

PATENTS AND THE INTERNET

INTRODUCTION

The global proliferation of networked computers on the Internet has spawned explosive growth in patents in the United States and worldwide. The advent of the World Wide Web, e-commerce, and their associated technological advances has resulted in a multitude of innovative ideas worthy of the title "invention." Historically, great technological strides are made from a flurry of inventive activities that use or improve upon a core technological advance. The Internet clearly qualifies as such a core technological advance.

On-line entrepreneurs should consider the benefits of obtaining patent protection for unique functional features associated with their on-line businesses. While products developed for Internet commerce may be patentable, other aspects of the business may also be afforded patent protection, such as innovative features of the networking technologies and software driving the on-line business. Operators of on-line businesses must also be wary of the potential impact of infringing existing patents, in order to preemptively dodge unwelcome legal battles. The Internet itself also serves as a valuable search tool for assisting in these patent-related matters. As discussed in detail below, software and other products may be entitled to patent protection if the invention is (1) new, (2) useful, and (3) non-obvious.

PATENT SYSTEM OVERVIEW

A patent is a government grant to an inventor of the right to exclude others from making, using, selling, offering to sell, or importing an invention for a limited period of time. The

government awards such monopolistic rights in exchange for the public disclosure of the invention through the patent document. Inventors are thereby rewarded for their efforts, and society benefits through the increased amount of technological knowledge made available to the public.

In order to fulfill their part of the bargain under United States patent law, inventors must disclose the best known manner for making and using the invention. The description of the invention must be sufficiently detailed to enable a person skilled in the particular technological field to make and use the invention without undue experimentation. If the invention proves to be sufficiently novel and non-obvious over existing technology, the government will in return grant the inventor a patent.

There are two types of patents that affect the Internet: utility patents and design patents. The enforceable term of a patent depends on which type of patent is obtained. A “utility patent” is available for a process, machine, manufactured article, composition, or any new and useful improvement. This type of patent covers the concept or idea behind the process, machine, composition, etc. Generally, a utility patent is enforceable for 20 years after the date on which the corresponding patent application is filed with the United States Patent and Trademark Office (USPTO). A “design patent” is available for anyone who develops an original ornamental design for a useful article of manufacture. Design patents cover the specific appearance, such as the article’s shape, rather than the concept or function of the article itself. A design patent is afforded a 14-year term from its date of issuance.

STATUTORY DEADLINES

Generally, a patent application filed in the United States must be filed in the USPTO within one year of the date on which the invention is first sold, offered for sale, used publicly, or publicly disclosed such as in a printed publication. This one-year period is often referred to as a “grace period” in the United States. Failure to file the patent application within this grace period will prevent an

inventor from ever obtaining patent protection for that invention. Further, it is important to note that most foreign countries do not recognize such a grace period, and those seeking foreign patent protection must file a patent application in the country in which patent protection is desired before any public disclosure or public use anywhere in the world. By way of treaties, many foreign countries do not require a patent application to be on file in that country prior to a public disclosure or use if, and only if, a patent application is already on file in a country that is a party to the treaty.

GENERAL PATENTABILITY REQUIREMENTS

Title 35 of the United States Code (35 U.S.C.) provides the federal law governing patents as enacted by Congress pursuant to a Constitutional grant of authority. 35 U.S.C. §101 sets forth patentable categories of subject matter, consisting of processes, machines, articles of manufacture, compositions of matter, or any new and useful improvement of the same. Generally, a “process” refers to a method, operation, step or series of steps performed upon some subject matter leading to a useful, concrete and tangible result. A process performed on a computer to provide a useful result would therefore be patentable subject matter. A “machine” includes mechanisms, mechanical devices and combinations that perform some function and produce a certain effect or result. “Compositions of matter” often arise in the chemical or biotechnical arena, and include physical mixtures of two or more ingredients. A “manufacture,” or “article of manufacture,” is a comprehensive catch-all category providing a residual class of “product” patents. Improvements to existing machines, processes, manufactures or compositions of matter also constitute patentable subject matter.

In addition to being among one of the statutory classes, an invention must prove to be new, useful and non-obvious compared to known technology and subject matter. 35 U.S.C. §101-103 sets forth these statutory requirements.

For an invention to be “new” under 35 U.S.C. §102, the invention must not have been known or used by others in the United States before the date of the patent applicant’s invention. Further, the invention must not have been patented or described in a printed publication anywhere in the world, or in public use or on sale in the United States, more than one year prior to the application filing date in the United States.

The obviousness requirement is set forth in 35 U.S.C. §103, and proves to be the most troublesome requirement to satisfy. Even an invention that is considered “new” under §102 must also prove to be non-obvious over subject matter already known or available to the public. If arriving at the inventive subject matter would have been “obvious” to a hypothetical person of ordinary skill in that technological field who has access to all the currently-available information in that field, a patent may not be obtained.

PATENT APPLICATION PROCESS

Even prior to the application process with the USPTO, a potential patent applicant should consider conducting a search of the prior art to help determine the likelihood of ultimately obtaining patent protection for an invention. A rudimentary search may include an on-line search for existing patents, publications, or other prior art. Discovering prior art directed to the invention may preclude the applicant’s ability to obtain patent protection. Patent practitioners can assist in conducting patent searches, and can provide an opinion as to the likelihood of the invention’s patentability. If it appears that the invention is novel and non-obvious over the prior art, a patent application must be prepared and filed to obtain patent protection.

A patent application includes a written description of the invention, drawings, and claims that define the invention. The description and drawings of the invention must adequately articulate the invention such that a person skilled in that technical area could make and use the invention without undue experimentation. When complete, the patent application is submitted to the USPTO. Unless special circumstances apply,

patent examiners review patent applications in their field of expertise in the order that they are received. It can often take up to a year or more from the time the application is filed to the time of first examination by the USPTO.

PATENT RESEARCH ON THE INTERNET

As is true for Internet research in general, the Internet is becoming an increasingly valuable tool for locating patent-related information. There are numerous reasons why a business owner may want to research patent information. A general understanding of United States or foreign patent laws may be desired, or actual patents or technical information may be sought out to determine whether an invention is potentially patentable, or potentially infringes another's patent. Patent searching may also be conducted to find patents or other published material that may potentially invalidate another's patent, such as a competitor, and may also be used to assess the proprietary positions of other companies.

Likewise, companies that may potentially have inventive ideas should consider placing restrictions on how information relating to the ideas is disseminated. Information that is randomly placed on company web sites without purging innovative ideas runs the risk that the information may later be used to invalidate a patent relating to the ideas. Courts have expanded the idea of what constitutes "prior art" to include information that is retrieved from the Internet. Prior art includes publications, patents or devices that were publicly known before filing of the patent application. In order to ensure that protection for inventions is not jeopardized, businesses must be careful when placing information online.

One popular Internet site for patent information is the USPTO web site, which can be found at www.uspto.gov. The U.S. Government provides free access to the United States patent database, which includes full text and images of U.S. patents issued since January 1, 1976. Access to the World Intellectual Property Organization (WIPO) PCT Patent Gazette is also provided, which allows searching of foreign patent applications filed in accordance with the Patent Cooperation Treaty. The USPTO web site also provides a wide variety of other information related to the patenting process.

PATENT INFRINGEMENT

A patentee obtains 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. If the invention is a process, the patentee obtains the right to exclude others from using, offering for sale, or selling throughout the United States or importing into the United States products made by that process.

On-line sellers of products could potentially be liable for patent infringement. Patents related to electronic transactions using the Internet are being granted by the USPTO. For example, the E-Data Corporation owns a patent that covers electronic point-of-sale transactions involving digital data. The patent is related to manufacturing and distributing information embodying material objects by using point of sale machines that are in communication with a common host. Since the inventor of this process is Charles C. Freeny, Jr., it has become known as the "Freeny Patent." Several thousand companies involved in electronic commerce have been contacted by E-Data and been asked to pay royalties. Some of these companies even entered into licensing agreements, including IBM and Adobe Systems.

It is not clear to what extent the Freeny Patent covers electronic commerce or if it will have only limited application. However, case law has begun to define its scope. In *Interactive Gift Express, Inc. v. CompuServe, Inc.*, 47 U.S.P.Q.2d 1797 (S.D.N.Y. 1998), the plaintiff alleged that CompuServe contributorily infringed and induced infringement by offering computer software via the Internet. The court suggested a very limited scope of the Freeny Patent and concluded that it applied only to electronic purchases made by buyers using kiosk-type terminal equipment in a retail setting and not any place where a computer was located and used to reproduce information in a material object for a price. However, the Federal Circuit vacated and remanded the decision, holding that the lower court erred on the construction of the claim limitations and interpreted the patent too narrowly, *Interactive Gift Express, Inc. v. CompuServe, Inc.*, 2001 U.S.App. LEXIS 15711 (Fed. Cir. July 13, 2001).

Patent rights associated with the basic process of electronic transactions will certainly have a significant impact on the development of electronic commerce using the Internet. High speed modems, which are critical to the commercial future of the Internet, have also been the subject of patent claims and conflicts. It will be interesting to monitor the extent to which patents are actually issued by the USPTO for Internet related technology and whether such patents will impede or bolster the expansion of electronic commerce on the Internet. The following section discusses the wide range of Internet related inventions that may be patentable.

United States Patent [19]

[11] Patent Number: 4,528,643

Freeny, Jr.

[45] Date of Patent: Jul. 9, 1985

- [54] **SYSTEM FOR REPRODUCING INFORMATION IN MATERIAL OBJECTS AT A POINT OF SALE LOCATION**
- [75] Inventor: **Charles C. Freeny, Jr.**, Fort Worth, Texas
- [73] Assignee: **FPDC, Inc.**, Oklahoma City, Okla.
- [21] Appl. No. **456,730**
- [22] Filed **Jan. 10, 1983**
- [31] **Int. ClG06F 1/00**
- [52] **U.S. Cl 364/900**
- [58] **Field of Search364/200 MS File, 900 MS File**

- 4,209,787 1/1980 Freeny, Jr.
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- 4,232,317 11/1980 Freeny, Jr.
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Primary Examiner—Raulie H. Zache
Attorney, Agent, or Firm—Dunlap & Codding

[27] ABSTRACT

The present invention contemplates a system for reproducing information in material objects at a point of sale location wherein the information to be reproduced is provided at the point of sale location from a location remote with respect to the point of sale location, an owner authorization code is provided to the point of sale location in response to receiving a request code from the point of sale location requesting to reproducing predetermined information in a material object, and the predetermined information is reproduced in a material object at the point of sale location in response to receiving the owner authorization code.

[56] References Cited
U.S. PATENT DOCUMENTS

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- 4,071,911 1/1978 Mazur 364/900
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56 Claims, 4 Drawing Figures

PATENTING INTERNET-RELATED SUBJECT MATTER

While it is perhaps easy to comprehend the patentability of a machine, manufacture or other piece of “hardware,” it is not as readily apparent for other less “tangible” inventions, such as software and related computer processes.

Software, computer processes, and graphical user interfaces are but a few examples of on-line technology available for patent protection. A utility patent can protect inventive functions, methods, systems or algorithms, including applied mathematical formulas, which are used or embodied in a software product. The following provides some guidance on the types of subject matter that on-line business owners and operators should recognize as potentially patentable. As software is the main patentable subject matter for Internet transactions, this discussion will focus on software. However, similar principles apply to other patentable subject matter.

First, entrepreneurs may want to sell a product by way of the Internet. Where the business is merely acting as a retail distribution center, any intellectual property rights in the product vest with the designer of the product, not the business owner. However, many businesses develop their own products to be sold via traditional and electronic commerce channels. In these cases, business owners should consider whether the product or products themselves are worthy of patent protection.

Potential patent protection related to the on-line business does not end there, however. Even where the product(s) being sold is not the creation of the business owner, patentable subject matter may lie in the manner in which the business avails itself to the electronic purchasers. For example, a unique software program or application developed to facilitate purchasing products from the on-line store can be patentable in and of itself. A program created to more quickly and efficiently display or order products could be successfully patented if novel and non-obvious over presently-existing software applications. Further, the purpose of the on-line store may be to sell a service, rather than a deliverable product. A good example of such a service is software used to make financial

transactions or stock trades. No product is actually delivered, but a service is provided for a cost. In these cases, business owners may market their service as being better than the competition. What makes the service “better” could potentially be a patentable invention, and an issued patent could give the patent owner a competitive edge.

Business owners may proclaim that they are software-illiterate, and are incapable of inventing sophisticated, patentable software. Even if this is true, it does not prevent the proprietor from “owning” the patent rights. If development of such software requires the business owner to seek professional services from a software company or individual programmer, the patent rights can be retained by requiring, via contract, that the program’s creator assign all patent rights to the business owner.

Utility Patents

Many inventions related to the Internet have been patented. Patents relating to electrical communication, data storage and retrieval, cryptography, information processing, and system organization are a few of the many Internet-related patents. A large portion of patent issues associated with the Internet are those surrounding software patents. Traditionally, software has been protected under copyright law. However, computer software may also be granted patent protection. Given a choice between copyright and patent protection, software developers generally prefer patent protection, as it provides greater protection than copyright. To obtain patent protection, the software must do more than solve a mathematical problem, as algorithms and abstract ideas are considered laws of nature and are therefore not patentable. For a discussion of copyrightability of software, see the Copyrightable Subject Matter discussion in the Copyright Law section.

Various types of functional software applications can be protected by utility patents, including word processing applications, compilers, web browsers, database programs, spreadsheets, utility programs, language translation programs, and even computer games. Utility patents can also protect aspects of the software design other than the

main functional application, such as control functions, editing functions and data structures. Data transmission schemes are also commonly the subject of utility patents, including communications protocols, encryption and data compression techniques.

Software that uses a mathematical algorithm or abstract idea may be protected by a utility patent if the inventor imposes sufficient limitations on the invention as to avoid preemption of the claimed algorithm or idea. The USPTO has identified several “safe harbors” where an invention can be patented if it: (1) incorporates sufficient “post-solution” activity; (2) incorporates sufficient “pre-solution” activity; or (3) is sufficiently limited to a practical application. Sufficient post-solution activity exists if the invention performs physical operations after using the mathematical algorithm. Merely conveying the result of a calculation, however, is not sufficient. Sufficient pre-solution activity exists if the data used in the mathematical algorithm represents measurements of physical objects or activities outside the computer. A mere data gathering step, however, is not sufficient. The measurements must be transformed into data before being used in the mathematical algorithm. Sufficient limitation to a practical application exists only when specified in the claim language.

In *State Street Bank & Trust v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999), the Federal Circuit held that a processing system that takes data representing discrete dollar amounts through a series of mathematical calculations to determine a share price was patentable subject matter because the final result was a useful, concrete, and tangible result. The computer system, identified by Signature Financial Group as Hub and Spoke®, facilitates a structure whereby mutual funds (Spokes) pool their assets in an investment portfolio (Hub) organized as a partnership. The Court noted that a process facilitated by a computing arrangement is a “machine,” or in some cases a “process,” either of which is statutorily available for patent protection. In sum, the Court’s ruling reveals that nearly any software-related invention producing a useful, concrete and tangible result is patentable subject matter.

Business Method Patents

Business method patents are utility patents that claim processes related to the operation of a business, and that relate to the accuracy, yield, profitability, or performance of the business. Although the patent claims often recite software and/or a computer system, neither is required to be patentable. Courts have found that there is no statutory or policy basis for excluding a business method from statutory patentable subject matter if the claimed method is within the class of patentable subject matter (i.e., not an abstract idea) and is useful, novel, and non-obvious. These patents are important because any company that develops or acquires such a patent can stop others from using the patented business method, or charge a fee for others to use it.

Many different aspects of software may be patentable. The concept driven by the software may be entitled to patent protection. For example, in *State Street*, discussed above, the Federal Circuit held that a data processing system that implemented an investment structure for use as an administrator and accounting agent for mutual funds constituted patentable subject matter. The Court noted that a process facilitated by a computing arrangement is a “machine,” or in some cases a “process,” either of which are statutorily available for patent protection. This case confirmed that business method patents were indeed patentable subject matter.

The *State Street* case has opened the door to a large number of business method patents. Amazon.com recently obtained a U.S. patent for a “one-click” on-line sales method. The “one-click” sales method involves purchasing items over the Internet with a single click of a mouse. The prior art methods utilize a two-step process in which the item to be purchased is placed in a “shopping cart” and is then “checked out.” Just over two months after issuance of its patent, Amazon.com successfully obtained a preliminary injunction against Barnesandnoble.com’s “Express Lane,” which used a sales method for purchasing items with a single mouse click, *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 53 U.S.P.Q.2d 1115

(W.D. Wash. 1999). The Federal Circuit vacated the preliminary injunction, though it agreed with the lower court that the patent had been infringed, stating that Barnesandnoble.com had mounted a substantial challenge to the validity of the patent based on prior art, Amazon.com, Inc. v. Barnesandnoble.com, Inc., 57 U.S.P.Q.2d 1747 (Fed. Cir. 2001). Although the case was vacated and remanded, the Court did not question the validity of the subject matter of the patent, indicating that the “one-click” business method is patentable subject matter.

Critics contended that that the PTO is ill-equipped to investigate if an Internet business method is novel or nonobvious. In response, the PTO added a “layer of review” to business method patent applications and hired technology specialists, particularly in the area of financial systems, to aid examiners. How this policy will affect the popular opinion of the patentability of business methods remains to be seen.

Design Patents

As mentioned above, a “design patent” is available for anyone who develops an original ornamental design for a useful article of manufacture. While utility patents protect functional aspects of technology, design patents protect the appearance of an article of manufacture or material portion of the article. The standard of novelty is whether the prior art (i.e., existing designs, knowledge, descriptions, patents or other public information), contains an article having substantially the same appearance as viewed by an ordinary observer.

For the on-line entrepreneur, design patents may be significant in order to protect their internationally advertised goods. As in the case of utility patents, a product sold via the Internet may be afforded design patent protection. For example, a manufacturer of shoes or chairs might consider obtaining a design patent for the aesthetic appearance of the article.

Perhaps more importantly for providers of e-commerce is the role of design patents for software-related ornamentation. While

having a somewhat tumultuous history, it is now clear that computer-generated icons are “designs” within the meaning of the statute, but must be embodied in an article of manufacture to satisfy the statute. The Manual of Patent Examining Procedure states that the icon can be embodied in an article of manufacture by visually illustrating the icon as part of a computer screen, monitor, other display panel or a portion thereof.

While less clear, a graphical screen image or web page could also be the subject of a design patent. Copyright law has traditionally been the manner of protecting screen images, but a screen image providing an operable interface could be construed as an uncopyrightable “method of operation.” Design patent protection may, therefore, be a more viable option for these types of screen images, although it would be prudent to also register them as copyrighted material. It is also important to have appropriate written agreements with employees and independent contractors to make sure that inventions and other intellectual property, including copyright, belongs to the company and not the individual or outside vendor. See Work-Made-For-Hire discussion in the Copyright Law section.

TRADE SECRET PROTECTION VERSUS PATENT PROTECTION

Generally, a trade secret is information such as a formula, pattern, compilation, compound, device, mechanism, method, or technique that provides some actual or potential value to its owner, is not known to or discovered by others, and is maintained in secrecy by its owner. As long as all trade secret requirements are maintained, trade secret protection will persist, i.e., there is no expiration of trade secrets based on duration of ownership.

State law governs trade secrets, and therefore varies from state to state. An important common thread, however, is the necessity to maintain the information in secrecy. Legal remedies for misappropriation of a trade secret are surrendered upon breach of this secrecy, on the grounds that the information has consequently

fallen into the public domain and is no longer a secret. It is this characteristic of trade secret law that is at odds with patent law policy, thereby sharply dividing these two forms of intellectual property protection.

Specific information or subject matter is therefore incapable of being protected by both trade secrets and patents, as these forms of protection are mutually exclusive. This is not to say that concurrent protection for related, yet different subject matter cannot be obtained. For example, trade secret and patent protection may be cooperatively used to patent a software process while maintaining the underlying source and object code as a trade secret. While United States patent law requires that the best mode for carrying out the invention be disclosed in a patent application, the United States Court of Appeals for the Federal Circuit has held that the actual program code need not necessarily be disclosed in order to meet this obligation. Whether program code needs to be disclosed in a patent application depends on the nature of the particular software invention, but most often does not require its disclosure, and may therefore be maintained as a trade secret.

Although protection of software is available under both patent and copyright laws, trade secret protection remains an important instrument. In some instances, trade secret protection can be the most effective form of software protection because its protection is immediate and can be perpetual in duration.