1
Terminology

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For those who have had little or no prior exposure to the field, this chapter serves as a primer to the world of inventions and patents and introduces the topics that will be discussed in more depth in further chapters.

1.1
The Terms of Patenting

1.1.1
The Patent

Territoriality

A patent is a legal document that specifies a technical invention. Patents are territorial and relate to a specific country and the same invention can therefore be patented in a number of countries. Usually, these patents have the same owner, and are related to one another by their process of application; if that is the case, they form a patent family.

It is possible, however, for different owners to have rights to the same invention in different countries. This situation can arise if different applicants apply for patents on the same or similar inventions in different countries, or if the original inventor or applicant sells the patent rights for each country individually.

Exclusionary Rights

The owner of the patent is given certain rights to exclude others from making commercial use of an invention; specifically the right to exclude others from commercially using, selling, offering and keeping in stock an invention as specified in the claim section of the granted patent, in the particular country of the patent. Since the law governing patent protection differs across geographical jurisdictions, the scope of this protection varies for patents within the same family.

Similar exclusionary rights can be obtained on designs, and in certain cases on names used in the context of a business, termed trademarks. There are important

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differences between the protection of patents on technical inventions, also termed "utility patents", which are the main subject of this book, and design patents and trademarks, which are discussed in Chapter 5. Utility patents have a maximum term of 20 years from the day of filing the application; other forms of intellectual property (IP) have different terms.

Reward for Disclosure

The patentee is awarded the right to exclude competitors as a reward for the public disclosure of an innovation, intended to stimulate scientific development. To meet this criterion, however the patent must describe the invention in a way that enables others to reproduce the invention. US law is especially stringent in its demand for a "best mode" disclosure, non-fulfilment of which may lead to invalidation of the patent.

First-to-Apply

More than one inventor may independently make an invention. Europe and most other nations, with the exception of the USA, grant the patent right to the applicant who first files an application on the invention in their country. In the USA, the right to patent is granted to whomever first made the invention regardless of the time of filing. Efforts are ongoing to bring US law in line with the rest of the world, but it is not clear whether this particular harmonisation will be successful.

1.1.2 The Process of Patenting

Drafting

Patenting an invention is a formal process resembling a dialogue between the applicant, who submits a patent application on an invention, and the national or regional Patent Office, which decides whether and to what extent the invention is patentable.

The process of drafting entails the collection of all material describing the invention, as well as publications that describe the technical background of the invention. A skilled professional, most likely a patent attorney or in-house patent agent, then drafts a patent application specifying the invention in all necessary detail, and claiming the essential principle and important embodiments that are to be protected.

Application

The first formal step in achieving patent protection is the submission of a patent application. This application alone confers only marginal protection to its owner, and most countries grant provisional protection rights to the applicant after the application is made public, usually after 18 months.

An applicant may choose to send several patent applications originating from the same invention to different individual countries. Alternatively, an application can be submitted to trans-national offices acting on behalf of countries bound together by an international treaty. Examples of such transnational offices are the European Patent Office (EPO) and the office of the World Intellectual Property Organisation (WIPO). In most cases these pathways only facilitate the patenting process, and the applicant ultimately ends up with a family of national patents.

A "world patent" does not exist, but an application under the Patent Cooperation Treaty (PCT) allows the applicant to submit applications to a very large number of countries in a single filing. The applicant will send a "PCT filing" to a national or regional office, either as a first or as a follow-up filing. The applicant will then have up to 30 months after the initial first filing to decide in which other countries of the PCT member states an application should be submitted. Commercially, the most notable exception to PCT membership is Taiwan, which has instead bilateral treaties with most countries to the same effect.

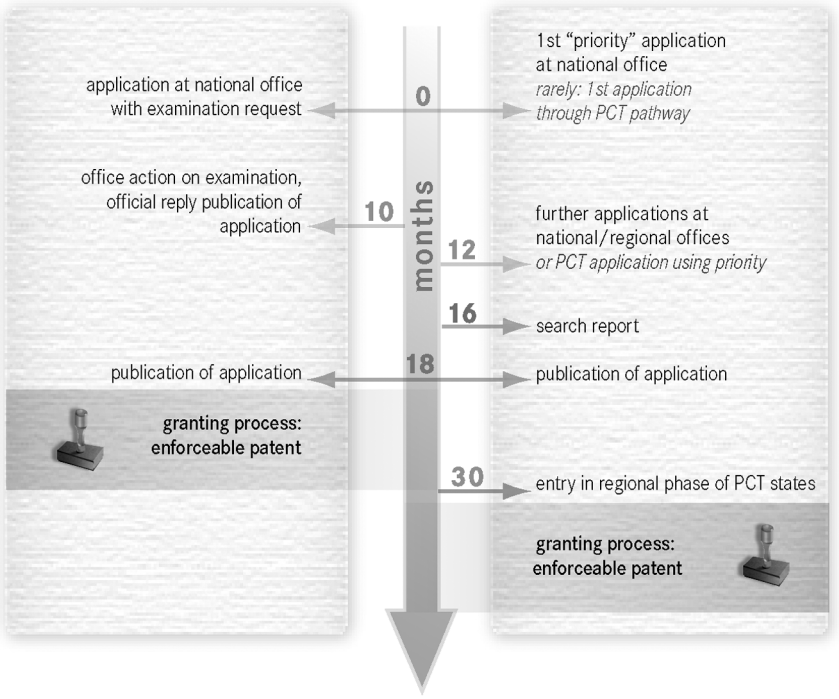


Fig. 1.1 Patent process: The national (left side) and the PCT pathway (right side) differ in how quickly an enforceable patent is issued. Many applicants choose the PCT pathway to file in many countries with one single application, because costs are deferred until later in the process.

Priority

Priority is a technical term referring to a ranking or "time-stamping" of inventions by calendar date. The earlier an invention has first been registered as a patent application at a Patent Office, the earlier its "priority". Of two applications that describe a similar invention, only the application with the earlier priority can give rise to a patent in any particular country.

A priority application can also be used as the basis for a second, extended application that encompasses its content. The content is then treated as if it had been submitted at the earlier priority date. The submission of an application therefore confers the right to be considered prior to others, and this right may extend to other applications.

This concept of a "priority right" was initially applied to individual offices, but today, most offices work together under the terms of an international treaty, the Paris Convention, in recognizing applications from other offices and priority rights can be used almost worldwide. The applicant may submit an application for a patent in only one country, and wait up to twelve months until submitting further applications relating to the same invention in many more countries. These later applications benefit from their claim to priority of the first application.

A follow-on application is granted a 20-year term, and an important result of submitting such applications using the priority of an initial filing is the effective prolongation of the invention's protection to 21 years. Whilst in fast-moving technologies this may have little importance, in technologies with long lifetimes, this mechanism may be very relevant to the total balance sheet of the patent.

Prior Art

Publications made before the priority date, which describe the elements and technology of the invention, form the "Prior Art". Publication does not have to be made in writing; public disclosure in a speech, or presentation, or over the internet also can form part of the prior art, though written disclosures are easier to track and date.

The existence of prior art describing an invention or elements of an invention, is an important weapon in contesting a patent, and a lot of prior art case law has therefore been compiled. Selling an invention before submitting a patent application, for instance, will in most cases make the invention part of the prior art, and hence unpatentable, even if the invention was not readily seen from the sold object. As always, however, what constitutes publication and what exact effect this has on patentability, is regulated nationally and may differ between countries.

Search Report

Many patent offices conduct a search of previous patent applications to identify the extent to which the claimed invention has been anticipated in the state of the art, or indeed, which documents can be found to come closest to the invention. The applicant thus receives official notification by a competent patent office as to

which publications, if any, may interfere with the patentability of the invention. Decisions as to how to proceed with research and patenting activities may be influenced by this report. This search report is usually published with the application 18 months after the priority date.

Examination

Depending on the country, patent applications may be subject to mandatory examination, or may remain at the application state until the applicant or another interested party requests examination. The USPTO (United States Patent and Trademark Office) examines applications automatically without a need for further request. In many other jurisdictions however, the request for examination is a separate step in the procedure and can be delayed until a search report by the respective patent office has been issued. This gives the applicant a chance to amend or abandon the application in light of the findings of the search report.

For applications being processed by the European Patent Office, requesting the examination is mandatory within the first two years after application. Although there is a requirement to explicitly request examination before the EPO, the application form already contains this official request. The applicant must remember to pay the examination fee however. In Japan examination is mandatory three years after application and the German office requires no mandatory examination for the first seven years after the initial application.

Despite numerous differences in practice, all national and transnational offices require that formal and material requirements are met and that fees are paid. The examiner eventually issues a communication on the patentability of the submitted claims, and a dialogue ensues that will either lead to a granted patent or the abandonment of the application. Usually, failure to adhere to formal obligations stipulated by law or the corresponding office, or failure to pay the necessary fees, results in an application being deemed abandoned or withdrawn, although recourse may be possible.

Granting, Opposition and Revocation

If the patent is provisionally granted, it will be published by the relevant office. In many jurisdictions there then follows a period during which interested parties, often competitors, may submit a notice of opposition to the patent. In the case of the EPO this period lasts nine months. Other jurisdictions have a shorter opposition period (three months for the German office), or do not provide for opposition at all. US patent law does not currently provide for an opposition procedure, though it seems likely that one will be adopted within the next few years.

Once the patent is granted and any opposition period has expired, the last recourse against a patent is the process of revocation by the national courts. Revocation procedures are rare. Revocation aside, a granted patent will be in force for the duration of the patent term; 20 years from the date of the application from which it originated, provided maintenance fees are paid. In most countries, the

patent owner must pay such maintenance fees in order for the patent to remain in force, and these fees usually rise steeply towards the end of the 20-year term. This is intended as an economic incentive to allow old patents to expire, allowing technology to become publicly available.

1.1.3 The Value in a Patent

The financial value of a patent stretching over its twenty-year lifespan is discussed fully in Chapters 6 and 7.

In-House Use, Licence or Sale

The immediate benefit that a patent confers to its owner is the power to exclude others from the use of the invention specified by the patent claims. This monopolistic power gives the patent owner special power in its market, and permits the realisation of greater profits. Four different principle mechanisms exist to derive value from a patent:

- an improved market position for the patented invention marketed as a product or employed as a process, directly by the patent owner ("in-house use"),
- revenue from licence payments paid to the patent owner by a third party operating under the cover of the patent,
- direct sale of the patent, or
- blocking or "fencing-in" of competitors, without making use of the patented invention.

The process by which value may be extracted from a patent is not as straightforward as a simple economic monopoly model would suggest however. It is complicated by inter-patent dependence, patent enforceability and cost issues.

Dependence and Multi-Patent Products

Often more than one patented technology is present in a product. If these technologies belong to different parties, their presence influences the ability of each patent owner to capture value. Indeed, the competing interests of the patent owners will need to be resolved in order for the product to be marketed, and for any of the parties to capture value from their inventions.

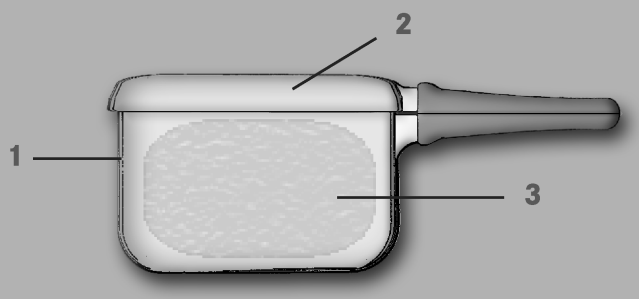
Different technologies may be independent of each other, such as the wheels and the chain of a bicycle. Often, however, there is some technological hierarchy or dependence. One frequent example is a patented improvement of an already patented innovation.

Such dependence can effectively bar an inventor or patentee from using an invention. It cannot be sufficiently stressed that owning a patent is not a licence to practise the patented invention; the power conferred by the patent is purely to exclude others from the practice of that invention (see Box 1).

Box 1
Dependency

Consider the invention of the steam cooker. The principle of this invention is to cook food in hot, pressurized steam. The simplest essential equipment for practicing the invention could be a pot with a steam-sealed lid, and a patent on the invention would have an independent claim reading:

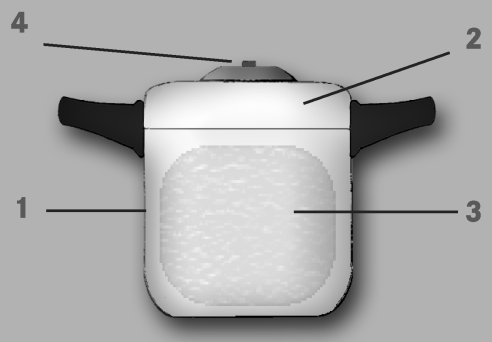
- Apparatus for the cooking of food comprising a pot (1) and a lid (2), characterized by the lid being fastened to the pot in a steam-tight fashion, creating a chamber (3) that can be pressurized.



In the absence of a mechanism to avoid the formation of pressure above the technical limit of the pot's material, the steam cooker is likely to explode if not heated carefully. The need for technical improvement is clear.

If a second inventor came up with a safety valve, this invention would certainly aid the safety and marketability of the product. A claim on this invention may read:

- Steam cooking apparatus comprising a pot (1) and a lid (2), where the lid is fastened to the pot in a steam tight manner creating a steam-tight chamber (3), characterized by a safety valve (4) being comprised in one of the enclosures of the steam-tight chamber.



The owner of the initial patent could market the pot alone, without the safety valve, and is legally independent. The second inventor, however, could not market the pot-cum-valve without a licence from the owner of the initial patent, since this invention includes all the elements of the first claim. The second inventor is dependent on the first.

Economically, however, the first inventor cannot sell pots without a valve, since they tend to explode. This inventor is legally independent, but in the absence of a technical alternative to the safety valve, is economically dependent on the valve technology to make the steam cooker pots marketable. The first inventor is "fenced in". If it is in the commercial interests of the inventors, the twin issues of dependency and fencing-in can be addressed by patent cross-licensing.

Enforcement

The cost and practicality of patent enforcement is an important issue. The value of a patent is derived from the power it confers to engage in litigation against competitors who make commercial use of the patented invention without having obtained a licence. Such competitors must be identified, demonstrated to be in contravention of the patent, and compelled to make amends; overall, an expensive process.

The detection and demonstration of infringement requires a network of local surveillance. Large multinational companies have such systems in place, but smaller businesses operating from a single location must invest in this architecture. If the patent relates to a physical object, it is possible to substantiate infringement easily, but if the patent relates to a process, proof of infringement may be more difficult, particularly if the process relates to a product that can be made by a number of routes. Whilst proof may ultimately be attainable, this comes at a significant cost.

The subsequent process of enforcing a patent includes, in its extreme form, lengthy and expensive court battles involving specialist lawyers. The overall cost of this legal enforcement greatly depends on the case, and potential litigants must consider both the merits of their legal arguments and the likely response of the infringer. Some large companies have significant resources and a history of stringent and successful litigation. Confrontation will be regarded differently depending on the situation of the patentee; a university clerk bound to a strict budget, the owner of a small business, or a large multinational protecting a key patent will all have different attitudes to the risk and cost of litigation.

There is no recipe for patent enforcement; only a principle. Legal enforcement is an integral conclusion to the patent value chain, to be avoided if possible, but considered from the outset of application.

Costs

A balance must be struck between the expected value of a patent and the costs of securing and enforcing it. These costs can vary immensely. Important variables are the pathway the applicant chooses to pursue, in which countries the invention is to be patented, whether and which patent lawyers or agents are employed, the field and scope of the invention, and the amount of correspondence between the office and the patent agent.

A valid patent can be registered for under $500 in the US; similar figures for Germany and the UK are about €500 and £200, respectively. These figures include examination fees levied by the patent offices, but no legal fees paid to an attorney or representative. Substantial worldwide protection, managed by a patent agent or attorney and through the necessary network of local representatives, can cost significantly upward of 100.000 €. Indeed, even restricting oneself to the major markets in Europe, the Americas and Asia may carry a similar cost.

The delicate balance between cost and value is individual to each patent and each applicant. Not all costs arise immediately after filing, and nor must an invention reach the market before a return can be made. The sophisticated applicant is able to devise a strategy to maximise the return based on their level of investment, and on their appetite for risk. This relationship between cost, value and risk is a major topic of this book.

1.1.4 Anatomy of a Patent Document

Front Page

The Front Page of a patent application shows the title of the invention and the issuing organization or country and presents information pertaining to the type of document, the inventors and the applicants, references to documents in the same family, and most importantly, to key dates in the patenting schedule. Since the reader may not be familiar with the language or even the script of a document, a code has been established that associates datasets with numbers. For example,

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 4 : **A63H 3/20, 3/46**	**A1**	**(11) International Publication Number:** **WO 87/ 03502** **(43) International Publication Date:** 18 June 1987 (18.06.87)

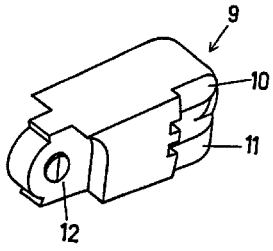
(21) International Application Number: PCT/DK86/00130
(22) International Filing Date: 3 December 1986 (03.12.86)
(31) Priority Application Number: 5608/85
(32) Priority Date: 4 December 1985 (04.12.85)
(33) Priority Country: DK

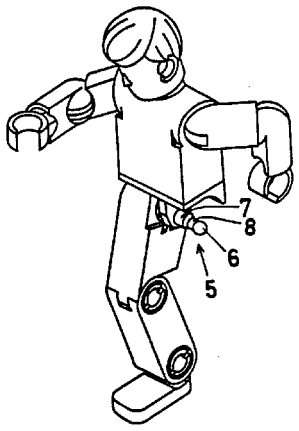
(71) Applicant *(for AU only):* INTERLEGO A.G. [CH/CH]; Sihlbruggstrasse 3, CH-6340 Baar (CH).
(71) Applicant *(for all designated States except AU US):* INTERLEGO A/S [DK/DK]; Aastvej 1, DK-7190 Billund (DK).
(72) Inventors; and
(75) Inventors/Applicants *(for US only) :* RYAA, Jan [DK/DK]; Kærvej 423, DK-7190 Billund (DK). POULSEN, Ole, Vestergaard [DK/DK]; Arne Pulsensvej 3, DK-7100 Vejle (DK).
(74) Agent: HOFMAN-BANG & BOUTARD A/S; Adelgade 15, DK-1304 Copenhagen K (DK).

(81) Designated States: AT (European patent), AU, BE (European patent), BG, BR, CH (European patent), DE (European patent), FI, FR (European patent), GB (European patent), HU, IT (European patent), JP, KR, LU (European patent), NL (European patent), NO, SE (European patent), SU, US.

Published
With international search report.

(54) Title: A TOY FIGURE HAVING MOVABLE BODY PARTS





(57) Abstract

In a toy figure with body parts movable in various directions the body parts (in the embodiment shown the legs) are connected with the body in a manner known per se by means of a socket (13) designed to receive a ball (6). To ensure long-term frictional stability between the movable parts, the body part (9) is formed with a pair of opposed walls (10, 11) designed to squeeze an engagement face (7) which is contiguous with the ball (6).

Fig. 1.2 The front page of an international application under the Patent Cooperation Treaty (PCT). Reproduced with permission by WIPO and the European Patent Office/espacenet.

(22) codifies the filing date of an application, and (71) the applicant. These numbers may not be present on older applications.

The examining office also gives patents or applications unique identifying numbers, and these appear both in the patent database and on the front page of any patent document. These numbers provide information as to the type, geography and status of a patent application. Usually, both applications and granted patents appear in databases as a combination of letters indicating the country, followed by a number and a letter. The letter "A" denotes applications, and this is changed to a "B" upon grant of a patent. There may be subsequent numbers and letters other than A and B depending on the country. The exact codes used by every country and their significance can be found on patent office websites.

Description and Drawings

The main section of a patent document always specifies the invention in words, and often in drawings. Typically, the description begins with a summary of the field of the invention and the technical shortcomings of the state of the art. Reference is made to the technology upon which the invention improves. This general section is often concluded by the formulation of a particular technical problem posed by the state of the art.

The invention will then be described in general terms and in detailed examples. Often, statements will be included in the description that make sweeping claims about what embodiments and alternative solutions to the technical problem fall within "the scope of the invention". The description in many patents will be worded so as to be very far-reaching.

It is important for the novice in the field to realise that this description does not define the exclusionary rights conferred by the patent. It is rather the "claims" of a patent that act to define these exclusionary rights. The description supports the claims, and in cases of doubt, offices and judges will refer to the content of the description in determining the exact scope of the claims.

Claims

The claims of an application define the exclusionary rights that the applicant wants to reserve, though these are often subsequently narrowed by examiners to meet patentability criteria. A claim is a one-sentence definition of the invention (technically not even a proper sentence, as the main verb is missing), but since inventions may be complicated, a claim can be very long and complex in wording. One way to analyse this complexity is to break the claim down into components or elements. An element is the indivisible base unit of the invention.

To infringe or fall under the scope of a claim, any product or process must comprise or contain all the elements of the claim. Claims, therefore, with few elements cover a wide area of technology, as products are more likely to comprise all the elements of such claims. Such claims are said to be broad. Broad claims suffer from a higher likelihood of the existence of prior art, and are more likely to be

INTERNATIONAL SEARCH REPORT

International Application No PCT/DK86/00130

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC [4]

A 63 H 3/20, A 63 H 3/46

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC	A 63 H 3/16, /20, /46
Nat Cl	77f: 3/16, /20, /46
US Cl	46: 161, 163

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
A	SE, A, 83 065 (DEICHMANN) 2 April 1935	1-4
A	DK, C, 69 266 (MÄTSEPURO) 23 May 1949	1-4
A	FR, A, 1 386 510 (RIBOUD) 22 January 1965	1-4
A	US, A, 1 868 049 (DEICHMANN) 19 July 1932	1-4

* Special categories of cited documents: [14]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
1987-03-06	1987 -03- 10
International Searching Authority	**Signature of Authorized Officer**
Swedish Patent Office	Manfred Weiss

Form PCT/ISA/210 (second sheet) (January 1985)

Fig. 1.3 The international search report of the application shown on the previous page. All cited prior art is labelled "A": the office considered the documents found in the search of no particular relevance with regard to the patentability of the patent's claims. Such report is a good indication that the claims have a high probability to be granted in examination. (Reproduced with permission by WIPO and the European Patent Office/espacenet.)

found non-patentable by examiners. In addition to broad, independent claims, patent agents therefore usually draft "dependent" claims with additional elements to provide a fallback.

If a product does not contain all elements of the claim, it does not fall under the scope of the claim. If it contains all elements of the claim, and at least one more, it falls under the scope of the claim and yet may constitute a novel invention (see Box 1).

The Research Report Page

Patents and applications that have been submitted to a formal search of relevant literature by a patent office contain a section with the citations of identified prior art. This information can be a valuable indicator of what prior art has been considered in the granting of the patent, or what prior art the office may consider in a subsequent examination.

The search report format chosen by the European Patent Office (EP documents ending in A1 or A3) and similarly used in documents published by the PCT pathway (document numbers beginning with WO) is especially useful. Possibly relevant documents are given with an indicator of their importance to the patentability of the claims. Prior art labelled as X or Y renders the patentability of a claim at least dubious. The report is useful in giving a competitor or potential investor a formal opinion on the patentability of the claimed invention.

1.1.5 Patentability of an Invention

Invention

Although the colloquial term "invention" means many things to many people, the law of each country has clear definitions of what constitutes a patentable invention. For the purpose of patent law, an invention is a new solution to a technical problem, which meets stringent criteria of novelty, inventiveness and technical content. These legal criteria may vary, in some cases enormously, from one country to the next. Although a process of harmonisation is currently under way it will be several years until these differences in patentability criteria become extinct.

Product, Process and Method Claims

An invention can be manifest in a physical object – a machine or a part of a machine or a chemical compound. Alternatively, it can be evident in a way of acting or doing things, as a process or a method of using a certain set of physical objects. Hence, patents can contain both claims to a product and an activity.

Sometimes a certain object, often a chemical compound, may be easiest to claim not by definitions applicable to the object itself, but to the process of making the object or compound. While such claims have an activity in their defining lan-

guage, they refer to a product. Patents will often have claims to both products and actions so as to optimally protect all manifestations of an inventive idea.

Novelty

One absolute criterion for patentability is novelty: the claimed invention must not have been known before the day of application or indeed, the priority date, if a priority is claimed. If all the elements of a claim can be found in one "embodiment" (a single object or process) known in the state of the art preceding the date of first application, that claim will not be patentable. The novelty of a claim is not destroyed, however, if its elements are anticipated in different embodiments.

US law does not refer to the day of application to define novelty, but rather to the day of invention. Thus, an invention inadvertently published prior to submitting a patent application may still be patentable in the US, but nowhere else in the world. A special case arises when no published prior art existed on the day of application of a patent, but a similar invention had already been submitted, awaiting publication. Such "prior rights" will preclude patentability only in the countries where the prior rights were filed.

Non-Obviousness

Not only must a claimed invention not have been anticipated by the state of the art, it must also be sufficiently different from its closest relative in the state of the art. In patent terms, it must differ to such a degree that it required an "inventive step" to come up with the invention. This principle prevents anyone from combining known elements from the state of the art into a novel object or process and claiming this obvious combination as a patent.

Despite this seemingly fuzzy definition, the practice of patent law has come up with pragmatic ways of deciding whether any particular claim meets the inventive step criteria. The subject of non-obviousness is discussed more fully in Chapter 3.

Non-Disclosure

The requirements of novelty and non-obviousness are absolute. If the invention has been made public knowledge before the application, even by the applicant or inventor, the invention is considered to be part of the state of the art, and hence, not patentable. In the US, a so-called "grace period" exists, but it would be highly recommendable even for US inventors not to publish their inventions lest they destroy their chances of being granted a patent in the rest of the world.

This principle of non-disclosure prior to registering an application does not mean that inventors cannot discuss their invention, and indeed such discussions with patent agents and investors are necessary. Inventors must simply take proper precautions to ensure that the invention is not made available to the public. Certain relationships, such as the attorney-client relationship or a working rela-

tionship between co-operating companies will imply an obligation to secrecy. It is very advisable, however, to take any precaution possible to exclude preliminary publication of an invention. Standard non-disclosure agreements ensure adherence to this principle.

Patentable Matter

Utility patents can only protect technical inventions. Inventions relating to the aesthetic qualities of an object, such as its shape or colour, without solving a technical problem, can be protected by design patents. Software and business methods are deemed non-technical and are thus excluded from patentability in many patent systems of the world, including Europe. The US Patent and Trademark Office (USPTO) accepts such applications and regularly grants patents on inventions that would be deemed non-technical under current standards at the EPO. Similarly, procedures to treat the human or animal body are not patentable in Europe, though devices used for such procedures are patentable.

1.1.6 Inventors and Applicants

All patent systems recognize the inventor as the original owner of an idea. The right to the patent, however, resides with the applicant.

Inventorship

The authors of an invention must be named on a patent application. They are the original owners of the right to the invention, although they may be in contractual obligation to cede this right.

One key activity at the outset of the patenting process is to identify the inventors. This may be difficult and sometimes cause conflict, but it is a very important decision. The exclusion of inventors from the patent may damage working relations, and jeopardize the legal validity and economic value of the patent. On the other hand, a large group of inventors may be difficult to manage.

The identity of the inventors is dependent on the invention that is claimed, under patentability criteria. This is influenced by the "prior art" found in the drafting process. Proper process should be observed and an attorney should be consulted, particularly if the invention is to be patented in the USA. Generally the criteria for inventorship are more stringent than those usually applied to the authorship of scientific publications. Inventors must have contributed to solving the underlying problem in a way that was not routine or obvious.

The Inventor as Applicant

Patent offices make the distinction between the inventor and the applicant, who is the person or entity with whom the Patent Office deals. If the applicant is not the

inventor, some justification as to how the applicant gained the right to apply is formally requested.

Indeed, in the US, only the inventors have the right to apply for a patent. The role of the corporate or university entity that has sponsored the invention is that of assignee. The assignee is named on the application or patent, but formally, the inventor has the role of the applicant, and hence, primary ownership of the patent, to which the assignee may be a successor in title.

Since most R&D work today is performed by corporate or academic entities and pursuing the patenting of an invention in multiple countries can be a costly venture, the inventor-applicant model is not as common outside of the US as it may once have been.

The Applicant as Successor in Title

Outside the US, this configuration is the most common. Corporate or academic sponsors of research will often oblige their employees to yield any inventions to the employer. Some countries stipulate this succession by law.

Several issues arise when looking in detail at this employer-inventor situation, and these are discussed in detail in Chapter 4. In effect, the relationship between employer and inventor may resemble that of a licensee-licensor, with an over-riding and potentially conflicting employer-employee relationship. Large differences exist between countries in the approach to resolving this inherent conflict. Another issue may arise if the inventor is in a contractual relationship with more than one party. This may arise when two full-time employments fall in quick succession and the origin of the invention is difficult to allocate, or when the inventor has effectively worked for more than one party at the same time.

1.2 Business Brief

Patents are exclusionary rights and do not imply any right or licence of the owner to use or sell the patented invention. The issued patent is a "right to sue" upon infringement.

Patents are territorial and an invention enjoys protection only in the countries in which patents have been applied for and have been issued. Not all types of inventions are patentable in all countries.

Applications and issued patents must be distinguished. Applications only confer provisional and limited protection. A patent application on an invention may take between one and more than four years to become a patent. If the examining office does not agree that the invention is patentable, a patent may not be issued and no protection is attained. Indeed, references made to a "patented invention" may often mean only that an application has been submitted. Resulting patent protection may be conditional on further examination.

After a patent is granted, many countries allow the public to oppose the patent for a limited period. Patents may later be attacked only by initiating a revocation process.

Care must be taken to keep an invention unpublished prior to filing an application in at least one of the Patent Cooperation Treaty member countries, to which most commercially important countries belong. Publication will render the invention unpatentable. Inventors must use non-disclosure agreements when discussing the invention with business partners and refrain from selling or using the invention publicly prior to application.

Patented technology may be dependent on other patents, thus forcing anyone making use of such technology to obtain a licence for the umbrella patents that dominate. Patents or indeed, entire portfolios may block each other.

Minimal information such as patent numbers enables a patent attorney to form a preliminary opinion about the validity of a patent family. In order to give an opinion about the value of a portfolio however, much more information is needed, including an assessment of the competition and of the technical field.

The applicant must have a valid claim to the ownership of the invention, and due diligence should be taken in ascertaining the validity of ownership transfer.

Value may be derived from a patent through use, licence or sale, or by blocking competitors. The anticipated value must be balanced by the costs of patenting and enforcement.