United States District Court,
E.D. Kentucky.

MAS-HAMILTON GROUP,
Plaintiff.
v.
LaGARD, INC,
Defendant.

No. CIV. A. 94-349

March 5, 1997.

Competitor brought action against patentees, seeking declaratory judgment that it did not infringe patent for electronic combination lock. Patentees counterclaimed, alleging infringement. Following bench trial, the District Court, Forester, J., held that: (1) incorrect inventorship did not render patent invalid; (2) patent was neither invented by another nor derived from another; (3) patent was not invalid under on-sale or public use bar; (4) patent satisfied best mode, enablement, and definiteness requirements; (5) patent was not invalid based on anticipation or obviousness; (6) as construed by court, patent was not literally infringed; and (7) patent was not infringed under doctrine of equivalents.

Ordered accordingly.

Cited.

Denise H. McClelland, Frost & Jacobs, Lexington, KY, David E. Schmit, Scott T. Piering, Rita Mirma, Frost & Jacobs, LLP, Cincinnati, OH, for Plaintiff.

Gregory P. Parsons, Stites & Harbison, Lexington, KY, Michael D. Harris, Guy Porter Smith, Christopher Darrow, Poms, Smith, Lande & Rose, Los Angeles, CA, for Defendant.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FORESTER**, District Judge.**

I. INTRODUCTION

This action was tried before the Court, beginning on February 4, 1997, and concluding on February 10, 1997. This matter is now before the Court for entry of Findings of Fact and Conclusions of Law. Having considered the evidence introduced at trial, the parties' Proposed Findings of Fact and Conclusions of Law and objections thereto, and the applicable law, the Court hereby makes the following Findings of Fact and Conclusions of Law.

II. FACTS

1. Plaintiff, Mas-Hamilton Group ("Mas-Hamilton"), is a Kentucky corporation having its principal place of business in Lexington, Kentucky. The principal shareholders of Mas-Hamilton are J.D. Hamilton (President) and his father, Jimmy Hamilton (Chairman). Mas-Hamilton is in the business of designing, manufacturing and selling high security electronic locks and related products.

2. Defendant, LaGard, Inc. ("LaGard") is a California corporation having its principal place of business in Torrance, California. The company is owned primarily by Klaus ("Nick") Gartner (CEO and Chairman), and Peter Phillips (now a consultant to LaGard). Mr. Gartner is a citizen of Germany and Mr. Phillips is a citizen of Great Britain. The president of LaGard is Larry Cutter.

3. LaGard is the owner of U.S. Patent No. 5,307,656 entitled "High Security Electronic Dial Combination Lock" (the " '656 patent"), which issued on May 3, 1994. The patent names as inventors Mr. Gartner, Mr. Cutter and Mr. Phillips. FN1 Gartner, Phillips, and Cutter applied for the patent on December 17, 1990.

FN1. On February 3, 1997, the Patent Office granted the patentee's petition to delete Cutter as a named inventor of the '656 patent.

4. On August 4, 1994, LaGard charged Mas-Hamilton's electronic high security lock with infringement of the '656 patent. PX71. At that time, the only lock sold by Mas-Hamilton was the X-07 lock. The X-07 lock (PX 124) is the only product manufactured or sold by Mas-Hamilton considered by the Court in connection with the infringement charges in this action.

5. In response to that infringement charge, Mas-Hamilton initiated the present action on September 8, 1994, seeking a declaratory judgment that it did not infringe the '656 patent. FN2 After an unsuccessful attempt to dismiss the case on jurisdictional grounds, LaGard counterclaimed for infringement of the '656 patent on July 18, 1995. FN3 In reply to the counterclaim, Mas-Hamilton asserted that the '656 patent was invalid and not infringed.

FN2. Another defendant, Hi-Shear Technology Corporation, was dismissed as a party to this action on July 3, 1995.

FN3. At trial, Defendant dropped its claim of willful infringement.

III. PATENT VALIDITY

[1] 6. A patent issued by the Patent Office is presumed to be valid as to each claim independently of the other claims. 35 U.S.C. s. 282; Jones v. Hardy, 727 F.2d 1524, 1528 (Fed.Cir.1984). In order to rebut this presumption, an accused infringer must establish by clear and convincing evidence the invalidity of each claim asserted to be invalid. Blonder-Tongue Laboratories v. University of Illinois Foundation, 402 U.S. 313, 335, 91 S.Ct. 1434, 28 L.Ed.2d 788 (1971); Shelcore, Inc. v. Durham Industries, Inc., 745 F.2d 621, 625 (Fed.Cir.1984).

[2] 7. It is also presumed that a Government agency, such as the United States Patent and Trademark Office, has properly done its job in examining a patent. American Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1359 (Fed.Cir.1984).

8. LaGard's patent covers an electronic combination lock. While the lock is a good design, inventor Nick Gartner testified at trial that he did not think anything in the lock industry is breakthrough. (Gartner, Trial Transcript Vol. III, afternoon session, p. 70).

9. In mechanical combination locks that existed before electronic locks, rotating the combination dial rotates a series of tumbler wheels and a cam wheel. The dial's back and forth rotation aligns gates or notches on the tumbler wheels. When the user dials the combination properly, all the gates align, which allows a fence to drop into the gates. When the fence drops into the gates, it allows a lever to move toward the cam wheel. The other end of the lever mounts on a withdrawal bolt. When the lever moves toward the cam wheel, a nose at the end of the lever drops into a curved indentation on the cam wheel. Because the shape of the indentation conforms to the nose's shape, the cam wheel holds the lever as the cam wheel rotates. Continued rotation of the cam wheel pulls the lever to the left, which, in turn, withdraws the bolt to allow a safe door to open.

10. Mechanical parts in this type of lock regularly move against each other. For example, the fence and the lever slide along the outside of the tumbler wheels and the cam wheel as one dials the combination. Experts including thieves and spies can listen or feel (or with X-rays see) when the fence and gates line up. With this information, they could defeat the lock.

11. In prior art electronic combination locks, dial rotation generates electronic signals. The signals activate an electric device, such as a solenoid, to release the lever so that the lever can engage the cam wheel. As with mechanical locks, continued rotation of the cam wheel pulls the lever to withdraw the bolt.

12. The invention described and claimed in LaGard's '656 patent combines several important features, which include:

a. The cam wheel turns freely without the bolt-pulling lever contacting the cam wheel until the user enters the proper combination.

b. The lever is secured away from the cam wheel until the user enters the proper combination.

c. Upon entering the proper combination, an internal mechanism positively drives the lever toward the cam wheel.

d. The internal mechanism includes an electro-mechanical driver such as a linear or rotating solenoid.

e. To reduce power needs, that solenoid only causes part of the mechanism to engage the cam wheel. Continued manual rotation of the cam wheel instead of electrical force from the solenoid continues to drive the mechanism, which pulls the lever into the cam wheel.

13. Plaintiff Mas-Hamilton has challenged validity on the following grounds:

a. Incorrect inventorship.

b. Prior invention by another under 35 U.S.C. s. 102(g).

c. Derivation under 35 U.S.C. s. 102(f).

d. The invention was "on sale" more than one year prior to the date of the application for patent under 35 U.S.C. s. 102(b).

e. The invention was in public use more than one year prior to the date of application for patent under 35 U.S.C. s. 102(b).

f. Failure to meet the best mode requirement under 35 U.S.C. s. 112.

g. Lack of enablement under 35 U.S.C. s. 112.

h. Vague or indefinite claims under 35 U.S.C. s. 112.

i. Anticipation/obviousness under 35 U.S.C. s.s. 102 and 103.

A. ***INCORRECT INVENTORSHIP***

14. A person is entitled to a patent unless he did not himself invent the subject matter sought to be patented. 35 U.S.C. s. 102(f); New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878, 883 (Fed.Cir.1992). A patent applicant must also submit an oath "that he believes himself to be the original and first inventor of the ... machine .. for which he solicits a patent". 35 U.S.C. s. 115; Glaxo, Inc. v. Novopharm, Ltd., 52 F.3d 1043, 1051 (Fed.Cir.1995).

16. A patent invalid for improper inventorship may be corrected by the Patent Office or a court:

Whenever through error a person is named in an issued patent as the inventor ... and such error arose without any deceptive intention on his part, the Commissioner [of Patents] may ... with proof of the facts and such other requirements as may be imposed, issue a certificate correcting such error. The error of omitting inventors or naming persons who are not inventors shall not invalidate the patent in which such error occurred if it can be corrected as provided in this section. The court before which such matter is called in question may order correction of the patent on notice and hearing of all parties concerned, and the Commissioner shall issue a certificate accordingly.

35 U.S.C. s. 256.

17. The parties disagree as to which side has the burden of proof on the issue of deceptive intent. Defendant contends that in order to invalidate a patent for misjoinder of inventors, Plaintiff must show deceptive intent by clear and convincing evidence. Plaintiff, however, contends that once a patent challenger shows that a co-inventor has been improperly joined in a patent, the burden shifts to the patent owner to prove that the inventors were improperly named without deceptive intent.

18. Mas-Hamilton asserts that the '656 patent is invalid for incorrect inventorship because it incorrectly

named Larry Cutter as an inventor. Furthermore, the patent application incorrectly stated that Nick Gartner and Peter Phillips were American citizens.

[5] 19. The '656 patent incorrectly names Mr. Cutter as a joint inventor with Mr. Gartner and Mr. Phillips. Cutter's contribution to the lock design came after Gartner and Phillips reduced the invention to practice. Mr. Gartner took a reduced-to-practice prototype to Mosler in November 1989, but Cutter did not become a LaGard employee until January 1990. Cutter made suggestions for prototypes for LaGard to submit to Mosler later in 1990. Gartner incorrectly considered that those activities made Cutter a joint inventor.

20. On September 30, 1996, LaGard filed a petition to correct inventorship with the Patent Office. LaGard's petition complied with the Patent Office's requirement set forth in 37 C.F.R. s. 1.48(a)(1) inasmuch as it contained "a statement of facts verified by the original named inventor or inventors." Inventors Gartner and Phillips and mistaken inventor Cutter submitted declarations with the petition showing that through error Cutter is named in the '656 patent as the inventor, and that the error arose without any deceptive intention on his part.

21. LaGard's petition to correct inventorship also informed the Patent Office about the errors in Gartner's and Phillips' citizenship.

22. On February 3, 1997, the Patent Office granted LaGard's petition to correct inventorship, finding that the mistake in inventorship resulted from error without any deceptive intent. DX 115.

23. Regardless of which side has the burden of proof on the issue of deceptive intent, the Court is satisfied from the testimony and evidence presented at trial that the errors in citizenship on the patent application and the incorrect naming of Cutter as an inventor were the result of inadvertence, and were not errors made with deceptive intent.

24. The Court thus finds that the '656 patent is not invalid due to incorrect inventorship.

B. *INVENTION BY ANOTHER*

[6] 25. A person has no right to a patent for something which was invented by someone else. In Re Bergy, 596 F.2d 952, 960 (C.C.P.A.1979). A patent is invalid if its subject matter was first invented by another.

26. 35 U.S.C. s. 102(g) provides:

A person shall be entitled to a patent unless-

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed or concealed it. In determining priority of invention, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

[7] [8] [9] 27. Priority of invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice. Mahurkar v.. C.R. Bard, Inc., 79 F.3d 1572, 1577 (Fed.Cir.1996),

quoting Price v. Symsek, 988 F.2d 1187, 1190 (Fed.Cir.1993). The term "conception" means the complete performance of the mental part of the inventive act. Reduction to practice occurs when the invention works for its intended purpose.

[10] 28. For its prior invention defense, Mas-Hamilton asserts that Clayton Miller and Michael Harvey invented the X-07 lock before LaGard's inventors invented the lock described and claimed in the '656 patent.

29. Nick Gartner and Peter Phillips have been involved in the lock industry for many years. Each is at least one named inventor of thirty or more patents relating to locking mechanisms. Gartner's and Phillips' patents have been licensed to many lock manufacturers and distributors, including Miller. Gartner received commendations from the Navy Department and the FBI for his work in developing a lock for use aboard Trident submarines to protect against a "knowledgeable psychotic."

30. In November 1989, George Herrmann and Gartner took a working prototype lock to Mosler, Inc., in Hamilton, Ohio. Mr. Herrmann is now and in 1989 was an independent sales representative selling LaGard products. There, Herrmann and Gartner showed the lock to Mosler engineers in order to interest Mosler in manufacturing the lock under license.

31. The lock that LaGard took to Mosler did not have a combination. Instead, closing a switch sent an electronic signal to the solenoid. FN4 When the signal went to the solenoid, manipulation of the dial allowed the lock mechanism to unlock the lock. The design and operation of more complex electronic combinations were known then and were not important features of the invention. At the time of LaGard's invention, electronic, multinumber combination circuits were known. U.S. Patent No. 4,745,784 describes such a circuit, and the '656 patent refers to that patent as an example of such well known circuits.

FN4. This lock shown to Mosler was powered by a 9 volt battery.

32. LaGard therefore reduced the '656 lock to practice by November 1989. Obviously, the lock was conceived prior to LaGard reducing it to practice. Even if LaGard's November 1989 prototype is not a reduction to practice, at a minimum that prototype is evidence of conception on that date. LaGard built its first prototype lock with a multiple number combination in August through September 1990. That prototype was part of a contract to supply a few locks to Mosler so that Mosler could evaluate the lock for a possible license. The locks that LaGard sent to Mosler were a reduction to practice. LaGard was diligent from November 1989 until it completed the prototypes for Mosler.

33. Clayton Miller, one of the inventors of the X-07 lock, is a principal of Lockmasters, a company that sells locks and lock parts and tools to aftermarket customers such as locksmiths.Miller has been involved in the lock industry all his life and has some patents of his own. Lockmasters is LaGard's exclusive aftermarket distributor. As LaGard's distributor, Miller had access to LaGard's offices and factory, although there is no direct evidence that Miller had access to the '656 lock.

34. Michael Harvey, one of the inventors of the X-07 lock, is an electronic engineer who has developed devices used in the Apollo space program as well as a digitally stabilized site used on the F-18. In the early 1980s, Gartner and LaGard contracted Harvey to develop an autodialer. Harvey last did consulting work for LaGard in 1982.

35. In the mid-1980s, Clayton Miller was approached by General Services Administration to do a study on entry techniques on high-security combination locks for safes. Miller, who had a long-time relationship with Gartner, was aware of the work that LaGard had done with autodialers, so he contacted Gartner for more information. Gartner gave Miller Harvey's phone number. Miller and Harvey formed C & M Technology and developed an automanipulator, a device which uses autodialing techniques and acoustic information to detect mechanical lock positions, allowing it to open locks more rapidly than an autodialer alone. Because the automanipulator provided a method for opening mechanical-type combination locks, Harvey and Miller determined that there was a need for a new type of next generation high security combination lock. Harvey and Miller then started working on the X-07 lock in about 1986.

36. The X-07 lock was reduced to practice at the latest on April 26, 1990 when Mr. Harvey successfully demonstrated a working prototype to those involved in the project.

37. Having heard the evidence and testimony, the Court is of the opinion and finds that the X-07 lock and the '656 patent are two separate inventions developed independently from one another by different inventors. Plaintiff has therefore failed to show by clear and convincing evidence that LaGard's '656 patent was invented by another. FN5

FN5. See the Court's findings on infringement, infra.

C. *DERIVATION*

[11] [12] 38. Mas-Hamilton alleges that the '656 patent is invalid because LaGard derived its alleged invention from others. Derivation is the taking of the invention of another and patenting it as one's own. Lamb-Weston, Inc. v. McCain Foods, Ltd., 78 F.3d 540, 549 (Fed.Cir.1996) (Newman, J., dissenting). It is irrelevant whether or not that invention is also prior art. *Id*. To invalidate a patent for derivation of invention, it must be demonstrated that the named inventors acquired knowledge of the claimed invention from another, or at least so much of the claimed invention as would have made it obvious to one of ordinary skill in the art. New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878, 883 (Fed.Cir.1992); 35 U.S.C. s. 102(f) ("a person shall be entitled to a patent unless ... he did not himself invent the subject matter sought to be patented").

[13] 39. As previously discussed, having heard the evidence and testimony, the Court is of the opinion and finds that the X-07 lock and the '656 patent are two separate inventions, developed independently from one another. Accordingly, Plaintiff has failed to show by clear and convincing evidence that the '656 patent was derived from another.

D. *ON SALE BAR*

[14] 40. Mas-Hamilton argues that the subject matter of the '656 patent was "on sale" by LaGard more than one year prior to the filing of the patent application on December 17, 1990, thus rendering the patent invalid under Section 102(b). Plaintiff contends that LaGard placed the '656 patent on sale when it took the prototype lock to Mosler in November 1989. An inventor loses his right to a patent if the alleged invention was placed "on sale" in this country more than one year prior to the date of the application for patent. Buildex, Inc. v. Kason Industries, Inc., 849 F.2d 1461, 1462 (Fed.Cir.1988); 35 U.S.C. s. 102(b). The inventor is strictly held to the requirement that he file his patent application within one year of any attempt

to commercialize the invention. *In re* Mahurkar, 71 F.3d 1573, 1577 (Fed.Cir.1995).

[15] [16] [17] 41. An invention may be on sale where there is a definite sale or an offer to sell. Buildex, Inc. v. Kason Industries, Inc., 849 F.2d 1461, 1462 (Fed.Cir.1988). It is not necessary that a sale be consummated for the patent to be invalid; no more than a firm offer to sell may be sufficient. *Id*. A single offer to sell is enough to invalidate the patent whether or not the offer is accepted. A.B. Chance Co. v. RTE Corp., 854 F.2d 1307, 1311 (Fed.Cir.1988). A patent may be invalidated because the alleged invention was previously "on sale" even though there are no commercially marketable products on hand. Barmag Barmer Maschinenfabrik AG v. Murata Mach. Ltd., 731 F.2d 831, 838 (Fed.Cir.1984). The test is whether the person offering the alleged invention thought he had a product which could be and was offered to customers. Paragon Podiatry Laboratory, Inc. v. KLM Laboratories, Inc., 984 F.2d 1182, 1187, n. 5. (Fed.Cir.1993). Such an offer for sale may invalidate the '656 patent even if no details are disclosed. RCA Corp. v. Data General Corp., 887 F.2d 1056, 1060 (Fed.Cir.1989).

[18] [19] 42. In the present case, Mas-Hamilton must prove by clear and convincing evidence that there was a definite sale or offer to sell more than one year before the '656 patent application was filed, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention. Mahurkar v. Impra, Inc., 71 F.3d 1573, 1576 (Fed.Cir.1995). The on sale determination depends on the totality of the circumstances, considered in view of the policies underlying s. 102(b). *Id*. at 1577; Envirotech Corp. v. Westech Engineering, Inc., 904 F.2d 1571, 1574 (Fed.Cir.1990). These policies include: (1) discouraging removal of inventions from the public domain that the public reasonably has come to believe are freely available; (2) encouraging the prompt and widespread disclosure of invention; (3) allowing an inventor a reasonable amount of time following sales activity to determine the potential economic value of a patent; and (4) prohibiting an inventor from commercially exploiting his invention beyond the statutorily prescribed time. *Id*. Foremost among the policies underlying the on-sale bar is the policy of preventing inventors from exploiting the commercial value of their inventions while deferring the beginning of the statutory term. Ferag AG v. Quipp, Inc., 45 F.3d 1562, 1566 (Fed.Cir.1995). The Federal Circuit has stressed that commercialization is the central focus for determining whether the patented invention has been placed "on-sale". Mahurkar v. Impra, Inc., 71 F.3d 1573, 1577 (Fed.Cir.1995).

[20] 43. LaGard asserts that the purpose of the transaction with Mosler was to negotiate and obtain a license for the '656 patent technology. "[A]n assignment or sale of rights in the invention and potential patent rights is not a sale of the invention within the meaning of section 102(b)." Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1267 (Fed.Cir.1986).

44. The testimony heard at trial compels the conclusion that LaGard first visited Mosler in November 1989 for the purpose of convincing Mosler that it had developed a product which would meet the specifications of FF-L-2740. LaGard presented to Mosler a prototype which was essentially the same device described in the '656 patent. It offered to furnish Mosler additional prototypes for presentation to GSA. At no time did LaGard offer to sell the invention to Mosler. It offered to license either (1) the production rights to the invention, or (2) the exclusive right to market the invention to the government. Thus, the totality of the circumstances shows that Plaintiff has failed to establish by clear and convincing evidence that the '656 patent was "on sale" more than one year prior to the filing of the patent application on December 17, 1990.

E. ***PUBLIC USE BAR***

45. Mas-Hamilton argues that the subject matter of the '656 patent was in "public use" when LaGard took a

prototype lock to Mosler more than one year prior to the filing of the patent application, thus rendering the patent invalid under Section 102(b). A patent is invalid if the invention was in public use in this country more than one year prior to the date of application for patent in the United States. 35 U.S.C. s. 102(b).

[21] [22] [23] 46. "Public use" is defined as including any use of the claimed invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor. Lough v. Brunswick Corp., 86 F.3d 1113, 1119 (Fed.Cir.1996); Baxter International Inc. v. Cobe Laboratories, Inc., 88 F.3d 1054, 39 U.S.P.Q.2d 1437, 1440 (Fed.Cir.1996). The public use bar of s. 102(b) requires that (1) the invention was used in public and (2) the use was not primarily experimental in purpose. Allied Colloids, Inc. v. American Cyanamid Co., 64 F.3d 1570, 1574 (Fed.Cir.1995). A product is considered to be in "public use" if the completed product is commercially exploited in any way. Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 622 (Fed.Cir.1985).

[24] 47. The totality of the circumstances must be considered in determining whether a particular event creates a public use bar. U .S. Environmental Products, Inc. v. Westall, 911 F.2d 713, 716 (Fed.Cir.1990); Allied Colloids, Inc. v. American Cyanamid Co., 64 F.3d 1570, 1574 (Fed.Cir.1995). The existence of a public use depends on how the totality of the circumstances of the case comports with the policies underlying the public use bar. Lough v. Brunswick Corp., 86 F.3d 1113, 1122, n. 5 (Fed.Cir.1996). These policies include: (1) discouraging the removal from the public domain, of inventions that the public reasonably has come to believe are freely available; (2) favoring the prompt and widespread disclosure of invention; (3) allowing the inventor a reasonable amount of time following sales activity to determine the potential economic value of a patent; and (4) prohibiting the inventor from commercially exploiting the invention for a period greater than the statutorily prescribed time. *Id*.

[25] 48. Factors to be considered in determining a public use include the nature of the activity that occurred in public, the public access to and knowledge of the public use, whether there was any confidentiality obligation imposed on persons who observed the use, whether progress records or other indicia of experimental activity were kept, whether persons other than the inventor or acting for the inventor conducted experiments, how many tests were conducted, the scale of the tests compared with commercial conditions, the length of the test in comparison with tests of similar products, and whether payment was made for the product of the tests. Allied Colloids, Inc. v. American Cyanamid Co., 64 F.3d 1570, 1574 (Fed.Cir.1995).

[26] 49. The testimony heard at trial compels the conclusion that LaGard visited Mosler in November 1989 for the purpose of convincing Mosler that it had developed a product which would meet the specifications of FF-L-2740. LaGard presented to Mosler a prototype which was essentially the same device described in the '656 patent. It offered to furnish Mosler additional prototypes for presentation to GSA. At no time did LaGard offer to sell the invention to Mosler. It offered to license either (1) the production rights to the invention, or (2) the exclusive right to market the invention to the government. While there was no proof offered that a confidentiality agreement was entered into by and between LaGard and Mosler, the Court is convinced, based on past practices in the industry, and upon the testimony of LaGard representatives, Herrmann and Gartner, and that because of the litigious nature of those engaged in the industry, that the design of the prototype would be kept confidential. This conclusion makes sense in light of the considerable research and expenditure that went into developing the '656 lock. To find otherwise would mean that LaGard was prepared to part with its concept for a mere $10,000, a finding which the Court is unprepared to make based on the evidence and testimony presented at trial. Further, Mosler was not given unlimited, unrestricted use of the '656 patent. Rather, it is clear to the Court that Mosler was only given a limited,

restricted use consistent with LaGard's purpose of interesting Mosler in a license. Therefore, the Plaintiff has failed to establish by clear and convincing evidence that the product was in public use more than one year prior to LaGard filing its patent application.

F. *BEST MODE*

[27] 50. Mas-Hamilton asserts that the '656 patent is invalid for failing to meet the best mode requirement. Under 35 U.S.C. s. 112, a patent specification must set forth the best mode contemplated by the inventor of carrying out his invention. The purpose of the best mode requirement is to restrain inventors from applying for patents while at the same time concealing from the public preferred embodiments of the invention which they have in fact conceived. De George v. Bernier, 768 F.2d 1318, 1324 (Fed.Cir.1985). The best mode requirement is intended to insure that a patent applicant plays "fair and square" with the patent system-it is a requirement that the *quid pro quo* of the patent grant be satisfied-one must not receive the right to exclude others unless at the time of filing he has provided an adequate disclosure of the best mode known to him of carrying out his invention. Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200, 1209-10 (Fed.Cir.1991).

[28] [29] 51. There is a two-part test for determining whether the best mode requirement has been violated: (1) whether, at the time the inventor filed his patent application, he knew of a mode of practicing his claimed invention that he considered to be better than any other; and (2) is the disclosure adequate to enable one skilled in the art to practice the best mode or has the inventor concealed his preferred mode from the public? Chemcast Corp. v. Arco Industries Corp., 913 F.2d 923, 926 (Fed.Cir.1990). Determining whether a patent complies with the best mode requirement involves two underlying factual inquiries: (1) it must be determined whether, at the time the patent application was filed, the inventor had a best mode of practicing the claimed invention; and (2) if the inventor had a best mode of practicing the claimed invention, it must be determined whether the specification of the patent adequately disclosed what the inventor contemplated as the best mode so that those having ordinary skill in the art can practice it. United States Gypsum v. National Gypsum Co., 74 F.3d 1209, 1212 (Fed.Cir.1996).

[30] 52. Plaintiff contends that the '656 patent discloses that the solenoid housing is preferably made from brass. However, if that instruction were followed, Plaintiff argues that the mechanism would not work. One of the models constructed by LaGard before the patent application was filed used a solenoid housing made of brass and iron or steel, and the alleged inventors were aware of that model. Consequently, Plaintiff maintains that the alleged inventors were aware of a better mode of practicing the alleged invention disclosed in the '656 patent. By disclosing an inoperable embodiment, Plaintiff asserts that the alleged inventors concealed the best mode. *See* Chemcast Corp. v. Arco Industries Corp., 913 F.2d 923, 926 (Fed.Cir.1990).

53. Plaintiff also argues that tolerancing (how accurately parts must be made for them to work properly) of the solenoid housing and the lever is critical to proper operation of the '656 lock. Specifically, testimony at trial indicated that the lock shown in the '656 patent's exemplary embodiment would jam because continued rotation of the dial while the detent ball is still engaged with the cam wheel causes the solenoid housing to contact the right side of the housing. There is no disclosure in the '656 patent which describes the necessary and preferred way of building the mechanism, which was known to the alleged inventors before the patent application was filed. Plaintiff contends that this information is critical to practicing the '656 patent lock.

54. There is no disclosure in the '656 patent concerning how long the solenoid should be energized. Plaintiff

contends that this is a very important consideration to enable the solenoid and lock to operate. Prior to filing the '656 patent application, Plaintiff argues that the alleged inventors knew that the solenoid should only be energized for a short, predetermined time, and had determined by trial and error in connection with a prototype that solenoid energization of about three seconds was the practical minimum for activation of the lock. This timing was incorporated in the software associated with a LaGard model before the patent application was filed. Plaintiff insists that this informationis critical to practicing the '656 patent lock. Consequently, the alleged inventors were well aware of this critical and necessary requirement and a better way of practicing the alleged invention, but concealed and failed to disclose it.

55. The testimony heard at trial compels the conclusion that one of ordinary skill in the art would appreciate that the solenoid must contain some magnetic material in order to work properly. Likewise, the lack of detailed tolerancing or solenoid energization timing information in the '656 patent would not prevent one of ordinary skill in the art from practicing the '656 patent. Therefore, the Court finds that Plaintiff has failed to establish by clear and convincing evidence that the '656 patent is invalid for failing to meet the best mode requirement.

G. *ENABLEMENT*

[31] [32] [33] 56. Mas-Hamilton asserts that the '656 patent is invalid for failing to meet the enablement requirement. The specification of a patent must contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same. 35 U.S.C. s. 112. In order to be considered enabling, a patent must give persons of ordinary skill in the relevant art enough information to practice the invention disclosed in the specification without undue experimentation. In re Alton, 76 F.3d 1168, 1172, n. 5 (Fed.Cir.1996). A patent is invalid if a person skilled in the pertinent art, using the knowledge available to that person, and the disclosure in the patent document, could not make and use the invention without undue experimentation. Northern Telecom, Inc. v. Datapoint, Corp., 908 F.2d 931, 941 (Fed.Cir.1990). The purpose of this requirement is to insure that the inventor provides sufficient information about the claimed invention. Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1571 (Fed.Cir.1991). It is not sufficient that a person following the disclosure might obtain the results set forth in the claims; it must invariably happen. Gubelmann v. Gang, 56 C.C.P.A. 1013, 408 F.2d 758, 766 (C.C.P.A.1969).

[34] 57. Plaintiff argued at trial that the '656 patent provides insufficient information concerning solenoid timing, construction of the solenoid housing, and relative tolerancing of the solenoid housing and lever in order to enable a person of ordinary skill in the art to build a working lock mechanism.

58. Having heard the testimony at trial, the Court finds that the information contained in the '656 patent would allow one of ordinary skill in the art to practice the '656 patent. Thus, Plaintiff has failed to establish by clear and convincing evidence that the '656 patent is invalid for failing to meet the enablement requirement.

H. *INDEFINITENESS*

[35] 59. Mas-Hamilton asserts that the claims at issue are invalid because they are indefinite as written or as asserted by LaGard. Patent claims must particularly point out and distinctly claim the subject matter which the patentee regards as his invention. 35 U.S.C. s. 112. A claim is invalid for failing to meet this requirement if those in the relevant art would not understand what is being claimed in the patent. Amgen,

Inc. v. Chugai Pharmaceutical Co. Ltd., 927 F.2d 1200, 1217 (Fed.Cir.1991). Thus, the requirement is that the language of the claims must make it clear what subject matter they encompass. PPG Industries, Inc. v. Guardian Industries Corp., 75 F.3d 1558, 1562 (Fed.Cir.1996). The statute sets forth a requirement for precision and definiteness of claim language. *Id*.

[36] 60. The Patent Office understood the terms used in the '656 patent claims. There is a "heavy presumption against [Mas-Hamilton] in arguing that the patents and claims do not comply with 35 U.S.C. s. 112 where the Examiner reviewed the adequacy of the descriptions and found the patent descriptions to be definite and allowed the patents thereafter." Water Tech. Corp. v. Calco Ltd., 658 F.Supp. 961, 972 (N.D.Ill.1986), *aff'd in part, rev'd in part,* 850 F.2d 660 (Fed.Cir.), *cert. denied,* 488 U.S. 968, 109 S.Ct. 498, 102 L.Ed.2d 534 (1988).

[37] 61. Based on the evidence and testimony presented at trial, the Court finds that the '656 patent claims make clear what subject matter is covered and encompassed in the patent. Plaintiff has therefore failed to establish by clear and convincing evidence that the '656 patent is invalid on grounds of indefiniteness.

I. ***ANTICIPATION/OBVIOUSNESS***

[38] 62. A patent may be found invalid based upon various types of prior art. 35 U.S.C. s. 102. A patent may also be invalid if the differences between the subject matter patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. 35 U.S.C. s. 103.

63. Plaintiff argues that according to LaGard, the primary difference between the alleged invention in the '656 patent and the prior art was the concept of positively moving the lever into contact with the cam wheel only after the proper combination was entered. Plaintiff contends that LaGard admitted that it has in its possession "voluminous" prior art documents showing this concept. However, Plaintiff claims that LaGard failed to produce those documents, in violation of this Court's order. Thus, Plaintiff invites the Court to draw an adverse inference that those documents, if produced, would invalidate the asserted claims of the '656 patent either as an anticipation or as obvious.

64. Having heard the testimony and arguments at trial, the Court finds that there is no evidence that the '656 patent is invalid due to prior art. Further, the Court will draw no adverse inference from LaGard's production of documents, or lack thereof, during discovery. Accordingly, the Court finds that Plaintiff failed to establish by clear and convincing evidence that the '656 patent is invalid due to anticipation or obviousness.

CONCLUSION ON VALIDITY

65. Based on the evidence produced at trial, and for the reasons expressed above, the Court finds that Plaintiff has failed to establish by clear and convincing evidence that the '656 patent is invalid for any reason. Thus, Plaintiff has failed to rebut the presumption that a patent issued by the Patent Office is valid. Accordingly, the Court finds that the '656 patent is valid.

IV. PATENT INFRINGEMENT

A. ***INFRINGEMENT***

[39] 66. The patent statutes provide that whoever, without authority from the patent owner, makes, uses or sells any patented invention within the United States during the term of the patent, infringes the patent. 35 U.S.C. s. 271. Patent infringement is determined by comparing the accused product with the invention set forth in the "claims" of the patent. A patent "claim" is a group of words which defines the boundary of the patent and which determines what the invention is. General Foods Corp. v. Studiengesellschaft Kohle mbH, 972 F.2d 1272, 1274 (Fed.Cir.1992). The claims are the numbered paragraphs which appear at the end of the patent and which are required to particularly point out and distinctly claim the subject matter which the patentee regards as his invention. Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 395-96 (Ct.Cl.1967).

[40] 67. To prevail, LaGard must prove by a preponderance of the evidence that Mas-Hamilton has infringed upon one or more of the claims of the '656 patent. Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1361 (Fed.Cir.1983). The burden always is on LaGard to show infringement. Under Sea Industries, Inc. v. Dacor Corp., 833 F.2d 1551, 1557 (Fed.Cir.1987).

[42] 69. There are two elements of a patent case: (1) construing the patent, and (2) determining whether infringement occurred. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Thus, determining infringement is a two-step process: the first step is to determine the meaning and scope of the patent claims; the second step is to compare the properly construed claim to that which it is asserted to infringe. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995) (*en banc*), *aff'd.,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Infringement may be literal where every limitation in a claim is met in the accused device exactly, or infringement may be proved under the doctrine of equivalents. Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 935 (Fed.Cir.1987) (*en banc*); Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996).

B. *CLAIM CONSTRUCTION*

[44] [45] 71. In interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the patent specification, and the prosecution history of the patent. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996); Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573, 1578 (Fed.Cir.1996). The court must also look to the words of the claims themselves, both asserted and non-asserted, to define the scope of the patented invention. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

[46] [47] 72. In construing a claim, claim terms are given their ordinary and accustomed meaning until examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise. Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995); Gentex Corp. v. Donnelly Corp., 69 F.3d 527, 530 (Fed.Cir.1995). The court must construe the claim language according to the standard of what those words would have meant to one skilled in the art as of the application date of the patent. Wiener v. NEC Electronics, Inc., 102 F.3d 534, 539 (Fed.Cir.1996). Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). It is always necessary to review the specification to determine whether the

inventor has used any terms in a manner inconsistent with their ordinary meaning; the specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

73. Included within an analysis of the prosecution history may be an examination of the prior art cited. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996).

[48] 74. Construction of a patent, including terms of art within its claim, is exclusively within the province of the court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Thus, the construction of patent claims, as well as the meaning and scope of a disputed technical term or terms of art in a patent claim, are questions of law. Applied Materials, Inc. v. Advanced Semiconductor Materials, 98 F.3d 1563, 1572 (Fed.Cir.1996).

75. The claims of the '656 patent contain a number of terms which are disputed in the present action. The Court finds that the claim terms listed below have the following meanings:

a. "Blocking Element" (Claim 1)

[49] 76. In the '656 patent, the blocking element is a cantilever arm formed as an integral part of the lever which blocks movement of the lever.

b. "Combination" (Claims 34, 43)

[50] 77. Claims 34 and 43 of the '656 patent define certain claim elements, particularly the movable link member, the movable element, and the movable projecting element, in terms of their functional operation before and after entry of a "combination". Consequently, the claim term "combination" represents a limitation on the functional definition, since the claims use the word "combination" as part of functional phrases.

78. The '656 patent specification speaks to a combination code. Col. 2, line 48; Col. 4, line 61; Col. 5, line 33; Col. 6, line 40, Col. 7, line 24. The code is entered by entering the proper sequence. Col. 7, line 19. The '656 patent incorporates by reference U.S. Patent No. 4,745,784 for some of the lock details. The '784 patent defines the combination in terms of "a predetermined sequential series of rotations". PX 9, col. 1, lines 19-21. The combination is also defined in terms of a "predetermined, sequential order corresponding to the code". Col. 4, lines 66-68.

[51] 79. The prosecution history of the '656 patent also describes a "combination code". PX 45, p. 111. The prosecution history references a number of prior art "combination" lock patents which require a sequence of letters or numbers to be entered to open the lock, e.g., PX 45, p. 49 (Diesel '702); p. 50 (Lee '114); p.50 (Gartner '667); p.51 (Uyeda '785); p.51 (Yueda '176); p.52 (Gartner '984); p. 172 (Herlong). Prior art, whether or not cited in the specification or the file history, may be used to demonstrate how a disputed term is used by those skilled in the art. McGill, Inc. v. John Zink Co., 736 F.2d 666 (Fed.Cir.1984).

[52] 80. General and technical dictionaries may be relied upon to determine the meaning of technical and other terms. Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1580 (Fed.Cir.1996).

81. According to dictionary definitions, a "combination" is a "sequence of letters or numbers chosen in setting a lock". Thus, the Court finds that as used in the claims of the '656 patent, "combination" means an

ordered sequence of letters or numbers which must be entered to open the lock. This term cannot be construed merely to cover a single switch closure.

c. " Correct Combination" (Claim 3)

[53] 82. The claim term "correct combination" defines the function of the lever moving element moving means and defines when the moving element is activated. Thus, the term defines and limits the function of a particular claim element. This term should be construed to have the same meaning as defined above for "combination", and refers to a particular type of combination which will cause the lock to open. Thus, "correct combination", as used in the '656 patent claims, means the proper ordered sequence of letters or numbers which must be entered to open the lock.

d. "Detent" (Claim 1)

[54] 83. As defined in the '656 specification, a "detent" is a ball comprising a spherical or curved surface 96 which can project, extend or protrude outwardly of the solenoid housing. Col. 6, lines 12-22; Col. 7, lines 31-34; Col. 7, lines 43-46; Col. 7, lines 51-56; Figures 1, 3, 4-7. In the specification, "detent" is not described or illustrated in any way other than as a spherical ball capable of being projected above the surface of the solenoid housing. Thus, this definition is of controlling significance. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed.Cir.1984).

84. In the usual engineering sense, a "detent" is a spring-loaded element that is driven into either a recessed area in another component or a slot or slide. A detent is almost without exception spring-loaded, or a spring-loaded component that goes into a mating hold slot, ridge, or the like. A detent may also be described as a mechanism that slides two pieces of metal together with a spring and ball to lock the pieces of metal together. A tooth on a gear is not considered a "detent".

85. The claims of the '656 patent also define a "detent" in terms of a member movable from one position to another (Claim 1) and where the "detent" protrudes from another member (Claims 8, 9, 14, 21). The claims of the '656 patent also define a "detent" in the conventional sense, as "spring-biased". *See* claims 10, 11, 12, 13, 15, 16, 17, 18. Both asserted and non-asserted claims may be used to define claim terms. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

86. Thus, as used in the '656 patent claims, "detent" means a separate spring-biased element such as a ball, which is movable from one position to another and that goes into a mating hole, slot or ridge in the blocking element and is capable of being driven by the solenoid into a position where it can contact the detent engaging member on the cam.

e. "Detent Engaging Member" (Claim 1)

[55] 87. As used in the claims of the '656 patent, the detent engaging member is a member located on the cam wherein rotation of the dial drives the member against a detent which has been moved to the detented position.

f. "Detented Position" (Claim 1)

[56] 88. In the '656 patent specification, the "detented" or engagement position is defined as the position where the spherical or curved surface detent ball 96 can project, extent or protrude outwardly of the

solenoid housing. Col. 6, lines 16-19.

89. Thus, as used in the '656 patent claims, the "detented position" is the location that the detent extends, projects or protrudes to by the solenoid by entry of the combination so that the detent can be contacted by the detent engaging member on the cam.

g. "*Electromechanical Device* " (Claim 33)

[57] 90. This term is not mentioned in the specification of the '656 patent. The only type of electromechanical device described in the specification is a solenoid. Thus, this term should be construed to be no broader than a solenoid and equivalent structures. Consequently, as used in the '656 patent "electromechanical device" means a device which imparts mechanical movement upon application of an electrical signal, such as a solenoid, to move the link element after entry of the combination.

h. "Electronically Activated" (Claim 3)

[58] 91. This limitation is used to define how the lever moving element is activated to cooperate with the moving means.

i. " Electronically Actuated" (Claim 1)

[59] [60] 92. This claim term defines how the solenoid is operated by entry of a predetermined combination. The term "electronically" has the same meaning as that term is used in Claim 3. The meaning of claim terms must be consistent throughout the patent. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed.Cir.1984).

j. " Electronic Combination Lock" (Claims 3, 34, 35, 38, 39, 43)

[61] 93. The '656 patent specification states that the "invention relates generally to electronic combination locks". Col. 1, lines 6-7. The "electronic dial combination lock" is described as "a dial having divisions to enter a combination code to gain entrance to the secured area .... A circuit contained in the secured region senses the electrical connections and detects when a certain subset of connections has been made corresponding to the lock's combination and initiates an electrical signal within the secured region. The signal may be used, e.g., to operate a solenoid ....". Col. 1, lines 15-31. Throughout the specification, the lock is described in terms of its electronic and combination features, e.g., that the solenoid plunger is actuated "when the correct combination is entered into the printed circuit board and an appropriate signal is produced from an output on the printed circuit board to the coil 108 in the solenoid, as would be known to one skilled in the art". Col. 6, lines 39-43. Consequently, the entire specification of the patent describes the "invention" as part of an "electronic combination lock", not as a separate mechanical mechanism.

94. It is also appropriate to determine whether the term in the preamble serves to define the invention that is claimed or is simply a description of the prior art. Applied Materials Inc. v. Advanced Semiconductor, 98 F.3d 1563, 1573 (Fed.Cir.1996). Here, the patentees used the preamble to define the "invention" itself, not simply to describe prior art.

95. The patentee chose to define its alleged "invention" as an "electronic combination lock", using both the preamble to define the electronic and combination aspects of the lock, as well as the remainder of the claim limitations. Consequently, the preamble forms a limitation of the claim.

[62] 96. Where the claim refers back to the preamble, e.g. by stating "said" [preamble], the preamble phrase becomes a limitation to the claim. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621 (Fed.Cir.1995). The last paragraph of Claim 3 refers to "said combination". The claim language also refers back to electronic activation of the moving element. Claim 34 and the claims dependent on that claim (Claim 35, 38, and 39) refer back to "the combination" of the preamble. The body of Claim 43 similarly refers back to "the combination". Consequently, in all of the claims, if no "combination" is present, there is nothing to describe the function of the mechanical elements, and the claim would not define an operable device. Thus, "electronic combination lock" must be interpreted to form a limitation of each of the claims.

k. " Electronically Operated Lock" (Claims 1, 31)

[63] 97. The entire specification of the '656 patent describes the "invention" in terms of a lock which is electronically operated; no other type of lock is mentioned in the context of the "invention".

98. The description "electronically operated lock" should also be interpreted as a limitation to the claim. In Claim 1, the "invention" is described as being "in an electronically operated lock". Consequently, the alleged "invention" cannot exist apart from the electronically operated lock. Further, the solenoid is described as "electronically actuated". If the lock were not electronic, this claim limitation would be meaningless. Thus, the preamble terms must be limitations to the claim since they are required to give meaning to the claim and properly define the invention. In re Paulsen, 30 F.3d 1475, 1479 (Fed.Cir.1994). Claim 31 also defines the "invention" as "in an electronically operated lock". Thus, both the preamble and the body of this claim are also used to define the subject matter of the claimed "invention". Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995).

l. "Electrically Operable" (Claim 35)

[64] 99. This phrase is only used in Claim 35, and is not referenced in the specification of the patent. The use of this terminology shows an intent to differentiate "electrically" from "electronically".

m. "Engagement Position" (Claim 31)

[65] 100. The specification of the '656 patent uses this term as synonymously with "detented position". *See,* Col. 6, lines 18-19. Thus, "engagement position" means the location that the detent extends, projects or protrudes to by the solenoid by entry of the combination so that the detent can be contacted by the detent engaging member on the cam.

n. "Lever Movement Blocking Element" (Claim 1)

[66] 101. This claim terminology, which is only used in this claim, has the same meaning as "blocking element" defined above. Thus, as used in the claims, "lever movement blocking element" means the cantilever arm which is formed as an integral part of the lever which blocks movement of the lever.

o. "Lever Operating Means" (Claim 1)

[67] 102. This claim element defines a "lever operating means for positively driving said lever toward said cam in response to continued rotation". The use of the word "means" triggers a presumption that the inventor used the term advisedly to invoke the statutory mandate for means-plus-function clauses. York

Prods., Inc. v. Central Tractor Farm & Family, Ctr., 99 F.3d 1568, 1574 (Fed.Cir.1996). LaGard concedes that this claim element is in means-plus-format and therefore subject to the requirements of 35 U.S.C. s. 112 para. 6. *LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion,* p. 8.

103. 35 U.S.C. s. 112 para. 6 provides:

An element in a claim for a combination may be expressed as a means or a step for performing a specified function without the recital of structure, material or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

[68] This is a universal requirement, and applies whether the claim language is being interpreted for purposes of infringement or validity. In re Donaldson Co., Inc. 16 F.3d 1189, 1193 (Fed.Cir.1994) (*en banc*).

[69] 104. "Means-plus-function" language means that the element is defined in terms of a means for performing a particular function. For a means-plus-function limitation to read on an accused device, the accused device must employ means identical or equivalent to the structures, materials or acts described in the patent specification, and the accused device must perform the identical function that is specified in the claims. King Instruments Corp. v. Perego, 65 F.3d 941, 945 (Fed.Cir.1995). Thus, the "means" language in the '656 patent claims which recites an element for performing a particular function does not cover all means for performing the specified function; rather, the claims are strictly confined to structures expressly disclosed in the '656 patent specification and corresponding equivalents. Symbol Technologies, Inc. v. Opticon, 935 F.2d 1569, 1575 (Fed.Cir.1991); Intel Corp. v. U.S.I.T.C., 946 F.2d 821, 841 (Fed.Cir.1991). Consequently, s. 112 para. 6 requires that means-plus-function claims be construed in view of the structure disclosed in the specification of the '656 patent. Alpex Computer Corp. v. Nintendo Co., Ltd., 102 F.3d 1214, 40 U.S.P.Q.2d 1667, 1672 (Fed.Cir.1996).

105. In the lever operating means described in the '656 patent specification, when the solenoid is actuated, the solenoid housing, which is also called a rigid body or element, slides in a channel to positively drive the lever from its disengaged position to a position for engaging the nose part of the lever with a slot on the cam wheel in response to dial rotation after the combination has been entered. When the solenoid is continuously activated after entry of the proper combination, the solenoid housing is driven through a detent ball by rotation of the dial cam to push against the lower end of the cantilever arm causing the lock lever to rotate about its pivot point. Once the protrusion on the cam wheel passes the detent ball (also called a "flag"), the solenoid housing immediately returns to its unactuated position.

106. The function of this means is to "positively drive" (as defined below) the lever toward the cam in response to continued dial rotation after the combination has been entered by means of the described mechanism.

p. "Lever Retaining Means" (Claim 1)

107. This claim element is described as a "lever retaining means for normally holding said lever out of engagement with said cam ....". LaGard concedes that this claim element is in the s. 112 para. 6 means-plus-function format. *LaGard's Reply Re Summary Judgment Motion on Infringement* (DE # 127), p. 12;

LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion (DE # 142), p. 8.

108. In the '656 patent specification, this "means" is described as a lever that is held out of contact with the dial cam by a cantilever arm. The cantilever arm is an integral part of the lever and includes a movable spring-loaded pin contained within a bore.

109. The function of this means is to normally hold the lever out of engagement with the cam during rotation of the dial until after the combination has been entered using the described mechanism.

q. "Lever Moving Element" (Claim 31)

[70] [71] 110. This claim limitation defines a lever moving element "for positively driving said lever toward said cam in response to continued dial rotation after said combination has been entered, whereby said lock is unlocked by rotation of said dial after entry of said combination and said lever is positively manipulated by dial rotation ...". Thus, the lever moving element is defined in terms of an element for performing the described functions. Although this claim element does not use the term "means" it is still in means-plus-function format. Merely because an element does not include the word "means" does not automatically prevent that element from being construed as a means-plus-function element under s. 112 para. 6. Cole v. Kimberly-Clark Corporation, 102 F.3d 524 (Fed.Cir.1996). Whether s. 112 para. 6 applies is to be decided upon an element-by-element basis, based upon the patent and its prosecution history. *Id.*

111. This term is neither used nor defined in the description of the '656 patent. The terminology appears for the first time in the claims where the element is defined in purely functional terms. There is no evidence that a "lever moving element" or "moving element" has a well-understood meaning in the art. *Cf.,* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field).

[72] [73] 112. Statements made during the prosecution relating to structures disclosed in the specification are also relevant to determining the meaning of the means-plus-function limitations of claims. Alpex Computer Corp. v. Nintendo Co., Ltd., 102 F.3d 1214, 40 U.S.P.Q.2d 1667, 1672 (Fed.Cir.1996). Whether the inventor used terminology interchangeably is a factor to be considered in claim construction. Amhil Enterprises Ltd. v. Wawa Inc., 81 F.3d 1554, 1559 (Fed.Cir.1996). The prosecution history of the '656 patent shows that the patent applicants intended to use the terms "means" and "element" interchangeably since many of the claims were amended to change from one term to the other. *See* PX 45, p. 23, (claim 11, "moving means" to "moving element"); p. 129 (claim 1, "means" to "a substantially non-resilient lever moving element"); p. 130 ("claim 4, lever moving means" to "moving element"); p. 130 (claim 5, "lever moving means" to "moving element"); p. 132 (claim 10, "lever moving means" to "lever moving element"); p. 132 (claim 11, "means" to "element"); p. 132 (claim 14, "means" to "a lever controlling element"); p. 133 (claim 16, "maintaining and moving means" to "lever controlling element"); p. 133 (claim 17, "maintaining and moving means" to "lever controlling element"); p. 133 (claim 18, "maintaining and moving means" to "lever controlling element"). According to the applicants, these changes were made to either define over the prior art (PX 45, p. 141), or characterized as only "minor changes" (PX 45, p. 142).

113. The claims of the '656 patent also use the terms "means" and "element" interchangeably. *See, e.g.,* Claims 1, 17, 19, 20 ("lever operating means"); Claim 5 ("lever moving means"); Claims 2, 8, 20, 24, 31 ("lever moving element"); Claims 12, 25 ("lever controlling element"). These terms are all used to describe

the same mechanical structure, and should therefore be construed in the same way under s. 112 para. 6.

114. The legislative history demonstrates Congress' intent that the word "means" need not be used to invoke the means-plus-function interpretation of s. 112 para. 6. *See,* In re Fuetterer, 50 C.C.P.A. 1453, 319 F.2d 259, 264, n. 11 (C.C.P.A.1963) ("all the elements of a combination now will be able to be claimed in terms of what they do as well as in terms of what they are").

115. This demonstrates that in the '656 patent, the term "element" is synonymous with "means". Consequently, "lever moving element" should be treated as the equivalent of "lever operating means" and subject to s. 112 para. 6.

116. This claim element is further described primarily in terms of what it does, i.e., its function, rather than what it is-its structure. All of the terms modifying "element" are phrased in functional language, principally in terms of three functions: (1) positively driving the lever toward the cam in response to continued dial rotation after the combination has been entered; (2) unlocking the lock by rotation of the dial after entry of the combination; and (3) positively manipulating the lever by dial rotation to engage the dial-operated cam only after entry of the combination. Thus, the use of the "element for" format also shows an intent to use the s. 112 para. 6 "means for" style of claiming.

117. In the '656 specification, the lever moving element or means is described in terms of when the solenoid is actuated. The solenoid housing (also called a rigid body or element) slides in a channel to positively drive the lever from its disengaged position to a position for engaging the nose part of the lever with the slot on the cam wheel in response to the dial rotation after the combination has been entered. When the solenoid is activated, after entry of the proper combination, the solenoid housing is driven through a detent ball by rotation of the dial cam to push against the lower end of the cantilever arm, causing the lock lever to rotate about its pivot point. The solenoid immediately returns to its unactuated position when the protrusion on the dial cam passes the detent ball.

r. "Means for Moving the Lever Moving Element" (Claim 3)

118. This claim limitation is admitted by LaGard to be a means-plus-function element subject to s. 112 para. 6. *LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion,* p. 10.

119. The means described in the '656 patent specification corresponding to this claim element comprises a lever moving element which includes in part the solenoid which is electronically activated when the combination has been entered. When the solenoid is actuated, the lever moving element, which is the solenoid housing, is physically moved linearly and the solenoid causes the detent ball to protrude above the surface of the solenoid housing in the path of the protrusion on the outer periphery of the cam wheel. This protrusion engages the detent ball and pushes it and the solenoid housing as the cam wheel is rotated.

120. The function of this means is to move the lever moving element when the stated functional conditions have been met.

s. "Movable Element" (Claim 34)

[74] 121. This claim limitation uses the term "element" which is the equivalent of "means" for the same reasons stated above. The terminology "movable element" has not been shown to have a generally

understood meaning in the art. *Cf.,* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field). This term is neither mentioned nor defined in the specification of the '656 patent. The term finds its first appearance in Claim 34 where it is defined in purely functional terms.

122. The specific words chosen for this element by the patentee show an intent to define the claim language in the s. 112 para. 6 format. The word "element" is modified by "movable", a functional description. The "element" or means is also described principally in terms of its five functions: (1) being disengaged from the driving surface on the cam before entry of the combination; (2) for projecting a sufficient distance; (3) so that movement of the driving surface on the cam moves the movable element which in turn causes the movable link member to be moved; (4) thereby permitting the lever to engage the cam surface; and (5) so that movement of the cam surface moves the lever. The "element" is thus described in terms of what it does, i.e. its function, not in terms of what it is-its mechanical structure-thus bringing the claim limitation within s. 112 para. 6.

123. In the specification of the '656 patent, the movable element or means is described as a spherical ball which is normally positioned below the upper surface of the solenoid housing and out of contact with the dial cam. When the solenoid is actuated, the spherical ball can project, extend or protrude outwardly of the upper surface of the solenoid housing so as to project into the path of a protrusion or boss on the dial cam. Further rotation of the dial cam causes the protrusion or boss to contact the spherical ball and move the solenoid housing linearly. Movement of the solenoid housing causes the lower end of the cantilever arm to be displaced from the recess on the upper surface of the solenoid housing allowing the lever arm to be released, thereby permitting the nose of the lever to engage the cam surface so that further rotation of the dial moves the lever arm to pull the bolt.

t. "Movable Link Element" (Claim 31)

124. This limitation should be construed as a means-plus-function claim element for the same reasons as "movable element"; the term "element" is the equivalent of "means". There is no evidence that a "movable link element" has any commonly understood meaning in the field. *Cf.,* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field). In the '656 patent, the "movable link element" is defined as a spherical or curved surface detent ball 96 which can project, extend, or protrude outwardly of the solenoid housing to a detented or engagement position upon actuation of the solenoid. Col. 6, lines 12-22. Even though this element may be defined in terms of some minimal structure, "the recitation of some structure in a means-plus-function element does not preclude the applicability of s. 112(6)". Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991).

125. In Claim 31, the "movable link element" is defined primarily in terms of its function. The term "movable" modifying "link element" shows an intent to define the term functionally-that the link element is movable, rather than being defined in a particular structural way. The "movable link element" is also defined by the words which follow, principally in terms of seven functions: (1) being movable from a withdrawn position; (2) being movable to an engagement position; (3) being movable in such a way that at least part of the cam engages the movable link element; (4) being positioned substantially at the withdrawn position; (5) being movable to the engagement position only after entry of the combination; (6) wherein the cam contacts and moves the movable link element; and (7) movement of the link element by the cam causes the lever moving element to move the lever.

126. In the specification of the '656 patent, the movable link element is identified as a spherical or curved surface on detent ball 96. In connection with the portion identified as a "movable link element", actuation of the solenoid causes the spherical detent ball to move in a straight line from a first position within the solenoid housing to the detented position where the ball projects, extends or protrudes above the top of the solenoid housing within the path of a boss on the periphery of the dial cam. Movement of the solenoid housing releases the lower end on the cantilever arm which causes the arm to shift position and move the lever into engagement with the dial cam.

u. "Movable Link Member" (Claims 31, 43)

[75] 127. This claim limitation defines a movable link member "for holding the lever out of engagement with the cam surface before entry of a combination and for releasing the lever after entry of the combination." Thus, the movable link member is defined in terms of an element for performing the described functions. As previously noted, merely because an element does not include the word "means" does not prevent that element from being considered as a mean-plus-function element under s. 112para. 6.

128. This term is neither used nor defined in the description of the '656 patent. The terminology appears for the first time in the claims where the element is defined in purely functional terms. There is no evidence that a "movable link member" has a well-understood meaning in the art. *Cf.* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field).

129. The prosecution history demonstrates that the patent applicants used the word "member" and "element" interchangeably, since many of the claims were amended to change from one term to the other. In fact, Claim 43 was expressly amended to change from "movable link element" to "movable link member". PX 45, p. 140, 169, 194. The reason for this change was not for substantive reasons, but simply to "more clearly define the invention". *Id,* p. 169, 194. Consequently, no substantive change was intended by the patent applicants. Other claims were similarly amended to use the terms "element" and "member" interchangeably. *See* PX 45, p. 139, 168-9, 193-4 (Claim 57, "element" to "member"); p. 139, 169, 194, 237 (Claim 58, "element" to "member"); p. 168, 193, 237 (claim 56, "member" to "element"). These amendments, as well, were made to eliminate indefiniteness, and to more clearly define the invention, not for substantive purposes. *Id,* p. 169, 194. This demonstrates the applicants' intention to use the term "member" synonymously with "element". Since "element" has been shown hereinabove to be synonymous with "means", "member" is also synonymous with "means". Thus, while this claim limitation does not use the term "means for", its language is equivalent to means-plus-function format under the principles described above: the use of the term "member for" is synonymous with "means for". Even though this claim limitation may be defined in terms of some minimal structure, the recitation of some structure in a means-plus-function element does not preclude the applicability of s. 112para. 6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991).

130. In these claims, the "movable link member" is defined primarily in terms of its functions. The term "movable" modifying "link member" shows an intent to define the term functionally-that the link member is movable, rather than being defined in a particular structural way. The "movable link member" is also defined by the words which follow, principally in terms of two functions: (1) holding the lever out of engagement; and (2) releasing the lever. This demonstrates a clearly expressed intent to claim in s. 112para. 6 format. Clearly, the applicants did not attempt to claim the "member" in terms of structure, but rather functionally in terms of its two stated functions. Consequently, this claim limitation should be construed

according to s. 112para. 6.

131. In the specification of the '656 patent, the structure disclosed associated with the movable link member comprises a lever held up out of contact with the dial cam by a cantilever arm which is an integral part of the lever and which includes a movable spring-loaded pin contained within a bore. The lower end of the spring-loaded pin normally rests within a recess in the upper surface of the solenoid housing. The solenoid housing (which is also called a rigid body or element) slides in a channel to release the lever from its disengaged position. Consequently, after the combination has been entered, the movable link member releases the lever.

v. "Movable Projecting Element" (Claims 35, 38, 39, 43)

132. These claims (which depend directly or indirectly from Claim 34) refer to "the movable projecting element". Although that element is not expressly defined in Claim 34, LaGard asserts it refers to the "movable element" of independent claim 34. Consequently, the "movable projecting element" should be construed as a means-plus-function element for the same reasons described in connection with the "movable element", and given the same meaning.

***w. "Non-Resilient"* (Claim 3)**

[76] [77] 133. This claim terminology is only used in Claim 3 to describe the lever moving element. During prosecution of the '656 patent, the Examiner rejected a number of the claims on the basis of prior art which showed a lever moving element operated by springs. PX 45, p. 60, 118. To distinguish over that prior art, the '656 patent applicants expressly limited the claim to exclude lever moving elements which were resiliently mounted by incorporating the modifying limitation "non-resilient". PX 45, p. 113, 130, 155, 173, 174, 198, 199. A patentee may not obtain, in an infringement suit, protection of subject matter that was relinquished in order to obtain allowance of other subject matter during prosecution. Modine Mfg. Co. v. U.S. International Trade Commission, 75 F.3d 1545, 1555 (Fed.Cir.1996). Consequently, this term should be interpreted to exclude lever moving elements which are operated resiliently, i.e. by means of springs, since a spring is resilient as LaGard concedes. *LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion* (DE # 142), p. 9.

x. Positively Driving (Claims 1, 31)

134. This claim terminology is used to describe the lever operating means of Claim 1, which is admitted to be a means-plus-function element. The terminology also is used to describe the lever moving element of Claim 31 which has been shown above to also be in the means-plus-function format.

135. The specification of the '656 patent describes the claim term "positively driving" as providing "positive" engagement of the lever with the cam wheel. As described in the specification of the '656 patent, when the proper conditions are met, the solenoid housing shifts linearly to release the spring-biased spring at the lower end of the cantilever arm, thus causing the lever to be pushed into contact with the cam to enable withdrawal of the bolt. Thus, as described and illustrated in the '656 patent, "positive" driving is associated with *pushing* the lever into the cam wheel.

136. During prosecution of the '656 patent application, LaGard expressly disclaimed operation of a lock mechanism that depended on the force of gravity to move the lever into contact with the cam. PX 45, p. 141.

y. "Predetermined Combination" (Claims 1, 31)

[78] 137. This claim term has the same meaning as "combination" and "correct combination" defined above. The claim language also requires that the "predetermined combination" be entered via the dial on the lock.

138. Although this claim term is contained in the introductory portion or preamble of the claim, it represents a claim limitation for the same reasons described above. The body of Claim 1 expressly refers back in each of the claim limitations to "said combination" or "the combination" or "the predetermined combination". Where the claim refers back to the preamble, e.g. by stating "said [preamble]", the preamble phrase becomes a limitation to the claim. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621 (Fed.Cir.1995).

139. Likewise in Claim 31, the term "predetermined combination" is also included in the preamble, and each of the claim limitations which follow refer back to "said combination". Thus, the requirement of a "predetermined combination" is a limitation on the claim. *Id*.

z. "Projecting" (Claims 34, 43)

[79] 140. This claim term describes the operation of the movable element (Claim 34) and the movable projecting element (Claim 43). LaGard identifies these elements in the '656 patent lock with spherical detent ball 96 which is normally positioned below the upper surface of the solenoid housing. When the solenoid is activated, the detent ball projects, extends or protrudes outwardly of the solenoid housing to a detented position. Col. 6, lines 15-20. Thus, as described and illustrated in the '656 patent specification, "projecting" means to be pushed by the solenoid from a position within the solenoid housing to a position where the detent ball protrudes above the upper surface of the solenoid housing.

141. The meaning of the term as used in the '656 patent is consistent with the usual definition of "project". Generally, "project" means to cause to protrude. PX 8. "Protrude" means to thrust forward, to cause to project, or to jut out from the surrounding surface. Id.

142. Thus, as used in the '656 patent claims, "projecting" means that the separate detent is caused to move so as to protrude above the upper surface of the solenoid housing.

aa. "Releasable Means" (Claim 3)

[80] 143. LaGard concedes that the releasable means of Claim 3 is a means-plus-function element subject to s. 112 para. 6. *LaGard's Reply Re Summary Judgment Motion on Infringement* (DE # 127), p. 11; *LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion* (DE # 142), p. 8. LaGard asserts, however, that the word "releasable" is unimportant for claim interpretation. However, no claim term is to be ignored in interpreting a claim; each element is to be considered material and essential.Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 951 (Fed.Cir.1987) (*en banc*).

144. In describing the "releasable means", the '656 patent specification states that the cantilever arm (an integral part of the lever) and detent on the lever (the spring-biased pin at the lower end of the cantilever) releasably maintains the lever in a position disengaged from the cam wheel. *See* '656 patent Abstract. These parts are also described in the specification to releasably maintain the pivotable lever in a position disengaged from the cam wheel. Col. 2, lines 24-26. As shown by the description and drawings of the '656 patent, when the solenoid housing translates linearly, the detent pin is released from the recess on the upper

surface of the solenoid housing. Once the lower end of the cantilever arm is released, there is no mechanical connection between the upper surface of the solenoid housing and the lower end of the cantilever arm. Thus, as used in the '656 patent, "release" has the usual meaning of a mechanical arrangement of parts for holding or freeing a device or mechanism as required, or a setting free from restraint. PX 187, PX 188.

145. As described in the '656 patent specification, the "releasable means" identifies a lever which is held up out of contact with the dial cam by a cantilever arm including at its lower end a movable spring-loaded detent pin within a bore which normally engages a recess in the solenoid housing which retains the detent pin in place. The detent pin, as well as the lower end of the cantilever arm, are releasable from the recess when the solenoid housing moves linearly to cause the lever to engage the dial cam. That is, as the solenoid housing moves linearly, there is no mechanical connection between the lever and the solenoid housing-the lever is set free from the solenoid housing.

146. The function of the releasable means is to maintain, through the operation just described, the lever in a stationary position disengaged from the cam wheel and independent of rotational movement of the cam wheel, yet release the lever at the appropriate time during operation of the lock.

bb. "Release" (Claims 34, 43)

147. In Claims 34 and 43, "release" is used to describe the interaction between the movable link member and the lever, i.e., that the movable link member is moved so as to "release" the lever. This term is to be defined in the same way as described in connection with the releasable means. When the mechanical mechanism operates, the movable link member (the solenoid housing) is moved to free the lever so that there is no longer any mechanical interconnection between the movable link member and the lever.

cc. "Releasing" (Claims 34, 43)

148. This claim term is used to describe the action of the movable link member after the combination has been entered. This term has the same meaning in these claims as "release", i.e., setting free the lever from the solenoid housing.

dd. "Retaining Element" (Claim 31)

149. This element is described in terms of its function: "for holding the lever out of engagement with said cam during rotation of said dial until after said combination has been entered". This claim limitation is distinguishable from the first element of Claim 1 only because the phrase "a retaining element for" has been substituted for "lever retaining means for". Further, the word "element" is the equivalent of the word "means", as described earlier. For the reasons previously described, this claim language is to be construed as a means-plus-function element and subject to s. 112 para. 6. The "element" is described solely by what it does: holding the lever out of engagement with the cam during rotation of the dial-rather than what it is.

150. There is no evidence that a "retaining element" has any commonly understood meaning in this art. *Cf.*, Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field).

151. The phrase "retaining element" is neither defined nor used in the description of the '656 patent specification. This terminology appears for the first time in Claim 31 where it is expressly defined in terms of functional terms, rather than its mechanical structure. The term "retaining" modifying "element" further

reflects an intent to claim the limitation functionally-that is, that the "element" retains or holds the lever out of engagement. Thus, the claim limitation is essentially devoid of mechanical structure, but is defined principally in terms of its functional characteristics.

[81] 152. The phrases "retaining means" and "retaining element" are also used interchangeably in other claims, also manifesting an intent for "element" and "means" to be equivalent. *See* Claims 1, 17, 19, 28 ("retaining means"); Claim 31 ("retaining element"). Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed.Cir.1984). These are all the same mechanical structure, described in equivalent functional language, and therefore should be interpreted the same.

153. In the '656 patent specification, for the part identified as the "retaining element", the lever is held up out of contact with the dial cam by a cantilever arm which is an integral part of the lever and which includes a movable spring-loaded pin contained within a bore which operates to create a force when released rotating the lever about its pivot axis to bring the lock lever out of engagement with the dial cam.

ee. "Solenoid" (Claim 1)

[82] 154. As previously noted, the words of a claim will be given their ordinary meaning unless it appears that the inventor used them differently. Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed.Cir.1993). The '656 patent uses the word "solenoid" in its normal sense to describe a conventional, electrically-operated member which linearly pulls an iron core into a coil. Col. 1, line 30; Col. 1, line 36; Col. 6, lines 43-46. In the '656 patent specification, the solenoid is consistently described in terms of a plunger 98 contained within a spool supporting a coil 108 which actuates the solenoid plunger to move it linearly, with a solenoid housing which can move linearly independently of the solenoid plunger. Col. 2, lines 47, 51, 55, 61; Col. 4, lines 37-38, 46; Col. 5, lines 43, 62, 67; Col. 6, lines 9-57; Col. 7, lines 5, 8, 11, 13-16, 26; Col. 8, line 7; Figs. 3, 5, 6, 7, 9, 10. There is no suggestion in the '656 patent that the patentee intended the term "solenoid" to include anything other than the conventionally described mechanism.

155. Other claims of the '656 patent also define a "solenoid" in terms of a solenoid housing enclosing a plunger. *See, e.g.*, Claims 9, 16. Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed.Cir.1984).

156. The '656 patent thus defines the "solenoid" as a structural element where (1) the solenoid is actuated only as long as power is supplied, then returning automatically to its original position; (2) the motion of the solenoid plunger is linear; and (3) the solenoid housing is movable.

ff. "Substantially Non-resilient Lever Moving Element" (Claim 3)

157. While this claim element does not use the term "means", it defines an "element" for performing specified functions. Thus, under the principles described above, "element for" is equivalent of "means for".

158. During prosecution of the '656 patent, the applicants amended the language "means for moving the lever" to "a substantially non-resilient lever moving element for moving the lever". PX 45, p. 129. The applicants argued that this change was made "to more clearly define the invention" and "to exclude the force of gravity operating on the lever to constitute the means for moving the lever". PX 45, p. 141. This shows that either the applicants considered "means" to be equivalent to "element", or that they considered "element" to define a narrower scope than "means". However, regardless of the change in terminology, the

means-plus-function form of the claim was retained.

159. The terminology "substantially non-resilient lever moving element", "lever moving element", or "moving element" has not been shown to have a generally understood meaning in the art. *Cf.,* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed.Cir.1996) ("detent mechanism" had well-understood meaning in the field). This "moving element" is described in terms of what it does, i.e. its function ("for moving the lever from its disengaged position"), not in terms of its mechanical structure. Even if the element retains minimal structure, this does not prevent it from being interpreted under s. 112 para. 6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991).

160. The phrase "lever moving" which modifies "element" is itself functional, i.e., it defines the "element" in terms of functionally moving a lever.

161. The modifying term "non-resilient" is also functional in nature since it defines the element in terms of its capability. The term "non-resilient" is not used or defined in the '656 patent specification, but appears for the first time in the claims. This language was added to distinguish from prior art which showed resilient, non-rigid element (i.e.springs) which operated to bias the lever into engagement with the cam wheel. PX 45, p. 113, 130, 155, 173-4, 198-9. The applicants further argued that their "invention" was different from the prior art because the prior art did not show a lever moved by a rigid element separate from the lever. PX 45, p. 113. Consequently, as used in the '656 patent claims, a "non-resilient lever moving element" is one which does not utilize a spring.

162. The "element" in this claim is also principally defined in terms of three functions: (1) moving the lever from its disengaged position; (2) for engaging the protrusion of the lever with the cam surface on the cam wheel; and (3) so that the rotation of the cam wheel thereafter in the given direction changes the locked mechanism from the locked condition to the unlocked condition.

163. Other claims in the '656 patent show the patentees' intent to use "means" and "element" interchangeably and therefore equivalently to describe the same parts of the lock. Claims 1, 17, 19, 28, ("lever operating means"); Claim 5 ("lever moving means"); Claims 2, 8, 20, 24, 31 ("lever moving element"); Claims 12, 25 ("lever controlling element"). Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed.Cir.1984). These are all the same mechanical structure, described in equivalent functional language, whether using the equivalent terms "means" or "element".

164. In the '656 patent specification, the substantially non-resilient lever moving element includes a cantilever arm which is an integral part of the lever and contains at its lower end a movable spring-loaded detent pin contained within a bore. The lower end of the pin engages a ramped recess in the solenoid housing. Upon entry of the proper combination and upon activation of the solenoid, the solenoid housing translates linearly to release the detent pin from the recess. This action causes the detent pin to move to a second position which pushes the lever into engagement with the dial cam. As the dial is rotated to withdraw the bolt, the lever and associated lower end of the detent pin slides along the upper surface of the solenoid housing. The lower end of the detent pin stays out of engagement with the recess when the solenoid is de-energized. Once the lever is engaged with the cam, the bolt and related assembly move independently of the solenoid housing. By this time, the solenoid housing has been released and returned to its normal position.

gg. "Withdrawn Position" (Claim 31)

[83] 165. This claim terminology describes the position of the movable link element when it is spaced from the cam. This term is used in the '656 patent specification in various contexts, but always in the same way to describe the condition when the bolt is "withdrawn", Col. 1, lines 32-33; or to describe the condition when "the detent [ball] 96 is unextended or withdrawn", Col. 6, lines 22-23. Thus, the term is used to be synonymous with "unextended", where the spherical detent ball is not projected, extended or protruded outwardly of the solenoid housing. *See* Col. 6, lines 16-19. That is, the withdrawn position is the opposite of the engagement position where the detent ball has projected above the surface of the solenoid housing.

C. *LITERAL INFRINGEMENT*

[84] 166. To establish literal infringement, *every* limitation set forth in a claim must be found in an accused device, *exactly*. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1575 (Fed.Cir.1995); Amhil Enterprises Ltd. v. Wawa Inc., 81 F.3d 1554, 1562 (Fed.Cir.1996) (literal infringement of a claim exists when the properly construed claim reads on the accused device exactly). Where a claim does not read on an accused device *exactly,* there can be no literal infringement. Johnston v. IVAC Corp., 885 F.2d 1574, 1580 (Fed.Cir.1989). A literal patent infringement analysis involves two steps: the proper construction of the asserted claim, and a determination whether the accused product infringes the asserted claim as properly construed. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581-82 (Fed.Cir.1996).

167. There is no literal infringement by the X-07 lock of the '656 patent.

a. Claim 1

[85] 168. The *lever retaining means* element of Claim 1 is in means-plus-function language, and therefore is to be construed under s. 112 para. 6. For a means-plus-function limitation to read on the accused X-07 lock, the X-07 lock element must perform the identical function, and have the same or an equivalent structure as the structure described in the specification corresponding to the claim's means. 35 U.S.C. s. 112 para. 6; Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d 1214, 40 U.S.P.Q.2d 1667, 1672 (Fed.Cir.1996); King Instruments Corp. v. Perego, 65 F.3d 941, 945 (Fed.Cir.1995). Thus, in determining whether a means-plus-function limitation in a claim is met, the sole question is whether the means in the accused device which performs the identical function stated in the claim is the same as or an equivalent of the corresponding structure described in the patent specification as performing that function. Durango Associates, Inc. v. Reflange, Inc., 843 F.2d 1349, 1357 (Fed.Cir.1988). Whether there is infringement under s. 112 para. 6 is a question of fact. Durango Associates, Inc. v. Reflange, Inc., 843 F.2d 1349, 1357 (Fed.Cir.1988); Symbol Technologies, Inc. v. Opticon, Inc., 935 F.2d 1569, 1575 (Fed.Cir.1991).

169. The X-07 lock does not use the same means as described in the '656 patent specification. The '656 patent uses a combination of a rigid cantilever arm integral with the lever and a spring-loaded pin at its lower end; the X-07 lock uses a slide member separate from a lever which slidingly traps a stud on the lever between two opposing surfaces on the slide member.

171. The differences between the lock disclosed in the '656 patent and the X-07 lock are not insubstantial. The mechanical constructions are substantially different and operate mechanically and functionally in a substantially different way. Since this claim limitation is not met *exactly,* there can be no literal infringement.

172. The *lever operating means* is also in s. 112 para. 6 means-plus-function format. The '656 patent uses a vertically protruding detent ball which pushes a solenoid housing in a straight line to release the spring-loaded pin at the lower end of a cantilever arm rigidly attached to the lever. The X-07 lock uses a stepper motor which is momentarily actuated to rotate a partial gear which, through a complex series of intervening rotatable and pivotable cam members, specially-designed intricately shaped cam surfaces, and pins, causes vertical translation of a slide member to move the lever. These two mechanisms are neither the same, nor unsubstantially different. Rather, the X-07 operates functionally in a substantially different way from the '656 patent lock. Since this claim limitation is not met *exactly,* there can be no literal infringement.

173. The '656 patent lock accomplishes its " *positively driving* " function by *pushing* the lever into the cam wheel. In the X-07 lock, the lever is *pulled* into the cam wheel in a substantially different way. Thus, the X-07 lock mechanism is not the same as disclosed in the '656 patent specification, nor is it equivalent, and the function and result are different. Since this claim limitation is not met *exactly,* there can be no literal infringement.

174. The accused X-07 lock does not use a *solenoid* or the equivalent of a solenoid. As defined above in the '656 patent, the solenoid is actuated only as long as power is supplied, and then automatically returns to its original position. The solenoid housing is movable; the motion of the solenoid is linear; and the solenoid requires considerable power. In contrast, the stepper motor used in the X-07 lock is actuated by a short electrical pulse, remains in its second state without application of power, is returned manually to its original state, the stepper motor housing is stationary, and the stepper motor uses rotational, not linear motion. A continuously-operated linear solenoid of the type described in the '656 patent could not be used in the X-07 lock (apart from the obvious mechanical substitution problems) because it uses too much electrical power. Other differences that differentiate a solenoid from a stepper motor are that the former requires considerably larger volume, is more apt to be defeated through impact or application of external magnetic fields, and does not respond to low voltage signals. PX 81, p. 141. The X-07 lock uses a stepper motor to guard against magnetic fields, a purpose not suggested by the '656 patent. The '290 patent, which was found patentable over the '656 patent, utilizes a stepper motor. PX 103. The Kromer patent (PX 173) discloses and claims a rotatable motor, and was also found patentable over the '656 patent. The fact that the accused device was found patentable over the asserted patent demonstrates the substantiality of the differences between the claimed and accused devices. Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1570 (Fed.Cir.1996). Thus, the X-07 lock does not contain a solenoid. Since this claim limitation is not met, there can be no literal infringement.

175. The '656 patent specification describes the *lever movement blocking element* as a cantilever arm integral with the lever. In contrast, the X-07 lock uses a separate slide member which is not an integral part of the lever. The '656 patent blocking member is moved by interaction with a linearly operated solenoid housing. The X-07 slide member is operated through a complex system of gears and pivots. Thus, the X-07 lock does not use the same means disclosed in the '656 patent or its equivalent. Rather, the two mechanisms operate substantially differently. Since this claim limitation is not met *exactly,* there can be no literal infringement.

176. The X-07 lock does not have a " *detent* ". In the '656 patent specification, the detent is a ball comprising a spherical or curved surface which can project, extend or protrude outwardly in the solenoid housing. Generally, a detent is considered to be a spring-loaded mechanism. The tooth on a gear which LaGard identifies as a "detent" cannot be considered within the definition of that term, since it does not project, extend or protrude, and is not spring-biased or spring-loaded in any way. The patented lock detent

ball is a separate element from the solenoid which actuates it and moves it into position. In contrast, the X-07 lock uses a partial gear which is rotated so that each gear tooth momentarily contacts a corresponding one of the gear teeth on the periphery of the cam. Thus, the X-07 lock does not employ a detent as that term is used in the patent, nor its equivalent since the X-07 lock mechanism operates in a substantially different way from that disclosed in the '656 patent. Also, since the "detented position" is defined in the '656 patent as where the ball can "project, extend or protrude outwardly of the solenoid housing ... upon actuation of the solenoid", the X-07 lock has no corresponding part or combination of parts that operate in this manner. Thus, there is no "detented position" in the X-07 lock. Since the X-07 lock lacks a detent, it also lacks a detent engaging member of the type defined in Claim 1, or any equivalent structure. Since this claim limitation is not met *exactly,* there can be no literal infringement.

b. Claim 3

[87] 177. The *releasable means* is a means-plus-function element, subject to s. 112 para. 6. In the '656 patent, the releasable means is described as a cantilever arm integral with the lever containing a spring-loaded detent pin which cooperates at its lower end with a linearly movable solenoid housing. The X-07 lock uses a slide member separate from the lever which slidingly traps a stud on the lever between two opposing surfaces on the slide member. Further, the '656 patent means requires that the lever be released to permit it to engage the cam. In the X-07 lock, no part of the lever or slide member is released; rather, connecting mechanical contact between these parts is maintained. Consequently, the X-07 lock lacks a releasable means. Thus, the mechanisms are substantially different, in construction, function and result. Since this claim limitation is not met *exactly,* there can be no literal infringement.

178. The *substantially non-resilient lever moving element* is also in means-plus-function format subject to '112 para. 6. The '656 patent uses a vertically protruding detent ball which pushes a solenoid housing in a straight line to release the spring-loaded pin at the lower end of a cantilever arm rigidly attached to the lever. The X-07 lock uses a stepper motor which is momentarily actuated to rotate a partial gear which, through a complex series of intervening rotatable and pivotable members and pins, causes vertical translation of a separate slide member to move the lever.

179. The *lever moving means* is a means-plus-function element subject to s. 112 para. 6. The '656 patent uses a vertically protruding detent ball which pushes a solenoid housing in a straight line to release the spring-loaded pin at the lower end of a cantilever arm rigidly attached to the lever. The X-07 lock uses a stepper motor which is momentarily actuated to rotate a partial gear which, through a complex series of intervening rotatable and pivotable members and pins, causes vertical translation of a slide member to move the lever. LaGard appears to identify the "lever moving element" in the '656 patent as the solenoid housing with the slide member in the X-07 lock. While the solenoid housing in the '656 patent might be liberally construed to be "electronically actuated", the X-07 lock slide member clearly is not, and in fact is several mechanical members removed from the stepper motor. Nor does any tooth on the partial gear of the X-07 lock move or contact the slide member, in the same or an equivalent manner as described in the '656 patent. Consequently, the two mechanisms are substantially different in construction, operation and result. The X-07 lock thus lacks a lever moving means as construed in the '656 patent. Since this claim limitation is not met *exactly,* there can be no literal infringement.

c. Claim 31

[88] 180. The X-07 lock does not use the same *lever retaining element* disclosed in the '656 patent or its equivalent. In the '656 patent, the lever retaining element is the integral lever/cantilever arm which includes

a movable spring-loaded pin which operates to create a force to bring the lock lever out of engagement with the dial cam. The X-07 lock uses a one-piece slide member separate from the lever which traps a lever stud between two opposing surfaces and prevents the stud from moving except within the channel formed by the two surfaces. Thus, the two mechanisms are constructed and function substantially differently, with different results. Since this claim limitation is not met *exactly,* there can be no literal infringement.

181. The X-07 lock also does not have the same *lever moving element* disclosed in the '656 patent or its equivalent. The patent uses a linearly sliding solenoid housing to push the lever into the cam wheel through an intermediate detent ball activated by a solenoid. The X-07 lock uses a stepper motor momentarily actuated to rotate a partial gear into an orientation where it meshes with a corresponding gear on the sector gear formed on the periphery of the dial cam. Thereafter, through a complex interconnection of slots, pins, cam surfaces, rotatable members, and a sliding member, the lever is pulled into engagement with the cam. These mechanisms are constructed and operate substantially differently. Further, the X-07 lever is not "positively driven", i.e. pushed, into the cam; rather, it is pulled into the cam. This operation and result, and the mechanical mechanism required to accomplish them, are substantially different from that disclosed in the '656 patent. Since this claim limitation is not met *exactly,* there can be no literal infringement.

182. The X-07 lock does not have the same *movable link element* disclosed in the '656 patent or its equivalent. The '656 patent uses a detent ball actuated by the solenoid to move in a straight line from within the solenoid housing to a detented position where the ball projects, extends or protrudes above the top of the solenoid housing within the path of a boss on the periphery of the dial cam. Movement of the solenoid housing releases the lower end of the cantilever arm which causes the arm to be pushed into engagement with the dial cam. In the X-07 lock, the stepper motor causes the previously described complex series of mechanical parts and operations to pull the lever into engagement with the cam. The construction, function and result of these mechanical mechanisms are substantially different. Without the necessary movable link element, the engagement position and the withdrawn position are not present in the sense those terms are defined in the '656 patent. Since this claim limitation is not met *exactly,* there can be no literal infringement.

d. Claim 33

[89] 183. Since Claim 33 depends from Claim 31, and Claim 31 does not infringe, Claim 33 cannot be infringed. Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed.Cir.1989) ("it is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to be infringed"). Further, since the X-07 lock lacks the necessary link element, it cannot have an electromechanical device for moving that element. Since this claim limitation is not met *exactly,* there can be no literal infringement.

e. Claim 34

[90] 184. The X-07 lock does not have the *movable link member* described in the '656 patent specification or its equivalent. The '656 patent uses a linearly movable solenoid housing and detent ball. The X-07 lock uses a stepper motor which is momentarily actuated to rotate a partial gear which, through the previously described complex series of intervening rotatable and pivotable members and pins, causes vertical translation of a separate slide to pull the lever into contact with the cam. Consequently, the X-07 lock construction, function and result are substantially different from those of the '656 patent. Since this claim limitation is not met *exactly,* there can be no literal infringement.

185. This claim limitation also requires that the lever be *released* after entry of the combination. In the X-07

lock, no part of the lever is released. Rather, the lever stud is retained at all times within the slot of the slide member. Thus, this function is entirely lacking in the X-07 lock. Since this claim limitation is not met *exactly,* there can be no literal infringement.

186. The X-07 lock also lacks the *movable element* described in the '656 patent or its equivalent. The '656 patent employs a movable detent ball and those elements necessary to project that ball. The X-07 lock uses meshing gear teeth, and has no corresponding element which is projected. Further, this claim limitation requires release of the lever. In the X-07 lock, no part of the lever is released after entry of the combination as noted above. Thus, the X-07 uses a substantially different mechanism and functions differently with a different result. Since this claim limitation is not met *exactly,* there can be no literal infringement.

f. Claim 35

187. Since Claim 35 depends from Claim 34 which is not infringed, Claim 35 is not infringed. Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed.Cir.1989). The X-07 lock also lacks the movable projecting element described in the '656 patent or its equivalent. The '656 patent uses a spherical detent ball which is normally positionedbelow the upper surface of the solenoid housing and may be projected, extended or protruded to another position by the solenoid. As already noted, the X-07 lock does not use this type of movable projecting element, nor any similar mechanism. Thus, the mechanisms are substantially different in construction, function and operation. Since this claim limitation is not met *exactly,* there can be no literal infringement.

g. Claims 38, 39

188. Since Claims 38 and 39 depend directly or indirectly from Claim 34 which is not infringed, these claims are not infringed. Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed.Cir.1989). Further, since both of these claims require the *movable projecting element* which is lacking, either exactly or by an equivalent in the X-07 lock, there can be no infringement.

h. Claim 43

189. Claim 43 requires, among other limitations, the same *movable link member* required by Claim 34. This element is not present in the X-07 lock with respect to Claim 43 for the same reasons described hereinabove.

190. The X-07 lock does not have the movable projecting element described in the '656 patent specification or its equivalent for the same reasons stated in connection with Claim 34. Nor is any part of the X-07 lever released, again for the same reasons previously stated. Since this claim limitation is not met, there can be no literal infringement.

CONCLUSION ON LITERAL INFRINGEMENT

191. Since the X-07 lock lacks at least one claim element of each of the asserted claims, there can be no literal infringement. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1539 (Fed.Cir.1991) (failure to meet a single limitation is sufficient to negate infringement of the claim).

D. *INFRINGEMENT BY EQUIVALENTS*

[91] [92] [93] 192. Where literal infringement is not established, infringement may be proved under the doctrine of equivalents. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996). In order to show infringement under the doctrine of equivalents, LaGard has the burden to show no more than an *insubstantial difference* between the claimed invention and the X-07 lock. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1521-2 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996); Graver Tank & Mfg. Co. v. Linde Air Prods., 339 U.S. 605, 70 S.Ct. 854, 94 L.Ed. 1097 (1950); Litton Systems, Inc. v. Honeywell, Inc., 87 F.3d 1559, 1571 (Fed.Cir.1996) (an accused product that does not literally infringe a claim may infringe if it has insubstantial changes from the patented device). The purpose of the doctrine of equivalents is to prevent others from avoiding the patent by merely making unimportant and insubstantial changes and substitutions in the patent. Alpex Computer Corp. v. Nintendo Co., Ltd., 102 F.3d 1214, 40 U.S.P.Q.2d 1667, 1672 (Fed.Cir.1996). However, merely because the accused product performs the same general function to achieve the same result as the required element does not establish their equivalency; the result must be achieved in substantially the same way. Zygo v. Wyko Corp., 79 F.3d 1563, 1569 (Fed.Cir.1996). Thus, an equivalent of a claim limitation cannot substantially alter the manner of performing the claimed function. Dolly, Inc. v. Spalding & Evenflo Co., 16 F.3d 394, 400 (Fed.Cir.1994).

[94] [95] 193. Under the doctrine of equivalents, there can be no infringement as a matter of law if a claim limitation is totally missing from the accused device. General American Transportation Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 771 (Fed.Cir.1996). Further, the doctrine of equivalents is not a license to ignore or erase structural and functional claim limitations on which the public is entitled to rely in avoiding infringement.Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1582 (Fed.Cir.1996). Thus, as demonstrated above, Mas-Hamilton cannot infringe, even under the doctrine of equivalents, those claims for which there is not a corresponding element in the X-07 lock.

[97] 195. Equivalency must be proven with particularized testimony and linking argument as to the insubstantiality of differences for each claim element. Texas Instruments, Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1566 (Fed.Cir.1996), *reaffirming* Lear Siegler, Inc. v. Sealy Mattress Co., 873 F.2d 1422 (Fed.Cir.1989).

[98] 196. The vantage point for assessing the substantiality of differences is one of ordinary skill in the relevant art. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1519 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996). The test is objective, with proof of the substantiality of differences resting on objective evidence. Sofamor Danek Group, Inc. v. DePuy-Motech, Inc., 74 F.3d 1216, 1222 (Fed.Cir.1996).

[99] 197. In determining equivalency, several factors may be considered, including whether the accused infringer obtained its own patent on the accused device; whether the accused infringer has copied the patented product; whether the accused infringer created its own product by independent development; whether persons reasonably skilled in the art would have known of the interchangeability of a part contained in the patent; and whether the accused and claimed invention performed substantially the same function in substantially the same way to yield substantially the same result. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1518-19 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996).

a. The '290 Patent

[100] 198. The fact that the accused X-07 lock was found patentable over the asserted '656 patent demonstrates the substantiality of differences between the claimed and accused devices. Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1570 (Fed.Cir.1996); National Presto Industries, Inc. v. West Bend Co., 76 F.3d 1185, 1192 (Fed.Cir.1996).

199. On January 30, 1996, the '290 patent issued. PX 103. That patent discloses and claims the mechanical mechanism in the X-07 lock. The Patent Examiner of the '290 patent was the same examiner (Lloyd A. Gall) who examined the '656 patent. During the prosecution of the '290 patent application, the Patent Examiner cited the '656 patent and rejected a number of the claims in view of the '656 patent. PX 81, p. 5, 200, 202, 203, 205, 213, 215, 216. However, the '290 patent issued, in spite of the '656 patent, with seventeen claims.

200. At least Claims 1, 2, 5, 6, 7, 10-14, and 16 of the '290 patent cover the mechanical mechanism of the X-07 lock which LaGard asserts is also covered by the claims of the '656 patent. This is strong evidence that the differences between the '656 patent claims and the X-07 lock are substantial, and therefore there is a lack of equivalency. This is also evidence that the claims of the '656 patent cannot be read broadly to include any and all means for positively driving the lever against the cam, but only the limited type of structure disclosed in the '656 patent and equivalents of that structure. Zygo Corp., 79 F.3d at 1570.

b. Lack of Copying

201. There is no evidence that Mas-Hamilton either copied or attempted to copy any part of the '656 patent mechanism. Rather, as previously found by the Court, the evidence shows that Mas-Hamilton independently developed the X-07 lock. Such evidence of independent development is highly relevant in rebuttal to refute any contention by LaGard that the doctrine of equivalents applies because Mas-Hamilton copied, i.e. intentionally appropriated the substance of the claimed invention. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1520 (Fed.Cir.1995) (*en banc*), *cert. granted,* 516 U.S. 1145, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996).

c. Interchangeability

203. Virtually none of the relevant components of the '656 patent lock are interchangeable with those of the X-07 lock. The relevant components of the two mechanical mechanisms are constructed differently and operate on different mechanical principles. The '656 patent mechanism uses a linear solenoid, detent ball, detent pin and cantilever arm. The X-07 uses a stepper motor, intermeshing gears, a slide cam, and a sliding member.

204. There is no evidence that a person of ordinary skill in the art would have considered any of the components in the two mechanisms interchangeable.

d. Function/Way/Result

[102] 205. The determination of insubstantial differences required to show equivalency often turns on whether the accused device performs substantially the same function in substantially the same way to achieve substantially the same result. Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d 1214, 40 U.S.P.Q.2d 1667 (Fed.Cir.1996). However, it is not enough to show equivalency if both devices perform the

same function when it is apparent from the patent drawings that the devices are differently constructed and perform that function in a different way. Engel Industries, Inc. v. Lockformer Co., 96 F.3d 1398, 1405-7 (Fed.Cir.1996). Thus, if the accused device performs a substantially different function *or* performs in a substantially different way *or* obtains a substantially different result, it does not infringe under the doctrine of equivalents. Engel Industries, Inc. v. Lockformer Co., 96 F.3d 1398, 1407 (Fed.Cir.1996).

e. Claim 1

206. As demonstrated above, the elements of Claim 1 at issue here, principally the lever retaining means, the lever operating means and the lever movement blocking element operate in substantially different ways in the '656 patent claim and the X-07 lock. Further, the function of those elements in the context of the lock, as well as the results achieved in terms of the internal manipulation of parts, is also substantially different as previously shown. Consequently, application of the function/way/result test demonstrates that the differences between Claim 1 and the X-07 lock are substantial.

207. The detent in Claim 1, and the elements which LaGard identifies as the equivalent element (meshing gear teeth), also operate in a substantially different way. Further, the functioning and result achieved by these disparate members are also substantially different. Likewise, the elements associated with the detent, including the detent engaging member and the detented position, also function in a substantially different way.

208. The analysis above also demonstrates the substantial differences in the way in which the solenoid and stepper motor function, and the results they achieve. The fact that two patents (the '290 patent and Kromer's) have both been issued by the Patent Office after full consideration of the '656 patent, demonstrates the lack of equivalency of these elements. There is no evidence that a person of ordinary skill in the art would consider a stepper motor the equivalent of the solenoid as those devices are used in their respective lock mechanisms.

f. Claim 3

209. As demonstrated above, the means for moving the lever moving element, releasable means, and the substantially non-resilient lever moving element of Claim 3, operate in a substantially different way than the mechanisms in the X-07 patent. Further, the functions which these elements perform, as reflected in their operation and the results they achieve, are substantially different from the function and the result in the X-07 lock. Consequently, application of the function/way/result test demonstrates that the differences between Claim 3 and the X-07 lock are substantial.

g. Claims 31 and 33

210. As demonstrated above, the lever moving element, movable link element and the retaining element of Claims 31 and 33 operate in substantially different ways in the '656 patent and the X-07 lock. Further, the engagement position and the withdrawn position of the components in the two mechanisms are substantially different. Further, the function and result achieved in the two mechanisms is also substantially different. Consequently, application of the function/way/result test demonstrates that the differences between Claims 31 and 33 and the X-07 lock are substantial.

h. Claims 34, 35, 38, 39

211. As demonstrated above, the movable element, movable link member, movable projecting element and electrically operable projecting element of Claims 34, 35, 38 and 39 operate in a substantially different way from any alleged corresponding parts in the X-07 lock. Further, the function and result achieved by the two mechanisms are also substantially different. The X-07 lock also does not have any mechanism which permits releasing of the lever. Rather, the lever is mechanically retained at all times, such that its operation is substantially different from the '656 patent mechanism. Further, the X-07 lock has no element equivalent to the curved surface of the '656 patent detent. The purpose of these elements, as well as their function and the way in which they operate, are substantially different. Thus, application of the function/way/result test demonstrates that the differences between these claims and the X-07 lock are substantial.

i. Claim 43

212. As demonstrated above, the movable link member, the movable projecting element and their associated projecting and releasing functions of Claim 43 are substantially different in the '656 patent and the X-07 lock. Consequently, application of the function/way/result test to this claim also demonstrates that the differences between Claim 43 and the X-07 lock are substantial.

CONCLUSION ON EOUIVALENTS

213. In view of the above analysis, none of the asserted claims of the '656 patent is infringed by the X-07 lock under the doctrine of equivalents. LaGard has not shown by a preponderance of the evidence and through particularized testimony and linking argument that the differences between the '656 patent claims, as interpreted hereinabove, and the accused X-07 lock are only insubstantial. Rather, the differences are deemed substantial, thereby defeating any claim of infringement under the doctrine of equivalents.

V. INJUNCTIVE RELIEF

214. Since LaGard has not established infringement, there is no basis for injunctive relief against Mas-Hamilton to prevent further infringement since no patent rights have been violated. 35 U.S.C. s. 283. Further, no injunction may issue against Mas-Hamilton to prevent future sales of X-07 locks to or for the government. Trojan, Inc. v. Shat-R-Shield, Inc., 885 F.2d 854, 856-7 (Fed.Cir.1989).

VI. EXCEPTIONAL CASE/ATTORNEYS' FEES AND COSTS

215. A court may award reasonable attorneys' fees to the prevailing party in exceptional cases. 35 U.S.C. s. 285; Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 455; Graco, Inc. v. Binks Mfg. Co., 60 F.3d 785, 794 (Fed.Cir.1995); CMI, Inc. v. Intoximeters, Inc., 866 F.Supp. 342, 348 (W.D.Ky.1994).

216. The Court finds that this case is not an "exceptional case" warranting an award of attorney's fees. Accordingly, each party will bear its own costs and attorneys' fees.

VII. CONCLUSION

217. Accordingly, for the reasons stated above, the Court concludes that Defendant LaGard's '656 patent is valid and that Plaintiff's X-07 lock does not infringe Defendant's '656 patent. Further, because of the Court's determination on the issue of infringement, Defendant LaGard is not entitled to injunctive relief. Finally, the Court concludes that this is not an exceptional case warranting an award of attorneys' fees and costs. An Order and Judgment will be contemporaneously entered in accordance with the foregoing Findings of Fact

and Conclusions of Law.

ORDER AND JUDGMENT

In accordance with the Findings of Fact and Conclusions of Law entered on the same date herewith,

IT IS HEREBY ORDERED and **ADJUDGED** that:

(1) Defendant LaGard's '656 patent is valid;

(2) Plaintiff Mas-Hamilton's X-07 lock does not infringe the '656 patent;

(3) this judgment is final and appealable, and no just cause for delay exists; and

(4) this matter is **STRICKEN** from the active docket.

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