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David W. Okey

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COMMENTS

ISSUED PATENTS AND THE STANDARD OF PROOF: EVIDENCE CLEAR AND CONVINCING OR MERELY PONDEROUS?

I. INTRODUCTION

The United States is one of the few countries to award a patent to the first person to invent, rather than the first person who files for a patent.¹ If there is a dispute, 35 U.S.C. § 102(g) gives the principal rule for determining who has the priority of invention,² and who is thus entitled to the patent.³ The requirements of section 102 may also be used as a defense against patent validity,⁴ asserted by an interfering patent or

A person shall be entitled to a patent unless—

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed or concealed it. In determining priority of invention, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Id.

See also PATENT & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2138.01 (6th ed. rev. 3 1997) [hereinafter MPEP] (stating that section 102 (g) is the basis of interference practice for determining priority of invention).

3. 35 U.S.C. § 135(a) (1996)(stating that the Board of Patent Appeals and Interferences shall determine questions of priority of inventions and may determine questions of patentability). If a patentee was not entitled to the patent because of a violation of the conditions of section 102, then the patent is proven invalid. Checkpoint Sys. v. United States Int'l Trade Comm'n, 54 F.3d 756, 761 (Fed. Cir. 1995) (noting that section 102 (g) may be used as a basis for invalidating a patent in defense to an infringement suit).

4. See, e.g., Mason v. Hepburn, 13 App. D.C. 86 (D.C. Cir. 1898). Mason had invented a clip for holding ammunition for a repeating rifle, but did not apply for a patent on the invention. *Id.* at 88. When alerted to Hepburn's patent, Mason applied for a patent on the basis of his prior invention and reduction to practice. *Id.* at 90. After the Patent Office

^{1.} ANTHONY M. DELLER, 1 WALKER ON PATENTS § 102, at 377 (Deller's ed. 1937), *citing* Reed v. Cutter, 20 F. Cas. 435 (C.C. Mass. 1841) (No. 11,645) (holding that only the first and original inventor, by whom the invention has been perfected and put into actual use, is entitled to a patent).

^{2. 35} U.S.C. § 102 (1996). Section 102 states:

application,⁵ or by an alleged infringer.⁶ The standard of proof used to decide these disputes has changed in recent years as a result of several important cases. In particular, *Price v. Symsek*⁷ changed the older rule requiring evidence beyond a reasonable doubt to overturn patent validity.⁸ Clear and convincing evidence now disproves the validity of an issued patent.⁹

declared an interference proceeding between Hepburn's patent and Mason's application, the court found that Mason had abandoned the invention because he had done nothing to give the public the benefit of the invention. Id. at 90-91. The court found that the inventor who gave the public the benefit of the invention was favored by the policy and spirit of the patent laws and the nature of equity. Id. at 96.

This doctrine, not statutory at the time, was codified into section 102(g) in the Patent Act of 1952. DONALD S. CHISUM, 3 CHISUM ON PATENTS, §10.02[5][b] at 10-23 (1998 ed.) [hereinafter 3 CHISUM]. See also ERNEST B. LIPSCOMB III, 1 LIPSCOMB'S WALKER ON PAT-ENTS § 3.2 at 189, (3d ed. 1984) [hereinafter 1 LIPSCOMB] (explaining desirability of public disclosure). Patents enjoy a presumption of validity. 35 U.S.C. § 282 (1996).

5. *Mason*, 13 App. D.C. at 96 (stating that abandonment may take place intentionally, by leaving the field to other inventors, while in others the first inventor may lose his right by sleeping too long upon it).

6. Dunlop Holdings Ltd. v. Ram Golf Corp., 524 F.2d 33 (7th Cir. 1975), cert. denied, 424 U.S. 958 (1976). When a patentee sued for infringement of a patent for a special golfball covering, the infringer claimed that the patent was invalid because of prior public use by a third party. Id. at 34. The patentee was precluded from having a valid patent since the invention was publicly used in this country by another independent inventor. Id. The patentee defended on the basis that the third party's prior use constituted suppression or concealment, but the court found that public use of many thousands of golf balls was not consistent with either suppression or concealment. Id. at 35-37.

7. Price v. Symsek, 988 F.2d 1187 (Fed. Cir. 1993).

8. Coffin v. Ogden, 85 U.S. 120, 124 (1873) (holding that every reasonable doubt against the defendant-infringer should be resolved against him). In *Coffin*, a locksmith invented a reversible lock for left- and right-handed doors, and showed his invention to several others in January of 1861. *Id.* at 122. His invention was not patented. *Id.* at 123. A second party also invented such a lock in March of 1861, and assigned his patented invention to Miller, who assigned it to Ogden. *Id.* at 121. Ogden sued Coffin to prevent him from selling such locks. *Id.* at 120-21. Coffin's successful defense was that the patentee was not the first and original inventor, since there was another, first inventor, i.e., the locksmith. *Id.* at 121. In deciding the case, the Supreme Court held that the laws required not conjecture, but certainty. *Id.* at 124. Upholding the view that patents were valid, the Court held that every reasonable doubt should be resolved against the defendant infringer. *Id.*

This requirement for certainty is repeated in Morgan v. Daniels, 153 U.S. 120, 125 (1894) (holding that "[t]he prior decision must be accepted as controlling in the subsequent suit between the same parties unless the contrary is established by testimony which in character and amount carries thorough conviction"). The ambivalence of the courts can be seen in Lorenz v. F.W. Woolworth, 305 F.2d 102, 105 (2d Cir. 1962), where the court stated that reasonable doubt on the question of validity must be resolved in favor of the patentee. Id. The court then stated that it could not allow decisions of the Patent Office (the presumption of validity, and the court declared the patent invalid. Id. at 105-06.

9. Price, 988 F.2d at 1195.

1999] ISSUED PATENTS AND THE STANDARD OF PROOF

The United States Patent and Trademark Office ("PTO") grants patents¹⁰ for useful inventions if the applicant appears to be entitled to a patent.¹¹ If a dispute occurs between separate inventive entities before a patent issues to any of the inventors, the PTO may declare an interference.¹²

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The Board of Patent Appeals and Interferences ("Board") hears interferences,¹³ and the Court of Appeals for the Federal Circuit ("Federal Circuit") hears appeals from the Board.¹⁴ If a patent application appears to interfere with an issued patent, the PTO will declare an interference and the Board will hear the case.¹⁵ Disputes over validity of issued patents are matters for federal courts, and the PTO has no authority over

12. 35 U.S.C. § 135(a) (1996).

Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any unexpired patent, an interference may be declared and the Commissioner shall give notice of such declaration to the applicants, or applicant and patentee, as the case may be.

Id.

13. 37 C.F.R. § 1.601(i)(1997). An interference is a proceeding instituted in the PTO before the Board of Patent Appeals and Interferences to determine questions of patentability and priority of invention between two or more parties claiming the same patentable invention. Id.

14. 35 U.S.C. § 141 (1996). A party to an interference dissatisfied with the decision of the Board of Patent Appeals and Interferences on the interference may appeal the decision to the United States Court of Appeals for the Federal Circuit. *Id.* The Federal Circuit is a court of appeals created by the Federal Courts Improvement Act of 1982, to eradicate the wide diversity of standards applied to patent cases. ERNEST B. LIPSCOMB III, 3 LIPSCOMB'S WALKER ON PATENTS § 9.6, at 18 (3d ed. 1985) [hereinafter 3 LIPSCOMB]. See also Jack Q. Lever, The New Court of Appeals for the Federal Circuit, Part I, 64 J. PAT. OFF. Soc'Y 178 (1982); Jack Q. Lever, The New Court of Appeals for the Federal Circuit, Part II (Conclusion), 64 J. PAT. OFF. Soc'Y 243 (1982).

15. 35 U.S.C. § 135 (a) (1996) (stating that the Board shall determine questions of priority and may determine questions of patentability). An interference between applications, or an interference between an application and an issued patent, means at least one claim of each application or patent claims the same subject matter. MPEP, *supra* note 2, § 2303 (noting that the intention of the parties to claim the same patentable invention is essential in every interference proceeding). See also 37 C.F.R. § 1.601(j) (explaining that an "interference-in-fact" exists when at least one claim of a party which corresponds to a count and at least one claim of an opponent which corresponds to the count define the same patentable invention). A "count" defines the interfering subject matter between two or more applications or between an application and a patent; there may be more than one count in an interference action. 37 C.F.R. § 1.601(f).

While applications are before the PTO, an examiner may even suggest that an applicant "copy claims" from an issued patent or application. The examiner will do so if the applications appear to be claiming the same subject matter, and copying claims will bring

^{10. 35} U.S.C. § 101 (1996). "Inventions. Who ever invents any new and useful process, article, manufacture or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

^{11. 35} U.S.C. § 151 (1996) (stating that "[i]f it appears that applicant is entitled to a patent under the law, a written notice of allowance shall be given or mailed to the applicant").

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these cases.¹⁶ In these situations, the usual fact pattern involves a patentee suing for infringement.¹⁷

A patent grants a monopoly to an inventor¹⁸ in exchange for the disclosure of a new, useful and non-obvious invention.¹⁹ The standard of proof represents a burden that the attacker of a patent must bear in order to prove the patent invalid.²⁰ The greater the burden, the more difficult it is to overturn the patent.²¹ The alternative is to uphold the patent, and perhaps an undeserved monopoly.²²

This Comment examines standards of proof in patent litigation and argues for a single standard of proof. Part II summarizes the history of the standards of proof in patent litigation. Part III reviews the meanings of the several standards of proof and then applies the standards of proof to patent interference and infringement cases, examining the differences in evidence required to sustain the burden of proof. This Comment then

16. 28 U.S.C. § 1338 (1994) (stating that federal courts have original jurisdiction for cases where patents and their validity are the primary subject matter).

17. See, e.g., Kolmes v. World Fibers Corp., 107 F.3d 1534, 1543 (Fed. Cir. 1997) (exemplifying the court's practice of holding patents "not invalid," since they are presumed valid when issued by the PTO). See also 35 U.S.C. § 282 (1996).

18. U.S. CONST. art. I, 8, cl. 8 (promoting the sciences and useful arts by granting to inventors exclusive use of their inventions for a limited time).

19. Kewanee Oil v. Bicron Corp., 416 U.S. 470, 483 (1974) (stating that inventions which meet the tests of utility, novelty and non-obviousness are entitled to be protected, but those which do not meet the test are not so entitled).

20. Am. Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1360 (Fed. Cir. 1984), cert. denied, 469 U.S. 821 (1984).

21. V.C. Ball, The Moment of Truth: Probability Theory and Standards of Proof, 14 VAND. L. REV. 807, 813 (1961) (noting that changing the requirement of persuasion makes the task more difficult, but does not change the nature of the task).

22. Sherman Act, 15 U.S.C. § 2 (1994) (stating that one who monopolizes any part of the trade or commerce of the several states shall be guilty of a felony). Monopolies may have an anti-competitive effect, resulting in higher prices than the market would otherwise allow. See RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW, 291-94 (4th ed. 1992).

The monopolistic effect of patents in certain areas, such as medicine, has been challenged by such measures as the Physician's Immunity Act, 35 U.S.C. § 287(c) (1996), which allows a private physician to practice a patented medical procedure without fear that the patent will be enforced against him. Eric M. Lee, 35 U.S.C. § 287(c)— The Physician Immunity Statute, 79 J. PAT. & TRADEMARK OFF. SOC'Y 701 (1997).

the applications, or an application and a patent, into interference; refusal to copy claims is grounds for the examiner to reject the patent application. 37 C.F.R. § 1.605(a).

In an interference proceeding, there is a senior party, and at least one junior party. 37 C.F.R. § 1.601(m) (defining a senior party as the party with the earliest effective filing date as to all counts, or if there is no party with the earliest filing date as to all counts, the party with the earliest filing date; a junior party is any other party). A junior party has the burden of proving priority of invention over the senior party. 37 C.F.R. § 1.657(a). A rebuttable presumption exists that as to each count, the inventors made their invention in the chronological order of the earlier of their filing dates, and that the burden of proof shall be upon the party who contends otherwise. *Id*.

proposes that there should be only a single standard of proof in patent litigation, i.e., preponderance of the evidence.

II. BACKGROUND

A patent is presumed valid when issued by the PTO.²³ Until *Price v.* Symsek,²⁴ an interfering application or an infringer had to clear this "presumption of validity" hurdle with "proof beyond a reasonable doubt" in order to prevail in a cause of action.²⁵ The standard of proof needed to overcome the validity of an issued patent is now "clear and convincing evidence."²⁶ When two patent applications are pending before the PTO,

26. Price, 988 F.2d at 1195. Even before Price and the establishment of the Court of Appeals for the Federal Circuit, other circuits were moving away from "proof beyond a reasonable doubt," and toward the "clear and convincing evidence" standard. See Codex Corp. v. Milgo Elec. Corp., 717 F.2d 622, 628 (1st Cir. 1983), cert. denied, 466 U.S. 931 (1984) (requiring clear and convincing evidence to overturn a patent for a data communication system); Digital Equip. Corp. v. Diamond, 653 F.2d 701, 706 (1st Cir. 1981) (citing a PTO standard used to find nine of thirteen counts of fraud established by clear and convincing evidence for a patent on control systems for a small computer); Dempster Bros. v. Buffalo Metal Container Corp., 352 F.2d 420, 424 n.3 (2d Cir. 1965), cert. denied, 384 U.S. 940, reh'g denied, 384 U.S. 1027 (1966) (invalidating a patent for front end loader "gooseneck" arms by clear and convincing evidence): In re Coordinated Pretrial Proceedings in Antibiotic Antitrust Actions, 676 F.2d 51, 53 (3d Cir. 1982) (requiring the government to show by clear and convincing evidence intent to defraud the Patent Office on an important tetracycline patent); Aluminum Co. of Am. v. Amerola Products Corp., 552 F.2d 1020, 1024 (3d Cir. 1977) (finding clear and convincing evidence required to show patent invalidity); Tights, Inc. v. Acme-McCrary Corp., 541 F.2d 1047, 1054 (4th Cir. 1976), cert. denied sub nom. Kayser-Roth v. Tights. Inc., 429 U.S. 980 (1976) (holding patent on panty-hose not invalid by clear and convincing evidence); Ludlow Corp. v. Textile Rubber & Chem. Co., 636 F.2d 1057, 1059 (5th Cir. 1981) (holding a patent invalid for anticipation by more than a preponderance of the evidence); Stewart-Warner Corp. v. City of Pontiac, Mich., 717 F.2d 269, 272 (6th Cir. 1983) (requiring infringing party to show patent invalidity by clear and convincing evidence over prior use or sale more than one year before application for patent); Armco Inc. v. Republic Steel Corp., 707 F.2d 886, 889 (6th Cir. 1983) (infringing party needed to show over-sized, long-span steel arch obvious in view of prior art by clear and convincing evidence); Deere & Co. v. Int'l Harvester Co., 658 F.2d 1137, 1145 (7th Cir.), cert. denied, 454 U.S. 969 (1981) (holding patent for corn-harvesting machine valid unless overturned by clear and convincing evidence); Reese v. Elkhart Welding & Boiler Works, Inc., 447 F.2d 517, 527 (7th Cir. 1971) (holding trailer hitch patent valid by clear and convincing evidence); Span-Deck, Inc. v. Fab-Con, Inc., 677 F.2d 1237, 1240 & n.3 (8th Cir. 1982) (holding patent for manufacturing process for prestressed, precast concrete valid unless overturned by clear and convincing evidence of prior public use or sale); Contico Int'l, Inc. v. Rubbermaid Commercial Prods., Inc., 665 F.2d 820, 822 (8th Cir. 1981) (holding design patent for commercial dollies valid unless overturned by substantial evidence); Sarkisian v. Winn-Proof Corp., 697 F.2d 1313, 1316 (9th Cir. 1983), cert. denied sub nom. Carsonite Int'l, Inc., v. Carson Mfg. Co. 460 U.S. 1052 (1983) (requiring showing of obviousness by clear and convincing evidence on patent for portable sign stand); Penn Int'l Indus., Inc.

^{23. 35} U.S.C. § 282 (1996).

^{24.} Price v. Symsek, 988 F.2d 1187 (Fed. Cir. 1993).

^{25.} Coffin v. Ogden, 85 U.S. 120 (1873).

and there is neither an issued patent nor any presumption of validity, the standard of proof is "preponderance of the evidence."²⁷

Three standards of proof exist, namely "beyond a reasonable doubt," "clear and convincing evidence," and "preponderance of the evidence."²⁸ Patent interference cases formerly required proof beyond a reasonable doubt when an inventor filed an interfering application after issuance of the patent in question.²⁹ Proof beyond a reasonable doubt was also the standard if an infringer attempted to use patent invalidity as a defense.³⁰

In a dispute between two parties, the finder of fact cannot acquire unassailably accurate knowledge concerning events in the past.³¹ The standard of proof instructs the fact-finder as to the "degree of confidence

27. Boises v. Benedict, 27 F.3d 539, 541-42 (Fed. Cir. 1994). In the case of an interference between an application and a patent which had been co-pending before the patent issued, the standard remains "preponderance of the evidence." Bruning v. Hirose, Nos. 96-1184, 96-1221, 1998 WL 690851, at *3 (Fed. Cir. Sept. 29, 1998).

28. California ex rel. Cooper v. Mitchell Bros. Santa Ana Theater, 454 U.S. 90, 93 (1981).

29. 3 CHISUM, supra note 4, § 10.03[1][c][iii] at 10-37. Note that § 102(b) bars any patent on an application filed more than one year after an interfering patent issues. 35 U.S.C. § 102(b) (1994).

30. Coffin, 85 U.S. at 120.

31. In re Winship, 397 U.S. 358, 370 (1970) (Harlan, J., concurring).

v. New World Mfg., Inc., 691 F.2d 1297, 1300 (9th Cir. 1982), citing Speed Shore Corp. v. Denda, 605 F.2d 469, 471 (9th Cir. 1979) (holding patent for water bed invalid for obviousness by clear and convincing evidence); Handgards, Inc. v. Ethicon, Inc., 601 F.2d 986, 996 (9th Cir. 1979), on remand 552 F. Supp. 820 (N.D. Cal. 1982), affd, 743 F.2d 1282 (9th Cir. 1984), cert. denied, 469 U.S. 1190 (1985) (holding alleged infringer must show badfaith patent prosecution by clear and convincing evidence to overcome validity of patent for glove-making process); Cent. Soya Co., Inc. v. Geo. A. Hormel & Co., 645 F.2d 847, 849-50 (10th Cir. 1981) (holding valid patent for method of making pork patties since infringing party did not produce clear and convincing evidence); Oliver United Filters, Inc. v. Silver, 206 F.2d 658, 664 (10th Cir. 1953), cert. denied, 346 U.S. 923 (1954) (requiring proof of infringement of apparatus and process for extracting sugar from sugar beets by clear and convincing evidence); Mfg. Research Corp. v. Graybar Elec. Co., 679 F.2d 1355, 1360 (11th Cir. 1982) (holding patent for cable bender invalid by clear and convincing evidence over prior use or sale); Haloro, Inc. v. Owens-Corning Fibreglas Corp., 266 F.2d 918, 919 (D.C. Cir. 1959) (holding patent for spun-glass roofing mop invalid over clear and convincing evidence of fraud). But see Anderson Co. v. Trico Prods. Corp., 267 F.2d 700, 701, 702, 705 (1st Cir. 1959) (holding patent for wiper for curved windshield invalid over prior art by evidence beyond a reasonable doubt; "clear, satisfactory and beyond a reasonable doubt;" "clear and satisfactory"); Tenneco Chems. Inc. v. Burnett & Co., Inc., 691 F.2d 658, 662 (4th Cir. 1982) (noting that patentee could rely on statutory presumption of validity for a process of making foam unless otherwise shown by preponderance of the evidence); Baumstimler v. Rankin, 677 F.2d 1061, 1065-66 (5th Cir. 1982) (holding preponderance of evidence required to overcome presumption of validity); Kiva Corp. v. Baker Oil Tools, Inc., 412 F.2d 546, 548, 551 (5th Cir.), cert. denied, 396 U.S. 927 (1969) (stating that corroborated oral testimony was sufficient to prove prior use of oil well tools, "clear and satisfactory, and by some, it is said, beyond a reasonable doubt;" "clear and convincing evidence").

our society thinks he should have in the correctness of factual conclusions for a particular type of adjudication."³² Though quantitatively imprecise, the different standards of proof communicate to the fact-finder different notions concerning the degree of confidence expected in the correctness of factual conclusions.³³

A history of patent cases shows that courts formerly required "proof beyond a reasonable doubt" or that "all doubts must be resolved against the defendant."³⁴ Judge Learned Hand held that patent cases were important enough that proof should be "quite as absolute as a criminal case, perhaps even more so."³⁵ A more modern view emerged in 1970 with *In re Winship*.³⁶ In a concurring opinion, Justice Harlan espoused the view that criminal cases have a greater burden of proof than civil cases.³⁷

Ten years later, the Supreme Court, in *Cooper*, decided that civil cases had never required proof beyond a reasonable doubt.³⁸ Only criminal matters had the burden of proving a case beyond a reasonable doubt.³⁹ The logical extension of this reasoning was that patent cases

35. United Shoe Mach. Corp. v. Brooklyn Wood Heel Corp., 77 F.2d 263 (2nd Cir. 1935).

36. 397 U.S. at 358.

37. Id. at 372 (noting a requirement for a higher burden of proof in criminal cases because society has determined it is worse to convict an innocent man than to free a guilty one).

38. California *ex rel* Cooper v. Mitchell Bros. Santa Ana Theater, 454 U.S. 90, 93 (1981).

39. Winship, 397 U.S. at 369 (explaining the court's reasoning). The Court in Winship further explained:

When one makes such an assessment, the reason for different standards of proof in civil as opposed to criminal cases becomes apparent. In a civil suit between two private parties for money damages, we view it as no more serious in general for there to be an erroneous verdict in the defendant's favor than for there to be an erroneous verdict in the plaintiff's favor. A preponderance of the evidence standard therefore seems peculiarly appropriate for, as explained most sensibly, it simply requires the trier of fact "to believe that the existence of a fact is more probable than its nonexistence before (he) may find in favor of the party who has the burden to persuade the (judge) of the fact's existence" references omitted).

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^{32.} Id.

^{33.} Id.

^{34.} ERNEST B. LIPSCOMB III, 4 LIPSCOMB'S WALKER ON PATENTS § 13.20 at 365 (3d ed. 1986) [hereinafter 4 LIPSCOMB], *citing* Marathon Oil Co. v. Firestone Tire and Rubber Co., 205 U.S.P.Q. 520 (N.D. Ohio 1979). Marathon reaches as far back as Morgan v. Daniels, 153 U.S. 120 (1894), for the principle that the resolution of the Board of Patent Interferences must be accepted as controlling. Marathon, 205 U.S.P.Q. at 524. The court determined that it would not overthrow the validity of an issued patent "unless the contrary is established by testimony which in character and amount carries thorough conviction." Id. at 526. The Patent and Trademark Office Rules of Practice are as binding as the law itself. 4 LIPSCOMB, supra note 34, § 13.1, at 341-42.

did not require such a stringent standard of proof.⁴⁰ This set the stage for an opinion that patent infringement or interference disputes would not require proof beyond a reasonable doubt, despite a plethora of precedents to the contrary.⁴¹

The Court of Appeals for the Federal Circuit recognized the trend with the decision in *Price*.⁴² The court examined the explanations in *Winship*⁴³ and *Cooper*⁴⁴ and decided that there was sufficient reason and precedent to change the evidentiary standard to clear and convincing evidence in cases where a patent enjoys the presumption of validity.⁴⁵ A subsequent case clarified the court's holding that the standard was preponderance of the evidence if there was no presumption of validity.⁴⁶ There was no distinction between patent interference or infringement cases.⁴⁷

The decision in *Price* lowered the burden of proof for alleged infringers; it also resolved conflicts in the issues of burden of proof, and especially that of corroboration.⁴⁸ Cases involving a patent with a presumption of validity require "clear and convincing evidence."⁴⁹

42. Price v. Symsek, 988 F.2d 1187, 1193 (Fed. Cir. 1993) (finding that there was no reason either to apply criminal standards or to use confusing verbiage in patent cases; while societal interests would sometimes involve stakes or issues "particularly important" or "more substantial than mere loss of money," those needs could be met by a "clear and convincing evidence" standard).

43. Winship, 397 U.S. 358 at 370 (holding that the standard of proof utilized in an adjudication reflects a very fundamental assessment of the comparative social costs or "disutility" of erroneous factual determinations).

44. California *ex rel* Cooper v. Mitchell Bros.' Santa Ana Theater, 454 U.S. 90, 93 (1981) (finding that the "beyond a reasonable doubt" standard has never been required in a civil case by the Supreme Court).

47. Price, 988 F.2d at 1192 (citing Langevin v. Nicolson, 110 F.2d 687, 694 (C.C.P.A. 1940)). While interference cases decide priority, an infringer may try to show that the allegedly infringed patent is not valid because of some violation of the conditions of patentability. ERNEST B. LIPSCOMB III, 7 LIPSCOMB'S WALKER ON PATENTS § 26:1, at 424 (3d ed. 1988) (noting that the defenses to patent validity include the conditions of 35 U.S.C. §§ 102 and 103 for granting patents).

48. Warren M. Haines II, Recent Decisions, 32 Dug. L. Rev. 149, 162 (1994).

49. Price, 988 F.2d at 1187. Price was the culmination of a line of judicial reasoning which may have had its birth in the unanimous opinion written by Justice Cardozo in Radio Corp. of Am. v. Radio Eng'g Lab., 293 U.S. 1 (1934).

^{40.} Cooper, 454 U.S. at 93.

^{41.} Morgan v. Daniels, 153 U.S. 120, 125 (1894) (holding that the testimony must carry thorough conviction); Coffin v. Ogden, 85 U.S. 120, 124 (1873) (holding that every reasonable doubt should be resolved); Lorenz v. F.W. Woolworth, 305 F.2d 102, 105 (2d Cir. 1962) (holding that reasonable doubt in favor of validity must be resolved in favor of the patentee); United Shoe Mach. Corp. v. Brooklyn Wood Heel Corp., 77 F.2d 263 (2d Cir. 1935) (holding that proof in patent cases should be quite as absolute as a criminal case, perhaps even more so).

^{45.} Price, 988 F.2d at 1195.

^{46.} Boises v. Benedict, 27 F.3d 539 (Fed. Cir. 1994).

1999] ISSUED PATENTS AND THE STANDARD OF PROOF

Whether two standards of proof are needed is another question.

More so than most court instructions, standards of proof are a source of confusion for juries, and perhaps judges,⁵⁰ although questions of patentability are questions of law.⁵¹ A court may hear evidence on factual matters in order to help resolve questions of law.⁵² If the standard of proof in a particular case is clear and convincing evidence, the fact-

Justice Cardozo cited a number of precedents in which the burden of proof for a defense of prior invention (to invalidate an issued patent) was that every reasonable doubt should be resolved against the defendant, or that what the defendant sought to prove should be established by the clearest proof, perhaps beyond a reasonable doubt. *Id.* at 7-8. Pronouncements such as these were made in circumstances where courts were "not defining a standard in terms of scientific accuracy or literal precision, but were offering counsel and suggestion to guide the course of judgment." *Id.* at 8.

The Justice may have been influenced by the long history of litigation on the subject matter of this suit, in which the rights to an invention in 1912 were not finally determined until this 1934 opinion. Id. at 1-2. Four claimants, acting independently, discovered an electronic circuit and all four claimed a patent. Id. at 3. The prize of an exclusive patent falls to the one who happened to be first; the others gain nothing for all their toil and talents. Id. After numerous interferences and lawsuits, one applicant satisfactorily proved that his date of invention, August of 1912, was the earliest and was awarded two U.S. patents. Id. at 4.

The patentee's assignee, Radio Corp. of America (RCA), then brought at least five more suits seeking to enforce the patent against alleged infringers. Id. at 4-5. RCA won all its suits, primarily on the basis of the presumed validity of the patents, which required the defendants to prove patent invalidity by "clear and convincing evidence," rather than a "preponderance of the evidence." Id. at 5-6.

The clear lesson in this case is that it is best to have the presumption of validity: [A] court might have a clear conviction that the validity of a patent had been successfully impeached, if it were passing upon the issue unhampered by the view of others, and yet the conviction might not be clear enough to overthrow a holding to the contrary approved by other judges.

Id. at 9-10.

50. C.M.A. McCauliff, Burden of Proof: Degrees of Belief, Quanta of Evidence, or Constitutional Guarantees?, 35 VAND. L. REV. 1293, 1298 (1982) [hereinafter McCauliff] (noting that there is confusion as to whether standard of proof applies to the objective quantum of evidence or to the subjective belief of the individual).

51. Graham v. John Deere Co., 383 U.S. 1, 17 (1966) (holding that the ultimate question of patent validity is one of law, while questions leading to the ultimate question of validity may be satisfied by basic factual inquiries).

52. Markman v. Westview Instruments, 52 F.3d 967, 973-74 (Fed. Cir. 1995), affd 517 U.S. 370 (1996).

See also 4 LIPSCOMB, supra note 34, § 13.20, at 366. Lipscomb cites Paivinen v. Sands, 339 F.2d 217 (C.C.P.A. 1965), for the proposition that the burden of proof consists of the burden of coming forward with the evidence and the burden of persuasion. 4 LIPSCOMB, supra note 34, § 13.20, at 366. The burden of persuasion itself then involves two questions, that is, "whether the facts are believable and whether they are sufficient, as a matter of law." Id. (emphasis in the original).

Findings of fact and conclusions of law are to be stated separately in bench trials. FED. R. CIV. P. 52(a). A court may require a jury to return only a special verdict in the form of a special written finding upon each issue of fact. FED. R. CIV. P. 49(a).

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finder, in assessing judgment, may consider only those facts established by clear and convincing evidence.⁵³

III. ANALYSIS

The standard of proof in patent validity cases is a measure of whether the fact-finder must believe in the patent's validity by a narrow margin or by a wide margin.⁵⁴ Patent litigation often requires the wider margin, clear and convincing evidence, because of the presumption of validity.⁵⁵ The only reason for the existence of the patent, and the presumption of validity, is the PTO's examination and issuance of the patent.⁵⁶ But when litigation arises, a determined advocate, spending many thousands of dollars, can often, if not always, find prior art which the PTO has not considered.⁵⁷

This section will study cases where the PTO did not consider evidence already in the record crucial to a determination of priority,⁵⁸ did not consider relevant prior art⁵⁹ and did not have access to evidence disproving patentability.⁶⁰

Finding unexamined prior art does not mean the patent is invalid, nor does it lower the burden of proof.⁶¹ Instead, the same deference applies to any issued patent; but there is no reason to defer to art the PTO

Note the distinction that the evidence must be such that the trier of fact clearly and convincingly believes the facts on the one side, more so than the facts on the other side. The conclusion of law then follows. *See* Bradley, *supra* note 53, at 138-39.

55. Price v. Symsek, 988 F.2d 1187, 1194 (Fed. Cir. 1993).

56. See 3 CHISUM, supra note 4, § 5.06[2], at 5-671 to 5-677 (citing Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976) (opining that there is an additional aspect to the presumption which relates to the deference due to the technical expertise possessed by the Patent Office and not generally possessed by federal judges)).

57. In re Portola Packaging, Inc., 110 F.3d 786, 789 (Fed. Cir. 1997).

58. Boises v. Benedict, 27 F.3d 539 (Fed. Cir. 1994).

59. Price, 988 F.2d at 1187.

60. Buildex, Inc. v. Kason Indus., Inc., 665 F. Supp 1021 (E.D.N.Y. 1987), rev'd 849 F.2d 1461 (Fed. Cir. 1988).

61. Am. Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1360 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984), (holding that the finding of prior art or invalidating evidence not before the PTO reduces or eliminates the deference due the PTO, but does not shift or

^{53.} Charles W. Bradley, *The Changing Role of Juries in Patent Litigation*, 416 PRACTICING L. INST. PAT. SERIES 113, 138 (1995) [hereinafter Bradley].

^{54.} Id. at 138 (stating that a challenger must come forward with proof of facts sufficient to convince the court, on an issue of law, that the patent is invalid—by a wide margin or by a narrow margin). Bradley then cites SSIH Equip. S.A. v. United States Int'l Trade Comm'n, 718 F.2d 365 (Fed. Cir. 1983). Bradley, *supra* note 53, at 139. That court found that the clear and convincing standard applies only to the facts, not to the ultimate issue of law in the case. SSIH, 718 F.2d at 375. While undoubtedly certain facts in patent litigation must be proved by clear and convincing evidence, the formulation of a legal conclusion on validity, from the facts established at trial, is a matter reserved for the court. Id.

did not examine.⁶² Under these circumstances, there is no reason for the clear and convincing evidence standard.⁶³ Instead, the wiser course would be to examine facts, in priority and infringement cases, for a preponderance of the evidence.⁶⁴

There should be only one standard of proof in patent litigation, a preponderance of the evidence. This Comment examines the meanings of the terms used in standards of proof and then explores the application of these standards to patent interference and infringement cases. This Comment argues that no reasonable basis exists for a higher standard of proof, clear and convincing evidence, in cases involving issued patents.

Under the "intrinsic evidence" rules, courts are to look first at what is in the patent and its prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Courts may only look at "extrinsic evidence" if an ambiguity remains. *Id.* at 1584. At the same time, the "rule of reason" followed by the Patent Office in its process for examining and granting patents, urges that all pertinent evidence be evaluated. Coleman v. Dines, 754 F.2d 353, 360 (Fed. Cir. 1985) (citing *Mikus v. Wachtel*, 542 F.2d 1157 (C.C.P.A. 1976)). Following the "rule of reason" may thus have the effect of entering more evidence into the record during patent prosecution. *Cf. Coleman*, 754 F.2d at 357-58 (noting that the fact-finder must look at the evidence; pointing out new evidence introduced at trial).

64. See McCauliff, supra note 50, at 1298. Professor McCauliff argues that there is a great deal of ambiguity as to the meaning of the several standards, and how they are interpreted by judges and jurors alike. *Id.* at 1297-99, 1305.

Professor McCauliff conducted several surveys of judges, and how they associate standards of proof with mathematical probabilities. *Id.* at 1326-35. She sent a questionnaire to all federal district and circuit court judges, and the justices of the United States Supreme Court. *Id.* at 1327. She received in return one hundred and seventy one numerical ratings out of approximately two hundred and eighty five sent out. *Id.* One question asked the judges' and justices' opinions of the probability associated with conviction beyond a reasonable doubt. *Id.* The responses ranged from fifty percent to one hundred percent, with about seventy percent of the responses between eighty percent and ninety five percent. *Id.* at 1327. Twenty-one of the respondents felt that one hundred percent conviction was needed for certainty beyond a reasonable doubt. *Id.*

McCauliff also mentions a prior survey, about ten years earlier, with similar results. Id. at 1328 (citing Rita J. Simon & Linda Mahan, *Quantifying the Burdens of Proof*, 5 LAW & Soc'Y REV. 319 (1971), in which about one-third of four hundred responding state and federal judges placed "reasonable doubt" at more than eighty percent, one-third at ninety to ninety five percent, and one-third at one hundred percent).

lighten the standard of proof). Prior art is generally defined as prior patents, publications, or inventions. See 3 CHISUM, supra note 4, 5.03[3] at 5-126.

^{62.} Am. Hoist & Derrick Co., 725 F.2d at 1359-60 (noting that when patent validity is attacked with prior art or other evidence not considered by the PTO, there is no reason to defer to the PTO so far as its effect on validity is concerned).

^{63.} Id. (stating that new prior art not before the PTO may so clearly invalidate a patent that the burden is fully sustained merely by proving the existence of the art and applying the proper law).

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A. The Meanings of the Terms

Standards of proof have long been a source of confusion for juries, and perhaps even some judges.⁶⁵ The three standards of proof normally used in court do not specify the evidence needed,⁶⁶ nor are the standards specific about the degree of certainty, which must exist in a juror's mind.⁶⁷ Estimates show about seventy percent of patent cases are now tried before juries, allegedly because patent lawyers have perceived both juries and the Federal Circuit to be pro-patent.⁶⁸ One influential author believes that the jury should be probably, highly probably, or almost certainly convinced of what has happened,⁶⁹ rather than considering whether there is a preponderance of evidence, clear and convincing evidence, or evidence beyond a reasonable doubt.

What does "preponderance of the evidence" mean? An example from another type of civil action, torts, is illustrative.⁷⁰ A bus on a city street forced a motorist off the road, where she collided with a parked vehicle.⁷¹ The city had issued an operating permit for Rapid Transit, Inc. to operate buses on the street where the accident occurred. Another bus com-

68. Allen N. Littman, The Jury's Role in Determining Key Issues in Patent Cases: Markman, Hilton Davis and Beyond, IDEA 207, 209 (1997) (citing 1994 Dir. of the Admin. Office of the U.S. Dist. Courts, Table C-4, at A1-79).

69. J. P. McBaine, Burden of Proof: Degrees of Belief, 32 CAL. L. REV. 242, 246-47 (1944). Professor McBaine proposed these paraphrases in an attempt to reduce uncertainty, conflict and confusion in our legal system as to the meaning of the three degrees of persuasion and belief, and the way they should be expressed in instructions to a jury. *Id.* at 246.

Professor McBaine particularly believed that the state of the law, as it pertained to proof "beyond a reasonable doubt," was in an unsatisfactory state. *Id.* at 255. He felt that the case law rulings were neither consistent nor satisfactory and cited Wigmore for the belief that detailed amplifications usually degenerated "into a mere tool for counsel who desire to entrap an unwary judge into forgetfulness of some obscure precedent," or quibbling over words uttered or declined to be uttered by the judge. *Id.* at 256 (citing JOHN H. WIGMORE, 9 EVIDENCE § 2497 (3d ed. 1940)).

70. Bert Black, A Unified Theory of Scientific Evidence, 56 FORDHAM L. REV. 595, 668 (1988) (applying tort law to a variety of cases where evidentiary issues can be difficult, such as medical malpractice). For example, Black argues that a requirement for "reasonable medical certainty," i.e., clear and convincing evidence, is meaningless when judges rule that there is no preponderance of the evidence unless a plaintiff proves his case with "reasonable medical certainty." Id. at 668 & n.446.

71. Smith v. Rapid Transit, Inc., 58 N.E.2d 754, 754-55 (Mass. 1945).

^{65.} McCauliff, *supra* note 50, at 1305 (stating that "[b]ecause of the inability—and reluctance— to agree on the meaning of the various burdens of proof, judges continue to apply different burdens of proof, even to preliminary questions of fact concerning constitutional claims").

^{66.} Id. at 1298 (stating that "[j]ury instructions on burdens of proof are almost always vague and ambiguous and thus confuse the very jurors they were intended to guide. . . [j]udges, perhaps by design, explain only cursorily the phrases that they use to convey the proper degree of certainty to the jury").

^{67.} Id. at 1323.

pany also operated in the city, but on routes different from those of Rapid Transit.⁷² When the motorist, unable to positively identify the offending bus, sued Rapid Transit, Rapid Transit conceded that its bus route included the place where the accident occurred.⁷³ Even though Rapid Transit admitted that its buses used the route where the accident occurred, the court directed a verdict for the defendant, and the Massachusetts Supreme Court agreed.⁷⁴

The court elaborated that a "proposition is proved by a preponderance of the evidence if it is made to appear more likely or probable in the sense that actual belief in its truth, derived from the evidence, exists in the mind or minds of the tribunal notwithstanding any doubts that may still linger there."⁷⁵ Clear and convincing evidence has been defined as "evidence which produces an abiding conviction that the truth of the factual contentions are highly probable."⁷⁶

Professor Tribe uses this case to make the point that even if there were a very high probability that the bus in question were the defendant's, that does not amount to proof.^{77} Even if courts were more inclined to use mathematical guidelines, there is great uncertainty over what those guidelines would be⁷⁸ or what they would mean.⁷⁹ Others argue

74. Id. at 754 (holding that a mathematical probability which somewhat favors a proposition to be proved is not sufficient).

75. Id., (citing Sargent v. Massachusetts Accident Co., 29 N.E.2d 825, 827 (Mass. 1940)). A young man was last seen alive when he was about to enter a rapids known to be very dangerous (the rapids fell seven hundred feet in a short distance, and only three expeditions were known to have passed through safely). Sargent, 29 N.E.2d at 826. His body was never found, but his paddle was found one month later, and part of his kayak eight months later. Id.

In a suit by the man's estate for life insurance benefits, the trial judge directed a verdict for the defendant insurance company, but the Massachusetts Supreme Court reversed and directed a verdict for the estate. Id. at 825. The court noted that the weight or preponderance of the evidence is its power to convince the tribunal of the actual truth of the proposition to be proved. Id. at 826.

76. Colorado v. New Mexico, 467 U.S. 310, 316 (1984).

77. Laurence A. Tribe, Trial by Mathematics: Precision and Ritual in the Legal Process, 84 HARV. L. REV. 1329, 1340-41 & n.37, 1349-50 (1971) [hereinafter Tribe]. For instance, another bus company may have operated on those streets, and charter busses or busses from out of town may also have been operating at the time in question. A mere probability, even a high one, such as eighty percent, does not justify a verdict against the defendant without actual evidence. *Id.* at 1349.

78. McCauliff, supra note 50, at 1332-33. In another portion of her survey, Professor McCauliff asked 175 judges the meaning of "preponderance of the evidence" and "more probable than not." *Id.* Even on this simple proposition, only about sixty percent of the judges believed that 50 percent was the right range. *Id.* at 1333. Most of the remaining forty percent of judges thought that more was required, although this usually took the form of 55 percent or 60 percent for a preponderance of the evidence. *Id.* A small minority felt

^{72.} Id. at 755.

^{73.} Id.

for courts to consider not only high probabilities, but also the confidence bands around those probabilities. 80

The bus case illustrates "preponderance of the evidence," while other examples may be used for "clear and convincing evidence" and "proof beyond a reasonable doubt." Consider Dean Prosser's example concerning a passenger injured in a railroad yard.⁸¹ If a passenger suffered an injury in a railway car, which derailed, there is an inference that the railroad was negligent.⁸² If she further shows that an open switch caused the derailment, she destroys any inference of other causes, but the inference that the defendant did not use proper care in looking after its switches is not destroyed, but strengthened.⁸³ And if she then can show that a drunken switchman left the switch open, there is nothing left to

80. Neil B. Cohen, Confidence in Probability: Burden of Persuasion in a World of Imperfect Knowledge, 60 N.Y.U. L. Rev. 385 (1985). Professor Cohen also reminds us of the difference between sampling, where we believe with a degree of confidence that our sample represents a larger population, and any particular case, where the evidence is not a sampling, but rather may represent the sum total of what we know about that particular event)—and it may not be enough. *Id.* at 407.

Cohen points out that one reason for denying plaintiff a judgment in the bus case is to encourage the plaintiff to gather more information about the facts than merely the probability of the defendant bus company's liability. *Id.* at 396. Cohen illustrates the difference between a "point estimate" and a detailed parameter using examples of marbles (picking white marbles from a mix of white and black) or coins (tossing for "heads"). *Id.* at 398. The difference in confidence intervals between flipping a coin 50 times, 100 times or 50,000 times is significant, even though the expected result in all three cases should be equal, i.e., an expected probability of 0.5. *Id.* at 400.

If one tosses the coins in these examples, "heads" may come up, respectively 27 times, 51 times and 26,000 times. *Id.* A point estimate of the next result being "heads" is, respectively, .54(27/50), .51(51/100) and .52 (26000/50000). *Id.* However, at a ninety-five percent confidence level, the interval estimates for the three situations are .54 plus or minus .14, .51 plus or minus .098, and for the 50,000-toss situation, .52 plus or minus .004. *Id.* In only the last of these situations (the 50,000 tosses) can we say with a ninety-five percent level of confidence that the interval does not include the expected 0.50 probability, since the interval of .520 plus or minus .004 (.516 to .524) does not include the expected result of 0.5 probability of a coin toss equally favoring "heads" or "tails." *Id.* at 400-01.

Only with the aid of a confidence level parameter in the last example can we say with confidence that the coin is *not* fair. *Id.* at 401. Professor Cohen's hypothesis is that point estimates are not enough, and that by analogy to the bus case, the amount of information known is only a small fraction of that which could be known about the incident in question. *Id.* at 397-98.

81. W. PAGE KEETON ET AL., PROSSER & KEETON ON THE LAW OF TORTS § 40, at 260 (5th ed. 1984).

that 40 percent or even 20 percent was a percentage sufficient to judge the evidence "more probable than not." Id.

^{79.} Tribe, *supra* note 77, at 1358-59 (expressing doubt concerning the ability of nonmathematical laymen to convert probabilities into assessments and verdicts).

^{82.} Id.

^{83.} Id.

infer.84

It would be reasonable to interpret derailment as "preponderance of the evidence." Proof of the open switch exemplifies "clear and convincing evidence." Proof of the drunken switchman is evidence "beyond a reasonable doubt."

Proof beyond a reasonable doubt is no longer required for patent cases after Price.⁸⁵ Instead, the fact-finder in a patent case involving the presumption of validity must now decide whether a particular fact is true, and whether by a wide margin or by a narrow margin.⁸⁶ At issue is whether two standards are needed, or whether preponderance of the evidence is a sufficient standard of proof.

EVIDENCE NOT CONSIDERED BY THE PTO B.

This section outlines two patent interference cases in which the PTO did not consider important evidence. In Boises, the standard of proof was preponderance of the evidence, since there was no issued patent and thus no presumption of validity.⁸⁷ Price concerned an issued patent with the presumption of validity.⁸⁸ Both cases turned on evidence that the PTO had not considered. Thus, the cases call into question the rationale behind the presumption of validity⁸⁹ and the need for clear and convincing evidence in patent litigation.

A patent interference case determines the priority between two parties claiming the same patentable invention.⁹⁰ Priority goes to the first party to show that it reduced the invention to practice, unless the other party can show it was the first to conceive the invention and exercised

88. Price, 988 F.2d at 1193.

89. See Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976) (noting that the technical expertise of the Patent office is the rationale for the presumption of validity and the high standard of proof required to overturn an issued patent).

90. 35 U.S.C. § 135(a) (1996) (stating that the Board shall determine questions of priority).

^{84.} Id.

^{85.} Price v. Symsek, 988 F.2d 1187, 1193 (Fed. Cir. 1993).

^{86.} See Bradley, supra note 54 (recalling that the standard of proof relates to findings of fact, not conclusions of law); Cohen, supra note 80 (explaining how more knowledge about a situation helps the fact-finder assess the situation and make a more informed decision, such as deciding whether the margin of error is wide or narrow, as in the coin-tossing example). See also supra note 3 (discussing Checkpoint Sys. v. United States Int'l Trade Comm'n, 54 F.3d 756, 762 (Fed. Cir. 1995), where the court, as fact-finder, had first to decide whether there was a prior inventor). When the facts proved the existence of a prior inventor by clear and convincing evidence, the court could then come to the legal conclusion of patent invalidity. Checkpoint Sys., 54 F.3d at 763.

^{87.} Boises v. Benedict, 27 F.3d 539, 541-42 (Fed. Cir. 1994).

reasonable diligence in reducing the invention to practice.⁹¹ The issues in a patent priority case are frequently the date of conception,⁹² the date of reduction to practice,⁹³ whether the claimed subject matter is identical,⁹⁴ whether the prior inventor abandoned, concealed or suppressed⁹⁵ the invention, and whether the first to conceive acted with diligence from a time prior to conception by the other.⁹⁶

91. 35 U.S.C. § 102(g) (1996). Reduction to practice may be constructive, the filing of a patent application, or actual, which usually requires making and testing the invention. 1 LIPSCOMB, *supra* note 4, § 4:40, at 414-16. Conception is the formation in the mind of the inventor of a complete and operative invention as it is thereafter to be reduced to practice, which constitutes a complete conception within the meaning of the patent law. *Id.* at 403.

The party seeking to establish reasonable diligence must account for the entire period, for which diligence is sought to be established, with reasonably continuous activity aimed at reduction to practice or legally adequate excuses for inactivity. 3 CHISUM, *supra* note 4, § 10.07, at 10-226 to 10-227.

Justice Oliver Wendell Holmes once said that a great many rules are accounted for by their manifest good sense, while others can only be understood by reference to ancient history. OLIVER WENDELL HOLMES, THE COMMON LAW 2 (Little, Brown & Co. 1949) (1881). Justice Holmes noted that some laws could only be understood, for example, by reference to the infancy of procedure among the Germanic tribes or to the social conditions of Rome under the Decemvirs. *Id.* The reader may wonder whether the Justice Holmes was referring specifically to United States patent practice.

92. Price, 988 F.2d at 1189; Kimberly-Clark Corp. v. Johnson & Johnson Co., 745 F.2d 1437, 1445 (Fed. Cir. 1984).

93. Scott v. Finney, 34 F.3d 1058, 1063 (Fed. Cir. 1994); Holmwood v. Sugavanam, 948 F.2d 1236, 1238 (Fed. Cir. 1991).

94. Oka v. Youssefyeh, 849 F.2d 581, 584 (Fed. Cir. 1988); Paivinen v. Sands, 339 F.2d 217, 221 (C.C.P.A. 1965). To anticipate a patent, there must be identity between the prior invention and the subsequent invention claimed in a patent. 1 LIPSCOMB, supra note 4, § 4:42, at 419. Courts are not governed by the names of things, but they look at the substance of the prior invention. *Id*.

95. Mason v. Hepburn, 13 App. D.C. (1898) (holding abandonment of ammunition clip until spurring by competitor); Lutzker v. Plet, 843 F.2d 1364, 1367 (Fed. Cir. 1988) (holding fifty-one month delay during commercialization not reasonable and creating an inference of suppression or concealment); Peeler v. Miller, 535 F.2d 647, 651 (C.C.P.A. 1976) (holding four-year delay by patent attorney not reasonable and creating an inference of suppression or concealment); Dentsply Research & Dev. Corp. v. Cadco Dental Prods. Co., 14 U.S.P.Q.2d 1039, 1041 (C.D. Cal. 1989) (finding an inference of suppression or concealment).

An inventor may abandon an unsuccessful endeavor, or he may abandon a successful invention, or he may abandon a patent application with or without abandoning his invention. ERNEST B. LIPSCOMB III, 2 LIPSCOMB'S WALKER ON PATENTS § 7:3, at 386 (3d ed. 1985).

An inventor may abandon his invention by express declaration, or by acquiescing with full knowledge of the use of the invention by others; or he may forfeit his rights as an inventor by a willful or negligent postponement of his claim, or by an attempt to withhold the benefit of his improvement from the public. *Id.* at 386-87. Commercial exploitation of a secret may constitute concealment or suppression within the meaning of 35 U.S.C. § 102(g). 1 LIPSCOMB, *supra* note 4, § 4:19, at 331.

96. Griffith v. Kanemaru, 816 F.2d 624, 626 (Fed. Cir. 1987) (holding no diligence in three-month wait for graduate student to arrive and begin work on invention); In re Mul-

1999] ISSUED PATENTS AND THE STANDARD OF PROOF

1. Preponderance of the Evidence

In Boises v. Benedict, two applications were pending before the PTO, and since neither party had an issued patent, the standard of proof was "preponderance of the evidence."⁹⁷ The case concerned the meaning of the claims.⁹⁸ The evidence used should be primarily that which was available at the time the patent was prosecuted (intrinsic evidence, including the patent application and its prosecution history)⁹⁹ rather than other matter, extrinsic evidence.¹⁰⁰ If a party introduces more evidence during infringement or interference proceedings, that party will have a better chance of proving its case.¹⁰¹

In Boises, the question focused on the interpretation of an inventor's notebook entry of an undefined "n" in a chemical formulation.¹⁰² The inventor's uncorroborated testimony of the meaning of "n" carried no weight.¹⁰³ The only other evidence of the meaning of "n" was the testimony of a laboratory technician, who witnessed the entry.¹⁰⁴ The Board of Patent Appeals and Interferences accepted testimony from the technician that "n" meant "one or two," but the testimony was not sufficient on

97. Boises v. Benedict, 27 F.3d 539, 541 (Fed. Cir. 1994).

98. Id.

99. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Note that under the "rule of reason," *supra* note 63, the Patent Office will favor a reasoned examination of all pertinent evidence so that a sound determination of the inventor's story may be reached. Coleman v. Dines, 754 F.2d 353, 360 (Fed. Cir. 1985), *citing* Mann v. Werner, 347 F.2d 636, 640 (C.C.P.A. 1965). This evidence, once entered into the prosecution history, includes interferences, and becomes intrinsic evidence, on the record. See Coleman, 754 F.2d at 360 (noting evidence and testimony presented during the interference proceedings).

The "rule of reason" has thus been cited in: Kridl v. McCormick, 105 F.3d 1446 (Fed. Cir. 1997) (determining utility of the invention); Holmwood v. Sugavanam, 948 F.2d 1236 (Fed. Cir. 1991) (demonstrating reduction to practice in this country); Oka v. Youssefyeh, 849 F.2d at 581(determining conception); Coleman, 754 F.2d at 353 (determining inventor's credibility or lack thereof).

100. See, e.g., supra note 63; Janice M. Mueller, Crafting Patents for the Twenty-First Century, 79 J. PAT. & TRADEMARK OFF. Soc'Y 499, 500-01 (1997) [hereinafter Mueller] (noting a trend in recent cases and relying on Vitronics, 90 F.3d at 1584, where the court ruled that it was improper to rely on extrinsic evidence, such as inventor testimony or technical experts, to contradict intrinsic evidence).

101. See, e.g., Mueller, supra note 100, at 500-01, 505 (noting that patentees traditionally have relied on their ability to introduce additional (extrinsic) evidence in court). Professor Mueller suggests that patents should now be written for the specific audience of judge and jury, with "reader-friendliness" and more-understandable drawings as benchmarks. *Id.* at 503-04.

102. Boises, 27 F.3d at 541.

103. Id.

104. Id.

der, 716 F.2d 1542, 1545 (Fed. Cir. 1983) (holding no diligence in delaying during two-day period just before date diligence required since invention had lain unattended for months prior to two-day period).

appeal to the Federal Circuit.¹⁰⁵ The court noted that the inventor had relied on that same "n" to establish a meaning of "two to eight" in prosecuting the patent.¹⁰⁶ With this contradiction, this inventor failed to prove conception of the subject matter by a preponderance of the evidence, and was denied a patent.¹⁰⁷

Evidence in the prosecution history should have precluded the inventor's claim.¹⁰⁸ The court did not require clear and convincing evidence, since the patent had not issued,¹⁰⁹ but only the interference

Note that this case presages Markman, supra note 52, in illustrating the importance of introducing pertinent evidence into the record. Markman v. Westview Instruments, 52 F.3d 967, 980-81 (Fed. Cir. 1995), affd, 517 U.S. 370 (1996). Another aspect of the Markman court's decision is the importance of internal consistency and coherence within the patent itself. Markman, 517 U.S. at 390. In Boises, the court had no trouble determining the structure of a complicated chemical patent and found clear error by the presumably technically trained examiners at the Patent Office. Boises, 27 F.3d at 539. Findings of the Board of Patent Appeals and Interferences will not be overturned except by facts found clearly erroneous. Coleman, 754 F.2d at 356.

106. Boises, 27 F.3d at 543.

107. Id. at 544. An inventor may also prove reduction to practice by a preponderance. Reiners v. Mehltretter, 236 F.2d 418 (C.C.P.A. 1956). Mehltretter invented a method for preparing gluconuric acid, and filed an application in April of 1949, with a date of invention in 1948; he was the senior party. Id. at 419. Reiners filed an application for the same invention on August of 1949, alleging conception in 1947 and reduction to practice in 1948. Id. Reiners was the junior party. Id. Since the applications were pending at the same time, the standard of proof was preponderance of the evidence. Boises, 27 F.3d at 541. This particular patent involved chemicals and reactions which were well known, and the court found that in such a case, the extent of proof necessary was not as exhaustive as that which would be required with entirely new substances or procedures. Reiners, 236 F.2d at 421.

The junior party presented corroborated notebook pages as well as his own testimony and the testimony of two assistants. *Id.* at 419-20. As evidence of reduction to practice, the formation of the gluconuric acid, he relied solely on the acid content of the samples (pH measurement) rather than a more conclusive test which would have shown exactly which acid was formed. *Id.* at 420. The Board found that the junior party had not reduced the invention to practice by sufficient proof of the 1948 date, forcing him to rely solely on the 1949 filing date. *Id.*

On appeal, the Court of Customs and Patent Appeals found that under the circumstances it would be highly probable, if not certain, on the basis of the change in pH alone, that 1,2-isopropylidene gluconuric acid was formed in the experiment in the quantities indicated in Reiners' exhibit. *Id.* at 421. The court attached "substantial weight" to this evidence, in reversing the Board's decision. *Id.* at 422.

108. Boises, 27 F.3d at 543.

109. Id. at 541.

^{105.} Id. at 541-44. Precisely what the inventor conceived was the issue in Boises, and the question of conception was "properly directed to whether there was formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention, and whether every limitation of the invention was known to the inventor at the time of conception." Id. at 543, citing Coleman v. Dines, 754 F.2d 353, 359 (Fed. Cir. 1985). The court noted that the technician's testimony could not prove the inventor's thoughts and that the technician's testimony was therefore insufficient as a matter of law to establish the meaning of "n." Boises, 27 F.3d at 543.

prevented the patent from issuing.¹¹⁰

2. Clear and Convincing Evidence

In Price v. Symsek, the Court of Appeals for the Federal Circuit set forth the requirements for proof in patent cases.¹¹¹ Price filed a patent application for a waste-heat recovery system on December 11, 1987, almost one year after a patent issued to Symsek and Regelin on December 16, 1986.¹¹² Price was the junior party and had to prove prior invention "beyond a reasonable doubt."¹¹³ The Board awarded priority to the senior party, Symsek, because the junior party was unable to establish prior conception, diligence, and reduction to practice beyond a reasonable doubt.¹¹⁴ On appeal, the court applied the rulings of Winship and Cooper and determined that the standard of proof in this patent case was "clear and convincing evidence."¹¹⁵

The junior party's evidence of prior conception consisted primarily of a drawing which included the invention, dated in March of 1982, prior to the senior party's invention, as well as an affidavit from the junior party's Corporate Secretary that she had viewed the drawing in March of 1982.¹¹⁶ In the interference proceeding, the Board ruled that the drawing was not corroborated evidence, because the Corporate Secretary did not know the inventor had made the drawing, nor did she understand

113. Id. at 1190-91.

114. Id.

115. Id. at 1194 (citing Amax Fly Ash Corp. v. United States, 514 F.2d 1041 (Ct. Cl. 1975)). Amax, the plaintiff corporation, sued the government (the Bureau of Mines) for infringement of Amax's patent on a method of using fly ash to control underground mine fires. Amax, 514 F.2d at 1042-1043. The Bureau of Mines claimed prior conception of the invention. Id. at 1043. The issue was whether a government employee, Magnuson, had conceived the invention. Id. Magnuson did not have prior experience in the field, did not know how to use pneumatic tankers to transport or inject fly ash, did not have confidence the idea would work, did not elaborate any notes on the subject, did not mention the idea to anyone, and did not amplify his testimony at the trial as to his concept at the time he claimed to have conceived the idea. Id. at 1048-49.

The court found that since the patent had issued, the standard of proof was "clear and convincing evidence," Amax, 514 F.2d at 1047, and that Magnuson had not proved prior conception or communication of the idea. *Id.* at 1051. The patent was found to have been infringed, and the plaintiff was entitled to reasonable compensation. *Id.* The facts of the case point overwhelmingly in favor of patent validity, and none of the Magnuson evidence was in the patent prosecution record, since Magnuson only arose in defense of the government's infringement.

116. Price, 988 F.2d at 1195.

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^{110.} Id.

^{111.} Price v. Symsek, 988 F.2d 1187 (Fed. Cir. 1993) (holding that clear and convincing evidence is required to prove invalidity of a patent in infringement or interference litigation).

^{112.} Id. at 1187.

the contents of the drawing.¹¹⁷ Thus, the Board found that the junior party did not prove prior conception because there was no corroboration.¹¹⁸

On appeal, the court held that a physical exhibit, such as a drawing, does not require corroboration for what it includes, and that the Board should have determined what the evidence disclosed.¹¹⁹ The clear message was that the Board should have considered this prior art rather than rejecting it; no deference was afforded the Board's decision not to examine highly pertinent evidence.¹²⁰

3. Beyond a Reasonable Doubt

The Board's requirement for corroboration in *Price v. Symsek*¹²¹ is probably the best comparison of evidentiary standards between "clear and convincing" and "beyond a reasonable doubt." A witness who understands, signs and dates the evidence provides corroboration beyond a reasonable doubt; in this case, signing and dating the exhibit, without understanding an engineering drawing, was sufficient to provide clear and convincing evidence.¹²²

The difference between evidentiary standards was close enough to confuse an experienced Board of patent examiners.¹²³ More importantly, the Board, mistaking the validity of the evidence, did not consider the most important factor, the dated and corroborated drawing, in the validity of the patent.¹²⁴ If the PTO did not consider the evidence, it is hard to understand why a court should defer to the PTO's examination.

All that the law requires is that the drawings exhibited and relied on as evidence of the con-ception of the invention must show a complete conception, free from ambiguity or doubt, and such as would enable the inventor or others skilled in the art to reduce the conception to practice without any further exercise of inventive skill. *Id.*

124. Id. at 1196.

^{117.} Id.

^{118.} Id.

^{119.} Id. at 1195-96, citing Webster Loom Co. v. Higgins, 105 U.S. 580, 594 (1881) (holding that "[a]n invention . . . may be exhibited in a drawing or in a model, so as to lay the foundation of a claim to priority, if it be sufficiently plain to enable those skilled in the art to understand it"). This followed the spirit of an earlier ruling, the appellate-level case of Armstrong v. DeForest Radio Tel. & Tel. Co., 280 F. 584 (2d Cir. 1922), cert. denied, 270 U.S. 663 (1926). The court found that while uncorroborated testimony must be accepted with caution, embodiment of the invention in some clearly perceptible form, such as a drawing, was sufficient. Id. at 590.

^{120.} Price, 988 F.2d at 1196. See also Markman v. Westview Instruments, 52 F.3d 967, 984 & n.13 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996) (noting that issues of law are reviewed de novo by appellate courts).

^{121.} Price, 988 F.2d at 1187.

^{122.} Id. at 1196.

^{123.} Id. at 1195.

1999] ISSUED PATENTS AND THE STANDARD OF PROOF

C. EVIDENCE NOT AVAILABLE TO THE PTO

As many as eighty percent of litigated patent cases uncover prior art not previously examined by the PTO.¹²⁵ Examination by the PTO is the basis for the issuance of a patent and the presumption of validity.¹²⁶ But examinations which do not consider all the evidence reduce or eliminate the deference due the PTO.¹²⁷ Thus, there is no reason for the higher standard of proof required in cases concerning an issued patent.

The PTO places great emphasis on having abundant technical information available to its examiners, as illustrated in its emphasis on technical documentation.¹²⁸ The Code of Federal Regulations has a section specifically devoted to the filing of information disclosure statements by patentees.¹²⁹ The person filing the information disclosure statement is required to certify whether each item in the statement was also cited in any foreign application within three months of the filing of the information disclosure statement.¹³⁰ The person filing the statement must also include in his filing a copy of each U.S. and foreign patent listed, and a copy of each publication listed.¹³¹ A concise explanation of the relevance of each document not in the English language is also required.¹³²

The PTO is concerned about access to technical information, as it continues to research new and better ways to store, classify, and access

The appellate court affirmed, noting that the district court had respected the assumption of validity of the patent. *Id.* at 458. The appellate court found that during the prosecution of the patent, the patentee had not mentioned to the PTO two items of prior art which the patentee's own files indicated were relevant. *Id.* at 456. In addition, a particularly important affidavit overcoming the examiner's rejection was shown to be highly misleading because of dimensional inaccuracy in comparing the invention at issue with prior art. *Id. Chicago Rawhide* demonstrates the importance of the presumption of validity, as well as the susceptibility of the PTO to missing and misleading evidence.

127. Am. Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1360 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984).

128. See, e.g., Notice of Hearing and Requests for Comments on a Technical Documentation Strategy, 61 Fed. Reg. 19611 (1996) [hereinafter PTO Technical Documentation] (stating that the PTO continues its efforts to make technical documentation available to patent examiners).

129. 37 C.F.R. § 1.97 (1996) (filing of an information disclosure statement).

130. Id.

131. 37 C.F.R. \S 1.98 (1996) (listing the contents of an information disclosure statement).

132. Id.

^{125.} In re Portola Packaging, Inc., 110 F.3d 786, 789 (Fed. Cir. 1997).

^{126.} Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976). A combination of misleading evidence and missing evidence may have improperly influenced the PTO. Id. at 456. Patentee Chicago Rawhide sued Crane Packing for infringing a patent for a mechanical seal, and the district court found the patent invalid for obviousness in view of prior patents. Id. at 453. On appeal, the patentee argued that the patent should have been upheld on the basis of the presumption of validity, particularly since the PTO had examined some of the prior art. Id. at 457.

information.¹³³ The PTO organization once included an Office of Automatic Data Processing, a Scientific Library, an Office of Documentation, Planning Support and Control, an Office of International Patent Classification, and Offices of Micrographic and Search Systems.¹³⁴ The PTO's streamlined organization now puts more control over information directly under the Assistant Commissioner for Patents.¹³⁵ An administrator for Search and Information Systems now heads offices for Classification Operations, a Scientific and Technical Information Center, and the Office of Search Systems.¹³⁶ The Office of Search Systems was specifically tasked to maintain a state-of-the-art awareness of machineassisted information storage, access, retrieval and display systems, useful or potentially useful in searching patent documentation, and to seek out partners and cooperating programs for the PTO to use.¹³⁷

In spite of these efforts, the information available to the PTO at the time of the patent examination can fall short of what is needed. Congress recognized that holding of patent invalidity by courts are based mostly on prior art that was not before the PTO.¹³⁸ Hearings before the Senate Committee on the Judiciary found that patent holders all too often find themselves in lengthy court proceedings where valuable patents are challenged on the grounds that the patent examiner missed pertinent data during the initial patent search.¹³⁹ The committee heard testimony referring to analysis of challenged patents, in which an investigator found that the proportion of invalid patents in which art not before the PTO figured into the result was between sixty-six and eighty percent.¹⁴⁰ Another witness asserted that newly discovered art is often

136. Id.

137. 45 Fed. Reg., supra note 134, at 51867, § 5.

138. In re Portola Packaging, 110 F.3d 786, 789 (Fed. Cir. 1997).

139. Id., citing Hearings on S. 1679, Senate Comm. on the Judiciary, 96th Cong. 14 (1980) [hereinafter Hearings].

140. Portola, 110 F.3d at 789, citing GLORIA K. KOENIG, PATENT VALIDITY- A STATISTICAL & SUBSTANTIVE ANALYSIS § 5.05[4] (1974). In a 1980 update to her earlier work, Koenig states that the proportion of patents held invalid at least in part on grounds of anticipation (Section 102) is between thirty-eight and fifty-five percent, while the proportion of patents held invalid at least in part on grounds of obviousness (Section 103) is between sixty-nine and eighty-one percent. GLORIA K. KOENIG, PATENT VALIDITY—A STATISTICAL & SUBSTANTIVE ANALYSIS, at 1-5 (Rev. ed. 1980).

As far as anticipation, the single most pertinent part of 35 U.S.C. § 102 states: A person shall be entitled to a patent unless—

^{133.} PTO Technical Documentation, *supra* note 128, at 19611 (stating that the PTO is placing increased reliance on the many commercial data bases of technical information, as well as data bases maintained by the PTO).

^{134.} U.S. Patent and Trademark Office, Statement of Organization and Functions, 45 Fed. Reg. 51867 (1980).

^{135.} U.S. Patent and Trademark Office, *PTO Organizational Structure* (last modified Aug. 26, 1998) http://www1.uspto.gov/web/menu/offices.html>.

identified only after a patent is issued, because a potential infringer generally has greater resources and incentives to search for and find prior art than does the PTO.¹⁴¹ As one author might have put it,

who reads incessantly, and to his reading brings not a spirit and judgment equal or superior, (and what he brings, what needs he elsewhere seek?) uncertain and unsettled still remains.¹⁴²

An infringement case, *Buildex, Inc. v. Kason Indus., Inc.*, illustrates the standards of proof in a situation where the PTO did not have all the evidence produced later in court.¹⁴³ In patent infringement litigation, the alleged infringer usually defends on the basis of patent invalidity, while the patentee must show infringement.¹⁴⁴ The two parties bear different burdens of proof, since the patentee need only show infringement by a preponderance of the evidence, while the alleged infringer must prove patent invalidity by clear and convincing evidence.¹⁴⁵

In Buildex, the invention was a refrigerator door hinge which incor-

(b) the invention was patented or described in a printed publication in this or a foreign country, or in public use or 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) (1996).

As to obviousness, Section 103 states:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

35 U.S.C. § 103 (1996).

141. Portola, 110 F.3d at 789, citing Hearings, supra note 139 (testimony of Donald R. Dunn, president of the American Patent Law Association).

142. JOHN MILTON, PARADISE REGAINED, Book IV, ll 322-26 (1671).

143. Buildex, Inc. v. Kason Indus., Inc., 849 F.2d 1461 (Fed. Cir. 1988).

144. Thomas L. Irving et al., A Year in Review: The Federal Circuit's Patent Decisions of 1993, 43 AM. U. L. REV. 1259, 1348 (1994) [hereinafter Irving], citing Westvaco Corp. v. International Paper Co., 991 F.2d 735, 745-46 (Fed. Cir. 1993) (holding that the plaintiff did not prove by clear and convincing evidence that the patent was invalid for anticipation and obviousness, but finding clear error in the district court's ruling of willful infringement). Accord Markman v. Westview Instruments, 517 U.S. 370, 374 (1996) (noting that patent lawsuits characteristically charge infringement, and that victory requires a finding that the patent claim covers the infringer's product or process).

145. Irving, supra note 144, at 1348-49. Even the court can be confused when differing burdens of proof are required in the same case. In a recent patent infringement case, the alleged infringer defended on the basis of patent invalidity and patent misuse by the patentee. Richardson-Vicks, Inc. v. Upjohn Co., No. CIV.A.93-556, 1996 WL 31209, at *1 (D. Del. Jan. 17, 1996), aff'd, 122 F.3d 1476 (Fed. Cir. 1997). The court correctly held that the standard of proof for evidence of patent invalidity was clear and convincing evidence. Id. However, the standard for patent misuse is preponderance of the evidence. Rohm & Haas Co. v. Owens-Corning Fiberglas Corp., Nos. 73-426 and 73-1080, 1977 U.S. Dist. Lexis

porated a switch to turn off the light inside the refrigerator.¹⁴⁶ Buildex filed a patent application on March 14, 1977, and a patent issued two years later.¹⁴⁷ Kason allegedly infringed the patent and the patentee sued.¹⁴⁸ The alleged infringer's defense was that the patentee had violated the 35 U.S.C. § 102(b) statutory bar by offering the hinge for sale more than one year before filing the patent application.¹⁴⁹

In order to show patent infringement, the patentee had to show by a preponderance of the evidence that the accused device included every limitation of the patent claim.¹⁵⁰ The patentee did so to the satisfaction of the court in a bench trial.¹⁵¹ The court rejected all of the infringer's defenses, which included patent invalidity, patent misuse, and inequitable conduct on the part of the patentee.¹⁵²

The alleged infringer, by contrast, had to show patent invalidity by "clear and convincing evidence."¹⁵³ The infringer relied on testimony from the patentee's sales manager and on a two-page quotation offering to sell the hinge four months prior to the statutory bar date and sixteen months before the patent application.¹⁵⁴ The district court found this evidence unpersuasive,¹⁵⁵ but the Court of Appeals for the Federal Circuit found it clear and convincing, noting that the proof need not be air-

146. Buildex, 849 at 1462.

148. Id. at 1461.

149. Id. at 1461-62.

150. Irving, supra note 144, at 1349.

151. Buildex, Inc. v. Kason Indus., Inc., 665 F. Supp. 1021, 1029 (E.D.N.Y. 1987), rev'd, 849 F.2d 1461 (Fed. Cir. 1988). The infringer, Kason, conceded that all elements of its hinges were recited in the Buildex patent, but argued that its hinges as sold did not include the assembly recited in the patent—a door, a door frame and so on. Id. at 1024. The court found that slavish conformity was not required and that the infringer's hinge was the device depicted in the patent. Id.

152. Buildex, 849 F.2d at 1461-62.

153. Id. at 1463 (distinguishing "clear and convincing evidence" as intermediate between a "beyond a reasonable doubt" standard and a "preponderance" standard, and citing *Colorado v. New Mexico*, 467 U.S. 310, 316 (1984), for the proposition that "clear and convincing evidence" is "evidence which produces in the mind of the trier of fact 'an abiding conviction that the truth of [the] factual contentions are 'highly probable"").

154. Buildex, 849 F.2d at 1463-64. No patent may issue on any device on sale more than one year prior to an application for patent. 35 U.S.C. § 102(b) (1996).

155. Buildex, 849 F.2d at 1464.

^{14034, *1, *57 (}N.D. Ala., Sept. 13, 1977); Watson Packer, Inc. v. Dresser Indus., Inc., 193 U.S.P.Q. 552, 559 (N.D. Tex. 1977).

The defendant-appellant's brief on appeal pointed out incorrect jury instructions concerning the standard of proof on this point. Reply Brief for Defendant/Cross-Appellant the Upjohn Co. at 38, Richardson-Vicks, Inc. v. Upjohn Co. (Fed. Cir. filed May 22, 1996) (No. 96-1214). However, the Federal Circuit affirmed the trial court in holding the patent invalid for obviousness, so there was no need to address the issue of patent misuse by the patentee. Richardson-Vicks, Inc. v. Upjohn Co., 122 F.3d 1476, 1478 (Fed. Cir. 1997).

^{147.} Id.

tight, and reversed the district court.¹⁵⁶ The Appellate Court also remanded the case for consideration of the alleged infringer's attorney fees because of the patentee's inequitable conduct, i.e., knowing that the patentee had offered the hinge for sale more than one year before filing the patent application and intentionally withholding this information from the Patent Office.¹⁵⁷

The Appellate Court gave some clues as to what it considered "airtight" evidence, in considering the history of the two-page quotation.¹⁵⁸ There were two versions of the quotation, one from the patentee's divisional sales manager, and the other from a customer.¹⁵⁹ The two copies differed slightly, and one copy was missing a page.¹⁶⁰ The court found the documents sufficient and decided that "[p]roof of delivery before the critical date would have been conclusive in this case, but it is not necessary to holding that the device was on sale before then."¹⁶¹ This case illustrates that highly pertinent evidence, such as sales before bar dates, is sometimes withheld from the PTO in its consideration of a patent ap-

When the patentee contended the court erred in not using a "beyond a reasonable doubt" standard, the precedent cited was *In re* Barbed Wire Patent (Washburn & Moen Mfg. Co. v. Beat 'Em All Barbed Wire Co.), 143 U.S. 275, 284 (1892) (holding that patent invalidity must be proved beyond a reasonable doubt). *Trans-World*, 750 F.2d at 1559. The court in *Trans-World* cited Radio Corp. of Am. v. Radio Eng'g Lab., 293 U.S. 1 (1934) as a more recent decision not requiring proof beyond a reasonable doubt, but rather clear and convincing evidence. *Id*.

161. Id. (noting that it is not necessary to prove that a transaction was consummated before the bar date, merely that the goods were "on sale" prior to one year before the patent application).

^{156.} Id. (citing from its predecessor court, Borrer v. Herz, 666 F.2d 569, 574 (C.C.P.A. 1981) (stating that the law requires persuasion, not perfection)). While Buildex concerned utility patents, another case in this same time frame involved design patents. Trans-World Mfg. Corp. v. Al Nyman & Sons, 750 F.2d 1552 (Fed. Cir. 1984). A patentee-manufacturer of point-of-purchase display units sued an alleged infringer for design patent infringement after the infringer allegedly copied two patented designs the manufacturer had made to display and sell eyeglasses. Id. at 1557. The burden was on the infringer produced photographs of prior art, corroboration of the photos and their dates, and testimony that thousands of such items were sold years before the patentee applied for the patents. Id. at 1558.

^{157.} Buildex, 849 F.2d at 1465.

^{158.} Id. at 1463-64.

^{159.} Id.

^{160.} Id. Depositions from the parties further supported the propositions that the documents were prepared and sent on or about the dates in question. Id. at 1463. At one point, the seller-patentee raised the issue that perhaps the quotation had not been sent to the buyer (and thus the subject matter of the patent had not been placed "on sale"). Id. at 1464. When a subpoena to the buyer produced the first page of the quotation, this challenge was refuted. Id.

plication.¹⁶² Why a patent issued under these circumstances should be accorded the presumption of validity is very difficult to understand. It is equally difficult to understand the requirement for clear and convincing evidence in overcoming the validity of such a patent.

D. RATIONALE FOR THE PRESUMPTION OF VALIDITY

The PTO's examination is the basis for the presumption of validity of an issued patent.¹⁶³ The cases examined in this Comment illustrate situations in which the PTO did not examine evidence,¹⁶⁴ did not appreciate evidence,¹⁶⁵ or did not have evidence available to it.¹⁶⁶ A record which shows that the PTO did not consider all the evidence reduces or eliminates the deference due the PTO.¹⁶⁷ With the rationale for a presumption of validity reduced or eliminated, there is no need for clear and convincing evidence,¹⁶⁸ and the standard of proof should be a preponderance of the evidence.

As many as eighty percent of holdings of patent invalidity by courts are based on prior art that was not before the PTO.¹⁶⁹ The cases studied

163. Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976).

164. Price v. Symsek, 988 F.2d 1187 (Fed. Cir. 1993).

165. Boises v. Benedict, 27 F.3d 539 (Fed. Cir. 1994).

166. Buildex, Inc. v. Kason Indus. Inc., 849 F.2d 1461(Fed. Cir. 1988).

167. Am. Hoist & Derrick Co. v. Sowa & Sons, 725 F.3d 1350, 1360 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984).

168. Chicago Rawhide, 523 F.2d at 458.

169. In re Portola Packaging, Inc., 110 F.3d 786, 789 (Fed. Cir. 1997) (noting newly discovered prior art in up to eighty percent of patents invalidated in court challenges). Accord Codex Corp. v. Milgo Elec. Corp., 717 F.2d 622, 628 (1st Cir. 1983), cert. denied, 466 U.S. 931 (1984); Digital Equip. Corp. v. Diamond, 653 F.2d 701, 705-06 (1st Cir. 1981); Dempster Bros. v. Buffalo Metal Container Corp., 352 F.2d 422, 426 (2d Cir. 1965), cert. denied, 384 U.S. 940, reh'g denied, 384 U.S. 1027 (1966); In re Coordinated Trial Proceedings in Antibiotic Antitrust Actions, 676 F.2d 51, 54 (3d Cir. 1982); Aluminum Co. of Am. v. Amerola Prods. Corp., 552 F.2d 1020, 1025 (3d Cir. 1977); Tights, Inc. v. Acme-McCrary Corp., 541 F.2d 1047, 1054 (4th Cir.), cert. denied sub nom. Kayser-Roth v. Tights, Inc., 429 U.S. 980 (1976); Ludlow Corp. v. Textile Rubber & Chem. Co., 636 F.2d 1057, 1058 (5th Cir. 1981); Stewart-Warner Corp. v. City of Pontiac, Mich., 717 F.2d 269, 274 (6th Cir. 1983); Armco, Inc. v. Republic Steel Corp., 707 F.2d 886, 889 (6th Cir. 1983) (implying that the PTO had not examined four prior-art patents); Deere & Co. v. Int'l Harvester Co., 658 F.2d 1137, 1143-44 (7th Cir.), cert. denied, 454 U.S. 969 (1981) (evidence not admitted by trial court); Span-Dek, Inc. v. Fab-Con, Inc., 677 F.2d 1237, 1242 (8th Cir. 1982) (implying prior art patents had not been considered by the PTO); Contico Int'l, Inc. v. Rubbermaid Com-

^{162.} Critikon, Inc. v. Becton Dickinson, Inc., 120 F.3d 1253, 1256 (Fed. Cir. 1997), cert. denied, 118 S. Ct. 1511 (1998) (stating that direct evidence of intent is rarely available in instances of inequitable conduct, but may be inferred from surrounding circumstances). See 1 LIPSCOMB, supra note 4, § 4:58, at 465-74 (listing evidence a defendant must produce to prove patent invalidity). If a defendant must show such evidence, it was most likely not in the record, cases like Boises to the contrary. See Critikon, 120 F.3d at 1256 (noting that patent applicants may sometimes withhold information).

in this Comment are consistent with this conclusion.¹⁷⁰ Other examples from recent cases abound, where patents have been found invalid for prior public use over evidence not available to the PTO,¹⁷¹ for obviousness over prior art not considered because it was not submitted to the PTO,¹⁷² for prior publications not considered by the PTO,¹⁷³ and because of inequitable conduct in not submitting art known to the inventor or the assignee.¹⁷⁴

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Holdings of patent invalidity by courts are mostly based on prior art that was not before the PTO.¹⁷⁵ An inventor at Baxter International, Inc., devised a sealless centrifuge for separating blood into its components.¹⁷⁶ In a completely separate series of events, scientists at the National Institutes of Health ("NIH") also devised, built and tested such a centrifuge, more than a year before Baxter's inventor applied for a patent.¹⁷⁷ When Baxter sued for infringement, the district court found the patent invalid because of a public use before the section 102(b) "critical

170. See Price v. Symsek, 988 F.2d 1187, 1195-96 (Fed. Cir. 1993) (noting that the Board refused to consider evidence); *Buildex*, 849 F.2d at 1463-64 (noting that the evidence of a prior public sale was not available to the PTO). *But see Boises*, 27 F.3d at 543 (noting that the evidence was in the patent prosecution history, but was evidently overlooked by the PTO).

171. Baxter Int'l, Inc. v. Cobe Lab., Inc., 88 F.3d 1054, 1058 (Fed. Cir. 1996) (affirming invalidity of patent on centrifuge because of evidence of public use prior to one year before the statutory bar date); Allied Colloids, Inc. v. Am. Cyanamid Co., 64 F.3d 1570, 1572 (Fed. Cir. 1995) (holding patent for sewage treatment system invalid because of public use more than one year before the patent application).

172. Nordberg, Inc. v. Telsmith, Inc., 82 F.3d 394, 396 (Fed. Cir. 1996) (holding patent for gyratory rock crusher invalid for obviousness over prior art not considered by PTO).

173. B.F. Goodrich Co. v. Aircraft Braking Sys. Corp., 72 F.3d 1577, 1581 (Fed. Cir. 1996) (holding patents for method of using brake pads invalid in light of prior publication not considered by PTO).

174. Critikon, Inc. v. Becton Dickinson, Inc., 120 F.3d 1253, 1255 (Fed. Cir. 1997), cert. denied, 118 S. Ct. 1511 (1998) (holding patents unenforceable due to inequitable conduct during prosecution).

175. In re Portola Packaging, 110 F.3d 786, 789 (Fed. Cir. 1997) (stating that holdings of patent invalidity by courts were mostly based on prior art that was not before the PTO). See also KOENIG, supra note 140.

176. Baxter, 88 F.3d at 1056.

177. Id.

mercial Prods., Inc., 665 F.2d 820, 823-24 & n.4 (8th Cir. 1981); Sarkisian v. Winn-Proof Corp., 697 F.2d 1313, 1323-24 (9th Cir.), *cert. denied sub nom.* Carsonite Int'l, Inc., v. Carson Mfg. Co. (1983) (citing two co-owned applications before the PTO which defined the same invention); Penn Int'l Indus., Inc. v. New World Mfg. Co., Inc., 691 F.2d 1297, 1300 (9th Cir. 1982); Handgards, Inc.v. Ethicon, Inc., 601 F.2d 986, 990-91 (9th Cir. 1979), *on remand* 552 F. Supp. 820 (N.D. Cal. 1982), *aff'd*, 743 F.2d 1282 (9th Cir. 1984), *cert. denied*, 469 U.S. 1190 (1985); Mfg. Research Corp. v. Graybar Elec. Co., 679 F.2d 1355, 1361 (11th Cir. 1982); Haloro, Inc. v. Owens-Corning Fibreglas Corp., 266 F.2d 918, 918-19 (D.C. Cir. 1959).

date."¹⁷⁸ Baxter argued that the use of the centrifuge by NIH did not bar the patent because the NIH use was not publicly known nor available, nor was it known to Baxter.¹⁷⁹ Accordingly, they argued, the public policy against removal of the invention from the public domain should not apply.¹⁸⁰ The Court of Appeals for the Federal Circuit noted that Baxter's lack of control over the use of the invention before the critical date constituted an invalidating public use, rather than an experimental use, and affirmed.¹⁸¹

While knowledge of the experimental use was completely outside Baxter's ken and control, it was sufficient to overturn the patent.¹⁸² An opposite result was reached in the *Allied Colloids* case.¹⁸³ Scientists at Allied Colloids, Inc. devised chemical flocculants useful in treating municipal sewage.¹⁸⁴ After preliminary tests in England, Allied Colloids' experimental materials were taken to the laboratory of a Detroit sewage treatment plant for testing more than one year before the application for the patents.¹⁸⁵ Later, when Allied Colloids sued American Cyanamid for infringing the patents, American Cyanamid raised the issue of these tests and Allied's failure to inform the PTO concerning these tests.¹⁸⁶

Cyanamid contended that the patents were invalid because the testing constituted a "public use" of the invention more than one year before the application for the patent.¹⁸⁷ They further contended that the patents were unenforceable due to Allied's inequitable conduct in not bringing the public use to the attention of the PTO.¹⁸⁸ While the lower court accepted these arguments, they did not go far on appeal.¹⁸⁹ Writing for a

180. Id.

185. Id.

186. Id. at 1572.

187. Id. at 1572, 1574.

^{178.} Id. at 1057. 35 U.S.C. § 102(b) bars patenting of an invention if it has been on public use or sale more than one year prior to the application for patent. 35 U.S.C. § 102 (b) (1996). The "critical date" in the analysis is thus the day one year prior to the application for patent. Public use or sale prior to this date will bar the patent. Baxter, 88 F.3d at 1057-58.

^{179.} Baxter, 88 F.3d at 1058.

^{181.} Id. at 1060-61. The court also noted that the first reason for enforcing a "public use" bar is to discourage the removal from the public domain of inventions that the public reasonably has come to believe are freely available, and that the second reason is the policy favoring the prompt and widespread disclosure of inventions. Id. at 1058.

^{182.} Id. at 1060-61. See also a vigorous dissent by Judge Newman, arguing that no purpose was served by invalidating Baxter's patent, especially in view of the fact that Baxter had no access to information on the work by NIH. Id. at 1061-63 (Newman, J., dissenting).

^{183.} Allied Colloids, Inc. v. Am. Cyanamid Co., 64 F.3d 1570 (Fed. Cir. 1995).

^{184.} Id. at 1573.

^{188.} Id. at 1572.

^{189.} Id. at 1577-79.

unanimous panel, Judge Newman noted that testing, even if "commercially motivated," is an exception to the public use bar.¹⁹⁰ In this case, the patentee kept records, disclosed no confidential information, and charged no fee, all of which suggested that the patentee was testing the product, not the market.¹⁹¹ The lower court's judgment as a matter of law on the public use issue was vacated.¹⁹²

The lower court in *Allied* had also barred enforcement of the patents due to Allied's allegedly inequitable conduct in not disclosing the tests to the PTO.¹⁹³ To establish non-enforcement based on inequitable conduct, the challenger to the patent must prove, by clear and convincing evidence, that the material information was intentionally withheld for the purpose of misleading or deceiving the patent examiner.¹⁹⁴ However, the testing in this case was not public, the information was not material, and there was no duty to bring the information to the attention of the patent examiner.¹⁹⁵ Thus, it is not inequitable conduct to omit telling the PTO information that the applicant in good faith believes is not relevant to patentability.¹⁹⁶

Intent to deceive the PTO and proof of intent are necessary to a finding of "inequitable conduct."¹⁹⁷ Without proof, a court will not find inequitable conduct, even if relevant prior art is found, which invalidates the patent. In *Goodrich*, the evidence came close.¹⁹⁸ In a patent suit which concerned aircraft brakes, Goodrich's Director of Engineering was charged with staying current on relevant technology as part of his duties.¹⁹⁹ He claimed not to know art which was arguably in the literature, and his name was on an internal circulation list for a particularly perti-

^{190.} Id. at 1576 (stating that the law recognizes that the inventor may test the invention, in public if that is reasonably appropriate to the invention, without incurring a public use bar). The court referred to a case in which an inventor tested a road pavement for several years; the inventor's desire to insure the durability of the pavement made the use experimental, even though the use was certainly "public" for all to see. City of Elizabeth v. Am. Nicholson Pavement Co., 97 U.S. 126 (1878).

^{191.} Id. at 1577.

^{192.} Id.

^{193.} Id.

^{194.} Id. at 1578.

^{195.} Id.

^{196.} Id.

^{197.} B.F. Goodrich Co. v. Aircraft Braking Sys., Inc., 72 F.3d 1577, 1585 (Fed. Cir. 1996).

^{198.} Id.

^{199.} Id. at 1580 (stating that Director Perry had the responsibility for reading literature and trade journals on aircraft brakes, as well as attending seminars and trade shows on aircraft brakes).

nent prior art patent.²⁰⁰ The Federal Circuit was not impressed with Goodrich's careless affidavit, nor with their careless patent prosecution, and warned that, "[b]arely dodging a bullet based on our deference to a trial court's decision on the factual question of intent and on a matter of equity does not merit approval or justify complacency."²⁰¹

Intent, and the court's perception of any intent to deceive, is important in deciding patent cases.²⁰² Nordberg, owner of a patent on a gyratory rock crusher, sued Telsmith for infringing the patent.²⁰³ The district court held the patent invalid because of prior art and "public use" testing. A "test" which was conducted more than one year prior to the application for patent, as well as a particular prior art patent, were not disclosed to the PTO during prosecution of the patent in issue.²⁰⁴ The Federal Circuit found no evidence that Nordberg's employees concealed the patent, and noted that there were hundreds of patents in Nordberg's files: the court also found that Nordberg's employees believed in good faith that the testing occurred under a confidentiality agreement and was thus not material to a statutory bar.²⁰⁵ In line with Judge Lourie's hypothesis, that such evidence of prior art does not emerge until litigated,²⁰⁶ the court noted that Nordberg's in-house patent counsel had indicated that regular searching of in-house prior art files began only "recently."207

The Federal Circuit came to a markedly different opinion in another instance where the patentee failed to disclose information to the PTO.²⁰⁸ Critikon, Inc. obtained patents for catheters.²⁰⁹ When Critikon sued Becton Dickinson for infringement, Becton alleged patent invalidity and inequitable conduct on the part of Critikon in prosecuting the patents.²¹⁰ Becton was able to show that both of Critikon's patent attorneys knew of relevant prior art during prosecution of one patent, and that this art had not been disclosed to the PTO.²¹¹ Perhaps even more important, they failed to inform the PTO of the prior art even during reissue proceedings,

- 204. Id. at 396-97.
- 205. Id. at 397.

- 207. Nordberg, 82 F.3d at 297.
- 208. Critikon, Inc., v. Becton Dickinson, Inc., 120 F.3d 1253 (Fed. Cir. 1997).
- 209. Id. at 1254-55.
- 210. Id. at 1255.
- 211. Id. at 1256.

^{200.} Id. at 1585. The court found troubling the affidavit of Director Perry, as well as the surrounding circumstances, but could not find an intent to deceive, and opined that it was not surprising that those who are careless exhibit those qualities more than once. Id.

^{201.} Id.

^{202.} Nordberg, Inc., v. Telsmith, Inc. 82 F.3d 394, 396 (Fed. Cir. 1996).

^{203.} Id.

^{206.} In re Portola Packaging, 110 F.3d 786, 789 (Fed. Cir. 1997) (Lourie, J.).

and during litigation.²¹² The court found this information highly material, and failure to disclose it highly inferential of an intent to deceive.²¹³ The inference was sufficient to find the patents unenforceable because of inequitable conduct.²¹⁴

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These latter cases illustrate that evidence of prior art or unpatentability for other reasons is often not brought to the attention of the PTO. The circumstances may be that the inventor does not know of the information,²¹⁵ does not believe the information is material,²¹⁶ or simply does not disclose the information.²¹⁷ For whatever reason, the PTO has not considered all the material information, a result which obtains in as many as eighty percent of litigated cases.²¹⁸ In the words of Justice Stevens, "[t]he basis for the requirement that invalidity be established by clear and convincing evidence is largely, if not wholly dissipated, when pertinent art is shown not to have been considered by the Patent Office."²¹⁹

IV. CONCLUSION

Patents and their prosecution will continue to evolve, and the rules followed will respond to "the felt necessities of the time."²²⁰ Use of differing standards of proof causes confusion to judges and juries alike.²²¹ Patent cases now use two standards of proof, depending on whether the presumption of validity applies.²²² Evidence to overcome the validity of an issued patent must be clear and convincing.²²³

But in many, if not a majority, of cases, the Patent Examiner does not have all of the evidence — certainly not all the evidence that will emerge in court over an interference or infringement suit.²²⁴ Since the

218. In re Portola Packaging, 110 F.3d 786, 789 (Fed. Cir. 1997).

219. Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976).

220. HOLMES, supra note 91, at 1 (noting that the life of the law has been experience, and that prevalent theories of the times, and even the intuitions and prejudices which judges share with their fellow men, help to determine the rules by which men are governed).

^{212.} Id.

^{213.} Id. at 1257-59.

^{214.} Id. at 1259.

^{215.} Baxter Int'l, Inc. v. Cobe Lab., Inc., 88 F.3d 1054 (Fed. Cir. 1996), Nordberg, Inc., v. Telsmith, Inc. 82 F.3d 394, 396 (Fed. Cir. 1996).

^{216.} Nordberg, Inc., v. Telsmith, Inc. 82 F.3d 394, 396 (Fed. Cir. 1996), Allied Colloids, Inc. v. Am. Cyanamid Co., 64 F.3d 1570 (Fed. Cir. 1995).

^{217.} Critikon, Inc., v. Becton Dickinson, Inc., 120 F.3d 1253 (Fed. Cir. 1997), B.F. Goodrich Co. v. Aircraft Braking Sys., Inc., 72 F.3d 1577, 1585 (Fed. Cir. 1996).

^{221.} McCauliff, supra note 64.

^{222.} Boises v. Benedict, 27 F.3d 539, 541 (Fed. Cir. 1994).

^{223.} Price v. Symsek, 988 F.2d 1187, 1194 (Fed. Cir. 1993).

^{224.} In re Portola Packaging, Inc., 110 F.3d 786, 789 (Fed. Cir. 1997).

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PTO examination is the basis for the presumption of validity of a patent, there is no reason to defer to art which the PTO has not examined.²²⁵

Evidence more convincing than that in the record will suffice; and if there is little in the record on the point in dispute, only a modicum of evidence is necessary. The courts should require no more.

David W. Okey

225. Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458 (7th Cir. 1975), cert. denied, 423 U.S. 1091 (1976).