"(2) The improved flanged tubular fire-proof lintels, substantially as hereinbefore described and shown on the drawing."

At the trial of the action for infringement the usual defences were set up. The most important alleged anticipations were descriptions in specifications, as follows :—

Abord's (American, No. 57450 of 1866)[1] was for bricks, B, for ceilings. These (as shown in longitudinal section in Fig. 1) rested on the flanges *a* of the girders A, with projections, *b*, underneath to hide the girders, the spaces *c* being for the introduction of mortar to bind the bricks and

[1] The sketches here given are taken from the diagrams used at the trial, by the courtesy of Messrs. *Faithfull & Owen*.

Fig. 1

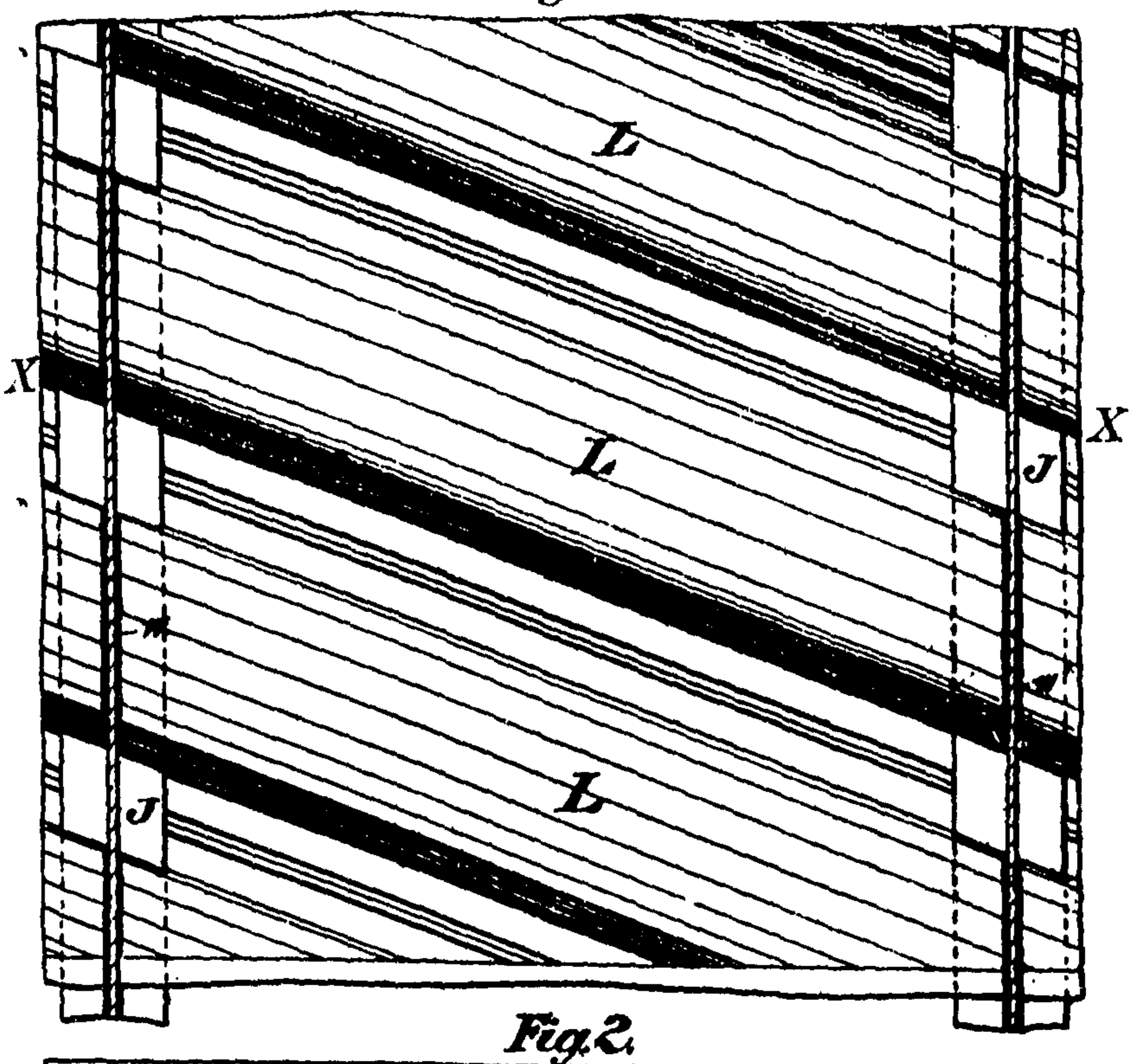


Fig. 2.

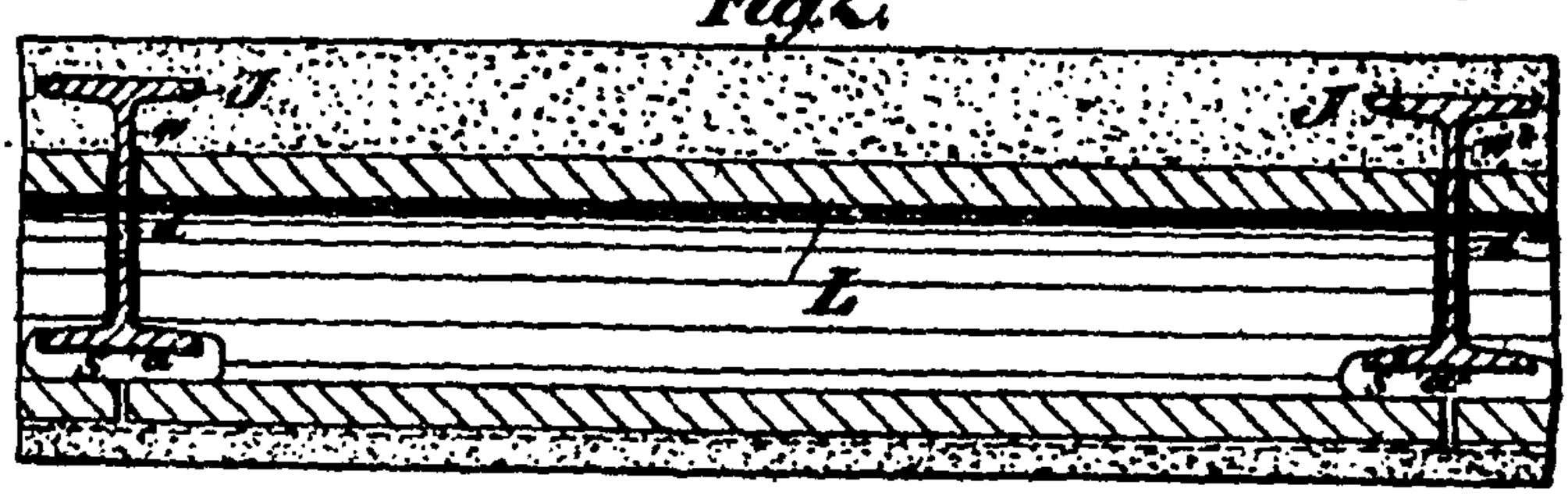
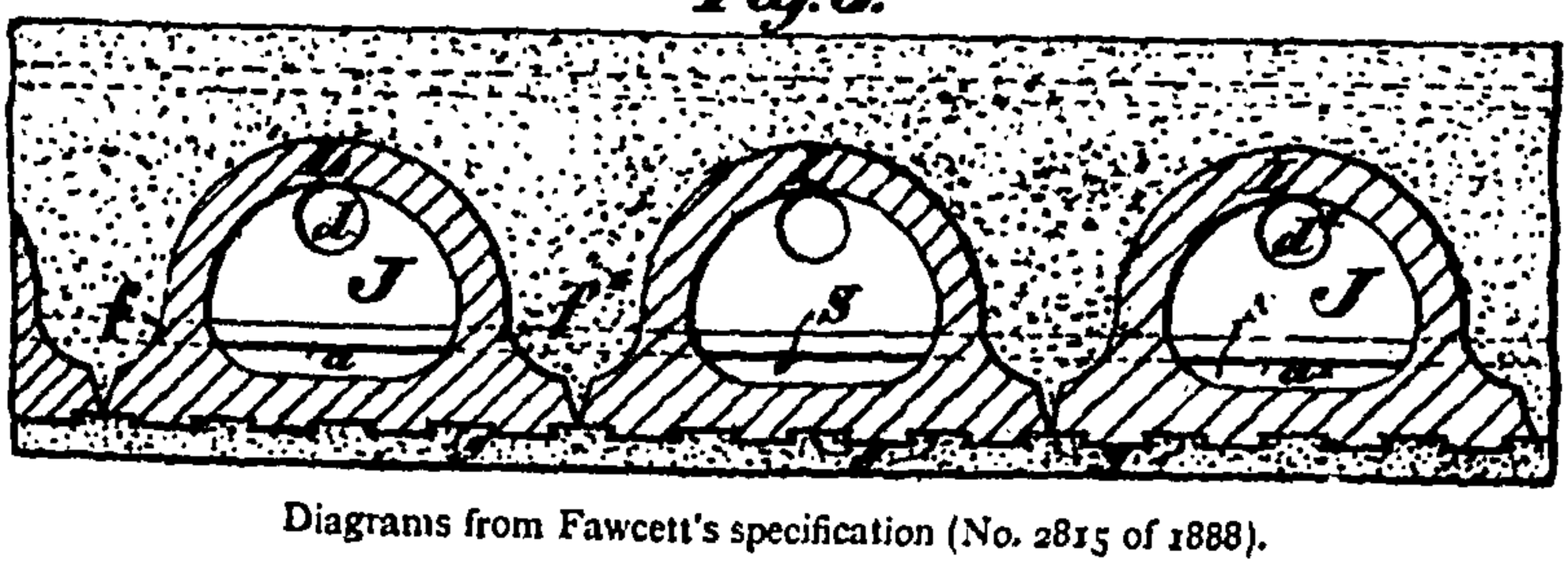
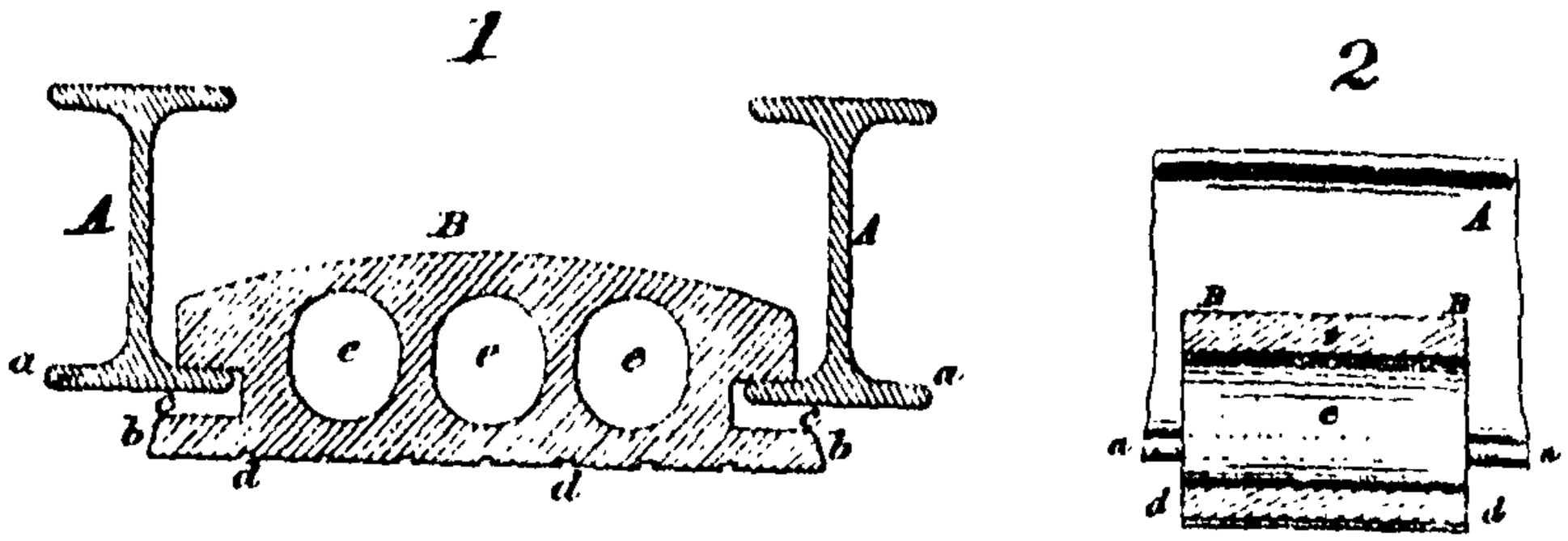


Fig. 3.



Diagrams from Fawcett's specification (No. 2815 of 1888).

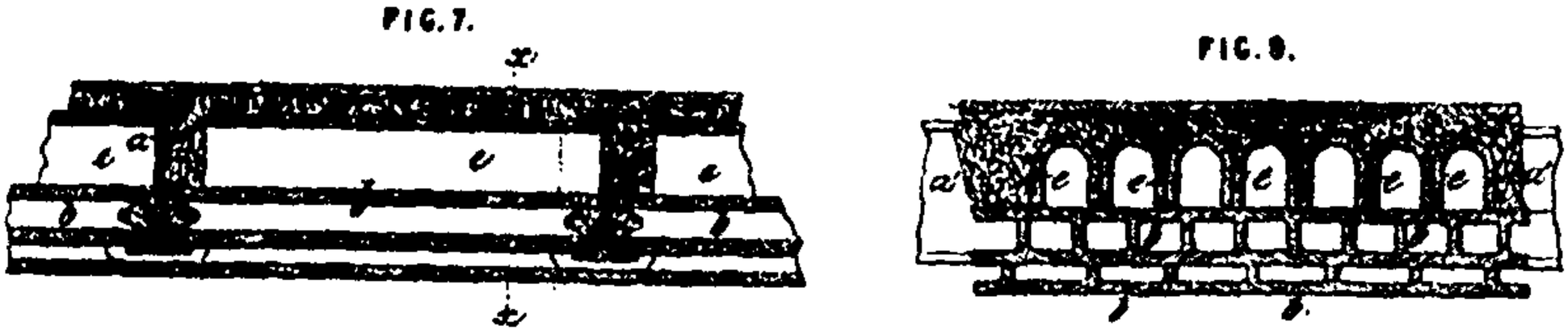
cover the girders, and the indentations *d* underneath to fix plaster where used. The bricks were lightened by being hollowed crosswise, the spaces *c* being across the brick. Fig. 2 is a section across the middle of the brick parallel to the girders A. The invention was "substituting for . . .



Abord's bricks for ceilings.

in the case of fire-proof structures, metal cross-ties and the usual filling in between the girders, hollow or tubular bricks, &c." There was no mention of construction of floors.

Snelgrove's (No. 7339 of 1885) was for improvements in ceilings and floors. The main feature was the construction of blocks so that they could be readily inserted between the girders or joists. These are shown in longitudinal section (*b*) in Fig. 7, and in cross-section (*b*) in Fig 9 (on line *x x* of Fig. 7). "Sometimes" tiles (*e*) in Figs. 7 and 9 were placed upon the blocks and the interstices filled in with cement. For the purposes of



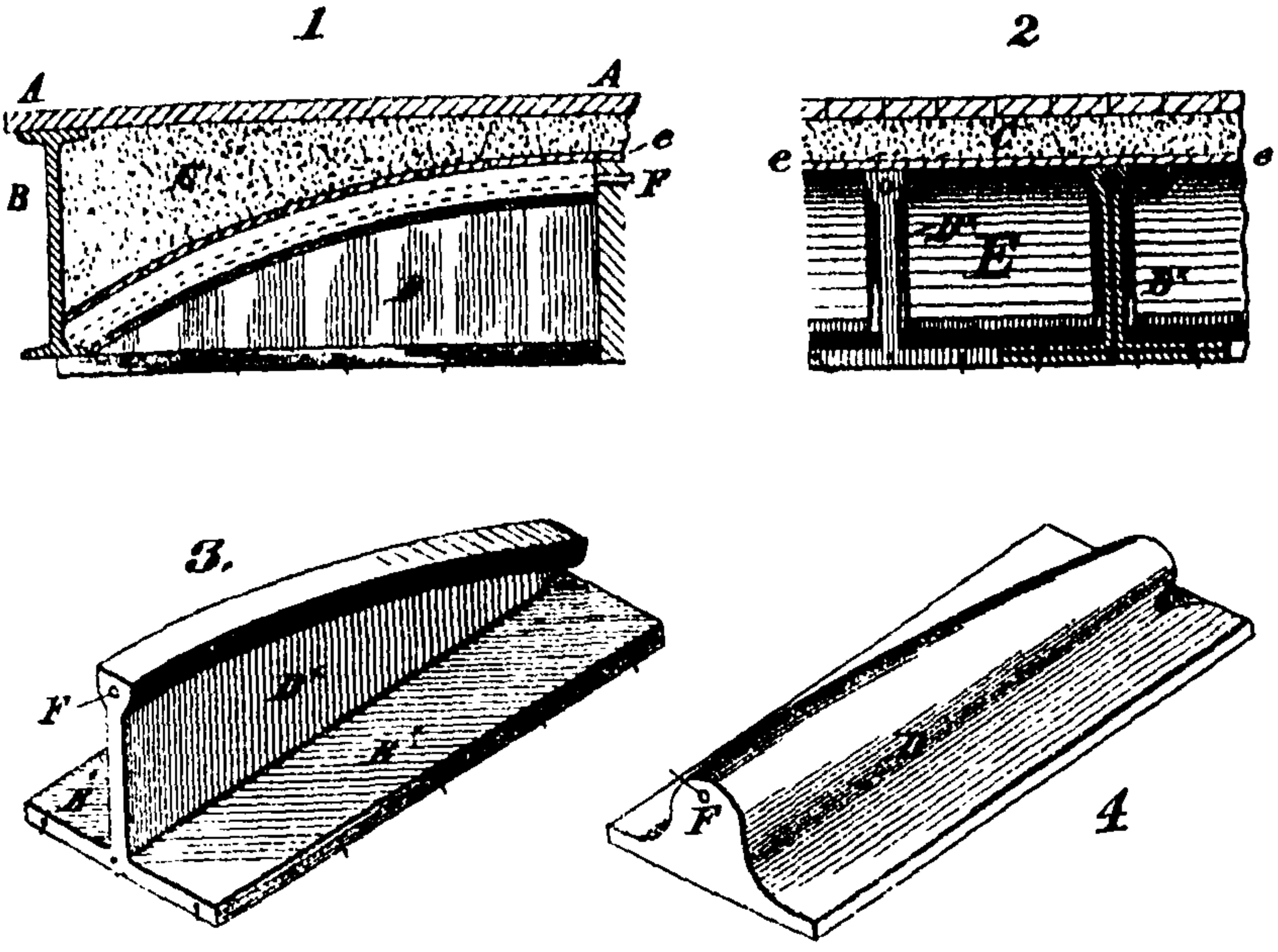
Diagrams from Snelgrove's specification (No. 7339 of 1885).

insertion these were shorter than the distance between the girders, and were placed alternately in contact with each girder. Concrete or cement grouting or other suitable material was filled in to support the tiles of the floor above.

Evidence was given that the whole strength would be due to the blocks *b*.

Bruner's (American, No. 356,703, 1887) was for improvements in arches or beams. These arches were made of concrete, cast with an iron rod running through the arch. They were made preferably, but not necessarily, in separate halves. Fig. 1 shows a longitudinal section of half an arch, in which A is the floor above, resting on the girder B and concrete D is the section of the half-arch. Fig. 2 is a cross-section of the floor

through the end of the half-arch of the form shown in Fig. 3. E is air-space between the arches, formed by putting thin boards, *c*, across the arches to support the concrete C. These spaces were described as "very important, as they effect a saving of material and a reduction in the weight of the structure." F is the iron rod cast in the arch, and wires were inserted in the concrete parallel to the edges to hold it together. Fig. 4 shows another shape of half-arch, which might be useful in some cases, as to



Portions of drawings of Bruner's arches and beams.

which no directions were given. These arches were placed side by side, flanges touching, but there was no indication that the spaces E were to be filled by concrete.

There was no proof that floors had ever been constructed according to the alleged anticipating specifications.

Evidence was given that *Fawcett's* floor would support the weight it was intended for, even after the lintels had been broken away.

The learned judge held at the trial that, having regard to the state of knowledge, there was not sufficient invention to support the patent.

On appeal to the Court of Appeal—

Held, that the invention was for a novel combination of old parts, producing a self-supporting floor, and that it was good subject-matter for a patent. Also that the second claim for the lintels was a claim for their use in fire-proof floors, and not generally.

Lindley, L.J. (at p. 405): "The merit of an inventor very often consists

in clearly realizing some particular useful end to be attained, or 'in apprehending a *desideratum*.' If an inventor does this, and also shows how to attain the desired effect by some new contrivance, his invention is patentable, although his contrivance involves the use of things, or parts of things, previously used by other people. Were it otherwise, no patent for a new thing comprised of well-known parts would ever be sustained. This appears to me to be the case here. The patentee had in his mind something which had never before occurred to any one; and the merit of his invention is attributable to this circumstance."

Rigby, L.J. (at p. 409), dealt with the construction of the second claim. The patent "is for 'improvements in the construction of fire-proof floors.' There, I know, is the distinction between ceilings and floors. The patentee has taken the floor throughout, and the lintel is only a means to an end, put forth throughout the whole of this specification as a means, and as a means, I may say, without shrinking at all. It is the means for producing the end aimed at, that is, the construction of a fire-proof floor, so that the claim must not be construed, unless on the perverse idea of destroying the patent, instead of giving a fair effect to it—it must not be construed as a mere claim for the lintel in that shape and form as it appears, and independent of its use. In fact, you cannot throw over the function which is clearly and plainly and very fully put forth in the specification. . . ." At p. 410: "I therefore come to the conclusion that the claim of the lintel was a claim not intended, and not operating unduly, to extend the scope of the patent, and that it be legitimate to separate the lintel itself—and this was the mainstay of the argument before us—from the purpose for which it was designed. To do so, and to hold that the patent was invalid on that ground, would really be departing from the substance in order to adhere unnecessarily to the mere letter. . . . The merit of this patent is not so much in the way in which the idea was carried out as in conceiving the idea itself. Then the thing became simple. I should like also to protest against the notion that you can in any way take away from the merit of an inventor by pointing out that one of his details is to be found in one obscure specification, and another detail in another, and so on, and saying that all he had to do was to put these things together, and then he would get a hint of one thing from one place and another thing from another. It is the getting of the idea, and it is the putting together of that idea, with the mechanical means of attaining it, that constitute invention."

1896. THE INCANDESCENT \S LIGHT CO. *v.* DE MARE, &C., 13 R. P. C. 559.

Construction of Specification—Pioneer Invention.

A patent (No. 15286 of 1885) was granted to *C. v. Welsbach* for the "manufacture of an illuminant appliance for gas and other burners."

The complete specification was in the following terms:—

"My invention relates to the manufacture of an illuminant appliance in the form of a cap or hood to be rendered incandescent by gas and other burners so as to enhance their illuminating power. For this purpose I employ a compound of oxide of lanthanum and zirconium or of these with oxide of yttrium, which substances in a finely divided condition when they are heated by a flame give out a full, large, almost pure white light without becoming volatilized or producing scale or ash even after being kept incandescent for many hours, but remain efficient without deterioration even when they are long exposed to the air.

"The proportions in which the substances are compounded may be varied within certain limits. I have found the following proportions very suitable:—

60 per cent. zirconia or oxide of zirconium,
20 per cent. oxide of lanthanum,
20 per cent. oxide of yttrium.

"The oxide of yttrium may be dispensed with, the composition being then:—

50 per cent. zirconia,
50 per cent. oxide of lanthanum.

"Instead of using the oxide of yttrium, ytterite earth, and instead of oxide of lanthanum, cerite earth containing no didymium and but little cerium may be employed.

"For applying the substances mentioned as an illuminant I use a fine fabric, preferably of cotton previously cleansed by washing with hydrochloric acid; I saturate this fabric with an aqueous solution of nitrate or acetate of the oxides, and gently press it until it does not readily yield fluid, so that in stretching or opening out the fabric the fluid does not fill up its meshes The fabric is then exposed to ammonia gas, and when it has been dried it is cut into strips and folded into plaits. One method of giving the desired shape to the cap or hood is to draw a fine platina wire through the meshes of the net and bend it to the form of a ring so as to give the fabric the shape of a tube, the edges of which are then sewn together with an impregnated thread. The cap or hood thus formed can be supported on cross-wires in the chimney of the lamp. The platina wire ring may be attached to a somewhat stronger platina wire to form a supporting stem by which the net can be secured to a holder on the burner-tube, the net itself being at such a height that the platina ring is an inch or more above the burner.

"On igniting the flame, the fabric is quickly reduced to ashes, the residuum of earthy matters nevertheless retaining the form of a cap or hood.

"For part of the zirconia a mixture of magnesia and zirconia may be employed with a little loss of intensity of the light."

It was next pointed out that the form and construction of the fabric

could be varied to suit the burner. Modes of coating with a fresh solution of the salts, and of strengthening the connection of the fabric to the supporting wire were mentioned.

The claim was for :—

"The manufacture substantially as herein described, of an illuminant appliance for gas and other burners, consisting of a cap or hood made of fabric impregnated with the substances mentioned and treated as set forth."

In the trial of the action for infringement it was proved that the term "rare earths" at the date of the patent was applied to denote earths consisting mainly of oxides of a group of metals known as the "cerium group;" some of the salts of these metals produced a precipitate with potassium sulphate, others not. Two subgroups were thus distinguished: the "cerium," consisting of the metals cerium, lanthanum, didymium, and samarium, the salts of which produce a precipitate; the other subgroup, called the "yttrium," consisting of the metals, yttrium, erbium, terbium, and others, did not yield a precipitate. But it was extremely difficult to separate the members of these respective subgroups from each other. The usual sources from which these metals were obtained were: "gadolinite," in which members of both groups were frequently found; "samarskite," which did not contain any of the "cerium" group; and "cerite," not containing the "yttrium" group.

The alleged infringement consisted in making mantles of zirconia and erbia, lanthana not being used. "Cerite" earth, mentioned as substitute for lanthana, did not contain erbia.

Before the date of the patent no means had been devised successfully for producing light by heating in burning gas substances like those used in *Welsbach's* invention, which created a new industry.

It was held at the trial that the claim was for the whole process by which the illuminating appliance, the hood, was produced, and was not confined to the precise proportions of salts mentioned, but was a much wider claim than one for the use of oxides of zirconium and lathanum as described, and that it had been infringed.

On appeal to the Court of Appeal the decision was upheld.

Kay, L.J. (p. 572): "Up to the time when this patent was taken out, nothing like the mode of appliance which this patentee invented had ever been used. In that sense it is what is called a 'pioneer' patent. Somebody has adopted the word 'pioneer,' but what is meant is this: that it was the very first time that this mode of applying this substance to a gas-flame or any practical mode of doing it had been discovered."

Smith, L.J. (p. 578): "This patent is not a patent simply for the use of zirconium and lanthanum; it is a far greater claim than that, and I will read just three lines of my brother *Wills'* judgment, because he most tersely states what in reality this patent is for. He says: '*Welsbach* certainly discovered for the first time a method (or process) by which a skeleton, frail but durable, of the resistant earthy oxides mentioned by him could be produced

which would give practically a means of obtaining light by incandescence, which would surpass the economy of the best methods known of getting illumination from gas. His specification claims the whole process by which he arrived at that result.' That, in short and apt language, describes what his patent is for."

Notes.

In the *Welsbach &c., Co.* v. *The Daylight Incandescent Mantle Co.* (17 R. P. C. 141), the above case was distinguished. In the latter case the alleged infringement consisted of the use of zirconia with ½ per cent. of cerium. It was held by the Court of Appeal that this use was not within the claim.

Per *Romer*, L.J. (p. 146): "It is probable that the patentee in this case might with safety have enlarged his claim. But he is bound by that claim. . . . I agree that the Court ought to take a broad view, and ought not to hold that ingredients substantially differ merely because they have different chemical names, and only differ in minor or comparatively unimportant respects from the substances mentioned." P. 147: "It appears to me impossible so to hold in accordance with any principle applicable to the construction of specifications. The fact is that no one, at the date of the specification, had the slightest idea that half per cent. of cerium, or any such quantity of cerium, could be of the slightest use in itself, or with zirconia, for the purposes of the patentee. That it was of use was a remarkable and astonishing discovery of later time, and one not contemplated by the patentee or covered by his specification. In this context it is important to bear in mind the proportions given by the patentee in his specification in which substances must or should be used. I quite agree that in a patent of this kind the Court should not tie down the patentee too strictly to the exact proportions given by him."

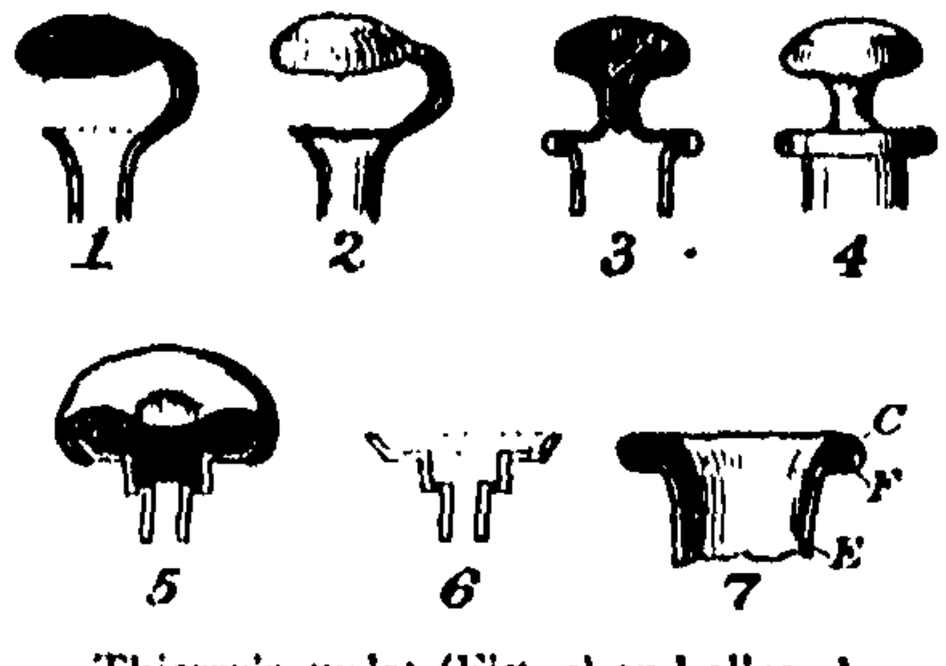
1896. RIEKMANN *v.* THIERRY, 14 R. P. C. 105.

Want of Invention—Ingenuity—Analogous Use—Construction of Claim.

In 1891 a patent (No. 18,331) was granted to Messrs. *Thierry* for "an improvement in eyelets."

The complete specification began with a statement relating to deficiencies in existing eyelets, and continued: "The object of our invention is to provide a permanent facing for the flange of an eyelet, this facing being of any desired colour, and giving a neat finish to the eyelet. For this purpose, instead of varnishing or otherwise treating the surface of the metal, we fix on the flange, which is the visible part of the eyelet, a casing of celluloid or similar material, such as xylonite, which may be of any desired colour, and which is moulded so as to present a neat rounded

facing of the flange. The accompanying drawing [1] is a magnified section of an eyelet with its flange encased with celluloid according to our invention. E is the tubular s . or body of the eyelet, F its flan ; encased with celluloid, C, which, as shown in the drawing, not only covers the face of the flange, but also extends round its edge and forms a layer under it, so that it is firmly held upon the flange and cannot be separated from it without actual fracture. This encasing of the flange with the celluloid ma be effected in various ways, which we do not claim as of our invention. . . ."



Thierry's eyelet (Fig. 7) and alleged anticipations.

A long description then followed of the modes of manufacture of the eyelet.

The claim was for :—

"A metal eyelet having its flange embedded in celluloid or like material, forming a facing. A facing layer over the flange and a fixing layer under the flange, substantially as described."

In an action for infringement the chief defence was that of want of novelty. Four specifications were alleged as disclosing the invention. Of these,[2] Figs. 1 and 2 show hooks of metal coated with celluloid according to *Smidt's* specification (No. 16,238 of 1889) in cross-section and outside view respectively; Figs. 3 and 4 show similar drawings of studs from *Smidt's* specification (No. 13,402 of 1890); and Figs. 5 and 6 show cross-sections of studs of *Joyce's* American specifica on (No. 259,867 of 1882). *Smidt* (1889) also showed an eyelet with a lluloid facing, but one nc turned over the edge.

Evidence was given at the trial to show that the patentees had much difficulty and made many experiments in perfecting their invention; but they did not know of the alleged anticipating specifications.

The learned judge found that the patent was valid.

That decision was upheld by the Court of Appeal.

On appeal to the House of Lords :—

Held, that there was not sufficient ingenuity shown in the invention of the eyelet to support a patent.

Lord *Halsbury*, L.C. (at p. 614) : "I think this patent is bad for lack of invention. The mode of covering a metal stud and coating it with either celluloid, or as the patentees say, some other similar substance, appears to me to be ingenious and useful, and for aught I know to the contrary it

[1] The drawing is reproduced in part and reduced as much as is necessary in Fig. 7.

[2] Only those are here sketched that are nearest tc invention in question.

[3] In all these drawings of cross-sections, as here shown, the celluloid is shown by shading in straight lines, and the metal foundation left clear.

might have been the subject of a patent. That, however, is expressly disclaimed, and, indeed, I think it is important before considering what the invention claimed is to consider what is disclaimed. . . . It comes to this—any eyelet of any metal, if covered with celluloid or any similar material, is within the patent. My Lords, it appears to me that there is no invention in applying to eyelets either celluloid or any other similar material. Whether there is or is not invention such as will support a patent is a question of fact and degree, and the state of facts and degree in one case can never be any guide in another."[1] The Lord Chancellor then discussed the facts and decisions in *Hinks* v. *The Safety Lighting Co.* (*ante*, p. 254) and *Brook* v. *Aston* (*ante*, p. 45), and continued: "I refer to these two cases only as illustrative of the proposition that no smallness or simplicity will prevent a patent being good,[2] while mere novelty of manufacture, or usefulness in the application of known materials to analogous uses, will not necessarily establish invention within the meaning of the patent laws." (At p. 116): "Looking at what is claimed, and much more at what is not claimed, it is very difficult to stop short of saying that all eyelets if covered with celluloid or other plastic materials are within the patent, and if so any button, stud, or hook, which was ever covered with a plastic material would be, equally with the eyelet, an invention whenever it was first so covered; but, whether it would be good subject-matter of a patent or not, it is not new, and therefore, to my mind, there is no invention, though this may be an improved eyelet, and there may, and I think there is, ingenuity in the process of covering it."

Lord *Davey* (at p. 121): "The respondents' Counsel now tells us that the invention is the eyelet itself, which he says is a new and useful article, and therefore patentable, and he likens it to a combination of old matters producing a new and useful result. And if I understand him correctly he argued that no patent could be held to be bad if the subject of it was a new and useful article. If he meant only that a new and useful article in the production of which there is invention is the proper subject of a patent, I suppose nobody will disagree with him. But if he means that an article which is new to the market is therefore proper subject-matter for a patent, irrespective of the question whether the production of it was the result of invention, I do not agree, and I am of opinion that it is not the law." His lordship then quoted the rule in *Harwood* v. *G. N. Ry. Co.* (as given, *ante*, p. 207, note 1), and continued: "It is not enough that the purpose is new or that there is novelty in the application, so that the article produced is in that sense new, but there must be some novelty in the mode of application. By that I understand that in adapting the old contrivance to the new purpose there must be difficulties to be overcome, requiring what is called invention, or there must be some ingenuity in the mode of making

[1] Quoted by *Ridley*, J., in *Brooks* v. *Lamplugh*, 14 R. P. C. 615.

[2] His lordship probably alluded to the decision of *Jessel*, M.R., as the patent was there held invalid for insufficiency and want of novelty (*ante*, p. 257).

the adaptation." His lordship then discussed the anticipatio s (as shewn above), and continued (p. 122): "In each case the mode of attachment and the plastic head is precisely the same as that employed by the re spondents. The *question is, whether given the use for the purpose of a button or* stud, of a celluloid head or cap attached to a flanged metal foundation tube or shank, by pressing it over and under the flange, there is any invention which will support a patent in employing the same device for an eyelet. The contrivance is the same. It can hardly be contended that the purpose of ornamenting or protecting his eyelet is not analogous to the purpose for which it is used in the stud. Is there any novelty in the mode *of adaptation?*" The patentees do not claim any of their three modes as novel or part of their invention. . . . I can find no suggestion of any difficulty to be overcome in adapting the contrivance for the purpose of an eyelet which does not equally exist in the case of a button or stud . . . it is a great demand on one's credulity to say there is any invention in the matter."

As to the difficulties and experiments of the patentees, his lordship pointed out that they did not know of *Joyce's* and *Smidt's* specifications. "The force of the argument, of course, depends very much on the inventive faculty and knowledge of the experimenters. . . . The question of patentable novelty must be determined from the subject itself, and not from evidence that a particular person was a longer or shorter time in arriving at it."

1897. THE LANCASHIRE EXPLOSIVES CO. *v.* THE ROBURITE EXPLOSIVES CO., 12 R. P. C. 470 and 14 R. P. C. 304.

Amount of Ingenuity required for Invention—Construction of Claim.

(First Action, 12 R. P. C. 470.)

A patent was granted in 1885 (No. 13690) to *H. H. Lake* for an invention of "an improved explosive compound."

The complete specification (as amended)[1] commenced with a general statement as to the defects of nitroglycerine and the objections to its use; the new invention is then described:—

"This explosive material or compound, which is termed 'Bellit,' is composed of only two solid substances, a nitrate, as for instance nitrate of ammonia, nitrate of potash, nitrate of baryta, or nitrate of soda, and a bi- or tri-nitrate of carburetted hydrogen,[2] such as binitro-benzine, trinito-naphthaline, or trinitro-totuol, mixed with such proportions that, in the explosion, the hydrogen of the carboniferous matter burns to water, and its carbon

[1] As no question was raised by the amendments, they are not here noticed; some were *mere improvements in translation, others substantial.*

[2] "Carburetted hydrogen" obviously means "a hydrocarbon." The specification was translated into English, the invention being communicated by a foreign inventor, *Carl Lamm.*

burns to carbonic oxide or carbonic acid or a mixture of both, at the expense of the oxygen contained in the nitrate conjointly with the oxygen already existing in the bi- or trinitro compound of carburetted hydrogen."

"The manufacture is carried on in such a manner that the bi-nitro benzine, the trinitro-naphthaline, or the trinitro-totuol, which are solids, are first pulverized conjointly with the nitrate or separately, after which they are mixed together, preferably in a revolving cylinder, which by means of steam is heated to 100° C., when the said nitric or nitro compounds melting at a temperature of between 75° and 100° C. completely coat the particles of nitre or saltpetre all over, the bi- or tri-nitro compound, after cooling, turns solid or sets, the whole becoming thus a solid, hard mass." The material is pressed into required shape before cooling, or is granulated afterwards. Proportions are then given for the ingredients, so as to form either carbon monoxide and water after explosion, or carbon dioxide and water, or mixtures of both. The excellent properties of the resulting explosive are pointed out. The specification concluded :—

"The 'Bellit' is, moreover, composed of only such nitrated carburetted hydrogens as are very rich in oxygen, but poor in carburetted hydrogen, and, amongst these, such as melt at from 75° to 100° Celsius. In consequence of the intimate mixture when heated, Bellit becomes so homogeneous that, without the addition of any nitro-glyceriniferous substances, picrate or gun-cotton, it may be caused to explode only by means of a fulminating cap. This circumstance renders the said explosive quite free from danger, both in loading, as any ordinary shock will not cause it to explode, and in storing, as it cannot be ignited by fire. The greatest advantage offered by the Bellit is that it may thus very advantageously serve the purpose of ordnance, partly as a charge of powder and partly as charge in the projectiles, as the effect of shooting does not cause the explosion of the Bellit."

The claim was for :—

"An explosive material or compound termed 'Bellit,' prepared by mixing two solid substances, viz. such bi- or tri-nitro compounds of carburetted hydrogen (or mixtures thereof) as are perfectly solid below 75° C., and a nitrate (or mixtures thereof) which substances are heated after being mixed together, so that the solid bi- or tri-nitro carburetted hydrogen melts, and after solidifying completely surrounds the unmelted nitrate, substantially as above set forth."

An action for infringement was brought against the defendants for the manufacture of an explosive called "Roburite," consisting of 86·45 per cent. of ammonium nitrate, 13·30 per cent. of chlorodinitro-benzole, and 0·25 per cent. of moisture.

The only defence finally relied on was that of want of "subject-matter," or lack of a sufficient exercise of inventive ingenuity.

The chief alleged anticipations were *Sprengel's* (No. 2642 of 1871) and *Jensen's* (No. 2422 of 1876).

The principle of *Sprengel's* invention was to keep separate the

"oxidizing" and "combustible" agents (one at least being a liquid) until the explosive was required to do its work. A large number of oxidizible substances were mentioned, liquids and solids, *e.g.* oxygen acids, preferably nitric acid, nitrates, and other solids. Amongst a long list of "combustible" substances were mentioned (solids) such nitro compounds and nitrates of organic compounds as were non-explosive, *e.g.* nitro-naphthaline and nitrate of aniline, also amongst the liquids, benzol, and nitro-benzol. When made in the prepared form certain solid oxidizing and combustible substances were to be added in proportions required to produce the explosive effect.

Jensen's specification, a provisional one, alleged an invention of an explosive compound made of mono-, di-, or tri-nitro-benzol nitrated alkalies, with chlorate of potash by preference, treated as directed in another provisional specification of the same date. The latter was for mixing nitrated alkalies with hydro-carbons, not liquefying at ordinary temperatures, *e.g.* stearine, paraffin. The hydro-carbons were to be liquefied "by heating before mixing with the nitrated alkalies, which thereby are to be made non-deliquescent."

It was proved at the trial that:—

The substances mentioned in the patent in question were included in *Sprengel's*, but it was only during the progress of manufacture that one of the substances was a liquid. The efficiency of the "Bellite" was due to each solid particle being coated with the other ingredient during manufacture, which was not indicated in *Sprengel's*. *Jensen's* explosive, made as described by him, could not be fired without a powerful detonator, unless chlorate of potash were an ingredient, and if it were used the manufacture would be too dangerous to be carried on. The nitrate of a hydrocarbon used in Bellite was not included in *Jensen's*, but it had the same "water-proofing" effect. An expert of fifty years' experience considered it would require experiment and invention to produce Bellite, and that sufficient directions for that purpose were not given in *Sprengel's*, *Jensen's*, or the other publications relied on.

It was also proved that it was known that the ingredients of Bellite could be mixed as described, and that a chemist conversant with explosives would suppose *a priori* that Bellite would be an explosive.

The defendants relied on the last-mentioned evidence elicited in cross-examination.

The learned judge held there was no invention, and the injunction asked for was refused.

On appeal to the Court of Appeal:—

Held, that there was ample evidence of sufficient ingenuity, and the injunction was granted.

Per Lord *Herschell* (at p. 479): "The patent is not merely for mixing together the substances he describes. When he mixes them together he treats them in a particular way. He treats them with heat, and he directs your attention to this, that in making your selection you must have regard to the degree of Celsius at which the substances will melt, because the

object is that one of them when heated shall melt, and that the other shall remain a solid, and that then they shall be allowed to cool, and that that which has melted shall surround the solid, so that you get a substance capable of detonation, and yet not too readily to be detonated, and yet one which is what is called waterproof. Where is the suggestion of Sir *F. Abel* that any chemist would have known that? He is not asked the question. Under these circumstances I am really at a loss to see how it can be said that in this case there was no invention. Chemists of the highest experience have said that it would require experiment and research. There is produced to the public, and the method of producing it is described, a new and useful substance, possessing qualities not known by any explosive which the world had been told about before, and it seems to me that the patent cannot be otherwise than supported."

Per *Rigby*, L.J. (at p. 482): "Invention consists in many cases of putting together items of common knowledge which no one else had ever thought of combining—common knowledge that you may mix, common knowledge that you may waterproof; but the essence of this invention appears to be that the inventor has taken a great many things that were common knowledge, and tried which of those items of common knowledge would produce a new and useful result, and he has ascertained that, following the process described by him, you will arrive at the new and useful result which he does arrive at, and I consider that this is undoubtedly invention. I go further, and say that in this particular case it would seem to me to be invention of a somewhat high order."

(The Second Case, 14 R. P. C. 304.)

The defendants thereupon altered their mode of manufacture of their powder, and made it in the following manner. About two per cent. of chloronaphthaline was used as a third ingredient; it was added to the nitrate of ammonia, before the addition of the binitro-benzine. Heat was used, but not above 40° C., so the binitro-benzine was never melted as described in the specification. Complete "waterproofing" was not secured.

On a motion to commit for breach of the injunction the learned judge held that the defendants had not infringed.

The Court of Appeal upheld this decision.

On appeal to the House of Lords:—

Held, that the patent was confined to the substance produced by means of heat as described, and that the claim did not cover what the defendants had done.

Per Lord *Herschell* (at p. 311): "Of course, it very often happens that a patentee claims less than he could have done. I do not say that is the case here: it is not necessary to apply one's mind to that; but a patentee often makes that smaller claim in order to render himself perfectly safe with the smaller claim, when a larger claim would have rendered his patent one open to cavil and question. Of course, very often when he

makes that smaller claim he does not foresee that making it smaller in order to make his patent safe, he has at the same time laid himself open to the danger of having something made which may be more or less equivalent to his invention without his invention being infringed. That is always one of the risks that a patentee runs. If he makes his patent too wide, it may be held bad. If, on the other hand, he makes it too narrow, he may find its value very largely diminished, because the protection it affords is very small. The difficulty always is to hit the medium between these two extreme cases. But nevertheless where a patentee has, as I think he has here, clearly and unequivocally made a smaller and more limited claim . . . it is impossible to construe his claim as extending to something which its language does not naturally include."

1897. WOOD *v.* RAPHAEL, 14 R. P. C. 496.

Want of Inventive Ingenuity—Alleged Combination.

A patent (No. 8124 of 1893) was granted to *J. J. Wood* for "Improvements in, or connected with, pince-nez or double eye-glasses."

The complete specification described the object of the invention, so to construct pince-nez that the centres of the glasses should be a constant distance apart corresponding with the normal distance apart of the user's eyes, and the supports be adjustable so as to firmly and comfortably fit, no matter on what part of the nose they are placed. The specification continued :—

"According to this invention, I combine with eye-glasses having a rigid or firm bridge and fixed centres, arms mounted at one end upon a hinge or joint, each having a spring in connection with it, adapted to normally press the arms towards the nose; and at the other end, gripping bearers which are hinged by a pivot, or equivalent loose joint or carrying support through which said bearers may move or swivel about on said arms; or, one only of said gripping bearers may be loose upon its joint and free to swivel thereon, the other being fixed, after being fitted or adjusted to the wearer's nose."

The invention will be apparent from Fig. 1,[1] in which "*a* are the glass frames, *b* is a rigid or practically rigid bridge connecting said frames *a* together, and *c* are the glasses; *d* are the rigid or practically rigid arms, and *e* are gripping bearers hinged on the ends of the arms *d*. Each of the arms *d* is hinged at its base to the frames *a*, and is pressed outwards from their frames by springs, one of which, *f*, is shown on the right-hand side of Fig. 1."

The details of the springs and attachments are described, as well as other modifications.

[1] It is unnecessary to give the other diagrams here. The author is indebted to Mr. *Raphael* (defendant's solicitor) for exhibits used in this case.

The first claim was for :—

"The herein described improvement in, or connected with, pince-nez or double eye-glasses consisting of the combination with pince-nez or double eye-glasses the centres of the glasses of which are fixed, of rigid arms, *d*, hinged on the frames or glasses thereof, gripping bearers (or one

Fig 1.

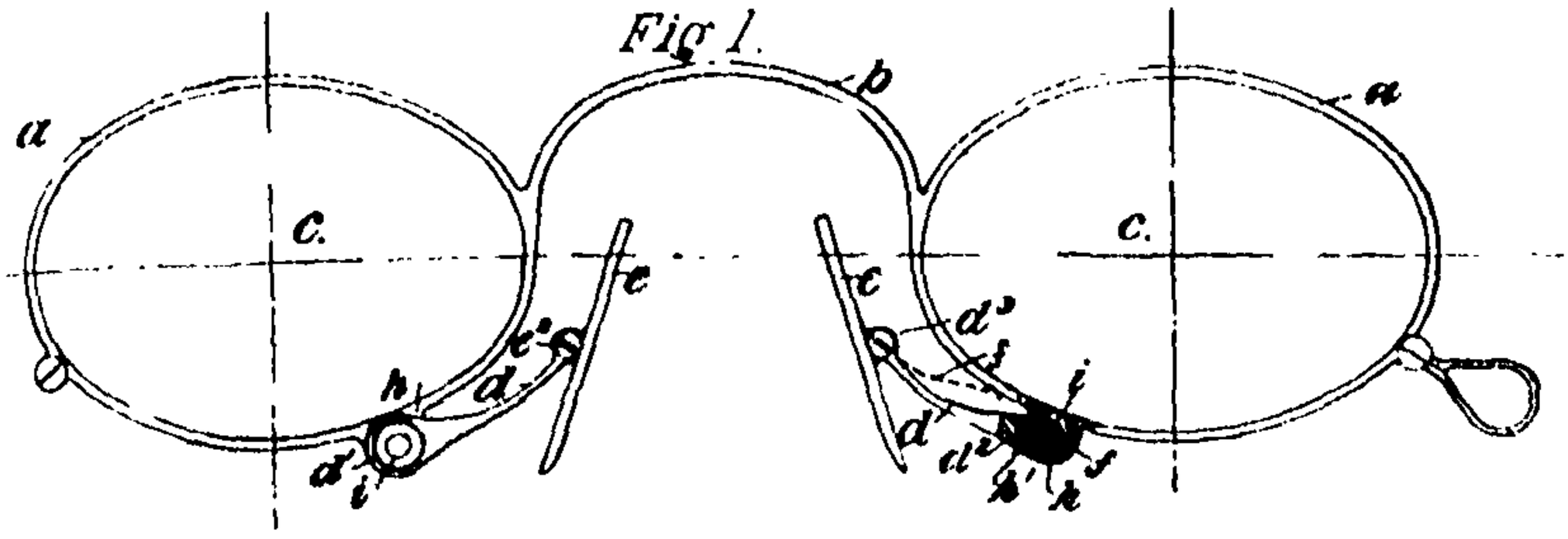


Fig 7

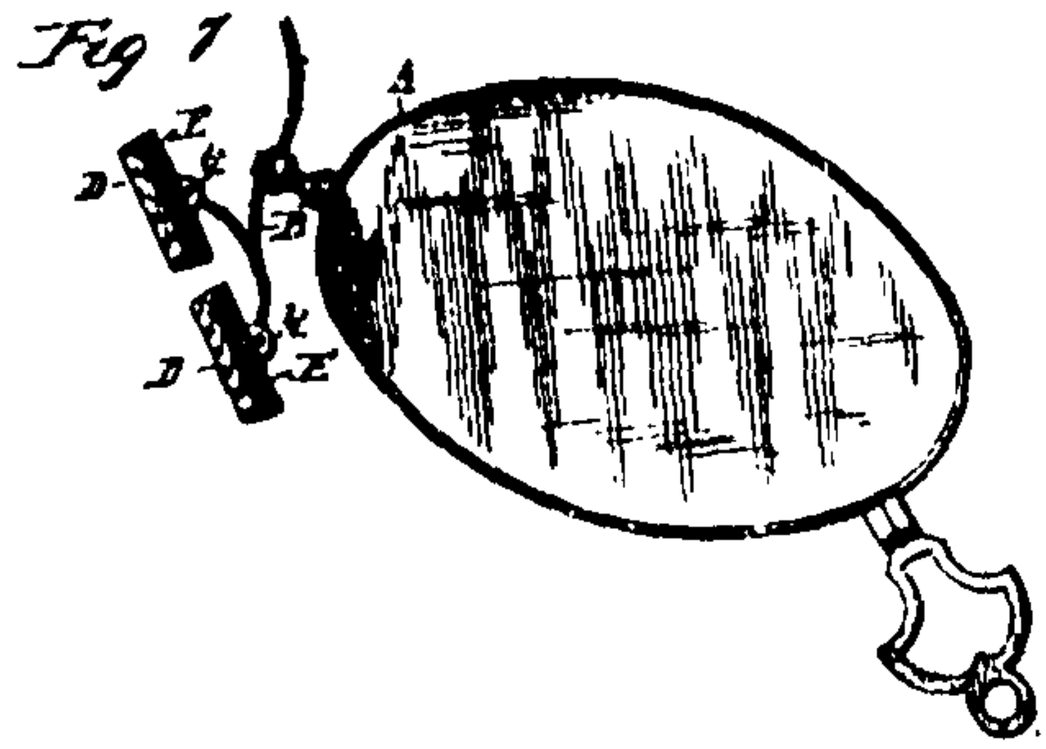


Fig. 1 of Wood's specification (No. 8124 of 1893).
Fig. 7 of Borsch's invention—an alleged anticipation.

gripping bearer), *e*, having oscillatory movement upon same, and springs by which said arms are pressed outwards and the gripping bearers on to the nose of the wearer; operating substantially as and for the purposes set forth."

The second and third claims were for the combinations as shown in the drawings more specifically.

A patent (No. 4280 of 1890) had previously been granted to the same inventor for similar improvements. In that specification the diagrams showed a rigid attachment of the arm *d* to the frame, instead of the coiled spring *f* of the later patent, the necessary play being secured by the arm *d* being elastic instead of rigid. The placquet was mounted on a hinge at its centre. The second claim was for—

"A pince-nez or double eye-glass wherein the relative positions of the foci—*i.e.* centres—of the glasses are constant or fixed, and the—*i.e.* hinged —gripping bearers are adapted to be moved or adjusted laterally, and pressed on to the wearer's nose by springs, substantially as set forth."

This was an action for infringement of both these patents.

It was proved at the trial that the advantage of keeping the centres at a constant distance was well known; so also were placquets hinged on to the *focuses without intervening springs in pince-nez, in which spring-bridges* were used helical and arched; so also were placquets rigidly attached to spring-arms in pince-nez with rigid bridges. Various forms of such contrivances were produced. Amongst other alleged anticipations, *Borsch's* American specification (1889) showed pince-nez in which the placquets were doubled on each side, in which the following passage occurs: "In Fig. 7 there is another form of cross-bar, which is provided with ears, *b'*, in which the nose-pieces are pivoted. I do not intend to limit myself, except where especially claimed, either to spring, bendable, or rigid metal for the parts carrying the nose-pieces, as either may be used at the will of the manufacturer. In some cases the wearer may prefer that these parts be of spring metal, while others may prefer that the metal may be capable of being bent to suit the nose, and depend upon the bridge for the spring." A rigid bridge was not mentioned, and the diagrams showed an arched one. The essence of the invention was the double placquet.

It was contended for the plaintiff that the inventions consisted in the combination of the three elements of rigid bridge, pivoted placquets, and spring-arms.

Held, that there was no invention to support a patent, as the alleged combination only gave to a well-known article an additional well-known feature (13 R. P. C. 730).

Romer, J. (at p. 735): "In my opinion there was nothing novel in the application of that extra feature, or in the purpose for which it was applied. There was no difficulty in adding that additional feature, if so desired; certainly no invention was required to add it. In fact the evidence shows that workmen in the ordinary course of their work, before the date of the plaintiff's patent, have applied pivoted placquets to pince-nez, both with fixed rims and elastic rims. . . . In the case before me I am satisfied that there is no real invention to support a patent—no real step by way of invention. In my opinion to uphold such a patent as this would unduly hamper the trade of this country. We should have clouds of such patents, and no workman would dare to make the simplest addition in perfectly well-known articles" [1]

On appeal the Court of Appeal upheld the learned judge's decision.

Per *Lindley* and *Rigby*, L.JJ.: *Borsch's* device cannot be confined to an elastic bridge.

Lindley, L.J.: "So far as the invention goes, so far as that idea goes, the thing unquestionably was incorporated in and published by *Borsch*. . . . After *Borsch's* specification to say that there could be a patent for the combination of a rigid bridge, with springs carrying a placquet which was hinged, appears to me to be going a great deal too far."

[1] It appears that from the point of view adopted in the older cases there was no "manufacture" at all. See *ante*, pp. 30–33, 35.

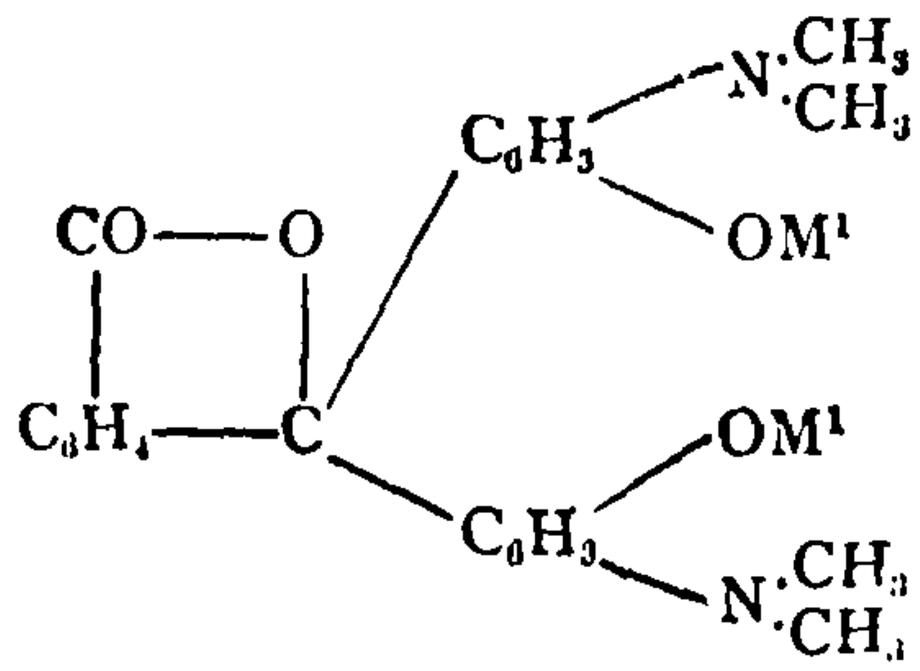
1897. MONNET *v.* BECK, 14 R. P. C. 777.

Construction—Erroneous Theory.

In 1892 a patent (No. 4677) was granted to *P. Monnet* for an invention of "the manufacture of new colouring matter or dyes."

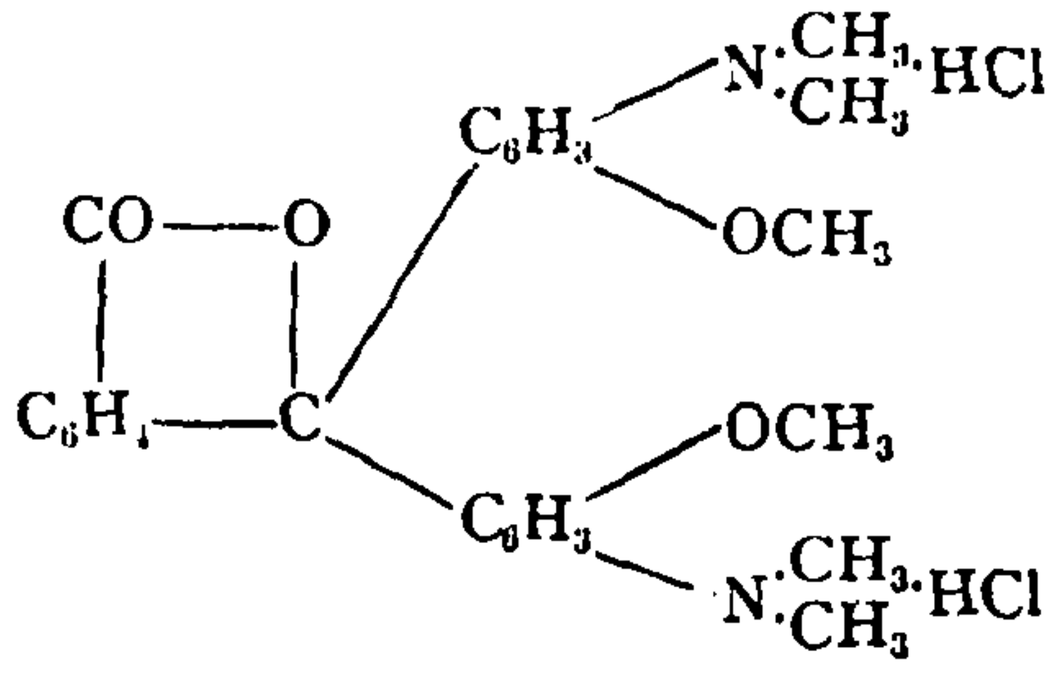
The specification commenced as follows:—

"The object of this invention is to manufacture new colouring matters, or dyes, which may appropriately be called 'anisolines,' from the bodies known as 'rhodamines.' These rhodamines can be obtained by several processes, the general formula of which is:—



"(M^1 designates a monovalent metal.)

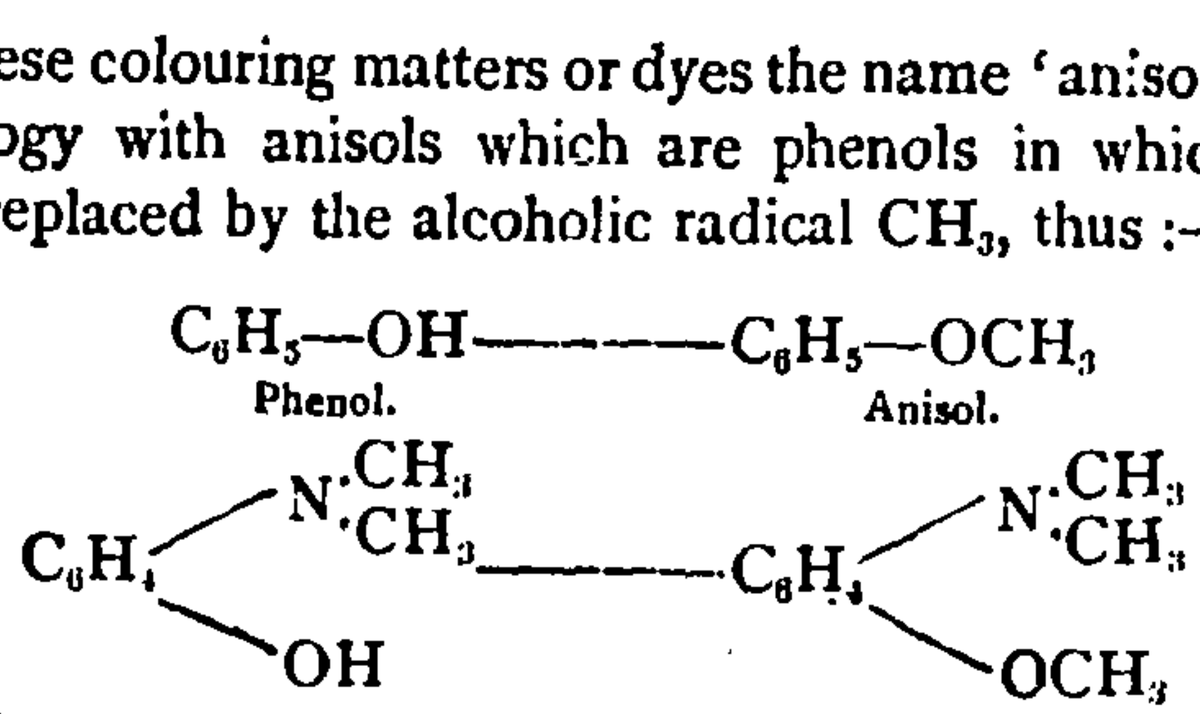
"It is by substituting for this metal a simple alcoholic radical such as ethyle (C_2H_5), methyle (CH_3), amyle (C_5H_{11}), &c., or a compound alcoholic radical such as benzyle ($C_6H_5—CH_2$), that I have succeeded in forming my new colouring matters or dyes, the constitution of which is:—



"I give these colouring matters or dyes the name 'anisolines,' on account of their analogy with anisols which are phenols in which the H of the hydroxyle is replaced by the alcoholic radical CH_3, thus:—

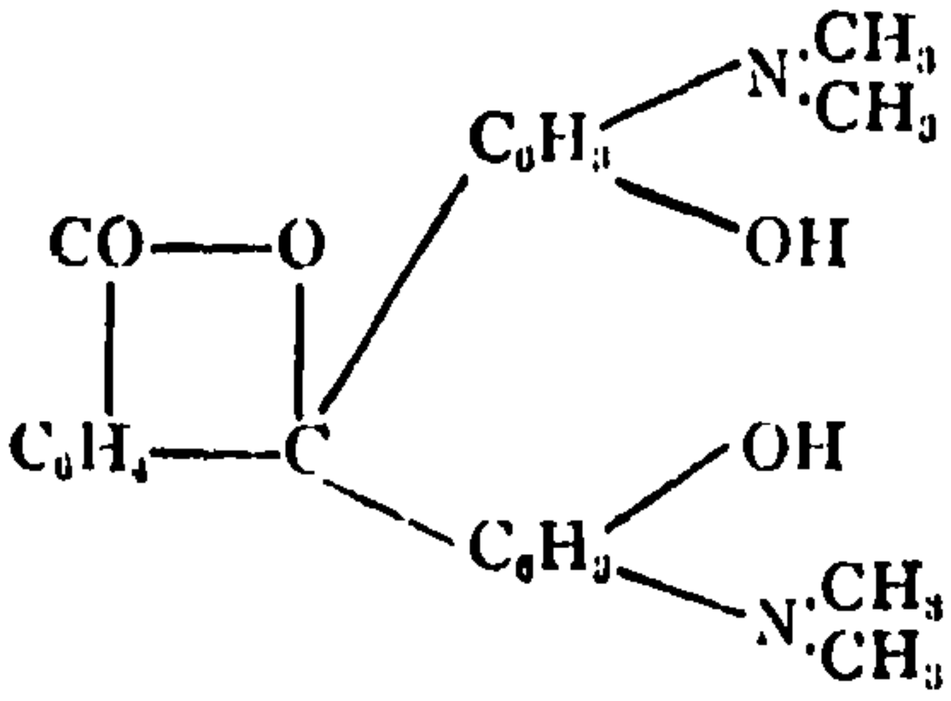
$C_6H_5—OH$ ——— $C_6H_5—OCH_3$

Phenol. Anisol.

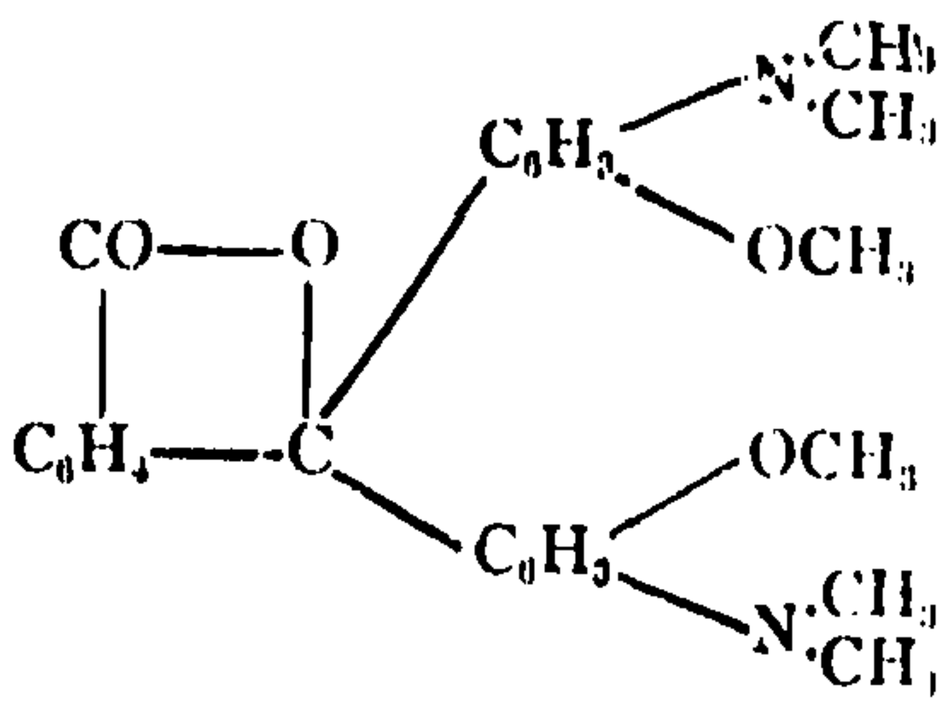


Dimethyle-meta-amido-phenol. Dimethyle-meta-amido-anisol.

"The dimethyle-meta-amido-phenol enters into the constitution of the rhodamines and the dimethyle-meta-amido-anisol into that of the anisolines.



Rhodamine (base).



Anisoline (base).

"EXAMPLE OF THE PREPARATION OF THE POTASSIUM SALT OF A RHODAMINE.

"The hydrochlorate of dimethyle-meta-amido-phenol-phthaleine is transformed into a potassium salt" in the following manner:—[1]

"Dissolve 10 kilos. of hydrochlorate of dimethyle-meta-amido-phenol-phthaleine in 50 litres of boiling water, pour this solution into another boiling solution of 5 kilos. of caustic potass dissolved in 20 litres of water. The potassium salt is immediately precipitated in the crystalline state, more soluble cold than hot; it is separated by filtration of its boiling solution, drained and dried. About 10 kilos. of potassium salt is obtained.

"TRANSFORMATION INTO ANISOLINE.

"Six kilos. of potassium salt of dimethyle-meta-amido-phenol-phthaleine of meta-amido-cresol-phthaleine dimethylated or diethylated, &c., 20 kilos. of ethylic alcohol at 93° C., and 3 kilos. of chloride of ethyle, or its equivalent of chloride of methyle, or of a bromide or an iodide, or the equivalent of chloride of benzyle, are heated under pressure for four hours at a temperature exceeding 100° C., preferably at about 120° C. After cooling, the product withdrawn from the autoclave is diluted with water, distilled to drive off the excess of chloride and to extract the alcohol; then there is added the amount of hydrochloric acid necessary to form the salt of anisoline, after which it is precipitated by sea-salt.

"The anisoline is dissolved in pure water and left to crystallize, or precipitated by sea-salt."

Further information was given as to the action of iodides, bromides, and chlorides under the same conditions. It was also pointed out that dyes might be also obtained by the above process from the condensation

[1] The formula for the salt was here inserted. It is the same as that of the rhodamine base above given, with the substitution of K for H in both the hydroxyl radicles.

products of succinic, suberic, &c., acids with alkylized amido-phenols or amido-cresols.

The claims were :—

"(1) The method or process of obtaining new colouring matters or dyes, hereinbefore called 'anisolines,' by substituting for the metal of rhodamine salts a simple alcoholic radical such as methyle, ethyle, or amyle, or a compound alcoholic radical such as benzyle, as hereinbefore described.

"(2) The carrying out of the method or process referred to in claim 1 by the action of a simple or compound alcoholic chloride, bromide, or iodide on a rhodamine salt, for example a potassium rhodamine salt in presence of ethylic alcohol, the whole being heated under pressure for several hours at a temperature exceeding 100° centigrade, the product of the reaction being diluted with water, then distilled to separate the alcohol and drive off the excess chloride of ethyle, the hot solution having added to it hydrochloric acid, whereby hydrochlorate of anisoline is formed, which is precipitated by sea-salt, all as hereinbefore set forth.

"(3) As new products, the colouring matters or dyes hereinbefore called 'anisolines,' obtained substantially in the manner set forth."

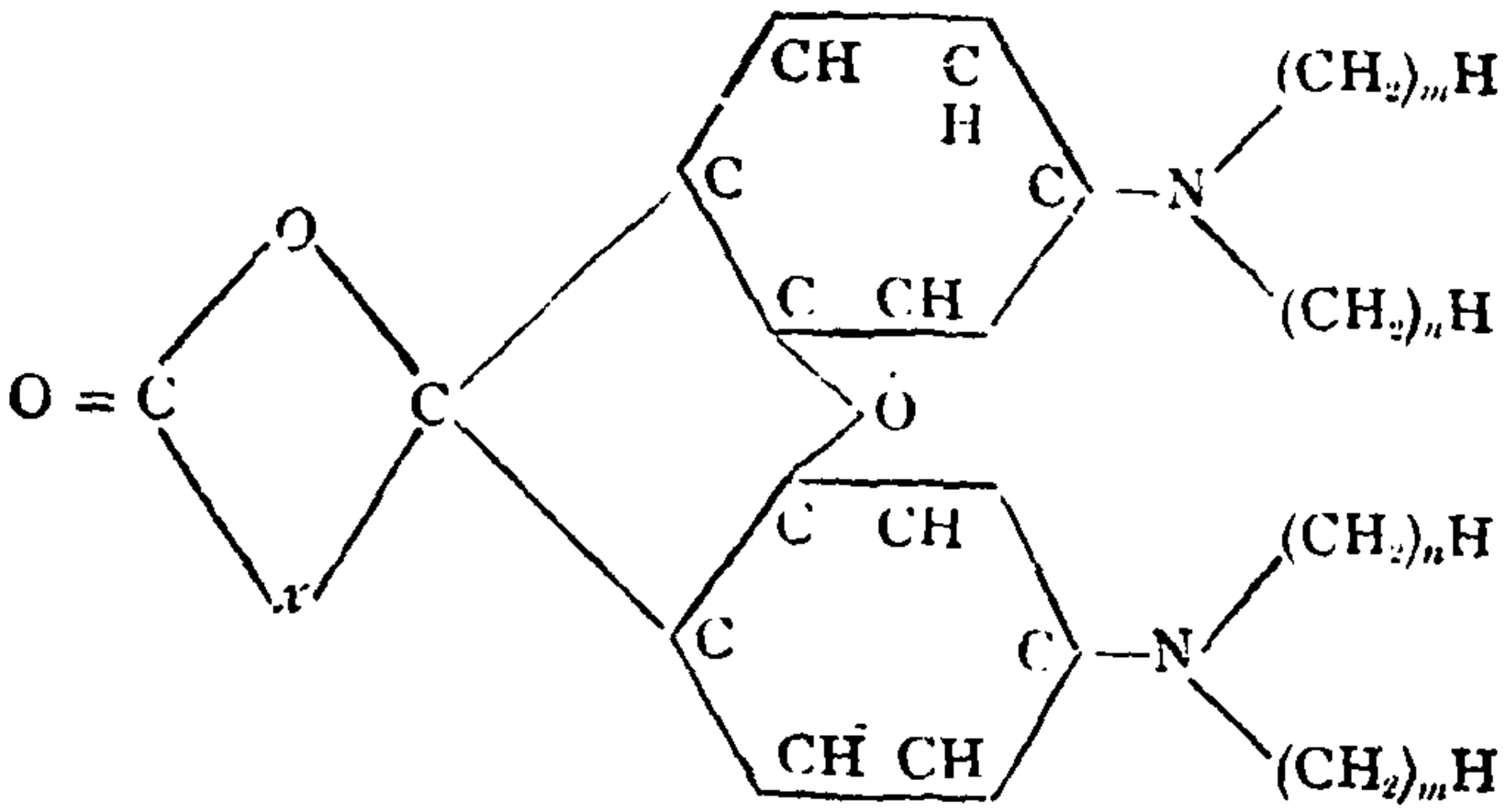
This was an action for an alleged infringement of the above patent.

The usual defences of insufficiency, want of novelty, want of utility, were raised, besides that of non-infringement.[1]

The alleged infringement consisted in the carrying out of the process described in the specification of the following case, *Badische Anilin, &c.* v. *La Société Chimique des Usines du Rhone* (*post*, p. 405).

The alleged invention and alleged infringement were both advances or improvements based on the manufacture of rhodamines as patented in 1887 (No. 15,374).

The general formula[2] of a rhodamine is :—

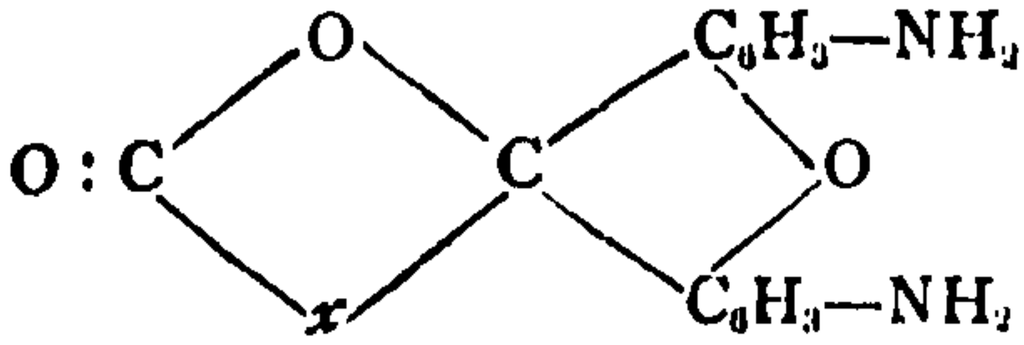


formed by condensation of two molecules of meta-amido-phenol or its alkyl derivatives with an organic acid. In this formula *m* and *n* are

[1] Only that part of the case is summarized here which is necessary to understand the main issue of validity.

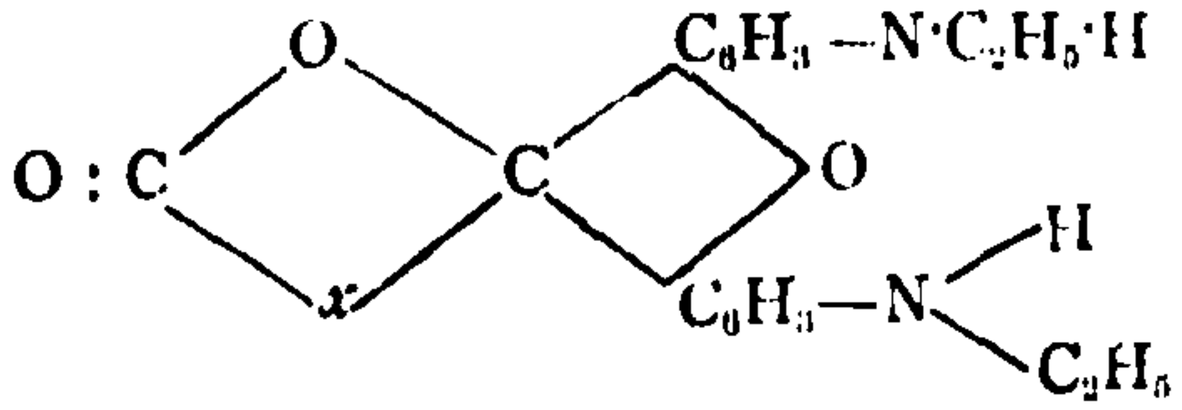
[2] The letters inside the hexagons denote the original atoms in the benzine rings.

indeterminate (0, or 1, 2, 3, &c.), and (x) depends on the particular acid used. *E.g.* if succinic acid [$C_2H_4 : (COOH)_2$], then x represents (C_2H_4), if phthalic acid [$C_6H_4 : (COOH)_2$] be employed, then x represents (C_6H_4). If both m and n be zero, then the rhodamine is of its simplest form—



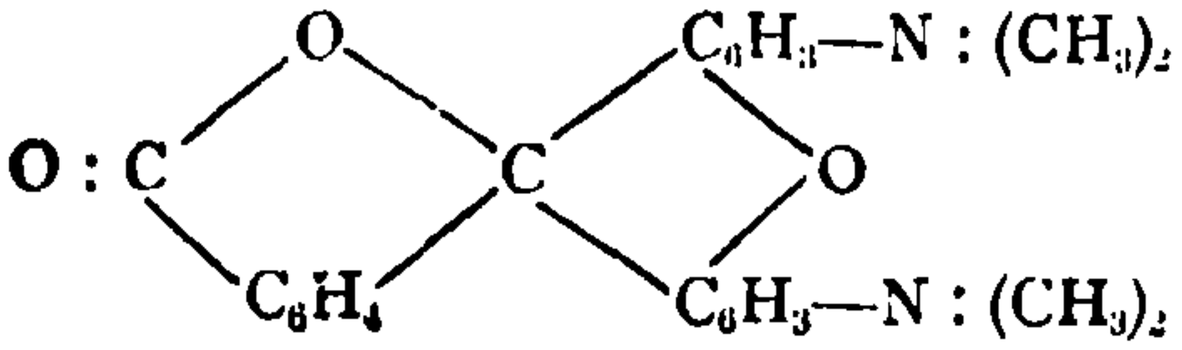
and is an "unalkylated" rhodamine.

If n only be zero, then the rhodamine is "dialkylated." Thus:—



represents a diethyl-rhodamine ($m = 2$ $n = 0$).

Where both the atoms of H in the amidogen are replaced by alkyl groups the rhodamine is "tetra-alkylated;" *e.g.* dimethyl-meta-amido-phenol-phthaleine is formed by the action of phthalic acid and dimethylmeta-amido-phenol, and is represented by the formula— [1]



It was admitted that the theory underlying *Monnet's* specification was incorrect; that no such metallic salt as therein described was, or could be formed; that instead of such salt the original base only was used in "transformation into anisoline." The defendant's process and patent was based on the discovery of the real nature of the reaction involved, viz. that the etherification consisted in the introduction of the new alkyl groups into that part of the molecule which came from the condensation of the original organic acid (*i.e.* the second O in the formula) instead of their introduction into the "condensation link" of the phenol groups.

It was *held* at the trial that the first and second claims included a claim for the potassium salt; that the third claim (taking the whole document into consideration) was for the product produced as described,[2] and not by any other process; and that the patent was invalid.

[1] *Monnet's* specification gives this formula without condensation, in support of his theory of the etherification taking place in the phenol groups.

[2] One of the reasons for this conclusion was the reference in the specification, to "anisoline," the production of anisol from phenol involving the production of a metallic salt. "Anisoline" is classified by *Schultz & Julius* as identical with "Rhodamine 6 G," on next page.

Per *Wills*, J. (at p. 847): "It seems to me you may put it in two ways, either of which is fatal to the patent. It may be said, 'You are claiming an impossible process,' which cannot be the subject of a patent, or if it be urged that *Monnet's* specification, apart from the claim, does not really describe a process depending upon a metallic salt, then, 'You are claiming a process which is not the one you have described,' which is equally fatal."

1897. BADISCHE ANILIN UND SODA FABRIK *v.* LA SOCIÉTÉ CHIMIQUE DES USINES DU RHONE AND WILSON, 14 R. P. C. 875; 15 R. P. C. 359

Construction—Alleged Prior Publication—Insufficiency—Inventor's Best Knowledge.

A patent (No. 9633 of 1892) was granted to *J. Y. Johnson* for "the manufacture and production of new basic dye-stuffs."[1]

The complete specification commenced as follows:—

"My foreign correspondents have discovered that a new basic rhodamine dye can be obtained by treating symmetrical di-ethyl rhodamine of the phthalic acid series in a manner such as to cause a further combination thereof with ethyl. This dye (which may be called 'di-ethyl-rhodamine-ethyl-ester') can be used for dyeing silk and wool, but appears to be best suited for dyeing vegetable fibre when mordanted with tannin. To such material it imparts red shades of colour which cannot be equalled in beauty and fastness, by the use of any hitherto known dye.

"The invention can be applied to other di-alkyl-rhodamines of the phthalic and succinic acid series which yield analogous results, and in every case instead of causing a further combination with ethyl, so as to obtain an ethyl ester, other alkyl groups may be introduced whether mono- or poly-valent so as to obtain other esters.

"Having stated the nature of the invention, I will further illustrate it by giving the following examples, but I premise that these can be varied considerably in their details, and that they are merely typical, illustrating the application of the invention to particular cases. The parts are by weight."

The first example given was a process consisting in passing dry HCl gas through a solution of di-ethyl-rhodamine in ethyl- or methyl-alcohol until saturated; then preferably heating, and continuing the process in the boiling solution until complete. The separation of the new dye was also described.

"Example 2. Heat about one part of di-ethyl-rhodamine-hydrochlorate, dissolved in about four parts of ethyl- or methyl-alcohol, in an autoclave for about ten hours at a temperature of about one hundred and fifty degrees centigrade, and work up as described in Example 1.

[1] Known as "Rhodamine 6 G." This specification and case can be better understood by a previous perusal of *Monnet* v. *Beck* above. The main issue alone is noted.

" Example 3. Heat about forty parts of di-ethyl-rhodamine base with about two hundred parts of methyl- or ethyl-alcohol and about fifty parts of methyl or ethyl-chloride. The operation is conducted in an autoclave which is heated in a boiling saturated salt solution. Continue heating for about eight hours. Distil with steam, filter the aqueous solution of the residue while hot. Unchanged di-ethyl-rhodamine base remains on the filter. On cooling the new dye separates out from the solution in the crystalline form. A more complete separation can be obtained by adding hydrochloric acid, and, if necessary, common salt. Filter, press, and dry at a low temperature."

Statements then followed showing how other di-alkyl-rhodamines could be used; also other acids for hydrochloric and other alcohols as solvents, and analogous halogen compounds for the chlorides in the third example. The properties of the dyes were mentioned.

The claims were :—

"(1) The manufacture of new basic dye-stuffs by treating di-alkyl-rhodamines of the phthalic or succinic acid series so as to cause a further combination with alkyl, substantially as hereinbefore described.

"(2) The manufacture of a new basic dye-stuff by treating di-alkyl-rhodamine of the phthalic acid series in an alcoholic solution with hydrochloric acid gas, substantially as hereinbefore described under Example 1.

"(3) The manufacture of a new basic dye-stuff by heating a salt of a di-alkyl-rhodamine of the phthalic acid series with an alcohol under pressure, substantially as hereinbefore described under Example 2.

"(4) The manufacture of a new basic dye-stuff by heating a di-alkyl-rhodamine of the phthalic acid series in the form of free base in alcoholic solution with an alkyl-halogen compound, substantially as hereinbefore described under Example 3.

"(5) As a new product, the new basic dye-stuff hereinbefore described, being di-ethyl-rhodamine-alkyl-esters, such, for example, as can be obtained by treating di-ethyl-rhodamine so as to cause a further combination with alkyl in particular with ethyl or methyl."

This was an action for infringement of the above patent. The usual defences were raised, but not that of "insufficiency." *Monnet's* process was alleged to anticipate the third example. During the trial it was discovered that the process described in the second example failed unless an iron autoclave were used. HCl was given off in the process, and interfered with the reaction. But by using an iron autoclave (as the inventor, Dr. *Bernthsen* had happened to do), the iron itself entered into the combination, and by destroying the free HCl, made the production of a comparatively pure dye possible.

It was proved that autoclaves made solely of iron were the cheapest and most common, but that the more expensive ones were enamelled throughout, and were used in manufactories devoted to making dyes when strong acids were anticipated.

At the trial the learned judge gave leave to amend the pleadings by

adding an objection as to insufficiency of the specification. It was proved that Dr. *Bernthsen's* discovery was that rhodamine acted as an acid (see *ante*, p. 404).

Held, at the trial, that the fifth claim (no foreign substances being mentioned) was for dyes in a state of substantial purity; that *Monnet's* specification, pointing away from the use of the unconverted rhodamine base (although he in fact used it), did not anticipate the third process; but that the patent was invalid owing to the insufficiency of the directions as to the autoclave.

On appeal to the Court of Appeal.

Held, that the specifiation was insufficient, and that since in the Court below the plaintiffs agreed that the claim was for a pure product, they could not contend on appeal that it was for the production of an impure dye.

Per *Smith*, L.J. (at p. 366): "In my judgment it is my duty to read the plain direction given in the specification, which is 'to heat in an autoclave,' which are plain and simple English words, and require no scientific knowledge to understand as soon as it is ascertained what an autoclave is. In my judgment it is clear that the words 'to heat in an autoclave' mean 'to heat in any autoclave'—of course of sufficient strength, and which is used for this class of dye-making. There cannot, in my opinion, be found in the words 'to heat in an autoclave' a direction to heat in an autoclave composed of iron and no other . . . It appears to me plain that if a dye-chemist, working by this specification, were to take for his work the more expensive, and, presumably, the better, class of autoclave, that is, the autoclave enamelled throughout within, he would never go back to the cheaper sort, namely, an autoclave made solely of iron, for his autoclave being of the best description, it would never occur to him that his autoclave was at fault when he could not get the desired result, which he clearly would not get with an enamelled autoclave, and that the commoner and cheaper autoclave was the one which alone could be used with effect."

1897. BROOKS *v.* LAMPLUGH, 15 R. P. C. 33.

Invention—Extent of Claim—Disconformity.

[This was an action on three patents. Two of these only are discussed in these pages.]

A patent (No. 15424 of 1890) was granted to *J. B. Brooks* for "Improvements in velocipede saddles."

The complete specification commenced as follows:—

"This invention relates in the first part to the base-framings, or supporting brackets, of cycle-saddles, and in the second part to the bosses connected with the said base-framings, and where through the L-bar for supporting the saddle, or connecting a saddle to a machine, passes.

"The primary object of my said invention, in connection with the framing part, is to obtain a maximum strength with lightness, and this I accomplish by making the said base-framing, or base-bracket part, trussed, or of the figure of a double-sided beam, trussed, or tied together in manner that the same is capable of resisting considerable tensile strain.

"In carrying out this part of my invention, I take two triangular-shaped frames, composed of rods, whose ends are respectively connected or secured to cross-ends, upon which the lower parts of the supporting springs of the saddle-seat rest. The triangular sides are directed nearly parallel one with another, and separated to an extent of about the breadth of the boss or L-bar bracket, which is secured at the middle of the said frames, by snug extensions, directed from the outside of the boss, and wherethrough the middle parts of the whole of the rods, which are preferably four in number, pass.

"Thus the boss is suspended as it were, between and at the middle of the framing-rods, which pass through radiating lugs, directed from the outside or periphery of the boss.

"By constructing the base-framing or bracket of rods tied together after the manner of triangles, a frame in equilibrium is thereby produced, as no change of figure to the sides can take place, unless by rupture or bursting.

"Both sides, and if necessary, the top, are longitudinally pierced or slotted, which gives unto the bracket an open and triangular construction.

"To give a tilting adjustment to the saddle-seat, the middle of the top side of the base-plate, or bracket, may be concaved, upon which the boss is adjustable.

"Fig. 1 of the accompanying drawings represent partly in elevation and partly in vertical section, a cycle-saddle, provided with base-framing, constructed and arranged according to my invention.

"The said framing, which is also provided at its middle with an L-bar boss, also constructed according to my invention, is of a skeleton form, and alike unto a trussed beam or bracket, with triangular sides.

"Fig. 2 represents an underside plan of the said base-framing, with the supporting springs of the saddle-seat. This view shows the disposition of the sides, one with each other, and how the same are united and stayed together by cross-ends. It also shows the connection which the L-bar boss has with the framed rods.

"Fig. 3 is a transverse section of the said base-framing through the L-pin, outside the eyes, wherethrough the tied-together rods constituting the framing pass."

Then followed a detailed description of the drawings here given, and of others showing other forms of the invention.

The first claim was :—

"First:—In cycle-saddles, making or forming the base-framings of them, of the figure of a trussed beam, that is to say, a base-framing consisting of triangular open-shaped sides (made from wire or sheet metal) separated from each other by a divisional space, and united at their ends by bosses,

cross-bars, or other connections, hence a trussed supporting framing, with the members composing the sides, separated from each other at a greater distance at their middles than at their ends, substantially as described and set forth."

There were five other claims of a more detailed nature.

This was an action for infringement of this, the following, and a third patent.[1]

The chief objections to this patent were that there was no subject-matter

Fig 1.

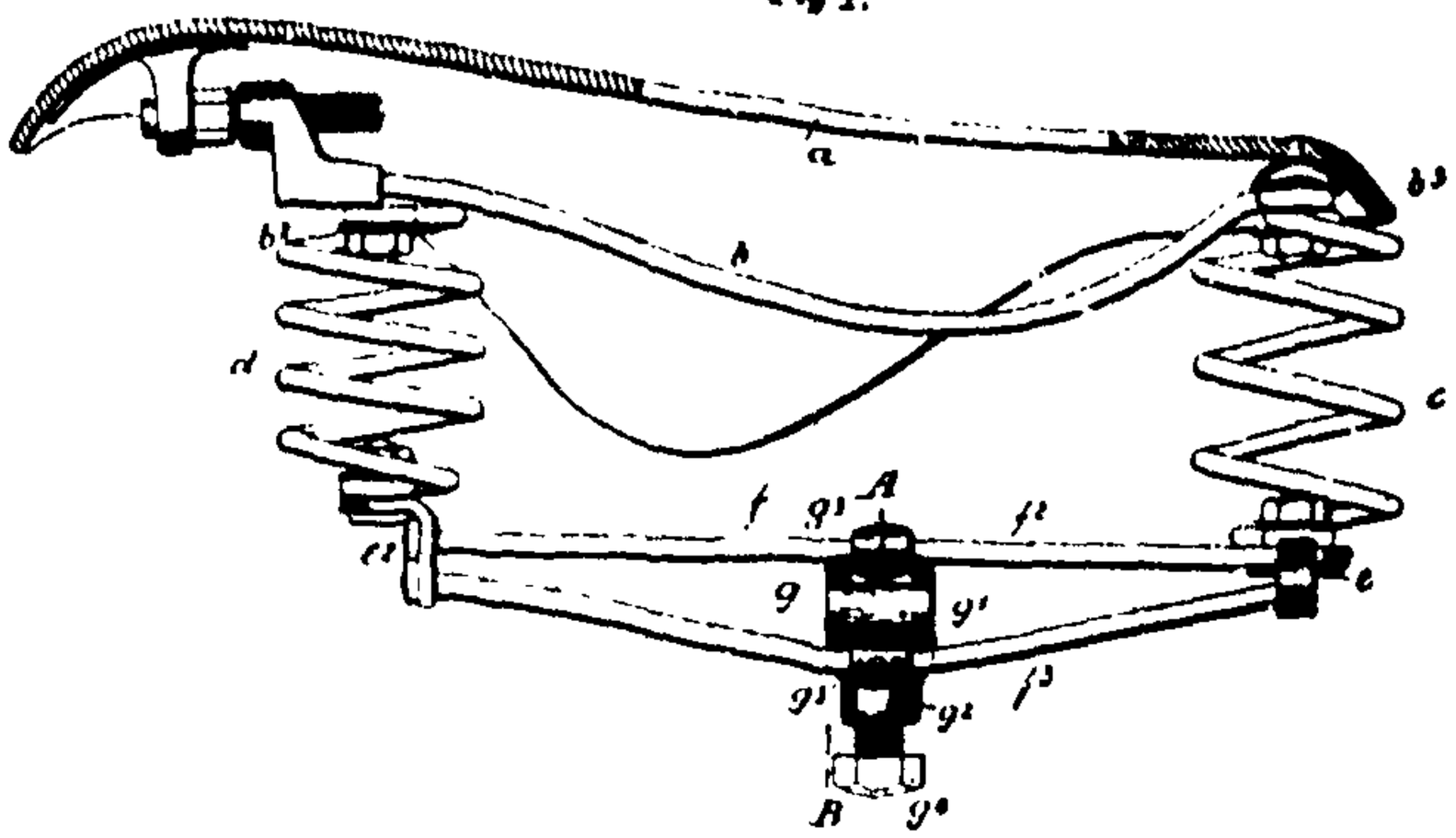


Fig.3

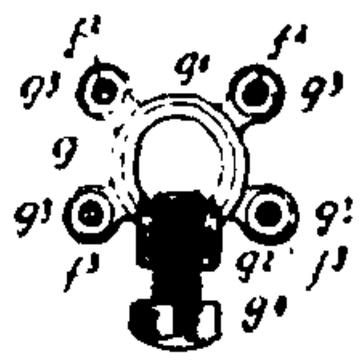
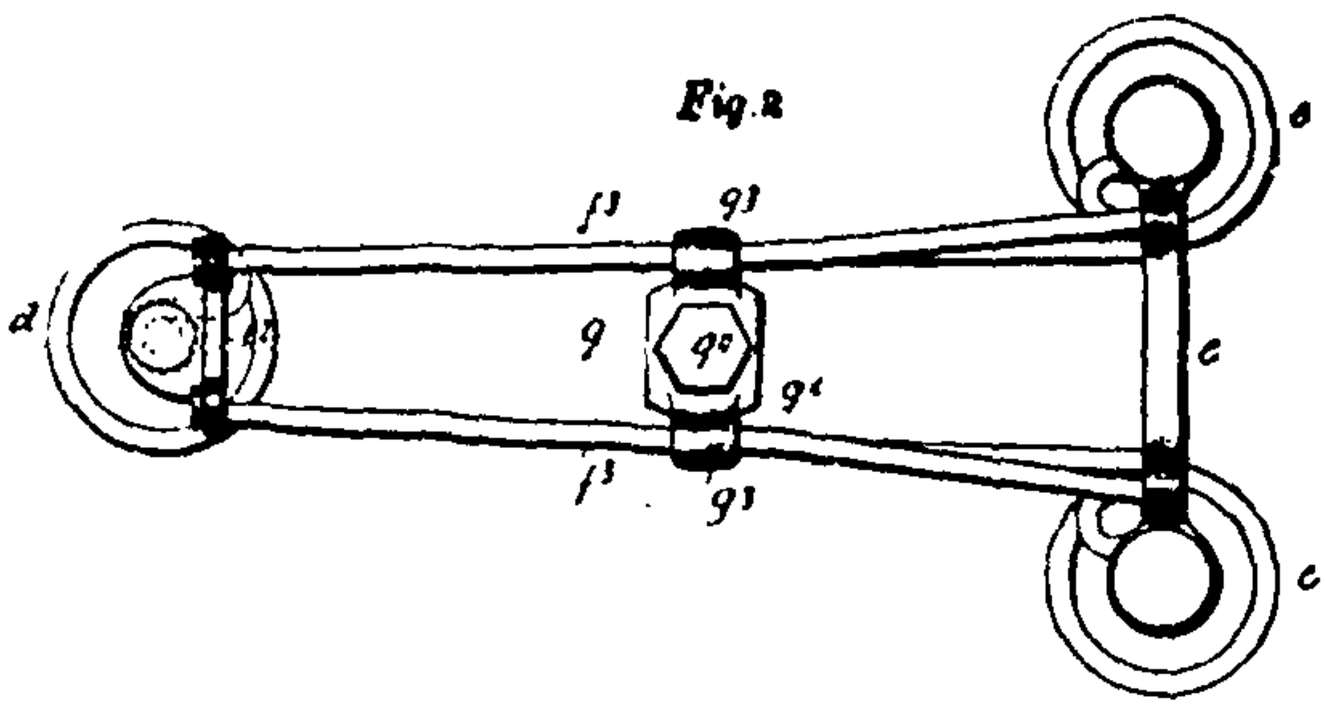


Fig.2



Diagrams from Brooks's specification (No. 15424 of 1890).

for a patent, the "trussed" beam being old, and used in an old manner, although for a new purpose; and also that the first claim was too wide.

The learned judge at the trial held that this was the application of the old principle of the trussed beam in a way that involved sufficient ingenuity to support the patent.

On appeal to the Court of Appeal:—

Held, that the claim was confined to the methods described in the specification, and did not extend to a claim for the use of trussed beams in cycle saddles generally, and that the patent was valid.

[1] Only so much is here alluded to as bears on the main issue as regards the first and second patents.

Smith, L.J. (at pp. 47, 48), alluded to the objection to the first claim, and the previous knowledge as to trussed beams, *i.e.* the upper member was in tension, and the lower (as struts) in compression. "It by no means follows that a patent is bad because an old well-known mechanical contrivance has been brought into use by a patentee. If it were so, very few patents at the present day could be upheld. We think the law upon this subject may be stated thus: Although there cannot be a valid patent for a well-known mechanical contrivance merely, when it is applied in a manner or to a purpose which is not quite the same, but is analogous to the manner, or the purpose, in which it has hitherto been notoriously applied,[1] yet there may be a valid patent, although well-known mechanical contrivances are used, if they are applied in a manner or to a purpose to which they have not been hitherto applied, and which new application results in a new and useful article not theretofore attained. In the first case there is no room for invention; that is, there is what is called no subject-matter. In the second there is room for invention; and if the Court comes to the conclusion that there has been invention in what has been done, then there is good subject-matter, and it is no answer to say that an old well-known mechanical contrivance has been used in bringing about the novel and useful result attained." His Lordship referred also to *Longbottom* v. *Shaw* (*ante*, p. 332) and continued—

"It appears to us that in the present case there is good evidence that a long-existing defect had been felt by the public, and a desire, if not a demand, for its remedy for a long time had existed, and that mechanicians had been at work to remedy these defects—namely, the numerous patents from time to time taken out for the purpose—and that the plaintiff first produced a real remedy of these defects by his patent of 1890, and that the matter was not obvious before 1890. We do not doubt that this constitutes good evidence of invention."[2]

Alluding to the first claim (at p. 49), his lordship said: "The defendant argues that this claim is bad, because it claims for the use of a trussed beam in general used anyhow in cycle-saddles, and not the use of a trussed beam in any particular way therein; and that, as a trussed beam is unquestionably old, the first claim is bad. If this were the true reading of this first claim, we argue that it would be bad, but we do not so read it, for, in our judgment, the words at the end of the claim, 'substantially as described and set forth,' apply to the whole claim, and limit the user of the trussed beam to the manner described in the specification."

The second patent sued upon (*No. 22608 of 1892*) was also granted to *J. B. Brooks* for "improvements in cycle-saddles."

A fairly full description of these improvements was given in the

[1] His lordship referred to *Harwood* v. *G. N. Ry. Co.*, *ante*, p. 204, and *Morgan* v. *Windover*, *ante*, p. 323.

[2] This comes back to the original test as to patentable invention, viz. the position of those in the trade. An invention is not patentable if it be so obvious as to unduly hamper persons in the exercise of their skill and knowledge. See *ante*, pp. 35, 37.

provisional specification. The attachment of the saddle-base to the pillar was thus described :— [1]

"In the fittings part of my invention—to wit the means of connecting the saddle to a vertical pillar, or an upright carried by the framing of a machine—I proceed in the manner following :—

"I take a divided clip, or a clip made of two sectional parts, with the wings or branched extensions upon one side of them pierced horizontally and through which a pivot-pin passes. The wings at the other side have formed through them radial slots, struck from the centre of the before-named pivot-pin, upon which the said clip turns as a centre of motion.

"Directed horizontally through the radial slots is a cross-pin, alike unto the before-named pivot-pin, and which said cross and pivot pins are slotted at their ends, wherein concave-faced bearing-blocks take, and with the said concaves presented outwards. Fitted within the ends of the slots are also closure or cottar washers with concaved or other seats presented innermost.

"Taking upon the extreme ends of the said cross and pivot pins come screw-nuts, and between the bearing-blocks and the closure or cottar washers come the framing-rods, and by the screwing up of the nuts the said framing-rods, which lie within the slots cut within the pins, and between the bearing-blocks or washers, are rigidly affixed in position, and at the same time, the sectional clamp is closed around the upright pillar, and the saddle secured in its desired position, which is adjustable vertically for tilting by the cross-pin taking through the radial slots, whilst the whole is adjustable horizontally on the screwing-up parts being loosened.

"Thus, tilting and horizontal adjustments are made by adjusting and sliding the parts into such positions as may be required upon the frame-rods. This done, then screw up the parts, when the necessary affixing of both saddle to its pillar and framing to the connection-clip is performed."

The complete specification gave a full description of the details of the invention with diagrams. After describing the invention shown in Figs. 4, 5, 6, and 7 in detail, an alleged modification was thus introduced :—

"In the modified forms of clip comprehended under Figs. 8, 9, and 19, i^{14} is a loop or ring body part, with opposite and screwed trunnion-like ends or pins, i^3, and with opposite and horizontal side-gaps or middle clearances, i^{15}, extending on both sides from trunnion to trunnion, or nearly so, and embraced by sectional or compound and adjustable clip parts, i^1, i^2, taking upon the body part of the said ring-clip i^{14}, and also having end clearances, i^{16}, wherethrough the trunnion ends and also the adjacent portions of the loop i^{14} extend, and through the gaps i^{15} adjacent to the said trunnions,

[1] Only a portion of the provisional is here given. The references to the diagrams of the complete are here inserted merely to facilitate the reader. There were no diagrams with the provisional specification. A part of Fig. 1 is given to aid in illustrating Fig. 4. Fig. 4 shows a vertical section, the saddle being tilted by the clip being raised or lowered on the right, the left pin being the fulcrum. Fig. 5 shows a horizontal section through A B of Fig. 4; the frame-rods *f*, *f* passing through the slotted pins, thus allowing of horizontal adjustment. Fig. 6 is a vertical section along C D of Fig. 5, showing the frame-rods *f* screwed into position. Fig. 7 shows the slotted pin by which this is effected.

Fig. 1.

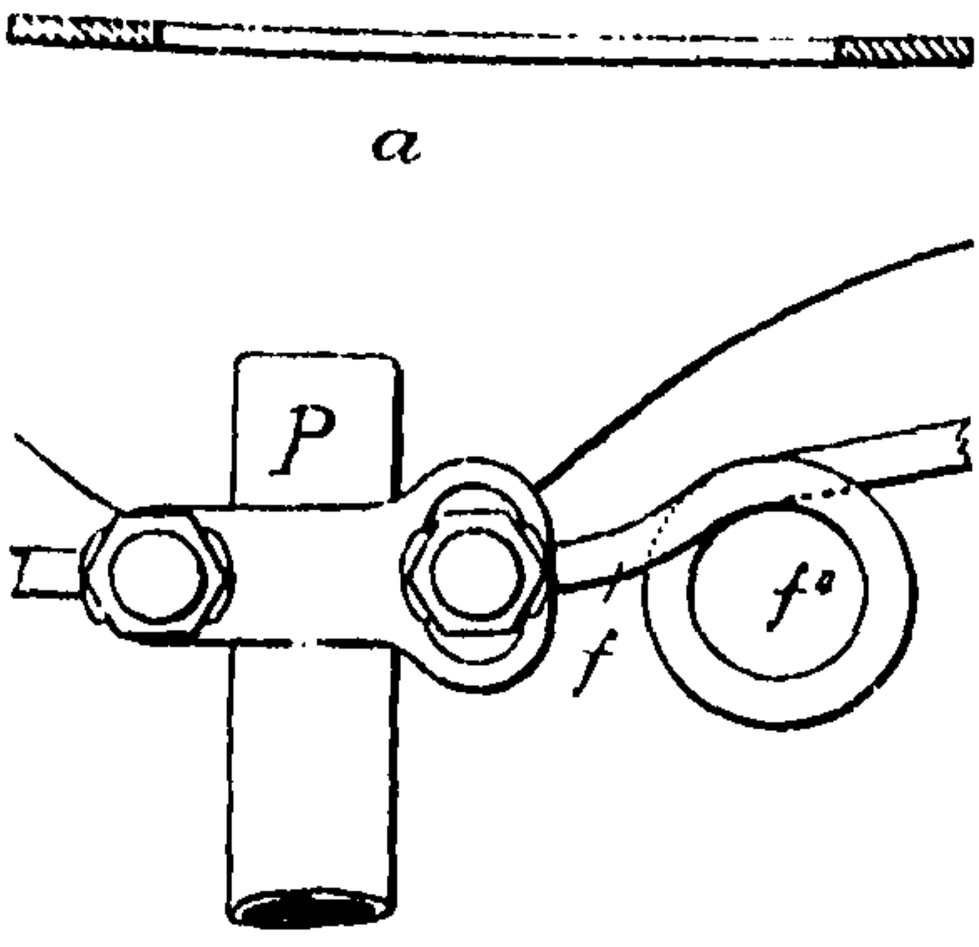


Fig. 4.

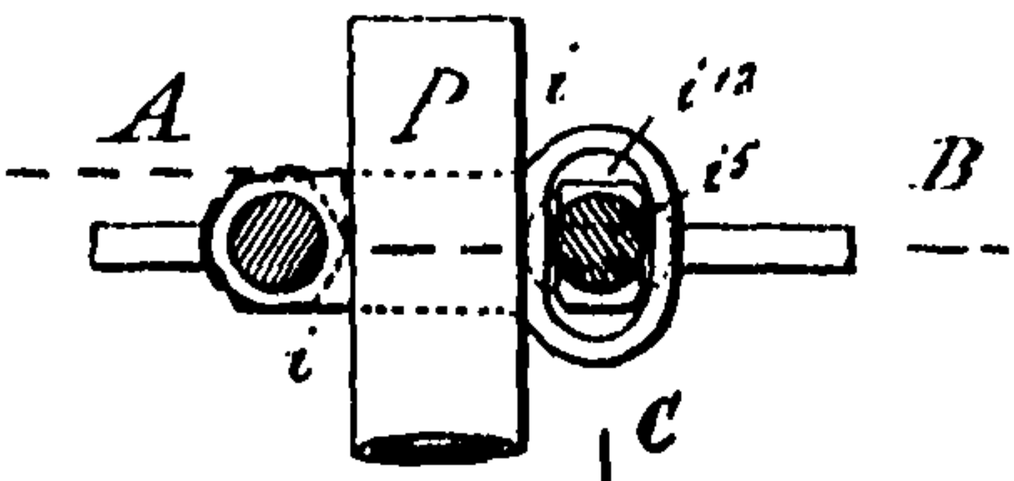


Fig. 5.

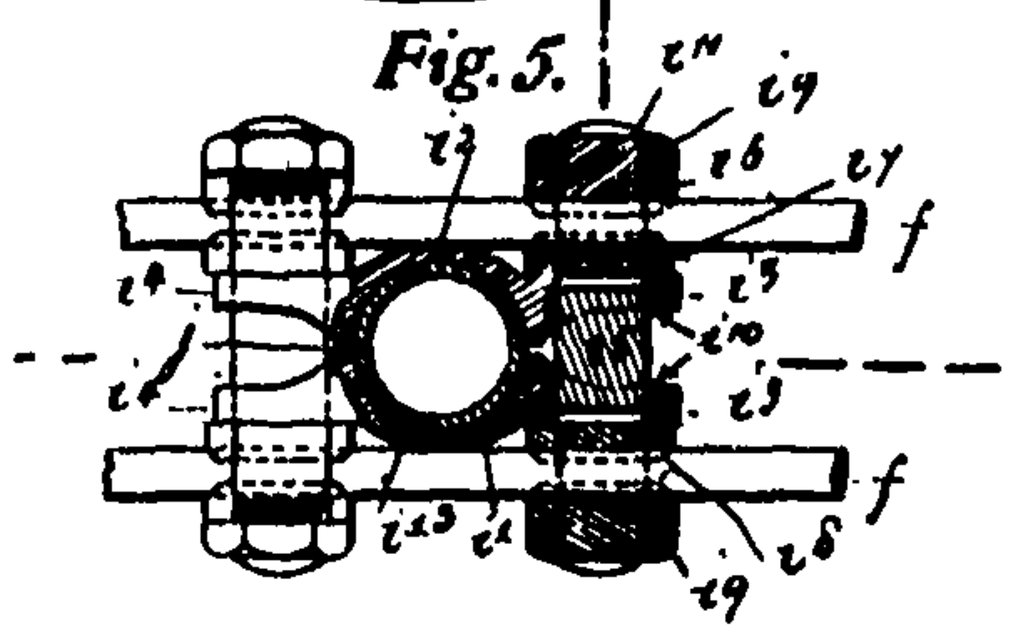


Fig. 6.

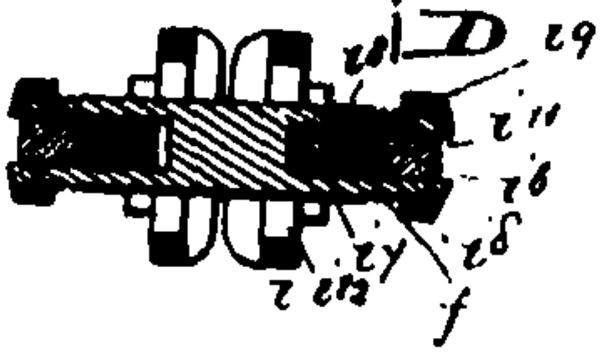


Fig. 7.

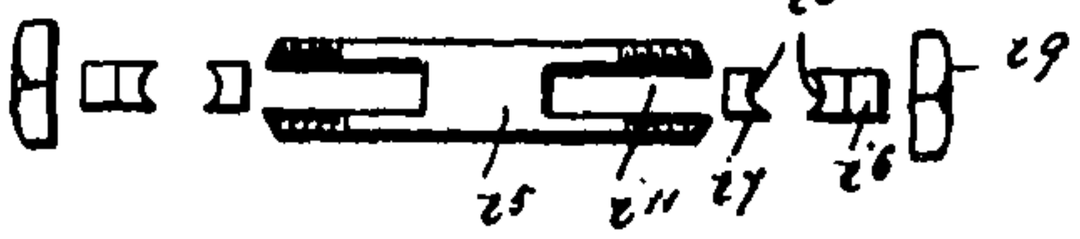


Fig. 8.

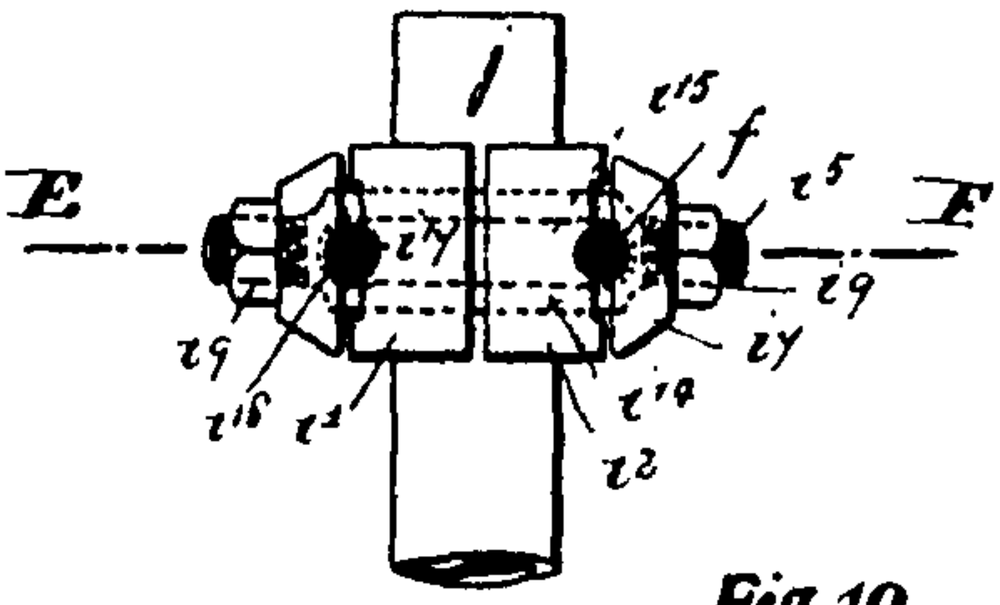
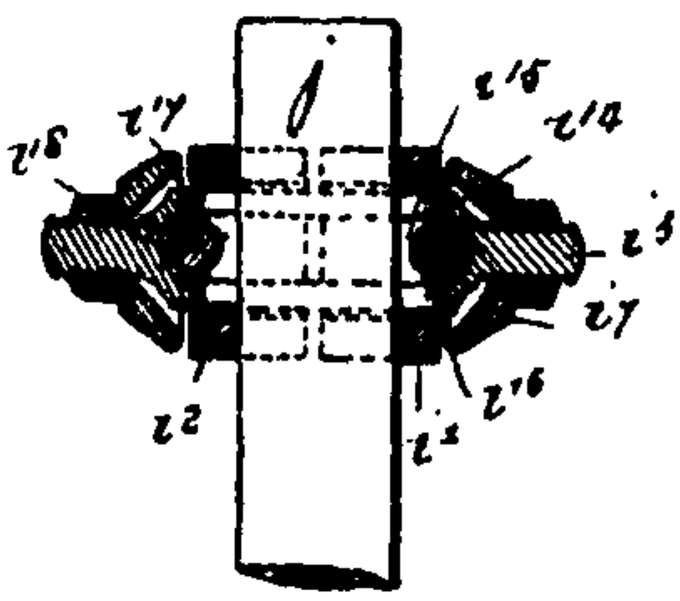


Fig. 9.

Fig. 10.



Portions of diagrams from Brooks's specification (No. 22608 of 1892).
The modification in Figs. 8, 9, and 10 constituted disconformity.

frame-rods, *f*, pass, and lie within opposed bearings, i^{17}, i^{18}, formed within the sectional clip parts i^1, i^2, and threaded washers i^7, whilst the whole of the parts are drawn together by the nuts i^9, taking upon the screwed trunnion-like ends i^8, and by such drawing up the sectional parts are closed, the frame-rods, *f* are clamped between the opposed clamping surfaces, hence the connection of the boss or clip to the framing, and at the same time the sectional parts i^1, i^2 are drawn upon the pillar *j*.

"Instead of the cross-pins i^6 in Figs. 4, 5, 6, and 7 being slotted at their ends, &c."

The last four claims were:—

"Fourthly:—In a saddle-frame and seat-pillar boss connection, consisting of sectional and clip parts adapted to embrace the pillar and to be drawn together by cross-pins, wherein or around which the seatings of opposed clamping washers or plates or their equivalents take or come and grip the frame-rods, so that on the screwing up of nuts or their equivalents upon the ends of the pins the frame-rods of the saddle are clamped to the connection, and at the same time the connection or boss to the seat-pillar or other support, substantially as described and set forth.

"Fifthly:—In seat-pillar bosses or like connections or clamping means, consisting of an inner ring body-part, having trunnion or screw pins at its two opposite sides, and internal clearances made through the ring, and which ring is embraced by section pillar-clips, having frame-rod seatings upon the two opposite sides and with seating-washers or rod-clamping plates with opposed rod-seatings coming opposite them, substantially as described and set forth.

"Sixthly:—The improvements in the general construction, arrangement, and combination of the parts of seat-pillar bosses, substantially as described and set forth in Figs. 4, 5, 6 and 7.

"Seventhly:—The improvements in the general construction, arrangement, and combination of the parts of seat-pillar bosses substantially as described and set forth in Figs. 8, 9 and 10."

Amongst other objections raised to the validity of this patent was that of "disconformity," consisting of the introduction of the device shown in Figs. 8, 9 and 10, which were alleged not to come within the provisional specification.

At the trial it was held that the device in question was a fair development of the method disclosed in the provisional.

On appeal to the Court of Appeal this decision was reversed.

Per *Smith*, L.J. (at p. 50): "It is said that this is a mere modification of the arrangement described in the provisional specification, and not in any sense a new invention. We cannot so regard it. It preserves, it is true, the possibility of lateral adjustment by drawing the framing-rods through the bearings when the nuts are loose; but this is common to every arrangement whereby framing-rods are held in position by the action of nuts upon washers. But it entirely abandons what we regard as the special object and feature of the combination, namely, the method of tilting the

saddle and holding it in its place by the operation of winged and slotted clips and two pins, one acting as a pivot, the other affording the means of fixing it in the desired position in the slotted wings. A ring which embraces the vertical pillar, and so being incapable of pivoting, makes it impossible for the frame-rods which pass through the gaps in it to be tilted, seems to us in no sense a development of the former arrangement. . . . We think that in dealing with patents for special arrangements of very familiar mechanical means, such as pins, washers, clips, or gripping-cheeks, nuts, &c., it is necessary to scrutinize the invention claimed with some nicety. By straining the doctrine of mechanical equivalents a patent for a particular combination of well-known appliances for fastening the framing rods of a saddle to a vertical pillar might be made to cover almost any other combination. . . . It seems to us to be a different means of accomplishing a different end, namely, the rigid attachment of an untiltable saddle to the vertical pillar, and therefore outside the provisional specification."

1898. THE GORMULLY & JEFFERY MANUFACTURING CO. v. NORTH BRITISH RUBBER CO., 15 R. P. C. 245.

Construction—Nature of Real Invention—Alleged Anticipation.

A patent (No. 16783 of 1890) was granted to *W. E. Bartlett* for "improvements in tyres or rims for cycles and other vehicles."

The complete specification was as follows:—

"This invention relates to tyres which consist of a flat endless band of indiarubber wider than the dovetailed groove into which it is inserted, so that it assumes an arched form when in place. I introduce between the arched outside tyre and the circular bottom of the metal rim a tube constructed of cloth and indiarubber provided with a branch for filling it with compressed air. By this arrangement the outer band-tyre may be reduced in thickness, and while assisting in sustaining the pressure (from weight) on the outer band, the lateral pressure of the inside air-tube will press its edges tightly against the dovetailed flanges of the metal rim, and thus be effective in holding it more firmly against the flanges of the metal rim at the momentarily bearing part of the tyre. It will be obvious that one advantage of this arrangement is that successive outside bands or tyres can be renewed from time to time without the necessity of wasting the tubular air-chamber between it and the metal rim, and thus greater economy will be attainable. It will be generally most convenient to have the filling-tube of the tubular air-chamber projecting from the surface of the tubular air-chamber resting on the metal rim, in which a hole is bored through which to pass the filling-tube.

"Where thin outer tyres are used I slightly thicken their edges where they lie inside the trough."

"DESCRIPTION OF THE DRAWINGS.

"Figs. 1 and 2 are transverse sections of wheels made according to my invention; *a* is the outer tyre of indiarubber or other elastic material, *b* is

Fig 1

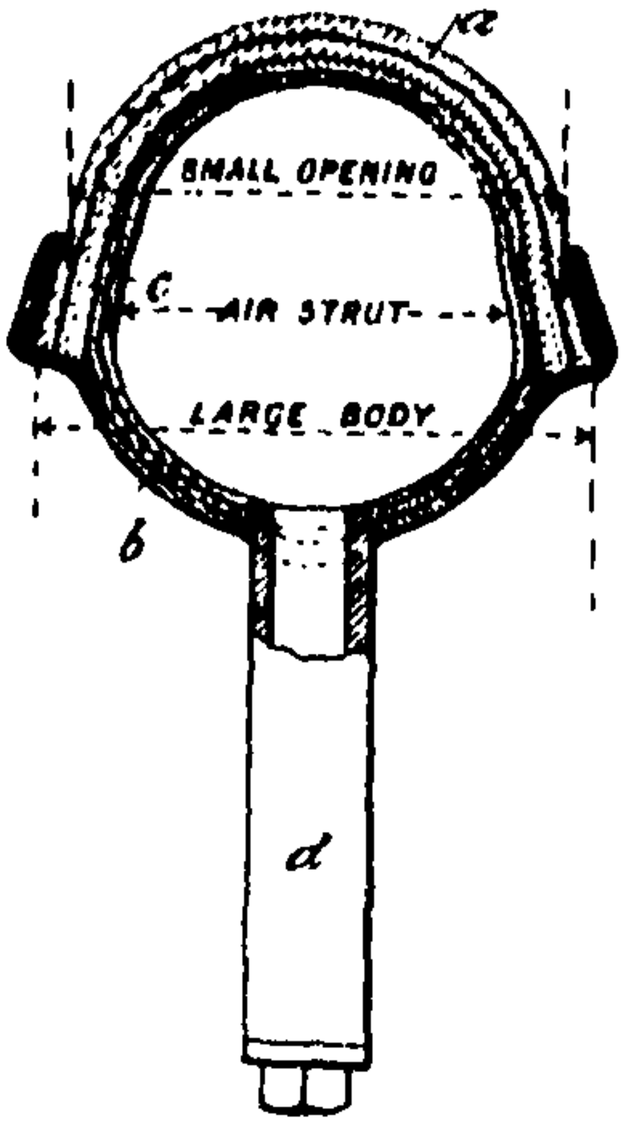
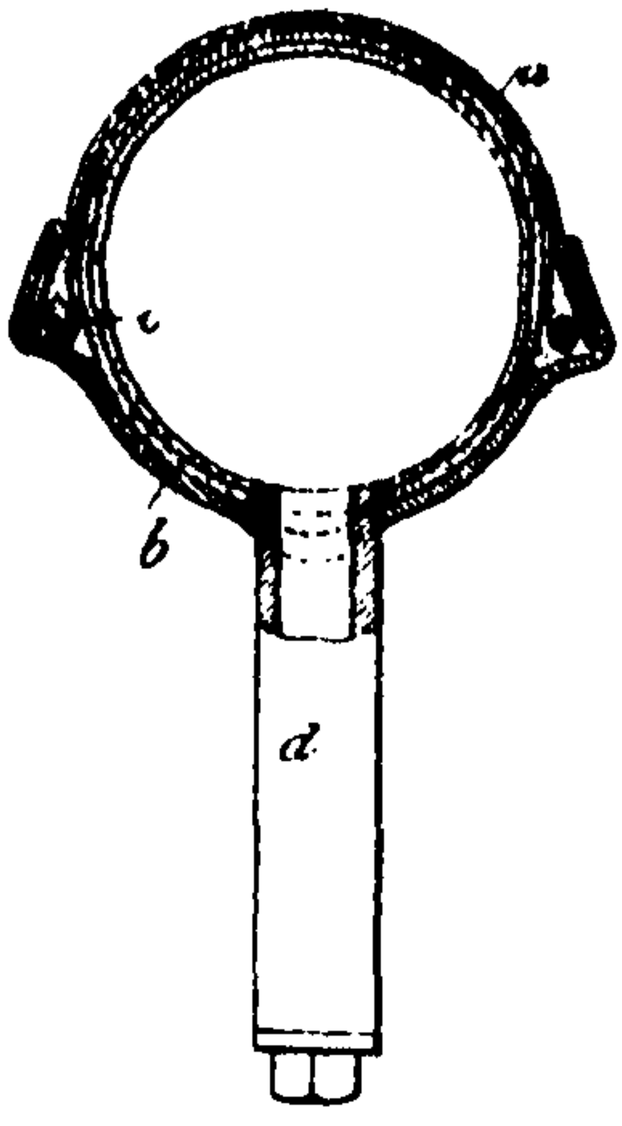


Fig. 2



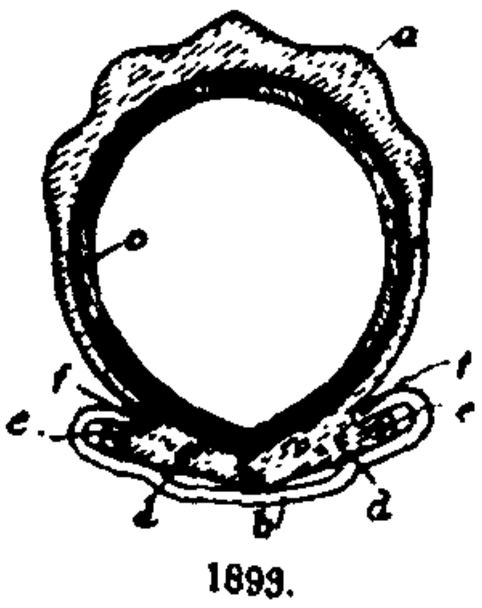
From Bartlett's specification, with addition of words in Fig. 1 indicating defendant's theory of the action of the tyre.

a metal tyre or rim, *c* is an air-tight tubular chamber, and *d* is the filling-tube."

The claims were:—

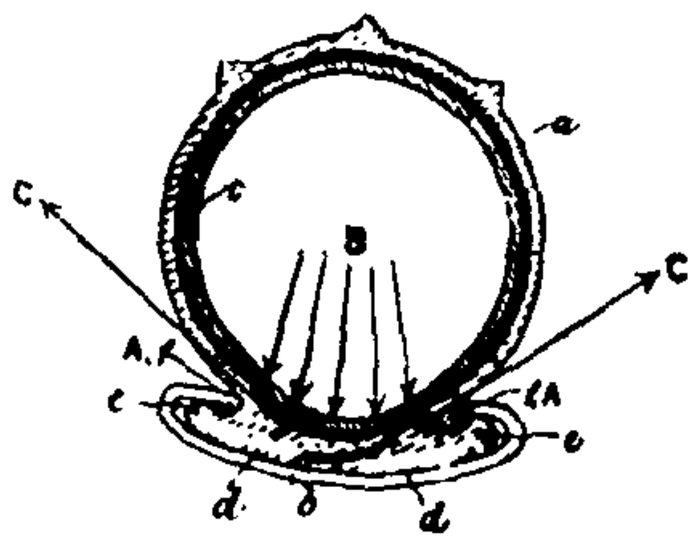
"(1) The combination of a grooved rim or metal tyre, and an arched tyre of indiarubber or other flexible material held in the groove by the pressure of an inflated tube within the arch which forces its edge against the sides of the groove substantially as described.

"(2) Tyres or rims for cycles and other vehicles consisting of the parts *a*, *b*, *c* combined and arranged substantially as described and shown in the drawings."



1893.

FIG. 3.



1894.

FIG. 4.

Sections of infringing tyres.

This was an action for infringement. One form of the alleged infringement is shown in Figs. 3 and 4, in which *a* is the outer cover, *b* the rim, *c* the inner air-tube (rubber alone), *e*, thickened lugs projecting into and held by

the inturned edges or hooks, *f*, of the rim. The only difference between the two tyres shown is the overlapping in the 1894 tyre.

The defendants' contention was that their tyres acted differently from the plaintiffs', which they alleged acted as if it were "dovetailed" into the rim. This is shown in Fig. 1 by the addition of words from the defendants' case as submitted to the House of Lords. They alleged that in their tyres the air-pressure, being everywhere normal to the tube (as shown by the arrows, B, in Fig. 4), produced a tangential strain or pull (shown at *c*) which was resisted by the lugs *f*.

At the trial and in the Court of Appeal the patent was upheld and the specification construed; the claim was held to be one not to the mere combination of the inner tube, rim, and outer tube, but for the arrangement whereby the air-pressure of the inner tube kept the tyre in position; and it was also held that defendants had infringed the patent.

On appeal to the House of Lords, the decision of the Court of Appeal was upheld.

Per Lord *Watson* (p. 253): "The appellants maintain that the letters patent do not disclose any new or useful invention, and are therefore invalid if the specification be so liberally interpreted as to bring their manufacture within its scope. In view of that defence it becomes necessary, first of all, to consider what is the true nature and merit, if any, of the invention which is described in the specification. . . ." P. 257: "The claim, as I construe it, is a claim for a method shown in the specification, or for any method substantially the same, of so connecting the ends of the outer cover with the metal rim that the ends of the cover are firmly held and detained, and that part of it which comes in contact with the ground is kept in its proper position as the outer part of the tyre of the wheel. And on a fair consideration of the terms of the specification, taken as a whole, the claim so made appears to me to embody the pith and substance of the invention. I do not think that the patentee claims to have invented the use of a metal rim, an outer cover, or an inner pneumatic tube constructed of cloth and indiarubber, either singly, or as forming in combination the tyre or felloe of a wheel for cycles or other vehicles. In my apprehension what he does claim as a novel invention is the mode which he has described of making such an attachment between the ends of the cover and the edges of the metal rim as will serve, if I may use the expression, to consolidate these three component parts of the tyre, whilst the wheel is in motion, by retaining both the cover and the inner tube in their right positions. According to that view of the specification there is no evidence tending to impeach either the novelty or the utility of the invention."

Lord *Shand* (p. 256): "This view" (that the patentee was confined to the use of "cloth and rubber" air-tube) "would, it appears to me, have been sound and irresistible if, on a true construction of the patent, the inner tube in its form and material and mode of action had been the point or essence and substance of the invention, or if the invention claimed had been merely the combination of outer tyre, inner tube, and metal rim

—a claim which, it appears, however, would have been clearly open to the objection of want of novelty. But I am satisfied that the patentee's claim is not for any such combination, nor for any specialty in the form, material, or application of the inflated inner tube to the outer indiarubber tyre so described as to make the degree of expansion of which the inner tube is capable and the material of which it is composed essential features of the invention. The essential feature, which was clearly novel, appears to me . . . to be in the arrangement and construction of the flanges of the metal rim and the edges or ends of the outer indiarubber or guttapercha tyre, which, when acted on by the inner inflated tube (whether capable of more or less expansion), produces a grip which keeps the outer tyre in its place when the wheel is in use on the road."

1898. THE MAXIM NORDENFELT, &C., CO. *v.* ANDERSON, 15 R. P. C. 422.

Construction—Range of Proportions given—Narrower Claim—Dictum as to Benevolent Construction.

A patent (No. 4477 of 1889) was granted to Sir *H. S. Maxim* for "improvements in the manufacture of explosive compounds."

The complete specification commenced by stating that the improvements produced a suitable powder for firearms. It continued: "In the manufacture of explosive compounds according to my present invention, I mix dissolved gun-cotton or pyroxyline with nitro-glycerine, nitro-gelatine or similar material and with oil, preferably castor-oil." Then follows a statement of the reasons for using "castor-oil or other suitable oil," and the resulting advantages.

The specification then continued: "I produce an explosive compound which is advantageous for various purposes, by mixing the gun-cotton, the nitro-glycerine, nitro-gelatine, or similar substance and the castor-oil in, or about in, the following proportions, viz., from 2 or 5 per cent. of the castor-oil, from 10 to 16 per cent. of the nitro-glycerine or the like, and the remainder of gun-cotton." The resulting product was then described, and details given for the process of manufacture, in one of which acetone was used as a solvent.

The first claim was for:—

"An explosive compound consisting essentially of gun-cotton or pyroxyline mixed with nitro-glycerine, nitro-gelatine, or similar material, and with castor-oil or other suitable oil, for the purpose above specified."

The other three claims were for processes which included acetone as a solvent.

This was an action for infringement of the above patent by the manufacture of "cordite," which consisted of nitro-glycerine 58 per cent., gun-cotton 37 per cent., and vaseline 5 per cent., together with acetone as a solvent which did not form part of the final product.

It was proved at the trial that at the date of the patent it was thought by chemists to be impossible to make a powder with gun-cotton which contained any very large percentage of nitro-glycerine. The inventor (an eminent chemist) thought the maximum quantity should be in the United Kingdom 16 per cent., and in other countries 10 per cent.

One of the processes in which acetone was used would not be worked with a mineral jelly, as vaseline, instead of the castor or vegetable oil.

Held, at the trial, that the specification claimed the product only when made of the ingredients in the proportions mentioned in the body of the specification. (14 R. P. C. 371.)

The learned judge pointed out that if vaseline be included as an "other suitable oil" one process claimed would not work, and so the patent would be invalid: "It affords a strong if not a conclusive argument in favour of construing the patent if possible as not covering the use of vaseline."

Held, by the Court of appeal, that the learned judge's decision was correct; Lord *Esher*, M.R., approved of the above dictum as to the vaseline. (14 R. P. C. 671).

On appeal to the House of Lords:—

Held, that the claim must be read in connection with the whole specification, and that it was for the powder made of the ingredients only when combined within the range of proportions mentioned.

Per Lord *Herschell* (at p. 327): "In construing a claim of this kind you must look not only to one part but to the whole of the specification. You cannot stop at the first part of it where you find that it is to be dissolved gun-cotton, but you must equally read the succeeding paragraph beginning, 'I produce an explosive compound . . . by mixing the gun-cotton, &c.'" P. 428: "It seems to me difficult to doubt that the patentee is there describing his invention, namely, that it is mixing them in or about in those proportions by means of which mixing that he is able to produce an explosive compound, &c. . . . That is farther borne out by the range which he gives, . . . it is 'in or about in the following proportions,' which of course allows a considerable range—a general range."

1898. OSMONDS *v.* THE BALMORAL CYCLE CO., 15 R. P. C. 505.

Disconformity—Embarrassing Claim.

In 1894 a patent (No. 2520) was granted to *F. J. Osmond* for "improvements in adjusting the driving-chains of safety-bicycles and other velocipedes."

The complete specification described by means of 21 diagrams the details of the invention. In carrying it out it was necessary to remove the step, which consisted of a projection, a prolongation of the axle of the driving-wheel.[1] As a substitute for it Fig. 22 showed a blank stamped out,

[1] The case is only noted here so far as the issue of disconformity is concerned.

which was folded at its middle, as shown in elevation Fig. 23 and plan Fig 24, rivetted at *n* and secured by the pin *p* and nut p^2 to the end *c* of the chain-stay.

The claims were :—

"First. The improvements in driving-chain adjusting mechanism of velocipedes hereinbefore described and illustrated in the accompanying

Fig. 22

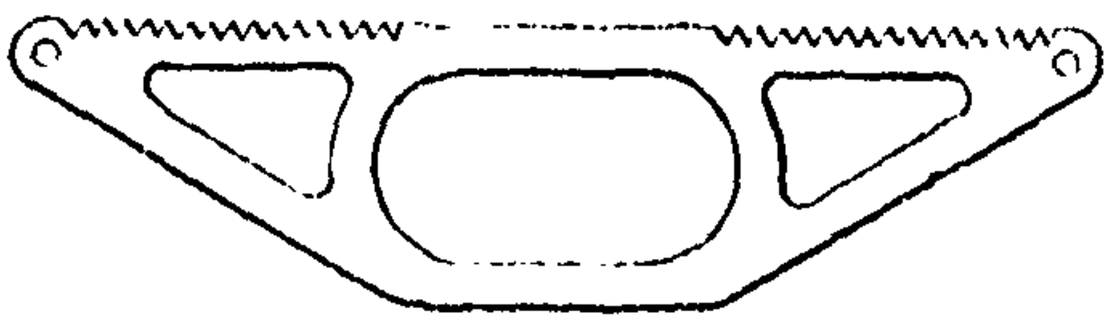


Fig. 23

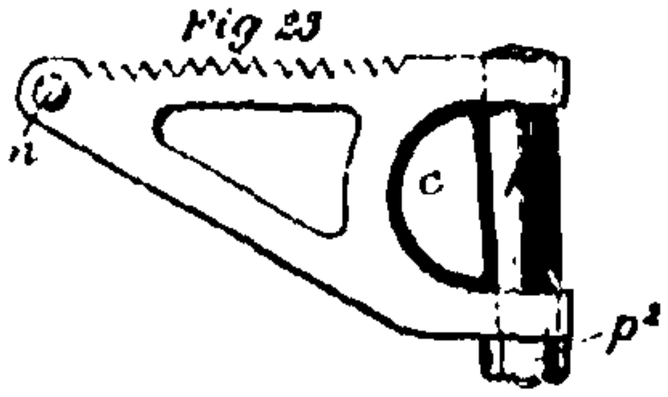
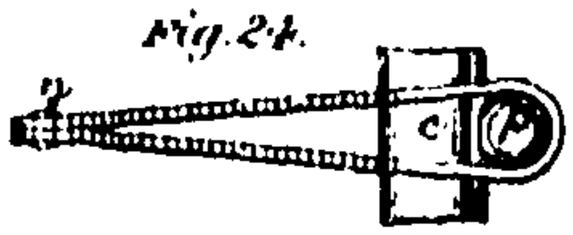


Fig. 24.



From Osmond's specification.

drawings, that is to say, making the ends of the arms or branches of the chain-stay hollow or tubular and longitudinally slotted on their inner sides, and arranging on the ends of the driving-wheel spindle carrier-blocks for taking into and working in the said hollow or tubular ends of the chain-stay, the said carrier-blocks being moved in the hollow or tubular chain-stays in the ways hereinbefore described and illustrated."

The second, third, and fourth claims referred to particular modifications described in the drawings.

The fifth claim was for :—

"The combination with the chain-adjusting gear for velocipedes hereinbefore described and claimed when used with semi-circular or semi-elliptical chain-stay arms of foot-steps of the kind hereinbefore described and illustrated in Figs. 22, 23, and 24 of the accompanying drawings."

The provisional specification contained no mention whatever of the new step.

At the trial of this action for infringement certain anticipations were alleged, and also the issue of disconformity was raised.

The learned judge held that claims subsequent to the first were otiose and needless, and did not enlarge the monopoly, as they only claimed the use of invention in the first claim with other things in addition, *e.g.*, the step in the fifth claim. The patent was upheld.

On appeal to the Court of Appeal :—

Held, that the claim to the use of the step in the combination with the gear was not foreshadowed in the provisional specification, and that the patent was therefore invalid.

Lindley, M.R. (at p. 518), referred to the fifth claim, and continued: "That raises a question which to my mind is new and important. He certainly is claiming something there; he certainly is claiming a combination of his chain-adjusting gear with that kind of foot-step; or (transposing the words) he is claiming a combination of the use of that step with his gear. Now, no such intention is shadowed forth in the provisional specification at all." The complete specification is therefore defective. The answer to that is that one cannot use the new gear, and therefore cannot use it with the step. "But that is not quite an answer to the difficulty. There is no doubt whatever that the addition of that step does improve the whole machine, and it is extremely embarrassing to anybody engaged in the trade to find a claim of a particular step in combination with something else; and it is obvious to us, who see so much of the use made of these patents, and the abuse made of them, that if that claim were allowed to stand it might embarrass people a great deal, and might be made an instrument of extortion and blackmail. It is a claim which ought never to have been put in, and which ought unquestionably to be struck out."

Note.

The stronger ground on which this case was decided is that the claim is embarrassing and misleading to persons engaged in the trade. Testing it in the manner suggested (*post*, p. 607), it would obviously be unfair to a rival inventor who invented the step, say immediately after the date of the provisional and before *Osmond* thought of it, to include it in *Osmond's* patent. The apparent distinction in principle between this and the dynamite case (*ante*, p. 274) is that here the new element in the combination is in itself a new invention, in the former case the additional element was old.

1899. DREDGE *v.* PARNELL, 16 R. P. C. 625.

No Invention—No subject-matter.

A patent (No. 18694 of 1891) was granted to *E. Dredge* for "an improved method of cutting necktie linings with a band-knife or other power knife."

The complete specification in describing the invention confined it to band-knives, and mentioned the difficulties met with in cutting soft material like "swansdown" by the then known methods, and continued: "By my process any pattern, whether straight or curved, or recessed or partly straight, and partly recessed or curved, can be rapidly cut, and in piles of 36 to 72 thicknesses deep, a feat never before attempted. Indeed, almost any thickness could be cut, if necessary, with a band-knife of sufficient size and power." The invention was described by means of two diagrams, Fig. 1 a perspective view, and Fig. 2 a plan of the templets as arranged on the cloth. The templets *a* were secured by bolts, *b*, and nuts, *c*, as shown

in Fig. 1. The advantages of the alleged invention were described. The claim was for "the method of cutting at one operation a large number of necktie linings by means of a revolving band-knife, the material being clamped firmly between two templets of identical form, as herein described and set forth."

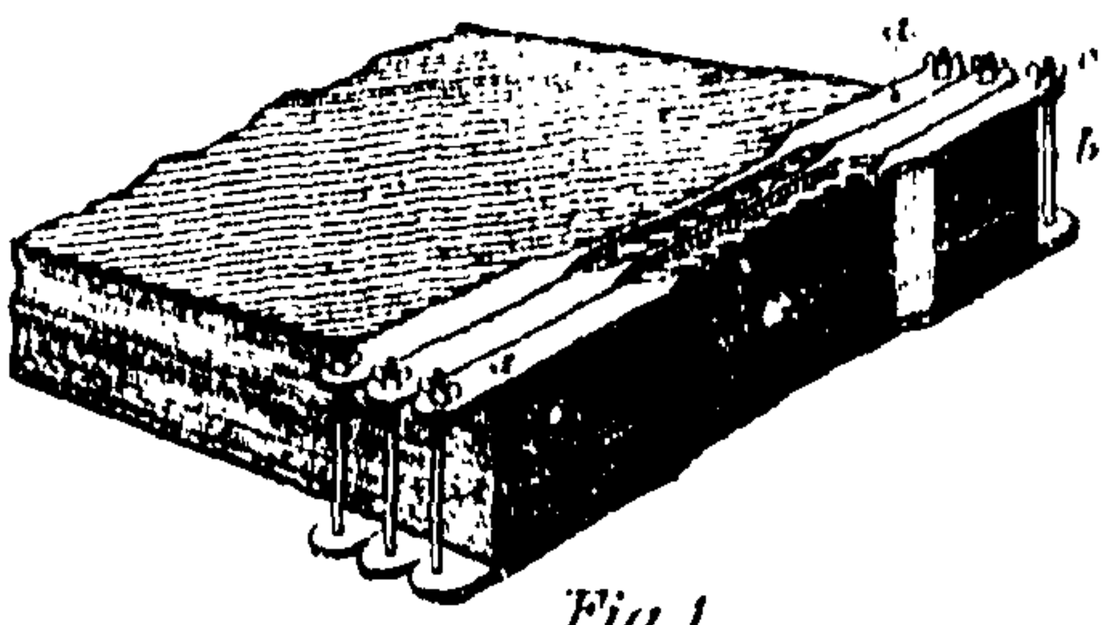


Fig. 1

From Dredge's specification.

It was proved that the process was new and useful, in so much that it enabled a band-knife to be used where a hand-knife had been previously employed. No anticipation was alleged. Soft articles before being cut out had previously been stiffened by being pressed between hard surfaces. It was argued that the merit lay in clamping identical pairs of templets close together, so that the knife should be guided by them.

Held by the Courts of First Instance and Appeal that there was not sufficient invention to support a patent.

On appeal to the House of Lords:—

Held, that the patent was invalid for want of patentable invention.

Per Lord *Halsbury*, L.C. (at p. 629): "It would be more true to say that the skilled workman found out in the arrangement of his tools that he ought to do what has been done here than to say that he had made an invention; because this is only an arrangement of his tools, and they are applied practically in the same way . . . adapted to that particular material . . . it is a rather more skilled and experienced application of the same old and well-known tools to the same sort of process that is applicable to fabrics of a firmer texture . . . I quite admit the difficulty there is, when once you admit invention, in saying, if the invention is an invention at all and is at all useful, that you can draw any exact or precise line as to the quantity of invention that is necessary to support a patent; but I confess I go a little further than the learned judges below, because I think, considering this alleged invention in its real essence and nature, there is no invention at all. It is simply a more skilled application of well-understood tools and well-understood processes."

Lord *Macnaghten* pointed out the difficulty of determining the degree of ingenuity to constitute invention. "In this case I do not think there is sufficient invention, and when I say 'I do not think there is sufficient invention,' I should mean the same thing if I said there was no invention or no substantial invention. I think the three phrases all mean the same thing. I do not think that it requires any study or thought to arrive at the instrument at which the plaintiff has arrived. I think any ordinary skilled workman setting his mind to accomplish that object would have come to the same result."[1]

[1] The last sentence here quoted bases the decision on the principle discussed *ante*, p. 35.

1899. PNEUMATIC TYRE COMPANY, LTD. *v.* LEICESTER PNEUMATIC TYRE, &c., CO., 16 R. P. C. 531.

Alleged Disconformity—Fair Development.

A patent (No. 14563 of 1890) was granted to *C. K. Welch* for "improvements in the construction of rubber tyres and metal rims or felloes of wheels for cycles and other light vehicles."

The provisional specification [1] described the objects of the invention to be "easy running, reduction of vibration, and security of the rubbers" to the rims. Former rubber tyres were fitted in grooves, and were thereby cut. In this invention the tyres are soft and larger, and are constructed to fit "either wholly or partly outside the metal rims or felloes," which may be of special shape. The rims may be made D-shaped or convex on the outside. The rubber tyres may be saddle or arch shaped, or thickened with a groove inside to receive the rim, the tyre to be secured by "two small holes through the rubber, one on each side of the rim, through each of which a suitable wire may be put, and the ends may be connected with a nipple having a right and left hand thread," or a similar device, "or I may use the well-known spring-wire." The nipples may be hexagonal. The wires may be connected after the tyre is placed on the rim, and drawn together by a wrench. The tyres may be of shapes different from what they will be on the felloe, *e.g.* a closed horseshoe, the rubber being opened when being put on. The sides would be left, by projecting, more compressible. "I may also make the rubber tyres larger in circumference, and draw them into the rims or felloes by the wires." This would cause the surface of the rubber to be compressed, generally making it still more indestructible and easy running." The rubbers may be lined with canvas. The outer surfaces may be of any form, and the inner grooved, for lightening, reducing vibration, or cementing to the rims.

"The above-described improved rubber tyres are also applicable to cycle and other wheels in present use or made in the ordinary way in which case they may be fitted over the existing rubbers without necessarily making any alteration, or I may substitute in place of the ordinary rubbers a lighter or cheaper material, such as cork.

"I may also fit this class of tyre to the ordinary rims by modifying the form of the inner surface of the rubbers, in which case a hole through the centre may be an advantage for lightening the same."

Cement may be used in addition to the wires. Another method of securing the rubber was given. The rubber tyres, "being outside the metal rims or felloes," are free to expand laterally.

The complete specification described the invention in detail, with a large number of diagrams corresponding to various forms of rims and tyres,

[1] The provisional is here summarized, the passages bearing on disconformity being *verbatim*. The case is noted here only as regards the issue of disconformity.

e.g. Figs. 1, 2, 5, and 6. In all the diagrams *a* is the metal rim, *c* the tyre, *d* canvas for supporting the wires *e*, *f* the right and left handed screw-nipple

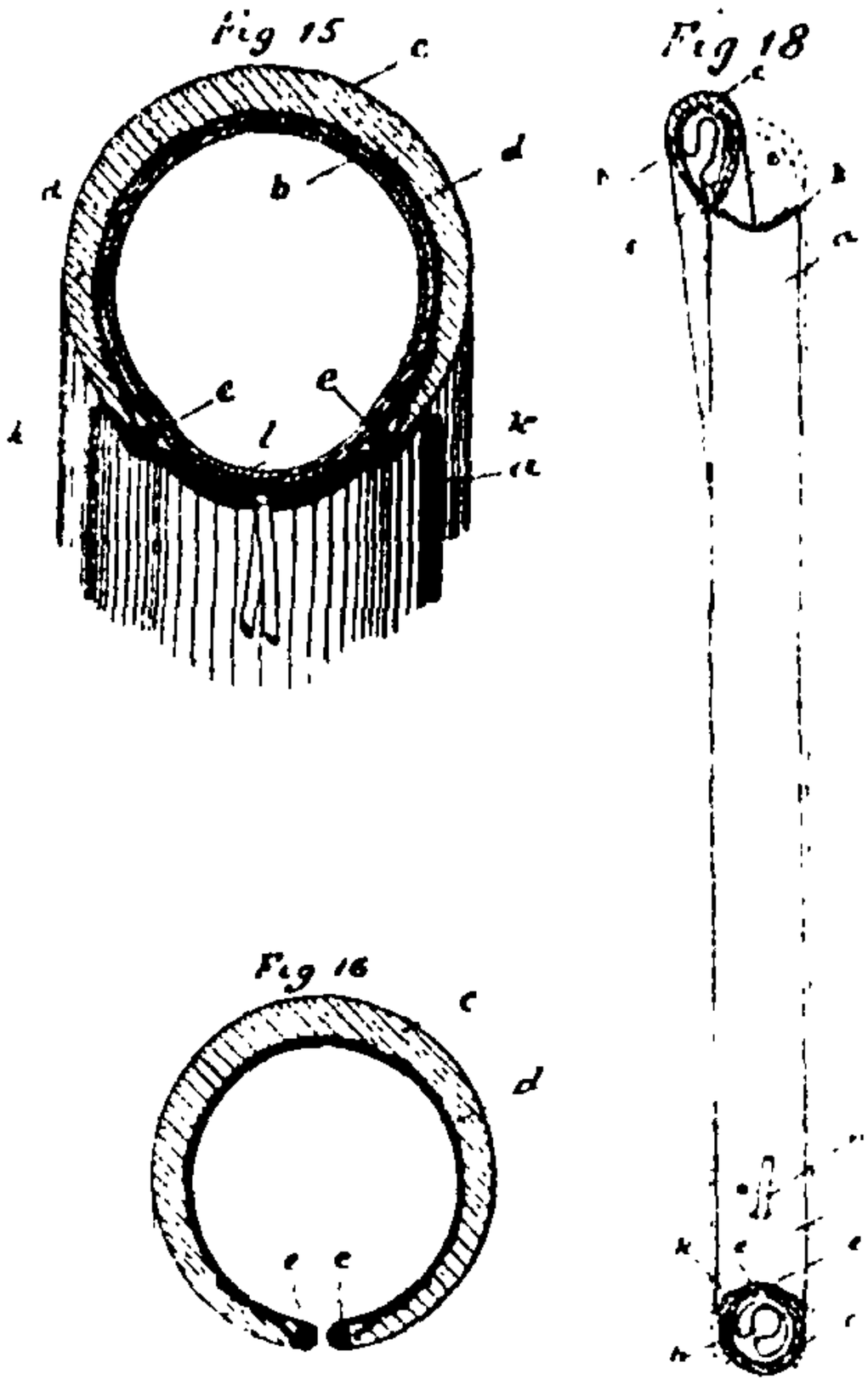
Diagrams from Welch's specification.

for tightening the wires in the aperture *g*. When the rims are shallow, as in Fig. 6, "the tyres may be lifted and held from the rim by any convenient tool, such as a screw-driver. By making this form of rim very shallow, I may connect both the wires beforehand, and force the rubber into its place on the rim. Fig. 14 showed the application of the invention to an ordinary cushion tyre, *b*.

The application of the invention to pneumatic tyres is shown in Figs. 15, 16, and 18. In these diagrams *k* represents the "shoulders" in the rims to receive the wires when the tyre is fully inflated, *l* a canvas strip along groove in rim, and *m* the air-valve, the other letters having the same significations as before.

The action of this device is thus described :—

"To secure the whole on the rim the inflatible tyre is first placed within the outer or protecting tyre *c*, the wires or cores *e e* are then closed together, allowing the tube *m* to project between, this is then pushed



Developments alleged as disconformity.

through the hole in the rim *a*, and the two wires or cores are placed into the bottom of the concave groove for about two-thirds of the whole rim, the remainder of the wires or cores with the tyre can then be lifted or sprung over the edge of the rim opposite the tube *m*, as shown in the drawing; the inner tube or tyre *b* may now be inflated with a small pump in the usual manner, this causes the wires or cores *c*, *c*, to part, until finally they are pushed into place over the shoulders *k*, *k*; thus, the wires being smaller in circumference than the edges of the rim, the inner tube or tyre may be pumped tight against the inner surface of the protecting tyre, thus the whole is rendered secure on the rim as shown in Fig. 15, and also in dotted lines in Fig. 18. To detach the rubber tyre or outer covering from the rim, the air must first be allowed to escape when the wires or cores ma, be pinched or closed together round the rim by the thumbs and fingers until the wires can be lifted over the edge of the rim; the whole can then be removed as shown in Fig. 18."

Seven of the claims related to Figs. 15 to 18 and the mode of attaching and removing the tyres as above described.

This was an action for infringement of the above patent. In addition to a number of other grounds for invalidity, that of disconformity was raised.

As to disconformity, it was argued that the provisional only disclosed a *convex* rim, on which the tyre was kept in position by wires *outside* the rim, which wires exerted *contractile force* by being screwed tight or "sprung" on if spring wires, whereas the complete disclosed a tyre kept on by air-pressure as the active force, the *inextensible* wires only operating by *reaction* to resist the results of inflating the tube, and the automatic mode of attachment (*i.e.* without the use of a wrench). On the other side it was contended that the tyre proper was on a convex surface, *viz.* the inflated tube; that the complete only showed the modifications necessary to adapt it to pneumatic tubes, which were a natural development of the invention; and that it was sufficiently foreshadowed in the provisional (as quoted *verbatim* above).

It was proved that at the date of the patent pneumatic tyres were known and used, although only to a slight extent.

The Courts of First Instance and of Appeal gave judgment in favour of the plaintiffs.

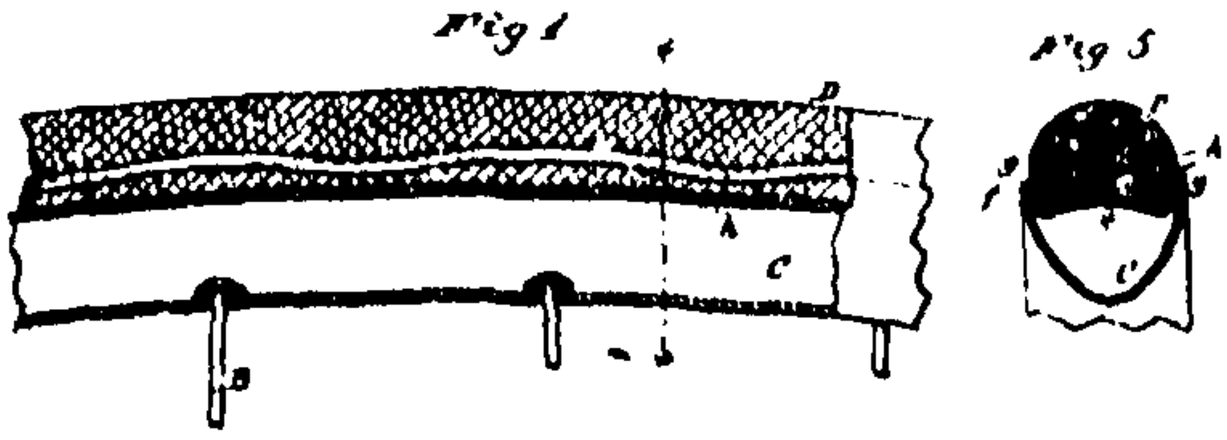
On appeal to the House of Lords:—

Held (comparing the case with the facts and arguments in *Newall* v. *Elliott*, *ante*, p. 201), that the invention objected to was the same invention as described in the provisional specification, with a development that almost must necessarily have been discovered in the interval between provisional and complete specifications, and that the patentee was bound to disclose it in his complete.

1897. PNEUMATIC TYRE CO. *v.* EAST LONDON RUBBER CO., 14 R. P. C. 573.

In this case, besides the objection of disconformity, that of want of novelty was raised to the validity of *Welch's* patent.

Several prior specifications were put forward as anticipations. The nearest to *Welch's* was an American one of *Latta* (341811, 1886). It described the construction of a velocipede. The portion alleged to anticipate *Welch's* invention is illustrated by Fig. 5, in which D, the tyre, is concave on the inner side (*f*) to fit the crown (*e*) of the rim, (*h*) represented "spring wires" embedded in the rubber tyre. These wires were to be crimped in a serpentine form, and their ends preferably secured before the tyre is moulded, so as to constitute complete rings. Cementing was mentioned as an alternative. The claims spoke of "an elastic tyre having a wavy or serpentine spring wire moulded" therein. No mention of an inextensible wire was made.



Latta's method of wiring on tyres.

Held, at the trial and by the Court of Appeal that *Welch's* invention was novel, *Latta's* wires performing a different function in the tyre.

The decisions on disconformity were the same as noted in the preceding case.

1899. KYNOCHS, LTD. *v.* WEBB, 17 R. P. C. 100.

Construction of Claim—Limit of Benevolent Construction.

A patent (No. 2343 of 1891) was granted to *T. G. Webb* for "an improvement in apparatus for concentrating sulphuric acid."

The invention was thus described in the complete specification :—

"Fig. 1 is a longitudinal section of the furnace-chambers and concentrating-vessels.

"Figs. 2 and 3 are sectional plans on the lines 2—2 and 3—3 of Fig 1 respectiveiy.

"Figs. 4 and 5 are transverse sections on the lines 4—4 and 5—5 of Fig. 1 respectively.

"A long rectangular furnace-chamber is arranged with two fires, A and B, from which the hot products of combustion pass into chambers, C and D, behind a wall, E.

The space in front of the wall E is covered by slabs, F, arranged in

steps, and on each step is placed a deep cylindrical glass vessel, G, formed with a projecting lip forming an overflow spout at its upper edge. In each of these vessels is loosely placed at an angle a tapered glass tube reaching down to its bottom from the spout of the next higher vessel, the lower end of this tube having an outlet slit along its side. Around the vessels G, near to their upper edges, is formed a floor, H, which may be of iron plate

FIG. 1

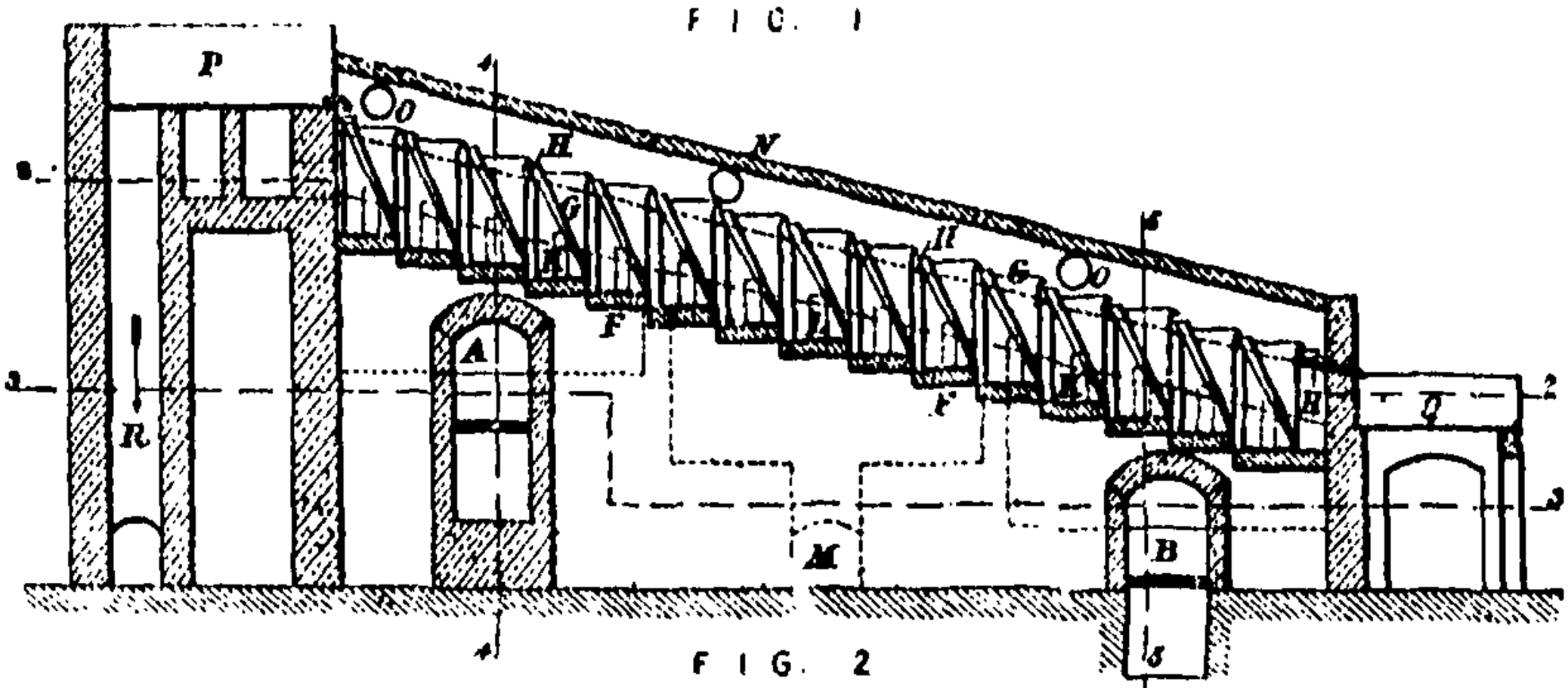


FIG. 2

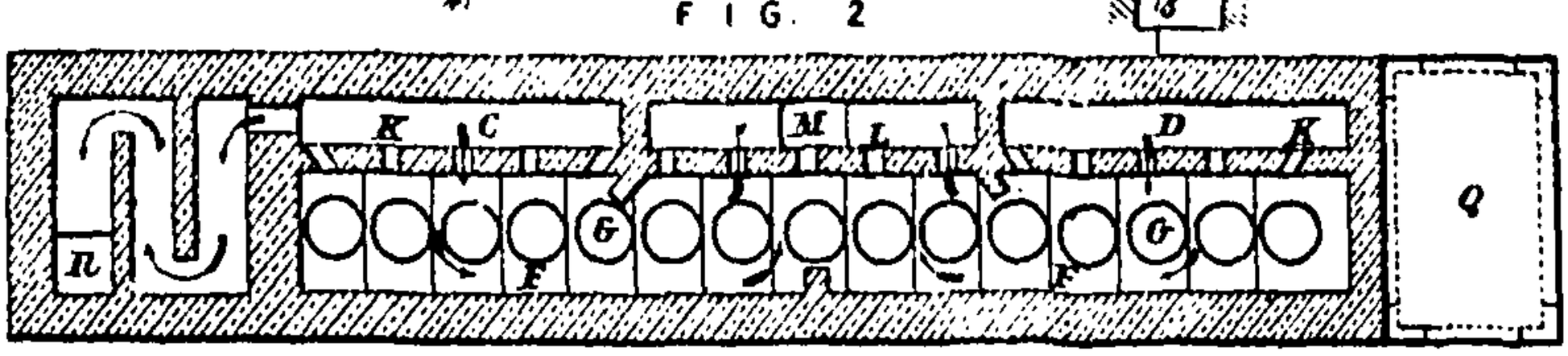
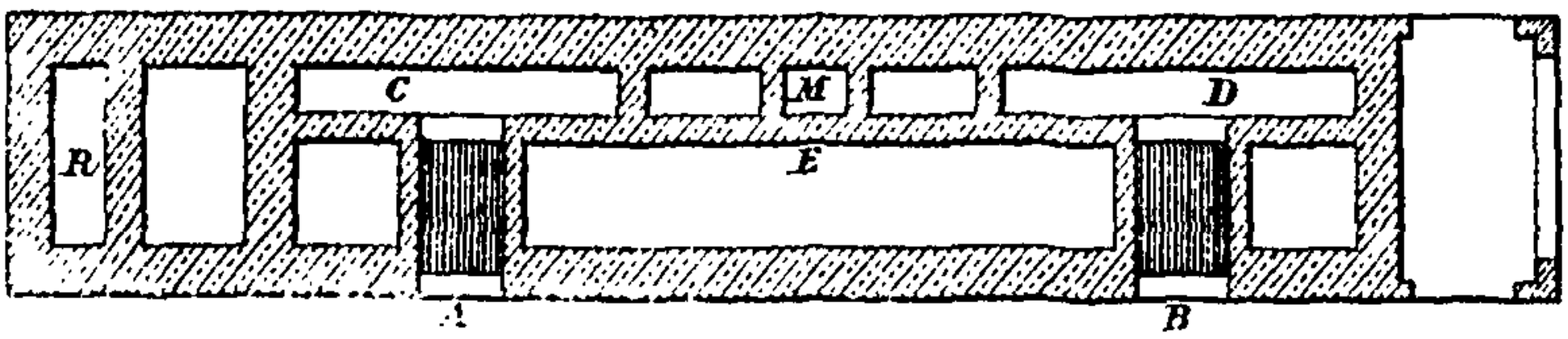


FIG 3.



Diagrams from Webb's specification (No. 2343 of 1891).

made sloping as shown, or it might be made in steps corresponding with the slabs F.

"Passages, K, are made for the hot products of combustion from the Chambers C and D into the space under the floor H occupied by the vessels G, and passages, L, are made from that space for the products of combustion to the back chamber whence a flue, M, leads to a chimney. Above the tops of the vessels G there is a roof N, and from the space under it pipes, O, serve to carry off fumes. At the upper end of the slope is a tank, P, containing the weak acid that has to be concentrated, and at the lower end of the slope is a tank, Q, to receive the concentrated acid. Hot products of combustion from the chamber C circulate under the tank P, and descend a flue, R, leading to a chimney.

"The apparatus is worked in the following manner. The hot products

of combustion from the fires A and B pass into the chambers C and D, and issuing thence by the passages K, circulate around the vessels G, heating them, and finally flow away by the passages L to the chimney-flue M. Weak sulphuric acid supplied from the tank P, where it is somewhat heated, flows into the taper-tube of the highest vessel G, and is conducted by the tube to the bottom of the vessel, causing overflow by the spout of the vessel into the taper-tube of the next lower vessel, and thus the acid flows from vessel to vessel becoming more and more concentrated, until finally it overflows from the lowest of the vessels into the receiving-tank Q. The vapour and fumes evolved pass away by the pipes O.

"By arranging the overflow from each of the vessels G to descend by a tube to the bottom of the next vessel, I ensure that all portions of the liquid are subjected to heating while they reascend to overflow again. If the weak acid simply overflowed from one vessel to the next without being forced to descend, it would, owing to its comparative lightness, be apt to flow merely across the upper part of the vessel, whereas by conducting it down to the bottom it displaces a portion of the liquid above it, causing overflow of that which has been heated while ascending from the bottom.

"The numbers and dimensions of the vessels G may obviously be varied, and a single fire or more than two fires or gas-burners might be used for heating them, these appliances being arranged in any convenient manner to give an approximately uniform heat throughout the chamber containing the vessels G, without any openings which might allow cold air to strike against the glass."

The claim was in the following terms :—

"For concentrating sulphuric acid, a series of glass vessels placed on steps in a heating-chamber, each of these vessels being made with an overflow spout and having placed in it a glass tube reaching down to its bottom from the spout of the next higher vessel, arranged and operating substantially as herein described."

An action for infringement of this patent was brought by the patentee against *Kynochs, Ltd.*, in the High Court of Justice in Ireland. Besides denying infringement the defendants also contended that the patent was invalid because— *inter alia*—the invention was not new, nor subject-matter for a patent, the specification did not distinguish what parts of the alleged invention were new and what old, and that it was ambiguous and misleading.

The principal anticipation alleged was *Chance's* process (Specification No. 1243 of 1871). *Chance's* apparatus [1] (Figs. 1 and 2) consisted of a series of retorts, *a*, resting on sand, *b*, in an inclined flue, *c*, heated by a furnace, *d*, at its lower end. Dilute acid entered at the top by the pipe, passed down the funnel *e* to the bottom of the retort. The overflow of acid (more concentrated owing to evaporation) passed similarly through the pipe

[1] Fig. 1 is a cross-section through the lowest retort of the series; Fig. 2, a longitudinal section of the arrangement.

f to the next retort, until the final product issued from the lowest retort. The retorts were kept at gradually increasing temperatures by reason of the furnace being at the lower end. The steam was either carried off by a separate flue, *g* (Fig. 1), or allowed to evaporate without such flue. Other diagrams showed the mode of arrangement of the apparatus on a manufacturing scale. The claim was for the continuous process.

Another alleged anticipation showed open beakers with lips for the overflow, without tubes to bottom of vessels, but it had not been practically used.

It was proved at the trial that the invention in question produced improved results over the older combinations. The output of acid was more than doubled and the cost of fuel greatly diminished. Breakages could be immediately repaired without stopping the process.

At the trial the patent was upheld by the Master of the Rolls. (15 R. P. C. 269.)

On appeal to the Court of Appeal the lords justices were equally divided in opinion, so the appeal was dismissed. (15 R. P. C. 541.)

The defendants appealed to the House of Lords.

Held, that the patent was invalid, as the claim was wide enough to include *Chance's* invention.

Per Lord *Halsbury*, L.C. (p. 107): "It seems to me that the majority of the Court relied on the fallacious assumption that every improvement in a known patentable article was necessarily of itself a patentable improvement, and that in this case, in which I will assume in favour of the respondent that his machine is better, cheaper, and more efficient than that of the original patentee, this entitles him, not only to use the original patentee's invention, but actually to proceed against him for an infringement of his patent. . . . Now, the claim is that which explains the invention, and the width of the claim is here probably intentional. It is aimed at comprehending every form in which this invention can be used; and if *Chance's* patent were still unexpired, it would be impossible for him, in my judgment, to escape from an action for infringement if this patent were before his, and the limit within which a patentee's rights are to be confined is no immaterial or trivial matter."

Per Lord *Davey*, (p. 115): "Any one might, of course, invent an improvement in any of the parts of the apparatus or a new arrangement or some useful addition to the parts of the apparatus described by *Chance*, and (if otherwise patentable) claim protection for such improvements. But this is not what the respondent has done. He does not by his specification claim to be the inventor of any such improvement, but his claim is for the combination, and whatever merit is in his patent is the combination. Putting it at the best for him he claims a particular form of *Chance's* machine; but in my opinion, as I have already said, his claim is wide enough to cover all that *Chance* invented and described." His lordship referred to *Foxwell* v. *Bostock* (*ante*, p. 225), *Harrison* v. *Anderston Foundry Co.*, (*ante*, p. 249), and other cases, and continued (p. 116): "I will assume that the respondent's

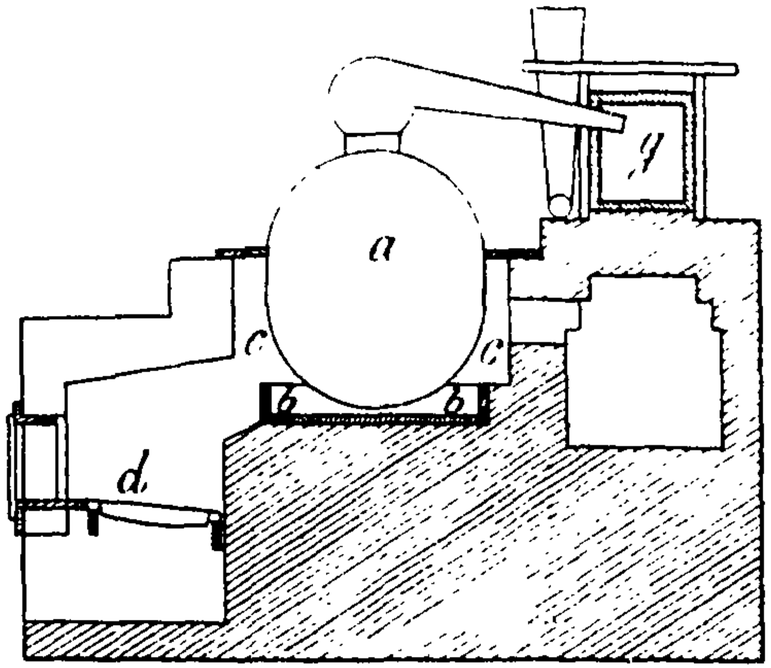


FIG. 1.—Cross-section of lowest retort.

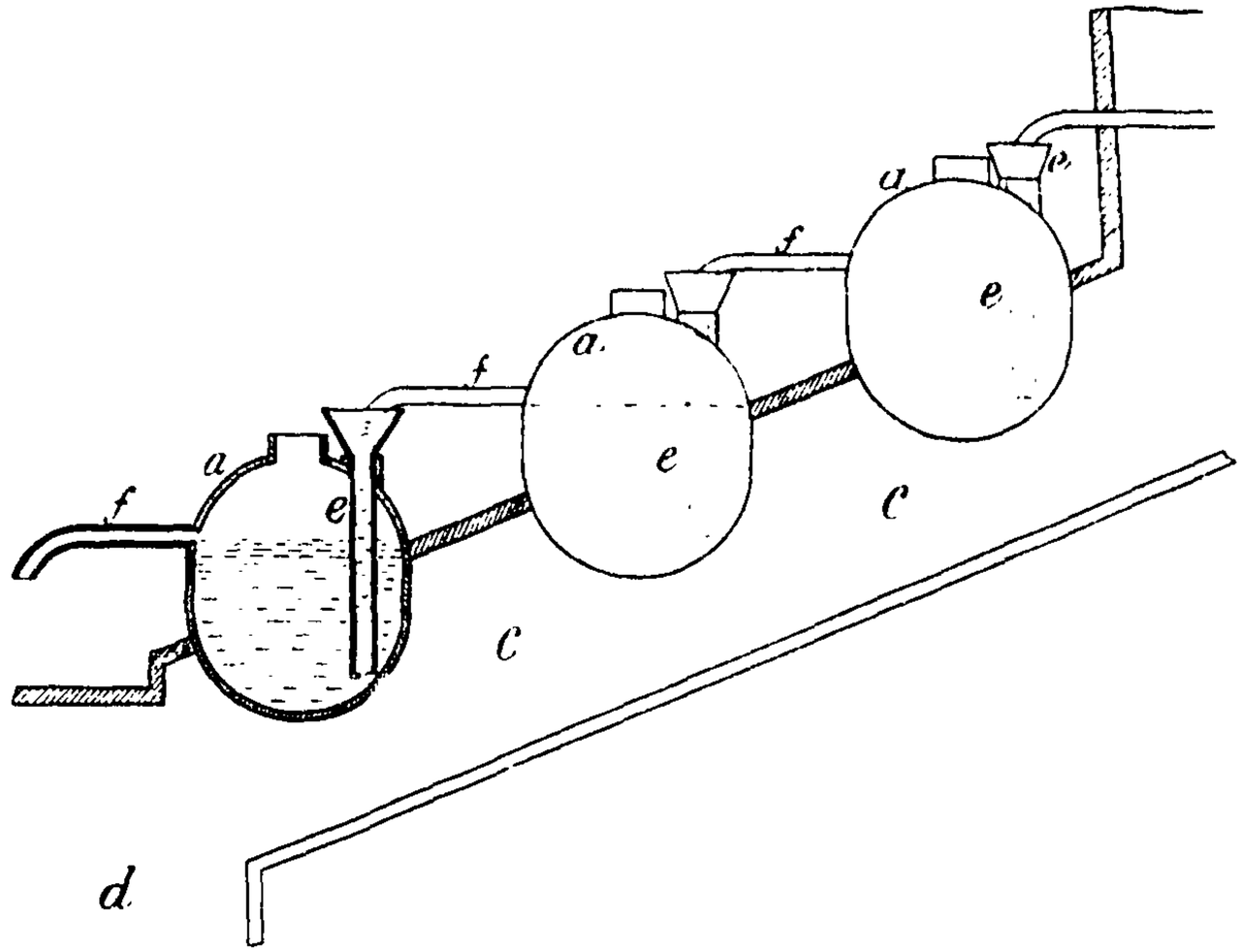


FIG. 2.—Longitudinal section.

Diagrams redrawn from Chance's specification (No. 1243 of 1871).

apparatus is more compact and easily worked, and produces better results with a less expenditure of fuel than one made strictly in accordance with the illustration of his invention given by *Chance*, and it is not wonderful that with the experience of nearly thirty years that should be so. But that will not, in my opinion, entitle him to maintain his present patent. The fallacy which underlies the respondent's arguments, and with great respect some of the judgments below, is the assumption that every useful discovery is a patentable invention." His lordship referred to Lord *Cranworth's* judgment (*Ralston* v. *Smith*, *ante*, p. 230), and continued: "In the present case I cannot say that the respondent's apparatus, as claimed by him in his specification, is a new manufacture within the realm. . . . If upon a fair construction of the specification with the assistance of experts and other admissible evidence, you find it contains matters that are not new, you must give effect to it. You are not to put a forced construction on the specification, as not intending to claim something that is old because it was foolish or suicidal of the patentee to claim it."

1900. DICK *v.* ELLAM'S DUPLICATOR COMPANY, 17 R. P. C. 196.

Subject-matter—Claim too wide.

A patent (No. 12013* of 1887) was granted to *H. J. Allison* for "improvements in the process of and apparatus for the copying, duplication, and printing of writings, drawings, typewriting, prints, and designs."

The complete specification commenced with a description of the invention. To make a stencil "I use a thin, tough, highly porous sheet, coated or filled with a material impervious to ink, the sheet being so thin and porous that wherever the filling or coating is removed, the sheet becomes open to the transmission of ink." The sheets were preferably to be thin enough to be permeated by printers' ink after a typewriter had been used to remove the paraffin coating. A thin porous sheet, as Japan dental paper or Yoshino, or any other sufficiently thin, was coated with paraffin or other impervious substance. A typewriter or similar instrument could then open the pores without puncturing or abrading the surface. The chief function of this sheet was for duplication of typewriting. The application of the paraffin or its substitute was described. "In the process I use by preference a sheet of the said dental paper" of a certain thinness. The details of the process of waxing this paper were described.

"*I do not claim* this process of waxing the sheet, however, but only describe it to enable it to be made without difficulty. I believe that well-known methods of manufacture are equally efficacious."

The mode of using the stencil thus produced to make copies was next described. The bearing surfaces used in making the stencil sheet were disclaimed, also the method of making stencils from paper impervious to ink, and the use of chemicals to eat into the texture of impervious paper.

The claims were :—

"1. A transmitting printing-sheet consisting of a thin porous transmitting sheet, through which ink is readily transmitted, as Japanese dental paper or Yoshino, filled or coated with a substance impervious to ink, as paraffin, substantially as described."

The 2nd claim was for the removal of the paraffin from such sheet at the points of printing. The 3rd for the process of preparing the printing-sheet by the pressure of the printing instrument. The 4th for a like method of making the printing-sheet from Yoshino by a typewriter.

"5. A transmitting printing-sheet consisting of a sheet of Japanese dental paper or Yoshino coated with paraffin substantially as described."

At the trial a number of specifications were alleged as anticipations. It was proved that waxed papers were known, varying, as to thickness, toughness, and texture. Waxing paper was a well-known process. It also appeared that perforation did in fact take place in plaintiff's process, but the disclaimer was held to apply only to cases where perforation avowedly took place.

The patent was held invalid for want of novelty or subject-matter.

On appeal to the Court of Appeal :—

Held, that the first and fifth claims were for a particular kind of paper printing-sheet, apart from the mode of producing it, and were too wide to support the patent.

Per *Lindley*, L.J. (p. 202) : "There is nothing new in covering paper with any kind of wax. Then he says, 'I take a particular class of thin, tough, porous paper. That is what I want, and I claim all such paper covered with wax.' Having regard to the state of knowledge, and having regard to what was done, there appears to me an absolute want of subject-matter at all. You cannot have a patent for covering one kind of paper with wax, when it is common knowledge that you can cover any paper with wax. The real truth is that his invention is the use of such paper with a particular typewriting machine."

1900. COOPER & CO *v.* BAEDEKER, 17 R. P. C. 209.

Large Sale—Want of Inventive Ingenuity.

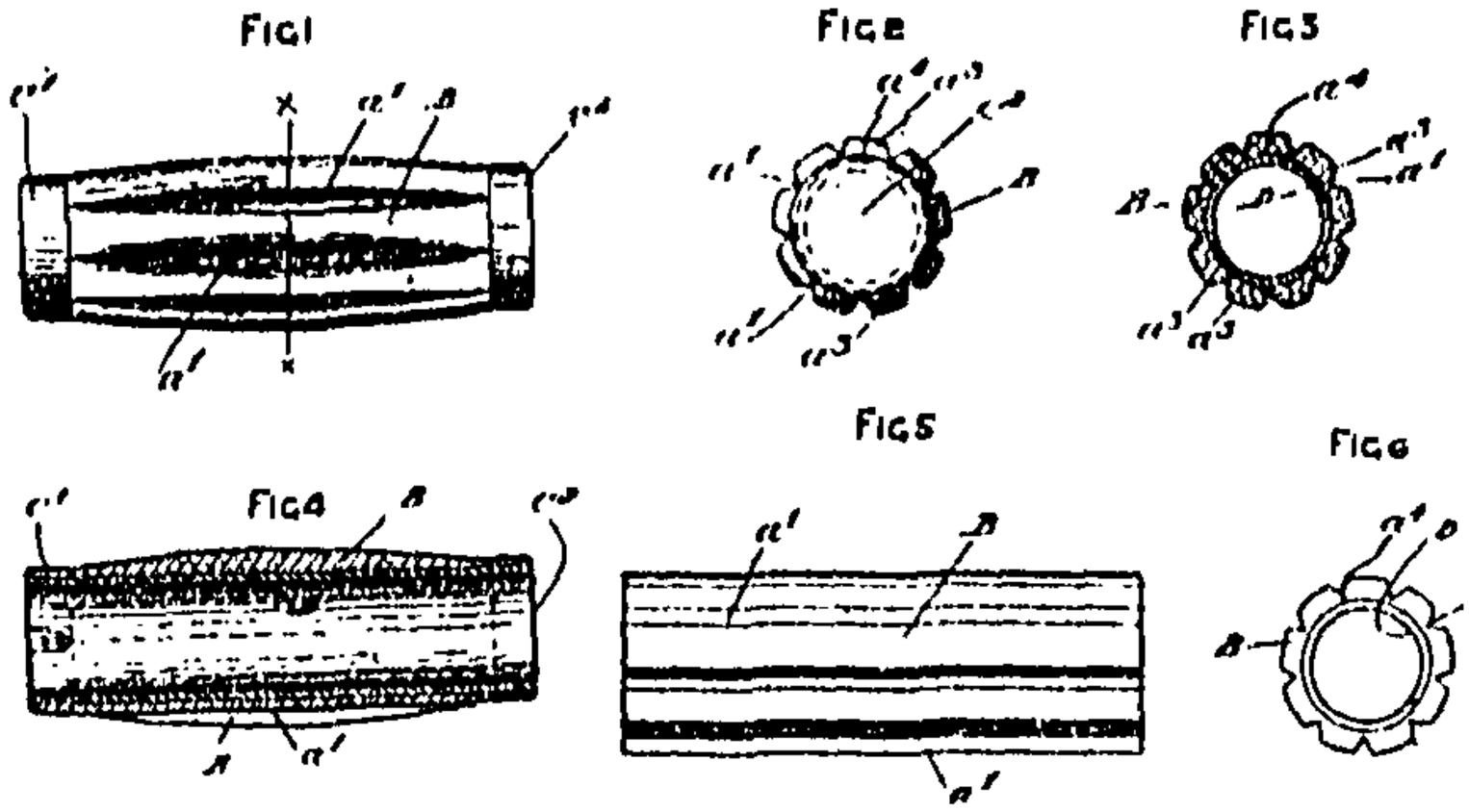
A patent was granted in 1894 (No. 18349) to *F. G. Bensley* for "improvements in felt handles for velocipedes, golf-sticks, and for other articles, and in the manufacture of the said handles."

The following extract from the complete specification describes the invention :—

"Fig. 1 is a side view of a velocipede felt handle constructed according to this invention; Fig. 2 is an end view of the same; Fig. 3 is a cross-section of the same on line X X of Fig. 1; Fig. 4 is a longitudinal section of the same; Fig. 5 is a side elevation, and Fig. 6 is an end elevation

of the partly formed handle; and Fig. 7 shows the strip of felt partly operated upon in accordance with this invention to form three of the said handles.[1] . . .

"In carrying out my invention I take a piece of sheet felt, A, of suitable thickness, say about three-eighths of an inch more or less, but I do not con-



Diagrams from Bensley's specification.

fine myself to any particular thickness, and of sufficient size for making say three handles (see Fig. 7), although the piece of felt which I operate upon may if desired be large enough to make only one or two of the said handles, or it may be large enough to make more than three of the same. I groove this piece of felt longitudinally from end to end, these grooves, a^1, being sufficiently deep and near enough together to allow of the felt being readily bent into the cylindrical shape of about the size of the required handle shown in Figs. 1, 2, and 3, of which the felt portion is marked B. The piece of felt (Fig. 7) is now (or after being formed into a cylinder as stated above) cross-cut at a^2 into short pieces, each long enough to make one of the required handles, which are then bent into the cylindrical shape as aforesaid, the grooves a^1 being on the outside of the same (see Figs. 5 and 6), and allowing of the bending of the felt into this form, which would be difficult or impossible unless the felt were grooved as aforesaid. The meeting edges of the piece of felt are now secured together at a^4 by being glued or otherwise firmly fixed together. The felt cylinder thus formed (see Figs. 5 and 6) is now turned in a lathe or otherwise machined on the outside if desired so as to reduce the same towards the ends, which are finished by metal mounts, C^1, C^2, fixed thereto which may be of the usual kind, or these mounts may be dispensed with. The edges a^3 at the terminations of the grooves a^1 are by preference rounded off as shown in Figs. 2 and 3 so as to afford a more comfortable grip to the hand."

Modifications consisting of a cylindrical lining, D, and modes of joining, and also the advantages of the invention, were described.

[1] It is not necessary for the present purpose to reproduce Fig. 7; it showed merely a strip of felt with nicks or slits in it.

The first claim was for :—

"Making felt handles for velocipedes, golf-sticks, tennis-rackets, and for other articles by first grooving a piece of sheet felt longitudinally at intervals, then bending the same and securing the meeting edges together so as to form a felt cylinder grooved from end to end on the outside which is or is not afterwards reduced towards the ends, all substantially as set forth."

The second claim was for the handle when manufactured, and the third for the particular form shown in the diagrams with the reduced ends.

This was an action for infringement of this patent.

It was proved at the trial that the invention was so successful that 286,000 handles had been sold in five years. The old method was to turn the handles out of a solid block of felt. Handles so made had been before the patent grooved on the outside. This invention avoided the previous large waste of material.

At the trial the patent was held invalid.

Held, by the Court of Appeal, that the essence of the invention lay in grooving the sheet felt to make it flexible before bending it round for the handle, and that there was not subject-matter to support the patent.

1900. ELECTRIC CONSTRUCTION CORPN. *v.* IMPERIAL TRAMWAYS CO., 17 R. P. C. 537.

Claim—Construction of.

A patent (No. 9527 of 1885) was granted to *T. J. Handford* (a communication from *F. J. Sprague* of *New York*) for "improvements in motors for electric railways."

The complete specification commenced as follows :— [1]

"This invention relates to electric motors mounted upon railway cars or carriages for the purpose of propelling the same, and its object is to so arrange and support the motor that the relative positions of its armature (E) and field-magnet (D) will not be changed, and the mechanical connections between the armature and the driving-axle (C) will not be disturbed by any movement of the car-body or carriage-body on its springs, while at the same time the driving-axle is relieved of dead weight.

"In accomplishing these objects, the yoke or back-piece (*a*) of the field-magnet (D) of the motor is hung from a cross-piece (F) of the truck (A) of the car or carriage by heavy springs (*b*, *b*); or from the car-body itself in case of a street-car or other vehicle having no truck.

"The driving-axle (C) of the car or carriage at its middle portion is

[1] The references to the diagrams are introduced into this part of the specification to save repetition. Fig. 1 is a plan, and Fig. 2 an elevation of the motor with tooth-gearing. Figs. 3 and 4 were corresponding ones for frictional gearing. Only the essential parts of the specification are here given.

enclosed in journals (*c*, *c*) situated between collars (*d*, *d*) on the axle, and these journals are held by clamping-parts (*e*, *e*) joined together on one side of the axle by a plate (*f*) to which they are bolted, and on the other side bolted to parts (*g*, *g*) extending from the pole-pieces (*h*, *h*) of the magnet.

Fig. 1

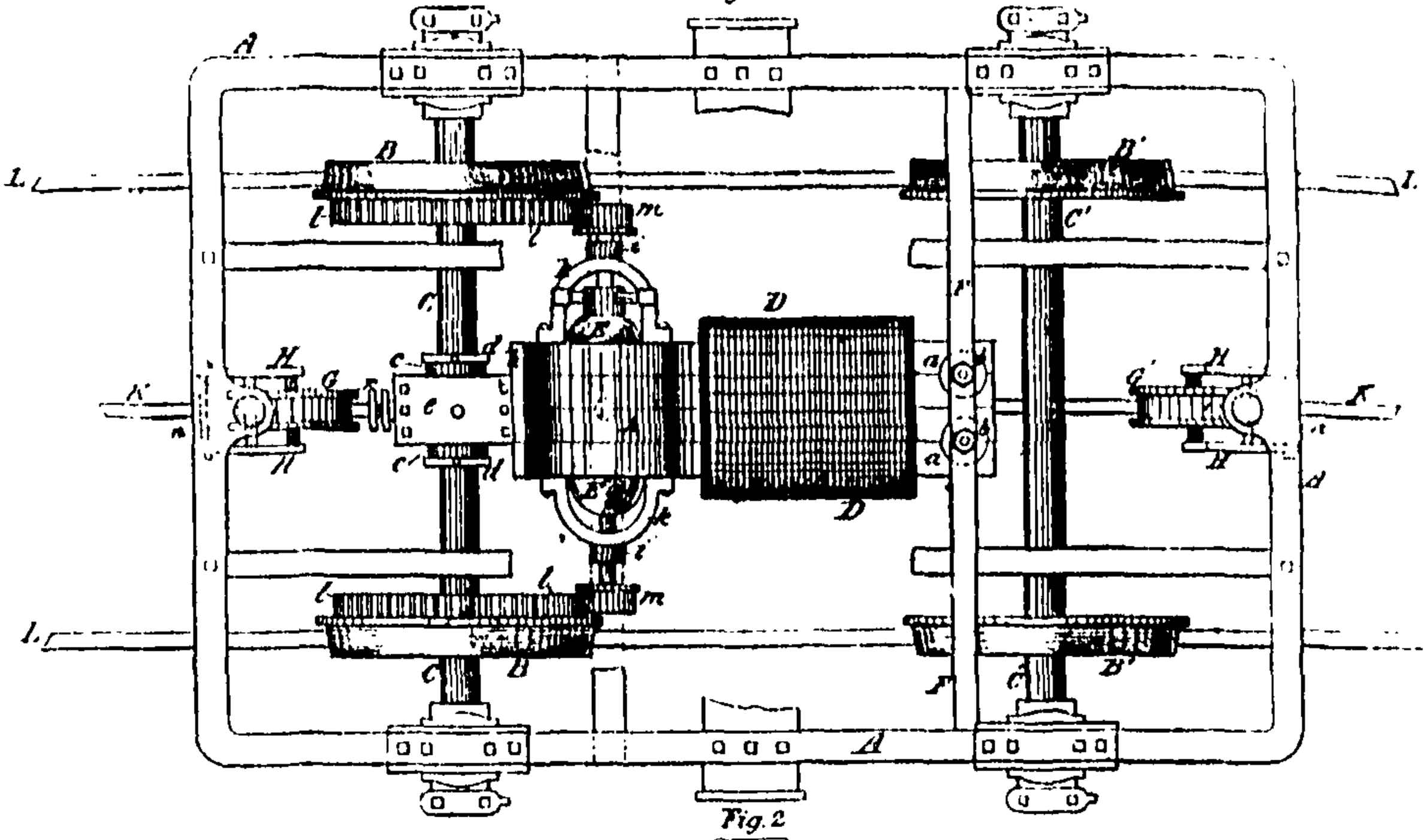
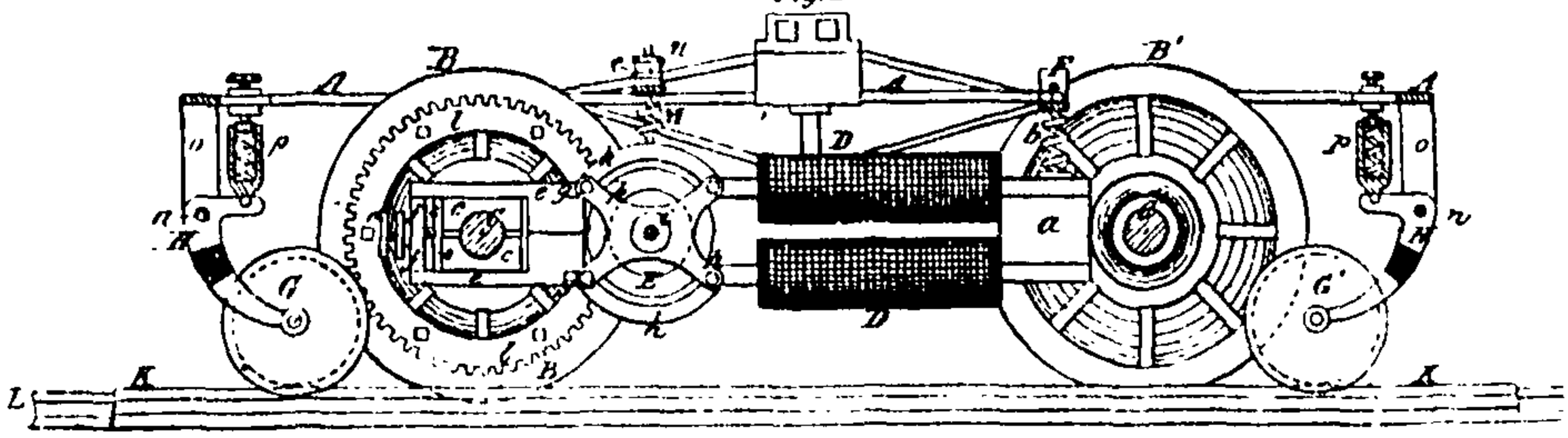


Fig. 2



Diagrams from Handford's specification (No. 9527 of 1885).

The clamping-pieces (*e*, *e*) are of non-magnetic metal. The field-magnet is thus sleeved or centred upon the axle.

"The bearings (*i*, *i*) of the armature-shaft are carried directly upon the field-magnet pole-pieces, being supported by arms (*k*, *k*) attached to the journal-boxes and to the said pole-pieces. . . .

"In order to relieve the driving-axle of the dead weight of the motor centred upon it, supporting springs (M) are employed which are connected with the sleeve centering the motor upon the axle, or with the polar extensions of the field-magnet, or at any other suitable point. These springs extend to cross-bars upon the truck-frame or to the car-body if there is no truck. Their tension is adjusted by nuts (*t*) locked by other nuts (*u*).

"This adjustment may be such as to carry wholly or partly the weight of this end of the motor or so as to actually exert a pressure upon the lower side of the driving-axle. By this arrangement the hammering effect which would result from supporting the motor directly upon the axle is reduced to the minimum."

Modifications of adjustment for frictional gearing were here given, and detailed descriptions of the drawings. The following passage occurred :—

"The armature being carried rigidly by the field-magnet, these two parts must always maintain precisely the same relative position under every vertical or lateral movement of the wheels or of the car-body or carriage-body, and as the field-magnet which carries the armature is itself centred by the axle of the wheels to which the armature-shaft is geared, the engaging gears also must always maintain precisely the same relative position. . . .

"At the same time the connection of the entire motor with the truck is through springs, so that its position is not affected by the movements of the truck on its springs."

The claims were :—

"(1) The motor of an electric railway car or carriage having its field-magnet centred or sleeved upon a driving-axle, its armature supported directly upon the said field-magnet, and having a shaft separate from the driving-axle and gearing-communicating motion from the armature-shaft to the driving-axle, substantially as hereinbefore described.

"(2) The motor of an electric railway car or carriage supported partly or wholly by springs from the car-body, carriage-body or truck, and having its field-magnet centred or sleeved upon a driving-axle, its armature supported directly upon the said field-magnet, and having a shaft separate from the driving-axle and gearing-communicating motion from the armature-shaft to the driving-axle, substantially as hereinbefore described.

"(3) The motor of an electric railway car or carriage centred upon the driving-axle at one end, and having spring supports at the other end."

This was an action for infringement.

Amongst many alleged anticipations was one that consisted of a drawing from the inventor's American specification, almost identical with that here shown, published with the claims in the American Official Gazette, a copy of which was lodged in the British Patent Office four weeks before the date of the application for the patent. Expert witnesses proved that this drawing disclosed to electricians the invention claimed in the first claim provided the claim did not include a motor hung on springs, which *Sprague's* drawing did not show.

It was held that the first claim did not include springs, and that the patent was therefore invalid.

The plaintiffs appealed to the Court of Appeal.

It was argued that the whole specification showed that the motor-car could not be made unless the electric motor was suspended by springs or their equivalent, that the first claim being for a subordinate integer of the combination must necessarily only apply to a case where springs were used.

Held, that the first claim did not include springs, and that it was anticipated by *Sprague's* own drawing.

Lord *Alverstone*, M.R., dealt at length with the evidence and arguments, and distinguished *Plimpton* v. *Spiller* (*ante*, p. 258), and followed *The Cassel Gold, &c., Co. v. Cyanide, &c.* (*ante*, p. 367), referring to the arguments and claims in the latter case. "So here we, taking the view that the first claim in its natural meaning claims the combination excluding the use of" (p. 550) "the special springs which form the essence of the patented invention, cannot, however anxious we may be to do so, read the first claim as including that which is specifically claimed and expressed in the two following claims so as to prevent the first claim having its natural meaning. . . . It is not possible to say that that particular combination, excluding the springs, is new. I think myself it was clearly shown in the drawing of *Sprague's* invention, and shown so that any competent electrician would have understood it at once. Then it was said, 'You must not act on a drawing alone.' I know of no such principle. A drawing, like any other anticipation, must be judged according to the facts of the particular case."

Per *Rigby*, L. J. (p. 550): "Claim 2 in effect differs only from claim 1 by the addition to it of the words 'partly or wholly by springs from the car-body, carriage-body, or truck.' The words of claim 1 are afterwards repeated *verbatim*, and you do not need anything more to show that the differentiation of meaning is involved in those words. . . . It seems to me that it is exactly the same thing as if claim 1 had said, 'substantially as hereinbefore described, but not supported wholly or partly by springs.' . . . It has been argued that, although certain words are not there by some construction you must treat them as if they were there. I think that an absolute impossibility, having regard to claim 2. But on what ground must you treat them as being there? It is said to be otherwise absurd. I doubt that, and I am afraid that would not be enough. Patentees are not to be held free from absurdities, or free from mistakes. They are subject to them, and, absurd as it may appear that the patentee should have made such a claim as claim 1, . . . that is not sufficient reason."

1900. CASTNER-KELLNER ALKALI CO. *v.* COMMERCIAL DEVELOPMENT CORPORATION, 17 R. P. C. 593.

Disconformity—Relative Motion.

A patent (No. 20259 of 1894) was granted to *C. Kellner* for "improvements in electrolytic apparatus for decomposing metallic salts."

The specifications described the invention as follows:[1]—

[1] The two specifications are here given together. The provisional is read by including the words in italics and omitting the words in brackets; conversely with the complete. They can thus be at once contrasted.

"This invention has reference to an apparatus for the electrolysis of alkaline salts with the aid of a stationary mercury cathode, in which the amalgam formed by electrolytic action has its location changed from the decomposing-chamber, in which it is produced, to a combining-chamber, in which it is decomposed and the cation combined with water, an acid, or other body, by the shifting of a partition which is adapted to be moved to and fro in the mercury, and serves to separate the two aforesaid chambers from each other. The partition is in this case made in the form of a bell closed at its lower edge by a mercury seal and enclosing the decomposing-chamber, so that the amalgam formed in the latter is caused by the shifting of the bell to have its location alternately on one side and on the other side of the bell without itself changing or moving its position, and is thus caused to gain access to and become situated in the combining-chamber, whilst the mercury on the other side of the partition, which was previously situated in the combining-chamber, effects [in the decomposing-chamber] the amalgamation of the metal that is being separated by the electrolytic decomposition of the electrolyte. [In this way, a considerable output can be obtained from the apparatus with a comparatively small quantity of mercury, because both operations can take place simultaneously and uninterruptedly.]

"In the *accompanying* drawings [filed with my provisional specification],

"Fig. 1 is the vertical section taken through one cell of an apparatus constructed according to this invention;

Fig. 2.

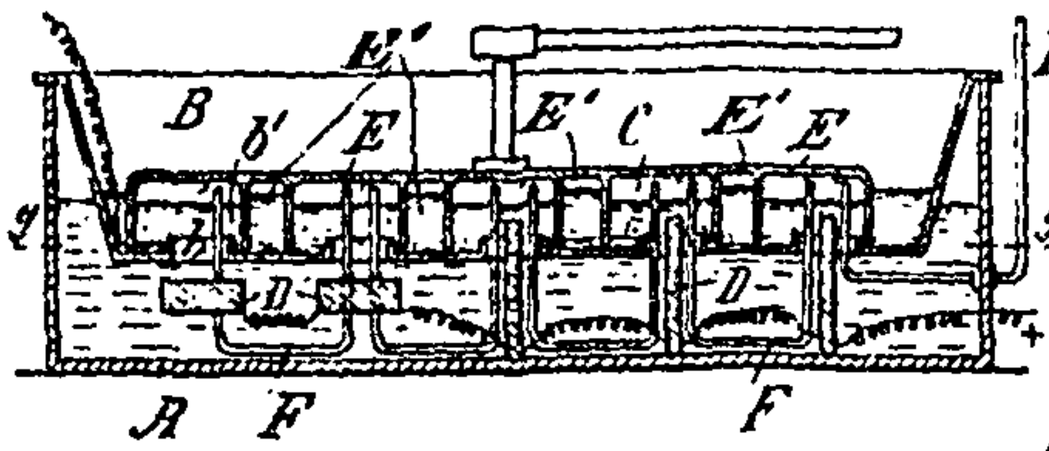


Fig. 1.

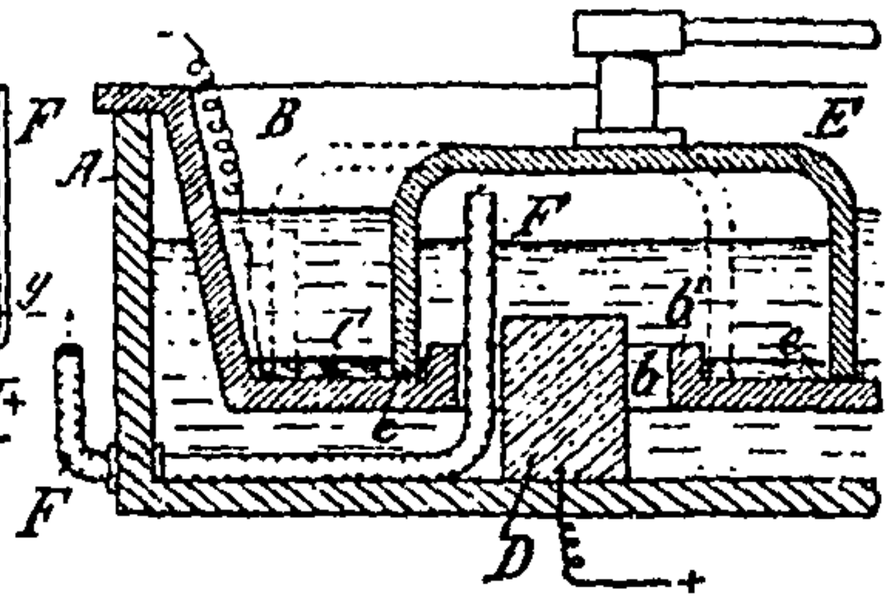


Fig. 3.

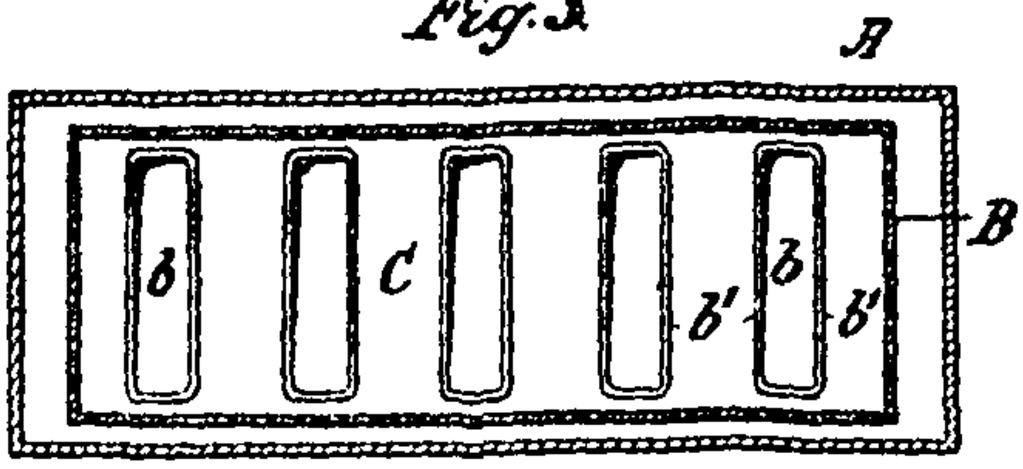


Fig. 4.

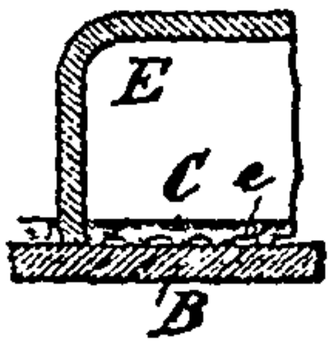
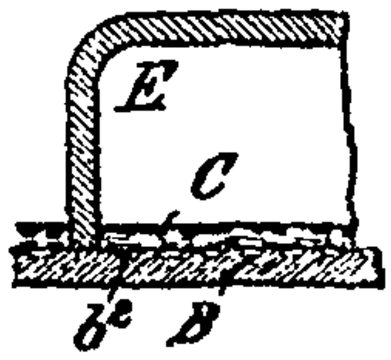


Fig. 5.



Drawings of Kellner's provisional specification (No. 20259 of 1894).

"Fig. 2 is a longitudinal section, to a smaller scale, taken through the whole apparatus;

"Fig. 3 is a horizontal section on the line *y*—*y* of Fig. 2; and

"Figs. 4 and 5 are sections through the bell showing two different forms of construction of the latter.

["In the accompanying drawings,

"Fig. 6 is a longitudinal vertical section illustrating a modified construction of the apparatus shown in Fig. 2.

"Fig. 7 is a vertical section, and Fig. 8 a horizontal section, taken in different planes, showing a further modified construction of the said apparatus.

"Fig. 9 is a vertical section through a cell of the apparatus, similar to that shown in Fig. 1, but provided with a short-circuited secondary electrode for the purpose of rapidly removing the alkaline metal from the amalgam that has been formed.]

"The apparatus shown [in Figs. 1, 2, and 3] comprises a vessel, A, for the reception of the electrolyte to be decomposed, and a trough, B, inserted or suspended in the vessel A, this trough having in its bottom openings, *b*, which are surrounded by projecting borders, *b'*, that serve to prevent the escape, through the [said] openings,[1] *b*, of the *mercury layer or cathode* [layer of mercury] C, which serves as a cathode and covers the bottom of the trough. The anodes D are arranged in the electrolytic space of the vessel A, horizontally or vertically, and in the latter case may, as shown, also project through the openings *b* into the trough B. Each of the trough openings is covered over by a bell, E, of non-conducting material—such, for example, as glass, stoneware, porcelain, or ebonite—which dips at its lower free edge into the mercury, and is of greater width than the opening *b*, so that it can be moved to and fro through a certain distance over this opening, the extent of this movement being limited by the upwardly projecting border *b'*. The bell thus encloses the decomposing-chamber communicating with the vessel A, and forms an electrically non-conducting partition between the decomposing-chamber and the combining-chamber of the trough B, which is charged above the mercury cathode C, which constitutes the seal, with water, acid or other substance with which it is desired to cause the cation, previously taken up by the mercury cathode, to combine.

"In order that the mercury shall not become displaced by the lower end of the bell sliding over the bottom of the trough B when the bell is being moved, slots or notches, *c* or b^2, are provided in the lower edge of the bell, as in Figs 1 and 4, or in the bottom of the trough, as in Fig. 5.

"A gas-exit pipe, F, leads from the decomposing-chamber to the exterior of the vessel A.

"The anode D and the mercury cathode C are *suitably* connected to the terminals of a suitable source of electricity.

"In an apparatus of large size, such as is intended to be employed on an industrial scale, the whole of the bells E are preferably united to form a cover which is provided with partitions, and is adapted to be moved to

[1] The letter *b* after the word "openings" was in the provisional, but not in the complete specification.

Fig 6

Fig 7

Fig. 8

Fig. 9.

Diagrams from Kellner's complete specification. Figs. 7 and 8 show the modification constituting disconformity.

and fro in the trough B, the spaces E^1 between every two bells being arranged to communicate by means of lateral openings with the trough B, as shown in Fig. 2. The gas-exit pipes F are then arranged in such a manner that the generated gas is led through all the bells in succession, and is drawn off from the last bell.

"The manner of working the apparatus is as follows :—

"The electrolyte, for instance a solution of common salt, within the vessel A and the decomposing spaces or chambers, becomes decomposed by the electrolytic action which takes place under the bells E, the liberated chlorine gas being led off through the pipe F, whilst the metallic sodium forms an amalgam with the mercury cathode C, which is situated within the bells E on one side of the anodes D, viz. on the right-hand side in Fig. 1. If now the bells be shifted to the left *hand* into the position shown in dotted lines in Fig. 1, the stationary mercury cathode, together with the amalgam, becomes thereby situated in the combining-chamber of the trough B, which is charged, it may be for instance with water. The sodium separates out from the amalgam, and combines with the water to form sodic hydrate. At the same time, by the shifting of the bells, that portion of the mercury which was previously situated outside the left-hand side portions of the bells, that is to say in the combining-chamber, will now be located in the decomposing-chamber, and acts as the cathode to produce the amalgamation *of* [with] the sodium which is continually being separated in the said decomposing-chamber. If the bells after a suitable interval of time be shifted back into the position shown in full lines, *i.e.* to the right hand, the mercury on the left-hand side of the anodes, together with the amalgam formed thereon, [again] becomes situated in the combining-chamber of the trough, and consequently within the sphere of action of the water in such chamber; whilst on the other hand the mercury situated on the right-hand side of the anodes, and the amalgam portion of which has been *dissolved* [acted upon] in the mean time [by water to remove sodium therefrom] becomes again situated in the decomposing-chamber for the purpose of forming fresh amalgam. It will thus be seen that by the to-and-fro movement of the bells, the transposition of the amalgam formed in the decomposing-chambers to the combining-chambers, and the practically continuous formation of caustic soda in the latter, are caused to take place alternately on the one side and on the other side of the anodes, whilst the mercury cathode itself remains at rest." [1]

The complete next described by Fig. 6 a modification in which the amalgam was decomposed inside the bell E, and the chlorine generated outside, reversing the process as above described. A further modification was introduced in the following terms :—

"Instead of being slidden along rectilinearly, the bell E, or the vessel A, or the bottom of the latter, may have a rotary motion imparted to it. An arrangement of apparatus of this kind is shown in Figs. 7 and 8.

[1] The provisional specification terminates here.

"Here the vessel A, which contains the mercury cathode C, is constructed in the form of a disc provided with an upwardly projecting edge, and the hub of which is fixed on a vertical shaft, K, that is rotated by suitable means. The decomposing and combining chambers are formed by means of fixed radially arranged bells, E, which are connected together so as to form a cover provided with partitions, as in the arrangement shown in Fig. 1.

"The decomposing and combining chambers follow each other in succession, and are respectively provided with the chlorine discharge pipe F, and with pipes H for discharging the hydrogen."

A method of rapidly removing the alkali metal from the amalgam was shown with reference to Fig. 9.

The claims were:—

"(1) An apparatus for the electrolysis of metallic salts with the aid of a stationary mercury cathode, in which partitions or bells capable of being moved to and fro, and dipping into the said mercury cathode, are arranged to separate the decomposing and combining spaces or chambers from each other, and by their to-and-fro movement to cause the mercury cathode to be located alternately within the sphere of action of the electrolyte, and of the substance to be combined with the cation produced, substantially as hereinbefore described with reference to and illustrated by Figs. 1 and 2 of the drawings referred to."

The second was for the modification shown in Fig. 6.

"(3) The modification of the apparatus specified in claim 1, in which one or more vessels, A, is or are mounted on a vertical shaft so as to be capable of rotating relatively to the fixed partitions or bells that dip into the mercury cathode carried by the said vessel or vessels, or in which the said partitions or bells are capable of rotating in a fixed vessel or vessels, substantially as hereinbefore described with reference to and illustrated by Figs. 7 and 8 of the accompanying drawings."

The fourth and fifth claims were for the arrangements shown in Fig. 9 and Figs. 4 and 5 respectively.

At the trial of this action for infringement of the above patent evidence was given to the effect that the chemical and electrical actions of the process were well known. In one of the alleged anticipations the vessels containing the electrolyte and plain water were stationary, dipping into and sealed by mercury, which was revolved by a paddle so as to bring the amalgam from the electrolytic cell into contact with the water in the other to dissolve the sodium or other alkaline metal. But in no previous case had the electrolytic cell been moved as in *Kellner's* specification.

Disconformity by including claim 3 was alleged.

It was held at the trial that the patent was valid, and had been infringed.

On appeal to the Court of Appeal that decision was reversed on the ground of disconformity.

Held, on appeal by the House of Lords, that the only invention described in the provisional was a new mechanical arrangement in which the mercury

formed a cathode "stationary" in the ordinary meaning of the term, and that the invention claimed by the third claim was not within the provisional.

The patent was therefore invalid.

Per Lord *Halsbury*, L.C. (p. 604): "Now I am unable to say that I think the provisional specification here ever contemplated the movement in any sense of the mercurial cathode. It is impossible to read the concluding part of the provisional specification without being struck by the absence of any hint of the arrangement claimed afterwards. What are called the bells are intended to be moved over the surface of the mercury, and the mercury cathode is to remain 'at rest.' . . ." P. 605: "This is a description of a mere mechanical appliance, and I cannot doubt that when this description was given the thing which was meant to be at rest was the mercury and the vessel containing it. . . . Claim 3 and the Figs. 7 and 8 to which it refers are an entire departure from the essential feature of the invention as originally described." The language of complete specification is an ingenious effort to avoid a glaring disconformity.

1900. BEAVIS *v.* RYLANDS GLASS AND ENGINEERING CO., LTD., 17 R. P. C. 704.

Want of Subject-matter.

A patent (No. 26359 of 1897) was granted to *C. E. Beavis* for "improvements in mineral-water bottles."

The specification was as follows:—

"My invention relates to improvements in bottles for holding mineral and aërated waters, and consists in so altering the shape of the indents in the necks of what are known in the trade as *Codd's* bottles as to obviate some of the drawbacks in their present construction and use.

"As now made, the indents at the lower part of the neck are horizontal, forming a transverse channel on the inside, which permits the liquid to flow in and out, and serves as a stop to prevent the ball from falling into the bottle when not in use; this transverse indentation is a source of weakness in the construction of the bottle, rendering it liable to bursting and fracture from obvious reasons, and the object of my invention is to alter the shape and direction of the indents, and form a differently shaped channel for the ball, and thus to remove some of the disadvantages connected with the use of these bottles."

The advantages and causes of alleged defects in the older bottles were enumerated in detail. The alleged invention was described in the following terms:—

"In Fig. 2 the indents A are made curved, as shown, the nicks B form the usual recess in which the ball rests when the bottle is being emptied; the nicks and indents control the shape of the channel C, which extends

from the recess to the neck of the bottle; by this means the neck of the bottle is structurally strengthened, the oscillation of the ball is prevented, the brush for cleaning is permitted to pass in and out of the neck without choking or wedging, and the inclined passage or channel provided for the ball lets it find its position in the seating or neck more readily than by the present method."

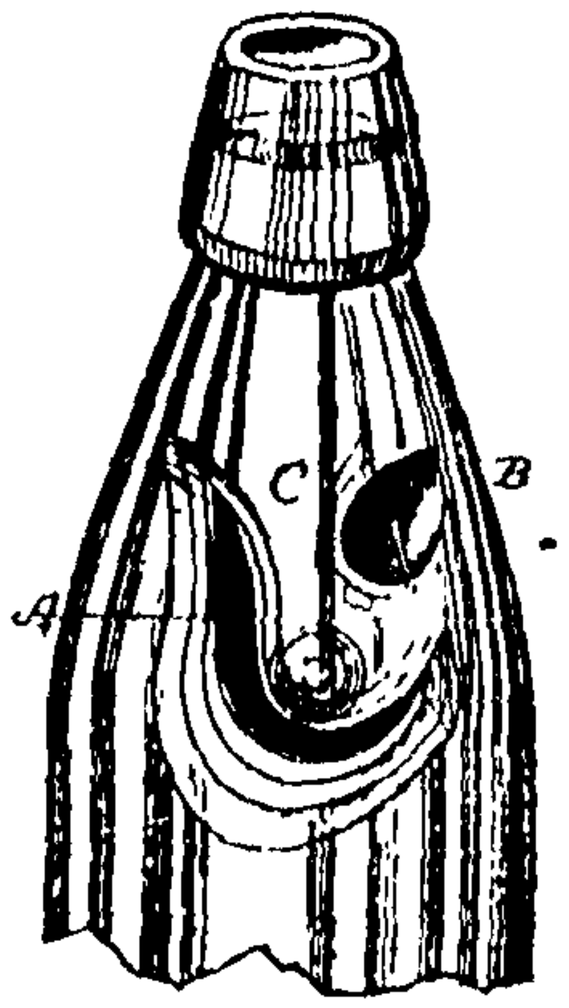


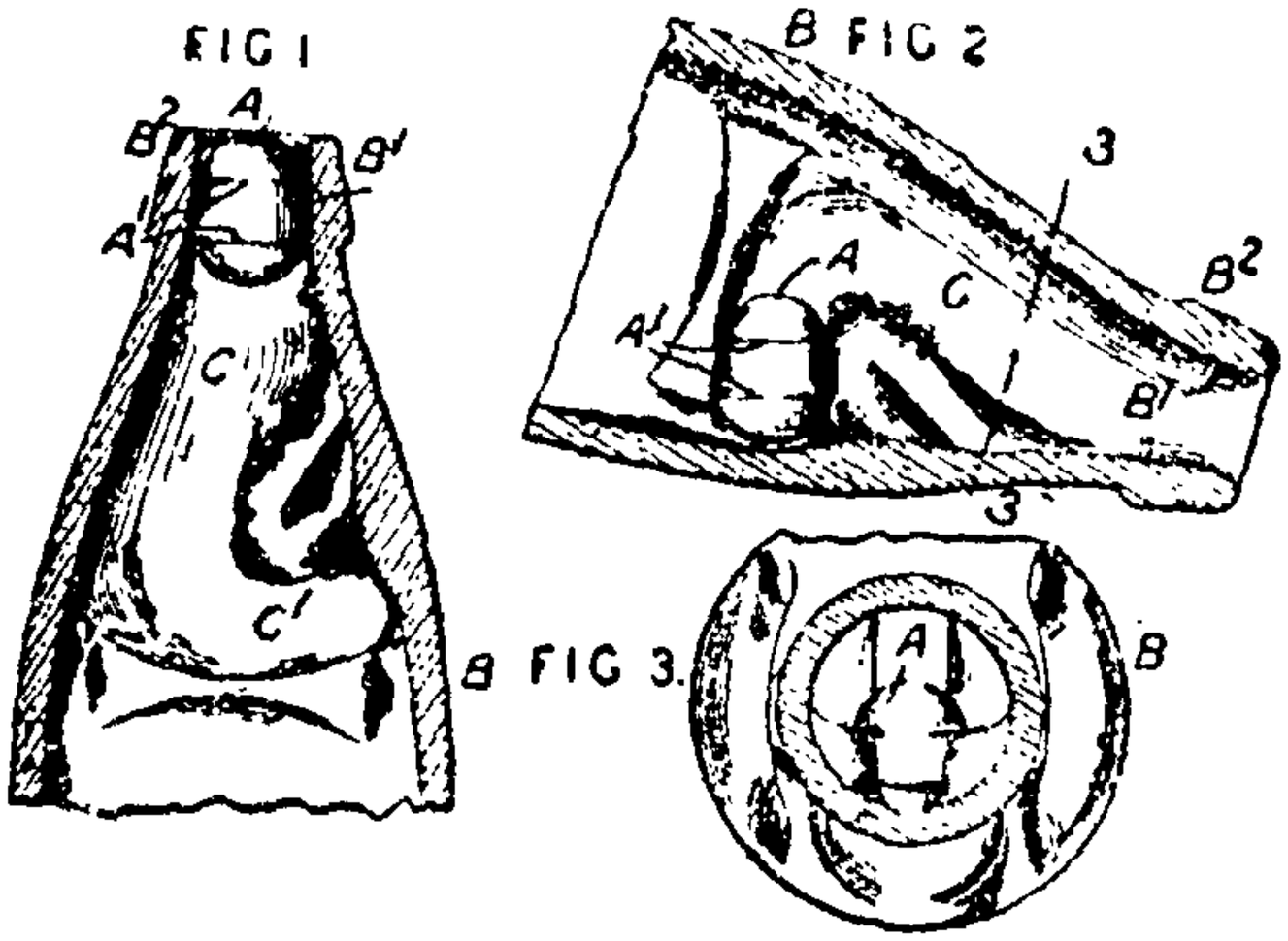
Fig. 2 of Beavis's specification.

The claim was as follows:—

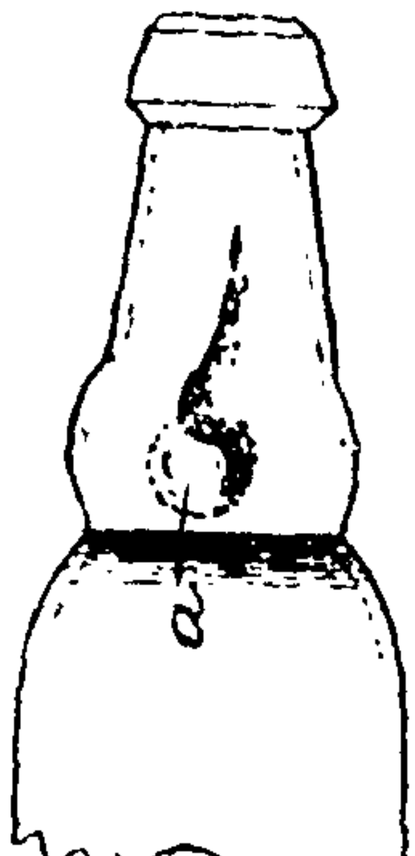
"In the manufacture of indented glass-stoppered bottles for mineral and aërated waters, making the indents of such a shape as will form a curved channel for the passage of the ball instead of the present horizontal one, substantially as and for the purposes herein set forth and described and illustrated by Fig. 2 of the accompanying drawings."

This was an action for infringement of the above patent. The chief defences were that the alleged invention was not new nor good subject-matter.

At the trial various drawings and bottles were produced, amongst others a drawing showing the form of *Codd's* bottle. In it the ball-stopper was prevented from going too far by the indentation across the bottle, and its return to the mouth while pouring out prevented by two indentations as shown.



From Jones's specification.



Codd's bottle.

Jones's specification of 1894 was relied on as an anticipation. Its nature is apparent from the diagrams. Fig. 1 shows the stopper in its place, Figs. 2 and 3 when kept at the bottom of the curved passage C. The stopper was not spherical, but cylindrical with rounded ends, and could not be turned in the curved channel.

At the trial the patent was held invalid on the above grounds.

On appeal the decision was upheld.

Lord *Alverstone*, M.R., dealt with the alleged anticipations in detail. At p. 710: "In cases which depend upon subject-matter, the most important thing of all, and that which I think the Court should always be first informed of, in order to put a proper construction on the patent, is what was the existing state of knowledge. If you simply look at a specification and endeavour to decide as to subject-matter without information as to the existing state of knowledge you are very likely, either on the one hand to belittle the invention, or on the other hand you may attach undue importance to it."

On the construction of the specification (p. 711): "But whatever may be the true view, it is the specification of the plaintiff we have to deal with, and the specification of the plaintiff claims his invention in these words 'In the manufacture, etc.'" [quoting them]. "In my opinion there was nothing else involved in that claim, or intended to be made the subject-matter of the invention, than turning the channel from what he thought was the common shape (and I dare say it was the best known shape)—the horizontal shape of channel into the curved. That that was disclosed in the specification of *Jones* I have no doubt. I think it was also disclosed in the specification of 1872; and I come to the same conclusion as that to which the learned judge came, that in changing the form of the channel he did not disclose anything which, in the face of the previous state of knowledge, could be good subject-matter."

P. 712: "Everybody who has experience in patent cases knows that cases of this kind do not rest upon mere authority. It is perfectly possible that a very small alteration, which is the result of experiment, or which may be the result of a happy thought, yet still does work such a complete revolution that it may be perfectly good subject-matter.[1] On the other hand, however much the individual may have solved in his own mind, or believes he has solved, a difficulty, in the interests of the public we have to consider what the public were entitled to use before his patent was granted.[2] In my opinion the existing state of knowledge shows that indents of different angles, and different shapes of curved passages made by the indents, were old; and that being so, in my judgment it was not good subject-matter to claim the changing of a straight indent into a curve."

Rigby, L.J., reviewed the facts and arguments, and concluded:—

"After considering all the instances that have been brought forward (and they are very numerous) I cannot but come to the conclusion that it was evident to any one acquainted with the manufacture that the indent might be horizontal or more or less curving upwards.[2] That was known, and perfectly well known; and, that being the case, I think that the mere

[1] Followed by *Farwell*, J., in *Parker & Smith* v. *Satchwell & Co., Ltd.*, 18 R. P. C. 308.

[2] Both the learned judges tested the existence of subject-matter from the workman's point of view. See *ante*, pp. 19, 34–37.

seizing upon a particular form, which every one knew might be used, even if it had incidental advantages, is not such an invention as would be subject-matter for a patent. I agree, therefore, with the learned judge's judgment."

1900. TAYLOR AND SCOTT *v.* ANNAND AND OTHERS, 18 R. P. C. 53.

Invention—Construction of Claim.

A patent (No. 5470 of 1886) was granted to *J. H. Buxton* and others for "improvements in arrangements and mechanism to facilitate the rapid application of type representing late news or matter to and the printing of the same by newspaper printing machines."

The complete specification commenced with a statement of the object of the invention :—

"In newspaper-printing new editions containing late news or matter is commonly added by cutting out portions from the stereo plates and inserting in the space thus made the type representing the late matter, but this takes time, and the object of our invention is to be able to add late news and print it in as little time as possible after its receipt."

The [1] type was to be arranged in a small box which was described in detail with the means of securing and adjusting the type therein, in such a manner that the printing surface of the type formed a segment of the surface of a cylinder concentric with the drum and its axle to which it was attached. Fig. 11 shows one mode of arranging and fastening the box (*a*) on a drum (*b*). The only mode of attachment shown in the drawings was by a dovetail; the box, however, could be secured in its place by more ways than one. This drum (*b*) was mounted on a shaft (Fig. 14).

The drum (*b*) had its own inking roller (*i*) (Figs. 13 and 14). The object in having the drum adjustable on the shaft was to enable it to be placed so as to operate on any column required in the paper. Suitable mechanism was described to bring the drum into use when required.

"The face of the type in the box *a* is in a curve at such radius from the axis of the drum *b* as will be equal to the radius of the operating surface of the impression-cylinder (*e*) or half its radius if the type-box is to print twice for one revolution of the impression-cylinders *e*, and so on."

The paper following *x x* in Fig. 13 passed round to the impression-cylinder (*e*) and was printed on by the stereo (*g*), and, when required, by the type on the drum (*b*).

The claims were :—

"(1) The combination and arrangement of mechanism for securing type or printing-surfaces in a box or holder, substantially as hereinbefore described and illustrated by the drawings.

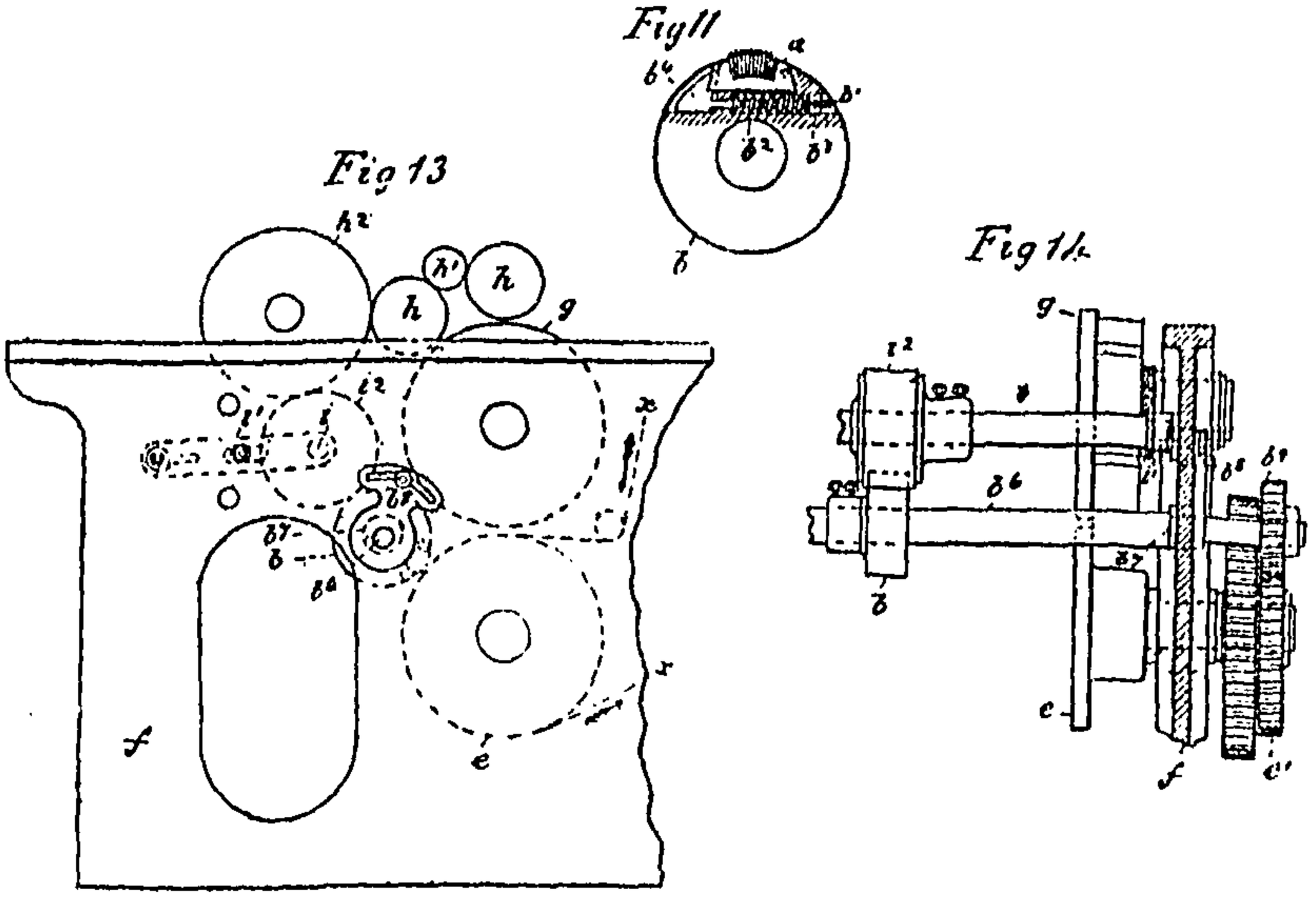
[1] The description of the invention is here summarized and given so far as it relates to the main issue on the third claim.

"(2) The combination and arrangement of mechanism for securing type or letter-press printing-surfaces in a box or holder, and the combination of the latter with a printing-drum separate from the main printing-cylinder substantially as hereinbefore described and illustrated by the drawings.

"(3) The combination and arrangement of a printing-drum (*b*) with the mechanism of the ordinary main impression and printing-cylinders of endless web letter-press printing-machines, substantially as and for the purpose hereinbefore described and illustrated by the drawings."

This was an action for infringement of the patent.

It was proved at the trial that the method in use at the date of the patent of printing late news consisted in cutting out a piece of the stereo, and inserting the new matter, by type set up in fudge-box, which type was



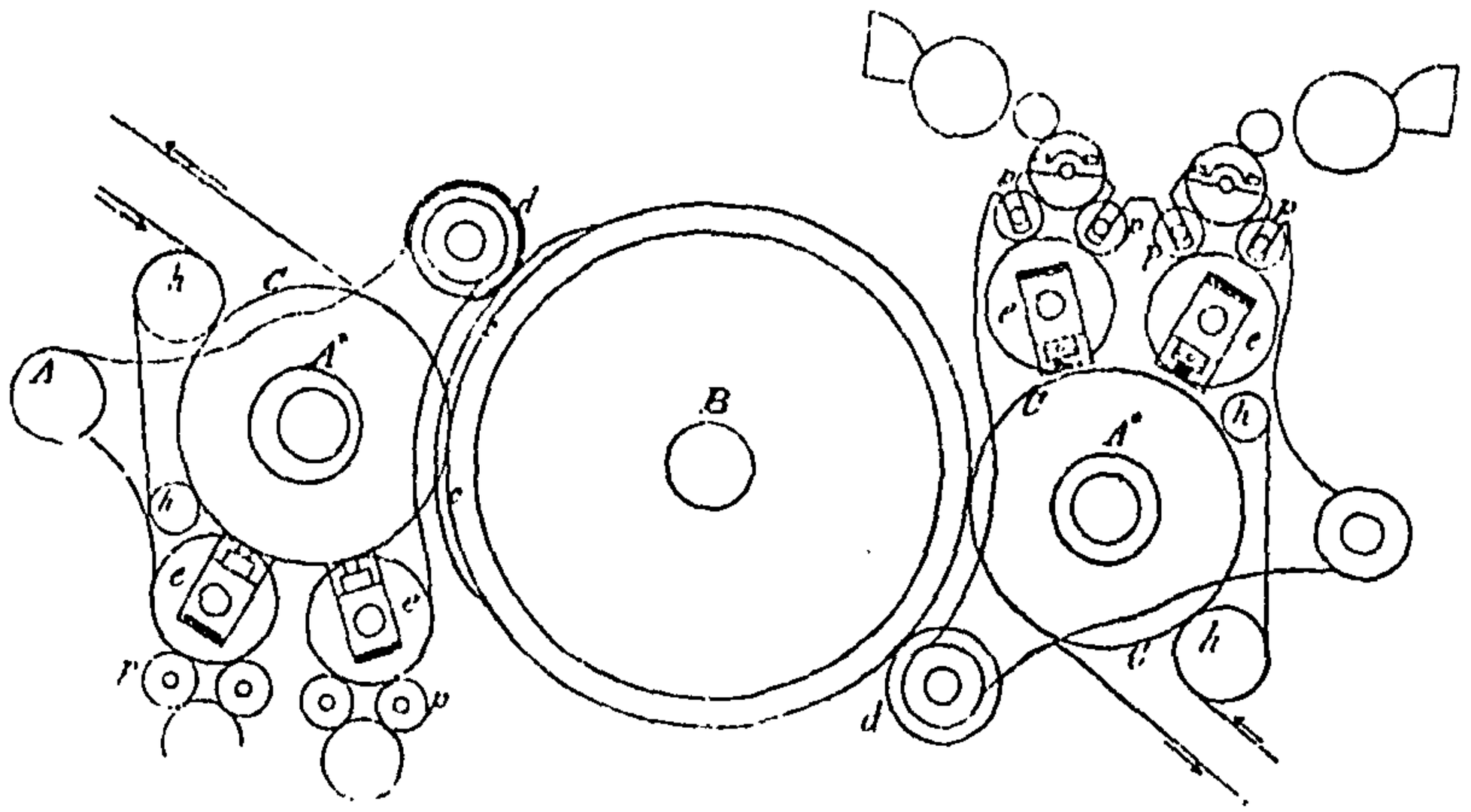
Diagrams from Buxton's specification (No. 5470 of 1886).

not on its surface concentric with the cylinder. There were great difficulties in keeping type securely fixed on a cylinder which in working revolved at a rapid rate. This invention overcame those difficulties and enabled late news to be inserted in a few moments, thereby enabling fresh editions of papers to be brought out in quick succession.

Several anticipations were alleged in order to show that the device in question was a mere adaptation of old methods. The more important of these were those of *Applegarth* (1858), *Duncan and Wilson* (1879) and *Mewburn* (1885).

Applegarth's (No. 372 of 1858) improvements in printing machinery contained amongst others a device for separately printing headings and

suchlike. In some cases he applied "a small roller or rollers with type or printing-surfaces thereon, together with a proper inking apparatus, to each of the printing rollers or cylinders; in this way I am enabled, while printing the main portion of the sheet by the large type or printing-cylinder as heretofore to introduce, for instance, a heading in a different colour, or, in fact, any matter which it is desirable to introduce, and this introduced matter may be changed without interfering with the form on the large printing cylinder." The arrangement to effect this object is thus described: "Fig. 6 is a diagram to show how small auxiliary printing-rollers may be arranged in combination with the roller which receives the black ink impression, so that the title of a newspaper, or the heading of other matter may be printed in three colours. The circumference of the central cylinder in this case is supposed to be 60 inches, and the impressing roller 30 inches.



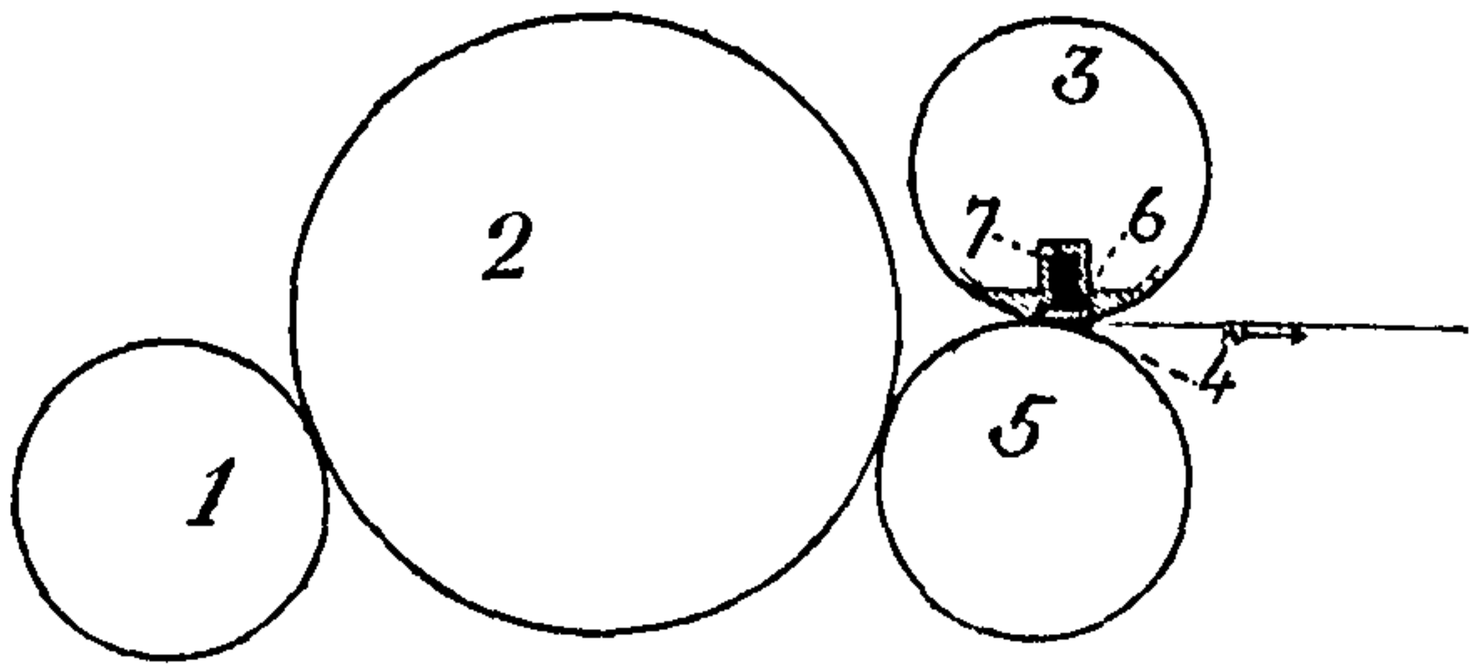
From Fig. 6 of Applegarth's specification (No. 372 of 1858).

Such a machine at '*Times*' rate would make 5000 revolutions, and might print at two places, as shown, or more, if only one colour roller is required. The carriage A* which supports the auxiliary printing rollers (which have toothed wheels working into the wheels of C) and their apparatus for supplying ink or colour, is hinged to the main frame of a machine at A; *c* is one of two shapes or cams which are fixed upon the central cylinder B, and as it revolves they act against the friction rollers *d*, which causes the carriage A* to revolve a little upon its spindle or hinge, A, so as to press the auxiliary rollers *e*, *e* against the sheet of paper upon the impressing roller C, which may thus be printed in two colours just before receiving the black impression from the form upon the central cylinder B."

On the opposite side of the diagram the apparatus is shown in the position in which it does not print, but is not out of gear; *h*, *h* are rollers with endless tapes pressing the sheet, *f*, *f'* the inking rollers, and *k* the metal distributing rollers.

The improvements of *Duncan and Wilson* (No. 168, of 1879) are thus described: "First, in addition to the stereotype cylinder or cylinders we employ one or more cylinders of small diameter fitted or constructed to carry movable type. The said type-cylinder or cylinders are so arranged as to print and fill up a blank or blanks left on each sheet by the stereotype cylinders. The movable type is not fixed rigidly to the surface of the cylinders, but is so arranged as to be free to move to and from the axis as such cylinder or cylinders, being held in position by a spring or springs, and thus allow of a smaller cylinder or smaller cylinders being used than would be the case if the type were rigidly attached thereto. Instead of employing a spring or springs to hold the movable type in contact with the impression-cylinders during the required time, a cam or cams may be employed for this purpose. Instead of a cylinder or cylinders being employed, the movable type may receive motion from rotating arms, carriers, or equivalent devices. Inking mechanism of the usual construction is employed.

"Fig. 1 is a view of such parts of a printing-machine as are necessary to illustrate the manner of carrying this first part of our invention into



From Fig. 1 of Duncan & Wilson's specification.

effect; (1) stereotype cylinder fitted and supplied with inking and other necessary appliances in any ordinary or well-known manner; (2) impression cylinder; (3) cylinder carrying movable type; (4) (5) impression cylinder. Inking mechanism is arranged to act on the surface of type (4). The said type (4) is held in position in a form which is free to slide in a groove (6), and is pressed against the impression cylinder (5) by means of the spring (7); (8) web of paper passing as shown by arrows. The type (3) is used to fill up blanks left by the stereotype secured on (1)."

Mewburn's (No. 2805 of 1885) was important as showing grooves running the whole length of the auxiliary cylinder in which the additional type could be placed. But it did not disclose any method of fitting type so that its surface would be concentric with the cylinder.

It was held at the trial that the third claim was not novel, as it was an adaptation of old known methods and ideas, and consisted in cutting away the unnecessary portions of a known auxiliary cylinder.

On appeal to the Court of Appeal (17 R. P. C. 126) :—

Held, that the patent was valid, and the device displayed great invention, and that the third claim was not confined to dovetailed boxes as shown in the drawings, but any box holding type in the proper position.

Per *Romer*, L.J. (17 R. P. C., p. 136): "Prior to the invention there was no known machine which would do in any practical or efficient way the special work done by the improved machine described. And, in our opinion, to arrive at that improvement there was required on the part of its discoverers great ingenuity and invention in the true sense of the word Now that the way to effect the improvement is known, it is easy to belittle it. It can, of course, readily enough be pointed out that the principle of using a small auxiliary cylinder was known before; that a drum is only a small cylinder; that a movable drum was not in itself a new discovery, and so forth. This process of undermining an invention is well known, and if allowed to prevail would destroy many valuable and undoubtedly valid patents. But the process is radically wrong. The way to ascertain whether a novel and useful improvement required invention in the true sense is to consider how matters stood just before the improvement was discovered. . . . Sufficient commentary is afforded by the fact that for years the defect in the stereo machines, to which we have previously called attention, remained unremedied, and that when *Duncan* and *Wilson* tried to remedy it they could only suggest means which differed considerably from those adopted by the patent of 1886, and which failed."

On appeal to the House of Lords this decision was upheld.

Lord *Halsbury*, L.C. (18 R. P. C. 62), dealt with the difficulty of dealing with cases in the abstract in which the alleged invention consists in a combination of old things, "because you have to start with the proposition that everything is old, and until you apply yourself to what is the particular mechanism and what is the particular exigency with which you have to deal in inventing the new mechanism for the purpose required, you do not adequately appreciate what that invention is; that is to say, until you come to put it into a concrete form to see what the thing is, and what the thing was intended to do, and then apply your mind to see whether the thing in its combination has been anticipated or not." His Lordship quoted from *Vickers* v. *Siddell* (*ante*, p. 324), and applied it to this case: "It is (p. 63) very easy to say nothing could be older than the stereotype—nothing could be older than the cylindrical stereotype—and the notion of cutting a piece out of some part of the cylinder and putting in a fudge-box, or some other mechanical appliance of that sort. And if one was arguing *a priori*, and not seeing what in the practical conduct of business was felt to be a want, the absence of which was to be supplied, one was, I think, apt to form a very inadequate idea of what the value of the invention was. . . ." Then when one finds that there is not "one single instance during the whole period of this printing industry to which this case extends, of this thing, or anything like this thing in its application or in its combination, having been produced by anybody, it is an almost irresistible inference of fact that there is something in the nature of invention, because

everybody wanted this thing to be done—everybody felt the usefulness of it when it was done; and to say that it is so obvious that it requires no invention seems to me to be absolutely contrary to the reasonable inference to be drawn from the condition of facts to which I have referred. . . . I am quite content to abide by the admirable and closely reasoned judgment of Lord Justice *Romer*."

1901. CASE *v.* CRESSY, 18 R. P. C. 419.

Want of Invention—Advantageous Results.

A patent (No. 14115 of 1896) was granted to *E. Case* for "an improved construction or arrangement of shore-groynes."

The specification commenced as follows:—

"This invention has for object constructing shore-groynes from a combination of upright or angle-wise arranged timbers in couples with lower ends set in concrete beds, preferably from about mean sea-level to low-water mark and landwards from the same point to the shore or sea wall, the spaces between the upright or angle timbers having horizontal planks let in or slipped down to form intermediate screens."

The drawings were then described in detail: A, the upright beams bolted, B, at a distance apart fixed by the intervening block C, the whole being imbedded in concrete; the groyne was built by the insertion of horizontal planks, E, and, if necessary, owing to the silting up of the sand, the structure could be continued as shown in the dotted lines of Fig. 3. A long groyne for a shallower beach was shown in Fig. 4.

The advantages of the alleged invention were thus described:—

"The rapidity with which a groyne on my principle can be prepared and set in position is marvellous as compared to the time occupied in digging, shoreing, strutting, and then tying in position by angle set-struts or props driven into the beach at a distance from the groyne itself. . . .

"It will be gathered from the foregoing that all my timber work can be prepared on shore, so that it has only to be carted to the spot as each hole is dug, and the uprights be set in place, gradually moving shorewards or seawards, according to the desire of the contractor.

"It is also to be noted that practically no plant or preparation other than the above is necessary, so that at the shortest notice advantage can be taken of an extraordinary low tide, caused by favourable wind or otherwise, to extend the groyne seawards.

"Little or no skilled labour will be necessary, as the central position for the digging of the holes can be readily staked out for guiding the digging labourers, who also after inserting the uprights simply hold them vertically while the cement concrete is shot in, preferably from a cart, to find its own packing, the action of the water of the inflowing tide effecting the consolidation."

The claim was for :—

"The construction of shore-groynes in the manner described, by preparing braced uprights, inserting them in holes, fixing them by cement con-

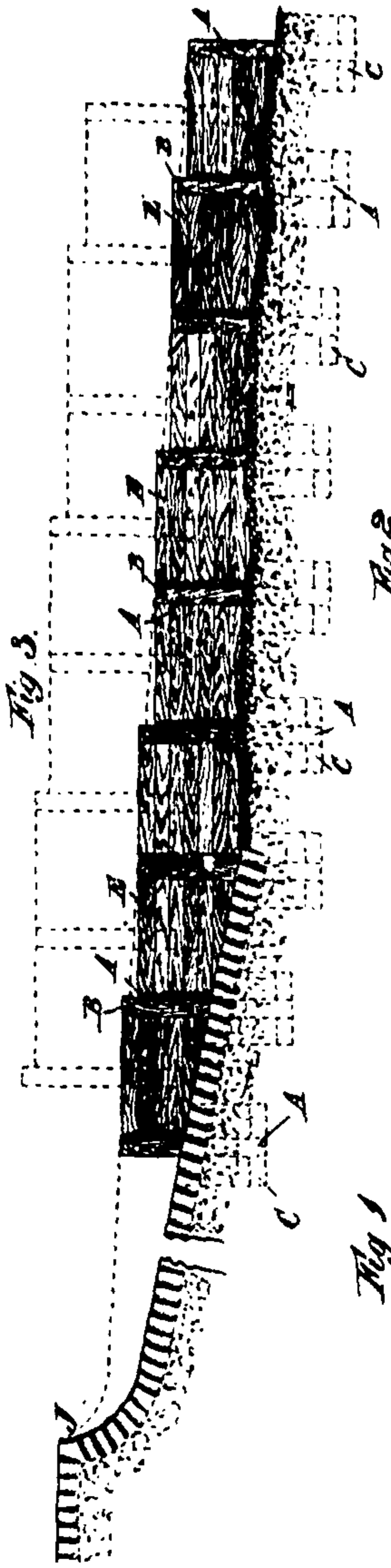


Fig 3.

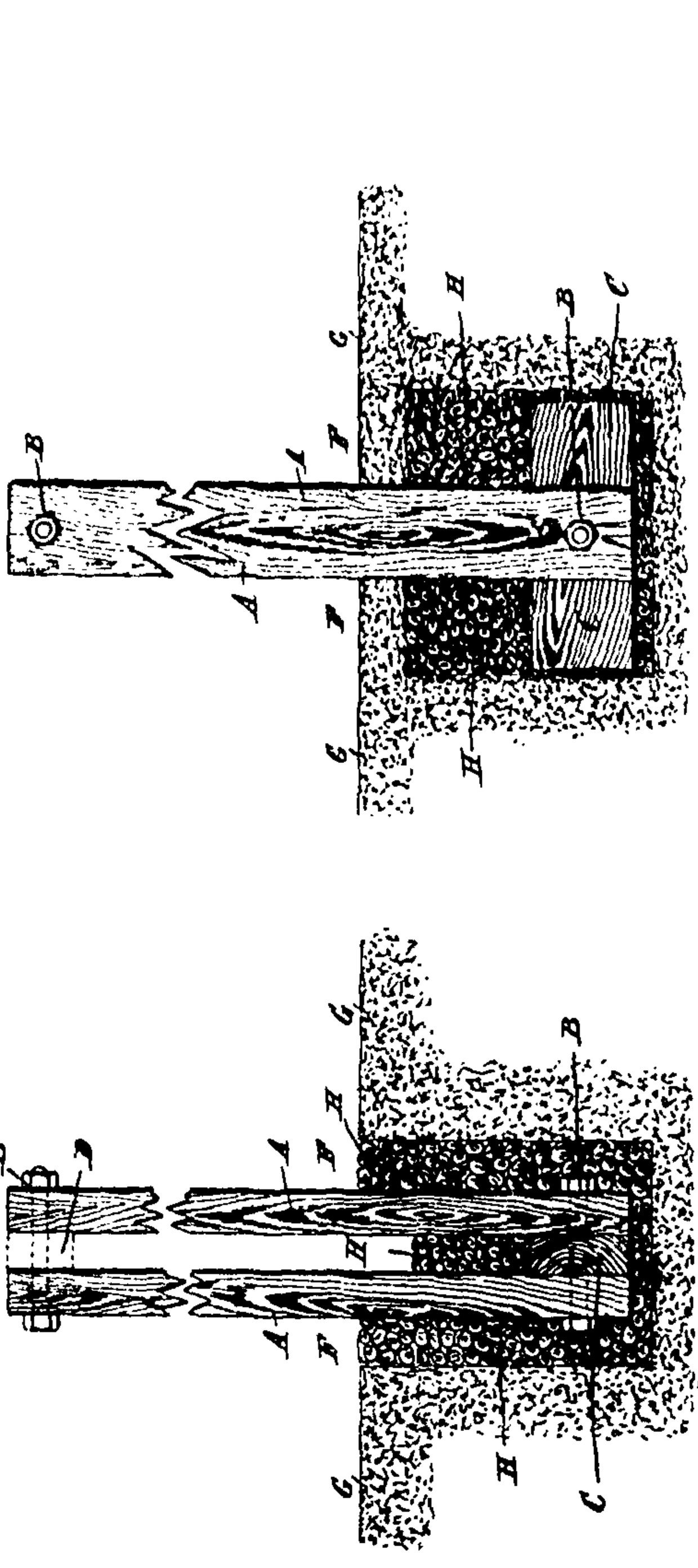


Fig 2.

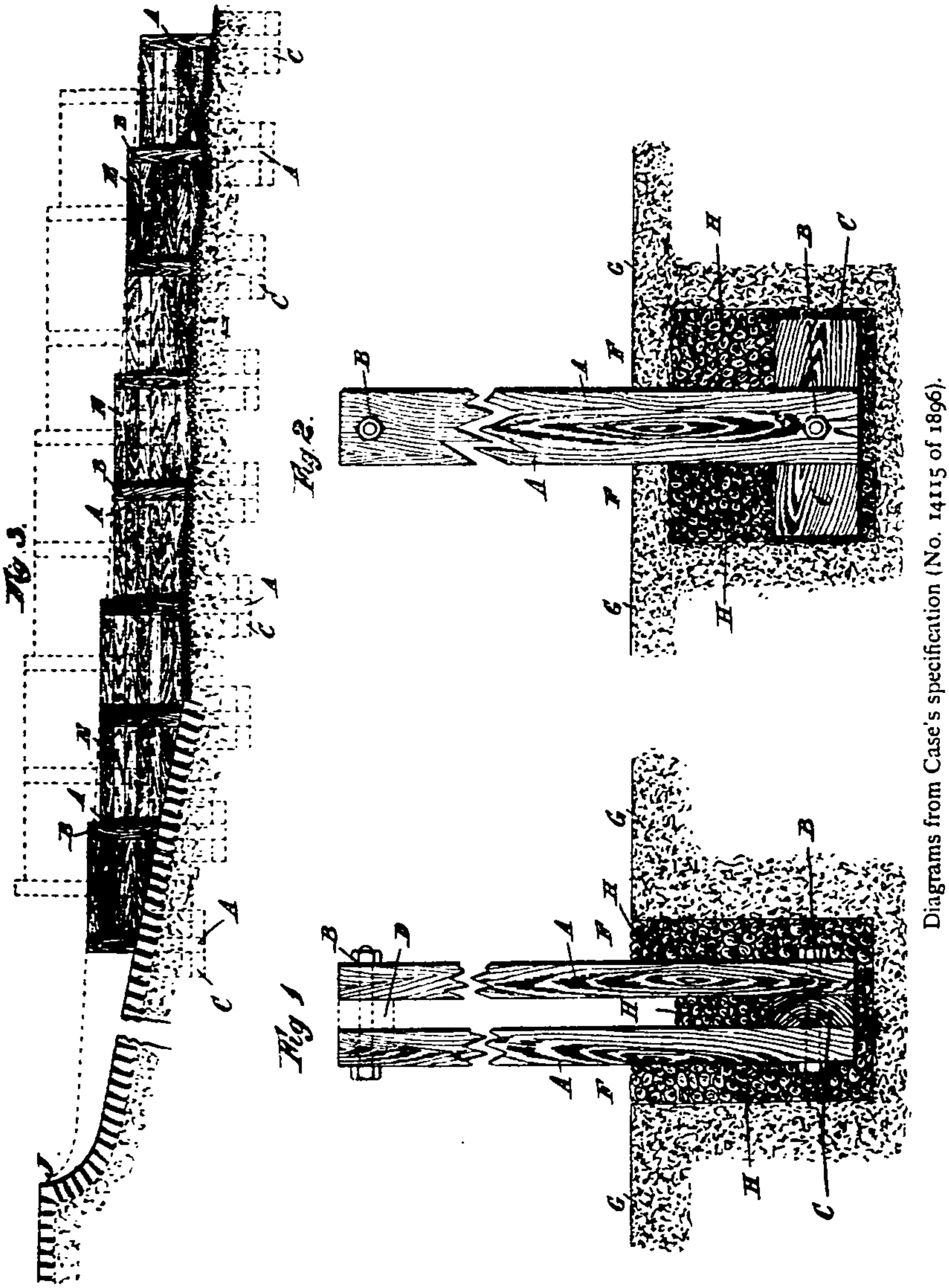
Fig 1

Diagrams from Case's specification (No. 14115 of 1896).

crete, and finally screening the intermediate spaces by horizontal planks, or their equivalents as set forth, the structure taking the form shown on the annexed drawings."

The claim was for :—

"The construction of shore-groynes in the manner described, by preparing braced uprights, inserting them in holes, fixing them by cement con-



crete, and finally screening the intermediate spaces by horizontal planks, or their equivalents as set forth, the structure taking the form shown on the annexed drawings."

An action was brought against the defendant for infringement of this patent.

The chief defence relied on was want of subject-matter, the alleged invention consisting merely in applying to the seashore a mode of construction of a fence that was well known on land.

The plaintiff argued that this mode of construction of groynes was new, and had great advantages.

The learned judge at the trial held the patent to be invalid for want of subject-matter.

The Court of Appeal upheld this decision.

Collins, L.J. (p. 421, l. 33):—The patentee "has discovered that the results on the sea-shore are very successful and are very cheaply accomplished by the use of this particular contrivance, but he does not introduce, and indeed could not have introduced, into his specification any allusion whatever to the advantages resulting from the discovery, or claim any patentable right therein. . . . Therefore it seems to me to be simply the application of a well-known instrument to a purpose—I will not even say to a purpose to which it has never been applied, because I think substantially the same thing was done before—but with results which have never been before accomplished. . . . Therefore it is clearly not proper subject-matter for a patent."

Romer, L.J., referred to the specification, and pointed out that the claim was for the making of a groyne irrespective of a system of groynes. It was *per se* not novel, and was advantageous for sea purposes not by reason of any peculiar nature of the sea, but because the posts were fixed firmly, quickly, and cheaply, as would also be the case on land. "It appears to me it would be carrying the Patent Law too far to hold that there was good subject-matter in this case. It might very unduly hamper persons in their dealings, and indeed I cannot help thinking that, if this was a good patent, the result would be to prevent the defendant from doing what he was doing. I am perfectly convinced that the defendant is doing nothing which ought to be stopped. He has himself shown how the idea of using the post in cement for the purpose of sea-groynes would naturally occur to anybody who wanted to make a post under the circumstances firmly and quickly, and he himself has shown how staggering is a well-known method of putting planks in such a fence as this. It appears to me if this patent were good, the result ought to have been that the defendant should have been held to have infringed, and ought to have been restrained. I do not think he ought. I do not think this is a case where there has been such an invention on the part of the patentee as will sustain the patent."

Note.

The judgment of *Collins*, L.J., recognized that results are no part of a patentable "manufacture" (*ante*, p. 11); and *Romer*, L.J., based his decision on the ultimate test of want of novelty or want of subject-matter:

see *ante*, pp. 19, 34, 37. This case should be compared with *Dredge* v. *Parnell*, *ante*, p. 420.

1902. TUBES, LTD. *v.* PERFECTA SEAMLESS STEEL TUBE CO., LTD., 20 R. P. C. 77.

Construction of Specification—Patent for Improvements.

In 1891 a patent (No. 11436) was granted to *J. Robertson* for "improvements in and relating to the compressing, shaping, and drawing of metal tubes, tubular, hollow, and solid articles, and in the means and apparatus therefor."

The complete specification commenced as follows:—

"My invention relates mainly to compressing and shaping metals such as iron, steel, and copper made soft by heat, shaping or forming masses or billets of metal in this soft state into tubes, tubular, hollow or solid articles by pressing, piercing, or expanding these by great force into or through shaping dies or matrices by mandrels or shaping-tools for tubes, tubular, and hollow articles, or by rams or shaping-heads for shaping solid articles and bars. My said invention consisting mainly in new and improved means and apparatus for fixing and operating the dies, matrices, mandrels, and metal billets during these shaping operations.

"New and improved means and apparatus for expelling metal articles while in a hot and plastic state from shaping dies or matrices and also for cooling the matrices, mandrels, or other shaping-tools so used quickly after they perform their shaping operations to avoid their being injured by heat.

"This invention being mainly a further development, and further new and improved applications of my inventions for which Letters Patent of the United Kingdom were granted to me namely:—No. 5018, dated the 4th day of April, 1888, entitled 'Improvements in and relating to the manufacture of metal tubes, tubular or hollow articles, and in shaping and finishing of same, and in apparatus therefor,' and No. 1627, dated the 30th day of January, 1890, entitled 'Improvements in and relating to the manufacture of metal tubes, tubular and hollow articles and in means and apparatus therefor,' and which inventions in all the suitable forms of the main parts of same and actuating gear therein shown used, it is part of my invention to combine and apply with these improvements. It is no part of my invention to use any of these new and improved modes and means of making tubes or other hollow or solid articles out of what is usually designated 'soft metals,' such as lead or tin, which have the distinguishing feature from other metals of not hardening under pressure or by being hammered in a cold state.

"I use throughout the following description the same letters and numerals of reference to indicate like parts in all the figures where like parts are shown in order as far as possible to avoid needless repetition in describing

the various modifications shown. Throughout my explanation I designate a solid or hollow piece of metal as taken from a heating furnace to be operated upon either for being formed into a tube, tubular, or solid article, a 'billet.' The arrows indicate the directions of the motions of the moving parts of the apparatus shown used, and of the motions of the billets and finished articles being operated upon when in motion.

"For the purpose of showing and described (*sic*) the parts of my invention, that part of my invention for holding up the metal billet in the die to be operated upon against the piercing action of the mandrel and of cooling and expelling the tube or tubular article formed in same, I show a long tube forming die and connecting parts, with mass or billet of hot metal being operated upon of my most improved form of these, all being of the general form described in my older inventions hereinbefore referred to.

"Fig. 1 is a rear-end elevation, and Fig. 2 a plan showing this die and all connections in section, the die A A^1 being shown in halves, the billet B

FIG.2

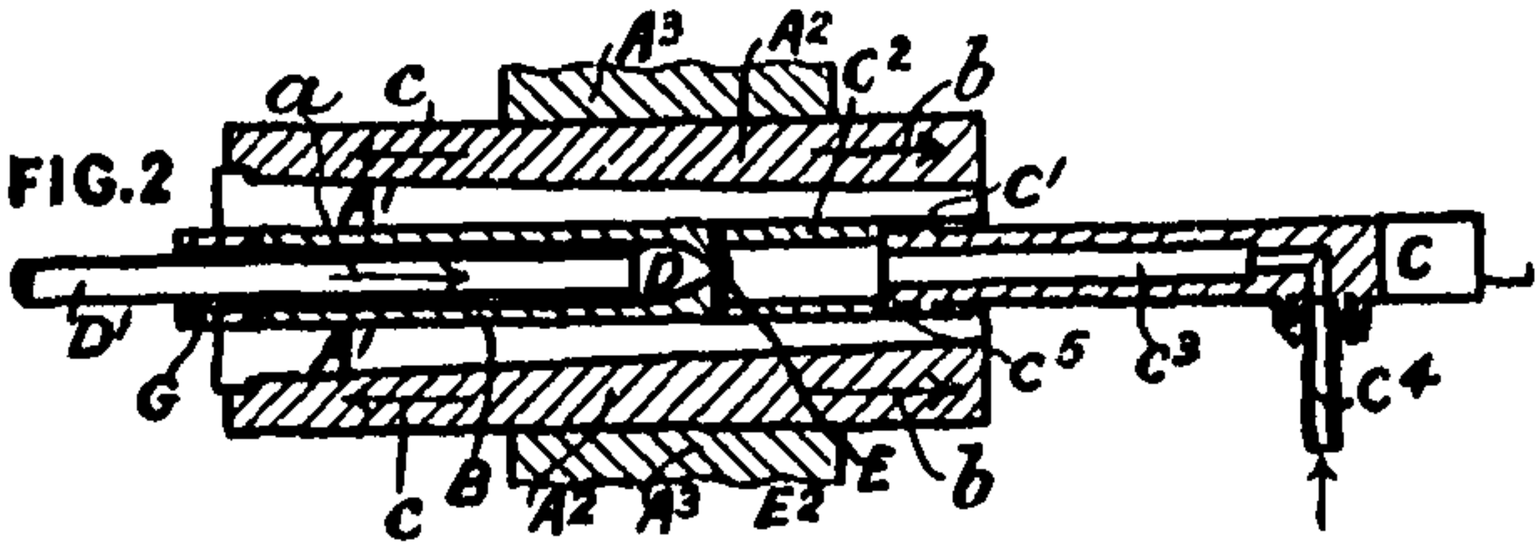


FIG.3.

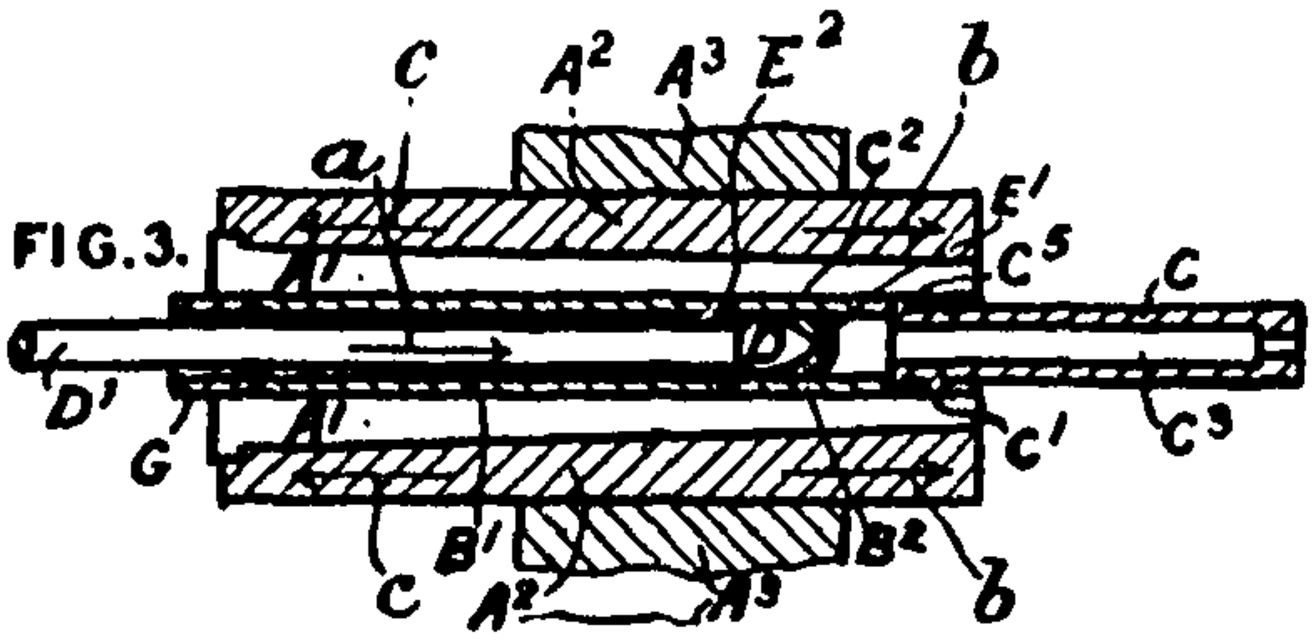
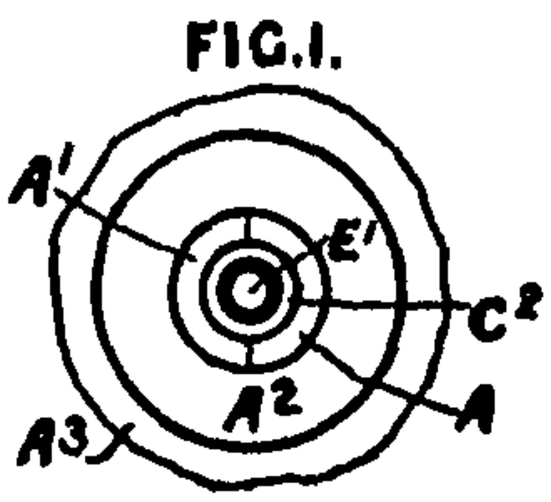


FIG.1.



From Robertson's specification (No. 11436 of 1891).

in the die A A^1 being held from motion endwise in its place by the after billet holding up stem rod C against the piercing action of the mandrel D. The billet B being shown in section in Fig. 2 nearly pierced through by the mandrel D. The mandrel D, stem rod D^1, after holding up stem rod C, and its stem rod head C^1, and after holding up ferrule piece C^2 which is placed between the billet of metal B being shown operated upon and for receiving the mandrel after it is forced through same (all of which, so far being part of my older inventions referred to) but to prevent the hot metal of the billet B being operated upon, from passing by the force from the mandrel D into this abutting and receiving receptacle for the mandrel C^2, a piece of metal plate E in a cold state, by preference formed of copper,

iron, or steel, its employment therein being part of my said new improvements, is shown in Fig. 2 placed over the mouth of this abutting ferrule piece and receiving receptacle C^2 for the mandrel D, and shown interposed between the hot billet B and the ferrule C^2.

"I call this plate E a service-plate, and it is used of such a thickness or strength as, by its shearing resistance to the advancing mandrel D and to the advance of the central part or mass of the billet B, to prevent the metal of same flowing into the ferrule C^2, this plate E being generally of a thickness from about a quarter of an inch to one inch, being increased in thickness as the diameter of the tube being formed is increased or proportioned in thickness to keep the billet B up to the piercing action of the mandrel D, yet to give way or be shorn through when the mandrel D reaches the end of the billet B as is shown in Fig. 2 nearly passed through the billet or close to this plate E."

Fig. 3 was then described,[1] in which the service-plate is shown as sheared by the mandrel, leaving a ring E^2 (on the left of the mandrel head D) held fast between the head of the formed tube and the ferrule C^2, "the shearing strength of the cold metal E to be forced off the billet B, being thus so proportioned as to allow little of the heated soft metal of the billet B to pass it, but to give way and allow the mandrel D to pass it."

"My new and improved means and apparatus for expelling tubes and other articles so formed in dies and matrices of heated soft metal in a plastic state, as also for cooling the matrices, dies, mandrels, and other shaping tools after the metal shaping operation is completed is also shown by the figures just described, as also my new and improved mode of cooling articles of this kind so formed, is also shown by the same figures just described, and for fixing the metal in same and shaping it. This expelling and cooling action is effected by injecting water or other fluid at a high pressure into the dies or matrices at or near the inner end surfaces of the article that has been formed in dies or matrices, using by preference water in a cold state for this purpose, as by its ready cooling action it cools and slightly contracts the hot metal and releases the hold of the die on the hot metal article just formed in it, as also affords very steady force for its removal out of it. Fig. 1 in rear-end elevation has shown the after billet holding stem rod C removed, showing the ferrule receiving-piece C^2 into which the mandrel D is forced after it has performed its piercing work, and into which in the die A A^1 the cooling water is forced at a great pressure. The channel through which the water is led in this example into the die A A^1 to cool and expel the tube B^1 and cool the die and mandrel, is shown formed in the after billet holding up stem rod C, having this water-channel C^3 shown in Figs. 2 and 3. Fig. 2 showing a pipe connection, C^4, to be connected to water forcing pumps, water accumulator, or any means affording water at a high pressure." The operation was described with reference to Figs. 2 and

[1] Only part of Fig. 3 is here shown, the rest is the same as the corresponding parts of Fig. 2.

3; and the mode of making the after stem-rod head watertight. The steam generated at high pressure cools and forces the mandrel D into the tube, "makes it for the instant about watertight, and quickly forces out tube and mandrel, leaving no time for the hot metal to do the die, mandrel, or any of the working parts of the same any injury, and makes the die ready for a fresh operation. The die A A^1 is shown in halves and placed in a container, A^2, which is shown placed in a sliding guide A^3 and provided with a mandrel entering-guide, G, which is of a form used in my older inventions referred to."

Several modifications were then described, with diagrams (Figs. 4–9). These consisted in: (1) interposing a block of metal in front of the service-plate so as to produce a clean shear in the latter; (2) doing without the service-plate by substituting a filling-up pad, round the circumference of which were grooves and corresponding one in the inside of the ferrule, the space being filled with soft metal, and the ring of soft metal giving way before the mandrel as the service-plate did; and (3) by passing through the service-pad a bar of cold metal, iron or steel, "of a strength proportioned to shear through or give way at a resisting strength that will not destroy a billet-piercing mandrel."

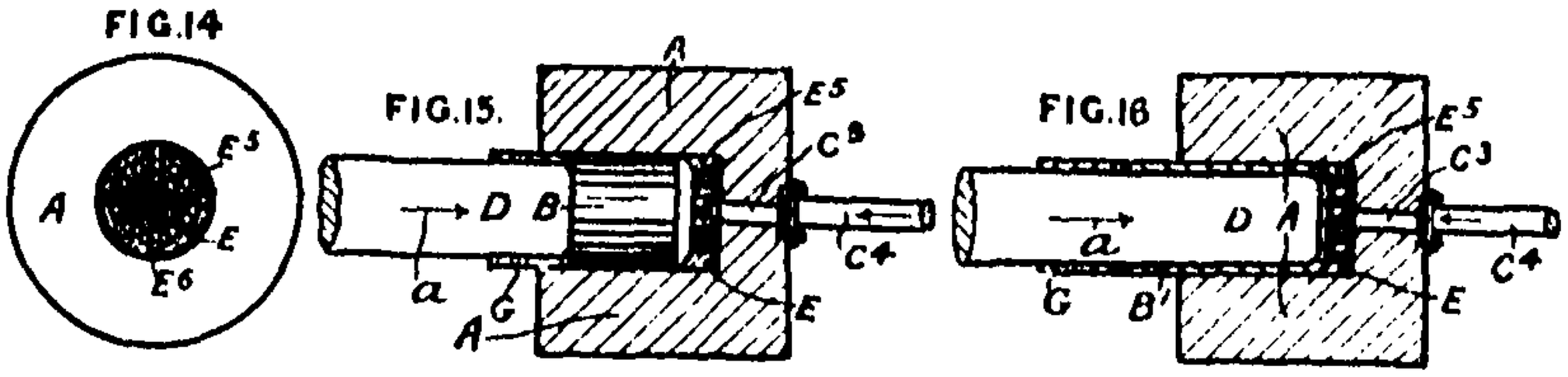
Another method of effecting the same object was described as applicable to billets of large diameters. This consisted in enclosing in a ferrule water or other suitable liquid, so arranged that it afforded sufficient resistance to the mandrel up to the pressure required for the operation. (Figs. 10 and 11.)

A new and improved water-entering chamber was described. (Figs. 12 and 13.)

"Another new and improved way of effecting a closing means against the entrance of the metal into the water-entering orifice in the inside surface of a matrice or die, consists in inserting into the inner surface of same an overlapping metal covering pad plate which may be left loose over the water orifice, allowing room for the water to pass at its edges or through small holes formed in its mass to the hot compressed metal.

"Fig. 14 is a front-end plan, and Fig. 15 a side-sectional elevation of a closed ended matrice, A, bored out internally suited for forming closed ended cylinders of hot metal for being united endwise such as are used for containing compressed gas, volatile substances and like purposes requiring great strength. A water-channel, C^3, being shown formed in the centre of the bottom end of the matrice and a water-pipe, C^4, connected to it. The inside orifice of this water-channel C^3 is shown covered over with a thick round pad-plate, E, loosely placed in the bottom of the die A of a shape next to the hot metal to assist in shaping the article to be shaped in the die, and with a number of holes, E^5, of so small diameter formed in it as will *not allow the hot metal to enter far into them* shown in plan by *Fig. 14*, which small holes may have small gutter-channels, E^6, formed in the inner surface of the plate E from the central water orifice C^3 to allow the water freely to these holes.

"A billet, B, of hot metal is shown by Fig. 15 placed in the die A, and mandrel D shown broken off short placed on top of same held centrally on the hot metal by the guide G all in a state ready for the mandrel head D being forced down into the billet of metal B. At the completion of the stroke, the form of the article B^1 shown formed, and the altered position of



Diagrams from Robertson's specification (No. 1436 of 1891).

the mandrel-head and guide of same, G, and thereafter on the water being admitted all the contents of the die A is by it quickly forced out. The bottom pad covering plate E is by preference made of considerable thickness or mass and partially heated at every fresh operation in order to make the hot metal resting on it flow more readily."

The specification continued by describing another die similar to the last. There then followed descriptions of methods of imparting rigidity to mandrel stem-rods, and of new and improved methods of shaping and drawing tubes so as to reduce the diameter. With respect to the latter, the specification referred to the patent No. 1627 of 1890, and continued: "This new and improved form, combination, or arrangement of die, together with my water-cooling process inside the die, and quick mode of expelling the tube or other article formed in it, rendering this mode of forming seamless tubes practicable."

A mode of compressing and shaping metals in shaping-dies was thus described:—

"A new and improved mode of compressing and shaping metals such as of iron, steel and copper in a heated soft state in combination with my shaping dies and matrices placed in sliding guides so as by the action of one ram and a fixed after holding stem rod, equal pressure can be imparted to both ends or both sides of the article being compressed, and shaped, and also in combination with my new and improved mode of contracting and cooling the articles shaped and dies for same, and of expelling the articles from the dies hereinbefore described in connection with Figs. 1 to 11 on sheet 1 of my drawings.

"Fig. 34 is a rear-end elevation, and Fig. 35 a sectional plan of a die, A A^1, in halves, placed in a container, A^2, and set in a sliding guide, A^3, in which a fixed after holding stem rod C with water channel, C^3, and water pipe, C^4, connected to same is shown placed in the internal after end of the die A A^1, which is of a round form."

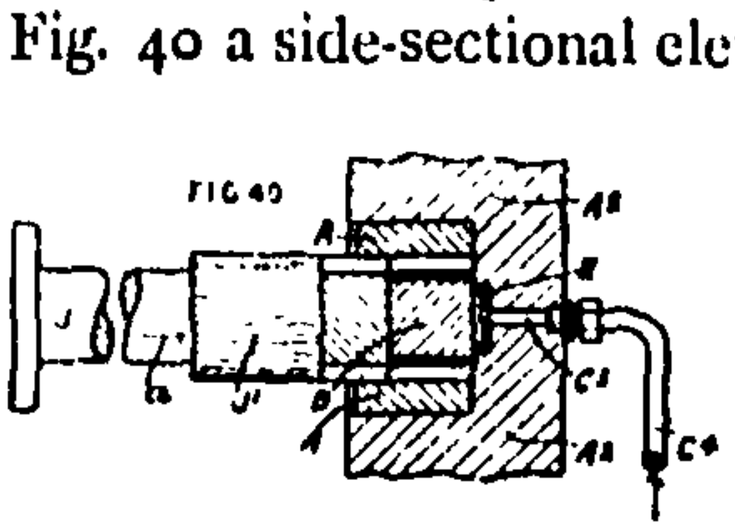
The mode of working this device was described in detail, and by

reference to the thick perforated plate E of Figs. 15 and 16, and Figs. 1, 2, and 3 above.

The use of the new matrix and die in the manufacture of short articles such as cog-wheels was thus described :—

"In matrices and dies suited for compressing and shaping heated soft metal into short articles where there is not much diminution of the pressure by friction by great length of surface on the side walls of the matrices and dies, the sliding guide and after holding up stem rod can be dispensed with, and in that form my new and improved form of matrice and die is mainly limited to the use of my new and improved water cooling and expelling means and apparatus but this for the preservation of the die from injurious duration of contact with the heated metal, and quickness of action obtained by my water-expelling action of the article compressed and shaped from hot metal in this way is of itself important.

"As an example of this form of die, Fig. 39 is a front-end elevation, Fig. 40 a side-sectional elevation of a die, A, adapted to compress and shape a billet, B, of heated soft metal shown placed in same into a cog-wheel. The die A being shown placed in the container A^2, which has to be made very strong and by preference of steel and here shown broken off. This die A which is of an annular form having shown formed in it the recesses A^{10} into which the metal of the plain cylindrical billet B is forced by the pressure of the ram J to form the cogs B^5 of the wheel B^1. The ram J the after end of which is shown of a round form, and shown broken off, has its front end on its periphery shown formed into cogs J^1 for a somewhat greater length than the depth of the die A, these cogs being made an easy sliding fit for the corresponding internal cogs, recesses A^{10} of the die A.



From Robertson's specification.

"Fig. 40 shows the billet B placed in the die, and the ram J entered into the die a short distance, ready for being forced in on the billet B to compress and shape it, and causes the metal of same to squirt into the wheel-cog shaped recesses in the die A^{10}.

"Fig 41, which is a sectional plan showing the stroke completed and the cog-wheel B^1 formed.

"A perforated plate, E, of the form described in connection with Figs. 15 and 16, for preventing the hot soft metal entering the water-orifice C^3 and on the water being admitted through the pipe C^4 shown, the wheel B^1 is forced out and the die made ready for a fresh operation. Dies shaped to various devices can be made to fit the container A^2 and in this way articles of various shapes can in this way be formed very solidly and very quickly. This water-expelling process being capable of being suited for most forms of dies for shaping or forging heated soft metals."

Other devices were described, the whole arrangement being somewhat similar to that described in Figs. 1 to 3.

There were seventeen claims, of which the most important are here given *in extenso* :—

"First. The method of and appliances, and apparatus for compressing and shaping metals such as wrought-iron, steel, and copper made soft by heat, shaping or forming masses or billets of metal in this soft state into tubes, tubular, hollow, and solid articles substantially as herein described in reference to and shown in the accompanying drawings.

"Second. The mode of and means for holding up endwise a metal billet made soft by heat in a tube forming die against the piercing action of a mandrel by inserted pieces of metal in a cold state as a plate, bar, bolt, or ring or like form of such a limited shearing or breaking strength, and apparatus for holding and regulating same as to prevent the billet of metal passing unpierced endwise before the mandrel along the die but to give way as the mandrel approaches to, or reaches the far end of the billet, so as to cause the mandrel to pass entirely through the billet without breaking off any material amount of the metal at the far end of the billet and without injury to the mandrel substantially as described in reference to Figs. 1 to 9 of the accompanying drawings."

The 3rd claim was for the device described in Figs. 10 and 11.

The 4th was for the mode of introducing fluids at high pressure with reference to Figs. 1 to 44.

The 5th for means of expelling hollow articles as described in Figs. 1 to 10 and 24 to 33.

The 6th for expelling solid articles with reference to Figs. 33 to 44.

The 7th to 10th claims were for devices described with reference to Figs. 14 to 19, 24 to 30, 31 to 33, and 20 to 23 respectively.

The 11th and 12th claims referred to Figs. 34 to 38.

The 13th claim was for :—

"The mode of and means for compressing and shaping metal articles in a heated soft plastic state in matrices, and of cooling and expelling the same by water at a high degree of pressure, as described in reference to and shown in connection with Figs. 39 to 41 of the accompanying drawings."

The 14th and 15th claims referred to Figs. 36 to 38.

The 16th and 17th referred to Figs. 42 to 44.

This was an action for infringement. The infringement alleged was the use of the holding-up plate and supporting ferrule as described in the second claim.

Besides a denial of infringement, and alleging that the specification was ambiguous, did not ascertain the invention, and disclosed no subject-matter, the main defence was want of novelty in claims 1, 2, 4, 8, and 9.

The patent of 1888 (No. 5018) referred to in the specification disclosed the use of a fluid die and a ferrule. That of 1890 (No. 1627) disclosed the use of the sliding die. It was proved that the "compressing and shaping" processes described with reference to Figs. 15, 16, 40, and 41,

as distinguished from the hydraulic ejection and cooling, were not new; and that the only novelty about the method illustrated by Figs. 37 and 38 was the use of the sliding die.

It was argued for the defendants that the first claim applied to compressing and shaping as distinguished from cooling and expelling processes, and that as it claimed what was old and included in the patentee's earlier inventions, the patent was invalid.

Held at the trial that there were three parts of the invention, compressing and *shaping*, *cooling*, and *expelling*; that the first claim was for the whole process including cooling, ejection, and making the die ready for a fresh operation. (17 R. P. C. 569.)

On appeal this decision was reversed. It was held that the cooling and expelling parts were improvements in relation to compressing and shaping, and that they were not throughout the specification included in the latter term; that the several claims were distinct, and that, comparing the first and thirteenth claim, the case of *The Electric Construction Corp.* v. *The Imp. Tr. Co.* (*ante*, p. 433) applied; and that the first claim applied to the devices shown in Figs. 15 and 16, 39 to 41, which were old and formed part of the patentee's earlier inventions. (18 R. P. C. 339.)

Held, on appeal to the House of Lords, that the first claim included the cooling and expelling processes, and the patent was valid.

Lord *Halsbury*, L.C., first described the nature of the improvements devised by the patentee, and the alleged infringement, and continued (p. 95): "Now, my Lords, the main attack, of course, on the specification is upon what may be called its composition from a literary point of view. . . . Why is a specification necessary? It is a bargain between the State and the inventor. The State says, 'If you will tell what your invention is, and if you will publish that invention in such a form and in such a way as to enable the public to get the benefit of it, you shall have a monopoly of that invention for a period of fourteen years.' That is the bargain. The meaning which I think has always been placed on the object and purpose of a specification is that it is to enable, not anybody, but a reasonably well-informed artisan, dealing with a subject-matter with which he is familiar, to make the thing, so as to make it available for the public at the end of the protected period. The question here is whether that has been done. Now, it appears to me that the mode in which one ought to face that question is to look (and I should say so not only of the specification of a patent, but of every instrument) at the whole of the instrument to see what it means—not to take an isolated passage out of it and make that inconsistent with the general invention, but to see substantially what the inventor really means, and when you arrive at that, then see whether the language is within the test that I have suggested as the proper test to apply to such a specification, and is such as will enable a typical workman to give the public the benefit of his invention."

As to question whether the patentee had anticipated himself by including what was in his previous specifications, the Lord Chancellor referred to and

quoted from the judgment of *Tindal*, L.C.J., in *Hardcastle* v. *Hardcastle* (1 Webs. 484), and continued: "Now, my Lords, I apply the principle of that case to the present one, and it appears to me, when I look at the language which the patentee has used, and the association of the three things together as a complete machine (I confess, with the utmost respect to those who do not take the same view as myself of the progress of the invention that I have described), the facts that he speaks of his new patent as in relation to the subject-matter that he has described, and that he describes it as improvements upon these things which he had previously patented, leave no doubt whatever in my mind as to what he meant, and, accordingly, I must say I entertain the opinion very strongly that the judgment here ought to be reversed.

"My Lords, there are two matters that I should like to refer to specifically, because they seem to me to raise important questions beyond the particular matter with which your Lordships are now dealing. One is—with the utmost respect I say it—the somewhat confused reference to what is called 'the claim,' and the other is a supposed condition of the patent being good, which I think is inconsistent with a judgment of this House.

"Now, in the judgment of the Court of Appeal, the complete specification is referred to as if every paragraph of it were to be regarded as a distinct and separate claim. That is a mistake. The patentee says (*ante*, p. 453, line 11), 'My invention relates mainly to compressing and shaping metals,' and so on, 'my said invention consisting mainly in new and improved means and apparatus for fixing and operating the dies, matrices, mandrels, and metal billets during these shaping operations.' That, to my mind, looking at the specification and reading it all, refers obviously to the new and improved thing, which is the service-plate. Then he goes on, 'New and improved means and apparatus for expelling metal articles while in a hot and plastic state from the shaping-dies,' and so on. That is the double operation of cooling and expelling. But those two are to be read together, and you cannot treat them as separate things. They are part of the complete specification."

As to the references in the judgments of the Lords Justices *Rigby* and *Vaughan Williams* to the necessity of there being a distinct claim to support the validity of the patent, the Lord Chancellor said (p. 99, line 20): "My Lords, of course no one could deny that the claim, like every other material part of the specification (and it is part of the specification), must be construed with reference to what the specification means, and no one would question if they meant that if, looking at it, it raised the doubt to which they have given expression, there might be ground for saying that the specification was bad, because the statement in the whole of the specification taken together, including the claim, was not that which the patentee was bound to give. But if they meant that, taking the claim as a distinct and separate statement, that was an independent ground, because there was no distinct claim in it, then, my Lords, that is absolutely inconsistent with the judgment of this House in *Vickers* v. *Siddell*" (*ante*, p. 324). "I do not

think that it would be accurate to speak of that judgment as *obiter*, because it turned upon the question of what were the facts there, and it is not accurate to say that one ground of the judgment was rendered unnecessary by what the facts proved were." The Lord Chancellor then quoted passages from his own judgment and that of Lord *Herschell* (*ante*, p. 328). "Now that judgment in the Court of Appeal, affirmed by this House, ought, I think, not to be so summarily dismissed by the simple observation that the statutable requirement has not been complied with. I wish, therefore, to express my concurrence in the former judgment, which is binding upon your Lordships."

Lord *Davey* (p. 101): "My Lords, I confess to a strong inclination to say, with Lord Justice *Vaughan Williams*, that there is a want of any distinct statement in this specification of the invention claimed. The office of the specification is to ascertain by particular description the nature of the invention, and the mode in which it is to be effected. No doubt a specification is not bad because there are questions or even difficulties which arise on the construction of its language, for a very few patents could survive such a test. In the present case the difficulty is not so much of construing the patentee's language, as of ascertaining what it is he really meant to say, or what are the words he intended to use. In the important part of the specification in which the nature of the invention is apparently intended to be described, you find a series of ungrammatical, disjointed sentences, without any verbs and without any words to indicate the relation which the sentence bears to that which precedes or that which follows it; and both in the body of the document and in the claims you find words inserted with no grammatical relation to the context in which they occur, and the meaning of which they only serve to obscure. The document which I have thus described is supposed to be primarily addressed, not to the trained intelligence of your Lordships, but to the mind of a competent artisan. In the case of a contract, or any similar document, the Court is bound to find a meaning; but in the case of a specification the Court must be satisfied that the patentee has fulfilled the condition upon which his monopoly is granted. This point, however, has not been pressed by the learned counsel for the respondents, and I believe that all your Lordships are agreed that we ought to put a meaning on the document.

"Applying myself, then, to this task, I have come to the conclusion that the construction adopted by Mr. Justice *Buckley* is preferable to that expressed in the judgment of Lord Justice *Rigby*. If I understand him rightly, the learned Lord Justice thinks that by the first claim the patentee has claimed as his invention all the modes of 'compressing and shaping' with or without a service-plate, shown on the drawings, and including those comprised in his earlier patents; or (in other words) he has claimed his invention over again. Now, my Lords, that is not a very probable construction, because the patentee mentions his previous patents in the forefront of his specification, and tells you that his present invention is mainly a further development and further new and improved application of his

previous inventions, which it is part of his invention to combine and apply with his new improvements. But still in a document of this kind the patentee may very well have made his claim too wide, though unintentionally." His lordship then examined the specification in detail, and dealt with the question of infringement. He concluded (p. 103): "My Lords, I have endeavoured to ascertain the meaning of this specification to the best of my ability; but I confess to an uneasy feeling that under the guise of construing, I have in fact drawn an amended specification for the patentee. And I retain my doubt whether the typical 'intelligent' artisan ought to be required to pick his way through this specification as your Lordships have done, in order to ascertain what the invention is—a matter which the patentee is bound by law to state distinctly either in the body of the specification or in his claiming clauses."

1902. WILSON BROS. BOBBIN CO. *v.* WILSON & CO., LTD., 20 R. P. C. 1.

Construction of Claim—Utility—No Inventive Ingenuity.

In 1895 a patent (No. 5559) was granted to *H. W. Wilson* for "improvements in means for strengthening and protecting tubes and bobbins used in the preparation and spinning of fibrous materials."

The specification began by a general statement that the invention "refers to an improved method of forming and applying the light metallic rings" used on bobbins in textile machinery. There was a reference to the earlier patent (No. 18790 of 1891) and the mode of attaching the ring in the specification thereof, viz. by the edge being pressed into a groove preferably cut to receive it. The specification continued: "My present invention is for similar objects, but, instead of forming the metallic hoops or rings with the said penetrating flange or lip, I fold or double over the lower part of the hoop, thus presenting a flat raised band at the foot of the interior of the hoop. When the hoop is applied to a tube or bobbin or flange I press this raised folded edge into the wood of the bobbin or tube, the pressure being sufficient to bury the folded edge in the wood, the edge of the doubled-over portion thus serving as a confining ring to prevent the hoop from coming off. The upper edge of the hoop is formed as set forth in my foregoing patent or in any other convenient or suitable manner so as to engage with or lay hold of the tube or bobbin or flange."

The diagrams illustrating the details of the invention were then described. Fig. 1 shows the ring before being put on, a^1 the edge that enters the wood at the top, a^2 the folded-over lip or edge to the ring. Fig. 2 shows the ring put on the bobbin, and Fig. 3 the final position when the edge or band is pressed into position. Figs. 4 and 5 showed the improved ring applied to interior foot and exterior of the bobbin. Figs. 6 and 7 show the application of the invention to the flanges of a bobbin. "I have found that in

these and other similar applications of the ring *a* to the tubes and bobbins the folded-over edge a_2 of the ring or hoop *a* gives a perfectly secure hold-fast to the hoop, and obviates drawbacks which occur in applying the said metal hoops under my aforesaid former patent of 1891. For example, it

Fig. 1

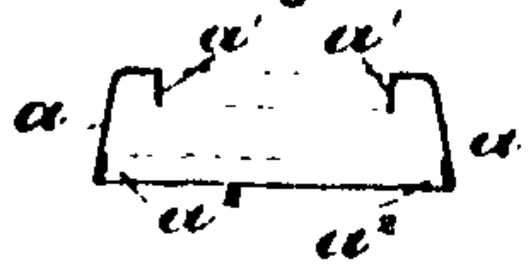


Fig. 2

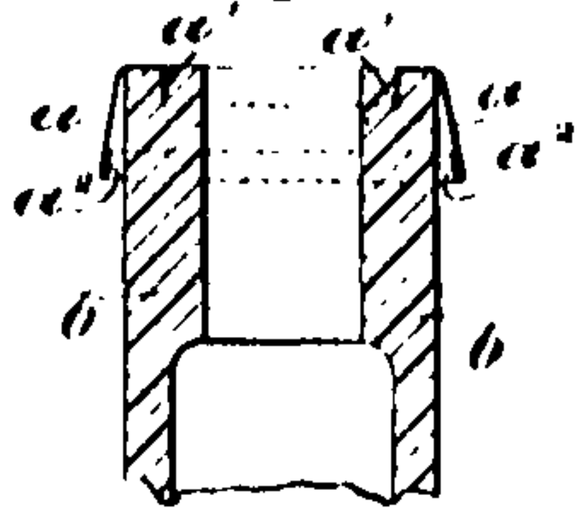


Fig. 3.

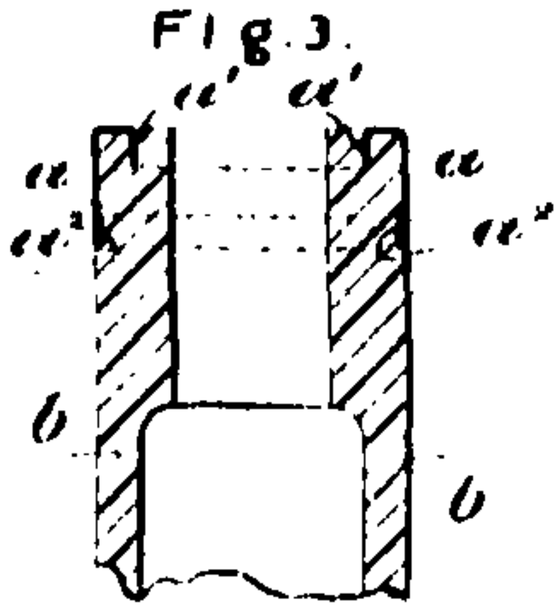
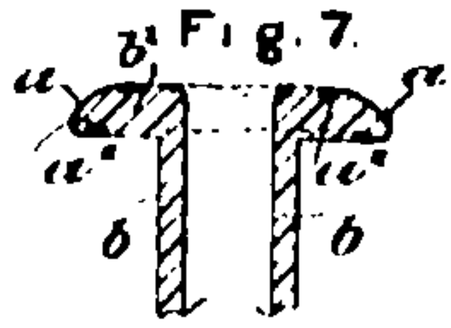


Fig. 6



Fig. 7.



From Wilson's specification (No. 5559 of 1895).

is not necessary to groove or indent the wood of the tube or bobbin to receive the folded edge a_2, as pressure alone suffices to sink the latter into the solid wood, where it remains as a binding and securing ring."

The claims were :—

"(1) In rings, hoops, shields and ferrules for application to tubes, bobbins, pirns, and flanges for the purpose of protecting and strengthening the same, forming the said rings, hoops, shields and ferrules with a folded or doubled over edge or lip such as *a* 2, which is pressed into the wood or material so as to hold the ring or hoop securely, in conjunction with a flange or lip, a^1, at the other end or edge of the ring or ferrule substantially as described and shown.

"(2) In rings, hoops, shields and ferrules for application to tubes, bobbins, pirns and flanges for the purpose of protecting and strengthening the same, forming the said rings, hoops, shields, or ferrules, *a*, with folded or doubled-over edges or lips, *a* 2, which are both pressed into the wood or material so as to hold the ring or hoop securely, substantially as described and as shown.

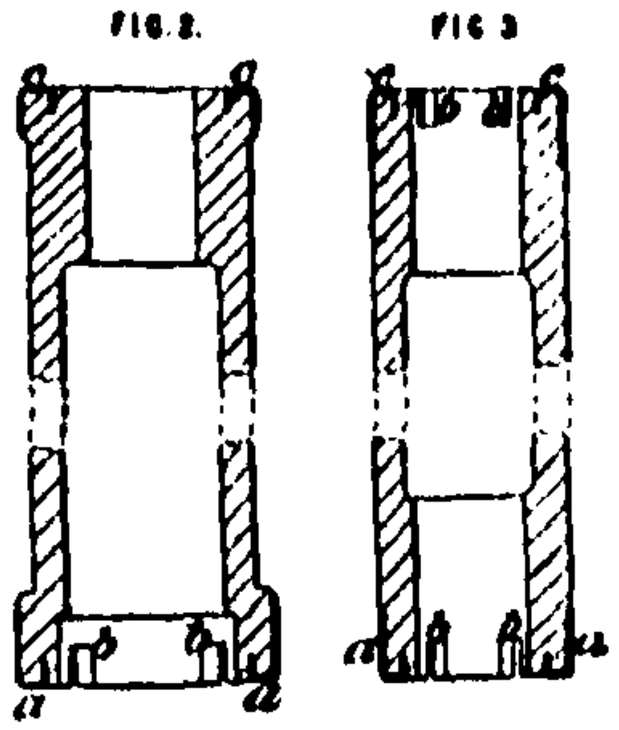
"(3) The improved rings or ferrules for application to tubes and bobbins substantially as described and illustrated."

This was an action for infringement.

The chief defences besides non-infringement were that the patent was invalid by reason of there being no sufficient addition to the stock of public

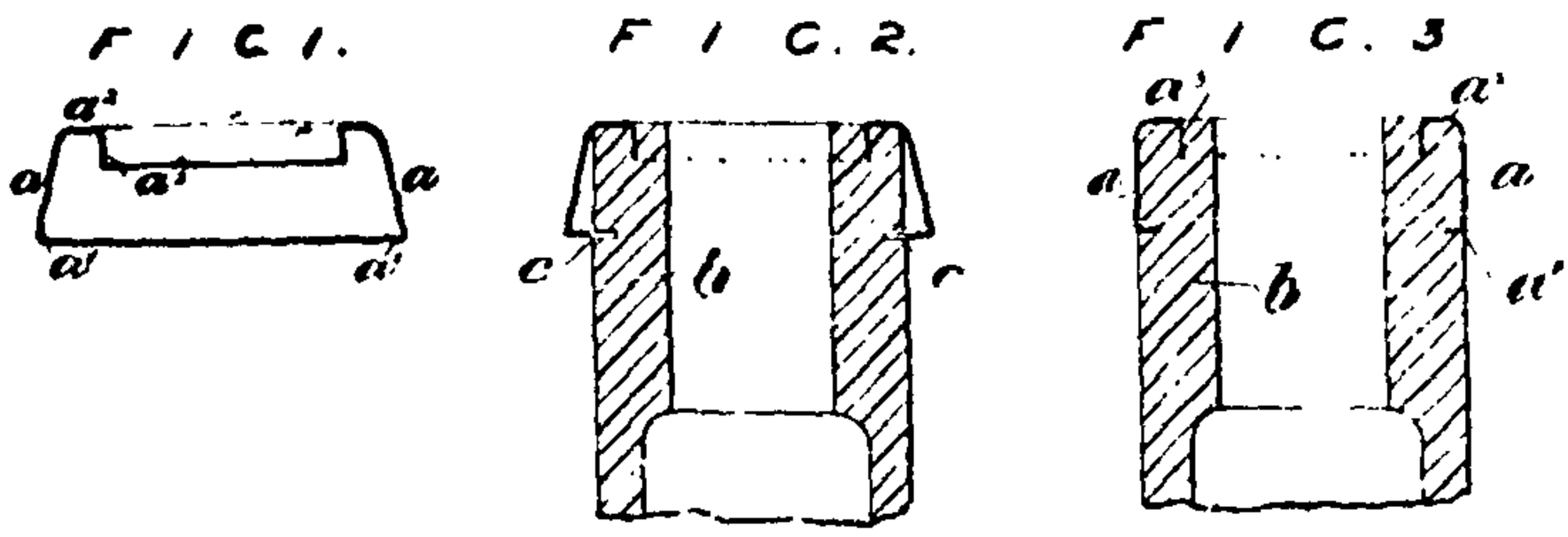
knowledge to constitute subject-matter for a patent; and that the invention as claimed in the three claims was not useful.

Amongst a large number of publications the following were relied on:—The specification of *J. H.* and *L. Wilson* (No. 1772 of 1881), which described a ring of J, I, or U-shaped cross-section; and one form of which is shown in Figs. 2 and 3.[1] In Fig. 2 the upturned portion of the flange is pressed into the end of the bobbin, and the other edge bent or milled over a shoulder on the tube. Fig. 3 shows a similar ring attached without any shoulder on the bobbin by being pressed or milled against or into the material of the tube or into a groove formed for its reception.



From Wilson's specification (No. 1772 of 1881).

In the specification of *Wilson*, No. 18790 of 1891, the above was referred to, and further improvements thereon described. The sharp edges of the ferrule were got rid of by grooving the bobbin and pressing into the groove the end of the ferrule (Fig. 1), as shown in Fig. 2. When the upper edge or rim was pressed into the wood (Fig. 2) the lower came opposite the groove *c*, and was then finally pressed into it, as shown in Fig. 3, the whole ring becoming cylindrical. Other applications of this improvement were shown in the specification.



From Wilson's specification (No. 18790 of 1891).

Other exhibits were produced. In one of these a ring was shown on a bobbin with the edge at the end of the bobbin completely turned in. This was held in position by the other edge being turned over a shoulder, and not by the inturned edge or band being pressed into the wood.

The patent was upheld at the trial, and judgment given for the plaintiffs.

The defendants appealed.

Upon the hearing before the Court of Appeal the defendants raised the point that, notwithstanding evidence of large sales of the plaintiff's bobbins, there was no evidence of any being made commercially without a groove

[1] The top and bottom of the bobbins are alone here shown.

being cut to receive the band, without which they alleged the rings would not remain on the bobbins.

The Court of Appeal held that the improvement in question was not such an advance upon the methods of the two earlier specifications as to constitute a patentable invention; also that the third claim was for the ferrule *per se* apart from the fastening on the bobbin, and that it was not new. The patent was held invalid.

On appeal to the House of Lords it was *held* that the specification claimed as an invention the fitting on of the rings without grooves, that there was no evidence to prove that this had been done, by the inventors or any one, so that the rings would not come off when being used. The appeal was dismissed.

Lord *Halsbury*, L.C. (p. 14), discussed the nature of the question at issue and the nature of the invention, quoting those portions of the specification given *in extenso* above,[1] and continued (p. 15 (48)): "If that had been proved to be practicable, I confess for myself I thought that it was a very ingenious and meritorious, although it seemed only a simple expedient, the turning in a ring of a sort of ferrule which probably everybody's umbrella has, accomplishing those objects which are set forth in the specification by very simple and effectual means. My Lords, when I find out now what the fact is it appears to me that there is no foundation for the whole of the allegation that the thing purporting to be done has ever been done. . . ." In the Court of Appeal counsel (p. 16 (1)) "very sternly protested that the thing suggested to be done by the patentee could not be done at all, and never had been done, and when an opportunity was given to those who were in favour of the patent to produce a single specimen which would prove the application of the patent in that manner, and so prove that it had been done, there is an absolute failure to prove anything of the sort. . . ." P. 16 (56): "My Lords, the result is that in this case I think the patent itself has shown no invention and no sufficient utility. It is very rarely, I think, that the question of utility is important; the word 'utility' does not occur in the statute, but I mean having commercial existence as a process of manufacture."

Per Lord *Davey* (p. 20 (12)): "I concur that we have not had brought before us any single example or instance in which a bobbin has been made in accordance with Figs. 2 and 3 of the plaintiff's specification of 1895, and that there is no evidence before your Lordships that the patent is capable of being worked, or that the invention which I think is claimed by claims 1 and 2 is capable of being applied in a practical or useful manner—at any rate, to any extent. It may be that in some soft woods it would be possible to apply it, but it appears from Mr. Greenwood's evidence that they have found it necessary (generally I think was his expression) to make a groove to receive the thickened edge before applying the pressure. The patent is not confined to any particular kind of wood, but on the face of the patent it

[1] *Ante*, pp. 463, 464.

is made to apply to all kinds of wood of which bobbins are usually made. I think the qualification ought to be put in 'of which bobbins are usually made.'

"My Lords, I think, therefore, that the patent is bad, either from want of utility, or, if it had been pleaded, for want of sufficiency of specification, and it fails on that ground."[1]

1903. CHAMBERLAIN AND HOOKHAM *v.* MAYOR, &c., OF BRADFORD,[2] 20 R. P. C.

Construction—Combination—Subsidiary Claim—Equivalents.

A patent was granted (No. 4225 of 1887) to *G. Hookham* for an invention of "improvements in electricity meters, parts of which improvements are applicable to dynamo-electric generators and motors."

The complete specification was twice amended, on the 14th February, 1889, and on the 14th August, 1895.

The specifications are as follows:—[3]

"My invention consists of the improvements hereinafter described in electricity meters, parts of the said improvements, as hereinafter pointed out, being also applicable to dynamo-electric generators and motors.

"I will describe my invention as applied to an electricity meter.

"My said electricity meter consists essentially of an electro-motor with constant or nearly constant field, the armature carrying the current to be metered and an electric brake consisting of a mass of metal in the form of a disc, cylinder, or other figure of rotation, rotating in a magnetic field in such a manner as to have 'eddy' or so called 'Foucault' currents generated in it. When all other work done by the motor is negligible compared with that done against 'eddy' currents the speed of rotation of its armature is directly proportional to the armature current.

"The electro-motor may be of any of the ordinary forms now in use. It may, for instance, have a drum, ring, or disc armature. Or it may consist of a simple solid disc or cylinder rotating between magnetic poles. In the latter case, however, I may use two thicknesses of metal in the disc or cylinder, the one carrying the current to be measured being insulated from the other except near the centre. And in order to confine the current to a narrow field the said disc or cylinder may be slit in directions at right angles to the motion in the field; or instead of a disc or cylinder so slit, insulated wires or metal strips may be used.

"The electric brake may be formed by the armature itself, or it may be attached to the armature so as to rotate in the same field, or it may be

[1] As to the connection between "utility" and "sufficiency," see *ante*, pp. 80-83.

[2] This abstract is prepared from the original documents and from hearing the case when this work was in the press. The author is indebted to Messrs. *Ashurst, Morris, Crisp & Co.* and Messrs. *Field, Roscoe & Co.*, for the drawings here reproduced.

[3] The provisional is repeated in the first portion of the complete.

independent of the armature, and rotate in a separate field; or a separate brake may be used in addition to an armature brake.

"In order that other work done by the motor may be very small compared with the work done on the electric brake, special means to reduce friction are adopted. If the axis of the motor armature is horizontal, the spindle is supported on anti-friction wheels; and if vertical or nearly vertical, on hardened points, and in both cases I use mercury contacts or commutators where practicable.

"If the spindle of the motor is horizontal I form a double or divided

FIG. 1.

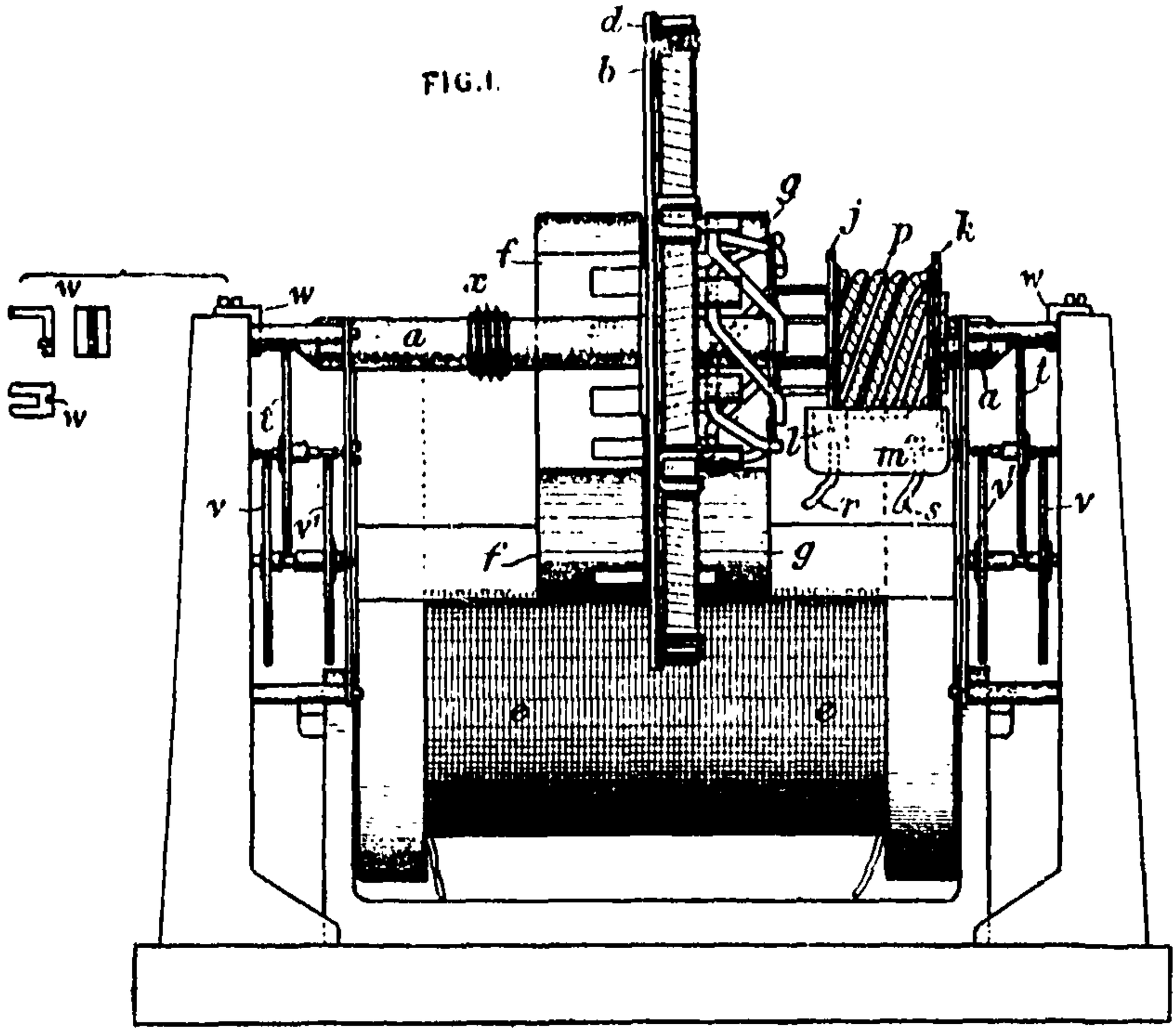


Fig. 1 of Hookham's specification. Side Elevation.

commutator consisting of two sets of insulated spokes or projections placed side by side, each set dipping into a mercury trough, the mercury troughs being connected one with each terminal of the machine. Each commutator spoke is put in connection with the one opposite to it on the other half of the double commutator, so that the mercury troughs, though both on the same side, act as ordinary brushes act when placed on opposite sides of the commutator. If the spindle is vertical I take advantage of the high surface tension of mercury in virtue of which it may be made to stand above the level of the vessel containing it. The ends of wires or metallic

strips from the vertical armature can thus cut the mercury without touching the vessel.

"When I use a motor consisting of a simple solid disc or cylinder, I may, in order to economize magnetizing force, corrugate the disc or cylinder

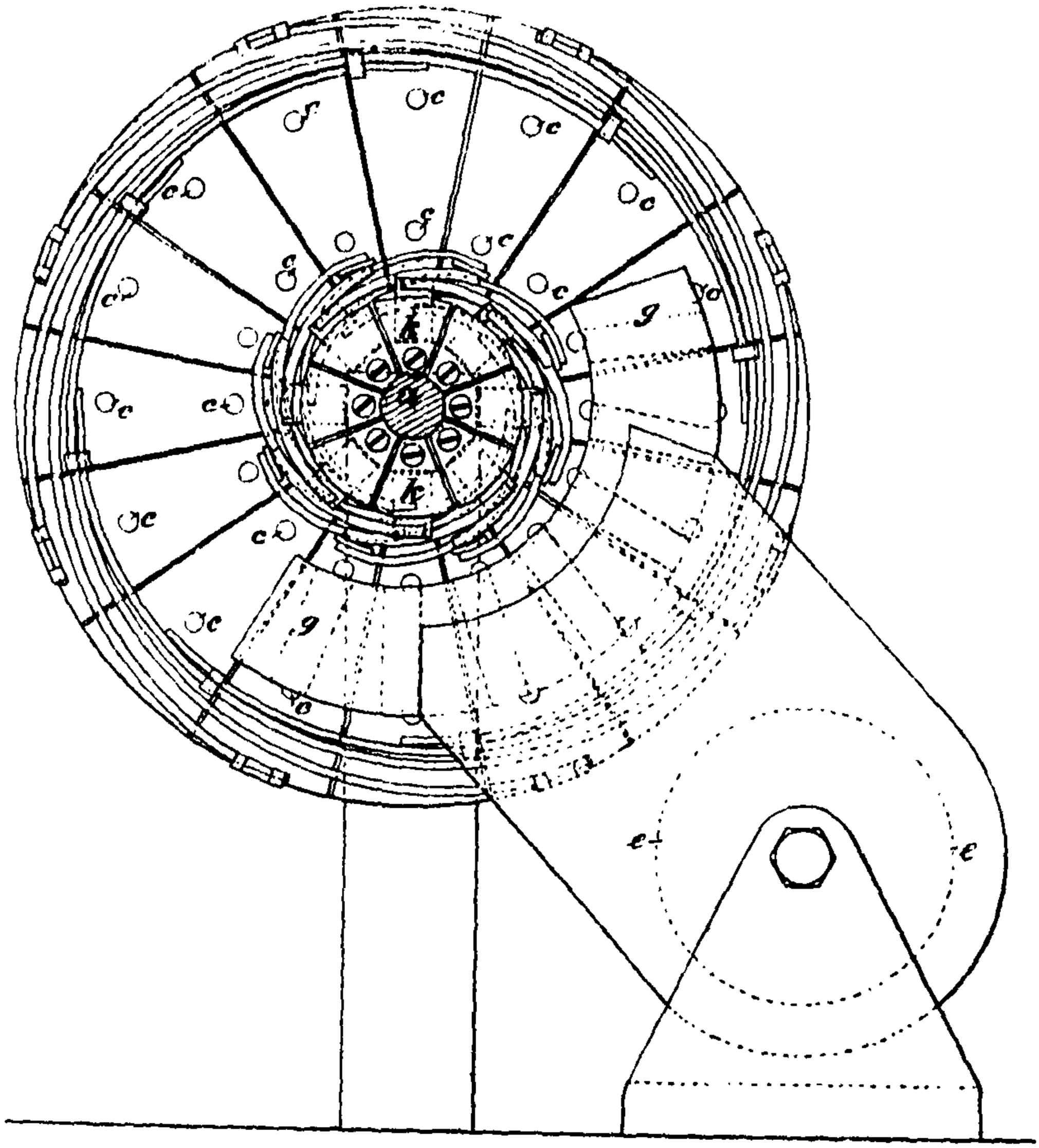


Fig. 3 of Hookham's specification. Elevation of Commutator End.

in concentric rings and form the magnet poles to correspond, and thereby not only lessen the resistance of the non-magnetic space, but also increase the efficiency of the driving current. If in any case it is found impracticable to render friction or other disturbing causes inappreciable, I may 'compound-wind' the magnets or armature of the motor or, if it is separate, of the electric brake.

"In cases where iron is used in the armature or the electric brake, I may

so dispose the magnets as to counteract or partially counteract gravity, and thereby lessen friction. For alternating currents the magnet cores, and if of iron the armature core, must be finely divided into wires or metal strips.

"The rotations of the axis of the armature of the meter are registered by means of counting apparatus of an ordinary type.

"The double commutator and the corrugation of the disc or cylinder

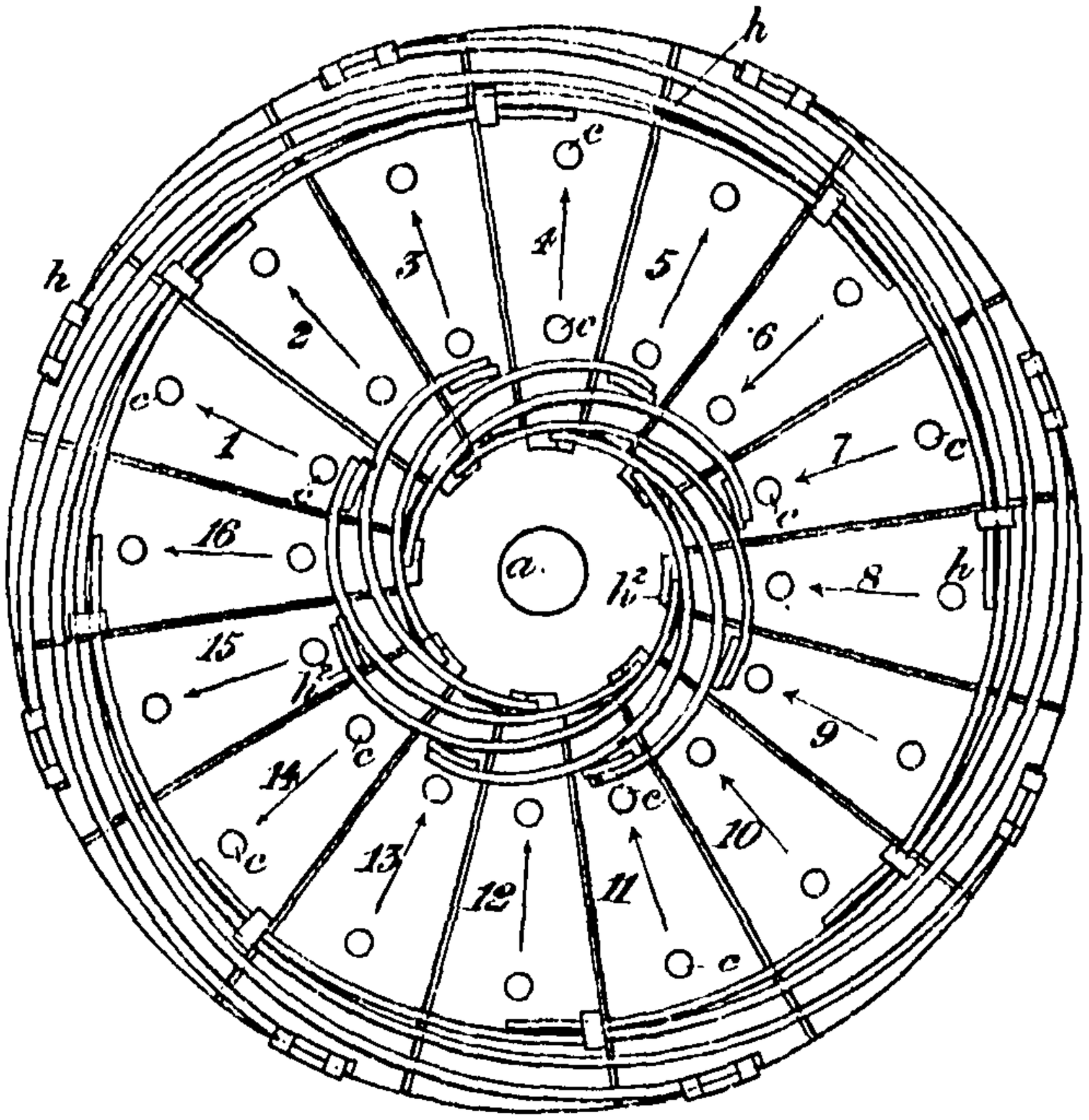


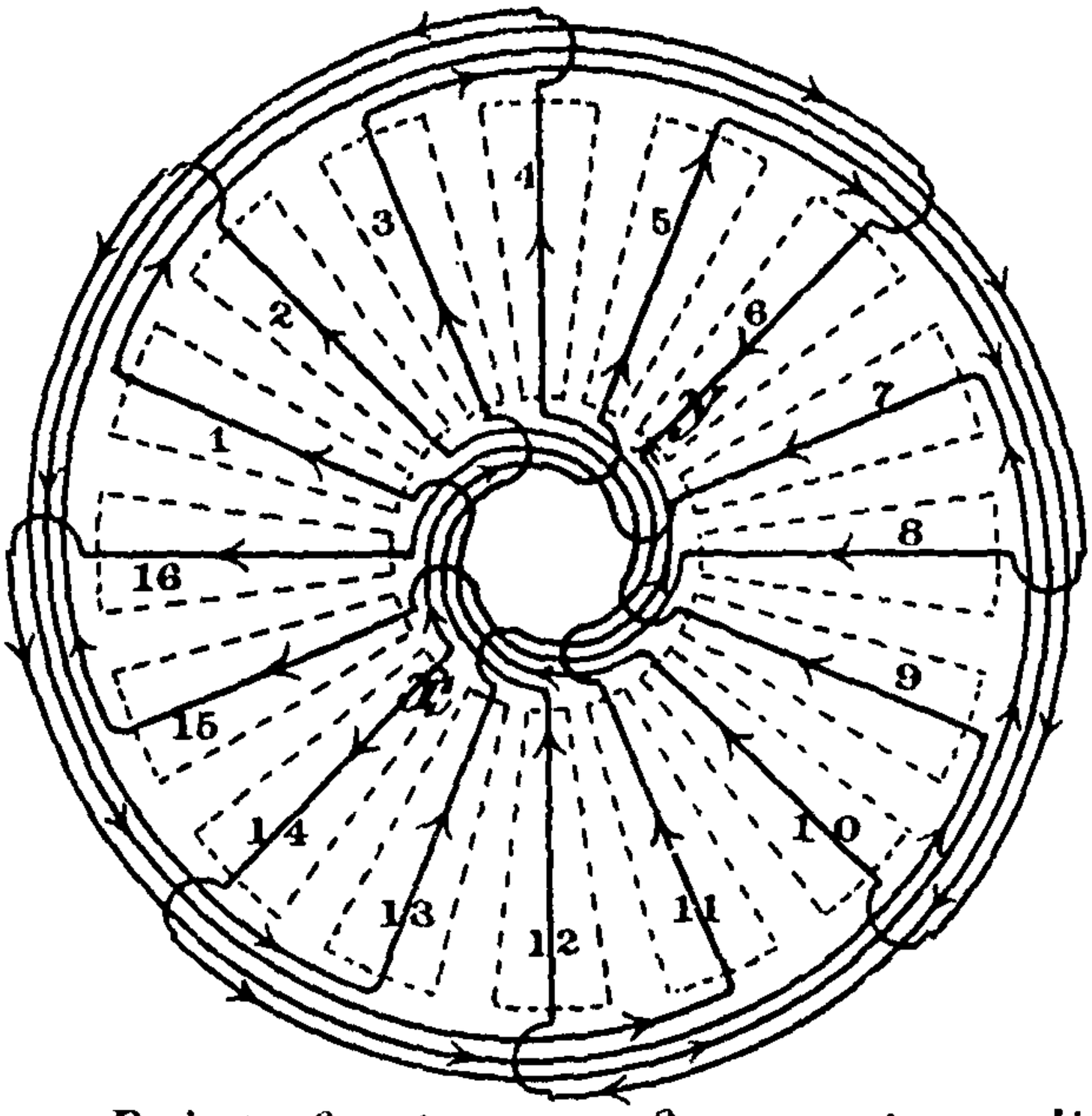
Fig. 5 of Hookham's specification.

and pole-pieces hereinbefore described are applicable to dynamo-electric generators and motors."

The specification (up to this point a repetition of the provisional) continued by giving a description of the drawings in detail. Fig. 1, representing a side elevation of an electricity meter "constructed according to one form" of the invention, Fig. 3, an end elevation at the commutator end, and Fig. 5, representing the armature in elevation, are here reproduced. The latter is thus described :—

"The armature consists of a series of metallic sectors marked respectively *1 to 16, both inclusive in Fig.* 5. These sectors make up a circular disc with radial slits, by which slits the said sectors are electrically insulated from one another. These sectors do not extend to the axis *a* of the machine, as seen in Fig. 5. The said sectors are carried by the circular

disc *b*, which is mounted on the axis *a*, and constitutes the brake of the meter as hereinafter explained. The sectors are connected to the disc or brake *b* by means of the pins or pegs *c*, made of ivory or wood or other insulating material. Between the brake *b* and the sectors is a disc of brown paper, *d*, by which the said sectors are electrically insulated from the brake *b*; *e* is the magnet between the pole-pieces *f* and *g*, of which the armature and brake *b* rotate. The sectors are electrically connected with each other in the manner best seen in Fig. 5. The connections are effected by flat wires or bands of copper covered with silk ribbon or other insulating material, and are carefully insulated from one another. The



X.....Point of entrance of current on disc
Y.....Point of exit of current from disc.

sector marked 1 is connected to the sector marked 8 by the outer band *h*, one end of which is soldered to the sector 1, and the other end is soldered to the sector 8. The inner end of the sector 8 is electrically connected by the inner band h^2 to the inner end of the sector 15. By tracing the several outer and inner bands, it will be seen that the several sectors are connected in the following manner."

There then followed a description of the course of the current. This may be seen from the next diagram, in which the current enters at *x* in sector 14, divides in two branches, and, flowing as indicated by the arrows, leaves the armature at *y* in sector 6. Sectors 7 to 13 are supposed to be between the pole-pieces *f* and *g*.

"The result is that the sectors 7, 8, 9 10, 11, 12 and 13 are urged from between the pole-pieces *f* and *g* of the electro-magnet *e*, communicating a rotary motion to the axis *a* of the armature. As the armature rotates, the sectors which were in the magnetic field, and were traversed by currents travelling inwards, pass in succession out of the magnetic field when the direction of the currents in them is changed by the commutator as hereinafter explained, and the sectors coming into the magnetic field also have the direction of their currents changed from outwards to inwards by the action of the commutator."

On the armature moving through one division, the current enters the next sector 13, and leaves at sector 5, thus the position of the currents relative to the pole-pieces remains the same.

The commutator was next described.

The commutator consists[1] of two series of insulated sectors, *j*, *k*, fixed a short distance apart on the axis, *a*, of the armature, the marginal portions of the several sectors dipping in turn as the axis *a* rotates in the mercury troughs *l*, *m* respectively. The series of sectors *j*, *k* exactly resemble in their action an ordinary commutator, the highest and lowest sectors respectively carrying the incoming and outgoing current. But in order to avoid the friction of a brush or spring upon the two opposite sectors, and to effect the transmission of the current through mercury which is practically frictionless, each of the sectors of the series *j* is connected by one of the wires *p* with the sector diametrically opposite to it on the series *k*, so that the opposite sectors of the series *j* are respectively connected with the mercury in the two troughs *l* and *m*. The wires *r* and *s* are the conductors by which the electric current to be metered is conveyed to and from the meter.

"If for any reason I desire to make the axis of the meter vertical, I may make use of the high surface tension of mercury to form a nearly frictionless commutator by means of two cisterns of mercury filled so completely that the surface of the mercury at a little distance from the side of the vessel stands higher than the edge of the vessel. In such case the segments of the commutator will revolve horizontally, and then the commutator need not be divided, but may consist of horizontal sectors moving in one horizontal plane.

"The brake consists of a metallic disc, *b*, preferably of copper, fixed on the axis *a*, and consequently rotating with it. As the said disc *b* travels between the pole-pieces *f*, *g* electric currents (commonly known as 'eddy' or 'Foucault' currents) are generated in the said disc *b*, the resistance they cause to the motion of the disc being proportional to its velocity.

"It is of importance to increase as far as possible the magnitude of these eddy currents. In order to do this I form the pole-pieces *f* and *g*

[1] The reference letters are the same in the specification and explanatory diagram given *post*, p. 476; the latter may be an aid in understanding the specification.

with grooves in them radial or nearly radial to the axis of rotation of the armature, as shown in Figs. 1, 2 and 3. The said grooves increase the retarding action of the brake disc *b*. They may be either made in both of the pole-pieces *f* and *g* as shown, or only in the pole-piece *f* nearest the brake disc *b*. Though these grooves are advantageous they are not essential, as both the pole-pieces may be without grooves.

"The special means I employ for reducing the friction of the axis *a* on its bearings to a minimum consists of the arrangement of anti-friction wheels and adjuncts represented in the drawings." These were described with reference to the drawings in detail, and also the mode of connecting the recording mechanism by the worm *x* on the spindle *a*. The indicating apparatus was not confined to any special form.

"In order to standardize the meter, the strength of the magnetic field may be modified by varying the resistance of the shunt circuit; or I may, in place of or in addition to varying the resistance of the shunt circuit, partially short-circuit the magnetic field by a bar or bars of iron connecting the poles whose section or proximity to the magnet can be adjusted. This method is applicable to permanent magnets whose field may be increased at intervals if it falls off by removing one or more of the iron bars.

"In the meter I have described and represented, the armature is divided into sectors in order that the current to be measured may pass several times across the magnetic field, and the sensitiveness of the meter may be thereby proportionately increased. I wish it, however, to be understood that I do not limit myself to the use of an armature divided into sectors, as a continuous disc may be employed in which the current travels only between the axis and periphery. This arrangement, although inferior in sensitiveness to the arrangement described, may be conveniently employed when heavy currents are to be measured.

"In the meter described and represented the main current passes through the armature and the shunt through the field-magnet, but similar results may be obtained by reversing this arrangement, in which case the use of iron in the armature is preferable.

"In order to enable the meter to measure current, the field must be constant, or else the armature must be of constant magnetic power, and the current to be measured must in such latter case pass round the field-magnets. To obtain this constancy in electro-magnets they must be saturated, and the magnetizing force and the dimensions of the core must be so proportioned as to secure this. The constancy of the field in which the brake moves (in the case in which it moves in a separate field) may be secured in an analogous way. *In electrical circuits in which the electro-motive force is practically constant, this degree of saturation in electro-magnets is not essential.*[1] But I prefer to have as field-magnets both of the electro-

[1] This sentence was introduced as part of the first amendments. During the argument it was pointed out that this amendment had been introduced after what the defendants had done

motor and of the brake permanent magnets, as they can be made to be very powerful and very constant by the following means.

"In place of electro-magnets as described and represented, I prefer using for smaller installations permanent magnets, a number of bar-magnets being substituted for the electro-magnet represented in the drawings, though I may use magnets of other shape or configuration; but in all cases in which I use permanent magnets, whether for the field of the motor or of the brake, the pole-pieces should have their surfaces very large compared with their distance apart, as represented in the drawings, so as to form a narrow slit in which the disc armature revolves. When this is done the permanent magnets are practically constant, and this arrangement is essential to the constancy of permanent magnets unless the disc is of iron, which is objectionable on other grounds. The power and constancy of these permanent magnets are increased by magnetizing them when in position, which is easily done by wrapping wire round them and passing a powerful current through the coil so formed. *I prefer to make the ratio between the area of the pole-pieces and the distance apart of the said pole-pieces at least seventy times as great as the ratio between the sectional area of the steel magnets and the length of the said magnets. For example, if the length of the steel magnet bars be six inches, and their sectional area four square inches, the area of each of the pole-pieces may be six square inches, and their distance apart one-eighth of an inch. Or the area of each of the pole-pieces may be three square inches, and their distance apart one-sixteenth of an inch. When these proportions are adopted a powerful and stable field is obtained.*[1]

"If iron is used in the armature, however pure and soft the said iron may be, there is still a constant drag due to the work expended on magnetization and de-magnetization. In such cases this drag may be overcome by compound winding the armature with a shunt current having separate commutator and brush arrangements. This is proportioned so as just to balance the magnetic drag and enable the meter to start with the required (small) current. Or I may pass the greater part of the shunt circuit round the armature and a small part round the magnets, which in this case are wound with the thicker conductor carrying the current to be metered, the said small part of the shunt serving the above-mention[illegible]urpose."[2]

A modification, consisting of corrugating the d[illegible] or cylinder and

was known, and that claim 1 was enlarged. Lord *Halsbury*, L.C.: "That was one of the things which, when I was Law Officer and when they came to us for amendment, we would not allow. It was one of the leading principles, you shall not enlarge by amendment the area of your invention." Lord *Davey*: "You could not tell what effect it might have to amend a claim, and it was only under special circumstances that you ever allowed a claim to be amended. . . . You may limit your claim." Lord *Halsbury*, L.C.: "It may have some bearing on the argument, but he has got the amendment." Appellants' counsel submitted that (*Moser* v. *Marsden*, *ante*, p. 374) the question whether claim 1 was enlarged by amendment could not be considered. Lord *Halsbury*, L.C.: "I said you have got the amendment; whether you ought to have it or not is another matter."

[1] This passage was introduced as explanatory matter in the first amendment.

[2] This is illustrated in the explanatory diagram, *post*, p. 476, but not in the specification.

magnetic poles, was described but without diagrams; the inventor did not think it necessary to give diagrams to show the application of the commutator and corrugations to dynamo-electric generators and motors, as such "will be sufficiently understood by the description hereinbefore given of their application to an electricity meter." Ordinary brushes were to be used with high-speed dynamos, a mercury commutator being in such a case inadmissible.

"Although I have described only that form of electric brake which I prefer to employ, yet I do not limit myself to that form, as it may be replaced by any electrical generating machine having a constant field and working on constant resistance, or, stated generally, by any arrangement involving the motion of a conductor relatively to a magnetic field, the strength of the field being maintained constant, and the current in the conductor being proportional to the rate of rotation.

"The armature itself may be made to act as an efficient brake and the brake disc dispensed with by making the sectors of thick copper and of considerable breadth as compared with the teeth or projections of the pole-pieces.

"Although I prefer generally to use only one pair of poles, I may use a second pair of similar poles symmetrically disposed on the opposite side of the axis."

The claims were:

"First.—An electricity meter for measuring current consisting of an electro-motor with constant field arranged substantially as hereinbefore described and illustrated in the accompanying drawings, the said electro-motor being combined with an electric brake also moving in a constant *or nearly constant*[1] field, preferably the same field as that in which the armature rotates substantially as herein described and illustrated in the accompanying drawings.

"[Secondly.—Compensating for magnetic drag or friction or both by compound winding either the armature or the magnets.][2]

"*Secondly.*—In electricity meters the obtaining a constant field either for the brake or the armature or both by the use of electro-magnets of such construction and dimensions that they become saturated while in use in circuits of the kind for which they are designed substantially as herein described.

"*Thirdly.*—In electricity meters the use for the purpose of procuring a *powerful and*[3] constant magnetic field of permanent magnets arranged as described with very large polar surfaces closely fronting each other *so as to form a narrow slit in which the disc armature revolves*[4] whether the same be magnetized in position or otherwise and the means described for regulating

[1] These words were part of the first amendments, see note: *ante*, pp. 473, 474.

[2] This claim was struck out by the second amendment, as it had been patented previously by *Ferranti* (No. 701 of 1887).

[3–4] The words in italics in this claim were introduced as part of the first amendments.

the same when or if necessary substantially as herein described and in part illustrated in the accompanying drawings.

"Seventhly.—The method hereinbefore described and illustrated in the accompanying drawings of combining the disc armature or insulated sectors with the continuous disc constituting the brake."

The remaining five claims were for—the horizontal and vertical mercury

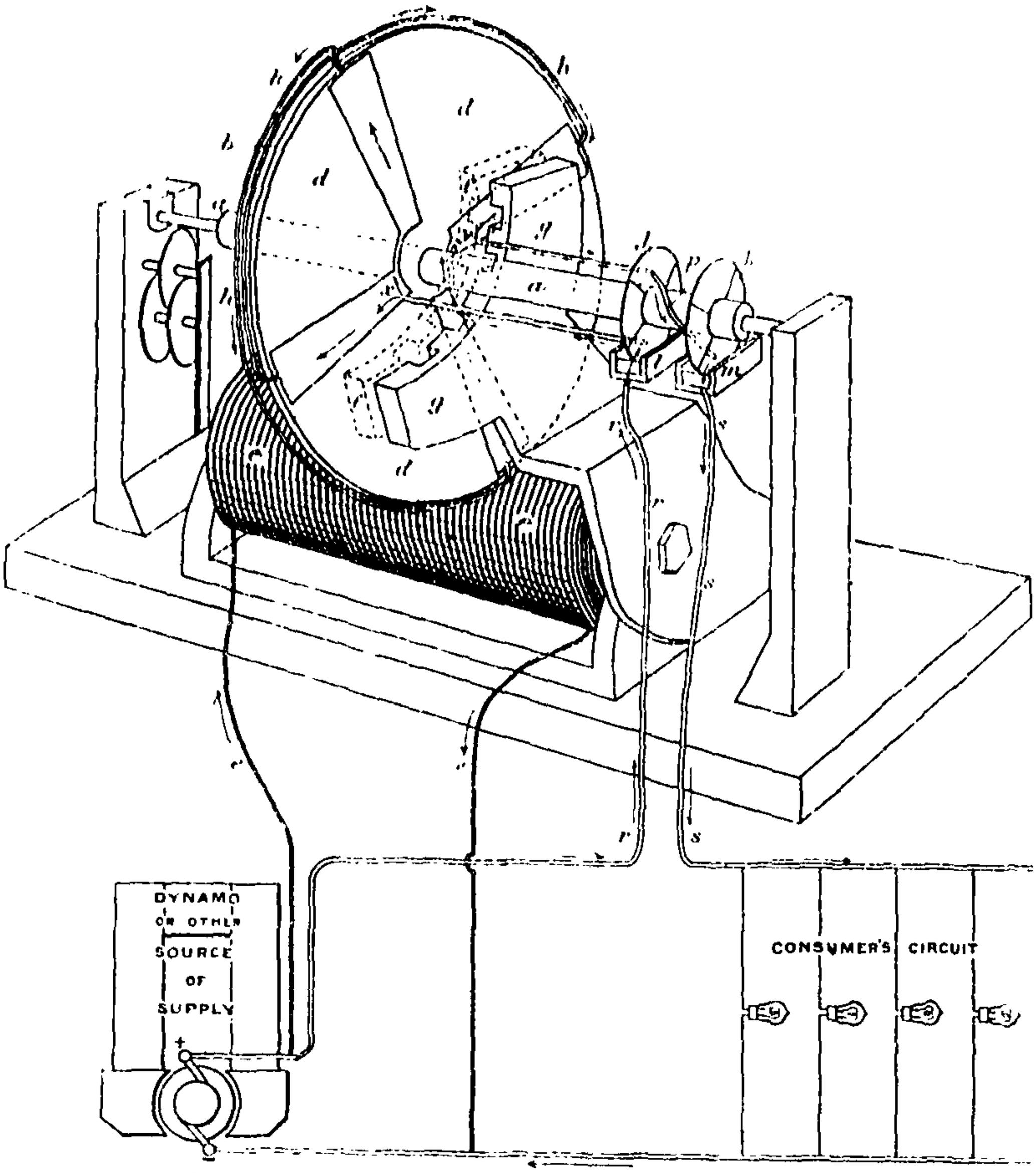


DIAGRAM ILLUSTRATING ELECTRICAL CONNECTIONS OF
HOOKHAM METER.

commutators, grooving the pole pieces, diminishing friction at the bearings as describe ' and the meter as a whole as described.

This was an action for infringement.

Evidence was given of the plaintiffs' and defendants' meters. The working of the former can be best understood by a reference to the diagram of the current connections as shewn above. The form here

indicated is one with the saturated magnet described in the specification (*ante* p. 473). Only four sectors are shown; the action is precisely the same with sixteen. The current enters from the dynamo, or main, along the conductor *r*, passes through the mercury trough *l*, and commutator *j*, thence along to the sector at *x*, where it divides into two branches, flows outwards as indicated by the arrows, thence by the conductors, *h*, to the outer edges of the other two sectors, along them reuniting at *y*, and thence by the commutator, *k*, through *m* and wire *s* to the lamp circuit. The current flowing inwards between the poles, *f*, *g*, of the constant magnet produces a force tending to turn the armature round on the axis *a*. As the sectors succeed each other, the commutator keeps the currents always flowing in the same direction relative to the magnetic field. The force or torque tending to rotate the armature is proportional to the strengths of the magnetic field and current. As the former is constant, the torque is proportional to the current, *i.e.* to $\frac{E}{R}$, where E is the voltage and R the resistance of the circuit. In the form of meter here shown the magnetic field was kept constant by the electro magnet being kept saturated; the magnetizing current being a shunt one in the conductor *c*, *c*. Unless some resisting force or brake were provided the armature would revolve with an acceleration until the resisting forces became equal to the driving force, or the armature split, or the mechanism otherwise broke down. To enable the device to work as a meter, a brake, consisting of a copper disc, *b* (attached in this form of meter to the back of the armature *d*), revolving between the poles, *f*, *g*, of the magnet, was used. On the known principles of Arago's Rotations, Foucault currents were set up of a strength proportional to the intensity of the magnetic field and the velocity of rotation. In a constant field this brake acted with a force proportional to the velocity of rotation. On a current of any given strength, therefore, being passed through the armature, rotation and acceleration ensued until equilibrium was established, the velocity of rotation being then proportional to the current passing, and thus by suitable recording mechanism the meter would show the total of ampère-hours.[1] It did not measure energy. Evidence was also given to the effect that this meter was the first practical meter in which the difficulty arising from friction was overcome. This was accomplished by making the driving (and necessarily braking) force large in comparison to friction and by reducing the latter by the adoption of anti-friction wheels and, in some forms of meter, by the mercury commutator.

[1] The result indicated would be $\int C dt$ or $\int \frac{E}{R} dt$. *Hookham's* meter would give the same result on a circuit of 200 volts pressure through two lamps in series, as on one of 100 volts through one similar lamp. But on the same circuit (while R is constant), the current being proportional to the pressure changes in the latter would be appreciated. Thus, other things being equal, if the pressure fell from 100 to 99 volts on a consumer's circuit the corresponding indications on the meter would show a decrease of 1 per cent. in the ampère-hours recorded.

Evidence of previous knowledge was given in order to show that the specification, if it included claims covering the defendant's meter, would be invalid. It was proved that the conditions of the problem were well known:—the use of magnets with a copper disc (such as those used in ammeters, or in Abel's meter, No. 10237 of 1884); the necessity for constancy in the magnetic field of the brake, and for increasing the brake-power by multiplying the poles, which gave better effects when of narrow area; the necessity for obviating the effect of friction, which would prevent a meter starting with a small current, and when started would prevent a full record being made. Magnets of all shapes and sizes were known, including those that were used by the defendants. Numerous publications were referred to, of which the most important were: Messrs. *Ayrton and Perry's* Specification (No. 2642 of 1882) and papers by *Marcel Deprez* and *F. Upperborn* on *Siemens'* Energy Measurer.

The specification of Messrs. *Ayrton and Perry* disclosed a combination consisting of a small dynamo-electric machine and suitable brake, that is, one in which the force resisting rotation was proportional to the velocity of rotation. The movable armature coil and fixed coils consisted, one of a high-resistance and the other a low-resistance coil. It was immaterial which was the movable coil. The coil of high resistance was connected as a shunt to the points on the circuit between which the energy to be measured was used, the low-resistance coil carried the current used by the consumer. The torque was proportional to the product of the two currents, that used by the consumer and the shunt current. But, as the latter passed through a constant resistance, the current in it was proportional to the voltage on the whole circuit. Hence the torque varied as the product of voltage and current, and the dials would record the total energy that passed, that is, the true integral of current into electromotive force.[1] But it was proved that this invention was not a practical meter, because the difficulty caused by the force of friction which was relatively considerable, was not overcome.

The paper by *Marcel Deprez* in *La Lumière Electrique* (January, 1884) dealt with the action of Siemens' Energy Measurer (No. 2210 of 1883). That device consisted of a small dynamo-electric machine of the Siemens' type, in which the consumer's current passed through fixed coils of low resistance and the shunt current through the movable bobbin of high resistance.

[1] If R and r be the resistances of the consumer's and shunt circuits respectively, E the E.M.F. of the total circuit, then the currents in the armature and fixed coil will be $\frac{E}{r}$ and $\frac{E}{R}$. The torque will vary as the product $\frac{E}{r} \times \frac{E}{R}$ or $\frac{E^2}{rR}$, but as r is constant this will vary as $\frac{E^2}{R}$ or as EC; C being the consumer's current. With proper calibration the meter will show $\int ECdt$, *i.e.* the total amount of energy or watts used. It will not only take into account variations of E, but, unlike *Hookham's*, a circuit of two lamps in series will have recorded double the amount of energy as in one lamp on a circuit of half the voltage.

In it the resisting force did not consist of a magnetic brake, but one formed of vanes revolving in a liquid. *M. Deprez* demonstrated rigorously that this instrument could not measure energy unless a brake were used which developed a resistance proportional to the velocity of rotation and not to its square, as did the vanes. He suggested "a copper disc revolving between the limbs of a permanent magnet" in which currents would be developed according to the well-known law, and which he had formerly applied in his magnetic-speed indicator. He also suggested reversing the Siemens' arrangement by putting the consumer's current through the armature and the shunt through a fixed high-resistance coil.

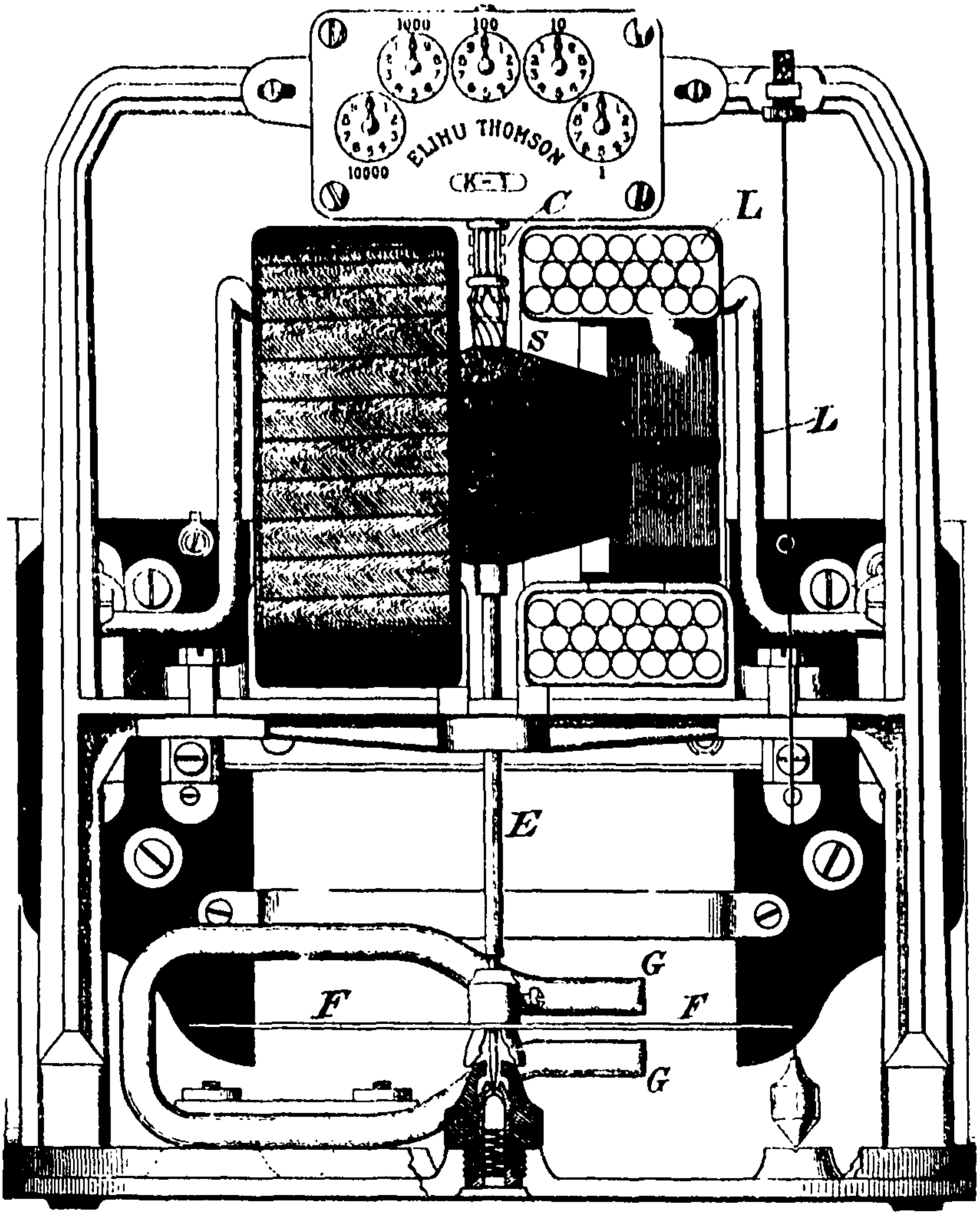
In a paper (16th February, 1884), *F. Upperborn* arrived at the same result as *Marcel Deprez*, and called attention to another consideration, namely the importance of relieving "more delicate measuring instruments from the performance of their own inherent work. But if this cannot be effected, then care must be taken that the measuring and measured forces are great in comparison with the forces coming otherwise into play. If we apply this law to the instrument under consideration, it results that one must then endeavour to diminish the frictional resistance as much as possible, and to make as great as possible the force consumption of the Faraday disc."

The alleged infringement consisted in the use, on a circuit alleged to be of constant potential, of a meter invented by *Elihu Thomson*. A diagram of it is given (*post*, p. 480), the left-hand half being shown in front elevation and the right hand in sectional. Its action will be best understood by reference to the diagrams shown (*post*, p. 481), in which the same letters are used for the corresponding parts. The current enters at A from the main, divides into two at B, one passing through the circuit and fixed coils L, L, and the lamps or consumer's circuit to D. The other, a shunt current, passing through the circuit S, commutator C, and movable armature and commutator to D, and thence to the return main. The commutator, C, was specially devised to get rid of friction, the contact-pieces were tipped with silver and of slight make, the shunt-current being small. The brake was a copper disc F on the same spindle, revolving between the poles of magnets G, of which at first three and subsequently two were used. In the improved form of meter an additional mode of overcoming the initial friction and eliminating error due to running friction was adopted, namely, the employment of a starting coil. This starting coil consisted of an extra coil of a few turns introduced into the shunt circuit, as shown in the lower diagram (*post*, p. 481). The magnetic field produced by the shunt-current always flowing through it tended, but was insufficient, to produce rotation of the armature, until at least sufficient current for one lamp was used in the circuit L, L. The armature was connected with a suitable train of mechanism and dials, on which was recorded the energy consumed, *i.e.* watts.[1]

[1] The principles of this meter and their mathematical expression are the same as those shown in connection with Messrs *Ayrton* and *Perry's* in the note on the preceding page.

It was proved that the magnets used in the defendants' meter were constant, but the constancy was not secured by reason of their shape and proportions, but by a process of artificial ageing.

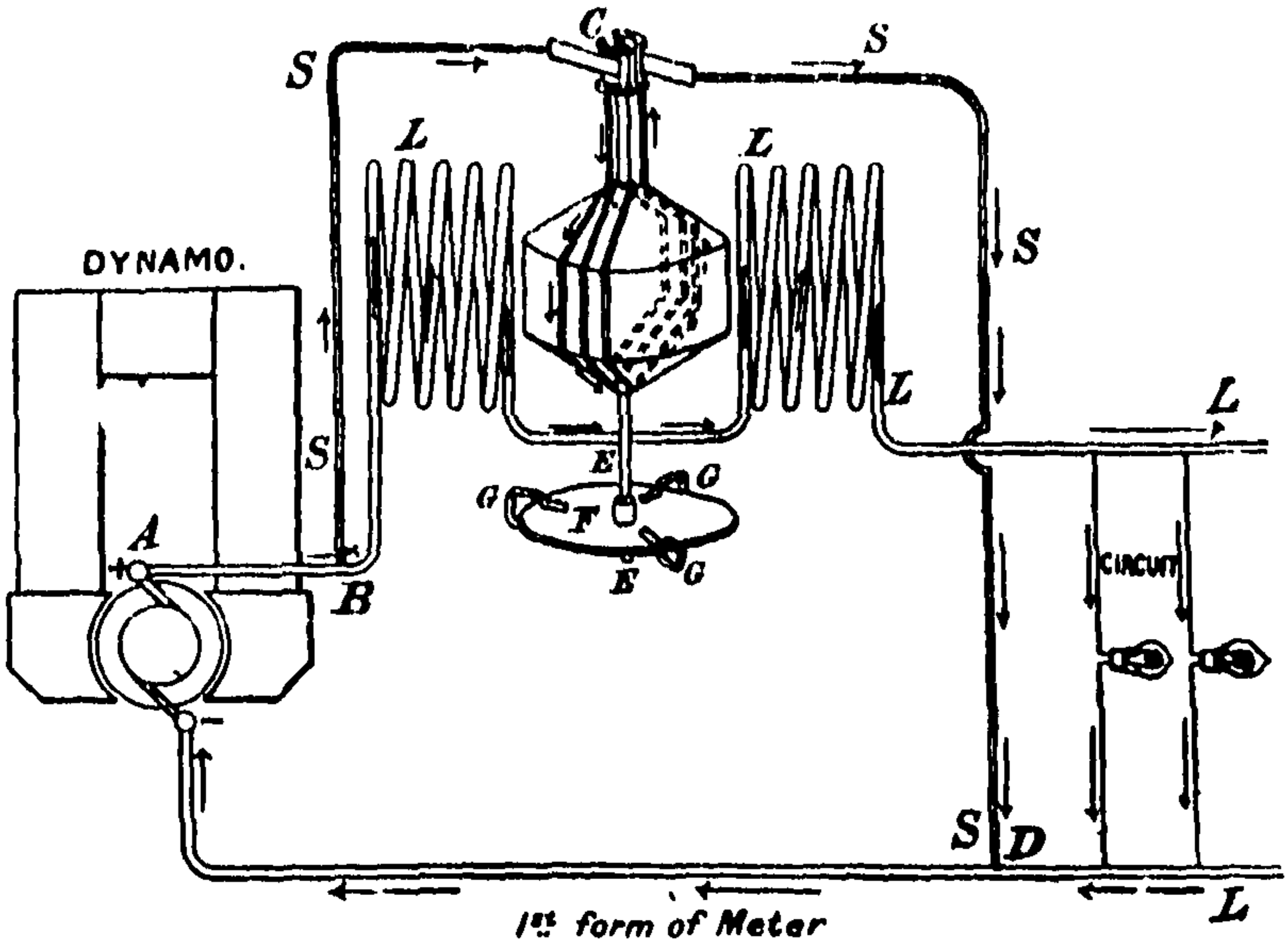
It was contended on behalf of the plaint[1] the specification should



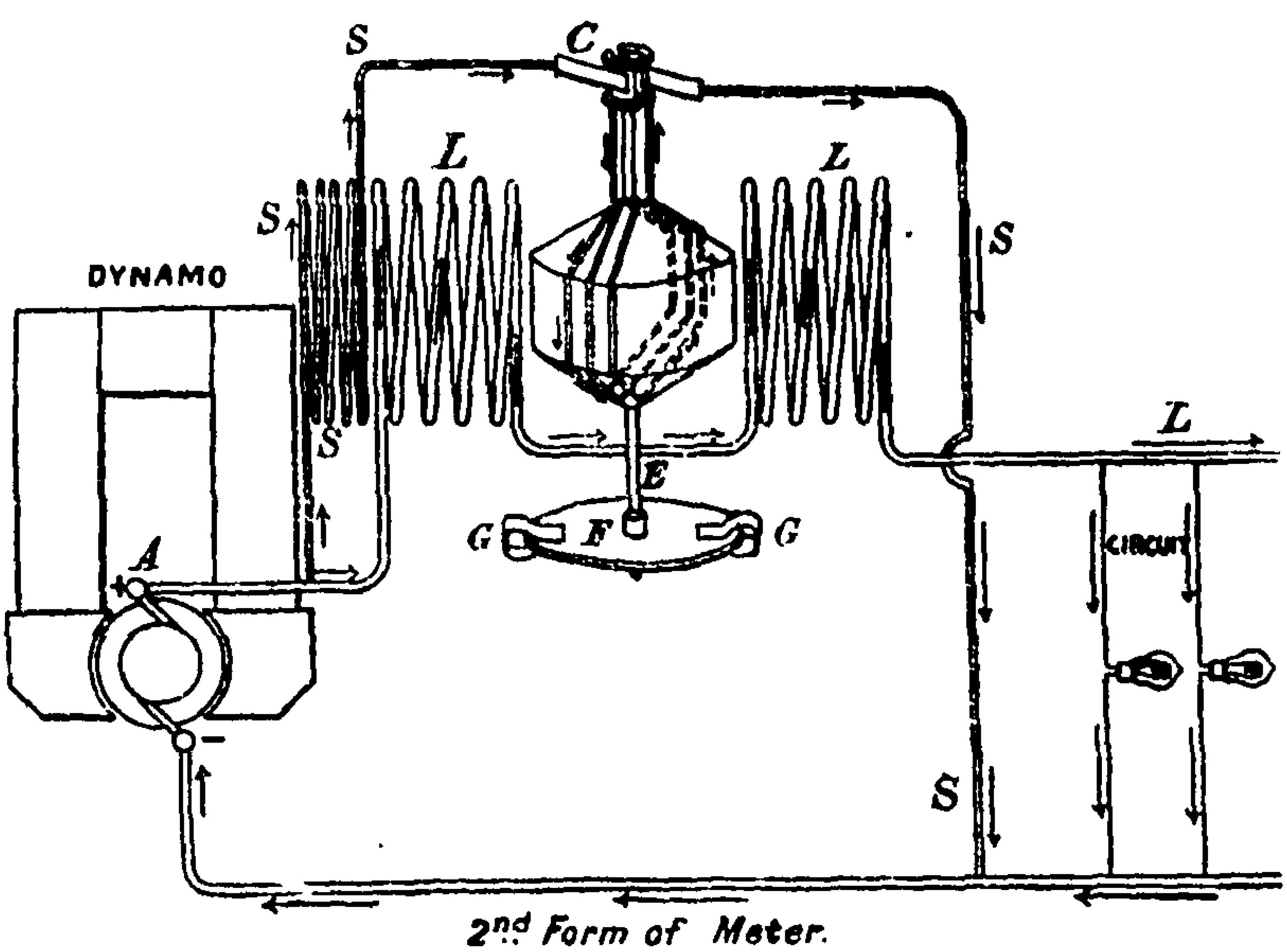
Defendants' meter.

be construed widely, being for the first successful meter made in accordance with known principles. That the invention consisted in a combination of five elements performing certain functions :—(1) An electro-motor of any ordinary form, in which the magnet must be constant unless when

[1] Argument as finally presented in the House of Lords.



1st form of Meter



2nd Form of Meter.

Connections of Defendant's meter.

on a circuit of constant potential in cases in which current is to be measured; and the armature must be of any ordinary known form and (when the current to be measured passes round the field magnets) to be of constant

magnetic power; (2) a magnetic brake whose field is powerful and constant; (3) reduction of axial friction by friction-wheels or hardened points; (4) reduction or balancing of commutator friction by mercury contacts or compound winding; and (5) large forces in motor and brake to swamp residual friction. It was alleged that the defendants' meter, when used on a circuit of constant potential, possessed the above elements, *e.g.* the motor was of an "ordinary form now in use" (*ante*, p. 467, l. 28); the separate brake was an alternative (*ante*, p. 468, l. 1); the starting-coil was the compound winding mentioned *ante*, p. 469, l. 9 and p. 474, l. 28; the current in the shunt-coil being constant produced a constant field; the arrangement was the alternative mentioned *ante*, p. 474, l. 31, and that when used on a circuit of constant and known potential it measured current.

The defendants maintained that their meter was the application of known principles, and was so constructed that its parts did not perform the same functions as those of the plaintiffs' combination, *i.e.* it would work with alternating currents, as to which, if the plaintiffs' claim included such matters, the specification was insufficient in directions; that the third claim was for the particular form of magnet described and illustrated, but if wide enough to include defendants' magnets would be invalid.

At the trial the learned judge found that the meters performed different functions, the object aimed at and attained by the defendants' being more extensive and useful; that the defendants' brushes were not known equivalents for plaintiffs' cummutator; and that the third claim was a subsidiary claim, and not one for a separate invention. No decision on validity was given (17 R. P. C. 493).

The plaintiffs appealed.

Held by the Court of Appeal (19 R. P. C. 78) that the meters were different combinations, and that the third claim was limited to compound or built-up magnets.

Romer, L.J., on the third claim, in delivering the judgment of the Court pointed out that the preferred ratio would have included old magnets, and continued (p. 92):—"If he was not describing his pole-pieces as an adjunct to his 'arrangement' of magnets, but was contemplating a claim apart from that arrangement, he was in a position of considerable difficulty, having regard to public knowledge at the date of his patent, in reference to the use of permanent magnets with a disc to form a brake in electricity meters. For in this case he would not be claiming the use of some new combination or arrangement of magnets, or some new magnet invented by him, but would be claiming the use of every known magnet which happened to have poles with what he calls 'large' surfaces, and which form between them what he calls a 'narrow' slit, merely because he had discovered they possessed valuable qualities with reference to a use which might well be held known. It appears to us that it would not be fair as against him to hold he intended to make such a large claim, which might have made it invalid, unless he had clearly indicated such an intention. In our opinion he has not indicated such an intention."

The plaintiffs appealed to the House of Lords.

The House of Lords upheld the decision of the Court of Appeal.

Lord *Davey* referred to the specification in detail in connection with the first claim, and pointed out that there was only one form of meter described fully therein. "It would of course be wrong to confine the patentee to the exact form of his combination which he has so described and illustrated. I also think that he is entitled to the merit of having first given to the world a practical electricity meter made on the principle of combining the use of an electric brake, operating by means of Faucault currents, with an electro-motor, and to have regard paid to that circumstance in construing his patent. But, on the other hand, it would be equally wrong, and, indeed, would be fatal to the validity of the patent, to allow the patentee such latitude in the construction of his patent and variation in its details as would entitle him to claim every form of electricity meter in which an electro-motor is combined with an electric brake of the kind described, or that combination coupled with a device of any kind for reducing friction, unless he can claim to have himself discovered the principle of such a machine." The law was correctly laid down by Baron *Alderson* in *Jupe* v. *Pratt* (1 Webs. 146). His lordship continued by commenting on the prior publications and by pointing out how the patentee in his specification allowed of variations in the details. "The elements of the combination (which appear to me to admit of no variation) appear to me to be the following: (1) that the meter is a current meter, *i.e.*, one for measuring only the quantity or ampère hours of the current without regard to any variation in the potential or voltage; (2) that the magnetic field of the motor must be constant; and (3) the use of the patentee's mercury contacts or commutators 'where practicable.' . . . It appears to me that the patentee thus defines the type of machine which he intends to claim as his invention with considerable latitude in detail."

As to the argument that the defendant's meter as used performed the same functions as the plaintiff's and was therefore an infringement, his lordship said: "But the question is whether the machine which is said to infringe contains the elements which the patentee considered were an essential part of his combination for the purpose for which it was designed. And it can make no difference in this respect whether the manufacturer or person using the machine is sued. . . . It happens under these conditions that energy is proportional to current because one factor is constant; but to my mind the differences of function still exist. . . . Your lordships are not asked to say whether the respondent's machine is a useful one for the purpose for which it is designed, but whether it is a machine of the same type as the appellant's." [1]

His lordship reviewed the specification and evidence relating to the magnets and pole-pieces, finding that the only permanent magnets that

[1] As to the distinction between a manufacture (here the meter) and the use to which it is put, see *ante*, pp. 11–13. As to testing identity of inventions by function, see *ante*, pp 30, 33, 39.

were suggested in the specification were an alternative to the saturated electro-magnets, and were built up with large pole-pieces attached. "But, my lords, I adopt the language of Lord *Cranworth* [1] in *Ralston* v. *Smith*, and say that it is not every useful discovery which will constitute a patentable invention, and that to tell a man who has been in the habit of using magnets of various forms for various purposes that one particular form has a useful property which was unknown to him before, is not in any sense to invent a 'new manufacture.'" The third claim "can only (as I think) be supported as pointing out what the patentee considered one of the merits and advantages of a subordinate element in one of the forms of the general combination claimed in the first claim, and as applicable only to the meter invented by the patentee. On the construction of the third claim I think also that it is confined to the use of the magnet in connection with the armature of the motor." His lordship contrasted it with the seventh claim (*ante*, p. 476) in which the patentee "claims his method of combining the disc armature with the disc constituting the brake," and pointed out that the words inserted by amendment in the third claim (*ante*, p. 475) were no doubt deliberately chosen, and therefore should not be construed in a wider sense than they naturally bear.

The Lord Chancellor and other members of the House fully concurred in Lord *Davey's* judgment.

[1] See *ante*, p. 230.

PART III.

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THE PATENTS, DESIGNS, AND TRADE MARKS ACT, 1883.

(46 & 47 VICT. C. 57.)

A.D. 1883.

An Act to amend and consolidate the Law relating to Patents for Inventions, Registration of Designs, and of Trade Marks.

[25*th August*, 1883.]

BE it enacted, &c.

PART I.
PRELIMINARY.

PART I.—PRELIMINARY.

Short title.

1. This Act may be cited as the Patents, Designs, and Trade Marks Act, 1883.

Division of Act into parts.

2. This Act is divided into parts. as follows:—

PART I.—PRELIMINARY.
PART II.—PATENTS.
PART III.—DESIGNS.
PART IV.—TRADE MARKS.
PART V.—GENERAL.

Commencement of Act.

3. This Act, except where it is otherwise expressed, shall commence from and immediately after the 31st day of December, 1883.

46 & 47 VICT. C. 57.

PART II. PATENTS.

PART II.—PATENTS.

Application for and Grant of Patent.

Persons entitled to apply for patent.

4. (1) Any person, whether a British subject or not, may make an application for a patent.

(2) Two or more persons may make a joint application for a patent, and a patent may be granted to them jointly.[1]

Application and specification.

5. (1) An application for a patent must be made in the form set forth in the First Schedule to this Act, or in such other form as may be from time to time prescribed; and must be left at, or sent by post to, the Patent Office in the prescribed manner.

(2) An application must contain a declaration[2] to the effect that the applicant is in possession of an invention, whereof he, or in the case of a joint application, one or more of the applicants, claims or claim to be the true and first inventor or inventors, and for which he or they desire or desire to obtain a patent; and must be accompanied by either a provisional or complete specification.

(3) A provisional specification must describe the nature of the invention, and be accompanied by drawings, if required.

(4) A complete specification, whether left on application or subsequently, must particularly describe and ascertain the nature of the invention, and in what manner it is to be performed, and must be accompanied by drawings,[3] if required.

(5) A specification, whether provisional or complete, must commence with the title, and in the case of a complete specification must end with a distinct statement of the invention claimed.

Reference of application to examiner.

6. The Comptroller shall refer every application to an examiner, who shall ascertain and report to the Comptroller whether the nature of the invention has been fairly described, and the application, specification, and drawings (if any) have been prepared in

[1] One of the persons at least must be the true and first inventor (48 & 49 Vict. c. 63, sect. 5, *post*, p. 516).

[2] This "declaration" may be either a statutory declaration under the Statutory Declaration Act, 1835, or not, as may be from time to time prescribed (48 & 49 Vict. c. 63, sect. 2, *post*, p. 515). *See* Patents Rules 25, 26, *post*, p. 531.

[3] References may be made in the complete to drawings with the provisional specification, instead of annexing copies to the complete (49 & 50 Vict. c. 37, sect. 2, *post*, p. 517).

the prescribed manner, and the title sufficiently indicates the subject-matter of the invention. 46 & 47 Vict. c. 57.

Power for Comptroller to refuse application or require amendment.

7.[1] (1) If the examiner reports that the nature of the invention is not fairly described, or that the application, specification, or drawings has not, or have not, been prepared in the prescribed manner, or that the title does not sufficiently indicate the subject-matter of the invention, the Comptroller may refuse to accept the application, or require that the application, specification, or drawings be amended before he proceeds with the application; and in the latter case the application shall, if the Comptroller so directs, bear date as from the time when the requirement is complied with.

(2) Where the Comptroller refuses to accept an application or requires an amendment, the applicant may appeal from his decision to the Law Officer.

(3) The Law Officer shall, if required, hear the applicant and the Comptroller, and may make an order determining whether, and subject to what conditions (if any), the application shall be accepted.

(4) The Comptroller shall, when an application has been accepted, give notice thereof to the applicant.

(5) If, after an application for a patent has been made, but before the patent thereon has been sealed, another application for a patent is made, accompanied by a specification bearing the same or a similar title, the Comptroller, if he thinks fit, on the request of the second applicant, or of his legal representative, may, within two months of the grant of a patent on the first application, either decline to proceed with the second application or allow the surrender of the patent, if any, granted thereon.

Time for leaving complete specification.

8. (1) If the applicant does not leave a complete specification with his application, he may leave it at any subsequent time within nine months[1] from the date of application.

(2) Unless a complete specification is left within that time the application shall be deemed to be abandoned.

Comparison of provisional and complete specification.

9. (1) Where a complete specification is left after a provisional specification, the Comptroller shall refer both specifications to an examiner for the purpose of ascertaining whether the complete

[1] The section is given here as re-enacted by 51 & 52 Vict. c. 50, sect. 2.

46 & 47 Vict. c. 57.

specification has been prepared in the prescribed manner, and whether the invention particularly described in the complete specification is substantially the same as that which is described in the provisional specification.

(2) If the examiner reports that the conditions hereinbefore contained have not been complied with, the Comptroller may refuse to accept the complete specification unless and until the same shall have been amended to his satisfaction; but any such refusal shall be subject to appeal to the Law Officer.

(3) The Law Officer shall, if required, hear the applicant and the Comptroller, and may make an order determining whether and subject to what conditions, if any, the complete specification shall be accepted.

(4) Unless a complete specification is accepted within twelve months[1] from the date of application, then (save in the case of an appeal having been lodged against the refusal to accept) the application shall, at the expiration of those twelve months, become void.

(5) Reports of examiners shall not in any case be published or be open to public inspection, and shall not be liable to production or inspection in any legal proceeding,[2] . . . unless the Court or officer having power to order discovery in such legal proceeding shall certify that such production or inspection is desirable in the interests of justice, and ought to be allowed.

Advertisement on acceptance of complete specification.

10. On the acceptance of the complete specification the Comptroller shall advertise the acceptance; and the application and specification or specifications with the drawings (if any) shall be open to public inspection.

Opposition to grant of patent. *Ante*, Ch. VIII. p. 118.

11. (1) Any person may at any time within two months from the date of the advertisement of the acceptance of a complete specification give notice at the Patent Office of opposition to the grant of the patent on the ground of the applicant having obtained the invention from him, or from a person of whom he is the legal representative, or on the ground that the invention has been

[1] From the coming into operation of 2 Ed. VII. c. 34, sect. 1, *post*, p. 523, this period is reduced to six months. It may be extended another month by the Comptroller, under exceptional circumstances (48 & 49 Vict. c. 63, sect. 3, *post*, p. 515).

[2] Words omitted repealed by 51 & 52 Vict. c. 50, sect. 3.

patented in this country on an application of prior date, *or*[1] *on the ground that the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification*, but on no other ground. 46 & 47 Vict. c. 57.

(2) Where such notice is given the Comptroller shall give notice of the opposition to the applicant, and shall, on the expiration of those two months, after hearing the applicant and the person so giving notice, if desirous of being heard, decide on the case, but subject to appeal to the Law Officer.

(3) The Law Officer shall, if required, hear the applicant and any person so giving notice and being, in the opinion of the Law Officer, entitled to be heard in opposition to the grant, and shall determine whether the grant ought or ought not to be made.

(4) The Law Officer may, if he thinks fit, obtain the assistance of an expert, who shall be paid such remuneration as the Law Officer, with the consent of the Treasury, shall appoint.

Sealing of patent.

12. (1) If there is no opposition, or, in case of opposition, if the determination is in favour of the grant of a patent, the Comptroller shall cause a patent to be sealed with the seal of the Patent Office.

(2) A patent so sealed shall have the same effect as if it were sealed with the Great Seal of the United Kingdom.

(3) A patent shall be sealed as soon as may be, and not after the expiration of fifteen months[2] from the date of application, except in the cases hereinafter mentioned, that is to say—

(*a*) Where the sealing is delayed by an appeal to the Law Officer, or by opposition to the grant of the patent, the patent may be sealed at such time as the Law Officer may direct.

(*b*) If the person making the application dies before the expiration of the fifteen months aforesaid, the patent may be granted to his legal representative and sealed

[1] Words in italics denote amendment made by 51 & 52 Vict. c. 50, sect. 4.

[2] This period may be extended by the Comptroller under 43 & 49 Vict. c. 63, sect. 3. *Post*, p. 515.

46 & 47 Vict. c. 57.

at any time within twelve months after the death of the applicant.

Date of patent.

13. Every patent shall be dated and sealed as of the day of the application: Provided that no proceedings shall be taken in respect of an infringement committed before the publication of the complete specification: Provided also, that in case of more than one application for a patent for the same invention, the sealing of a patent on one of those applications shall not prevent the sealing of a patent on an earlier application.

Provisional Protection.

Provisional protection.

14. Where an application for a patent in respect of an invention has been accepted, the invention may during the period between the date of the application and the date of sealing such patent be used and published without prejudice to the patent to be granted for the same; and such protection from the consequences of use and publication is in this Act referred to as provisional protection.

Protection by Complete Specification.

Effect of acceptance of complete specification.

15. After the acceptance of a complete specification and until the date of sealing a patent in respect thereof, or the expiration of the time for sealing, the applicant shall have the like privileges and rights as if a patent for the invention had been sealed on the date of the acceptance of the complete specification: Provided that an applicant shall not be entitled to institute any proceeding for infringement unless and until a patent for the invention has been granted to him.

Patent.

Extent of patent.

16. Every patent when sealed shall have effect throughout the United Kingdom and the Isle of Man.

Term of patent.

17. (1) The term limited in every patent for the duration thereof shall be fourteen years from its date.

(2) But every patent shall, notwithstanding anything therein or in this Act, cease if the patentee fails to make the prescribed payments within the prescribed times.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, a patentee fails to make any prescribed payment within the prescribed time, he may apply to the Comptroller for an enlargement of the time for making that payment. 45 & 47 Vict. c. 57.

(4) Thereupon the Comptroller shall, if satisfied that the failure has arisen from any of the above-mentioned causes, on receipt of the prescribed fee for enlargement, not exceeding ten pounds, enlarge the time accordingly, subject to the following conditions :—

(*a*) The time for making any payment shall not in any case be enlarged for more than three months.

(*b*) If any proceeding shall be taken in respect of an infringement of the patent committed after a failure to make any payment within the prescribed time, and before the enlargement thereof, the Court before which the proceeding is proposed to be taken may, if it shall think fit, refuse to award or give any damages in respect of such infringement.

Amendment of Specification.

18. (1) An applicant or a patentee may, from time to time, by request in writing left at the Patent Office, seek leave to amend his specification, including drawings forming part thereof, by way of disclaimer, correction, or explanation, stating the nature of such amendment and his reasons for the same. Amendment of specification. For notes, see *ante*, pp. 161, 163.

(2) The request and the nature of such proposed amendment shall be advertised in the prescribed manner, and at any time within one month from its first advertisement any person may give notice at the Patent Office of opposition to the amendment.

(3) Where such notice is given the Comptroller shall give notice of the opposition to the person making the request, and shall hear and decide the case subject to an appeal to the Law Officer.

(4) The Law Officer shall, if required, hear the person making the request and the person so giving notice, and being in the opinion of the Law Officer entitled to be heard in opposition to the request, and shall determine whether and subject to what conditions, if any, the amendment ought to be allowed.

46 & 47 VICT. c. 57.

(5) Where no notice of opposition is given, or the person so giving notice does not appear, the Comptroller shall determine whether and subject to what conditions, if any, the amendment ought to be allowed.

(6) When leave to amend is refused by the Comptroller, the person making the request may appeal from his decision to the Law Officer.

(7) The Law Officer shall, if required, hear the person making the request and the Comptroller, and may make an order determining whether, and subject to what conditions, if any, the amendment ought to be allowed.

(8) No amendment shall be allowed that would make the specification, as amended, claim an invention substantially larger than or substantially different from the invention claimed by the specification as it stood before amendment.

(9) Leave to amend shall be conclusive as to the right of the party to make the amendment allowed, except in case of fraud; and the amendment shall in all courts and for all purposes be deemed to form part of the specification.

(10)[1] The foregoing provisions of this section do not apply when and so long as any action for infringement or proceeding for revocation of a patent is pending.

Power to disclaim part of invention during action, &c.

19. In an action for infringement of a patent, and in a proceeding for revocation of a patent, the Court or a judge may at any time order that the patentee shall, subject to such terms as to costs and otherwise as the Court or a judge may impose, be at liberty to apply at the Patent Office for leave to amend his specification by way of disclaimer, and may direct that in the mean time the trial or hearing of the action shall be postponed.

Restriction on recovery of damages.

20. Where an amendment by way of disclaimer, correction, or explanation, has been allowed under this Act, no damages shall be given in any action in respect of the use of the invention before the disclaimer, correction, or explanation, unless the patentee establishes to the satisfaction of the Court that his original claim was framed in good faith and with reasonable skill and knowledge.[2]

[1] This sub-section is substituted for the original one by 51 & 52 Vict. c. 50, sect. 5.

[2] That is, that he intended, in his original specification, to claim what he had really invented, and no more (*Kane* v. *Royle*, 18 R. P. C. 338).

21. Every amendment of a specification shall be advertised in the prescribed manner. 46 & 47 VICT. C. 57. Advertisement of amendment.

Compulsory Licenses.

22. [Repealed.]

Register of Patents.

23. (1) There shall be kept at the Patent Office a book called the Register of Patents, wherein shall be entered the names and addresses of grantees of patents, notifications of assignments and of transmissions of patents, of licenses under patents, and of amendments, extensions, and revocations of patents, and such other matters affecting the validity or proprietorship of patents as may from time to time be prescribed. Register of patents.

(2) The register of patents shall be *prima facie* evidence of any matters by this Act directed or authorized to be inserted therein.

(3) Copies of deeds, licenses, and any other documents affecting the proprietorship in any letters patent or in any license thereunder, must be supplied to the Comptroller in the prescribed manner for filing in the Patent Office.

Fees.

24. (1) There shall be paid in respect of the several instruments described in the Second Schedule to this Act, the fees in that schedule mentioned, and there shall likewise be paid, in respect of other matters under this part of the Act, such fees as may be from time to time, with the sanction of the Treasury, prescribed by the Board of Trade; and such fees shall be levied and paid to the account of Her Majesty's Exchequer in such manner as the Treasury may from time to time direct. Fee in schedule.

(2) The Board of Trade may from time to time, if they think fit, with the consent of the Treasury, reduce any of those fees.

Extension of Term of Patent.

25. (1) A patentee may, after advertising in manner directed by any rules made under this section his intention to do so, present a petition to Her Majesty in Council, praying that his Extension of term of patent on petition to Queen in Council.

46 & 47 Vict. c. 57.

patent may be extended for a further term; but such petition must be presented at least six months before the time limited for the expiration of the patent.

(2) Any person may enter a caveat, addressed to the Registrar of the Council at the Council Office, against the extension.

(3) If Her Majesty shall be pleased to refer any such petition to the Judicial Committee of the Privy Council, the said Committee shall proceed to consider the same, and the petitioner and any person who has entered a caveat shall be entitled to be heard by himself or by counsel on the petition.

(4) The Judicial Committee shall, in considering their decision, have regard to the nature and merits of the invention in relation to the public, to the profits made by the patentee as such, and to all the circumstances of the case.

(5) If the Judicial Committee report that the patentee has been inadequately remunerated by his patent, it shall be lawful for Her Majesty in Council to extend the term of the patent for a further term not exceeding seven, or in exceptional cases fourteen, years; or to order the grant of a new patent for the term therein mentioned, and containing any restrictions, conditions, and provisions that the Judicial Committee may think fit.

(6) It shall be lawful for Her Majesty in Council to make, from time to time, rules of procedure and practice for regulating proceedings on such petitions, and subject thereto such proceedings shall be regulated according to the existing procedure and practice in patent matters of the Judicial Committee.

(7) The costs of all parties of and incident to such proceedings shall be in the discretion of the Judicial Committee; and the orders of the Committee respecting costs shall be enforceable as if they were orders of a division of the High Court of Justice.

Revocation.

Revocation of patent.

26. (1) The proceeding by *scire facias* to repeal a patent is hereby abolished.

(2) Revocation of a patent may be obtained on petition to the Court.

(3) Every ground on which a patent might, at the commencement of this Act, be repealed by *scire facias* shall be available

by way of defence to an action of infringement, and shall also be a ground of revocation. 46 & 47 Vict. c. 57.

(4) A petition for revocation of a patent may be presented by—

(*a*) The Attorney-General in England or Ireland, or the Lord Advocate in Scotland;

(*b*) Any person authorized by the Attorney-General in England or Ireland, or the Lord Advocate in Scotland;

(*c*) Any person alleging that the patent was obtained in fraud of his rights, or of the rights of any person under or through whom he claims;

(*d*) Any person alleging that he, or any person under or through whom he claims, was the true inventor of any invention included in the claim of the patentee;

(*e*) Any person alleging that he, or any person under or through whom he claims an interest in any trade, business, or manufacture, had publicly manufactured, used, or sold, within this realm, before the date of the patent, anything claimed by the patentee as his invention.

(5) The plaintiff must deliver with his petition particulars of the objections on which he means to rely, and no evidence shall, except by leave of the Court or a judge, be admitted in proof of any objection of which particulars are not so delivered.

(6) Particulars delivered may be from time to time amended by leave of the Court or a judge.

(7) The defendant shall be entitled to begin, and give evidence in support of the patent, and if the plaintiff gives evidence impeaching the validity of the patent the defendant shall be entitled to reply.

(8) Where a patent has been revoked on the ground of fraud, the Comptroller may, on the application of the true inventor made in accordance with the provisions of this Act, grant to him a patent in lieu of and bearing the same date as the date of revocation of the patent so revoked, but the patent so granted shall cease on the expiration of the term for which the revoked patent was granted.

46 & 47 Vict. c. 57.

Crown.

Patent to bind Crown.

27. (1) A patent shall have to all intents the like effect as against Her Majesty the Queen, her heirs and successors, as it has against a subject.

(2) But the officers or authorities administering any department of the service of the Crown may, by themselves, their agents, contractors, or others, at any time after the application, use the invention for the services of the Crown on terms to be before or after the use thereof agreed on, with the approval of the Treasury, between those officers or authorities and the patentee, or, in default of such agreement, on such terms as may be settled by the Treasury after hearing all parties interested.

Legal Proceedings.

Hearing with assessor.

28. (1) In an action or proceeding for infringement or revocation of a patent, the Court may, if it thinks fit, and shall, on the request of either of the parties to the proceeding, call in the aid of an assessor specially qualified, and try and hear the case wholly or partially with his assistance; the action shall be tried without a jury unless the Court shall otherwise direct.

(2) The Court of Appeal or the Judicial Committee of the Privy Council may, if they see fit, in any proceeding before them respectively, call in the aid of an assessor as aforesaid.

(3) The remuneration, if any, to be paid to an assessor under this section shall be determined by the Court or the Court of Appeal or Judicial Committee, as the case may be, and be paid in the same manner as the other expenses of the execution of this Act.

Delivery of particulars.

29. (1) In an action for infringement of a patent the plaintiff must deliver with his statement of claim, or by order of the Court or the judge, at any subsequent time, particulars of the breaches complained of.

(2) The defendant must deliver with his statement of defence, or, by order of the Court or a judge, at any subsequent time, particulars of any objections on which he relies in support thereof.

(3) If the defendant disputes the validity of the patent, the

particulars delivered by him must state on what grounds he disputes it, and if one of those grounds is want of novelty must state the time and place of the previous publication or user alleged by him. 46 & 47 Vict. c. 57.

(4) At the hearing no evidence shall, except by leave of the Court or a judge, be admitted in proof of any alleged infringement or objection of which particulars are not so delivered.

(5) Particulars delivered may be from time to time amended, by leave of the Court or a judge.

(6) On taxation of costs regard shall be had to the particulars delivered by the plaintiff and by the defendant; and they respectively shall not be allowed any costs in respect of any particular delivered by them unless the same is certified by the Court or a judge to have been proven or to have been reasonable and proper, without regard to the general costs of the case.

Order for inspection, &c., in action.

30. In an action for infringement of a patent, the Court or a judge may on the application of either party make such order for an injunction inspection or account, and impose such terms and give such directions respecting the same and the proceedings thereon as the Court or a judge may see fit.

Certificate of validity questioned and costs thereon.

31. In an action for infringement of a patent, the Court or a judge may certify that the validity of the patent came in question; and if the Court or a judge so certifies, then in any subsequent action for infringement, the plaintiff in that action on obtaining a final order for judgment in his favour shall have his full costs charges and expenses as between solicitor and client, unless the Court or judge trying the action certifies that he ought not to have the same.

Remedy in case of groundless threats of legal proceedings.

32. Where any person claiming to be the patentee of an invention, by circulars advertisements or otherwise threatens any other person with any legal proceedings or liability in respect of any alleged manufacture use sale or purchase of the invention, any person or persons aggrieved thereby may bring an action against him, and may obtain an injunction against the continuance of such threats, and may recover such damage (if any) as may have been sustained thereby, if the alleged manufacture, use, sale, or purchase to which the threats related was not in fact an infringement of any legal rights of the person making such threats:

46 & 47 Vict. c. 57.

Provided that this section shall not apply if the person making such threats with due diligence commences and prosecutes an action for infringement of his patent.

Miscellaneous.

Patent for one invention only.

33. Every patent may be in the form in the First Schedule to this Act, and shall be granted for one invention only, but may contain more than one claim; but it shall not be competent for any person in an action or other proceeding to take any objection to a patent on the ground that it comprises more than one invention.

Patent on application of representative of deceased inventor.

34. (1) If a person possessed of an invention dies without making application for a patent for the invention, application may be made by, and a patent for the invention granted to, his legal representative.

(2) Every such application must be made within six months of the decease of such person, and must contain a declaration by the legal representative that he believes such person to be the true and first inventor of the invention.

Patent to first inventor not invalidated by application in fraud of him.

35. A patent granted to the true and first inventor shall not be invalidated by an application in fraud of him, or by provisional protection obtained thereon, or by any use or publication of the invention subsequent to that fraudulent application during the period of provisional protection.

Assignment for particular places.

36. A patentee may assign his patent for any place in or part of the United Kingdom, or Isle of Man, as effectually as if the patent were originally granted to extend to that place or part only.

Loss or destruction of patent.

37. If a patent is lost or destroyed, or its non-production is accounted for to the satisfaction of the Comptroller, the Comptroller may at any time cause a duplicate thereof to be sealed.

Proceedings and costs before Law Officer.

38. The Law Officers may examine witnesses on oath and administer oaths for that purpose under this part of this Act, and may from time to time make, alter, and rescind rules regulating references and appeals to the Law Officers and the practice and procedure before them under this part of this Act; and in any proceeding before either of the Law Officers under this part of this Act the Law Officer may order costs to be paid by either party, and any such order may be made a rule of the Court.

46 & 47 Vict. c. 57.

Exhibition at industrial or international exhibition not to prejudice patent rights.

39. The exhibition [1] of an invention at an industrial or international exhibition, certified as such by the Board of Trade, or the publication of any description of the invention during the period of the holding of the exhibition, or the use of the invention for the purpose of the exhibition in the place where the exhibition is held, or the use of the invention during the period of the holding of the exhibition by any person elsewhere, without the privity or consent of the inventor, shall not prejudice the right of the inventor or his legal personal representative to apply for and obtain provisional protection and a patent in respect of the invention or the validity of any patent granted on the application, provided that both the following conditions are complied with, namely,—

(*a*) The exhibitor must, before exhibiting the invention, give the Comptroller the prescribed notice of his intention to do so; and

(*b*) The application for a patent must be made before or within six months from the date of the opening of the exhibition.

Publication of illustrated journal, indexes, etc.

40. (1) The Comptroller shall cause to be issued periodically an illustrated journal of patented inventions, as well as reports of patent cases decided by courts of law, and any other information that the Comptroller may deem generally useful or important.

(2) Provision shall be made by the Comptroller for keeping on sale copies of such journal, and also of all complete specifications of patents for the time being in force, with their accompanying drawings, if any.

(3) The Comptroller shall continue, in such form as he may deem expedient, the indexes and abridgments of specifications hitherto published, and shall from time to time prepare and publish such other indexes, abridgments of specifications, catalogues, and other works relating to inventions, as he may see fit.

Patent Museum.

41. The control and management of the existing Patent Museum, and its contents shall from and after the commencement of this Act, be transferred to and vested in the Department

[1] The provisions of this section may be extended by Order in Council to foreign exhibitions under 49 & 50 Vict. c. 37, sect. 3, *post*, p. 517.

46 & 47 Vict. c. 57.

of Science and Art, subject to such directions as Her Majesty in Council may see fit to give.

Power to require models on payment.

42. The Department of Science and Art may at any time require a patentee to furnish them with a model of his invention on payment to the patentee of the cost of the manufacture of the model; the amount to be settled, in case of dispute, by the Board of Trade.

Foreign vessels in British waters.

43. (1) A patent shall not prevent the use of an invention for the purposes of the navigation of a foreign vessel within the jurisdiction of any of Her Majesty's Courts in the United Kingdom, or Isle of Man, or the use of an invention in a foreign vessel within that jurisdiction, provided it is not used therein for or in connection with the manufacture or preparation of anything intended to be sold in or exported from the United Kingdom or Isle of Man.

(2) But this section shall not extend to vessels of any foreign state of which the laws authorize subjects of such foreign state, having patents or like privileges for the exclusive use or exercise of inventions within its territories, to prevent or interfere with the use of such inventions in British vessels while in the ports of such foreign state, or in the waters within the jurisdiction of its Courts, where such inventions are not so used for the manufacture or preparation of anything intended to be sold in or exported from the territories of such foreign state.

Assignment to Secretary for War of certain inventions.

44. (1) The inventor of any improvement in instruments or munitions of war, his executors, administrators, or assigns (who are in this section comprised in the expression the inventor) may (either for or without valuable consideration) assign to Her Majesty's Principal Secretary of State for the War Department (hereinafter referred to as the Secretary of State), on behalf of Her Majesty, all the benefit of the invention and of any patent obtained or to be obtained for the same; and the Secretary of State may be a party to the assignment.

(2) The assignment shall effectually vest the benefit of the invention and patent in the Secretary of State for the time being on behalf of Her Majesty, and all covenants and agreements therein contained for keeping the invention secret and otherwise shall be valid and effectual (notwithstanding any want

of valuable consideration), and may be enforced accordingly by the Secretary of State for the time being. 46 & 47 Vict. c. 57.

(3) Where any such assignment has been made to the Secretary of State, he may at any time before the application for a patent for the invention, or before publication of the specification or specifications, certify to the Comptroller his opinion that, in the interest of the public service, the particulars of the invention and of the manner in which it is to be performed should be kept secret.

(4) If the Secretary of State so certifies, the application and specification or specifications with the drawings (if any), and any amendment of the specification or specifications, and any copies of such documents and drawings, shall, instead of being left in the ordinary manner at the Patent Office, be delivered to the Comptroller in a packet sealed by authority of the Secretary of State.

(5) Such packet shall until the expiration of the term or extended term during which a patent for the invention may be in force, be kept sealed by the Comptroller, and shall not be opened save under the authority of an order of the Secretary of State, or of the Law Officers.

(6) Such sealed packet shall be delivered at any time during the continuance of the patent to any person authorized by writing under the hand of the Secretary of State to receive the same, and shall if returned to the Comptroller be again kept sealed by him.

(7) On the expiration of the term or extended term of the patent, such sealed packet shall be delivered to any person authorized by writing under the hand of the Secretary of State to receive it.

(8) Where the Secretary of State certifies as aforesaid, after an application for a patent has been left at the Patent Office, but before the publication of the specification or specifications, the application, specification or specifications, with the drawings (if any), shall be forthwith placed in a packet sealed by authority of the Comptroller, and such packet shall be subject to the foregoing provisions respecting a packet sealed by authority of the Secretary of State.

46 & 47 Vict. c. 57.

(9) No proceeding by petition or otherwise shall lie for revocation of a patent granted for an invention in relation to which the Secretary of State has certified as aforesaid.

(10) No copy of any specification or other document or drawing, by this section required to be placed in a sealed packet, shall in any manner whatever be published or open to the inspection of the public, but save as in this section otherwise directed, the provisions of this part of this Act shall apply in respect of any invention and patent as aforesaid.

(11) The Secretary of State may, at any time by writing under his hand, waive the benefit of this section with respect to any particular invention, and the specifications, documents and drawings shall be thenceforth kept and dealt with in the ordinary way.

(12) The communication of any invention for any improvement in instruments or munitions of war to the Secretary of State, or to any person or persons authorized by him to investigate the same or the merits thereof, shall not, nor shall anything done for the purposes of the investigation, be deemed use or publication of such invention so as to prejudice the grant or validity of any patent for the same.

Existing Patents.

45. [Provisions respecting existing patents.]

Definitions.

Definitions of patent, patentee, and invention.

46. In and for the purposes of this Act—

"Patent" means letters patent for an invention;

"Patentee" means the person for the time being entitled to the benefit of a patent;

"Invention" means any manner of new manufacture the subject of letters patent and grant of privilege within section six of the Statute of Monopolies (that is, the Act of the twenty-first year of the reign of King James the First, chapter three, intituled "An Act concerning monopolies and dispensations with penal laws and the forfeiture thereof"), and includes an alleged invention.

In Scotland "injunction" means "interdict."

[*Parts III. and IV., relating to Designs and Trade Marks, are omitted, not being within the scope of this work.*] 46 & 47 Vict. c. 57.

PART V.—GENERAL.

Patent Office and Proceedings thereat.

Patent Office.

82. (1) The Treasury may provide for the purposes of this Act an office with all requisite buildings and conveniences, which shall be called, and is in this act referred to as, the Patent Office.

(2) Until a new Patent Office is provided, the offices of the Commissioners of Patents for inventions and for the registration of designs and trade-marks existing at the commencement of this Act shall be the Patent Office within the meaning of this Act.

(3) The Patent Office shall be under the immediate control of an officer called the Comptroller-General of Patents, Designs, and Trade-marks, who shall act under the superintendence and direction of the Board of Trade.

(4) Any act or thing directed to be done by or to the Comptroller may[1] . . . be done by or to any officer for the time being in that behalf authorized by the Board of Trade.

Officers and clerks.

83. (1) The Board of Trade may at any time after the passing of this Act, and from time to time, subject to the approval of the Treasury, appoint the Comptroller-General of Patents, Designs, and Trade-marks, and so many examiners and other officers and clerks, with such designations and duties as the Board of Trade think fit, and may from time to time remove any of those officers and clerks.

(2) The salaries of those officers and clerks shall be appointed by the Board of Trade, with the concurrence of the Treasury, and the same and the other expenses of the execution of this Act shall be paid out of the money provided by Parliament.

Seal of Patent Office.

84. There shall be a seal for the Patent office, and impressions thereof shall be judicially noticed and admitted in evidence.

Trust not to be entered in registers.

85. There shall not be entered in any register kept under this Act, or be receivable by the Comptroller, any notice of any trust expressed implied or constructive.

[1] Words omitted repealed by 2 Ed. VII. c. 34, s. 4.

46 & 47 Vict. c. 57.

Refusal to grant patent, etc.

86. The Comptroller may refuse to grant a patent for an invention, or to register a design or trade-mark, of which the use would, in his opinion, be contrary to law or morality.

Entry of assignments and transmissions in registers.

87. Where a person becomes entitled by assignment, transmission, or other operation of law to a patent, or to the copyright in a registered design, or to a registered trade-mark, the Comptroller shall on request, and on proof of title to his satisfaction, cause the name of such person to be entered as proprietor of the patent, copyright in the design, or trade-mark, in the register of patents, designs, or trade-marks, as the case may be. The person for the time being entered in the register of patents, designs, or trade-marks, as proprietor of a patent, copyright in a design or trade-mark as the case may be, shall, subject to *the provisions of this Act and to*[1] any rights appearing from such register to be vested in any other person, have power absolutely to assign, grant licenses as to, or otherwise deal with, the same, and to give effectual receipts for any consideration for such assignment, license, or dealing. Provided that any equities in respect of such patent, design, or trade-mark may be enforced in like manner as in respect of any other personal property.

Inspection of and extracts from registers.

88. Every register kept under this Act shall at all convenient times be open to the inspection of the public, subject to *the provisions of this Act and to*[2] such regulations as may be prescribed; and certified copies, sealed with the seal of the Patent Office, of any entry in any such register shall be given to any person requiring the same on payment of the prescribed fee.

Sealed copies to be received in evidence.

89. Printed or written copies or extracts, purporting to be certified by the Comptroller and sealed with the seal of the Patent Office, of or from patents specifications disclaimers and other documents in the Patent Office, and of or from registers and other books kept there, shall be admitted in evidence in all Courts in Her Majesty's dominions, and in all proceedings, without further proof or production of the originals.

Rectification of registers by Court.

90. (1) The Court may on the application of any person aggrieved by the omission without sufficient cause of the name of any person *or of any other particulars*[3] from any register kept

[1–2] Words in italics inserted by 51 & 52 Vict. c. 50, sects. 21, 22.
[3] These words are inserted by 51 & 52 Vict. c. 50, sect. 23.

under this Act, or by any entry made without sufficient cause in any such register, make such order for making expunging or varying the entry, as the Court thinks fit; or the Court may refuse the application; and in either case may make such order with respect to the costs of the proceedings as the Court thinks fit. 46 & 47 Vict. c. 57.

(2) The Court may in any proceeding under this section decide any question that it may be necessary or expedient to decide for the rectification of a register, and may direct an issue to be tried for the decision of any question of fact, and may award damages to the party aggrieved.

(3) Any order of the Court rectifying a register shall direct that due notice of the rectification be given to the Comptroller.

Power for Comptroller to correct clerical errors.

91. The Comptroller may, on request in writing accompanied by the prescribed fee,—

(*a*) Correct any clerical error in or in connection with an application for a patent, or for registration of a design or trade-mark; or

(*b*) Correct any clerical error in the name, style or address of the registered proprietor of a patent, design, or trade-mark.

(*c*) Cancel the entry or part of the entry of a trade-mark on the register: Provided that the applicant accompanies his request by a statutory declaration made by himself, stating his name, address, and calling, and that he is the person whose name appears on the register as the proprietor of the said trade-mark.

(*d*) [1] *Permit an applicant for registration of a design or trade-mark to amend his application by omitting any particular goods or classes of goods in connection with which he has desired the design or trade-mark to be registered.*

92. [Alteration of registered mark.]

Falsification of entries in registers.

93. If any person makes or causes to be made a false entry in any register kept under this Act, or a writing falsely purporting to be a copy of an entry in any such register, or produces or tenders or causes to be produced or tendered in evidence any such writing, knowing the entry or writing to be false, he shall be guilty of a misdemeanor.

[1] This sub-section is added by 51 & 52 Vict. c. 50, sect. 24.

46 & 47 Vict. c. 57.

Exercise of discretion by Comptroller.

94. Where any discretionary power is by this Act given to the Comptroller, he shall not exercise that power adversely to the applicant for a patent, or for amendment of a specification, or for registration of a trade-mark or design, without (if so required within the prescribed time by the applicant) giving the applicant an opportunity of being heard personally or by his agent.

Power of Comptroller to take directions of Law Officers.

95. The Comptroller may, in any case of doubt or difficulty arising in the administration of any of the provisions of this Act, apply to either of the Law Officers for directions in the matter.

Certificate of Comptroller to be evidence.

93. A certificate purporting to be under the hand of the Comptroller as to any entry, matter, or thing which he is authorized by this Act, or any general rules made thereunder, to make or do, shall be *prima facie* evidence of the entry having been made, and of the contents thereof, and of the matter or thing having been done or left undone.

Applications and notices by post.

97. (1) Any application, notice, or other document authorized or required to be left, made or given at the Patent Office or to the Comptroller, or to any other person under this Act, may be sent by a prepaid letter through the post; and if so sent shall be deemed to have been left made or given respectively at the time when the letter containing the same would be delivered in the ordinary course of post.

(2) In proving such service or sending, it shall be sufficient to prove that the letter was properly addressed and put into the post.

Provision as to days for leaving documents at office.

98. Whenever the last day fixed by this Act, or by any rule for the time being in force, for leaving any document or paying any fee at the Patent Office shall fall on Christmas Day, Good Friday, or on a Saturday or Sunday, or any day observed as a holiday at the Bank of England, or any day observed as a day of public fast or thanksgiving, herein referred to as excluded days, it shall be lawful to leave such document or to pay such fee on the day next following such excluded day, or days if two or more of them occur consecutively.

Declaration by infant, lunatic, &c.

99. If any person is, by reason of infancy lunacy or other inability, incapable of making any declaration or doing anything required or permitted by this Act or by any rules made under the

authority of this Act, then the guardian or committee (if any) of such incapable person, or if there be none, any person appointed by any Court or judge possessing jurisdiction in respect of the property of incapable persons, upon the petition of any person on behalf of such incapable person, or of any other person interested in the making such declaration or doing such thing, may make such declaration or a declaration as nearly corresponding thereto as circumstances permit, and do such thing in the name and on behalf of such incapable person, and all acts done by such substitute shall for the purposes of this Act be as effectual as if done by the person for whom he is substituted. 46 & 47 Vict. c. 57.

Transmission of certified printed copies of specifications, &c.

100. Copies of all specifications, drawings, and amendments left at the Patent Office after the commencement of this Act, printed for and sealed with the seal of the Patent Office, shall be transmitted to the Edinburgh Museum of Science and Art, and to the Enrolments Office of the Chancery Division in Ireland, and to the Rolls Office in the Isle of Man, within twenty-one days after the same shall respectively have been accepted or allowed at the Patent Office; and certified copies of or extracts from any such documents shall be given to any person requiring the same on payment of the prescribed fee; and any such copy or extract shall be admitted in evidence in all Courts in Scotland and Ireland and in the Isle of Man without further proof or production of the originals.

Power for Board of Trade to make general rules for classifying goods and regulating business of Patent Office. [And as to registration of Patent Agents, *post*, p. 519.]

101. (1) The Board of Trade may from time to time make such general rules and do such things as they think expedient, subject to the provisions of this Act—

(*a*) For regulating the practice of registration under this Act:

(*b*) For classifying goods for the purposes of designs and trade-marks;

(*c*) For making or requiring duplicates of specifications, amendments, drawings, and other documents;

(*d*) For securing and regulating the publishing and selling of copies, at such prices and in such manner as the Board of Trade think fit, of specifications drawings amendments and other documents;

(*e*) For securing and regulating the making printing publishing and selling of indexes to, and abridgments of,

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specifications and other documents in the Patent Office; and providing for the inspection of indexes and abridgments and other documents;

(*f*) For regulating (with the approval of the Treasury) the presentation of copies of Patent Office publications to patentees and to public authorities, bodies, and institutions at home and abroad;

(*g*) Generally for regulating the business of the Patent Office, and all things by this Act placed under the direction or control of the Comptroller, or of the Board of Trade.

(2) Any of the forms in the First Schedule to this Act may be altered or amended by rules made by the Board as aforesaid.

(3) General rules may be made under this section at any time after the passing of this Act, but not so as to take effect before the commencement of this Act, and shall (subject as hereinafter mentioned) be of the same effect as if they were contained in this Act, and shall be judicially noticed.

(4) Any rules made in pursuance of this section shall be laid before both Houses of Parliament, if Parliament be in session at the time of making thereof, or, if not, then as soon as practicable after the beginning of the then next session of Parliament, and they shall also be advertised twice in the official journal to be issued by the Comptroller.

(5) If either House of Parliament, within the next forty days after any rules have been so laid before such House, resolve that such rules or any of them ought to be annulled, the same shall after the date of such resolution be of no effect, without prejudice to the validity of anything done in the mean time under such rules or rule or to the making of any new rules or rule.

102. [Annual reports of Comptroller.]

International and Colonial Arrangements.

International arrangements for protection of inventions, designs, and trade-marks.

103. (1) If Her Majesty is pleased to make any arrangement with the Government or Governments of any foreign state or states for mutual protection of inventions, designs, and trade-marks, or any of them, then any person who has applied for protection for any invention, design, or trade-mark in any such state, shall be

entitled to a patent for his invention or to registration of his design or trade-mark (as the case may be) under this Act, in priority to other applicants ; and such patent or registration shall have the same date as the date of the *application*[1] in such foreign state. 46 & 47 Vict. c. 57.

Provided that his application[2] is made, in the case of a patent within *twelve*[3] months, and in the case of a design or trade-mark within four months, from his applying for protection in the foreign state with which the arrangement is in force.

Provided that nothing in this section contained shall entitle the patentee or proprietor of the design or trade-mark to recover damages for infringements happening prior to the date of the actual acceptance of his complete specification, or the actual registration of his design or trade-mark in this country, as the case may be.

(2) The publication in the United Kingdom, or the Isle of Man during the respective periods aforesaid of any description of the invention, or the use therein during such periods of the invention, or the exhibition or use therein during such periods of the design, or the publication therein during such periods of a description or representation of the design, or the use therein during such periods of the trade-mark, shall not invalidate the patent which may be granted for the invention, or the registration of the design or trade-mark.

(3) The application for the grant of a patent, or the registration of a design, or the registration of a trade-mark under this section, must be made in the same manner as an ordinary application under this Act: Provided that, in the case of trade-marks, any trade-mark the registration of which has been duly applied for in the country of origin may be registered under this Act.

(4) The provisions of this section shall apply only in the case of those foreign states with respect to which Her Majesty shall from time to time by Order in Council declare them to be

[1] As amended by 48 & 49 Vict. c. 63, sect 6, *post*, p. 516.

[2] That is an application to come under the provisions of this section: *British Tanning Co.* v. *Groth*, 8 R. P. C. 122; *Acetylene Illuminating Co.* v. *Un. Alkali Co.*, 20 R. P. C. 167. It must be accompanied by a complete specification. 1 Ed. VII. c. 18, sect. 1.

[3] As amended by 1 Ed. VII. c. 18, sect. 1.

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applicable, and so long only in the case of each state as the Order in Council shall continue in force with respect to that state.

Provision for colonies and India.

104. (1) Where it is made to appear to Her Majesty that the legislature of any British possession has made satisfactory provision for the protection of inventions, designs, and trade-marks, patented or registered in this country, it shall be lawful for Her Majesty from time to time, by Order in Council, to apply the provisions of the last preceding section, with such variations or additions, if any, as to Her Majesty in Council may seem fit, to such British possession.

(2) An Order in Council under this Act shall, from a date to be mentioned for the purpose in the Order, take effect as if its provisions had been contained in this Act; but it shall be lawful for Her Majesty in Council to revoke any Order in Council made under this Act.

Offences.

Penalty on falsely representing articles to be patented.

105. (1) Any person who represents that any article sold by him is a patented article, when no patent has been granted for the same, or describes any design or trade-mark applied to any article sold by him as registered which is not so, shall be liable for every offence on summary conviction to a fine not exceeding five pounds.

(2) A person shall be deemed, for the purposes of this enactment, to represent that an article is patented or a design or a trade-mark is registered, if he sells the article with the word "patent," "patented," "registered," or any word or words expressing or implying that a patent or registration has been obtained for the article stamped, engraved, or impressed on, or otherwise applied to, the article.

106. [Penalty on unauthorized assumption of Royal arms.]

Scotland, Ireland, &c.

Saving for Courts in Scotland.

107. In any action for infringement of a patent in Scotland the provisions of this Act, with respect to calling in the aid of an assessor, shall apply, and the action shall be tried without a jury, unless the Court shall otherwise direct, but otherwise nothing shall

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affect the jurisdiction and forms of process of the Courts in Scotland in such an action or in any action or proceeding respecting a patent hitherto competent to those Courts.

For the purposes of this section "Court of Appeal" shall mean any Court to which such action is appealed.

Summary proceedings in Scotland.

108. In Scotland any offence under this Act declared to be punishable on summary conviction may be prosecuted in the Sheriff Court.

Proceedings for revocation of patent in Scotland.

109. (1) Proceedings in Scotland for revocation of a patent shall be in the form of an action of reduction at the instance of the Lord Advocate, or at the instance of a party having interest with his concurrence, which concurrence may be given on just cause shown only.

(2) Service of all writs and summonses in that action shall be made according to the forms and practice existing at the commencement of this Act.

Reservation of remedies in Ireland.

110. All parties shall, notwithstanding anything in this Act, have in Ireland their remedies under or in respect of a patent as if the same had been granted to extend to Ireland only.

General saving for jurisdiction of Courts.

111. (1) The provisions of this Act conferring a special jurisdiction on the Court as defined by this Act, shall not, except so far as the jurisdiction extends, affect the jurisdiction of any Court in Scotland or Ireland in any proceedings relating to patents or to designs or to trade-marks; and with reference to any such proceedings in Scotland, the term "the Court" shall mean any Lord Ordinary of the Court of Session, and the term "Court of Appeal" shall mean either Division of the said Court; and with reference to any such proceedings in Ireland, the terms "the Court" and "the Court of Appeal" respectively mean the High Court of Justice in Ireland and Her Majesty's Court of Appeal in Ireland.

(2) If any rectification of a register under this Act is required in pursuance of any proceeding in a Court in Scotland or Ireland, a copy of the order, decree, or other authority for the rectification, shall be served on the Comptroller, and he shall rectify the register accordingly.

Isle of Man.

112. This Act shall extend to the Isle of Man, and—

(1) Nothing in this Act shall affect the jurisdiction of the

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Courts in the Isle of Man, in proceedings for infringement or in any action or proceeding respecting a patent, design, or trade-mark competent to those Courts;

(2) The punishment for a misdemeanor under this Act in the Isle of Man shall be imprisonment for any term not exceeding two years, with or without hard labour, and with or without a fine not exceeding one hundred pounds, at the discretion of the Court;

(3) Any offence under this Act committed in the Isle of Man which would in England be punishable on summary conviction may be prosecuted, and any fine in respect thereof recovered at the instance of any person aggrieved, in the manner in which offences punishable on summary conviction may for the time being be prosecuted.

Repeal, Transitional Provisions, Savings.

Repeal and saving for past operation of repealed enactments, &c.

113. The enactments described in the Third Schedule to this Act are hereby repealed. But this repeal of enactments shall not—

(*a*) Affect the past operation of any of those enactments, or any patent or copyright or right to use a trade-mark granted or acquired, or application pending, or appointment made, or compensation granted, or order or direction made or given, or right, privilege, obligation, or liability acquired, accrued, or incurred, or anything duly done or suffered under or by any of those enactments before or at the commencement of this Act; or

(*b*) Interfere with the institution or prosecution of any action or proceeding, civil or criminal, in respect thereof, and any such proceeding may be carried on as if this Act had not been passed; or

(*c*) Take away or abridge any protection or benefit in relation to any such action or proceeding.

Former registers to be deemed continued.

114. (1) The registers of patents and of proprietors kept under any enactment repealed by this Act shall respectively be deemed parts of the same book as the register of patents kept under this Act.

(2) The registers of designs and of trade-marks kept under any enactment repealed by this Act shall respectively be deemed parts of the same book as the register of designs and the register of trade-marks kept under this Act. 46 & 47 Vict. c. 57.

Saving for existing rules.

115. All general rules made by the Lord Chancellor or by any other authority under any enactment repealed by this Act, and in force at the commencement of this Act, may at any time after the passing of this Act be repealed altered or amended by the Board of Trade, as if they had been made by the Board under this Act, but so that no such repeal alteration or amendment shall take effect before the commencement of this Act; and, subject as aforesaid, such general rules shall, so far as they are consistent with and are not superseded by this Act, continue in force as if they had been made by the Board of Trade under this Act.

Saving for prerogative.

116. Nothing in this Act shall take away abridge or prejudicially affect the prerogative of the Crown in relation to the granting of any letters patent or to the withholding of a grant thereof.

General Definitions.

General definitions.

117. (1) In and for the purposes of this Act, unless the context otherwise requires,—

"Person" includes a body corporate;

"The Court" means (subject to the provisions for Scotland, Ireland, and the Isle of Man) Her Majesty's High Court of Justice in England;

"Law Officer" means Her Majesty's Attorney-General or Solicitor-General for England;

"The Treasury" means the Commissioners of Her Majesty's Treasury;

"Comptroller" means the Comptroller-General of Patents, Designs, and Trade-marks;

"Prescribed" means prescribed by any of the Schedules to this Act, or by general rules under or within the meaning of this Act;

"British possession" means any territory or place situate within Her Majesty's dominions, and not being or forming part

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of the United Kingdom, or of the Channel Islands, or of the Isle of Man, and all territories and places under one legislature, as hereinafter defined, are deemed to be one British possession for the purposes of this Act;

"Legislature" includes any person or persons who exercise legislative authority in the British possession; and where there are local legislatures as well as a central legislature, means the central legislature only.

In the application of this Act to Ireland, "summary conviction" means a conviction under the Summary Jurisdiction Acts, that is to say, with reference to the Dublin Metropolitan Police District the Acts regulating the duties of justices of the peace and of the police for such district, and elsewhere in Ireland the Petty Sessions (Ireland) Act, 1851, and any Act amending it.

SCHEDULES.

THE FIRST SCHEDULE.

FORMS OF APPLICATION, ETC.

[The Forms A, A_1, A_2, B, and C given *post*, pp. 545–551, are substituted for those originally in this schedule.]

FORM D.

[FORM OF PATENT.]

See post, p. 569.

FORM E.

[FORM OF APPLICATION FOR REGISTRATION OF DESIGN.]

FORM F.

[FORM OF APPLICATION FOR REGISTRATION OF TRADE-MARK.]

THE SECOND SCHEDULE.

FEES ON INSTRUMENTS FOR OBTAINING PATENTS AND RENEWAL.

[*Fees substituted by the Patents Rules*, 1903, *are set out post, p.* 542.]

THE THIRD SCHEDULE.

[ENACTMENTS REPEALED.]

THE PATENTS, DESIGNS, AND TRADE MARKS (AMENDMENT) ACT, 1885.

(48 & 49 VICT. C. 63.)

An Act to amend the Patents, Designs, and Trade Marks Act, 1883. [14*th August*, 1885.] A.D. 1885.

BE it enacted, &c.

Construction and short title.

1. This Act shall be construed as one with the Patents, Designs, and Trade Marks Act, 1883 (in this Act referred to as the principal Act).

This Act may be cited as the Patents, Designs, and Trade Marks (Amendment) Act, 1885, and this Act and the principal Act may be cited together as the Patents, Designs, and Trade Marks Acts, 1883 and 1885.

Amendment of sect. 5 of 46 & 47 Vict. c. 57.

2. Whereas sub-section two of section five of the principal Act requires a declaration to be made by an applicant for a patent to the effect in that sub-section mentioned, and doubts have arisen as to the nature of that declaration, and it is expedient to remove such doubts: Be it therefore enacted that:

The declaration mentioned in sub-section two of section five of the principal Act may be either a statutory declaration under the Statutory Declarations Act, 1835 (5 & 6 W. 4, c. 62), or not, as may be from time to time prescribed.

Amendment of sects. 8, 9, and 12 of 46 & 47 Vict. c. 57.

3. Whereas under the principal Act, a complete specification is required (by section eight) to be left *nine*[1] months, and (by section nine) to be accepted within twelve months, from the date of application, and a patent is required by section twelve to be sealed within fifteen months from the date of application, and it is expedient to empower the Comptroller to extend in certain cases the said times: Be it therefore enacted as follows:

[1] This period is now six months by 2 Ed. VII. c. 34, sect. 1.

48 & 49 Vict. c. 63.

A complete specification may be left and accepted within such extended times, not exceeding one month and three months respectively after the said *nine*[1] and twelve months respectively as the Comptroller may on payment of the prescribed fee allow, and where such extension of time has been allowed, a further extension of four months after the said fifteen months shall be allowed for the sealing of the patent; and the principal Act shall have effect as if any time so allowed were added to the said periods specified in the principal Act.

Specifications, &c., not to be published unless application accepted.

4. Where an application for a patent has been abandoned, or become void, the specification or specifications and drawings (if any) accompanying or left in connection with such application, shall not at any time be open to public inspection or be published by the Comptroller.

Power to grant patents to several persons jointly.

5. Whereas doubts have arisen whether under the principal Act a patent may lawfully be granted to several persons jointly, some or one of whom only are or is the true and first inventors or inventor; be it therefore enacted and declared that it has been and is lawful under the principal Act to grant such a patent.

Amendment of sect. 103 of 46 & 47 Vict. c. 57.

6. In sub-section one of section one hundred and three of the principal Act, the words "date of the application" shall be substituted for the words "date of the protection obtained."

[1] This period is now six months by 2 Edw. VII. c. 34, sect. 1.

THE PATENTS ACT, 1886.

(49 & 50 VICT. C. 37).

An Act to remove certain doubts respecting the construction of the Patents, Designs, and Trade Marks Act, 1883, so far as respects the drawings by which specifications are required to be accompanied, and as respects exhibitions. A.D. 1886.

[25*th June*, 1886.]

WHEREAS by section five of the Patents, Designs, and Trade Marks Act, 1883, specifications, whether provisional or complete, must be accompanied by drawings if required, and doubts have arisen as to whether it is sufficient that a complete specification refers to the drawings by which the provisional specification was accompanied, and it is expedient to remove such doubts: 46 & 47 Vict. c. 57.

Be it therefore enacted, &c.

Short title and construction.

1. This Act may be cited as the Patents Act, 1886, and shall be construed as one with the Patents, Designs, and Trade Marks Acts, 1883 (46 & 47 Vict. c. 57) and 1885 (48 & 49 Vict. c. 63), and, together with those Acts, may be cited as the Patents, Designs, and Trade Marks Acts, 1883 to 1886.

The same drawings may accompany both specifications.

2. The requirement of sub-section four of section five of the Patents, Designs, and Trade Marks Act, 1883, as to drawings shall not be deemed to be insufficiently complied with by reason only that instead of being accompanied by drawings the complete specification refers to the drawings which accompanied the provisional specification. And no patent heretofore sealed shall be invalid by reason only that the complete specification was not accompanied by drawings but referred to those which accompanied the provisional specification.

49 & 50 Vict. c. 37.

Protection of patents and designs exhibited at international exhibitions.

3. Whereas by section thirty-nine of the Patents, Designs, and Trade Marks Act, 1883, as respects patents, and by section fifty-seven of the same Act as respects designs, provision is made that the exhibition of an invention or design at an industrial or international exhibition, certified as such by the Board of Trade, shall not prejudice the rights of the inventor or proprietor thereof, subject to the conditions therein mentioned, one of which is that the exhibitor must, before exhibiting the invention, design, or article, or publishing a description of the design, give the Comptroller the prescribed notice of his intention to do so:

And whereas it is expedient to provide for the extension of the said sections to industrial and international exhibitions held out of the United Kingdom, be it therefore enacted as follows:

It shall be lawful for Her Majesty, by Order in Council, from time to time to declare that sections thirty-nine and fifty-seven of the Patents, Designs, and Trade Marks Act, 1883, or either of those sections, shall apply to any exhibition mentioned in the Order in like manner as if it were an industrial or international exhibition certified by the Board of Trade, and to provide that the exhibitor shall be relieved from the conditions, specified in the said sections, of giving notice to the Comptroller of his intention to exhibit, and shall be so relieved either absolutely or upon such terms and conditions as to Her Majesty in Council may seem fit.

PATENTS, DESIGNS, AND TRADE MARKS ACT, 1888.

(51 & 52 VICT. C. 50.)

An Act to amend the Patents, Designs, and Trade Marks Act, 1883. [*24th Dec.*, 1888.]

A.D. 1888.

WHEREAS it is expedient, &c.

Be it therefore enacted, &c.

Register of patent agents.

1.—(1) After the 1st day of July, 1889, a person shall not be entitled to describe himself as a patent agent, whether by advertisement, by description on his place of business, by any document issued by him, or otherwise, unless he is registered as a patent agent in pursuance of this Act.

(2) The Board of Trade shall, as soon as may be after the passing of this Act, and may from time to time, make such general rules as are in the opinion of the Board required for giving effect to this section, and the provisions of section 101 of the principal Act shall apply to all rules so made as if they were made in pursuance of that section.

(3) Provided that every person who proves to the satisfaction of the Board of Trade that prior to the passing of this Act he had been *bonâ fide* practising as a patent agent shall be entitled to be registered as a patent agent in pursuance of this Act.

(4) If any person knowingly describes himself as a patent agent in contravention of this section he shall be liable on summary conviction to a fine not exceeding £20.

(5) In this section "patent agent" means exclusively an agent for obtaining patents in the United Kingdom.

Amendments of 46 & 47 Vict. c. 57, s. 7, as to applications.

2. For section seven of the principal Act the following section shall be substituted, namely :—

(*The substituted section is inserted ante, p.* 487.)

51 & 52 VICT. C. 50.

s. 9, as to disclosure of reports of examiners.

3. In sub-section five of section nine of the principal Act the words "other than an appeal to the Law Officer under this Act" shall be omitted.

s. 11, as to opposition to grant of patent.

4. In sub-section one of section eleven of the principal Act the words from "or on the ground of an examiner" to "a previous application," both inclusive, shall be omitted, and there shall be added in lieu thereof the following words, namely:—

(*The substituted words are inserted ante, p.* 489.)

5. For sub-section ten of section eighteen of the principal Act the following sub-section shall be substituted, namely:—

(*The substituted sub-section is inserted ante, p.* 492.)

[*Sections six to twenty relating to Design and Trade Marks are omitted.*]

s. 87, as to entry of assignments, &c.

21. In section eighty-seven of the principal Act, after the words "subject to," shall be added the words "the provisions of this Act and to."

(*Inserted ante, p.* 504.)

s. 88, as to inspection.

22. In section eighty-eight of the principal Act, after the words "subject to," shall be added the words "the provisions of this Act and to."

(*Inserted ante, p.* 504.)

s. 90, as to rectification of register.

23. In section ninety of the principal Act, after the words "of the name of any person," shall be added the words "or of any other particulars."

(*Inserted ante, p.* 504).

s. 91, as to correction of errors.

24. To section ninety-one of the principal Act the following sub-section shall be added; namely,

"(*d*) Permit an applicant for registration of a design or trade-mark to amend his application by omitting any particular goods or classes of goods in connection with which he has desired the design or trade-mark to be registered."

(*Inserted ante, p.* 505.)

25. [Proceedings of Board of Trade.]

26. [Jurisdiction of Lancashire Palatine Court as to Trade Marks.]

Construction of principal Act.

27. The principal Act shall, as from the commencement of this Act, take effect subject to the additions, omissions, and

substitutions required by this Act, but nothing in this Act shall affect the validity of any act done, right acquired, or liability incurred before the commencement of this Act. 51 & 52 Vict. c. 50.

28. This Act shall, except so far as is by this Act otherwise specially provided, commence and come into operation on the first day of January, one thousand eight hundred and eighty-nine. Commencement of Act.

29. This Act may be cited as the Patents, Designs, and Trade Marks Act, 1888, and this Act and the Patents, Designs, and Trade Marks Act, 1883 to 1886, may be cited collectively as the Patents, Designs, and Trade Marks Acts, 1883 to 1888. Short title.

THE PATENTS ACT, 1901.

(1 ED. VII. C. 18.)

A.D. 1901.

An Act to amend the law with reference to International Arrangements for Patents. [*17th Aug.*, 1901.]

BE it enacted, &c.

International arrangements.

1. (1) In the first proviso to sub-section one of section 103 of the Patents, Designs, and Trade Marks Act, 1883, [46 & 47 Vict. c. 57] (which section relates to the time for making applications for protection under International arrangements), the words "twelve months" shall be substituted for the words "seven months."

(2) An application under that section shall be accompanied by a complete specification, which, if it be not accepted within the period of twelve months, shall, with the drawings (if any), be open to public inspection at the expiration of that period.

Short title, &c.

2.—(1) This Act may be cited as the Patents Act, 1901, and may be cited and shall be construed as one with the Patents, Designs, and Trade Marks Acts, 1880 to 1888.

(2) This Act shall come into operation on the 1st day of January, 1902.

THE PATENTS ACT, 1902.

(2 ED. VII. c. 34.)

BE it enacted, &c.

A.D. 1902.

Examination of previous specifications in United Kingdom on applications for patents.

1.—(1) Where an application for a patent has been made and a complete specification has been deposited by the applicant, the examiner shall forthwith, in addition to the inquiries which he is directed to make by the Patents, Designs, and Trade Marks Act, 1883, [46 & 47 Vict. c. 57] (in this Act referred to as the principal Act), make a further investigation for the purpose of ascertaining whether the invention claimed has been wholly or in part claimed or described in any specification (other than a provisional specification not followed by a complete specification) published before the date of the application, and deposited pursuant to any application for a patent made in the United Kingdom within fifty years next before the date of the application.

(2) If on investigation it appears that the invention has been wholly or in part claimed or described in any such specification, the applicant shall be informed thereof, and the applicant may, within such time as may be prescribed, amend his specification, and the amended specification shall be investigated in like manner as the original specification.

(3) The examiner shall report to the Comptroller the result of his investigations in such manner as the Board of Trade may direct.

(4) The provisions of sub-section five of section nine of the principal Act, as amended by any subsequent enactment, shall apply to reports under this section.

(5) If the Comptroller is satisfied that no objection exists to the specification on the ground that the invention claimed thereby has been wholly or in part claimed or described in a previous

2 Ed. VII. c. 34.

specification as before mentioned, he shall, in the absence of any other lawful ground of objection, accept the specification.

(6) If the Comptroller is not so satisfied, he shall, after hearing the applicant, and unless the objection be removed by amending the specification to the satisfaction of the Comptroller, determine whether a reference to any, and, if so, what, prior specifications ought to be made in the specification by way of notice to the public.

(7) An appeal shall lie from the decision of the Comptroller under this section to the Law Officer.

(8) Section eight of the principal Act [46 & 47 Vict. c. 57] and section three of the Patents, Designs, and Trade Marks (Amendment) Act, 1885 [48 & 49 Vict. c. 63] (which regulate the time for depositing a complete specification), shall have effect as if references therein to the period of nine months were references to the period of six months.

(9) The investigations and reports required by this section shall not be held in any way to guarantee the validity of any patent, and no liability shall be incurred by the Board of Trade or any officer thereof by reason of, or in connection with, any such investigation or report, or any proceeding consequent thereon.

(10) The Board of Trade, with the sanction of the Treasury, may prescribe an additional fee not exceeding one pound in respect of the investigation mentioned in this section, which shall be payable on the sealing of the patent.

(11) This section shall come into operation at such date as the Board of Trade may by order direct, and shall apply only to applications made after that date, and the order shall be laid before both Houses of Parliament.

Limitation as to anticipation.

2. An invention covered by any patent granted on an application to which section one of this Act applies shall not be deemed to have been anticipated by reason only of its publication in a specification deposited pursuant to an application made in the United Kingdom not less than fifty years before the date of the application for a patent therefor, or of its publication in a provisional specification of any date not followed by a complete specification.

3. [Amendment of law relating to compulsory licences. *Omitted.*] 2 Ed. VII. c. 34.

4. In sub-section four of section eighty-two of the principal Act [1] (which relates to the performance of the duties of the Comptroller by other officers under the direction of the Board of Trade) the words "in his absence" shall be repealed. Performance of Comptroller's duties.

5. This Act may be cited as the Patents Act, 1902, and may be cited and shall be construed as one with the Patents, Designs, and Trade Marks Acts, 1883 to 1901. Short title and construction.

[1] *Ante*, p. 503.

PATENTS RULES, 1903.

BY virtue of the provisions of the Patents, Designs, and Trade Marks Acts, 1883 to 1902, the Board of Trade do hereby make the following Rules :—[1]

SHORT TITLE.

Short title.

1. These Rules may be cited as the Patents Rules, 1903.

COMMENCEMENT.

Commencement.

2. These Rules shall come into operation from and immediately after the 12th day of January, 1903.

INTERPRETATION.

Interpretation.

3. In the construction of these Rules—

"United Kingdom" includes the Isle of Man ;

"Foreign Application" means an application by any person for protection of his invention in a Foreign State or British Possession to which by any Order in Council for the time being in force the provisions of section 103 of the Act of 1883 as amended by any subsequent Act have been declared applicable ;

"Convention Application" means an application in the United Kingdom under the provisions of section 103 of the Act of 1883 as amended by any subsequent Act.

Save as aforesaid any words herein used defined by the said Acts shall have the meanings thereby assigned to them respectively.

FEES.

First Schedule.

4. The fees to be paid under the said Acts shall be those specified in the list of fees in the First Schedule to these Rules.

[1] Those dealing with matters outside the scope of this work (*i.e.* rules 69-75) ar omitted.

FORMS.

Second Schedule.

5. The Forms contained in the Second Schedule to these Rules may, as far as they are applicable, be used in any proceedings under the said Acts or under these Rules and so far as they relate to the same subject-matter shall be substituted for the forms in the First Schedule to the Act of 1883.

APPLICATIONS FOR PATENTS.

Application by representative of deceased inventor.

6. In the case of an application for a patent by the legal representative of a person who has died possessed of an invention, the probate of his will, or the letters of administration granted of his estate and effects, or an official copy of such probate or letters, shall be produced at the Patent Office in proof of the applicant's title as such legal representative, and must be supported by such further evidence as the Comptroller may require.

Address for service.

7. Every application for a patent shall be accompanied by a statement of an address (hereinafter referred to as "the address for service") to which all notices, requisitions, and communications of every kind may be sent by the Comptroller or by the Board of Trade, and such statement shall thereafter be binding upon the applicant until a substituted address for service shall be furnished by him to the Comptroller. The Comptroller may in any particular case require that the address for service be in the United Kingdom.

Order of recording applications.

8. Applications for patents sent through the post shall, as far as may be practicable, be opened and numbered in the order in which the letters containing the same have been respectively delivered in the ordinary course of post.

Applications left at the Patent Office otherwise than through the post shall be in like manner numbered in the order of their receipt at the Patent Office.

Application for separate patents by way of amendment.

9. Where a person making application for a patent includes in his specification by mistake, inadvertence, or otherwise, more than one invention, he may, with the consent of the Comptroller, at any time before the date allowed for the acceptance of his complete specification, amend the same so as to apply to one

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invention only, and may make application for a separate patent for each invention accordingly.

Every such application shall, if the applicant notify his desire to that effect to the Comptroller, bear the date of the first application and shall, together therewith, be proceeded with in the manner prescribed by the said Acts and by these Rules, as if every such application had been originally made on that date.

Extension of time for leaving and accepting complete specification.

10. An application for extension of time for leaving or accepting a complete specification shall be made on Form U or on Form V, as the case may require, and shall state in detail in what circumstances and upon what grounds such extension is applied for, and the Comptroller may require the applicant to substantiate such allegations by such proof as the Comptroller may think necessary.

Notice and advertisement of acceptance.

11. On the acceptance of a provisional or complete specification the Comptroller shall give notice thereof to the applicant, and shall advertise the acceptance of every complete specification in the official journal of the Patent Office.

Inspection of complete specification.

12. Upon such acceptance in the case of a complete specification, the application and specification or specifications with the drawings (if any) may be inspected at the Patent Office upon payment of the prescribed fee.

APPLICATIONS UNDER THE INTERNATIONAL CONVENTION.

Convention applications.

13. Every Convention application shall contain a declaration that foreign application has been made for protection of the invention to which such Convention application relates, and shall specify all the Foreign States or British Possessions in which such foreign applications have been made, and the official date or dates thereof respectively. The application must be made within twelve months from the date of the first foreign application, and must be accompanied by a complete specification, and signed by the person or persons by whom such first foreign application was made. If such person, or any of such persons be dead, the application must be signed by the legal representative of such dead person, as well as by the other applicants, if any.

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Foreign specification, &c., to accompany application.

14. Every Convention application, in addition to the specification left therewith, must be accompanied by a copy or copies of the specification, and drawings or documents filed or deposited by the applicant in the Patent Office of the Foreign State or British Possession in respect of the first foreign application, duly certified by the official chief or head of the Patent Office of such Foreign State or British Possession as aforesaid, or otherwise verified to the satisfaction of the Comptroller. If any specification or other document relating to the application is in a foreign language, a translation thereof shall be annexed thereto and verified by statutory declaration or otherwise to the satisfaction of the Comptroller.

Public inspection.

15. If the complete specification left with the application be not accepted within twelve months from the date of the first foreign application, it shall, with the drawings, if any, be open to public inspection at the expiration of that period.

Proceedings.

16. Save as aforesaid and as provided by Rule 52 all proceedings in connection with a Convention application shall be taken within the times and in the manner prescribed by the said Acts or these Rules for ordinary applications.

SIZE, &C., OF DOCUMENTS.

Size, &c., of documents.

17. All documents and copies of documents, except drawings, sent to or left at the Patent Office or otherwise furnished to the Comptroller or to the Board of Trade shall be written or printed in the English language (unless otherwise directed) in large and legible characters upon strong paper and, except in the case of statutory declarations and affidavits, on one side only, of a size of 13 inches by 8 inches, leaving a margin of two inches on the left-hand part thereof, and the signatures thereto must be written in a large and legible hand.[1] Duplicate documents shall at any time be left, if required by the Comptroller.

DRAWINGS ACCOMPANYING SPECIFICATIONS.[2]

General.

18. Drawings, when furnished, should accompany the provisional or complete specification to which they refer, except in

[1] The several sheets should be pinned together at the top left-hand corner.

[2] A specimen drawing may be obtained on application to the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

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the case provided for by Rule 24. No drawing or sketch such as would require the preparation for the printer of a special illustration for use in the letterpress of the specification when printed should appear in the specification itself.

Requirements as to paper.

19. Drawings must be made on pure white, hot-pressed, rolled, or calendered drawing paper of smooth surface, good quality, and medium thickness. Mounted drawings, and drawings on toned paper or Bristol or other board, must not be used.

Size of drawings and arrangement of figures.

Drawings must be on sheets which measure 13 inches from top to bottom, and are either 8 inches or 16 inches wide, the narrower sheets being preferable. Each sheet should be provided with a border line half an inch from the edge of the paper, and the figures should be placed in an upright position.

If there are more figures than can be shown on one of the smaller-sized sheets, two or more of these sheets should be used in preference to employing the larger size. When an exceptionally large drawing is required, it should be continued on subsequent sheets. There is no limit to the number of sheets that may be sent in, but no more sheets should be employed than are necessary, and the figures should be numbered consecutively throughout.

Drawings to be suitable for reproduction.

20. Drawings must be of such a character as to be suitable for reproduction on a reduced scale. To meet this requirement—

(*a*) They must be executed with absolutely black Indian ink.

(*b*) Each line must be firmly and evenly drawn, sharply defined, and of the same strength throughout.

(*c*) Section lines, lines for effect, and shading lines should be as few as possible, and must not be closely drawn.

(*d*) Shade lines must not contrast too much in thickness with the general lines of the drawing.

(*e*) Sections and shading should not be represented by solid black or washes.

(*f*) They should be on a scale sufficiently large to show the invention clearly, and only so much of the apparatus, machine, &c., should appear as effects this purpose. If the scale is given, it should be drawn, and not denoted by words.

Reference letters and figures, and index numerals used in

conjunction therewith, must be bold, distinct, not less than one-eighth of an inch in height: the same letters should be used in different views of the same parts. Where the reference letters are shown outside the figure, they must be connected with the parts referred to by fine lines.

Drawings to bear name of applicant, &c., but no descriptive matter.

21. Drawings must bear the name of the applicant (and, in the case of drawings left with a complete specification after a provisional specification, the number and year of the application) in the left-hand top corner; the number of sheets of drawings sent, and the consecutive number of each sheet, in the right-hand top corner; and the signature of the applicant or his agent in the right-hand bottom corner. Neither the title of the invention nor any descriptive matter should appear on the drawings.

Copies of drawings.

22. A facsimile or "true copy" of the original drawings must be filed at the same time as the original drawings, prepared strictly in accordance with the above Rules (except with regard to the reference letters and figures, which should be in blacklead pencil).

Marking of originals and true copies.

The words "original" or "true copy" must in each case be marked at the right-hand top corner, under the numbering of the sheet.

Delivery of drawings.

23. Drawings must be delivered at the Patent Office free from folds, breaks, or creases.

Provisional drawings used for complete specifications.

24. If an applicant desires to adopt the drawings lodged with his provisional specification as the drawings for his complete specification, he should refer to them in the complete specification as those left with the provisional specification.

STATUTORY DECLARATIONS AND AFFIDAVITS.

Form, &c., of statutory declaration and affidavit.

25. The statutory declarations and affidavits required by these Rules, or used in any proceedings thereunder, shall be headed in the matter or matters to which they relate, and shall be drawn up in the first person, and shall be divided into paragraphs consecutively numbered, and each paragraph shall so far as possible be confined to one subject. Every statutory declaration or affidavit shall state the description and true place of abode of the person making the same, and shall be written or printed bookwise, and

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shall bear the name and address of the person leaving it, and shall state on whose behalf it is left.

Manner in which, and persons before whom, declaration or affidavit is to be taken.

26. The statutory declarations and affidavits required by the said Acts and these Rules, or used in any proceedings thereunder, shall be made and subscribed as follows:—

(*a*) In the United Kingdom, before any justice of the peace, or any commissioner or other officer authorized by law in any part of the United Kingdom to administer an oath for the purpose of any legal proceeding;

(*b*) In any other part of His Majesty's dominions, before any Court, judge, justice of the peace, or any officer authorized by law to administer an oath there for the purpose of a legal proceeding; and

(*c*) If made out of His Majesty's dominions, before a British Minister, or person exercising the functions of a British Minister, or a Consul, Vice-Consul, or other person exercising the functions of a British Consul, or before a notary public, or before a judge or magistrate.

INDUSTRIAL OR INTERNATIONAL EXHIBITIONS.

Industrial or international exhibitions.

27. Any person desirous of exhibiting an invention at an industrial or international exhibition, or of publishing any description of the invention during the period of the holding of the exhibition, or of using the invention for the purpose of the exhibition in the place where the exhibition is held, may, after the Board of Trade have issued a certificate that the exhibition is an industrial or international one, give to the Comptroller notice on Form O of his intention to exhibit, publish, or use the invention, as the case may be. For the purpose of identifying the invention in the event of an application for a patent being subsequently made the inventor shall furnish to the Comptroller a brief description of his invention, accompanied, if necessary, by drawings and such other information as the Comptroller may in each case require.

EXERCISE OF DISCRETIONARY POWERS BY THE COMPTROLLER.

Exercise of discretionary powers by Comptroller. Notice of hearing.

28. Before exercising any discretionary power given to the Comptroller by the said Acts or these Rules adversely to the applicant for a patent or for amendment of a specification, the Comptroller shall give ten days' notice, or such longer notice as he may think fit, to the applicant of the time when he may be heard personally or by his agent before the Comptroller.

Notice by applicant.

29. Within five days from the date when such notice would be delivered in the ordinary course of post, or such longer time as the Comptroller may appoint in such notice, the applicant shall notify in writing to the Comptroller whether or not he intends to be heard upon the matter.

Comptroller may require statement, &c

30. Whether the applicant desires to be heard or not, the Comptroller may at any time require him to submit a statement in writing within a time to be notified by the Comptroller, or to attend before him and make oral explanations with respect to such matters as the Comptroller may require.

Decision to be notified to parties.

31. The decision or determination of the Comptroller in the exercise of any such discretionary power as aforesaid shall be notified by him to the applicant, and to any other person who appears to him to be affected thereby.

OPPOSITION TO GRANTS OF PATENTS.

Notice of opposition.

32. A notice of opposition to the grant of a patent shall be on Form D, and shall state the ground or grounds on which the person giving such notice (hereinafter called the opponent) intends to oppose the grant, and must be signed by him. Such notice shall state his address for service in the United Kingdom, and shall be accompanied by an unstamped copy, which copy shall be transmitted by the Comptroller to the applicant.

Copy for applicant.

Evidence in support of allegation that invention has been obtained from opponent

33. Where the ground of an opposition is that the applicant has obtained the invention from the opponent, or from a person of whom such opponent is the legal representative, unless evidence in support of such allegation be left at the Patent Office within fourteen days after the expiration of two months from the date

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of the advertisement of the acceptance of the applicant's complete specification, the opposition shall be deemed to be abandoned.

Attendance of declarant on Comptroller.

34. Where the ground of an opposition is that the applicant has obtained the invention from the opponent, or from a person of whom such opponent is the legal representative, the Comptroller may request or allow any person who has made a statutory declaration in the matter to which the opposition relates to attend before him at the hearing of the case and make oral explanations with respect to such matters as the Comptroller may require.

Particulars of prior patent.

35. Where the ground or one of the grounds of opposition is that the invention has been patented in this country on the application of prior date, the number and date of such prior application shall be specified in the notice.

Opponent's evidence.

36. Except in the case provided for in Rule 33, statutory declarations need not be left in connection with an opposition, but the opponent may within fourteen days after the expiration of two months from the date of the advertisement of the acceptance of the applicant's complete specification, leave at the Patent Office statutory declarations in support of his opposition, and on so leaving shall deliver to the applicant copies thereof.

Applicant's evidence.

37. Within fourteen days from the delivery of such copies, the applicant may leave at the Patent Office statutory declarations in answer, and on so leaving shall deliver to the opponent copies thereof, and within fourteen days of such delivery the opponent may leave at the Patent Office his statutory declarations in reply, and on so leaving shall deliver to the applicant copies thereof. Such last-mentioned declarations shall be confined to matters strictly in reply.

Evidence in reply.

Applicant's evidence if opponent does not leave statutory declarations.

38. If the opponent does not leave statutory declarations in support of his opposition, the applicant may (if he desires so to do) within three months from the date of the advertisement of the acceptance of his complete specification, leave at the Patent Office statutory declarations in support of his application, and on so leaving shall deliver to the opponent copies thereof.

Opponent's evidence.

39. Within fourteen days from the delivery of such copies, the opponent may leave at the Patent Office statutory declarations in answer, and on so leaving shall deliver to the applicant copies thereof, and within fourteen days from such delivery the applicant

may leave at the Patent Office his statutory declarations in reply, and on so leaving shall deliver to the opponent copies thereof. Such last-mentioned declarations shall be confined to matters strictly in reply. Evidence in reply.

40. No further evidence shall be left on either side except by leave, or on the requisition, of the Comptroller. Closing of evidence.

41. On completion of the evidence (if any), or at such other time as he may see fit, the Comptroller shall appoint a time for the hearing of the case, and shall give the parties ten days' notice at the least of such appointment. If either party does not desire to be heard he shall as soon as possible notify the Comptroller to that effect. If either party desires to be heard he must leave Form E at the Patent Office. The Comptroller may refuse to hear either party who has not left Form E prior to the date of hearing. If either party intends to refer at the hearing to any publication other than a specification mentioned in the notice of opposition, he should, unless the same has been referred to in a statutory declaration already filed, give to the other party and to the Comptroller five days' notice at the least of his intention, together with details of each publication to which he intends to refer. After hearing the party or parties desirous of being heard or if neither party desires to be heard, then without a hearing the Comptroller shall decide the case and notify his decision to the parties. Hearing.

AMENDMENT OF SPECIFICATION.

42. A request for leave to amend a specification must be signed by the applicant, and shall contain an address for service in the United Kingdom. When not made in pursuance of an order of the Court or a judge the request must, where a patent has been sealed, also contain a statement that no action for infringement nor proceeding for revocation of the patent is pending. The request must be accompanied by a duly certified copy of the original specification and drawings, showing in red ink the proposed amendment, and shall be advertised by publication of the request and the nature of the proposed amendment in the official journal of the Patent Office, and in such other manner (if any) as the Comptroller may in each case direct. Request for leave to amend.

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Leave by Court.

43. Where a request for leave to amend is made in pursuance of an order of the Court or a judge, an office copy of the order shall be left with the request at the Patent Office.

Notice of opposition.

44. A notice of opposition to the amendment shall be on Form G, and shall state the ground or grounds on which the person giving such notice (hereinafter called the opponent) intends to oppose the amendment, and must be signed by him. Such notice shall state his address for service in the United Kingdom, and shall be accompanied by an unstamped copy, which copy shall be transmitted by the Comptroller to the applicant.

Copy for the applicant.

Opponent's evidence.

45. Within fourteen days after the expiration of one month from the first advertisement of the application for leave to amend, the opponent may leave at the Patent Office statutory declarations in support of his opposition, and on so leaving shall deliver to the applicant copies thereof.

Further proceedings.

46. Upon such declarations being left, and such copies being delivered, the provisions of Rules 37, 40 and 41 shall apply to the case, and the further proceedings therein shall be regulated in accordance with such provisions as if they were here repeated.

Applicant's evidence if opponent does not leave statutory declarations.

47. If the opponent does not leave statutory declarations in support of his opposition, the applicant may (if he desires so to do) within two months from the date of the first advertisement of the application for leave to amend leave at the Patent Office statutory declarations in support of his application, and on so leaving shall deliver to the opponent copies thereof.

Further proceedings.

48. Upon such declarations being left, and such copies being delivered, the provisions of Rules 39, 40, and 41 shall apply to the case, and further proceedings therein shall be regulated in accordance with such provisions as if they were here repeated.

Requirements on amendment.

49. Where leave to amend is given the applicant shall, if the Comptroller so require, and within a time to be limited by him, leave at the Patent Office a new specification and drawings as amended, to be prepared in accordance with Rules 17 to 23.

Advertisement of amendment.

50. Every amendment of a specification shall be advertised forthwith by the Comptroller in the official journal of the Patent Office, and in such other manner (if any) as the Comptroller may direct.

REGISTER OF PATENTS.

Entry of grant.

51. Upon the sealing of a patent the Comptroller shall cause to be entered in the Register of Patents the name, address, and calling of the patentee as the grantee thereof, and the title of the invention, together with the address for service.

Entry in respect of Convention application.

52. The patent granted on any Convention application shall be entered in the register as dated of the date on which the first foreign application was made, and the payment of renewal fees, and the expiration of the patent, shall be reckoned as from the date of the first foreign application.

Alteration of address.

53. If a patentee send to the Comptroller on Form R notice of an alteration in his address, the Comptroller shall cause the register to be altered accordingly, and may require the altered address to be in the United Kingdom.

Request for entry of subsequent proprietorship.

54. Where a person becomes entitled to a patent, or to any share or interest therein, by assignment, or by transmission, or other operation of law, a request for the entry of his name in the register as such complete or partial proprietor of the patent, or of such share or interest therein, as the case may be, shall be addressed to the Comptroller, and left at the Patent Office.

Form and signature of request.

55. Such request shall be on Form L, and shall in the case of individuals be made and signed by the person requiring to be registered as proprietor, or by his agent duly authorized to the satisfaction of the Comptroller, and in the case of a body corporate by its agent, authorized in like manner.

Particulars to be stated in request.

56. Every such request shall state the name, address, and calling of the person claiming to be entitled to the patent, or to any share or interest therein, as the case may be, and the particulars of the assignment, transmission, or other operation of law, by virtue of which he claims to be entered in the register as proprietor, so as to show the manner in which, and the person or persons to whom, the patent, or such share or interest therein as aforesaid, has been assigned or transmitted.

Production of documents of title and other proof.

57. Every assignment, and every other document containing, giving effect to, or being evidence of, the transmission of a patent or affecting the proprietorship thereof as claimed by such request,

PATENTS RULES, 1903.

except such documents as are matters of record, shall, unless the Comptroller in his discretion otherwise directs, be produced to him together with the request, and such other proof of title as he may require for his satisfaction.

As to a document which is a matter of record, an official or certified copy thereof shall in like manner be produced to the Comptroller.

Copies for Patent Office.

58. There shall also be left with the request an attested copy of the assignment or other document or copy above required to be produced.

Body corporate.

59. A body corporate may be registered as proprietor by its corporate name.

Entry of Orders of the Privy Council or of the Court.

60. Where an order has been made by His Majesty in Council for the extension of a patent for a further term or for the grant of a new patent, or where an order has been made for the revocation of a patent or the rectification of the register under section 90 of the Act of 1883, or otherwise affecting the validity or proprietorship of the patent, the person in whose favour such order has been made shall forthwith leave at the Patent Office an office copy of such order. The register shall thereupon be rectified or the purport of such order shall otherwise be duly entered in the register, as the case may be.

Entry of date of payment of fees on issue of certificate.

61. Upon the issue of a certificate of payment under Rule 68 the Comptroller shall cause to be entered in the register a record of the date of payment of the fee on such certificate.

Entry of failure to pay fees.

62. If a patentee fails to make any prescribed payment within the prescribed time, or any enlargement thereof duly granted, there shall be duly entered in the register a notification of such failure.

Entry of notification of license, or other document.

63. An attested copy of every license granted under a patent, or of any other document purporting to affect the proprietorship of a patent, shall be left at the Patent Office with a request on Form M that a notification thereof may be entered in the register. The accuracy of such copy shall be certified as the Comptroller may direct, and the original document shall at the same time be produced and left at the Patent Office if required for further verification.

64. The register of patents shall be open to the inspection of

PATENTS RULES, 1903.

Hours of inspection of register.

the public on every week day except Sunday between the hours of ten and four, and on Saturday between the hours of ten and one, except on the days and the times following :—

(*a*) Christmas Day, Good Friday, the day observed as His Majesty's birthday, days observed as days of public fast or thanksgiving, and days observed as holidays at the Bank of England ; or

(*b*) Days which may from time to time be notified by a placard posted in a conspicuous place at the Patent Office ;

(*c*) Times when the register is required for any purpose of official use.

Certified copies of documents.

65. Certified copies of any entry in the register, or certified copies of, or extracts from, patents, specifications, disclaimers, affidavits, statutory declarations, and other public documents in the Patent Office, or of or from registers and other books kept there, may be furnished by the Comptroller on payment of the prescribed fee.

PAYMENT OF FEES FOR CONTINUANCE OF PATENT.

Payment of fees for continuance of patent.

66. If a patentee intends at the expiration of the fourth year from the date of his patent to keep the same in force, he shall before the expiration of the fourth and each succeeding year during the term of the patent, pay the prescribed fee. The patentee may pay the whole or any portion of the aggregate of such prescribed annual fees in advance.

The Form J in the Second Schedule, duly stamped, should be used for the purpose of this payment.

Enlargement of time for payments.

67. An application for an enlargement of the time for making a prescribed payment shall state in detail the circumstances in which the patentee by accident, mistake, or inadvertence has failed to make such payment, and the Comptroller may require the patentee to substantiate by such proof as he may think necessary the allegations contained in the application for enlargement.

Certificate of payment.

68. On due compliance with the terms of Rule 66, and as soon as may be after such respective periods as aforesaid, or any enlargement thereof respectively duly granted, the Comptroller

PATENTS RULES, 1903.

shall issue a certificate that the prescribed payment has been duly made.

[*Rules* 69-75 *relating to Compulsory Licenses and Revocation of Patents are omitted.*]

GENERAL.

Power of amendment, &c.

76. Any document for the amending of which no special provision is made by the said Acts may be amended, and any irregularity in procedure, which in the opinion of the Comptroller may be obviated without detriment to the interests of any person, may be corrected, if and on such terms as the Comptroller may think fit.

General power to enlarge time.

77. The times prescribed by these Rules for doing any act, or taking any proceeding thereunder, other than the times for lodging evidence referred to in Rule 33 or in the procedure in these Rules relating to compulsory licenses and revocation of patents, may be enlarged by the Comptroller if he think fit, and upon such notice to other parties, and proceedings thereon, and upon such terms, as he may direct.

Power to dispense with evidence.

78. Where, under these Rules, any person is required to do any act or thing, or to sign any document, or to make any declaration on behalf of himself or of any body corporate, or any document or evidence is required to be produced to or left with the Comptroller, or at the Patent Office, and it is shown to the satisfaction of the Comptroller that from any reasonable cause such person is unable to do such act or thing, or to sign such document, or make such declaration, or that such document or evidence cannot be produced or left as aforesaid, it shall be lawful for the Comptroller, with the sanction of the Board of Trade, and upon the production of such other evidence, and subject to such terms as they may think fit, to dispense with any such act or thing, document, declaration, or evidence.

Hours of business.

79. The Patent Office shall be open to the public every week-day except Saturday between the hours of ten and four, and on Saturday between the hours of ten and one, except on the days following:—

Christmas Day, Good Friday, the day observed as His Majesty's birthday, the days observed as days of public

fast or thanksgiving, or as holidays at the Bank of England, and days which may from time to time be notified by a placard posted in a conspicuous place at the Patent Office.

Leaving documents.

80. Any application, notice, or other document authorized or required to be left, made, or given at the Patent Office, or to the Comptroller, or to any other person under these Rules, may be sent by a prepaid letter through the post, and if so sent shall be deemed to have been left, made, or given at the time when the letter containing the same would be delivered in the ordinary course of post. In proving such service or sending it shall be sufficient to prove that the letter was properly addressed and put into the post.

AGENCY.

Agency.

81. With the exception of the signing of the following documents, namely, applications for patents, requests for leave to amend applications, specifications, or letters patent, authorizations of agents, notices of oppositions, requests for issue of duplicate letters patent, notices of abandonment of or of intention not to proceed with applications, surrenders of letters patent, and petitions for compulsory license and revocation of patent, all communications to the Comptroller under the said Acts and these Rules may be signed by and all attendances upon the Comptroller may be made by or through an agent duly authorized to the satisfaction of the Comptroller, and, if he so require it, resident in the United Kingdom. The Comptroller shall not be bound to recognize as such agent, or to receive further communications from any person whose name, by reason of his having been adjudged guilty of disgraceful professional conduct, has been erased from the register of patent agents, kept under the provisions of the Patents, Designs, and Trade Marks Act, 1888, relating to the registration of patent agents, and not since restored. In any particular case, the Comptroller may, if he think fit, require the personal signature or presence of an applicant, opponent, or other person.

PATENTS RULES, 1903.

Repeal.

REPEAL.

82. All general rules relative to patents heretofore made by the Board of Trade under the Patents, Designs, and Trade Marks Acts, 1883 to 1901, and in force on the 12th day of January, 1903, shall be and they are hereby repealed as from that date, without prejudice, nevertheless, to anything done under such rules, or to any application or other matter then pending.

Dated the 12th day of January, 1903.

G. W. BALFOUR,
President of the Board of Trade.

THE FIRST SCHEDULE.

LIST OF FEES PAYABLE ON AND IN CONNECTION WITH LETTERS PATENT.

		£	s.	d.	£	s.	d.
1.	On application for provisional protection ...	1	0	0			
2.	On filing complete specification	3	0	0			
					4	0	0
	or						
3.	On filing complete specification with first application ...	4	0	0			
4.	On appeal from Comptroller to Law Officer. By appellant	3	0	0			
5.	On notice of opposition to grant of patent. By opponent	0	10	0			
6.	On hearing by Comptroller. By applicant and by opponent respectively	1	0	0			
	On application to amend specification :—						
7.	Up to sealing. By applicant	1	10	0			
8.	After sealing. By patentee	3	0	0			
9.	On notice of opposition to amendment. By opponent ...	0	10	0			
10.	On hearing by Comptroller. By applicant and by opponent respectively	1	0	0			
11.	On application to amend specification during action or proceeding. By patentee	3	0	0			
12.	On application to the Board of Trade for a compulsory license. By persons applying	1	0	0			
13.	On opposition to grant of compulsory license. By opponent	1	0	0			
	On certificate of renewal :—						
14.	Before the expiration of the 4th year from the date of the patent and in respect of the 5th year	5	0	0			
15.	Before the expiration of the 5th year from the date of the patent and in respect of the 6th year	6	0	0			
16.	Before the expiration of the 6th year from the date of the patent and in respect of the 7th year	7	0	0			

		£	s.	d.
	On certificate of renewal (*continued*) :—			
17.	Before the expiration of the 7th year from the date of the patent and in respect of the 8th year	8	0	0
18.	Before the expiration of the 8th year from the date of the patent and in respect of the 9th year	9	0	0
19.	Before the expiration of the 9th year from the date of the patent and in respect of the 10th year	10	0	0
20.	Before the expiration of the 10th year from the date of the patent and in respect of the 11th year	11	0	0
21.	Before the expiration of the 11th year from the date of the patent and in respect of the 12th year	12	0	0
22.	Before the expiration of the 12th year from the date of the patent and in respect of the 13th year	13	0	0
23.	Before the expiration of the 13th year from the date of the patent and in respect of the 14th year	14	0	0
	On enlargement of time for payment of renewal fees :—			
24.	Not exceeding one month	1	0	0
25.	„ two months	3	0	0
26.	„ three months	5	0	0
27.	For every entry of an assignment, transmission, agreement, license, or extension of patent	0	10	0
28.	For duplicate of letters patent ... ... each	2	0	0
29.	On notice to Comptroller of intended exhibition of a patent under section 39	0	10	0
30.	Search or inspection fee ... ... each	0	1	0
31.	For office copies ... ... every 100 words (but never less than one shilling)	0	0	4
32.	For office copies of drawings, cost according to agreement			
33.	For certifying office copies, MSS. or printed ... each	0	1	0
34.	On postal request for printed specification	0	0	8
	On request to Comptroller to correct a clerical error :—			
35.	Up to sealing	0	5	0
36.	After sealing	1	0	0
37.	For certificate of Comptroller under section 96	0	5	0
38.	For altering address in register	0	5	0
39.	For enlargement of time for filing complete specification, not exceeding one month...	2	0	0
	For enlargement of time for acceptance of complete specification :—			
40.	Not exceeding one month	2	0	0
41.	„ two months	4	0	0
42.	„ three months	6	0	0

G. W. BALFOUR,
President of the Board of Trade.

12th January, 1903.

Approved :

H. T. ANSTRUTHER,
H. W. FORSTER,
Lords Commissioners of
His Majesty's Treasury.

PATENTS RULES, 1903.

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THE SECOND SCHEDULE.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form A.

(To be accompanied by two copies of Form B or of Form C.)

PATENT.

APPLICATION FOR PATENT.

(*a*) _____

(*a*) Here insert (*in full*) name, address, and calling of applicant or applicants.

_____

_____ do hereby

declare that _____ in possession of an invention the title of which

is (*b*) _____

(*b*) Here insert title of invention.

that (*c*) _____

claim to be the true and first inventor _____ thereof; and that the same is not in use by any other person or persons to the best of _____ knowledge and belief; and _____ humbly pray that a Patent may be granted to _____ for the said invention.

(*c*) In the case of more than one applicant, state whether all, or if *not*, who is or are the inventor or inventors.

Dated _____ day of _____ 19 _

(*d*) _____

_____

_____

_____

(*d*) To be signed by applicant or applicants. In the case of a Firm, each member of the Firm must sign.

NOTE.—One of the two forms on the back hereof or a separate authorization of agent should be signed by the applicant or applicants.

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

(1.) *Where application is made through an Agent* (*Rule* 81).

. . . .

. . . . . hereby appoint . .

of . . . . .

to act as . . . . . Agent in respect of the within application for a Patent, and request that all notices, requisitions, and communications relating thereto may be sent to such Agent at the above address.

. . . . . day of . . . . . 19 . .

(*a*) To be signed by applicant or applicants.

(*a*) . . . . . .

. . . . . .

. . . . . .

(2.) *Where application is made without an Agent* (*Rule* 7).

. . . . . .

. . . . . hereby request that all notices, requisitions, and communications in respect of the within application may be sent to

. . . . . at . . . . . .

. . . . . day of . . . . . 19 . . .

(*b*) To be signed by applicant or applicants.

(*b*) . . . . . .

. . . . . .

. . . . . .

. . . . . .

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form A 1.

(To be accompanied by two copies of Form B or of Form C.)

PATENT.

APPLICATION FOR PATENT FOR INVENTIONS COMMUNICATED FROM ABROAD.

I (*a*) _____

of _____ in the county of _____ do hereby declare that I am in possession of an invention the title of which is (*b*)

(*a*) Here insert (*in full*) name, address, and calling of applicant.

(*b*) Here insert title of invention.

_____

which invention has been communicated to me by (*c*) _____

(*c*) Here insert name, address, and calling of communicator.

_____

that I claim to be the true and first inventor thereof; and that the same is not in use within the United Kingdom of Great Britain and Ireland and the Isle of Man by any other person or persons to the best of my knowledge and belief; and I humbly pray that a Patent may be granted to me for the said invention.

Dated _____ day of _____ 19 __

(*d*) _____

(*d*) To be signed by applicant or applicants.

NOTE.—One of the two forms on the back hereof or a separate authorization of agent should be signed by the applicant or applicants.

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

(1.) *Where application is made through an Agent* (*Rule* 81).

hereby appoint

of

to act as Agent in respect of the within application for a Patent, and request that all notices, requisitions, and communications relating thereto may be sent to such Agent at the above address.

day of 19

(*a*)

(*a*) To be signed by applicant or applicants.

(2.) *Where application is made without an Agent* (*Rule* 7).

hereby request that all notices, requisitions, and communications in respect of the within application may be sent to

at

day of 19

(*b*)

(*b*) To be signed by applicant or applicants.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form A2.

(To be accompanied by two copies of Form C.)

PATENT.

APPLICATION FOR PATENT UNDER INTERNATIONAL AND COLONIAL ARRANGEMENTS.

(*a*)

do hereby declare that I (or we) have made applications for protection of my (or our) invention of (*b*)

in the following Foreign States and on the following official dates, viz.: (*c*)

and in the following British Possessions and on the following official dates, viz.: (*d*)

That the said invention was not in use within the United Kingdom of Great Britain and Ireland and the Isle of Man by any other person or persons before the (*e*)

to the best of knowledge, information, and belief, and humbly pray that a patent may be granted to for the said invention in priority to other applicants, and that such patent shall have the date (*f*)

(*g*)

(*a*) Here insert (*in full*) name, address, and calling of applicant, or of each of the applicants.

(*b*) Here insert title of invention.

(*c*) Here insert the name of each Foreign State, followed by the official date of the application in each respectively.

(*d*) Here insert the name of each British Possession, followed by the official date of the application in each respectively.

(*e*) Here insert the official date of the earliest foreign application.

(*f*) Here insert the official date of the earliest foreign application.

(*g*) Signature of applicant or of each of applicants.

NOTE.—If the application be made through an agent a proper authorization should be supplied: if not, an address for service to which communications may be sent should be furnished.

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

To be issued with Form A or A1.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form B.

PROVISIONAL SPECIFICATION.

(To be furnished in Duplicate.)

(a) Here insert title verbally agreeing with that in the application form.

(a) _____

(b) Here insert (*in full*) name, address, and calling of applicant or applicants as in application form.

(b) _____

do hereby declare the nature of this invention to be as follows:—(c)

(c) Here begin description of the nature of the invention. The continuation of the specification should be upon wide-ruled paper of the same size, on one side only, with a margin of two inches on the left hand of the paper. The specification and the duplicate thereof must be dated (thus): "Dated this day of , 19 ," and signed at the end.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Where provisional specification has been left, quote No. and date.

No. _____

Date _____

Form C.

COMPLETE SPECIFICATION.

(To be furnished in Duplicate—one unstamped.)

PATENT.

(*a*) _____

(*a*) Here insert title verbally agreeing with that in the application form.

(*b*) _____

(*b*) Here insert (*in full*) name, address, and calling of applicant or applicants as in application form.

do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

(*c*) _____

(*c*) Here begin full description of invention. The continuation of the specification should be upon wide-ruled paper of the same size, on one side only, with a margin of two inches on the left hand of the paper. The completion of the description should be followed by the words :

"Having now particularly described and ascertained the nature of my said Invention, and in what manner the same is to be performed, I declare that what I claim is :" After which should be written the claim or claims numbered consecutively. The specification and the duplicate thereof must be dated (thus) : "Dated this day of , 19 ," and signed at the end.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form C[1].

POSTAL REQUEST FOR PRINTED SPECIFICATION.

To the Comptroller-General.

Please send one copy of Specification, No. _____ Year _____

to

(*Name in full*) _____

(*Address*) _____

PATENTS, 7½*d.*

½*d.*

The Comptroller-General,

The Patent Office,

25, *Southampton Buildings,*

London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902. PATENTS RULES, 1903.

Form D.

FORM OF OPPOSITION TO GRANT OF PATENT.

PATENT.

[To be accompanied by an unstamped copy.]

(*a*) I

(*a*) Here state (in full) name and address.

hereby give notice of my intention to oppose the grant of Letters Patent upon application No. of , applied for by

upon the ground (*b*)

(*b*) Here state upon which of the grounds of opposition permitted by section 11 of the Act of 1883, as amended by section 4 of the Act of 1888, the grant is opposed.

(Signed) (*c*)

(*c*) To be signed by opponent.

My address for service in the United Kingdom is :—

To the Comptroller,
The Patent Office, 25, *Southampton Buildings*,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form E.

PATENT.

FORM OF NOTICE THAT HEARING BEFORE THE COMPTROLLER WILL BE ATTENDED.

OPPOSITIONS TO THE GRANT OF PATENTS OR TO AMENDMENTS.

SIR,

(a) Here insert address.

I _____ of (a) _____

_____

hereby give notice that the hearing in reference to

_____ will be attended by myself or by some person on my behalf.

Sir,

Your obedient Servant

(Signed) _____

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form F.

PATENT.

FORM OF APPLICATION FOR AMENDMENT OF SPECIFICATION.

(*a*) _____

(*a*) Here state (in full) name and address of applicant or patentee.

seek leave to amend the specification of Letters Patent No. _____ of 1 , as shown in red ink in the certified copy of the original specification hereunto annexed.

(*b*) I declare that no action for infringement or proceeding for revocation of the Letters Patent in question is pending.

(*b*) These words are to be struck out when Letters Patent have not been sealed, or when, if Letters Patent have been sealed, the application is made in pursuance of an order of the Court or a Judge.

My reasons for making this amendment are as follows (*c*) _____

(*c*) Here state reasons for seeking amendment; and where the applicant is not the patentee, state what interest he possesses in the Letters Patent.

(Signed) (*d*) _____

(*d*) To be signed by applicant.

My address for service in the United Kingdom is :—

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

N.B.—No amendment is permissible that would make the invention substantially larger or substantially different (section 18 of the Act of 1883); nor, so long as any action for infringement or proceeding for revocation of a patent is pending, may the application be made except by leave of the Court or a Judge under section 19 of the Act of 1883. If the application is made by such leave, this should be stated, and an office copy of the Order of the Court or Judge should accompany the application.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

FORM G.

PATENT.

FORM OF OPPOSITION TO AMENDMENT OF SPECIFICATION.

[*To be accompanied by an unstamped copy.*]

(*a*) Here state (in full) name and address of opponent.

(*a*) _____

_____

_____

_____

_____

hereby give notice of objection to the proposed amendment of the specification of Letters Patent No. _____ of 1 _____ for the following reason : (*b*)

(*b*) Here state reason of opposition.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(Signed) _____

My address for service in the United Kingdom is :—

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

[Forms H, H 1, and I, relating to Compulsory Licenses and Revocation are omitted.]

[When stamped this Form must be sent at once to the Patent Office.]

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form J.

APPLICATION FOR CERTIFICATE OF PAYMENT OR RENEWAL.

I hereby transmit the fee prescribed for the continuation in force of (*a*) Patent No. , of 1 for a further period of .

(*a*) Here insert name of patentee.

Name (*b*)

Address

(*b*) Here insert name and full address.

To the Comptroller,
The Patent Office, Southampton Buildings,
Chancery Lane, London, W.C.

[This part of the Form to be filled in at the Patent Office.]

PATENT.

CERTIFICATE OF PAYMENT OR RENEWAL.

Letters Patent No. of 1 .

This is to certify that did this day of 19, make the prescribed payment of £ in respect of a period of from and that by virtue of such payment the rights of the patentee remain in force.*

Seal

* *See* section 17 of the Patents, Designs, and Trade Marks Act, 1883.

The Patent Office, London.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form K.

PATENT.

FORM OF APPLICATION FOR ENLARGEMENT OF TIME FOR PAYMENT OF RENEWAL FEE.

SIR,

I HEREBY apply for an enlargement of time for _____ month in which to make the _____ payment of _____

upon my Patent, No. _____ of 1

The circumstances in which the payment was omitted are as follows (*a*) :—

(*a*) The circumstances must be stated in detail; *see* Rule 67.

I am,

Sir,

Your obedient Servant,

(*b*) _____

(*b*) Here insert full address to which receipt is to be sent.

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form L.

PATENT.

FORM OF REQUEST TO ENTER NAME UPON THE REGISTER OF PATENTS.

I (*a*) _____

_____

_____

hereby request that you will enter (*b*) _____ name (*c*) in the Register of Patents :—

(*d*) claim to be entitled (*e*) _____

_____

of the Patent No. _____ of 1 , granted to (*f*) _____

_____

the title of which is (*g*) _____

_____

by virtue of (*h*) _____

_____

_____

_____

_____

_____

_____

And in proof whereof I transmit the accompanying (*i*) _____

_____ with an attested copy thereof.

(*a*) *Or* We. Here insert (*in full*) name, address, and description.

(*b*) My *or* our.
(*c*) *Or* names.

(*d*) I *or* We.
(*e*) Here insert the nature of the claim, *e.g.* *as Assignee.*
(*f*) Here give name and address of person to whom Patent was granted.
(*g*) Here insert title of the invention.

(*h*) Here specify the particulars of such document, giving its date, and the parties to the same, and showing how the claim here made is substantiated.

(*i*) Here insert the nature of the document.

I am,
Sir,
Your obedient Servant,

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form M.

PATENT.

FORM OF REQUEST TO ENTER NOTIFICATION OF LICENSE OR OTHER DOCUMENT IN THE REGISTER OF PATENTS.

(*a*) Here insert a description of the nature of the document.

I HEREBY transmit an attested copy of (*a*) _____

under Patent No. of 1 , as well as the original document for verification, and I have to request that a notification thereof may be entered in the Register.

I am,

Sir,

Your obedient Servant,

(Signed)

(*b*) Here insert full address.

(*b*)

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902. PATENTS RULES, 1903.

Form N.

PATENT.

APPLICATION FOR DUPLICATE OF PATENT.

Date

SIR,

I REGRET to have to inform you that the Patent dated (*a*)

No. granted to

(*a*) Here insert date, number, full name, and address of grantee.

for an invention the title of which is (*b*)

(*b*) Here insert title of invention.

has been (*c*)

(*c*) Here insert the word "destroyed" or "lost," as the case may be, and state, in full, the circumstances of the case, which must be verified by statutory declaration.

I beg therefore to apply for the issue of a duplicate of such Patent. (*d*)

(*d*) Here state interest possessed by applicant in the Patent.

(Signature of Patentee.)

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form 0.

PATENT.

NOTICE OF INTENDED EXHIBITION OF AN UNPATENTED INVENTION.

(*a*) Here state (*in full*) name and address of applicant.

(*a*) _____

_____

hereby give notice of my intention to exhibit a _____

of _____ at the _____

_____

(*b*) State "opened" or "is to open."

Exhibition, which (*b*) _____ of _____ 19 ,

under the provisions of the Patents, Designs, and Trade Marks Acts, 1883 to 1902.

(*c*) This description of invention should be accompanied by drawings if necessary.

(*c*) _____ herewith enclose a brief description of my invention

_____

_____

(Signed) _____

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902. PATENTS RULES, 1903.

Form P.

PATENT.

FORM OF REQUEST FOR CORRECTION OF CLERICAL ERROR.

SIR,

I HEREBY request that the following clerical error (*a*) _____

(*a*) or errors.

in the (*b*) _____

(*b*) Here state whether in application, specification or register.

No. _____ of 1 _____, may be corrected in the manner shown in red ink

in the certified copy of the original (*b*) _____

hereunto annexed.

Signature _____

Full Address _____

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form Q.

PATENT.

CERTIFICATE OF COMPTROLLER-GENERAL.

The Patent Office,

London,

19

I, , Comptroller-General of Patents, Designs, and Trade-marks, hereby certify

(*a*) Here insert (in full) name and address of person requiring the certificate.

To (*a*)

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form R.

FORM OF NOTICE FOR ALTERATION OF AN ADDRESS IN REGISTER.

PATENT.

SIR,

(*a*) _____

(*a*) Here state (in full) name or names and address of applicant or applicants.

hereby request that _____ address now upon the Register may be altered as follows :—

(*b*)

(*b*) Here insert full address.

Sir,

Your obedient Servant,

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form S.

[Form of Application for Entry of Order of Privy Council in Register omitted.]

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form T.

PATENT.

FORM OF APPEAL TO LAW OFFICER.

I, (*a*) _____

(*a*) Here insert (*in full*) name and address of appellant.

hereby give notice of my intention to appeal to the Law Officer from (*b*) _____

(*b*) Here insert "the decision" or "that part of the decision," as the case may be.

of the Comptroller of the _____ day of _____ 19 , whereby he (*c*) _____

(*c*) Here insert "refused [or allowed] application for Patent," or "refused [or allowed] application for leave to amend Patent," or otherwise, as the case may be.

No. (*d*) _____ of the year 1 (*d*)

(*d*) Insert number and year.

Signature _____

Date _____

N.B.—This notice must be sent to the Comptroller-General at the Patent Office, London, W.C., and a copy of the same to the Law Officers' Clerk at Room 549, Royal Courts of Justice, London.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

PATENTS RULES, 1903.

Form U.

PATENT.

FORM OF APPLICATION FOR EXTENSION OF TIME FOR LEAVING A COMPLETE SPECIFICATION.

SIR,

I, _____ hereby, in respect of application No. _____ dated _____, apply for one month's extension of time in which to leave a Complete Specification.

The circumstances in and grounds upon which this extension is applied for are as follows (*a*):—

(*a*) The circumstances and grounds must be stated in detail; *see* Rule 10.

Sir,

Your obedient Servant,

(*b*) _____

(*b*) To be signed by applicant or applicants or his or their agent.

To the Comptroller,

The Patent Office, 25, Southampton Buildings,

Chancery Lane, London, W.C.

PATENTS RULES, 1903.

PATENTS, DESIGNS, AND TRADE-MARKS ACTS, 1883 TO 1902.

Form V.

PATENT.

FORM OF APPLICATION FOR EXTENSION OF TIME FOR ACCEPTANCE OF A COMPLETE SPECIFICATION.

SIR,

I _____ hereby apply for _____ months' extension of time for the acceptance of the Complete Specification upon application No. _____ dated _____.

The circumstances in and grounds upon which this extension is applied for are as follows (*a*) :— _____

(*a*) The circumstances and grounds must be stated in detail; *see* Rule 10.

Sir,

Your obedient Servant,

(*b*) _____

(*b*) To be signed by applicant or applicants or his or their agent.

To the Comptroller,
The Patent Office, 25, Southampton Buildings,
Chancery Lane, London, W.C.

Form W.

FORM OF PATENT.

EDWARD VII., by the Grace of God, of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come greeting:

WHEREAS

hath declared that he is in possession of an invention for

that he is the true and first inventor thereof, and that the same is not in use by any other person to the best of his knowledge and belief:

And whereas the said inventor hath humbly prayed that a patent might be granted unto him for the sole use and advantage of his said invention:

And whereas the said inventor (hereinafter together with his executors, administrators, and assigns, or any of them, referred to as the said patentee) hath by and in his complete specification particularly described the nature of his invention:

And whereas We, being willing to encourage all inventions which may be for the public good, are graciously pleased to condescend to his request:

Know ye, therefore, that We of our especial grace, certain knowledge, and mere motion do by these presents, for us, our heirs and successors, give and grant unto the said patentee our especial license, full power, sole privilege, and authority, that the said patentee by himself, his agents, or licensees, and no others, may at all times hereafter during the term of years herein mentioned, make, use, exercise, and vend the said invention within our United Kingdom of Great Britain and Ireland, and Isle of Man, in such manner as to him or them may seem meet, and that the said patentee shall have and enjoy the whole profit and advantage from time to time accruing by reason of the said invention during the term of fourteen years from the date hereunder written of these presents: And to the end that the said patentee may have and enjoy the sole use and exercise and the full benefit of the said invention, We do by these presents for us, our heirs and successors, strictly command all our subjects whatsoever within our United Kingdom of Great Britain and Ireland, and the Isle of Man, that they do not at any time during the continuance of the said term of fourteen years either directly or indirectly make use of or put in practice the said invention, or any part of the same, nor in anywise imitate the same, nor make or cause to be made any addition thereto or subtraction therefrom, whereby to pretend themselves the inventors thereof, without the consent, license or agreement of the said patentee in writing under his hand and seal, on pain of incurring such penalties as may be justly inflicted on such offenders for their contempt of this our Royal command, and of being answerable to the patentee according to law for his damages thereby occasioned:

PATENTS RULES, 1903.

Provided that these our letters patent are on this condition, that, if at any time during the said term it be made to appear to us, our heirs, or successors, or any six or more of our Privy Council, that this our grant is contrary to law, or prejudicial or inconvenient to our subjects in general, or that the said invention is not a new invention as to the public use and exercise thereof within our United Kingdom of Great Britain and Ireland, and Isle of Man, or that the said patentee is not the first and true inventor thereof within this realm as aforesaid, these our letters patent shall forthwith determine, and be void to all intents and purposes, notwithstanding anything hereinbefore contained: Provided also, that if the said patentee shall not pay all fees by law required to be paid in respect of the grant of these letters patent, or in respect of any matter relating thereto at the time or times, and in manner for the time being by law provided; and also if the said patentee shall not supply or cause to be supplied, for our service all such articles of the said invention as may be required by the officers or commissioners administering any department of our service in such manner, at such times, and at and upon such reasonable prices and terms as shall be settled in manner for the time being by law provided, then, and in any of the said cases, these our letters patent, and all privileges and advantages whatever hereby granted shall determine and become void notwithstanding anything hereinbefore contained: Provided also that nothing herein contained shall prevent the granting of licenses in such manner and for such considerations as they may by law be granted: And lastly, We do by these presents for us, our heirs and successors, grant unto the said patentee that these our letters patent shall be construed in the most beneficial sense for the advantage of the said patentee.

In witness whereof We have caused these our letters to be made patent and to be sealed as of the

one thousand nine hundred

and

* Here is to be inserted the name of the Comptroller-General.

*
Comptroller-General of Patents, Designs, and Trade-marks.

Seal of Patent Office.

G. W. BALFOUR,
Pre ' lent of the Board of Trade.

12th January, 1903.

RULES REGULATING THE PRACTICE AND PROCEDURE ON APPEALS TO THE LAW OFFICERS.

I. When any person intends to appeal to the Law Officer from a decision of the Comptroller in any case in which such appeal is given by the Acts, he shall within fourteen days from the date of the decision appealed against file in the Patent Office a notice of such his intention.

II. Such notice shall state the nature of the decision appealed against, and whether the appeal is from the whole, or part only, and if so, what part of such decision.

III. A copy of such notice of intention to appeal shall be sent by the party so intending to appeal to the Law Officers' clerk, at room 549, Royal Courts of Justice, London ; and when there has been an opposition before the Comptroller, to the opponent or opponents ; and when the Comptroller has refused to seal a patent on the ground that a previous application for a patent for the same invention is pending, to the prior applicant.

IV. Upon notice of appeal being filed, the Comptroller shall forthwith transmit to the Law Officers' clerk all the papers relating to the matter of the application in respect of which such appeal is made.

V. No appeal shall be entertained of which notice is not given within fourteen days from the date of the decision appealed against, or such further time as the Comptroller may allow, except by special leave upon application to the Law Officer.

VI. Seven days' notice, at least, of the time and place appointed for the hearing of any appeal, shall be given by the Law Officers' clerk, unless special leave be given by the Law Officer that any shorter notice be given.

VII. Such notice shall in all cases be given to the Comptroller and the appellant ; and, when there has been an opposition before the Comptroller, to the opponent or opponents ; and, when the

Comptroller has refused to seal a patent on the ground that an application for a patent for the same invention is pending, to the prior applicant.

VIII. The evidence used on appeal to the Law Officer shall be the same as that used at the hearing before the Comptroller; and no further evidence shall be given, save as to matters which have occurred or come to the knowledge of either party, after the date of the decision appealed against, except with the leave of the Law Officer upon application for that purpose.

IX. The Law Officer shall, at the request of either party, order the attendance at the hearing on appeal, for the purpose of being cross-examined, of any person who has made a declaration in the matter to which the appeal relates, unless in the opinion of the Law Officer there is good ground for not making such order.

X. Any person requiring the attendance of a witness for cross-examination shall tender to the witness whose presence is required a reasonable sum for conduct money.

XI. Where the Law Officer orders that costs shall be paid by any party to another, he may fix the amount of such costs, and if he shall not think fit to fix the amount thereof, he shall direct by whom and in what manner the amount of such costs shall be ascertained.

XII. If any costs so ordered to be paid be not paid within fourteen days after the amount thereof has been so fixed or ascertained, or such shorter period as shall be directed by the Law Officer, the party to whom such costs are to be paid may apply to the Law Officer for an order for payment under the provisions of section 38 of the Act.

XIII. All documentary evidence required, or allowed by the Law Officer to be filed, shall be subject to the same regulations, in all respects, as apply to the procedure before the Comptroller, and shall be filed in the Patent Office, unless the Law Officer shall order to the contrary.

XIV. Any notice or other document required to be given to the Law Officers' clerk, under these rules, may be sent by a prepaid letter through the post.

HENRY JAMES, A.-G.
FARRER HERSCHELL, S.-G.

FORM OF REPLY SENT TO INVENTORS BY THE ADMIRALTY.

It is requested that in any further communication on this subject the above letters and numbers may be quoted, and the Letter addressed as follows:—
"The Secretary of the Admiralty,
"Whitehall,
"London."

ADMIRALTY, S.W.,

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SIR,

In reply to your letter of the ,
I am commanded by my Lords Commissioners of the Admiralty to acquaint you that if you will comply with the Instructions contained in the accompanying "Memorandum for Inventors," dated 1st April, 1895, and containing Regulations for the reception of Inventions submitted to this Office, your proposal shall be duly considered.

2. In the event of your desiring to submit your proposal in accordance with the Memorandum, it is necessary that sufficient particulars should be given to enable the same to be fully considered, including any evidence you may have of the usefulness of the Invention obtained by actual previous experiment.

3. Should it be considered desirable to try your Invention in a Dockyard or elsewhere, the provision of the article and all expenses connected with carriage, fitting up and removing it will have to be borne by you.

4. I am at the same time to inform you that if any plans, models, or papers, which form an essential part of the description of your Invention, are forwarded to this Office, they will be retained by their Lordships for future reference, and cannot therefore be returned to you.

I am, Sir, &c.

MEMORANDUM FOR INVENTORS ISSUED BY THE ADMIRALTY AND WAR OFFICE.

Note.—When the words in square brackets are substituted for those printed in italics the circular is identical with that of the War Office.

ADMIRALTY, *1st July*, 1895, } or { WAR OFFICE, *1st June*, 1901.

IN consequence of the numerous claims for compensation for loss of time, and for expenses incurred by private individuals in working out inventions of various kinds, as well as for rewards in consequence of the use of such inventions, the *Lords Commissioners of the Admiralty consider* [the Secretary of State for War considers] it necessary to make known the following Regulations:—

1. By Section 27 of the "Patents, Designs, and Trade-Marks Act, 1883," it is enacted as follows:—

> "A Patent shall have to all intents the like effect as against Her Majesty the Queen, her Heirs, and Successors, as it has against a subject.
>
> "But the Officers or Authorities administering any Department of the service of the Crown, may by themselves, their agents, contractors, or others, at any time after the application, use the invention for the service of the Crown, on terms to be before or after the use thereof agreed on, with the approval of the Treasury, between those Officers or Authorities and the Patentee, or, in default of such agreement, on such terms as may be settled by the Treasury, after hearing all parties interested."

2. Persons who desire to submit any invention for consideration, should do so by letter addressed to the *Secretary of the Admiralty* [Under-Secretary of State for War]. The letter should state the nature of the invention; whether patented or not; if patented, it should quote number and date of patent. It should also state whether the person who offers it for consideration desires to make any claim for remuneration in connection with it. In the absence of such a statement it will be assumed that no such remuneration is expected.

3. Expenses or loss of time incurred before or after the submission of an invention will give no claim, unless authority for such expenses has been previously given by letter signed by *the Secretary of the Admiralty* [one of the Under-Secretaries of State or the Director-General of Ordnance]; and the liability will be strictly confined to the limits of expenditure authorized in such letter.

4. Should the invention be adopted into the Service, the person or persons who submitted the same may be required to furnish two copies of all designs, drawings, or particulars relating to the invention, which may be desired by the *Admiralty* [War Department], as well as any patterns which may be considered necessary; and it is to be understood that all such drawings, designs and patterns will be absolutely at the disposal of H.M.'s Government for all purposes whatever. Reasonable prices will be paid by the *Admiralty* [War Department] for the designs, drawings, and patterns supplied.

5. No claim for reward for an invention will be held to be established, unless the invention has been adopted into the Service; and all designs, drawings, patterns and particulars required by the *Admiralty* [War Department] have been supplied under the conditions mentioned above.

6. All claims for remuneration will be carefully considered; but any award which may be made will only be payable to the claimant when approved by the Treasury, and money is available from funds voted by Parliament for such purposes.

7. The above rules do not apply to inventions patented by such Government *employés* as are required to obtain official permission before taking out a patent, with regard to whom special regulations are in force.

INTERNATIONAL CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY.

Signed at Paris, March 20, 1883.

(As modified [1] by an Additional Act, which was signed at Brussels, Dec. 14, 1900.)

I.

INTERNATIONAL CONVENTION.

SA Majesté le Roi des Belges, Sa Majesté l'Empereur du Brésil, Sa Majesté le Roi d'Espagne, le Président de la République Française, le Président de la République de Guatemala, Sa Majesté le Roi d'Italie, Sa Majesté le Roi des Pays-Bas, Sa Majesté le Roi de Portugal et des Algarves, le Président de la République de Salvador, Sa Majesté le Roi de Serbie et le Conseil Fédéral de la Confédération Suisse,

Également animés du désir d'assurer, d'un common accord, une complète et efficace protection à l'industrie et au commerce des nationaux de leurs États respectifs et de contribuer à la garantie d droits des inventeurs et de la loyauté des transactions commerciales, ont résolu de conclure une Convention à cet effet et ont nommé pour leurs Plénipotentiaires, savoir, &c.[2]

Lesquels, après s'être communiqué leurs pleins pouvoirs respectifs, trouvés en bonne et due forme, sont convenus des Articles suivants :—

[1] The modifications as regards inventions consist in the addition of Article IV. *bis*, and Article X. *bis*, and the words in italics in other Articles, and in the omission of words printed between square brackets. The Governments of St. Domingo and Servia have not yet ratified the amended convention, .nd are, therefore, only bound by the earlier. Germany and Austria-Hungary have announced their adhesion to the Convention from 1st May, 1902, and 1st Jan., 1904, respectively.

[2] The names and titles of the plenipotentiaries are here omitted.

Article I.

Les Gouvernements de la Belgique, du Brésil, de l'Espagne, de la France, du Guatemala, de l'Italie, des Pays-Bas, du Portugal, du Salvador, de la Serbie et de la Suisse sont constitués à l'état d'Union pour la protection de la Propriété Industrielle.[1]

Article II.

Les sujets ou citoyens de chacun des États Contractants jouiront, dans tous les autres États de l'Union, en ce qui concerne les brevets d'invention, les dessins ou modèles industriels, les marques de fabrique ou de commerce et le nom commercial, des avantages que les lois respectives accordent actuellement ou accorderont par la suite aux nationaux.

En conséquence, ils auront la même protection que ceux-ci et le même recours légal contre toute atteinte portée à leurs droits, sous réserve de l'accomplissement des formalités et des conditions imposées aux nationaux par la législation intérieure de chaque État.

Article III.

Sont assimilés aux sujets ou citoyens des États Contractants les sujets ou citoyens des États ne faisant pas partie de l'Union qui sont domiciliés ou ont des établissements industriels ou commerciaux *effectifs et sérieux* sur le territoire de l'un des États de l'Union.

Article IV.

Celui qui aura régulièrement fait le dépôt d'une demande de brevet d'invention, d'un dessin ou modèle industriel, d'une marque de fabrique ou de commerce, dans l'un des États Contractants, jouira, pour effectuer le dépôt dans les autres États, et sous réserve des droits des tiers, d'un droit de priorité pendant les délais déterminés ci-après.

En conséquence, le dépôt ultérieurement opéré dans l'un des autres États de l'Union avant l'expiration de ces délais ne pourra

[1] The States and British Colonies now acceding to the Convention and constituting the Union are given, *post*, p. 596, par. 22.

être invalidé par des faits accomplis dans l'intervalle, soit, notamment, par un autre dépôt, par la publication de l'invention ou son exploitation [par un tiers], par la mise en vente d'exemplaires du dessin ou du modèle par l'emploi de la marque.

Les délais de priorité mentionnés ci-dessus seront de [six] *douze* mois pour les brevets d'invention, et de [trois] *quatre* mois pour les dessins ou modèles industriels, ainsi que pour les marques de fabrique ou de commerce. [Ils seront augmentés d'un mois pour les pays d'outre-mer.]

Article IV. (bis).

Les brevets demandés dans les différents États contractants par des personnes admises au bénéfice de la Convention aux termes des Articles II. et III., seront indépendants des brevets obtenus pour la même invention dans les autres États adhérents ou non à l'Union.

Cette disposition s'appliquera aux brevets existants au moment de sa mise en vigueur.

Il en sera de même, en cas d'accession de nouveaux États, pour les brevets existant de part et d'autre au moment de l'accession.

Article V.

L'introduction par le breveté, dans le pays où le brevet a été délivré, d'objets fabriqués dans l'un ou l'autre des États de l'Union, n'entraînera pas la déchéance.

Toutefois le breveté restera soumis à l'obligation d'exploiter son brevet conformément aux lois du pays où il introduit les objets brevetés.

Article X. (bis).

Les ressortissants de la Convention (Article II. et III.) jouiront, dans tous les États de l'Union, de la protection accordée aux nationaux contre la concurrence déloyale.

Article XI.[1]

Les Hautes Parties Contractantes [s'engagent à accorder] *accorderont, conformément, à la législation de chaque pays,* une protection temporaire aux inventions brevetables, aux dessins ou

[1] Articles VI. to X. do not relate to patents, and are therefore omitted.

modèles industriels, ainsi qu'aux marques de fabrique ou de commerce, pour les produits qui figureront aux Expositions Internationales officielles ou officiellement reconnues, *organisées sur le territoires de l'une d'elles.*

Article XII.

Chacune des Hautes Parties Contractantes s'engage à établir un service spécial de la Propriété Industrielle et un dépôt central, pour la communication au public des brevets d'invention, des dessins ou modèles industriels et des marques de fabrique ou de commerce.

Article XIII.

Un office international sera organisé sous le titre de "Bureau International de l'Union pour la Protection de la Propriété Industrielle."

Ce bureau, dont les frais seront supportés par les Administrations de tous les États Contractants, sera placé sous la haute autorité de l'Administration Supérieure de la Confédération Suisse, et fonctionnera sous sa surveillance. Les attributions en seront déterminées d'un commun accord entre les Etats de l'Union.

Article XIV.

La présente Convention sera soumise à des révisions périodiques en vue d'y introduire les améliorations de nature à perfectionner le système de l'Union.

A cet effet, des Conférences auront lieu successivement, dans l'un des États Contractants, entre les Délégués des dits États.

[La prochaine réunion aura lieu en 1885, à Rome.]

Article XV.

Il est entendu que les Hautes Parties Contractantes se réservent respectivement le droit de prendre séparément, entre elles, des arrangements particuliers pour la protection de la Propriété Industrielle, en tant que ces arrangements ne contreviendraient point aux dispositions de la présente Convention.

Article XVI.

Les États qui n'ont point pris part à la présente Convention seront admis à y adhérer sur leur demande.

Cette adhésion sera notifiée par la voie diplomatique au Gouvernement de la Confédération Suisse, et par celui-ci à tous les autres.

Elle emportera, de plein droit, accession à toutes les clauses et admission à tous les avantages stipulés par la présente Convention, *et produira ses effets un mois après l'envoi de la notification faite par le Gouvernement Suisse aux autres États unionistes, à moins qu'une date postérieure n'ait été indiquée par l'État adhérent.*

Article XVII.

L'exécution des engagements réciproques contenus dans la présente Convention est subordonnée, en tant que de besoin, à l'accomplissement des formalités et règles établies par les lois constitutionnelles de celles des Hautes Parties Contractantes qui sont tenues d'en provoquer l'application, ce qu'elles s'obligent à faire dans le plus bref délai possible.

Article XVIII.

La présente Convention sera mise à exécution dans le délai d'un mois à partir de l'échange des ratifications et demeurera en vigueur pendant un temps indéterminé, jusqu'à l'expiration d'une année à partir du jour où la dénonciation en sera faite.

Cette dénonciation sera adressée au Gouvernement chargé de recevoir les adhésions. Elle ne produira son effet qu'à l'égard de l'État qui l'aura faite, la Convention restant exécutoire pour les autres Parties Contractantes.

Article XIX.

La présente Convention sera ratifiée, et les ratifications en seront échangées à Paris, dans le délai d'un an au plus tard.

En foi de quoi les Plénipotentiaires respectifs l'ont signée et y ont apposé leurs cachets.

Fait à *Paris*, le *20* Mars, *1883*.

(Signé)

(L.S.) BEYENS.
(L.S.) VILLENEUVE.
(L.S.) Duc DE FERNAN-NUNEZ.
(L.S.) P. CHALLEMEL-LACOUR.
(L.S.) CH. HÉRISSON.
(L.S.) CH. JAGERSCHMIDT.
(L.S.) CRISANTO-MEDINA.
(L.S.) RESSMAN.
(L.S.) BARON DE ZUYLEN DE NYEVELT.
(L.S.) JOSE DA SILVA MENDES LEAL.
(L.S.) F. D'AZEVEDO.
(L.S.) J.-M. TORRES-CAÏCEDO.
(L.S.) SIMA M. MARINOVITCH.
(L.S.) LARDY.
(L.S.) J. WEIBEL.

(*Translation.*)[1]

HIS Majesty the King of the Belgians, His Majesty the Emperor of Brazil, His Majesty the King of Spain, the President of the French Republic, the President of the Republic of Guatemala, His Majesty the King of Italy, His Majesty the King of the Netherlands, His Majesty the King of Portugal and the Algarves, the President of the Republic of Salvador, His Majesty the King of Servia, and the Federal Council of the Swiss Confederation,

Being equally animated with the desire to secure, by mutual agreement, complete and effectual protection for the industry and commerce of their respective subjects and citizens, and to provide

[1] The official translation here given is that of the Convention as modified on 14th Dec., 1900. The differences in phrases are so many that identification of them as in the original above would create confusion. Additions of substance are Arts. IV. (*bis*) and X. (*bis*), and passages printed in italics.

a guarantee for the rights of inventors, and for the loyalty of commercial transactions, have resolved to conclude a Convention to that effect, and have named as their Plenipotentiaries, that is to say, &c.[1]

Who, having communicated to each other their respective full powers, found in good and due form, have agreed upon the following Articles:—

Article I.

The Governments of Belgium, Brazil, Spain, France, Guatemala, Italy, Holland, Portugal, Salvador, Servia, and Switzerland constitute themselves into a Union for the protection of Industrial Property.[2]

Article II.

The subjects or citizens of each of the Contracting States shall, in all the other States of the Union, as regards patents, industrial designs or models, trade-marks and trade names, enjoy the advantages that their respective laws now grant, or shall hereafter grant, to their own subjects or citizens.

Consequently, they shall have the same protection as the latter, and the same legal remedy against any infringement of their rights, provided they observe the formalities and conditions imposed on subjects or citizens by the internal legislation of each State.

Article III.

The subjects or citizens of States which are not Parties to the Union shall be assimilated to the subjects or citizens of the Contracting States, provided that they are domiciled in, or have industrial or commercial establishments, *real and effective*, in the territory of one of the States of the Union.

Article IV.

Any person who shall have duly applied for a patent, industrial design, or model or trade-mark in one of the Contracting States, shall enjoy, in order to admit of such request being lodged in the

[1] It is unnecessary to insert the names and titles of the plenipotentiaries.

[2] The countries and British Colonies that have joined the Union are set out, *post*, p. 596, par. 22.

other States, during the periods of time mentioned below, a right of priority, the rights of third parties being reserved.

Consequently, subsequent registration in one of the other States of the Union before the expiration of such periods shall not be invalidated by any acts accomplished in the interval,—either, for instance, by another registration, by the publication of the invention, or by the working of it, by the sale of patterns of the design or model, or by use of the trade-mark.

The above-mentioned periods of time during which priority is guaranteed shall be *twelve* months for patents with respect to inventions, and *four* months for patents for industrial designs or models as well as for trade or merchandise marks.

Article IV. (bis).

Patents applied for in the various Contracting States by persons admitted to the benefits of the Convention in the terms of Articles II. and III. shall be independent of the patents obtained for the same invention in the other States, whether such States be or be not parties to the Union.

This stipulation shall apply to patents already existing at the time when it shall come into effect.

The same stipulation shall apply, in the case of the accession of new States, with regard to patents in existence, either on one side or the other, at the time of accession.

Article V.

The introduction by the patentee into the country where the patent has been granted of objects manufactured in any of the States of the Union shall not entail forfeiture.

Nevertheless, the patentee shall remain bound to work his patent in conformity with the laws of the country into which he introduces the patented objects.[1]

Article X. (bis).

Persons resorting to the countries referred to in the Convention (Articles II. and III.) shall enjoy in all the States of the Union the protection accorded to nationals against dishonest competition.

[1] Articles VI. to X. do not relate to patents, and are therefore omitted.

Article XI.

The High Contracting Parties shall, *in conformity with the legislation of each country*, accord temporary protection to inventions susceptible of being patented, and to industrial designs or models, as well as to trade-marks or merchandise marks, in respect of products which shall be exhibited at official or officially recognized International Exhibitions *held in the territory of one of them*.

Article XII.

Each of the High Contracting Parties agrees to establish a special Government Department for industrial property, and a central office for communication to the public of patents, industrial designs or models, and trade-marks.

Article XIII.

An international office shall be organized under the name of "Bureau International de l'Union pour la Protection de la Propriété Industrielle" (International Office of the Union for the Protection of Industrial Property).

This office, the expense of which shall be defrayed by the Governments of all the Contracting States, shall be placed under the high authority of the Central Administration of the Swiss Confederation, and shall work under its supervision. Its functions shall be determined by agreement between the States of the Union.

Article XIV.

The present Convention shall be submitted to periodical revisions with a view to the introduction of amendments calculated to improve the system of the Union.

For this purpose Conferences shall be held successively in one of the Contracting States between the Delegates of the said States.

Article XV.

It is agreed that the High Contracting Parties respectively reserve to themselves the right to make separately, as between themselves, special arrangements for the protection of Industrial Property, in so far as such arrangements do not contravene the provisions of the present Convention.

Article XVI.

States which are not parties to the present Convention shall be allowed to accede to it upon their request.

The accession shall be notified through the diplomatic channel to the Government of the Swiss Confederation, and by the latter to all the other states. It shall entail, as a matter of right, accession to all the clauses, as well as admission to all the advantages stipulated in the present Convention, *and shall take effect one month after the despatch of the notification by the Swiss Government to the other States of the Union, unless a subsequent date have been indicated by the acceding State.*

Article XVII.

The execution of the reciprocal engagements contained in the present Convention is subordinated, in so far as necessary, to the observance of the formalities and rules established by the Constitutional laws of those of the High Contracting Parties who are bound to procure the application of the same, which they engage to do with as little delay as possible.

Article XVIII.

The present Convention shall come into operation one month after the exchange of ratifications, and shall remain in force for an unlimited time, till the expiry of one year from the date of its denunciation. This denunciation shall be addressed to the Government commissioned to receive adhesions. It shall only affect the denouncing State, the Convention remaining in operation as regards the other Contracting Parties.

Article XIX.

The present Convention shall be ratified, and the ratifications exchanged in Paris, within one year at the latest.

In witness whereof the respective Plenipotentiaries have signed the same, and have affixed thereto their seals.

Done at Paris the 20th March, 1883.

(Signed)

(L.S.) BEYENS, &c.

II.

Final Protocol.[1]

Au moment de procéder à la signature de la Convention conclue, à la date de ce jour, entre les Gouvernements de la Belgique, du Brésil, de l'Espagne de la France, du Guatemala, de l'Italie, des Pays-Bas, du Portugal, du Salvador, de la Serbie, et de la Suisse, pour la protection de la Propriété Industrielle, les Plénipotentiaires soussignés sont convenus de ce qui suit :

1. Les mots "Propriété Industrielle" doivent être entendus dans leur acception la plus large, en ce sens qu'ils s'appliquent non seulement aux produits de l'industrie proprement dite, mais également aux produits de l'agriculture (vins, grains, fruits, bestiaux, &c.), et aux produits minéraux livrés au commerce (eaux minérales, &c.).

2. Sous le nom de "Brevets d'Invention" sont comprises les diverses espèces de brevets industriels admises par les législations des États Contractants, telles que brevets d'importation, brevets de perfectionnement, &c.

3. Il est entendu que la disposition finale de l'Article II de la Convention ne porte aucune atteinte à la législation de chacun des États Contractants, en ce qui concerne la procédure suivie devant les Tribunaux et la compétence de ces Tribunaux.

3 (*bis*). Le breveté, dans chaque pays, ne pourra être frappé de déchéance pour cause de non-exploitation qu'après un délai minimum de trois ans, à dater du dépôt de la demande dans le pays dont il s'agit, et dans le cas où le breveté ne justifierait pas des causes de son inaction.[2]

* * * * * * *

7. Le présent Protocole de Clôture, qui sera ratifié en même temps que la Convention conclue à la date de ce jour, sera considéré comme faisant partie intégrante de cette Convention, et aura mêmes force, valeur et durée.

En foi de quoi, les Plénipotentiaires soussignés ont dressé le présent Protocole.

(Signé) BEYENS, &c.

[1] Portions not relating to patents are omitted.
[2] Added by the Additional Act of Dec. 14, 1900.

(*Translation.*)

On proceeding to the signature of the Convention concluded this day between the Governments of Belgium, Brazil, Spain, France, Guatemala, Italy, the Netherlands, Portugal, Salvador, Servia, and Switzerland, for the protection of Industrial Property, the undersigned Plenipotentiaries have agreed as follows :—

1. The words "Industrial Property" are to be understood in their broadest sense; they are not to apply simply to industrial products, properly so called, but also to agricultural products (wines, corn, fruits, cattle, &c.), and to mineral products employed in commerce (mineral waters, &c.).

2. Under the word "patents" are comprised the various kinds of industrial patents recognized by the legislation of each of the Contracting States, such as importation patents, improvement patents, &c.

3. The last paragraph of Article II. does not affect the legislation of each of the Contracting States as regards the procedure to be followed before the Tribunals, and the competence of those Tribunals.[1]

3 (*bis*). The patent, in each country, shall not be liable to forfeiture on account of failure to utilize it, until after the expiration of at least three years from the date of the deposit of the application in the country concerned, and only provided the patentee cannot show reasonable cause for his inaction.[2]

7. The present Final Protocol, which shall be ratified together with the Convention concluded this day, shall be considered as forming an integral part of, and shall have the same force, validity, and duration as the said Convention.

In witness whereof the undersigned Plenipotentiaries have drawn up the present Protocol.

(Signed) BEYENS, &c.

[1] Paragraphs 4–6 relate to trade-marks and the establishment of the International Office.
[2] Added by the Act of Dec. 14, 1900.

INSTRUCTIONS TO APPLICANTS FOR PATENTS.

(*Issued by the Patent Office for Inventors' Guidance.*)

1. *Mode of Proceeding to obtain Patents for Inventions in the United Kingdom.*—

Sub-sections (i.) to (v.) (general), *ante*, p. 107.
„ (vi.) to (viii.) (provisional specification), *ante*, p. 106.
„ (ix.) and (x.) (complete specification), *ante*, p. 111.
„ (xi.) (title), *ante*, p. 106.
„ (xii.) (same as Rule 17, *ante*, p. 529, with the additional information that "the several sheets should be fastened together at the top left-hand corner.")
„ (xiii.) (drawings, same as Rules 18–24, *ante*, pp. 529–531.)

2. *Patent Forms and Fees.*—(i.) Forms are not supplied by the Patent Office, but can be purchased on personal application at the Inland Revenue Office, Royal Courts of Justice (Room No. 6), Strand, London, W.C., or, at a few days' notice and upon pre-payment of the value of the stamp, at any Money Order Office in the United Kingdom.

If it should not be convenient to apply in either of the ways above specified, the stamped forms can be ordered by post from the Controller of Stamps, Room 5, Inland Revenue Office, Somerset House, London, W.C. In this case a bankers' draft or a Money or Postal Order payable to the Commissioners of Inland Revenue and crossed Bank of England, to cover the value of the stamp and the cost of transmitting the Form in a registered envelope by post, must be forwarded to Somerset House with the application for the Form. Cheques will not be accepted.

	£	s.	d.
Form A.—Application for Patent	1	0	0
„ A[1].— „ „ for invention communicated from abroad	1	0	0
„ A[2].— „ „ under International and Colonial arrangements	1	0	0
„ B.—Provisional Specification	No fee.		
„ C.—Complete Specification	3	0	0
„ C[1].—On Postal Request for printed copy of specification (*for use in the United Kingdom only*)	0	0	8
„ D.—On notice of opposition to grant of Patent. By opponent	0	10	0
„ E.—On hearing by Comptroller. By applicant and by opponent respectively	1	0	0
„ F.—On application to amend specification. Up to sealing ...	1	10	0
„ „ After sealing ...	3	0	0
„ G.—On notice of opposition to amendment. By opponent ...	0	10	0
„ H (with H[1]).—On application to the Board of Trade for a compulsory license	1	0	0
„ I.—On opposition to grant of compulsory license	1	0	0
„ J.—On certificate of payment of renewal fee:—			
Before the expiration of the 4th year from date of Patent, and in respect of the 5th year	5	0	0
„ „ 5th „ 6th „	6	0	0
„ „ 6th „ 7th „	7	0	0
„ „ 7th „ 8th „	8	0	0
„ „ 8th „ 9th „	9	0	0
„ „ 9th „ 10th „	10	0	0
„ „ 10th „ 11th „	11	0	0
„ „ 11th „ 12th „	12	0	0
„ „ 12th „ 13th „	13	0	0
„ „ 13th „ 14th „	14	0	0
„ K.—On enlargement of time for payment of renewal fees:—			
Not exceeding 1 month	1	0	0
„ „ „ „ 2 months	3	0	0
„ „ „ „ 3 „	5	0	0
„ L.—For every entry of name upon Register of Patents ...	0	10	0
„ M.—For every entry of notification of License	0	10	0
„ N.—For duplicate of Letters Patent	2	0	0
„ O.—On notice to Comptroller of intended exhibition of unpatented invention	0	10	0
„ P.—On request to Comptroller to correct a clerical error.			
Up to sealing	0	5	0
„ „ „ After sealing	1	0	0
„ Q.—For certificate of Comptroller	0	5	0
„ R.—For altering address in register	0	5	0
„ S.—For every entry of an Order of Privy Council	0	10	0
„ T.—On appeal from Comptroller to Law Officer	3	0	0
„ U.—On enlargement of time for leaving complete specification:—Not exceeding 1 month	2	0	0
„ V.—On enlargement of time for acceptance of complete specification after 12 months:—Not exceeding 1 month ...	2	0	0
„ 2 months ...	4	0	0
„ 3 „ ...	6	0	0

(ii.) Forms A, B, C, and C[1] are *usually kept on sale* at the undermentioned places :—

London General Post Office, E.C.
Post Office, 195, Whitechapel Road, E.
„ 239, Borough High Street, S.E.
„ Charing Cross, W.C.
Post Office, Lombard Street, E.C.
„ 28, Eversholt Street, Camden Town, N.W.
„ 12, Parliament Street, S.W.,

and the chief Post Offices in the towns in the United Kingdom named below :—

Aberdeen.
Accrington.
Altrincham.
Ashton-under-Lyne.
Barnsley.
Barrow-in-Furness.
Bath.
Bedford.
Belfast.
Beverley.
Birkenhead.
Birmingham.
Blackburn.
Bolton.
Bradford.
Brighton.
Bristol.
Bromsgrove.
Burnley.
Burslem.
Burton-on-Trent.
Bury.
Cambridge.
Cardiff.
Carlisle.
Chatham.
Chester.
Clitheroe.
Congleton.
Cork.
Coventry.
Crewe.
Croydon.
Darlaston.
Derby.
Dewsbury.
Doncaster.
Dorchester.
Driffield.
Droitwich.
Dublin.
Dudley.
Dumbarton.
Dundalk.
Dundee.
Durham.
Edinburgh.
Exeter.
Galway.
Gateshead.
Glasgow.
Goole.
Greenock.
Greenwich.
Guildford.
Halifax.
Hartlepool.
Huddersfield.
Hull.
Inverness.
Ipswich.
Keighley.
Kendal.
Kidderminster.
Knaresbro'.
Knutsford.
Lanark.
Lancaster.
Leamington.
Leeds.
Leicester.
Leith.
Lichfield.
Limerick.
Lincoln.
Liverpool.
Londonderry.
Macclesfield.
Manchester.
Middlesbrough.
Nantwich.
Newcastle.
Newport (Mon.).
Northallerton.
Northampton.
Nottingham.
Nuneaton.
Oldbury.
Oldham.
Paisley.
Patrington.
Perth.
Plymouth.
Pontefract.
Portsmouth.
Prescot.
Preston.
Reading.
Redditch.
Renfrew.
Richmond (Yorks).
Ripon.
Rochdale.
Rotherham.
Rugby.
Salford.
St. Helens.
Scarborough.
Sedgeley.
Sheffield.
Southampton.
Stafford.
Stalybridge.
Stockport.
Stoke-on-Trent.
Stourbridge.
Stourport.
Sunderland.
Swansea.
Tamworth.
Truro.
Tunstall.
Wakefield.
Walsall.
Warrington.
Waterford.
Wednesbury.
West Bromwich.
Wexford.
Whitby.
Widnes.
Wigan.
Wolverhampton.
Wolverton.
Woolwich.
Worcester.
York.

3. *Opposition to the Grant of a Patent.*—Under section 11 of the Act of 1883, opposition may be made to the grant of a patent at

any time within two months from the date of the advertisement in the *Illustrated Official Journal* of the acceptance of the complete specification, by any person; on the ground of the applicant having obtained the invention from him, or from a person of whom he is the legal representative; or on the ground that the invention has been patented in this country on an application of prior date; or on the ground that the complete specification describes or claims an invention other than that described in the provisional specification and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification; *but on no other ground.* See par. 2, Form D, *ante*, p. 553.

4. *Amendment of Specification.*—Under section 18 of the Act, a complete specification may be amended by way of disclaimer, correction, or explanation, but no amendment will be allowed that would make the specification as amended claim an invention substantially larger than or substantially different from the invention claimed by the specification as it stood before amendment. A request for leave to amend must be made and signed by the applicant or the registered proprietor of the patent, and must be accompanied by a certified printed copy of the specification shewing clearly in red ink the proposed amendments. A printed copy of any published specification may be obtained from the Patent Office, 25, Southampton Buildings, W.C., price 8*d.*, including inland postage (see par. 25, *post*, p. 598). The fee for certifying the printed copy is one shilling. Care should be taken to indicate clearly what part of the printed description it is proposed to omit, and at what point interlineations are to be inserted. Additional matter which cannot be written upon the printed copy should be written upon a separate sheet and attached to the print. See par. 2, Forms F and P, *ante*, pp. 555, 563, 588.

It should be remembered that the proposed amendments, whether allowable or not, are made public and advertised, and that this publication may be a bar to obtaining a valid patent for matter disallowed by way of amendment. No amendment of a provisional specification is allowed under section 18; but clerical errors therein may be corrected.

5. *Payment of Renewal Fees for Continuance of Patent.*—Every

patent is granted for the term of fourteen years from the date of application, subject to the payment, before the expiration of the fourth and each succeeding year during the term of the patent, of the prescribed fee. The patentee may pay all or any of such prescribed annual fees in advance.

Payment must be made by way of Form J duly stamped, which must be sent to the Patent Office for entry of the payment in the register. The production of Letters Patent at the Patent Office on payment of these fees is not required. See par 2, Form J, *ante*, p. 557.

As the payment of these renewal fees is regulated by Act of Parliament, a fee cannot be received a *single day* after it is due; but if by accident, mistake, or inadvertence the payment has been omitted, application may be made to the Comptroller, on Patent Form K, for an enlargement of time to make such payment, but no enlargement can be allowed beyond three months. See par. 2, Form K, *ante*, p. 558, and par. 6.

TABLE SHOWING AMOUNT OF RENEWAL FEES PAYABLE YEAR BY YEAR.

Year in which the Patent is dated.	Amount payable in Respective Years.										
	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£	£	£	£	£	£
1890	14										
1891	13	14									
1892	12	13	14								
1893	11	12	13	14							
1894	10	11	12	13	14						
1895	9	10	11	12	13	14					
1896	8	9	10	11	12	13	14				
1897	7	8	9	10	11	12	13	14			
1898	6	7	8	9	10	11	12	13	14		
1899	5	6	7	8	9	10	11	12	13	14	
1900		5	6	7	8	9	10	11	12	13	14
1901			5	6	7	8	9	10	11	12	13
1902				5	6	7	8	9	10	11	12
1903					5	6	7	8	9	10	11

6. *Enlargement of Time.*—Applications for enlargement of time must state in detail in what circumstances and upon what grounds the enlargement is applied for. See par 2, Forms K, U, and V, *ante*, pp. 558, 567, 568.

7. *Assignments, Licenses, &c.*—Deeds of assignment of patents, and other documents affecting the proprietorship of patents, licenses to manufacture or use patented inventions, are required by section 23 of the Act to be entered in the Register at the Patent Office. No document can, however, be recorded until the patent affected has been actually sealed. Every document sent for registration must be duly stamped in accordance with the provisions of the Stamp Act, 1891, and must be accompanied by an attested copy written upon foolscap paper (on one side only) and bearing a shilling impressed stamp, and by the stamped Form of Request. See par. 2, Form L and Form M, *ante*, pp. 559, 560. Names of individual members of Firms should be set out on the Form of Request.

8. *Exhibition of Unpatented Inventions.*—Any person may exhibit an unpatented invention at an exhibition certified by the Board of Trade as industrial or international, without prejudice to his subsequent patent rights, provided (*a*) that he gives the prescribed notice to the Comptroller of his intention so to exhibit it, and (*b*) that the application for a patent be made within six months from the date of the opening of the exhibition. See par. 2, Form O, *ante*, p. 562. In the case of exhibitions held out of the United Kingdom, no notice of intention to exhibit is required to be given to the Comptroller.

9. *Comptroller's Certificate.*—Any one wishing to be informed as soon as a complete specification is accepted, or an application for amendment is entered, should forward a copy of Form Q with a request for such information. See par. 2, Form Q, *ante*, p. 564. An applicant for a patent, however, is duly notified of the acceptance of his complete specification at the address for service given with his application.

10. *Provisional Protection.*—Provisional protection, which is conferred by the acceptance of an application, entitles an applicant to use and publish his invention without thereby prejudicing his patent-rights, but it does not protect him from infringement. The right to sue for infringement does not arise until a patent is sealed, and then only in respect of such infringements as have been committed after the acceptance and publication of the complete specification. The certificate of receipt issued when an application is lodged does not confer provisional protection.

11. *Searches, Office Copies, &c.*—Searches cannot be undertaken

by the Patent Office, but must be made by the person requiring information, or by his solicitor or agent. See par. 25, *post*, p. 598.

The following fees are charged:—

	£	s.	d.
For inspection of original documents ... ... each	0	1	0
For office copies ... every 100 words (but never less than 1s.)	0	0	4
For certifying office copies, MS. or printed ... ... each	0	1	0

An additional stamp duty of one shilling is also charged under the Stamp Act upon certified copies of Registers, or of stamped legal documents.

For office copies of drawings, cost according to size and character of drawings.

12. *Information by Post.*—Any person wishing to know whether a particular patent is still in force, the name of the present proprietor of a patent, or any similar details, may obtain an extract from the Register of Patents upon stating the number and year of the patent and forwarding the fee of one shilling by postal order. No information with reference to unpublished applications can be given to others than the applicant or applicants.

13. *Date of printing Specification and sealing Patent.*—Specifications are printed fifteen days after the advertisement of the acceptance of the complete specification. The patent is usually sealed about ten weeks after the acceptance of the complete specification, *i.e.* about ten days after the expiration of the period allowed for opposition. See par. 3, *ante*, p. 590.

14. *Documents not Open to Inspection.*—The provisional specification (if any) and the complete specification are not open to public inspection, for searches or for copying, until after the acceptance of the complete specification. The specifications of abandoned or void applications are not printed or open to inspection.

15. *Use of the Word "Patent."*—Any person who represents that an article sold by him is a patented article when no patent has been granted for it is liable for every offence on summary conviction to a fine not exceeding five pounds. In a case decided by a police magistrate it was held, however, that a person was entitled to mark goods with the word "patent" after the complete specification had been accepted. See sect. 105 of the Act, and Reports of Patent Cases, vol. 13, p. 265.[1]

[1] The cases decided in Police Courts are not in agreement. Representing goods to be the subject of an existing patent when they are not is also an offence against the Merchandise Marks Act, 1887. The two enactments are not identical. The points are fully discussed in Kerly on Trade Marks, pp. 570, 579.

16. *Advice on Patent Matters, Opinions as to the Merit or Novelty of Inventions, the Infringement or Fraudulent Appropriation of Inventions, &c.*—(*a*) The Patent Office does not undertake to give legal advice or opinions on any subject connected with Patent Law, which, like other laws, is left to the interpretation of professional men; nor does the Patent Office examine specifications or other documents before they are filed.

(*b*) No official search is at present made as regards novelty, sect. 1 of the Patents Act, 1902 (*ante*, p. 523), which provides for an examination of prior British specifications, being not yet (October, 1903) in operation, consequently, British patents are taken out at the risk of applicants, who are expected to cause a search to be made as to the novelty of their inventions either before they make, or before they complete, their applications. Nor does the Patent Office report as to the patentability of an alleged invention unless its use is contrary to law or morality, or unless it is of a frivolous nature or does not relate to a manner of manufacture.

(*c*) It is left to every person to protect his rights by opposition or otherwise. See par. 3, *ante*, p. 590. A patent is granted upon an application which passes the prescribed stages and is unopposed, whether the invention be novel or not.

(*d*) The Patent Office cannot recommend any particular patent agent for employment by applicants, but a List of Registered Patent Agents may be obtained from Messrs. Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W., or through any bookseller. Price (including postage), 1*s.* 1*d.*

17. *Application for Assistance, Reduction of Fees, &c.*—It is not within the power of the Comptroller to comply with any of the following requests:—

For pecuniary assistance to obtain patents.
„ reduction or remission of any of the fees required by the Patent Law.
„ purchase or acquirement of any interest in patented or other inventions
„ recommendation of any invention for purchase or use by a Government Department or by the public.

18. *Mechanical Inventions not protected by Registration.*—As many inventors imagine that mechanical inventions can be protected

by registration as designs, it may be stated that improvements in the construction, arrangement, or application of machinery can only be protected by a patent.

19. *Patent Medicines.*—Communications with respect to the preparation and supply of medicine stamps appropriated to a particular medicine, or as to the liability to stamp duty of so-called "patent medicines," should be addressed to the Secretary (Stamps and Taxes), Inland Revenue, Somerset House, W.C.

The use of medicine stamps does not have the effect of Letters Patent.

20. *Full-size Copies of Drawings.*—Full-size copies of drawings printed by photolithography may be obtained at the undermentioned rates:—

No of Copies.	Whole sheets Imperial (30 × 22).	Half-sheets Imperial. (15 × 22.)	Foolscap Size. (13 × 16.)	Half-foolscap Size. (13 × 8.)
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
Single copies	25 0	15 0	15 0	10 0
Not exceeding 6 copies ..	28 0	18 0	17 0	12 0
„ 12 „	30 0	20 0	18 6	13 6
„ 25 „	32 0	22 0	20 0	15 0

If a satisfactory photograph cannot be obtained from the original drawing, an extra charge will be made to cover the expense of making a tracing.

When the original drawings are coloured there will also be an extra charge for colouring the copies.

21. *Patents, &c., in the British Colonies and Foreign States.*—Applications for colonial or foreign patents, &c., must be made to the Government of the colony or foreign State in which protection is desired. A collection of colonial and foreign patent, design, and trade-mark laws and rules may be seen in the Free Library of the Patent Office.

22. *International and Colonial Arrangements.*—An International Convention for the protection of industrial property exists between the following States:—

Austria-Hungary.[1]
Belgium.
Brazil.
Denmark with the Faröe Islands.
France with Algeria and colonies.
Germany.[2]
Great Britain with New Zealand and Queensland.

[1] Will join from January 1, 1904.
[2] Has announced adhesion from May 1, 1902, but Order in Council not yet issued.

Italy.
Japan.
Netherlands with the Dutch East Indies, Surinam, and Curaçoa.
Norway.
Portugal with the Azores and Madeira.
Santo Domingo.[1]
Servia.[2]
Spain.
Sweden.
Switzerland.
Tunis.
United States of America.

A copy of the text of the Convention, published by Messrs. Eyre & Spottiswoode, may be purchased for 2*d.* through any bookseller. (See *ante*, p. 576.)

Under this Convention, an applicant for a patent in any one of the contracting States may obtain priority in any of the other States.

Similar arrangements, for the mutual protection of inventions, designs, and trade-marks, have been made between Great Britain on the one side, and each of the following States and Colonies on the other :—

Ecuador (designs and trade-marks only). Greece (designs and trade-marks only). Honduras. Mexico. Paraguay. Roumania (designs and trade-marks only). Tasmania. Uruguay. Western Australia.

An application in the United Kingdom for a patent having priority of date under the international and colonial arrangements must be made within twelve months from the date of the *first* foreign application, and must be accompanied by a complete specification and signed by the person or persons by whom the first foreign application was made. It must be made upon Form A[2] (see *ante*, p. 549), and in addition to the specification must be accompanied by—

(1) A copy or copies of the specification and drawings as filed in the Patent Office of the foreign State or British possession in respect of the first foreign application duly certified by the official chief of such Patent Office, or otherwise verified to the satisfaction of the Comptroller ; and
(2) If the specification be in a foreign language, by a translation thereof, verified by statutory declaration or otherwise to the satisfaction of the Comptroller.

An International Office, in connection with the Convention, has been established at Berne, Switzerland, which publishes a monthly periodical, entitled *La Propriété Industrielle.* The yearly subscription (including postage) for all countries within the Postal Union

[1-2] These Governments have not yet agreed to the Convention, as amended September 14, 1902, but adhere to it in the original form.

is 5 francs 60 centimes, and should be forwarded by money order to L'Imprimerie Co-opérative, Berne.

23. *Patent Museum, South Kensington.*—This museum was in 1883 placed under the management of the Department of Science and Art. It no longer forms a separate section, but has been incorporated with the general Science Collections of the South Kensington Museum. All communications relating thereto should be addressed to the Secretary, Science and Art Department, South Kensington, London, S.W. The Science Collections are open to the public *free* daily, from 10 a.m. to 10 p.m. on Mondays, Tuesdays, and Saturdays; and from 10 a.m to 4, 5, or 6 p.m. on other days of the week according to the season. A number of the models may be seen in motion from 11 a.m. to the hour of closing. Entrance—Exhibition Road.

24. *Patent Office Library.*—The reading-rooms of the Free Public Library of the Patent Office are open daily, from 10 a.m. till 10 p.m., except on Sundays, Christmas Day, Good Friday, and Bank Holidays. On the day observed as His Majesty's birthday, Christmas Eve, Easter Eve, and Whitsun Eve, the library is closed at 4 p.m.

In addition to the printed specifications, indexes, and other publications of the Patent Office, the library contains a collection of the leading British and Foreign Scientific Journals, Transactions of Learned Societies, and text-books of Science and Art, and the full or abridged Patent Specifications of the following countries:—Argentine Republic, Austria, Barbados, Belgium, Canada, Cape Colony, Denmark, Finland, France, Germany, Grenada, Hungary, Italy, Japan, Mauritius, Natal, New South Wales, New Zealand, Norway, Portugal, Queensland, Russia, St. Lucia, St. Vincent, Straits Settlements, Sweden, Switzerland, Trinidad, United States of America, Victoria, Western Australia.

25. *Patent Office Publications.*[1]—These may be consulted daily at the Free Public Library of the Patent Office; at the Science and Art Department, South Kensington; and at the Free Libraries, &c., named *post*, pp. 600–603. They are also on sale at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., and

[1] The list of these is not inserted in this work. It may be seen at most of the places mentioned below, or can be obtained by writing to the Patent Office.

will be forwarded by post on receipt of the price and of the postage (if any is charged). *Sums amounting to* 1*s. or more must be remitted by Postal or Post Office Order payable to the Comptroller-General.* Postage stamps sent in payment of any amount exceeding 11*d.* will be returned. Deposit accounts may be opened, the minimum deposit being £2.

In ordering specifications, the price of which is 8*d.* each, the number and year of the patent must be given. In searching for the invention of any particular person, the Name Indexes, published as part of the Illustrated Official Journal of Patents, should be consulted. In searching as to the novelty of any particular invention, or as to the patents which have been granted in connection with a particular subject, the Abridgment Class and Index Key should first be consulted to ascertain where the subject-matter is classified in the Patent Office publications. The corresponding volumes of Abridgments of Specifications, each of which is furnished with Name and Subject-Matter Indexes, should then be examined. In the case of recent specifications for which abridgment volumes have not yet been published, the annual and monthly Subject-Matter Indexes and Illustrated Official Journal must be consulted. Such searches cannot be undertaken by the Patent Office. See par. 11, *ante*, p. 593.

Specifications or other publications cannot be returned by the purchasers, unless a wrong number has been supplied through an error on the part of the Patent Office.

26. *Specifications of Foreign and Colonial Patents.*—Specifications of foreign and colonial patents are not sold by the Patent Office. Applications for these should be made to the Patent Office of the country in which the patent was granted.

27. *Lists of Places receiving Donations of Patent Office Works.*—See *post*, pp. 600–603.

28. *Lists of Patent Office Publications.*—(Omitted.)

List of Places receiving Donations of Patent Office Publications.

The publications relating to Patents supplied are denoted as follows :—

All. = All publications, including specifications.
Abr. = Abridgments of British specifications.
Jour. = Official Illustrated Journal of Patents.
Special = Selected publications only.
Am. This denotes that copies of United States Specifications are also kept in the local library.

In the United Kingdom, Isle of Man, and Channel Islands.

Aberdeen—Public Library. *Abr.*, *Jour.*
Accrington—Mechanics' Institution. *Jour.*
Public Library. *Abr.*, *Jour.*
Airdrie—Free Public Library. *Abr.*, *Jour.*
Alloa—Public Library. *Abr.*, *Jour.*
Alnwick—Scientific and Mechanical Institution. *Abr.*
Altrincham—Free Library and Technical School. *Jour.*
Arbroath—Public Library. *Jour.*
Armagh—Natural History and Philosophical Society. *Abr.*
Ashton-under-Lyne — Heginbottom Free Library. *Abr.*, *Jour.*
Aston, near Birmingham—Aston Manor Public Library. *Abr.*, *Jour.*
Ayr—Carnegie Public Library. *Abr.*

Bacup—Mechanics' Institution. *Abr.*
Banbury—Mechanics' Institute. *Abr.*
Barnsley—Free Library. *Abr.*, *Jour.*
Barnstaple—North Devon Athenæum. *Abr.*
Barrow-in-Furness—Free Public Library and Museum. *Abr.*, *Jour.*
Basingstoke—Mechanics' Institute and Club. *Abr.*, *Jour.*
Belfast—Free Public Library. *All.*
Linen Trade Board—*Special.*
Queen's College. *Jour.*
Birkenhead—Free Public Library. *Abr.*, *Jour.*
Birmingham — Cycle Engineers' Institute. *Jour.*
Mason College. *Special.*
Reference Library, Patent Department, Eden Place. *All.*, *Am.*
Blackburn—Free Library and Museum. *Abr.* *Jour.*
Blackpool—Free Library. *Jour.*
Blackrock (Co. Dublin)—Public Library. *Jour.*
Blyth—Mechanics' Institution. *Abr.*
Bodmin—Literary Institution. *Abr.*
Bolton—Little Bolton Library. *All.*
Bootle—Free Public Library. *Abr.*, *Jour.*
Bradford, Yorkshire—Free Library, Darley Street. *All.*
Braintree—Braintree and Bocking Mechanics' Institute. *Abr.*
Brechin—Public Library. *Jour.*
Brighton—Public Library, Royal Pavilion. *Abr.*, *Jour.*
Bristol—Literary and Philosophical Club. *Jour.*
Public Libraries, Hotwells Branch Library. *All.*
School of Science, Merchants' Hall. *Jour.*
Burnley—Corporation Free Library. *Jour.*
Mechanics' Institution. *Abr.*, *Jour.*
Burslem—Wedgwood Institute. *Abr.*
Bury St. Edmund's—Athenæum Library, *Abr.*
Bury—Public Library. *Jour.*

Cambridge—Free Library. *Jour.*
Philosophical Library. *Jour.*
University Library. *Jour.*
Canterbury—Free Library. *Abr.*, *Jour.*
Cardiff—Central Free Library, Reference Department. *All.*
South Wales Institution of Engineers, Park Place. *Abr.*
Carlisle—Public Library, Tullie House. *All.*
Carmarthen—Literary and Scientific Institute. *Abr.*
Carnarvon—Free Library. *Abr.*, *Jour.*
Chatham—Dockyard. *Jour.*
Cheltenham—Public Library. *Abr.*
Chester—Free Library, St. John Street. *Abr.*, *Jour.*
Chorley—Free Public Library. *Jour.*
Colchester—Public Library. *Abr.*
Cork—Free Library, Nelson Place. *Abr.*, *Jour.*
Coventry—Free Library. *Abr.*
Crewe—Mechanics' Institution. *Abr.*, *Jour.*
Croydon—Central Free Public Library. *Jour.*

Darlington—Edward Pease Public Library. *Jour.*
Technical College. *Jour.*
Darwen—Public Library. *Abr.*, *Jour.*
Denbigh—Free Reading Room. *Jour.*
Derby—Public Library and Museum. *All.*

IN THE UNITED KINGDOM, ETC.—*continued.*

Devonport—Free Public Library. *Abr.*, *Jour.*
Dewsbury—Free Public Library. *Abr.*, *Jour.*
Doncaster—Free Library. *Abr.*, *Jour.*
Dublin—King's Inns' Library. *Jour.*
Law Library, Four Courts. *Jour.*
National Library of Ireland, Kildare Street. *All.*
Public Record Office. *All.*
Dudley—Free Library. *Jour.*
Dumbarton—Free Public Library. *Abr.*, *Jour.*
Dundalk—Free Library. *Jour.*
Dundee—Public Library, Albert Institute. *All.*

Ebbw Vale—Literary and Scientific Institute. *Abr.*
Edinburgh—Advocates' Library. *Jour.*
Museum of Science and Art. *All.*, *Am.*
Public Library. *Jour.*
Elgin—Library. *Jour.*
Enfield—Small Arms Factory. *Jour.*
Exeter—Albert Memorial Museum and Free Library. *Abr.*, *Jour.*

Falkirk—Public Library. *Jour.*
Falmouth—Free Public Library. *Jour.*
Frome—Literary and Scientific Institution. *Abr.*
Mechanics' Institution. *Abr.*

Galashiels—Public Library. *Jour.*
Glasgow—Athenæum. *Abr.*, *Jour.*
Institution of Engineers and Shipbuilders in Scotland, 207, Bath Street. *Abr.*, *Jour.*
Kelvingrove Museum. *Abr.*
Library of the Faculty of Procurators. *Jour.*
Philosophical Society. *Abr.*, *Jour.*
Stirling's and Glasgow Public Library, Miller Street. *All.* *Am.*
West of Scotland Iron and Steel Institute. *Abr.*
Gloucester—Free Library, Guildhall. *Abr.*, *Jour.*
Gravesend—Public Library. *Jour.*
Guernsey — Guille-Allés Library, Market Place. *Abr.*

Halifax — Mechanics' Institute, Crossley Street. *Abr.*
Public Library, Akroyd Park. *All.*
Hanley—Public Free Library. *Abr.*, *Jour.*
Harrogate—Public Library. *Jour.*
Hawick—Public Library. *Jour.*
Hebden Bridge — Mechanics' Institution, Commercial Street. *Abr.*
Heywood—Public Free Library. *Abr.*, *Jour.*
High Wycombe—Free Library. *Jour.*
Holyhead—Public Library. *Jour.*
Horwich—Mechanics' Institute Library. *All.*, *Am.*
Houghton-le-Spring—Church Institute. *Jour.*
Huddersfield—Lockwood Mechanics' Institution. *Jour.*
Technical School. *Abr.*
Town Hall. *All.*
Hull—Public Libraries. *All.*

Inverness—The Public Library. *Abr.*, *Jour.*
Ipswich—Free Library, High Street. *All.*
Isle of Man—Castletown, Rolls Office. *All.*

Jersey—Public Library. *Abr.*, *Jour.*

Keighley—Mechanics' Institute, North Street. *All.*, *Am.*
Kettering—Church Institute and Working Men's Club. *Abr.*
Kidderminster—Free Library. *Abr.*
Kilmarnock—Public Library. *Abr.*

Lancaster—Public Library, Storey Institute. *Abr.*
Leamington Spa—Free Library, Town Hall. *Abr.*, *Jour.*
Leeds—Association of Engineers. *Abr.*, *Jour.*
Church Institute. *Abr.*
Free Public Library. *All.*, *Am.*
Philosophical and Literary Society. *Abr.*
Yorkshire College. *Abr.*
Leek, Staffordshire—Literary and Mechanics Institution. *Abr.*
The Nicholson Institute. *Special.*
Leicester—Free Public Library, Wellington Street. *All.*
Lincoln—Public Library. *Jour.*
Liverpool—Admiralty. *Special.*
Chemical Laboratory, University College. *Special.*
Free Library, William Brown Street. *All.*
Llanelly—Mechanics' Institution. *Jour.*
London—Acton Public Library. *Jour.*
Admiralty. *Special.*
Aeronautical Society. *Jour.*
Austrian Embassy. *Jour.*
Bar Library, Royal Courts of Justice. *Jour.*
Battersea Public Library, Lammas Hall, Bridge Road West. *Jour.*
Battersea Public Library, Lavender Hill. *Jour.*
Battersea Public Library, Lurline Gardens, Victoria Road. *Jour.*
Bethnal Green—Free Library, London Street (from 1888). *All.*
Bishopsgate Institute. *Jour.*
Board of Trade. *Jour.*
Borough Road Polytechnic Institution. *Jour.*
Bow Library. *Jour.*
British Horological Institute. *Special.*
British Museum. *All.*
Brixton Oval, Tate Central Library. *Abr.*, *Jour.*
Camberwell Central Library, Peckham Road, S.E. *Abr.*, *Jour.*
Canning Town Free Public Library, Barking Road, E. *Abr.*, *Jour.*
Central Young Men's Christian Association, 186, Aldersgate Street. *Jour.*
Chelsea Public Library. *Abr.*
Clerkenwell Public Library. *Jour.*
Coach Builders and Wheelwrights' Art Journal. *Jour.*
Cold Storage and Ice Trades Review. *Jour.*
Ealing Free Public Library. *Jour.*
East Ham—Plashet Library. *Jour.*

IN THE UNITED KINGDOM, ETC.—*continued.*

Edmonton Public Library. *Jour.*
Electrician. *Jour.*
Federated Institutes of Brewing. *Special.*
Feilden's Magazine. *Jour.*
Fulham Free Public Library. *Jour.*
Fulham Free Public Library, Wandsworth Bridge Road Branch. *Jour.*
G.P.O. Telegraph Branch. *Jour.*
German Embassy. *Jour.*
Goldsmiths Company's Technical Institute, New Cross, S.E. *Jour.*
Guildhall Library, E.C. *Abr., Jour.*
Haggerston — Kingsland Road Library. *Jour.*
Hammersmith Free Public Library. *Jour.*
Hampstead Public Libraries, Kilburn Branch. *Jour.*
Harlesden Public Library. *Jour.*
Home Office. *Special.*
Hoxton—Pitfield Street Library. *Jour.*
Imperial Institute. *Abr., Jour.*
Incorporated Law Society, Chancery Lane. *Abr., Jour.*
India Office. *Jour.*
Inland Revenue Department. *Jour.*
Inner Temple Library. *Abr., Jour.*
Institute of British Carriage Manufacturers. *Special.*
Institute of Patent Agents, Southampton Buildings, Chancery Lane. *Abr., Jour.*
Institution of Civil Engineers, Gt. George Street. *Abr., Jour.*
Institution of Electrical Engineers. *Special.*
Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W. *Abr.*
Institution of Naval Architects. *Special.*
Iron and Steel Institute. *Special.*
Journal of Gas Lighting. *Jour.*
Kensington Free Public Library, Notting Hill. *Jour.*
Kilburn Public Library. *Jour.*
Lewisham Public Libraries. *Jour.*
London Chamber of Commerce. *Jour.*
London Institution, Finsbury Circus. *Abr., Jour.*
Microscopical Society. *Special.*
Mile End Public Library. *Jour.*
Newington Public Library, Walworth Road, S.E. *Abr., Jour.*
Old Brompton Road Free Public Library. *Jour.*
Page's Magazine. *Jour.*
People's Palace, Mile End Road, E. *Abr., Jour.*
Pharmaceutical Society of Great Britain. *Jour.*
Photographic Society. *Special.*
Polytechnic, Regent Street. *Jour.*
Poplar Public Library. *Jour.*
Postal Stores, Mount Pleasant, Clerkenwell. *Jour.*
Privy Council. *Jour.*
Rotherhithe Public Library. *Jour.*
Royal Historical Society. *Jour.*
Royal Institution. *Jour.*
St. Bride Foundation Institute. *Special.*
Science Library — South Kensington Museum. *All.*
Sir John Cass's Technical Institute. *Jour.*
Society of Arts. *Abr., Jour.*
Society of Chemical Industry. *Special.*
Society of Patent Agents. *Jour.*
Southwark, St. George's Public Library, Borough Road, S.E. *Abr., Jour.*
Stoke Newington Public Library. *Jour.*
Surveyors' Institution. *Special.*
Tate Library, Streatham. *Jour.*
Tottenham Public Library. *Jour.*
Tottenham Public Library, St. Ann's Road Branch. *Jour.*
Toynbee Hall. *Jour.*
Treasury. *Jour.*
Walthamstow Public Library. *Abr., Jour.*
Wandsworth Public Library. *Abr., Jour.*
War Office, Pall Mall. *Abr., Jour.*
West Ham Public Library, Stratford. *Abr., Jour.*
Westminster Free Public Library, Great Smith Street. *Abr., Jour.*
Whitechapel Free Public Library. *Jour.*
Willesden Green Public Library. *Jour.*
Wimbledon Free Public Library. *Abr., Jour.*

Loughborough—Public Library. *Abr., Jour.*
Lowestoft—Public Library. *Abr.*

Macclesfield—Free Library, Town Hall. *Jour.*
Manchester—Chemical Club. *Abr., Jour.*
Association of Engineers. *Jour.*
Free Library, Deansgate. *All. Am.*
Moss Side Public Library. *Abr., Jour.*
Municipal Technical School. *Special.*
Owen's College. *Abr.*
Society of Dyers and Colorists. *Special.*
Mansfield—Free Public Library. *Abr., Jour.*
Merthyr Tydfil—Free Library. *Abr., Jour.*
Middlesborough—Public Free Library. *Abr., Jour.*
Middleton, Manchester—Free Library. *Abr., Jour.*

Nelson—Free Library. *Jour.*
Nenagh—Town Hall. *Jour.*
Newburgh, Fife—Laing Free Library. *Jour.*
Newcastle-on-Tyne—Institution of Engineers and Shipbuilders. *Jour.*
North of England Institute of Mining and Mechanical Engineers. *Abr., Jour.*
Public Library, New Bridge Street. *All.*
Newport, Mon.—Chamber of Commerce. *Jour.*
Free Library. *All.*
Newport, Salop—Literary Institute. *Jour.*
Northampton—Public Library. *Jour.*
North Shields—Free Library. *Abr., Jour.*
Northwich—Brunner Free Public Library. *Abr., Jour.*
Norwich—Free Library. *Abr., Jour.*
Nottingham—Mechanics' Institution. *Abr., Jour.*
Central Free Public Library. *All.*

Oldbury—Public Library. *Jour.*
Oldham—Free Library, Union Street. *All., Am.*
Oswestry—Free Public Library, Guildhall. *Abr.*

IN THE UNITED KINGDOM, ETC.—*continued.*

Oxford—Bodleian Library. *Jour.*
Public Library. *Jour.*

Pembroke—Dockyard. *Jour.*
Penzance—Free Library. *Abr., Jour.*
Perth—Sandeman Public Library. *Abr., Jour.*
Peterhead—Public Library. *Abr., Jour.*
Plymouth—Free Public Library. *Abr., Jour.*
Pontypridd—Free Library. *Abr., Jour.*
Portsmouth—Dockyard. *Abr., Jour.*
Public Free Library, Central Library, Town Hall. *Abr., Jour.*
Preston—Harris Free Public Library and Museum. *All.*

Rawtenstall—Technical School. *Jour.*
Reading—Free Public Library, Museum, and Art Gallery. *Abr., Jour.*
Redditch—Literary and Scientific Institution. *Abr.*
Redruth—Free Public Library. *Abr., Jour.*
Richmond, Surrey—Free Public Library. *Abr., Jour.*
Rochdale—Free Public Library, Esplanade. *All.*
Rotherham—Free Public Library. *Abr.*
Rothwell—Public Library. *Jour.*
Ryde, Isle of Wight—Young Men's Christian Association and Literary Institute, Lind Street. *Abr.*

Saffron Walden—Literary and Scientific Institution. *Abr.*
Salford—Free Library, Peel Park. *All.*
St. Helens—Free Public Library, the Gamble Institute. *Abr., Jour.*
Scarborough—Mechanics' and Literary Institute, Vernon Place. *Abr.*
Sheerness—Dockyard. *Jour.*
Sheffield—Chamber of Commerce. *Jour.*
Free Public Library, Surrey Street. *All., Am.*
Shipley—Salt Schools. *Abr.*
Shrewsbury—Free Public Library. *Abr., Jour.*
Southend-on-Sea—Institute. *Abr.*
Southport—Atkinson Free Library. *Jour.*
South Shields—Public Free Library. *Abr., Jour.*
Spalding—Christian Young Men's Association. *Abr.*
Stafford—Free Library. *Abr., Jour.*
Stockton-on-Tees—Free Library. *Abr.*
Stockport—Central Free Library. *All.*
Stony Stratford—Church Institute. *Jour.*
Stowmarket—The Institute. *Abr.*
Stroud—Free Library. *Jour.*
Sudbury, Suffolk—Literary and Mechanics' Institute. *Abr.*
Sunderland—Equitable Industrial Society, Limited. *Jour.*
Public Free Library. *Jour.*
Swansea—Public Library. *All.*
Royal Institution of South Wales. *Abr., Jour.*
Swindon, New—G.W.R. Mechanics' Institution. *Abr., Jour.*

Thetford—Mechanics' Institution. *Jour.*
Thornaby-on-Tees—Public Library. *Jour.*
Todmorden—Free Library. *Jour.*

Uttoxeter—Reading Room and Library. *Abr.*

Wallsend—Industrial Co-operative Society. *Jour.*
Walsall—Free Library. *Abr., Jour.*
Waltham Abbey—*Special.*
Warrington—Municipal Museum. *Abr., Jour.*
Watford—Public Library. *Jour.*
Wednesbury—Free Library. *Abr., Jour.*
Wellington—Young Men's Christian Association. *Abr.*
West Bromwich—Free Library. *Abr., Jour.*
West Hartlepool—Public Library. *Abr., Jour.*
Weston-super-Mare—Free Public Library. *Abr., Jour.*
Whitby—Museum. *Abr.*
Whitchurch—Mechanics' Institute. *Jour.*
Whitehaven—Free Public Library. *Abr., Jour.*
Wigan—Corporation Library. *Jour.*
Wolverhampton—Free Library. *All.*
Wolverton—L. & N. W. R. Library. *Jour.*
Woolwich—Explosives Committee. *Special.*
Ordnance Committee. *Special.*
Ordnance Factories. *Abr., Jour.*
Public Library. *Jour.*
Royal Artillery Institution. *Jour.*
Royal Gun Factory. *Jour.*
Worcester—Public Library, Victoria Institute. *Abr., Jour.*
Workington—Public Library and Reading Room. *Abr., Jour.*
Wrexham—Free Public Library. *Jour.*

York—Institute of Art, Literature, and Science, Free Library. *Jour.*

IN BRITISH COLONIES AND POSSESSIONS.

Australia and Tasmania.

Adelaide (S. Aus.)—Colonial Institute. *All.*
Patent Office (from 1878). *All.*
Ballarat (Vic.)—School of Mines. *Abr.*
Brisbane (Qu.)—Patent Office. *All.*
Hobart (Ta.)—General Register Office. *All.*
Melbourne (Vic.)—Institute of Patent Agents. *Jour.*
Department of Mines. *Jour.*
Melbourne (Vic.)—Patent Office. *All.*
Public Library. *All.*
Perth (W. Aus.)—Patent Office (from 1898). *All.*
Victoria Library. *Abr.*
Sydney (N.S.W.)—Engineering Association. *Jour.*
Patent Office. *All.*

Canada.

Kingston (Ont.)—School of Mining. *Jour.*
Montreal (Que.)—Council of Arts and Manufactures of Quebec. *All.*
Society of Civil Engineers. *Abr.*
Ottawa (Ont.)—Exchequer Court. *Jour.*
Patent Office. *All.*
Toronto (Ont.)—Bureau of Agriculture. *Jour.*
Canadian Institute. *Jour.*
Public Library. *All.*
Winnipeg (Man.)—Library of Parliament *Jour.*
Public Library. *Abr., Jour.*

Demerara (British Guiana).

Georgetown—Govt. Secretary's Office. *Jour.*

India and Ceylon.

Bombay—Indian Textile Journal Co. *Jour.*
Patent Office Secretariat. *All.*
Calcutta—"Indian and Eastern Engineer." *Jour.*
Patent Office, Imperial Secretariat. *All.*
Colombo—Government Office. *Jour.*
Ishapore (Beng.)—Gunpowder Factory. *Jour.*
Madras—Patent Office Secretariat. *All.*

Malta.

Valetta—Chief Secretary's Office. *Abr., Jour.*

Mauritius.

Colonial Secretary's Office. *Abr., Jour.*

New Zealand.

Auckland—Free Public Library. *Abr., Jour.*
Wellington—Patent Office. *All.*

South Africa.

Cape Town—Colonial Secretary's Office. *Abr., Jour.*
Kimberley—Public Library. *Jour.*
Pretoria—Patent Office. *Jour.*
Salisbury—Patent Office. *Jour.*

Trinidad.

Government. *Jour.*

In Foreign Countries.

Argentine Republic.

Buenos Ayres—Patent Office. *Jour.*
Buenos Ayres—"Revista de Patentes y Marcas." *Jour.*

Austria-Hungary.

Budapest—Patent Office. *Jour.*
Prague—Deutsche Technische Hochschule. *Jour.*
Vienna—"Austrian Trade Journal." *Jour.*
"Der Electro Techniker." *Jour.*
Handelsministerium (from 1898). *All.*

Belgium.

Brussels—Association de la Presse Technique. *Jour.*
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APPENDIX.

NOTE ON DISCONFORMITY.

ALTHOUGH the decisions have gone on the grounds mentioned in the text, *ante*, pp. 64–71, yet under the Act of 1883 another consideration presents itself, namely, the position and interests of members of the public who discover the same additional invention and use it openly without applying for protection.

The monopoly now dates from the application, and nine months are allowed under the Act of 1883 (reduced to six under the Act of 1902) before the complete specification need be lodged. This enables the question of disconformity to be approached from another point of view. Members of the public who are possible rival inventors have an interest in an applicant not being granted a patent for anything he had not substantially invented at the date of his application. On the other hand, the public have a right to a full disclosure of all improved methods of carrying out the invention known to the inventor at the date of the complete specification.[1]

The few months' interval between these times is the source of the difficulty; for an applicant may not have discovered the additional invention or development until, say, five months after his application; meanwhile a rival inventor may discover it, say, one month after the application made by the former inventor. Now, if the additional invention be such that the original applicant can include it in his specification, he can forestall another person who has in fact made the discovery or invention three months earlier. For illustration, suppose a similar case to the Cyanide Case (*ante*, pp. 68, 369), in which the state of public knowledge was such that another person might independently hit on the additional invention (the use of the dilute solution of cyanide), say, one month after the application and four months before the first applicant discovered it. If that other person does not disclose it the case is covered by the rule (*ante*, p. 49) that an inventor who keeps a discovery secret loses all the benefit of it as against a subsequent patentee; but if he give it to the public, and he and others use it commercially, it is hard on them to have to pay royalties to one who independently invents the improvement some months later, and includes it in his

[1] See *ante*, p. 72.

claims as a "fair development" of something described in his earlier provisional.

The interests of the public and rival inventors were recognized in the early case of *Crossley* v. *Beverley* (9 Ba. & Cr. 63), in which the rule of full disclosure was first laid down. Lord *Tenterden*, C.J. (at p. 64), said: "I am at a loss to know for what reason a patentee is allowed time to disclose his invention, unless it be for the purpose of enabling him to bring it to perfection. *If in the intermediate time another person were to discover the improvements for so much of the machine the patent would not be available.*" That case was decided in 1829, at a period when the conflict of interests here discussed could not have arisen, for until 1852 the monopoly only commenced from the sealing of the patent (*ante*, p. 53). From 1852 to 1883 it was in the discretion of the Law Officer to date the patent as of any date not earlier than the application, and not later than that of the actual sealing of the patent, and in that manner protection was afforded to the public.

Under the present Act the only apparent remedy is by opposition to the grant by a rival inventor who has himself invented the additional invention and applied for a patent for it;[1] but no opposition can be raised by another inventor who is actually first in point of time as regards the additional invention, uses it commercially and gives it to the public.

The conclusion to be drawn from the foregoing considerations is that it is in the public interest, since 1883, to apply more strictly against the patentee the rule as to disconformity, and in cases of doubt to require the additional matter to be cut out under sect. 9 of the Act of 1883 as not being "substantially the same" as that which is described in the provisional specification.

Under the third ground of opposition (*ante*, p. 152) the opponent must show not only that the alleged disconformity is something more than a fair development or improvement of what is outlined in the applicant's provisional specification, but that he also invented it and applied for protection after the original application and before the complete was lodged. In making such independent invention the opponent either (1) knew of or invented substantially something included in the applicant's provisional, or (2) arrived at his invention by paths of experiment and research other than those described in the applicant's provisional.

Consider the former case first. The opponent may have devised the same invention as the applicant, but before him, and neglected to apply for a patent so that the applicant secured priority; or he may, in fact, have devised the invention after the applicant and by reason of quicker working arrived at the addition constituting the alleged disconformity before the original applicant did. In either case he is simply a later inventor.

But the case assumes quite a different aspect if the opponent

[1] 51 & 52 Vict. c. 50, sect. 4, *ante*, pp. 152, 489.

can prove that he arrived at the invention alleged as constituting the disconformity by some course of research apart from that covered by the applicant's provisional specification. Such a case is clearly contemplated by the Act. The question at once arises whether this does not afford the inventor a guide by which the risk of disconformity may be avoided. Can it be said that an invention *independently arrived at is not such a large step in advance* as to constitute a further distinct invention?

Suppose the test be applied to cases of the class of *Nuttall* v. *Hargreaves* (*ante*, p. 334), and *Cera Light Co.* v. *Dobbie* (*ante*, p. 71), in which the novelty of the invention lay entirely in the additional matter. In such the test is obviously satisfied, for others, knowing of the anticipations, *could* have made the additional inventions as well as the patentees.

Another class of cases are those like *The Castner-Kellner Alkali Co.* v. *Commercial Development Corp.* (*ante*, p. 436), in which the provisional has a comparatively narrow ambit owing to the existence of other somewhat similar inventions. The method introduced there as a "modification," and constituting the disconformity might have been independently invented or developed from some of the similar inventions or methods known at the date of the application.

On the other hand, where, owing to the novel principle or arrangement employed, the provisional has a wider ambit, as in *Woodward* v. *Sansum* (*ante*, p. 300), in which the alleged disconformity consisted in alteration of the relative action of the parts, one cannot see how an independent inventor could devise the alleged disconform device without at the same time devising the arrangement shown in the provisional, or at least the principle of it.

In order to aid the inventor to decide whether to include a certain improvement or make it the subject of a separate application it may be useful to apply the test here suggested. If, considering the state of public knowledge at the date of the provisional, it be possible for one to devise or invent the additional invention without knowing of or inventing what is described in the provisional, it will be safer to make a separate application for the improvement.

This test appears to be satisfied in all the reported cases in the House of Lords and Court of Appeal with the following exceptions:—

In *Gaulard & Gibbs' Patent*, in the Court of Appeal, disconformity was found under circumstances (*ante*, p. 3) in which this test would fail; but the House of Lords did not approve of the finding on that issue.

In *Lane Fox* v. *Kensington, &c.* (*ante*, p. 349), the Court of Appeal followed their own decision in the case of *Gaulard & Gibbs' Patent*, but found the patent invalid on other grounds.

In *Cassel, &c.* v. *Cyanide* the Court of Appeal held the patent to be invalid on another ground, *viz.* want of novelty in another claim. *Ante*, p. 369.

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