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Testimony of John R. Thomas

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Hearing: Patent Issues and Small Business

March 29, 2007

U.S. House Small Business Committee

Small businesses play a role in the technological advancement and economic growth of the United States.' Several studies commissioned by U.S. federal agencies have concluded that individuals and small entities constitute a significant source of innovative products and services.' Studies have also indicated that entrepreneurs and small, innovative firms rely more heavily upon the patent system than larger enterprises. Larger companies are said to possess alternative means for achieving a proprietary or property-like interest in a particular technology. For example, trade secrecy, ready access to markets, trademark rights, speed of development, and consumer goodwill may to some degree act as substitutes to the patent system.' However, individual inventors and small firms often do not have these mechanisms at their disposal. As a result, the patent system may enjoy heightened importance with respect to these enterprises!

The U.S. patent system has long acknowledged the role, and particular needs, of independent inventors, small firms, and universities. For example, the patent statute calls for each of these entities to receive a 50% discount on many USPTO fees' As the USPTO is currently entirely funded by the fees it charges its users,' this provision effectively calls for larger institutions to subsidize the patent expenditures of their smaller competitors.

Beyond potentially diminished financial resources vis-a-vis larger concerns, however, observers have disagreed over whether small business has particular needs with respect to the patent system, and if so whether those needs should be reflected in patent law doctrines. With respect to the proposed system of "prior user rights," for example, some observers state that such rights would particularly benefit small entities, which may often lack a sophisticated knowledge of the patent system. Others disagree, stating that smaller concerns rely heavily on the exclusivity of the patent right, and that the adoption of prior user rights would advantage large enterprises. Similar debates have occurred with respect to other patent reform proposals, perhaps reflecting the fact that the community of small businesses is itself a diverse one.

This statement briefly reviews patent reform topics that appear to be of particular interest to small businesses, including adoption of a first-inventor-to-file priority principle, recognition of prior user rights, expansion of post-grant administration revocation proceedings, and renewed emphasis upon measuring the inventor's contribution when measuring damages for patent infringement.

First Inventor to File

Currently under discussion is a shift in the U.S. patent priority rule from the current "first-toinvent" principle to the "first- inventor-to-file" principle." Within the patent law, the priority rule addresses the circumstance where two or more persons independently develop the identical or similar invention at approximately the same time. In such cases the patent law must establish a rule as to which of these inventors obtains entitlement to a patent."

In the United States, when more than one patent application is filed claiming the same invention, the patent will be awarded to the applicant who was the first inventor in fact. This conclusion holds even if the first inventor was not the first person to file apatent application directed towards that invention." Under this "first-to-invent" system, 13 the timing of real-world events, such as the date a chemist conceived of a new compound or a machinist constructed a new engine, is of significance.

In every patent-issuing nation except the United States, priority of invention is established by the earliest effective filing date of a patent application disclosing the claiming invention." Stated differently, the inventor who first filed an application at the patent office is presumptively entitled to the patent. Whether or not the first applicant was actually the first individual to complete the invention in the field is irrelevant. This priority system follows the "first-inventor-to file" principle.

A simple example illustrates the distinction between these priority rules. Suppose that inventor A synthesizes a new chemical compound on August 1, 2007, and files a patent

application on November 1, 2007 claiming that compound. Suppose further that inventor B independently invents the same compound on September 1, 2007, and files a patent application on October 1, 2007. Inventor A would be awarded the patent under the first-to-invent rule, while Inventor B would obtain the patent under the first-inventor-to-file principle.

Under the current U.S. first-to-invent rule, the majority of priority disputes in the United States are resolved via "interference" proceedings conducted at the USPTO.'S An interference is a complex administrative proceeding that ordinarily results in the award of priority to one of its participants. These proceedings are not especially common. One estimate is that less than onequarter of one percent of patents are subject to an interference." This statistic may mislead, however, because the expense of interference cases may lead to their use only for the most commercially significant inventions.

The patent community has witnessed an extensive and sometimes emotional debate on the relative merits of the first-to-invent and first-inventor-to-file principle. Supporters of the current first-to-invent principle in part assert that the first-inventor- to-file system would create inequities by sponsoring a "race to the Patent Office." They are also concerned that the first-to- file system would encourage premature and sketchy technological disclosures in hastily-filed patent applications."

Supporters of the first-inventor-to-file principle in part assert that it provides a definite, readily determined and fixed date of priority of invention, which would lead to greater legal certainty within innovative industries. They also contend that the first-inventor-to-file principle would decrease the complexity, length and expense associated with current USPTO interference proceedings. Rather than being caught up in lengthy interference proceedings in an attempt to prove dates of inventive activity that occurred many years previously, they assert, inventors could continue to go about the process of innovation. Supporters also observe that U. S. industry already organizes its affairs on a first-inventor-to-file basis in order to avoid forfeiture of patent rights abroad."

The effect of a shift to the first-inventor-to-file rule upon individual inventors, small firms, and universities has been debated. Some observers state that such entities often possess fewer resources and wherewithal than their larger competitors, and thus are less able to prepare and file patent applications quickly. Others disagree, stating that smaller concerns are more nimble than larger ones and thus better able to submit applications promptly. They also point to the availability of provisional applications, '9 asserting that such applications allow small entities to secure priority rights readily without a significant expenditure of resources. A quantitative study of interference proceedings by Gerald Mossinghoff, a former Commissioner of the USPTO, also suggested that the first-to-invent rule neither advantaged or disadvantaged small entities vis-a-vis larger enterprises."

The role of the U.S. Constitution is sometimes debated within the context of the patent priority principle. Article I, section 8, clause 8 of the Constitution provides Congress with the authority: "To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Some observers suggest this language suggests, or possibly even mandates, the current first-to-invent system. Others conclude that because the first-inventor-to-file only awards patents to individuals who actually developed the invention themselves, rather than derived it from another, this priority system is permissible under the Constitution."

In analyzing the propriety of these positions, it should be noted that under well-established U.S. law, the first-inventor-in-fact does not always obtain entitlement to a patent. If, for example, a first-inventor-in-fact maintained his invention as a trade secret for many years before seeking patent protection, he may be judged to have "abandoned, suppressed or concealed" the invention." In such a case a second-inventor-in-fact may be awarded a patent on that invention. Courts have reasoned that this statutory rule encourages individuals to disclose their inventions to the public promptly, or give way to an inventor who in fact does so." As the first-inventor-to-file rule acts in a similar fashion to this longstanding patent law principle, conflict between this rule and the Constitution

appears unlikely.

Prior User Rights

The patent reform debate has also considered the expansion of the "first inventor defense" established by the American Inventors Protection Act of 1999. As currently found at 35 U.S.C. 273, an earlier inventor of a "method of doing or conducting business" that was later patented by another may claim a defense to patent infringement in certain circumstances. Though has been devoted towards broadening this defense by allowing it to apply with respect to any patented subject matter.

The impetus for this provision lies in the rather complex relationship between the law of trade secrets and the patent system. Trade secrecy protects individuals from misappropriation of valuable information that is useful in commerce. One reason an inventor might maintain the invention as a trade secret rather than seek patent protection is that the subject matter of the invention may not be regarded as patentable. Such inventions as customer lists or data compilations have traditionally been regarded as amenable to trade secret protection but not to patenting.24 Inventors might also maintain trade secret protection due to ignorance of the patent system or because they believe they can keep their invention as a secret longer than the period of exclusivity granted through the patent system."

The patent law does not favor trade secret holders, however. Well- established patent law provides that an inventor who makes a secret, commercial use of an invention for more than one year prior to filing a patent application at the PTO forfeits his own right to a patent." This policy is based principally upon the desire to maintain the integrity of the statutory proscribed patent term. The patent law grants patents a term of twenty years, commencing from the date a patent application is filed." If the trade secret holder could make commercial use of an invention for many years before choosing to file a patent application, he could disrupt this regime by delaying the expiration date of his patent.

On the other hand, settled patent law principles established that prior secret uses would not defeat the patents of later inventors." If an earlier inventor made secret commercial use of an invention, and another person independently invented the same technology later and obtained patent protection, then the trade secret holder could face liability for patent infringement. This policy was based upon the reasoning that once issued, published patent instruments fully inform the public about the invention, while trade secrets do not. As between a subsequent inventor who patented the invention, and thus had disclosed the invention to the public, and an earlier trade secret holder who had not, the law favored the patent holder.

The American Inventors Protection Act of 1999 reconciled these principles by providing an infringement defense for an earlier inventor of a method of doing business that was later patented by another. By limiting this defense to patented methods of doing business, Congress responded to the 1998 Federal Circuit opinion in State Street Bank and Trust Co. v. Signature Financial Group.29 That judicial opinion recognized that business methods could be subject to patenting, potentially exposing individuals who had maintained business methods as trade secrets to liability for patent infringement. As originally enacted, then, he first inventor defense was arguably a focused provision directed towards a specific group of potential patent infringers.

As presently codified at 35 U.S.C. 273, the first inventor defense is subject to several additional qualifications. First, the defendant must have reduced the infringing subject matter to practice at least one year before the effective filing date of the application. Second, the defendant must have commercially used the infringing subject matter prior to the effective filing date of the patent. Finally, any reduction to practice or use must have been made in good faith, without derivation from the patentee or persons in privity with the patentee.

Legislation proposed in the 109" Congress would have expanded upon the first inventor defense by allowing it to apply to all patented subject matter. The effect of this legislative proposal would have been to introduce "prior user rights" into U.S. law. A feature of

many foreign patent regimes, prior user rights are seen as assisting small entities, which may lack the sophistication or resources to pursue patent protection. The provision of prior user rights would allow such entities to commercialize their inventions when they used the subject matter of the invention prior to the patent's filing date, even when they themselves did not pursue patent rights. For this reason, a more expansive prior user rights regime has also been tied to adoption of the first-inventor-to-file priority system.30

Proponents of prior user rights also assert that the new legislation would support investment in technological innovation. Under this view, firms would not longer be required to engage in extensive defensive patenting, but rather would be able to devote these resources to further innovation. In addition, some commentators observe that many U.S. trading partners, including Germany and Japan, currently allow prior user rights. As a result, U.S. firms that obtain patent rights in certain foreign nations may face the possibility that a foreign firm may enjoy prior user rights in that invention. Foreign firms with U.S. patents do not currently face this possibility with respect to U.S. firms, however. Under this view, adoption of prior user rights in the United States would "level the playing field" for U.S. industry."

Proposals to adopt prior user rights have attracted critics, however. Some observers believe that under such a regime individuals, aware that they could rely upon prior user rights, would be discouraged from disclosing their inventions through the patent system. Others have stated that prior user rights reduce the value of patents and therefore make innovation less desirable. The role ofthe U.S. Constitution is sometimes debated within this context as well. Article I, section 8, clause 8 of the Constitution provides Congress with the authority: "To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Some commentators suggest this language suggests, or possibly requires, a system of exclusive patent rights, rather than patent rights that are mitigated by prior user rights."

Post-Grant Opposition Proceedings

Legislation before the 109' Congress would have introduced post- grant opposition proceedings into U.S. patent law. Oppositions, which are common in foreign patent regimes, are patent revocation proceedings that is usually administered by authorities from the national patent office. Oppositions often involve a wide range of potential invalidity arguments and are conducted through adversarial hearings that resemble courtroom litigation.

Although the U.S. patent system does not currently include oppositions, the U.S. patent system has incorporated a so-called reexamination proceeding since 1981. Some commentators have viewed the reexamination as a more limited form of an opposition. Under the reexamination statute, any individual, including the patentee, a competitor, and even the USPTO Director, may cite a prior art patent or printed publication to the USPTO. If the USPTO determines that this reference raises a "substantial new question of patentability" with respect to an issued patent, then it will essentially reopen prosecution of the issued patent.

Traditional reexamination proceedings are conducted in an accelerated fashion on an ex parte basis. Following the American Inventors Protection Act of 1999, an inter partes reexamination allows the requestor to participate more fully in the proceedings through the submission of argument and the filing of appeals. Either sort of reexamination may result in a certificate confirming the patentability of the original claims, an amended patent with narrower claims or a declaration of patent invalidity.

Congress intended reexamination proceedings to serve as an inexpensive alternative to judicial determinations of patent validity." Reexamination also allows further access to the legal and technical expertise of the USPTO after a patent has issued 34 However, some commentators believe that reexamination proceedings have been employed only sparingly and question their effectiveness."

Some observers have expressed concern that potential requesters are discouraged from

commencing inter partes reexamination proceedings due to a statutory provision that limits their future options. In order to discourage abuse of these proceedings, the inter partes reexamination statute provides that third-party participants may not later assert that a patent is invalid "on any ground that [they] raised or could have raised during the inter partes reexamination proceedings."" Some believe that this potential estoppel effect disinclines potential requesters from use of this postgrant proceeding.

Many observers have called for the United States to adopt an opposition system in order to provide more timely, lower cost, and more efficient review of issued patents." Such a system could potentially improve the quality of issued patents by weeding out invalid claims. It might also encourage innovative firms to review issued patents soon after they are granted, thereby increasing the opportunity for technology spiilovers." Concerns have arisen over oppositions because they too may be costly, complex, and prone to abuse as a means for harassing patent owners." A successful opposition proceeding will require a balancing of these concerns.

Patent Damages Reform

A fundamental premise of the patent system is that the market most effectively assesses the worth of inventions.' Reliance upon market mechanisms allows the government to promote innovation with relatively modest effort and expense, particularly in comparison with the rewardbased systems that are the chief alternatives to patents." As Judge Giles S. Rich explained:

[I]t is one of the legal beauties of the system that what is given by the people through their government-the patent right-is valued automatically by what is given by the patentee. His patent has value directly related to the value of his invention, as determined in the marketplace.

Consistent with this orientation, the patent law aspires to fix damages for infringement at marketbased rates that are intended to compensate the patent proprietor for the

infringement.'

As suggested by the \$1.52 billion damages award Alcatel-Lucent recently obtained against Microsoft, evidence is mounting that judicial determinations of damages for patent infringement have begun to exceed market rates. This problem appears to be due in part to the combination of the increasing popularity of the patent system and the growing sophistication of technology. In the twenty-first century, the number of issued patents has reached a level virtually unimaginable to an earlier generation. By an order of magnitude, the number of extant patents has never been higher than it is today.'

Contemporaneously, technologies have grown more complex. Even everyday consumer products, ranging from cellular telephones to automobiles, commonly incorporate hundreds or thousands of individual components." These trends have resulted in an environment where high technology products increasingly embody not merely a single or handful of patented inventions, but hundreds or even thousands of them.

Within this milieu, the prospect that high technology firms must obtain licenses from multiple patent holders in order to market their products has become a virtual certainty. Yet case law and empirical evidence alike reveal that the courts are inclined towards awarding damages that may far exceed an individual patent's contribution to an infringing product. To name ten such recent cases:

In Bose Corp. v. JBL, Inc.,' the claimed invention consisted of a particular type of "loudspeaker enclosure"-essentially a cabinet in which a stereo loudspeaker sits. In particular, the patented loudspeaker enclosure featured a "port tube" that allowed some of the acoustic energy inside the cabinet to be released with proper attention to phase relationships, in order to eliminate port noise and increase bass response. When assessing damages against an adjudicated infringer, however, the trial court allowed the royalty base to consist of the entire loudspeaker system, rather than just the infringing port tube.

The court of appeals in Code-Alarm, Inc. v. Electromotive Technologies Corp. 47 allowed the value of the entire vehicle alarm system to serve as the royalty base, rather

than the single component (a motion sensor) that was patented.

In Fonar Corp. v. General Elec. Co., the patented invention was limited to a specific imaging feature incorporated into an Magnetic Resonance Imaging (MRI) machine. The court nonetheless upheld a jury's damages award consisting of a royalty based upon the value of an entire accused MRI machine.

The infringed patent in Hem, Inc. v. Behringer Saws, Inc." claimed a "feed table," a mechanical device for moving workpieces, such as sections of wood, towards a saw, drill, or other machine tool. The jury awarded infringement damages based not just upon sales of feed tables, however, but upon the adjudicated infringer's sales of unpatented saws as well.

In Interactive Pictures Corp. v. Infinite Pictures, Inc.," the court of appeals affirmed the inclusion of all of the patent proprietor's products in the royalty base, rather than merely the infringing image viewing system.

Lucent Techs., Inc. v. Newbridge Networks, Inc." involved the infringement of a patented data networking device. With respect to damages, the court allowed two unpatented software programs- designated as 4602 and 46020-to be included in the royalty base, even though they were not physically part of the patented device, and were not even necessary for the patented device to operate.

The Federal Circuit overturned the damages award in Micro Chemical, Inc. v. Leztron, Inc., 12 relating to a microingredient weighing machine that included the patented invention. Overturning the district court, the court of appeals authorized a royalty award based on sales of the unpatented microingredients because it was reasonably foreseeable that the patentee would have profited from sales of the microingredients had the infringement not occurred.

The patentee in State Contracting & Engineering Corp. v. Condotte" was awarded

reasonable royalties based upon the amount of an entire construction contract, rather than merely upon the cost of the patented soundwall.

In Symbol Technologies v. Proxim," the court awarded damages based upon a 6% royalty based upon the infringement of two patents relating to the IEEE 802.11 wireless local area networking standard (commonly known as WiFi). Because hundreds of issued patents and pending applications cover the 802.11 cluster of standards, the royalty obligations of any firm selling WiFi products could be many multiples of the product's sales price.

In Tee Air, Inc. v. Denso Manufacturing Michigan Inc.," a suit involved a patented method and device for balancing a fan inside an assembly, the court of appeals upheld a damages award based upon sales of entire radiator and condenser assemblies.

Damages awards that dramatically exceed the commercial value of a patented invention conflict with the fundamental patent law norm that the marketplace is the best evaluator of an invention's worth. This theoretical imbalance manifests itself through a number of deleterious practical consequences. First, excessive damages awards may promote patent litigation. A rational patent proprietor may be unwilling to make fair royalty demands in the boardroom when they are able to obtain significantly higher damages awards in the courtroom.

Second, the gap between the damages awarded for patent infringement and the marketplace value of a patented invention may also encourage speculation in patents. So-called trollsentrepreneurial speculators who prefer to acquire and enforce patents rather than engage in research, development, manufacturing, or other socially productive activity-may be animated in part by the reality that patent damages awards may exceed profits that can be obtained in the marketplace." Put differently, overly generous damages awards may encourage firms to play the patent game, rather than engage in manufacturing, marketing, or other more socially productive activity.

Third, the failure to apportion patent damages may cause the scope of patent protection routinely to extend beyond the scope of its claims. At times, of course, the scope of the claim does not adequately reflect the marketplace value of the inventor's contribution, due either to claim drafting or commercial marketing decisions. In such circumstances courts appropriately apply the Entire Market Value Rule. Yet when the Entire Market Value Rule effectively becomes the default damages principle, rather than one that applies under only particular circumstances, the actual scope of patent protection may greatly exceed the claim scope that has been sought and obtained. Failure to apportion damages may cause a patent effectively to cover contributions that lie within the public domain, as well as technology that has been patented by third parties or even by the infringer. Current patents remedies practice too quickly disregards a host of patentability and infringement doctrines- including, among others, novelty, nonobviousness, enablement, claim construction, and the doctrine of equivalents-that attempt to achieve a just balance between promoting innovation and preserving competitions'

These three factors contribute to an additional point of concern: The imposition of unreasonable royalty burdens upon high technology manufacturers." Modern products and processes commonly embody numerous patented inventions, with some incorporating on the order of one thousand or more. Overly generous damages awards with respect to just a fraction of these patents may impose infringement liability upon manufacturers that dramatically exceeds the profits the infringer made. Such an outcome fails to recognize that the patent system serves not just to promote innovation, but also to encourage the dissemination of new products and processes to the marketplace."

The decline of apportionment principles may also be due to an affirmative judicial desire to award a prevailing patent proprietor supracompetitive rates as damages. Under this rationale, although courts state that damages award are intended only to compensate patent proprietors for the infringement, they are nonetheless sympathetic to patent proprietors who prevail in litigation but leave the courtroom with market-oriented rates. For example, in the influential decision in Panduit Corp. v. Stahlin Brothers Fibre Works, Inc.," Chief Judge Markey explained that:

Except for the limited risk that the patent owner, over years of litigation, might meet the heavy burden of proving the four elements required for recovery of lost profits, the infringer would have nothing to lose, and everything to gain if he could count on paying only the normal, routine royalty non-infringers might have paid. As said by this court in another context, the infringer would be in a "heads-I-win, tails-you loose positio."

Under this view, failure to augment damages insufficiently compensates patent proprietors who are forced to litigate. It may also encourage infringers to refuse to license voluntarily.

The reasoning in Panduit suffers from several flaws. First, Congress has also stipulated that prevailing patent proprietors may be entitled to the award of a permanent injunction prohibiting future infringement.' Unless the adjudicated infringer can readily shift its manufacturing and distribution facilities to an alternative technology, the imposition of an injunction is likely to be a costly and even fatal event for that enterprise. The availability of an injunction provides an additional incentive for private bargaining, regardless of the award of damages for past infringement.

Second, this line of reasoning ignores the reality that the patent system relies upon stubborn defendants in patent cases to weed out invalid patents.' The punishment of adjudicated infringers through high damages awards would not only discourage private efforts to maintain patent quality, it is also inconsistent with congressional directives expressed within the Patent Act. Notably, Congress has provided for the award of enhanced damages," as well as the award of attorney fees in "exceptional cases. Congress is of course free to expand upon the circumstances in which courts may award punitive damages. Notably, earlier patent statutes called for the automatic award of punitive damages," and one bill introduced in the 109' Congress called for the award of attorney fees to prevailing patent holders." Absent statutory amendments, however, judicial award of punitive damages or attorney fees through the guise of compensatory damages flies in the face of congressional intent.

Because overly generous damages awards may ultimately impede the process of technological innovation and dissemination that the patent system is meant to promote, current legislative reform proposals directed towards infringement remedies appear appropriately focused. In recognition of the concerns of high technology manufacturers, the 109" Congress featured two bills that in part concerned the apportionment of patent damages. In the House of Representatives, the proposed Patent Reform Act of 200569 would have accounted for apportionment as follows:

In determining a reasonable royalty in the case of a combination, the court shall consider, if relevant and among other factors, the portion of the realizable profit that should be credited to the inventive contribution as distinguished from other features of the combination, the manufacturing process, business risks, or significant features or improvements added by the infringer."

An alternative Patent Reform Act of 2006 was later introduced before the Senate." The proposed Senate bill would have addressed apportionment as follows:

In determining a reasonable royalty consideration shall be given to

- (A) the economic value that should be attributed to the novel and nonobvious feature or features of the invention, as distinguished from the economic value attributable to other features, improvements added by the infringer, and the business risks the infringer undertook in commercialization;
- (B) the terms of non-exclusive marketplace licensing of the invention; and
- (C) other relevant factors in applicable law."

The substance of both of these formulations derive from factor 13 of the Georgia-Pacific analysis. Although the differences between the two bills are subtle, they are significant.

The House bill would have required consideration of apportionment "if relevant "-a statutory reform that may have simply confirmed existing law." By requiring that apportionment "shall" be considered in reasonable royalty cases, the Senate bill would have presented a more robust reform proposal.

In addition, the Senate bill appears to have addressed concerns over the precise wording of the House bill." With its use of the seemingly innocuous terms "combination" and "inventive contribution," the House bill awakened memories of older case law from a period that was entirely less favorable to patents. Some decades past, the term "combination patent" was not only a pejorative, it also invoked more stringent validity criteria-- ones that seemed inevitably to result in an invalid patent." The distinct wording of the Senate bill undoubtedly eased some concerns among the patent bar about the unintended invocation of unwelcome patenting standards from an earlier era.

The notion that patent damages should be based upon the value of the inventor's contribution stands among the more venerable damages doctrines in all ofpatent jurisprudence. In an era where apportionment concerns are more cogent than ever, courts have treated this doctrine with surprising neglect. The resulting trend towards overly generous damages awards may allow patentees to obtain proprietary interests in products they have not invented, encourage litigation, promote patent speculation, place unreasonable royalty burdens upon producers of high technology products, and ultimately impede the process of technological innovation and dissemination that the patent system is meant to foster. By better aligning the patent system's aspirations with its practical workings, reinvigoration of apportionment principles may stand among the more significant contributions by current patent reformers.