Strategically Securing and Protecting Intellectual Property in the Renewable and Emission Technology Space

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ABSTRACT

This paper is a primer on intellectual property (IP), presented in two parts. Part one describes the various types of IP, with a focus on patents and recent developments in patent law, while part two discusses how to protect IP.

Keywords: patent, ip, intellectual property, infringement

1. TYPES OF INTELLECTUAL PROPERTY

Most aspects of IP in the United States (U.S.) fall under the jurisdiction of the federal government by virtue of rights conveyed in the U.S. Constitution. In particular, Article I, Section 8, Clause 8 of the U.S. Constitution gives authority for patents and trademarks, and Article I, Section 8, Clause 3 sets the foundation for copyrights. Below is a brief description of various types of IP that may be included in an IP portfolio.

1.1. Copyright

Copyright provides creators (or authors, as defined by statute) of creative works limited rights in those works. Since 1978, copyrights in the U.S. are protected under federal law, although state law may also apply in certain cases. The two basic concepts protected by copyright are originality and creative expression. Examples of works covered by copyright are: literary works; musical works; dramatic works; pantomimes and choreographic works; pictorial, graphic and sculptural works; motion pictures and other audiovisual works; sound recordings; and architectural works. The owner of a copyright enjoys several exclusive rights, such as to reproduce the work, prepare derivative works, distribute copies of the work, and publicly perform/display the work. The copyright owner may also extend some or all of these exclusive rights to others by licensing the rights. A copyright generally lasts 70 years, but can last longer under various circumstances. Copyrighted works can be registered with the U.S. Copyright Office (part of the Library of Congress), but registration is not required to enjoy copyright protection. In fact, copyright is automatically secured when the work is created. However, in order to enforce a copyright, the copyrighted work must be registered with the U.S. Copyright Office prior to filing a lawsuit seeking damages.

1.2. Trademark

Trademarks allow consumers to identify the source of goods and services. The most common marks are trademarks and service marks. A trademark is a word, name, symbol, image, design, device, or any combination used to distinguish the goods of an entity from goods of other entities (usually competitors). Service marks are essentially the same as trademarks in form; however they apply to services instead of goods. Trademark applications are processed by the U.S. Patent and Trademark Office (USPTO), a division of the Department of Commerce. If a trademark application is approved, the mark must successfully undergo a 30 day public comment period before a notice of allowance is issued and the trademark is registered. Registered trademarks are identified by the symbol ® and are published in the Principal Register. Registration is not required to use a trademark. In fact, the symbol ^{TM} designates an unregistered trademark, and the symbol ^{SM} designates an unregistered service mark.

To become a registered trademark, a mark must be used in interstate commerce, and the mark must be distinctive. Since the main purpose of a trademark is to avoid a likelihood of confusion with consumers, the more distinctive and original a mark is (as opposed to a generic or merely descriptive mark), the better chance that the mark will be registered. Under certain conditions, an intent-to-use trademark application can be filed where the applicant has a certain amount of time, subject to some extensions, to use the trademark in commerce. Failure to use the mark in commerce within the allowed time will result in abandonment. A registered mark remains so for 10 years, and registration of the mark can be renewed in 10 year increments for a fee, provided it remains in use in commerce.

Both federal law and state common law permits certain remedies in cases of trademark infringement, but certain defenses also exist. If a trademark is deemed important to a business (such as for brand recognition), the business needs to be diligent about registering and enforcing its trademark to avoid a situation where certain remedies are no longer available.

1.3. Trade Secrets

A trade secret is information that derives economic value from its secrecy and is subject to reasonable efforts to maintain its secrecy. Generally, the more closely guarded the secret within the business, the more likely it is to be deemed a trade secret. Employees that leave a business and try to take the trade secret with them can be subject to criminal charges as well as a number of remedies available to the holder of the trade secret in state courts.

While often underappreciated, trade secrets can be extremely valuable to a business. The protection afforded by trade secret is different from that provided by patents, trademarks and copyrights in a number of ways, mainly in the fact that trade secrets do not need to be filed or registered with any government agency. In fact, the act of registering or filing an application would destroy the trade secret.

1.4. Patents

Patents are afforded protection in accordance with federal law (the U.S. Constitution and Chapter 35 of the U.S. Code), and are issued by the USPTO. Patents protect an invention by one or more inventors. An invention can be something completely new or, more commonly, a useful improvement of an existing technology. The rights of a patent are considered a property right and can be freely assigned at any time. Any assignment of rights should be filed with the USPTO to give proper notice of ownership of rights in a patent. While an inventor may represent herself during patent prosecution (*i.e.*, the process of obtaining a patent), only individuals registered to practice before the USPTO (*i.e.*, a patent attorney or a patent agent) are allowed to represent the corporate assignee of an invention.

1.4.1. Requirements for a Patent

A few of the important requirements for a patent are discussed below.

1.4.1.1. Inventorship

In the U.S., an inventor (or a group of inventors) is entitled to a patent for her invention once a number of requirements are met. An inventor is a person who materially contributes to the conception of at least a portion of the claimed invention. People who simply implement an invention are not considered inventors. All inventors of the invention must be listed on the application, and people who are not inventors may not be listed on the application (or the patent may be deemed unenforceable). A corporation cannot be considered an inventor; however, many employment contracts require employees to assign patent rights to the corporation for inventions conceived during the course of employment.

1.4.1.2. Subject matter (35 U.S.C. § 101)

Generally, any invention that has some human intervention can receive a patent, but naturally occurring phenomenon are not eligible subject matter. Patents are awarded for a utility (*i.e.*, machine, article of manufacture, composition of matter, and business method), a design, or a plant (*e.g.*, a flower, a tree, etc.). Software itself is not patentable, but the function of the software can be patented if it results in a physical transformation or recites a particular machine or apparatus, usually as part of a business process. This paper focuses on utility patents.

1.4.1.3. Novelty (35 U.S.C. § 102)

The concept of novelty (or anticipation) covers both other previous inventions (a.k.a. prior art) and the present invention. As for other inventions, if a prior art reference (dated prior to the date a patent application is filed) discloses each element of the present invention, then the present invention will be deemed anticipated and denied a patent. As for the present invention, once the present invention is known or used by others or if it is published or offered for sale, the inventor must submit a patent application for that invention within one year from the date of disclosure. Failing to do so prevents the inventor from ever being granted a patent on the invention (which is known as the "statutory bar").

1.4.1.4. Non-obviousness (35 U.S.C. § 103)

Non-obviousness is often considered the most difficult requirement to meet, especially given recent developments (see below). The non-obviousness test keeps trivial combinations of things already known in the field of the invention from being issued as a patent. Obviousness is measured from the point of view of a person of ordinary skill in the art at the time the invention is made. Non-obviousness is a fact-specific inquiry that involves the combination of various prior art references, which are compared with the present invention, on a claim-by-claim basis.

1.4.2. Rights that accompany a patent

An issued patent affords the owner the right to exclude others from making, using, selling, offering to sell, or importing an invention for a defined number of years. However, a patent owner is not required to use the patent. Accordingly, many patents are never used in commerce. The term of a patent is 20 years from the earliest filing date of the patent application (although extension to the term of a patent is possible for delays caused by the USPTO). After the patent term expires, the invention becomes part of the public domain. The rights that come with a patent are meant to strike a balance between rewarding an inventor for

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the creativity of an invention and the public's need for this technology to advance society.

1.4.3. Recent developments

Patent law in the U.S. is undergoing rapid change caused, in part, by a backlash from what the public (and Congress) perceive as a broken patent system. Further change appears to be on the horizon from both the courts and Congress. The changes seem to indicate that acquiring patents and enforcing those patents will be more difficult.

1.4.3.1. *In re Bilski* and the Impact on Patentable Subject Matter

In late 2008, the Court of Appeals for the Federal Circuit, which hears most of the patent-related appeals, held that software-related patents must either recite a particular machine or apparatus, or the software-related patents must result in a physical transformation. Failing to do so will result in a denial of a patent. Since the decision is so recent, some of the specific boundaries of the "machine-or-transformation" test established in *Bilski* are still being set through subsequent decisions.

1.4.3.2. *KSR v. Teleflex* and the Impact on Non-Obviousness

In 2007, the U.S. Supreme Court attempted to clarify what prior art should be used and how the prior art should be combined when considering whether an invention is obvious. The Court ruled that prior art used as references in a rejection do not necessarily have to come from the same area of technology. In addition, the Court indicated that hindsight reconstruction is allowed when combining multiple references to render an invention as obvious.

1.4.3.3. Potential Legislation

A number of legislative changes affecting the current patent system have been discussed. One proposed change is converting from a first-to-invent system, which is unique to the U.S., to a first-to-file system. Such a change would simplify many aspects of the worldwide patent system, but it would also result in a complete paradigm shift for U.S. patent practice that will take time to resolve. Another proposed change is imposing a requirement for a "working" invention (*i.e.*, the patented invention is actually being used in commerce) prior to allowing the owner to enforce a patent.

2. PROTECTING IP

The discussion below addresses some of the common issues businesses face regarding an IP portfolio.

2.1. Finding the Right Firm

While creating, maintaining, and protecting an IP portfolio requires a great deal of effort, expertise, and expense, there are ways to effectively manage the process.

2.1.1. Outside Counsel vs. In-House

Many aspects of managing an IP portfolio for a business do not require a professional with extensive experience in IP. Some tasks can, and in some cases should, be done "in-house." Such tasks may include: identifying important technology and gathering information regarding the technical details of inventions, completing copyright registration forms and mailing the forms to the U.S. Copyright Office, tracking products and use of marks by competitors, administering compliance with marking (both patents and trademarks) within the business, managing and paying annuities and maintenance fees, etc.

Of course, tasks that involve functions requiring a specialized legal competence in IP (such as prosecuting patent applications with the USPTO or foreign jurisdictions, litigation, trade commission actions, interferences, oppositions, reexaminations, etc.) should be handled by experienced IP professionals to avoid potentially costly pitfalls for the unwary.

2.1.2. Seeking Outside Counsel

Picking the proper outside counsel for your business requires matching the culture and expertise of the law firm with the precise needs of your business. Many general practice law firms offer an IP practice to complement more traditional corporate transactional and litigation practices. General practice law firms often employ hundreds of attorneys that can handle a variety of legal issues for a business and have offices located throughout the country. An alternative to general practice law firms are so-called "boutique" IP law firms that solely focus on IP practice. Such "boutique" IP law firms often employ professionals with strong technical backgrounds and have offices located in close proximity to clients requiring such technical competence.

When seeking to engage outside counsel, care must be taken to determine the best match. To do so, you should interview several law firms and ask questions about topics such as: (1) technical and/or business expertise of staff; (2) fees for the various services; (3) billing methods and options available; (4) who will actually do the work; (5) current client references; and (6) relevant experience and relationships with IP firms in countries deemed important to your business.

2.2. Importance of an IP Portfolio

An IP portfolio can be used offensively ("as a sword") or defensively ("as a shield"), depending on the business needs, the technology involved, and/or the atmosphere in the marketplace.

2.2.1. Protect technology

When used defensively, a well-managed IP portfolio allows a business to avoid being held hostage by one or more competitors. For example, by obtaining patents covering current core products and future technological innovations of the business, the business can continue to practice the inventions without fearing that one or more competitors may obtain IP protection to block its path. Moreover, by caching a large portfolio of IP, a business that is sued (or threatened to be sued) for IP infringement will be more likely to own IP that can be used as leverage (or for cross-licensing) during settlement negotiations.

2.2.2. Add value

When used offensively, a well-managed IP portfolio can add to both the actual and the perceived value of a business. Actual value is commonly acquired in the form of remedies from successful infringement litigation or licensing agreements. Remedies for infringement litigation often include monetary damages and/or injunctive relief either from a judgment (after trial) or, more commonly, from a settlement of the infringement litigation. The remedies often result in a windfall for the business, or at least the weakening of its competitors. Licensing agreements involve transactions where the IP owner sells a license to another business to use those rights on a limited basis. The license typically sells for a fixed fee or may involve royalty payments based on use. Again, the IP rights will result in cash flow for the business and an advantage over competitors in the marketplace. Perceived value can also be added to a business by properly managing an IP portfolio. A common example is when a "start-up" business is looking for additional capital. From the perspective of a potential investor, a robust IP portfolio can potentially add tremendous value as an asset of the business; however, the IP portfolio will only have value if it was properly maintained.

2.3. International considerations

The U.S. is part of various international treaties, which makes it easier to protect IP in a number of countries throughout the world. The wisdom of seeking international protection should be analyzed in light of the business, the invention, and the technology on a per country basis.

2.4. Costs

The cost associated with securing IP rights varies widely. For example, to be granted a single issued patent application in the U.S. could cost between $25,000 and $100,000, depending on the law firm being used. The cost differential depends heavily on the effectiveness of the law firm prosecuting the patent. The cost of securing rights to IP in countries outside the U.S. often doubles or even triples the cost, depending on the number of countries and translations required.

A large portion of the costs of acquiring IP must be paid upon the rendering of services (or possibly even prior to rendering the services). A business will need to budget appropriately. Businesses seeking the services of IP professionals should remember that the price of those services (whether high or low) does not always translate to an equivalent level of service performed. IP professionals that deliver quality work product and display an understanding of the business strategy of the firm will produce better value regardless of the price charged for the service.

2.5. Timing of protection; Importance of planning

Businesses seeking to build an IP portfolio must plan ahead. Early planning for IP can translate to tremendous savings for a business, both in terms of money spent and value realized. Spending just a few thousand dollars to determine an IP strategy with sound IP policies and procedures will likely avoid several million dollars of mistakes (e.g. lawsuits, missed licensing opportunities, lost funding, etc.) over the life of the business.

2.6. Applications for Clean Technologies

Clean technology is a broad space, occupied by technologies related to fields such as power generation, emission reductions, and water. The clean technology sector has experienced significant growth in recent years. Technological innovations have been at the core of this growth and are likely to play a critical role in the continued growth.

Proper management of an IP portfolio to protect the technological innovation in this landscape of growth can translate to significant amounts of revenue or, in some cases, the difference between the growth of a business and its failure. The current industry is poised to grow with heightened public awareness of the benefits of the clean technologies and the current administration's agenda to promote such technologies. For both existing and soon-to-be-formed businesses in this space, the time to begin assessing their IP is now.

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