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FIRST-TO-FILE V. FIRST-TO-INVENT: A BONE OF CONTENTION IN THE INTERNATIONAL HARMONIZATION OF U.S. PATENT LAW

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Introduction

A international treaty harmonizing the laws that govern the creation and enforcement of ownership rights in intellectual property has gradually become an increasingly important goal for the United States. The United States International Trade Commission, a governmental agency authorized to investigate unfair import practices, estimates that the U.S. loses approximately \$23.8 billion dollars annually from the piracy of intellectual property created in the United States. These losses constitute about five percent of the U.S. trade deficit, and translate into nearly 300,000 jobs lost for Americans. With the rising trade deficit, the U.S. can no longer afford to ignore the potential revenues that would be generated by a system allowing world-wide enforcement of U.S. owned intellectual property rights. A unified system of intellectual property laws would reduce intellectual property piracy by allowing world-wide enforcement of U.S. owned patents, copyrights and trademarks, which in turn would generate substantial foreign revenues.

A multi-national treaty ratified by a large number of nations would offer a feasible means of enforcing U.S. patents in foreign countries, with the advantages of simplicity and multi-party representation. Although bilateral trade agreements offer a more flexible method of negotiating a mutually acceptable agreement between two governments, it would be an arduous and insurmountable task for the U.S. to negotiate bilateral treaties with each and every country in the world. Moreover, without the incentives offered by a multi-national agreement, many countries may simply refuse to negotiate bilateral treaties with the United States. Further, the legal morass of rules that would be created by a multitude of bilateral agreements would be difficult to implement. Thus, a multi-national treaty is effectively the best way of world-wide enforcement of U.S. patents.

Two organizations, the World Intellectual Property Organization (hereinafter "WIPO") and the General Agreement on Tariffs and Trade (hereinafter "GATT") are working towards drafting the provisions of a multinational agreement that would be acceptable to many countries. The WIPO is a specialized agency of the United Nations that is attempting to draft an international treaty to harmonize the patent laws of the different nations of the world. GATT is a high level international meeting between nations designed to facilitate international trade. One of the fifteen GATT negotiating groups, the Trade-Related Aspects of Intellectual

Property Rights (hereinafter "TRIPS"), is attempting to negotiate an international agreement that could provide a minimum level of protection for intellectual property.

Although the GATT agreement does not mandate adoption of a first-to-file system, U.S. participation in the WIPO treaty is obstructed by the first-to-invent rule followed by U.S. patent law. The first-to-invent doctrine is a fundamental doctrine of U.S. patent law which dates back to the 1836 Patent Act. Under the first-to-invent system, a patent is granted to the first applicant who conceives of the invention, provided that applicant used reasonable diligence in reducing the invention to practice from the moment of conception. Thus, amongst rival applicant claiming the same invention, the first inventor is granted the patent, rather than the first person to file a patent application. In contrast, under the first-to-file system followed by the overwhelming majority of countries, patent rights may be claimed by the first person to file a patent application; irrespective of whether he or she was truly the first inventor. The reluctance of the U.S. to adopt the first-to-file system proposed in the WIPO draft treaty has stalled U.S. participation in this treaty.

The first-to-invent doctrine has been part of U.S. law for more than 150 years. For the last two decades, Congress, U.S. industry and the American Bar Association, have consistently rebuffed attempts to adopt a first-to-file system. However, recently, an influential movement advocating adoption of the first-to-file system has emerged. Recently, Donald J. Quigg, the Deputy Commissioner of the U.S. Patent and Trademark Office (hereinafter "Patent Office"), announced to the WIPO that the U.S. Patent Office would consider dropping its 150 year old first-to-invent rule in return for improved patent-protection standards around the world. Thus, the current U.S. position towards the first-to-file system is a conciliatory one, driven by the perceived benefit of participation in an international harmonization treaty.

This comment anticipates the potential drawbacks and benefits of adopting a first-to-file system. Part I overviews the basic provisions of U.S. patent law and the first-to-invent doctrine. Part II discusses worldwide efforts to harmonize patent laws including prevailing regional treaties and the WIPO and GATT treaties. The modifications of U.S. patent law that are necessary for the U.S. to participate in current international treaties are outlined in Part III. The constitutionality of adopting a first-to-file system is discussed in Part IV. Part V discusses methods to control the quantity and quality of patent applications were the U.S to adopt a first-to-file system. Finally, the benefits of ratifying a harmonized international treaty and the benefits of adopting a first-to-file system are discussed in Part VI.

1. An Overview of U.S. Patent Law

1. Patent Rights and Territorial Boundaries

A patent is a legally enforceable monopoly granted by a national government to an inventor. The patent monopoly is granted to promote progress of science of the useful arts by offering inventors exclusive rights over their invention for a limited period as an incentive for their research efforts. Patents have the attributes of personal property and may be assigned by a written instrument. A U.S. patent grants its owner(s) "the right to exclude others from making, using or selling the invention," within the United States and its territories for a period of seventeen years. What is granted is not the right to make, use or sell, but the right to exclude others from making, using or selling the invention. Infringement is the unauthorized use of the patent invention. Remedies for infringement include injunctions, damages and attorney fees.

Although a patent grants a monopoly, the rights created by a patent are only valid within the territorial boundaries of the particular nation granting the patent, absent a treaty between that nation and other countries. To enjoy similar rights in foreign countries, the inventor must generally obtain separate patents from the governments of each of those countries. However, some countries are signatories to regional and international treaties that allow a patent granted by one country to be enforceable in a several countries.

2. Patentable Subject Matter

There are three types of patents: utility patents, design patents and plant patents. Utility patents govern inventions that are useful, novel and nonobvious. A design patent protects novel, original and ornamental designs for an article of manufacture, and a plant patent concerns new and distinct varieties of asexually reproduced plants. The following discussion focuses on the standards governing utility patents.

There are five categories of inventions protected by utility patents: processes, machines, manufacture, compositions of matter and improvements thereof. However, § 101 does not embrace every discovery. Since a patent confers a legally enforceable monopoly, public policy considerations dictate that the monopoly on an invention be granted only if the invention meets certain strict statutory standards. Thus, mere ideas or mental steps and methods of calculation are

not patentable. Neither are naturally occurring substances or laws of nature.

In addition, to falling within one of the categories of patentable subject matter, the invention must meet the three-fold criteria of (i) utility, (ii) nonobviousness and (iii) novelty. These requirements are discussed below.

1. Utility

An invention has "utility", or is useful, if it is capable of some beneficial use in society. It must be more than "a mere curiosity, a scientific process exciting wonder yet not producing physical results, or [a] frivolous or trifling article or operation not aiding in the progress nor increasing the possession of the human race." Although the degree or quantum of utility is not at issue, the use of the invention must be one that morals and public policy does not discountenance or prohibit. Thus, if the sole use of the invention is one that is detrimental to the public, a patent will not be granted.

2. Nonobviousness

The second requirement is that the invention be nonobvious. A patent may not be obtained if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art. In *Graham v. John Deere Co.*, the Supreme Court articulated a three part factual inquiry to determine the nonobviousness of an invention. Under this test, it is necessary to survey (1) the scope and content of the prior art, (2) examine the differences between the prior art and the invention, and (3) determine the level of ordinary skill in the art. In addition, "such secondary considerations as commercial success, long felt but unsolved needs, [and the] failure of others," might be utilized to give light to the circumstances surrounding the nonobviousness of the invention.

3. Novelty

Novelty is the third requirement governing the patentability of an invention. To be patentable, the invention must be "novel" or new at the time of discovery. The novelty requirement which "lies at the heart of the patent system" prohibits patentability if the invention is "known, used, patented, described or made by another prior to the applicant's invention thereof."

35 U.S.C. § 102 articulates a series of factual circumstances that would preclude novelty, or "anticipate" the invention. For example, Section 102(a) bars a patent if 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." Similarly, under Section 102(e), an invention lacks novelty if it has been "described in a patent granted on an application for a patent by another filed in the United States before the invention thereof by the applicant." Lack of novelty bars a patent under the rationale that the grant of a patent monopoly is not justified, if the invention is already known to the public, and the patent disclosure does not provide any new knowledge to the public.

One other feature significantly distinguishes the U.S. patent laws from those of other countries. In the U.S. the inventor has up to one year from the date of public disclosure of his invention to file his patent application. However, many nations have an "absolute novelty" system, under which the inventor loses the right to patent an invention if the invention is disclosed to the public at any time prior to the date of filing of the patent application.

4. The First-To-Invent System

Under the first-to-invent doctrine, a patent is granted to the first person who invented the claimed subject matter, rather than to the first person who files a patent application. This doctrine, first elucidated in the Patent Act of 1836, predicates that the patent system should reward the first true inventor rather than a later inventor who merely wins the race to the Patent Office. Under 35 U.S.C. § 102(g) a patent will not be granted to an applicant, if the invention claimed in the application, was made in this country by a person other than the applicant -- without abandonment, suppression or concealment -- prior to the applicant's invention. Priority of invention amongst rival applicants, is decided by the Patent Office in an interference proceeding.

1. Interference Proceedings

When more than one applicant files a patent application claiming the same invention, either applicant, or the Patent Office, may institute an "interference

proceeding." In an interference proceeding, the Patent Office determines which of the rival applicants is truly the first inventor. The applicant who is the last to file a patent application (hereinafter "junior applicant") must establish by a preponderance of the evidence that he or she has priority over the "senior applicant", i.e., the first person to file a patent application.

The first inventor is the person who first conceived of the invention provided that he or she diligently worked to reduce the invention to practice from the moment of conception to the date of filing the patent application. Thus, under a first-to-invent system, priority of invention turns around the judicially evolved doctrines defining the point of conception and the factual circumstances that would indicate due diligence in reducing an invention to practice.

2. Conception

"Conception" is a purely mental process. It is "the 'formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as is hereafter to be applied in practice.'" The date of conception must be evidenced by a written record, witnessed and dated by at least one other person, other than a co-inventor, who acknowledges that he or she understood the concept presented.

3. Reduction to Practice

Reduction to practice is a term of art representing the physical acts associated with the mental act of conception. The mere mental act of identifying a problem ripe for solution -- or for that matter a potential theoretical solution to a problem -- is insufficient to claim a patent. The inventor must sufficiently implement his or her idea or theoretical concept into a tangible product or process that functions as a complete and operative invention satisfying its intended purpose. The inventor "must provide independent corroborating evidence [of a reduction to practice] in addition to his own statements and documents." The inventor's failure to exercise diligence in reducing the invention to practice may result in loss of priority.

4. Reasonable Diligence

The rationale behind the diligence requirement stems from the public's interest in prompt disclosure of the invention. The junior applicant who relies on prior conception of the invention to defeat a senior applicant's claim for priority, "must account for the entire period from just before [the senior applicant's filing date] until his reduction to practice." In applying the diligence requirement the courts may consider reasonable problems and limitations encountered by the inventor. However, any delay "caused by the inventor's efforts to refine the invention to the most marketable and profitable form have not been accepted as sufficient excuses for inactivity." Similarly, an unreasonable delay in filing a patent application may also provide a basis for the inference of abandonment, suppression or concealment.

14. World-Wide Efforts to Harmonize Patent Laws

1. The Growing Trend Towards International Harmonization

The growing trend toward international harmonization of intellectual property laws is evidenced by the number of treaties accepted by the nations of a specific region of the world. The most prominent of these treaties include the European treaties, the South American treaties and African treaties.

1. Regional Treaties

1. The European Community

The European Patent Convention (hereinafter "EPC"), which includes thirteen European countries, is the best known of the regional treaties. The EPC established procedures under which an applicant can file a single patent application in any one language with the European Patent Office. This application undergoes a single examination proceeding. However, the ultimate decision of patentability is still made separately by the signatory countries according to their own patent law.

The nations of the European Economic Community also negotiated a separate convention (entitled "The Community Patent Convention") in 1972 which has not entered into force. This agreement would create a single patent right, granted by the EPO, and effective throughout the European Community.

2. South American and African Treaties

South American and African countries have also attempted to harmonize their patent laws by means of regional treaties. The Buenos Aires Convention (entitled "The Convention for the Protection of Inventions, Patents, Designs and Industrial Models") includes several South American nations. The Afro-Malagasy Accord of 1962, which includes twelve former french colonies of Africa, established a central Industrial Property Office.

2. International Treaties

Two contemporary international treaties concerning patents are (i) The Paris Convention for the Protection of Industrial Property of 1883, and (ii) The Patent Cooperation Treaty of 1978. These treaties greatly simplify the complex process of obtaining patents in numerous nations.

The Paris Convention is the basic treaty on patents, accepted by more than a hundred nations, including the United States and most industrial and developing nations of the world. The Paris Convention allows the inventors of any signatory nation, to claim priority based on the filing date of the first application to be filed in any of the signatory nations. However, the privileges granted by this treaty are limited. In order to obtain foreign patents, it is still necessary to file separate applications in each foreign nation, conforming to the patent laws of that particular nation. Although this existing and valid treaty could be modified to reflect increased international harmonization, the large number of signatory nations has made it difficult to obtain agreement on the sweeping changes necessary for true harmonization.

The Patent Cooperation Treaty (hereinafter "PCT") includes 40 signatory countries that account for over 90% of the total number of world filings. The PCT established a single centralized filing system which allows an inventor to file a single application at the Patent Office of any member nation for its forty signatory nations. The prior art for this application is searched and then a preliminary examination as to novelty, non-obviousness and utility made by the PCT division of the local Patent Office. The application may be then submitted for examination by the patent offices of other nations. However, the patentability of the invention is still evaluated under patent laws of the member nation; patents are awarded by other countries only if their requirements are satisfied.

2. The WIPO Patent Harmonization Treaty & GATT

1. GATT

The General Agreement on Tariffs and Trade (hereinafter "GATT") is a high level international meeting between nations designed to facilitate international trade. For the past four years, negotiating teams from the signatory nations of GATT have been involved in the Uruguay Round negotiations directed towards updating the provisions of the Fair-Trade treaty. When GATT was created in 1947, world trade revolved mainly around manufactured goods and raw materials, and the protection of intellectual property was not a significant issue. However, today an important goal of the GATT talks is to reach an international consensus on a minimum level of protection for intellectual property rights. This is the task of one of the fifteen GATT negotiating groups, entitled "Trade-Related Aspects of Intellectual Property Rights" (hereinafter "TRIPS").

2. The WIPO Treaty

The World Intellectual Property Organization (hereinafter "WIPO") is a specialized agency of the United Nations that is attempting to draft an international treaty to harmonize intellectual property laws. The Committee of Experts of the WIPO hold annual meetings to discuss the provisions of each draft treaty. At each meeting the provisions of the latest draft treaty are discussed. Negotiators from each participating nation vote on adoption of specific provisions articles -- presented in alternative form -- to select the provision that best represents the interests of their nation. In its final version, the draft treaty will be adopted by all the countries ratifying the agreement.

20. U.S. Patent Law Modification Necessary To Allow U.S. Participation in International Treaties

1. A. Discriminatory Provisions of U.S. Patent Law Foreign governments contend that U.S. Patent law contains several provisions that discriminate against foreign inventors. These discriminatory provisions lower the standards of novelty that must be met by U.S. inventors, and limit the rights of priority by acts in foreign countries. Foreign nations are demanding modification of the provisions as a prerequisite for U.S. participation in international patent treaties.

1. Novelty

The provisions of 35 U.S.C. § 102 impose the geographically limiting language "in this country," on certain events which bar novelty. Under Section 102 (a), the applicant is entitled to a patent unless the invention claimed was known or used by others in this country prior to the invention by the applicant. Thus, public knowledge or public use of the invention in a foreign country does not bar the grant of a U.S. patent. Section 102(g) bars a patent if the invention was made in this country by another, before the applicant's invention thereof. Thus, an applicant may obtain a patent in the United States, even if the invention was first discovered in a foreign country.

2. Priority of Invention

Other provisions of U.S. patent law restrict the privilege of establishing priority by acts occurring in foreign countries. Under 35 U.S.C. § 104 a junior applicant is barred from establishing priority of invention by relying on a date of conception in a foreign country. Thus, while a domestic inventor is allowed to establish priority by proving the date on which he or she conceived the invention within the United States, foreign inventors are severely limited in their ability to establish dates of conception in their countries. Consequently, the earliest date the foreign applicant may rely upon in a claim for priority of invention, is the date a foreign patent application was filed, which is regarded as the date of simultaneous conception and reduction to practice.

3. The U.S. Position on Abolishing Discriminatory Practices

In 1966, the President's Commission on the Patent System, recommended abolishing of the exclusion of foreign knowledge, uses or invention as a basis for patentability, calling these exclusions arbitrary and unjustified under modern conditions. The original Patent Acts of 1790 and 1793 did not state this geographical limitation; the provision was first included in the Patent Act of 1836, under the rationale that the character of foreign activity was difficult to prove, and under the presumption that U.S. applicants would be unable to gain access to foreign prior art.

The passage of time has, if anything, strengthened the case for adopting a more universal definition of novelty. The evidentiary problems of proving and verifying foreign acts and the accessibility of foreign prior art are no longer insurmountable obstacles. Thus, the geographical limitations on novelty and conception are out of harmony with modern times and with the present patent laws of other countries.

Although these discriminatory provisions are still the law, it is unlikely that the U.S. will protest the adoption of non-discriminatory provisions in a harmonized treaty. Of more importance to the U.S. are the more drastic changes necessitated if a first-to-file system is adopted in the U.S.

2. First-to-File v. First-To-Invent

Foreign nations have repeatedly insisted that the U.S. adopt a first-to-file system. For example, the Fair Trade Center of Japan recently announced that the U.S. first-to-invent system, "yields results that are inherently unstable and unpredictable." Although the GATT agreement does not mandate adoption of a first-to-file system, the WIPO harmonization treaty requires adoption of a first-to-file system.

1. The GATT & WIPO Treaties Stance

1. The GATT Provisions

The primary focus of the TRIPS negotiations is to raise the floor of intellectual property protection in the international arena. However, Japan and nations within the European Economic Community tried to use the GATT negotiations to obtain basic changes in U.S. laws, including elimination of the first-to-invent doctrine. In contrast, the United States negotiators for TRIPS are attempting to limit the changes in U.S. law that will be required by a GATT agreement.

At present, the GATT treaty does not mandate adoption of a first-to-file system. In the Uruguay round of October 10, 1990 a GATT draft text proposed adoption of a first-to-file provision. However, this provision was omitted from the most recent draft of the Fair-Trade Treaty, dated November 23, 1991. Thus, adoption of the first-to-file system is not a barrier to U.S. participation in the GATT treaty.

2. The WIPO Provisions

Unlike the GATT treaty, the WIPO Draft Treaty has adopted the first-to-file

system as a uniform international rule simply because it is the system followed by the overwhelming majority of the world's nations. The first-to-file provision is specified in Article 9(2) of the WIPO draft treaty. Under article 9(2), when two or more inventors claim the same invention, the invention belongs to the applicant with the earliest filing date. In addition, Article 2(ii) of the WIPO draft treaty defines the date of priority of invention as the "filing date of the application for a patent."

2. The U.S. Position on Adopting a First-To-File System To participate in the WIPO treaty, the U.S. must adopt a first-to-file system. Adoption of a this system, has been the subject of considerable debate in the and American Bar Association, American industry and the legislature since the 1960's.
3. Executive and Legislative Views
Congress recognizes the need to negotiate an international agreement that will allow U.S. entities to enforce their intellectual property rights. In 1988, Congress passed the trade reform laws of the Omnibus Trade and Competitive Act, in partial response to the problem of intellectual property piracy problem. This act included trade reform laws that made it easier to sue foreign entities who imported products that infringed U.S. patents.

However, still further protective measures are necessary to protect rampant intellectual property piracy on foreign shores. A recent Congressional hearing declared, "[i]n terms of balance of trade the U.S. exports far more intellectual property than it imports. Since we continue to suffer from a vexing trade deficit, products protected by intellectual property have become among our most cherished commodities." Thus, Congress recognizes the need for an internationally enforceable treaty that would allow world-wide enforcement of U.S. patents.

Initially the U.S. delegation approached the WIPO committee requesting amendment of the Paris Convention Treaty to include a provision that allowed member nations to choose between a first-to-file or a first-to-invent system. However, the U.S. request received virtually no support in the WIPO Conference at Hague, and the WIPO committee adopted a provision mandating adoption of the first-to-file system.

Subsequently at the June 1990 meeting of the WIPO, the United States delegation stated that it would recommend ratification of the WIPO treaty in its present form, only if the total harmonization package proposed by the treaty was clearly of significant benefit to U.S. industry. The delegation stated that a clear benefit was necessary to justify the fundamental change in U.S. law that would be mandated by adoption of a first-to-file system. Thus, the current U.S. position towards adoption of the first-to-file system is controlled by the perceived benefit of participation in an international harmonization treaty.

4. The American Bar Association
The section of Patents, Trademarks and Copyrights of the American Bar Association, (hereinafter "ABA-PTC") supported the Patent Office stance by passing a resolution showing their support for adoption of the first-to-file system so long as the first-to-file provision was part of a whole package harmonizing international patent law. In the 1991 meeting in Chicago, the ABA-PTC section resubmitted resolution 102-1:

RESOLVED, that the Section of Patent, Trademark and Copyright Law favors in principle an amendment of the United States Patent Laws to provide that except in cases of derivation, the first to file a patent application among rival applicants for the same invention is the applicant entitled to a patent if, but only if, the foregoing be part of the patent harmonization treaty wherein other countries agree to significant changes in their systems sufficiently beneficial to United States applicants and their assignees.

The ABA-PTC resolution is important in that it mirrors the negotiating position of the U.S. delegation to the WIPO.

5. American Industry
Generally, american industry has also reversed its position with regard to adoption of a first-to-file system. Today, multinational corporations and their lobbying organizations stress the need for a uniform and harmonized patent system to provide the power to seek

enforcement of valuable foreign patents. Industries such as pharmaceutical and computer software businesses have a strong economic interest in seeking world-wide enforcement of their patents. This interest is evidenced by the Pharmaceutical Manufacturer's Association, the National Association of Manufacturers and the A.I.P.L.A.'s active support of recent WIPO treaty amendments .

Thus, multinational corporations believe that it is necessary to "underscore the need for American trade negotiators to take a tough line in defense of intellectual property in current negotiations to liberalize the General Agreement on Tariffs and Trade, the international trade agreement." The rationale of U.S. industry is reflected in the words of Representative Moorehead, "People in other countries are using the ingenuity of our inventors to create goods and send those goods into our country to compete with American-made goods and consequently beating us with the use of our own technology." "[A]s the largest exporter of industrial and copyrighted works, it only makes sense for the United States to provide American creators and inventors with the best protection in the world." The position adopted by American industry also results from the recent "series of bitter patent-infringement battles pitting American companies against Japanese manufacturers accused of stealing valuable inventions."

There is another reason why large business entities favor adoption of a first-to-file system. Multinational corporations that routinely market their products throughout the world, are already operating in a de facto first-to-file system. In order to avail of foreign patent rights, these companies must rush to the United States Patent and Trademark Office to file patent applications if they desired to comply with the absolute novelty and first-to-file restrictions of foreign countries. Thus, multinational corporations have little to lose by advocating a first-to-file system, and a lot to gain by world-wide enforcement of their patent rights.

33. The Constitutionality of Adopting a First-to-File System

1. The Constitutional Provision

The constitutionality of the first-to-file provision has been debated by legal scholars since the Presidential Commission report of 1967 first recommended adoption of a first-to-file system. This constitutional issue revolves around the construction of Article I, Section 8 of the Constitution which provides, "Congress shall have the power to promote the progress of science and useful arts by securing for a limited time to authors and inventors exclusive right to their respective writings and discoveries." [emphasis added]

2. A First-to-File System is Unconstitutional

Opponents of the first-to-file system argue that the constitutional clause mandates that the exclusive right created by a patent grant be awarded only to the true inventor. The first-to-invent rule supports this mandate by allowing an inventor to claim patent rights even if he or she was not the first to apply for a patent. On the other hand, a first-to-file rule would allow one other than the true inventor to claim exclusive rights, merely because he or she happened to win the race to the Patent Office. Thus, the first-to-file system would violate the constitutional mandate.

1. Limitation on Legislative Powers

The Supreme Court has held that the patent clause of the constitution is a limitation, as well as a grant of power to Congress: "[t]he Congress in its exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. Nor may it enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby. . . . This is the standard expressed in the Constitution and may not be ignored." Thus, opponents of a first-to-file system contend that Congressional adoption of this system would exceed the restraints intended to be imposed by the framers of the constitution. However, proponents of the first-to-file system argue that the constitutional purpose of the patent clause is best served by adoption of a first-to-file system.

2. The Framers' Intent

Traditionally, a patent monopoly was granted only to the true and first inventor. The purpose of the patent clause is to promote science and the useful arts by allowing inventors to obtain a limited monopoly on their discoveries. Although the framers abhorred the granting of monopolies, the patent monopoly was justified in view of the public benefit obtained by providing this economic incentive to inventors. Thus, if the intent of the framers is inferred from the traditional English law, a patent should be granted only to the first person to invent the claimed subject-matter. The constitutional clause granting patent rights to the "inventor," would be a hollow and deceptive

provision, if instead of the true inventor, the first person to file a patent application is accorded exclusive patent rights.

3. The Opposing View

4. Framer's Intent

Some authors argue that a strict construction and historical analysis of the constitution would suggest a narrow definition of inventors. These scholars submit that there is no constitutional provision that explicitly requires a patent to be issued only to the first inventor. The purpose of the patent clause is to grant an incentive for inventors to promptly file their patent disclosures, so that the public can benefit from such disclosure.

Arguably, a first-to-file system would promote rapidity of public disclosure. The faster the invention is disclosed to the public, the faster the public will be able to extend the knowledge gleaned from the patent disclosure. If the first-to-file system promotes prompt disclosure of the invention to the public, one of the primary goals of the constitutional clause would be enhanced by adoption of a first-to-file system.

5. Statutory Limitations

Commentators have noted that certain provisions of the enacted patent laws actually bar the true and first inventor from claiming a patent. The limitations may be either in the form of rules mandating prompt disclosure of the invention, or in the form of rules barring the patent grant if the inventor fails to prove conception by independent corroboration of his claim. Proponents of the first-to-file system contend that if Congress has the power to enact laws that expressly bar the "true and first" inventor from obtaining patent rights, Congress should have the power to adopt a first-to-file system.

1. Delays in Filing a Patent Application

35 U.S.C. § 102 (b) bars a patent if the invention in public use or sold to the public more than one year prior to the date of application. Thus, an inventor would lose his patent rights if he tested the invention in public use or if he engaged in a preliminary marketability study more than one year prior to filing the patent application.

The inventor can also abandon his right to a patent if he or she fails to exercise reasonable diligence in reducing the invention to practice. Thus, a first inventor who slackens from working on the invention, may lose his patent rights. Similarly an unreasonable delay in filing a patent application can also provide a basis for disallowing a patent to the first inventor. The rationale behind these rules is to balance the interest in rewarding and encouraging invention with the public's interest in the earliest possible disclosure of innovation.

2. Evidentiary Limitations

There are also several statutes which impose evidentiary limitations that may bar the first inventor from obtaining a patent. For example, a patent will be granted to the chronologically subsequent inventor if the true first inventor fails to provide independent corroboration of his claim by a prior date of conception.

Similarly, an inventor who has the misfortune to have invent outside U.S. territory, is barred from proving his priority in conception based on foreign events. Most individuals do not maintain consistent or elaborate records. Inventive souls possessing "flash of creative genius" do not often lend themselves to the dreary tedium of embellished record keeping. Thus, establishing the date of conception may pose significant evidentiary problems for small entity inventors. Thus, the alleged protection offered to inventors by the first-to-invent system may be largely illusory.

37. Conclusion

Arguably, the constitutional clause is intended to limit the patent grant to the true first inventor and none other. If such a limitation is read into the constitutional clause, then adoption of a system which may grant a patent to one other than the true inventor would be unconstitutional. However, there is no express language in the constitution that requires the patent to be granted only to the first inventor.

Even though congressional powers are limited by constitution, Congress has the power to implement the constitution "by selecting the policy which in its judgment best effectuates the constitutional aim", within the limits of the constitutional standards of patentability. This power is evidenced by the enacted statutes which restrict the rights of an inventor who delays in filing the patent application or who fails to prove sufficient priority of conception. Thus, if adoption of a first-to-file system would provide an incentive to

U.S. inventors resulting from increased foreign revenues, the ultimate purpose of the constitutional provision to act as an incentive promoting science and the useful arts, is best served by ratifying an international treaty even if it contains a first-to-file system. Thus, it is unlikely that any challenge to the constitutionality of a first-to-file system will survive.

40. Fear of Patent Flooding: Controlling the Quantity and Quality of Patent Applications Under a First-to-File System

Practitioners fear two potentially adverse repercussions of adopting a first-to-file system. First, they fear that a system which grants priority of invention based on the date of filing of the patent application, will immediately result in an inordinate increase in the number of patent applications filed at the Patent Office. This type of "patent flooding," will cause significant delays within the Patent Office, thereby increasing the average time required to issue a patent. Secondly, it is feared that a first-to-file system will encourage filing of hastily prepared applications with sketchy disclosures, in the race to the Patent Office, ultimately resulting in a decline in the quality of the disclosure within patent applications.

These fears are largely unfounded. Provisions within the WIPO draft treaty protect the quality of patent applications and provide disincentives against the filing of numerous patent applications.

1. The Quantity of Patents

1. Eliminating Delays in Patent Issuance by Mandatory Time Limits

1. Delays in Patent Issuance

Opponents of the first-to-file system fear that adoption of a first-to-file system will result in substantial delays in the issuance of patents. The first-to-file system rewards the applicant who is first to file his or her patent application by granting that applicant priority of invention. Such a system would encourage business entities with vast resources, such as large corporations, to file a patent application as soon as possible, even if the actual invention is not fully developed or tested, only to subsequently abandon the application. The large number of applications that would be filed, would inundate the Patent Office resulting in substantial delays in the issuance of patents.

Practitioners advocating this theory rely on statistics from first-to-file countries compiled by the Patent Office. For example, the Japanese Patent Office takes an average of seven years to process an application. In comparison, the United States Patent and Trademark Office takes an average of only two years to issue a patent. This delay is caused in part by the numerous applications filed by Japanese corporations and inventors, and in part by the understaffing of the Japanese Patent Office.

2. Self-Imposed Time Limits

However, any such anticipated delay could be countered by imposing time limits within which a patent must be issued. The WIPO draft treaty provides for such time limitations. Article 16(1) of the WIPO draft treaty imposes time limits for both the prior art search and for the substantive examination of patents. Search results must be published within 18 to 24 months after the date of filing the patent application. Moreover, the Patent Office of the contracting state to begin examination of a filed application within three years from the date of filing. Finally, Article 16 also mandates a final decision on the issue of patentability within two years from the filing date.

This provision was deemed the most important article of the WIPO draft treaty by the United States delegation. The U.S. delegation pointed out that without time limits, the effective life of a patent would decrease in proportion to this delay, since the 20 year term of the patent under the WIPO treaty commences from the date of filing of the application.

In contrast, the Japanese delegation to the June 1990 WIPO meeting objected to the time limits imposed by the Article 16 provision, claiming that the provision imposed unrealistic time limitations that were impossible to achieve. Japan could remedy this deficiency quite easily by increasing funding for its Patent Office. Thus, self-imposed time limits governing the issuance of patents could remedy any delay occasioned by the filing of increased applications.

2. Patent Flooding It is also feared that under a first-to-file system, business entities with vast resources such as large corporations, would file numerous patent applications for insignificant variations on or modifications to the original patent application, to ensure priority on all possible variations of an invention. This would cause delays in patent prosecution, affect the transfer of technology and adversely affect the interests of small business entities.

1. Double Patenting Restrictions

The filing of numerous applications claiming minor variations of the original invention, would leave the original application for a basic innovation "surrounded" by a complex maze of ancillary innovations. This would force the original inventors to cross-license variations of their own technology, in order to assure themselves of the right to use their own inventions. Thus, the filing of large numbers of applications could force the original inventors into unwanted technology sharing agreements. This would cause the incentive to the original inventor, to lose its exclusive nature.

However, patent flooding can be combated by adoption of a provision similar to the double patenting provision of U.S. patent law. Under 35 U.S.C. § 101, only a single patent may issue for an invention. Two or more patent applications are regarded as claiming the same invention, if the claims of one application would literally infringe the claims of the other application, or if the claims of one were obvious variations of the other. The rationale behind these provisions is to ensure that each and every patent has claims which differ by more than merely claim breadth. Under this rule, it would be impossible to obtain multiple patents each claiming insignificant variations of the original application, because every application must claim a substantially different and distinct invention.

2. Protecting Small Business Entities by Reduced Filing Fees

There is yet another detrimental aspect of the incentive to promptly file numerous patent applications that would affect small business entities. Small business entities -- who constitute 40% of all patent applicants -- lack the financial resources to compete with large corporations. Thus, opponents of the first-to-file system argue that such a system would act as a disincentive to the inventive efforts of small entities.

However, there is a simple and effective way to protect small business entities that is already implemented under U.S. patent law. The U.S. Patent Office charges a 50% lower fee for small entities. These entities could be protected by offering further reductions in application fee schedule.

2. The Quality of Patent Applications: Protecting Against Inadequate Disclosure

1. Disclosure Requirements

The basic policy underlying the patent grant is that in exchange for granting a 17 year monopoly, the public obtains a complete disclosure of the invention in the patent application. The patent application must disclose how to make and use the invention with sufficient certainty to enable one skilled in the art to practice the invention. The application must also disclose the best mode of practicing the invention that is known to the inventor at the time of filing the application. The adequacy of the disclosure is measured objectively, requiring the disclosure to be such that it would enable one of ordinary skill in the art to make or use the invention without undue experimentation.

2. The Fear of Inadequate Disclosures

Practitioners fear that quality of application would decline in a first-to-file system, based on observations of the Japanese system. As a consequence of the incentive to file first, many patent applications in Japan are filed with sketchy, speculative and unproven descriptions of the invention. In these jurisdictions, patent applications are often filed prematurely, without the invention being fully developed or tested.

Inadequate disclosures provide little benefit to the public. Any patent based upon a carefully prepared disclosure of a complete invention will be more valuable to the scientific community than one based upon a hastily written disclosure of an incomplete application. Thus, proponents of the first-to-file system argue that the first-to-invent system promotes a more thorough disclosure because the inventor has the time to build a

prototype, test its functionality and prove its utility.

3. Protecting The Quality Of Disclosures

The fears of inferior and inadequate disclosures are also largely unfounded. The WIPO draft treaty has strict standards to protect the quality of disclosures. Article 3 of the WIPO draft treaty requires "the invention to be disclosed in a manner sufficiently clear for it to be carried out by a person skilled in the art." Article 3 also requires the disclosure to explain the usefulness of the invention, identify the problems solved and describe the advantages of the invention.

The WIPO draft treaty does not expressly mandate a best mode requirement. However, the treaty requires the application to set forth at least one exemplary method of carrying out the invention. In addition, although not mandated, the best mode requirement is treated as an optional requirement that may be enforced by member states. Under Article 3, subsection 4(b), "Contracting Parties [signatory nations] may at their option provide that the mode for carrying out the invention be in fact the 'best mode' known to the inventor at the [time of filing the application]." Thus, the United States would have the option to maintain its best mode requirement without violating this treaty.

43. The Benefits of Ratifying the WIPO Harmonization Treaty

1. Enforceability of U.S. Patents

A unified international system of patent laws would provide a greater incentive to U.S. inventors by allowing them to enforce U.S. patents outside the territories of the United States.

The increased enforceability of patents under a harmonized patent system may be paralleled to the enhanced enforceability of patents achieved in the U.S. under the Federal Circuit Court. Congress established a national Court of Appeals entitled the Federal Circuit just below the United States Supreme Court for patent matters. One of the results of the creation of a single court of appeals for all patent cases, has been the increasing number of patents that have been held valid and infringed. In the mid 70's, the Circuit courts only upheld 27 percent of the patents that were litigated. This disincentive to inventors resulted in a 34% decrease in the number of U.S. patent applications between 1972 and 1982.

In contrast, the Federal Circuit affirmed 86% of lower court decisions that upheld the validity of a patent, and only affirmed 60% of lower court decisions which invalidated patents. Thus, it is now extremely risky to infringe patents in the U.S. The effect of these decisions is to encourage business entities to file patent applications, while discouraging companies from infringing issued patents. A harmonized and international system of patent laws could provide a similar thrust in enforcing U.S. patents in foreign countries.

2. Modification of Foreign Patent Laws

There is a common perception in the United States that foreign countries provide inadequate laws governing patent application procedures and inadequate laws governing patent protection. These issues may be resolved by bilateral trade negotiations between the U.S. government and specific foreign nations. However, bilateral negotiations with numerous nations is a costly and highly politicized process.

In contrast, by participating in an international treaty, the United States could pressure foreign countries to substantially modify their patent application procedures and their laws governing the enforceability of patents. The U.S. would have more leverage as a member of an international consortium, than it would as a single nation.

1. Patentable Subject Matter

The scope of patentable subject matter is severely limited in many foreign countries. For example, China and India do not allow patents on pharmaceutical products. Since pharmaceutical products cannot be patented, these countries offer no means of enforcing U.S. patents on pharmaceutical products. A harmonized patent treaty, by delineating the scope of patentable subject matter, may allow enforcement of these types of patents in foreign countries.

Article 10 of the WIPO treaty allows patent protection "for all inventions, whether they concern products or processes, in all field of technology." This broad definition includes categories of inventions such as pharmaceutical products. From fear that these provisions

will have significant economic repercussions in their nations, certain developing countries proposed an alternative text for Article 10 that would exclude patent protection for "methods of medical treatment for humans or animals" and also exclude patents for "plant or animal varieties or essentially biological processes for the production of plants and animals." Thus, the scope of patentable subject matter is still at issue.

However, adverse the short term repercussions of these provisions, in the long term, they will provide significant incentives for large multinational corporations to invest in the research and development of pharmaceutical products. Furthermore, a possible compromise for essentials such as pharmaceutical products would be to include a provision in the WIPO draft treaty that provides for a system of compulsory licensing for these categories of inventions. This would allow the developing nations to obtain cheaper access to essential technologies.

2. Modification of Foreign Patent Application Procedures

U.S. entities are often faced with procedural roadblocks when they submit patent applications in foreign countries. The excessive delay in patent issuance in countries like Japan (which takes an average of seven years to issue a patent) discourages many corporations from filing Japanese patents. This delay may be caused by inadequate patent application procedures or by the inadequate staffing of the Patent Office.

An international treaty could provide a standardized format for patent application and even impose time limits on the issuance of patents. As a signatory nation, the U.S. would be able to negotiate provisions of the treaty that would benefit U.S. entities.

A long term objective of the harmonization of patent laws is to allow examination of a patent application in a single and centralized Patent Office. The results of this examination would then provide a basis for the issuance of a patent in any of the signatory nations. Centralized filing procedures would be convenient, relatively cheap and would allow inventors to pursue a broad international patenting strategy. However, at present, the WIPO draft treaty does not harmonize patent prosecution, because of the reluctance of signatory nations to reform their patent examination procedures to meet international standards.

3. Advantages of Adopting a First-to-File System

In addition to the benefits obtained from ratification of an international treaty, adoption of a first-to-file system by itself would also offer several advantages. The first-to-file system is more predictable, efficient, and accurate. Also, a first-to-file system would offer the benefit of lower transactional costs incurred in patent prosecution.

1. Accuracy and Predictability

Under the first-to-file system an accurate search for prior art may be accomplished by simply searching through the files of the Patent Office for any pending or issued patents that disclose the same invention. The applicant cannot claim priority of invention only if another person has already filed a patent application.

In contrast, determination of priority under the first-to-invent system is often complex, expensive and unreliable. Often true priority is not conclusively established until litigation when the validity of the patent is at issue. The senior applicant who first files a patent application has no way of establishing if other inventors conceived of, and were diligently reducing the invention to practice at the time of the senior applicant's conception.

2. Reduced Interference Proceedings

The primary domestic difficulty that the first-to-file system would cure is to eliminate interference proceedings. The interference practice has been strongly criticized for its inherent inefficiency and cost. An interference proceeding allows the Patent office to determine the true first inventor amongst rival applicants. "Interfering patents are not patents that are or may be infringed by the same device; interfering patents are patents that claim the same subject matter . . . [Thus, it is necessary] to compare claims, not disclosures."

Adoption of a first-to-file system would eliminate interference proceedings. Under Section 301 of the WIPO draft treaty, when two or more applicants claim the same

invention, the applicant who is the first-to-file prevails. Thus, the first-to-file system eliminates the need for a costly and time consuming interference procedure.

Conclusion

The first-to-file system is constitutional and the adoption of this system as part of an international harmonized treaty would provide a significant economic benefits to the United States. As a signatory nation of an international treaty, the United States would have stronger leverage in negotiating fundamental changes in the application procedures and enforcement of U.S. patents in foreign countries. Even without the benefit of a harmonized treaty, the first-to-file system is advantageous because of its inherent efficiency, accuracy and predictability. The United States can no longer afford the luxury of an isolated and quarantined patent system.

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