



RESOURCE PUBLICATION

INTELLECTUAL PROPERTY MODULE



Table of Contents

Introduction	1
Types of Intellectual Property	2
Patent	2
Types of Patents	2
Priority of Invention	5
Patent Application Process	6
Copyright	9
Trademark	12
Trade Secret	14
Early Steps to Protect your Intellectual Property	15
Other Intellectual Property Considerations	18

INTELLECTUAL PROPERTY MODULE

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(Information in this module does not provide legal advice nor is it intended to provide you with legal advice. All legal advice should be obtained from a qualified intellectual property attorney. This module provides definitions, examples, and resources only – it's a starting point for your information gathering journey as a technology developer, but it is not exhaustive.)

INTRODUCTION

Commercializing technology innovations is a complex process. Many of its milestones and related activities may be unfamiliar to many people looking to develop new technologies. Attempting to commercialize your developments will raise several new issues that must be addressed. One of the most significant issues is recognizing the importance of protecting your intellectual property. To help you better understand the issues involved, this module will suggest some early steps to help protect your intellectual property along with options for how it can be protected.

Intellectual property is defined by the United States Patent and Trademark Office (USPTO) as “Creations of the mind – creative works or ideas embodied in a form that can be shared or can enable others to recreate, emulate, or manufacture them.”¹ Intellectual property can be protected in different ways through patent law, copyright law, trademark law, and trade secret law. Each is completely different from the others in the types of property protected and the rights granted. All intellectual property must be protected throughout the development process by both creating careful records to prove your ownership and using non-disclosure agreements when discussing your development with others.

In this module, we will explain each type of intellectual property protection (including which types of protection are most appropriate for different developments) and discuss the need for confidentiality and non-disclosure agreements throughout the development process. Once again, please be aware that this module was not designed to give legal advice.

¹ United States Patent and Trademark Office web site. <http://www.uspto.gov/main/glossary/index.html#i>

TYPES OF INTELLECTUAL PROPERTY

There are four primary types of intellectual property protection in the United States:

- 1) Patent
- 2) Copyright
- 3) Trademark
- 4) Trade Secret

1) PATENT

Patent Law is derived primarily from statutory law, specifically the Patent Act of 1952 and its subsequent revisions. A patent is a property right granted by the United States government to an inventor “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’ for a limited time in exchange for public disclosure of the invention when the patent is granted.”² The key point is that a patent only excludes others from producing, using, or selling your invention. It neither gives the inventor a right to produce his/her invention nor does it convey that there is a market for the invention.

TYPES OF PATENTS

There are three types of patents: utility patents, design patents, and plant patents.

Utility Patents

Utility Patents filed after June 8, 1995 are valid for a term of 20 years from the first U.S. filing date for the patent. Utility patents are issued for inventions that are useful, novel, and nonobvious (please refer to the definitions at the end of this section for further explanation of these terms). Utility patents protect how the invention works. In some cases, utility patents can be used to protect software products.

The Patent Act of 1952 states that “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 U.S.C. §101. While this section of the patent statute seems very straightforward, determining what is patentable does not simply mean that any invention that fits into one of the categories listed in the statute is eligible for a patent. An example used by the book *Patent Law and Policy: Cases and Materials* describes the discovery of a pine needle with medicinal properties as a discovery that is not patentable, even though it appears to be within the meaning of the statute. While such a pine needle is a “new and useful... composition of matter”, it may be denied a patent in light of many cases interpreting the broad language included in the patent statute.³ Therefore, the Patent Act must be read in conjunction with appropriate case law to determine what is patentable.

² <http://www.uspto.gov/main/glossary/index.html> (Definition of “patent”)

³ Merges, Robert Patrick, et al. *Patent Law and Policy: Cases and Materials*. Newark: LexisNexis, 2002 (p. 66)

Definitions

Utility – The utility requirement is easily met in most cases since it only mandates that an invention be minimally useful. There are a few cases in which a new invention with no real use is created (for example, a new chemical compound that does not serve any purpose). In these few cases, the utility requirement would not be met.

Novelty (35 U.S.C. 102(a)) – “A person shall be entitled to a patent unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.” In short, the invention must truly be new and unique. If others have invented the device or described it in a previous publication (regardless of whether you knew of the previous invention or publication), then the invention is not novel and not entitled to a patent. It may be beneficial to contact a patent attorney to discuss whether your concept is truly novel before investing a significant amount of money in an invention that cannot be patented. A patent attorney will also be able to discuss aspects of the novelty requirement that may be specific to your concept.

Nonobviousness (35 U.S.C. 103(a)) – “A patent may not be obtained... if the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time to a person having ordinary skill in the art to which said subject matter pertains.” Therefore, in laymen’s terms, “nonobviousness asks whether a development is a significant enough technical advance to merit the award of a patent.”⁴ Nonobviousness may very well be the most important of the patent requirements, and it may also be the most difficult to satisfy.

Design Patents

Design patents are granted to inventors that create a novel and nonobvious ornamental design for an article of manufacture. The key difference between a utility patent and a design patent is that a design patent only protects how the invention looks, not how the invention works. The term for a design patent is 14 years, and it also has a fee schedule that is different from utility patents (please refer to the USPTO web site for more information on the fee schedule and application process for design patents – <http://www.uspto.gov/web/offices/pac/doc/general/design.htm>).⁵

Plant Patents

Plant patents are available to protect the development of new varieties of both sexually and asexually produced plants. The Plant Patent Act (PPA) protects asexually produced plants, while the Plant Varieties Protection Act (PVPA) protects sexually produced plants.

The PPA grants the patentee the “right to exclude others from asexually reproducing the plant, and from using, offering for sale, or selling the plant so reproduced, or any of its parts, throughout the United States.” 35 U.S.C. Section 163. This particular statement has been interpreted to mean that the right to exclude only prevents others from

⁴ Merges, Robert Patrick, et al. *Patent Law and Policy: Cases and Materials*. Newark: LexisNexis, 2002 (pg. 644)

⁵ <http://www.uspto.gov/web/offices/pac/doc/general/design.htm>

asexually reproducing plants from the patentee's plants. Therefore, if someone independently develops the same plant, they would not be liable for infringement. The PPA also does not protect any previously unknown variety of plant that is found in nature. In many other important respects, the PPA follows along with the Patent Act, particularly with respect to the patent term and the application process. For more information on the PPA, please refer directly to the statute (35 U.S.C. §161).

Unlike the PPA, the PVPA differs from the Patent Act in several ways, most notably that the PVPA is administered by the Department of Agriculture, and there are exemptions for experimentation and for certain uses by farmers. The plant patent term also lasts for twenty years from the date of the issuance of the patent, rather than twenty years from the date of application. For more information on the PVPA, please refer directly to the statute (7 U.S.C. §2321).

PRIORITY OF INVENTION

The United States patent system is a “first-to-invent” system rather than a “first-to-file” system. This means that patent examiners at the United States Patent and Trademark Office give priority to the first person to invent something instead of the first person to file an application for patent for an invention. While this system may seem straightforward, there are situations where the first inventor may not be entirely clear.

Consider the following example: John and Bob have both invented the exact same device. John conceived the device on January 1, 2000, while Bob conceived the device on July 1, 2000. Both John and Bob complete prototypes of the invention, and they both draft and file patent applications for their inventions immediately after their prototypes are completed. However, Bob files his patent application three months before John does. Who is entitled to the patent?

In the previous example, the determination as to which inventor will receive the patent is contingent upon John’s diligence in reducing his invention to practice (i.e. completing a prototype). The basic rule of priority was explained by Judge Taft in Christie v. Seybold in 1893: “the man who first reduces an invention to practice is prima facie the first and true inventor, but...the man who first conceives, and, in a mental sense, first invents, a machine, art, or composition of matter, may date his patentable invention back to the time of conception, if he connects the conception with its reduction to practice by reasonable diligence on his part, so that they are substantially one continuous act.” Christie v. Seybold, 55 F. 69 (6th Cir. 1893). In other words, in the example, John would have to show that he used reasonable diligence to bring his invention from conception to prototype in order to be awarded the patent. If John took a six-month break after conceiving the device to pursue other research or because he did not have adequate resources (including money), then he likely would be found to have not used reasonable diligence, and Bob would be awarded the patent. In contrast, if John spent the entire time from conception of his invention until the completion of his prototype conducting experiments and maximizing the usability of the device, then he would be considered the first inventor and would be awarded the patent.

Since John would have to prove both prior conception and diligence in order to be awarded a patent, logbooks or laboratory notebooks can be very important for intellectual property protection (logbooks are described in detail in the second half of this module). For University researchers, University Technology Transfer Offices can provide advice on how to protect your intellectual property development from conception through an application for patent. This is an important resource that should be utilized before any development of intellectual property begins in a University setting.

For technologies that may be sold in other countries, inventors should be aware that almost every other country in the world has a “first-to-file” patent system. In a “first-to-file” system, the first person to file an application for patent has priority. Had the previous example with John and Bob taken place in a country other than the United States, Bob would be awarded the patent (provided his patent application was acceptable) without any consideration regarding whether John actually conceived the device first. This is an important distinction that should be considered, particularly if you are applying for a patent in countries other than the United States.

PATENT APPLICATION PROCESS

Types of Patent Applications

There are three main types of applications for patent that an inventor can submit: non-provisional application for patent, provisional application for patent, and a Patent Cooperation Treaty application.

Non-provisional Application for Patent

A non-provisional application for patent requires a specification (which includes a claim or claims), drawings, as well as the appropriate forms and fees.⁶ The specification is a written description of the invention that includes the process for making and using the invention. The claims included in the specification are what “define the precise scope of the intellectual property rights that are warranted by the disclosure made earlier in the specification.”⁷ Therefore, claims must be drafted carefully to be as broad as the USPTO will allow because the claims define the rights you have with respect to a particular invention. Broader claims will allow the inventor to have broader legal rights. However, if the claim is too broad, the USPTO would likely reject the claim if it includes “anything within the mass of publicly available information...; or anything beyond the actual discoveries of the inventor.”⁸ Therefore, if you wish to file a non-provisional application for patent, it is recommended that you contact an intellectual property attorney to assist you in drafting your patent application to ensure that you have the broadest possible legal rights if your patent is granted. If the patent is granted, the non-provisional application for patent will result in a utility patent with a twenty-year term from the filing date of the non-provisional application.

Provisional Application for Patent

Effective June 8, 1995, it became possible to file a provisional application for patent with the U.S. Patent and Trademark Office. The provisional application for patent is intended to be a relatively low-cost way of postponing the cost and effort of drafting and filing a non-provisional patent application. The provisional application need not contain claims, and the filing fee is modest. Once the provisional application for patent is filed, the applicant may then wait almost a full year before filing a non-provisional patent application (the provisional application has a duration of one year from the date of filing). The twenty-year patent term that runs from the first U.S. filing date does not start with the provisional application, but instead begins only with the date of the subsequent non-provisional patent application. As a result, one may postpone the start of the twenty-year patent term by up to one year through the use of a provisional patent application. Filing a provisional patent application delays any review of the information contained in it for merit or prior art for one year.

⁶ <http://www.uspto.gov/web/offices/pac/utility/utility.htm>

⁷ Merges, Robert Patrick, et al. Patent Law and Policy: Cases and Materials. Newark: LexisNexis, 2002 (pg. 26)

⁸ Merges, Robert Patrick, et al. Patent Law and Policy: Cases and Materials. Newark: LexisNexis, 2002 (pg. 26)

Patent Cooperation Treaty (PCT) Application

The PCT Application is used when the inventor(s) is considering pursuing patents outside of the United States. The PCT Application is a “placeholder” that reserves a priority filing date in all of the countries that are a party to the PCT. This is important because almost all other countries have a “first-to-file” patent system, where the filing date is very important. The PCT application needs to be filed within one year of the first patent application date in the United States. This includes the provisional application as well. For example, if you file a provisional application for patent, the PCT application would need to be filed within one year – the same amount of time you would have before needing to file the full application for patent. Once the PCT application is filed, the applicant has 30 months from the priority filing date to file patent applications in whichever PCT countries they choose. Therefore, if you wait a full year (12 months) to file the PCT application after your first United States patent application, then you only have 18 months from the date of the PCT application to file patent applications in PCT countries.⁹

While filing for patent applications in other countries may provide you with more protection worldwide, it is important to consider which countries your invention is likely to be sold in and the potential market for the invention in those countries. If the profits from sales do not provide an adequate return on your investment (patent prosecution fees, filing fees, annual patent maintenance fees, cost to introduce the invention into that market (including production costs, design modifications to meet product safety laws, etc.)), then you may not wish to patent your invention in that country.

Additional Information

For both the Provisional Application for Patent and the Non-provisional applications for Patent, it is important that inventors pay attention to the One-Year Time Bar for inventions disclosed prior to filing a patent application:

One-Year Time Bar (35 U.S.C. §102(b)) – A person is not entitled to a patent if “the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.”¹⁰ As a result, you are allowed to begin selling your invention, display it at a convention, or discuss it in a publication and still be able to patent it provided that you file a Non-Provisional Application for Patent within one year of the first date of sale, publication, or dissemination. If that one-year period ends and you have not filed a Non-Provisional Application for Patent, you are no longer entitled to a patent for the invention that was disclosed to the public. For example, if a person discloses his invention to the public through sale or other means on January 1, 2006 and files a Provisional Application for Patent on July 1, 2006, the inventor must file a Non-Provisional Application for Patent before January 1, 2007. It does not matter that the one-year term of the Provisional Application for Patent has not expired. When it comes to the one-year time bar, the only date that matters is the date of first public disclosure.

⁹ http://www.patentdoc.com/patents/pct_application.html

¹⁰ 35 U.S.C. §102(b)

Patent Pending – The term “patent pending” can be used by a manufacturer of a product to indicate that a patent application has been filed with the United States Patent and Trademark Office for that particular product. It cannot be used by a manufacturer that has not applied for a patent yet, even though they may intend to do so in the future. Manufacturers that use the term “patent pending” fraudulently will be subject to a fine.¹¹

¹¹ <http://www.uspto.gov/web/offices/pac/doc/general/faq.htm#1>

2) COPYRIGHT

Copyrights apply to many different works, including literary works, musical works, pictures, graphics, dramatic works, and sound recordings. The protection offered by a copyright is limited in that it only protects the copyright owner from others who may copy his or her work. It does not, however, prevent others from using the ideas contained in that work. Copyright only protects the expression of an idea, not the idea itself. This idea-expression dichotomy is explained later in this section.

Copyright protection is also sought for many types of computer software. The U.S. Copyright Office defines a computer program as a “set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”¹² Copyright protection is afforded to all of the expressions that combine to make up the computer program. Copyright protection cannot be used to protect ideas, program logic, algorithms, systems, methods, concepts, and layouts. Computer software is typically classified as a “literary work” under the Copyright Act.

Copyrightable Subject Matter

“Copyright protection subsists... in original works of authorship fixed in any tangible medium of expression ...from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.” (17 U.S.C. Section 102 (a)). “Works of authorship” as described in the Copyright Act (17 U.S.C. Section 102 (a)(1)-(8)) are:

- 1) Literary Works
- 2) Musical Works, including any accompanying words
- 3) Dramatic Works, including any accompanying words
- 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

As described, copyright protection is automatically afforded to the author of the materials listed above upon creation, so long as it is “fixed” as described in the statute. This includes images created by a computer game or software and projected onto a screen as well as anything written and/or drawn on paper or computer and many other types of communications. For further explanation of what constitutes fixation, please refer to the Copyright Act (17 U.S.C §101).

¹² <http://www.copyright.gov/circs/circ61.html#definition>

Copyright protects the expression of an idea, not the idea itself

“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 U.S.C. §102 (b)) Therefore, copyright only protects the actual expression of ideas or processes in words, pictures, or other medium and not the actual ideas or processes. A very well-known case in copyright law that discusses this idea/expression dichotomy and what a copyright actually protects is Baker v. Selden, 101 U.S. 99 (1880). In this case, Charles Selden had written and copyrighted an instructional book about a new system of accounting that he had devised. The book included blank forms that illustrated the system and allowed the reader to actually practice the method of accounting. Mr. Baker had subsequently authored a book that described basically the same system of accounting with similar forms, except the system had a different arrangement of columns and used different headings. Selden had filed suit against Baker, claiming that he had infringed the copyrights for his original book and subsequent books he had written that added to and improved his original system. The Court ruled that Selden could not secure the exclusive right to use the accounting system described in his book through copyright. Since only the explanation of the system is protected by copyright, Baker could not infringe Selden’s copyright by describing the same system in his book, so long as the expression of the idea was different. While the idea/expression dichotomy has been clarified further by statute and other cases over the years, Baker v. Selden is considered the origin of the idea/expression dichotomy in American copyright law and provides a good example of what can and cannot be protected by copyright.

Registration

Copyright registration is not necessary to obtain copyright protection. However, a registered copyright can be very important in a copyright infringement suit. For example, in a copyright infringement suit, the plaintiff must prove that: (1) she is the owner of a valid copyright, and (2) that one of her rights associated with the copyright had been violated (copyright owner’s rights will be discussed later). A registered copyright is prima facie evidence of a copyright, meaning that the Court assumes that you have a valid copyright unless proven otherwise by the defendant (provided that registration is within five years of publication). Therefore, the first element of an infringement suit is already satisfied. For the minimal fee required to secure a registered copyright with the United States Copyright Office, it would be worthwhile to submit your work for registration in many cases. For more information regarding copyright registration, please visit the United States Copyright Office’s web site (<http://www.copyright.gov/register>). For specific advice regarding specific works of authorship, you should contact your intellectual property attorney before pursuing a course of action.

Exclusive Rights

Another thing to consider is that a copyright is a grant of a bundle of rights by the United States government to “a work of authorship” as previously described. Copyright owners have the exclusive rights to do and to authorize any of the following (17 U.S.C. §106):

- 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) To perform the copyrighted work publicly;
- 5) To display the copyrighted work publicly;
- 6) In the case of sound recordings, to perform the copyrighted work publicly by means of digital audio transmission.

What this means is that the copyright owner has the sole right to make copies of his/her work and to display, perform, present, or sell the work publicly. It also allows the owner to create works that are based upon preexisting works, also known as derivative works.

While copyright owners are granted the aforementioned exclusive rights, the Copyright Act places some limitations on those exclusive rights to ensure that the ideas included in those copyrighted works are disseminated adequately for the public good (for example, a college student is allowed to photocopy a page of a book to reference when writing a term paper). The Copyright Act discusses these limitations in detail, but they are outside the scope of this module. Please refer to the Copyright Act, specifically sections 107-112, 117, 119, and 121-122 for more information on the limitations to the exclusive rights granted to copyright owners.

3) TRADEMARK

“A trademark is a word, phrase, symbol or design, or combination of words, phrases, symbols or designs, which identify and distinguish the source of the goods or services of one party from those of others.”¹³ Trademarks, unlike patents, do not expire as long as they are being used in commerce. Many companies use trademarks to protect company names and logos as well as the names and logos that they develop for their products. For more detail, please consult the U.S. Patent and Trademark Office frequently asked questions at: <http://www.uspto.gov/web/offices/tac/tmfaq.htm>.

What is the difference between registered and unregistered trademarks?

The symbol™ indicates an unregistered trademark, and you can establish rights in that mark based on legitimate use of the mark under trademark law.¹⁴ Even though registration is not required, it is usually recommended. Registration of a trademark requires application to the United States Patent and Trademark Office and approval of the mark by an examiner before use of the registered trademark symbol, ®, is permitted. Advantages to registering your trademark include:

- Constructive notice to the public of the registrant's claim of ownership of the mark
- A legal presumption of the registrant's ownership of the mark and the registrant's exclusive right to use the mark nationwide on or in connection with the goods and/or services listed in the registration
- The ability to bring an action concerning the mark in federal court
- The use of the U.S registration as a basis to obtain registration in foreign countries, and
- The ability to file the U.S. registration with the U.S. Customs Service to prevent importation of infringing foreign goods.¹⁵

You can file for a registered trademark online using the Trademark Electronic Application System (TEAS), which is available at <http://www.uspto.gov/teas/index.html>, or via mail. Please consult an intellectual property attorney for specific advice regarding your potential trademarks. However, an attorney is not required to file a trademark application. Details regarding the requirements for a trademark application can be found on the USPTO's web site: <http://www.uspto.gov/web/offices/tac/doc/basic/appcontent.htm>.

¹³ http://www.uspto.gov/web/offices/tac/doc/basic/trade_defin.htm

¹⁴ <http://www.uspto.gov/web/offices/tac/doc/basic/register.htm>

¹⁵ <http://www.uspto.gov/web/offices/tac/doc/basic/register.htm>

Search existing trademarks before filing

To avoid trademark infringement, you should search existing trademarks prior to selecting a name or logo for your product. The United States Patent and Trademark Office maintains a web site where users can search U.S. trademark applications and registrations free of charge:

http://tess2.uspto.gov/bin/gate.exe?f=login&p_lang=english&p_d=trmk. Online databases available through Thomson's Dialog (<http://www.dialog.com/>) include trademark applications and registrations in the United States, Canada, and many countries in Europe. Additional databases include:

- Trademark Search Atlas (<http://www.trademark-search.com>)
- Trademarks Online (<http://www.trademarksonline.com>)
- TMWeb (<http://www.tmweb.com/>)

Unlike patent applications, which in many cases must be filed in advance of a particular date, there is no specific date by which a trademark registration application must be filed. Instead, in the United States, an ordinary "use" trademark application can only be filed after the goods or services have been in interstate commerce. However, as previously discussed, you do not need to register your trademark in the United States to have trademark rights.

Intent-to-Use Trademark

A few years ago, the U.S. Patent and Trademark Office established a new kind of application called an Intent-to-Use (ITU) trademark application. To be able to file this application, the applicant need not have used the mark in interstate commerce, but the applicant must have a good-faith intention to use the mark in interstate commerce. The Intent-to-Use application does not permit the applicant to reserve trademarks for indefinite periods of time. The duration of the initial Intent-to-Use application is six months. This period may be extended by six-month intervals for up to three years, provided some effort is being made to use the mark in commerce. After 3 years, the USPTO will not register the mark if it is not being used in interstate commerce and a Statement of Use notice has not been filed.

4) TRADE SECRET

A trade secret is the information that a company keeps secret to allow the company to compete effectively in the marketplace. Trade secrets can include customer identities and preferences, vendors, product pricing, marketing strategies, company finances, manufacturing processes, and other competitively valuable information. Some well-known examples of trade secrets are the recipes for Coca-Cola and Bush's Baked Beans. Trade secrets, however, are not protected by federal law as the other three types of Intellectual Property are, and they do not need to be applied for or approved by any agency. Trade secret laws have been developed through common law or through the Uniform Trade Secrets Act (UTSA), which attempted to make trade secret laws the same from state to state. While many states have adopted the Uniform Trade Secrets Act, some have not. Therefore, the UTSA is only applicable in the states that have chosen to adopt it.

Under the Uniform Trade Secrets Act (1985), information must meet three criteria to qualify as a trade secret. First, the information must not be "generally known or readily ascertainable" through proper means. Second, the information must have "independent economic value due to its secrecy." And third, the trade secret holder must use "reasonable measures under the circumstances to protect" the secrecy of the information.¹⁶ Therefore, as long as you keep this type of information secret, trade secrets can potentially be protected in perpetuity. You may wish to contact an intellectual property attorney to determine whether your concept is subject matter protected by your state's trade secret laws.

¹⁶ UTSA §1(3).

EARLY STEPS TO PROTECT YOUR INTELLECTUAL PROPERTY

There are many ways to ensure that your intellectual property is sufficiently documented and protected from the start of your development process. Two of the most important activities to protect your intellectual property during development are the use of logbooks and non-disclosure agreements.

Logbooks/Laboratory Notebooks

Creation of a logbook is the best way to protect an invention that will likely be patented. Logbooks are most important for patents since there is little protection for patentable subject matter during the development process. As discussed previously in the “Patent” section, the United States patent system awards patents to the first person or persons to invent something, regardless of whether or not the concept has been prototyped or reduced to practice first. This means an inventor must keep complete, detailed records to prove the date on which the invention was conceived if two inventors file an application for patent for the same invention. Logbooks are also good practice because they help document and verify development activities for your own reference as you move through the development and commercialization process.

To create a logbook, obtain a notebook that is bound with pre-numbered pages. Your first dated, signed entry should be a description of your idea, and you should be the only person writing in your logbook. All your notes, drawings, and any information regarding your invention from the date of conception onward should be placed in this notebook. The logbook’s initial entries must be read, signed, and dated by at least one, preferably two individuals whom you trust and who are not relatives or co-inventors. It is also important to ensure that this notebook remains confidential. Remember that anyone who reviews your entries should first sign a non-disclosure agreement to protect your concepts. Non-disclosure agreements will be discussed in further detail in the next section.

The Book Factory, a company that sells laboratory notebooks, provides general information on how to create a logbook.

Your logbook should include:

- Date of project conception
- Details regarding your idea and the information that led to its formation
- An explanation of how your idea will be reduced to practice (prototype)
- Information on the structure and operation of your invention
- Results of any testing and evaluation completed
- Chronology of the process from idea to product
- Other working notes¹⁷

¹⁷ Book Factory LLC, 2005. http://www.bookfactory.com/special_info/lab_notebook_guidelines.html

Guidelines on how to ensure that your logbook is treated as a legal document:

- Ensure that all entries are kept sequentially starting at the top of the first page and continuing to the bottom of the last page. Leave no open space.
- Legibly sign and date each page before continuing onto the next page
- Never erase or tear out pages in your logbook, simply cross-out erroneous entries with a single line.
- Permanently attach all supportive material to your logbook in its chronological order.
- Include references and important notes for all secondary sources in the text of your logbook as well.¹⁸

For additional information on keeping an inventor's logbook, The Oklahoma State University Patent and Trademark Depository Library offers 16 tips on how to ensure that your logbook accurately documents your development process. To view this information, please visit their web site at <http://www.library.okstate.edu/patents/logbook.htm>. For specific questions regarding your invention or development and its associated logbook, please contact your intellectual property attorney for legal advice. An intellectual property attorney will be able to help customize your logbook to satisfy any legal requirements specific to your development.

Non-Disclosure/Confidentiality Agreements

The second important issue for safeguarding your intellectual property is to protect your concept when discussing it with others. In order to do this, you must draft a non-disclosure or confidentiality agreement (hereafter referred to as confidentiality agreement) that will have to be signed by people before discussing your concept with them. A confidentiality agreement is a legal document that states that the person signing it will not disclose any information regarding your invention or concept to anyone. The document also prevents the signee from using the invention or concept for any purpose other than what is stated in the agreement. This means that the person signing the confidentiality agreement cannot divulge information regarding your invention or concept to anyone else, nor can they go out and use or produce the invention or concept themselves. Therefore, it is important to ensure that the people you select to verify your logbook entries first sign your confidentiality agreement.

The importance of a confidentiality agreement should not be underestimated. If you discuss your concept with others outside of a confidentiality agreement, questions about ownership of that concept may come into play. Without a signed confidentiality agreement in place, people with whom you discuss your invention or concept are able to discuss it with others or use it for their own purposes. They can also claim co-invention (joint ownership) if they offer suggestions on improving or modifying your invention unless the agreement specifies that ownership of any suggestions for improvements is granted back to you.

¹⁸ Book Factory LLC, 2005. http://www.bookfactory.com/special_info/lab_notebook_guidelines.html

If you are a university-based researcher/developer, check with your University Technology Transfer office for approved agreements for you to use. If you are an independent inventor, you should contact an intellectual property attorney to have a non-disclosure agreement drafted specifically for your invention or concept.

Important Note about Disclosure and Patents: Disclosing enabling information concerning your invention at a conference presentation or in written materials activates the one-year time bar discussed in the “Patent” section. Enabling information is the pertinent information on how to build or replicate your device or what functions your device performs. If you do not file a patent application within one year of your disclosure, your work is no longer patentable. If you choose to discuss your idea at a conference or in written materials, do not provide any enabling information.

OTHER INTELLECTUAL PROPERTY CONSIDERATIONS

Prior Art Searching

Since novelty is very important for patentable inventions, prior art searching can be very important. If someone else has previously invented your device or has written about it in a publication, you may not be able to patent that device. As a result, it is critical to complete a prior art search to ensure that your concept isn't already in the marketplace prior to moving forward with your project. It can save you a significant amount of time and money that would have been spent developing your concept even though you would not be able to patent it. Guidelines for conducting a patent search can be found at Basic Patents.com (<http://www.basicpatents.com/homepage.htm>) and include:

- Use generic terms that describe the function of your invention, yet are sufficiently descriptive to avoid thousands of unrelated hits. For example, consider the Alphasmart – an easy-to-use educational keyboard. The inventors of the Alphasmart would not use only the key word, “keyboard,” to search for prior art, but may use “portable keyboard” or “alternative keyboard” instead to search for similar products.
- Limit the field by using additional descriptive terms (i.e. “portable keyboard with LCD display” or “portable alternative keyboard K-12”)
- Where possible, add defining characteristics of your product that make it unique (i.e. Portable key-board with file storage capacity and wireless connectivity).¹⁹

Conducting a search

You can begin this effort by searching the World Wide Web, catalogs, and stores that offer similar products or who you envision making similar products. Visit retailers and professionals to learn how individuals currently address the function or need that your device addresses through products already in the market. Contact prospective users of your device to seek information about how they currently address that function. If you are contacting parties outside the scope of your project, your conversations with individuals or companies should focus on the function or need your product addresses and not design information regarding your invention. For example, if you were inventing the first calculator, your information search would have focused on how prospective users are currently performing the mathematical calculations you envision your device performing. The responses you would have received were adding machines, slide rules, and pencil and paper.

Searches can be extremely important because they may help you avoid investing large amounts of money to invent something that already exists. An existing invention review program for the field of assistive technology has found that over 60% of the device submissions received from inventors were re-inventions of existing products.²⁰ It is best for an inventor to spend time and effort prior to device development to ensure that his/her product does not exist in the marketplace, rather than expending resources on prototype development and attempted patenting of something that already exists.

¹⁹ <http://www.basicpatents.com/homepage.htm> (“Searching” Page)

²⁰ Leahy, James A. “Critical Factors for Evaluating and Commercializing Inventions.” Proceedings of the RESNA '99 Annual Conference. Arlington: RESNA Press, p. 133-135.

However, it may be best to have your patent attorney perform the prior art search. A patent attorney will have specialized knowledge on how to best search previous patents and prior art to give you very specific advice regarding your invention and any prior art that exists. A patent attorney will also be able to provide legal advice regarding your invention and how it may be patented to avoid the claims of any existing patents. This can be especially helpful if your detailed market research indicated a need for the invention in the marketplace.

An example of this scenario is the Lids Off™ Automatic Jar Opener that was transferred to Black & Decker through the RERC on Technology Transfer (T²RERC). At the time the Lids Off was in development, several automatic jar openers had already been patented. However, in-depth market research conducted by the T²RERC had indicated that the automatic jar openers currently in the marketplace were not meeting consumers' needs. Had the prior art search stopped at the point where several patents for automatic jar openers were found, the opportunity for the Lids Off would have been lost. However, the claims (the legally protected aspects of the invention) in each patent did not cover the design of the Lids Off. As a result, the Lids Off could still be patented and released into the marketplace by Black & Decker. Only a patent attorney would have the skills necessary to interpret claims of existing patents and provide an opinion as to whether your invention would be patentable. If you know there is a need for your device in the market after conducting in-depth market research, it may be in your best interest to contact your patent attorney to have him or her provide you with a patentability opinion to see if you can protect your device.

Intellectual Property Ownership Issues

There are very different and distinct paths an inventor or researcher/developer will take depending on whether she is acting independently or through her place of employment. Intellectual property ownership issues are very different for university employees that are working under a federal grant and independent inventors or technology developers working with their own personal or company funds.

University Employees

The University and Small Business Patent Procedures Act of 1980, also known as the Bayh-Dole Act, set the guidelines for ownership and licensing or transferring technologies developed at universities with federal funds. Some principal tenets of the law include:

- Stipulations that a University must disclose “all inventions conceived or reduced to practice (prototypes) during the performance of a federal grant, contract, or cooperative agreement” to their funding agencies.
- Rights of the U.S. Government to non-exclusive, non-transferable, irrevocable rights to use the patented technology developed with government funds. [Note: The university or company retains the right to enter into license agreements with companies outside of the government.]
- Obligation of a University to contract written agreements with its faculty and staff requiring disclosure of inventions developed within the confines of the University. It also specifies that the Universities must share a portion of the revenue received from licensing the invention with the inventor/developer. All remaining revenue must be used to support scientific research or education (Council on Government Relations, 1999).

As indicated by the Bayh-Dole Act, if you are a university researcher and you developed your invention as part of your employment at a university using university resources, you do not have exclusive ownership rights to your development. The law states that legal rights to any invention generated through your occupation at the university belong to your university and to any funding agency that may be helping to pay for the development. This information should have been included in the terms you agreed to upon being hired at the University. However, you will remain eligible for some royalties from your invention.

If the invention was developed through your work under a federal grant, there are three things you should understand:

1. The grant is awarded to the university, not to the Principal Investigator, the Project Director, or anyone who works on the grant. The university is the entity responsible for ensuring that the grant activity complies with all federal guidelines.
2. Since the money comes from the federal government, the government has the right to future use of any invention resulting from their funding, should they choose to pursue it.
3. If the government decides not to pursue the development and returns ownership of the development to the university, the university has the right to either take ownership of any invention or to decline ownership since it is the actual grant recipient. Therefore, the person (or people) who brought the development to fruition is the third in line to claim ownership for that development. However, if the university claims ownership, they may share the royalties from the development with the actual inventors or developers.

Role of the University Technology Transfer Office

If you are working at a University and receive federal grant money from a government agency for your work, the product or invention you develop will have to be disclosed to your University's Technology Transfer Office (TTO). Universities are required to have invention disclosure forms, confidentiality forms, and an ownership policy in place regarding concepts developed by university employees. For example, Case Western University provides a form to their university based researchers that they must fill out when disclosing their development efforts to the Case Western Technology Transfer Office (<http://ora.ra.cwru.edu/techtransfer/forms/InventionDisclosure.doc>). No specific guidelines are provided for when this information should be disclosed. However, it is better to disclose your concept to your TTO earlier so that it can provide you with advice to guide you through the development process so that your intellectual property is fully protected.

Your university also has a right to claim the majority of ownership and some of the subsequent royalties generated from licensing any invention or product you develop. While this may not seem reasonable given that the initial effort and idea were yours, it is important to remember that you have already been compensated for your work through your salary. In addition, the University will bear all the costs and risk associated with protecting and commercializing the invention. Therefore, they should (and do) receive the majority of the royalties.

University TTO's offer many benefits for employees developing technologies under a federal grant. TTO's may offer some of the following benefits:

- Familiarity with the process necessary to protect your concept
- Confidentiality and non-disclosure agreement templates already drafted for use
- Experience in completing prior art searches to ascertain whether the product you develop is new and unique
- Assignment of value to your invention (projecting the target market and potential sales) to determine if patent protection is fiscally prudent
- When it is proven to be a prudent course of action, your University may bear the costs for a patent and will do all the paperwork necessary to apply for a patent
- Will address ownership issues with your funding sponsor
- Development of a commercialization package to present to potential licensing companies
- Handle the negotiations and draft the license agreement with an interested company
- Once your invention or product is licensed, the TTO will be your "watch dog" for product sales and royalty payments

While it is advisable to notify the TTO as early in the development process as possible, keep in mind that the provision of legal and other commercialization services by your university's TTO is based on an evaluation of the market potential of your prototype product. If they determine that the sales of the invention will be low (which correlates to low royalties for the university for the license of the invention), they can and will refuse to pursue activities toward commercialization of your technology. This decision is based on the university's projected return on investment for your invention – if the university will make less money than it spends to commercialize your invention (or if it estimates it will make insufficient profits from your invention), then it is not worthwhile for the university to pursue it. However, if the TTO finds that your technology offers an acceptable return, the benefits of working with them are well worth sharing the royalties for your future product. By virtue of their experience, the university's TTO will help to ensure that your invention is protected by securing intellectual property rights and enforcing your rights if someone may infringe those rights. Your intellectual property protection (e.g., patent or copyright) is only as good as your ability to protect it. You may need "deep pockets" to defend your claim. If a company infringes your intellectual property, the university has its own attorneys to enforce it, whereas if you were the sole holder of rights, you would have to find and hire legal representation yourself. In the competitive world, a company may not hesitate to infringe patents held by an individual, but it may think twice about the cost of legal action that could be taken by a university.

However, the university's partial ownership can act to thwart the commercialization process of your idea. Universities may lack knowledge regarding the identification of business partners and appropriate commercialization processes for your specific technology. Therefore, it is important that university-based developers work closely with their TTO to ensure that companies approached are appropriate for the specific technology application that they are attempting to commercialize.

Assistive Technology Development

In cases related to assistive technology, the expected returns on your invention may be very low since the potential market size for most assistive technologies is very small. In these cases, your university may decide that it is not worth investing time and resources to bring your technology to market. This often causes a great deal of frustration for the researcher/developer as the process often stalls here.

If your funding agency and your university's TTO are not willing to pursue a license agreement on your behalf, you can ask your TTO and your funding agency to waive all ownership rights to the invention. While this waiver would give you the intellectual property rights in the development and the right to pursue commercialization opportunities independently, you may find that the potential return on investment is insufficient to warrant the investment of your personal resources. You also may not have the institutional expertise and resources to protect and commercialize the invention. At this point, you have to consider all of the findings to determine if you think it is worth your time and effort to continue independently.

In some cases, the university will decline the offer to waive rights back to you and may not take any further action to commercialize your technology application. Unfortunately, in these situations there is very little recourse that the developer can take other than seeking market information and possible partnerships on behalf of the TTO. These additional efforts may entice the University TTO to move forward with a technology. One of the major pitfalls of working with your TTO for technology applications with a small market is the ability of the University to determine whether the development merits further work toward commercialization. While this is very frustrating for the researcher/developer, it is a fact of life when pursuing commercialization of devices with small market sizes.

Independent Inventor

If you are an independent inventor using your own resources, you don't have to worry about sharing ownership of your invention with another agency. Conversely, you also don't have a resource rich partner to help bring your invention to the marketplace. As an independent inventor, you will chart your own course and travel down your own path. Therefore, an important consideration before building a prototype of your technology is to do preliminary research to ensure that a similar product in the marketplace does not already exist.

If a similar product exists, you should conduct market research to determine whether your device will be directly competing with the pre-existing product for sales. If so, it may be difficult to find a company to license your device, even if it is patentable. If a similar product does not exist, it still would be wise to conduct market research. If people will not be willing to purchase your product, then it would be pointless to spend thousands of dollars to patent and commercialize a device that few people will buy. Keep in mind that you should use confidentiality agreements throughout the market research process any time you disclose your concept to others. Ultimately, if you determine that your invention will provide you with an acceptable return on your research and development investment (including any costs related to obtaining a patent on the development), then you should contact your patent attorney to discuss the patentability of your device as well as the most appropriate ways to protect your device as you progress through the development process.