FENDING OFF PAPER PATENTS AND PATENT TROLLS: A NOVEL "COLD FUSION" DEFENSE BECAUSE CHANGING TIMES DEMAND IT

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ABSTRACT

Can there be a patent without inventing anything? The words evoke contradiction. Yet, "paper patents" are directed to prophetic ideas that had issued as patents without the so-called inventors actually building an operable device or proving the device worked for its intended purpose. Inventors of paper patents did not invent new discoveries; they invented little more than the patents themselves. When alleged inventors simply express an idea in a tangible medium without actually reducing the purported discovery to practice, then they may have fulfilled requirements under the Copyright Act but, plainly stated, they are just that—merely authors. A copyrightable expression of an inchoate idea, however, may not comport with the patent system. Moreover, in recent years a cottage industry of "patent trolls" has grown up around the lucrative patent model of not manufacturing anything. Instead of commercializing products, patent trolls buy up patents (oftentimes older paper patents), wait for the technology and industry to grow up around the patent, and then use the patent as a holdup device for extorting money from would-be defendants wishing to avoid the exorbitant costs of defending against an

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overreaching broadly claimed invention. But the public has a great interest in ensuring that patents cover no more than what the inventor actually discovered before being rewarded with a patent monopoly beyond the scope of the imaginary innovation motivated largely by litigation and the hopes of large damages. Therefore, in these changing times, the rising costs of litigation, and the competitive global economy, a novel "cold fusion" defense is needed to ensure that the author had invented a functioning, operative device commensurate with the utility of invention and not greater in scope than what was actually invented.

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I. INTRODUCTION

In 1859, Abraham Lincoln lectured on the value of patents: "The patent system . . . added the fuel of interest to the fire of genius."[1] Overlooking Pennsylvania Avenue in Washington, D.C., those words are carved in the stone atop the Commerce Building's north end specially designed to house the United States Patent and Trademark Office.[2] Lincoln understood the importance and prosperity that intellectual property brings to a nation, as did the Constitution's framers in 1787 by giving Congress the power 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."[3]

But can there be a patent without inventing? The words evoke contradiction.

In recent years, however, a significant cottage industry has grown up around the lucrative patent model of not manufacturing or inventing anything. Instead, certain enterprises merely buy up patents just sitting on someone's shelves, patents that were never—or in actuality could never be—practiced by the so-called inventor, and dust off these patents for the purpose of extorting nuisance settlements from manufacturers of purportedly related goods.[4] These companies ushered in the era of "patent trolls."[5]

Like the fiendish figures of Scandinavian folklore living under bridges and never actually building the bridge through trial and error or sweat and toil, but, nonetheless, trying to prevent passersby from crossing it without paying a toll, the patent troll

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[1] Jay I. Alexander, *Cabining the Doctrine of Equivalents in* Festo*: A Historical Perspective on the Relationship Between the Doctrine of Equivalents and Prosecution History Estoppel*, 51 AM. U. L. REV. 553, 554 (2002); Diana D. McCall, Note, *Stating the Obvious: Patents and Biological Material*, 2003 U. ILL. J.L. TECH. & POL'Y 239, 242 (2003); Steven L. Nichols, *Hippocrates, the Patent-Holder: The Unenforceability Of Medical Procedure Patents*, 5 GEO. MASON L. REV. 227, 227 (1997).

[2] The United States Patent and Trademark Office (USPTO) is an agency of the United States Department of Commerce.

[3] U.S. CONST. art. I, § 8, cl. 8.

[4] *See* Raymond P. Niro & Paul K. Vickrey, *The Patent Troll Myth*, 7 SEDONA CONF. J. 153, 153 (2006) (citation omitted).

[5] The term "patent troll" was "first used in 2001 by Peter Detkin [of Intel Corp.] to describe the small companies . . . suing Intel for patent infringement" and looking for nuisance-value settlements. Steve Seidenberg, *Troll Control*, A.B.A. J., Sept. 2006, at 51, 53; *see also* Niro & Vickrey, *supra* note 4, at 153.

never conceives of, builds, or makes the alleged invention work. Even so, the patent troll levies those patents against innocent[6] would-be defendants who opt for a settlement in lieu of the exorbitant costs associated with defending against the high-stakes expense of patent litigation.[7]

What is worse, the patent system has allowed these enterprises to brandish "paper patents" in order to coerce a would-be defendant into paying licensing fees to bare-bone, half-baked, and prophetic ideas that were not operable but still managed to make their way through an overworked Patent Office. As used here, a "paper patent" corresponds to a device never actually built or proved by the purported inventor to be workable for its intended purpose before the inventor filed an application that matured as a patent, and therefore, is a device devoid of any commercial value by the patent owner except as a "holdup"[8] device for extorting money, and that would be valuable if some later, true inventor discovers how to make the technology work, such as a "perpetual motion machine" or "cold fusion" that solves the world's energy crisis.[9] Indeed, it can be said that the inventor of a paper patent did not patent any invention but instead only invented a patent.[10]

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[6] "[I]ntent is not an element of direct infringement, whether literal or by equivalents. . . . Infringement is, and should remain, a strict liability offense." Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1527 (Fed. Cir. 1995) (*en banc*).

[7] *See* Eon-Net, L.P. v. Flagstar Bancorp, Inc., No. C05-2129MJP, 2006 WL 3749903, at *4 (W.D. Wash. Dec. 19, 2006) ("The exceedingly high cost of patent litigation provides an infringement defendant facing frivolous, baseless litigation with a strong incentive to settle; such defendants may be willing to pay a 'small' settlement to avoid hundreds of thousands or millions, in legal fees.").

[8] Jeffrey D. Sullivan & David Loretto, Symbol Technologies v. Lemelson, *Prosecution Laches, and the Unmet Challenge of Junking "Junk Patents,"* 33 AIPLA Q.J. 285, 301–02 (2005).

[9] *See generally* Daniel C. Rislove, *A Case Study of Inoperable Inventions: Why is the USPTO Patenting Pseudoscience?*, 2006 WIS. L. REV. 1275.

[10] Derek C. Stettner, *Meet the Patent Enforcers*, WIS. LAW., Apr. 2004, at 19–20; *see also* Jay P. Kesan & Andres A. Gallo, *Why "Bad" Patents Survive in the Market and How Should We Change?—The Private and Social Costs of Patents*, 55 EMORY L.J. 61, 84 n.90 (2006) ("The term 'paper patent' is commonly used to refer to patents that are not employed in any technology or ever licensed. They are property rights merely on paper."); Dan L. Burk & Mark A. Lemley, *Biotechnology's Uncertainty Principle*, 54 CASE W. RES. L. REV. 691, 696 n.17 (2004) ("Of course, in the case of constructive reduction to practice, or filing a 'paper patent' without having actually made the invention, the inventor is in some sense speculating or guessing about the features of an invention not yet built. But even in that instance, the underlying assumption in patent law is

In a very real sense, the fight casts economics against the nexus of patent law and junk science. Before there were patent laws, the inventor had no guarantee against others using the invention, so now patent law gives the inventor a monopoly for a limited time to exclude others from practicing the invention as claimed in the patent—even what might amount to nothing more than a paper patent.[11] When facing a cease and desist letter from a patent troll wielding a paper patent, however, the recipient can quickly estimate from published literature the likelihood of finding itself in a morass of litigation costs and easily sinking millions in defending against a patent infringement lawsuit. One can little blame the would-be defendants for settling with the patent trolls, because patents are presumed valid as a matter of patent law,[12] which places on the defendant[13] the burden of proving the patent invalid by a standard of clear and convincing evidence.[14] In this competitive market, the decision maker can ill afford to ignore sunk costs in legal fees that bite into the proverbial bottom line, but must instead pay close attention to the reality of attorneys' fees billed in six minute increments.

Consequently, rather than "promote" science as envisioned in the Constitution, a patent monopoly over a mere paper patent—foisted by a patent troll—actually cripples legitimate research and development, stymies innovation, and chills healthy competition. The patent troll or inventor of these paper patents receives the boon of the patent monopoly, but the "useful arts" that the Constitution so nobly seeks to advance is not promoted.

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that the inventor 'has' the invention mentally, and so can give a sufficiently detailed description of that inventive conception—physically creating the invention is straightforward.").

[11] Robert E. Thomas, *Vanquishing Copyrights Pirates and Patent Trolls: The Divergent Evolution of Copyright and Patent Laws*, 43 AM. BUS. L.J. 689, 690 (2006).

[12] "A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim." 35 U.S.C. § 282 (2000).

[13] The plaintiff asserting a patent in a patent infringement lawsuit need not show that the patent is valid and enforceable. "The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity." 35 U.S.C. § 282.

[14] "A party seeking to establish that particular claims are invalid must overcome the presumption of validity in 35 U.S.C. § 282 by clear and convincing evidence." Nystrom v. Trex Co., 424 F.3d 1136, 1149 (Fed. Cir. 2005) (citation omitted).

Now, more than ever before, the challenge to America and to the assault on a free-market system is not with Lincoln's fuel of interest or fire of genius, but with a patent system that awards—and rewards—patent monopolies for heretofore apocryphal "perpetual motion machines" and "cold fusion."

This criticism of paper patents and patent trolls should not be interpreted as an attack on the United States Patent and Trademark Office, to suggest that the office is flawed for issuing paper patents, or to endorse a view that the office needs overhauling. Although there is little doubt that "bad" patents thrive in a marketplace absent judicial review due to the costs of challenging the patents,[15] the blame does not fall squarely with the Patent Office. To the contrary, the patent system is being abused. The Patent Office is the result of inspired thinking of such notables as Thomas Jefferson who helped to create in 1802 a Patent Office that fueled the interest and fired the genius, tinkering, and garage inventors to innovate in ways that saved or improved lives and fostered the high standard of living in America over the 200 years that followed.[16] Patent monopolies, far from constituting a failure that thwarts progress, are one of the greatest assets of ingenuity conceived by the framers of the Constitution, and brings prosperity to a nation as Lincoln suggested nearly 150 years ago.

What needs restoring, however, with the necessary assistance of the courts, Congress, and creative new theories from counsel for accused infringers, is a return to the notion that the inventor must actually have invented something. This is a small cost to impose on the inventor for the cost imposed on the public from the patent monopoly.

This Article introduces a "cold fusion" defense because changing times require it. A "cold fusion" defense, as the name implies, exhibits no "utility," and is not operative, ready for patenting, or otherwise in the possession of the applicant at the time of filing the application as required by the Patent Act and the Supreme Court. As with "cold fusion" or "perpetual motion machines," these would greatly improve life if they worked, but the applicant should not get the benefit of a twenty year monopoly that excludes others from independently developing a workable device during the patent's life simply because the

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[15] Kesan & Gallo, *supra* note 10 at 70, 77.

[16] KENNETH W. DOBYNS, HISTORY OF THE UNITED STATES PATENT OFFICE 41 (1994).

applicant won the race to the Patent Office with an application drafted in prophetic fashion.

The patent owner should be held to demonstrate a workable model of the purported invention based on the application as filed, or risk summary judgment at an early stage of the litigation. The patent owner should not be allowed to co-opt the defendant's device in this effort, but ought to be limited to the proof that preexisted the filing date of the application that matured into the asserted patent. Any refusal, inability, or failure to produce such evidence should give rise to a rebuttable presumption of spoliation or else the patentee has no incentive to keep laboratory notebooks, models, or other proof of invention, thereby turning loss of such necessary proof into a game of heads-I-win, tails-you-lose.

Specifically, Part II provides a background discussion on the rationale of the patent system, with a review of Abraham Lincoln's 1859 "Lecture on Discoveries and Inventions" and a brief history of the patent statutes. Part III explores a public interest rationale for invalidating so-called "bad" patents. Part IV offers an overview of the staggering costs of patent litigation broken down by expenses through the end of discovery and total costs through disposition of the case, and an analysis of how, according to some commentators, paper patents and patent trolls will hurt the economy by diverting resources away from research and to the courtroom—a potential burden that accused infringers may feel more acutely with the passage of the new rules relating to electronic discovery under the Federal Rules of Civil Procedure that became effective December 2006. Part V constructs an analysis of the "cold fusion" defense that might prove more useful, and more doctrinally satisfactory, than invalidity counterclaims in attempting to address the problem a defendant has litigating against paper patents and patent trolls.

II. ADDING THE FUEL OF INTEREST TO THE FIRE OF GENIUS

In recent years, an increasing number of attacks have been levied against the United States Patent and Trademark Office ("Patent Office") for the quality of examination it gives to patent applications, and critics have scrutinized this examination as resulting in the Patent Office granting patent claims that are broader than the invention merits.[17] Amidst this criticism lies an

[17] *See, e.g.*, Kesan & Gallo, *supra* note 10, at 63 & nn. 2, 4 (collecting recent

undercurrent of cries to reform the Patent Office, which—though not perfect—serves an invaluable function in the goal of promoting science and progress.

A. *Abraham Lincoln's 1859 Lecture Promoting the Patent System*

As true today as when he gave it in 1859, Abraham Lincoln delivered one of the most stirring defenses to the patent system. Then, just two days past his fiftieth birthday, Lincoln the lawyer traveled to Illinois College located in Jacksonville, Illinois and gave on February 11, 1859, a "Lecture on Discoveries and Inventions."[18]

Lincoln sets the backdrop for his lecture by juxtaposing the technological advantages flowing from a "Young America," in contrast to the considerably less advanced "Old Fogy," by giving a brief account of the history of a world that was slow to change and lumbering along years between advances.[19] Lincoln then urges that the great difference between Young America and the Old Fogy is the result of "Discoveries, Inventions, and Improvements," which follows from "observation, reflection and experiment."[20] He then summoned an example apropos to the topic of discoveries and inventions:

> For instance, it is quite certain that ever since water has been boiled in covered vessels, men have seen the lids of the vessels rise and fall a little, with a sort of fluttering motion, by force of the steam; but so long as this was not specially observed, and reflected and experimented upon, it came to nothing. At length however, after many thousand years, some man observes this long-known effect of hot water lifting a pot-lid, and begins a train of reflection upon it. He says "Why, to be sure, the force that lifts the pot-lid, will lift any thing else, which is no heavier than the pot-lid." "And, as man has much hard lifting to do, can not this hot-water power be made to help him?" He has become a little excited on the subject, and he fancies he hears a voice answering "Try me." He does try it; and the *observation*, *reflection*, and *trial* gives to the world the control of that tremendous, and now well known agent, called steam-power. This is not the actual history in detail, but the

articles criticizing the Patent Office for issuing "so-called 'bad' or improvidently granted patents").

[18] *See generally* 2 LINCOLN: SPEECHES AND WRITINGS 1859–1865, at 3–11 (The Library of America, 11th prtg. 1989) [hereinafter LINCOLN].

[19] *Id.* at 3–4.

[20] *Id.* at 4.

general principle.[21]

According to Lincoln, the "first inventor"[22] would be that person who, through experimentation, trial and error, succeeded in making the thing work.[23] In so doing, Lincoln may have expressed the notion of a "paper patent." Indeed, any person who merely describes the effects of steam or prophetically announces the use of steam to move a heretofore inconceivable locomotive might have copyright protection for expressing the idea in a tangible medium, but the inventor in the sense of a patent is someone who makes the steam engine operable.[24] While patent law protects inventions that were reduced to practice, copyright law extends to any work fixed in a tangible medium and satisfying a relatively low requirement that it is "original," a standard usually satisfied so long as the work was not copied from another and the work was more than merely trivial.[25]

Indeed, giving sole credit to the person who described steam ignores reality and thwarts common sense. "What one observes, and would himself infer nothing from, he tells to another, and that other at once sees a valuable hint in it. A result is thus reached which neither *alone* would have arrived at."[26]

After intimating his opinion, Lincoln then makes clear the point that, in the world's history, discoveries, inventions, and improvements followed more rapidly with "the introduction of Patent-laws"[27] in 1624.[28] And so it was that old-fogyism, of which

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[21] *Id.* at 4–5 (emphasis in original).

[22] *Id.* at 5 ("But was this first inventor of the application of steam, wiser or more ingenious than those who had gone before him? Not at all. Had he not learned much of them, he never would have succeeded—probably, never would have thought of making the attempt.").

[23] *Id.* at 4–5.

[24] *See, e.g.*, *id.* at 3, 5.

[25] 17 U.S.C. § 102(a) (2000) ("Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression . . . ."). Even a derivative work, so long as it entails "a minimal degree of creativity," will be deemed to be "sufficiently original" under the copyright laws. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 348 (1991); *see also* Swirsky v. Carey, 376 F.3d 841, 851 (9th Cir. 2004) ("In this circuit, the definition of originality is broad, and originality means 'little more than a prohibition of actual copying.' All that is needed to satisfy originality is for the author to contribute 'something more than a 'merely trivial' variation.") (internal citations omitted). *See generally* Christopher A. Harkins, *Tattoos and Copyright Infringement: Celebrities, Marketers, and Businesses Beware of the Ink*, 10 LEWIS & CLARK L. REV. 313, 318–19 (2006).

[26] LINCOLN, supra note 18, at 6 (emphasis in original).

[27] *Id.* at 8–9.

[28] *Id.* at 10.

Lincoln spoke as smothering the intellects and energies of the inventor, gave way to a young America motivated by the patent laws.

On the cusp of the sesquicentennial of that 1859 lecture and the bicentennial of his 1809 birth, Lincoln's conclusion so nearly perfectly epitomizes the rationale for patent laws today as it was then, and thereby paid tribute in a manner that best sums up the value, indeed the essence, of a Constitution that paved the way for our patent system:

> Next came the Patent laws. These began in England in 1624; and, in this country, with the adoption of our constitution. Before then, any man might instantly use what another had invented; so that the inventor had no special advantage from his own invention. The patent system changed this; secured to the inventor, for a limited time, the exclusive use of his invention; and thereby added the fuel of *interest* to the *fire* of genius, in the discovery and production of new and useful things.[29]

Perhaps voices discontent with the present Patent Office are justified, or quite possibly their criticisms are misplaced. Still, Lincoln made a strong case for the patent system. And he saw that patent system as reaching beyond the rich; but would instead also emancipate the minds of masses, breaking the mental shackles that looked upon the educated as superior beings, and encouraged all (women[30] and African-Americans,[31] inclusive) that they were capable of rising to equality.[32]

Lincoln carried his pro-patent system message to Milwaukee, Wisconsin later that same year as his Jacksonville lecture. On September 30, 1859 in a lecture given to the members of the

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[29] *Id.* at 10–11 (emphasis in original).

[30] Women, it was suggested by Lincoln, were possibly the first of all inventors: "And this reminds me of what I passed unnoticed before, that the very first invention was a joint operation, Eve having shared with Adam in the getting up of the apron. And, indeed, judging from the fact that sewing has come down to our times as 'woman's work' it is very probable she took the leading part; he, perhaps, doing no more than to stand by and thread the needle. That proceeding may be reckoned as the mother of all 'Sewing societies'; and the first and most perfect 'world's fair' all inventions and all inventors then in the world, being on the spot." *Id.* at 6–7.

[31] "Lincoln believed that the right to patent an invention was fundamental. He even used the right to patent as a means of protesting the *Dred Scott* decision [that, as interpreted, proscribed blacks from] the right to obtain a patent. In an executive rebellion attempting to undermine the decision, Lincoln insisted that federal officers issue patents to black inventors." Nichols, *supra* note 1, at 227 n.1 (citation omitted).

[32] LINCOLN, *supra* note 18, at 10.

Wisconsin State Agricultural Society and citizens of Wisconsin, Lincoln extolled the benefits of pursuing discoveries, inventions, and improvements regardless of station in life: "I know of nothing so pleasant to the mind, as the discovery of anything which is at once *new* and *valuable*—nothing which so lightens and sweetens toil, as the hopeful pursuit of discovery."[33] Moreover, no one should feel limited by education or think of inventions as a right reserved only to the college educated: "And how vast, and how varied a field is agriculture, for such discovery. The mind, already trained to thought, in the country school, or higher school, cannot fail . . . ."[34]

The truth be told, Lincoln's passion for technology, the inventive process, and the patent system was that of a person who spoke from his own experience of relying[35] on the patent system, which experience had added the fuel of interest to the fire of genius in the discovery and production of new and useful things. In fact, ten years before his lecture in Jacksonville, Lincoln obtained on May 22, 1849 his own United States Patent No. 6,469 for a method of "Buoying Vessels over Shoals."[36] According to the Smithsonian Institution Press, Lincoln conceived of his idea in 1848 when, during boat travels, he found himself stranded on a sandbar,[37] and this theory finds support from biographical literature.[38] The gist of the invention is that,

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[33] *Id.* at 99 (emphasis in original).

[34] *Id.*

[35] Geri J. Yonover, *What Hath (Not)* Chakrabarty *Wrought: From the Mouse that Roared to Hello Dolly and Beyond*, 32 Val. U.L. Rev. 349, 354 n.20 (1998) ("Several famous Americans relied on the patent system for protection. Before he became President, Abraham Lincoln himself obtained a patent for a device to free boats from shoals. Patent No. 6469.").

[36] On March 10, 1849, Abraham Lincoln of Springfield, Illinois, filed an application for a patent that the United States Patent and Trademark Office issued Letters Patent No. 6,469 on May 22, 1849. For an image of Lincoln's patent, visit the United States Patent and Trademark Office website at http://www.uspto.gov/patft/ and enter Lincoln's patent number 6,469 in the appropriate field. *See also* Smithsonian Legacies, Patent Model and Application Submitted by Abraham Lincoln, "Method of Buoying Vessels over Shoals," 1849, http://smithsonianlegacies.si.edu/objectdescription.cfm?ID=130 (last visited May 17, 2007).

[37] Smithsonian Legacies, *supra* note 36.

[38] Two-time Pulitzer Prize–winning author David Herbert Donald wrote that Lincoln, at age 22, arrived in 1831 in New Salem, Illinois when working the Sangamon river on a flatboat that became lodged on a milldam: "Loaded with barrels of bacon, wheat, and corn, the flatboat was too heavy to float over the dam, and it began taking on water at an ominous rate. The whole village turned out to watch . . . . The young giant Lincoln attracted their special

when a boat ran aground such as in shallow waters, bellows cold be filled with air such that the vessel, thus buoyed, would be lifted and thereby float clear of the ground.[39] Lincoln is the only United States president ever to be named as an inventor on a U.S. patent.[40] In 1908, the Smithsonian acquired Lincoln's patent model and application from the Patent Office.[41] The model Lincoln had whittled can be seen at the Smithsonian's National Museum in Washington, D.C.[42]

Abraham Lincoln's words are as apt today as they were when written nearly 150 years ago. It is one thing to be genius, but being motivated is a quite different matter—the patent system accounts for the difference.

B. A Brief History of the United States Patent Statutes

The current Patent Act of 1952 is over fifty years old, but traces its roots to April 10, 1790, when President George Washington signed into law a bill that would provide the framework of what would become the American patent system.[43]

Under Section 1 of the 1790 Statute, any person or person could petition the Secretary of State, the Secretary for the department of war, and the Attorney General of the United

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attention as he worked in the water, with his 'boots off, hat, coat and vest off. Pants rolled up to his knees and shirt wet with sweat and combing his fuzzie hair with his fingers as he pounded away on the boat.' Unable to budge the flatboat, he bore a hole in the bow and unloaded enough of the barrels in the rear so that the stern rose up. When the water poured out through the hole, the whole boat lifted and floated over the dam. Townsmen marveled at Lincoln's ingenuity . . . ." DAVID HERBERT DONALD, LINCOLN 38–39 (1995).

[39] *Id.*; *see also* Smithsonian Legacies, *supra* note 36.

[40] *Id.* (Lincoln is "[t]he only American president to receive a patent."); *see also* McCall, *supra* note 1, at 242 ("A more pro-patent rationale was expressed by Abraham Lincoln, the only U.S. president to hold a patent.").

[41] Smithsonian Legacies, *supra* note 36. As a general rule today, specimens and models relating to the invention that the applicant wishes to patent are no longer required to be filed with the Patent Office. 35 U.S.C. § 114 ("The Director may require the applicant to furnish a model of convenient size to exhibit advantageously the several parts of his invention. When the invention relates to a composition of matter, the Director may require the applicant to furnish specimens or ingredients for the purpose of inspection or experiment."). As proposed by this Article, a "cold fusion" defense would expect the patentees to show their invention had "utility," was "ready for patenting," and was in "possession" of the invention at the time of filing the patent application, which presumably can best be shown with a model or specimen that has reduced to practice in workable fashion the claimed invention.

[42] *See* Smithsonian Legacies, *supra* note 36.

[43] Act of April 10, 1790, ch. 7, 1 Stat. 109 (1790) (repealed 1793).

States,[44] which petition shall set forth that "he, she, or they, hath or have invented or discovered any *useful* art, manufacture, engine, machine, or device, or any improvement therein not before known or used."[45] If any two of the Secretary of State, the Secretary for the department of war, and the Attorney General shall deem the invention or discovery sufficiently "useful and important", then a patent may be granted to the petitioner, which patent describes the invention or discovery, "clearly, truly and fully," and grants to the petitioner, for a "term not exceeding fourteen years, the sole and exclusive right and liberty of making, constructing, using and vending to others to be used, the said invention or discovery."[46] Thus, the original patent statute required that the patent be granted only if the invention is "useful," which under current patent parlance would require that there be "utility" (capable of being put to use).[47]

The first patent statute was repealed by the 1793 Statute.[48] Enacted on February 21, 1793, the second patent statute, like its predecessor, also required that the person have demonstrated the invention to be a "new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement" thereof, which was "not known or used before the application."[49]

Over concern and outcry that the second patent statute was little more than a registration system whereby the patent issued upon payment of the application fee,[50] the third patent statute[51] in 1836 repealed the 1793 statute. According to that criticism, an examination system needed to substitute for a registration system that had resulted in many patents for inventions without "merit" and were responsible for an alarming increase in "lawsuits" that were both "onerous to the courts, ruinous to the [defendants], and injurious to society."[52] The 1836 Statute contains the fundamental principles of modern patent law,

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[44] The Patent Office was not formed until 1802. *See* DOBYNS, supra note 16, at 41.

[45] Act of April 10, 1790, ch. 7, 1 Stat. at 109–10 (emphasis added).

[46] *Id.*

[47] WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY UNABRIDGED 2524 (2002) (defining the term "useful" to mean "capable of being put to use: having utility").

[48] Act of Feb. 21, 1793, ch. 11, 1 Stat. 318 (1793) (repealed 1836).

[49] *Id.* at 318–19.

[50] Senate Report Accompanying S. 239, 24th Cong., at 3–4 (1st Sess. 1836).

[51] Act of July 4, 1836, ch. 357, 5 Stat. 117 (1836) (amended in 1870) (repealed in 1952).

[52] Senate Report Accompanying S. 239 at 2.

created a Patent Office with a Commissioner of Patents, and gave that office "the function of examining applications for patents with the power to refuse patents, which was not present in the previous law."[53] As with the patent statutes before it, the 1836 Statute had kept the requirement that the claimed invention be "useful."[54] Coincidentally or not, Lincoln's anecdote about the steam engine apparently had harkened back to what had become the first patent allowed by a patent examination system under the 1836 Statute, which patent bears United States Patent No. 1 from which all present day patents are numbered consecutively thereafter.[55]

The third patent statute was amended by the 1870 Statute[56] and repealed in 1952.[57] The Patent Act of 1952,[58] as amended, exists to this day as the latest patent statute. Like the various incarnations before it, the Patent Act of 1952 retained the requirement that limited patents to inventions that were new and "useful."[59]

Pasquale J. Federico was the primary author of the Patent Act of 1952 and, at that time, the Examiner-in-Chief of the United States Patent Office.[60] Federico's "Commentary on the New Patent Act," which is no longer included in recent editions of Title 35 by Thomson-West Publishing Company, was reprinted in the Journal of the Patent and Trademark Office Society.[61]

Federico characterized usefulness of the invention or discovery

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53 P.J. Federico, *Commentary on the New Patent Act*, 75 J. PAT & TRADEMARK OFF. SOC'Y 161, 164–165 (1993).

54 Act of July 4, 1836, ch. 357, 5 Stat. at 119–20.

55 Prior to the 1836 Statute, patents were not numbered. The first issued patent bearing a patent number (U.S. Letters Patent No. 1) issued on July 13, 1836 to John Ruggles of Thomaston, Maine for a "Locomotive Steam-Engine for Rail and Other Roads." For an image of this patent, visit the USPTO website at http://www.uspto.gov/patft/ and enter the patent number in the appropriate field.

56 Act of July 8, 1870, ch. 230, 16 Stat. 198 (1870) (repealed in 1952).

57 Act of July 19, 1952, ch. 950, 66 Stat. 792 (1952) (codified as amended at 35 U.S.C. § 1).

58 *Id.*

59 35 U.S.C. § 101 (2000).

60 *See generally* Federico, *supra* note 53, at 160 ("Pasquale J. Federico was the primary author of the Patent Act of 1952."); *id.* at 161 n.** (identifying P.J. Federico as "Examiner-in-Chief, U.S. Patent Office").

61 *See generally* Federico, *supra* note 53, at 163–66 (providing an introduction to the prior patent acts of 1790, 1793, 1836, and amendments at various times including 1837, 1839, 1842, 1861, 1870, and from 1874 to 1952 over sixty Acts by Congress relating to patents had been passed to subsequently amend and supplement the 1870 Statute).

as "[o]ne of the basic and most important sections of the old statute was . . . [specifying] the subject matter for which a patent could be obtained," and which the new patent act had retained.[62] Subject to other conditions of patentabilty—such as novelty, non-obviousness, and specification requirements—whoever "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title."[63] Furthermore, the patent application must contain "a written description of the invention, and of the manner and process of *making and using* it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to *make and use* the same."[64]

There was a time when many may have harbored doubts whether members of Congress could join together to introduce a new patent statute. Leading members of the House and Senate Judiciary Committees dispelled those doubts, however, on April 18, 2007, when they introduced bipartisan, bicameral patent reform legislation in the "Patent Reform Act of 2007."[65] If signed into law, the legislation would bring the biggest, most sweeping changes to U.S. patent law in over 50 years.[66]

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[62] *Id.* at 175.

[63] *Id.* at 176. This language closely follows the working of the old statute, *id.*, and has not changed to date, *see* 35 U.S.C. § 101 (2000) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.").

[64] Federico, *supra* note 53, at 185 (emphasis added). This language, except for reduction in wording, is the same as in the old statute, *id.*, and is codified in 35 U.S.C. § 112, ¶ 1 ("The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.").

[65] H.R. 1908 and S. 1145, 110th Cong. 1st Session (Apr. 18, 2007). Senator Orrin G. Hatch (R-Utah) joined Senate Judiciary Committee Chairman Patrick Leahy (D-Vt.) in introducing S. 1145, while Representative Howard Berman (D-Calif.) joined the House Judiciary Committee's ranking member Lamar Smith (R-Tex.) in introducing an identical bill, H.R. 1908. At the time this article is going to press, it remains to be seen whether the Patent Reform Act of 2007 will overcome concerns and reservations of opposition groups and gain the support necessary to become law *in toto* in the near term, or whether it will undergo further refinement and modification in the face of an impending and intense debate.

[66] The patent act has been revised since 1952, including 1994, 1999, and 2002

While early reports suggest that the Patent Reform Act of 2007 is hitting some snags and may not pass without amendments to or deletions of certain sections,[67] a "cold fusion" defense would apply under existing law as well as the proposed legislation. For that reason and for the sake of completeness, it would be remiss to propose a new defense under the current body of patent law without addressing how (or if) the defense would work under the proposed legislation. Under settled law and the legislation as currently proposed, the cold fusion defense promotes consistency

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measures that changed the term of how long the patent would last, but relevant statutory changes by the Patent Reform Act of 2007 are the most sweeping. Section 3 gives priority to the earlier-filed application for a claimed invention, thereby converting the current patent system from a first-to-invent system to a first-inventor-to-file system. Section 5 creates prior user rights, makes it more difficult to plead willful infringement allegations that would now be subject to a "good faith" defense, and requires that a reasonable royalty reflect the patent's "specific contribution over the prior art" (i.e., what was patentably distinct and truly new about the patent) in order to address and overcome perceived problems with the entire market value rule and its "Hail Mary" damages theory that includes non-patented components as the royalty base (*see infra* Part IV.C.2). Section 6 creates a new, post-grant review procedure by which the Patent Office may consider challenges to a patent's validity within one year from the date the patent issues (window one) or anytime during the life of the patent (window two) should a third party show, *inter alia*, that the challenged claim presents a significant economic harm to it or that it received notice from the patent owner alleging patent infringement. Section 10 includes a venue section designed to curb forum shopping by patent owners and is designed to bring about more efficient patent litigation by providing interlocutory appeals to the Federal Circuit jurisdiction when a district court construes the claims of a patent (*see infra* Part V.A). Other changes include Section 4 (streamlining the inventor's oath or declaration), Section 9 (improving patent quality by creating a mechanism for third parties to submit information to the Patent Office before the patent issues), and Section 11 (expanding the rulemaking authority by the Patent Office).

[67] In fact, Chief Judge Paul R. Michel of the United States Court of Appeals for the Federal Circuit has spoken out against the Patent Reform in letters written on May 3, May 21, and June 7, 2007, to leading members of the Judiciary Committee over his concerns with two provisions of the proposed legislation, without commenting on other provisions. Copies of these letters are on file with the author; *see also* http://patentsmatter.com/issue/legislation.php (last visited June 17, 2007). First, Chief Judge Michel argued that an appeal should not lie from the mere fact of a claim construction ruling, because the Federal Circuit would be overburdened with appeals. Instead, he proposes continuing current law where the granting of a dispositive summary judgment motion may be immediately appealed as a matter of right. Second, Chief Judge Michel argued that courts are ill-equipped to deal with the apportioning provision of the proposed legislation that limits damages awards to the economic value added by the claimed invention over the prior art. Rather, he proposes continuing the established law on using apportioning a royalty base for determining lost profits or reasonable royalties under the entire market value rule. *See infra* Part IV.C.2.

and predictability for parties making decisions about the merits of patent infringement cases without delaying the process of resolving those patent suits, facilitates earlier settlements that further the efficient administration of justice, and advances quicker resolution of patent litigation, thereby reducing caseload burdens on federal courts and litigation expenses on parties that can ill afford them. Moreover and as shown below, the defense fits within established principles of current case law that would be unchanged by the proposed legislation.

The Patent Reform Act of 2007 leaves untouched the historically longstanding requirement that patents be limited to new and "useful" inventions.[68] Moreover, comments by members of Congress who introduced each respective bill have clearly revealed an overriding and consistent theme that holds fast to and harkens back to Lincoln's defense of the patent system while affirming a goal advanced in this article of enhancing an increase in the quality of patents:

> The patent system is the bedrock of innovation, especially in today's global economy. . . . America's ingenuity continues to fund our economy, and we must protect new ideas and investments in innovation and creativity. Patents encourage technological advancement by providing incentives to invent, invest in, and disclose new technology. Now, more than ever, it is important to ensure efficiency and increased quality in the issuance of patents.[69]

What's more, the Patent Reform Act of 2007 seeks to put "invent" back into "invention" by, for the first time, defining an "inventor" and a "claimed invention." According to the proposed legislation, the "term 'inventor' means the individual or, if a joint invention, means the individuals collectively who invented or discovered the subject matter of the invention,"[70] while the "term 'claimed invention' means the subject matter defined by a claim in a patent or an application for a patent."[71] And even though the legislative reform might lead to a "first-inventor-to-file" system, the emphasis must necessarily be on the first "inventor"

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[68] Neither the Senate Bill S. 1145 nor the House Bill H.R. 1145 sought to amend Section 101 (the "new and useful" prerequisite to patentability) of the Patent Act of 1952.

[69] *See* Senator Leahy's press release at http://leahy.senate.gov/press/200704/041807a.html (last visited May 17, 2007) and http://hatch.senate.gov/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=1792 (last visited May 17, 2007) for Senator Hatch's press release.

[70] Patent Reform Act of 2007, § 3(a) as set forth in H.R. 1908 and S. 1145.

[71] Patent Reform Act of 2007, § 3(i) as set forth in H.R. 1908 and S. 1145.

to file a patent application that offers the public both a new and useful "invention."[72]

As shown above, the United States patent system underscores that the quid pro quo of obtaining a monopoly for a limited time is for the patentee to promote science by teaching how to "make and use" the invention as claimed. This is not far from what Abraham Lincoln opined, that the first inventor is not the person who merely "observes"[73] but the person who, sometimes years later, has "succeeded"[74] in making it work by seeing a valuable "hint" in it:

> When writing was invented, any important observation, likely to lead to a discovery, had at least a chance of being written down, and consequently, a better chance of never being forgotten; and of being seen, and reflected upon, by a much greater number of persons; and thereby the chance of a valuable hint being caught, proportionably augmented. By this means the observation of a single individual might lead to an important invention, years, and even centuries after he was dead.[75]

Immediacy is important because it guarantees that the insight belongs to the author—that the conception of the invention was formed in the mind of the author as a definite and permanent idea of a complete and operative invention as it was to be applied in practice. It is quite a different matter, however, if the writing should trigger at a later date an insight that belongs to the reader, who, having thought about the extent of what was actually disclosed by the author concludes that this could be done another way or applied to after-arising technology. In that circumstance, it is the reader (not the author) who took the valuable hint and with research or experimentation or through trial and error actually invented the thing.

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[72] Care should now be taken when referring to the term "first-to-file," which might unduly conjure incorrect images of or a return to the patent statute as little more than a registration system. *See supra* text accompanying notes 50–51. Contrary to that image, the Judiciary Committees were very arduous in taking great pains to make clear their intent when titling Section 3: "Right of the First *Inventor* to File." Patent Reform Act of 2007, § 3 as set forth in H.R. 1908 and S. 1145 (emphasis added).

[73] LINCOLN, *supra* note 18, at 6 ("What one observes, and would himself infer nothing from, he tells to another, and that other at once sees a valuable hint in it. A result is thus reached which neither *alone* would have arrived at.") (emphasis in original).

[74] *Id.* at 5 ("[The] first inventor of the application of steam [was not wiser] than those . . . before him . . . [but] succeeded . . . [in] making the attempt.").

[75] *Id.* at 9.

III. THE PUBLIC INTEREST IN INVALIDATING SO-CALLED "BAD" PATENTS

A patent and its corresponding monopoly is a privilege, and the public has an interest in ensuring that it extends only to a complete and operative invention.[76] Indeed, under the Patent Act of 1952 and all previous incarnations, patentability must be conditioned on a public promise that it is new and "useful."[77] Because patent validity affects not only the accused infringer but raises issues of great importance to the public as well, it is as important to uphold a "good patent" as it is "that a bad one be definitely stricken."[78]

A. On the Public Interest in Purging Invalid Patents

The Supreme Court has long held that "[a] patent by its very nature is affected with a public interest. It is an exception to the general rule against monopolies and to the right to access to a free and open market."[79] Due in large measure to the monopolistic power that the patent wields,[80] the Supreme Court favors judicial testing of patent validity and "invalidation of specious patents."[81] Indeed, it is a longstanding edict that public interest is fostered by freedom from invalid patents and their improper restraint on free trade.[82]

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[76] Blonder-Tongue Labs., Inc. v. Univ. of Illinois Found., 402 U.S. 313, 344 (1971) ("The patent is a privilege. But it is a privilege which is conditioned by a public purpose.").

[77] *Id.* at 332 n.23 ("Under §§ 101 and 102 of the 1952 Act, patentability is also conditioned on novelty and utility.").

[78] *Id.* at 331 n.21 ("Patent validity raises issues significant to the public as well as to the named parties.").

[79] *Id.* at 343 (citation and internal punctuation omitted).

[80] U.S. CONST. art. I, § 8, cl. 8 ("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."); *see also* 35 U.S.C. § 154(a)(1) (2000) ("Every patent . . . shall . . . grant to the patentee . . . 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 . . . ."); 35 U.S.C. § 261 (2000) ("[P]atents shall have the attributes of personal property.").

[81] United States v. Glaxo Group Ltd., 410 U.S. 52, 69 (1973) ("Certainly, it is true, as the Court states, that there is a public interest favoring the judicial testing of patent validity and the invalidation of specious patents. For when a patent is invalid, 'the public parts with the monopoly grant for no return, the public has been imposed upon and the patent clause subverted.'") (citations omitted).

[82] Edward Katzinger Co. v. Chicago Metallic Mfg. Co., 329 U.S. 394, 400–01 (1947) ("[This principle is] firmly grounded upon the broad public interest in

Therefore, fundamental to the patent system is the principle that patents shall be issued only to inventions that can be practiced, and the "quid pro quo" for the limited monopoly is disclosure of that invention.[83] Accordingly, the patent and its ensuing monopolistic privilege "results from invention and is limited to the invention which it defines."[84] The disclosure fixes the invention and cannot be treated as a "nose of wax"[85] to be stretched, prodded, and molded for expedience sake such as during litigation.

Lincoln's factors of fueling interest to the fire of genius also buttress the rationale for purging flawed patents. According to the Supreme Court, the patent system was carefully crafted such that striking a "balance between the interest in motivating innovation and enlightenment by rewarding invention with patent protection on the one hand, and the interest in avoiding monopolies that unnecessarily stifle competition on the other, has been a feature of the federal patent laws since their inception."[86] As argued in a 2006 dissenting opinion[87] by

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freeing our competitive economy from the trade restraints which might be imposed by price-fixing agreements stemming from narrow or invalid patents. . . . In thus emphasizing the necessity of protecting our competitive economy by keeping open the way for interested persons to challenge the validity of patents which might be shown to be invalid, the Court was but stating an often expressed policy that 'It is the public interest which is dominant in the patent system,' and that the right to challenge 'is not only a private right to the individual, but it is founded on public policy which is promoted by his making the defen[s]e, and contravened by his refusal to make it.'") (internal citations omitted); Marconi Wireless Tel. Co. of Am. v. United States, 320 U.S. 1, 48 (1943) ("[T]he public interest that an invalid patent be not sustained is sufficiently great . . . ."); Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1353 (Fed. Cir. 2001) (noting "[t]he public interest in invalidating invalid patents").

[83] Enzo Biochem, Inc. v. Gen-Probe Inc., 323 F.3d 956, 970 (Fed. Cir. 2002); *see also* Capon v. Eshhar, 418 F.3d 1349, 1357 (Fed. Cir. 2005) (The disclosure requirement is a prerequisite to satisfying "the policy premises of the law, whereby the inventor's technical/scientific advance is added to the body of knowledge, as consideration for the grant of patent exclusivity.").

[84] *Blonder-Tongue Labs.*, 402 U.S. at 344.

[85] Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995); *see also* Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378–79 (Fed. Cir. 1998) ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.") (citations and internal punctuation omitted); *id.* at 1378 ("The public has a right to rely on such definitive statements made during prosecution.") (citations and internal punctuation omitted).

[86] Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 63 (1998) ("[T]he patent system represents a . . . bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive

Supreme Court Justice Stephen G. Breyer (joined by Justice John Paul Stevens and Justice David H. Souter), the dissenting justices stated the reason exclusion of abstract "ideas" from patent protection "is that sometimes *too much* patent protection can impede rather than 'promote the Progress of Science and useful Arts,' the constitutional objective of patent and copyright protection."[88] Just as the patent system provides "monetary incentives for invention," the problem arises from patents that impede research by forcing researchers to avoid "ideas" if patented, leading to "costly and time-consuming" investigations on the Patent Office for issued patents or pending applications, and prohibitively "raising the costs of using [allegedly] patented information."[89] Thus, patent law balances the goal of creating incentives to invent while avoiding dangers of overprotection.[90] The dissent's concluding remarks asserted that, if "the patent is invalid, then special public interest considerations reinforce my view that we should decide the case."[91]

Moreover, a broadly worded extant patent might serve as a "blocking patent"[92] on other valuable uses for the teachings of that patent even if developed and discovered by another. Consider the following hypothetical enunciated by the Federal Circuit. Person A invents a shoe polish for shining shoes, and

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monopoly for a limited period of time.").

[87] Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc., 126 S. Ct. 2921, 2921 (2006) (Breyer, J., dissenting) (dissenting to the Supreme Court's per curiam opinion dismissing a writ of certiorari as improvidently granted).

[88] *Id.* at 2922 (emphasis in original).

[89] *Id.*

[90] *Id.* ("Patent law seeks to avoid the dangers of overprotection just as surely as it seeks to avoid the diminished incentive to invent that underprotection can threaten."). Conjuring images of Lincoln's patent on a "Method of Buoying Vessels over Shoals," *supra* notes 36–42 and accompanying text, the dissent pronounced that "[o]ne way in which patent law seeks to sail between these opposing and risky shoals is through rules that bring certain types of invention and discovery within the scope of patentability while excluding others." *Lab. Corp. of Am. Holdings*, 126 S. Ct. at 2922 (Breyer, J., dissenting).

[91] *See id.* at 2928–29 (Breyer, J., dissenting) ("To fail to do so threatens to leave the medical profession subject to the restrictions imposed by this individual patent and others of its kind. Those restrictions may inhibit doctors from using their best medical judgment; they may force doctors to spend unnecessary time and energy to enter into license agreements; they may divert resources from the medical task of health care to the legal task of searching patent files for similar simple correlations; they may raise the cost of healthcare while inhibiting its effective delivery.").

[92] Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 810 (Fed. Cir. 2002).

Person B independently discovers that the Person A's claimed composition for shoe polish actually has a new use of growing hair when rubbed on bare skin.[93] While Person B might obtain a patent on the use of Person A's composition for growing hair, Person B shall not be able to use its own independent invention.[94] Though the court's hypothetical is simplistic and perhaps intended to be somewhat humorous, it is instructive of other potential scenarios such as someone independently developing a new use for an old composition or instrumentality wherein the new use is a medication or medical device that saves or improves the quality of lives.

Against this backdrop, the patent system was designed to ensure that all patents meet the patentability requirements under the Patent Act of 1952, and the courts are entrusted with the enforcement role of weeding out invalid patents that have failed to satisfy those mandates.[95] When the court invalidates a patent it does so "with the public interest in mind."[96] Therefore, in the interest of the public, invalid patents ought to be purged with a court finding of invalidity such that, if the inventor fails to meet her end of the bargain by not disclosing her invention in the patent itself, the inventor forfeits the right to exclude others from practicing the ostensible invention. The public interest is thus served by invalidating valueless patents that are onerous to the courts, ruinous to the accused infringer, and injurious to society.

Similarly, the Patent Reform Act of 2007 evinces a legislative effort to refine the current patent act in order to bolster the

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[93] *Id.* at 809–10.

[94] *Id.* at 810. The patent owner cannot be forced to license its patent. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1555 (Fed. Cir. 1995) (explaining that the courts do not recognize a "compulsory license").

[95] *See* John D. Livingstone, Comment, *Uniformity of Patent Law Following* Florida Prepaid*: Should the Eleventh Amendment Put Patent Owners Back in the Middle Again?*, 50 Emory L.J. 323, 326–335 (2001) (detailing the patentability requirements under the Patent Act of 1952 and noting that because of the Court's role interpreting claims, "it is vital that judges understand the science that drives the litigation . . . [and it] requires a judicial system that can provide unity through scientific and legal interpretation.").

[96] J. Nicholas Bunch, Note, *Takings, Judicial Takings, and Patent Law*, 83 TEX. L. REV. 1747, 1756 n.50 (2005) (arguing that "when the court speaks—by invalidating a patent—it is speaking with the public interest in mind. The patent system is designed to protect inventions that meet certain requirements, but deny protection to those that do not. The courts are entrusted in this system with the enforcement role, and when they conclude—even on the basis of a new rule—that a certain patent does not meet the patentability requirements, that decision is in the public interest.").

public interest in, and integrity of, patents by ensuring an increased quality of patents through a system that encourages and facilitates striking down low quality patents. Specifically, the crafters who fashioned this bicameral, bipartisan patent reform initiative have stressed the need to challenge patent claims that are broader than what is merited by the invention:

> The bottom line in this is there should be no question that the U.S. patent system produces high quality patents. Since questions have been raised about whether this is the case, the responsibility of Congress is to take a close look at the functioning of the patent system. . . . High patent quality is essential to continued innovation. Litigation abuses, especially ones committed by those which thrive on low quality patents, impede the promotion of the progress of science and the useful arts. Thus, we must act quickly to maintain the integrity of the patent system.[97]

This Congressional attempt to adopt a meaningful patent reform aimed, in part, at a proverbial cleaning house of low quality patents will impact all companies, patent owners, and Americans, and reflects the importance that maintaining a high standard of good patents, while mitigating the harm caused by bad patents, will have on the US economy.

B. Hurdles of Presumed Validity and Administrative Correctness

Under Section 282 of the patent statute, "a patent enjoys a presumption of validity."[98] In order to overcome the presumption, the accused infringer must mount clear and convincing evidence of invalidity.[99] At times, the invalidity defense presents a question of fact, at other times a question of law, and even a mixed question of law and facts depending on whether the invalidity defense is based on "utility,"[100]

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[97] *See* Senator Leahy's and Senator Hatch's press releases, *supra* note 69.

[98] SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357 (Fed. Cir. 2006). "A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim." 35 U.S.C. § 282 (2000).

[99] *SRAM Corp.*, 465 F.3d at 1357.

[100] Under the "utility" requirement of 35 U.S.C. § 101, the invention must be useful, which is a question of fact. Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1359 (Fed. Cir. 1999) (holding claims invalid based on inoperability and a failure to comply with the utility and enablement requirements).

"anticipation,"[101] "obviousness,"[102] "enablement,"[103] "best mode,"[104] "written description,"[105] or "indefiniteness."[106] Thus, an accused infringer seeking to invalidate a patent at summary judgment[107] must carry the burden of proving by "clear and convincing evidence" that no reasonable fact finder could find the patent

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[101] Anticipation as interpreted under 35 U.S.C. § 102(b) means that the invention is not new (novel), which is a question of fact. SeaChange Int'l, Inc. v. C-Cor Inc., 413 F.3d 1361, 1379 (Fed. Cir. 2005).

[102] The test of whether a patent is invalid for "obviousness" under 35 U.S.C.A. § 103(a) is dependent on underlying factual determinations that, in a jury trial, are decided by the jury, with the ultimate question of obviousness being a legal conclusion for the court. Dystar Textilfarben GmbH & Co. v. C.H. Patrick Co., 464 F.3d 1356, 1360 (Fed. Cir. 2006); Kao Corp. v. Unilever U.S., Inc., 441 F.3d 963, 968 (Fed. Cir. 2006). The United States Supreme Court recently reiterated the analytical framework for courts to follow when applying Section 103(a): determining the scope and content of the prior art, ascertaining the differences between the prior art and the patent claims at issue, resolving the level of ordinary skill in the pertinent art, considering objective indicia of nonobviousness if in issue (nexus of the invention to commercial success, long felt but unmet needs, failure of others, to name a few), and against this backdrop determining obviousness or nonobviousness. KSR Int'l Co. v. Teleflex, Inc., 127 S. Ct. 1727, 1734 (2007).

[103] "Enablement" under 35 U.S.C. § 112, ¶ 1 is a legal determination by the court based on underlying factual inquiries. Old Town Canoe Co. v. Confluence Holdings Corp., 448 F.3d 1309, 1320 (Fed. Cir. 2006); Falko–Gunter Falkner v. Inglis, 448 F.3d 1357, 1363 (Fed. Cir. 2006); *Process Control Corp.*, 190 F.3d at 1359.

[104] A patent is invalid under 35 U.S.C. § 112, ¶ 1, if, at the time of filing a patent application, an applicant failed to disclose the "best mode" or "preferred" way of using the invention in order to place the invention in the possession of the public, which involves factual inquires. *Old Town Canoe Co.*, 448 F.3d at 1320.

[105] The "written description" requirement of 35 U.S.C.A. § 112, ¶ 1 is violated (and the patent invalid) if the patent fails to detail sufficiently the invention such that a person of ordinary skill in the art understands what is being claimed and recognizes that the named inventor invented what is claimed to be the invention. This is a question of fact for the fact finder. *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1336–37 (Fed. Cir. 2006); *Falko-Gunter Falkner* 448 F.3d at 1363; *Kao Corp.*, 441 F.3d at 967.

[106] Unless the patent concludes with claims that particularly point out and distinctly claim the subject matter that the inventor regards to be the invention, it is invalid as "indefinite" under 35 U.S.C. § 112, ¶ 2. The court, even in a jury trial, decides the legal conclusion of whether the claims are invalid for indefiniteness. *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005); *see also Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999) ("A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims.") (citation omitted).

[107] Summary judgment is proper when "there is no genuine issue as to any material fact" and "the moving party is entitled to judgment as a matter of law." FED. R. CIV. P. 56(c).

valid.[108]

In addition to the statutory presumption of validity, patent validity is also bolstered by a "presumption of administrative correctness"—a notion that patent examiners do their jobs correctly and that the Patent Office, charged with the job of issuing only valid patents, should not be second guessed.[109] According to the Federal Circuit, "our patent system depends primarily on the Patent and Trademark Office's ('PTO's') care in screening out invalid patents during prosecution."[110] The presumption of administrative correctness mostly applies when (or at least could not be stronger as when) it concerns matters the accused infringer presents in support of invalidity are essentially the same as those previously considered by the Patent Office, such as when the accused infringer relies on prior art previously considered by the patent examiner and which, notwithstanding, the patent claim was allowed.[111] Thus, the presumption of administrative correctness should not be equated as just another incarnation of the presumption of validity,[112] but together they form hurdles for any challenge to patent invalidity.

Notwithstanding these presumptions, countervailing arguments raise concerns over the competency (or at least the workload) of the Patent Office.[113] The Patent Office, like any

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[108] SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357 (Fed. Cir. 2006).

[109] Superior Fireplace Co. v. Majestic Prods. Co., 270 F.3d 1358, 1380–81 (Fed. Cir. 2001) (Dyk, J., dissenting); Applied Materials, Inc. v. Advanced Semicon. Materials Am., Inc., 98 F.3d 1563, 1569 (Fed. Cir. 1996); Lannom Mfg. Co. v. U.S. Int'l Trade Comm'n, 799 F.2d 1572, 1575 (Fed. Cir. 1986); Am. Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1359 (Fed. Cir. 1984).

[110] Prima Tek II, L.L.C. v. Polypap, S.A.R.L., 412 F.3d 1284, 1287 (Fed. Cir. 2005).

[111] *Am. Hoist*, 725 F.2d at 1359–60.

[112] *In re* Etter, 756 F.2d 852, 861 (Fed. Cir. 1985) (Nies, J., concurring) (explaining that presumption of validity and the presumption of administrative regularity or correctness are separate concepts); *Am. Hoist*, 725 F.2d at 1359–60.

[113] Criticism of the Patent Office, however, may not be admissible in some courts unless the patentee opens the door. Bausch & Lomb, Inc. v. Alcon Labs., Inc., 79 F. Supp. 2d 252, 255–56 (W.D.N.Y. 2000) ("It appears that the purpose of this testimony would be to attempt to undermine the presumption of validity under 35 U.S.C. § 282 by inviting the jury to speculate about possible defects, errors, or omissions in the application process that led to the issuance of the patent-in-suit . . . . But generalized testimony about 'problems' in the PTO is not admissible. . . . I caution plaintiff that if it opens the door by suggesting that 'some extraordinary deference is due in this case,' the court may revisit this ruling.") (citations omitted); Applied Materials, Inc. v. Advanced Semicon. Materials Am., Inc., No. C 92-20643 RMW, 1995 WL 261407, at *3 (N.D. Cal. Apr. 25, 1995) ("Testimony about overwork, quotas, awards or promotions at the

government agency, often does not have sufficient resources to do its job as well as it may like. The most vexing difficulties and challenges confronted by examiners are a quota system and a serious lack of time sufficient to investigate and review thoroughly a patent application when hundreds of thousands of applications are filed each year.[114] Patent examiners are only human and are under great pressure that could lead to their taking the easy way out, i.e., allowing an application. And patent grants have been issued at increasing rates since Lincoln's U.S. Patent No. 6,469 in 1849: The Patent Office issued the 3,000,000th patent in 1961, 4,000,000th patent fifteen years later in 1976, the 5,000,000th after another fifteen years in 1991, the 6,000,000th in 1999, and the 7,000,000th in 2006.[115] As a result, patent quality is a genuine topic for debate. Based on the number of patents declared invalid each year by the Federal Circuit Court of Appeals, assuring that only meritorious patent applications are allowed has proven to be an elusive goal and perhaps an unattainable target to date, thereby inspiring, in some folks, little confidence as to the legitimacy of patents.

When a substantial question exists relating to the correctness of the monopolistic grant that attaches to every patent, it does not conflict (but coincides) with the nature of the public interest that accused infringers ought to have a fair shake at judicial review of the propriety of the grant in whole or in part. Pragmatically speaking, however, the presumptions of validity and administrative correctness erect just two of the obstacles to challenging an invalid patent.

Patent Office, or the number of patents that issue annually or insinuating that the Patent Office does not do its job properly is excluded. Such evidence would be irrelevant speculation and would constitute an inappropriate attack on the Patent Office."). The *Applied Materials* court warned that it would reconsider its ruling if the door was opened by the patent owner "presenting evidence suggesting . . . extraordinary deference" to the Patent Office. *Id.*

[114] *See Applied Material*, 1995 WL 261407 at *3; *see also* GOV'T ACCOUNTABILITY OFFICE, INTELLECTUAL PROPERTY: IMPROVEMENTS NEEDED TO BETTER MANAGE PATENT OFFICE AUTOMATION AND ADDRESS WORKFORCE CHALLENGES (2005), *available at* http://www.gao.gov/htext/d051008t.html.

[115] *See generally* USPTO Patent Full-Text and Image Database, http://patft.uspto.gov/netahtml/PTO/srchnum.htm (last visited May 17, 2007); *see also* U.S. Patent Number Dating Chart, http://www.925-1000.com/patent.html (last visited May 17, 2007).

IV. RISING COSTS OF PATENT LITIGATION MAKE IT INCREASINGLY PROHIBITIVE TO CHALLENGE PATENT VALIDITY

In theory, invalid patents are subject to attack. In reality, these patents evade attack when litigation costs—making it economically more feasible to take a license to a bad patent—deter meritorious challenges. Mindful of these considerations, the Federal Circuit has noted that, "if an invalid patent is issued, competitors may be deterred from challenging it by the substantial cost of litigation. Even if a successful challenge is brought, competition may be suppressed during the pendency of the litigation."[116] The Federal Circuit's view embraces a fundamental question answered below.

A. How Much Will It Cost to Defend that Patent Infringement Suit?

Posing that question in a recent survey revealed a startling answer: Possibly millions. And that is just the cost of defense (win or lose).[117]

Patent litigation is outrageously expensive, driven in part by the complexities of the technical and legal issues, uncertainties of claim scope, and the amount at stake.[118] Indeed, the amount at stake necessarily could exceed the present value of the accused infringer, because the patent owner wields a monopoly that could shut down a company.[119] This leads to hard-fought litigation and little compromise or agreement among the parties and their counsel.

The Law Practice Management Committee of the American Intellectual Property Law Association ("AIPLA") is tasked with the job of conducting a survey of its members, which survey includes questions relating to costs of various legal services.[120] One such topic is the cost of patent litigation. The most recent survey results were published in late 2005.[121]

The breakdown for typical patent litigation costs considered the amount at risk as well as the amount spent at two stages

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116 Prima Tek II, L.L.C. v. Polypap, S.A.R.L., 412 F.3d 1284, 1287 (Fed. Cir. 2005).

117 AM. INTELL. PROP. LAW ASS'N (AIPLA), REPORT OF THE ECONOMIC SURVEY 22–23 (2005).

118 *See generally id.*

119 *Id.*

120 *Id.* at 1.

121 *Id.*

during the litigation: through the end of discovery, and "total costs"[122] through disposition of the case.[123] Through discovery for a case when $1 million is at risk, the same case that cost $250,000 in 2001 turned out to cost $290,000 in 2003 and, in 2005, rose to $350,000, while total costs incurred exceeded half of the value at risk: $499,000 in 2001; $500,000 in 2003; and $650,000 in 2005.[124]

Turning to the next echelon where the patent owner alleged damages in excess of $1 million, the cost of discovery rose from $797,000 in 2001 to $1.001 million in 2003 and $1.25 million in 2005, while the total costs for these years were $1.499 million, $2 million, and $2 million, respectively.[125] When more than $25 million was at risk, the discovery costs increased from $1.508 million in 2001 to $2.508 million in 2003 and $3.000 million in 2005, according to the AIPLA report, with total costs increasing from $2.992 million to $3.995 million to $4.500 million for 2001, 2003, and 2005, respectively.[126]

So, the stakes are high—both the amount at risk as well as the typical costs simply to defend against allegations of patent infringement. And the amount of money spent each year in the United States litigating over patent suits will likely increase given that the number of patent suits filed each year has risen from 1,212 filed in 1990 to 1,706 in 1995 to 2,460 in 2000 and 2,706 in the last reported year of 2005.[127]

If a realistic remedy lies in challenging an improvidently issued patent, then something must be done to reduce the cost of litigation in a system that deters competitors from challenging patent invalidity. In an effort to make patent litigation more efficient, Congress has recently proposed one possible solution.

The United States House of Representatives on September 28, 2006, passed a patent pilot program[128] and on January 4, 2007

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[122] Total cost included outside legal and paralegal services, local counsel, travel expenses, fees and costs for court reporters, photocopies, couriers, exhibit preparation, expert witnesses, and jury consultants. *Id.* at 22.

[123] *Id.* at 22.

[124] *Id.* at 22–23.

[125] *Id.*

[126] *Id.*

[127] For data on patent lawsuits filed, *see* Judicial Facts and Figures, tbl. 4.7, http://www.uscourts.gov/judicialfactsfigures/2005/Table407.pdf (last visited May 17, 2007).

[128] See H.R. 5418, 109th Cong. (2006) (authorizing a patent pilot program wherein judges, located in the five venues where the greatest number of patent lawsuits were filed in 2005, could request to hear patent cases or, alternatively,

reintroduced the bill in order to establish a patent "pilot program in certain United States district courts to encourage enhancement of expertise in patent cases among district judges."[129] The patent pilot program, if passed into law, will address concerns over the expensive nature of patent litigation and effect on judicial resources.[130] Any savings to the accused infringer, however, will likely be offset or eclipsed by the amendments to the Federal Rules of Civil Procedure that went into effect on December 1, 2006 and require electronic discovery.[131] These amendments greatly increase the volume and scope of potentially relevant data[132] and the cost of discovery given the general presumption that the responding party must bear the expense of complying with discovery requests.[133]

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opt out of hearing patent cases—thereby resulting in a comparative advantage and concomitant increased efficiency for the judges who regularly hear patent cases). On September 21, 2006, the Senate referred a similar bill for review by the Senate Judiciary Committee. S. Res. 3923, 109th Cong. (2006) (authorizing a pilot program in certain United States district courts to encourage enhancement of expertise in patent cases among district judges).

[129] See H.R. 34, 110th Cong. (2007).

[130] One commentator in 1990, while addressing concerns over the admissibility of scientific evidence under the *Frye* doctrine and Federal Rule of Evidence 702, suggested legislation that would create judicial/technical panels from "present judicial structure" wherein "the judges who would constitute the panel are already on the bench." John W. Osborne, *Judicial/Technical Assessment of Novel Scientific Evidence*, 1990 U. ILL. L. REV. 497, 542 (1990).

[131] FED. R. CIV. P. 16(b)(5) (requiring the scheduling order to provide for discovery of electronically stored information); FED. R. CIV. P. 26(a)(1)(B) (recognizing that a party must disclose electronically stored information as well as documents); FED. R. CIV. P. 26(b)(2)(B) (a responding party should produce electronically stored information that is reasonably accessible); FED. R. CIV. P. 33(d) (electronically stored information may be produced in lieu of answering the interrogatory); FED. R. CIV. P. 34(a) (including electronically stored information in the definition of discoverable material); FED. R. CIV. P. 37(f) (sanctions in failing to provide electronically stored information that was not "lost as a result of the routine good-faith operation of an electronic information system.").

[132] *See* Nathan Drew Larsen, *Evaluating the Proposed Changes to Federal Rule of Civil Procedure 37: Spoliation, Routine Operation and the Rules Enabling Act*, 4 NORTHWESTERN J. OF TECH. & INTELL. PROP. 212, 216 (2006).

[133] Oppenheimer Fund, Inc. v. Sanders, 437 U.S. 340, 358 (1978). Electronic discovery has the potential to be vastly more expensive due to the volume of potentially relevant data and ease of storage. Zubulake v. UBS Warburg LLC, 229 F.R.D. 422, 436 (S.D.N.Y.2004). While costs might be shifted to the requesting party under certain circumstances, there will be costly battles over when those circumstances have been met, and serious consequences when electronic discovery has been lost. *See generally* Wiginton v. CB Richard Ellis, Inc., 229 F.R.D. 568, 572 (N.D. Ill. 2004); *see* Zubulake v. UBS Warburg LLC, 229 F.R.D. 422, 437 (S.D.N.Y. 2004).

B. Why Accept a License to a Paper Patent Subject to an Invalidity Attack?

Costs of litigation create a proverbial carrot that patent trolls dangle in front of would-be defendants in order to entice or, as some have argued, extort a nuisance settlement. Coupled with presumptions of validity and administrative correctness, the accused infringer must weigh the differing burdens of proof between its burden of establishing invalidity by clear and convincing evidence versus a finding of infringement, which need only be proved by a preponderance of the evidence.[134] Moreover, even if a would-be defendant were successful in challenging a patent's validity, competition may be suppressed during the pendency of the litigation, especially when customers become reluctant to purchase allegedly infringing product or when the defendant pulls the product from the market in order to stave off willfulness damages. Thus, a potential or actual defendant might succumb to the threat of even a weak infringement suit and give up a reasonably strong invalidity counterclaim, because one benefit accruing to a business by accepting a license from a patentee who was threatening to file a suit is the avoidance of defending an expensive patent infringement action during periods when the business may be least able to afford one.[135]

The expense of patent litigation has many casualties. First, assuming that a judgment of invalidity should be rendered

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[134] SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357 (Fed. Cir. 2006) (explaining that the presumption of invalidity "can be overcome only through facts supported by clear and convincing evidence"); Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1310 (Fed. Cir. 2005) ("To prove direct infringement, the plaintiff must establish by a preponderance of the evidence that one or more claims of the patent read on the accused device literally or under the doctrine of equivalents."); Warner-Lambert Co. v. Teva Pharm. USA, Inc., 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005) (stating that preponderance of the evidence "simply requires proving that infringement was more likely than not to have occurred.").

[135] James Bessen & Michael J. Meurer, *Lessons for Patent Policy from Empirical Research on Patent Litigation*, 9 LEWIS & CLARK L. REV. 1, 16 (2005) ("A rational defendant will sometimes yield to the threat of a weak suit for three main reasons. First, court errors are difficult to avoid in patent litigation, because claim interpretation is complex and it is difficult for fact-finders to assess evidence of infringement. Thus, a deserving defendant may face a significant risk of liability. Second, a weak lawsuit may be difficult to distinguish from a strong lawsuit, at least until defendant gathers information about the patent through discovery. Finally, even a weak lawsuit may impose significant costs on the defendant, and the defendant might settle to avoid the nuisance of mounting a defense.").

against the asserted patent, the total costs an accused infringer might bear simply to prove invalidity "deter meritorious challenges" to bad patents.[136] Second, in lieu of the high cost of defending against the patentee's accusations, the accused party has expended funds on a license to protect itself from a patent that is invalid, which moneys could be put to better use, such as further research and development.[137] Those payments place the alleged infringer at a competitive disadvantage vis-à-vis other competitors in the marketplace who were not sued, or alleged infringers who could afford to litigate. The license has several economic consequences for the settling party, which must absorb the royalty costs in order to compete with other manufacturers, thereby cutting the profitability of its business and perhaps assuring that it will never be in a financial position to challenge[138] the patent in court or compete efficiently with others in the marketplace.[139] And third, there are social costs of patent litigation such as the crippling effect it has on innovation.[140]

C. The Controversy Surrounding Alleged Patent Trolls

Regardless of which side of the aisle one finds itself in enforcing patents or defending against them, all can agree on one thing. Whether in the eye of the beholder or not, so-called patent trolls find themselves front and center in critical debates over the patent system and are providing impetus for major proposed legislation ostensibly designed to deal with the perceived problem.[141]

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[136] Kesan & Gallo, *supra* note 10, at 69 n.36 ("Although they [bad patents] are prone to attacks on their validity, bad patents may nevertheless deter meritorious challenges: '[S]mall companies may not be willing to invest resources in such a challenge, especially with the presumption of validity that attends PTO decisions. Rather, it may make more sense for these companies to accept a license fee from the patentee, thereby leaving the inappropriate patent unchallenged.'") (citation omitted).

[137] Bessen & Meurer, *supra* note 135, at 10; Seidenberg, *supra* note 5 at 51.

[138] In *MedImmune, Inc., v. Genentech, Inc.*, 127 S. Ct. 764, 767 (2007), the Supreme Court rejected the Federal Circuit's settled view that a patent licensee must "terminate or be in breach of its license agreement before it can seek a declaratory judgment that the underlying patent is invalid, unenforceable, or not infringed." After *MedImmune*, a patent licensee may challenge the validity of the licensed patent.

[139] *See generally* Landers, *infra* note 144 (discussing royalties).

[140] Bessen & Meurer, *supra* note 135, at 25 (stating that "[i]t is possible that increasing litigation imposes an increasing burden on innovators who cannot avoid the growing maze of patents and ambitions of patent owners.").

[141] Raymond P. Niro, *Who Is Really Undermining the Patent System—"Patent*

They have been labeled intellectual property "ambulance chasers,"[142] "patent system bottom feeders,"[143] and patent "terrorists."[144] They are "patent trolls."[145] Critics have assailed patent trolls as companies that neither produce products nor commercialize patents but merely shake down, to the detriment of their prey, innocent companies attempting to create and sell products, with the consequence that the freeloading patent troll causes a stifling effect on innovation and threaten injunctions with the ensuing social harm to the free market that results from reduced competition.[146] Also, some claim that patent trolls exploit solo inventors, small companies, and those on the brink of bankruptcy by obtaining the patents for a nominal sum and then greatly leveraging the acquired patents into a license mill without engaging in innovative activities and for royalty rates far in excess of the claimed invention of the threatened patent.[147]

Trolls" or Congress?, 6 J. MARSHALL REV. INTELL. PROP. L. 185, 187 (2007) ("Are 'patent trolls' really so dangerous that legislation is needed to reform the patent system?"). The commentator was alluding to Senate Bill 3818, introduced in August 2006, which was an earlier version of the Patent Reform Act of 2007 that landed in the House and Senate on April 18, 2007.

142 Jeremiah Chan & Matthew Fawcett, *Footsteps of the Patent Troll*, 10 INTELL. PROP. L. BULL. 1, 1 (2005) ("Critics contend that they are the ambulance chasers of the new millennium.").

143 David G. Barker, Comment, *Troll or No Troll? Policing Patent Usage with an Open Port-Grant Review*, 2005 Duke L. & Tech. Rev. 9 ¶ 7 (2005) ("Some commentators have described corporate patent trolls as 'patent system bottom feeders' who buy 'improvidently-granted patents from distressed companies for the sole purpose of suing legitimate businesses.").

144 Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307, 346 (2006) ("Such licensing companies are compared to 'terrorists' that 'threaten legitimate innovators and producers.'") (citation omitted).

145 Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 TEX. L. REV. 961, 1023 n.305 (2005) ("[The term 'patent troll'] is a pun on the dual use of the word in English to refer both to a type of fishing in which a hook is dangled while the fisher moves slowly looking for prey and also to the ogre-like Scandinavian creature found in caves and under bridges.").

146 Landers, *supra* note 144, at 345; Mark A. Lemley & Ragesh K. Tangri, *Ending Patent Law's Willfulness Game*, 18 BERKELEY TECH. L.J. 1085, 1112 (2003) (observing that "many non-manufacturing owners are holdup artists or 'trolls' who are in the business of litigation, not innovation."); Bessen & Meurer, *supra* note 135, at 27 (arguing that "[c]ertain strategic uses of patents are socially harmful; more empirical research is needed to quantify the social loss from anti-competitive and opportunistic patent litigation, and guide policies that will discourage anti-social litigation.").

147 Landers, *supra* note 144, at 347 ("Original inventors may have a legitimate expectancy interest in selling their inventions for value. It remains to be seen whether 'patent trolls' are actually paying a fair price."); Debra Koker, *Fulfilling the 'Due Care' Requirement After Knorr-Bremse*, 11 B.U. J. SCI.

Still others decry that, instead of investing capital to develop inventions, the troll's goal is to obtain ambiguous patents with inordinately broad claims of questionable validity and then banking on the presumption of validity and cost of litigation in order to snatch a nuisance settlement.[148] Other critics lambaste patent trolls for, rather than advancing science or technology, using a patent (thought but not proven) to have a futuristic quality whereby the troll need merely wait for the industry to grow up around the patent and then hold up unsuspecting infringers by threatening those companies with baseless (but costly) lawsuits that would shutdown or otherwise cripple the would-be defendant with large damages and the costs of defense.[149]

& TECH. L. 154, 158–59 n.50 (2005) ("Law firms and investors can buy patents at bankruptcy auctions and then assert them against a manufacturer. The 'patent troll' has nothing to lose, but the manufacturer has significant exposure. The manufacturer cannot ignore the troll, because that could lead to a finding of willfulness. Often the manufacturer will settle with the troll, rather than engage in expensive, risky litigation. This, unfortunately, only encourages the troll and gives him more ammunition to use against his next victim.").

[148] Seidenberg, *supra* note 5, at 51 ("Patent trolls find questionable patents . . . then use the leverage of patent litigation to get a tax, essentially, on some of the most successful computer and software projects that exist,' says Jason Schultz, an attorney with the San Francisco-based Electronic Frontier Foundation. 'This takes away resources that would otherwise go to R&D and increasing competition. They definitely hurt the economy.'"); *see also* Chan & Fawcett, *supra* note 142, at 3–4 ("The end result is that thousands of ambiguous and dubious patents are issued every year, leading to confusion in the scope and coverage of any one patent. For patent trolls, these ambiguous or 'bad' patents are effective weapons. Bad patents have very broad claims that probably should not have issued over the prior art. These overbroad claims allow patent trolls to cast a relatively wider net over a technology base and more easily assert infringement against a larger group of target companies. Overbroad patents also simplify an infringement analysis for the patent troll by reducing the amount of pre-assertion work; the broader and more ambiguous the claims, the less room there is for discrete claim interpretation and for non-infringement arguments. The validity of such patents can be questionable, but a validity challenge is typically harder to prove and more costly for the target company than a non-infringement defense.").

[149] Elizabeth D. Ferrill, *Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls*, 6 N.C. J.L. & Tech. 367, 376 (2005) ("[P]atent trolls tend to buy older patents, which may have been forgotten or overlooked (and thus cost less to acquire) but still play a roll in modern technology. Then they aggressively enforce these older patents against makers of relatively new technologies."); *see also* Mann, *supra* note 145, at 1027 (noting a particular type of conduct by trolls viewed by some as damaging: "the strategy of waiting after a patent has been issued while an industry advances using the covered technology and then suing widely for infringement only after the industry has become locked into the technology through independent innovation and

Of course, there are two sides to every story. Supporters argue that, like the mythical creatures of Scandinavian folklore, there are no such creatures as patent trolls and that the perceived problems constitute a myth propagated by infringers and potential infringers.[150] They also respond that non-manufacturing patentees should stand on equal footing with all patentees and, indeed, many large companies and universities exploit patents that they no longer (or never did) commercialize.[151] And those who stand on this side of the aisle argue that inventors are compensated for their inventions, which fosters (not hinders) those inventors to go on and innovate.[152] It has also been argued that the speculators who purchase patents level the playing field for small inventors who would fall victim to the larger companies, and create interest in redefining the importance of, and interest in, intellectual property.[153]

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development."); *see also*, Chan & Fawcett, *supra* note 142, at 1.

[150] *See generally* Niro & Vickrey, *supra* note 4; see also James F. McDonough III, *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, 56 EMORY L. J. 189, 190 (2006) (arguing that patent trolls actually benefit society by providing "liquidity, market clearing, and increased efficiency to the patent markets").

[151] Mark A. Lemley, *Patenting Nanotechnology*, 58 STAN. L. REV. 601, 626 (2005) (noting that universities manufacture nothing but "because universities do early stage research, they patent inventions that are far from commercialization; they may therefore actually speed the entry of some inventions into the public domain by obtaining patents that expire earlier."); Niro & Vickrey, *supra* note 4, at 156 (naming inventors who initially manufactured nothing but went on to form manufacturing companies that are everyday household names); Landers, *supra* note 144, at 343–44 (noting how manufacturing companies generate licensing revenue from non-core patents and those for abandoned product lines); *see also* Mann, *supra* note 145, at 996–97 ("[M]any . . . large firms obtain substantial revenues from directly exploiting their patent portfolios").

[152] Ferrill, *supra* note 149, at 378 ("A key point that the critics fail to mention is that the patent trolls, like Acacia Technologies, buy many of these underutilized patents directly from the inventors. This sale of patents presumably gives the inventors additional capital with which they may chose to create new inventions. Once it has acquired the patent, the patent troll simply uses its much larger resources to enforce the patent as a property right, thereby recovering its initial investment along with a substantial profit."); Niro & Vickrey, *supra* note 4, at 156; Mann, *supra* note 145, at 1024 ("Essentially, trolls are serving a function as intermediaries that specialize in litigation to exploit the value of patents that cannot be exploited effectively by those that have originally obtained them.").

[153] Barker, *supra* note 143, ¶ 16 ("The cotton gin and other similar examples show why there should be no blanket rule that one person cannot acquire and enforce another's patent."); Ferrill, *supra* note 149, at 379 ("Perhaps patent speculators signal the end of the 'free ride' that the large companies were taking on the backs of less affluent patent owners.").

In the final analysis, both sides concede that there might be something wrong with patent trolls and the effect on the patent system in general and negative impact on innovation in particular. They simply think the troll is the other person and disagree that their client, or the patent being enforced, constitutes the pejorative patent troll.

1. Costs of Litigation and How Patent Trolls Differ from Other Plaintiffs in Patent Infringement Cases

In the conventional patent infringement suit, one competitor holds a patent and asserts it against another competitor in the marketplace believed to be infringing the patent, while the defendant competitor typically holds a patent that it asserts against the plaintiff in a counterclaim. The threat that the plaintiff, too, could be enjoined from selling its product has the effect of leveling the playing field.

Belying that conventional scenario, the patent troll is not a competitor at all, and the paper patent was never, and possibly could never be, commercialized. While the patent might be declared invalid and the court might sanction counsel[154] and the plaintiff,[155] these potential repercussions are present in every patent suit. What happens to the usual rules of engagement in a settlement negotiation?

The plaintiff patent troll substantially changes the landscape of settlement talks. No one can deny the presence of a licensing disequilibrium[156] when a plaintiff in a patent suit has no products of its own to defend in a counterclaim of infringement, which vitiates the possibility of an injunction[157] that keeps its products out of the marketplace. Therefore, the trolls have no interest in a

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[154] *See* 28 U.S.C. § 1927 (2000) ("Any attorney or other person admitted to conduct cases in any court of the United States or any Territory thereof who so multiplies the proceedings in any case unreasonably and vexatiously may be required by the court to satisfy personally the excess costs, expenses, and attorneys' fees reasonably incurred because of such conduct.")

[155] 35 U.S.C. § 285 ("The court in exceptional cases may award reasonable attorney fees to the prevailing party.").

[156] *See, e.g.*, Mann, *supra* note 145, at 1023 (noting that the patenting system is losing equilibrium due in part to "firms that have no interest in a licensing equilibrium because they produce no products of their own").

[157] *See* 35 U.S.C. § 283 ("The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.").

standard cross-licensing agreement,[158] and by removing these downsides from the typical business calculus that a plaintiff must weigh before bringing suit, the environment is conducive for a patent owner to roll the dice and "game"[159] the patent system in court.

Conversely, a typical manufacturer, even an entity that obtains licensing revenues from patents it no longer uses or has never used, must think twice before initiating a patent infringement suit. Doing so can quite possibly put its own products at risk and expose it to liability from a counterclaim that makes the manufacturer plaintiff that much more likely to agree to a cross license.

In addition, a patent troll does not face other drawbacks that historically put pressure on parties to settle short of protracted, comprehensive patent litigation and trial. Discovery burdens are unequal and mostly one-sided in favor of the patent troll who commonly has few documents beyond the patent and prosecution history.[160] Whereas a patent troll typically has few employees and does not operate any business beyond patent litigation for

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[158] *See* Lemley, *supra* note 151, at 625–26 (noting that patentees that are not market participants are more likely to try to gain licensing revenue by bringing suit than are actual market participants).

[159] Landers, *supra* note 144, at 307 ("Patent litigation is developing a troubling resemblance to a Las Vegas casino. . . . These circumstances create incentives for patentees to 'game' the patent system by seeking large damages and settlement jackpots from those accused of infringement."); *see also id.* at 310 ("[P]atent trolls are able to game the system by using existing patent damages decisions.").

[160] The PTO records relating to an issued patent are usually called a "file history" or "prosecution history" in today's parlance, and historically were called a "file wrapper." MANUAL OF PATENT EXAMINING PROCEDURE § 719, at 700-281 (8th ed. 2001, rev. Oct. 2005) ("The folder in which the U.S. Patent and Trademark Office maintains the application papers is referred to as a file wrapper."). Regardless of the nomenclature, these include all publicly accessible and non-expunged documents made of record in the folder that relate to the issued patent: all papers submitted by the applicant to the PTO (e.g., the application as filed, powers of attorney, oaths/declarations of inventorship, invention disclosure statements), all correspondence from the PTO to the applicant relating to the examination of the application for patentability ("office actions" that reject patent claims or object to aspects of the specification, and prior art cited by the PTO as relevant to the claimed invention), all responses by the applicant to the PTO (such as amending the claims, making arguments, submitting declarations in support of patentability), and correspondence from the PTO in reply to the applicant, and so on until the patent is allowed and issued. The foregoing examples may be referred to as "pre-grant" papers, but there may also be "post-grant" papers such as post-grant amendments, reissues, reexaminations, and oppositions.

which it commonly engages attorneys who often work on a contingency fee arrangement, the manufacturer must take a hard look upon the demands and distractions that litigation will place on its witnesses, in-house counsel, and officers in mounting a defense to the lawsuit. While the patent troll might hold out for the proverbial big pay day, the manufacturer defendant needs to consider the loss of revenues from a business unit being shut down by an injunction, costing jobs to employees working on the accused products, as well as the reality of answering to shareholders in shareholder litigation in the form of a derivative suit.

These differences necessarily make manufacturing defendants susceptible to being victimized by scare-and-run litigation tactics that infect its business environment and may lower its stock prices if it takes a chance on trial instead of an early settlement. The uncertain, insecure, and precarious cloud over the manufacturer's products renders it particularly helpless and immobile so long as there is a disparity of settlement conditions: A manufacturer making decisions based strictly on cost analysis[161] while an overly optimistic patent troll bets on a game theory expecting to be "bought off" based on the higher relative cost of trial exposure to the defendant.

Equally indisputable, the plaintiff need not prove the more difficult theory of lost profits, which requires the patent owner to prove that, "but for" the infringement, it would have made the sales that the infringer had made.[162] The lost profits test mandates proof of demand for the product, ability to manufacture and market to the demand, the absence of non-infringing alternatives, and the profit it would have made on the lost sales.[163] In lieu of the greater standard of proving lost profits, the

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[161] Thomas S. Ulen, *Remarks on the Lewis & Clark Law School Business Law Forum: Behavioral Analysis of Corporate Law: Instruction or Distraction?*, 10 LEWIS & CLARK L. REV. 177, 178 (2006) ("[P]eople pay close attention to sunk costs in making current decisions.").

[162] *See* Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1545 (Fed. Cir. 1995) (holding "that the general rule for determining actual damages to a patentee that is itself producing the patented item is to determine the sales and profits lost to the patentee because of the infringement").

[163] *Id.* (citing Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156 (6th Cir. 1978)). The availability of lost profits is a question of law for the court. Wechsler v. Macke Int'l Trade, Inc., Nos. 05-1242 and 05-1243, 2007 WL 1452791, at *5 (Fed. Cir. May 18, 2007) ("Only after the court has decided, as a matter of law, that lost profits are available does the jury then get to determine the amount of those lost profits.") (citing Ericsson, Inc. v. Harris

Patent Act guarantees the patent owner (even if it never commercializes a single product) a minimum royalty on all of defendant's sales.[164] The plaintiff need not even be an established royalty, and may in that case still recover a reasonable royalty from the defendant if the royalty means that the defendant would be selling the product at a significant loss.[165]

Moreover, while some patent owners might avoid suing or threatening suit against customers of the infringing products for fear of jeopardizing a preexisting or potential business relationship, as licensing organizations that do not commercialize the patents they own, patent trolls have no product for sale and, in effect, are more prone to threaten suit against customers who buy infringing components for incorporation into a larger assembly or system.[166] Otherwise stated, a manufacturer—who asserts a patent it no longer uses or never used and who then confronts a counterclaim as to its own products—will commonly face pressure from its customers to settle and thereby remove

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Corp., 353 F.3d 1369, 1373 (Fed. Cir. 2003)).

[164] 35 U.S.C. § 284 (Compensation for infringement can be "in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court."); *Rite-Hite Corp.*, 56 F.3d at 1544 (interpreting the statutory mandate that a damage award shall be "in no event less than a reasonable royalty" as setting "a floor below which damage awards may not fall.").

[165] Applied Med. Res. Corp. v. U.S. Surgical Corp., 435 F.3d 1356, 1361 (Fed. Cir. 2006) (noting that reasonable royalties may be awarded in the absence of an established royalty); Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1338 (Fed. Cir. 2004) (rejecting Wal-Mart's contention that the reasonable royalty should not be so high as to mean the defendant sells the product at a significant loss) (citations omitted).

[166] An end user who purchases infringing product from the patent owner might be immune from suit under the "first sale/exhaustion" doctrine. *See* Monsanto Co. v. Scruggs, 459 F.3d 1328, 1335–36 (Fed. Cir. 2006) (suggesting that had the purchaser of patented seeds from the patent owner sold second-generation, unlicensed seeds derived from the patented seeds, and had the sale of seeds not been "conditioned on obtaining a license" from the patent holder, the buyer of the second-generation seeds may have implicated the first sale/exhaustion doctrine). For a comprehensive, insightful, and thoughtful analysis of the "first sale/exhaustion" doctrine, *see generally* John W. Osborne, *A Coherent View of Patent Exhaustion: A Standard Based on Patentable Distinctiveness*, 20 SANTA CLARA COMPUTER & HIGH TECH. L.J. 643 (2004). But in the typical customer suit the customer merely sells that product without alteration, incorporates that product in its own product, or employs the product as part of a manufacturing process, which may constitute patent infringement. *See* 35 U.S.C. § 271(a) (2000) ("[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent.").

uncertainty that the customer will lot its supplier if an injunction issues. Conversely, a patent troll may exploit the defendant's customer relations by making good on its threat and actually suing the supplier's customer.[167] For many similar reasons, such a maneuver puts pressure on the supplier of the allegedly infringing component to settle with the troll.[168] For instance, in addition to any contractual indemnity obligations or a duty arising out of the implied warranty against infringement under the Uniform Commercial Code,[169] as a practical matter, these

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[167] When the patent owner sues the customer, that customer generally has little recourse other than expending considerable funds litigating or turning the defense over to the manufacturer (if sued as a codefendant), but the customer and manufacturer remain jointly and severally liable. Shockley v. Arcan, Inc., 248 F.3d 1349, 1364 (Fed. Cir. 2001).

[168] While courts sometimes stay the litigation against the customer, particularly when the manufacturer and customers are defendants in the same action, *see, e.g.*, Katz v. Lear Siegler, Inc., 909 F.2d 1459, 1464 (Fed. Cir. 1990); Refac Int'l, Ltd. v. IBM, 790 F.2d 79, 80–81 (Fed. Cir. 1986) (denying a request for reconsideration of an order under which all thirty-seven defendants were bound but plaintiff was precluded from obtaining an injunction against separated defendants at trial), where the manufacturer defendant is a foreign entity, the court might need to deny a motion to stay the case as to the customer defendant because it would leave the patent owner without the means of proving direct infringement. *See generally* John W. Osborne, *A Rational Analytical Boundary for Determination of Infringement by Extraterritorially-Distributed Systems*, 46 IDEA 587, 588–89, 615 (2005) (arguing that, under 35 U.S.C. § 271(c), (f), (g) (2000), a foreign defendant of an extraterritorially-distributed telecommunications system cannot infringe the patent if its activities relating to the patentably distinctive aspect of the claimed invention did not take place in the United States). *Compare* Pfizer, Inc. v. Aceto Corp., 853 F. Supp. 104, 105–06 (S.D.N.Y. 1994) (granting the manufacturer defendant's motion to dismiss a patent-infringement claim against it because it "has not brought its product into the United States from China, [and] it is not an 'importer' within the meaning of § 271(g)"), *with* Christopher A. Harkins, *Overcoming the Extraterritorial Bar to Bringing Copyright Actions: On Pleading Copyright Infringement to Protect Copyrighted Works from the Defendant that Ships Overseas for Distribution Abroad*, 17 INTELL. PROP. & TECH. L.J. 1, 7 (May 2005) (noting the extraterritorial bar to bringing copyright infringement suits, but arguing for an exception to that rule, because "[w]hen defendants have committed at least one primary act of copyright infringement in the United States, the presumption against extraterritoriality ought not to defeat a court's subject matter jurisdiction") *and* Microsoft Corp. v. AT & T Corp., 127 S. Ct. 1746 (2007) ("There is an exception" to the general rule that no infringement occurs when a patented product is made and sold in another country under Section 271(f), *id.* at 1750, but limiting the availability of damages when actual tangible "component" being supplied "from the United States" was not being installed in the infringing product assembled overseas, *id.* at 1756–58).

[169] *See* U.C.C. § 2-312(3), 1A U.L.A. 463 (2004) ("Unless otherwise agreed a seller who is a merchant regularly dealing in goods of the kind warrants that the goods shall be delivered free of the rightful claim of any third person by way of infringement or the like but a buyer who furnishes specifications to the seller

customer suits negatively affect the supplier's goodwill to its customers, cast a cloud on those products, and jeopardize any other existing or potential business relationships relative to those products.[170]

Another powerful weapon in plaintiff's arsenal is to threaten a defendant with willful infringement[171] charges unless the defendant stops all sales of the accused device.[172] If the defendant permits continued sales, then the plaintiff may ask the court for treble damages[173] and attorneys' fees.[174]

In defending against charges of willful infringement, a defendant might rely on the "advice of counsel" defense and offer up an opinion letter from an opining attorney who found the accused device not to infringe a valid and enforceable claim of the asserted patent.[175] But after the Federal Circuit's 2006 decision

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must hold the seller harmless against any such claim which arises out of compliance with the specifications."); *see also* Cover v. Hydramatic Packing Co., 83 F.3d 1390, 1394 (Fed. Cir. 1996) (stating, in dictum, that a "rightfully claim" of infringement under Section 2-312(3) does not require a finding of absolute patent liability).

[170] The Federal Circuit has recognized the interest of a manufacturer: "it is a simple fact of life that a manufacturer must protect its customers, either as a matter of contract, or good business, or in order to avoid the damaging impact of an adverse ruling against its products." *Katz*, 909 F.2d at 1464 (citation omitted).

[171] A finding of willful infringement is made after considering the totality of the circumstances. Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., 383 F.3d 1337, 1342–43 (Fed.Cir.2004) (en banc). Courts consider nine factors when determining whether an infringer has acted in bad faith and whether damages should be increased, wherein one factor is "whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed." Liquid Dynamics Corp. v. Vaughan Co., 449 F.3d 1209, 1225 (Fed. Cir. 2006).

[172] Christopher A. Harkins, *A Budding Theory of Willful Patent Infringement: Orange Books, Colored Pills, and Greener Verdicts*, 2007 DUKE L. & TECH. REV. No. 5, pp. 1–32 (2007) (arguing that, when a company becomes aware of a patent, it has an affirmative duty of due care to avoid infringing a valid and enforceable patent, and introducing a theory of willful infringement whereby the Food and Drug Administration's "Orange Book," which is published pursuant to the Hatch-Waxman Act, would provide the notice to a defendant who produces a generic version of a brand-name patented drug).

[173] 35 U.S.C. § 284 (1999) (A "court may increase the damages up to three times the amount found or assessed.").

[174] 35 U.S.C. § 285 (1952) ("The court in exceptional cases may award reasonable attorney fees to the prevailing party.").

[175] A defendant may attempt to show good faith "by obtaining the advice of legal counsel as to infringement or patent validity." *Liquid Dynamics*, 449 F.3d at 1225.

in *EchoStar*,[176] the law is in a critical state of flux as to whether (and, more importantly, to what extent) the defendant, by relying on the opinion, has waived the attorney-client privilege and work product immunity of all communications concerning the subject matter of the opinion letter.

This uncertainty favors a patent troll's coercive tactics of bullying a quick settlement from an otherwise innocent defendant, especially given the wake from *EchoStar*, which has set off a veritable feeding frenzy of attacks by plaintiffs on the most sacred of a defendant's attorney-client communications and work product: that of *trial* counsel itself.[177] As a result, it has been argued that misapplication of *EchoStar* by district courts will force defendants into making a Hobson's choice of giving up the time-honored advice of counsel defense that may avoid a finding of willful infringement on the one hand, or asserting the defense and thereby giving up all protection of attorney-client communications (including that of the trial team) concerning fundamental issues in the case and, consequently, the effective assistance of counsel.[178]

2. The Entire Market Value Rule and Its "Hail Mary" Damages Theory that Includes Non-patented Components as the Royalty Base

Today, many products are assemblies of component parts or, in the case of software and computer related devices, are "system" products that comprise sometimes thousands of individual

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[176] In re EchoStar Commnc'ns Corp., 448 F.3d 1294 (Fed. Cir. 2006) (holding that reliance on the advice of counsel defense to willfulness waives the attorney-client privilege and certain categories of the work product immunity relating to the subject matter of the opinion).

[177] Crossroads Sys. (Tex.), Inc. v. Dot Hill Sys. Corp., No. 03-754, 2006 WL 1544621, at *12 (W.D. Tex. May 31, 2006) (granting Plaintiff's Motion to Disqualify Trial Counsel for Dot Hill, and holding that no member of trial counsel's firm may assist in the presentation of this case at trial).

[178] Christopher A. Harkins, *Choosing Between the Advice of Counsel Defense to Willful Patent Infringement or the Effective Assistance of Trial Counsel: A Bridge or the Troubled Waters?*, 5 NORTHWESTERN J. OF TECH. & INTELL. PROP. 210, 233–46 (2007) (proposing a coherent and equitable balancing test once a defendant asserts the advice of counsel defense, which test will bring clarity and fairness to the potentially chilling effect on discussions between the defendant and its trial team that threatens the very fabric of what trial lawyers do: communicating with the client regarding the preparation of the case for trial, discussing views on the issues and evidence raised in the case or the opinion letter, and evaluating the litigation so as to allow the client to make an informed and non-coerced decision about settlement).

components any one of which could be the subject of a patent owned by a third party.[179] Is the royalty based on the price of the component part, or the price of the complete end product? If the latter, then it is foreseeable there comes a day when the licenses on the end product translate into a defendant ostensibly working for the licensor-trolls[180] or abandoning a successful product, thereby having economic consequences, including inefficient resource allocation and social harm from the unavailability of the product.

In a license negotiation, a prospective licensor might desire to use, as the royalty base, the selling price of the end product, incorporating a component part that practices the alleged invention.[181] In contrast, a prospective licensee would want the royalty base to be its purchase price of the patented component.[182] The royalty base cannot be considered in a vacuum, and its interaction with the royalty rate constitutes a relevant consideration in any negotiation.[183] It is logical that the royalty rate for a patented component may be relatively higher if the base is defined as the sales of that component alone.[184] But if the royalty base is defined as the sales of the complete end-user product of which the component is merely a part, then the royalty rate must be decreased accordingly.[185]

Under the patent laws, a patent owner may ask for "damages adequate to compensate for [alleged] infringement," such as lost profits if the patent owner actually sells patented products, "but in no event [may the damages be] less than a reasonable royalty

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179 Landers, *supra* note 144, at 341.

180 *Id.* at 310 (arguing that "[a]warding damages for unpatented components of an infringing device can be seen as overcompensation for actual harm suffered by patentees, expanding patent rights beyond their scope, and threatening to deter lawful innovative activity").

181 *Id.* at 325, 355 (discussing how a reasonable royalty is determined, which includes determining "the total value of the infringing items on which the patentee is entitled to royalty payments," which may consist of the sale price of the end product that contains patented components).

182 *See* Robert S. Bramson, *Valuing Patents, Technologies and Portfolios: Rules of Thumb*, 635 PRACTISING L. INST. 465, 471 (2001) ("Where the invention relates to a new component of an existing product, the prospective licensees may balk a lot more about basing the royalty on the price of the product than on the price of the component . . . .").

183 *See* Landers, *supra* note 144, at 375 ("[I]n a reasonable royalty determination, the royalty base and the royalty rate are inextricably linked.").

184 Karen Vogel Weil & Brian C. Horne, *Establishing Reasonable Royalty Damages*, 875 PRACTISING L. INST. 665, 676 (2006).

185 *Id.*

for the use made of the invention."[186] The "entire market value rule" is intensely fact specific and depends on many circumstances. Indeed, while it is unclear whether the Federal Circuit speaks with one voice on apportionment, trial courts have tended to adopt a burden-shifting approach. The plaintiff first proves the applicability of the entire market value rule, after which the defendant (as the beneficiary of any apportionment) bears the burden of apportioning the royalty base between infringing and non-infringing sales, especially when the apportionment evidence lies within the defendant's control.[187]

In one of its earliest forms, as set forth in *Rite-Hite Corp. v. Kelley Co.*, "[t]he entire market value rule has typically been applied to include in the compensation base unpatented components of a device when the unpatented and patented components are physically part of the same machine."[188] The Federal Circuit has extended the theory "to allow inclusion of physically separate unpatented components normally sold with the patented components."[189] One common theme from the Federal Circuit, however, is that the patentee should only be able to recover lost profits, or lost royalties, on unpatented components when those components together with the patented components are "considered to be [parts] of a single assembly," a single "functional unit," and all the components together must be analogous to "parts of a complete machine,"[190] (e.g., damages for filter screens used with a patented filtering device; damages for unpatented wheels and axles sold with patented vehicle suspension system). A few Federal Circuit cases will show just

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[186] 35 U.S.C. § 284 (2000); *see also* Wechsler v. Macke Int'l Trade, Inc., Nos. 05-1242 and 05-1243, 2007 WL 1452791, at *5 (Fed. Cir. May 18, 2007) ("Normally, if the patentee is not selling a product, by definition there can be no lost profits. The only exception is where the patentee has the ability to manufacture and market a product, but for some legitimate reason does not. Even in these situations, though, the burden on a patentee who has not begun to manufacture the patented product is commensurately heavy.") (citation and internal quotations omitted).

[187] In his June 7, 2007 letter, Chief Judge Michel stated that "the burden of apportioning the base for *reasonable royalties* falls on the infringer, which the burden for application of the Entire Market Value Rule falls on the patentee." MICHEL, *supra* note 67 (emphasis added); *cf.* Micro Chem., Inc., v. Lextron, Inc., 318 F.3d 1119, 1122 (Fed. Cir. 2003); Grain Processing Corp. v. American Maize-Prods. Co., 185 F.3d 1341, 1349 (Fed. Cir. 1999); Nickson Indus., Inc. v. Rol Mfg. Co., 847 F.2d 795, 799 (Fed. Cir. 1988).

[188] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1549 (Fed. Cir. 1995).

[189] *Id.* at 1550.

[190] *Id.*

how fact-dependent this theory is.

In *Imonex Services, Inc., v. W.H. Munzprufer Dietmar Trenner GmbH*, the owner of patents for coin selection mechanisms sued end users who sold aftermarket coin selectors (individually or in kits) and also sold "laundry machines" that incorporated those coin selectors.[191] The patent owner sought to apply the entire market value theory to recover damages based on the selling price of the "laundry machines."[192] The trial court properly limited the damages to the coin selectors sold individually or as kit items, and therefore rejected the patentee's attempt to apply a royalty to the laundry machines.[193] While the court acknowledged that "[t]he entire market value rule allows calculation of damages based on the value of an entire apparatus containing several features," the court limited that theory to a case when the patent-related feature is the "basis for customer demand."[194] The trial court properly rejected the entire market value theory of damages because the patentee failed to offer admissible testimony that the patented feature was "the basis for customer demand for the laundry machines as a whole."[195]

In *Juicy Whip, Inc. v. Orange Bang, Inc.*, the Federal Circuit allowed the manufacturer to introduce evidence on its claim for lost profits on syrup (unpatented) based on the defendant's infringement of a patented syrup dispenser. The Court held the entire market value rule applies where unpatented components are "typically" sold with the patented item.[196] The "functional unit" test was the "key criterion for lost profits of unpatented materials used with a patented device."[197]

Similarly, in *Bose Corporation v. JBL, Inc.*, the Federal Circuit affirmed a determination that the entire value of loudspeaker systems that incorporated the patented ports that were found to infringe the patent was the applicable royalty base for purposes of damages.[198] The Federal Circuit agreed that the patented ports "inextricably worked with other components of

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191 Imonex Servs., Inc. v. Munzprufer Dietmar Trenner GMBH, 408 F.3d 1374, 1376, 1379 (Fed. Cir. 2005).

192 *Id.* at 1376.

193 *See id.* at 1380–81.

194 *Id.* at 1380 (citing *Rite-Hite Corp.*, 56 F.3d at 1549).

195 *Id.*

196 Juicy Whip, Inc. v. Orange Bang, Inc., 382 F.3d 1367, 1371 (Fed. Cir. 2004).

197 *Id.* at 1372.

198 Bose Corp. v. JBL, Inc., 274 F.3d 1354, 1361 (Fed. Cir. 2001).

loudspeakers as a single functioning unit to provide the desired audible performance . . . [and] . . . improved the performance of the loudspeakers and contributed substantially to the increased demand for the products in which it was incorporated."[199] Moreover, Bose presented evidence that the patented ports were "integral to the overall performance of its [own] loudspeakers by way of . . . improved bass tones," and that defendant "JBL's marketing executive also acknowledged that improved bass performance was a prerequisite for JBL's decision to go forward with manufacturing and selling certain loudspeakers."[200] Also, "Bose presented evidence detailing its efforts to market the benefits of its loudspeakers using the [patented] invention . . . and provided testimony on its increase in sales in the year following the introduction of its speakers containing the invention."[201] According to the Federal Circuit, "all of this was [found] to support an award of a reasonable royalty based upon the entire value of the loudspeakers."[202]

Likewise, the Federal Circuit affirmed a judgment in *Tec Air, Inc. v. Denso Mfg. Michigan, Inc.*, wherein a jury awarded damages based on the entire market value rule and the functional relationship between patented fans and unpatented radiator/condenser assemblies.[203] The Tec Air case involved device claims as well as method claims directed to balancing an injection-molded fan.[204] Tec Air sued Denso for infringement because it manufactured radiator and condenser assemblies "that included a fan that was balanced according to the claimed method."[205] The Federal Circuit affirmed the jury award of a 6.5% royalty based on the "infringing sales of Denso's entire radiator and condenser assemblies . . . because each Denso assembly was a single functioning unit, which included the infringing fan."[206] It was relevant to the Federal Circuit in *Tec Air* that "customers wanted fans that were balanced" and that,

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199 *Id.*

200 *Id.*

201 *Id.*

202 *Id.*

203 Tec Air, Inc. v. Denso Mfg. Michigan, Inc., 192 F.3d 1353, 1357 (Fed. Cir. 1999).

204 *Id.*

205 *Id.*

206 *Id.*; *see also id.* at 1362 ("The jury awarded damages based on the entire market value rule, 'which permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for customer demand.'") (citation omitted).

"after Denso changed its specification, one customer complained and required Denso to rebalance the fans."[207]

V. THE "COLD FUSION" DEFENSE TO PAPER PATENTS AND PATENT TROLLS

At the outset in earlier sections, the need for a "cold fusion" defense to paper patents and patent trolls was given. The present section sets forth the analytical framework for this novel defense and provides further rationales for it. Also, support for the defense is discussed, borrowing from and founded in common sense, familiar concepts, and well-established principles of patent law thereby making the novel defense that much more palatable to the bar, judiciary, and quite possibly Congress.

A. The Cold Fusion Defense

The further a patent moves away from a requirement that the inventor actually have a complete and operative invention as it is to be applied in practice, the broader the patent's scope and the greater potential that the right of exclusivity will protect speculative ideas as opposed to patentable subject matter. With just a little time, money, and imagination, one may "patent," for instance, notions of "cold fusion" and "perpetual motion machines" that would undoubtedly be beneficial to society and invaluable to an inventor who, without inventing anything, received patent claims that are broad enough to read on technology developed for the first time years after the inventor first files an application. Real-life examples abound just on this side of what—at the time of the patent application—were little more than science fiction but where technology advances and evolves to intersect a heretofore apocryphal prognostication and prophetic example disclosed in a broadly written patent and having an undue chilling effect on the behavior of later scientists, researchers, and practitioners who (sometimes many years later) through their own experimentation, hard work, and trial and error succeed in commercializing a bona fide product or process that actually works.[208]

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[207] *Id.* at 1357.

[208] It is not the present intention to call out and question the validity of any particular patent. Others have criticized as unworkable a patented device for perfusing a severed animal head that could read on research tools for organ transplants that save lives, or an early untested and hypothetical patent for

As a result, the patent system will move away from inventing much more than the patents themselves. Inventors no longer invent new discoveries; they become mere authors. This transformation from an inventor who invents to an author who writes about inchoate ideas has the effect of fundamentally frustrating companies actually investing in research, increasing costs associated with avoiding stepping on a mine field explosion of an increasing number of paper patents, and hindering innovation as contemplated by a patent system that once was, always has been, and still is intended to provide the fuel of interest to the fire of genius and reward with monopolistic power for a limited time actual (not imaginative or would-be) innovations. But writing about an idea does not necessarily mean that the author is in possession of the idea and capable of actually building the device or disclosing it sufficient to allow another to build it without undue experimentation.[209]

The "cold fusion" defense restores the patent system to a first-to-invent system[210] rather than a first-to-file system[211] that

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cryogenically preserving a human that might later read on organ donations and research involving human embryonic stem cells. For a few websites that collect patents of interest, intrigue, and fancy, see Brown & Michaels, PC, Weird and Wonderful Patents, http://www.lightlink.com/bbm/weird.html (last visited May 20, 2007), Totally Absurd Inventions, http://www.totallyabsurd.com/archive.htm (last visited May 20, 2007), and Patently Absurd!, http://www.patent.freeserve.co.uk/ (last visited May 20, 2007).

[209] In order not to overcompensate the initial inventor and to minimize obstacles for later innovations by the inventor, that inventor could always first file an application for a patent and, once she adds additional functionality, improvements, or operability to the device she could re-file the same application (or one that adds subject matter) so as to ensure patent protection over the actual innovation. *Cf.* Symbol Techs., Inc. v. Lemelson Med. Educ. & Research Found., 422 F.3d 1378, 1385 (Fed. Cir. 2005) ("Commonly, and justifiably, one might refile an application to add subject matter in order to attempt to support broader claims as the development of an invention progresses."). That way, what the earlier patent lacks in utility the later patent makes up, thereby maintaining the proper patent quid pro quo of a monopoly in exchange for an operable invention. Thus, the patentee could assert both patents, and guaranteeing her of proving utility for at least the second patent.

[210] It is submitted that, if the Patent Reform Act of 2007 is signed into law as introduced and without modifications, the proposed legislation would emphasize the "inventor," the "claimed invention," and "the first *inventor* to file" on the claimed invention. Patent Reform Act of 2007, § 3 as set forth in H.R. 1908 and S. 1145 (emphasis added).

[211] To loosely describe the Patent Reform Act of 2007 as a "first-to-file" system is to pluck the "inventor" from the requirements of Section 3, which is aptly entitled "Right of the First *Inventor* to File." *Id.* (emphasis added). In the full passage from which the "first-to-file" language was extracted, the leading members of the Senate and House Judiciary Committees stressed the "inventor"

merely encourages a race to the Patent Office that will eventually lead, as sure as the day follows the night, to patenting little more than one's speculation and prospecting, thereby supplanting any tangible innovative contribution to the public that forms the quid pro quo of the patent system. If the author is not truly the first person having possession of the idea, having actually built or disclosed a functioning device that others can make, then the author is not the first to invent, and the public has a great interest in ensuring that the patent covers no more than what the inventor actually discovers before being rewarded with a patent monopoly beyond the scope of the imaginary innovation. Therefore, in these changing times, a novel "cold fusion" defense is needed to ensure that the author invented a functioning, operative device[212] commensurate with the utility of invention.

Moreover, the "cold fusion" defense applies with equal justification to the Patent Reform Act of 2007, should that bill be signed into law. Indeed, Congress wrestled with concerns over poor quality patents, litigation abuses that thrive on those patents, and the high-stakes, complex, and costly game of patent litigation. Laying the foundation for the House and Senate initiative to strengthen the patent system, members of this bicameral, bipartisan patent reform legislation emphasized a goal that applies equally to the cold fusion defense advanced in this article: "If we are to maintain our position at the forefront of the world's economy and continue to lead the globe in innovation and production, then we must have an efficient and streamlined patent system to allow for high quality patents that limits counterproductive litigation."[213]

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of, and the "invention" in, the issued patent. Only by ignoring the context and language of the proposed legislation may shorthand be used to describe the revisions as creating a pure "first-to-file" system, without regard to the requirement that an inventor who receives a patent monopoly shall be the first to have actually invented a new and useful invention. But substituting "first-to-file" for "first inventor to file" would return patent law to a registration system akin (at least in this respect) to the second patent statute of 1793, which was repealed under criticism as having resulted in patents for so-called inventions without merit. *See supra* notes 50–51 and accompanying text. Such a conclusion also is in tension with the intent of the Patent Reform Act of 2007 to increase the quality of issued patents. *See supra* notes 69–72, 97, and accompanying text.

[212] For brevity, the device should be understood to include a "process, machine, manufacture, or composition of matter" or "improvement thereof," which is patentable subject matter according to 35 U.S.C. § 101 (2000).

[213] *See* Senator Leahy's and Senator Hatch's press releases, *supra* note 69.

So, what is the "cold fusion" defense?[214]

First, in the pleadings, initial disclosures, and/or preliminary contentions, the plaintiff[215] carries the burden of making out a prima facie case of utility of the claimed invention as disclosed in the patent by submitting admissible proof that it was operable when the patent application was filed and sufficiently showing actual reduction in practice and adequately establishing that the claimed invention belonged to the inventor and was ready for patenting.

The patent owner has both the burden of production and the burden of persuasion of utility of invention.[216] A bald face, conclusory argument or statement in the specification that a patent has usefulness rings hollow and should be entitled to no weight.

Second, once the plaintiff has met this burden, the defendant may plead a cold fusion defense, which shifts the burden of production to the defendant to present evidence that would tend to rebut the plaintiff's utility of invention, while the burden of persuasion remains with the plaintiff.

If the defendant cannot meet its burden of going forward by presenting some evidence, the plaintiff has met its burden of persuasion. But if the defendant presents some evidence to support the denial, the fact-finder weighs the evidence, bearing in mind that the plaintiff retains the ultimate burden of persuasion.[217] Summary judgment at an early stage would be available to the defendant if no reasonable fact finder could find

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214 Often, "courts have confused the ideas of affirmative defense and negation by affirmative proof." FLEMING JAMES ET AL., CIVIL PROCEDURE § 4.5, at 247–50 (5th ed. 2001). *See id.* for a discussion of the differences between an affirmative defense and a defense.

215 For simplicity, the term "plaintiff" refers to patent owners suing for patent infringement or defending against a declaratory judgment action based on their cease and desist letter.

216 FLEMING JAMES ET AL., *supra* note 214, § 7.12, at 414 (Embodied in the term "burden of proof," "[t]he two distinct concepts may be referred to as (1) the risk of nonpersuasion, sometimes called the 'burden of persuasion,' and (2) the duty of producing evidence (or burden of production), sometimes called the burden of going forward with the evidence."). These two concepts can be distinguished by the fact that the burden of production can shift back and forth between parties during the trial, unlike the burden of persuasion. *Id.* §§ 7.15, 7.16, at 419–20.

217 The defendant may also proceed with traditional affirmative defenses of invalidity based on prior art and the like for which it has both the burden of production and the burden of persuasion based on clear and convincing evidence. *See* 35 U.S.C. § 102(d).

that the plaintiff can carry its burden on this element of the case, thereby securing "the just, speedy and inexpensive determination of every action."[218] And a court may enter a final judgment,[219] or other judgment from which an interlocutory[220] appeal lies,[221] even when the plaintiff asserts multiple claims or has clustered multiple parties in a single venue as patent trolls often do. Everyone wins when the patent system encourages expedited resolution early stage. A contingency fee attorney representing the patent troll need not expend further time and money when it becomes apparent that its optimism was overstated. The parties are more apt to settle pending or in lieu of an appeal, thereby reducing the defendant's cost of defense. Meanwhile, early resolution conserves valuable judicial resources.

Any refusal, inability, or failure to produce proof of invention would give rise to a rebuttable presumption of spoliation to be resolved by court at the summary judgment stage. A less stringent standard without a sanction for spoliation would discourage a plaintiff from maintaining such evidence. The cases most recognized as setting the benchmark standards for evidence-preservation issues are the series of *Zubulake* decisions

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218 FED. R. CIV. P. 1; *see also* FED. R. EVID. 102 ("These rules shall be construed to secure fairness in administration, elimination of unjustifiable expense and delay, and promotion of growth and development of the law of evidence to the end that the truth may be ascertained and proceedings justly determined.").

219 FED. R. CIV. P. 54(a)–(b).

220 28 U.S.C. § 1292(b) (2000) (Interlocutory appeals may lie when the issue "involves a controlling question of law as to which there is substantial ground for difference of opinion and that an immediate appeal from the order may materially advance the ultimate termination of the litigation.").

221 While final judgments are the normal route to Federal Circuit review, to a large extent interlocutory appeals remain an available but untapped means of bringing about efficient, uniform, and certain resolution of issues in patent infringement cases. One commentator offers an insightful analysis of how interlocutory appeals in patent cases would maximize judicial efficiency while giving litigants predictability that may be used in reaching informed decisions of whether to settle or proceed to trial. *See* Srikanth K. Reddy, *Easing the Claim Construction Blow with Early-Discovery* Markman *Hearings that Are Appealable to the Federal Circuit on an Interlocutory Basis*, 5 NW. J. TECH. & INTELL. PROP. 118, 119 (2006) (Positing "that claims should be construed during the early stages of discovery and that parties should be able to immediately appeal the district court's Markman determination to the CAFC on an interlocutory basis."); *see also* Patent Reform Act of 2007 § 10 as set forth in H.R. 1908 and S. 1145, 110th Cong. 1st Session (Apr. 18, 2007) (amending 28 U.S.C. § 1292 to permit "an appeal from an interlocutory order or decree determining construction of claims in a civil action for patent infringement under section 271 of title 35."); *but see* MICHEL, *supra* note 67.

out of the Southern District of New York.[222] According to *Zubulake V*, spoliation is "the destruction or significant alteration of evidence, or the failure to preserve property for another's use as evidence in pending or reasonably foreseeable litigation."[223] Because a patent is a negative right (a right to exclude others from practicing the claimed invention but not a right to the patentee to practice the invention),[224] arguably, litigation is always foreseeable.[225] The appropriate sanction for spoliation, if any, rests with the discretion of the trial court, whose "authority to sanction litigants for spoliation arises jointly under the Federal Rules of Civil Procedure and the court's inherent powers."[226] In the event that evidence is spoiled, the

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[222] Zubulake v. UBS Warburg, LLC, 217 F.R.D. 309 (S.D.N.Y. 2003) [hereinafter Zubulake I]; Zubulake v. UBS Warburg, LLC, 230 F.R.D. 290 (S.D.N.Y. 2003) [hereinafter Zubulake II]; Zubulake v. UBS Warburg, LLC, 216 F.R.D. 280 (S.D.N.Y. 2003) [hereinafter Zubulake III]; Zubulake v. UBS Warburg, LLC, 220 F.R.D. 212 (S.D.N.Y. 2003) [hereinafter Zubulake IV]; Zubulake v. UBS Warburg, LLC, 229 F.R.D. 422 (S.D.N.Y. 2004) [hereinafter Zubulake V].

[223] *Zubulake V*, 229 F.R.D. at 430 (quoting West v. Goodyear Tire & Rubber Co., 167 F.3d 776, 779 (2d Cir. 1999)).

[224] 35 U.S.C. § 154(a)(1) (2000) (providing that patents grant to the patentee "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"); *see also* 35 U.S.C. § 271(a)–(c) (defining patent infringement using parallel terms to the provision above, including identifying a patent infringer as "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor").

[225] While a patentee may also seek patents in order to build a portfolio so as to increase valuation of the company or to generate direct revenue from assigning or licensing the patent, this objective does not vitiate the reasonable foreseeability of litigation, because all that remains is for the patentee to identify a potential infringer or to threaten litigation unless the would-be defendant takes a license.

[226] *Zubulake V*, 229 F.R.D. at 430. Because patent rights are created by the U.S. Constitution, and the Patent Act of 1952, a federal law under Title 35 of the United States Code, and the federal courts were granted original and exclusive jurisdiction over cases relating to patents, federal law on spoliation ought to apply. U.S. CONST. art. I, § 8, cl. 8; 35 U.S.C. § 102 (2000) ("A person shall be entitled to a patent unless . . . [various conditions exist]"); 28 U.S.C. § 1338(a); *see* Hunter Douglas, Inc. v. Harmonic Design, Inc., 153 F.3d 1318 (Fed. Cir. 1998) (quoting Christianson v. Colt Operating Corp., 486 U.S. 800, 809 (1987)) (explaining that Federal law applies where "the plaintiff's right to relief necessarily depends on resolution of a substantial question of federal patent law, in that patent law is a necessary element of one of the well-pleaded claims"), *overruled by* Midwest Indus., Inc. v. Karavan Trailers, Inc., 175 F.3d 1356, 1358–59 (Fed. Cir. 1999); *see also In re* Spalding Sports Worldwide, Inc., 203 F.3d 800, 803 (Fed. Cir. 2000) (explaining that Federal Circuit law governs "issues of substantive patent law"). Similarly, "federal evidentiary rules rather

plaintiff might terminate the litigation out of the realization that it cannot carry its burden.

The plaintiff's burden of showing utility of invention is easily already part of, or can be grafted onto, conventional complaints for patent infringement. For instance, plaintiffs plead (as they must) infringement of their patent under Section 271(a) of the Patent Act, which twice recites infringement of the patented "invention."[227] Likewise, Form 16 of the Appendix of Forms to the Federal Rules of Civil Procedure recommends that the plaintiff allege "an invention," describe what the invention is in, and plead that the letters patent were "duly and legally issued"[228] so as to satisfy all patentability requirements.[229] And plaintiffs already typically include in their complaints allegations extolling and heaping praise on the usefulness of their patented inventions.

Unlike the heightened presumption of validity and administrative correctness paid to prior art references that the Patent Office actually considered or other bases of invalidity asserted in counterclaims or affirmative defenses, utility of invention ought to receive a lower degree of deference and, therefore, need only be shown or rebutted by a preponderance of the evidence. The Manual of Patent Examining Procedure

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than state spoliation laws" apply when the parties are diverse. Condrey v. Suntrust Bank, 431 F.3d 191, 203 (5th Cir. 2005).

[227] 35 U.S.C. § 271(a) (2000) ("Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent.").

[228] FED. R. CIV. P., Appendix of Forms, Form 16, ("On May 16, 1934, United States Letters Patent No. __ were duly and legally issued to plaintiff for an invention in an electric motor; and since that date plaintiff has been and still is the owner of those Letters Patent.").

[229] Fed. R. Civ. P. 84 ("The forms contained in the Appendix of Forms are sufficient under the rules . . ."). Commentators have noted that courts may graft additional requirements onto Form 16, which was simply intended to demonstrate the brevity statement of the Federal Rules of Civil Procedure Rule 8(a). *See* Franklin D. Kang, *Pleading Patent Infringement Claims: Does Form 16 Suffice for All Purposes?*, 24 INTELL. PROP. L. NEWSLETTER (ABA) 25, 30 (2006), *available at* http://www.abanet.org/intelprop/newsletter/IPL%20Winter%2006.pdf (noting the "split of authority on whether a patent infringement complaint conforming to Form 16 suffices for all purposes to survive a motion to dismiss under Rule 12(b)(6)," and recommending "that a legislative amendment to Rule 84 and/or further judicial clarification regarding the sufficiency of Form 16 for all cases is overdue,"); *see also* Fed. R. Civ. P. 84 ("The forms contained in the Appendix of Forms . . . are intended to indicate the simplicity and brevity of the statement which the rules contemplate").

(MPEP)[230] states that it favors rejections according to Sections 102 (novelty) and 103 (non-obviousness) based on prior invalidating art: "[i]n cases where there exists a sound rejection on the basis of prior art which discloses the 'heart' of the invention (as distinguished from prior art which merely meets the terms of the claims), secondary rejections on minor technical grounds should ordinarily not be made."[231] Unlike prior art rejections, the official instruction pursuant to the MPEP is that "[o]ffice personnel are reminded that they must treat as true a statement of fact made by an applicant in relation to an asserted utility."[232] Otherwise stated, "[i]f the applicant has asserted that the claimed invention is useful for any particular practical purpose (i.e., it has a 'specific and substantial utility') and the assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility."[233]

Consequently, "utility" under Section 101 of the Patent Act is hardly, if ever, examined to a substantive degree by the Patent Office examiner during prosecution, although the Patent Office has indicated a desire for heightening the utility standard, which in turn bolsters adopting the "cold fusion" defense proffered herein.[234] Until that happens, however, the examiners will continue to blindly credit utility of invention if the applicant includes, which it always does, some sort of circuitous, conclusory, and self-serving statement of usefulness in the

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230 USPTO, MANUAL OF PATENT EXAMINING PROCEDURE (8th ed. 2006), *available at* http://www.uspto.gov/web/offices/pac/mpep/mpep.htm [hereinafter MPEP]. "'The MPEP [is] commonly relied upon as a guide to patent attorneys and patent examiners on procedural matters.' While the MPEP does not have the force of law, it is entitled to judicial notice as an official interpretation of statutes or regulations as long as it is not in conflict thereto." Molins PLC v. Textron, Inc., 48 F.3d 1172, 1180 n.10 (Fed. Cir. 1995) (quoting Litton Systems, Inc. v. Whirlpool Corp., 728 F.2d 1423, 1439 (Fed. Cir. 1984)).

231 MPEP, *supra* note 230, § 707.07(g), 700-129.

232 *Id.* § 2107, 2100-21.

233 *Id.* § 2107, 2100-20. Moreover, the MPEP tells examiners that "[a] rejection under 35 U.S.C. § 101 for lack of utility should not be based on grounds that the invention is frivolous, fraudulent or against public policy." *Id.* § 706.03(a), 700-70.

234 William F. Lee et al., *Limits on Patentability in Life Sciences: Claims Covering Expressed Sequence Tags*, 6 SEDONA CONF. J. 95, 96 (2005) (commenting on the overall practice of the Patent Office "continuing to judge the utility of other inventions under a more lenient test. . . . Rather, those statutory and judicial sources make clear that the standard for utility under 35 U.S.C. Section 101 is a minimal one . . . .").

specification.

One virtue of the "cold fusion" defense is that it depends on familiar concepts and well-established principles in patent law, such as conception, possession, reduction to practice, and "ready for patenting."[235] Moreover, the Patent Act of 1952 requires that every patent "shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."[236] Therefore, the logistical framework of determining utility of invention may borrow from tools applied with claim construction,[237] because for the plaintiff to stretch the scope of the invention beyond that which was operable or in the inventor's possession would expand the literal scope of the claimed invention.

Another virtue is that the defense will not complicate the case to any appreciable extent given that proof of utility of invention should be within the possession, custody, and control of the plaintiff. As a result, it should be no hardship for the plaintiff to

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[235] *E.g.*, Stephen Bruce Lindholm, Comment, *Revisiting Pfaff and the On-Sale Bar*, 15 ALB. L.J. SCI. & TECH. 213, 258 (2004) ("Conception and reduction to practice are the two traditional milestones in the development of an invention. The Supreme Court added 'ready for patenting' as an intermediate stage in *Pfaff*," (quoting Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 67–68, 68 n.14 (1998)); *see, e.g.*, R. Douglas Bradley, Comment, *When is Enough Enough? Reduction to Practice and Summary Judgment During Patent Priority Disputes*, WASH. L. REV. 1109, 1114–18 (1997) (describing the requirements of conception, possession, and reduction to practice, and the variance from in applying such requirements to inventions in "unpredictable" arts). Albeit well-established principles are not always well settled (and sometimes evolving) but that has no negative bearing on the "cold fusion" defense any more than it has on those very principles themselves.

[236] 35 U.S.C. § 112, ¶ 2 (2000).

[237] In 1996, the Supreme Court put to rest the issue of who decides the meaning of a claimed invention: "[w]e hold that the construction of a patent, including terms of art within its claim, is exclusively within the province of the court." Markman v. Westview Instruments, Inc., 517 U.S. 370, 372 (1996); *see generally* Phillips v. AWH Corp., 415 F.3d 1303 *passim* (Fed. Cir. 2005) (restating the basic principles of claim construction for courts to apply); *see also* Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454, 1456 (Fed. Cir. 1998) ("[T]he court determines the scope and meaning of the patent claims asserted . . . ," especially given the "the view that claim construction, as a form of 'document construction,' is solely a question of law . . . .") (citing *Markman*, 517 U.S at 388–89)); *see also* Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) ("We therefore settle inconsistencies in our precedent and hold that in a case tried to a jury, the court has the power and obligation to construe as a matter of law the meaning of language used in the patent claim. As such, '[a] patent covers the invention or inventions which the court, in construing its provisions, decides that it describes and claims.'") (internal citations omitted).

include such support in its pleadings or no later than with its initial disclosures,[238] preliminary contentions,[239] or in the patent pilot programs "among the 15 district courts in which the largest number of patent and plant variety protection cases were filed."[240] Much like the initial disclosures, preliminary contents, and patent pilot programs hope to accomplish, the requirement of proof of utility of invention will likely deter frivolous patent litigation on the one hand or on the other hand secure an early and efficient resolution of the action at a savings to already stretched judicial resources and litigant coffers.

The two prongs of the "cold fusion" defense have the additional virtue of removing the guesswork or costly discovery necessary in deciding whether to assert the defense. The defendant is free to wait and investigate plaintiff's proffered proof, of course, and any dispute ought to be resolved easily without considerable investment in time, money, or judicial resources because the facts establishing the defense are relatively straightforward and ascertainable from plaintiff's proof, whether it be the actual physical functioning prototype, model, diagrams, blueprints, photographs, notebook entries, sketches, or source code running or embodying the claimed invention as it existed at the filing date of the patent application.

In order to mitigate the "nose of wax"[241] or proverbial fart in a

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[238] FED. R. CIV. P. 26(a)(1)(B) ("[A] party must, without awaiting a discovery request, provide to other parties . . . [discoverable information including] all documents, data compilations, and tangible things that are in the possession, custody, or control of the party and that the disclosing party may use to support its claims or defenses . . . .").

[239] Effective January 1, 2001, the United States Court for the Northern District of California enacted "Patent Local Rules," and Local Rules 3-1 and 3-2 require plaintiffs to provide preliminary infringement contentions together with supporting documents within ten (10) days after the initial case management conference, and could include a requirement that the plaintiffs provide preliminary proof of utility of invention. Patent L.R. 3-1, 3-2 (2001), available at http://www.cand.uscourts.gov/ (follow the "Local Rules" hyperlink on the right side of the webpage; then follow the "Patent Local Rules 1/1/2001" on the "All Local Rules" Menu; then open PDF document labeled "Pat1200-1.pdf"). Other United States courts, including the Eastern District of Texas, have followed suit and now require preliminary contentions. P.R. 4-2 (2006), *available at* http://www.txed.uscourts.gov/Rules/LocalRules/Documents/Appendix%20M.pdf.

[240] H.R. 5418, 109th Cong. § 1(a)–(b) (as passed by House of Representatives, Sept. 28, 2006); *see also* H.R. 34, 110th Cong. (1st Session 2007) (reintroducing the patent pilot program).

[241] White v. Dunbar, 119 U.S. 47, 51 (1886) ("Some persons seem to suppose that a claim in a patent is like a nose of wax which may be turned and twisted

windstorm, plaintiff's proof must exist at the filing date of the patent application so as to ensure that, when viewed through the lens of utility, the applicant (now patentee) does nothing to extend the claimed invention to cover, in effect, what the patentee did not invent.[242] Also, pre-litigation peer review literature may be relevant in determining at an early stage whether no reasonable fact finder could find that the plaintiff can carry its burden of proving utility of invention in order to keep both plaintiff and defendant honest, so no one party is likely to complain that the defense is one-sided or too easily satisfied.[243]

Will there be 100,000 declaratory judgment cases filed tomorrow against patentees? The answer is a resounding no. The "cold fusion" defense is only a defense; it is not a counterclaim setting forth a claim for relief[244] and cannot give rise to jurisdiction under the Declaratory Judgment Act.[245]

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in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express.").

[242] For a thoughtful analysis extolling the benefits of choosing the filing date, *see generally* Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 115–19 (2005).

[243] To the contrary, the defense as set forth is limited and may arguably preclude a deserving defendant from asserting, or prevailing on, its protection when a plaintiff has mounted superficial proof somewhat, but not much, stronger than a house of cards in order to overcome a motion for summary judgment. But in that situation, the truth finding function of the judicial system, goal of judicial integrity, and overall incredulous positions might have the plaintiff paint itself into a corner on some other issues that await claim construction or cost credibility at trial.

[244] Under the Federal Rules of Civil Procedure, one may assert "claims for relief," FED. R. CIV. P. 8(a), which "seeks redress of a distinct wrong" regardless of the number of distinct legal theories because theories do not equal claims. NAACP v. Am. Family Mut. Ins. Co., 978 F.2d 287, 291 (7th Cir. 1992).

[245] 28 U.S.C. § 2201(a) (2000) (Declaratory Judgment Act requires "a case of actual controversy"); Teva Pharms. USA, Inc. v. Pfizer, Inc., 395 F.3d 1324, 1330 (Fed. Cir. 2005) (Until recently (March 26, 2007, to be precise), in patent cases the Federal Circuit had held that courts were to apply a two-part test when determining whether to find an actual controversy in suits requesting a declaration of patent non-infringement or invalidity, which two-part test mandated "both (1) an explicit threat or other action by the patentee which creates a reasonable apprehension on the part of the declaratory judgment plaintiff that it will face an infringement suit, and (2) present activity by the declaratory judgment plaintiff which could constitute infringement, or concrete steps taken by the declaratory judgment plaintiff with the intent to conduct such activity."); *see also*, Windsurfing Int'l, Inc. v. AMF, Inc., 828 F.2d 755, 757 (Fed. Cir. 1987) (setting forth a similar two-part test of when there would be an actual controversy); Hanes Corp. v. Millard, 531 F.2d 585, 592 (D.C. Cir. 1976) (holding that the presentation of defenses cannot bestow the independent jurisdiction necessary to create case of actual controversy within the meaning of

The 2007 Supreme Court decision in *Medimmune, Inc. v. Genentech, Inc.*, allowing a patent licensee (Medimmune) to bring a declaratory judgment action against the patent licensor (Genentech) without first terminating or breaching any terms of the licensing agreement, does not turn a mere "defense" into an actual controversy that satisfies the justiciability, standing, and ripeness requirements of Article III or the Declaratory Judgment Act.[246] To the contrary, the Supreme Court disagreed that Medimmune's declaratory judgment action involved "only a freestanding claim of patent invalidity."[247] Instead, the *Medimmune* Court found that the patent licensee had challenged the interpretation of patent licensing agreement together with claims for of patent invalidity and non-infringement, based on an actual controversy created by the patent licensor's letter delivered to the licensee.[248] According to the Supreme Court, the petitioner believed the letter created a clear threat to enforce a newly issued patent by expressing the licensor's belief that a patent fell within the terms of the license agreement, covered the licensee's product, and demanded royalties under the license agreement.[249] So, under *Medimmune*, something more than a mere defense is needed under the Declaratory Judgment Act, and that something more included at least an express threat by the patent licensor, such as a direct charge of infringement, an indirect threat of infringement by the licensor filing a lawsuit against the licensee's customer, or other overt acts constituting a licensee's reasonable apprehension of being sued.[250]

The Supreme Court strongly hinted in footnote 11 of *MedImmune* that it was calling into question the continued viability of "the Federal Circuit's 'reasonable apprehension of suit' test (or in its evolved form, the 'reasonable apprehension of *imminent* suit test [of *Teva*])."[251] If there was any doubt as to the impact footnote 11 might have, the Federal Circuit removed all

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the Declaratory Judgment Act).

[246] MedImmune, Inc. v. Genentech, Inc., 127 S. Ct. 764, 767–68, 777 (2007).

[247] *Id.* at 768.

[248] *Id.* at 770 ("All we need determine is whether petitioner has alleged a contractual dispute. It has done so.").

[249] *Id.* at 768.

[250] Thus, the federal courts will not see a flood gate open if they adopt a cold fusion defense. *Cf. id.* at 773 & n.10 (pointing out that "affirmative defense" becomes moot in light of a finding of no infringement and, therefore, fails the justiciability requirement, but noting that a "counterclaim" is treated differently and would not be mooted) (citations omitted).

[251] *MedImmune*, 127 S. Ct. at 774 n.11.

doubt in its recent decisions of *SanDisk Corporation v. STMicroelectronics, Inc.*[252] and *Teva Pharmaceuticals USA, Inc. v. Novartis Pharmaceuticals Corp.*,[253] which decisions many argued to have dealt a blow to patent trolls who engage in extra-judicial patent enforcement aimed at putting the would-be infringer to a choice between abandoning its right to sell a product or to betting the farm[254] by risking treble damages and the loss of business if it continues selling its product.

The Federal Circuit noted that the Declaratory Judgment Act "served the policies underlying the patent laws by enabling a test of the validity and infringement of patents that are being used only as scarecrows,"[255] and scrapped the decades of precedent requiring a would-be infringer to show a reasonable apprehension of being sued.[256] Under the new law, the Federal Circuit described an adverse positions test:

> The Supreme Court emphasized that Article III requires that the dispute at issue be definite and concrete, touching the legal relations of parties having adverse legal interests; and that it be real and substantial and admit of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts.[257]

But *SanDisk* and *Novartis* never held that a mere "defense" could be brought under the Declaratory Judgment Act or that a party need no longer assert a "claim."[258] To what extent the test

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252 SanDisk Corp. v. STMicroelectronics, Inc., 480 F.3d 1372, 1379 (Fed. Cir. 2007) ("The Supreme Court, in *MedImmune*, addressed the 'reasonable apprehension of suit' aspect of this court's two-part test and concluded that it conflicts" with the case or controversy principle that is rooted in Article III of the Constitution).

253 Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330, 1346–47 (Fed. Cir. 2007) (Friedman, J., concurring) ("Although these footnote statements were dicta, the Court apparently was telling us that it rejected our "reasonable apprehension of imminent suit" test for determining declaratory judgment jurisdiction in patent cases.").

254 *SanDisk*, 480 F.3d at 1378–79, 1382.

255 *Novartis*, 1332 F.3d at 1336 n.2 (internal quotations and interlineations omitted).

256 The court in *SanDisk* expressly avoided the second prong of the Federal Circuit's declaratory judgment test for patent infringement actions: "In this case, we address only the first prong of this court's two-part test. There is no dispute that the second prong is met. We therefore leave to another day the effect of *MedImmune*, if any, on the second prong." *SanDisk*, 480 F.3d at 1380 n.2.

257 *SanDisk*, 480 F.3d at 1378 (internal quotations and brackets omitted); *see also Novartis*, 482 F.3d at 1336–37 (same).

258 FED. R. CIV. P. 8(a)–(b) (A party must assert "claims for relief" and

in patent declaratory judgment actions is a moving current, under a state of flux and to undergo further morphing until there is an en banc decision, the present flow of current still requires a patentee to assert its rights:

> We hold only that where a patentee asserts rights under a patent based on certain identified ongoing or planned activity of another party, and where that party contends that it has the right to engage in the accused activity without license, an Article III case or controversy will arise and the party need not risk a suit for infringement by engaging in the identified activity before seeking a declaration of its legal rights.[259]

In so holding, however, *SanDisk* and *Novartis* remove the imbalance that once belonged to patent trolls: There would be no safe haven once afforded to patent owners who, by using scare-and-run negotiation tactics,[260] could threaten a patent infringement suit and expensive litigation under the guise of offering a patent license.

Moreover, Chief Justice Robert's concurring opinion in the recent *eBay* decision suggests that the time is ripe for a new defense that puts an end to the gamesmanship of patent trolls and the pernicious outgrowth of paper patents:

> In cases now arising trial courts should bear in mind that in many instances the nature of the patent being enforced and the economic function of the patent holder present considerations quite unlike earlier cases. An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. . . . For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. . . . When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in

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"defenses to each claim asserted.").

[259] *SanDisk*, 480 F.3d at 1381; *see also Novartis*, 482 F.3d at 1336-37, 1345–46 (further shaped the adverse positions test by emphasizing an "all circumstances" analysis as the standard by which the adverse legal interests ought to be weighed in determining whether there was sufficient evidence of standing and ripeness to make the controversy justiciable under Article III of the Constitution); *but see SanDisk*, 480 F.3d at 1384 (Bryson, J., concurring) ("[V]irtually any invitation to take a paid license relating to the prospective licensee's activities would give rise to an Article III case or controversy if the prospective licensee elects to assert that its conduct does not fall within the scope of the patent.").

[260] *SanDisk*, 480 F.3d at 1383; *Novartis*, 482 F.3d at 1336 n.2.

> negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.[261]

With "bad"[262] patents mired in a wave of negative publicity, the United States Supreme Court recently sounded off on the validity of weaker patents that will be sure to give patents an image makeover. In *KSR International Co. v. Teleflex Inc.*,[263] the Court effectively invalidated a patent based on obviousness grounds, raised the bar on patentability,[264] and concomitantly lowered the boom on patent trolls wielding improvidently issued paper patents. *KSR* promises to create a stir in the industry by making it easier for defendants to prove invalidity, and thereby suggesting a transition of making it harder obtain (and preserve the validity of) patents based on the combination of known elements.

Rejecting the Federal Circuit's rigid approach of requiring obviousness to be proven by the "teaching, suggestion, or motivation" test,[265] the Supreme Court expressed "the need for caution" in granting patents or preserving their validity.[266] Moreover, the Supreme Court emphasized both "real innovation" and "utility" as the driving forces as the quid pro quo for a patent monopoly: "Granting patent protection to advances that would occur in the ordinary course without real innovation retards

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[261] eBay Inc. v. MercExchange, 126 S.Ct. 1837, 1842 (2006) (Kennedy, J., concurring) (raising the bar on patent trolls seeking injunctive relief—their most potent weapon in so-called shakedowns) (citations omitted).

[262] Kesan & Gallo, *supra* note 10 at 70, 77.

[263] 127 S. Ct. 1727 (2007).

[264] "If a court, or patent examiner, conducts this analysis and concludes the claimed subject matter was obvious, the claim is invalid under § 103." *Id.* at 1734.

[265] Under the "teaching, suggestion, or motivation" test, a patent claim is only proved to be invalid for obviousness if "'some motivation or suggestion to combine the prior art teachings' can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art." *Id.*

[266] The Supreme Court set forth an expansive and flexible approach to the test for obviousness, a test that sweeps in teachings from multiple prior art references in the same or different field and improvements in the same or similar devices, considers demands in the marketplace for an improvement and the background knowledge possessed by one of ordinary skill in the art, and asks whether the patent claim does no more than yield a combination of familiar elements to achieve a predictable result. *Id.* at 1739–41; *see also id.* at 1741 ("As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.").

progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility."[267]

Buoyed by policies of promoting innovation and the progress of science on the one hand, without the high price paid to legitimate competition on the other, one senses a return to the notion that an inventor must actually have invented something before being rewarded a patent monopoly:

> We build and create by bringing to the tangible and palpable reality around us new works based on instinct, simple logic, ordinary inferences, extraordinary ideas, and sometimes even genius. These advances, once part of our shared knowledge, define a new threshold from which innovation starts once more. And as progress beginning from higher levels of achievement is expected in the normal course, the results of ordinary innovation are not the subject of exclusive rights under the patent laws. Were it otherwise patents might stifle, rather than promote, the progress of useful arts.[268]

The Supreme Court's 2007 decisions in *Medimmune* and *KSR*, and the Federal Circuit's 2007 decisions in *SanDisk* and *Novartis* reveal an increasing willingness to entertain challenges to patents. And Chief Justice Roberts' concurring opinion in the 2006 *eBay* decision conceals some cynicism toward paper patents and patent trolls. Critics of the patent system might cheer these decisions as foretelling a day when paper patents and patent trolls may be plutoed.

And these decisions signal a suggestion that the Supreme Court might be open to creative theories that strike a proper balance between the public policy of promoting the sciences that underlies the patent system on the one hand, and on the other hand protecting patent monopolies while acknowledging the concern that paper patents and patent trolls undermine the patent system. Playing an important role in an effort to curtail enforcement of paper patents by patent trolls, leading Congressional members, who on behalf of the House and Senate Judiciary Committees that introduced legislation in the Patent Reform Act of 2007, have underscored the need to streamline an effective way of challenging the validity of patents for many of the same policy reasons that buttress the novel defense proposed in this article:

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[267] *Id.* at 1741.
[268] *Id.* at 1746.

> High patent quality is essential to continued innovation. Litigation abuses, especially ones committed by those which thrive on low quality patents, impede the promotion of the progress of science and the useful arts. . . . Strengthening intellectual property leads to economic growth, job creation and the type of creativity that has made America the envy of the world. The bill is a good first start.[269]

The "cold fusion" defense strikes the right balance between protecting a plaintiff's right to monetize the patent while, at the same time, safeguarding innovative companies that are grappling with litigation costs while striving to bring useful new products to consumers without dampening investment in research and development.

In sum, the novel cold fusion defense is founded on fundamental fairness, leveling the playing field in a lesser examined patentability requirement known as "utility," and public interest that the patentee not be rewarded with a monopoly for a half-baked idea tantamount to no invention at all but merely akin to an author writing about inchoate ideas patenting little more than speculation. Given the exorbitant costs of patent litigation, the accused infringer ought at a minimum to have the right to prove the alleged invention was not "useful" by a preponderance of the evidence by demonstrating that the invention did not work, and better yet ought to be able to put the patentee to the task of proving that it did. As such, a patentee is expected to offer some evidence of usefulness by proving that, at the time the application was filed, she had possession of the invention, which she could do by producing sufficient documentary corroboration of building the device or disclosing the invention for another to build it without undue experimentation so that it was truly ready for patenting.[270] Public interest in screening the wheat from the chaff of bad patents demands nothing less than this from the patentee for the privilege of a monopoly.

B. Borrowing from Patent Principles

Courts, Congress, and attorneys may also borrow from well-

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[269] *See* Senator Leahy's and Senator Hatch's press releases, *supra* note 69.

[270] Space Sys./Loral, Inc. v. Lockheed Martin Corp., 271 F.3d 1076, 1080 (Fed. Cir. 2001) ("[W]hen development and verification are needed in order to prepare a patent application that complies with § 112, the invention is not yet ready for patenting.").

established patent principles as further support for the "cold fusion" defense.

1. Cold Fusion, Perpetual Motion Machines, and Lack of Utility

Mentioning "perpetual motion machines" and "cold fusion" in a conversation conjures up images and recollections of those who claimed to have discovered both inventions, only to have it found out that the so-called discoveries were a hoax, a fraud,[271] or otherwise did not work.[272] Those claims were found out due in part to their own braggadocio and due in even larger part to the immeasurable value their inventions would have brought to the energy crisis and similar research.[273] Delving into paper patents as argued above reveals the startling fact that many were no better than, by analogy, and equally spurious as "perpetual motion machines" and "cold fusion," which were found to be preposterous fiascos that failed the utility standard of patentability.[274]

As recently as 2004, the Federal Circuit in *In re Dash*[275]

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[271] *See* Markarian v. Garoogian, 767 F. Supp. 173, 175–76, 180 (N.D. Ill. 1991) (Investor in alleged fraudulent cold fusion device brought action against three participants who presented the invention in April 1989 as an investment opportunity).

[272] *See, e.g., In re* Dash, 118 Fed. App'x 488, 489, 492 (Fed. Cir. 2004) (affirming the USPTO Board of Patent Appeals and Interferences' (BPAI) decision to reject claims on a patent application for "cold fusion" machine due to inoperability, and stating "[i]t was reasonable for the Board to conclude that the examiner had established ['that a person of ordinary skill in the art would reasonably doubt the asserted utility'] based on the number and quality of cited references that debunked claims of cold fusion").

[273] *See* Michele Landis Dauber, *The Big Muddy*, 57 STAN. L. REV. 1899, 1899–1901 (2005) (describing the effects of the announcement by two chemists that they had created cold fusion, including the immediate broadcast by the media of their assertions of success and the hope that the discovery would "transform the nation's protracted and contentious debate over energy policy").

[274] While the Patent Office generally catches (and rejects) blatant attempts to patent cold fusion and perpetual motion machines, the standard for utility remains quite minimal and therefore "bad" paper patents may issue in those cases where the patent application on its face does not scream "cold fusion" or a "perpetual motion machine." *See, e.g., In re Dash*, 118 Fed. App'x at 489–90, 492 (affirming BPAI's rejection of claims on patent application based on inoperability); *In re* Swartz, 232 F.3d 862, 862–64 (Fed. Cir. 2000) (affirming BPAI's rejection of claims on patent application based on inoperability).

[275] *In re Dash*, 118 Fed. App'x at 489–90, 492. Pursuant to Fed. Cir. R. 47.6(b) (2006), the Federal Circuit's Order was non-precedential but is intended to be part of the public record. According to the Federal Circuit Rules, an order designated non-precedential was "determined by the panel issuing it as not adding significantly to the body of law." *Id.*

affirmed the decision by the Patent Office's Board of Patent Appeals and Interferences ("BPAI") for rejecting claims for a patent disclosing an electrolytic method of producing excess heat energy (i.e., "cold fusion" without actually using the term "cold fusion") as failing the utility requirement under 35 U.S.C. § 101.[276] Professor Dash and his graduate students had published results of their experiments, calculations, and publications that ostensibly corroborated, according to Professor Dash, nuclear fusion had occurred and submitted those results to the Patent Office in an attempt to prove operability in order to overcome a utility rejection in the face of a considerable amount of scientific literature offered by the Patent Office to cast doubts on producing cold fusion by Professor Dash's claimed method.[277] The Federal Circuit affirmed the rejection, "[g]iven the scientific community's considerable doubt regarding the utility of 'cold fusion' processes," even though Professor Dash's patent application included a statement of utility.[278] In addition to peer-reviewed articles, the Federal Circuit stated that the Patent Office in rejecting the application could rely on documents that were anecdotal or other sources calling into question the claimed invention's operability, which merely goes to the "weight" given whatever was not peer-reviewed.[279]

Others have attempted to patent cold fusion. In 2000, the Federal Circuit addressed the patentability of an invention involving cold fusion in *In re Swartz*.[280] In that case, the Solicitor on behalf of the Director of the United States Patent and Trademark Office asserted that, at least as of the application's filing date (and thereafter as well), the mainstream scientific community did not accept the results reported by cold fusion

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[276] *In re Dash*, 118 Fed. App'x at 489–90.

[277] *Id.* at 489–90, 492.

[278] *Id.* at 490. On file with the author are the briefs that the appellant and appellee submitted to the Federal Circuit. On April 10, 1989, Drs. Martin Fleischmann and Stanley Pons published a paper in 261 Journal of Electro-Analytical Chemistry 301–08 (1989) describing cold fusion. On April 16, 1990, just over a year after Fleischmann and Pons announced that they had discovered cold fusion, Professor Dash filed the grandfather application to the continuation application that was at issue before the Federal Circuit. In its brief, the Patent Office chronicles eleven publications (nine scientific papers and two non-technical reports) representative of the response of the scientific community to that "announcement" of cold fusion, and the failed efforts to reproduce it (reproducibility forms the cornerstone of all scientific method).

[279] *Id.* at 491.

[280] *In re* Swartz, 232 F.3d 862, 864 (Fed. Cir. 2000) [hereinafter Swartz I].

researchers as demonstrating the existence of cold fusion, that cold fusion technology was still controversial and not accepted by the scientific community as a whole.[281] The Federal Circuit agreed with the BPAI's affirmance of the Patent Office rejection on the grounds that "those skilled in the art would 'reasonably doubt' the asserted utility and operability of cold fusion," and therefore failed the utility requirement under Section 101.[282] In reaching its decision, the Federal Circuit equated "useful" under Section 101 to "operable" without undue experimentation at the time the application was filed.[283]

In 1989, the Federal Circuit in *Newman v. Quigg* considered the utility of an application directed to a "perpetual motion machine" that ostensibly generated higher energy output than input.[284] Mr. Newman presented evidence that was "largely qualitative rather than quantified by measured data,"[285] while the Office of the Solicitor presented declarations and witness testimony discussing tests of the invention by the National Bureau of Standards.[286] The Federal Circuit agreed with the BPAI's affirmance of the Patent Office rejection for lack of utility, and further held that, "[w]hile it is not a requirement of patentability that an inventor correctly set forth, or even know, how or why the invention works, neither is the patent applicant relieved of the requirement of teaching how to achieve the

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[281] On file with the author are the briefs that the appellant and appellee submitted to the Federal Circuit.

[282] *Swartz I*, 232 F.3d at 864. Swartz also tried to obtain earlier patents on cold fusion, which resulted in two non-precedential orders. *In re* Swartz, 50 Fed. App'x 422, 423 (Fed. Cir. 2002) ("Under [35 U.S.C.] § 101, any patentable invention must be useful and, accordingly, the subject matter of the claim must be operable."); *In re* Swartz, 243 F.3d 553, 566 (Fed. Cir. 2000).

[283] *Swartz I*, 232 F.3d at 863 ("[Utility and enablement requirements are] closely related. To satisfy the enablement requirement of 35 U.S.C. § 112, ¶ 1, a patent application must adequately disclose the claimed invention so as to enable a person skilled in the art to practice the invention at the time the application was filed without undue experimentation. The utility requirement of § 101 mandates that the invention be operable to achieve useful results. Thus, if the claims in an application fail to meet the utility requirement because the invention is inoperative, they also fail to meet the enablement requirement because a person skilled in the art cannot practice the invention.") (citations omitted); *see also* Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1358 (Fed. Cir. 1999) (Section 101 requires that the invention be "useful" and, accordingly, be "operable").

[284] Newman v. Quigg, 877 F.2d 1575, 1577 (Fed. Cir. 1989).

[285] *Id.* at 1581.

[286] *Id.* at 1578.

claimed result."[287]

2. Conception of the Invention

This patent law principle also supports the "cold fusion" defense. Arising generally in the context of an unnamed inventor attempting to be added to the patent, the Federal Circuit requires that the joint inventor prove that he or contributed in some significant manner to the "conception or reduction to practice of the invention."[288]

"[C]onception is the touchstone of inventorship."[289] Otherwise stated, there can be no inventorship without conception. Moreover, the Federal Circuit defines conception as the "formation in the mind of the inventor, of a definite and permanent idea of the *complete and operative* invention, as it is hereafter to be *applied in practice*."[290] Explaining the requirement that the conception be "complete," the Federal Circuit holds that a conception is not complete until the idea is "so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation."[291]

3. Actual Reduction to Practice

The date when the applicant files the patent application is deemed to be the invention's "constructive" reduction to practice in contrast to the "actual reduction to practice" of when the

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[287] *Id.* at 1581–82 (noting that "lack of utility because of inoperativeness, and absence of enablement, are closely related grounds of unpatentability") (citation omitted); *see also* Rasmusson v. SmithKline Beecham Corp., 413 F.3d 1318, 1322–23 (Fed. Cir. 2005) (discussing the relationship between enablement under § 112, ¶ 1 and utility under § 101); *see also* Fregeau v. Mossinghoff, 776 F.2d 1034, 1035, 1039 (Fed. Cir. 1985) (finding inoperative, and therefore lacking utility under § 101, an invention for enhancing beverage flavor through use of a magnetic field).

[288] Pannu v. Iolab Corp., 155 F.3d 1344, 1351 (Fed. Cir. 1998); *see also* Ethicon, Inc. v. U.S. Surgical Corp., 135 F.3d 1456, 1460 (Fed. Cir. 1998); Fina Oil & Chem. Co. v. Ewen, 123 F.3d 1466, 1473 (Fed. Cir. 1997). Other ways of proving "joint" inventorship are to "(2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art." *Pannu*, 155 F.3d at 1351.

[289] Stern v. Trustees of Columbia Univ., 434 F.3d 1375, 1378 (Fed. Cir. 2006).

[290] *Id.* (citation omitted) (emphasis added).

[291] *Id.* (citation omitted).

applicant actually builds an operable device that works.[292] During prosecution of the application before the Patent Office, there is no need for proof of actual reduction to practice unless the applicant needs to establish an earlier date in order to swear behind a prior art reference or in an interference proceeding when the Patent Office is examining co-pending applications by separate entities who claim to have invented the same invention.[293] An actual reduction to practice requires a determination that the inventor's conception, including all its limitations, actually worked for its intended purpose.[294]

4. Ready for Patenting

Arising out of an on-sale statutory bar to patentability,[295] the Supreme Court in *Pfaff v. Wells Elecs. Inc.* found the patent was invalid for being "on sale for more than the year" before the application filing date, because the invention was "ready for patenting [and offered for sale] before it [w]as actually . . . reduced to practice."[296] Two years after *Pfaff*, the Federal Circuit has noted that "development and verification" are needed to ensure that the invention complies with Section 112 and, therefore, "ready for patenting."[297] Indeed, one of the Section 112 requirements is that the applicant disclose her "best mode"[298] of carrying out the invention:

> Paper patents, prematurely filed, eviscerate the value of patent disclosures because they necessarily contain untested, speculative details. Paper patents merely add to the clutter of unproved patents in the PTO and in the courts, requiring fees, examinations, lawyers, trials and appeals, all of which disserve both the

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292 Cooper v. Goldfarb, 154 F.3d 1321, 1327 (Fed. Cir. 1998).

293 *See* Orthman Mfg., Inc. v. Chromalloy Am. Corp., 512 F. Supp. 1284, 1293 (C.D. Ill. 1981).

294 *Cooper*, 154 F.3d at 1327–28 (Fed.Cir.1998) ("In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all the limitations . . . and (2) he determined that the invention would work for its intended purpose.").

295 The applicant shall not be entitled to a patent if the invention was "on sale in this country, more than one year prior to the date of the application for patent in the United States." 35 U.S.C. § 102(b) (2000).

296 525 U.S. 55, 66 (1998).

297 Space Sys./Loral, Inc. v. Lockheed Martin Corp., 271 F.3d 1076, 1080 (Fed. Cir. 2001) ("[W]hen development and verification are needed in order to prepare a patent application that complies with § 112, the invention is not yet ready for patenting.").

298 Patent applications "shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112 (2000).

inventing and the using communities.[299]

Public interest is not served by any lesser requirement that allows § 112 requirements to be watered down to bare ideas.

5. Possession of the Invention

Section 112 further requires a "written description"[300] to "ensure that the patent applicant actually invented the claimed subject matter and was in possession of the patented invention at the time of the filing."[301] For there to be "possession" of the "invention," "actual" possession is not the standard, but the specification shall "convey to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention."[302] Even though actual possession is not required, the word "invention" refers to a "complete" concept rather than merely one that is "substantially complete," because "[t]he logical predicate of 'possession' is, of course, 'completeness.'"[303] And "conception [with its requirement of a complete and operative invention as applied in practice] is a prerequisite to an adequate written description" since "one cannot describe what one has not

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[299] UMC Elecs. Co. v. United States, 816 F.2d 647, 665 (Fed. Cir. 1987) (Smith, J., dissenting).

[300] 35 U.S.C. § 112 (2000) ("The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.").

[301] Monsanto Co. v. Scruggs, 459 F.3d 1328, 1336 (Fed. Cir. 2006). For an insightful commentary proposing that a coherent view of patent law would follow from an analysis that considers "possession" as part of the enablement requirement of § 112, rather than "written description," see generally Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 146 (Winter 2006). Indeed, both requirements are "closely related" and "rise and fall together." LizardTech, Inc. v. Earth Res. Mapping, Inc., 424 F.3d 1336, 1344–45 (Fed. Cir. 2005). Under the "enablement" requirement of § 112, the applicant's specification must enable a person skilled in the art to make and use the invention "without undue experimentation." *Monsanto*, 459 F.3d at 1337–38 (citation omitted); *see also In re* Wands, 858 F.2d 731, 737 (Fed. Cir. 1988) (identifying eight factors of "undue experimentation").

[302] Falko-Gunter Falkner v. Inglis, 448 F.3d 1357, 1365 (Fed. Cir. 2006); *see also* Pandrol USA v. Airboss Ry. Prods., 424 F.3d 1161, 1165 (Fed. Cir. 2005) (written description requires information sufficient "to show that the inventor possessed the invention at the time of [the] original disclosure"); Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563 (Fed. Cir. 1991) (emphasizing "possession *of the invention*") (emphasis in original).

[303] *Falko-Gunter Falkner*, 448 F.3d at 1367 (quoting Pfaff v. Wells Elecs. Inc., 525 U.S. 55, 66 (1998)).

conceived."[304]

In order to keep the inventor honest, the claims cannot be broader than, or construed later for the expedience of litigation to cover the accused device, that which the specification actually described, with all of the claim limitations.[305] Moreover, applicants shall not amend their claims in order to take advantage of later-developed technological advances not described in the specification as filed.[306] Otherwise, the inventor may attempt to overreach and read a broadly claimed invention onto an accused product regardless of the differences.[307]

Therefore, the written description requirement guarantees that the insight for the invention actually belonged to the inventor as an inventor, not as a mere author of imagination and possibilities left to the intelligent and educated reader. It is a different matter, however, if the language triggers insight belonging to the reader, who thinks of what was in fact disclosed in the specification and concludes, "This could be done differently." In that case, the reader (not the patent inventor) is conceiving of a variation of what could have been, might have been, but was not described sufficiently under the written description requirement to allow the patent inventor to take the credit and claim ownership of the reader's invention.

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304 *Id.* at 1367 & n.13 (citation omitted).

305 Kao Corp. v. Unilever US, Inc., 441 F.3d 963, 968 (Fed. Cir. 2006) (The "specification must describe an invention in sufficient detail that one skilled in the art can clearly conclude that the inventor invented what is claimed."); Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1330 (Fed. Cir. 2003) (requiring an applicant "to recount his invention in such detail that his future claims can be determined to be encompassed within his original creation"); Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1480 (Fed. Cir. 1998) (holding that claims can be "no broader than the supporting disclosure"); Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997) (stating that an applicant must describe the invention "with all its claimed limitations") (citations omitted).

306 Chiron Corp. v. Genentech, Inc., 363 F.3d 1247, 1255 (Fed. Cir. 2004) ("The written description requirement prevents applicants from using the amendment process to update their disclosures (claims or specification) during their pendency before the patent office.").

307 LizardTech. Inc. v. Earth Res. Mapping, Inc., 424 F.3d 1336, 1346 (Fed. Cir. 2005) ("By analogy, suppose that an inventor created a particular fuel-efficient automobile engine and described the engine in such detail in the specification that a person of ordinary skill in the art would be able to build the engine. Although the specification would meet the requirements of section 112 with respect to a claim directed to that particular engine, it would not necessarily support a broad claim to every possible type of fuel-efficient engine, no matter how different in structure or operation from the inventor's engine.").

6. Reverse Doctrine of Equivalents

What has come to be known as the "reverse doctrine of equivalents" might offer additional support for the "cold fusion" defense by safeguarding against an inventor's overreaching attempt to stretch the meaning of the claim beyond what she invented in order to sweep in an accused product that embodies after-arising technology. The reverse doctrine of equivalents applies "where a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim."[308] In such a case, the doctrine may operate to "restrict the claim."[309] As a result, the reverse doctrine of equivalents might support a cold fusion defense for combating a "paper patent" by reeling in the patent troll from overstating the invention.

VI. CONCLUSION

The fundamental rationale for the patent system is not necessarily to favor one inventor over another, but to benefit the public by creating an incentive to promote science and useful arts. Indeed, the United States patent system is unique in the world with a "first-to-invent" system rather than a "first-to-file" system.[310] As the quid pro quo for a patent monopoly, inventors ought to prove utility of invention in their case-in-chief by showing that a functioning, operative invention existed when the

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[308] Tate Access Floors, Inc. v. Interface Architectural Res., 279 F.3d 1357, 1368 (Fed. Cir. 2002) (citation omitted).

[309] *Id.* While casting doubt on whether the doctrine would justify a finding of literal non-infringement, the Federal Circuit appears to have left open the possibility that the doctrine may apply to "restrict the claim" under the doctrine of equivalents. The Federal Circuit has since cited (without invoking, but never overruling) the doctrine of equivalents. Cordis Corp. v. Boston Sci. Corp., 188 Fed. App'x 984, 985 (Fed. Cir. 2006); *In re* Corvis Corp., 95 Fed. App'x 308, 308 (Fed. Cir. 2004); Biogen, Inc. v. Berlex Labs., 318 F.3d 1132, 1140 (Fed. Cir. 2003); Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1351 (Fed. Cir. 2003).

[310] Young v. Dworkin, 489 F.2d 1277, 1282–83 (C.C.P.A. 1974). The principles and rationales that support a "cold fusion" defense, introduced here, apply with equal force under the Patent Reform Act of 2007, which, if signed into law, creates a "first *inventor* to file" system, *see* Patent Reform Act of 2007, § 3, as set forth in H.R. 1908 and S. 1145, 110th Cong. 1st Session (Apr. 18, 2007) (emphasis added), and thereby puts the "invent" back into "inventor," who, as a quid pro quo for receiving a patent, is required to have been the first to have provided the public with a new and useful "invention." *See supra* notes 68–72, 97, 211, and accompanying text.

application was filed in order to ensure that the proper scope of their patent only covers what they actually invented and described as a complete and operative invention as intended to be applied in practice. The "cold fusion" defense is in the public interest by providing fuel of interest to the fire of genius and not simply the first one to win a race to the PTO mailroom.

Anything less than this has the untoward consequence of converting the patent system to a copyright system, where inventors need not invent but need only write about their inchoate ideas in paper patents, which is at odds with the patent system. Plainly stated, they are no longer inventors but instead become mere authors. But the Constitution awards for a limited time exclusive rights to authors for their writings and, in contrast, rights to inventors for their discoveries.[311] To keep competitive in an ever increasing global economy, the patent system needs to deter patent trolls from brandishing paper years later against those who independently develop a workable patents device that the patentee could not. Anything short of this will eviscerate legitimate research and development by victims of paper patents and would chill the advancement of sciences.

Recognizing that the line between actual invention and speculation may not always be distinct, a few inventions might fall admittedly somewhere interstitially between sheer speculation and actual manufacturing. When faced with the distinction between where that line lies, however, courts are uniquely equipped to balance the policy in favor of promoting the sciences and the policy of preventing paper patents and patent trolls from sword-and-shield litigation tactics with the goal of litigation costs driving swift settlements. Disabling the patentee from having to show utility of invention causes considerable harm to the values that underlie the monopoly that accompanies a patent, and dangers inherently undermining the patent system are magnified given the spiraling cost of defending a patent infringement lawsuit involving tenuous but expansive patent claims.

Urging a middle ground, the "cold fusion" defense is tailored to accommodate both competing policy considerations the court must balance in the context of the patent system, while

311 U.S. CONST. art. I, § 8, cl. 8 ("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.").

encouraging more efficient, predictable, and reliable resolution of patent cases in order to make the cases less expensive, less time-consuming, and more certain. As the above review has shown, the "cold fusion" defense is needed and should be considered by patent counsel, by judges generally and particularly those comprising the Patent Pilot Program, and in judicial and congressional reforms to U.S. patent litigation, because changing times demand it.