Obtaining A Patent

Editor’s note: This is part three of a six part series on patent law. The next column will address how to extract basic information from patents in a field of interest.

This column introduces the concepts and terminology involved in obtaining patents and the strategic purposes for doing so. The procedure for obtaining a patent is very rule oriented. Following the rules and paying attention to detail provide the best chance of obtaining a strong, enforceable patent—one that can be used as a business tool and justify the resources invested to obtain the patent.

How Patents Fit Into Business Plans

Before seeking a patent, a company should understand what role patents can or will play in its business plan. A company does not need a patent to implement an invention. Still, having a patent empowers a company to exclude others from practicing the invention until the patent expires. A company can leverage this right in many subtle ways. Some reasons to obtain a patent include:

- Becoming competitive in an existing market;
- Maintaining customer confidence (e.g., for ingredient suppliers);
- Protecting a competitive edge in a new market;
- Generating licensing revenue;
- Creating leverage for use when negotiating cross-licenses;
- Creating leverage for use when countering a suit by a competitor; and/or
- Attracting the interest of potential acquirers.

The goals of start-up or small companies may differ from those of larger, more established companies. For example, a start-up may hope to develop a strong portfolio of patents to become an attractive acquisition target. A large company may invest in noncore technologies to generate licensing revenues. Each business has its own philosophy regarding intellectual property development, protection, and use.

The Value of a Patent

Once a company decides to obtain a patent, it makes sense to obtain the most valuable patent possible. Patent value depends on many factors, including:

- Usefulness: The usefulness and necessity of the patented technology to the patent holder and/or its competition impacts the value of the patent. Lack of usefulness and necessity diminishes value.
- Unassailability: Valuable patents can withstand challenge to their validity and enforceability during a lawsuit.
- Breadth: Can competitors design around the patent, i.e., achieve a similar result without infringing the patent? Value increases with increasing design-around difficulty.

Obtaining a Patent

There are three primary phases in obtaining a patent: 1) the invention; 2) drafting and filing the patent application; and 3) prosecuting the patent application before the United States Patent and Trademark Office (USPTO). Each phase requires a commitment of resources and money. Additionally, phases two and three involve attorney time and fees that must be paid to the USPTO. It should be noted that USPTO fee amounts change periodically. The most recent schedule of fees can be found at the USPTO website. “Small entities,” including eligible independent inventors, small businesses, and nonprofit organizations, pay reduced fees. Finally, even after obtaining a patent, the USPTO collects periodic fees. Thus, obtaining and maintaining a patent in the United States can be expensive. Seeking patent protection in additional countries multiplies the costs. An overview of the three phases of obtaining a U.S. patent is provided below.

The Invention

Many companies have procedures for employees to submit inventions for review and potential patenting. Such procedures often employ an invention disclosure form, which includes providing information such as:

- Identification of the individual(s) that contributed to the invention (i.e., the potential inventors) and the part or parts of the invention to which they contributed;
- A description of the invention;
- A description of how to make and use the invention;
- A description and timeline of how the invention was developed;

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Cross references to notebook(s), memoranda, and reports that record the work underlying the invention; Identification of prior art (e.g., publications or products in the field) known to the potential inventors; Identification of planned and past marketing activities; and Identification of planned and past publications or presentations by the potential inventor(s) or others regarding the subject matter of the invention.

Typically, a committee comprising members from technical, business, and legal departments meet and review invention disclosures to assess commercial viability and determine whether to seek patent protection, rely on trade secret protection, or take no action at all.

As indicated above, an invention disclosure often includes a timeline of how the invention was developed. Such timelines help identify when the invention was conceived and reduced to practice. Conception is the formation of a definite and permanent idea of an operative invention (1). Reduction to practice is a showing that the invention actually works. This can be shown by making a prototype (“actual” reduction to practice) or by describing the invention in writing (“constructive” reduction to practice). A patent application often serves as constructive reduction to practice.

The United States has a first-to-invent patent system. This means that if two inventors file separate patent applications on the same invention, the patent will go to the first inventor, regardless of who filed the first patent application. Documents evidencing the dates of conception and reduction to practice, such as laboratory notebooks and internal memoranda are used to determine when an invention was made and, consequently, who was the first to invent.

Most of the rest of the world uses a first-to-file system, rather than a first-to-invent system. In a first-to-file system, the patent goes to the first person to file an application—the invention date is irrelevant. Congress is considering changing the United States to a first-to-file system to harmonize U.S. patent law with the rest of the world.

Drafting and Filing the Patent Application

Conducting a Literature Search

Once an invention is chosen for patenting, the invention disclosure and other technical information are forwarded to a patent attorney. Often, the patent attorney will conduct a search of related patents and publications to assist in understanding the potentially patentable aspects of the invention—the aspects not already known in the field. A search may also reveal similar patents owned by competitors—patents that may impact the company’s ability to launch a product based on the patented invention.

Drafting the Patent Application

The next step is to draft the patent application. This step depends on whether the patent attorney is filing a provisional application or a nonprovisional application. The patent attorney could also file a U.S. application that is a counterpart to a previously filed international application, but such counterparts are beyond the scope of this article.

Provisional Applications

Provisional applications serve as a temporary placeholder to establish a filing date. They are not reviewed by the USPTO and do not result in issued patents. Provisional applications require a thorough description of the technical details of the invention, but the description can be informal. For example, a technical report, memorandum, or set of data tables may be adequate. Provisional applications, unlike nonprovisional applications, do not require claims (described below). Thus, filing a provisional application is convenient when there is no time to draft a more formal nonprovisional application before publicly disclosing the invention. Additionally, filing a provisional application buys an applicant some time to assess whether the commercial value of the invention merits the costs associated with filing a nonprovisional application. In most circumstances, a nonprovisional application must be filed within a year of the filing of the provisional application.

Filing a provisional application costs $210 (or $105 for a small entity). Additional fees may be charged if the application exceeds 100 sheets. Attorney time and costs depend on the level of formality of the provisional application.

Nonprovisional Applications

A nonprovisional patent application is the formal application that the USPTO examines for patentability. The USPTO rules require a nonprovisional application to have several sections, including a written description of the invention (i.e., the specification) and at least one claim. The requirements of a nonprovisional utility patent application can be found at the USPTO website at www.uspto.gov/web/offices/pac/utility/utility.htm. An applicant can file a nonprovisional application without filing a provisional application. Only a nonprovisional application can issue as a patent.

Filing a nonprovisional application costs $1,530 (or $765 for a small entity), which includes a filing fee, search fee, and examination fee. The USPTO charges additional fees depending on the number of claims and the length of the application. Drafting a nonprovisional patent application can cost from about $5,000 to tens of thousands of dollars in attorney time, depending on the complexity of the invention.

The Claims Define the Invention

Patent claims, which appear at the end of each patent, define the invention. Put another way, the patent claims are the legal boundaries of the patentee’s right to exclude. To draft claims, the patent attorney typically discusses the invention with the inventors and probes whether and how the invention can be applied beyond the immediate uses envisioned by the inventor. In drafting patent claims, the patent attorney balances the goals of drafting claims that cover the novel aspects of the invention as broadly as possible, thus maximizing the scope of patent protection, while drafting the claims narrowly enough that they do not cover subject matter that was already known in the field. Patent attorneys often achieve this balance by drafting a series of claims, some broad and some narrow. The invention disclosure and the results of the literature search mentioned above help guide the patent attorney in drafting claims with an appropriate scope.

Other Statutory Requirements of the Application

In drafting the application, the patent attorney considers criteria the patent examiner will use to determine patentability. As noted in part one of this series, an invention (as defined by the claims of the application) is reviewed for utility, novelty, and nonobviousness. Additionally, a patent application must contain a specification and claims that satisfy other statutory disclosure requirements, briefly touched upon in part two of this series. These include the definiteness, written description, enablement, and best mode requirements described below.

Definiteness: The claims of a patent must clearly set forth the patented subject matter, such that one can determine whether or not they infringe the patent.
Written Description: The patent specification must describe the invention in a way that demonstrates that the inventor actually possessed the claimed invention. For example, if the application only discusses uncharged emulsifiers for use in a composition, it might not provide enough “written description” to support a claim to charged emulsifiers.

Enablement: The patent specification must enable those skilled in the art to make and use the invention without undue experimentation. Thus, the application does not have to provide basic information such as how to boil water, but must provide information that is necessary to make and use the invention and would not otherwise be known.

Best Mode: The patent specification must disclose the best way of practicing the invention known to the inventors at the time of filing the application. For example, if the inventors claim a new compound, and have a synthetic route that they consider best, that synthetic route must be disclosed in the patent application.

Determining Inventorship

In the United States, only inventors can apply for patent applications. The inventors can assign ownership of the invention to a company—but the application must be filed by the inventors. Consequently, the patent attorney must determine the identity of the true inventors. Although inventorship can be corrected, improper inventorship is also a basis for invalidating a patent.

An inventor is defined as anyone who contributes to the conception of an invention. This is not the same standard as used when identifying authors for a journal article. For example, one who carries out routine but critical tasks without contributing to the conception of the invention is not an inventor—but such individuals may be named as co-authors. Likewise, vague brainstorming contributions that fall short of defining the operative features of an invention do not count as inventorship.

Each claim of a patent can have one or more inventors, and different claims can have different inventors. Each inventor should be included in the patent application. Therefore, joint inventorship is common. Joint inventorship may cause issues for inventions created with outside consultants, co-manufacturers, or research institutes. Therefore, when working on joint projects, it is important to consider up front who will own inventions resulting from such projects. Issues may also arise when a true inventor has left a company and is needed to participate in filing a patent application.

Accuracy of the Application

Before filing an application with the USPTO, the inventors must carefully review the application for accuracy. The inventors then sign a declaration stating that they are the original inventors and that the contents of the application are accurate. In the declaration, the inventors also acknowledge their duty of candor to the USPTO. This duty is described below.

The Duty of Candor

Under U.S. patent law, the patent applicants (including each named inventor) have a duty to provide to the patent examiner any information that could be material to the patentability of their invention. Such information could be prior art, public presentations, or data relating to the invention. This is known as the “duty of candor.” This duty begins with the filing of the application and continues until the patent issues. This duty may be satisfied by identifying such information in the application itself or by separately submitting materials to the USPTO in what is called an Information Disclosure Statement. Failure to comply with the duty of candor can render an issued patent unenforceable.

The Filing Date and its Implications

Once an application is received by the USPTO, it receives a filing date. This date is important for many reasons. First, it is the presumptive date of invention and will be used by the patent Examiner when searching for prior art to assess novelty and nonobviousness. Second, in the United States, an inventor has a one-year grace period to file a patent application after publicly disclosing an invention. Thus, to determine whether a public disclosure falls within the one-year grace period, one must know the filing date of the application. This grace period distinguishes U.S. patent law from most of the rest of the world, where patent rights are not available after an invention has been disclosed to the public. Therefore, before publicly disclosing an invention, it is important for the inventor (or intellectual property management) to discuss any public presentations, market tests, commercial sales, or other potential disclosures of the invention with the patent attorney to: 1) ensure that the U.S. patent application is filed within one year of such events; and 2) consider how such disclosures might impact patentability in other countries.

Prosecuting the Patent Application

Once received by the USPTO, a patent application is assigned to an examiner who specializes in the relevant technology. The examiner reviews the application for utility, novelty, nonobviousness, and to ensure that the application complies with other statutory requirements, including the definiteness, written description, enablement, and best mode requirements described above. The examiner then communicates with the applicants regarding the status of the application—i.e., whether or not the application meets the requirements for patentability. This process of communication between applicant and examiner is referred to as patent prosecution. The USPTO maintains a written record of these communications known as the prosecution history of the application and patent. The public and competitors may rely on the prosecution history to aid in understanding the scope of the patent claims. The applicant and examiner may speak with each other, but only written communications become part of the prosecution history on which the applicant, public, and competitors may rely.

Office Actions

If an application does not meet the requirements for patentability, the examiner issues an office action. An office action is a written communication from the examiner containing a claim-by-claim analysis of the invention. The examiner separately either allows or rejects each claim, providing the basis for each rejection. Each claim may be rejected for one or more reasons, including lack of novelty, obviousness, lack of enablement, or failure to satisfy another statutory requirement of patentability. Office actions become part of the prosecution history.

Office Action Responses

Applicants have a set period of time, typically two to three months, to respond to an office action. A response can address a rejected claim in the following ways:

- Explain why a rejection is wrong and argue for allowance of the rejected claim in its current form;
- Amend the rejected claim to overcome the rejection;
- or
- Cancel the rejected claim.
A response can include a submission of data or other information in support of the applicant’s arguments. Office action responses become part of the prosecution history.

An office action response may cost from a few hundred dollars to several thousand dollars in attorney time. Additionally, the USPTO charges extension fees ranging from $120 to $2,230 for filing a response beyond the time for response set by the examiner.

Examiner Interviews
In addition to or in lieu of submitting an office action response, an applicant can request an examiner interview to discuss the invention, discuss the examiner’s bases for rejection, and explain why the applicant believes the examiner is wrong. Interviews can be conducted telephonically or in person. After an examiner interview, the examiner typically issues an examiner interview summary, summarizing what was discussed in the examiner interview. Examiner interview summaries become part of the prosecution history.

Prosecution History
As explained above, all written communications between applicant and examiner go into the prosecution history. Thus, any admissions or explanations in the prosecution history can be used by accused infringers during litigation or by competitors when trying to interpret a patent’s scope. This prevents applicants from adopting a narrow view of the invention with the examiner for purposes of patentability and later arguing for a broad interpretation when asserting the patent in litigation. Therefore, the ability to amend claims and debate the scope of the invention with the examiner should not be used as a substitute for drafting a well thought-out application.

Publication of the Application
Patent applications are generally published by the USPTO about 18 months after filing, even if the application is still being prosecuted and even though the application may never issue as a patent. Monitoring published applications can provide insight into a competitor’s activities. The USPTO posts newly published patent applications every Thursday. These applications can be found and searched at http://www.uspto.gov/patft/index.html.

Final Rejection or Allowance
Eventually, a patent application is either allowed or the examiner issues a final rejection of one or more claims. If at least one claim is allowed, the applicant can obtain a patent on that claim and file a continuation application (see below) to continue prosecution of the other claims. Or the applicant can appeal the examiner’s rejections.

Upon issuance, the patent owner’s rights and the presumption of the patent’s validity attach. The USPTO issues new patents every Tuesday.

The Patent Family
During prosecution, before a patent application matures into an issued patent or a patent application is abandoned, an applicant may file additional applications that relate to the original nonprovisional application, also known as the parent application. These include divisional applications, continuation applications, and continuation-in-part applications, each of which is briefly described below.

Divisional Applications: If the parent application contains claims directed to more than one invention, the examiner may require that the applicant prosecute the claims to the different inventions in different applications. For example, if an application contains claims to both a new compound and a new composition, the examiner might require the applicant to prosecute the compound claims in one application and composition claims in another. The applicant must then choose which type of claim to prosecute in the original parent application and cancel the remaining claims. The applicant can then file a divisional application to prosecute the remaining claims. The divisional application is limited to subject matter disclosed but not pursued in the original application.

Continuation Applications: A continuation can be filed to continue prosecution of finally rejected claims with new arguments or amendments. A continuation may also be useful where only some claims in the original application have been allowed and some have been rejected. In such circumstances, the applicant can choose to have a patent issue on the allowed claims and pursue the rejected claims in the continuation application.

Continuation-In-Part Applications: A continuation-in-part (CIP) is an application filed during the pending of a parent application that contains some new matter, i.e., information that was not in the original application. The original matter in the CIP is entitled to the filing date of the original application, but the new matter is not. New matter may be added to provide support for claim amendments necessary to overcome an examiner’s rejection. Additionally, if improvements are made to an invention during prosecution of an application, the applicants may pursue the improvements in a CIP.

Divisional, continuation, and CIP applications must be filed during the pendency of the parent application. There are additional fees associated with filing divisional, continuation, and CIP applications.
**Maintenance Fees**

The USPTO requires patent holders to pay maintenance fees at 3.5, 7.5, and 11.5 years after issuance to keep a patent alive. Companies often reevaluate the value of a patent when maintenance fees are due. Paying maintenance fees on patents claiming unused or outdated technology may not make business sense. The following is the USPTO's maintenance fee schedule:

- **3.5 years:** $930;
- **7.5 years:** $2,360; and
- **11.5 years:** $3,910.

**Reissue And Reexamination**

After a patent issues, applicants and third parties can have the USPTO reconsider an issued patent through the reissue and/or reexamination procedures. There are USPTO fees associated with reissue and reexamination of a patent.

**Reissue:** A patent holder can seek reissue to correct mistakes in a patent, such as claiming too much or claiming too little. A reissue that narrows the claim scope can be pursued any time before patent expiry, but a reissue that broadens the claim scope must be requested within the first two years after issuance.

**Reexamination:** Reexamination allows the patentee or a third party to request that the USPTO reexamine a patent’s claims in light of specific pieces of prior art.

The USPTO will only conduct a reexamination upon presentation of a substantial new question of patentability. A patentee may seek reexamination to bolster the strength of a patent (i.e., reinforce the presumption that the patent is valid in light of newly discovered prior art). A competitor may seek reexamination as a relatively inexpensive alternative to litigation to invalidate a patent. However, such an approach can backfire if the patent makes it through reexamination and is actually strengthened by the procedure.

**Reference**


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