

WHAT IS A PATENT?

The source of patent law is Section 8 of the U.S. Constitution, which gives Congress the power “*To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.*” Accordingly, a patent confers upon its owner the *exclusive right* to make, use, sell, offer for sale, or import the patented invention for the term of the patent, which is typically 20 years from the date of the date the patent application is filed.

WHAT CAN BE PATENTED?

According to Title 35 U.S. Code, §101: “*Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.*” Pure concepts and ideas are not patentable; the idea must be given a physical embodiment. For example, Einstein’s discovery that matter can be converted into energy $E=mc^2$ is not patentable, but a tangible process or apparatus for converting matter into energy (such as a nuclear reactor) is patentable.

DOES AN INVENTION HAVE TO BE COMPLETELY NEW TO BE PATENTED?

No, improvements on existing inventions are patentable. The vast majority of patents deal with improvements of an existing technology, not an entirely new technology.

WHAT STANDARDS ARE APPLIED TO DETERMINE IF AN INVENTION IS PATENTABLE?

There are three standards: utility, novelty, and non-obviousness. Utility requires that the invention has a useful function (general utility) and that it actually performs that function (specific utility). For example, a perpetual motion machine is not patentable because it cannot actually perform its supposed function. Novelty, as defined in 35 U.S. Code §102, requires: (a) that the invention was not known, used or patented by others before the applicant invented it, and (b) that the invention was not in public use or on sale in the U.S. and was not patented or described in a printed publication in any country more than one year prior to the date of the application for patent in the U.S. Inventions that were known, used, sold or patented before the applicant’s invention are referred to as the “prior art”. Non-obviousness, as defined in 35 U.S. Code §103, requires that the applicant’s invention be sufficiently different from the prior art that a person of ordinary skill in the field would not be able to derive the invention from the prior art. In other words, if someone of ordinary skill in the field could have come up with the same invention based on the prior art, then the invention is obvious and is not patentable.

WHAT IS THE FIRST STEP IN PATENTING AN INVENTION?

An initial determination needs to be made as to whether the invention is patentable. The first step in making that determination is to conduct a “patentability search” or “patent search”. Such a search involves surveying the prior art worldwide, including U.S. patents and patent publications as well as international patents and publications. The goal of the patent search is to identify the prior art that is most relevant to the invention at hand in terms of novelty and/or obviousness. Once the most relevant prior art has been identified, it must be reviewed and analyzed by a competent patent attorney in order to formulate an expert assessment of the prospects of obtaining a patent for the invention. Such an assessment is issued by the attorney in the form of an “opinion letter”. The opinion letter provides the inventor with the input he/she needs to make informed business decision about proceeding to the next step of the patenting process.

WHEN AND HOW IS A PATENT APPLICATION PREPARED?

After the patent attorney has issued the opinion letter assessing the patentability of the invention, the attorney and inventor will typically confer and together decide whether to prepare a patent application. They will also discuss the scope of the invention that will be disclosed in the application. Typically, an invention will encompass more than one version or “embodiment”. While an inventor will usually envision one or more optimum versions of the invention, which are the “preferred embodiments”, he/she will want his/her patent protection to extend beyond the preferred embodiments to prevent competitors from “working around” the patent. Once the scope of the invention to be patented is determined, the attorney will prepare a patent application consisting of three principal parts: (i) the Specification, (ii) the Claims, and (iii) the Drawings.

WHAT INFORMATION GOES INTO THE PATENT SPECIFICATION?

35 U.S. Code §112 requires that the patent Specification be “enabling” — that is, it must enable someone with ordinary skill in the field to practice the invention simply by reading the Specification. The Specification is usually divided into four parts: (i) Background of the Invention, (ii) Summary of the Invention, (iii) Brief Description of the Drawings, and (iv) Detailed Description of the Preferred Embodiment(s). In the Background section, the Specification points out how the present invention is distinguishable from the prior art — *i.e.*, how it is both novel and non-obvious in light of the prior art. The Summary section discusses the “objectives” of the invention, primarily by identifying the problems that are associated with the prior art and that the present invention is able to solve. Each of the Drawings is identified as Fig. 1, Fig. 2, *etc.*, with a one-sentence description of what is depicted in each. The Drawings include “reference numbers” that identify each element of the invention. In the Detailed Description, these reference numbers are used to create a narrative describing how the invention is practiced — how it is “put together” and how it works.

WHAT IS THE FUNCTION OF THE PATENT CLAIMS?

The patent Claims are the heart of the patent application, because the Claims define the scope of the inventor’s patent protection. While the Claims must be based upon what is

disclosed in the Specification, they typically will be much broader in scope than the preferred embodiment(s) that are described in detail in the Specification. The object in writing the Claims is to lay claim to as many of the potentially viable versions of the invention as possible without overextending into areas already staked out by the prior art. The Claims are structured such that there are a few “independent claims”, which, as the name implies, stand on their own. Each independent claim will usually have associated with it a number of “dependent claims”, which represent refinements of the invention set forth in the independent claim. The Claims may relate to an apparatus, a chemical composition, a genetic sequence, a computer code, a process, or a method. While each patent application must relate to only one invention, the invention may be alternately claimed in different categories. For example, if an apparatus is claimed, the process performed by the apparatus and/or the method by which it is used can also be claimed.

ARE THERE DIFFERENT TYPES OF PATENT APPLICATIONS?

Yes. There are four types: (i) Utility Patent applications, (ii) Design Patent applications, (iii) Plant Patent applications, and (iv) Provisional Patent applications. The most common is the Utility Patent application, which covers functional man-made items, such as mechanical, electrical, chemical, pharmaceutical, software and genetic inventions. Design Patents deal with ornamental designs of functional items. For example, a new type of fabric would call for a Utility Patent application, while a new decorative fabric pattern would involve a Design Patent application. Subject to certain exceptions, newly developed plant varieties can be the subject of Plant Patent applications. A Provisional Patent application can be filed one year in advance of a Utility Patent application in order to secure a “priority date” for the Utility Patent application. Since earlier patent applications predating the “priority date” are considered to be prior art that may be cited against patentability of the invention at hand, it is sometimes advantageous to secure an early priority date by filing a Provisional Patent application in advance of the Utility Patent application.

WHAT HAPPENS AFTER THE PATENT APPLICATION IS FILED?

The filed application is first reviewed in the Patent Office for completeness. In some instances, a Notice to File Missing Parts may be issued after the initial filing. Once the application is complete, a Foreign Filing License is issued by the Patent Office. This gives the inventor a period of one year (or six months for Design Patent applications) to file international patent applications based on the priority date of the U.S. application. The application is then referred to a specific Group Art Unit within the Patent Office that deals with the field of art most relevant to the invention at hand. An individual Patent Examiner is assigned to review the application. After his/her initial review the Patent Examiner will issue a first Office Action, in he/she will: (a) find all of the claims to be allowable, (b) find some of the claims to be allowable, while objecting to or rejecting other claims, or (c) reject all of the claims. The patent attorney for the inventor will then prepare a response to the initial Office Action, in which response the attorney may amend the claims in an effort to overcome the Examiner’s rejections. In addition, or alternately, the attorney’s response may traverse the Examiner’s objections/rejections by offering

legal arguments. The Examiner will then issue a final Office Action, which again may allow some or all of the claims and/or reject some or all of them.

IS THERE ANY RECOURSE FROM AN UNFAVORABLE FINAL OFFICE ACTION?

Yes. The inventor's attorney can appeal the Examiner's rulings, or file a Request for Continued Examination (RCE). The RCE process basically gives the attorney another opportunity to overcome the Examiner's grounds for rejecting some or all of the claims.

WHAT HAPPENS ONCE THE EXAMINER FINDS THE CLAIMS ARE ALLOWABLE?

A Notice of Allowance issues, and all that remains to be done is pay the fees required for issuance of the patent.

DOES THE INVENTOR HAVE TO WAIT FOR THE ISSUANCE OF HIS/HER PATENT BEFORE BEGINNING TO MANUFACTURE OR MARKET THE INVENTION?

No. The mere filing of a patent application protects the inventor from infringement during the period the application is under review, provided that a patent ultimately issues for the invention. Patent protection relates back to the patent application filing date and covers the "patent pending" period.

HOW LONG DOES THE ENTIRE PATENTING PROCESS TAKE?

The duration of the process from patent application filing to issuance of a patent can be quite variable. Much depends on how much backlog exists in the Group Art Unit and Patent Examiner assigned to review the application. The process seldom takes less than a year, but usually does not extend beyond three years (except if an appeal or an RCE is needed).

SHOULD AN INVENTOR DISCLOSE HIS/HER INVENTION TO OTHERS PRIOR TO FILING A PATENT APPLICATION?

An inventor should avoid disclosing his/her invention to anyone other than his/her patent attorney until after the patent application is filed, because the application affords the only truly secure protection from misappropriation of the invention by others. Also, the publication of information about the invention more than a year in advance of the patent application may actually deprive the inventor of his/her patent rights. In the rare instances where pre-application disclosure is unavoidable, the inventor should have his/her patent attorney draft an appropriate Non-Disclosure Agreement to limit the use of the information by the party to whom it is being disclosed.