Europäisches Patentamt
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How patents work

An introduction for law students

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Learning goals

The learning goals of this lecture are to understand:

- the different types of intellectual property rights available
- the role of the patent system
- what can (and cannot) be patented
- what rights a patent confers
- who is entitled to apply for and obtain a patent
- what must be disclosed in a patent application
- whether trade secrets can be an alternative to patents
- where a patent application can be filed
- what a patent application looks like
- who the key people are in the patent application procedure
- what the patent application procedure entails
- what can happen after a patent has been granted
- how infringement of a patent is determined
- what defences are available
- how patents can be used as commercial tools

What are intellectual property rights?

There are different types of intellectual property rights:

- Trade marks
- Patents
- Copyright
- Designs (registered and unregistered)
- Trade secrets

Some intellectual property rights in a mobile phone

Trade marks:
- Manufacturer name “Nokia”
- Product number “N95”
- Logos

Patents:
- Data processing methods
- Semiconductor circuits
- Chemical compounds

Copyright:
- Software code
- Instruction manual
- Packaging artwork

Trade secrets:
- ?



Designs (registered and unregistered):
- Form of overall phone shape
- Arrangement of buttons
- Three-dimensional wave form of buttons

What is the role of the patent system?

- Encourage technological innovation
- Promote competition and investment
- Encourage dissemination of information
- Promote technology transfer

What can be patented?

Under the European Patent Convention (EPC), patents are granted for:

- any inventions in all fields of technology (Article 52(1) EPC)
- provided that they are:
  - new (defined in Article 54 EPC)
  - involve an inventive step (defined in Article 56 EPC) and
  - susceptible of industrial application (defined in Article 57 EPC)

What is a “new” invention?

- New at the date of filing the patent application
- New if it does not form part of the “state of the art” (Article 54(1) EPC)
- “State of the art” means everything made available to the public before the filing date of the European patent application (Article 54(2) EPC)
- There must have been no public disclosure of an invention before filing a patent application

So keep it confidential!

- Under the EPC, first to file patent application will be entitled to a patent
- Disclosure:
  - before filing will invalidate the patent application – the invention will have been anticipated
  - means not only in writing but in any way at all
  - can be anywhere in the world – “absolute novelty”
- Keep it confidential – if necessary by using a non-disclosure agreement (NDA)

What cannot be patented? (1)

The following are not considered to be inventions for the purposes of granting European patents:

- Discoveries, scientific theories and mathematical methods (Article 52(2)(a) EPC)
- Aesthetic creations (Article 52(2)(b) EPC)
- Schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers (Article 52(2)(c) EPC)
- Presentations of information (Article 52(2)(d) EPC)

What cannot be patented? (2)

- A patent claim directed solely to an item listed in Article 52(2) EPC will not be considered an invention and therefore will not be patentable, but…

- Applies only if the patent claim relates to that subject-matter or activities "as such" (Article 52(3) EPC)

- A patent claim that includes a mix of both patentable, technical, and excluded, non-technical, subject-matter can be regarded as an invention and may be patented after all

Programs for computers

- Program for a computer “as such” is excluded from patentability (Article 52(2)(c) EPC), but…
- Not excluded from patentability if, when running on a computer, it causes a further “technical effect” going beyond the "normal" physical interaction between the program (software) and the computer (hardware)
- Programs for computers are therefore not automatically excluded from patentability

What cannot be patented? (3)

- Inventions whose commercial exploitation would be contrary to "**ordre public**" or **morality** (Article 53(a) EPC)

- **Plant or animal varieties** or essentially biological processes for the production of plants or animals (Article 53(b) EPC)

- **Methods for treatment** of the human or animal body **by surgery or therapy** and **diagnostic methods** practised on the human or animal body (Article 53(c) and Article 54(4)-(5) EPC)

What rights does a patent confer?

- Right to prevent third parties from commercially exploiting an invention without authorisation
- Not a right to use - instead a patent protects an invention by giving the owner of the patent the right to stop anyone from making or using the invention without the owners' consent
- Rights conferred by a European patent are the same as the rights would be if conferred by a national patent in each contracting state in respect of which it is granted (Article 64 EPC)
- Right to assign or transfer ownership of a patent and to conclude licensing contracts (Articles 71-73 EPC)
- Maximum term of patent protection is 20 years (Article 63 EPC)

Who is entitled to apply for and obtain a patent? (1)

- Application may be filed by any natural or legal person, or any body equivalent to a legal person (Article 58 EPC)

- Application may also be filed by joint applicants
  (Article 59 EPC)

- Application must designate the inventor
  (Article 81 EPC)

Who is entitled to apply for and obtain a patent? (2)

- Right to a European patent belongs to the inventor or successor in title (Article 60(1) EPC)
- If the inventor is an employee, the right to a European patent is determined in accordance with the law of the EPC contracting state in which the employee is mainly employed (Article 60(1) EPC)
- Invention relevant to the employee's normal field of employment will generally be owned by their employer
- Employee may receive additional financial reward - depending on the law of the EPC contracting state concerned
- Inventor will always have the right to be mentioned as such before the EPO (Article 62 EPC)

What must be disclosed in a patent application?

- A detailed description of at least one way of carrying out the invention must be given
- Information disclosed must be sufficiently clear to a person “skilled in the art” (Article 83 EPC) – this is called “sufficiency”
- The information disclosed is published in the patent document so that everyone can benefit from it
- The disclosure of the invention in exchange for patent protection is also known as the “patent bargain”

Can trade secrets be an alternative to patents?

- If the invention is a process (e.g. a process of manufacturing) “trade secrets” may be a viable alternative
- But trade secrets can leak out and, if they do, there is no protection
- Once the invention has been disclosed, it cannot be patented
- In other cases it may be preferable to keep inventing without patenting – simply keeping ahead of competitors by bringing new products onto the market faster than they do

Where can a patent application be filed?

There are different routes to patent protection:

- **National patent offices**
  - National patent valid only in that country
  - Non-nationals can apply for a patent
  - 12 month right of ‘priority’ for international applications
- **European Patent Office (EPO)**
  - A “European patent” is equivalent to national patents in the countries for which it was granted
  - the applicant chooses the countries
  - the cost depends on the number of countries designated
- **Patent Cooperation Treaty (PCT)**
  - Just one initial application for 141 Contracting States
  - After the international phase, the international application leads to multiple national patent examination procedures
  - Costly patenting decisions can be delayed by up to 30-31 months after filing
  - No international patent but an international patent application procedure
  - PCT application can be filed at a national patent office, EPO or WIPO

What does a patent application look like?

A European patent application consists of (Article 78(1) EPC):

- Request for grant
- Description of the invention (Rule 42 EPC) – a summary of prior art, a disclosure of the invention and what the problem it is supposed to solve
- Claims (Articles 69, 84 and Rule 43 EPC) – determine the extent of protection conferred by a European patent
- Drawings (if any) referred to in the description or the claims - the description and drawings are used to interpret the claims
- Abstract (Article 85, Rule 47 EPC) – around 150 words that can be used as a search tool for other patent applications

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(54) **New superconductive compounds of the K2NiF4 structural type having a high transition temperature, and method for fabricating same.**

(57) The superconductive compounds are oxides of the general formula $RE_{2-x}AE_xTM.O_{4-y}$, wherein RE is a rare earth, AE is a member of the group of alkaline earths or a combination of at least two member of that group, and TM is a transition metal, and wherein

Who are the key people in the patent application procedure?

- Patent examiner
- Applicant
- Representative, either:
  - a professional representative who is on a list maintained by the EPO (Article 134(1) EPC), or
  - a legal practitioner entitled to act in patent matters (Article 134(8) EPC)

What is the European patent application procedure?

- Examination on filing and formalities examination
- Search report
- Publication of application and search report
- Substantive examination
- Grant of the patent
- Validation of the patent

What can happen after a European patent has been granted?

- Opposition (Articles 99 - 105 EPC)
- Limitation/revocation (Article 105a – 105c EPC)
- Renewal fees (Article 141 EPC)
- Invalidity proceedings (under national law)
- Infringement proceedings (under national law – see Article 64(3) EPC)

How is infringement of a patent determined? (1)

- Precisely what constitutes ‘infringement’ of a patent may differ in each jurisdiction and will be determined by the courts with reference to the applicable national law

- Typically, courts in European countries have adopted provisions of infringement based on acts that undermine the right of the patent proprietor to prevent third parties not having his consent from direct use of the invention, in particular:

  - from making, offering, putting on the market or using a product which is the subject-matter of the patent, or importing or stocking the product for these purposes

  - from using a process which is the subject-matter of the patent or, when the third party knows, or it is obvious in the circumstances, that the use of the process is prohibited without the consent of the proprietor of the patent, from offering the process for use

  - from offering, putting on the market, using, or importing or stocking for these purposes the product obtained directly by a process which is the subject-matter of the patent

- In addition, courts in European countries have adopted definitions of contributory infringement based acts that undermine the right of the patent proprietor to prevent third parties not having his consent from indirect use of the invention, in particular:

  - from supplying or offering to supply a person, other than a party entitled to exploit the patented invention, with means, relating to an essential element of that invention, for putting it into effect therein, when the third party knows, or it is obvious in the circumstances, that these means are suitable and intended for putting that invention into effect

How is infringement of a patent determined? (2)

- A finding of infringement then depends on whether the features of the alleged infringing device are covered by the claims of the respective patent

- Whether infringement has occurred is to be determined by the courts in each country where the patent is valid and alleged to have been infringed, with reference to the applicable national law

- However, the EPC – Article 69 and the Protocol on Interpretation of Article 69 - provides the courts in each country with guidance on the extent of the protection conferred by a European patent or a European patent application

- The extent of protection may go beyond that which is literally covered by the claims, as interpreted or construed by the court, and may encompass also the *equivalents* to the invention covered by the claims

Which jurisdiction will apply in patent litigation?

Under European Union law, the Brussels Regulation provides that proceedings concerned with registration or validity of patents will occur:

- separately in each country in which the patent has been registered
- regardless of the place of domicile or nationality of the persons being sued

Source: Article 22(4) of Council Regulation (EC) No. 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters

What defences are available?

Defences available when a person is accused of infringement will depend on the different applicable national laws, but typically:

- There is no infringement because the act falls outside the patent claims
- There is no infringement because the act is non-infringing, e.g. the rights conferred by a patent generally do not extend to: (a) acts done privately and for non-commercial purposes; (b) acts done for experimental purposes relating to the subject matter of the patented invention
- There is no infringement because the patent is invalid, i.e. the alleged infringer can take legal action to challenge the validity of the patent
- There is no infringement because the rights conferred by the patent have expired

Note:

- If found invalid, the patent may be cancelled (revoked)
- The losing party must usually pay both parties' costs
- Out of court settlements - including licensing or cross-licensing - may be a viable alternative to patent litigation for both parties

What are unjustified threats?

What constitutes an unjustified threat will depend on the different applicable national laws, but will typically involve:

- a person, whether or not the owner of a patent, who makes unjustified threats that patent infringement proceedings will be initiated
- a person aggrieved by the unjustified threats of patent infringement proceedings then claiming damages against the person making the threats

However, typically under the applicable national law, a person is not considered to have threaten another person with patent infringement proceedings merely by:

- providing factual information about the patent
- making enquiries of the other person for the sole purpose of discovering whether, or by whom, the patent has been infringed
- making an assertion about the existence of the patent for the purpose of any enquiries so made

What remedies are available?

Remedies available will depend on the different applicable national laws, but typically include:

- Interim or preliminary injunctions
- Final or permanent injunctions
- Disposal outside channels of commerce
- Damages

How can patents be used as commercial tools?

- Commercialisation and exploitation
- Blocking patents
- Licensing or cross-licensing
- On-line databases:
  - Often free to use and valuable commercial tools
  - why not go online and try a search?

http://www.espacenet.com/

Summing up this lecture

- This lecture introduced you to the different types of intellectual property rights available and provided some more detailed knowledge of patents in particular

- However, the aim of the lecture was not to make you an expert in intellectual property law

- Instead, the lecture was intended as an introductory overview to provide a basic level of understanding and raise awareness

- So anyone considering filing a patent application, concerned that they might be infringing a patent, or is the owner of a patent concerned that their patent might be being infringed, should seek professional advice from a qualified patent attorney or a legal practitioner entitled to act in patent matters