

CSE 490T/590T: Intellectual Property Law for Engineers

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1. Introduction

This course reader is a compilation of materials obtained from various sources, including works in the public domain produced by government agencies (e.g., U.S. Patent and Trademark Office, Copyright Office) and the courts, works provided by private parties or organizations under permissive licenses, works in the public domain by virtue of copyright expiration, the author's own work, etc. No claim to copyright is made to materials in the public domain or obtained from others under license.

Very Brief Overview of IP Regimes

Some people confuse patents, copyrights, trademarks, and trade secrets. Although there may be some similarities among these kinds of intellectual property protection, they are different and serve different purposes.

Patents

A patent for an invention is the grant of a property right to the inventor, issued by the United States Patent and Trademark Office. Generally, the term of a new patent is 20 years from the date on which the application for the patent was filed in the United States or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees. U.S. patent grants are effective only within the United States, U.S. territories, and U.S. possessions. Under certain circumstances, patent term extensions or adjustments may be available.

The right conferred by the patent grant is, in the language of the statute and of the grant itself, "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States or "importing" the invention into the United States. What is granted is not the right to make, use, offer for sale, sell or import, but the right to exclude others from making, using, offering for sale, selling or importing the invention. Once a patent is issued, the patentee must enforce the patent in the courts.

The theory behind the patent system is: in exchange for sharing information about the invention with the public, the government grants the inventor a limited right to exclude others from making and using the invention. The grant is limited in duration and scope. The grant is limited in scope because the grant only covers what is claimed in the patent. The claims of the patent are the formal, legal description of the invention.

There are three types of patents:

- 1) **Utility patents** may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof;
- 2) **Design patents** may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture; and
- 3) **Plant patents** may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.

Trademarks

A trademark is a word, name, symbol, or device that is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others. A

servicemark is the same as a trademark except that it identifies and distinguishes the source of a service rather than a product. The terms “trademark” and “mark” are commonly used to refer to both trademarks and servicemarks.

Trademark rights may be used to prevent others from using a confusingly similar mark, but not to prevent others from making the same goods or from selling the same goods or services under a clearly different mark. Trademarks that are used in interstate or foreign commerce may be registered with the USPTO. The registration procedure for trademarks and general information concerning trademarks can be found in the separate book entitled “Basic Facts about Trademarks.”(http://www.uspto.gov/trademarks/basics/Basic_Facts_Trademarks.jsp).

Copyright

Copyright is a form of protection provided to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works, both published and unpublished. The 1976 Copyright Act generally gives the owner of copyright the exclusive right to reproduce the copyrighted work, to prepare derivative works, to distribute copies or phonorecords of the copyrighted work, to perform the copyrighted work publicly, or to display the copyrighted work publicly.

The copyright protects the form of expression rather than the subject matter of the writing. For example, a description of a machine could be copyrighted, but this would only prevent others from copying the description; it would not prevent others from writing a description of their own or from making and using the machine.

Trade Secrets

Trade secret can be used to protect (1) valuable business information that (2) is not generally known, and (3) which is subject to reasonable efforts to preserve secrecy.

Trade secret is protected under state law, now federal law. Typically, it is based in contractual relations between two parties (e.g., employer-employee, buyer-seller, etc.). Many states have adopted the Uniform Trade Secrets Act.

Getting a trade secret is easy, compared to patents: make a secret, keep it a secret, typically via non-disclosure agreements.

Notice the tension between trade secrets and patents. Patents require disclosure; trade secrets require confidentiality. If you have something (e.g., an algorithm) that you want to patent, you must disclose it to the public, which destroys the secret.

Main IP Regimes Compared

<i>Type</i>	<i>Term</i>	<i>Subject Matter</i>	<i>Cost</i>
Utility Patent	20 years	New and useful machines, processes, compositions of matter	High
Design Patent	14 years	Ornamental designs	Medium
Trademark	Indefinite	Indicators of source	Medium
Copyright	Life + 70	Original works of authorship fixed in tangible mediums of expression	Low
Trade secret	Indefinite	Secret information	Low

Enrichment Reading

This reader will occasionally include excerpts from literature, law review articles, current events, and the like. The purpose is to get the reader to think laterally, to ponder the nature and purpose of the legal system generally, or specific intellectual property rules in particular. This next excerpt is a chapter from *Moby Dick*, by Herman Melville. As you read it, think about the rule system described by the narrator. Why even have such a system of rules? Are there other ways to arrange the entitlements and remedies in the system?

Moby Dick, Chapter 89, Fast-fish and Loose-fish¹

The allusion to the waif-poles² in the last chapter but one, necessitates some account of the laws and regulations of the whale fishery, of which the waif may be deemed the grand symbol and badge.

It frequently happens that when several ships are cruising in company, a whale may be struck by one vessel, then escape, and be finally killed and captured by another vessel; and herein are indirectly comprised many minor contingencies, all partaking of this one grand feature. For example,- after a weary and perilous chase and capture of a whale, the body may get loose from the ship by reason of a violent storm; and drifting far away to leeward, be retaken by a second whaler, who, in a calm, snugly tows it alongside, without risk of life or line. Thus the most vexatious and violent disputes would often arise between the fishermen, were there not some written or unwritten, universal, undisputed law applicable to all cases.

Perhaps the only formal whaling code authorized by legislative enactment, was that of Holland. It was decreed by the States-General in A.D. 1695. But though no other nation has ever had any written whaling law, yet the American fishermen have been their own legislators and lawyers in this matter. They have provided a system which for terse comprehensiveness surpasses Justinian's Pandects and the By-laws of the Chinese Society for the Suppression of

¹ Herman Melville, *Moby Dick*; or *The Whale*, 1851.

² "The waif is a pennoned pole, two or three of which are carried by every boat; and when additional game is at hand, are inserted upright into the floating body of a dead whale, both to mark its place on the sea, and also as token of prior possession, should the boats of any other ship draw near." *Moby Dick*, Chapter 87.

Meddling with other People's Business. Yes; these laws might be engraven on a Queen Anne's forthing, or the barb of a harpoon, and worn round the neck, so small are they.

I. A Fast-Fish belongs to the party fast to it.

II. A Loose-Fish is fair game for anybody who can soonest catch it.

But what plays the mischief with this masterly code is the admirable brevity of it, which necessitates a vast volume of commentaries to expound it.

First: What is a Fast-Fish? Alive or dead a fish is technically fast, when it is connected with an occupied ship or boat, by any medium at all controllable by the occupant or occupants,- a mast, an oar, a nine-inch cable, a telegraph wire, or a strand of cobweb, it is all the same. Likewise a fish is technically fast when it bears a waif, or any other recognized symbol of possession; so long as the party wailing it plainly evince their ability at any time to take it alongside, as well as their intention so to do.

These are scientific commentaries; but the commentaries of the whalemens themselves sometimes consist in hard words and harder knocks- the Coke-upon-Littleton of the fist. True, among the more upright and honorable whalemens allowances are always made for peculiar cases, where it would be an outrageous moral injustice for one party to claim possession of a whale previously chased or killed by another party. But others are by no means so scrupulous.

Some fifty years ago there was a curious case of whale-trover litigated in England, wherein the plaintiffs set forth that after a hard chase of a whale in the Northern seas; and when indeed they (the plaintiffs) had succeeded in harpooning the fish; they were at last, through peril of their lives, obliged to forsake not only their lines, but their boat itself. Ultimately the defendants (the crew of another ship) came up with the whale, struck, killed, seized, and finally appropriated it before the very eyes of the plaintiffs. And when those defendants were remonstrated with, their captain snapped his fingers in the plaintiffs' teeth, and assured them that by way of doxology to the deed he had done, he would now retain their line, harpoons, and boat, which had remained attached to the whale at the time of the seizure. Wherefore the plaintiffs now sued for the recovery of the value of their whale, line, harpoons, and boat.

Mr. Erskine was counsel for the defendants; Lord Ellenborough was the judge. In the course of the defence, the witty Erskine went on to illustrate his position, by alluding to a recent crim. con. case, wherein a gentleman, after in vain trying to bridle his wife's viciousness, had at last abandoned her upon the seas of life; but in the course of years, repenting of that step, he instituted an action to recover possession of her. Erskine was on the other side; and he then supported it by saying, that though the gentleman had originally harpooned the lady, and had once had her fast, and only by reason of the great stress of her plunging viciousness, had at last abandoned her; yet abandon her he did, so that she became a loose-fish; and therefore when a subsequent gentleman re-harpooned her, the lady then became that subsequent gentleman's property, along with whatever harpoon might have been found sticking in her.

Now in the present case Erskine contended that the examples of the whale and the lady were reciprocally illustrative to each other.

These pleadings, and the counter pleadings, being duly heard, the very learned Judge in set terms decided, to wit,- That as for the boat, he awarded it to the plaintiffs, because they had merely abandoned it to save their lives; but that with regard to the controverted whale, harpoons, and line, they belonged to the defendants; the whale, because it was a Loose-Fish at the time of the final capture; and the harpoons and line because when the fish made off with them, it (the fish) acquired a property in those articles; and hence anybody who afterwards took the fish had a right to them. Now the defendants afterwards took the fish; ergo, the aforesaid articles were theirs.

A common man looking at this decision of the very learned Judge, might possibly object to it. But ploughed up to the primary rock of the matter, the two great principles laid down in the twin whaling laws previously quoted, and applied and elucidated by Lord Ellenborough in the above cited case; these two laws touching Fast-Fish and Loose-Fish, I say, will on reflection, be found the fundamentals of all human jurisprudence; for notwithstanding its complicated tracery of sculpture, the Temple of the Law, like the Temple of the Philistines, has but two props to stand on.

Is it not a saying in every one's mouth, Possession is half of the law: that is, regardless of how the thing came into possession? But often possession is the whole of the law. What are the sinews and souls of Russian serfs and Republican slaves but Fast-Fish, whereof possession is the whole of the law? What to the rapacious landlord is the widow's last mite but a Fast-Fish? What is yonder undetected villain's marble mansion with a doorplate for a waif; what is that but a Fast-Fish? What is the ruinous discount which Mordecai, the broker, gets from the poor Woebegone, the bankrupt, on a loan to keep Woebegone's family from starvation; what is that ruinous discount but a Fast-Fish? What is the Archbishop of Savesoul's income of L100,000 seized from the scant bread and cheese of hundreds of thousands of broken-backed laborers (all sure of heaven without any of Savesoul's help) what is that globular 100,000 but a Fast-Fish. What are the Duke of Dunder's hereditary towns and hamlets but Fast-Fish? What to that redoubted harpooneer, John Bull, is poor Ireland, but a Fast-Fish? What to that apostolic lancer, Brother Jonathan, is Texas but a Fast-Fish? And concerning all these, is not Possession the whole of the law?

But if the doctrine of Fast-Fish be pretty generally applicable, the kindred doctrine of Loose-Fish is still more widely so. That is internationally and universally applicable.

What was America in 1492 but a Loose-Fish, in which Columbus struck the Spanish standard by way of wailing it for his royal master and mistress? What was Poland to the Czar? What Greece to the Turk? What India to England? What at last will Mexico be to the United States? All Loose-Fish.

What are the Rights of Man and the Liberties of the World but Loose-Fish? What all men's minds and opinions but Loose-Fish? What is the principle of religious belief in them but a Loose-Fish? What to the ostentatious smuggling verbalists are the thoughts of thinkers but Loose-Fish? What is the great globe itself but a Loose-Fish? And what are you, reader, but a Loose-Fish and a Fast-Fish, too?

Credits, Sources, Copyrights

The above materials are based substantially on content provided by the USPTO, available at: <http://www.uspto.gov/patents-getting-started/general-information-concerning-patents>.

Works produced by the USPTO are works prepared by the U.S. Government and are thus in the public domain. No claim to copyright is made to those materials.

2. Patent Overview

Patent Laws

The Constitution of the United States gives Congress the power to enact laws relating to patents, in Article I, section 8, which reads "Congress shall have 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."

Under this power Congress has from time to time enacted various laws relating to patents. The first patent law was enacted in 1790. The patent laws underwent a general revision which was enacted July 19, 1952, and which came into effect January 1, 1953. It is codified in Title 35, United States Code. On September 16, 2011, Congress enacted the America Invents Act, representing a major overhaul of the patent system.

The patent law specifies the subject matter for which a patent may be obtained and the conditions for patentability. The law establishes the United States Patent and Trademark Office to administer the law relating to the granting of patents and contains various other provisions relating to patents.

What Can Be Patented

The patent law specifies the general field of subject matter that can be patented and the conditions under which a patent may be obtained.

In the language of the statute, any person who "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," subject to the conditions and requirements of the law. The word "process" is defined by law as a process, act, or method, and primarily includes industrial or technical processes. The term "machine" used in the statute needs no explanation. The term "manufacture" refers to articles that are made, and includes all manufactured articles. The term "composition of matter" relates to chemical compositions and may include mixtures of ingredients as well as new chemical compounds. These classes of subject matter taken together include practically everything that is made by man and the processes for making the products.

The Atomic Energy Act of 1954 excludes the patenting of inventions useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon. See 42 U.S.C. 2181(a).

The patent law specifies that the subject matter must be "useful." The term "useful" in this connection refers to the condition that the subject matter has a useful purpose and also includes operativeness, that is, a machine which will not operate to perform the intended purpose would not be called useful, and therefore would not be granted a patent.

Interpretations of the statute by the courts have defined the limits of the field of subject matter that can be patented, thus it has been held that the laws of nature, physical phenomena, and abstract ideas are not patentable subject matter.

A patent cannot be obtained upon a mere idea or suggestion. The patent is granted upon the new machine, manufacture, etc., as has been said, and not upon the idea or suggestion of the new machine. A complete description of the actual machine or other subject matter for which a patent is sought is required.

Novelty and Non-Obviousness, Conditions for Obtaining a Patent

In order for an invention to be patentable it must be new as defined in the patent law, which provides that an invention cannot be patented if:

“(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention” or

“(2) the claimed invention was described in a patent issued [by the U.S.] or in an application for patent published or deemed published [by the U.S.], in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.”

There are certain limited patent law exceptions to patent prohibitions (1) and (2) above. Notably, an exception may apply to a “disclosure made 1 year or less before the effective filing date of the claimed invention,” but only if “the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed... from the inventor or a joint inventor.”

In patent prohibition (1), the term “otherwise available to the public” refers to other types of disclosures of the claimed invention such as, for example, an oral presentation at a scientific meeting, a demonstration at a trade show, a lecture or speech, a statement made on a radio talk show, a YouTube™ video, or a website or other on-line material.

Effective filing date of the claimed invention: This term appears in patent prohibitions (1) and (2). For a U.S. nonprovisional patent application that is the first application containing the claimed subject matter, the term “effective filing date of the claimed invention” means the actual filing date of the U.S. nonprovisional patent application. For a U.S. nonprovisional application that claims the benefit of a corresponding prior-filed U.S. provisional application, “effective filing date of the claimed invention” can be the filing date of the prior-filed provisional application provided the provisional application sufficiently describes the claimed invention. Similarly, for a U.S. nonprovisional application that is a continuation or division of a prior-filed U.S. nonprovisional application, “effective filing date of the claimed invention” can be the filing date of the prior filed nonprovisional application that sufficiently describes the claimed invention. Finally, “effective filing date of the claimed invention” may be the filing date of a prior-filed foreign patent application to which foreign priority is claimed provided the foreign patent application sufficiently describes the claimed invention.

Even if the subject matter sought to be patented is not exactly shown by the prior art, and involves one or more differences over the most nearly similar thing already known, a patent may still be refused if the differences would be obvious. The subject matter sought to be patented must be sufficiently different from what has been used or described before that it may be said to be non-obvious to a person having ordinary skill in the area of technology related to the invention. For example, the substitution of one color for another, or changes in size, are ordinarily not patentable.

The United States Patent and Trademark Office

Congress established the United States Patent and Trademark Office to issue patents on behalf of the government. The Patent Office as a distinct bureau dates from the year 1802 when a separate official in the Department of State, who became known as “Superintendent of Patents,” was placed in charge of patents. The revision of the patent laws enacted in 1836 reorganized the Patent Office and designated the official in charge as Commissioner of Patents.

The Patent Office remained in the Department of State until 1849 when it was transferred to the Department of Interior. In 1925 it was transferred to the Department of Commerce where it is today. The name of the Patent Office was changed to the Patent and Trademark Office in 1975 and changed to the United States Patent and Trademark Office in 2000.

The USPTO administers the patent laws as they relate to the granting of patents for inventions, and performs other duties relating to patents. Applications for patents are examined to determine if the applicants are entitled to patents under the law and patents are granted when applicants are so entitled. The USPTO publishes issued patents and most patent applications 18 months from the earliest effective application filing date, and makes various other publications concerning patents. The USPTO also records assignments of patents, maintains a search room for the use of the public to examine issued patents and records, and supplies copies of records and other papers, and the like. Similar functions are performed with respect to the registration of trademarks. The USPTO has no jurisdiction over questions of infringement and the enforcement of patents.

The work of examining applications for patents is divided among a number of examining technology centers (TCs), each TC having jurisdiction over certain assigned fields of technology. Each TC is headed by group directors and staffed by examiners and support staff. The examiners review applications for patents and determine whether patents can be granted. An appeal can be taken to the Patent Trial and Appeal Board from their decisions refusing to grant a patent, and a review by the Director of the USPTO may be had on other matters by petition. In addition to the examining TCs, other offices perform various services, such as receiving and distributing mail, receiving new applications, handling sales of printed copies of patents, making copies of records, inspecting drawings, and recording assignments.

At present, the USPTO has over 12,000 employees, of whom about three quarters are examiners and others with technical and legal training. Patent applications are received at the rate of over 500,000 per year.

Who May Apply For A Patent

According to the law, the inventor, or a person to whom the inventor has assigned or is under an obligation to assign the invention, may apply for a patent, with certain exceptions. If the inventor is deceased, the application may be made by legal representatives, that is, the administrator or executor of the estate. If the inventor is legally incapacitated, the application for patent may be made by a legal representative (e.g., guardian). If an inventor refuses to apply for a patent or cannot be found, a joint inventor may apply on behalf of the non-signing inventor.

If two or more persons make an invention jointly, they apply for a patent as joint inventors. A person who makes only a financial contribution is not a joint inventor and cannot be joined in the application as an inventor. It is possible to correct an innocent mistake in erroneously omitting an inventor or in erroneously naming a person as an inventor.

Officers and employees of the United States Patent and Trademark Office are prohibited by law from applying for a patent or acquiring, directly or indirectly, except by inheritance or bequest, any patent or any right or interest in any patent.

Application For Patent

Non-Provisional Application for a Patent

A nonprovisional application for a patent is made to the Director of the United States Patent and Trademark Office and includes:

- (1) A written document which comprises a specification (description and claims);
- (2) Drawings (when necessary);
- (3) An oath or declaration; and
- (4) Filing, search, and examination fees. Fees for filing, searching, examining, issuing, appealing, and maintaining patent applications and patents are reduced by 50 percent for any small entity that qualifies for reduced fees under 37 CFR 1.27(a), and are reduced by 75 percent for any micro entity that files a certification that the requirements under 37 CFR 1.29(a) or (d) are met.

All application documents must be in the English language or a translation into the English language will be required along with the required fee set forth in 37 CFR 1.17(i).

The specification must conclude with a claim or claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as the invention. The portion of the application in which the applicant sets forth the claim or claims is an important part of the application, as it is the claims that define the scope of the protection afforded by the patent. The claims must commence on a separate sheet.

More than one claim may be presented provided they differ from each other. Claims may be presented in independent form (e.g. the claim stands by itself) or in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim that refers back to more than one other claim is considered a “multiple dependent claim.”

The application for patent is not forwarded for examination until all required parts, complying with the rules related thereto, are received. If any application is filed without all the required parts for obtaining a filing date (incomplete or defective), the applicant will be notified of the deficiencies and given a time period to complete the application filing (a surcharge may be required)—at which time a filing date as of the date of such a completed submission will be obtained by the applicant. If the omission is not corrected within a specified time period, the application will be returned or otherwise disposed of; the filing fee if submitted will be refunded less a handling fee as set forth in the fee schedule.

The filing fee and declaration or oath need not be submitted with the parts requiring a filing date. It is, however, desirable that all parts of the complete application be deposited in the Office together; otherwise, each part must be signed and a letter must accompany each part, accurately and clearly connecting it with the other parts of the application. If an application that has been accorded a filing date does not include the filing fee or the oath or declaration, applicant will be notified and given a time period to pay the filing fee, file an oath or declaration and pay a surcharge.

All applications received in the USPTO are numbered in sequential order, and the applicant will be informed of the application number and filing date by a filing receipt.

The filing date of an application for patent is the date on which a specification (including at least one claim) and any drawings necessary to understand the subject matter sought to be patented are received in the USPTO; or the date on which the last part completing the application is received in the case of a previously incomplete or defective application.

Provisional Application for a Patent

Since June 8, 1995, the USPTO has offered inventors the option of filing a provisional application for patent, which was designed to provide a lower-cost first patent filing in the United States and to give U.S. applicants parity with foreign applicants. Claims and oath or declaration are NOT required for a provisional application. A provisional application provides the means to establish an early effective filing date in a patent application and permits the term “Patent

Pending” to be applied in connection with the invention. Provisional applications may not be filed for design inventions.

The filing date of a provisional application is the date on which a written description of the invention, and drawings if necessary, are received in the USPTO. To be complete, a provisional application must also include the filing fee, and a cover sheet specifying that the application is a provisional application for patent. The applicant would then have up to 12 months to file a nonprovisional application for patent as described above. The claimed subject matter in the later filed nonprovisional application is entitled to the benefit of the filing date of the provisional application if it has support in the provisional application.

If a provisional application is not filed in English, and a nonprovisional application is filed claiming benefit to the provisional application, a translation of the provisional application will be required. See title 37, Code of Federal Regulations, Section 1.78(a)(5).

Provisional applications are NOT examined on their merits. A provisional application will become abandoned by the operation of law 12 months from its filing date. The 12-month pendency for a provisional application is not counted toward the 20-year term of a patent granted on a subsequently filed nonprovisional application that claims benefit of the filing date of the provisional application.

Publication of Patent Applications

Publication of patent applications is required by the American Inventors Protection Act of 1999 for most plant and utility patent applications filed on or after November 29, 2000. On filing of a plant or utility application on or after November 29, 2000, an applicant may request that the application not be published, but only if the invention has not been and will not be the subject of an application filed in a foreign country that requires publication 18 months after filing (or earlier claimed priority date) or under the Patent Cooperation Treaty. Publication occurs after the expiration of an 18-month period following the earliest effective filing date or priority date claimed by an application. Following publication, the application for patent is no longer held in confidence by the Office and any member of the public may request access to the entire file history of the application.

As a result of publication, an applicant may assert provisional rights. These rights provide a patentee with the opportunity to obtain a reasonable royalty from a third party that infringes a published application claim provided actual notice is given to the third party by applicant, and patent issues from the application with a substantially identical claim. Thus, damages for pre-patent grant infringement by another are now available.

Oath or Declaration, Signature

An oath or declaration is a formal statement that must be made by the inventor in a non-provisional application. Each inventor must sign an oath or declaration that includes certain statements required by law and the USPTO rules, including the statement that he or she believes himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application and the statement that the application was made or authorized to be made by him or her. See 35 U.S.C 115 and 37 CFR 1.63. An oath must be sworn to by the inventor before a notary public. A declaration may be submitted in lieu of an oath. A declaration does not need to be notarized. Oaths or declarations are required for design, plant, utility, and reissue applications.

Filing, Search, and Examination Fees

A patent application is subject to the payment of a basic fee and additional fees that include a search fee, an examination fee, and issue fee. Consult the USPTO website at www.uspto.gov for the current fees. Total claims that exceed 20, and independent claims that exceed three are considered “excess claims” for which additional fees are due. For example, if applicant filed a total of 25 claims, including four independent claims, applicant would be required to pay excess claims fees for five total claims exceeding 20, and one independent claim exceeding three. If the same applicant later filed an amendment increasing the total number of claims to 29, and the number of independent claims to six, applicant would be required to pay more excess claims fees for the four additional total claims and the two additional independent claims.

If the owner of the invention is a small entity, (an independent inventor, a small business concern or a nonprofit organization), most fees are reduced by half if small entity status is claimed. If small entity status is desired and appropriate, applicants should pay the small entity filing fee. Applicants claiming small entity status should make an investigation as to whether small entity status is appropriate before claiming such status.

Specification [Description and Claims]

The following order of arrangement should be observed in framing the application:

- (a) Application transmittal form
- (b) Fee transmittal form
- (c) Application Data Sheet
- (d) Specification
- (e) Drawings
- (f) Executed Oath or declaration

The specification should have the following sections, in order:

- (1) Title of the Invention
- (2) Cross Reference to related applications (if any). (Related applications may be listed on an application data sheet, either instead of or together with being listed in the specification.)
- (3) Statement of federally sponsored research or development (if any)
- (4) The names of the parties to a joint research agreement if the claimed invention was made as a result of activities within the scope of a joint research agreement
- (5) Reference to a “Sequence Listing,” a table, or a computer program listing appendix submitted on a compact disc and an incorporation by reference of the material on the compact disc. The total number of compact disc including duplicates and the files on each compact disc shall be specified.
- (6) Background of the Invention
- (7) Brief Summary of the Invention
- (8) Brief description of the several views of the drawing (if any)
- (9) Detailed Description of the Invention
- (10) A claim or claims
- (11) Abstract of the disclosure
- (12) Sequence listing (if any)

The specification must include a written description of the invention and of the manner and process of making and using it, and is required to be in such full, clear, concise, and exact

terms as to enable any person skilled in the technological area to which the invention pertains, or with which it is most nearly connected, to make and use the same.

The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter, or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor for carrying out the invention must be set forth.

In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

The title of the invention, which should be as short and specific as possible (no more than 500 characters), should appear as a heading on the first page of the specification if it does not otherwise appear at the beginning of the application. A brief abstract of the technical disclosure in the specification, including that which is new in the art to which the invention pertains, must be set forth on a separate page preferably following the claims. The abstract should be in the form of a single paragraph of 150 words or less, under the heading "Abstract of the Disclosure."

A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. The summary should be commensurate with the invention as claimed, and any object recited should be that of the invention as claimed.

When there are drawings, there shall be a brief description of the several views of the drawings, and the detailed description of the invention shall refer to the different views by specifying the numbers of the figures, and to the different parts by use of reference numerals.

The specification must conclude with a claim or claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as the invention. The portion of the application in which the applicant sets forth the claim or claims is an important part of the application, as it is the claims that define the scope of the protection afforded by the patent and which questions of infringement are judged by the courts.

More than one claim may be presented, provided they differ substantially from each other and are not unduly multiplied. One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim that refers back to more than one other claim is considered a "multiple dependent claim."

Claims in dependent form shall be construed to include all of the limitations of the claim incorporated by reference into the dependent claim. A multiple dependent claim shall be construed to incorporate all the limitations of each of the particular claims in relation to which it is being considered.

The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

Drawing

The applicant for a patent will be required by law to furnish a drawing of the invention whenever the nature of the case requires a drawing to understand the invention. However, the Director may require a drawing where the nature of the subject matter admits of it; this drawing must be filed with the application. This includes practically all inventions except compositions of matter or processes, but a drawing may also be useful in the case of many processes.

The drawing must show every feature of the invention specified in the claims, and is required by the Office rules to be in a particular form. The Office specifies the size of the sheet on which the drawing is made, the type of paper, the margins, and other details relating to the making of the drawing. The reason for specifying the standards in detail is that the drawings are printed and published in a uniform style when the patent issues, and the drawings must also be such that they can be readily understood by persons using the patent descriptions.

Examination of Applications and Proceedings In the United States Patent and Trademark Office

Applications, other than provisional applications, filed in the United States Patent and Trademark Office and accepted as complete applications are assigned for examination to the respective examining technology centers having charge of the areas of technology related to the invention. In the examining TC, applications are taken up for examination by the examiner to whom they have been assigned in the order in which they have been filed or in accordance with examining procedures established by the Director.

Applications will not be advanced out of turn for examination or for further action except as provided by the rules, or upon order of the Director to expedite the business of the Office, or upon a showing that, in the opinion of the Director, will justify advancing them.

The examination of the application consists of a study of the application for compliance with the legal requirements and a search through U.S. patents, publications of patent applications, foreign patent documents, and available literature, to see if the claimed invention is new, useful and non-obvious and if the application meets the requirements of the patent statute and rules of practice. If the examiner's decision on patentability is favorable, a patent is granted.

Restrictions

If two or more inventions are claimed in a single application, and are regarded by the Office to be of such a nature (e.g. independent and distinct) that a single patent should not be issued for both of them, the applicant will be required to limit the application to one of the inventions. The other invention may be made the subject of a separate application which, if filed while the first application is still pending, will be entitled to the benefit of the filing date of the first application. A requirement to restrict the application to one invention may be made before further action by the examiner.

Office Action

The applicant is notified in writing of the examiner's decision by an Office "action" which is normally mailed to the attorney or agent of record. The reasons for any adverse action or any objection or requirement are stated in the Office action and such information or references are given as may be useful in aiding the applicant to judge the propriety of continuing the prosecution of his or her application.

If the claimed invention is not directed to patentable subject matter, the claims will be rejected. If the examiner finds that the claimed invention lacks novelty or differs only in an obvious manner from what is found in the prior art, the claims may also be rejected. It is not uncommon for some or all of the claims to be rejected on the first Office action by the examiner; relatively few applications are allowed as filed.

Applicant's Reply

The applicant must request reconsideration in writing, and must distinctly and specifically point out the supposed errors in the examiner's Office action. The applicant must reply to every ground of objection and rejection in the prior Office action. The applicant's reply must appear throughout to be a bona fide attempt to advance the case to final action or allowance. The mere allegation that the examiner has erred will not be received as a proper reason for such reconsideration.

In amending an application in reply to a rejection, the applicant must clearly point out why he or she thinks the amended claims are patentable in view of the state of the art disclosed by the prior references cited or the objections made. He or she must also show how the claims as amended avoid such references or objections. After reply by the applicant, the application will be reconsidered, and the applicant will be notified as to the status of the claims—that is, whether the claims are rejected, or objected to, or whether the claims are allowed, in the same manner as after the first examination. The second Office action usually will be made final.

Interviews with examiners may be arranged, but an interview does not remove the necessity of replying to Office actions within the required time.

Final Rejection

On the second or later consideration, the rejection or other action may be made final. The applicant's reply is then limited to appeal in the case of rejection of any claim and further amendment is restricted. Petition may be taken to the Director in the case of objections or requirements not involved in the rejection of any claim. Reply to a final rejection or action must include cancellation of, or appeal from the rejection of, each claim so rejected and, if any claim stands allowed, compliance with any requirement or objection as to form. In making such final rejection, the examiner repeats or states all grounds of rejection then considered applicable to the claims in the application.

Amendments to Application

The applicant may amend the application as specified in the rules, or when and as specifically required by the examiner.

Amendments received in the Office on or before the mail date of the first Office action are called "preliminary amendments," and their entry is governed by 37 CFR 1.115. Amendments in reply to a non-final Office action are governed by CFR 1.111. Amendments filed after final action are governed by 37CFR 1.116 and 37CFR 41.33.

The specification, claims, and drawing must be amended and revised when required, to correct inaccuracies of description and definition or unnecessary words, and to provide substantial correspondence between the claims, the description, and the drawing. All amendments of the drawings or specification, and all additions thereto must not include new matter beyond the original disclosure. Matter not found in either, involving a departure from or an addition to the original disclosure, cannot be added to the application even if supported by a supplemental oath or declaration, and can be shown or claimed only in a separate application.

Amendments to the claims are to be made by presenting all of the claims in a claim listing that replaces all prior versions of the claims in the application. In the claim listing, the status of every claim must be indicated after its claim number after using one of the seven parenthetical expressions set forth in 37 CFR 1.121(c). "Currently amended" claims must be submitted with markings (e.g., underlining and strikethrough). All pending claims not being currently amended must be presented in the claim listing in clean version without any markings (e.g., underlining and strikethrough).

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added by amendment or substituted for canceled claims, they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented. When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant.

Time for Reply and Abandonment

The reply of an applicant to an action by the Office must be made within a prescribed time limit. The maximum period for reply is set at six months by the statute (35 U.S.C. 133), which also provides that the Director may shorten the time for reply to not less than 30 days. The usual period for reply to an Office action is three months. A shortened time for reply may be extended up to the maximum six-month period. An extension of time fee is normally required to be paid if the reply period is extended. The amount of the fee is dependent upon the length of the extension. Extensions of time are generally not available after an application has been allowed. If no reply is received within the time period, the application is considered as abandoned and no longer pending. However, if it can be shown that the failure to prosecute was unavoidable or unintentional, the application may be revived upon request to and approval by the Director. The revival requires a petition to the Director, and a fee for the petition, which must be filed without delay. The proper reply must also accompany the petition if it has not yet been filed.

Appeal to the Patent Trial and Appeal Board and to the Courts

If the examiner persists in the rejection of any of the claims in an application, or if the rejection has been made final, the applicant may appeal to the Patent Trial and Appeal Board (PTAB) in the United States Patent and Trademark Office. The PTAB consists of the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, the Deputy Under Secretary of Commerce for Intellectual Property and Deputy Director of the USPTO, the Commissioner for Patents, and the administrative patent judges, but normally each appeal is heard by only three members. An appeal fee is required and the applicant must file a brief to support his or her position. An oral hearing will be held if requested upon payment of the specified fee.

As an alternative to appeal, in situations where an applicant desires consideration of different claims or further evidence, a request for continued examination (RCE) or a continuation application is often filed. For the requirements for filing an RCE, see 37 CFR 1.114. An RCE is not available in an application for a design patent, but a continuation of a design application may be filed as a Continued Prosecution Application (CPA) under 37 CFR 1.53(d).

If the decision of the PTAB is still adverse to the applicant, an appeal may be taken to the Court of Appeals for the Federal Circuit or a civil action may be filed against the Director in the United States District Court for the District of Columbia. The Court of Appeals for the Federal Circuit will review the record made in the Office and may affirm or reverse the Office's action. In a civil action, the applicant may present testimony in the court, and the court will make a decision.

Allowance and Issue of Patent

If, on examination of the application, or at a later stage during the reconsideration of the application, the patent application is found to be allowable, a Notice of Allowance and Fee(s) Due will be sent to the applicant, or to applicant's attorney or agent of record, if any, and a fee for issuing the patent and if applicable, for publishing the patent application publication (see 37 CFR 1.211-1.221), is due within three months from the date of the notice. If timely payment of the fee(s) is not made, the application will be regarded as abandoned. See the current fee schedule at www.uspto.gov. The Director may accept the fee(s) late, if the delay is shown to be unavoidable (35 U.S.C. 41, 37 CFR 1.137(a)) or unintentional (35 U.S.C. 151, 37 CFR 1.137(b)). When the required fees are paid, the patent issues as soon as possible after the date of payment, dependent upon the volume of printing on hand. The patent grant then is delivered or mailed on the day of its grant, or as soon thereafter as possible, to the inventor's attorney or agent if there is one of record, otherwise directly to the inventor. On the date of the grant, the patent file becomes open to the public for applications not opened earlier by publication of the application.

In cases where the publication of an application or the granting of a patent would be detrimental to the national security, the Commissioner for Patents will order that the invention be kept secret and shall withhold the publication of the application or the grant of the patent for such period as the national interest requires. The owner of an application that has been placed under a secrecy order has a right to appeal the order to the Secretary of Commerce. 35 U.S.C. 181.

Nature of Patent and Patent Rights

The patent is issued in the name of the United States under the seal of the United States Patent and Trademark Office, and is either signed by the Director of the USPTO or is electronically written thereon and attested by an Office official. The patent contains a grant to the patentee, and a printed copy of the specification and drawing is annexed to the patent and forms a part of it. The grant confers "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States" and its territories and possessions for which the term of the patent shall be generally 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application under 35 U.S.C. 120, 121 or 365(c), from the date of the earliest such application was filed, and subject to the payment of maintenance fees as provided by law.

The exact nature of the right conferred must be carefully distinguished, and the key is in the words "right to exclude" in the phrase just quoted. The patent does not grant the right to make, use, offer for sale or sell or import the invention but only grants the exclusive nature of the right. Any person is ordinarily free to make, use, offer for sale or sell or import anything he or she pleases, and a grant from the government is not necessary. The patent only grants the right

to exclude others from making, using, offering for sale or selling or importing the invention. Since the patent does not grant the right to make, use, offer for sale, or sell, or import the invention, the patentee's own right to do so is dependent upon the rights of others and whatever general laws might be applicable. A patentee, merely because he or she has received a patent for an invention, is not thereby authorized to make, use, offer for sale, or sell, or import the invention if doing so would violate any law.

An inventor of a new automobile who has obtained a patent thereon would not be entitled to use the patented automobile in violation of the laws of a state requiring a license, nor may a patentee sell an article, the sale of which may be forbidden by a law, merely because a patent has been obtained.

Neither may a patentee make, use, offer for sale, or sell, or import his or her own invention if doing so would infringe the prior rights of others. A patentee may not violate the federal antitrust laws, such as by resale price agreements or entering into combination in restraints of trade, or the pure food and drug laws, by virtue of having a patent. Ordinarily there is nothing that prohibits a patentee from making, using, offering for sale, or selling, or importing his or her own invention, unless he or she thereby infringes another's patent that is still in force. For example, a patent for an improvement of an original device already patented would be subject to the patent on the device.

The term of the patent shall be generally 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application under 35 U.S.C. 120, 121 or 365(c), from the date of the earliest such application was filed, and subject to the payment of maintenance fees as provided by law. A maintenance fee is due 3.5, 7.5 and 11.5 years after the original grant for all patents issuing from the applications filed on and after December 12, 1980. The maintenance fee must be paid at the stipulated times to maintain the patent in force. After the patent has expired anyone may make, use, offer for sale, or sell or import the invention without permission of the patentee, provided that matter covered by other unexpired patents is not used. The terms may be extended for certain pharmaceuticals and for certain circumstances as provided by law.

Assignments and Licenses

A patent is personal property and may be sold to others or mortgaged; it may be bequeathed by a will; and it may pass to the heirs of a deceased patentee. The patent law provides for the transfer or sale of a patent, or of an application for patent, by an instrument in writing. Such an instrument is referred to as an assignment and may transfer the entire interest in the patent. The assignee, when the patent is assigned to him or her, becomes the owner of the patent and has the same rights that the original patentee had.

The statute also provides for the assignment of a part interest, that is, a half interest, a fourth interest, etc., in a patent. There may also be a grant that conveys the same character of interest as an assignment but only for a particularly specified part of the United States. A mortgage of patent property passes ownership thereof to the mortgagee or lender until the mortgage has been satisfied and a retransfer from the mortgagee back to the mortgagor, the borrower, is made. A conditional assignment also passes ownership of the patent and is regarded as absolute until canceled by the parties or by the decree of a competent court.

An assignment, grant, or conveyance of any patent or application for patent should be acknowledged before a notary public or officer authorized to administer oaths or perform notarial acts. The certificate of such acknowledgment constitutes prima facie evidence of the execution of the assignment, grant, or conveyance.

Recording of Assignments

The Office records assignments, grants, and similar instruments sent to it for recording, and the recording serves as notice. If an assignment, grant, or conveyance of a patent or an interest in a patent (or an application for patent) is not recorded in the Office within three months from its date, it is void against a subsequent purchaser for a valuable consideration without notice, unless it is recorded prior to the subsequent purchase.

An instrument relating to a patent should identify the patent by number and date (the name of the inventor and title of the invention as stated in the patent should also be given). An instrument relating to an application should identify the application by its application number and date of filing, the name of the inventor, and title of the invention as stated in the application should also be given. Sometimes an assignment of an application is executed at the same time that the application is prepared and before it has been filed in the Office. Such assignment should adequately identify the application, as by its date of execution and name of the inventor and title of the invention, so that there can be no mistake as to the application intended. If an application has been assigned and the assignment has been recorded or filed for recordation, the patent will be issued to the assignee as owner, if the name of the assignee is provided when the issue fee is paid and the patent is requested to be issued to the assignee. If the assignment is of a part interest only, the patent will be issued to the inventor and assignee as joint owners.

Joint Ownership

Patents may be owned jointly by two or more persons as in the case of a patent granted to joint inventors, or in the case of the assignment of a part interest in a patent. Any joint owner of a patent, no matter how small the part interest, may make, use, offer for sale and sell and import the invention for his or her own profit provided they do not infringe another's patent rights, without regard to the other owners, and may sell the interest or any part of it, or grant licenses to others, without regard to the other joint owner, unless the joint owners have made a contract governing their relation to each other. It is accordingly dangerous to assign a part interest without a definite agreement between the parties as to the extent of their respective rights and their obligations to each other if the above result is to be avoided.

The owner of a patent may grant licenses to others. Since the patentee has the right to exclude others from making, using, offering for sale, or selling or importing the invention, no one else may do any of these things without his or her permission.

A patent license agreement is in essence nothing more than a promise by the licensor not to sue the licensee. No particular form of license is required; a license is a contract and may include whatever provisions the parties agree upon, including the payment of royalties, etc.

The drawing up of a license agreement (as well as assignments) is within the field of an attorney at law. Such an attorney should be familiar with patent matters as well. A few states have prescribed certain formalities to be observed in connection with the sale of patent rights.

Infringement of Patents

Infringement of a patent consists of the unauthorized making, using, offering for sale, or selling any patented invention within the United States or U.S. Territories, or importing into the United States of any patented invention during the term of the patent. If a patent is infringed, the patentee may sue for relief in the appropriate federal court. The patentee may ask the court for an injunction to prevent the continuation of the infringement and may also ask the court for an award of damages because of the infringement. In such an infringement suit, the defendant may

raise the question of the validity of the patent, which is then decided by the court. The defendant may also aver that what is being done does not constitute infringement. Infringement is determined primarily by the language of the claims of the patent and, if what the defendant is making does not fall within the language of any of the claims of the patent, there is no literal infringement.

Suits for infringement of patents follow the rules of procedure of the federal courts. From the decision of the district court, there is an appeal to the Court of Appeals for the Federal Circuit. The Supreme Court may thereafter take a case by writ of certiorari. If the United States Government infringes a patent, the patentee has a remedy for damages in the United States Court of Federal Claims. The government may use any patented invention without permission of the patentee, but the patentee is entitled to obtain compensation for the use by or for the government. The Office has no jurisdiction over questions relating to infringement of patents. In examining applications for patent, no determination is made as to whether the invention sought to be patented infringes any prior patent. An improvement invention may be patentable, but it might infringe a prior unexpired patent for the invention improved upon, if there is one.

Design Patents

The patent laws provide for the granting of design patents to any person who has invented any new and non-obvious ornamental design for an article of manufacture. The design patent protects only the appearance of an article, but not its structural or functional features. The proceedings relating to granting of design patents are the same as those relating to other patents with a few differences. See current fee schedule for the filing fee for a design application. A design patent has a term of 14 years from grant, and no fees are necessary to maintain a design patent in force. If on examination it is determined that an applicant is entitled to a design patent under the law, a notice of allowance will be sent to the applicant or applicant's attorney, or agent, calling for the payment of an issue fee. The drawing of the design patent conforms to the same rules as other drawings, but no reference characters are allowed and the drawing should clearly depict the appearance, since the drawing defines the scope of patent protection.

The specification of a design application is short and ordinarily follows a set form. Only one claim is permitted, following a set form that refers to the drawing(s).

Plant Patents

The law also provides for the granting of a patent to anyone who has invented or discovered and asexually reproduced any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state.

Asexually propagated plants are those that are reproduced by means other than from seeds, such as by the rooting of cuttings, by layering, budding, grafting, inarching, etc.

With reference to tuber-propagated plants, for which a plant patent cannot be obtained, the term "tuber" is used in its narrow horticultural sense as meaning a short, thickened portion of an underground branch. Such plants covered by the term "tuber-propagated" are the Irish potato and the Jerusalem artichoke.

An application for a plant patent consists of the same parts as other applications. The term of a plant patent shall be 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed

application under 35 U.S.C. 120, 121 or 365(c), from the date the earliest such application was filed.

The specification should include a complete detailed description of the plant and the characteristics thereof that distinguish the same over related known varieties, and its antecedents, expressed in botanical terms in the general form followed in standard botanical text books or publications dealing with the varieties of the kind of plant involved (evergreen tree, dahlia plant, rose plant, apple tree, etc.), rather than a mere broad non-botanical characterization such as commonly found in nursery or seed catalogs. The specification should also include the origin or parentage of the plant variety sought to be patented and must particularly point out where and in what manner the variety of plant has been asexually reproduced. The Latin name of the genus and species of the plant should be stated. Where color is a distinctive feature of the plant, the color should be positively identified in the specification by reference to a designated color as given by a recognized color dictionary. Where the plant variety originated as a newly found seedling, the specification must fully describe the conditions (cultivation, environment, etc.) under which the seedling was found growing to establish that it was not found in an uncultivated state.

A plant patent is granted on the entire plant. It therefore follows that only one claim is necessary and only one is permitted.

The oath or declaration required of the applicant in addition to the statements required for other applications must include the statement that the applicant has asexually reproduced the new plant variety. If the plant is a newly found plant, the oath or declaration must also state that the plant was found in a cultivated area.

Plant patent drawings are not mechanical drawings and should be artistically and competently executed. The drawing must disclose all the distinctive characteristics of the plant capable of visual representation. When color is a distinguishing characteristic of the new variety, the drawing must be in color. Two duplicate copies of color drawings must be submitted. All color drawings should include a one-inch margin at the top for Office markings when the patent is printed.

Specimens of the plant variety, its flower or fruit, should not be submitted unless specifically called for by the examiner.

A plant patent application is the only type of patent application filed at the USPTO which is not permitted to be filed via EFS-Web.

The Plant Variety Protection Act (Public Law 91577), approved December 24, 1970, provides for a system of protection for sexually reproduced varieties, for which protection was not previously provided, under the administration of a Plant Variety Protection Office within the Department of Agriculture.

Treaties and Foreign Patents

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in other countries must apply for a patent in each of the other countries or in regional patent offices. Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country, in accordance with the requirements of that country.

The laws of many countries differ in various respects from the patent law of the United States. In most foreign countries, publication of the invention before the date of the application will bar the right to a patent. Some foreign countries require that the patented invention must be

manufactured in that country after a certain period, usually three years. If there is no manufacture within this period, the patent may be void in some countries, although in most countries the patent may be subject to the grant of compulsory licenses to any person who may apply for a license.

There is a treaty relating to patents adhered to by 176 countries (at the time of this printing), including the United States, and is known as the Paris Convention for the Protection of Industrial Property. It provides that each country guarantees to the citizens of the other countries the same rights in patent and trademark matters that it gives to its own citizens. The treaty also provides for the right of priority in the case of patents, trademarks and industrial designs (design patents). This right means that, on the basis of a regular first application filed in one of the member countries, the applicant may, within a certain period of time, apply for protection in all the other member countries. These later applications will then be regarded as if they had been filed on the same day as the first application. Thus, these later applicants will have priority over applications for the same invention that may have been filed during the same period of time by other persons. Moreover, these later applications, being based on the first application, will not be invalidated by any acts accomplished in the interval, such as, for example, publication or exploitation of the invention, the sale of copies of the design, or use of the trademark. The period of time mentioned above, within which the subsequent applications may be filed in the other countries, is 12 months in the case of first applications for patent and six months in the case of industrial designs and trademarks.

Another treaty, known as the Patent Cooperation Treaty, was negotiated at a diplomatic conference in Washington, D.C., in June 1970. The treaty came into force on January 24, 1978, and is presently (as of 2014) adhered to by over 148 countries including the United States. The treaty facilitates the filing of applications for patent on the same invention in member countries by providing, among other things, for centralized filing procedures and a standardized application format.

The timely filing of an international application affords applicants an international filing date in each country which is designated in the international application and provides (1) a search of the invention and (2) a later time period within which the national applications for patent must be filed. A number of patent attorneys specialize in obtaining patents in foreign countries.

Under U.S. law it is necessary, in the case of inventions made in the United States, to obtain a license from the Director of the USPTO before applying for a patent in a foreign country. Such a license is required if the foreign application is to be filed before an application is filed in the United States or before the expiration of six months from the filing of an application in the United States unless a filing receipt with a license grant issued earlier. The filing of an application for a U.S. patent constitutes the request for a license and the granting or denial of such request is indicated in the filing receipt mailed to each applicant. After six months from the U.S. filing, a license is not required unless the invention has been ordered to be kept secret. If the invention has been ordered to be kept secret, the consent to the filing abroad must be obtained from the Director of the USPTO during the period the order of secrecy is in effect.

Foreign Applicants for U.S. Patents

The patent laws of the United States make no discrimination with respect to the citizenship of the inventor. Any inventor, regardless of his or her citizenship, may apply for a patent on the same basis as a U.S. citizen. There are, however, a number of particular points of special interest to applicants located in foreign countries.

The application for patent in the United States must be made by the inventor and the inventor must sign the oath or declaration (with certain exceptions), differing from the law in many countries where the signature of the inventor and an oath of inventorship are not necessary. If the inventor is dead, the application may be made by his or her executor or administrator, or equivalent, and in the case of intellectual disability it may be made by his or her legal representative (guardian).

No U.S. patent can be obtained if the invention was patented abroad before applying in the United States by the inventor or his or her legal representatives if the foreign application was filed more than 12 months before filing in the United States. Six months are allowed in the case of designs. 35 U.S.C. 172.

An application for a patent filed in the United States by any person who has previously regularly filed an application for a patent for the same invention in a foreign country that affords similar privileges to citizens of the United States shall have the same force and effect for the purpose of overcoming intervening acts of others as if filed in the United States on the date on which the application for a patent for the same invention was first filed in such foreign country. This is the case, provided the application in the United States is filed within 12 months (six months in the case of a design patent) from the earliest date on which any such foreign application was filed and claims priority under 35 U.S.C. 119(b) to the foreign application. A copy of the foreign application certified by the patent office of the country in which it was filed is required to secure this right of priority.

Credits, Sources, Copyrights

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3. Conditions for Patentability

Introduction

To be patentable, a *claim* must be:

1. Directed to eligible subject matter: an apparatus, process, article of manufacture, composition of matter (35 U.S.C. 101)
2. Novel over the prior art (35. U.S.C. 102)
3. Non-obvious over the prior art (35 U.S.C. 103)
4. Described by the patent application (35 U.S.C. 112)
5. Enabled (35 U.S.C. 112)
6. Definite (35 U.S.C. 112)

Each claim of a patent application is examined for compliance with each of the above conditions. If a claim fails to meet even one of the conditions, the claim is not patentable. In the case of an issued patent, a claim that is not patentable is said to be *invalid*.

Because the Patent Office is imperfect, it does from time to time issue patents that include claims that are not patentable. For example, the examiner may have failed to discover relevant items of prior art. As will be discussed further below, issued patents are presumed to be valid. An opposing party (typically in litigation) bears the burden of showing that one or more claims of a patent are invalid.

It's All About the Claims

Patentability of an invention is determined with reference to the patent claims. The claims appear at the end of the patent specification and are the formal, legal description of the metes and bounds of the invention. The other parts of the patent specification, such as the abstract, title, written description are relevant insofar as they describe and illustrate the invention, but they do not determine the scope of the protected invention. This function is performed by the claims and the claims only.

Example Claims

There are only a few rules governing the syntax of claims. The key rule is that each claim be presented as a single sentence. For example:

1. A lawn-cutting apparatus, comprising:
an electric lawn mower;
a solar panel configured to provide power to the electric lawn mower;
and
a motion controller configured to autonomously navigate the electric lawn mower about a lawn.

2. The lawn-cutting apparatus of claim 1, wherein the motion controller is configured to detect and avoid objects.

3. The lawn-cutting apparatus of claim 1, further comprising a range sensor configured to provide range data to the motion controller, the range data indicating a distance between the range sensor and a remote object.

The above example defines three claims. Each claim is a numbered sentence. Claim 1 is an “independent” claim, meaning that it stands alone. Claims 2 and 3 are “dependent” claims, which further narrow the invention defined by claim 1. In object-oriented programming language terms, an independent claim can be thought of as a base class or superclass, while a dependent claim can be thought of as a derived class or subclass.

Independent claim 1 defines the invention as including three elements: a lawn mower, a solar panel, and a motion controller. Independent claim 1 also describes interrelationships between those elements. For example, the solar panel must be configured to power the mower and the motion controller must be configured to navigate the mower about a lawn.

A dependent claim includes all of the elements of its parent claim. Thus, in the above example, claim 2 includes all elements of claim 1, and further limits that invention with “wherein the motion controller is configured to detect and avoid objects.”

“Read On”

The patent community uses a special verb: “to read on.” Reading on is the process of comparing a claim to another instrumentality (e.g., device, process, composition of matter) to determine validity or infringement.

For example, continuing the above example:

- If claim 1 reads on a device being used, sold, imported, etc., then that device infringes the claim.
- If claim 1 reads on a device described in a prior art document, then the claim is invalid.

A claim reads on a device if the device includes each and every element of the claim. The fact that a device includes additional elements does not negate infringement.

For example, suppose a company is selling an electric (battery powered), autonomous lawnmower called “RoboMower.” RoboMower does not include a solar panel.

- Under the given facts, does RoboMower infringe? No, because it does not include a solar panel.
- A variant, RoboMower2, includes a solar panel that powers the mower. RoboMower2 infringes at least claim 1.
- But RoboMower2 also includes a video camera and metal wheels. Does this fact mean RoboMower2 escapes infringement of claim 1? No.
- Back to RoboMower (no solar panel on the mower). Suppose RoboMower is being used in a context where the battery is powered by a solar panel mounted on the user’s garage roof. Does this version of RoboMower infringe? This is a trickier question, but strictly speaking, it probably does infringe because the claim makes no limitations on the physical relationship between the solar panel and mower – it does not require that the solar panel be attached to the mower.

If a device does not infringe an independent claim, it cannot possibly infringe any of its dependent claims, because the dependent claims are strictly narrower than the independent claim.

Each and every word in a claim matters. Generally speaking, longer claims are narrower claims, because they impose more limitations on the scope of the protected invention. For example, compare the following claims to the above lawn mower claim. I’ve highlighted the

changes with respect to claim 1 via strikethrough and underlining to make clear the differences in scope.

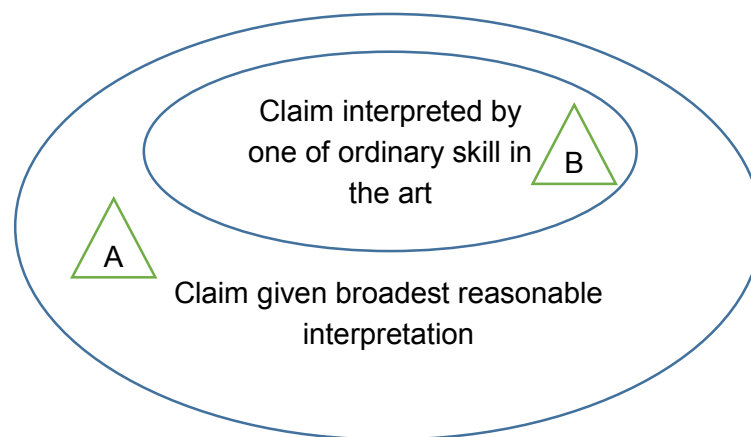
4. A lawn-cutting apparatus, comprising:
an electric lawn mower;
a solar panel configured to provide power to the electric lawn mower;
and
a motion controller configured to ~~autonomously~~ navigate the electric lawn mower about a lawn.

5. A lawn-cutting apparatus, comprising:
an electric lawn mower;
a solar panel that is coupled to the lawn mower and that is configured to provide power to the electric lawn mower; and
a motion controller configured to autonomously navigate the electric lawn mower about a lawn.

Think of the claims as a checklist. For infringement, each and every element must be present in the accused instrumentality. If even one element is missing, a charge of infringement cannot be carried. Or if each and every element is shown in the prior art, the claim invalid, and should not have been issued.

Confusion Alert: Interpretation of Claims

What does a claim mean? Claims are, for better or worse, written in the English language. This means that they are inherently subject to interpretation. There is no formal semantics associated with claim interpretation. To make matters more confusing, the PTO and the courts interpret claims in different ways. The PTO, when examining claims in an application, give claim terms their “broadest reasonable interpretation.” The courts, on the other hand, interpret claim terms as one of ordinary skill in the art would interpret them. What’s the difference? Well, the former is considerably broader than the latter. What is the impact of these different interpretive standards? By interpreting the claims broadly, the PTO is able to sweep in more prior art, and thus force claims to withstand a more vigorous challenge during examination.



In the above diagram, the nested ovals illustrate the scope of a claim with respect to the two interpretive standards. Prior art items are illustrated as triangles labeled A and B. To make

the example concrete, suppose that the claim term at issue is “computer.” Suppose further that the broadest reasonable interpretation of computer is “a logic circuit that implements some function.” One of ordinary skill in the art might interpret the term more narrowly, such as “a logic circuit that implements a function defined by a program stored in a memory.” Prior art reference A describes a combinational logic circuit configured to add two input numbers. Prior art reference B describes a stored program computer. The broadest reasonable interpretation thus encompasses both references A and B – the examiner could rely on either reference to reject the claim. On the other hand, during litigation, prior art reference A could not be used to invalidate the claim, because the adder it describes is not a “computer,” as understood by one of ordinary skill in the art.

The broad interpretive standard used by the Patent Office supports the “presumption of validity” associated with issued patents. The theory is that because claims were examined with respect to a broad sweep of prior art, the issued claim should be presumed to be valid once issued. This means that the patentee does not bear the burden of proving, during enforcement, that a patent duly issued by the PTO is valid. Instead, the accused infringer bears the burden of proving that the patent is invalid during litigation.

Burdens of Proof

Because every issued patent was subjected to rigorous examination using a broader interpretive standard, the accused bears the burden of proving that an asserted patent is invalid. Moreover, given the broad interpretive standard used during examination, the accused must present provide “clear and convincing evidence” that a patent is invalid.

What is “clear and convincing” evidence? While the courts do not assign probabilities, there are is a hierarchy of some of the evidence standards used by the courts, from high to low:

- Beyond a reasonable doubt
- Clear and convincing
- Preponderance of the evidence (more likely than not, more than 50-50)
- Substantial evidence

The point is that it is hard to invalidate a patent during litigation, because the accused must present clear and convincing evidence that the patent is invalid. This makes some sense, given the very broad interpretive standard used by the PTO during examination theoretically subjects the patent claims to a broad sweep of prior art. On the other hand, the higher evidence standard does not make sense when one considers that the Patent Office does not always consider the best prior art references.

At this point, it is worth noting that the patentee must only show infringement by a preponderance of the evidence. This means that the patentee must only show that it is more likely than not that the accused infringed at least one claim of the asserted patent. But this standard cuts two ways: accused parties in litigation will often prefer to fight over infringement, rather than try to cross the higher hurdle of proving invalidity by clear and convincing evidence.

Subject Matter

To be eligible for patent, the claimed subject matter must be a “new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. 101. When read plainly, this provision of the patent statute set forth low bar for patent-eligible subject matter: if the invention is claimed as a process, machine, manufacture, composition of matter, then it is *eligible* for patenting. Note that just because a claim is eligible

for patenting, does not mean that it is entitled to a patent, because the claim must still be shown to meet the other conditions of patentability, including novelty, non-obviousness, enablement, and the like. These other conditions are discussed in more detail below.

The following summarizes the four categories of eligible subject matter, as defined by the courts:

1. Process – an act, or a series of acts or steps. See *Gottschalk v. Benson*, 409 U.S. 63, 70, 175 USPQ 673, 676 (1972) ("A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing." (emphasis added) (quoting *Cochrane v. Deener*, 94 U.S. 780, 788, 24 L. Ed. 139, 1877 Dec. Comm'r Pat. 242 (1876))); *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1316, 75 USPQ2d 1763, 1791 (Fed. Cir. 2005) ("[A] process is a series of acts." (quoting *Minton v. Natl. Ass'n. of Securities Dealers*, 336 F.3d 1373, 336 F.3d 1373, 1378, 67 USPQ2d 1614, 1681 (Fed. Cir. 2003))). See also 35 U.S.C. 100(b); *Bilski v. Kappos*, 561 U.S. ___, 130 S. Ct. 3218, 95 USPQ2d 1001 (2010).
2. Machine – a concrete thing, consisting of parts, or of certain devices and combination of devices. *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570, 17 L. Ed. 650 (1863). This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result. *Corning v. Burden*, 56 U.S. 252, 267, 14 L. Ed. 683 (1854).
3. Manufacture – an article produced from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by handlabor or by machinery. *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 197 (1980) (emphasis added) (quoting *Am. Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 51 S. Ct. 328, 75 L. Ed. 801, 1931 (Dec. Comm'r Pat. 711 (1931))).
4. Composition of matter – all compositions of two or more substances and all composite articles, whether they be the results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids, for example. *Chakrabarty*, 447 U.S. at 308, 206 USPQ at 197.

Examples of claims that are not directed to one of the statutory categories include:

1. transitory forms of signal transmission (for example, a propagating electrical or electromagnetic signal per se), *In re Nuijten*, 500 F.3d 1346, 1357, 84 USPQ2d 1495, 1503 (Fed. Cir. 2007);
2. a naturally occurring organism, *Chakrabarty*, 447 U.S. at 308, 206 USPQ at 197;
3. a human per se, *The Leahy-Smith America Invents Act (AIA)*, Public Law 112-29, sec. 33, 125 Stat. 284 (September 16, 2011);
4. a legal contractual agreement between two parties, see *In re Ferguson*, 558 F.3d 1359, 1364, 90 USPQ2d 1035, 1039-40 (Fed. Cir. 2009) (cert. denied);
5. a game defined as a set of rules;
6. a computer program per se, *Gottschalk v. Benson*, 409 U.S. at 72, 175 USPQ at 676-77;
7. a company, *Ferguson*, 558 F.3d at 1366, USPQ at 1040; and
8. a mere arrangement of printed matter, *In re Miller*, 418 F.2d 1392, 1396, 164 USPQ 46, 49 (CCPA 1969).

The categories of patent eligible subject matter have long been subject to judicial exceptions. Judicial exceptions include laws of nature (e.g., $F=ma$, $E=mc^2$), natural phenomena (e.g., gravity), and abstract ideas (e.g., mathematical formula, algorithms). Judicial exceptions are court-created limitations on the scope of eligible subject matter – they are not found anywhere in the text of the patent statute itself. The court has established such exceptions based on public policy rationales, primarily related to the concern that granting patents on, for example, a laws of nature would allow the inventor to monopolize all applications of the claimed law.

While judicial exceptions have long been off-limits for patenting, applications of such judicial exceptions have historically been patent eligible. For example, while the law $F=ma$ is in and of itself not patent-eligible, a control system for a car that utilizes $F=ma$ has historically been patent eligible. As another example, in the context of computer-related invention, an algorithm (e.g., quicksort) is considered an abstract idea. However, an *implementation* of the algorithm, such as by a claim to a computer system or a computerized process, has historically been patent eligible.

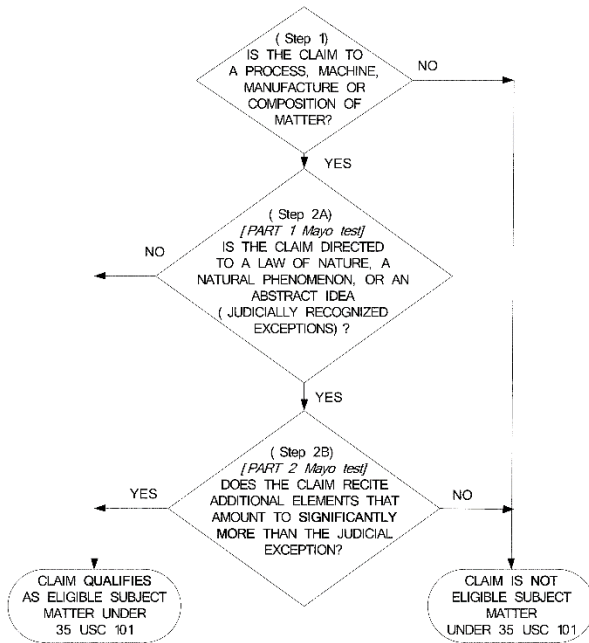
In recent years, the Supreme Court has taken a renewed interest in refining the meaning, scope, and application of the judicial exceptions in the context of biotech and computer-related inventions. This interest has been driven at least in part by well-publicized concerns with gene patents, abstract computer-related patents, business method patents, and the like. The Supreme Court, in a number of decisions, has attempted to provide an analytical framework or test for determining whether a claimed invention is patent eligible. Although the exact contours of this test are still being determined through decisions in the lower courts, there is no doubt that the Court has diminished the universe of patent eligible subject matter. The impact of the Court's action is profound: the modified standard means that many formerly valid patents are now invalid, and that many patent applications that would have been granted under the old standard will now not be granted.

The Mayo-Alice Subject Matter Eligibility Test

The following figure illustrates the test currently used by the PTO when evaluating a claim for subject matter eligibility under 35 U.S.C. 101. The test is sometimes known as the “Mayo-Alice” test, after the two Supreme Court decisions which developed the test.

The test has two main parts, discussed in detail below.

PRIOR TO EVALUATING A CLAIM FOR PATENTABILITY, ESTABLISH THE BROADEST REASONABLE INTERPRETATION OF THE CLAIM. ANALYZE THE CLAIM AS A WHOLE WHEN EVALUATING FOR PATENTABILITY.



IN ACCORDANCE WITH COMPACT PROSECUTION, ALONG WITH DETERMINING ELIGIBILITY, ALL CLAIMS ARE TO BE FULLY EXAMINED UNDER EACH OF THE OTHER PATENTABILITY REQUIREMENTS: 35 USC §§ 102, 103, 112, and 101 (UTILITY, INVENTORSHIP, DOUBLE PATENTING) AND NON-STATUTORY DOUBLE PATENTING.

The first part of the test asks whether the claim is to a process, manufacture, machine, or composition of matter. This is simply applying the plain text of the statute to ask whether a patentable “thing” is being claimed. As a general matter, this part of the test is easy to satisfy. If the claim recites something that is recognizable as an apparatus/machine, process, manufacture, or composition of matter, step 1 of the test should be satisfied. If step 1 of the test is not satisfied, the claim is not eligible, end of analysis.

The second part of the test has two subparts, parts of the so-called “Mayo test.” The first subpart is designed to ferret out claims that, on their surface, claim something that is patent eligible, but contain within them a judicial exception. The first subpart asks whether the claim is directed to one of the judicial exceptions. If not, then the

claim qualifies as eligible subject matter. If so, the second subpart must be evaluated.

In the second subpart, the test asks whether the claims recite additional elements that amount to “significantly more” than the judicial exception. In the computer context, part of the test is trying to catch claims that are merely applying an abstract idea within a computing system, without adding significant additional elements or limitations.

For claims that have the misfortune of being analyzed under the second subpart, the key question then becomes, “what qualifies as significantly more?” The Supreme Court has identified a number of considerations for determining whether a claim with additional elements amounts to significantly more than the judicial exception itself. The following are examples of these considerations. Limitations that may be enough to qualify as “significantly more” when recited in a claim with a judicial exception include:

- Improvements to another technology or technical field;
- Improvements to the functioning of the computer itself;
- Applying the judicial exception with, or by use of, a particular machine;
- Effecting a transformation or reduction of a particular article to a different state or thing;
- Adding a specific limitation other than what is well-understood, routine and conventional in the field, or adding unconventional steps that confine the claim to a particular useful application; or
- Other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment.

Limitations that were found not to be enough to qualify as “significantly more” when recited in a claim with a judicial exception include:

- Adding the words “apply it” (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer;
- Simply appending well-understood, routine and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, e.g., a claim to an abstract idea requiring no more than a generic computer to perform generic computer functions that are well understood, routine and conventional activities previously known to the industry;
- Adding insignificant extra-solution activity to the judicial exception, e.g., mere data gathering in conjunction with a law of nature or abstract idea; or
- Generally linking the use of the judicial exception to a particular technological environment or field of use.

The test and guidelines for evaluating claims for subject matter eligibility are, well, somewhat abstract. In the following, we’ll look at some real world examples, taken from actual judicial decisions.

Example 1: O’Reilly v. Morse

This case concerned Morse’s telegraph. (U.S. Reissue Patent No. RE 117.)

Claim 6. The claim was interpreted by the Supreme Court as a system of signs (signals) by closing a galvanic circuit rapidly for telegraphing, combined with machinery to record the signs.

Claim 8. I do not propose to limit myself to the specific machinery, or parts of machinery, . . . the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, signs, or letters, at any distances, being a new application of that power...

Note that this case predates the above-described test. The Court indicated that the test should not yield results inconsistent with prior decisions. Thus, in the following analysis, the PTO has applied the test to the claim analyzed in this case.

The claims are to the process of using electromagnetism to produce distinguishable signs for telegraphy, and in particular to print intelligible characters at any distance. While the format of the claims is outdated, it can be seen that claim 6 recites the system of signs in combination with the machinery for recording, which was found eligible. In contrast, claim 8 recites the use of electromagnetism without limits on the machinery for recording, which was found ineligible. The discovery of electromagnetism, which is a natural phenomenon, is not patentable by itself.

Example 2: Diamond v. Diehr

The claimed invention is a process for molding raw, uncured synthetic rubber into cured precision products. The process uses a mold for precisely shaping the uncured material under heat and pressure and then curing the synthetic rubber in the mold so that the product will retain its shape and be functionally operative after the molding is completed. Achieving the perfect cure depends upon several factors including the thickness of the article to be molded, the temperature of the molding process, and the amount of time that the article is allowed to remain in the press. It is possible to calculate when to open the press and remove the cured product

using well-known time, temperature, and cure relationships by means of the Arrhenius equation.
Representative claim:

1. A method of operating a rubber-molding press for precision molded compounds with the aid of a digital computer, comprising:
 - providing said computer with a data base for said press including at least, natural logarithm conversion data (\ln), the activation energy constant (C) unique to each batch of said compound being molded, and a constant (x) dependent upon the geometry of the particular mold of the press,
 - initiating an interval timer in said computer upon the closure of the press for monitoring the elapsed time of said closure,
 - constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity in the press during molding,
 - constantly providing the computer with the temperature (Z), repetitively calculating in the computer, at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure, which is $\ln v = CZ+x$, where v is the total required cure time,
 - repetitively comparing in the computer at said frequent intervals during the cure each said calculation of the total required cure time calculated with the Arrhenius equation and said elapsed time, and
 - opening the press automatically when a said comparison indicates equivalence.

Note again that this case predates the above-described test. Thus, in the following analysis, the PTO has applied the test to the claim analyzed in the case.

The claim is directed to a statutory category, i.e., a process (Step 1: YES). The claim recites the Arrhenius equation, which is the mathematical formula: $\ln v = CZ+x$. The court noted that an algorithm, or mathematical formula, is like a law of nature, which cannot be the subject of a patent. The claimed process when viewed as a whole focuses on the use of the Arrhenius equation to cure synthetic rubber. Thus, the claim is directed to an exception (Step 2A: YES). Next, the claim as a whole is analyzed to determine whether any element, or combination of elements, is sufficient to ensure that the claim amounts to significantly more than the exception. The specifically disclosed and claimed constant measurement of temperature at a mold cavity of a rubber-molding press and the claimed repetitive computer recalculation of the appropriate cure time using the constantly updated measurements are additional elements that provide "something more" than mere computer implementation of calculation of the Arrhenius equation. Further, the claimed steps act in concert to transform raw, uncured rubber to cured molded rubber. The combination of steps recited in addition to the mathematical formula show that the claim is not to the formula in isolation, but rather that the steps impose meaningful limits that apply the formula to improve an existing technological process. Thus, the claim amounts to significantly more than the judicial exception (Step 2B: YES). The claim is eligible.

Example 3: Parker v. Flook

The invention is a method of updating alarm limits using a mathematical formula. An "alarm limit" is a number. During catalytic conversion processes, operating conditions such as temperature, pressure, and flow rates are constantly monitored. When any of these "process

variables" exceeds a predetermined alarm limit, an alarm may signal the presence of an abnormal condition indicating either inefficiency or perhaps danger. Representative claim:

1. A method for updating the value of at least one alarm limit on at least one process variable involved in a process comprising the catalytic chemical conversion of hydrocarbons wherein said alarm limit has a current value of $B_0 + K$ wherein B_0 is the current alarm base and K is a predetermined alarm offset which comprises:

(1) Determining the present value of said process variable, said present value being defined as PVL ;

(2) Determining a new alarm base B_1 , using the following equation: $B_1 = B_0(1.0 - F) + PVL(F)$ where F is a predetermined number greater than zero and less than 1.0;

(3) Determining an updated alarm limit which is defined as $B_1 + GK$; and thereafter;

(4) Adjusting said alarm limit to said updated alarm limit value.

Analysis (again performed by the PTO): The claim is directed to a statutory category, i.e., a process (Step 1: YES). The claim recites the mathematical formula " $B_1 = B_0(1.0 - F) + PVL(F)$ ". The claimed invention focuses on the calculation of the number representing the alarm limit value using the mathematical formula. Thus, the claim is directed to a mathematical formula, which is like a law of nature that falls within the exceptions to patent-eligible subject matter (Step 2A: YES).

A process is not unpatentable simply because it contains a law of nature or mathematical algorithm. The claim as a whole must be analyzed to determine what additional elements are recited in the claim. The claimed formula is limited by the steps of gathering the input variables and carrying out the calculation to update the number describing the alarm limit, and by the field of technology for which it is to be used. The determination of chemical process variables, and the use of a generic computer to calculate values, is routine and conventional in the field of chemical processing. Adjusting the alarm limit based on the solution to the mathematical formula is merely post-solution activity that could be attached to almost any formula. Limiting the claim to petrochemical and oil-refining industries, such that the claim does not seek to wholly preempt the mathematical formula, is a field-of-use limitation that does not impose meaningful limits on the mathematical formula. Moreover, when considered as an ordered combination, the claim is nothing more than a purely conventional computerized implementation of applicant's formula. Therefore, the claim as a whole does not provide significantly more than a generic computer upon which the claimed formula is calculated. Thus, the claim does not amount to significantly more than the judicial exception itself (Step 2B: NO). The claim is not eligible and should be rejected under 35 U.S.C. 101.

Example 4: Alice Corp. v. CLS Bank

Background: The claims at issue relate to a computerized scheme for mitigating "settlement risk"; i.e., the risk that only one party to an agreed-upon financial exchange will satisfy its obligation. In particular, the claims are designed to facilitate the exchange of financial obligations between two parties by using a computer system as a third-party intermediary. The intermediary creates "shadow" credit and debit records (i.e., account ledgers) that mirror the balances in the parties' real-world accounts at "exchange institutions" (e.g., banks). The intermediary updates the shadow records in real time as transactions are entered, allowing only

those transactions for which the parties' updated shadow records indicate sufficient resources to satisfy their mutual obligations. At the end of the day, the intermediary instructs the relevant financial institutions to carry out the "permitted" transactions in accordance with the updated shadow records, thus mitigating the risk that only one party will perform the agreed-upon exchange. The invention is claimed in the form of a computer-implemented process, a system enabling that process, and a computer-readable medium enabling that process to be performed by a computer. Representative method claim:

Claim 33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;

(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;

(c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and

(d) at the end-of-day, the supervisory institution instructing one of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

Analysis: The claim is directed to a statutory category, i.e., a process (Step 1: YES). The claim recites the concept of managing settlement risk through an intermediary, i.e., intermediated settlement. The claimed invention describes the procedures an intermediary should take in managing settlement risk between two parties, i.e., specific details of intermediating settlement. Intermediated settlement, like risk hedging in *Bilski*, is not a preexisting fundamental truth but rather is a longstanding commercial practice (a method of organizing human activity). The concept of intermediated settlement is a fundamental economic practice long prevalent in our system of commerce, which is in the realm of abstract ideas identified by the Supreme Court. Thus, the claim is directed to the abstract idea of intermediated settlement (Step 2A: YES). Next, the claim as a whole is analyzed to determine whether any element, or combination of elements, is sufficient to ensure that the claim amounts to significantly more than the exception. Although a computer acts as the intermediary in the claimed method, the claims do no more than implement the abstract idea of intermediated settlement on a generic computer. Using a computer to create and maintain "shadow" accounts amounts to electronic recordkeeping, which is one of the most basic functions of a computer. The same is true with respect to the use of a computer to obtain data, adjust account balances, and issue automated instructions. All of these computer functions are "well-understood, routine, conventional activit[ies]" previously known to the industry. Each step does no more than require a generic computer to perform generic computer functions. Considered as an ordered combination, the computer components of the method add nothing that is not already present

when the steps are considered separately, and thus simply recite the concept of intermediated settlement as performed by a generic computer. The claims do not purport to improve the functioning of the computer itself, or to improve any other technology or technical field. Use of an unspecified, generic computer does not transform an abstract idea into a patent-eligible invention. Thus, the claim does not amount to significantly more than the abstract idea itself (Step 2B: NO). The claim is not eligible and should be rejected under 35 U.S.C. 101.

Representative System Claim (U.S. Patent No. 7,725,375)

26. A data processing system to enable the exchange of an obligation between parties, the system comprising:
a communications controller,
a first party device, coupled to said communications controller,
a data storage unit having stored therein
(a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and
(b) information about a third account for a second party, independent from a fourth account maintained by a second exchange institution; and
a computer, coupled to said data storage unit and said communications controller, that is configured to
(a) receive a transaction from said first party device via said communications controller;
(b) electronically adjust said first account and said third account in order to effect an exchange obligation arising from said transaction between said first party and said second party after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and
(c) generate an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

Analysis (by the PTO): The claim is directed to a statutory category, i.e., a machine (Step 1: YES). As discussed for the method claim, the claim recites the concept of intermediated settlement and is directed to an abstract idea (Step 2A: YES). Looking again to see what additional features are recited in the claim, the system includes a communications controller, a first party device, a data storage device, and a computer. The claimed hardware is generic hardware that nearly every computer will include. None of the hardware offers a meaningful limitation beyond generally linking the system to a particular technological environment, that is, implementation via computers. Put another way, the system claims are no different from the method claims in substance; the method claims recite the abstract idea implemented on a generic computer, while the system claims recite a handful of generic computer components configured to implement the same idea. The claim does not amount to significantly more than the underlying abstract idea (Step 2B: NO). The claim is not eligible and should be rejected under 35 U.S.C. 101.

Example 5: Research Corp. Tech. v. Microsoft Corp.

Representative claim:

1. A method for the halftoning of gray scale images by utilizing a pixel-by-pixel comparison of the image against a blue noise mask in which the blue noise mask is comprised of a random non-deterministic, non-white noise single valued function which is designed to produce visually pleasing dot profiles when thresholded at any level of said gray scale images.

The claim is to digital image halftoning. Halftoning techniques allow computers to present many shades and color tones with a limited number of pixels, which allows computer displays and printers to render an approximation of an image by using fewer colors or shades of gray than the original image. One method of generating a digital halftoned image is called "thresholding" that uses a two-dimensional array called a "mask." The claimed method incorporates algorithms and formulas that control the masks and halftoning, but apply them in a technique that improves the generated digital halftoned image. The invention presents functional and palpable applications in the field of computer technology with specific applications or improvements to technologies in the marketplace. So, although the claimed method uses algorithms and formulas, the claim was found eligible.

Example 6: Digitech Image Tech., LLC v. Electronics for Imaging, Inc.

(U.S. Patent No. 6,128,415) Representative claim:

10. A method of generating a device profile that describes properties of a device in a digital image reproduction system for capturing, transforming or rendering an image, said method comprising:

generating first data for describing a device dependent transformation of color information content of the image to a device independent color space through use of measured chromatic stimuli and device response characteristic functions;

generating second data for describing a device dependent transformation of spatial information content of the image in said device independent color space through use of spatial stimuli and device response characteristic functions; and

combining said first and second data into the device profile.

The court found the claim to be an abstract idea because it describes a process of organizing information through mathematical correlations and is not tied to a specific structure or machine. The claim recites the process of taking two data sets and combining them into a single data set, the device profile. The two data sets are generated by taking existing information--i.e., measured chromatic stimuli, spatial stimuli, and device response characteristic functions--and organizing this information into a new form. The claim language does not expressly tie the method to an image processor. It generically recites a process of combining two data sets into the device profile; it does not claim the processor's use of that profile in the capturing, transforming, or rendering of a digital image. Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible. All of the claims were found ineligible.

Xxx: additional examples here?

Concerns with the Mayo-Alice Subject Matter Test

Practitioners and commentators have raised concerns over the new subject matter test. One concern relates to the procedural application of the test at the PTO. The test allows a patent examiner to conclude, without any real evidentiary requirement, that the claim recites an abstract idea. Once the claim is so characterized, the burden essentially shifts back to the applicant to prove that the claim includes “significantly more” than the abstract idea. This can be difficult, especially in information-based technologies, where the essence of the invention is to process data from one form to another. Examples of such inventions could include compression technologies, search and information retrieval, data structure innovations, and the like.

Another concern with the Mayo-Alice test is that it seems to merge the analysis of patentable subject matter with the analysis of novelty/obviousness. Historically, these two analyses have been quite separate: first ask whether the claim is directed to a machine, process, etc; if so, analyze the claim for novelty and non-obviousness with respect to the prior art.

In contrast, the language of the Mayo-Alice test is infused with the language of novelty. Specifically, the “significantly more” analysis appears to revolve largely around questions of what is new or different compared to what has been done before. For example, the Court noted that *improvements* to another technology or functioning of the computer itself could be viewed as providing significantly more than the abstract idea itself. But judging whether something is an “improvement” of a technology necessarily requires an analysis of the current state of the art. As another example, adding a specific limitation other than what is “well-understood, routine, and conventional” in a field may qualify as significantly more. Again, how does the Examiner determine what is “well-understood, routine, and conventional” without reference to the prior art?

The reliance on prior art analysis within the Mayo-Alice test begs the question of why such a test is even necessary. If an applicant presents a claim that recites an abstract idea coupled with nothing more than well-known, conventional, and routine computer operations, then wouldn't this claim be rejected (or invalid) in view of the prior art for obviousness reasons. After all, it shouldn't be difficult for an examiner to find prior art that teaches all of the well-known, conventional, and routine computer operations.

Returning for a moment to the procedural concern raised above, the Mayo-Alice test enables patent examiners to reject claims based essentially on a conclusion that the claim is present in the prior, but without meeting the evidentiary requirements of making a prior-art rejection under Sections 102 or 103. This seems counter to the structure of the patent statute, and raises due process concerns. The patent statute requires that the Office give adequate notice of the reasons for a rejection. 35 U.S.C. 132. In the context of a prior art rejection under Sections 102 or 103, notice has typically meant that the examiner must evaluate the claims in view of specific prior art references. But the Mayo-Alice test allows an examiner to dress up a prior art rejection as a subject matter rejection, and thereby escape the obligation to actually search, cite, analyze, and apply the claims to actual prior art references.

Novelty

A claimed invention may be rejected under 35 U.S.C. 102 when the invention is anticipated (or is “not novel”) over a disclosure that is available as prior art. To anticipate a claim, the disclosure must teach every element of the claim.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) (claim to a system for setting a computer clock to an offset time to address the Year 2000 (Y2K) problem, applicable to records with year date data in “at least one of two-digit, three-digit, or four-digit” representations, was held anticipated by a system that offsets year dates in only two-digit formats). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. In *re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Note that, in some circumstances, it is permissible to use multiple references in a 35 U.S.C. 102 rejection. In particular, a secondary reference may be used to define a term, demonstrate inherency, or show enablement of the primary reference.

Non-obviousness

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 (i.e., the claimed invention is novel), if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

An invention that would have been obvious to a person of ordinary skill at the time of the invention is not patentable. See 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a). The framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (A) Determining the scope and content of the prior art; and
- (B) Ascertaining the differences between the claimed invention and the prior art; and
- (C) Resolving the level of ordinary skill in the pertinent art.

Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. *Id.* at 17-18, 148 USPQ at 467. Such evidence, sometimes referred to as “secondary considerations,” may include evidence of commercial success, long-felt but unsolved needs, failure of others, and unexpected results. The evidence may be included in the specification as filed, accompany the application on filing, or be provided in a timely manner at some other point during the prosecution. The weight to be given any objective evidence is made on a case-by-case basis. The mere fact that an applicant has presented evidence does not mean that the evidence is dispositive of the issue of obviousness.

The question of obviousness must be resolved on the basis of the factual inquiries set forth above. While each case is different and must be decided on its own facts, the *Graham* factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis.

The obviousness analysis must avoid impermissible hindsight. Many if not most inventions appear to be obvious with the benefit of hindsight. A proper obviousness analysis must be rooted in the understanding of a person of ordinary skill in the art when the application was filed (or invention was made, under the first to invent law).

The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. Factors that may be considered in determining the level of ordinary skill in the art may include: (A) “type of problems encountered in the art;” (B) “prior art solutions to those problems;” (C) “rapidity with which innovations are made;” (D) “sophistication of the technology; and” (E) “educational level of active workers in the field. In a given case, every factor may not be present, and one or more factors may predominate.”

“A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421, 82 USPQ2d 1385, 1397 (2007). “[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420, 82 USPQ2d 1397. Office personnel may also take into account “the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418, 82 USPQ2d at 1396.

Obviousness Rationales 35 U.S.C. 103

Once the *Graham* factual inquiries are resolved, Office personnel must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

The obviousness analysis cannot be confined by . . . overemphasis on the importance of published articles and the explicit content of issued patents. . . . In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends.

Prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. The “mere existence of differences between the prior art and an invention does not establish the invention’s nonobviousness.” *Dann v. Johnston*, 425 U.S. 219, 230, 189 USPQ 257, 261 (1976). The gap between the prior art and the claimed invention may not be “so great as to render the [claim] nonobvious to one reasonably skilled in the art.” *Id.* In determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. Factors other than the disclosures of the cited prior art may provide a basis for concluding that it would have been obvious to one of ordinary skill in the art to bridge the gap. The rationales discussed below outline reasoning that may be applied to find obviousness in such cases.

Exemplary rationales that may support a conclusion of obviousness include:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Factors Weighing Against a Conclusion of Obviousness

Rebuttal evidence may include evidence of “secondary considerations,” such as “commercial success, long felt but unsolved needs, [and] failure of others” (*Graham v. John Deere Co.*, 383 U.S. at 17, 148 USPQ at 467), and may also include evidence of unexpected results. For example, in the case of a claim to a combination, applicants may submit evidence or argument to demonstrate that:

- (A) one of ordinary skill in the art could not have combined the claimed elements by known methods (e.g., due to technological difficulties);
- (B) the elements in combination do not merely perform the function that each element performs separately;
- (C) the results of the claimed combination were unexpected;
- (D) one reference teaches away from the proposed combination; or
- (E) the proposed combination is inoperative.

Prior Art

Confusion Alert: On March 16, 2013, the U.S. patent system transitioned to a “first to file” (also sometimes called “AIA,” for the America Invents Act) regime from a “first to invent” (also sometimes called “pre-AIA”) regime. The rules that characterize prior art (for purposes of novelty and non-obviousness) differ between the two systems. Patents and applications with effective filing dates prior to the transition date are still subject to the first to invent rules. When looking at a patent or application, one must thus first determine which rules apply:

<i>First to invent rules</i>	<i>First to file rules</i>
<ul style="list-style-type: none"> • Patents issued prior to the transition date • Applications filed prior to the transition date • Applications claiming priority to an application filed prior to the transition date (e.g., a continuation, filed April 1, 2013, of an application filed January, 2012) 	<ul style="list-style-type: none"> • Patents issued from applications filed after the transition date • Applications filed after the transition date (which do not claim an earlier priority date)

By way of summary, the differences between the two rule systems can be understood like this:

- Both systems include a one-year “bar”: a disclosure (***by anyone***) of your invention more than one year before the application for patent renders the invention unpatentable
- In the first to file system (AIA), the inventor who files or publishes first gets the patent (some people call the system a “first *inventor* to file or *publish*” system)
- In the first to invent system (pre-AIA), the inventor who invents first gets the patent

For an inventor, it is first important to understand the potential novelty destroying acts related to patent applications the inventor may file. Thus, the following discussion focuses on the current rules under the first to file system.

Prior art documents and activities which may preclude patentability are set forth in AIA 35 U.S.C. 102(a)(1). Such documents and activities include prior patenting of the claimed invention, descriptions of the claimed invention in a printed publication, public use of the claimed invention, placing the claimed invention on sale, and otherwise making the claimed invention available to the public.

The Novelty Rule Under the AIA

35 U.S.C. 102 reads:

A person shall be entitled to a patent unless—

(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or

(2) the claimed invention was described in a patent issued under section [151](#), or in an application for patent published or deemed published under section [122 \(b\)](#), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

Because many of the terms of the AIA novelty rule are the same as those in the pre-AIA novelty rule, and because there is little case law to interpret the meaning of these terms in the AIA, the below material defines some of these terms with reference to pre-AIA legal precedent.

“Effective Filing Date”

Pre-AIA 35 U.S.C. 102(a) and (e) reference patent-defeating activities occurring before the applicant invented the claimed invention. AIA 35 U.S.C. 102(a)(1) and (a)(2) make no mention of the date of the invention, but instead concern documents that existed or activities that occurred “before the effective filing date of the claimed invention.” As a result, it is no longer possible to antedate or “swear behind” certain prior art disclosures by making a showing under 37 CFR 1.131 that the applicant invented the claimed subject matter prior to the effective date of the prior art disclosure.

The AIA defines the term “effective filing date” for a claimed invention in a patent or application for patent (other than a reissue application or reissued patent) as the earliest of: (1) the actual filing date of the patent or the application for the patent containing the claimed invention; or (2) the filing date of the earliest application for which the patent or application is

entitled, as to such invention, to a right of priority or the benefit of an earlier filing date under 35 U.S.C. 119, 120, 121, or 365. See 35 U.S.C. 100(i)(1).

Thus, the one-year grace period in AIA 35 U.S.C. 102(b)(1) (see section on “Exceptions, below”) is measured from the filing date of any U.S. or foreign patent application to which the patent or application is entitled to benefit or priority as to such invention, whereas the one-year grace period in pre-AIA 35 U.S.C. 102(b) is measured from only the filing date of the earliest application filed in the United States (directly or through the PCT).

As under pre-AIA law, the effective filing date of a claimed invention is determined on a claim-by-claim basis and not an application-by-application basis. That is, the principle that different claims in the same application may be entitled to different effective filing dates vis-à-vis the prior art remains unchanged by the AIA. However, it is important to note that although prior art is applied on a claim-by-claim basis, the determination of whether pre-AIA 35 U.S.C. 102 and 35 U.S.C. 103 or AIA 35 U.S.C. 102 and 103 apply is made on an application-by-application basis.

“Patented”

AIA 35 U.S.C. 102(a)(1) indicates that a prior patent of a claimed invention will preclude the grant of a subsequent patent on the claimed invention. This means that if a claimed invention was patented in this or a foreign country before the effective filing date of the claimed invention, AIA 35 U.S.C. 102(a)(1) precludes the grant of a patent on the claimed invention. The effective date of the patent for purposes of determining whether the patent qualifies as prior art under AIA 35 U.S.C. 102(a)(1) is the grant date of the patent.

Although an invention may be described in a patent and not claimed therein, the grant date would also be the applicable prior art date for purposes of relying on the subject matter disclosed therein as “described in a printed publication,” provided that the patent was made available to the public on its grant date. Note that a U.S. patent that issues after the effective filing date of a claimed invention and is not available as prior art against that invention under AIA 35 U.S.C. 102(a)(1) could be available as prior art under AIA 35 U.S.C. 102(a)(2).

“Described in a Printed Publication”

If a claimed invention is described in a patent, published patent application, or printed publication, such a document may be available as prior art under AIA 35 U.S.C. 102(a)(1).

While the conditions for patentability of AIA 35 U.S.C. 112(a) require a written description of the claimed invention that would have enabled a person skilled in the art to make as well as use the invention, the prior art provisions of AIA 35 U.S.C. 102(a)(1) and (a)(2) require only that the claimed invention is “described” in a prior art document (patent, published patent application, or printed publication). The two basic requirements that must be met by a prior art document in order to describe a claimed invention such that it is anticipated under the first to file system are the same as those under the first to invent system. First, “each and every element of the claimed invention” must be disclosed either explicitly or inherently, and the elements must be “arranged or combined in the same way as in the claim.” Second, a person of ordinary skill in the art must have been enabled to make the invention without undue experimentation. Thus, in order for a prior art document to describe a claimed invention such that it is anticipated under AIA 35 U.S.C. 102(a)(1) or (a)(2), it must disclose all elements of the claimed invention arranged as they are in the claim, and also provide sufficient guidance to enable a person skilled in the art to make the claimed invention.

An anticipatory description it is not required in order for a disclosure to qualify as prior art, unless the disclosure is being used as the basis for an anticipation rejection. In accordance with pre-AIA case law concerning obviousness, a disclosure may be cited for all that it would reasonably have made known to a person of ordinary skill in the art. Thus, the description requirement of AIA 35 U.S.C. 102(a)(1) and (a)(2) does not preclude an examiner from applying a disclosure in an obviousness rejection under AIA 35 U.S.C. 103 simply because the disclosure is not adequate to anticipate the claimed invention.

“In Public Use”

Under the first to invent system (pre-AIA), an invention that was “in public use” precluded the grant of a patent only if such public use occurred “in this country.” Under the first to file system (AIA), there is no geographic limitation on where prior public use or public availability occurs. Furthermore, a public use would need to occur before the effective filing date of the claimed invention to constitute prior art under AIA 35 U.S.C. 102(a)(1).

The pre-AIA case law also indicates that a public use will bar patentability if the public use occurs before the critical date and the invention is ready for patenting. Under pre-AIA 35 U.S.C. 102(b), the critical date is the date that is one year prior to the date of application for patent in the United States. Under pre-AIA 35 U.S.C. 102(b), the uses of an invention before the patent's critical date that constitute a “public use” fall into two categories: the use either “(1) was accessible to the public; or (2) was commercially exploited.”

Public use under AIA 35 U.S.C. 102(a)(1) is limited to those uses that are available to the public. The public use provision of AIA 35 U.S.C. 102(a)(1) thus has the same substantive scope, with respect to uses by either the inventor or a third party, as public uses under pre-AIA 35 U.S.C. 102(b) by unrelated third parties or others under pre-AIA 35 U.S.C. 102(a).

“On Sale”

The pre-AIA case law indicates that on sale activity will bar patentability if the claimed invention was: (1) the subject of a commercial sale or offer for sale, not primarily for experimental purposes; and (2) ready for patenting. See *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67, 48 USPQ2d 1641, 1646-47 (1998). Contract law principles apply in order to determine whether a commercial sale or offer for sale occurred. In addition, the enablement inquiry is not applicable to the question of whether a claimed invention is “on sale” under pre-AIA 35 U.S.C. 102(b). See *Epstein*, 32 F.3d at 1568, 31 USPQ2d at 1824. The phrase “on sale” in AIA 35 U.S.C. 102(a)(1) is treated as having the same meaning as “on sale” in pre-AIA 35 U.S.C. 102(b), except that the sale must make the invention available to the public. For a discussion of “on sale” as used in pre-AIA 35 U.S.C. 102(b), see generally

Under pre-AIA 35 U.S.C. 102(b), if an invention was “on sale,” patentability was precluded only if the invention was on sale “in this country.” Under AIA 35 U.S.C. 102(a)(1), there is no geographic limitation on where the sale or offer for sale may occur. When formulating a rejection, Office personnel should consider evidence of sales activity, regardless of where the sale activity took place.

The pre-AIA 35 U.S.C. 102(b) “on sale” provision has been interpreted as including commercial activity even if the activity is secret. AIA 35 U.S.C. 102(a)(1) uses the same “on sale” term as pre-AIA 35 U.S.C. 102(b). The “or otherwise available to the public” residual clause of AIA 35 U.S.C. 102(a)(1), however, indicates that AIA 35 U.S.C. 102(a)(1) does not cover secret sales or offers for sale. For example, an activity (such as a sale, offer for sale, or other

commercial activity) is secret (non-public) if it is among individuals having an obligation of confidentiality to the inventor.

“Otherwise Available to the Public”

AIA 35 U.S.C. 102(a)(1) provides a “catch-all” provision, which defines a new additional category of potential prior art not provided for in pre-AIA 35 U.S.C. 102. Specifically, a claimed invention is not entitled to a patent if it was “otherwise available to the public” before its effective filing date. This “catch-all” provision permits decision makers to focus on whether the disclosure was “available to the public,” rather than on the means by which the claimed invention became available to the public or whether a disclosure constitutes a “printed publication” or falls within another category of prior art as defined in AIA 35 U.S.C. 102(a)(1). The availability of the subject matter to the public may arise in situations such as:

- a student thesis in a university library
- a poster display or other information disseminated at a scientific meeting
- subject matter in a laid-open patent application or patent
- a document electronically posted on the Internet
- a commercial transaction that does not constitute a sale under the Uniform Commercial Code

Even if a document or other disclosure is not a printed publication, or a transaction is not a sale, either may be prior art under the “otherwise available to the public” provision of AIA 35 U.S.C. 102(a)(1), provided that the claimed invention is made sufficiently available to the public.

No Requirement of "By Others"

A key difference between pre-AIA 35 U.S.C. 102(a) and AIA 35 U.S.C. 102(a)(1) is the requirement in pre-AIA 35 U.S.C. 102(a) that the prior art relied on was “by others.” Under AIA 35 U.S.C. 102(a)(1), there is no requirement that the prior art relied upon be by others. Thus, any prior art which falls under AIA 35 U.S.C. 102(a)(1) need not be by another to constitute potentially available prior art. However, disclosures of the subject matter made one year or less before the effective filing date of the claimed invention by the inventor or a joint inventor or another who obtained the subject matter directly or indirectly from the inventor or a joint inventor may fall within an exception under AIA 35 U.S.C. 102(b)(1) to AIA 35 U.S.C. 102(a)(1).

“Described in a patent ... or in an application”

AIA 35 U.S.C. 102(a)(2) gives prior art effect to patents and published applications as of their filing date. Most applications publish about 18 months from their filing date. Applications typically take several years to issue as patents. Until applications are published, they are held in confidence by the Patent Office. This provision of the AIA (and a similar provision in pre-AIA 35 U.S.C. 102(e)) uses filing date (and not publication or issue date) as the relevant date for determining whether a published patent application or issued patent is prior art to a claimed invention.

For example, a claimed invention having a filing date of July 1, 2014 can be anticipated by a patent or application that was filed prior to July 1, 2014, even though the patent/application did not issue or publish until after July 1, 2014. Most applications publish about 18 months from their filing date.

On the one hand, this provision may seem counter to the overarching focus of the AIA on “public” acts (e.g., public sale, publication dates) as novelty destroying events, because the

filing of a patent application is clearly not a public act. On the other hand, using the filing date as the relevant prior art date makes sense, given the delays between filing and publication/issue.

Exceptions

AIA 35 U.S.C. 102(b) sets out exceptions to AIA 35 U.S.C. 102(a), in that prior art that otherwise would be included in AIA 35 U.S.C. 102(a) shall not be prior art if it falls within an exception under AIA 35 U.S.C. 102(b).

Exceptions to the categories of prior art defined in AIA 35 U.S.C. 102(a)(1) are provided in AIA 35 U.S.C. 102(b)(1). Specifically, AIA 35 U.S.C. 102(b)(1) states that

[a] disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

(A) the disclosure was made by the inventor or a joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

Exceptions to the categories of prior art defined in AIA 35 U.S.C. 102(a)(2) are provided in AIA 35 U.S.C. 102(b)(2). Specifically, AIA 35 U.S.C. 102(b)(2) states that

[a] disclosure shall not be prior art to a claimed invention under subsection (a)(2) if—

(A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor;

(B) the subject matter disclosed had, before such subject matter was effectively filed under subsection (a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person.

Note the parallelism between subsections (1) and (2). Understand subsection (1) and you will be most of the way to understanding subsection (2).

The AIA exceptions operate to establish the “one-year grace period,” a feature that is somewhat unique to U.S. patent law. Subsection (A) excludes as prior art disclosures made less than a year before filing, where the disclosure is made by the inventor or someone who obtained the subject matter from the inventor. Subsection (B) excludes as prior art disclosures made less than a year before filing, where the subject matter was previously disclosed by the inventor or someone who obtained it from the inventor.

To illustrate subsection (A):

- Suppose inventor X makes a disclosure D on July 1, 2014. Inventor X files for a patent on June 1, 2015. D is not prior art because it is the inventor’s own disclosure.

- Same facts as above, except that the disclosure D is made by former business partner P who obtained the subject matter of the disclosure from inventor X. D is not prior art, because P obtained the subject matter from X.

To illustrate subsection (B):

- Suppose again that inventor X makes a disclosure D1 on July 1, 2014. Third party T (completely independent of X) makes a disclosure D2 of the same subject matter on August 1, 2014. Inventor X files for a patent on June 1, 2015. D2 would ordinarily be prior art under 35 U.S.C. 102(a)(1) because it was published before the filing date. However, by operation of the exception in subsection (B), the inventor's earlier disclosure D1 "shields" the application from D2.
- What if third party T filed for a patent on May 1, 2015? Who gets the patent?

Written Description

35 U.S.C. 112(a) and the first paragraph of pre-AIA 35 U.S.C. 112 require that the "specification shall contain a written description of the invention" This requirement is separate and distinct from the enablement requirement.

The written description requirement has several policy objectives. "[T]he 'essential goal' of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed." In *re Barker*, 559 F.2d 588, 592 n.4, 194 USPQ 470, 473 n.4 (CCPA 1977). Another objective is to put the public in possession of what the applicant claims as the invention. "The 'written description' requirement implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1084 (Fed. Cir. 2005). Further, the written description requirement promotes the progress of the useful arts by ensuring that patentees adequately describe their inventions in their patent specifications in exchange for the right to exclude others from practicing the invention for the duration of the patent's term.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. However, a showing of possession alone does not cure the lack of a written description. *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956, 969-70, 63 USPQ2d 1609, 1617 (Fed. Cir. 2002). Much of the written description case law addresses whether the specification as originally filed supports claims not originally in the application. The issue raised in these cases is most often phrased as whether the original application provides "adequate support" for the claims at issue or whether the material added to the specification incorporates "new matter" in violation of 35 U.S.C. 132.

In addition, early opinions suggest the Patent and Trademark Office was unwilling to find written descriptive support when the only description was found in the claims; however, this viewpoint was rejected. It is now well accepted that a satisfactory description may be in the claims or any other portion of the originally filed specification. These early opinions did not address the quality or specificity of particularity that was required in the description, i.e., how much description is enough.

An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures,

diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. Amer. Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was “ready for patenting” such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention.

A question as to whether a specification provides an adequate written description may arise in the context of an original claim which is not described sufficiently, a new or amended claim wherein a claim limitation has been added or removed, or a claim to entitlement of an earlier priority date or effective filing date under 35 U.S.C. 119, 120, or 365(c). Most typically, the issue will arise in the context of determining whether new or amended claims are supported by the description of the invention in the application as filed, or whether a claimed invention is entitled to the benefit of an earlier priority date or effective filing date under 35 U.S.C. 119, 120, or 365(c). Compliance with the written description requirement is a question of fact which must be resolved on a case-by-case basis. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563, 19 USPQ2d at 1116 (Fed. Cir. 1991).

Original Claims

There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976) (“we are of the opinion that the PTO has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims”). However, as discussed above, the issue of a lack of adequate written description may arise even for an original claim when an aspect of the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention. The claimed invention as a whole may not be adequately described if the claims require an essential or critical feature which is not adequately described in the specification and which is not conventional in the art or known to one of ordinary skill in the art.

The claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence. For example, even though a genetic code table would correlate a known amino acid sequence with a genus of coding nucleic acids, the same table cannot predict the native, naturally occurring nucleic acid sequence of a naturally occurring mRNA or its corresponding cDNA. Cf. *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993), and *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995) (holding that a process could not render the product of that process obvious under 35 U.S.C. 103).

The Federal Circuit has pointed out that under United States law, a description that does not render a claimed invention obvious cannot sufficiently describe the invention for the purposes of the written description requirement of 35 U.S.C. 112. *Eli Lilly*, 119 F.3d at 1567, 43 USPQ2d at 1405.

As a general rule, where software constitutes part of a best mode of carrying out an invention, description of such a best mode is satisfied by a disclosure of the functions of the software. This is because, normally, writing code for such software is within the skill of the art, not requiring undue experimentation, once its functions have been disclosed.... Thus, flow charts or source code listings are not a requirement for adequately disclosing the functions of software. *Fonar Corp. v. Gen. Elec. Co.*, 107 F.3d 1543, 1549, 41 USPQ2d 1801, 1805 (Fed. Cir. 1997) (“.”).

A lack of adequate written description issue also arises if the knowledge and level of skill in the art would not permit one skilled in the art to immediately envisage the product claimed from the disclosed process.

New or Amended Claims

The proscription against the introduction of new matter in a patent application (35 U.S.C. 132 and 251) serves to prevent an applicant from adding information that goes beyond the subject matter originally filed. The claims as filed in the original specification are part of the disclosure and, therefore, if an application as originally filed contains a claim disclosing material not found in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter. Thus, the written description requirement prevents an applicant from claiming subject matter that was not adequately described in the specification as filed. New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement.

While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure. An amendment to correct an obvious error does not constitute new matter where one skilled in the art would not only recognize the existence of the error in the specification, but also recognize the appropriate correction.

Under certain circumstances, omission of a limitation can raise an issue regarding whether the inventor had possession of a broader, more generic invention. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998) (claims to a sectional sofa comprising, *inter alia*, a console and a control means were held invalid for failing to satisfy the written description requirement where the claims were broadened by removing the location of the control means); *Johnson Worldwide Assoc. v. Zebco Corp.*, 175 F.3d 985, 993, 50 USPQ2d 1607, 1613 (Fed. Cir. 1999) (In *Gentry Gallery*, the “court’s determination that the patent disclosure did not support a broad meaning for the disputed claim terms was premised on clear statements in the written description that described the location of a claim element--the ‘control means’ --as ‘the only possible location’ and that variations were ‘outside the stated purpose of the invention.’ *Gentry Gallery*, 134 F.3d at 1479, 45 USPQ2d at 1503. *Gentry Gallery*, then, considers the situation where the patent’s disclosure makes crystal clear that a particular (i.e., narrow) understanding of a claim term is an ‘essential element of [the inventor’s] invention.’”).

A claim that omits an element which applicant describes as an essential or critical feature of the invention originally disclosed does not comply with the written description requirement. See *Gentry Gallery*, 134 F.3d at 1480, 45 USPQ2d at 1503. A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may also be subject to rejection under 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, para. 1, as not enabling, or under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, para. 2.

Enablement

The enablement requirement refers to the requirement of 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph that the specification describe how to make and how to use the invention. The invention that one skilled in the art must be enabled to make and use is that defined by the claim(s) of the particular application or patent.

The purpose of the requirement that the specification describe the invention in such terms that one skilled in the art can make and use the claimed invention is to ensure that the invention is communicated to the interested public in a meaningful way. The information contained in the disclosure of an application must be sufficient to inform those skilled in the relevant art how to both make and use the claimed invention. However, to comply with the enablement requirement, it is not necessary to “enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect.” Detailed procedures for making and using the invention may not be necessary if the description of the invention itself is sufficient to permit those skilled in the art to make and use the invention. A patent claim is invalid if it is not supported by an enabling disclosure.

The enablement requirement is separate and distinct from the written description requirement. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116-17 (Fed. Cir. 1991) (“the purpose of the ‘written description’ requirement is broader than to merely explain how to ‘make and use’”). Therefore, the fact that an additional limitation to a claim may lack descriptive support in the disclosure as originally filed does not necessarily mean that the limitation is also not enabled. In other words, even if a new limitation is not described in the original disclosure, the addition of a new limitation in and of itself may not create an enablement problem provided that one skilled in the art could make and use the claimed invention with the new limitation. Consequently, such limitations must be analyzed for both enablement and description using their separate and distinct criteria.

Test of Enablement

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. The standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? Accordingly, even though the statute does not use the term “undue experimentation,” it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation.

A patent need not teach, and preferably omits, what is well known in the art. Any part of the specification can support an enabling disclosure, even a background section that discusses, or even disparages, the subject matter disclosed therein.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is “undue.” These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;

- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)

It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole. 858 F.2d at 737, 740, 8 USPQ2d at 1404, 1407.

A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

The determination that "undue experimentation" would have been needed to make and use the claimed invention is not a single, simple factual determination. Rather, it is a conclusion reached by weighing all the above noted factual considerations. *In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404.

How to Make the Claimed Invention

As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied. *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). Failure to disclose other methods by which the claimed invention may be made does not render a claim invalid under 35 U.S.C. 112. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533, 3 USPQ2d 1737, 1743 (Fed. Cir. 1987), cert. denied, 484 U.S. 954 (1987).

How to Use the Claimed Invention

If a statement of utility in the specification contains within it a connotation of how to use, and/or the art recognizes that standard modes of administration are known and contemplated, 35 U.S.C. 112 is satisfied. *In re Johnson*, 282 F.2d 370, 373, 127 USPQ 216, 219 (CCPA 1960); *In re Hitchings*, 342 F.2d 80, 87, 144 USPQ 637, 643 (CCPA 1965). See also *In re Brana*, 51 F.2d 1560, 1566, 34 USPQ2d 1437, 1441 (Fed. Cir. 1993).

For example, it is not necessary to specify the dosage or method of use if it is known to one skilled in the art that such information could be obtained without undue experimentation. If one skilled in the art, based on knowledge of compounds having similar physiological or biological activity, would be able to discern an appropriate dosage or method of use without undue experimentation, this would be sufficient to satisfy 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph. The applicant need not demonstrate that the invention is completely safe. See also MPEP § 2107.01 and § 2107.03.

Working Example

Compliance with the enablement requirement of 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph, does not turn on whether an example is disclosed. An example may be “working” or “prophetic.” A working example is based on work actually performed. A prophetic example describes an embodiment of the invention based on predicted results rather than work actually conducted or results actually achieved.

An applicant need not have actually reduced the invention to practice prior to filing. In *Gouldv. Quigg*, 822 F.2d 1074, 1078, 3 USPQ 2d 1302, 1304 (Fed. Cir. 1987), as of Gould’s filing date, no person had built a light amplifier or measured a population inversion in a gas discharge. The Court held that “The mere fact that something has not previously been done clearly is not, in itself, a sufficient basis for rejecting all applications purporting to disclose how to do it.” 822 F.2d at 1078, 3 USPQ2d at 1304 (quoting *In re Chilowsky*, 229 F.2d 457, 461, 108 USPQ 321, 325 (CCPA 1956)).

The specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation. *In re Borkowski*, 422 F.2d 904, 908, 164 USPQ 642, 645 (CCPA 1970).

Definiteness

Optimizing patent quality by providing clear notice to the public of the boundaries of the inventive subject matter protected by a patent grant fosters innovation and competitiveness. Accordingly, providing high quality patents is one of the agency’s guiding principles. The Office recognizes that issuing patents with clear and definite claim language is a key component to enhancing the quality of patents and raising confidence in the patent process.

35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph requires that a patent application specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his or her invention. In patent examining parlance, the claim language must be “definite” to comply with 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph. Conversely, a claim that does not comply with this requirement of 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph is “indefinite.”

The primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent. A secondary purpose is to provide a clear measure of what applicants regard as the invention so that it can be determined whether the claimed invention meets all the criteria for patentability and whether the specification meets the criteria of 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph with respect to the claimed invention.

It is of utmost importance that patents issue with definite claims that clearly and precisely inform persons skilled in the art of the boundaries of protected subject matter. Therefore, claims that do not meet this standard must be rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph as indefinite. Such a rejection requires that the applicant respond by explaining why the language is definite or by amending the claim, thus making the record clear regarding the claim boundaries prior to issuance. As an indefiniteness rejection requires the applicant to respond by explaining why the language is definite or by amending the claim, such rejections must clearly identify the language that causes the claim to be indefinite and thoroughly explain the reasoning for the rejection.

Interpreting the Claims

A fundamental principle contained in 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.

As discussed above, the interpretive standard used by the Patent Office during examination is known as the “broadest reasonable interpretation.” Under this standard, claim terms are interpreted more broadly than under the standard used by the courts when assessing validity of an issued patent. The courts interpret claim terms as they would be understood by one of ordinary skill in the art. The interpretive standard used by the Patent Office thus sweeps in more prior art than could be applied during an ex-post invalidity challenge in the courts.

Broadest Reasonable Interpretation

The first step to examining a claim to determine if the language is definite is to fully understand the subject matter of the invention disclosed in the application and to ascertain the boundaries of that subject matter encompassed by the claim. During examination, a claim must be given its broadest reasonable interpretation consistent with the specification as it would be interpreted by one of ordinary skill in the art. Because the applicant has the opportunity to amend claims during prosecution, giving a claim its broadest reasonable interpretation will reduce the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984); *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.”).

The focus of the inquiry regarding the meaning of a claim should be what would be reasonable from the perspective of one of ordinary skill in the art. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260, 94 USPQ2d 1640, 1644 (Fed. Cir. 2010); *In re Buszard*, 504 F.3d 1364, 84 USPQ2d 1749 (Fed. Cir. 2007). In *Buszard*, the claim was directed to a flame retardant composition comprising a flexible polyurethane foam reaction mixture. *Buszard*, 504 F.3d at 1365, 84 USPQ2d at 1749. The Federal Circuit found that the Board’s interpretation that equated a “flexible” foam with a crushed “rigid” foam was not reasonable. *Id.*, at 1367, 84 USPQ2d at 1751. Persuasive argument was presented that persons experienced in the field of polyurethane foams know that a flexible mixture is different than a rigid foam mixture. *Id.*, 504 F.3d at 1366, 84 USPQ2d at 1751.

Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification. The plain meaning of a term means the ordinary and customary meaning given to the term by those of ordinary skill in the art at the time of the invention. The ordinary and customary meaning of a term may be evidenced by a variety of sources, including the words of the claims themselves, the specification, drawings, and prior art. However, the best source for determining the meaning of a claim term is the specification - the greatest clarity is obtained when the specification serves as a glossary for the claim terms. The presumption that a term is given its ordinary and customary meaning may be rebutted by the applicant by clearly setting forth a different definition

of the term in the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1028 (Fed. Cir. 1997) (the USPTO looks to the ordinary use of the claim terms taking into account definitions or other “enlightenment” contained in the written description); But c.f. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004) (“We have cautioned against reading limitations into a claim from the preferred embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification.”). When the specification sets a clear path to the claim language, the scope of the claims is more easily determined and the public notice function of the claims is best served.

Different Standards for Definiteness used by the Patent Office and the Courts

Patented claims enjoy a presumption of validity and are not given the broadest reasonable interpretation during court proceedings involving infringement and validity, and can be interpreted based on a fully developed prosecution record. Accordingly, when possible, courts construe patented claims in favor of finding a valid interpretation. A court will not find a patented claim indefinite unless it is “insolubly ambiguous.” See, e.g., *Exxon Research and Eng’g Co. v. United States*, 265 F.3d 1371, 1375, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001); see also *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004) (“The requirement to ‘distinctly’ claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles....Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite.”). In other words, the validity of a claim will be preserved if some meaning can be gleaned from the language.

In contrast, no presumption of validity attaches before the issuance of a patent. The Office is not required or even permitted to interpret claims when examining patent applications in the same manner as the courts, which, post-issuance, operate under the presumption of validity. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1028 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989). The Office must construe claims in the broadest reasonable manner during prosecution in an effort to establish a clear record of what applicant intends to claim. In deciding whether a pending claim particularly points out and distinctly claims the subject matter, a lower threshold of ambiguity is applied during prosecution. *Ex parte Miyazaki*, 89 USPQ2d 1207, 1212 (Bd. Pat. App. & Int. 2008) (precedential); *In re Am. Acad. of Sci. Tech Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004) (“However, the Board is required to use a different standard for construing claims than that used by district courts.”). The lower threshold is applied because the patent record is in development and not fixed. As such, applicant has the ability to provide explanation and/or amend the claims to ensure that the meaning of the language is clear and definite prior to issuance. *Burlington Indus. Inc. v. Quigg*, 822 F.2d 1581, 1583, 3 USPQ2d 1436, 1438 (Fed. Cir. 1987) (“Issues of judicial claim construction such as arise after patent issuance, for example during infringement litigation, have no place in prosecution of pending claims before the PTO, when any ambiguity or excessive breadth may be corrected by merely changing the claim.”).

During examination, after applying the broadest reasonable interpretation to the claim, if the metes and bounds of the claimed invention are not clear, the claim is indefinite and should be rejected. *Zletz*, 893 F.2d at 322, 13 USPQ2d at 1322. For example, if the language of a claim, given its broadest reasonable interpretation, is such that a person of ordinary skill in the relevant art would read it with more than one reasonable interpretation, then a rejection under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph is appropriate. Examiners,

however, are cautioned against confusing claim breadth with claim indefiniteness. A broad claim is not indefinite merely because it encompasses a wide scope of subject matter provided the scope is clearly defined. Instead, a claim is indefinite when the boundaries of the protected subject matter are not clearly delineated and the scope is unclear. For example, a genus claim that covers multiple species is broad, but is not indefinite because of its breadth, which is otherwise clear. But a genus claim that could be interpreted in such a way that it is not clear which species are covered would be indefinite (e.g., because there is more than one reasonable interpretation of what species are included in the claim).

Threshold Requirements of Clarity and Precision

The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision set forth in the statute, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with the required degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted so long as 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, is satisfied.

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;

(B) The teachings of the prior art; and

(C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also *In re Larsen*, No. 01-1092 (Fed. Cir. May 9, 2001) (unpublished) (The preamble of the Larsen claim recited only a hanger and a loop but the body of the claim positively recited a linear member. The court observed that the totality of all the limitations of the claim and their interaction with each other must be considered to ascertain the inventor's contribution to the art. Upon review of the claim in its entirety, the court concluded that the claim at issue apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112.).

A claim term that is not used or defined in the specification may not be indefinite if the meaning of the claim term is discernible. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004) (holding that the disputed claim term "surrender value protected investment credits" which was not defined or used in the specification was discernible and hence not indefinite because "the components of the term have well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence").

If the language of the claim is such that a person of ordinary skill in the art could not interpret the metes and bounds of the claim so as to understand how to avoid infringement, a rejection of the claim under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, is appropriate. See *Morton Int'l, Inc. v. Cardinal Chem. Co.*, 5 F.3d 1464, 1470, 28 USPQ2d 1190, 1195 (Fed. Cir. 1993). However, if the language used by applicant satisfies the statutory requirements of 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, the claim must not be rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph.

4. Trademark

What Is a Trademark or Servicemark?

A trademark is a word, name, symbol, or device that is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others. A servicemark is the same as a trademark except that it identifies and distinguishes the source of a service rather than a product. The terms "trademark" and "mark" are commonly used to refer to both trademarks and servicemarks.

Trademark rights may be used to prevent others from using a confusingly similar mark, but not to prevent others from making the same goods or from selling the same goods or services under a clearly different mark. Trademarks that are used in interstate or foreign commerce may be registered with the USPTO. The registration procedure for trademarks and general information concerning trademarks can be found in the separate book entitled "Basic Facts about Trademarks."

(http://www.uspto.gov/trademarks/basics/Basic_Facts_Trademarks.jsp).

Identifying the Proper "Basis" for Filing a Trademark Application

A trademark application must specify the proper "basis" for filing, most likely either a current use of the mark in commerce or on an intent to use the mark in commerce in the future. Understanding the distinction between these filing bases, and the implications of selecting one, are important considerations before starting the application process.

What is the difference between "use in commerce" and "intent to use" in commerce?

The basic difference between these two filing bases is whether you have used the mark on all the goods/services. If you have already used your mark in commerce, you may file under the "use in commerce" basis. If you have not yet used your mark in commerce, but intend to use it in the future, you must file under the "intent to use" basis. An "intent to use" basis will require filing an additional form and fee that are unnecessary if you file under "use in commerce."

Benefits of Registering a Trademark

Benefits of registration include:

- Constructive notice nationwide of the trademark owner's claim.
- Evidence of ownership of the trademark.
- Jurisdiction of federal courts may be invoked.
- Registration can be used as a basis for obtaining registration in foreign countries.
- Registration may be filed with U.S. Customs Service to prevent importation of infringing foreign goods.

Interstate Commerce

For goods, "interstate commerce" generally involves sending the goods across state lines with the mark displayed on the goods or the packaging for the goods. With services, "interstate commerce" generally involves rendering a service to customers in another state or rendering a service that affects interstate commerce (e.g., restaurants, gas stations, hotels).

Common Law Rights

Federal registration is not required to establish rights in a trademark. Common law rights arise from actual use of a mark and may allow the common law user to successfully challenge a registration or application.

Distinctiveness/Descriptiveness Continuum

With regard to trademark significance, matter may be categorized along a continuum, ranging from marks that are highly distinctive to matter that is a generic name for the goods or services. The degree of distinctiveness – or, on the other hand, descriptiveness – of a designation can be determined only by considering it in relation to the specific goods or services. *Remington Products, Inc. v. N. Am. Philips Corp.*, 892 F.2d 1576, 1580, 13 USPQ2d 1444, 1448 (Fed. Cir. 1990) (the mark must be considered in context, i.e., in connection with the goods).

At one extreme are marks that, when used in relation to the goods or services, are completely arbitrary or fanciful. Next on the continuum are suggestive marks, followed by merely descriptive matter. Finally, generic terms for the goods or services are at the opposite end of the continuum from arbitrary or fanciful marks. As stated in *H. Marvin Ginn Corp. v. Int'l Ass'n of Fire Chiefs, Inc.*, 782 F.2d 987, 989, 228 USPQ 528, 530 (Fed. Cir. 1986), *quoting Weiss Noodle Co. v. Golden Cracknel & Specialty Co.*, 290 F.2d 845, 847, 129 USPQ 411, 413 (C.C.P.A. 1961), “[t]he name of a thing is in fact the ultimate in descriptiveness.”

Fanciful, arbitrary, and suggestive marks, often referred to as “inherently distinctive” marks, are registrable on the Principal Register without proof of acquired distinctiveness. See [TMEP §1209.01\(a\)](#).

Marks that are merely descriptive of the goods or services may not be registered on the Principal Register absent a showing of acquired distinctiveness under 15 U.S.C. §1052(f). See [TMEP §1209.01\(b\)](#) regarding merely descriptive marks, and [TMEP §§1212–1212.10](#) regarding acquired distinctiveness. Merely descriptive marks may be registrable on the Supplemental Register in applications under §1 or §44 of the Trademark Act. 15 U.S.C. §1091.

Matter that is generic for the goods or services is not registrable on either the Principal or the Supplemental Register under any circumstances. See [TMEP §§1209.01\(c\)–\(c\)\(iii\)](#).

Generic Terms

Generic terms are terms that the relevant purchasing public understands primarily as the common or class name for the goods or services. These terms are incapable of functioning as registrable trademarks denoting source, and are not registrable on the Principal Register under §2(f) or on the Supplemental Register.

When a mark is comprised entirely of generic wording and some or all of the wording in the mark is the phonetic equivalent of the generic wording, the entire mark may not be disclaimed, even in the proper spelling, and approved for registration on the Supplemental Register. The disclaimer does not render an otherwise unregistrable generic mark registrable.

Merely Descriptive Marks

To be refused registration on the Principal Register under §2(e)(1) of the Trademark Act, 15 U.S.C. §1052(e)(1), a mark must be merely descriptive or deceptively misdescriptive of the goods or services to which it relates. A mark is considered merely descriptive if it describes an

ingredient, quality, characteristic, function, feature, purpose, or use of the specified goods or services. Similarly, a mark is considered merely descriptive if it immediately conveys knowledge of a quality, feature, function, or characteristic of an applicant's goods or services. Examples include: APPLE PIE held merely descriptive of potpourri; BED & BREAKFAST REGISTRY held merely descriptive of lodging reservations services; MALE-P.A.P. TEST held merely descriptive of clinical pathological immunoassay testing services for detecting and monitoring prostatic cancer; COASTER-CARDS held merely descriptive of a coaster suitable for direct mailing.

The determination of whether a mark is merely descriptive must be made in relation to the goods or services for which registration is sought, not in the abstract. This requires consideration of the context in which the mark is used or intended to be used in connection with those goods/services, and the possible significance that the mark would have to the average purchaser of the goods or services in the marketplace. The mark need not describe all the goods and services identified, as long as it merely describes one of them.

It is not necessary that a term describe all of the purposes, functions, characteristics, or features of a product to be considered merely descriptive; it is enough if the term describes one significant function, attribute, or property.

A term also may be considered merely descriptive if the identified services fall within a subset of services indicated by the term. See *In re Amer. Soc'y of Clinical Pathologists, Inc.*, 442 F.2d 1404, 1406-07, 169 USPQ 800, 801 (C.C.P.A. 1971) (holding that REGISTRY OF MEDICAL PATHOLOGISTS was descriptive of certain claimed services that were implicitly subsumed within service of providing a registry of medical pathologists and of additional claimed services that were "supporting, ancillary or auxiliary to the primary function" of applicant's registry services).

The great variation in facts from case to case prevents the formulation of specific rules for specific fact situations. Each case must be decided on its own merits.

Fanciful, Arbitrary, and Suggestive Marks

Fanciful marks comprise terms that have been invented for the sole purpose of functioning as a trademark or service mark. Such marks comprise words that are either unknown in the language (e.g., PEPSI, KODAK, and EXXON) or are completely out of common usage (e.g., FLIVVER).

Arbitrary marks comprise words that are in common linguistic use but, when used to identify particular goods or services, do not suggest or describe a significant ingredient, quality, or characteristic of the goods or services (e.g., APPLE for computers; OLD CROW for whiskey).

Suggestive marks are those that, when applied to the goods or services at issue, require imagination, thought, or perception to reach a conclusion as to the nature of those goods or services. Thus, a suggestive term differs from a descriptive term, which immediately tells something about the goods or services. Examples include: SPEEDI BAKE for frozen dough found to fall within the category of suggestive marks because it only vaguely suggests a desirable characteristic of frozen dough, namely, that it quickly and easily may be baked into bread; NOBURST for liquid antifreeze and rust inhibitor for hot-water-heating systems found to suggest a desired result of using the product rather than immediately informing the purchasing public of a characteristic, feature, function, or attribute; DRI-FOOT held suggestive of anti-perspirant deodorant for feet in part because, in the singular, it is not the usual or normal manner in which the purpose of an anti-perspirant and deodorant for the feet would be described.

Incongruity is a strong indication that a mark is suggestive rather than merely descriptive. Incongruity in a mark is one of the accepted guideposts in the evolved set of legal principles for discriminating the suggestive from the descriptive mark. The concept of mere descriptiveness “should not penalize coinage of hitherto unused and somewhat incongruous word combinations whose import would not be grasped without some measure of imagination and ‘mental pause.’” Examples include: TENNIS IN THE ROUND held not merely descriptive for providing tennis facilities, the Board finding that the association of applicant's marks with the phrase “theater-in-the-round” created an incongruity because applicant's tennis facilities are not at all analogous to those used in a “theater-in-the-round”; SNO-RAKE held not merely descriptive of a snow-removal hand tool; FRANKWURST held not merely descriptive for wieners, the Board finding that although “frank” may be synonymous with “wiener,” and “wurst” is synonymous with “sausage,” the combination of the terms is incongruous and results in a mark that is no more than suggestive of the nature of the goods; TINT TONE held suggestive for hair coloring, the Board finding that the words overlap in significance and their combination is somewhat incongruous or redundant and does not immediately convey the nature of the product; MOUSE HOUSE held fanciful for museum services featuring mice figurines made up to appear as human beings, the Board finding that the only conceivable meaning of “mouse house,” i.e., a building at a zoo in which live and/or stuffed mice are displayed, is incongruous.

Suggestive marks, like fanciful and arbitrary marks, are registrable on the Principal Register without proof of secondary meaning. Therefore, a designation does not have to be devoid of all meaning in relation to the goods/services to be registrable. If, after conducting independent research, it is unclear to the examining attorney whether a term in a mark has meaning in the relevant industry, the examining attorney must make an inquiry of the applicant, pursuant to 37 C.F.R. §2.61(b). If the examining attorney determines that the term is arbitrary or fanciful, the examining attorney may enter a Note to the File in the record indicating that research was conducted regarding the meaning of the term in the relevant industry, without stating any legal opinions or conclusions.

Credits, Sources, Copyrights

The above materials are based substantially on content provided by the USPTO, available at:

- Trademark FAQs, <http://www.uspto.gov/learning-and-resources/trademark-faqs>
- Trademark Manual of Examining Procedure, <http://www.uspto.gov/learning-and-resources/trademark-faqs>

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5. Copyright

What Is Copyright?

Copyright is a form of protection provided by the laws of the United States (Title 17, U. S. Code) to the authors of “original works of authorship,” including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works. Section 106 of the 1976 Copyright Act generally gives the owner of copyright the exclusive right to do and to authorize others to do the following:

- reproduce the work in copies or phonorecords
- prepare derivative works based upon the work
- distribute copies or phonorecords of the work to the public by sale or other transfer of ownership, or by rental, lease, or lending
- perform the work publicly, in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works
- display the work publicly, in the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work
- perform the work publicly (in the case of sound recordings*) by means of a digital audio transmission

In addition, certain authors of works of visual art have the rights of attribution and integrity as described in section 106A of the 1976 Copyright Act.

It is illegal for anyone to violate any of the rights provided by the copyright law to the owner of copyright. These rights, however, are not unlimited in scope. Sections 107 through 122 of the 1976 Copyright Act establish limitations on these rights. In some cases, these limitations are specified exemptions from copyright liability. One major limitation is the doctrine of “fair use,” which is given a statutory basis in section 107 of the 1976 Copyright Act. In other instances, the limitation takes the form of a “compulsory license” under which certain limited uses of copyrighted works are permitted upon payment of specified royalties and compliance with statutory conditions.

Who Can Claim Copyright?

Copyright protection subsists from the time the work is created in fixed form. The copyright in the work of authorship immediately becomes the property of the author who created the work. Only the author or those deriving their rights through the author can rightfully claim copyright. In the case of works made for hire, the employer and not the employee is considered to be the author. Section 101 of the copyright law defines a “work made for hire” as:

1. a work prepared by an employee within the scope of his or her employment; *or*
2. a work specially ordered or commissioned for use as:
 - a contribution to a collective work
 - a part of a motion picture or other audiovisual work
 - a translation
 - a supplementary work
 - a compilation
 - an instructional text
 - a test

- answer material for a test
- an atlas

If the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.

The authors of a joint work are co-owners of the copyright in the work, unless there is an agreement to the contrary. Copyright in each separate contribution to a periodical or other collective work is distinct from copyright in the collective work as a whole and vests initially with the author of the contribution.

Effect of Ownership of a Copy

Mere ownership of a book, manuscript, painting, or any other copy or phonorecord does not give the possessor the copyright. The law provides that transfer of ownership of any material object that embodies a protected work does not of itself convey any rights in the copyright.

What Works Are Protected?

Copyright protects “original works of authorship” that are fixed in a tangible form of expression. The fixation need not be directly perceptible so long as it may be communicated with the aid of a machine or device. Copyrightable works include the following categories:

1. literary works
2. musical works, including any accompanying words
3. dramatic works, including any accompanying music
4. pantomimes and choreographic works
5. pictorial, graphic, and sculptural works
6. motion pictures and other audiovisual works
7. sound recordings
8. architectural works

These categories should be viewed broadly. For example, computer programs and most “compilations” may be registered as “literary works”; maps and architectural plans may be registered as “pictorial, graphic, and sculptural works.”

What Is Not Protected by Copyright?

Several categories of material are generally not eligible for federal copyright protection. These include among others:

- works that have not been fixed in a tangible form of expression (for example, choreographic works that have not been notated or recorded, or improvisational speeches or performances that have not been written or recorded)
- titles, names, short phrases, and slogans; familiar symbols or designs; mere variations of typographic ornamentation, lettering, or coloring; mere listings of ingredients or contents
- ideas, procedures, methods, systems, processes, concepts, principles, discoveries, or devices, as distinguished from a description, explanation, or illustration
- works consisting entirely of information that is common property and containing no original authorship (for example: standard calendars, height and weight charts, tape measures and rulers, and lists or tables taken from
- public documents or other common sources

Copyright Secured Automatically upon Creation

The way in which copyright protection is secured is frequently misunderstood. No publication or registration or other action in the Copyright Office is required to secure copyright. (See discussion of publication, below.) There are, however, certain definite advantages to registration.

Copyright is secured automatically when the work is created, and a work is “created” when it is fixed in a copy or phonorecord for the first time. “Copies” are material objects from which a work can be read or visually perceived either directly or with the aid of a machine or device, such as books, manuscripts, sheet music, film, videotape, or microfilm.

“Phonorecords” are material objects embodying fixations of sounds (excluding, by statutory definition, motion picture soundtracks), such as cassette tapes, CDs, or vinyl disks. Thus, for example, a song (the “work”) can be fixed in sheet music (“copies”) or in phonograph disks (“phonorecords”), or both. If a work is prepared over a period of time, the part of the work that is fixed on a particular date constitutes the created work as of that date.

Publication

Publication is no longer the key to obtaining federal copyright as it was under the Copyright Act of 1909. However, publication remains important to copyright owners. The 1976 Copyright Act defines publication as follows: “Publication” is the distribution of copies or phonorecords of a work to the public by sale or other transfer of ownership, or by rental, lease, or lending. The offering to distribute copies or phonorecords to a group of persons for purposes of further distribution, public performance, or public display constitutes publication. A public performance or display of a work does not of itself constitute publication.

Note: Before 1978, federal copyright was generally secured by the act of publication with notice of copyright, assuming compliance with all other relevant statutory conditions. U.S. works in the public domain on January 1, 1978, (for example, works published without satisfying all conditions for securing federal copyright under the Copyright Act of 1909) remain in the public domain under the 1976 Copyright Act.

Notice of Copyright

The use of a copyright notice is no longer required under U. S. law, although it is often beneficial. Because prior law did contain such a requirement, however, the use of notice is still relevant to the copyright status of older works.

Notice was required under the 1976 Copyright Act. This requirement was eliminated when the United States adhered to the Berne Convention, effective March 1, 1989.

Use of the notice may be important because it informs the public that the work is protected by copyright, identifies the copyright owner, and shows the year of first publication. Furthermore, in the event that a work is infringed, if a proper notice of copyright appears on the published copy or copies to which a defendant in a copyright infringement suit had access, then no weight shall be given to such a defendant’s interposition of a defense based on innocent infringement in mitigation of actual or statutory damages, except as provided in section 504(c)(2) of the copyright law. Innocent infringement occurs when the infringer did not realize that the work was protected.

The use of the copyright notice is the responsibility of the copyright owner and does not require advance permission from, or registration with, the Copyright Office.

Form of Notice for Visually Perceptible Copies

The notice for visually perceptible copies should contain all the following three elements:

1. The symbol © (the letter C in a circle), or the word “Copyright,” or the abbreviation “Copr.”; *and*
2. The year of first publication of the work. In the case of compilations or derivative works incorporating previously published material, the year date of first publication of the compilation or derivative work is sufficient. The year date may be omitted where a pictorial, graphic, or sculptural work, with accompanying textual matter, if any, is reproduced in or on greeting cards, postcards, stationery, jewelry, dolls, toys, or any useful article; *and*
3. The name of the owner of copyright in the work, or an abbreviation by which the name can be recognized, or a generally known alternative designation of the owner.

Example: © 2011 John Doe

How Long Copyright Protection Endures

A work that was created (fixed in tangible form for the first time) on or after January 1, 1978, is automatically protected from the moment of its creation and is ordinarily given a term enduring for the author’s life plus an additional 70 years after the author’s death. In the case of “a joint work prepared by two or more authors who did not work for hire,” the term lasts for 70 years after the last surviving author’s death. For works made for hire, and for anonymous and pseudonymous works (unless the author’s identity is revealed in Copyright Office records), the duration of copyright will be 95 years from publication or 120 years from creation, whichever is shorter.

Transfer of Copyright

Any or all of the copyright owner’s exclusive rights or any subdivision of those rights may be transferred, but the transfer of exclusive rights is not valid unless that transfer is in writing and signed by the owner of the rights conveyed or such owner’s duly authorized agent. Transfer of a right on a nonexclusive basis does not require a written agreement. A copyright may also be conveyed by operation of law and may be bequeathed by will or pass as personal property by the applicable laws of intestate succession.

Copyright is a personal property right, and it is subject to the various state laws and regulations that govern the ownership, inheritance, or transfer of personal property as well as terms of contracts or conduct of business. Transfers of copyright are normally made by contract.

The law does provide for the recordation in the Copyright Office of transfers of copyright ownership. Although recordation is not required to make a valid transfer between the parties, it does provide certain legal advantages and may be required to validate the transfer as against third parties.

Copyright Registration

In general, copyright registration is a legal formality intended to make a public record of the basic facts of a particular copyright. However, registration is not a condition of copyright protection. Even though registration is not a requirement for protection, the copyright law provides several inducements or advantages to encourage copyright owners to make registration. Among these advantages are the following:

- Registration establishes a public record of the copyright claim.
- Before an infringement suit may be filed in court, registration is necessary for works of U.S. origin.
- If made before or within five years of publication, registration will establish prima facie evidence in court of the validity of the copyright and of the facts stated in the certificate.
- If registration is made within three months after publication of the work or prior to an infringement of the work, statutory damages and attorney's fees will be available to the copyright owner in court actions. Otherwise, only an award of actual damages and profits is available to the copyright owner.
- Registration allows the owner of the copyright to record the registration with the U.S. Customs Service for protection against the importation of infringing copies. For additional information, go to the U.S. Customs and Border Protection website at www.cbp.gov/. Registration may be made at any time within the life of the copyright. Unlike the law before 1978, when a work has been registered in unpublished form, it is not necessary to make another registration when the work becomes published, although the copyright owner may register the published edition, if desired.

Credits, Sources, Copyrights

The above materials are based substantially on content provided by the Copyright Office, available at: Copyright Basics, <http://www.copyright.gov/circs/circ01.pdf>.

Works produced by the Copyright Office are works prepared by the U.S. Government and are thus in the public domain. No claim to copyright is made to those materials.

6. Laws Regulating Intellectual Property

U.S. Constitution

The Congress shall have 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. (Art. 1, Section 8)

Patent Statutes & Regulations

Title 35 U.S. Code

35 USC 100 - Definitions

When used in this title unless the context otherwise indicates—

- (a) The term “invention” means invention or discovery.
- (b) The term “process” means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.
- (c) The terms “United States” and “this country” mean the United States of America, its territories and possessions.
- (d) The word “patentee” includes not only the patentee to whom the patent was issued but also the successors in title to the patentee.
- (e) The term “third-party requester” means a person requesting ex parte reexamination under section [302](#) who is not the patent owner.
- (f) The term “inventor” means the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.
- (g) The terms “joint inventor” and “coinventor” mean any 1 of the individuals who invented or discovered the subject matter of a joint invention.
- (h) The term “joint research agreement” means a written contract, grant, or cooperative agreement entered into by 2 or more persons or entities for the performance of experimental, developmental, or research work in the field of the claimed invention.
- (i)
 - (1) The term “effective filing date” for a claimed invention in a patent or application for patent means—
 - (A) if subparagraph (B) does not apply, the actual filing date of the patent or the application for the patent containing a claim to the invention; or
 - (B) the filing date of the earliest application for which the patent or application is entitled, as to such invention, to a right of priority under section [119](#), [365 \(a\)](#), or [365 \(b\)](#) or to the benefit of an earlier filing date under section [120](#), [121](#), or [365 \(c\)](#).
 - (2) The effective filing date for a claimed invention in an application for reissue or reissued patent shall be determined by deeming the claim to the invention to have been contained in the patent for which reissue was sought.
- (j) The term “claimed invention” means the subject matter defined by a claim in a patent or an application for a patent

35 USC 101 - Inventions Patentable

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.

35 USC 102 - Conditions for patentability; novelty

(a) Novelty; Prior Art.— A person shall be entitled to a patent unless—

(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or

(2) the claimed invention was described in a patent issued under section [151](#), or in an application for patent published or deemed published under section [122 \(b\)](#), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

(b) Exceptions.—

(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.— A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

(A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

(2) Disclosures appearing in applications and patents.— A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if—

(A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor;

(B) the subject matter disclosed had, before such subject matter was effectively filed under subsection (a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person.

35 USC 103 - Conditions for patentability; non-obvious subject matter

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section [102](#), if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

35 USC 111 - Application

(a) **In General.**—

(1) **Written application.**— An application for patent shall be made, or authorized to be made, by the inventor, except as otherwise provided in this title, in writing to the Director.

(2) **Contents.**— Such application shall include—

(A) a specification as prescribed by section [112](#);

(B) a drawing as prescribed by section [113](#); and

(C) an oath or declaration as prescribed by section [115](#).

(3) **Fee and oath or declaration.**— The application must be accompanied by the fee required by law. The fee and oath or declaration may be submitted after the specification and any required drawing are submitted, within such period and under such conditions, including the payment of a surcharge, as may be prescribed by the Director.

(4) **Failure to submit.**— Upon failure to submit the fee and oath or declaration within such prescribed period, the application shall be regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the fee and oath or declaration was unavoidable or unintentional. The filing date of an application shall be the date on which the specification and any required drawing are received in the Patent and Trademark Office.

(b) **Provisional Application.**—

(1) **Authorization.**— A provisional application for patent shall be made or authorized to be made by the inventor, except as otherwise provided in this title, in writing to the Director. Such application shall include—

(A) a specification as prescribed by section [112 \(a\)](#); and

(B) a drawing as prescribed by section [113](#).

(2) **Claim.**— A claim, as required by subsections (b) through (e) of section [112](#), shall not be required in a provisional application.

(3) **Fee.**—

(A) The application must be accompanied by the fee required by law.

(B) The fee may be submitted after the specification and any required drawing are submitted, within such period and under such conditions, including the payment of a surcharge, as may be prescribed by the Director.

(C) Upon failure to submit the fee within such prescribed period, the application shall be regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the fee was unavoidable or unintentional.

(4) **Filing date.**— The filing date of a provisional application shall be the date on which the specification and any required drawing are received in the Patent and Trademark Office.

35 USC 112

(a) **In General.**— The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

(b) **Conclusion.**— The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

(c) Form.— A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

(d) Reference in Dependent Forms.— Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

(e) Reference in Multiple Dependent Form.— A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

(f) Element in Claim for a Combination.— An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Copyright Statutes & Regulations

Title 17 US Code

17 USC 101. Definitions

Except as otherwise provided in this title, as used in this title, the following terms and their variant forms mean the following:

An “architectural work” is the design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings. The work includes the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features.

“Audiovisual works” are works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied.

A “collective work” is a work, such as a periodical issue, anthology, or encyclopedia, in which a number of contributions, constituting separate and independent works in themselves, are assembled into a collective whole.

A “compilation” is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term “compilation” includes collective works.

A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.

“Copies” are material objects, other than phonorecords, in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term “copies” includes the material object, other than a phonorecord, in which the work is first fixed.

“Copyright owner”, with respect to any one of the exclusive rights comprised in a copyright, refers to the owner of that particular right.

A work is “created” when it is fixed in a copy or phonorecord for the first time; where a work is prepared over a period of time, the portion of it that has been fixed at any particular time constitutes the work as of that time, and where the work has been prepared in different versions, each version constitutes a separate work.

A “derivative work” is a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted. A work consisting of editorial revisions, annotations, elaborations, or other modifications, which, as a whole, represent an original work of authorship, is a “derivative work”.

A “device”, “machine”, or “process” is one now known or later developed.

A “digital transmission” is a transmission in whole or in part in a digital or other nonanalog format.

To “display” a work means to show a copy of it, either directly or by means of a film, slide, television image, or any other device or process or, in the case of a motion picture or other audiovisual work, to show individual images nonsequentially.

A work is “fixed” in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. A work consisting of sounds, images, or both, that are being transmitted, is “fixed” for purposes of this title if a fixation of the work is being made simultaneously with its transmission.

The terms “including” and “such as” are illustrative and not limitative.

A “joint work” is a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole.

To “perform” a work means to recite, render, play, dance, or act it, either directly or by means of any device or process or, in the case of a motion picture or other audiovisual work, to show its images in any sequence or to make the sounds accompanying it audible.

To perform or display a work “publicly” means—

(1) to perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered; or

(2) to transmit or otherwise communicate a performance or display of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.

To “transmit” a performance or display is to communicate it by any device or process whereby images or sounds are received beyond the place from which they are sent.

A “useful article” is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information. An article that is normally a part of a useful article is considered a “useful article”.

A “work made for hire” is—

(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire. For the purpose of the foregoing sentence, a “supplementary work” is a work prepared for publication as a secondary adjunct to a work by another author for the purpose of introducing, concluding, illustrating, explaining, revising, commenting upon, or assisting in the use of the other work, such as forewords, afterwords, pictorial illustrations, maps, charts, tables, editorial notes, musical arrangements, answer material for tests, bibliographies, appendixes, and indexes, and an “instructional text” is a literary, pictorial, or graphic work prepared for publication and with the purpose of use in systematic instructional activities.

17 USC 102. Subject matter of copyright: In general

(a) Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include the following categories:

(1) literary works;

(2) musical works, including any accompanying words;

- (3) dramatic works, including any accompanying music;
- (4) pantomimes and choreographic works;
- (5) pictorial, graphic, and sculptural works;
- (6) motion pictures and other audiovisual works;
- (7) sound recordings; and
- (8) architectural works.

(b) In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.

17 USC 103. Subject matter of copyright: Compilations and derivative works

(a) The subject matter of copyright as specified by [section 102](#) includes compilations and derivative works, but protection for a work employing preexisting material in which copyright subsists does not extend to any part of the work in which such material has been used unlawfully.

(b) The copyright in a compilation or derivative work extends only to the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material. The copyright in such work is independent of, and does not affect or enlarge the scope, duration, ownership, or subsistence of, any copyright protection in the preexisting material.

17 USC 105. Subject matter of copyright: United States Government works

Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

17 USC 106. Exclusive rights in copyrighted works

Subject to [sections 107 through 122](#), the owner of copyright under this title has the exclusive rights to do and to authorize any of the following:

- (1) to reproduce the copyrighted work in copies or phonorecords;
- (2) to prepare derivative works based upon the copyrighted work;
- (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
- (4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly;
- (5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly; and
- (6) in the case of sound recordings, to perform the copyrighted work publicly by means of a digital audio transmission.

17 USC 107 . Limitations on exclusive rights: Fair use

Notwithstanding the provisions of [sections 106](#) and [106A](#), the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means

specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(2) the nature of the copyrighted work;

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

(4) the effect of the use upon the potential market for or value of the copyrighted work.

The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.

Trademark Statutes & Regulations

Federal Statute: 15 USC 1051 et seq. (the “Lanham Act”)

Trade Secrets Statutes & Regulations

Uniform Trade Secrets Act (1985)

1. DEFINITIONS.

As used in this [Act], unless the context requires otherwise:

(1) "Improper means" includes theft, bribery, misrepresentation, breach or inducement of a breach of a duty to maintain secrecy, or espionage through electronic or other means;

(2) "Misappropriation" means:

(i) acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or

(ii) disclosure or use of a trade secret of another without express or implied consent by a person who

(A) used improper means to acquire knowledge of the trade secret; or

(B) at the time of disclosure or use, knew or had reason to know that his knowledge of the trade secret was

(I) derived from or through a person who had utilized improper means to acquire it;

(II) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or

(III) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or

(C) before a material change of his [or her] position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.

(3) "Person" means a natural person, corporation, business trust, estate, trust, partnership, association, joint venture, government, governmental subdivision or agency, or any other legal or commercial entity.

(4) "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

(i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and

(ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

2. INJUNCTIVE RELIEF

(a) Actual or threatened misappropriation may be enjoined. Upon application to the court an injunction shall be terminated when the trade secret has ceased to exist, but the injunction may be continued for an additional reasonable period of time in order to eliminate commercial advantage that otherwise would be derived from the misappropriation.

(b) In exceptional circumstances, an injunction may condition future use upon payment of a reasonable royalty for no longer than the period of time for which use could have been prohibited. Exceptional circumstances include, but are not limited to, a material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation that renders a prohibitive injunction inequitable.

(c) In appropriate circumstances, affirmative acts to protect a trade secret may be compelled by court order.

3. DAMAGES

(a) Except to the extent that a material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation renders a monetary recovery inequitable, a complainant is entitled to recover damages for misappropriation. Damages can include both the actual loss caused by computing actual loss. In lieu of damages measured by any other methods, the damages caused by misappropriation may be measured by imposition of liability for a reasonable royalty for a misappropriator's unauthorized disclosure or use of a trade secret.

(b) If willful and malicious misappropriation exists, the court may award exemplary damages in the amount not exceeding twice any award made under subsection (a).