

Patent Basics¹

A patent enables its owner to prevent others from making, using, selling, offering to sell or importing a patented invention in the jurisdiction (country or region) that issued the patent. Once a patent application is filed with a patent office, the invention may be referred to as “patent pending.” Once a patent is issued (granted), a patent infringement suit may be brought by the patent owner (“patentee”) to recover money damages and seek an injunction against future infringement. It is up to the patentee (not the Government) to identify infringers and enforce a patent. A patent is intangible personal property and may be sold, licensed, donated, inherited, jointly owed, etc.

Various strategies motivate companies to acquire patents, including:

- obtaining market exclusivity
- licensing and collecting royalties
- deterring suits brought by others
- attracting investors
- applying pressure on, or bargaining with, adversaries, even in non-patent disputes
- rewarding innovative employees
- marketing (product differentiation)

A patent is analogous to a deed to real estate, in that both define the outer boundaries of property that is owned. A patented invention can be an apparatus, a method of doing something or a composition of matter (*i.e.*, a chemical compound). These types of inventions are covered by “utility” patents. Other types of patents cover ornamental designs (“design patents”) and plants, but these two types are not discussed here.

A patent must describe an invention with enough detail so that one of ordinary skill in the art can make and use the invention, without undue experimentation. One need not have made, or even have an intention to make or market, an invention to file a patent application, as long as the inventor can describe how to make and use the invention. The limited monopoly granted by a patent is given in return for this disclosure. A granted patent is a public document. Generally, a patent application is published 18 months after filing.

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A patent application is a written document, not merely a filled-in form. The effort required to prepare and file a patent application can be substantial, often involving legal fees, US Patent Office fees and formal drawing costs. Once filed, patent applications are not automatically granted. Many patent applications are never granted. A not insubstantial amount of work is typically required to obtain allowance of a patent application (see “patent prosecution,” below), which may involve additional legal fees, often spread over several years.

Patent Claims

In addition to teaching how to make and use an invention, a patent defines the invention, for infringement purpose, by reciting one or more claims. A claim defines an invention as a combination of interrelated elements (things) or steps to be performed. For example, a claim to a pencil may recite, “1. A writing implement comprising: (a) an elongated piece of graphite, (b) attached along its length to a structural member.”

A claim specifies the minimum requirements to infringe a patent. Anything that meets all these requirements infringes the claim, even if the accused device or method includes additional elements or steps that are not recited in the claim, and even if the accused device or method is also covered by another patent. Broader claims provide greater scope of ownership. Thus, well-written claims are often abstract. Claims need not necessarily include every feature of an invention. Infringing one claim is sufficient to infringe an entire patent.

It is common to include a set of claims of progressively narrower scope in a patent application, in case the claims are granted but one or more of the broader claims are subsequently invalidated, such as during litigation. For example, a narrower pencil claim might recite, “2. A writing implement according to claim 1, wherein the structural member comprises wood.” This is an example of a dependent claim, *i.e.*, it includes all the elements/steps of at least one other referenced claim. A dependent claim is necessarily more specific (narrower) than the claim from which it depends, because the dependent claim adds one or more requirements to infringe. Therefore, potentially fewer devices/methods infringe a dependent claim, but it is less subject to attack with “prior art.” (See below.)

Claims are the most important part of a patent, because they determine the scope of the patent, *i.e.*, what the patentee owns. Claims have been described by a Supreme Court Justice as constituting one of the most difficult legal instruments to draw with accuracy.

An inventor is a person who contributed at least one element, limitation or step to at least one claim in a patent. In the US, only inventors may file patent applications, although one or more of the inventors may assign (*i.e.*, transfer ownership of) his/her portion of a patent or patent application to another person or to a company, or to license his/her portion of a patent.

Inventors often execute (*i.e.*, sign) assignment documents to transfer their ownership to their employers or other assignees. Assignments are recorded in the US Patent Office, much the way deeds to real estate are recorded in registries of deeds.

Inventors also execute declarations, in which they state under oath that they believe themselves to be the first inventors of the claimed inventions. Declarations typically

include powers of attorney from the inventors to patent attorneys who file the applications and thereafter respond to correspondence from the Patent Office regarding the applications (“prosecute” the patent application.)

Requirements for Patentability

Prior art includes documents, publications, patents, products, product literature, etc. that were publicly available before the filing date of a patent application or, in some cases, before the invention. A US patent or a published US patent application is prior art (as used against other US patent applications) for all that it discloses, as of its filing date.

To be patentable, an invention must be new (novel), useful and not obvious. The patentability of each claim of an application is judged individually.

“New” means no single prior art reference discloses (“anticipates”) all the elements/steps of a claim.

“Not obvious” means the difference between a claimed invention and one or more prior art references would not have been obvious to one of ordinary skill in the art at the time of the invention. Obviousness is often indicated by a combination of prior art references that would have been considered by an inventor in the field of the invention and that discloses all the elements/steps of a claim.

“Useful” means the invention has some practical applicability. This is a low threshold.

An inventor has no duty to search for prior art. However, the inventor and all other people related to preparing and prosecuting a patent application have a duty to disclose prior art of which they are aware or become aware and that an examiner would consider to be *material* (not necessarily patentability-defeating) to examination of the application. It is best to err on the side of disclosing art, rather than withholding it. This duty continues until the patent application is finally granted or abandoned. Thus, an inventor who learns of prior art while a patent application is pending has a duty to disclose the art, even if the inventor is no longer employed by a former employer or by an assignee or licensee.

Patentable Subject Matter

Types of Patent Applications

US law recognizes two types of patent applications: provisional and non-provisional. A US provisional patent application:

- has no formal requirements
- is never examined
- cannot become a patent
- expires exactly one year after its filing date
- can be used to establish a priority date for a future US non-provisional patent application or a foreign patent or international application

If an unexpired original provisional application adequately teaches how to make and use an invention, a non-provisional or foreign patent application that claims priority to the

provisional application is treated (for purposes of comparing it to prior art) as though the non-provisional or foreign application was filed on the same date as the provisional application was filed. A provisional application is optional.

A US non-provisional patent application:

- has formal requirements (including format, margins, font size, claims and drawings)
- is examined
- can be issued (granted) as a patent
- can be used to establish a priority date for a future US, foreign or international patent application. (Foreign and international applications must be filed within one year of the earliest available priority date.)

A US non-provisional application can claim priority to an unexpired provisional or international application or to a pending (*i.e.*, not abandoned and not yet granted) non-provisional or foreign application. The non-provisional application claiming priority is treated as though it was filed on the priority date, to the extent the earlier application discloses how to make and use the invention claimed in the non-provisional application.

A US non-provisional patent application must be filed (if ever) within one year of:

- selling or offering to sell an invention that the inventor knows how to make and use, or
- publicly disclosing or using the invention

(Note: Effective March 16, 2013, the U.S. changes to a “first inventor to file” system, as a result of the America Invents Act. This and related changes to the patent law are not described in detail in this document, but they are described in an accompanying document.)

Provisional applications are often filed before (sometimes just before) either of these types of events (for example, product announcements, trade shows, “beta” tests, etc.) to give the inventor one year to prepare and file a corresponding non-provisional application.

A sale or offer to sell includes a license or an offer to license. To start the one-year clock, an offer must be capable of being accepted, so as to create a contract (a “meeting of the minds”), but the offer need not be in writing.

Bars to Patentability

A public disclosure reveals how to make and use an invention, to as few as one person, without an obligation of confidentiality, such as a (preferably written) non-disclosure agreement (NDA). A public use makes use of the invention without an obligation of confidentiality by the users or observers of the use, even if information about how to make the invention is not disclosed. A demonstration of an invention to a non-inventor (sometimes even to a co-worker), without an NDA, can be a public disclosure. A test of an invention, particularly a test conducted by a potential customer to determine suitability for the customer’s purpose, (as distinct from testing to determine if the claimed invention

works) can be a public use if not protected by an NDA. A public disclosure or public use starts the one-year time bar clock.

A test or evaluation unit given or sold to a customer, even at a deep discount, can start the one-year on-sale clock. An NDA cannot prevent an offer to sell or a sale from starting the one-year on-sale clock.

In a court proceeding, such as a patent infringement suit, a patent may be invalidated if it is shown the patent should not have been issued due to: prior art (known or unknown to the examiner), public use or sale more than one year prior to the filing, or failing to meet any other requirement for patentability. In a court proceeding, a patent may be found unenforceable due to misconduct while the patent's application was being examined, ex. failure to disclose known prior art. In addition, a patentee or a third party may request the Patent Office to re-examine an issued patent by submitting prior art and, in the case of a third party, a "substantial new question regarding patentability" that was not originally considered by the examiner.

Process

Patent applications are examined by patent examiners in the order the applications are filed. Examiners are specialists in their respective technical fields. Queue lengths (wait times) vary greatly by technical area. Backlogs can be three or more years long in the software and some other arts. "Special" applications (due to inventor's advanced age or high priority subject matter) may be taken out of turn.

Once taken up, a patent examiner searches for prior art (not limited to issued patents) and determines if the patent application meets the requirements for patentability. If not, the examiner issues an Office Action rejecting the claim(s) and giving reasons for the rejection. Some claims may be rejected while other claims are allowed. An Office Action typically specifies a three-month due date for a response, extendable by up to three one-month extensions-of-time with payment of progressively larger fees.

Responding to rejections with arguments and/or amending claim(s) to overcome the rejections is collectively referred to as "patent prosecution." Prosecution usually involves several rounds of Office Actions and responses. Responding to an Office Action is generally less expensive than preparing a patent application. Legal costs for prosecuting an application are generally estimated separately from costs for preparing and filing the patent application.

A "maintenance fee" is due 3-1/2, 7-1/2 and 11-1/2 years after a US non-provisional patent is granted. A US non-provisional patent generally expires 20 years from its earliest filing date, assuming the maintenance fees have been timely paid. Failing to pay a maintenance fee causes the patent to expire early.

If the Patent Office exceeds prescribed time limits in examining a patent application, a patent term may be extended by a corresponding amount of time, less prosecution delays caused by a patent applicant. Once a published patent application is abandoned, or a patent expires, another person cannot file an application for the same invention, because the other person would not be the first to invent the invention, and the published application or the expired patent would be prior art. A patent cannot be "renewed."

Certain US Patent Office fees are reduced by half for “small entities,” such as individuals, non-profit organizations and corporations with no more than 500 employees, where the patent or application owner is not under an obligation to assign ownership to a non-small entity.

Patents Outside the United States

Patents are country specific, although some parts of the world (most notably, Europe) also have regional patents. A European patent must be validated in individual countries to be enforceable in those countries. Validation involves paying a fee and may involve translating the patent.

Most countries outside the US do not provide a one-year grace period for sales or public disclosures of inventions. Thus, filing a US provisional or non-provisional application before a public announcement, demonstration, test or sale may be necessary to preserve foreign filing rights.

A foreign (*i.e.*, non-US) patent application generally must be filed (if ever) within one year of the earliest available priority date. Foreign patents typically expire 20 years from their earliest effective filing date.

Most countries use a “first to file” rule, where the first applicant to file a patent application has priority over a later applicant for a patent on the same invention, regardless of which applicant actually invented first. On the other hand, the US uses a “first to invent” rule, where a later applicant may prove he/she: (a) invented earlier than an earlier filer and (b) worked diligently to perfect the invention and file the application. Laboratory notebooks and other documentation can be key to this proof. (“Proof” means a preponderance of the evidence, not a mathematical proof.) This and other differences in patent laws among countries can mean different inventors may be granted patents in different countries on the same invention. Furthermore, some subject matter is patentable in only certain countries. Differences in the definitions of “prior art” can also lead to different results in different countries. (*Note: Effective March 16, 2013, the U.S. changes to a “first inventor to file” system, as a result of the America Invents Act. This and related changes to the patent law are not described in detail in this document, but they are described in an accompanying document.*)

Translation costs, foreign patent office filing fees, annual/recurring foreign patent office “annuities” or “maintenance fees” on applications or granted patents, and foreign patent associate attorney fees can make foreign patents expensive. It may be adequate to file in economically important countries (such as only major markets) or strategic countries (such as where competitors are likely to manufacture products), rather than filing in a large number of countries.

Foreign applications may be filed directly in each country or region (for example, Europe) of interest.

An international (“Patent Cooperation Treaty” or “PCT”) patent application may be filed in addition to, or instead of, individual country/regional applications, including instead of a US non-provisional application. A PCT application may result in the eventual grant of one or more national or regional patents, with the notable exception of Taiwan. (For political reasons, Taiwan is not a “contracting state” under the Patent Cooperation Treaty,

whereas China is a contracting state.) A PCT application is examined once by an international searching authority (typically the US Patent Office, the European Patent Office or the Korean Patent Office) chosen by the applicant. The international searching authority produces a prior art search report and a written patentability opinion during an “international phase.”

A PCT application never directly issues as a patent. Instead, the PCT application must enter a “national phase” (typically within 30 months of its priority date) and be further examined by patent offices in individual countries/regions of interest. The national phase patent offices generally give some deference to the patentability opinion of the international searching authority, but they are not bound by the patentability opinion.

A PCT application can provide the following benefits:

- It can be filed in English, thus deferring translation costs.
- It can defer national patent office fees and foreign attorney fees until after a search report and patentability opinion is obtained from the international searching authority.
- An applicant has some opportunity to amend the PCT application and make arguments to obtain a favorable patentability opinion during the international phase, before committing to national phase entry.
- There may be efficiencies in prosecuting the application in individual national phase patent offices after resolving some or all the patentability issues raised during the international phase.
- It provides time for an applicant to evaluate marketability of an invention, before committing to national phase entry. An applicant may abandon a PCT application without incurring national phase costs if, for example, patentability or product marketability seems unlikely.

A foreign or PCT application must generally be filed within one year of the earliest available priority date.

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