1996


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AREA SUMMARIES

1995 PATENT LAW DECISIONS OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

LAWRENCE M. SUNG, PH.D.*

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The author gratefully acknowledges the support of Foley & Lardner and the other members of its Federal Circuit Practice Group, which currently includes six former Federal Circuit law clerks. The statements and opinions contained in this Article reflect the author's present views alone, and should not be attributed to Foley & Lardner or any of its past, present, or future clients.
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INTRODUCTION

The United States Court of Appeals for the Federal Circuit has exclusive jurisdiction of appeals in civil actions across the country that arise under the patent statutes. During 1995, the Federal Circuit decided 417 such appeals, and issued ninety-four opinions designated citable as precedent. The work of the court this past year


3. Id. All dispositions of the Federal Circuit are precedential unless otherwise noted. FED. CIR. R. 47.6(a). The holdings of a precedential decision are binding on a subsequent panel unless overruled by the court in banc. South Corp. v. United States, 690 F.2d 1368, 1370 n.2, 215 U.S.P.Q. (BNA) 657, 658 n.2 (Fed. Cir. 1982) (in banc) (stating appropriateness of adopting body of law established by Court of Claims and Court of Customs and Patent Appeals in Federal Circuit decisions); cf. Johnston v. IVAC Corp., 885 F.2d 1574, 1579, 12 U.S.P.Q.2d (BNA) 1382, 1386 (Fed. Cir. 1989) ("Where conflicting statements . . . appear in our precedent, the panel
exemplifies the continued commitment of its judges and staff to the nationwide uniformity and improved administration of the patent laws. The history of the Federal Circuit likely will distinguish 1995, however, based on three decisions of the court in banc. These cases are Markman v. Westview Instruments, Inc., Hilton Davis Chemical Co. v. Warner-Jenkinson Co., and Rite-Hite Corp. v. Kelley Co.

Organized into four major sections, this Article provides a comprehensive survey of the 1995 precedential Federal Circuit patent decisions. In view of the issues raised in the majority of the cases this year, including the in banc cases, the presentation of the recent opinions occurs in a somewhat reverse order compared with past annual patent area summaries published by The American University Law Review. In the following Article, a consideration of patent enforcement in the federal courts precedes a discussion of patent application prosecution in the United States Patent and Trademark Office ("USPTO").

The Article begins in Part I with an overview of recent Federal Circuit case law governing patent infringement and the available defenses and remedies. The in banc decisions in Markman, Hilton Davis, and Rite-Hite predominate here. Next, in Part II, the Article is obligated to review the cases and reconcile or explain the statements, if possible. If not reconcilable and if not merely conflicting dicta, the panel is obligated to follow the earlier case law which is the binding precedent.

Furthermore, in certain circumstances the Federal Circuit may affirm the judgment of a trial court or administrative agency without opinion. 28 U.S.C. § 46. A majority of circuit judges in regular active service on a U.S. court of appeals may order a hearing or rehearing before that court in banc. 28 U.S.C. § 46(c). An in banc panel consists of all active circuit judges plus any senior circuit judge who was a member of the original panel deciding the case and who elects to participate. Id. Some legal authorities prefer the term "en banc." The propriety of the terminology aside, this Article follows the language of the authorizing statute and the Federal Circuit in its first decision. See id.; South Corp., 690 F.2d at 1370, 215 U.S.P.Q. (BNA) at 658 (adopting in banc holdings of U.S. Court of Claims and U.S. Court of Customs and Patent Appeals as binding precedent on Federal Circuit). Accordingly, the term "in banc" appears throughout to specify decisions by the full court.

The purpose of this Article is to provide neither an exhaustive consideration of the patent law, nor a critical jurisprudential analysis of the 1995 Federal Circuit patent law decisions. To accommodate an interest in these topics, however, this Article refers to available treatises or other published commentaries whenever appropriate.
considers the more procedural aspects of patent enforcement through litigation in the district courts and the Federal Circuit. The Article then turns in Part III to a discussion of appeals from the USPTO pertaining to the patentability of inventions. In Part IV, the Article concludes with a brief account of apparent themes in certain opinions of the Federal Circuit, including the dissents and concurrences. In particular, this final portion highlights topics such as the right to a jury determination of specific patent issues, and the proper degree of judicial deference to USPTO determinations.

I. ENFORCING PATENT RIGHTS

This initial section reviews the precedential decisions relating to patent infringement liability and remedies. The discussion of substantive patent enforcement begins with the scope of patent protection and the types of conduct that amount to infringement. The presentation continues with the possible defenses to an infringement charge and ends with a listing of the forms of relief available to a prevailing plaintiff patent holder. Moreover, Part I spotlights the three 1995 in banc decisions of the Federal Circuit and their impact on the patent laws.

In *Markman v. Westview Instruments, Inc.*, the Federal Circuit addressed whether the interpretation of a patent claim is a pure legal conclusion within the exclusive province of the court. In a second in banc decision, the court had another opportunity to define the respective roles of judge and jury in the resolution of particular patent law issues. The question raised in *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.* was whether the district court judge in a patent infringement trial has discretion to preclude the jury from consideration of infringement under the doctrine of equivalents. In its third in banc decision, *Rite-Hite Corp. v. Kelley Co.*, the Federal Circuit considered whether a patent holder who successfully has proven

10. A patent may issue to the inventor, the inventor's heirs, or an assignee. 35 U.S.C. § 154(a)(1) (1994). For simplicity, however, this Article uses the term "patent holder" throughout to refer to those parties having legal title to a patent or standing to litigate matters concerning that patent or both.
infringement may recover lost profits related to missed sales of certain products, not covered by the patent-in-suit, which competed directly with the defendant’s infringing goods.\textsuperscript{16}

As the following case survey will show, \textit{Markman}, \textit{Hilton Davis}, and \textit{Rite-Hite} already have had a pronounced effect on patent practice. The potential consequences of these in banc decisions have not escaped the attention of the general public.\textsuperscript{17} In addition, the constitutional issues raised by these three in banc cases appear to have renewed the Supreme Court’s interest in patent cases.\textsuperscript{18}

\section{Infringement Liability}

A United States patent is a government grant for a limited time of exclusive rights to an invention.\textsuperscript{19} One who engages without permission in statutorily proscribed conduct relating to a patented invention is liable, subject to available defenses, as an infringer.\textsuperscript{20}

\begin{enumerate}
\item See, \textit{e.g.}, \textit{Jury Cases on Patent Infringement on Trial}, CHI. TRIB., June 12, 1995, \textsection 3 (Business), at 6 (noting that \textit{Markman} was “landmark decision” because Federal Circuit held that judges, not juries, should be responsible for defining scope of patents in patent trials); Teresa Riordan, \textit{Substantial Questions Linger After A Ruling That Could Give Patent Holders More Power}, N.Y. TIMES, Aug. 21, 1995, at D2 (commenting on response to \textit{Hilton Davis}); Teresa Riordan, \textit{Patent Court's Ruling Is Seen As Limiting Role of Juries}, N.Y. TIMES, Apr. 8, 1995, \textsection 1, at 41 (reviewing “long-awaited decision” in \textit{Markman}).
\item The United States Constitution contemplates the statutory grant of intellectual property rights. U.S. CONS.T art. I, \textsection 8, cl. 8 (vesting Congress with power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”). Title 35 of the United States Code sets forth the statutory scheme for domestic patent protection. \textit{See generally} 35 U.S.C. \textsection\textsection 100-200 (1994) (providing for application and award of patents). In addition, the USPTO has promulgated regulations concerning the prosecution of patent applications. \textit{See generally} 37 C.F.R. \textsection\textsection 1.31-1.378 (1995) (stating national processing provisions).
\item \textit{See infra} notes 207-358 and accompanying text (discussing acts constituting patent infringement).
\end{enumerate}
I. Scope of patent protection

Every patent concludes with at least one numbered paragraph called a "claim." The claim defines the patented invention. Moreover, the claim sets forth the scope of the patent holder's legal right to exclude others, during the patent term, from making, using, offering for sale, or selling the patented invention throughout the United States, or from importing that invention into the United States. The correct interpretation of a claim is paramount in virtually all patent-related matters. Indeed, judicial determinations regarding the patentability, validity, or infringement of a patent claim all rely on the same claim interpretation.

a. Claim construction in general

This past year, the Federal Circuit in banc set forth specific guidelines regarding proper claim construction. To determine the legal scope of a patent claim, the court must decide what the words used in the claim would have meant at the time of the invention to someone having ordinary skill in the relevant technology.
language, the remaining portions of the patent specification, and the patent prosecution history all serve as interpretative aids in this exercise. Furthermore, claim interpretation is a question of law that the trial judge in a patent infringement suit has an obligation to decide alone. Perhaps most importantly, as a pure legal conclusion, the district court’s claim construction is subject to de novo review by the Federal Circuit.

i. Substantive concerns

In *Markman v. Westview Instruments, Inc.*, the Federal Circuit resolved an apparent inconsistency in its precedent regarding the respective roles of judge and jury in proper claim construction. The appellate court faced a jury’s claim interpretation that seemingly diverged from the trial judge’s claim construction on post-trial motions. The Federal Circuit held unequivocally that claim construction is a purely legal conclusion, which falls exclusively within the district court’s province. The Federal Circuit thus affirmed the district court’s judgment of noninfringement as a matter of law, notwithstanding the jury verdict of infringement.

Markman had sued Westview alleging infringement of its patent to an automated inventory system for monitoring articles of clothing throughout the steps of commercial laundry and dry cleaning. The claims of the patent recited an “inventory control and reporting system” that could “localize spurious additions to inventory” and that included, inter alia, a “means to maintain an inventory total.” The meaning of “inventory” was the crux of the case. To inform the

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29. See infra notes 31-71 and accompanying text (discussing *Markman* holdings in detail).
30. See infra notes 31-71 and accompanying text (discussing *Markman* holdings in detail). The ability of the Federal Circuit to state a proper claim construction on appeal without deference to the conclusions or determinations of the district court facilitates a uniform pronouncement of the true legal scope of a patent.
33. Id., 34 U.S.P.Q.2d (BNA) at 1329.
34. See id., 34 U.S.P.Q.2d (BNA) at 1329 (stating court’s construction of claims is matter of law reviewed de novo on appeal).
37. See id. at 972, 34 U.S.P.Q.2d (BNA) at 1323 (reciting claim one of Markman invention).
38. *Id.* at 974-75, 34 U.S.P.Q.2d (BNA) at 1325-26.
meaning of "inventory," Markman introduced at trial the testimonies of the inventor, a technical expert, and a patent law expert.39 These individuals stated that one of ordinary skill in the art would not necessarily have construed "inventory" to include articles of clothing.40

The trial judge instructed the jury to construe the claims in view of the patent documents from the perspective of those of ordinary skill in the art.41 The jury found Westview liable for infringement on two of Markman's claims.42 Notwithstanding the jury verdict, the district court granted Westview's deferred motion for judgment as a matter of law.43 The district court relied upon its own claim construction and held that "inventory" included articles of clothing.44 The parties did not dispute that even though Westview's accused system could register transactions and cash totals, it could not maintain information regarding particular articles of clothing.45 The district court thus entered judgment for Westview as a matter of law, based on the absence of this claim limitation in the accused system.46

On appeal, Markman relied upon Federal Circuit precedent holding that a district court should submit to the jury any underlying factual disputes about meanings of claim terms.47 The Federal Circuit in banc rejected Markman's contention, however, and affirmed the district court's entry of judgment as a matter of law.48 In so ruling, the court implicitly overruled precedent contrary to its present holding that the district court alone must construe patent claims as a matter of law.49 The appellate court reasoned that its holding was entirely consistent with the fundamental general legal principle that

39. Id. at 973, 34 U.S.P.Q.2d (BNA) at 1324.
40. Id. at 983, 34 U.S.P.Q.2d (BNA) at 1322-33.
41. Id. at 973, 34 U.S.P.Q.2d (BNA) at 1324.
42. Id., 34 U.S.P.Q.2d (BNA) at 1324.
43. Id., 34 U.S.P.Q.2d (BNA) at 1324.
44. Id., 34 U.S.P.Q.2d (BNA) at 1324.
45. Id., 34 U.S.P.Q.2d (BNA) at 1324.
46. Id., 34 U.S.P.Q.2d (BNA) at 1324.
47. Id. at 973-74, 34 U.S.P.Q.2d (BNA) at 1324-25.
48. Id. at 979, 34 U.S.P.Q.2d (BNA) at 1329.
"the construction of a written evidence is exclusively with the court."\(^{50}\)

The Federal Circuit emphasized that placing sole responsibility for claim construction with the trial judge did not deprive parties to a patent infringement case of their Seventh Amendment right to trial by jury.\(^{51}\) In addition, although the dissent, one of the concurring opinions, and certain of the amici agreed with Markman's contention, the majority opinion specifically discounted the argument that the assignment of claim construction to the court's exclusive province conflicted with Supreme Court precedent.\(^{52}\) The majority distinguished the cases cited by Markman as anachronistic or inapposite.\(^{53}\)

Responding further to the dissenting and concurring opinions, the majority used, as an analytical framework, the analogy of a patent to a statute to support the judge's interpretation of patent claims, rather than the analogy of a patent to a contract.\(^{54}\) Although the majority recognized the inherent limitations of such analogies, it nevertheless noted that general principles of statutory interpretation were germane to patent claim construction cases.\(^{55}\)

In Markman, the Federal Circuit provided clear guidance to the district courts about the relative significance of certain evidence regarding the meaning of claim terms.\(^{56}\) The court embraced precedent stating that proper claim interpretation derives from consideration of the relevant patent-related documents.\(^{57}\) This "intrinsic" evidence includes: (i) the patent itself, i.e., the specification and the claims; and (ii) the prosecution history, i.e., the record of proceedings before the USPTO.\(^{58}\) The court also approved the examination of "extrinsic" evidence, e.g., expert and inventor testimony, dictionaries, and learned treatises, to inform the state of the technology, or "prior art," at the time of the invention.\(^{59}\)

\(^{50}\) Id. at 978, 34 U.S.P.Q.2d (BNA) at 1328 (quoting Levy v. Gadsby, 7 U.S. (3 Cranch) 180, 186 (1805)).

\(^{51}\) Id. at 983-84, 34 U.S.P.Q.2d (BNA) at 1333.

\(^{52}\) Id. at 987-88, 34 U.S.P.Q.2d (BNA) at 1336-37.

\(^{53}\) Id., 34 U.S.P.Q.2d (BNA) at 1336-37 (distinguishing Silsby v. Foote, 55 U.S. (14 How.) 218 (1852), and Bischoff v. Wethered, 76 U.S. (9 Wall.) 812 (1869), upon which dissenting and concurring opinions relied).

\(^{54}\) Id. at 987, 34 U.S.P.Q.2d (BNA) at 1386.

\(^{55}\) Id., 34 U.S.P.Q.2d (BNA) at 1396.

\(^{56}\) See generally id. at 979-83, 34 U.S.P.Q.2d (BNA) at 1392-94 (describing evaluation of evidence of record to interpret meaning of claims).

\(^{57}\) See id. at 979-80, 34 U.S.P.Q.2d (BNA) at 1329-30 (citing Graham v. John Deere Co., 383 U.S. 1, 33 (1966) (considering patent's prosecution history); Autogiro Co. of Am. v. United States, 384 F.2d 391, 396-98, 155 U.S.P.Q. (BNA) 697, 701-03 (Ct. Cl. 1967) (relying on specification and included claims)).

\(^{58}\) Id., 34 U.S.P.Q.2d (BNA) at 1329-30.

\(^{59}\) Id. at 980, 34 U.S.P.Q.2d (BNA) at 1330.
Federal Circuit emphasized, however, that extrinsic evidence could only be used to assist in the court's understanding of the patent, not to clarify ambiguity in claim language, much less to vary or contradict the meaning of claim terms. Specifically, the court noted that evidence of the subjective intent of the inventor during claim drafting deserves little or no probative weight in claim interpretation, unless otherwise documented in the prosecution history.

Several matters remain unresolved after Markman. One such issue concerns the respective roles of judge and jury in the interpretation of a means-plus-function claim under 35 U.S.C. § 112, paragraph six, which involves a determination of equivalents. In addition, the Seventh Amendment implications raised by the elimination of the jury's role in claim construction have prompted review by the Supreme Court. The Court granted certiorari specifically to answer whether, "in a patent infringement action for damages, [there is] a right to a jury trial under the Seventh Amendment of the United States Constitution of genuine factual disputes about the meaning of a patent." The Court heard oral arguments on January 8, 1996, in this appeal.

ii. Procedural concerns

The Federal Circuit's holding in Markman leaves no doubt that a trial judge has an absolute and exclusive duty to construe indepen-

60. Id. at 981, 34 U.S.P.Q.2d (BNA) at 1331.
61. See id. at 983, 34 U.S.P.Q.2d (BNA) at 1332-33 (stating that testimony of inventor of patent-in-suit and of someone of ordinary skill in art pertaining to proper claim construction amounted only to legal opinion which court was not required to follow). "[T]he court has complete discretion to adopt the expert legal opinion as its own, to find guidance from it, or to ignore it entirely, or even to exclude it." Id., 34 U.S.P.Q.2d (BNA) at 1333.
62. See id. at 977 n.8, 34 U.S.P.Q.2d (BNA) at 1327 n.8 ("[T]he issue of construction of means-plus-function claim limitations under 35 U.S.C. § 112 para. 6...is not before us today, and we express no opinion on the issue whether a determination of equivalents under § 112, para. 6 is a question of law or fact."). For an insightful discussion of the law concerning § 112, ¶ 6, see Rick D. Nydegger, Traversing the Section 112, Paragraph Six Field of Land Mines: Does In re Donaldson Adequately Defuse the Problems? (Part I), 76 J. PAT. & TRADEMARK OFF. SOCY 947 (1995) and Rick D. Nydegger, Traversing the Section 112, Paragraph Six Field of Land Mines: Does In re Donaldson Adequately Defuse the Problems? (Part II), 77 J. PAT. & TRADEMARK OFF. SOCY 30 (1995).
65. Id.

On April 23, 1996, after the submission of this Article, the Supreme Court affirmed the Federal Circuit's decision in Markman. Markman v. Westview Instruments, Inc., 116 S. Ct. 1384 (1996). The unanimous decision held that the relegation of claim construction exclusively to the judge did not violate the Seventh Amendment and, moreover, fostered consistency in patent infringement case resolution, a goal that the Federal Circuit was established to achieve.
ently the claims of a patent-in-suit. Furthermore, in a jury trial, the judge has the additional responsibility of instructing the jury on proper claim interpretation. Various procedural questions remain unanswered, however. For example, the Federal Circuit did not specifically opine on whether a district court may submit claim interpretation issues to the jury for advisory opinions pursuant to Federal Rule of Civil Procedure 39(c). While this approach seems proper so long as the district court provides some indication that it has met its obligation of independent claim construction, the issue has yet to be tested on appeal. In addition, procedural complications can arise when a district court defers involvement by submitting claim interpretation to the jury and later rules as a matter of law on post-trial motions. Difficulty occurs if the trial judge adopts the jury's claim construction in its entirety without any indication of further independent analysis. In such instances, the Federal Circuit may be unable to ascertain whether the trial judge has truly construed the claims independently.

In any event, pre-trial hearings on claim construction have taken place in post-Markman district court litigation. While such hearings are perhaps a focused method for trial judges to discharge their claim construction obligations, the actual efficiency of such a procedure has been controverted. The timing of district courts' claim construction aside, actual jury consideration of a proper claim construction will apparently support the verdict, regardless of the source of that interpretation.

In Laitram Corp. v. NEC Corp., the Federal Circuit reversed the district court's judgment of noninfringement as a matter of law, notwithstanding the jury verdict of infringement. Although the

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66. Markman, 52 F.3d at 979, 34 U.S.P.Q.2d (BNA) at 1329 (explaining that judicial interpretation of patent claims is matter of law to be decided by court on consideration of record).
67. Id., 34 U.S.P.Q.2d (BNA) at 1329.
68. See Fed. R. Civ. P. 39(c) (providing that “[i]n all actions not triable of right by a jury the court . . . may try any issue with an advisory jury”).
70. John J. Kirby, Jr. & Terrence J. Connolly, In the Wake of Markman, LEGAL TIMES, Dec. 11, 1995, Special Report, at 21; see Lucas, 890 F. Supp. at 332 n.3, 36 U.S.P.Q.2d (BNA) at 1238 n.3 (explaining that Markman creates administrative problems by requiring additional time and jury hiatus).
71. See infra notes 72-88 and accompanying text (discussing Laitram in detail).
district court submitted the issue of claim interpretation to the jury in the form of special interrogatories, the court itself eventually construed the claims by ruling on NEC's motion for judgment of noninfringement as a matter of law.\(^7\) The procedural propriety of the district court's actions, therefore, was not an issue on appeal.\(^7\) Similar to its review in Markman, the Federal Circuit treated the jury's claim interpretation as an advisory determination and focused, in its de novo review, on the propriety of the district court's claim construction.\(^7\) Contrary to Markman, however, the Federal Circuit concluded in Laitram that the district court's claim interpretation was incorrect, whereas the jury's claim construction was correct.\(^7\) The appellate court further determined that in view of the jury's proper claim interpretation, substantial evidence supported the jury finding of literal infringement.\(^7\) The Federal Circuit thus remanded the case to the district court with instructions to reinstate the jury's verdict.\(^7\)

Laitram had sued NEC alleging infringement of its patent to a letter-quality, electro-optical printer using photosensitive paper.\(^8\) The district court asked the jury to construe the patent claims in special interrogatories.\(^8\) The jury returned a verdict against NEC for literal infringement.\(^8\) On NEC's motion for judgment of noninfringement as a matter of law, the district court undertook an independent claim construction.\(^8\) The district court decided that the jury had erred in interpreting the claims and granted NEC's motion.\(^8\)

The Federal Circuit concluded that the district court's post-trial claim construction was substantively flawed.\(^8\) The district court's independent claim interpretation apparently contained inconsistent underlying determinations.\(^8\) In any event, the Federal Circuit

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\(^{74}\) *Id.* at 1394, 36 U.S.P.Q.2d (BNA) at 1210.

\(^{75}\) See *id.*, 36 U.S.P.Q.2d (BNA) at 1210 (explaining that claim construction is legal determination solely within court's province).

\(^{76}\) *Id.*, 36 U.S.P.Q.2d (BNA) at 1210.

\(^{77}\) *Id.* at 1394-95, 36 U.S.P.Q.2d (BNA) at 1210-11.

\(^{78}\) *Id.* at 1395, 36 U.S.P.Q.2d (BNA) at 1211.

\(^{79}\) *Id.*, 36 U.S.P.Q.2d (BNA) at 1211.

\(^{80}\) *Id.* at 1389-91, 36 U.S.P.Q.2d (BNA) at 1206-08. The patent-in-suit was Reexamined U.S. Patent No. B1 3,952,311. *Id.* at 1389, 36 U.S.P.Q.2d (BNA) at 1206.

\(^{81}\) *Id.* at 1391-92, 36 U.S.P.Q.2d (BNA) at 1208.

\(^{82}\) *Id.* at 1392, 36 U.S.P.Q.2d (BNA) at 1208.

\(^{83}\) *Id.*, 36 U.S.P.Q.2d (BNA) at 1208.

\(^{84}\) *Id.*, 36 U.S.P.Q.2d (BNA) at 1208.

\(^{85}\) *Id.* at 1394, 36 U.S.P.Q.2d (BNA) at 1210 (explaining trial court's conclusion that NEC printers could not literally infringe claims as inexplicable and erroneous).

\(^{86}\) *Id.*, 36 U.S.P.Q.2d (BNA) at 1210 (stating that trial court contradicted its previous claim determination by holding that claims at issue did not cover strobed printing, whereas jury
decided that the jury correctly construed the claim and properly applied this construction to find infringement.\textsuperscript{87} The appellate court thus implicitly held that if the district court discharges its obligation of making an independent claim construction and if the jury ultimately has the benefit of a proper claim construction to which to apply evidence of infringement, the source of that proper construction is irrelevant.\textsuperscript{88}

\textbf{b. Claim construction in certain contexts}

On several other occasions during 1995, the Federal Circuit considered the issue of claim construction. The court provided general guidance regarding the significance of preamble language,\textsuperscript{89} prosecution history,\textsuperscript{90} and composition recitations.\textsuperscript{91} In addition, the Federal Circuit addressed the meanings of specific terms used in patent claims, such as “at least approximately,”\textsuperscript{92} “solution-phase,”\textsuperscript{93} “skinless,”\textsuperscript{94} and “into said bend.”\textsuperscript{95}

\textbf{i. Preamble language}

In some patents, the claims begin with introductory language, known as a preamble.\textsuperscript{96} For example, a preamble may specify an intended use of the invention.\textsuperscript{97} While interpretation of a claim preamble is simply a part of claim construction as a whole, the inquiry

\textsuperscript{87} Id. at 1994, 35 U.S.P.Q.2d (BNA) at 1210.

\textsuperscript{88} Id. at 1995, 36 U.S.P.Q.2d (BNA) at 1211.

\textsuperscript{89} See infra notes 99-109 and accompanying text (discussing Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 34 U.S.P.Q.2d (BNA) 1816 (Fed. Cir. 1995)).


\textsuperscript{91} See infra notes 122-46 and accompanying text (considering Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1558, 35 U.S.P.Q.2d (BNA) 1801 (Fed. Cir. 1995)).

\textsuperscript{92} See infra notes 149-70 and accompanying text (discussing Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 36 U.S.P.Q.2d (BNA) 1162 (Fed. Cir. 1995)).

\textsuperscript{93} See infra notes 171-87 and accompanying text (analyzing Gentex Corp. v. Donnelly Corp., 69 F.3d 5277, 36 U.S.P.Q.2d (BNA) 1667 (Fed. Cir. 1995)).

\textsuperscript{94} See infra notes 196-206 and accompanying text (reviewing Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 36 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 1995)).

\textsuperscript{95} See infra notes 189-95 and accompanying text (considering Hoover Group, Inc. v. Custom Metalcraft, Inc., 66 F.3d 299, 36 U.S.P.Q.2d (BNA) 1101 (Fed. Cir. 1995)).

\textsuperscript{96} See \textit{In re} Paulsen, 30 F.3d 1475, 1479, 31 U.S.P.Q.2d (BNA) 1671, 1673 (Fed. Cir. 1994) (explaining that preamble may state invention’s purpose or intended use and may represent “additional structural limitation or mere introductory language”).

\textsuperscript{97} Id., 31 U.S.P.Q.2d (BNA) 1673.
into whether the preamble constitutes a limitation to the claim depends on the facts of a particular case.98

In *Bell Communications Research, Inc. v. Vitalink Communications Corp.*,99 the Federal Circuit reaffirmed that no precise test exists to determine when words in a preamble constitute a claim limitation.100 The court agreed with the district court’s holding that the preamble language, incorporated in the body of the claim, constituted a limitation.101 The Federal Circuit, however, concluded that the district court’s interpretation of this preamble-derived language was erroneous.102 The appellate court thus vacated the district court’s summary judgment of noninfringement.103

Bellcore had sued Vitalink alleging infringement of its patent to a computer local area network through which source devices can broadcast data packets along tree paths to destination devices.104 Vitalink counterclaimed for a declaratory judgment of noninfringement.105 The district court granted Vitalink’s motion for summary judgment of noninfringement based on Vitalink’s proposed construction of one of Bellcore’s patent claims.106

Absent implications regarding the respective roles of judge and jury, this appeal represented a straightforward application of the claim construction principles of *Markman*.107 The Federal Circuit held that the district court had improperly read an additional limitation into the claim by interpreting the claim language in isolation from the teaching of the specification.108 Given this erroneous claim construction, the Federal Circuit vacated the district court’s summary judgment of noninfringement and remanded for factual consider-

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98. *See In re Stencel*, 828 F.2d 751, 754, 4 U.S.P.Q.2d (BNA) 1071, 1073 (Fed. Cir. 1987) (“Whether a preamble of intended purpose constitutes a limitation to the claims is . . . a matter to be determined on the facts of each case in view of the claimed invention as a whole.”).


100. *See Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 621, 34 U.S.P.Q.2d (BNA) 1816, 1821 (Fed. Cir. 1995) ("We have long eschewed the use of an absolute rule according or denying all preambles limiting effect, having recognized that one cannot determine a preamble’s effect except by reference to the specific claim of which it is a component.").

101. *Id.*, 34 U.S.P.Q.2d (BNA) 1821 (describing claim as limited in light of specification).

102. *Id.* at 621-22, 34 U.S.P.Q.2d (BNA) at 1821.

103. *Id.* at 623, 34 U.S.P.Q.2d (BNA) at 1822.

104. *Id.* at 618, 34 U.S.P.Q.2d (BNA) at 1818. The patent-in-suit was U.S. Patent No. 4,706,080. *Id.* at 616, 34 U.S.P.Q.2d (BNA) at 1816.

105. *Id.* at 618, 34 U.S.P.Q.2d (BNA) at 1818.

106. *Id.* at 618-19, 34 U.S.P.Q.2d (BNA) at 1818-19.


108. *Bell Communications*, 55 F.3d at 621-22, 34 U.S.P.Q.2d (BNA) at 1821.
ations of infringement, either literally or under the doctrine of equivalents.  

\[ \text{ii. Prosecution history} \]

The prosecution history of a patent consists of the entire record of proceedings before the USPTO. In *Markman*, the Federal Circuit held that proper claim construction requires consideration of, inter alia, arguments and amendments made during the prosecution of a patent application.

In *Southwall Technologies, Inc. v. Cardinal IG Co.*, the Federal Circuit reaffirmed its holding in *Markman* that courts should construe claims in light of the patent prosecution history. The court further emphasized that resort to the prosecution history as an interpretative aid in claim construction stands wholly apart from its use as an estoppel to limit infringement under the doctrine of equivalents. The Federal Circuit affirmed the district court's summary judgment of noninfringement.

Southwall had sued Cardinal alleging infringement of its patent to heat-reflective coating for windows. The district court concluded that the prosecution history of Southwall's reexamined patent required that the "sputter-deposited dielectric" limitation recited in the claims result from a one-step deposition process.

Examination of the prosecution history revealed that Southwall had amended its claims in response to the patent examiner's obviousness rejec-
In support of this amendment, Southwall specifically explained that the invention was patentably distinguishable over the prior art because the recited dielectric layers could be deposited directly. In view of Cardinal's two-step process, the district court held that Cardinal's product could not infringe literally Southwall's patent as a matter of law. The Federal Circuit agreed entirely with the district court's reasoning.

iii. Composition recitations

In Exxon Chemical Patents, Inc. v. Lubrizol Corp., the Federal Circuit held that a composition claim covers any product which, at any time, contained the recited elements of the claimed composition. The Federal Circuit concluded that the district court's instruction to the jury on the proper meaning of the claims was erroneous. Moreover, the appellate court held, as a matter of law, that Exxon failed to prove infringement of the properly construed claims. The Federal Circuit thus reversed the district court's entry of judgment on the jury verdict of infringement.

Exxon had sued Lubrizol alleging infringement of its patent to additives that enhanced the performance of lubricating oils for motor vehicle engines. The claims of the Exxon patent recited a lubricating oil composition containing five specific ingredients. At trial, Lubrizol did not contest Exxon's assertion that Lubrizol created its infringing product by combining the five Exxon ingredients. Lubrizol argued, however, that the proper claim interpretation required the presence of all five ingredients in the final ready-to-use product. Furthermore, Lubrizol contended that two of the five ingredients reacted immediately when combined during the manufacturing process, so that the final Lubrizol product lacked one...
of the ingredients specified by Exxon. Therefore, according to Lubrizol, its final product did not infringe Exxon's patent.

In response, Exxon offered expert testimony disputing the effect of Lubrizol's asserted chemical reaction. Exxon presented no evidence, however, that Lubrizol's accused final products actually contained all five ingredients. Instead, Exxon relied heavily on its construction of its patent claims as defining a recipe, which Lubrizol admitted following. The district court agreed with Exxon's claim interpretation and charged the jury accordingly. The jury rendered a verdict against Lubrizol for willful infringement.

As an initial matter, the Federal Circuit criticized the district court's failure to undertake its own claim construction. The appellate court emphasized that rather than simply adopting one of the parties' proffered claim interpretations to instruct the jury, the trial judge has a duty to construe the claims independently and then instruct the jury on that interpretation. The appellate court admonished against merely choosing between the parties' proffered claim constructions because such interpretations typically favored one side improperly.

In any event, the Federal Circuit held that the district court's jury charge was legally erroneous. Neither of the parties' proffered claim interpretations was entirely correct. The court concluded that the claims of the Exxon patent were product claims, the proper construction of which encompassed any product that, at any time, contained the five recited ingredients. In view of the trial proceedings, the Federal Circuit further held that Exxon did not avail

131. Id. at 1559, 35 U.S.P.Q.2d (BNA) at 1805.
132. Id., 35 U.S.P.Q.2d (BNA) at 1805 (describing Lubrizol's argument that no ashless dispersant existed in Lubrizol's products after ingredient blending).
133. Id. at 1559, 35 U.S.P.Q.2d (BNA) at 1805-06.
134. Id. at 1558, 35 U.S.P.Q.2d (BNA) at 1804-05.
135. Id. at 1557, 35 U.S.P.Q.2d (BNA) at 1803-04.
136. Id. at 1558, 35 U.S.P.Q.2d (BNA) at 1804 (explaining that Lubrizol's view of claims depended on temporal limitation when claims related only to composition of end products).
137. Id. at 1555, 1557, 35 U.S.P.Q.2d (BNA) at 1802, 1804.
138. Id. at 1555, 35 U.S.P.Q.2d (BNA) at 1802.
139. Id. at 1556, 1558, 35 U.S.P.Q.2d (BNA) at 1803, 1805.
140. Id. at 1556, 35 U.S.P.Q.2d (BNA) at 1803.
141. Id., 35 U.S.P.Q.2d (BNA) at 1803.
142. Id. at 1558, 35 U.S.P.Q.2d (BNA) at 1805.
143. Id., 35 U.S.P.Q.2d (BNA) at 1805-06. Lubrizol was correct in considering Exxon's claims to read on product, although its interpretation was too narrow. Id., 35 U.S.P.Q.2d (BNA) at 1804-05. On the other hand, Exxon correctly interpreted its claims not to be time-limited, although Exxon erred in failing to offer evidence analyzing composition of Lubrizol's end products. Id., 35 U.S.P.Q.2d (BNA) at 1804-05.
144. Id. at 1557-58, 35 U.S.P.Q.2d (BNA) at 1804.
itself of ample opportunity to present evidence that Lubrizol's products met the limitations of Exxon's patent claims at some time during the manufacturing process. The Federal Circuit thus concluded that Lubrizol was entitled to a judgment of noninfringement as a matter of law.

**iv. Specific claim language**

On several occasions during 1995, the Federal Circuit discussed the meanings of certain terms in the context of the specific claims in which they appeared. The favored interpretation of a claim is one that sustains the validity of that claim. Courts may not, however, redraft claims to uphold their validity.

In *Quantum Corp. v. Rodime, PLC*, the Federal Circuit held that certain amendments made during a reexamination proceeding constituted an impermissible broadening of the claims, thus rendering those claims invalid. The court specifically concluded that Rodime's amendment of its claims, changing the track density of "at least 600" tracks per inch ("tpi") to "at least approximately 600" tpi, broadened the scope of the claims. Furthermore, this broadening amendment during reexamination under 35 U.S.C. § 305 rendered the claims invalid. The Federal Circuit thus affirmed the district court's summary judgment of invalidity.

Rodime requested reexamination of its patent to computer disk drives that accommodated 3.5 inch diskettes capable of comparable performance to 5.25 inch diskettes. In addition to making numerous other amendments, Rodime changed language regarding the data storage capacity of the claimed invention by adding the term

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145. Id. at 1560-61, 35 U.S.P.Q.2d (BNA) at 1806-07.
146. Id. at 1561, 35 U.S.P.Q.2d (BNA) at 1808.
149. 65 F.3d 1577, 36 U.S.P.Q.2d (BNA) 1162 (Fed. Cir. 1995).
151. Id. at 1582, 36 U.S.P.Q.2d (BNA) at 1167.
152. Id. at 1584, 36 U.S.P.Q.2d (BNA) at 1168. Section 305 permits an applicant to amend previously filed claims and to add new claims to distinguish an invention. Id., 36 U.S.P.Q.2d (BNA) at 1168; cf. 35 U.S.C. § 305 (1994) ("No proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding.").
"approximately" to the track density limitation.\textsuperscript{155} The reexamined patent issued with this alteration.\textsuperscript{156}

Five years later, Quantum filed suit against Rodime for a declaratory judgment of invalidity, unenforceability, and noninfringement.\textsuperscript{157} Rodime counterclaimed for infringement.\textsuperscript{158} Quantum filed a motion for summary judgment of invalidity, arguing that the amendment to track density during reexamination broadened the scope of the claims in violation of 35 U.S.C. § 305.\textsuperscript{159} The district court construed the reexamined claims and concluded that "at least approximately 600 tpi" was broader in scope than "at least 600 tpi."\textsuperscript{160} Accordingly, the district court granted Quantum's motion.\textsuperscript{161}

On appeal, Rodime contended that those skilled in the art would have understood that routine manufacturing variances rendered track density values imprecise.\textsuperscript{162} In other words, one skilled in the art would have interpreted "600 tpi" to mean "approximately 600 tpi."\textsuperscript{163} According to Rodime, the amendment to the track density limitation during reexamination was, therefore, a mere clarification.\textsuperscript{164} The Federal Circuit rejected this argument, reasoning that Rodime's evidence did not extend to how one skilled in the art would have interpreted "at least 600 tpi."\textsuperscript{165} Absent such a showing, the appellate court construed the claim language according to its ordinary meaning.\textsuperscript{166} The Federal Circuit concluded that "at least 600 tpi" specified an exact floor of 600 whereas "at least approximately 600 tpi" defined an imprecise range starting slightly below 600.\textsuperscript{167} The reexamined claims thus covered more than the original claims.\textsuperscript{168}

\textsuperscript{155} Id. at 1579, 36 U.S.P.Q.2d (BNA) at 1163-64.
\textsuperscript{156} Id., 36 U.S.P.Q.2d (BNA) at 1164.
\textsuperscript{157} Id., 36 U.S.P.Q.2d (BNA) at 1164.
\textsuperscript{158} Id., 36 U.S.P.Q.2d (BNA) at 1164.
\textsuperscript{159} Id., 36 U.S.P.Q.2d (BNA) at 1164 (contending that addition of "approximately" would serve to cover certain disk drives that were not covered by original patent).
\textsuperscript{160} Id. at 1580, 36 U.S.P.Q.2d (BNA) at 1164 (looking to ordinary meaning of disputed claim limitations).
\textsuperscript{161} Id., 36 U.S.P.Q.2d (BNA) at 1164.
\textsuperscript{162} Id. at 1581, 36 U.S.P.Q.2d (BNA) at 1165 (stating that density value is understood to represent range of possible track densities).
\textsuperscript{163} Id., 36 U.S.P.Q.2d (BNA) at 1165.
\textsuperscript{164} Id. at 1580, 36 U.S.P.Q.2d (BNA) at 1165.
\textsuperscript{165} Id. at 1581, 36 U.S.P.Q.2d (BNA) at 1165-66 (reasoning that addition of "approximately" was substantive change).
\textsuperscript{166} Id., 36 U.S.P.Q.2d (BNA) at 1165-66 (citing dictionary definitions of "at least" and "approximately").
\textsuperscript{167} Id., 36 U.S.P.Q.2d (BNA) at 1166.
\textsuperscript{168} Id. at 1581-82, 36 U.S.P.Q.2d (BNA) at 1167.
In addition, the appellate court considered, as a matter of first impression, the effect of § 305’s proscription against claim broadening.\textsuperscript{169} Despite the absence of guidance in the statutory language, the legislative history of the statute, and the court’s own precedent, the Federal Circuit concluded that a violation of § 305 rendered invalid the claims in their entirety, not simply those portions of the claims representing the broadened scope.\textsuperscript{170}

In \textit{Gentex Corp. v. Donnelly Corp.},\textsuperscript{171} the Federal Circuit affirmed the district court’s summary judgment of noninfringement, holding that no genuine issue of infringement existed where the accused device clearly lacked a particular limitation of the properly construed claims.\textsuperscript{172} Gentex had sued Donnelly alleging infringement of its patent to an automobile rear view mirror that could darken in response to glare from headlights behind the vehicle.\textsuperscript{173} In particular, the claims recited a “solution-phase” electrochromic element in the mirror that reversibly changed color upon low voltage electric current triggered by rear vehicle sensors.\textsuperscript{174}

Gentex had previously sued Donnelly on the same patent, alleging infringement by different Donnelly mirror models.\textsuperscript{175} The district court in the earlier case held that the Gentex patent was neither invalid nor unenforceable.\textsuperscript{176} Because Donnelly had not asserted noninfringement as a defense, the district court awarded damages and enjoined further infringement.\textsuperscript{177}

Shortly afterwards, Donnelly began marketing a new mirror model using an electrochromic element in solid film instead of in solution phase.\textsuperscript{178} Gentex’s complaint in this case alleged specifically that the new Donnelly mirrors were really no different from Donnelly’s earlier infringing mirrors.\textsuperscript{179} In response, Donnelly counterclaimed for a declaratory judgment of noninfringement and invalidity and

\begin{itemize}
\item \textsuperscript{169} \textit{Id.} at 1582-83, 36 U.S.P.Q.2d (BNA) at 1167.
\item \textsuperscript{170} \textit{Id.} at 1583-84, 36 U.S.P.Q.2d (BNA) at 1168 (reasoning that § 305 explicitly prohibits any broadening of claims during reexamination).
\item \textsuperscript{171} 69 F.3d 527, 36 U.S.P.Q.2d (BNA) 1667 (Fed. Cir. 1995).
\item \textsuperscript{172} \textit{Gentex Corp. v. Donnelly Corp.,} 69 F.3d 527, 530, 36 U.S.P.Q.2d (BNA) 1667, 1670 (Fed. Cir. 1995) (stating that patent only covered “solution phase” reactions and accused device’s reactions occurred in solid film), aff’g 31 U.S.P.Q.2d (BNA) 1189 (W.D. Mich. 1994).
\item \textsuperscript{173} \textit{Id.} at 528, 36 U.S.P.Q.2d (BNA) at 1668. The patent-in-suit was U.S. Patent No. 5,128,799. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1668.
\item \textsuperscript{174} \textit{Id.} at 528-29, 36 U.S.P.Q.2d (BNA) at 1668.
\item \textsuperscript{175} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1668.
\item \textsuperscript{176} \textit{See id.}, 36 U.S.P.Q.2d (BNA) at 1668 (citing \textit{Gentex Corp. v. Donnelly Corp.,} 27 U.S.P.Q.2d (BNA) 1714 (W.D. Mich. 1993)).
\item \textsuperscript{177} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1668.
\item \textsuperscript{178} \textit{Id.} at 529, 36 U.S.P.Q.2d (BNA) at 1668.
\item \textsuperscript{179} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1668.
\end{itemize}
later moved for summary judgment.\textsuperscript{180} The district court construed the claims of the Gentex patent as limited to devices in which the electrochemical reactions occurred in a liquid environment.\textsuperscript{181} Because Donnelly's new mirrors employed electrochromic elements in a solid film, the district court concluded as a matter of law that Donnelly could not infringe.\textsuperscript{182} 

The Federal Circuit embraced the district court's opinion.\textsuperscript{183} The appellate court further rejected Gentex's technical arguments on appeal\textsuperscript{184} and held that the trial judge properly construed the claims in view of the specification.\textsuperscript{185} Moreover, the Federal Circuit noted that the district court's interpretation of "solution-phase" in the claims was consistent with the inventor's testimony.\textsuperscript{186} The appellate court thus discerned no error in the trial court's summary judgment in favor of Donnelly.\textsuperscript{187} 

In \textit{Hoover Group, Inc. v. Custom Metalcraft, Inc.},\textsuperscript{188} the Federal Circuit reversed the district court's judgment of infringement.\textsuperscript{189} The district court found infringement after the liability phase of a bifurcated bench trial.\textsuperscript{190} Hoover had sued Custom alleging infringement of two of its patents to metal tanks of a particular configuration used for liquid storage and transport.\textsuperscript{191} 

The Federal Circuit held that the district court improperly construed the claims of one of the Hoover patents to cover bends in the bottom plate of the tank that resembled either a "V" or an inverted "V."\textsuperscript{192} The court concluded that nothing in the patent's specification or prosecution history, nor in the prior art, suggested that the recited limitation "into said bend and along said bend" meant anything other than V-shaped.\textsuperscript{193} The district court found

\begin{flushright}
\textsuperscript{180} Id., 36 U.S.P.Q.2d (BNA) at 1668.
\textsuperscript{181} Id., 36 U.S.P.Q.2d (BNA) at 1668.
\textsuperscript{182} Id., 36 U.S.P.Q.2d (BNA) at 1668.
\textsuperscript{183} Id., 36 U.S.P.Q.2d (BNA) at 1669.
\textsuperscript{184} Id., 36 U.S.P.Q.2d (BNA) at 1670 (describing technical arguments that accused devices function in same way as solution-phase devices).
\textsuperscript{185} Id., 36 U.S.P.Q.2d (BNA) at 1669 (stating that use of "solution-phase" in specification limited patent claims to devices where electrochemical reactions occur entirely in liquid).
\textsuperscript{186} Id., 36 U.S.P.Q.2d (BNA) at 1669.
\textsuperscript{187} Id., 36 U.S.P.Q.2d (BNA) at 1669.
\textsuperscript{188} 66 F.3d 299, 36 U.S.P.Q.2d (BNA) 1101 (Fed. Cir. 1995).
\textsuperscript{189} Hoover Group, Inc. v. Custom Metalcraft, Inc., 66 F.3d 299, 305, 36 U.S.P.Q.2d (BNA) 1101, 1105 (Fed. Cir. 1995).
\textsuperscript{190} Id. at 303, 36 U.S.P.Q.2d (BNA) at 1104.
\textsuperscript{191} Id. at 301, 36 U.S.P.Q.2d (BNA) at 1102 (noting that tanks in question possessed sloped bottoms to facilitate drainage of contents). The patents-in-suit were U.S. Patent Nos. 4,840,284 and 4,785,958. Id.
\textsuperscript{192} Id. at 304, 36 U.S.P.Q.2d (BNA) at 1104-05.
\textsuperscript{193} Id., 36 U.S.P.Q.2d (BNA) at 1104-05.
\end{flushright}
that the bottom plates of all accused Custom tanks had inverted V-shaped bends. In view of the clear absence in the accused devices of a limitation of the properly construed claims, the Federal Circuit reversed the district court's finding of infringement.

In Pall Corp. v. Micron Separations, Inc., the Federal Circuit affirmed the district court's judgment of infringement after a bench trial. Although the Federal Circuit initially decided to hear this appeal in banc, the resolution of the claim interpretation issue in Markman facilitated the return of Pall to the original panel for disposition. Pall had alleged that Micron's Nylon 66 and Nylon 46 products infringed Pall's patent to nylon microfiltration membranes suitable for filtering microorganisms or other microscopic contaminants. The claims of the patent required that the nylon membrane be "skinless." With respect to its accused Nylon 66 membranes, Micron defended against infringement on the sole ground that photomicrographs of the Nylon 66 membranes revealed a "skin" layer. Pall, however, contended that the "skinless" limitation was a performance characteristic describing a surface that does not impede filtration flow.

Both the district court and the Federal Circuit agreed with Pall's interpretation of "skinless." Based on technical evidence presented at trial, the district court found that Micron's Nylon 66 membranes contained all the relevant performance characteristics of a "skinless" membrane, and thus literally infringed Pall's patent. The Federal Circuit discerned no clear error in the district court's finding. The appellate court did further consider whether the Micron Nylon 46 membranes infringed the Pall patent, however, focusing on
whether prosecution history estoppel precluded a finding of infringement under the doctrine of equivalents.\textsuperscript{206}

2. Infringing acts

Patent infringement liability arises with the unauthorized manufacture, use, offer for sale, or sale in the United States of a patented invention, or importation of that invention into the United States.\textsuperscript{207} The determination of infringement is a two-step inquiry, beginning with a proper claim construction as set forth in \textit{Markman}.\textsuperscript{208} The second step of the infringement analysis involves the comparison of the accused product or process to the properly construed claim.\textsuperscript{209} A patent holder alleging infringement has the burden of proving at trial by a preponderance of the evidence that the accused infringer’s product or process contains every limitation of at least one of the asserted claims of the patent, either literally or by equivalence.\textsuperscript{210} Infringement is a question of fact that the Federal Circuit reviews for substantial evidence to support the jury’s verdict,\textsuperscript{211} or for clear error where the trial judge sits as the fact-finder.\textsuperscript{212}

\begin{itemize}
  \item 206. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1228 (explaining that infringement may be proved under doctrine of equivalents when there is insubstantial difference between claimed invention and accused product); \textit{see infra} notes 305-18 and accompanying text (discussing infringement by Micron’s accused Nylon 46 products).
  \item 208. Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1576, 27 U.S.P.Q.2d (BNA) 1836, 1839 (Fed. Cir. 1993) (stating that claim must be properly construed to determine scope and meaning).
  \item 210. Conroy v. Reebok Int’l Ltd., 14 F.3d 1570, 1573, 29 U.S.P.Q.2d (BNA) 1373, 1374-75 (Fed. Cir. 1994) (noting that “[t]o support an infringement determination, an accused device must embody exactly each claim limitation or its equivalent.”); Key Mfg., Inc. v. Microdot, Inc., 925 F.2d 1444, 1449, 17 U.S.P.Q.2d (BNA) 1806, 1810 (Fed. Cir. 1991) (stating that “the patentee must prove that the accused device embodies every limitation in the claim, either literally or by a substantial equivalent”).
  \item 211. \textit{See Lemelson}, 968 F.2d at 1207, 23 U.S.P.Q.2d (BNA) at 1288 (“[The substantial evidence test] requires us to decide for ourselves whether reasonable jurors viewing the evidence as a whole could have found the facts needed to support the verdict in light of the applicable law.”).
  \item 212. \textit{See United States v. United States Gypsum Co.}, 333 U.S. 364, 395 (1948) (“A finding is ‘clearly erroneous’ when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.”).
\end{itemize}
a. *Infringement under the doctrine of equivalents*

A literal infringement results when every limitation recited in a patent claim is present exactly in an accused product or process.\(^{213}\) A finding of infringement does not, however, require that the accused product or process embody every limitation of the claim literally.\(^{214}\) Even when a patent holder cannot prove literal infringement, a finding of infringement may be appropriate under the doctrine of equivalents.\(^{215}\)

In *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*,\(^{216}\) the Supreme Court set forth a tripartite test to decide infringement under the doctrine of equivalents.\(^{217}\) The Court held that the absence of literal infringement did not preclude a finding of infringement under the doctrine of equivalents when the accused device "performs substantially the same function in substantially the same way to obtain the same result."\(^{218}\) This holding soon received shorthand reference as the function-way-result test of *Graver Tank*.\(^{219}\)

Moreover, the function-way-result test achieved wide application in the lower courts as the definitive test of equivalence, despite the Court's admonition against viewing equivalency as "the prisoner of a formula."\(^{220}\) Furthermore, the Supreme Court's treatment of the doctrine of equivalents as equitable in nature spawned controversy over whether this doctrine is a matter of equity applicable at the court's discretion.\(^{221}\) Even Federal Circuit precedent appeared to raise questions regarding the nature and proper application of the doctrine of equivalents.\(^{222}\)

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\(^{215}\) See infra notes 216-50 and accompanying text (explaining doctrine of equivalents and cases decided under this doctrine).


\(^{217}\) Id. at 608.

\(^{218}\) Id. (stating that essence of doctrine is that one may not practice fraud on patent).

\(^{219}\) Cf. International Visual Corp. v. Crown Metal Mfg., 991 F.2d 763, 774, 26 U.S.P.Q.2d (BNA) 1588, 1593 (Fed. Cir. 1993) (stating that there may be instances in which function-way-result test is satisfied but when facts may not justify application of doctrine of equivalents).

\(^{220}\) Graver, 339 U.S. at 609.


In *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.*, the Federal Circuit clarified the law regarding infringement under the doctrine of equivalents. This case presented the Federal Circuit with another opportunity to consider the respective roles of the judge and jury in patent cases. The in banc court held unequivocally that infringement under the doctrine of equivalents is a factual issue for the jury to resolve after proper instructions on claim interpretation. The Federal Circuit stated that a district court judge in a jury trial on patent infringement may not withhold from the jury consideration of infringement under the doctrine of equivalents. In so ruling, the appellate court foreclosed any argument that infringement under the doctrine of equivalents is a matter of equity applicable at the discretion of the judge. The Federal Circuit affirmed the district court's entry of judgment on the jury verdict of infringement.

Hilton Davis had sued Warner-Jenkinson alleging infringement of its patent to the ultrafiltration-mediated purification of commercial dyes for food and drug use. The claims of the patent recited, inter alia, parameters for ultrafiltration through a membrane at "a hydrostatic pressure of approximately 200 to 400 p.s.i.g., at a pH from approximately 6.0 to 9.0." At trial, Hilton Davis presented evidence that the accused Warner-Jenkinson ultrafiltration process operated at a pressure between 200 to nearly 500 p.s.i.g. and sometimes at a pH of 5.0. The jury found that Warner-Jenkinson had infringed Hilton Davis' patent under the doctrine of equivalents.

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that Federal Circuit's allusions to equity in doctrine of equivalents is reference to general fairness).


225. *See infra* notes 1384-1406 and accompanying text (discussing Federal Circuit's holdings regarding roles of judge and jury in patent cases).


227. *Id. at 1522, 35 U.S.P.Q.2d (BNA) at 1648* ("The trial judge does not have discretion to choose whether to apply the doctrine of equivalents when the record shows no literal infringement.").

228. *Id. at 1521, 35 U.S.P.Q.2d (BNA) at 1648*.

229. *Id. at 1529, 35 U.S.P.Q.2d (BNA) at 1654*.

230. *Id. at 1516, 35 U.S.P.Q.2d (BNA) at 1643* The patent-in-suit was U.S. Patent No. 4,560,746. *Id. at 1515, 35 U.S.P.Q.2d (BNA) at 1642*.

231. *Id., 35 U.S.P.Q.2d (BNA) at 1643*.

232. *Id. at 1524-25, 35 U.S.P.Q.2d (BNA) at 1650-51*.

233. *Id. at 1516, 35 U.S.P.Q.2d (BNA) at 1643* (noting that jury only awarded Hilton Davis 20% of requested damages).
On appeal, Warner-Jenkinson argued that the doctrine of equivalents is an equitable remedy available only upon a suitable threshold showing of the equities by the patent holder, e.g., copying or piracy by the accused infringer. Furthermore, Warner-Jenkinson asserted that, as a matter of equity, infringement under the doctrine of equivalents is a legal issue for the court, and not the jury, to decide. The Federal Circuit in banc, however, rejected Warner-Jenkinson's contentions. The court held that a showing of culpable conduct is not necessary for, much less a prerequisite to, a finding of infringement under the doctrine of equivalents. The Federal Circuit thus affirmed the jury verdict of infringement, despite the literal pressure and pH differences from the claimed invention. The court relied on substantial evidence demonstrating that the Warner-Jenkinson ultrafiltration process performed the same function, in an equivalent way, to achieve the same result as the patented invention.

The Federal Circuit clearly set forth that infringement under the doctrine of equivalents exists where the differences between the claimed invention and the accused product or process are objectively insubstantial. The court noted that it may often be enough to rely solely on the function-way-result test to establish insubstantiality, and thus equivalency. In newer technologies, however, the court recognized the possibility that the function-way-result test would not suffice to illuminate the substantiality of the differences. The Federal Circuit noted that important factors not considered in the function-way-result test included: evidence of known interchangeability of the accused and claimed elements; copying; designing around; and independent development. Furthermore, the court stated that the proper objective standard for assessing the substantiality of differences is the perspective of a person of ordinary skill in the relevant art.

234. Id. at 1522-23, 35 U.S.P.Q.2d (BNA) at 1649.
235. Id. at 1523, 35 U.S.P.Q.2d (BNA) at 1649.
236. Id., 35 U.S.P.Q.2d (BNA) at 1649.
237. Id. at 1519, 35 U.S.P.Q.2d (BNA) at 1646 (asserting that doctrine of equivalents does not rely on subjective awareness or intent of accused infringer).
238. Id. at 1528-29, 35 U.S.P.Q.2d (BNA) at 1654.
239. Id. at 1524-25, 35 U.S.P.Q.2d (BNA) at 1650-51.
240. Id. at 1518, 35 U.S.P.Q.2d (BNA) at 1645.
242. Id., 35 U.S.P.Q.2d (BNA) at 1645 (noting that new technologies are more sophisticated than those in existence when function-way-result test arose).
243. Id. at 1519-20, 35 U.S.P.Q.2d (BNA) at 1646-47.
244. Id. at 1519, 35 U.S.P.Q.2d (BNA) at 1646.
Still unclear after Hilton Davis is whether evidence of interchangeability, copying, or designing around would be sufficient, in the absence of a function-way-result analysis, to support a finding of equivalency. According to its holding in Malta v. Schulmerich Carillons, Inc., the Federal Circuit requires a patent holder alleging infringement under the doctrine of equivalents to assert with particularity why or how the accused device is equivalent to the claimed invention. What constitutes a sufficient showing under Malta after Hilton Davis remains uncertain.

Warnen-Jenkinson petitioned the Supreme Court to grant certiorari to consider the issue: "Does patent infringement exist whenever accused product or process is 'equivalent' to invention claimed in patent, in that differences are not 'substantial' as determined by jury, even though accused product or process is outside literal scope of patent claim?" The Supreme Court granted certiorari on February 26, 1996, to Warnen-Jenkinson's petition and will hear oral arguments on the appeal during its 1996 term.

In Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., the Federal Circuit faithfully applied the holding in Hilton Davis regarding a proper doctrine of equivalents inquiry. The court concluded that substantial evidence supported the jury verdict of infringement under the doctrine of equivalents. In particular, the Federal Circuit reaffirmed that while infringement requires a literal or an equivalent
correspondence of the accused device with respect to each and every element of the claim, such correspondence did not have to be one-to-one as to particular components.\textsuperscript{254} The appellate court thus affirmed the district court's entry of judgment on the jury verdict of infringement.\textsuperscript{255}

Festo had sued Shoketsu alleging infringement of its Carroll and Stoll patents to a material transport piston/cylinder system in which movement of a sleeve member outside the cylinder is magnetically coupled with the movement of the piston inside the cylinder.\textsuperscript{256} Before trial, the district court granted partial summary judgment on infringement of the Carroll patent under the doctrine of equivalents.\textsuperscript{257} The parties tried the issue of infringement of the Stoll patent to the jury.\textsuperscript{258} The jury returned a verdict of infringement.\textsuperscript{259}

Shoketsu contended that its product did not infringe either the Carroll or the Stoll patents because it lacked certain claimed sealing rings used to increase the life of the piston.\textsuperscript{260} The Federal Circuit clarified, however, that the "all elements rule" of \textit{Pennwalt Corp. v. Durand-Wayland, Inc.}\textsuperscript{261} did not require a one-to-one correspondence between the recited components and those of the accused device.\textsuperscript{262} The appellate court held that, despite the absence of certain claimed components, Shoketsu's accused device contained a ring configuration corresponding to those of the Carroll and Stoll patents.\textsuperscript{263} In view of the equivalency evidence presented, the Federal Circuit affirmed the summary judgment on infringement of the Carroll patent as well as the jury verdict of infringement of the Stoll patent.\textsuperscript{264}

\begin{thebibliography}{9}
\bibitem{254} Id. at 863, 37 U.S.P.Q.2d (BNA) at 1164.
\bibitem{255} Id., 37 U.S.P.Q.2d (BNA) at 1165.
\bibitem{256} Id. at 861 n.2, 37 U.S.P.Q.2d (BNA) at 1162 n.2. The patents-in-suit were U.S. Patent Nos. 3,779,401 (Carroll) and 4,354,125 (Stoll). Id. at 860, 862, 37 U.S.P.Q.2d (BNA) at 1162, 1163.
\bibitem{257} Id. at 860-61, 37 U.S.P.Q.2d (BNA) at 1162-63 (noting that Shoketsu offered no evidence to refute Festo's assertion that accused device performed substantially same function in substantially same way as patented device).
\bibitem{258} Id. at 862-66, 37 U.S.P.Q.2d (BNA) at 1164-67 (revealing that issues of patent validity and infringement were also heard by special master, due to complexity of case).
\bibitem{259} Id. at 862, 37 U.S.P.Q.2d (BNA) at 1163.
\bibitem{260} Id. at 863, 37 U.S.P.Q.2d (BNA) at 1164.
\bibitem{262} Festo, 72 F.3d at 863, 37 U.S.P.Q.2d (BNA) at 1164 (citing Dolly, Inc. v. Spalding & Evenflo Cos., 16 F.3d 394, 398, 29 U.S.P.Q.2d (BNA) 1767, 1769 (Fed. Cir. 1994)).
\bibitem{263} Id., 37 U.S.P.Q.2d (BNA) at 1164 (indicating that accused device was not as effective as patented one).
\bibitem{264} Id. at 868, 37 U.S.P.Q.2d (BNA) at 1168.
\end{thebibliography}
b. Prosecution history estoppel

Prosecution history estoppel limits the scope of protection available under the doctrine of equivalents. Prosecution history estoppel thus precludes a patent holder from asserting a scope of equivalency in an infringement suit that would encompass subject matter that it had disclaimed during prosecution of the patent application to obtain allowance of the claims in their issued form.

Prosecution history estoppel is a question of law that the Federal Circuit reviews de novo. Whether a particular statement during prosecution results in estoppel depends upon the reason for the statement. Clearly, express disclaimers of subject matter in the prosecution history give rise to estoppels.

In Southwall Technologies, Inc. v. Cardinal IG Co., for example, the Federal Circuit concluded that prosecution history estoppel restricted the permissible range of plaintiff's equivalents claim. The Federal Circuit agreed with the district court that during the prosecution of its reexamination patent, Southwall expressly disclaimed a "sputter-deposited dielectric" resulting from a process other than one-step deposition. Southwall had amended its claims and specifically explained that the invention was patentably distinguishable from the prior art because the recited dielectric layers could be deposited together directly. The appellate court thus affirmed the district court's summary judgment of noninfringement.

265. See Townsend Eng'g Co. v. HiTec Co., 829 F.2d 1086, 1090, 4 U.S.P.Q.2d (BNA) 1136, 1139 (Fed. Cir. 1987) (explaining that patentee is prevented "from contending later in an infringement action that his claims should be interpreted as if limitations added were not present" (quoting Thomas & Betts Corp. v. Litton Sys., Inc., 720 F.2d 1572, 1579, 220 U.S.P.Q. (BNA) 1, 6 (Fed. Cir. 1983))).

266. See Zenith Labs., Inc. v. Bristol-Myers Squibb Co., 19 F.3d 1418, 1424, 30 U.S.P.Q.2d (BNA) 1285, 1290 (Fed. Cir.) (stating that essence of prosecution history estoppel is that patentee should not be able to obtain through litigation coverage of subject matter relinquished during prosecution), cert. denied, 115 S. Ct. 500 (1994).


271. Southwall Technologies, 54 F.3d at 1581, 34 U.S.P.Q.2d (BNA) at 1681.

272. Id. at 1580, 34 U.S.P.Q.2d (BNA) at 1680.

273. Id. at 1581, 34 U.S.P.Q.2d (BNA) at 1680.

In contrast, changes or arguments that are not substantive in nature and that did not affect patentability will not create estoppels. As the following cases show, various types of conduct during the prosecution of a patent application can present grave consequences for the unwary in later litigation, however.

i. Continuation practice

In Mark I Marketing Corp. v. R.R. Donnelley & Sons Co., the Federal Circuit affirmed the district court's summary judgment of noninfringement. Mark had sued Donnelley alleging infringement of its patent to a process for full-spectrum color printing using only two printing plates and two ink colors. The patent claims required sequential exposure of the recited film and sequential use of the recited color filters.

Donnelley filed a motion for summary judgment of noninfringement both literally and under the doctrine of equivalents. Donnelley asserted that its process neither exposed film sequentially nor used filters sequentially. Donnelley also argued that prosecution history estoppel, or alternatively the prior art, barred application of the doctrine of equivalents in this case. Mark conceded the absence of literal infringement. The district court ultimately granted Donnelley's motion on the ground that Mark failed to refute the assertion that Donnelley used a prior art process. Given this use, Donnelley could not infringe under the doctrine of equivalents as a matter of law.

The Federal Circuit did not consider whether the district court correctly held that Mark failed to refute Donnelley's factual assertion of practicing a prior art process. Instead, the appellate court only addressed the issue of prosecution history estoppel. The Federal

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275. See Laitram Corp. v. NEC Corp., 952 F.2d 1357, 1361, 21 U.S.P.Q.2d (BNA) 1276, 1279 (Fed. Cir. 1991) (stating that change may render claim "merely clarified").
278. Id. at 288, 36 U.S.P.Q.2d (BNA) at 1097. The patent-in-suit was U.S. Patent No. 4,554,241.
279. Id. at 287, 36 U.S.P.Q.2d (BNA) at 1096.
280. Id. at 287-88, 36 U.S.P.Q.2d (BNA) at 1097-98.
281. Id. at 288, 36 U.S.P.Q.2d (BNA) at 1097.
283. Id., 36 U.S.P.Q.2d (BNA) at 1097 (alleging that Donnelley's process was known and used before Mark's invention).
284. Id., 36 U.S.P.Q.2d (BNA) at 1097.
285. Id. at 289, 36 U.S.P.Q.2d (BNA) at 1097-98.
286. Id., 36 U.S.P.Q.2d (BNA) at 1097-98.
287. Id., 36 U.S.P.Q.2d (BNA) at 1098.
Circuit concluded that the prosecution history supported the district court's summary judgment of noninfringement.\textsuperscript{288}

The prosecution history of Mark's patent application involved the filing of two continuation-in-part applications.\textsuperscript{289} In Mark's original "grandparent" application, the patent examiner rejected the claims as anticipated and obvious.\textsuperscript{290} These claims contained no limitations regarding sequential use of filters or sequential exposure of film.\textsuperscript{291} Mark did not respond to the rejections, but instead filed a second "parent" application.\textsuperscript{292} Mark amended the claims in the parent application to add a limitation of sequential filter use.\textsuperscript{293} Despite Mark's representation that sequential filter use distinguished the invention from the prior art, the patent examiner rejected the amended claims as obvious.\textsuperscript{294} Again, Mark did not respond to the rejections, but instead filed another continuation-in-part application.\textsuperscript{295} This application, from which the patent ultimately issued, contained further amended claims including the limitation of sequential film exposure.\textsuperscript{296} The patent examiner allowed these claims to issue without comment.\textsuperscript{297}

In view of this prosecution history, the Federal Circuit concluded that Mark clearly had disclaimed coverage of processes that did not use filters sequentially.\textsuperscript{298} Mark's decision to file narrower continuation-in-part applications rather than to respond expressly to the patent examiner's rejections in no way avoided an estoppel.\textsuperscript{299} The court further concluded that summary judgment was appropriate given the undisputed record of the disclaimers in the prosecution history.\textsuperscript{300}

\textit{ii. Responses to non-prior art rejections}

In \textit{Pall Corp. v. Micron Separations, Inc.},\textsuperscript{301} the Federal Circuit affirmed the district court's judgment of infringement after a bench
Pall had sued Micron alleging that Micron's Nylon 66 and Nylon 46 products infringed its patent to nylon microfiltration membranes suitable to filter microorganisms or other microscopic contaminants. With regard to the accused Nylon 46 membranes, the district court found no literal infringement, based on the difference between the 4:1 methylene to amide ratio in the Nylon 46 resin and the "about 5:1 to about 7:1" ratio recited as a claim limitation. The district court, however, did find that Micron's Nylon 46 membranes infringed Pall's patent under the doctrine of equivalents.

On appeal, Micron did not challenge the district court's infringement findings, but argued that prosecution history estoppel precluded Pall from asserting the range of equivalents necessary to capture Micron's Nylon 46 membranes. The prosecution history indicated that Pall had filed a narrower continuation-in-part application containing claims with the additional limitation of a methylene to amide ratio. The addition of this ratio limitation was voluntary, however. In the original claims of the "parent" application, the sole limitation regarding the resin was insolubility in alcohol. The patent examiner did not reject the continuation-in-part claims based on prior art, but rather on inadequate support in the specification. Pall responded that the claims were "actually rather narrow," but did not further amend the claims as to the ratio limitations. The patent examiner then allowed the claims to issue.

The Federal Circuit stated that, in contrast to claim amendments or arguments in response to prior art rejections, those made simply to impart precision to the claim language generally do not create the

303. Id. at 1215, 36 U.S.P.Q.2d (BNA) at 1227. The patent-in-suit was U.S. Patent No. 4,340,479.
304. Id. at 1217, 36 U.S.P.Q.2d (BNA) at 1227.
305. Id. at 1218, 36 U.S.P.Q.2d (BNA) at 1230 (finding that Micron's product has substantially same chemical and physical structures, performed same function in same way, and achieved same result as Pall's claimed membranes).
307. Id. at 1219, 36 U.S.P.Q.2d (BNA) at 1230.
308. Id., 36 U.S.P.Q.2d (BNA) at 1230 (stating that refiling was based on Pall's own research).
309. Id., 36 U.S.P.Q.2d (BNA) at 1230.
310. Id., 36 U.S.P.Q.2d (BNA) at 1230 (noting that patent examiner also labeled claims as "too broad").
311. Id., 36 U.S.P.Q.2d (BNA) at 1230.
312. Id., 36 U.S.P.Q.2d (BNA) at 1230.
presumption of an estoppel.\textsuperscript{313} In view of Pall's voluntary restriction of the claims and the facts surrounding the response to a non-prior art rejection, the Federal Circuit held that Pall was not estopped from asserting a range of equivalence to encompass a methylene to amide ratio of 4:1.\textsuperscript{314} The appellate court thus affirmed the district court's judgment of infringement under the doctrine of equivalents regarding the Nylon 46 membranes.\textsuperscript{315}

c. Design patent infringement

A design patent protects the nonfunctional aspects of a claimed ornamental design.\textsuperscript{316} Design patent infringement liability attaches if visually the accused design is substantially the same as the patented design\textsuperscript{317} and if it appropriates the novelty in the patented design that distinguishes the patented design from the prior art.\textsuperscript{318} The relevant comparison is between the accused design and the claimed design, not the commercial embodiment of the claimed design.\textsuperscript{319} Similar to the infringement determination for utility patents, this determination for design patents is a two-step inquiry involving a proper claim construction followed by the comparison of the accused design for overall visual similarity.\textsuperscript{320} Design patent infringement is a question of fact that the Federal Circuit reviews for substantial

\textsuperscript{313} Id., 36 U.S.P.Q.2d (BNA) at 1230 (stating that non-substantive change does not trigger estoppel).

\textsuperscript{314} Id., 36 U.S.P.Q.2d (BNA) at 1230.

\textsuperscript{315} Id. at 1220, 36 U.S.P.Q.2d (BNA) at 1231.


\textsuperscript{317} See Gorham Co. v. White, 81 U.S. 511, 528 (1871). The Court delineated the test as follows:


\textsuperscript{319} See Payless Shoesource, Inc. v. Reebok Int'l Ltd., 998 F.2d 985, 990, 27 U.S.P.Q.2d (BNA) 1516, 1520-21 (Fed. Cir. 1993) (stating that proper application of Gorham test requires comparison of accused design to claimed design and not to commercial embodiment).

\textsuperscript{320} See infra notes 330-36 and accompanying text (discussing Elmer v. ICC Fabricating, 67 F.3d 1571, 1581, 36 U.S.P.Q.2d (BNA) 1417, 1424 (Fed. Cir. 1995)).
evidence to support the jury's verdict or for clear error where the judge sits as the fact-finder.\footnote{321}

In \textit{Sun Hill Industries, Inc. v. Easter Unlimited, Inc.},\footnote{322} the Federal Circuit reversed the district court's bench trial judgment of infringement.\footnote{323} Sun Hill had sued Easter alleging infringement of its design patent to a large, orange, plastic bag that resembled a Halloween pumpkin when stuffed with leaves or other lawn debris.\footnote{324} The district court relied on color, size, and material characteristics in comparing the accused bags to the patented bags.\footnote{325} The Federal Circuit held that the district court erred by comparing the accused Easter bags to Sun Hill's commercial product, which contained more features than specified in the patent claims.\footnote{326} Furthermore, the Federal Circuit held that the district court improperly found infringement because the accused bags did not embody any of the four points of novelty in the Sun Hill patented design, i.e., the contrasting jack-o-lantern faces, the bottom closure, the specific facial features, and the shiny surface.\footnote{327} Absent an appropriation of points of novelty by the accused product, a finding of design patent infringement may not stand as a matter of law.\footnote{328}

In \textit{Elmer v. ICC Fabricating, Inc.},\footnote{329} the Federal Circuit reversed the district court's entry of judgment on the jury verdict of design patent infringement.\footnote{330} Elmer had sued ICC alleging infringement of its design patent to a triangular vehicle rooftop advertising display.\footnote{331} The patent claim recited an """'ornamental design for a vehicle top sign holder, as shown and described."'\footnote{332} The Federal Circuit noted that each of the patent's six figures showed the presence of triangular

\footnotesize{\begin{itemize}
  \item \footnote{321} See \textit{Braun Inc. v. Dynamics Corp. of Am.}, 975 F.2d 815, 819, 24 U.S.P.Q.2d (BNA) 1121, 1124 (Fed. Cir. 1992).
  \item \footnote{322} 48 F.3d 1193, 33 U.S.P.Q.2d (BNA) 1925 (Fed. Cir. 1995).
  \item \footnote{324} Id. at 1195, 33 U.S.P.Q.2d (BNA) at 1926. The patent-in-suit was U.S. Design Patent No. 310,023.
  \item \footnote{325} Id. at 1194, 33 U.S.P.Q.2d (BNA) at 1925.
  \item \footnote{326} Id. at 1196, 33 U.S.P.Q.2d (BNA) at 1926.
  \item \footnote{327} Id., 33 U.S.P.Q.2d (BNA) at 1927.
  \item \footnote{328} Id. at 1197-98, 33 U.S.P.Q.2d (BNA) at 1927-28.
  \item \footnote{329} Id. at 1197, 33 U.S.P.Q.2d (BNA) at 1928.
  \item \footnote{330} 67 F.3d 1571, 36 U.S.P.Q.2d (BNA) 1417 (Fed. Cir. 1995).
  \item \footnote{332} Id. at 1573, 36 U.S.P.Q.2d (BNA) at 1418. The patent-in-suit was U.S. Design Patent No. 290,620.
  \item \footnote{333} Id., 36 U.S.P.Q.2d (BNA) at 1418.
  \item \footnote{334} Id. at 1577, 36 U.S.P.Q.2d (BNA) at 1421 (quoting claim language of U.S. Design Patent No. 290,620).}

vertical ribs and an upper protrusion.\textsuperscript{333} The appellate court thus held these aspects to be necessary ornamental limitations.\textsuperscript{334} In view of this claim interpretation, the Federal Circuit decided that substantial evidence did not exist to support the jury verdict of infringement.\textsuperscript{335} Moreover, the appellate court concluded that no reasonable jury could have found the overall visual appearance of the claimed design to be substantially similar to the accused design.\textsuperscript{336}

d. \textit{Plant} patent infringement

One who discovers and asexually reproduces a distinct and new variety of plant may obtain plant patent protection.\textsuperscript{337} In general, the same patent rights and remedies pertain to both utility patents and plant patents.\textsuperscript{338}

In \textit{Imazio Nursery, Inc. v. Dania Greenhouses},\textsuperscript{339} the Federal Circuit construed the scope of protection of a “variety” under the Plant Patent Act as limited to a single plant and its asexually reproduced progeny.\textsuperscript{340} The appellate court accordingly held that infringement of a plant patent requires proof of asexual reproduction of the actual plant patented.\textsuperscript{341} In addition, the Federal Circuit stated that evidence of independent creation was a valid affirmative defense to plant patent infringement.\textsuperscript{342} The appellate court reversed the district court’s summary judgment of noninfringement and remanded the case for reconsideration in light of this interpretation of the Plant Patent Act.\textsuperscript{343}

\textit{Imazio} had sued Coastal Nursery alleging infringement of its patent to an early blooming variety of Erica Sunset heather that bloomed during Christmas and Valentine’s Day seasons.\textsuperscript{344} Coastal asserted

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\begin{itemize}
\item \textsuperscript{333} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1421.
\item \textsuperscript{334} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1421.
\item \textsuperscript{335} \textit{Id.} at 1578, 36 U.S.P.Q.2d (BNA) at 1421.
\item \textsuperscript{336} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1421. The court found that ICC’s sign lacked triangular vertical ribs and an upper protrusion. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1421. Because the ICC device lacked these ornamental features and was substantially different in overall appearance, the ICC product did not infringe the design patent. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1421.
\item \textsuperscript{337} 35 U.S.C. § 161 (1994).
\item \textsuperscript{338} \textit{Id.}
\item \textsuperscript{339} 69 F.3d 1560, 36 U.S.P.Q.2d (BNA) 1673 (Fed. Cir. 1995).
\item \textsuperscript{341} \textit{Id.} at 1570, 36 U.S.P.Q.2d (BNA) at 1681.
\item \textsuperscript{342} \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1681.
\item \textsuperscript{343} \textit{Id.} at 1570-71, 36 U.S.P.Q.2d (BNA) at 1681-82 (remanding because trial court did not use proper standard for plant patent infringement and, therefore, may not have considered all evidence relevant to infringement issue).
\item \textsuperscript{344} \textit{Id.} at 1562, 36 U.S.P.Q.2d (BNA) at 1674. The patent-in-suit was U.S. Plant Patent No. 5236. \textit{Id.} at 1561, 36 U.S.P.Q.2d (BNA) at 1674.
\end{itemize}
the defenses of invalidity and noninfringement. In particular, Coastal argued that it had independently grown the accused plants. The district court granted Imazio’s motion for summary judgment of infringement, but sent the questions of validity, willfulness, and damages to the jury. The jury verdict found Imazio’s patent not invalid, Coastal’s infringement willful, and damages at over $100,000. The district court further found the case exceptional and awarded attorney fees plus prejudgment interest.

In ruling on the summary judgment motion, the district court reasoned that “asexual reproduction” under the Plant Patent Act covered plants having the same morphology and phenotype as the patented plant. Moreover, the district court discounted Coastal’s defense of independent creation as irrelevant.

The Federal Circuit commented at length on the proper scope of plant patent protection. After a full consideration of the statute, its legislative history, and related case law, the appellate court concluded that the proper scope of a plant patent is limited to a single plant and its asexually reproduced progeny. The appellate court was not troubled by the apparently inconsistent use of the term “variety” between the Plant Patent Act and the Plant Variety Protection Act. Because of the divergent goals of these statutes, the Federal Circuit ruled that the definition of “variety” under the Plant Variety Protection Act did not necessarily inform the meaning of “variety” under the Plant Patent Act.

Furthermore, the appellate court construed asexual reproduction under the Plant Patent Act to include progeny of the patented plant obtained by “‘grafting, budding, cuttings, layering, division and the

345. Id. at 1562, 36 U.S.P.Q.2d (BNA) at 1674.
346. Id. at 1570, 36 U.S.P.Q.2d (BNA) at 1681.
347. Id. at 1562, 36 U.S.P.Q.2d (BNA) at 1674.
348. Id., 36 U.S.P.Q.2d (BNA) at 1674.
349. Id., 36 U.S.P.Q.2d (BNA) at 1674.
350. Id. at 1569, 36 U.S.P.Q.2d (BNA) at 1680.
351. Id., 36 U.S.P.Q.2d (BNA) at 1680.
352. Id. at 1564-68, 36 U.S.P.Q.2d (BNA) at 1676-80.
354. See id. at 1568, 36 U.S.P.Q.2d (BNA) at 1679-80 (rejecting Imazio’s argument that term “variety” applies broadly to plants with same characteristics). The court reasoned that the Plant Patent Act was enacted to protect plants reproduced asexually, whereas the Plant Variety Protection Act was enacted to afford protection for plants sexually reproduced. Id., 36 U.S.P.Q.2d (BNA) at 1679-80. Based on the fact that sexual and asexual reproduction are different, the term “variety” cannot be interpreted the same under both statutes. Id., 36 U.S.P.Q.2d (BNA) at 1679-80.
355. Id. at 1568, 36 U.S.P.Q.2d (BNA) at 1680.
like, but not by seeds.¹⁵⁵⁶ Evidence of independent development thus would tend to disprove asexual reproduction.¹⁵⁵⁷ In any event, the Federal Circuit held that the district court improperly entered summary judgment by basing infringement solely on evidence that the accused plants had the same essential characteristics as those of the patent plant.¹⁵⁵⁸

3. Defenses to infringement

a. Invalidity

To obtain patent protection, the claimed invention must involve statutory subject matter that is useful, novel, and nonobvious.¹⁵⁵⁹ In addition, the applicant must satisfy the statutory disclosure requirements.¹⁵⁶⁰

A defendant to an infringement suit may raise, as an affirmative defense, patent invalidity based on these grounds.¹⁵⁶¹ An issued patent, however, carries a statutory presumption of validity.¹⁵⁶² A party must overcome this presumption by proving invalidity with clear and convincing evidence.¹⁵⁶³

i. Anticipation

To receive patent protection, the invention must be novel, i.e., not anticipated by the prior art.¹⁵⁶⁴ An invention is anticipated if a single prior art reference expressly or inherently discloses each and every limitation of the claimed invention.¹⁵⁶⁵ A party must prove

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³⁵⁶. Id. at 1566, 36 U.S.P.Q.2d (BNA) at 1677 (quoting S. REP. NO. 315, 71st Cong., 2d Sess. 3 (1930)).
³⁵⁷. See id. at 1570, 36 U.S.P.Q.2d (BNA) at 1681 (rejecting district court's conclusion that independent creation is not valid defense to plant patent infringement).
³⁵⁸. Id., 36 U.S.P.Q.2d (BNA) at 1681.
³⁶⁰. Id. § 112. The statute provides in relevant part:

[T]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Id.

³⁶¹. Id. § 282.
³⁶². Id.
³⁶⁴. 35 U.S.C. § 102(a)-(b).
anticipation by clear and convincing evidence." Anticipation is a question of fact that the Federal Circuit reviews for clear error. In Hoover Group, Inc. v. Custom Metalcraft, Inc., the Federal Circuit affirmed the portion of the district court's judgment that found the patents-in-suit not invalid for anticipation. Hoover had sued Custom alleging infringement of two of its patents to metal tanks of a particular configuration for liquid storage and transport. Custom defended that the Hoover patents were invalid based on the existence of certain Custom products that anticipated the claimed inventions. The district court held that each of the asserted Custom products lacked at least one of the limitations recited in the Hoover patent claims. Accordingly, the district court found that the Hoover patents were not invalid for anticipation. The Federal Circuit ascertained no clear error in the district court's determinations and thus upheld its judgment.

In Glaxo Inc. v. Novopharm Ltd., the Federal Circuit affirmed the district court's judgment that the patent-in-suit was not invalid. Glaxo had sued Novopharm alleging infringement of its patent to a specific crystalline form of the antiulcer medication, ranitidine hydrochloride. Novopharm conceded infringement, but asserted,

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370. Id. at 302, 36 U.S.P.Q.2d (BNA) at 1103. The patents-in-suit were U.S. Patent Nos. 4,840,284 and 4,785,958. Id. at 301, 36 U.S.P.Q.2d (BNA) at 1102.

371. Id. at 302, 36 U.S.P.Q.2d (BNA) at 1103. Custom Metalcraft claimed that several of its products embodied the patented invention in question nearly a year before Hoover filed a patent. Id., 36 U.S.P.Q.2d (BNA) at 1103.

372. Id., 36 U.S.P.Q.2d (BNA) at 1103. For example, with respect to the '284 patent, the district court found that the "plough sugar bin was not a tank suitable for storing liquids, but a bin for storage of dry materials." Id., 36 U.S.P.Q.2d (BNA) at 1103. The district court also found that the three center discharge tanks did not have slopes caused by the presence of "a plurality of creases and were not completely draining, lacking 'a smooth contoured surface sloping toward said discharge opening.'" Id., 36 U.S.P.Q.2d (BNA) at 1104 (quoting Hoover Group, Inc. v. Custom Metalcraft, Inc., No. 4-CV91-5055 (D. Neb. Feb. 1, 1993))

373. Id., 36 U.S.P.Q.2d (BNA) at 1103.

374. Id. at 305, 36 U.S.P.Q.2d (BNA) at 1103.


inter alia, that the patent was invalid as anticipated.\textsuperscript{378} Contrary to Novopharm's argument, the district court found that the prior art did not inherently anticipate the claimed invention because the prior art disclosed the production of a different crystalline form than that claimed.\textsuperscript{379} The Federal Circuit discerned no clear error in the district court's findings.\textsuperscript{380}

\textit{ii. Public use bar}

The patent laws bar patent protection of an invention that was in public use or on sale more than one year before the filing date of the United States patent application for that invention.\textsuperscript{381} The public use and on sale bars to patentability derive from the same public policy.\textsuperscript{382} The rationales for these patentability bars include the encouragement of prompt disclosure of inventions to the public and the discouragement of commercial exploitation of the invention while deferring the start of the patent protection term.\textsuperscript{383}

A party asserting patent invalidity based on public use must prove by clear and convincing evidence that the invention was used before the critical date, in public, and primarily for purposes other than experimentation.\textsuperscript{384} Factors relevant to a public use inquiry include public access to and awareness of the activity, the degree of confidentiality imposed on observers, indicia of bona fide experimentation, and the financial aspects of the activity.\textsuperscript{385} The Federal Circuit reviews de novo the district court's ultimate conclusion of public use, and reviews for clear error the underlying factual findings.\textsuperscript{386}

In \textit{Allied Colloids Inc. v. American Cyanamid Co.},\textsuperscript{387} the Federal Circuit vacated the district court's judgment of invalidity as a matter of law based on public use, notwithstanding the jury verdict.\textsuperscript{388} The
appellate court held that the mere existence of a commercial motive when testing an invention does not render that activity a public use. 389

Colloids had sued American alleging infringement of its patent to the treatment of sewage with certain polymeric flocculents. 390 American asserted that Colloids' patent was invalid based on public use. 391 Before the critical date of April 23, 1985, Colloids conducted a series of laboratory tests at a Detroit sewage treatment facility. 392 At trial, the evidence showed that Colloids personnel kept research records of the tests, maintained strict control of the test samples, and conducted the tests outside the presence of Detroit municipal employees. 393 Moreover, Colloids received no payment for these tests. 394 The district court nevertheless held the Detroit tests established a public use bar because they were commercially motivated. 395

The Federal Circuit disagreed. 396 The court emphasized that the public use inquiry required a consideration of the totality of the circumstances. 397 The district court had erred in viewing as dispositive the commercial motivation behind the Detroit tests. 398 The appellate court held that the overall experimental nature of the Detroit test did not support the conclusion of public use. 399

iii. On sale bar

A party asserting patent invalidity based on on sale activity must prove by clear and convincing evidence that a definite sale or offer to sell occurred before the critical date and that the subject matter of the sale or offer to sell either anticipated the claimed invention or would have rendered the claimed invention obvious. 400 The Federal

389. Id. at 1576, 35 U.S.P.Q.2d (BNA) at 1844.
391. Id. at 1575, 35 U.S.P.Q.2d (BNA) at 1843.
392. Id. at 1573, 35 U.S.P.Q.2d (BNA) at 1842.
393. Id. at 1575, 35 U.S.P.Q.2d (BNA) at 1843.
394. Id. at 1576, 35 U.S.P.Q.2d (BNA) at 1844.
395. Id. at 1573-74, 35 U.S.P.Q.2d (BNA) at 1842.
396. Id. at 1576-77, 35 U.S.P.Q.2d (BNA) at 1844-45.
397. Id. at 1576, 35 U.S.P.Q.2d (BNA) at 1844 (observing that lack of payment for Detroit testing, as well as keeping detailed experimental notes, indicated that testing of invention did not amount to public use).
399. Id., 35 U.S.P.Q.2d (BNA) at 1844.
400. See UMC Elecs. Co. v. United States, 816 F.2d 647, 656, 2 U.S.P.Q.2d (BNA) 1465, 1472 (Fed. Cir.), cert. denied, 484 U.S. 1025 (1987) (noting that party asserting patent invalidity based on sale activity must prove that there was definite sale or offer to sell one year prior to filing for subject patent).
Circuit reviews de novo the district court's ultimate conclusion of on sale activity and reviews for clear error the underlying factual findings.001

In Ferag AG v. Quipp Inc.,002 the Federal Circuit reversed the district court's bench trial judgment of infringement.003 Ferag AG had sued Quipp alleging infringement of its patent to a specialized conveyer apparatus used in the printing of newspapers or magazines.004 Quipp asserted noninfringement and invalidity as defenses.005 The appellate court concluded that Ferag AG's patent was invalid for on sale activity.006

In January 1981, Ferag AG filed a patent application to its invention.007 Ferag AG, a Swiss corporation, is the partial owner of Ferag, Inc., a Pennsylvania corporation.008 In November 1979, Ferag AG confirmed an order with Ferag, Inc., for a conveyer system purchased by the Bergen Evening Record, a New Jersey newspaper publisher.009 The district court found that Ferag AG and Ferag, Inc., were not separate entities.010 Because a sale or offer to sell must involve separate entities, the district court concluded the absence of an on sale bar.011

The Federal Circuit disagreed, noting that Ferag, Inc., was under the complete management authority of an entity other than Ferag AG.012 The appellate court rejected Ferag AG's argument that the existence of common sales goals, including "best efforts" provisions and confidentiality agreements, made Ferag AG and Ferag, Inc., indistinguishable.013

004. Id. at 1566, 33 U.S.P.Q.2d (BNA) at 1514. The patent-in-suit was U.S. Patent No. 4,381,056. Id. at 1564, 33 U.S.P.Q.2d (BNA) at 1513.
005. Id. at 1566, 33 U.S.P.Q.2d (BNA) at 1514.
006. Id. at 1569, 33 U.S.P.Q.2d (BNA) at 1517 (basing its determination on fact that Ferag AG sold or offered to sell product embodying invention more than one year before filing of patent application).
007. Id. at 1564, 33 U.S.P.Q.2d (BNA) at 1513.
008. Id., 33 U.S.P.Q.2d (BNA) at 1513.
009. Id. at 1569, 33 U.S.P.Q.2d (BNA) at 1514.
010. Id. at 1567, 33 U.S.P.Q.2d (BNA) at 1515.
011. Id., 33 U.S.P.Q.2d (BNA) at 1515.
012. Id. The sale or offer of an invention must involve separate entities. 35 U.S.C. § 102(b) (1994). The court in Ferag AG reasoned that Ferag, Inc., and Ferag AG were not controlled by the same group because the outstanding shares of Ferag, Inc., were split evenly between Smallacombe and Ferag AG's owners. Ferag AG, 45 F.3d at 1567, 33 U.S.P.Q.2d (BNA) at 1515.
013. Ferag AG, 45 F.3d at 1567, 33 U.S.P.Q.2d (BNA) at 1515.
In addition, the Federal Circuit concluded that Ferag AG attempted to commercialize its invention before the critical date. The appellate court rejected Ferag AG’s contention that the product sold to Bergen did not embody the patented invention. The Federal Circuit also concluded that the district court legally erred by requiring a party asserting the on sale bar to prove that the patent owner intended, and the customer understood, that the product sold embodied the invention. The Federal Circuit therefore held Ferag AG’s patent invalid and reversed the district court’s judgment.

In Mahurkar v. Impra, Inc., the Federal Circuit held that no on sale activity had occurred even though the transaction at issue was a bona fide sale under the Uniform Commercial Code (“UCC”). The appellate court emphasized that whether an invention was on sale within the meaning of § 102(b) depends on the totality of the circumstances and focuses on commercialization. Despite the existence of an actual sales transaction, the appellate court concluded that this event neither resulted in commercialization of the invention nor placed the invention in the public domain. The Federal Circuit thus affirmed the district court’s bench trial judgment that the patent was not invalid.

Mahurkar had sued Impra alleging infringement of his patent to a smooth bore double lumen hemodialysis catheter. Impra asserted noninfringement and invalidity. The sole basis for Impra’s invalidity defense was the alleged on sale activity. The district court found that the transaction at issue did not constitute on sale activity despite being a bona fide UCC sale. The district court

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414. Id., 33 U.S.P.Q.2d (BNA) at 1515 (describing sale of Ferag system to Bergen before Ferag AG filed patent application as evidence that Ferag AG put conveyor system invention on sale).
415. Id., 33 U.S.P.Q.2d (BNA) at 1515-16.
416. Id. at 1568, 33 U.S.P.Q.2d (BNA) at 1516.
417. Id. at 1569, 33 U.S.P.Q.2d (BNA) at 1517.
419. Mahurkar v. Impra, Inc., 71 F.3d 1573, 1577, 37 U.S.P.Q.2d (BNA) 1138, 1142 (Fed. Cir. 1995) (concluding that sale was sham and did not violate patentability bar under 35 U.S.C. § 102(b) despite fact that prototype was reduction to practice of invention).
421. Id., 37 U.S.P.Q.2d (BNA) at 1142.
423. Id. at 1575, 37 U.S.P.Q.2d (BNA) at 1140. The patent-in-suit was U.S. Patent No. 4,583,968. Id. at 1574, 37 U.S.P.Q.2d (BNA) at 1139.
424. Id. at 1575, 37 U.S.P.Q.2d (BNA) at 1140.
425. Id., 37 U.S.P.Q.2d (BNA) at 1140.
426. Id., 37 U.S.P.Q.2d (BNA) at 1140 (noting that UCC sale was for nonexperimental purposes).
also found that Impra literally infringed the patent and ultimately awarded Mahurkar lost profits damages of $4,589,472.427

Mahurkar filed his utility patent application in August 1984.428 The application claimed entitlement to the earlier October 1983 filing date of his design patent application.429 Before this, Mahurkar had granted Quinton Instruments Company an exclusive license to make, use, and sell the invention.430 However, the license conditioned exclusivity on Quinton's marketing of the double lumen catheters by September 1982.431 In August 1982, Northwest Kidney Center purchased two prototype catheters from Quinton.432 Northwest never used these prototypes, however, because they had serious structural defects.433 Quinton did not engage in widespread commercialization of the perfected invention until April 1983.434

The Federal Circuit agreed with the district court that "the on sale inquiry is not subject to a mechanical rule."435 The fact that an actual sale under the UCC had occurred did not alter this analysis.436 The appellate court concluded that the Northwest transaction was a sham intended only to retain exclusive rights under the license.437 Indeed, Mahurkar had contested Quinton's status as an exclusive licensee based on the Northwest deal.438 In any event, the Federal Circuit further recognized that Quinton had not advertised the prototype catheters, nor offered them to anyone except Northwest.439 Moreover, the prototypes were unusable for their intended

427. Id. at 1576, 37 U.S.P.Q.2d (BNA) at 1141.
428. Id. at 1575, 37 U.S.P.Q.2d (BNA) at 1140.
429. Id., 37 U.S.P.Q.2d (BNA) at 1140.
431. Id. at 1574, 37 U.S.P.Q.2d (BNA) at 1139.
432. Id., 37 U.S.P.Q.2d (BNA) at 1140.
433. Id. at 1575, 37 U.S.P.Q.2d (BNA) at 1140.
434. Id., 37 U.S.P.Q.2d (BNA) at 1140.
435. Id. at 1577, 37 U.S.P.Q.2d (BNA) at 1141. To determine whether Mahurkar's patent was invalid for on sale activity, the Federal Circuit considered the policies underlying 35 U.S.C. § 102(b), including: (1) discouraging removal of inventions from the public domain that the public reasonably has come to believe are freely available; (2) encouraging the prompt and widespread disclosure of inventions; (3) allowing an inventor a reasonable amount of time following sales activity to determine the potential economic value of a patent; and (4) prohibiting an inventor from commercially exploiting his invention beyond the statutorily prescribed time. Id. at 1577, 37 U.S.P.Q.2d (BNA) at 1142 (citing Environotech Corp. v. Westech Eng'g Inc., 904 F.2d 1571, 1577, 15 U.S.P.Q.2d (BNA) 1230, 1232 (Fed. Cir. 1990)).
436. Id. at 1577, 37 U.S.P.Q.2d (BNA) at 1142.
439. Id., 37 U.S.P.Q.2d (BNA) at 1142 (observing that Northwest transaction was deal to satisfy licensing requirements and not commercial sale because Northwest bought catheters as favor rather than as commercial purchase).
purpose. In view of the totality of the circumstances, the court found that the Northwest transaction did not constitute an invalidating on sale activity.

iv. Obviousness

To receive patent protection, an invention must be nonobvious at the time of the invention to one of ordinary skill in the relevant art. An accused infringer must prove obviousness by clear and convincing evidence. Obviousness is a question of law that the Federal Circuit reviews de novo. The conclusion of obviousness is subject to underlying factual findings, however. These findings include the scope and content of the prior art, the level of ordinary skill in the art at the time of the invention, objective evidence of nonobviousness, and differences between the prior art and the claimed invention. Relevant secondary considerations of nonobviousness include commercial success, long felt but unsolved needs, failures of others, and copying. The Federal Circuit reviews the factual findings of the district court for clear error.

In Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc., the Federal Circuit affirmed the district court's judgment of invalidity for obviousness despite the district court's failure to explain explicitly how one of ordinary skill in the art would have combined the cited prior art references to achieve the claimed invention. The appellate court thus discerned no clear error in the factual findings underlying the district court's ultimate conclusion of obviousness.

Para-Ordnance had sued SGS, alleging infringement of its patent to a kit to increase the ammunition capacity of a semi-automatic
handgun. In addition to noninfringement, SGS asserted patent invalidity based on obviousness. In the bench trial, the district court found that the prior art taught the widening of the ammunition magazine to accommodate more cartridges in a staggered configuration. Contrary to the prior art, the claimed invention used a converging one-piece frame to hold the widened magazine. Relying on the testimony of SGS's expert witness, the district court concluded that the claimed invention would have been obvious to one of ordinary skill in the art having the benefit of the cited prior art references.

The Federal Circuit majority opinion stated that a thorough inspection of the prior art device would have provided the requisite motivation to construct the claimed invention after appropriate modifications. The dissent, however, characterized this holding as a classic example of impermissible hindsight reconstruction. Although the Federal Circuit agreed with Para-Ordnance that a trial exhibit had improperly suggested a hindsight analysis, the court held that the remaining record nonetheless supported the district court's conclusion.

v. Best mode violation

To obtain patent protection, an inventor must disclose the best mode personally known at the time of filing the application. The best mode inquiry thus focuses on the inventor's state of mind based on personal knowledge of available facts. A party must prove a best mode violation by clear and convincing evidence.
ance with the best mode requirement is a factual question that the Federal Circuit reviews for clear error.\textsuperscript{463} In \emph{Glaxo Inc. v. Novopharm Ltd.},\textsuperscript{464} the Federal Circuit affirmed the district court's judgment that the patent-in-suit was not invalid.\textsuperscript{465} Glaxo had sued Novopharm alleging infringement of its patent to a specific crystalline form of the antiulcer medication, ranitidine hydrochloride.\textsuperscript{466} Novopharm conceded infringement, but sought summary judgment that the patent was invalid for failure to disclose the best mode of practicing the invention.\textsuperscript{467} The district court denied Novopharm's motion.\textsuperscript{468}

At trial, Novopharm presented evidence that officials at Glaxo considered an azeotroping process as the best mode of preparing the claimed compound for use in a pharmaceutical composition.\textsuperscript{469} No evidence existed, however, that the inventor ever knew of the azeotroping process.\textsuperscript{470} Indeed, the inventor did not work in the same department as the scientists who developed the azeotroping process.\textsuperscript{471} Despite Novopharm's arguments to the contrary, the district court refused to impute knowledge of the Glaxo officials to the inventor to find a best mode violation.\textsuperscript{472}

The Federal Circuit held that imputed knowledge alone may not form the basis of a best mode violation.\textsuperscript{473} The court noted that a plain reading of the relevant statute focused the best mode inquiry on what the inventor contemplated.\textsuperscript{474} In particular, the court recognized that the inventor was concerned solely with the creation of the claimed compound and was entirely unconcerned with the steps necessary to prepare the claimed compound for use in a commercial


\textsuperscript{466} \textit{Id. at 1047, 34 U.S.P.Q.2d (BNA) at 1566, aff'd 830 F. Supp. 871, 29 U.S.P.Q.2d (BNA) 1126 (E.D.N.C. 1993).} The patent-in-suit was U.S. Patent No. 4,521,431. \textit{Id. at 1045, 34 U.S.P.Q.2d (BNA) at 1565.}

\textsuperscript{467} \textit{Id. at 1047, 34 U.S.P.Q.2d (BNA) at 1567.}

\textsuperscript{468} \textit{Id., 34 U.S.P.Q.2d (BNA) at 1567.}

\textsuperscript{469} \textit{Id. at 1049, 34 U.S.P.Q.2d (BNA) at 1568.}

\textsuperscript{470} \textit{Id. at 1050-51, 34 U.S.P.Q.2d (BNA) at 1570.} Novopharm raised an imputed knowledge best mode defense, arguing that the Glaxo official's knowledge of the azeotroping process should be imputed to the inventor. \textit{Id., 34 U.S.P.Q.2d (BNA) at 1570.}

\textsuperscript{471} \textit{Id. at 1051, 34 U.S.P.Q.2d (BNA) at 1570.}

\textsuperscript{472} \textit{Id. at 1050, 34 U.S.P.Q.2d (BNA) at 1570.}

\textsuperscript{473} \textit{Id., 34 U.S.P.Q.2d (BNA) at 1569.}

\textsuperscript{474} \textit{Id., 34 U.S.P.Q.2d (BNA) at 1569 (noting that meaning of 35 U.S.C. § 112 (1994), which states that "[t]he specification... shall set forth the best mode contemplated by the inventor of carrying out his invention," could not be more obvious).}
pharmaceutical composition.\textsuperscript{475} In addition, the majority opinion rejected Novopharm's contention, with which the dissent agreed, that failure to impute corporate knowledge to the inventor would foster intentional ignorance in corporate inventors.\textsuperscript{476} The majority instead characterized the practical reality of corporate research as a compartmentalized work environment.\textsuperscript{477}

In \textit{Graco, Inc. v. Binks Manufacturing Co.},\textsuperscript{478} the Federal Circuit vacated the portion of the district court's judgment after a bench trial that found the patent-in-suit infringed and not invalid.\textsuperscript{479} Graco had sued Binks, alleging infringement of its patent to a pump used to deliver heavy and abrasive fluent materials.\textsuperscript{480} Binks defended against this charge by asserting invalidity of the patent based on a best mode defense.\textsuperscript{481} Before filing the patent application, the inventor, Paul Schlosser, designed an improved seal in the prototype pump to replace O-rings that wore out daily.\textsuperscript{482} Schlosser clearly contemplated the improved seal as a better mode.\textsuperscript{483} Indeed, the commercial embodiments of the claimed invention incorporated the improved seal, and a later, related patent disclosed the same.\textsuperscript{484} Schlosser, however, never disclosed this improvement in the application from which the patent-in-suit issued.\textsuperscript{485}

In any event, the district court made no findings regarding a best mode violation.\textsuperscript{486} On appeal, the parties argued whether the district court ruled on this issue at all and whether Binks had waived the defense.\textsuperscript{487} Unable to ascertain the answers to these questions from the record, the Federal Circuit remanded to the district court.\textsuperscript{488} In particular, the appellate court inquired whether the

\begin{itemize}
\item \textsuperscript{475} Id. at 1051, 34 U.S.P.Q.2d (BNA) at 1570.
\item \textsuperscript{476} Id. at 1051-52, 34 U.S.P.Q.2d (BNA) at 1570-71.
\item \textsuperscript{477} Id., 34 U.S.P.Q.2d (BNA) at 1570-71.
\item \textsuperscript{478} 60 F.3d 785, 35 U.S.P.Q.2d (BNA) 1255 (Fed. Cir. 1995).
\item \textsuperscript{480} Id. at 787, 35 U.S.P.Q.2d (BNA) at 1257. The patent-in-suit was U.S. Patent No. 4,035,109. Id., 35 U.S.P.Q.2d (BNA) at 1256.
\item \textsuperscript{481} Id. at 789, 35 U.S.P.Q.2d (BNA) at 1256.
\item \textsuperscript{482} Id., 35 U.S.P.Q.2d (BNA) at 1256.
\item \textsuperscript{483} Id., 35 U.S.P.Q.2d (BNA) at 1258.
\item \textsuperscript{484} Id., 35 U.S.P.Q.2d (BNA) at 1297. The improved seal was the subject of U.S. Patent No. 4,029,442. Id. at 788, 35 U.S.P.Q.2d (BNA) at 1256-57.
\item \textsuperscript{485} Id., 35 U.S.P.Q.2d (BNA) at 1256-57 (noting that Schlosser as individual holds U.S. Patent No. 4,029,442 on modified pump, while Ceraco's patent, which is patent at issue, contains general language that does not specify improvement).
\item \textsuperscript{486} Id. at 789, 35 U.S.P.Q.2d (BNA) at 1258.
\item \textsuperscript{487} Id., 35 U.S.P.Q.2d (BNA) at 1258.
\item \textsuperscript{488} Id. at 790, 35 U.S.P.Q.2d (BNA) at 1258.
\end{itemize}
district court improperly imported the intent to mislead requirement from the inequitable conduct defense to the best mode defense.\textsuperscript{489}

\textit{vi. Abandonment}

The abandonment, suppression, or concealment of an invention may preclude an inventor from obtaining patent protection.\textsuperscript{490} No particular period of delay is unreasonable per se.\textsuperscript{491} Abandonment is a question of fact that the Federal Circuit reviews for clear error.\textsuperscript{492}

In \textit{Checkpoint Systems, Inc. v. United States International Trade Commission},\textsuperscript{493} the Federal Circuit affirmed the decision of the International Trade Commission ("ITC") that no violation of § 337 of the Tariff Act of 1930 had occurred.\textsuperscript{494} In so ruling, the ITC held that the patents-in-suit were not infringed and were invalid due to abandonment.\textsuperscript{495} The Federal Circuit reviews the factual findings of the ITC for support by substantial evidence.\textsuperscript{496} In addition, the court reviews de novo the ITC's legal conclusions regarding validity.\textsuperscript{497}

Checkpoint alleged that various foreign companies imported, sold for importation, or sold in the United States after importation, products that infringed its patents to deactivatable electronic tags used in retail stores to deter shoplifting.\textsuperscript{498} The ITC instituted an investigation against these foreign companies based on Checkpoint's complaint.\textsuperscript{499} During the proceeding, two of the foreign companies claimed that the patents were invalid under 35 U.S.C. § 102(g) based on the work of Checkpoint design engineer George Kaltner, who was

\textsuperscript{489} Id., 35 U.S.P.Q.2d (BNA) at 1258.
\textsuperscript{490} See 35 U.S.C. § 102(g) (1994) (stating that "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.").
\textsuperscript{492} See Electric Storage Battery Co. v. Shimadzu, 307 U.S. 5, 15 (1939) (describing various issues of fact, such as negligence or delayed application, that can lead to determination of abandonment).
\textsuperscript{493} 54 F.3d 756, 35 U.S.P.Q.2d (BNA) 1042 (Fed. Cir. 1995).
\textsuperscript{494} Checkpoint Sys., Inc. v. United States Int'l Trade Comm'n, 54 F.3d 756, 763, 35 U.S.P.Q.2d (BNA) 1042, 1048 (Fed. Cir. 1995).
\textsuperscript{495} Id. at 759, 35 U.S.P.Q.2d (BNA) at 1043.
\textsuperscript{496} Id. at 759-60, 35 U.S.P.Q.2d (BNA) at 1044.
\textsuperscript{497} Id. at 760, 35 U.S.P.Q.2d (BNA) at 1045.
\textsuperscript{498} Id. at 759, 35 U.S.P.Q.2d (BNA) at 1044-45. The patents-in-suit were U.S. Patent Nos. 4,498,076 and 4,567,473. Id. at 758, 35 U.S.P.Q.2d (BNA) at 1043.
\textsuperscript{499} Id. at 759, 35 U.S.P.Q.2d (BNA) at 1045.
not a designated inventor on the patents-in-suit. The ITC agreed, finding that Kaltner had indeed invented the claimed deactivatable tags before the inventors who had been designated in the patents. The ITC, however, determined that Kaltner had not abandoned, suppressed, or concealed the invention.

On appeal, Checkpoint did not contest the factual findings of the ITC, but instead challenged the ITC's legal conclusion of invalidity. The Federal Circuit noted that after reduction to practice of the deactivatable tags, Kaltner had diligently continued to perfect them for use as part of a commercial electronic security system. The appellate court held that the period of time between reduction to practice and commercialization was not an unreasonable period constituting abandonment. Moreover, Kaltner's diligent activity excused such delay. In addition, the Federal Circuit noted that Checkpoint failed to avail itself of the opportunity to correct the omission of Kaltner as an inventor. Such a correction would have obviated the invalidity ground now facing Checkpoint.

b. Noninfringement

In addition to patent invalidity, noninfringement is another affirmative defense available to an accused infringer. During 1995, the Federal Circuit considered several cases involving various asserted grounds of noninfringement.

i. Prior art practice

In Baxter Healthcare Corp. v. Spectramed, Inc., the Federal Circuit reversed the district court's judgment of noninfringement as a matter

503. Id. at 760, 35 U.S.P.Q.2d (BNA) at 1045.
504. Id. at 762, 35 U.S.P.Q.2d (BNA) at 1047.
505. See id., 35 U.S.P.Q.2d (BNA) at 1047 (describing efforts to perfect invention for market in 4 years between reduction to practice and commercialization).
506. See id., 35 U.S.P.Q.2d (BNA) at 1047 (describing Kaltner's diligent efforts to perfect invention for marketing).
507. Id. at 763, 35 U.S.P.Q.2d (BNA) at 1048.
508. Id., 35 U.S.P.Q.2d (BNA) at 1048.
510. See infra notes 511-630 and accompanying text (discussing prior art practice, repair, licensed conduct, and patent term extension period activity).
of law, notwithstanding the jury verdict of infringement.\textsuperscript{512} The court held that literal infringement may exist even though the accused device would have been obvious in light of the prior art.\textsuperscript{513} Baxter had sued Spectramed alleging infringement of its patent to a direct blood pressure monitoring system in which the calibration of transducers occurred continuously.\textsuperscript{514} In response, Spectramed asserted that the patent was unenforceable for inequitable conduct, and invalid as anticipated and obvious.\textsuperscript{515}

After trial, the jury returned a special verdict, answering unanimously in Baxter’s favor on twelve of fourteen interrogatories.\textsuperscript{516} The jury unanimously found, inter alia, that Spectramed willfully infringed Baxter’s patent.\textsuperscript{517} The jury, however, was unable to return a unanimous verdict on the issue of obviousness.\textsuperscript{518} The district court declared a mistrial based on the jury’s inability to answer all of the interrogatories unanimously.\textsuperscript{519} On the parties’ post-trial motions, the district court entered a judgment of noninfringement as a matter of law in favor of Spectramed.\textsuperscript{520}

The Federal Circuit held that the district court erred in accepting Spectramed’s argument that the jury’s findings of infringement should be set aside.\textsuperscript{521} This argument was based solely on the assertion that Spectramed only used what the prior art had already disclosed.\textsuperscript{522} The appellate court emphasized that infringement may exist even if the accused device is obvious in light of the prior art or is otherwise unpatentable.\textsuperscript{523} The Federal Circuit thus held that the district court had no grounds for upsetting the jury verdict of infringement.\textsuperscript{524} Moreover, “ample evidence” existed to support the jury’s infringement finding.\textsuperscript{525} Accordingly, the Federal Circuit

\textsuperscript{513} Id. at 1583, 34 U.S.P.Q.2d (BNA) at 1126.
\textsuperscript{514} Id. at 1579, 34 U.S.P.Q.2d (BNA) at 1123. The patent-in-suit was U.S. Patent No. 4,610,256.
\textsuperscript{515} Id. at 1579-80, 34 U.S.P.Q.2d (BNA) at 1123-24.
\textsuperscript{516} Id. at 1580, 34 U.S.P.Q.2d (BNA) at 1123-24.
\textsuperscript{517} Id. at 1579 & n.6, 34 U.S.P.Q.2d (BNA) at 1123 & n.6.
\textsuperscript{518} Id. at 1579 n.8, 34 U.S.P.Q.2d (BNA) at 1123 n.8.
\textsuperscript{519} Id. at 1580, 34 U.S.P.Q.2d (BNA) at 1123.
\textsuperscript{520} Id., 34 U.S.P.Q.2d (BNA) at 1124.
\textsuperscript{521} Id. at 1583, 34 U.S.P.Q.2d (BNA) at 1126.
\textsuperscript{522} Id., 34 U.S.P.Q.2d (BNA) at 1126.
\textsuperscript{523} Id., 34 U.S.P.Q.2d (BNA) at 1126 (noting that issues of obviousness in view of prior art are relevant in assessing validity of claims, not infringement issues).
\textsuperscript{524} Id., 34 U.S.P.Q.2d (BNA) at 1126.
\textsuperscript{525} Id., 34 U.S.P.Q.2d (BNA) at 1126 (noting that defendant agreed “that the record is devoid of substantial evidence” showing that its product was different than patented product).
remanded on the invalidity issues and affirmed the district court's entry of judgment on the jury verdict of no inequitable conduct.\(^{526}\)

ii. Repair

Infringement liability does not attach to the repair of a patented combination of unpatented components.\(^{527}\) The distinction between permissible repair and impermissible reconstruction does not depend on whether the replaced element is an essential or distinguishing part of the claimed combination.\(^{528}\) Permissible repair includes any repair necessary for the maintenance or use of the whole patented combination, such as the replacement of spent, unpatented elements.\(^{529}\)

In *Sage Products, Inc. v. Devon Industries, Inc.*,\(^{530}\) the Federal Circuit affirmed the district court's summary judgment of noninfringement.\(^{531}\) Sage had sued Devon, alleging inducement to infringe, and contributory infringement of, its patent to a disposal system for contaminated sharp medical instruments.\(^{532}\) The claimed disposal system contained an inner disposable container within a permanent outer unit.\(^{533}\) The removable inner container was an unpatented element of the claimed combination.\(^{534}\) Sage contended that hospital replacement of its removable inner container with Devon's inner container was an impermissible reconstruction that constituted direct infringement.\(^{535}\) Sage further alleged that Devon was consequently "inducing infringement of and/or contributorily infringing" Sage's patent.\(^{536}\)

The Federal Circuit, however, held that the Sage inner containers were effectively spent when filled.\(^{537}\) Accordingly, Devon's offer of

\(^{526}\) *Id.* at 1585, 34 U.S.P.Q. 2d (BNA) at 1128.

\(^{527}\) *See* Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 346 (1961) (describing replacement of individual parts after original is spent as owner's "lawful right" to repair own property).


\(^{529}\) *Aro*, 365 U.S. at 346 (outlining extent of permissible repair).

\(^{530}\) 45 F.3d 1575, 33 U.S.P.Q. 2d (BNA) 1755 (Fed. Cir. 1995).

\(^{531}\) *See* Sage Prods., Inc. v. Devon Indus., Inc., 45 F.3d 1575, 1579, 33 U.S.P.Q. 2d (BNA) 1765, 1768 (Fed. Cir. 1995) (explaining that plaintiff was engaging in "no more than an attempt to expand patent rights to an unpatented product").

\(^{532}\) *Id.* at 1577, 33 U.S.P.Q. 2d (BNA) at 1766. The patent-in-suit was U.S. Reissue Patent No. 33,413. *Id.* at 1576, 33 U.S.P.Q. 2d (BNA) at 1766.

\(^{533}\) *Id.* at 1576-77, 33 U.S.P.Q. 2d (BNA) at 1766.

\(^{534}\) *Id.* at 1576, 33 U.S.P.Q. 2d (BNA) at 1766.

\(^{535}\) *Id.* at 1577, 33 U.S.P.Q. 2d (BNA) at 1766.

\(^{536}\) *Id.*, 33 U.S.P.Q. 2d (BNA) at 1766.

\(^{537}\) *Id.* at 1578, 33 U.S.P.Q. 2d (BNA) at 1767.
a replacement product did not constitute infringing conduct.\textsuperscript{538} Indeed, Sage prescribed its inner containers for single use only, marking them with a warning label "BIOHAZARD—SINGLE USE ONLY."\textsuperscript{539} Given the absence of any direct infringement, the Federal Circuit affirmed the district court's summary judgment that Devon could neither have induced infringement nor contributorily infringed.\textsuperscript{540}

\textit{iii. Licensed conduct}

When a patent holder sells or authorizes a sale of the patented product, a court may recognize an implied license.\textsuperscript{541} The existence of an implied license is a question of law that the Federal Circuit reviews de novo.\textsuperscript{542}

In \textit{McCoy v. Mitsuboshi Cutlery, Inc.},\textsuperscript{543} the Federal Circuit held that the breach of a supply contract by a patent holder creates an implied license for the supplier to resell the patented articles to third parties in the mitigation of damages.\textsuperscript{544} Accordingly, such a sale does not constitute infringing conduct.\textsuperscript{545} The appellate court thus reversed the district court's entry of judgment on the jury verdict of infringement.\textsuperscript{546}

McCoy contracted with Mitsuboshi for the production of its patented knife, which simultaneously peels, deveins, and butterflies shrimp.\textsuperscript{547} After Mitsuboshi produced the requested 150,000 patented shrimp knives, McCoy accepted and paid for only 20,000.\textsuperscript{548} Following unsuccessful negotiations with McCoy for payment and delivery on the balance of the stock, Mitsuboshi resold the remaining knives to other parties.\textsuperscript{549} McCoy sued Mitsuboshi for

\textsuperscript{538} Id., 33 U.S.P.Q.2d (BNA) at 1767.
\textsuperscript{539} Id., 33 U.S.P.Q.2d (BNA) at 1767.
\textsuperscript{540} Id. at 1579, 33 U.S.P.Q.2d (BNA) at 1768.
\textsuperscript{541} See United States v. Univis Lens Co., 316 U.S. 241, 250-51 (1942) (noting that patent holder's sale of unfinished patented item was both transfer of ownership and license to complete patented procedure without further payment).
\textsuperscript{544} Id. at 923, 36 U.S.P.Q.2d (BNA) at 1293.
\textsuperscript{545} Id. at 925, 36 U.S.P.Q.2d (BNA) at 1295.
\textsuperscript{546} Id. at 919, 36 U.S.P.Q.2d (BNA) at 1290. The patent-in-suit was U.S. Patent No. 4,759,125.
\textsuperscript{547} Id., 36 U.S.P.Q.2d (BNA) at 1290.
\textsuperscript{548} Id., 36 U.S.P.Q.2d (BNA) at 1290.
\textsuperscript{549} Id., 36 U.S.P.Q.2d (BNA) at 1290.
The jury found that McCoy breached its supply contract. The jury decided that Mitsuboshi infringed McCoy's patent in its resale of the knives, however. The district court denied Mitsuboshi’s motion for judgment of noninfringement as a matter of law, notwithstanding the jury verdict.

The Federal Circuit concluded that the course of conduct between McCoy and Mitsuboshi created an implied license upon McCoy's breach of contract for Mitsuboshi's resale of the patented knives. As an initial matter, the court stated that McCoy subjected its patent rights to state contract law upon its supply agreement with Mitsuboshi. Applying Texas law to the breach of contract issue, the Federal Circuit held that Mitsuboshi had a right to resell the goods in mitigation of its damages when McCoy wrongfully refused to pay, even without McCoy's consent or a prior adjudication of McCoy's breach. The Federal Circuit concluded that patent infringement liability could not attach based solely on Mitsuboshi's exercise of its remedies under state contract law.

In Carborundum Co. v. Molten Metal Equipment Innovations, Inc., the Federal Circuit held that a purchaser of an unpatented component of a patented combination from the patent holder obtains an implied license to use the patented combination for the life of that component. The court concluded that the replacement of the original component with another sold by a competitor effectively terminated the implied license and therefore rendered the continued use of the patented combination a direct infringement. The Federal Circuit thus affirmed the district court's entry of judgment on the jury verdict of contributory infringement and inducement to infringe.

Metallics, the plaintiff, owned a patent to a metal purification system that uses gas injection to facilitate the removal of impurities

551. Id. at 920, 36 U.S.P.Q.2d (BNA) at 1290.
552. Id. at 919-20, 36 U.S.P.Q.2d (BNA) at 1290.
553. Id. at 920, 36 U.S.P.Q.2d (BNA) at 1290.
554. Id. at 922, 36 U.S.P.Q.2d (BNA) at 1292.
555. Id., 36 U.S.P.Q.2d (BNA) at 1292.
556. Id. at 923, 36 U.S.P.Q.2d (BNA) at 1293.
557. Id., 36 U.S.P.Q.2d (BNA) at 1293.
558. 72 F.3d 872, 37 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1995).
560. Id. at 881, 37 U.S.P.Q.2d (BNA) at 1174.
561. Id. at 883, 37 U.S.P.Q.2d (BNA) at 1177.
Metaullics sold only one component of this patented combination, namely a pump for the gas injection and molten metal transfer. The Metaullics pump had no use other than as an element of its metal purification apparatus. Molten, the defendant, also sold a pump suitable for use in the patented system.

Metaullics sued Molten alleging inducement to infringe, and contributory infringement of its patent. As a defense, Molten asserted an absence of direct infringement. After closing arguments in the liability phase of the bifurcated jury trial, the district court granted Metaullics' motion for a directed verdict, holding that the use of a Molten pump in a Metaullics metal purification system constituted a direct infringement. Following the jury verdict finding Molten liable for contributory infringement and induced infringement, the district court entered a permanent injunction.

The Federal Circuit stated that whether the purchase of an unpatented component of a patented combination creates an implied license depends on the circumstances of the sale. Furthermore, the component at issue must have no noninfringing uses. In view of the lack of any express restrictions by Metaullics regarding the use of its pump and the absence of noninfringing uses, the court easily concluded that an implied license to use the patented system existed. The crux of the case, however, was the proper scope of this license. The Federal Circuit held that the term of the implied license was limited to the life of the pump. Had Metaullics sold the patented system, its customer would have had an implied license for the life of the combination, allowing for replacement of the individual, unpatented components throughout that lifetime. The court noted, however, that Metaullics chose to sell

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562. Id. at 875, 37 U.S.P.Q.2d (BNA) at 1170. The patent-in-suit was U.S. Patent No. 4,169,584.  
563. Id. at 876, 37 U.S.P.Q.2d (BNA) at 1170.  
566. Id., 37 U.S.P.Q.2d (BNA) at 1171.  
567. Id., 37 U.S.P.Q.2d (BNA) at 1171.  
568. Id., 37 U.S.P.Q.2d (BNA) at 1171.  
569. Id., 37 U.S.P.Q.2d (BNA) at 1171.  
570. Id. at 878, 37 U.S.P.Q.2d (BNA) at 1173.  
571. Id., 37 U.S.P.Q.2d (BNA) at 1172.  
572. Id., 37 U.S.P.Q.2d (BNA) at 1173.  
573. Id., 37 U.S.P.Q.2d (BNA) at 1173 (noting that parties did not contest existence of implied license).  
574. Id. at 880, 37 U.S.P.Q.2d (BNA) at 1173.  
575. Id. at 879-80, 37 U.S.P.Q.2d (BNA) at 1173.
only a single component of the metal purification system, and thus to forgo revenue on the entire patented apparatus. Accordingly, the Federal Circuit concluded that the circumstances of the sale did not support an implied license beyond the life of the individual pump component.

iv. Patent term extension period

The Hatch-Waxman Act exempts from infringement liability certain activity reasonably related to the application for generic drug approval by the Food and Drug Administration ("FDA"). A pharmaceutical manufacturer may file an abbreviated new drug application ("ANDA") to obtain expedited FDA approval of its generic version of the patented drug. In the ANDA, a manufacturer also can state its intention to commercialize the generic drug before the expiration of the approved drug's patent. This occurs via a "paragraph IV" certification, asserting invalidity or noninfringement of the patent on the approved drug. In response to a paragraph IV certification, the patent holder may file an infringement suit. The initiation of litigation operates as a statutory bar to suspend FDA approval of the generic drug.

As a member country to the General Agreement on Tariffs and Trade ("GATT"), the United States promulgated the Uruguay Round Agreements Act ("URAA"), which provided, inter alia, for

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576. Id. at 880, 37 U.S.P.Q.2d (BNA) at 1174.
577. Id., 37 U.S.P.Q.2d (BNA) at 1174.
579. See 21 U.S.C. § 355(j) (describing conditions under which person may file abbreviated application for approval of new drug).
580. Id.
582. See id. (setting forth paragraph IV requirement of generic drug applicant's certification that in its opinion and to its best knowledge, patent pertaining to that drug "is invalid or will not be infringed by the manufacture, use, or sale of the new drug for which the application is submitted").
584. See 21 U.S.C. § 355(j)(4)(B)(iii) (stating that approval of abbreviated new drug application is effective immediately on approval by government, unless infringement action is brought by patent holder within 45 day period after current holder receives notice of application as required by § (2)(B)(i)).
the patent term extension of certain extant patents. The URAA, however, included safe harbor provisions limiting the remedies available for infringement during the patent extension term to equitable renumeration.

In *Bristol-Myers Squibb Co. v. Royce Laboratories, Inc.*, the Federal Circuit held that the URAA does not shield from liability otherwise infringing conduct under the Hatch-Waxman Act. The court concluded that liability under section (e) of the Hatch-Waxman Act arises from the submission of an ANDA containing a paragraph IV certification, irrespective of whether the ANDA filing occurred during the original patent term, or during the patent term extension period, also known as the Delta period, provided by the URAA. The appellate court consequently reversed the district court’s dismissal of the case and remanded.

Bristol had sued Royce alleging infringement of its patent to the antihypertensive drug, captopril, used to treat high blood pressure and certain heart and kidney diseases. The URAA postponed the expiration of Bristol’s patent from August 8, 1995 to February 13, 1996. The basis for the suit was the paragraph IV certification in Royce’s ANDA for a generic version of captopril. Although Royce had not asserted patent invalidity, it stated that its generic version of captopril would not infringe Bristol’s patent because of the safe harbor provisions of the URAA. In the district court, Royce filed respective motions to dismiss the complaint and to set aside the suspension of the FDA approval of its generic drug. The district court agreed with Royce that after FDA approval, the safe harbor

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591. 35 U.S.C. § 271(e) (describing conditions under which importation of patented genetic materials is permissible, actions which constitute infringement, and available relief if infringement is found).
592. See *Bristol-Myers*, 69 F.3d at 1136, 36 U.S.P.Q.2d (BNA) at 1647 (noting that if Congress intended for URAA to convert infringing conduct into non-infringing action, it would have stated so in URAA).
594. *Id.* at 1133, 36 U.S.P.Q.2d (BNA) at 1644. The patent-in-suit was U.S. Patent No. 4,105,776.
595. *Id.*, 36 U.S.P.Q.2d (BNA) at 1644.
596. *Id.*, 36 U.S.P.Q.2d (BNA) at 1644.
597. *Id.*, 36 U.S.P.Q.2d (BNA) at 1644.
598. *Id.*, 36 U.S.P.Q.2d (BNA) at 1644.
provisions of the URAA would shield Royce from infringement liability for the manufacture, use, or sale of its generic version of captopril. 599 Accordingly, the district court reasoned that the "artificial" infringement triggered by Royce's filing of the ANDA should not further delay FDA approval. 600 The district court thus granted Royce's motions. 601

The Federal Circuit held that the safe harbor provisions of the URAA did not affect infringement under the Hatch-Waxman Act. 602 The court concluded that the safe harbor provisions of the URAA did not, as Royce argued, exempt from infringement liability the commercialization of a generic drug simply because it occurred during the patent extension term, as opposed to the original term, of a drug patent. 603 Instead, the URAA provided that the remedy for infringement during the Delta period would be limited to equitable remuneration. 604 In addition, the court ruled that the Hatch-Waxman Act operated as a statutory bar, precluding FDA approval of Royce's ANDA until after February 13, 1996, the expiration date of the extended patent term. 605

Earlier, in DuPont Merck Pharmaceutical Co. v. Bristol-Myers Squibb Co., 606 the Federal Circuit had similarly held that the URAA did not affect infringement under the Hatch-Waxman Act. 607 The court concluded that the safe harbor provisions of the URAA did not exempt from infringement liability the commercialization of a generic drug simply because it occurred during the Delta period. 608 The Federal Circuit thus affirmed the district court's dismissal of the declaratory judgment action. 609

Before enactment of the URAA, DuPont filed an ANDA certifying that Bristol's patent to captopril would expire on August 8, 1995. 610 The URAA subsequently postponed the expiration of Bristol's patent

599. Id. at 1134, 36 U.S.P.Q.2d (BNA) at 1645.
600. Id. at 1139-34, 36 U.S.P.Q.2d (BNA) at 1645.
601. Id. at 1134, 36 U.S.P.Q.2d (BNA) at 1645 (noting that no infringement was present under 35 U.S.C. § 271 and therefore no need to prohibit FDA approval existed).
602. Id. at 1136-37, 36 U.S.P.Q.2d (BNA) at 1648.
603. Id. at 1136, 36 U.S.P.Q.2d (BNA) at 1648.
604. Id., 36 U.S.P.Q.2d (BNA) at 1648.
605. Id. at 1137-38, 36 U.S.P.Q.2d (BNA) at 1648.
608. Id., 35 U.S.P.Q.2d (BNA) at 1722.
610. Id. at 1400, 35 U.S.P.Q.2d (BNA) at 1720. The patent-in-suit was U.S. Patent No. 4,105,776. Id. at 1398, 35 U.S.P.Q.2d (BNA) at 1719.
until February 13, 1996.611 DuPont chose not to amend its ANDA to add a paragraph IV certification, but instead filed suit seeking a declaration of noninfringement.612 The district court dismissed the action for lack of jurisdiction absent an actual controversy.613

The Federal Circuit disagreed, concluding that Bristol had created a reasonable apprehension of suit by threatening to sue DuPont for infringement during the Delta period.614 The appellate court affirmed the district court's dismissal, however, because DuPont failed to state a claim upon which relief may be granted.615 The Federal Circuit decided that the URAA did not affect infringement liability under 35 U.S.C. § 271(e)(2).616 In addition, the URAA did not alter the operation of the statutory bar precluding FDA approval of an accused infringer's ANDA until after the expiration of the patent term.617

The Federal Circuit considered patent term extension in a third decision during 1995. In this case, however, the court addressed this issue outside the context of an infringement defense. In Aktiebolaget Astra v. Lehman,618 the Federal Circuit held that the determination of the regulatory review period used to calculate the patent term extension period under the Hatch-Waxman Act is within the exclusive purview of the Secretary of Health and Human Services.619 The appellate court thus affirmed the district court's dismissal of Astra's suit to have the Commissioner of Patents and Trademarks recompute the patent term extension that the Secretary had assessed.620

Astra's patent covered a method of using phosphonoformic acid to treat diseases associated with acquired immunodeficiency syndrome.621 Astra applied for FDA review of its patented drug, FOSCAVIR.622 Accordingly, Astra sought a patent term extension under the Hatch-Waxman Act.623 Astra disagreed with the

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611. Id. at 1399, 35 U.S.P.Q.2d (BNA) at 1720.
612. Id. at 1400, 35 U.S.P.Q.2d (BNA) at 1721.
613. Id. at 1401, 35 U.S.P.Q.2d (BNA) at 1721 (granting Bristol-Myer's motion to dismiss for want of controversy as required by Declaratory Judgment Act, 28 U.S.C. § 2201 (1994)).
614. Id., 35 U.S.P.Q.2d (BNA) at 1721.
615. Id. at 1402, 35 U.S.P.Q.2d (BNA) at 1722.
616. Id., 35 U.S.P.Q.2d (BNA) at 1722 (stating that URAA does not change definition of infringement under § 271(e)(2)).
617. Id., 35 U.S.P.Q.2d (BNA) at 1722.
618. 71 F.3d 1578, 37 U.S.P.Q.2d (BNA) 1212 (Fed. Cir. 1995).
620. Id. at 1581, 37 U.S.P.Q.2d (BNA) at 1215.
621. Id. at 1579, 37 U.S.P.Q.2d (BNA) at 1213. The patent-in-suit was U.S. Patent No. 4,215,113. Id. at 1578, 37 U.S.P.Q.2d (BNA) at 1213.
622. Id. at 1579, 37 U.S.P.Q.2d (BNA) at 1213.
Secretary's determination of the length of the regulatory review period, arguing that it should be extended an additional eighty-four days. The Commissioner denied Astra's request for lack of authority to reconsider the Secretary's calculation. Astra filed suit in the district court against the Commissioner. In granting the Commissioner's motion for summary judgment, the district court agreed that the Hatch-Waxman Act committed the regulatory review period determination solely to the Secretary. The district court thus dismissed Astra's suit.

The Federal Circuit agreed with the district court's holding, concluding that the terms of the statute clearly and unambiguously vested authority of the regulatory period determination to the Secretary. Moreover, the legislative history fully supported the statutory construction given by both the district and appellate courts.

c. Unenforceability for inequitable conduct

Patent applicants and their representatives have a duty of candor, good faith, and honesty in their dealings with the USPTO. Breach of this duty constitutes inequitable conduct. A party alleging inequitable conduct must prove by clear and convincing evidence that the patent applicant intentionally misrepresented or withheld material information from the patent examiner. Information is material if a substantial likelihood exists that a reasonable examiner would have considered it necessary to a proper patentability assessment of an invention. Circumstantial evidence may allow

624. Id., 37 U.S.P.Q.2d (BNA) at 1213 (claiming that, under 35 U.S.C. § 156, proper extension should be 1126 days instead of 1042 days).
625. Id. at 1580, 37 U.S.P.Q.2d (BNA) at 1213-14.
626. Id., 37 U.S.P.Q.2d (BNA) at 1214.
627. Id., 37 U.S.P.Q.2d (BNA) at 1214.
628. Id., 37 U.S.P.Q.2d (BNA) at 1214.
629. Id., 37 U.S.P.Q.2d (BNA) at 1214.
630. Id. at 1581, 37 U.S.P.Q.2d (BNA) at 1215.
631. See Precision Instrument Mfg. Co. v. Automotive Maintenance Mach. Co., 324 U.S. 806, 818 (1945) (stating that persons with pending applications at Patent Office have "uncompromising duty to report to it all facts concerning possible fraud or inequitableness underlying the applications in issue").
632. See id. (explaining that only through requiring disclosure can USPTO prevent inequitable conduct, thereby protecting public from "fraudulent patent monopolies"); 37 C.F.R. § 1.56 (1995) (describing intentional failure to report material information as inequitable conduct).
634. See 37 C.F.R. § 1.56 (1995) (delineating duties to disclose information material to patentability).
the inference of an intent to deceive the USPTO. Evidence of gross negligence alone, however, cannot support a finding of deceptive intent.

The Federal Circuit reviews for abuse of discretion in the district court's determination of inequitable conduct. Misrepresentation, materiality, and intent to deceive are underlying questions of fact that the Federal Circuit reviews for clear error.

i. Intent

In *Therma-Tru Corp. v. Peachtree Doors Inc.*, the Federal Circuit reversed the district court's judgment of unenforceability for inequitable conduct. Therma-Tru had sued Peachtree alleging infringement of its patent to a glass fiber-reinforced plastic door. The claims of the patent recited a compression-molded plastic door surface etched in a simulated wood grain texture to a depth between 0.003 and 0.009 inch and essentially devoid of glass fibers to a depth of at least 0.005 inch. At trial, Peachtree contended that Therma-Tru engaged in inequitable conduct by intentionally withholding from the patent examiner an enabling disclosure of how to make a compression-molded plastic door surface essentially devoid of glass fibers to a depth of at least 0.005 inch. While the jury considered patent validity and infringement issues, the judge alone decided the issue of inequitable conduct. In holding the patent unenforceable, the trial judge determined that Therma-Tru had intentionally withheld material information from the patent examiner.

The Federal Circuit held, however, that the district court's judgment of unenforceability conflicted with the implied findings

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636. See *Kingsdawn*, 863 F.2d at 876, 9 U.S.P.Q.2d (BNA) at 1392 (noting all evidence is necessary in determining intent to deceive).
637. See id., 9 U.S.P.Q.2d (BNA) at 1392.
638. See id. at 872, 9 U.S.P.Q.2d (BNA) at 1389.
641. Id. at 991, 33 U.S.P.Q.2d (BNA) at 1274-75. The patent-in-suit was U.S. Patent No. 4,550,540. Id. at 990, 33 U.S.P.Q.2d (BNA) at 1275.
642. Id. at 991, 33 U.S.P.Q.2d (BNA) at 1275.
643. Id. at 994, 33 U.S.P.Q.2d (BNA) at 1278.
644. Id., 33 U.S.P.Q.2d (BNA) at 1277.
645. Id., 33 U.S.P.Q.2d (BNA) at 1278.
underlying the jury verdicts of infringement and validity. The appellate court noted the jury finding that Therma-Tru had properly disclosed the best mode of practicing the claimed invention. The court relied upon precedent to support the notion that the jury's findings of fact control where inconsistencies exist between the jury verdict and the judge's determinations. The Federal Circuit thus concluded that the district court's finding of materiality was clearly erroneous.

Furthermore, the Federal Circuit reversed the judgment based on clear error in the district court's finding of intent. In reaching this conclusion, the court noted the absence of evidence that Therma-Tru knew at the time of filing the patent application that some glass fibers were closer to the door surface than 0.005 inch. Indeed, photomicrograph evidence of the detail structure of the door surface was available only later when Peachtree obtained it in contemplation of litigation. Moreover, the court found no evidence of intent to mislead or deceive the patent examiner. The Federal Circuit emphasized that a finding of such intent may not be based simply on a failure to satisfy a condition of patentability, such as the enablement requirement.

In Glaxo Inc. v. Novopharm Ltd., the Federal Circuit affirmed the district court's judgment that the patent-in-suit was not unenforceable. Glaxo had sued Novopharm alleging infringement of its patent to a specific crystalline form of the antiulcer medication, ranitidine hydrochloride. Novopharm conceded infringement, but asserted, inter alia, that the patent was unenforceable due to the inequitable conduct in Glaxo's submission of an erroneous declaration in response to an initial rejection by the patent examiner.

646. Id., 33 U.S.P.Q.2d (BNA) at 1278.
647. Id., 33 U.S.P.Q.2d (BNA) at 1278.
648. Id. at 995, 33 U.S.P.Q.2d (BNA) at 1279.
649. Id. at 996, 33 U.S.P.Q.2d (BNA) at 1279.
650. Id., 33 U.S.P.Q.2d (BNA) at 1279.
651. Id. at 995, 33 U.S.P.Q.2d (BNA) at 1279.
652. Id. at 995-96, 33 U.S.P.Q.2d (BNA) at 1279.
653. Id. at 996, 33 U.S.P.Q.2d (BNA) at 1279.
654. Id., 33 U.S.P.Q.2d (BNA) at 1279.
656. Id., 33 U.S.P.Q.2d (BNA) at 1279.
657. Id. at 1047, 34 U.S.P.Q.2d (BNA) at 1566. The patent-in-suit was U.S. Patent No. 4,521,431. Id. at 1045, 34 U.S.P.Q.2d (BNA) at 1565.
658. Id. at 1047, 34 U.S.P.Q.2d (BNA) at 1567.
The examiner had originally rejected the claims of the Glaxo patent as anticipated or obvious in view of the prior art. The examiner had then requested proof to support Glaxo’s assertion that the prior art disclosed a different crystalline form of ranitidine hydrochloride than the form contained in Glaxo’s claim. Glaxo provided test data as proof, accompanied by a declaration of one of its scientists. Accordingly, the examiner withdrew the rejection.

At trial, Glaxo admitted that, contrary to statements in the declaration, the test data did not show the actual results of tests on the prior art compound. In fact, the scientists had substituted test data from an analogous compound, because they knew that the analogous compound would show characteristics identical to that of the prior art compound. Although the district court found the misstatements material, it nevertheless declined to infer fraudulent intent. The trial court thus held that Novopharm failed to carry its burden of proving inequitable conduct by clear and convincing evidence. Although it questioned the correctness of the district court’s determination, the Federal Circuit ascertained no clear error warranting reversal.

In Baxter Healthcare Corp. v. Spectramed, Inc., the Federal Circuit affirmed the district court’s entry of judgment on the jury verdict of no inequitable conduct. Baxter had sued Spectramed alleging infringement of its patent to a direct blood pressure monitoring system that continuously calibrates its transducers. Spectramed defended, inter alia, that the patent was unenforceable for inequitable conduct.

The parties consented to a jury determination of inequitable conduct. After trial, the jury rendered a verdict through special interrogatories, finding that Spectramed had failed to prove material-
ty or Baxter’s intent to mislead the USPTO. The district court denied Spectramed’s motion for judgment of unenforceability as a matter of law.

The Federal Circuit held that substantial evidence supported the jury’s finding of the absence of intent to mislead the USPTO. Furthermore, the court noted that Spectramed did not have direct evidence of intent, but instead sought to rely solely on inferences drawn from the materiality of Baxter’s alleged misrepresentations. The Federal Circuit added that it would have been improper for the district court to draw such inferences on a motion for judgment as a matter of law.

ii. Materiality

In Molins PLC v. Textron, Inc., the Federal Circuit affirmed the district court’s judgment of unenforceability based on inequitable conduct. Molins had sued Textron alleging infringement of its patent to a fully automated system for the simultaneous machining of related tool parts. Even though Molins’ attorney had represented previously to foreign patent offices that a particular prior art reference was the closest prior art, he did not cite this prior art reference to the USPTO during the United States patent application prosecution. Molins cited the prior art reference to the USPTO only after the issuance of the patent. Moreover, Molins’ prior art statement listed this reference among a multitude of other references cited in foreign prosecutions.

After a bench trial, the district court held that Molins had engaged in inequitable conduct during patent prosecution by withholding the prior art reference from the USPTO. The Federal Circuit ascertained no error in the district court’s determination of the materiality of the withheld prior art reference and the district court’s inference

673. Id., 34 U.S.P.Q.2d (BNA) at 1127.
674. Id. at 1580, 34 U.S.P.Q.2d (BNA) at 1124.
675. Id. at 1584, 34 U.S.P.Q.2d (BNA) at 1127.
676. Id., 34 U.S.P.Q.2d (BNA) at 1127.
678. 48 F.3d 1172, 33 U.S.P.Q.2d (BNA) 1823 (Fed. Cir. 1995).
680. Id. at 1175-76, 33 U.S.P.Q.2d (BNA) at 1825-26. The patents-in-suit were U.S. Patent Nos. 4,369,563 and 4,621,410. Id. at 1175, 33 U.S.P.Q.2d (BNA) at 1824.
681. Id. at 1176-77, 33 U.S.P.Q.2d (BNA) at 1825.
682. Id., 33 U.S.P.Q.2d (BNA) at 1825.
683. Id., 33 U.S.P.Q.2d (BNA) at 1825.
684. Id. at 1177, 33 U.S.P.Q.2d (BNA) at 1826.
of Molins' intent to deceive. The district court, however, had also based its inequitable conduct holding on Molins' failure to disclose certain Lemelson patents and a Lemelson patent application.

The Federal Circuit held that the district court erred in this portion of its decision. In particular, the Federal Circuit agreed with Molins' contention on appeal that its failure to cite the Lemelson patents did not constitute inequitable conduct because the patent examiner had cited and considered these references despite Molins' nondisclosure. In addition, the appellate court concluded that the Lemelson patent application was merely cumulative and thus not material.


d. Laches and estoppel

Laches and equitable estoppel are defenses to an allegation of patent infringement. An accused infringer invoking a laches defense must prove by a preponderance of the evidence that the plaintiff's unreasonable delay in bringing suit resulted in material prejudice to the defendant. Similarly, an accused infringer invoking equitable estoppel must prove by a preponderance of the evidence that the plaintiff misled the defendant into reasonably believing that the plaintiff had foregone enforcement of its patent rights against the defendant, that the defendant relied on this belief, and that material prejudice would result from survival of the claim. The Federal Circuit reviews for an abuse of discretion the district court's decision whether to apply the equitable defenses of laches or equitable estoppel.

In Gasser Chair Co. v. Infanti Chair Manufacturing Corp., the Federal Circuit reversed the district court's summary judgment that
laches and equitable estoppel barred Gasser's patent infringement claim.\textsuperscript{696} Gasser had sued Infanti alleging infringement of its patent to a bumper edge for chairs.\textsuperscript{697} In January 1979, Gasser sent Infanti a cease-and-desist letter asserting that Infanti made and sold chairs that infringed Gasser's patent.\textsuperscript{698} Although Infanti agreed to stop such activity,\textsuperscript{699} Gasser became aware of continued infringement, particularly through Infanti's trade show displays in 1983, 1986, and 1987.\textsuperscript{700} Gasser did not correspond with Infanti until February 1988.\textsuperscript{701} After negotiating efforts with Infanti failed, Gasser filed its patent infringement suit in December 1988.\textsuperscript{702}

In reversing the district court's summary judgment in favor of Infanti, the Federal Circuit focused on the lower court's disregard of evidence relevant to the issues of laches and equitable estoppel.\textsuperscript{703} For example, the district court failed to consider certain relevant factors, such as Infanti's intentional copying of Gasser's designs, when making its laches inquiry.\textsuperscript{704} In addition, the Federal Circuit found that the district court had improperly relied on a conclusory assertion by Infanti that Gasser's silence was evidence of Gasser's forgiveness of Infanti's infringing acts.\textsuperscript{705} In view of Infanti's burden on a motion for summary judgment, the Federal Circuit concluded that the district court's treatment of the evidence and failure to draw reasonable inferences in Gasser's favor were improper.\textsuperscript{706}

In \textit{ABB Robotics, Inc. v. GMFanuc Robotics Corp.},\textsuperscript{707} the Federal Circuit affirmed the district court's summary dismissal of the case with prejudice.\textsuperscript{708} ABB had sued GMF alleging infringement of its patent.


\textsuperscript{697} \textit{See id.}, 34 U.S.P.Q.2d (BNA) at 1823 (explaining that bumper edge is structural device used for upholstered chairs). The patent-in-suit was U.S. Patent No. 4,106,739. \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{698} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{699} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{700} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{701} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{702} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1823.

\textsuperscript{703} \textit{Id.} at 774-75, 34 U.S.P.Q.2d (BNA) at 1825-27 (noting that summary judgment motion requires consideration of "all pertinent factors").

\textsuperscript{704} \textit{Id.} at 775, 34 U.S.P.Q.2d (BNA) at 1826.

\textsuperscript{705} \textit{Id.} at 776, 34 U.S.P.Q.2d (BNA) at 1827.

\textsuperscript{706} \textit{Id.} at 776-77, 34 U.S.P.Q.2d (BNA) at 1827-28 (finding that appellants lacked sufficient time to argue and present evidence).


to a mechanical manipulator suitable for use in robotic arms. In September 1986, GMF specifically denied infringement. ABB did not reallege infringement until June 1991. The district court found that, by its silence, ABB misled GMF into believing that ABB would not enforce its patent rights against GMF. In addition, the trial court found that GMF relied on this silence, subsequently expanding its infringing activity threefold.

On appeal, ABB argued that no misleading conduct can exist absent a "legally required threat of immediate and vigorous enforcement." The Federal Circuit disagreed, stating that a threat of enforcement followed by silence was but one example of misleading conduct. ABB also contended that no economic prejudice can exist "a non-recoupable capital investment." Again, the Federal Circuit disagreed, finding that the proper inquiry regarding economic prejudice is whether the alleged infringer changed its economic position during the patent holder’s period of enforcement delay. Ascertaining no error in the district court’s findings, the Federal Circuit affirmed the summary dismissal on the basis of equitable estoppel.

e. Claim and issue preclusion

Claim preclusion, or res judicata, bars the relitigation of claims already adjudicated. Similarly, issue preclusion, or collateral estoppel, bars the relitigation of issues already adjudicated. A party to a subsequent action invoking collateral estoppel regarding issue preclusion must prove that the prior action: (1) involved the same controlling facts and applicable law; (2) involved actual litigation of the identical issue; (3) concluded with a final judgment to which

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710. Id. at 1068, 34 U.S.P.Q.2d (BNA) at 1598.

711. Id., 34 U.S.P.Q.2d (BNA) at 1598.

712. Id. at 1069, 34 U.S.P.Q.2d (BNA) at 1599.

713. Id. at 1068, 34 U.S.P.Q.2d (BNA) at 1599.

714. Id. at 1069, 34 U.S.P.Q.2d (BNA) at 1599.

715. Id., 34 U.S.P.Q.2d (BNA) at 1599.

716. Id. at 1068, 34 U.S.P.Q.2d (BNA) at 1600.

717. Id., 34 U.S.P.Q.2d (BNA) at 1600.

718. Id., 34 U.S.P.Q.2d (BNA) at 1600.

719. See Young Eng'rs, Inc. v. United States Int'l Trade Comm'n, 721 F.2d 1305, 1316, 219 U.S.P.Q. (BNA) 1142, 1152 (Fed. Cir. 1983) (finding second infringement action barred when issues were litigated previously).

the identical issue was essential; and (4) permitted a "full and fair opportunity" to litigate that issue. As claim and issue preclusion are not matters unique to patent cases, the Federal Circuit applies the applicable law of the relevant regional circuit rather than its own jurisprudence.

i. Claim preclusion

In Mars Inc. v. Nippon Conlux Kabushiki-Kaisha, the Federal Circuit affirmed the district court's summary judgment that claim preclusion barred the suit. Mars had sued Nippon Conlux alleging inducement to infringe its patent to an electronic coin sorter used in vending machines. Although Mars had a pending action before the same district court on a related matter when it filed its complaint, Mars did not move to consolidate the cases.

Mars had filed suit previously on the same patent against Conlux USA, a wholly owned subsidiary of Nippon Conlux. Mars did not name Nippon Conlux as a defendant. In that action, Mars alleged that Conlux USA directly infringed, and induced others to infringe, its patent. After trial, the jury returned a verdict of infringement and awarded Mars $545,562.

In the present case, Nippon Conlux filed a motion for summary judgment on claim preclusion grounds. The district court granted this motion, finding that despite its subsidiary status, the relationship between Nippon Conlux and Conlux USA was sufficiently close to justify barring the suit against Nippon Conlux on the same underlying claim.

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725. Id. at 617, 35 U.S.P.Q.2d (BNA) at 1312 (describing that coin device distinguished real from counterfeit coins). The patent-in-suit was U.S. Patent No. 3,918,565. Id. at 617, 35 U.S.P.Q.2d (BNA) at 1312.
726. Id. at 618, 35 U.S.P.Q.2d (BNA) at 1312.
727. Id. at 617, 35 U.S.P.Q.2d (BNA) at 1312.
728. Id., 35 U.S.P.Q.2d (BNA) at 1312.
729. Id., 35 U.S.P.Q.2d (BNA) at 1312.
730. Id., 35 U.S.P.Q.2d (BNA) at 1312.
731. Id., 35 U.S.P.Q.2d (BNA) at 1312.
732. Id., 35 U.S.P.Q.2d (BNA) at 1312 (noting that absent distinct legal basis for recovery against defendant, prior action bars further proceedings).
The Federal Circuit rejected Mars' contentions that Nippon Conlux is a separate entity from Conlux USA and that the suits raised wholly different causes of action. The appellate court concluded that privity existed between Nippon Conlux and Conlux USA based on Conlux USA's status as a wholly owned subsidiary, controlled and financed by Nippon Conlux. Furthermore, the court embraced regional circuit precedent recognizing that the standard for privity in defensive assertions of res judicata is less onerous than that of claim preclusion. In rejecting Mars' claim that the suits involved separate causes of action, the Federal Circuit agreed with the district court that the suits derived from the same causes of action despite the application of somewhat different legal theories.

ii. Issue preclusion

In Comair Rotron, Inc. v. Nippon Densan Corp., the Federal Circuit reversed the district court's summary judgment of noninfringement based on the application of collateral estoppel. In that case, Rotron had sued Nidec alleging infringement of its patents to field commutation magnets in direct current fans. The Connecticut district court granted Nidec's motion for summary judgment based upon prior litigation in New Jersey district court between Rotron and Matsushita. During the damages phase of the prior litigation, the New Jersey district court found that Nidec's fans, among those of other manufacturers, were acceptable noninfringing alternatives to those claimed in Rotron's patents.

In reversing the district court's summary judgment, the Federal Circuit concluded that the district court's finding regarding Nidec's fans was not essential to the judgment. The court determined that the district court could have reached a damages award decision without considering Nidec's fans. The Federal Circuit thus held

733. Id. at 619, 35 U.S.P.Q.2d (BNA) at 1313-14.
734. Id., 35 U.S.P.Q.2d (BNA) at 1313.
735. Id., 35 U.S.P.Q.2d (BNA) at 1313-14 (favoring Third Circuit's focus on relationship between parties rather than strict privity analysis).
736. Id. at 620, 35 U.S.P.Q.2d (BNA) at 1314.
739. Id. at 1596, 33 U.S.P.Q.2d (BNA) at 1930. The patents-in-suit were U.S. Patent Nos. 4,494,028 and 4,779,069. Id., 33 U.S.P.Q.2d (BNA) at 1930.
740. Id. at 1537, 33 U.S.P.Q.2d (BNA) at 1931.
741. Id. at 1538, 33 U.S.P.Q.2d (BNA) at 1931.
742. Id., 33 U.S.P.Q.2d (BNA) at 1931.
743. Id., 33 U.S.P.Q.2d (BNA) at 1931.
that the application of collateral estoppel by the Connecticut district
court was improper.\textsuperscript{744} Furthermore, the Federal Circuit suggested
that a judgment based on independent, alternative grounds may not
support issue preclusion with respect to any one of those grounds
alone.\textsuperscript{745}

\section*{B. Infringement Remedies}

A prevailing plaintiff patent holder has several available statutory
remedies. These include damages, injunctive relief, and reasonable
attorney fees.\textsuperscript{746}

\subsection*{1. Damages}

A patent holder prevailing in an infringement action is entitled to
recover damages, interest, and costs.\textsuperscript{747} In general, such damages
must be adequate to compensate for infringement.\textsuperscript{748} In no circum-
stance, however, may damages be less than a reasonable royalty.\textsuperscript{749}
One measure of damages depends on the sales and profits that the
patent holder lost because of the infringement.\textsuperscript{750} If the prevailing
patent holder cannot establish lost profits, then the court may
determine a reasonable royalty by using a hypothetical royalty
negotiation between the patent holder and a willing licensee at the
time of the alleged infringement.\textsuperscript{751} In addition, where the patent
holder's product embodies unpatented and patented components, the
court must assess whether the reasonable royalty may derive from the
entire market value of the combination.\textsuperscript{752} The Federal Circuit

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744.\textsuperscript{}] \textit{Id.} at 1539, 33 U.S.P.Q.2d (BNA) at 1932.
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745.\textsuperscript{}] \textit{Id.} at 1538, 33 U.S.P.Q.2d (BNA) at 1932 (citing \textit{Restatement (Second) of Judgments} § 27, cmt. i (1982)).
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747.\textsuperscript{}] \textit{Id.} § 284.
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748.\textsuperscript{}] \textit{Id.}
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749.\textsuperscript{}] \textit{Id.}
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750.\textsuperscript{}] \textit{Id.}
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751.\textsuperscript{}] \textit{Id.} at 1539, 33 U.S.P.Q.2d (BNA) at 1932.
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752.\textsuperscript{}] \textit{Id.} at 1538, 33 U.S.P.Q.2d (BNA) at 1932 (citing \textit{Restatement (Second) of Judgments} § 27, cmt. i (1982)).
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753.\textsuperscript{}] See \textit{infra} notes 754-72 and accompanying text (considering \textit{Rite-Hite} in detail).
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reviews the district court's damages award for an abuse of discretion.\footnote{753}

\textbf{a. Lost profits}

In \textit{Rite-Hite Corp. v. Kelley Co.},\footnote{754} the Federal Circuit affirmed in banc the portion of the district court's judgment that awarded certain lost profits after the damages phase of the bifurcated bench trial.\footnote{755} The appellate court held that a prevailing patent holder may recover lost profits related to missed sales of certain products, which directly competed with the defendant's infringing goods, even if the patent-in-suit did not cover these products.\footnote{755}

Rite-Hite had sued Kelley alleging infringement of its patent to a locking device designed to prevent separation of freight trucks from dock platforms during loading and unloading.\footnote{757} Rite-Hite manufactured the patented truck restraints and distributed them through independent sales organizations.\footnote{758} After a bench trial, the district court found Kelley liable for infringement.\footnote{759} The district court further found that "but for" Kelley's sale of 3,825 infringing devices, Rite-Hite would have made (i) eighty additional sales of its MDL-55 restraining device, which the patent-in-suit covered; (ii) 3,243 additional sales of its ADL-100 restraining device, which the patent-in-suit did not cover; and (iii) 1,692 additional dock levelers, a bridging platform sold with the restraints.\footnote{760} The district court thus awarded Rite-Hite as a manufacturer the lost wholesale profits based on the MDL-55, the ADL-100, and the dock levelers.\footnote{761} The district court also awarded Rite-Hite as a retailer a reasonable royalty based on these lost sales.\footnote{762}


\footnote{756}. \textit{Id.} at 1548-49, 35 U.S.P.Q.2d (BNA) at 1072 (noting alternative to \textit{Panduit} test, which requires intrinsic value of patent to be sole basis for lost profits).

\footnote{757}. \textit{Id.} at 1542, 35 U.S.P.Q.2d (BNA) at 1066. The patent-in-suit was U.S. Patent No. 4,373,847.

\footnote{758}. \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1066.

\footnote{759}. \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1067.

\footnote{760}. \textit{Id.} at 1543, 35 U.S.P.Q.2d (BNA) at 1067.

\footnote{761}. \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1067.

\footnote{762}. \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1067.
On appeal, Kelley challenged, inter alia, Rite-Hite's entitlement to lost profits on the ADL-100. Kelley conceded that Rite-Hite had established "but for" causation, but argued that these lost profits were not legally compensable because the patent-in-suit did not cover the ADL-100. The Federal Circuit held, however, that Rite-Hite's lost ADL-100 sales were reasonably foreseeable in view of the direct market competition between the ADL-100 and Kelley's infringing restraints. In addition, the court rejected Kelley's contention that awarding damages for products not covered by the patent-in-suit constituted an expansion of patent rights in contravention of the antitrust laws. Affirming the district court's lost profits award, the Federal Circuit held that although the Rite-Hite patent did not cover the ADL-100, Kelley should have reasonably foreseen that its infringement of the patent-in-suit would have resulted in lost sales of the ADL-100.

The Federal Circuit, however, did vacate the district court's damage award based on lost sales of the dock levelers. The appellate court construed the precedent as holding that recovery of the entire market value of a combination of unpatented and patented components is proper only if those components compose a single machine or constitute an otherwise functional unit. Concluding that the dock levers could function independently of the truck restraints, the Federal Circuit refused to allow recovery for unpatented components sold with patented components for convenience or business reasons.

Kelley petitioned the Supreme Court for certiorari from the Federal Circuit decision. The Supreme Court, however, denied the petition.
i. Exploitation by the patent holder

In *King Instruments Corp. v. Perego*, the Federal Circuit affirmed the district court’s award of damages. As an initial matter, the court reiterated its holding in *Rite-Hite* that a prevailing patent holder may recover lost profits on missed sales of directly competing and infringing goods, even if the patent-in-suit did not cover these products.

More importantly, the Federal Circuit reaffirmed that a patent holder may recover lost profits even though it does not make or sell the patented device. The Federal Circuit sought to justify this pronouncement through a consideration of the legislative history and public policy rationale of the patent damages statute. In particular, the court noted that any prerequisite of patent exploitation to the recovery of lost profits by the patent holder would contravene the principle that the patent grant dictated only a right to exclude others from infringing conduct, not a personal right to practice the invention.

The district court found that Perego had infringed the ‘461 patent, one of King’s asserted three patents. King asserted lost profits attributable to its missed sales of a tape loader, which directly competed with Perego’s infringing tape loader, even though the ‘461 patent did not cover this particular King tape loader. Factors considered by the district court regarding damages included, inter alia, (i) King’s seventy percent tape loader market share before Perego’s infringement, (ii) the relative consumer attraction of features in the King versus Perego tape loaders, and (iii) the existence of acceptable noninfringing substitutes. The Federal Circuit ascertained no abuse of discretion in the district court’s assessment and upheld the damage award.

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775. *Id.* at 947, 36 U.S.P.Q.2d (BNA) at 1133.
776. *Id.*, 36 U.S.P.Q.2d (BNA) at 1133 (rejecting cross-appellant’s contention that no damages be awarded because appellee refrained from selling product).
777. *Id.* at 947-48, 36 U.S.P.Q.2d (BNA) at 1133.
778. *Id.* at 949, 36 U.S.P.Q.2d (BNA) at 1135.
779. *Id.* at 945, 36 U.S.P.Q.2d (BNA) at 1131. The patents-in-suit were U.S. Patent Nos. 3,637,153, 3,825,461, and 3,997,123. *Id.* at 944, 36 U.S.P.Q.2d (BNA) at 1130.
780. *Id.* at 947, 36 U.S.P.Q.2d (BNA) at 1132-33.
781. *Id.* at 953, 36 U.S.P.Q.2d (BNA) at 1137-38.
782. *Id.*, 36 U.S.P.Q.2d (BNA) at 1138.
ii. Noninfringing substitutes

In *Pall Corp. v. Micron Separations, Inc.*, the Federal Circuit modified the district court's award of damages after a bench trial. The district court found that Micron infringed the Pall patent. In addition to Pall and Micron, Cuno Corporation also sold similar nylon membranes. In reducing Pall's lost profit award, the district court assessed market realities and found that Cuno's nylon membranes were acceptable noninfringing substitutes.

On appeal, Pall argued that this reduction was improper. In May 1990, Pall and Cuno settled ongoing infringement litigation through a patent license to Cuno. Pall contended that Cuno's products therefore were not noninfringing substitutes before that time. In addition, Pall maintained that its subsequent license to Cuno should not affect its recovery of lost profits resulting from Micron's infringement. The Federal Circuit agreed with Pall regarding the district court's reduction of the damage award before the Cuno settlement. The Federal Circuit held that Pall should recover lost profits, measured by Micron's infringing sales before May 1990, and that the district court's reduction was proper for the time after Cuno became a licensee. The Federal Circuit therefore remanded to the district court for a recalculation of damages.

b. Reasonable royalty

The amount of a reasonable royalty is a question of fact that the Federal Circuit reviews for substantial evidence to support the jury's
verdict, or for clear error where the trial judge sits as the
fact-finder.\footnote{796}

In \textit{Unisplay, S.A. v. American Electronic Sign Co.},\footnote{797} the Federal
Circuit vacated the district court's entry of the jury's reasonable
royalty award after the damages phase of the bifurcated trial.\footnote{798}
Unisplay had sued American alleging infringement of its patent to a
high visibility message display using reflective surfaces in the day and
backlighting at night.\footnote{799} At the end of the liability phase of trial,
the district court entered judgment of infringement based on the jury
verdict.\footnote{800} As a measure of damages, Unisplay sought a reasonable
royalty rather than lost profits.\footnote{801} In addition, Unisplay argued
during the damages phase of trial for a reasonable royalty measured
by its projected sales, not American's actual sales.\footnote{802} Unisplay
advanced the theory that American had "poisoned the market" for
Unisplay's signs.\footnote{803}

The district court, however, excluded the proffered sales projections
and instructed the jury that the "poisoning of the market" theory was
an improper measure of damages.\footnote{804} The jury awarded Unisplay
$1,628,950, which represented fourteen percent of American's actual
sales.\footnote{805} The district court increased this award by twenty-five
percent for willful infringement, granted prejudgment interest on the
actual damages, and awarded attorney fees to Unisplay.\footnote{806} In
denying American's post-trial motion for judgment as a matter of law,
the district court relied on evidence of, inter alia, a comparable
license involving a ten percent royalty, and testimony of Unisplay's
damages expert that at the time of trial a willing licensee would pay
a ten percent to twelve percent royalty.\footnote{807}

The Federal Circuit held that the relevant evidence of record did
not support the jury's reasonable royalty determination.\footnote{808} None of

\footnotesize{\begin{itemize}
\item 796. See SmithKline Diagnostics, Inc. v. Helena Labs. Corp., 926 F.2d 1161, 1164, 17
in setting standard of review to determine reasonable royalty).
\item 797. 69 F.3d 512, 36 U.S.P.Q.2d (BNA) 1540 (Fed. Cir. 1995).
\item 798. Unisplay, S.A. v. American Elec. Sign Co., 69 F.3d 512, 520, 36 U.S.P.Q.2d (BNA) 1540,
\item 799. \textit{Id.} at 514-15, 36 U.S.P.Q.2d (BNA) at 1541-42. The patent-in-suit was U.S. Patent No.
4,163,382. \textit{Id.} at 513, 36 U.S.P.Q.2d (BNA) at 1541.
\item 800. \textit{Id.} at 515, 36 U.S.P.Q.2d (BNA) at 1542.
\item 801. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1542.
\item 802. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1542.
\item 803. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1542.
\item 804. \textit{Id.}, 36 U.S.P.Q.2d (BNA) at 1543.
\item 805. \textit{Id.} at 516 & n.5, 36 U.S.P.Q.2d (BNA) at 1543 & n.5.
\item 806. \textit{Id.} at 516, 36 U.S.P.Q.2d (BNA) at 1543.
\item 807. \textit{Id.} at 516-17, 36 U.S.P.Q.2d (BNA) at 1543-44.
\item 808. \textit{Id.} at 518, 36 U.S.P.Q.2d (BNA) at 1545.
\end{itemize}}
the proffered comparable licenses involved a royalty of more than ten percent with minimum quarterly payments. In addition, the testimony of Unisplay's damages expert improperly focused on the time of trial, instead of the time of the infringement. The court thus vacated the damages award as excessive. Although American had requested a new trial, the Federal Circuit encouraged Unisplay to consider remittitur of the portion of the actual jury award in excess of $1,428,950. This figure represented the application of the "maximum recovery rule" using the ten percent royalty of the most favorable comparable license presented as evidence at trial. The Federal Circuit remanded to the district court with instructions to grant American's request for a new trial should Unisplay choose not to remit.

2. Equitable relief

a. Preliminary and permanent injunctions

In a patent infringement suit, the district court may grant a preliminary injunction pending trial and a permanent injunction after a full determination on the merits. The grant of a preliminary injunction depends on the likelihood of success on the merits, irreparable harm, balance of hardships, and the public interest. The moving party bears the burden of showing that these elements support the award of a preliminary injunction. The Federal Circuit reviews the district court's grant of a preliminary or permanent injunction for an abuse of discretion.

In *High Tech Medical Instrumentation, Inc. v. New Image Industries, Inc.*, the Federal Circuit reversed the district court's grant of a

809. *Id.*, 36 U.S.P.Q.2d (BNA) at 1545.
810. *Id.* at 518-19, 36 U.S.P.Q.2d (BNA) at 1545.
811. *Id.* at 520, 36 U.S.P.Q.2d (BNA) at 1546.
812. *Id.* at 519, 36 U.S.P.Q.2d (BNA) at 1546.
813. *Id.*, 36 U.S.P.Q.2d (BNA) at 1546.
814. *Id.*, 36 U.S.P.Q.2d (BNA) at 1546.
preliminary injunction.\(^{820}\) High Tech had sued New Image alleging that New Image’s AcuCam product infringed its patent to a hand-held dental endoscope containing a small video camera to allow recorded examination inside a patient’s mouth.\(^{821}\) The claims of High Tech’s patent included the limitation that the internal camera be “rotatably coupled” to the housing to facilitate shifts in the orientation of the video image even while the operator holds the endoscope in a fixed position.\(^{822}\)

The Federal Circuit held that the district court had ruled incorrectly in favor of High Tech on two of the four requirements for the grant of a preliminary injunction.\(^{823}\) Specifically, the Federal Circuit held that the district court erred in finding that High Tech would likely succeed on its infringement claim, and that High Tech would suffer irreparable harm if denied injunctive relief pending trial.\(^{824}\) Regarding the likelihood of success, the district court had relied on evidence that one could conceivably loosen two screws in the AcuCam housing to allow independent rotation of the internal camera similarly to High Tech’s patented endoscope.\(^{825}\) In contrast, the Federal Circuit held that a device does not infringe merely because simple alteration would place it within the scope of a patent claim.\(^{826}\) According to the Federal Circuit, a device that is specifically designed for alteration or assembly may infringe if such manipulation resulted in a device meeting every limitation of a patent claim.\(^{827}\)

Based on the finding that High Tech would likely succeed on its infringement claim, the district court presumed irreparable harm.\(^{828}\) The Federal Circuit held that this finding must fall with the district court’s erroneous finding of likelihood of success.\(^{829}\) Moreover, no independent grounds for prospective harm existed.\(^{830}\) High Tech, for example, did not make or sell dental endoscopes, nor had it


\(^{821}\) Id. at 1553, 33 U.S.P.Q.2d (BNA) at 2006. The patent-in-suit was U.S. Reexamined Patent No. 4,858,001. Id., 33 U.S.P.Q.2d (BNA) at 2006.

\(^{822}\) Id., 33 U.S.P.Q.2d (BNA) at 2006.

\(^{823}\) Id. at 1554-55, 33 U.S.P.Q.2d (BNA) at 2008.

\(^{824}\) Id. at 1555-57, 33 U.S.P.Q.2d (BNA) at 2008-10.

\(^{825}\) Id., 33 U.S.P.Q.2d (BNA) at 2008-10.

\(^{826}\) Id., 33 U.S.P.Q.2d (BNA) at 2008-10.

\(^{827}\) Id. at 1556, 33 U.S.P.Q.2d (BNA) at 2009.

\(^{828}\) Id., 33 U.S.P.Q.2d (BNA) at 2009.

\(^{829}\) Id., 33 U.S.P.Q.2d (BNA) at 2009.

\(^{830}\) See id., 33 U.S.P.Q.2d (BNA) at 2009 (noting absence of any other information in district court record that would support finding of irreparable harm).
licensed rights to the manufacture or sale of the claimed invention.\textsuperscript{831}

In \textit{Carborundum Co. v. Molten Metal Equipment Innovations, Inc.},\textsuperscript{832} the Federal Circuit affirmed the district court's grant of a permanent injunction.\textsuperscript{833} Metallics had sued Molten alleging inducement to infringe, and contributory infringement of, its patent to a metal purification system.\textsuperscript{834} The jury found Molten liable and awarded Metallics $254,421 in lost profits attributed to Molten's past sales of infringing pumps and repair parts.\textsuperscript{835} The district court permanently enjoined Molten from selling repair parts to customers who previously purchased its pumps to replace the original Metallics pump in the patented system.\textsuperscript{836} Accordingly, Metallics did not seek lost profits damages on the future repair parts sales.\textsuperscript{837}

The district court denied Molten's request to modify the permanent injunction.\textsuperscript{838} Molten contended that the payment of lost profits damages for past events created an implied license for Molten's customers to repair their pumps.\textsuperscript{839} The district court disagreed, stating that in view of Metallics' limited damages request, such an implied license would be inequitable.\textsuperscript{840}

The Federal Circuit agreed with the district court that to modify the injunction according to Molten would essentially deny Metallics full compensation for the infringement.\textsuperscript{841} In addition, the appellate court distinguished the case from \textit{King Instrument Corp. v. Otari Corp.},\textsuperscript{842} in which the Federal Circuit held that the defendant could sell its customers unpatented repair parts associated with infringing products for which the patent holder had received full compensation.\textsuperscript{843} As opposed to the patent holder in \textit{King}, Metallics proved entitlement to lost profits on the sale of spare parts.\textsuperscript{844} The Federal

\textsuperscript{831} \textit{Id.} at 1556-57, 33 U.S.P.Q.2d (BNA) 2009.
\textsuperscript{832} 72 F.3d 872, 37 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1995), aff'd No. 1:92-CV-2106 (N.D. Ohio Apr. 21, 1994).
\textsuperscript{834} \textit{Id.} at 867, 37 U.S.P.Q.2d (BNA) at 1171. The patent-in-suit was U.S. Patent No. 4,169,584. \textit{Id.} at 875, 37 U.S.P.Q.2d (BNA) at 1169.
\textsuperscript{835} \textit{Id.} at 877, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{836} \textit{Id.} at 876, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{837} \textit{Id.} at 877, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{838} \textit{Id.}, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{839} \textit{Id.}, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{840} \textit{Id.}, 37 U.S.P.Q.2d (BNA) at 1171.
\textsuperscript{841} \textit{Id.} at 882, 37 U.S.P.Q.2d (BNA) at 1175.
\textsuperscript{842} 814 F.2d 1560, 2 U.S.P.Q.2d (BNA) 1201 (Fed. Cir. 1987).
\textsuperscript{843} \textit{King Instrument Corp. v. Otari Corp.}, 814 F.2d 1560, 1564, 2 U.S.P.Q.2d (BNA) 1201, 1204 (Fed. Cir. 1987).
\textsuperscript{844} \textit{Carborundum}, 72 F.3d at 881, 37 U.S.P.Q.2d (BNA) at 1175.
Circuit thus held that the district court did not abuse its discretion in refusing to modify the permanent injunction, which prohibited Molten from future spare parts sales.\footnote{Id. at 882, 37 U.S.P.Q.2d (BNA) at 1176.}

\textit{b. Restitution}

In \textit{FilmTec Corp. v. Hydranautics},\footnote{67 F.3d 931, 36 U.S.P.Q.2d (BNA) 1410 (Fed. Cir. 1995).} the Federal Circuit held that the absence of property transfer in the context of injunctive relief did not preclude restitution as a matter of law.\footnote{FilmTec Corp. v. Hydranautics, 67 F.3d 931, 939, 36 U.S.P.Q.2d (BNA) 1410, 1415 (Fed. Cir. 1995).} The court further decided that the losses incurred here as a consequence of a wrongfully granted injunction warranted recovery in damages rather than restitution.\footnote{Id. at 940, 36 U.S.P.Q.2d (BNA) at 1416.} The Federal Circuit thus affirmed the district court’s denial of a motion seeking restitution.\footnote{Id. at 934, 36 U.S.P.Q.2d (BNA) at 1411.}

FilmTec had sued Hydranautics alleging infringement of its patent to a reverse osmosis membrane for water desalinization.\footnote{Id. at 933, 36 U.S.P.Q.2d (BNA) at 1411.} Hydranautics defended that FilmTec did not have actual title to the patent.\footnote{Id., 36 U.S.P.Q.2d (BNA) at 1411.} The district court bifurcated the trial into a liability and a damages phase.\footnote{Id. at 934, 36 U.S.P.Q.2d (BNA) at 1412.} After the liability phase of trial, the district court found infringement and enjoined Hydranautics from further manufacture of its accused membranes.\footnote{Id., 36 U.S.P.Q.2d (BNA) at 1415.}

The Federal Circuit held that title in the patent vested in the United States, not in FilmTec, and that FilmTec, therefore, lacked standing.\footnote{Id. at 994, 36 U.S.P.Q.2d (BNA) at 1412.} On remand to the district court, Hydranautics sought restitution for FilmTec’s unjust enrichment during the time the injunction prohibited Hydranautics from manufacturing its accused membranes.\footnote{Id. at 993, 36 U.S.P.Q.2d (BNA) at 1411.} The district court denied the motion because: (1) the injunction did not cause Hydranautics to transfer any property to FilmTec; (2) Hydranautics held title to the patent until the appellate decision held otherwise; and (3) the losses suffered were recoverable more properly as damages than restitution.\footnote{Id., 36 U.S.P.Q.2d (BNA) at 1415.}
The Federal Circuit agreed only with the district court's last stated ground for denial. In particular, the court noted that Hydranautics did not seek a stay of the pending injunction. In any event, the Federal Circuit discerned no clear error in the district court's denial of Hydranautics' motion.

3. Enhanced damages, attorney fees, and costs

A deliberate disregard of another's patent rights, as opposed to actions taken by an accused infringer under a reasonable belief that it did not infringe the patent, may support a finding of willful infringement. A plaintiff patent holder must prove by clear and convincing evidence that, in view of the totality of the circumstances, the defendant's infringement was willful. Willfulness is a question of fact that the Federal Circuit reviews for clear error. Furthermore, a finding of willful infringement may form the basis for an exceptional case determination.

The district court may award attorney fees and costs in an exceptional case. A party must prove an exceptional case by clear and convincing evidence. The determination that a case is exceptional is a question of fact that the Federal Circuit reviews for clear error.

In addition, the district court has inherent authority to assess attorney fees as a sanction against a party for bad faith litigation conduct. The Federal Circuit reviews for an abuse of discretion.

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857. Id. at 939-40, 36 U.S.P.Q.2d (BNA) at 1416.
858. Id. at 940, 36 U.S.P.Q.2d (BNA) at 1416.
859. Id., 36 U.S.P.Q.2d (BNA) at 1416.
863. See S.C. Johnson & Sons, Inc. v. Carter-Wallace, Inc., 781 F.2d 198, 201, 228 U.S.P.Q. (BNA) 367, 369 (Fed. Cir. 1986); cf. Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 455, 227 U.S.P.Q. (BNA) 293, 298 (Fed. Cir. 1985) (enumerating other circumstances, such as inequitable conduct, litigation misconduct, vexatious litigation, and frivolity, that are appropriate grounds for exceptional case finding).
867. See Fed. R. Civ. P. 11, 37; see also Refac Int'l Ltd. v. Hitachi, Ltd., 921 F.2d 1247, 1256, 16 U.S.P.Q.2d (BNA) 1347, 1354 (Fed. Cir. 1990) (providing example of court using inherent power to award fees due to "frivolous" nature of appeal).
the propriety of the district court’s award of attorney fees and costs.868

In *Graco, Inc. v. Binks Manufacturing Co.*,869 the Federal Circuit reversed a portion of the district court’s judgment after a bench trial finding Binks’ infringement willful and awarding attorney fees.870 Graco had sued Binks alleging infringement of its patent to a pump to deliver heavy and abrasive fluent materials.871 The district court found Binks’ infringement willful based on the inadequate opinion of Binks’ counsel and Binks’ failure to heed the advice of its counsel.872

Regarding the adequacy of the opinion of counsel, the district court cited the absence of any analysis of the prosecution history or the validity of the patent-in-suit.873 The Federal Circuit held that the district court’s findings were clearly erroneous.874 Although the opinion of Binks’ attorney did not provide a detailed analysis, it clearly reflected a consideration of the prosecution history.875 The court did not contest the district court’s determination that validity was never assessed.876 Instead, the Federal Circuit held that such an absence alone does not render an opinion of counsel inadequate.877 Furthermore, the court concluded that the opinion was detailed and reasonable, albeit incorrect in hindsight.878

The Federal Circuit also disagreed with the district court’s second ground for finding willfulness.879 The district court had found that Binks ignored the advice of counsel to cease manufacture of certain pump models.880 In contrast, the Federal Circuit characterized these acts as the result of carelessness or inadvertency of technical personnel, not the wanton disregard of Graco’s patent rights by Binks’ management.881 Moreover, the court pointed to Binks’ candor in stipulating at trial to the sales of these particular pumps as infringe-

869. 60 F.3d 785, 35 U.S.P.Q.2d (BNA) 1255 (Fed. Cir. 1995).
871. Id. at 787-88, 35 U.S.P.Q.2d (BNA) at 1256-57. The patent-in-suit was U.S. Patent No. 4,035,109.
872. Id. at 792, 35 U.S.P.Q.2d (BNA) at 1260.
875. Id. at 793, 35 U.S.P.Q.2d (BNA) at 1261.
876. Id., 35 U.S.P.Q.2d (BNA) at 1261.
877. Id., 35 U.S.P.Q.2d (BNA) at 1261.
878. Id., 35 U.S.P.Q.2d (BNA) at 1261.
879. Id. at 794, 35 U.S.P.Q.2d (BNA) at 1262.
880. Id., 35 U.S.P.Q.2d (BNA) at 1262.
881. Id., 35 U.S.P.Q.2d (BNA) at 1262.
The Federal Circuit accordingly reversed the district court's finding of willfulness and the resultant award of attorney fees. 883

In *Pall Corp. v. Micron Separations, Inc.*, 884 the Federal Circuit reversed the portion of the district court's judgment finding Micron's infringement willful. 885 Pall had sued Micron alleging infringement of its patent to nylon microfiltration membranes suitable to filter microorganisms or other microscopic contaminants. 886 After a bench trial, the district court found that Micron's Nylon 66 and Nylon 46 products infringed. 887

On the issue of willfulness, the district court determined that Micron had made "significant efforts" during the initial manufacture of its Nylon 66 membranes to avoid infringement of the Pall patent, despite the absence of a noninfringement opinion of counsel. 888 In 1989, three years after Pall filed suit, Micron shifted most, but not all, of its filter manufacture to the Nylon 46 product. 889 The district court found that the production of Nylon 46 membranes did not constitute willful infringement. 890 The district court, however, held that Micron should have known, when it shifted to the Nylon 46 filter, that its Nylon 66 filters infringed the Pall patent. 891 Accordingly, the district court ruled that Micron's continued manufacture of Nylon 66 membranes after 1989 was evidence of willfulness. 892 The district court therefore doubled the damages award attributable to infringing sales of the Nylon 66 product after 1989. 893

The Federal Circuit disagreed with the district court's reasoning. 894 Because the district court found that the initial manufacture of Nylon 66 filters did not constitute willful infringement, the court held that the partial shift in manufacture from the Nylon 66 to the Nylon 46 filters was simply not probative of willfulness regarding the

882. *Id.*, 35 U.S.P.Q.2d (BNA) at 1262.

883. *Id.* at 795, 35 U.S.P.Q.2d (BNA) at 1263.


886. *Id.* at 1215, 36 U.S.P.Q.2d (BNA) at 1227. The patent-in-suit was U.S. Patent No. 4,340,479. *Id.*, 36 U.S.P.Q.2d (BNA) at 1227.

887. *Id.* at 1215-16, 36 U.S.P.Q.2d (BNA) at 1227.


889. *Id.*, 36 U.S.P.Q.2d (BNA) at 1232.

890. *Id.*, 36 U.S.P.Q.2d (BNA) at 1232.

891. *Id.*, 36 U.S.P.Q.2d (BNA) at 1232.

892. *Id.*, 36 U.S.P.Q.2d (BNA) at 1232.

893. *Id.*, 36 U.S.P.Q.2d (BNA) at 1232.

894. *Id.* at 1222, 36 U.S.P.Q.2d (BNA) at 1232.
continued production of Nylon 66. The Federal Circuit stressed that attempts to mitigate or avoid infringement, even if unsuccessful, do not alone prove culpability in continuation of the allegedly infringing conduct.

II. FEDERAL COURT PRACTICE

This section of the Article considers the procedural aspects of patent enforcement in the district courts and the Federal Circuit. These issues include jurisdiction, disposition, and control of cases. For instance, as courts vested under Article III of the United States Constitution, the district courts and the Federal Circuit must remain cognizant of their limited jurisdiction. The failure of the parties at any time during the litigation to satisfy the requirements of Article III divests the federal courts of jurisdiction to hear the case. In addition, the district courts and the Federal Circuit may dispose of and control their cases as appropriate under the applicable federal rules.

A. District Court Practice

1. Jurisdiction

a. Declaratory judgment

The Declaratory Judgment Act established a procedural mechanism for the resolution of actual controversies between interested parties. A determination of an actual controversy requires the existence of a reasonable apprehension of immediate harm. The party seeking a declaratory judgment has the burden of establishing

896. Id., 36 U.S.P.Q.2d (BNA) at 1233.
897. See infra notes 901-1185 and accompanying text (discussing and analyzing various procedural issues which occur commonly in patent litigation).
900. See infra notes 982-1074 and accompanying text (regarding summary judgment, dismissal, contempt, settlement, and leave to amend).
the existence of an actual case or controversy.\footnote{903} Declaratory judgment jurisdiction is a question of law that the Federal Circuit reviews de novo.\footnote{904}

In \textit{Phillips Plastics Corp. v. Kato Hatsujou Kabushiki Kaisha},\footnote{905} the Federal Circuit affirmed the district court's dismissal of a declaratory judgment action.\footnote{906} Phillips had filed suit in December 1992 seeking a declaratory judgment of noninfringement and invalidity of Kato's reissue patent to expandable fasteners for reversibly attaching panels to one another.\footnote{907} In dismissing Phillips' declaratory judgment suit, the district court concluded that Phillips lacked reasonable apprehension of suit by Kato.\footnote{908}

Kato first contacted Phillips in October 1987, asserting that Phillips manufactured fasteners within the scope of Kato's patent.\footnote{909} Kato concurrently offered Phillips a license.\footnote{910} Phillips refused, stating that the patent was invalid.\footnote{911}

In 1989, Kato applied for reissue of its patent.\footnote{912} Despite Phillips' submission of additional prior art as a participant in this patent office proceeding, the Kato patent reissued.\footnote{913} In June 1992, Kato sent Phillips a copy of the reissued patent and again invited Phillips to license the patented technology.\footnote{914} Although Kato subsequently requested from Phillips sales and pricing information on which to base a licensing proposal, no further written correspondence specifically regarding the patent occurred between the parties prior to suit.\footnote{915}

The Federal Circuit agreed with the district court that the totality of the circumstances did not support the existence of an objectively reasonable apprehension of suit.\footnote{916} In particular, the appellate
The court noted that the parties had not exhausted license negotiations.\textsuperscript{917} The Federal Circuit further held that the particular choice of words and phrases used by the patent holder to characterize an alleged infringer’s conduct cannot alone create a reasonable apprehension of suit.\textsuperscript{918}

In \textit{Super Sack Manufacturing Corp. v. Chase Packaging Corp.},\textsuperscript{919} the Federal Circuit affirmed the district court’s dismissal of the declaratory judgment counterclaim.\textsuperscript{920} Super Sack had sued Chase alleging infringement of its patents to collapsible receptacles through which to deliver flowable materials such as chemicals, grain, or fertilizer.\textsuperscript{921} Chase counterclaimed for a declaratory judgment of noninfringement and invalidity.\textsuperscript{922} Six years later, Super Sack filed a motion to dismiss Chase’s counterclaim for lack of jurisdiction.\textsuperscript{923} In its motion, Super Sack promised not to sue Chase for any past acts of patent infringement.\textsuperscript{924} The district court granted Super Sack’s motion.\textsuperscript{925}

On appeal, Chase argued as a threshold matter that Super Sack’s promise to sue was ineffectual because it was merely a statement of counsel in court documents.\textsuperscript{926} Noting the estoppel effect of the representation by Super Sack’s attorney, the Federal Circuit rejected Chase’s contention.\textsuperscript{927} Chase next asserted the continuing existence of an actual controversy, because Super Sack’s promise not to sue extended only to past infringing activity.\textsuperscript{928} Given the absence of any contention that Chase was presently engaged in infringing conduct, however, the Federal Circuit held that no justiciable controversy remained.\textsuperscript{929} The court thus affirmed the district court’s dismissal of Chase’s declaratory judgment counterclaim.\textsuperscript{930}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{917} \textit{Id.} at 1053, 35 U.S.P.Q.2d (BNA) at 1224.
\item \textsuperscript{918} \textit{Id.} at 1054, 35 U.S.P.Q.2d (BNA) at 1224.
\item \textsuperscript{921} \textit{Id.} at 1055, 35 U.S.P.Q.2d (BNA) at 1140. The patents-in-suit were U.S. Patent Nos. 4,143,796 and 4,194,652. \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1140.
\item \textsuperscript{922} \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1140.
\item \textsuperscript{923} \textit{Id.} at 1056, 35 U.S.P.Q.2d (BNA) at 1141.
\item \textsuperscript{924} \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1141.
\item \textsuperscript{925} \textit{Id.} at 1057, 35 U.S.P.Q.2d (BNA) at 1141.
\item \textsuperscript{926} \textit{Id.} at 1059, 35 U.S.P.Q.2d (BNA) at 1143.
\item \textsuperscript{927} \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1143.
\item \textsuperscript{928} \textit{Id.}, 35 U.S.P.Q.2d (BNA) at 1143.
\item \textsuperscript{929} \textit{Id.} at 1059-60, 35 U.S.P.Q.2d (BNA) at 1143-44.
\item \textsuperscript{930} \textit{Id.} at 1060, 35 U.S.P.Q.2d (BNA) at 1144.
\end{itemize}
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In *Serco Services Co. v. Kelley Co.*, the Federal Circuit affirmed the district court's summary dismissal of the declaratory judgment action. Serco had filed suit in Texas district court against Kelley for a declaratory judgment of noninfringement and invalidity. In response, Kelley filed suit three days later in Wisconsin district court alleging that Serco infringed its patent to a locking device designed to prevent separation of freight trucks from dock platforms during loading and unloading. Despite the conclusion that Serco satisfied the jurisdictional requirements for a declaratory judgment action, the Texas district court dismissed the suit so that Kelley's infringement suit in the Wisconsin district court could proceed. The Texas district court exercised its discretion to dismiss based on the availability of witnesses and documents in Wisconsin. In addition, the Texas district court considered Serco's motive to preempt Kelley's lawsuit as one factor in its decision to dismiss.

The Federal Circuit concluded that the Texas district court did not abuse its discretion in dismissing the declaratory judgment action. The court recognized that despite the rule favoring the first-filed forum in the parties' "race to the courthouse," interests of judicial efficiency may warrant dismissal in favor of the second-filed forum. The Federal Circuit agreed with the Texas district court that the concentration of Kelley's documents and witnesses in Wisconsin supported dismissal.

b. Personal jurisdiction

The existence of personal jurisdiction is a question of law that the Federal Circuit reviews de novo. Furthermore, the Federal Circuit applies its own precedent, rather than the law of the relevant regional circuit.

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933. Id. at 1038, 34 U.S.P.Q.2d (BNA) at 1218.
934. Id., 34 U.S.P.Q.2d (BNA) at 1218. The patent-in-suit was U.S. Patent No. 4,448,925.
935. Id. at 1037, 34 U.S.P.Q.2d (BNA) at 1217.
936. Id. at 1038, 34 U.S.P.Q.2d (BNA) at 1218.
937. Id., 34 U.S.P.Q.2d (BNA) at 1218.
938. Id., 34 U.S.P.Q.2d (BNA) at 1218.
939. Id., 34 U.S.P.Q.2d (BNA) at 1218.
940. Id., 34 U.S.P.Q.2d (BNA) at 1219.
In *Akro Corp. v. Luker*, the Federal Circuit reversed the dismissal of Akro's declaratory judgment action for want of personal jurisdiction and remanded to the district court. Akro, an Ohio corporation, had filed a declaratory judgment action in the United States District Court for the Northern District of Ohio against Luker, a California resident. Akro asserted declaratory judgment jurisdiction based on Luker's allegations that Akro infringed its patent to vehicle floor mats. Luker did not answer Akro's complaint, but instead filed a motion to dismiss for lack of personal jurisdiction. Akro appealed the district court's grant of Luker's motion.

The Federal Circuit considered whether an assertion of jurisdiction would be consistent with the Ohio long-arm statute and due process principles. The appellate court decided that the Ohio long-arm statute authorized the exercise of jurisdiction to the extent that such an exercise comported with due process. The Federal Circuit focused on instances of Luker's activities purposefully directed at Ohio. In particular, the court noted Luker's warning letter to Akro and Luker's entry into an exclusive license agreement with Pretty Products, an Ohio corporate manufacturer of floor mat carpets. Moreover, the court determined that Akro's declaratory judgment action related directly to Luker's conduct. In addition, Luker did not contend that the Ohio district court's exercise of jurisdiction would be somehow unconstitutionally unreasonable. The Federal Circuit thus concluded that the district court erred in dismissing Akro's suit for lack of personal jurisdiction over Luker.

c. Standing

In *Ortho Pharmaceutical Corp. v. Genetics Institute, Inc.*, the Federal Circuit affirmed the district court's summary dismissal of the case for

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944. Akro Corp. v. Luker, 45 F.3d 1541, 1549, 33 U.S.P.Q.2d (BNA) 1505, 1512 (Fed. Cir.),
945. *Id.* at 1543, 33 U.S.P.Q.2d (BNA) at 1506. The patent-in-suit was U.S. Patent No. 4,871,602.
946. *Id.* at 1543, 33 U.S.P.Q.2d (BNA) at 1506.
947. *Id.*, 33 U.S.P.Q.2d (BNA) at 1506.
948. *Id.*, 33 U.S.P.Q.2d (BNA) at 1506.
949. *Id.* at 1544, 33 U.S.P.Q.2d (BNA) at 1507.
950. *Id.*, 33 U.S.P.Q.2d (BNA) at 1507.
951. *Id.* at 1546, 33 U.S.P.Q.2d (BNA) at 1509.
952. *Id.*, 33 U.S.P.Q.2d (BNA) at 1509.
953. *Id.* at 1549, 33 U.S.P.Q.2d (BNA) at 1511.
954. *Id.*, 33 U.S.P.Q.2d (BNA) at 1511.
955. *Id.*, 33 U.S.P.Q.2d (BNA) at 1512.
lack of standing. Ortho had sued Genetics Institute ("GI") alleging infringement of its patent to a deoxyribonucleic acid ("DNA") sequence encoding erythropoietin, which stimulates the synthesis of red blood cells. Ortho is a worldwide licensee of the patent-in-suit. After filing suit, Ortho sought participation by the licensor, Amgen, as an involuntary plaintiff. In response to GI's motion to dismiss, Ortho premised its standing as a coplaintiff on its rights under the license. This agreement provided Ortho with an exclusive license to practice the patent in the United States and abroad, and with the right to sue infringers on its own if Amgen declined to participate.

In ruling against Ortho, the district court concluded that Ortho's license was nonexclusive despite the express language of the license agreement because the licensor, Amgen, retained rights to use the patented invention in the United States. In addition, the district court rejected Ortho's argument that in any event its exclusive license abroad was an adequate basis for standing. The district court, however, did not decide whether Ortho's right to sue under the license granted Ortho standing.

The Federal Circuit agreed with the district court's rulings. The court emphasized that the substantive rights, not the titles used by the parties, control the status of a licensee. Here, the license agreement granted Ortho no actual proprietary interest in the patent. The court held that despite any economic injury it may incur, a nonexclusive licensee lacks standing because it suffers no legal injury absent such a property interest. Moreover, the right

958. Id. at 1029, 34 U.S.P.Q.2d (BNA) at 1445. The patent-in-suit was U.S. Patent No. 4,703,008.
959. Id. at 1028-29, 34 U.S.P.Q.2d (BNA) at 1445.
960. Id. at 1029, 34 U.S.P.Q.2d (BNA) at 1445.
961. Id., 34 U.S.P.Q.2d (BNA) at 1445.
962. Id., 34 U.S.P.Q.2d (BNA) at 1445-46.
963. Id. at 1030, 34 U.S.P.Q.2d (BNA) at 1446.
964. Id., 34 U.S.P.Q.2d (BNA) at 1446.
965. Id., 34 U.S.P.Q.2d (BNA) at 1446.
966. Id. at 1031, 34 U.S.P.Q.2d (BNA) at 1446.
967. Id. at 1032, 34 U.S.P.Q.2d (BNA) at 1448. The court stated that "it is the licensee's beneficial ownership of a right to prevent others from making, using or selling the patented technology that provides the foundation for co-plaintiff standing, not simply that the word 'exclusive' may or may not appear in the license." Id., 34 U.S.P.Q.2d (BNA) at 1448.
968. Id. at 1033, 34 U.S.P.Q.2d (BNA) at 1449.
969. Id. at 1031, 34 U.S.P.Q.2d (BNA) at 1447.
to sue provisions of the license could not vest Ortho with a right it otherwise would not have.  

In *Abbott Laboratories v. Diamedix Corp.*, the Federal Circuit reversed the district court's denial of intervention in the patent infringement action. Abbott was the exclusive licensee of Diamedix's patents to immunoassays for the detection of hepatitis virus in blood. Abbott had sued Ortho alleging infringement of these patents. The district court denied Diamedix's motion to intervene, holding that Abbott would adequately represent Diamedix's interests.

The Federal Circuit, however, held that the district court should have allowed Diamedix to intervene because Abbott lacked standing to pursue alone its patent infringement action. The court emphasized that an infringement suit required participation by the patent holder. Rejecting Abbott's arguments to the contrary, the Federal Circuit noted that although Diamedix had conveyed broad rights to Abbott, Diamedix nonetheless retained substantial interests in the patents. Embracing Supreme Court precedent, the Federal Circuit reiterated that any transfer of less than the entirety of rights under a patent constitutes a license rather than an assignment. Accordingly, a patent licensee bringing an infringement suit must join the patent holder licensor as a necessary party. The Federal Circuit stated, however, that entitlement to intervention dictated nothing regarding the nature of participation by the intervenor.

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970. *Id.* at 1034, 34 U.S.P.Q.2d (BNA) at 1450.
973. *Id.* at 1129, 33 U.S.P.Q.2d (BNA) at 1772. The patents-in-suit were U.S. Patent Nos. 4,474,878 and 4,642,285. *Id.*, 33 U.S.P.Q.2d (BNA) at 1772.
974. *Id.* at 1130, 33 U.S.P.Q.2d (BNA) at 1772-73.
975. *Id.*, 33 U.S.P.Q.2d (BNA) at 1773.
976. *Id.*, 33 U.S.P.Q.2d (BNA) at 1773.
977. *Id.*, 33 U.S.P.Q.2d (BNA) at 1773.
978. *Id.* at 1132, 33 U.S.P.Q.2d (BNA) at 1774.
979. *Id.* at 1131, 33 U.S.P.Q.2d (BNA) at 1773-74.
980. *Id.* at 1132, 33 U.S.P.Q.2d (BNA) at 1775.
981. *Id.* at 1133, 33 U.S.P.Q.2d (BNA) at 1776.
2. Dispositions

a. Summary judgment

A district court must enter summary judgment in the absence of a genuine dispute of material fact between the parties.\(^{982}\) The propriety of summary judgment is a question of law that the Federal Circuit reviews de novo.\(^{983}\) In addition, the Federal Circuit applies the relevant law of the appropriate regional circuit based on the underlying claim.\(^{984}\)

In *Glaverbel Societe Anonyme v. Northlake Marketing & Supply, Inc.*\(^{985}\), the Federal Circuit reversed portions of the district court’s summary judgment of noninfringement and remanded.\(^{986}\) Glaverbel had sued Northlake alleging infringement of its patents to the use of particular formulations of oxidizable substances, such as aluminum, silicon, magnesium, or zirconium, in ceramic welding processes for repairing industrial furnaces.\(^{987}\)

Northlake filed a motion for partial summary judgment of noninfringement accompanied by documents containing results of tests Glaverbel conducted regarding specific Northlake formulations.\(^{988}\) Northlake's motion contained five paragraphs, three seeking judgments of noninfringement generally (paragraphs one, three, and four) and two requesting judgments of noninfringement as to specific Northlake formulations (paragraphs two and five).\(^{989}\) Glaverbel conceded that the Northlake formulations described in three of the four accompanying exhibits did not infringe the Glaverbel patents.\(^{990}\) The district court refused to consider any of

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\(^{982}\) *See* FED. R. CIV. P. 56(c) (mandating summary judgment "if the pleadings, depositions, answers to interrogatories and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law"); Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986) (interpreting Rule 56(c) as not requiring party moving for summary judgment to always make affirmative evidentiary showing).


\(^{987}\) *Id.* at 1553-54, 33 U.S.P.Q.2d (BNA) at 1497-98. The patents-in-suit were U.S. Patent Nos. 3,684,560 and 4,489,022. *Id.* at 1553, 33 U.S.P.Q.2d (BNA) at 1497.

\(^{988}\) *Id.* at 1559-60, 33 U.S.P.Q.2d (BNA) at 1502-03.

\(^{989}\) *Id.* at 1560, 33 U.S.P.Q.2d (BNA) at 1502-05.

\(^{990}\) *Id.*, 33 U.S.P.Q.2d (BNA) at 1503.
the exhibits, finding them all inadmissible for lack of authentication. The district court held that Northlake’s motion for summary judgment failed to satisfy the requirements of Rule 56(c) and (e). The district court also concluded that Glaverbel failed to prove the existence of a genuine issue of material fact. The district court, however, did not distinguish between the respective paragraphs of the motion and entered summary judgment in the entirety for Northlake.

The Federal Circuit noted that paragraphs one, three, and four did not concern any specific formulation or product in controversy. Northlake provided no evidence to support its general requests in these paragraphs. Given Northlake’s failure to meet its initial burden as the moving party on summary judgment, the court held that Glaverbel did not have to produce any responsive evidence to defeat Northlake’s motion. The Federal Circuit therefore concluded that the district court improperly entered summary judgment as to the subject matter of paragraphs one, three, and four.

As for paragraphs two and five, the Federal Circuit affirmed the entry of summary judgment. The Federal Circuit held that the district court properly entered summary judgment for Northlake as to the specific formulations of which Glaverbel conceded noninfringement. The court, however, stated that the district court should have considered the one accompanying exhibit (Exhibit D) discussing specific Northlake formulations that Glaverbel still regarded as infringing. This exhibit had been received into evidence without objection as part of earlier deposition testimony. Applying Seventh Circuit precedent, the Federal Circuit ruled that a district court may consider exhibits that are a part of a deposition record. In response to Northlake’s motion with respect to Exhibit D, Glaverbel provided nothing beyond attorney argument asserting infringement under the doctrine of equiva-

991. Id. at 1561, 33 U.S.P.Q.2d (BNA) at 1503-04.
992. Id. at 1559, 33 U.S.P.Q.2d (BNA) at 1502.
993. Id., 33 U.S.P.Q.2d (BNA) at 1502.
994. Id. at 1562, 33 U.S.P.Q.2d (BNA) at 1505.
995. Id. at 1561, 33 U.S.P.Q.2d (BNA) at 1504.
996. Id. at 1561-62, 33 U.S.P.Q.2d (BNA) at 1504.
997. Id. at 1562, 33 U.S.P.Q.2d (BNA) at 1504.
998. Id., 33 U.S.P.Q.2d (BNA) at 1504.
999. Id., 33 U.S.P.Q.2d (BNA) at 1505.
1000. Id. at 1561, 33 U.S.P.Q.2d (BNA) at 1504.
1001. Id., 33 U.S.P.Q.2d (BNA) at 1504.
1002. Id., 33 U.S.P.Q.2d (BNA) at 1504.
1003. Id., 33 U.S.P.Q.2d (BNA) at 1504.
Finding this insufficient to meet Glaverbel’s burden as the nonmoving party to establish the absence of a genuine issue of material fact, the Federal Circuit affirmed the summary judgment limited to the specific formulations set forth in Northlake’s motion.1005

b. Dismissal

A district court has inherent authority to control its docket.1006 The court may exercise this discretion by dismissing a lawsuit.1007 The Federal Circuit reviews for an abuse of discretion the propriety of the district court’s dismissal.1008 In addition, the Federal Circuit applies the relevant law of the appropriate regional circuit.1009

In *L.E.A. Dynatech, Inc. v. Allina,*1010 the Federal Circuit affirmed the district court’s dismissal without prejudice of the patent infringement suit.1011 In that case, Dynatech had filed a declaratory judgment action against Allina seeking a declaration of noninfringement and unenforceability of five of Allina’s patents.1012 Allina counterclaimed for infringement of one of these patents.1013 In addition, Allina sought reissue of this patent.1014 The patent examiner rejected all the claims in Allina’s reissue application.1015 Based on this action, Dynatech filed a motion to dismiss Allina’s counterclaim, and requested attorney fees and costs.1016 The district court granted Dynatech’s motion and awarded $537,541.60 in fees and costs.1017 The Federal Circuit concluded that the district court had not abused its discretion in dismissing Allina’s counterclaim.1018 In particular, the Federal Circuit noted that dismissal without prejudice

1004. *Id.* at 1562, 33 U.S.P.Q.2d (BNA) at 1504.
1005. *Id.*, 33 U.S.P.Q.2d (BNA) at 1505.
1007. *See infra* notes 1011-19 and accompanying text (discussing *Dynatech*).
1010. 49 F.3d 1527, 33 U.S.P.Q.2d (BNA) 1839 (Fed. Cir. 1995).
1012. *Id.* at 1529, 33 U.S.P.Q.2d (BNA) at 1840.
1013. *Id.*, 33 U.S.P.Q.2d (BNA) at 1840. The patent-in-suit was U.S. Patent No. 4,931,895.
1014. *Id.*, 33 U.S.P.Q.2d (BNA) at 1840.
1015. *Id.*, 33 U.S.P.Q.2d (BNA) at 1841.
1016. *Id.*, 33 U.S.P.Q.2d (BNA) at 1841.
1017. *Id.*, 33 U.S.P.Q.2d (BNA) at 1841.
1018. *Id.* at 1530, 33 U.S.P.Q.2d (BNA) at 1842.
amounted to a stay of the proceedings pending appeal of the patent examiner's rejection of the reissue claims.1019

c. Contempt

A patent holder may bring contempt proceedings against a party enjoined by court order from further infringement.1020 The patent holder must prove contempt by clear and convincing evidence.1021 The Federal Circuit reviews for an abuse of discretion the district court's finding of contempt.1022 Given the summary nature of contempt proceedings, the Federal Circuit generally admonishes against them.1023

In *Arbek Manufacturing, Inc. v. Moazzam*,1024 the Federal Circuit affirmed the district court's denial of the motion for contempt.1025 Arbek had sued Moazzam alleging infringement of its design patent to ornamental cabinets.1026 Moazzam admitted infringement.1027 Accordingly, the district court entered an order enjoining Moazzam from any future acts of infringement.1028 Three years later, Arbek discovered that Moazzam was selling slightly modified cabinets in apparent violation of the court order.1029 Based on the existence of substantial open issues of infringement, the district court dismissed Arbek's motion for contempt and went on to hold that Moazzam's modified cabinet did not infringe the Arbek patent.1030 The Federal Circuit affirmed the dismissal but vacated the noninfringement finding as premature.1031

In *Carborundum Co. v. Molten Metal Equipment Innovations, Inc.*,1032 the Federal Circuit affirmed the district court's judgment finding the infringer in contempt for violating the existing permanent injunc-

1019. *Id.*, 33 U.S.P.Q.2d (BNA) at 1841-42.
1021. See *id.*, 227 U.S.P.Q. (BNA) at 682.
1022. See *id.* at 1530-31, 227 U.S.P.Q. (BNA) at 682-83.
1025. *Id.* at 1569, 34 U.S.P.Q.2d (BNA) at 1671. The patent-in-suit was U.S. Design Patent No. 313,323.
1026. *Id.* at 1568, 34 U.S.P.Q.2d (BNA) at 1670.
1027. *Id.* at 1569, 34 U.S.P.Q.2d (BNA) at 1671.
1028. *Id.*, 34 U.S.P.Q.2d (BNA) at 1671.
1029. *Id.*, 34 U.S.P.Q.2d (BNA) at 1671.
1030. *Id.* at 1570, 34 U.S.P.Q.2d (BNA) at 1671-72.
1031. *Id.*, 34 U.S.P.Q.2d (BNA) at 1672.
1032. 72 F.3d 872, 37 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1995).
Metallics had sued Molten alleging inducement to infringe, and contributory infringement of, its patent to a metal purification system. Following the entry of judgment on the jury verdict finding Molten liable, the district court permanently enjoined Molten from selling repair parts to customers who previously purchased its pumps to replace the original Metallics pump in the patented system. The district court modified its injunction to allow Molten a two-week grace period so that its customers could convert to noninfringing systems. During the grace period, Molten did not convert a single pump to a noninfringing design and simply continued to sell repair parts to its customers. The district court found these parts sales excessive and held Molten in contempt, assessing $23,000 in additional damages plus attorney fees and costs associated with the contempt proceeding.

On appeal, Molten based its challenge to the district court's contempt finding solely on the asserted impropriety of the permanent injunction. The Federal Circuit affirmed the grant of the permanent injunction, however. The court thus concluded that the district court had not abused its discretion in holding Molten in contempt. Moreover, the Federal Circuit emphasized that a party dissatisfied with the injunction may not simply ignore it, as Molten did.

d. Settlement

The judicial system favors dispute resolution through voluntary settlements. Accordingly, a party seeking to invalidate a settlement agreement bears a heavy burden of persuasion.

In Core-Vent Corp. v. Implant Innovations, Inc., the Federal Circuit affirmed the district court's entry of a consent judgment based
upon the parties’ voluntary settlement.\textsuperscript{1046} Core-Vent had sued Implant alleging infringement of its patent to a dental implant anchor.\textsuperscript{1047} Following jury selection at trial, the parties stipulated in open court to infringement based on an oral settlement agreement that further set forth the amount of damages and the framework of a license.\textsuperscript{1048} The trial judge ordered the parties to reduce the settlement to writing.\textsuperscript{1049} Afterwards, however, the parties were unable to agree to the exact terms of the license.\textsuperscript{1050} The district court nevertheless entered final judgment on a proposed consent judgment that Core-Vent drafted.\textsuperscript{1051} In response, Implant moved for reconsideration of the judgment and requested a hearing on the disputed issues concerning the license.\textsuperscript{1052} The district court denied the motion, holding that the statements of counsel in open court set forth adequate terms of a license agreement to which the proposed consent judgment essentially conformed.\textsuperscript{1053}

On appeal, Implant contended that it would not have agreed to the settlement had it known that the consent judgment embodied a final license agreement.\textsuperscript{1054} Implant asserted that it believed at trial that the consent judgment merely required the parties to negotiate and execute a license.\textsuperscript{1055} In particular, Implant argued that it would not have agreed to a license absent a provision allowing Implant to cease royalty payments if any subsequent court or agency action invalidated the Core-Vent patent.\textsuperscript{1056} The Federal Circuit, however, agreed wholly with the district court’s reasoning that the settlement agreement included an enforceable license.\textsuperscript{1057} Furthermore, the appellate court rejected Implant’s contentions that the terms of the consent judgment varied from those recited in open court.\textsuperscript{1058}


\textsuperscript{1047} Id. at 1254, 34 U.S.P.Q.2d (BNA) at 1582. The patent-in-suit was U.S. Patent No. 4,960,381. \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1582.

\textsuperscript{1048} Id., 34 U.S.P.Q.2d (BNA) at 1582.

\textsuperscript{1049} Id. at 1255, 34 U.S.P.Q.2d (BNA) at 1583.

\textsuperscript{1050} Id., 34 U.S.P.Q.2d (BNA) at 1583.

\textsuperscript{1051} Id., 34 U.S.P.Q.2d (BNA) at 1583.

\textsuperscript{1052} Id., 34 U.S.P.Q.2d (BNA) at 1583.

\textsuperscript{1053} Id., 34 U.S.P.Q.2d (BNA) at 1583.

\textsuperscript{1054} Id. at 1256, 34 U.S.P.Q.2d (BNA) at 1584.

\textsuperscript{1055} Id., 34 U.S.P.Q.2d (BNA) at 1584.

\textsuperscript{1056} Id., 34 U.S.P.Q.2d (BNA) at 1584.

\textsuperscript{1057} Id. at 1259, 34 U.S.P.Q.2d (BNA) at 1587.

\textsuperscript{1058} Id., 34 U.S.P.Q.2d (BNA) at 1587.
e. Leave to amend

Federal Rule of Civil Procedure 15 provides that leave to amend a party's pleadings "shall be freely given when justice so requires."\(^{1059}\)

In *FilmTec Corp. v. Hydranautics*,\(^{1060}\) the Federal Circuit held that absent "sham" litigation, the *Noerr-Pennington* doctrine precluded any claim of antitrust violation.\(^{1061}\) The court thus affirmed the district court's denial of the defendant's motion to amend its answer to add a counterclaim for antitrust violations.\(^{1062}\)

*FilmTec* had sued *Hydranautics* alleging infringement of its patent to a reverse osmosis membrane for water desalinization.\(^{1063}\) *Hydranautics* defended that *FilmTec* did not have actual title to the patent.\(^{1064}\) The district court bifurcated the trial into a liability and a damages phase.\(^{1065}\) After the liability phase of trial, the district court found infringement and enjoined *Hydranautics* from further manufacture of its accused membranes.\(^{1066}\) On appeal, the Federal Circuit held that title in the patent vested in the United States, not *FilmTec*, and thus *FilmTec* lacked standing.\(^{1067}\)

On remand to the district court, *Hydranautics* sought to amend its answer to add a counterclaim for antitrust violations.\(^{1068}\) As grounds for denial of *Hydranautics' motion, *FilmTec* asserted the *Noerr-Pennington* doctrine and undue delay.\(^{1069}\) In denying *Hydranautics' motion, the district court focused on the undue delay, noting the filing of the motion well after full adjudication and appeal of the underlying patent infringement action.\(^{1070}\)

The Federal Circuit disagreed with the district court's reasoning, stating that *Hydranautics* could not have asserted sham litigation until after the appellate decision reversing the district court's judgment in favor of *FilmTec*.\(^{1071}\) Before then, *FilmTec's* successful patent

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1059. FED. R. CIV. P. 15.
1062. Id. at 940, 36 U.S.P.Q.2d (BNA) at 1416.
1063. Id. at 933, 36 U.S.P.Q.2d (BNA) at 1411. The patent-in-suit was U.S. Patent No. 4,277,344. Id., 36 U.S.P.Q.2d (BNA) 1411.
1064. Id. at 944, 36 U.S.P.Q.2d (BNA) at 1411.
1065. Id., 36 U.S.P.Q.2d (BNA) at 1411.
1066. Id., 36 U.S.P.Q.2d (BNA) at 1411.
1068. Id. at 934-35, 36 U.S.P.Q.2d (BNA) at 1412.
1069. Id. at 935, 36 U.S.P.Q.2d (BNA) at 1412.
1070. Id. at 936, 36 U.S.P.Q.2d (BNA) at 1413.
1071. Id. at 937, 36 U.S.P.Q.2d (BNA) at 1413.
infringement action obviously could not be a sham. In any event, the Federal Circuit concluded that FilmTec's suit was not objectively unreasonable. The court thus held that the exception to immunity under the Noerr-Pennington doctrine was unavailable to Hydranautics.

3. Practice

a. Sanctions

In *L.E.A. Dynatech, Inc. v. Allina*, the Federal Circuit affirmed the district court's award of attorney fees and costs upon dismissal without prejudice of the patent infringement suit. The Federal Circuit concluded that Allina had manipulated the progress of the district court proceedings based on the perceived strength of its case. In addition, the court declined to consider Allina's new argument on appeal that the award of fees and costs would bankrupt Allina.

In *Imagineering, Inc. v. Van Klassens, Inc.*, the Federal Circuit held that the district court abused its discretion in sanctioning Van Klassens for failure to withdraw its counterclaim. Imagineering had sued Van Klassens alleging infringement of its design patent to a rocking chair. Van Klassens counterclaimed for a declaratory judgment of invalidity and noninfringement. Imagineering withdrew its patent infringement claim, but Van Klassens did not withdraw its declaratory judgment counterclaim. The district court dismissed Van Klassens' counterclaim and sanctioned Van Klassens for refusing to withdraw its counterclaim voluntarily. Imagineering admitted invalidity of its design patent. Van Klassens filed a

1072. *Id.* at 936, 36 U.S.P.Q.2d (BNA) at 1413.
1073. *Id.* at 938, 36 U.S.P.Q.2d (BNA) at 1415.
1074. *Id.* at 939, 36 U.S.P.Q.2d (BNA) at 1415.
1077. *Id.* at 1531, 33 U.S.P.Q.2d (BNA) at 1842.
1078. *Id.* at 1531, 33 U.S.P.Q.2d (BNA) at 1842.
1082. *Id.*, 34 U.S.P.Q.2d (BNA) at 1527.
1083. *Id.*, 34 U.S.P.Q.2d (BNA) at 1527.
1084. *Id.*, 34 U.S.P.Q.2d (BNA) at 1527.
1085. *Id.*, 34 U.S.P.Q.2d (BNA) at 1527.
motion to recover its attorney fees, which the district court de-

The Federal Circuit reversed the district court’s imposition of
sanctions against Van Klassens for failure to withdraw voluntarily its
counterclaim for a declaratory judgment of design patent invalidity
and noninfringement. The court held that Van Klassens risked
a waiver of any objections to the district court’s rulings on Van
Klassens’ counterclaim and motion for attorney fees.

b. Special master

A district court has the inherent discretion to appoint, without the
consent of the parties, a special master to assist the court in a
case. Federal Rule of Civil Procedure 53 further defines the
court’s authority to assign issues to a special master.

In Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., the
Federal Circuit held that jury consideration of a special master’s
written infringement findings did not deprive the defendant of its
right to a jury trial. The court considered the totality of the
circumstances, particularly noting the complexity of the case, and
concluded that any procedural error was harmless. The Federal
Circuit thus affirmed the district court’s entry of judgment on the jury
verdict of infringement.

Festo had sued Shoketsu alleging infringement of its patents (“Carroll” and “Stoll”) to a material transport piston/cylinder system
in which movement of a sleeve member outside the cylinder is
magnetically coupled to the movement of the piston inside the
cylinder. The trial judge appointed a special master to make
recommendations regarding validity and infringement. The

1086. Id. at 1262-63, 34 U.S.P.Q.2d (BNA) at 1527-28.
1087. Id. at 1267, 34 U.S.P.Q.2d (BNA) at 1532, rev’g 155 F.R.D. 68, 31 U.S.P.Q.2d (BNA)

1119 (S.D.N.Y. 1994).
1088. Id. at 1256, 34 U.S.P.Q.2d (BNA) at 1531.
1089. See Ex parte Peterson, 253 U.S. 500, 512 (1920) (appointing auditor as special master to
parse out issues for trial); see also Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560,
1566-67, 7 U.S.P.Q.2d (BNA) 1057, 1060-61 (Fed. Cir.) (considering special master’s findings
1090. See FED. R. CIV. P. 53.
1091. 72 F.3d 857, 37 U.S.P.Q.2d (BNA) 1161 (Fed. Cir. 1995).
(BNA) 1161, 1167 (Fed. Cir. 1995).
1093. Id., 37 U.S.P.Q.2d (BNA) at 1167.
1094. Id., 37 U.S.P.Q.2d (BNA) at 1167.
1095. Id. at 860, 37 U.S.P.Q.2d (BNA) at 1162. The patents-in-suit were U.S. Patent Nos.
3,779,401 (Carroll) and 4,354,125 (Stoll). Id. at 860-62, 37 U.S.P.Q.2d (BNA) at 1162-63.
1096. Id. at 865, 37 U.S.P.Q.2d (BNA) at 1166.
master's report favored Festo on the validity issues and Shoketsu on the infringement issues.\footnote{1097}

Before trial, the district court granted partial summary judgment of infringement of the Carroll patent under the doctrine of equivalents.\footnote{1098} The parties tried the remaining issues to the jury.\footnote{1099} Although Federal Rule of Civil Procedure 53(e)(3) provides for an oral presentation only of the master's report to the jury, the district court determined that the complexity of the technical and legal issues warranted allowing the jury to examine the sixty-eight-page written report before deliberations.\footnote{1100} The jury found both patents valid, and the Stoll patent infringed.\footnote{101} In addition, the jury assessed damages against Shoketsu.\footnote{1102} The district court denied Shoketsu's post-trial motion for a new trial, holding that any procedural error did not substantially affect the parties' rights.\footnote{1103}

On appeal, Shoketsu contended that the possession of the master's report by the jury tainted the deliberations and effectively denied Shoketsu's right to an independent jury trial.\footnote{1104} The Federal Circuit agreed, however, with the district court that any error was harmless.\footnote{1105} The court emphasized that Shoketsu itself asked the jury in closing to give serious weight to the master's determinations.\footnote{1106} In any event, the jury found infringement under the doctrine of equivalents despite the special master's statement that prosecution history estoppel barred Festo's asserted range of equivalents.\footnote{1107} The Federal Circuit thus concluded that the totality of the circumstances did not justify a new trial.\footnote{1108}

\begin{thebibliography}{100}
\bibitem{1097} Id., 37 U.S.P.Q.2d (BNA) at 1166.
\bibitem{1098} Id. at 860, 37 U.S.P.Q.2d (BNA) at 1162.
\bibitem{1099} Id. at 862, 37 U.S.P.Q.2d (BNA) at 1163.
\bibitem{1100} Id. at 865-66, 37 U.S.P.Q.2d (BNA) at 1166-67. Although all the jurors were supposed to return their copies of the report to the court before deliberations, apparently not all the copies were so returned. Id., 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1101} Id. at 866, 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1102} Id., 37 U.S.P.Q.2d (BNA) at 1167. The accessory sale doctrine allows for the recovery of lost profits on auxiliary components which derive their market value from the patented item; the auxiliary components have no independent purpose on their own. See Rite-Hite Corp. v. Kelley Co., 56 F.3d 1598, 1590 (Fed. Cir. 1995).
\bibitem{1103} Festo, 72 F.3d at 866, 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1104} Id. at 864, 37 U.S.P.Q.2d (BNA) at 1166.
\bibitem{1105} Id. at 865, 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1106} Id., 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1107} Id., 37 U.S.P.Q.2d (BNA) at 1167.
\bibitem{1108} See id., 37 U.S.P.Q.2d (BNA) at 1167 (stating jury's conclusion on infringement was contrary to master's conclusion).
\end{thebibliography}
B. Federal Circuit Practice

1. Jurisdiction

In In re Graves, the Federal Circuit held that it had jurisdiction to consider the merits of an appeal filed prior to the Board's reconsideration decision. The court concluded that despite the ineffective notice of appeal when filed, the appeal became ripe upon the Board's disposition of the pending reconsideration request. On the merits, the Federal Circuit held that the Board's construction of the claims of Graves' application was proper and that the rejections of the claims as anticipated were not clearly erroneous. The appellate court thus affirmed the Board's decision.

The claims covered a device and method for testing and recording the continuity of circuits in electronic systems. The minority of the Board construed certain claims of the application to require test signal monitoring of input and output points simultaneously. The majority concluded, however, that the claims did not require monitoring of one input point and multiple output points simultaneously. Following this claim construction, the majority determined that a prior art patent ("Rockwell") anticipated the claimed invention. The dissenting Board member instead construed the claims to require parallel (simultaneous) monitoring of an input point and multiple output points and thus disagreed with the majority's resulting finding of anticipation.

The Board rendered its decision upholding the examiner's rejections. Graves requested that the Board reconsider its decision. While this request was pending, however, Graves filed a notice of appeal to the Federal Circuit. About a week later, the Board denied Graves' request to modify its original decision.

111. Id., 36 U.S.P.Q.2d (BNA) at 1699-1700.
112. Id. at 1153, 36 U.S.P.Q.2d (BNA) at 1701-02.
114. Id. at 1149, 36 U.S.P.Q.2d (BNA) at 1698. The application at issue was U.S. Application Serial No. 07/870,452. Id., 36 U.S.P.Q.2d (BNA) at 1698.
115. Id. at 1152, 36 U.S.P.Q.2d (BNA) at 1701.
117. Id., 36 U.S.P.Q.2d (BNA) at 1701.
118. Id., 36 U.S.P.Q.2d (BNA) at 1701.
119. Id. at 1149, 36 U.S.P.Q.2d (BNA) at 1698.
120. Id., 36 U.S.P.Q.2d (BNA) at 1698.
121. Id., 36 U.S.P.Q.2d (BNA) at 1698.
122. Id., 36 U.S.P.Q.2d (BNA) at 1698.
As an initial matter on appeal, the Federal Circuit concluded that the Board had jurisdiction to reconsider its original decision despite Graves' intervening notice of appeal.\textsuperscript{1123} Accordingly, the Federal Circuit had jurisdiction to hear Graves' appeal from the reconsideration decision of the Board.\textsuperscript{1124} The court recognized that Graves' notice of appeal would have been untimely had it been based on the Board's original, as opposed to reconsideration, decision.\textsuperscript{1125} The Federal Circuit thus reasoned that when Graves filed the notice of appeal, the original Board decision was "unappealable."\textsuperscript{1126} The notice therefore did not divest the Board of jurisdiction to hear Graves' request for reconsideration.\textsuperscript{1127} In view of these particular circumstances, the Federal Circuit considered Graves' appeal simply suspended until the Board rendered its reconsideration decision.\textsuperscript{1128}

On the merits, the Federal Circuit concluded that the majority's claim construction, although a broad reading of the claims, was consistent with the specification.\textsuperscript{1129} Furthermore, the court held that the Rockwell patent would anticipate the claimed invention even under the claim construction asserted by the dissenting Board member.\textsuperscript{1130} To reach this conclusion, the Federal Circuit stated that one skilled in the art would have known of simultaneous output point monitoring, and have applied that knowledge to the series (nonsimultaneous) circuits of the Rockwell patent to achieve the claimed invention.\textsuperscript{1131}

2. Review

Federal Rule of Civil Procedure 52(a) provides that a district court "shall find the facts specially and state separately its conclusions of law thereon" in a case tried without a jury, or with an advisory jury.\textsuperscript{1132} This facilitates a meaningful review of a bench decision by the appellate court.

\textsuperscript{1123} Id. at 1150, 36 U.S.P.Q.2d (BNA) at 1699.
\textsuperscript{1124} Id. at 1151, 36 U.S.P.Q.2d (BNA) at 1700.
\textsuperscript{1125} Id. at 1150, 36 U.S.P.Q.2d (BNA) at 1699.
\textsuperscript{1126} Id., 36 U.S.P.Q.2d (BNA) at 1699.
\textsuperscript{1127} Id., 36 U.S.P.Q.2d (BNA) at 1699.
\textsuperscript{1128} Id. at 1151, 36 U.S.P.Q.2d (BNA) at 1700.
\textsuperscript{1129} See id. at 1152, 36 U.S.P.Q.2d (BNA) at 1701 (citing cases stating that broad reading of claim is not inconsistent with applicant's disclosures).
\textsuperscript{1130} Id., 36 U.S.P.Q.2d (BNA) at 1701.
\textsuperscript{1131} Id., 36 U.S.P.Q.2d (BNA) at 1701.
\textsuperscript{1132} FED. R. CIV. P. 52(a).
In Transmatic, Inc. v. Gulton Industries, Inc., the Federal Circuit vacated the district court’s damages award. The court held that the district court failed to provide sufficiently comprehensive factual findings pursuant to Rule 52(a). Transmatic had sued Gulton alleging infringement of its patent to a public transit bus interior lighting fixture used to illuminate advertising placards.

Despite Transmatic’s timely jury demand, the district court conducted a bench trial with an advisory jury. Prior to trial, the district court granted Transmatic’s motion for partial summary judgment that Transmatic’s patent was not invalid. The district court also granted Gulton’s motion for partial summary judgment of noninfringement literally. After trial, the district court found Gulton liable for infringement under the doctrine of equivalents, and held that Transmatic had not engaged in inequitable conduct. The district court further found that Gulton’s infringement was not willful and awarded $3,023,773 in damages.

The district court had apparently adopted the entire advisory jury verdict on damages. Both the jury and the trial judge rejected Gulton’s asserted downward adjustments to Transmatic’s lost profits claim. However, in view of the absence of detailed findings and reasoning by the district court, the Federal Circuit was unable to engage in any meaningful review of the award. The Federal Circuit thus vacated and remanded this portion of the district court’s judgment.

1135. Id. at 1276, 35 U.S.P.Q.2d (BNA) at 1040.
1136. Id. at 1272-74, 35 U.S.P.Q.2d (BNA) at 1037-38. The patent-in-suit was U.S. Reexamined Patent No. 4,887,415. Id. at 1272, 35 U.S.P.Q.2d (BNA) at 1037.
1137. Id. at 1274, 35 U.S.P.Q.2d (BNA) at 1038.
1138. Id., 35 U.S.P.Q.2d (BNA) at 1038.
1140. Id., 35 U.S.P.Q.2d (BNA) at 1038.
1141. Id., 35 U.S.P.Q.2d (BNA) at 1038.
1142. Id. at 1276, 35 U.S.P.Q.2d (BNA) at 1039.
1143. Id., 35 U.S.P.Q.2d (BNA) at 1039.
1144. Id., 35 U.S.P.Q.2d (BNA) at 1040.
1145. Id., 35 U.S.P.Q.2d (BNA) at 1040.
3. Sanctions

Federal Rule of Appellate Procedure 38 authorizes the Federal Circuit to award attorney fees and costs for a frivolous appeal. In Nasatka v. Delta Scientific Corp., the Federal Circuit dismissed the appeal as moot in light of an intervening decision of the district court, and imposed sanctions on Nasatka for pursuing a frivolous appeal. Nasatka had sued Delta alleging infringement of its patent to a vehicle security barricade. The sole accused device was a barricade that Delta claimed to have sold only to the United States government for use at the Pentagon near Washington, D.C. Because the United States Court of Federal Claims is the exclusive forum for suits against government supply contractors involving patented articles, Delta filed a motion to dismiss Nasatka's infringement action for lack of jurisdiction. In response, Nasatka brought a new allegation that barricades, which Delta sold to the World Trade Center in New York City, also infringed Nasatka's patent. Accordingly, Nasatka contended that district court jurisdiction remained proper.

The district court dismissed Nasatka's claims as to the Pentagon barricades for lack of jurisdiction. In addition, however, the district court granted Delta's request to dismiss without prejudice Nasatka's claims as to the World Trade Center barriers for failure to conduct an adequate investigation pursuant to Federal Rule of Civil Procedure 11 prior to filing suit. The district court further granted Delta's motion for attorney fees and costs under Rule 11.

Nasatka appealed the district court's dismissal of its claims as to the World Trade Center barricades. One month after Nasatka filed
its appeal with the Federal Circuit, however, the district court vacated its Rule 11 sanctions order. On Nasatka’s motion for reconsideration, the district court concluded that the prefiling investigation regarding the World Trade Center barricades was adequate after all.

The Federal Circuit advised Nasatka to dismiss its appeal voluntarily and refile its complaint alleging infringement by Delta’s World Trade Center barricades. Nasatka, however, ignored this suggestion because it believed that a favorable appellate ruling on the adequacy of the prefiling investigation would eliminate the basis for Delta’s motion before the district court for attorney fees and costs pursuant to 35 U.S.C. § 285 as a prevailing party. Despite further notice by the Federal Circuit of the possibility of sanctions against Nasatka under Rule 38, Nasatka continued to prosecute its appeal.

Not surprisingly, the Federal Circuit dismissed the appeal as moot and imposed sanctions against Nasatka. The court concluded that Nasatka’s concerns regarding the award of attorney fees and costs under § 285 did not justify continued appeal here, because Nasatka would have recourse in a subsequent appeal from any adverse district court order. In addition, because the district court’s reconsideration of its sanctions order did not moot that part of the district court’s original judgment regarding Nasatka’s claims as to the Pentagon barricades, the Federal Circuit let the original judgment stand.

In Munoz v. Strahm Farms, Inc., the Federal Circuit affirmed the district court’s judgment of invalidity, and imposed sanctions on Munoz for filing a frivolous appeal. Munoz had sued Strahm alleging infringement of its patent to a crop harvesting machine. Strahm counterclaimed for a declaratory judgment of, inter alia, invalidity based on anticipation. Munoz requested a jury trial

1158. Id. at 1581, 35 U.S.P.Q.2d (BNA) at 1375.
1159. Id., 35 U.S.P.Q.2d (BNA) at 1376.
1160. Id. at 1582, 35 U.S.P.Q.2d (BNA) at 1376.
1161. Id. at 1581, 35 U.S.P.Q.2d (BNA) at 1376.
1162. Id. at 1582, 35 U.S.P.Q.2d (BNA) at 1377.
1163. Id. at 1583, 35 U.S.P.Q.2d (BNA) at 1377.
1164. Id. at 1581, 35 U.S.P.Q.2d (BNA) at 1376.
1165. Id. at 1581 n.2, 35 U.S.P.Q.2d (BNA) at 1376 n.2.
1168. Id. at 502, 36 U.S.P.Q.2d (BNA) at 1500. The patent-in-suit was U.S. Patent No. 4,616,468.
held in multiple parts, beginning with a consideration of the anticipation issue.¹¹⁷⁰

During this first phase of trial, Strahm introduced evidence of a public use of another crop harvesting machine ("Elmore/Sahara") before the critical date for anticipation of the Munoz patent.¹¹⁷¹ Munoz did not dispute that the Elmore/Sahara machine would anticipate the claimed invention if Strahm could prove its public use before the critical date.¹¹⁷² The jury heard testimony from four Strahm witnesses that the Elmore/Sahara crop harvester was in public use before the critical date, and contrary testimony from seven Munoz witnesses.¹¹⁷³ In addition, over Munoz's objection, the trial judge admitted into evidence unauthenticated, dated slide pictures of the anticipatory machine and the testimony of a farm advisor ("Mayberry") who purportedly took them before the critical date.¹¹⁷⁴ At the end of the first phase of trial, the jury rendered a verdict of invalidity of the Munoz patent based on the anticipatory prior use of the Elmore/Sahara crop harvester.¹¹⁷⁵ Munoz declined to file a motion for judgment as a matter of law.¹¹⁷⁶

On appeal, Munoz challenged only the district court's evidentiary rulings.¹¹⁷⁷ In particular, Munoz asserted that the trial court erred in failing to exclude the Mayberry testimony and slides.¹¹⁷⁸ Munoz contended that the date information on the slides was inadmissible hearsay falling outside the business records exception.¹¹⁷⁹ The Federal Circuit disagreed.¹¹⁸⁰ Moreover, the court held that the Mayberry evidence was merely cumulative, and thus any error in its introduction at trial would be harmless.¹¹⁸¹

The Federal Circuit also ruled on Strahm's motion for attorney fees and costs pursuant to Federal Rule of Appellate Procedure 38 based on a frivolous appeal.¹¹⁸² The court held that Munoz's appeal was frivolous as filed and as argued.¹¹⁸³ The Federal Circuit cited the absence of any legal or factual ground for reversal of the jury's verdict

¹¹⁷⁰ Id., 36 U.S.P.Q.2d (BNA) at 1500.
¹¹⁷¹ Id., 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷² Id., 36 U.S.P.Q.2d (BNA) at 1500-01.
¹¹⁷³ Id. at 502-03, 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁴ Id. at 502, 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁵ Id. at 503, 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁶ Id., 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁷ Id., 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁸ Id., 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁷⁹ Id., 36 U.S.P.Q.2d (BNA) at 1501.
¹¹⁸⁰ Id. at 504, 36 U.S.P.Q.2d (BNA) at 1502.
¹¹⁸¹ Id., 36 U.S.P.Q.2d (BNA) at 1502.
¹¹⁸² Id., 36 U.S.P.Q.2d (BNA) at 1502.
¹¹⁸³ Id. at 504-05, 36 U.S.P.Q.2d (BNA) at 1502-03.
given the cumulative evidence presented on anticipatory public use. In addition, the Federal Circuit rested its decision to impose sanctions on: (1) the difficult burden on appeal faced by an appellant challenging a jury's factual findings; (2) the lack of a motion for judgment as a matter of law before the district court; and (3) Munoz's failure to address adequately in his briefs the substantial record evidence contrary to his position.

III. OBTAINING PATENT RIGHTS

This section provides an overview of cases involving issues of patentability. In addition, Part III comments on several procedural aspects of practice before the USPTO.

A. Patent Application Prosecution

I. Subject matter

Patent protection extends to only certain types of inventions as set forth by statute. Such inventions include processes, machines, manufactures, and compositions of matter. In recent years, the patentability of computer-related technology has been the focus of the Federal Circuit's inquiries into patentable subject matter.

In In re Beauregard, the Federal Circuit considered the Commissioner's motion to dismiss Beauregard's appeal of the rejection of his computer program product claims. The Commissioner conceded that computer programs in a tangible medium such as a floppy diskette constitute patentable subject matter. In view of the parties' agreement that the printed matter doctrine was inapplicable, the Federal Circuit vacated the Board's decision.

1184. Id., 36 U.S.P.Q.2d (BNA) at 1502-03.
1185. Id. at 505, 36 U.S.P.Q.2d (BNA) at 1503.
1186. For a statistical study of the Federal Circuit's dispositions in appeals from the USPTO regarding §§ 102, 103, and 112 rejections, see Dunner, supra note 207, at Charts 1C, 2C, and 3C.
1188. See id.; see also Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980) (holding that availability of patent protection applies to "anything under the sun that is made by man").
1189. See In re Alappat, 53 F.3d 1526, 1545, 31 U.S.P.Q.2d (BNA) 1545, 1588 (Fed. Cir. 1994) (in banc) (reversing rejection of claims to computer operating pursuant to software as nonstatutory subject matter under § 101).
1192. Id., 35 U.S.P.Q.2d (BNA) at 1384.
1193. Id., 35 U.S.P.Q.2d (BNA) at 1384.
2. Conditions for patentability

a. Novelty

To receive patent protection, an invention must be novel, that is, not anticipated by the prior art.\(^{1194}\) An invention is anticipated if a single prior art reference expressly or inherently discloses each and every limitation of the claimed invention.\(^{1195}\) Anticipation is a question of fact that the Federal Circuit reviews for clear error.\(^{1196}\)

A patent applicant may overcome an anticipation rejection by attesting to an actual reduction to practice of the claimed invention before the effective date of the cited reference.\(^{1197}\) A party seeking to show actual reduction to practice must prove by a preponderance of the evidence that the invention existed and worked for its intended purpose.\(^{1198}\) The Federal Circuit reviews de novo the ultimate conclusion of a reduction to practice and reviews for clear error the underlying fact findings.\(^{1199}\)

In \textit{In re Asahi/America Inc.},\(^{1200}\) the Federal Circuit reversed the Board's decision, which upheld the patent examiner's rejection of the claims as anticipated.\(^{1201}\) Asahi had filed a request for reexamination of its patent in view of a patent issued to Sweeney.\(^{1202}\) The subject matter of the Asahi reexamination application was a double pipe system in which the surrounding outer pipe would contain any leaks from the inner pipe.\(^{1203}\) If the Sweeney patent constituted prior art, it would anticipate, and thus invalidate, the Asahi patent.\(^{1204}\) Asahi therefore attempted to remove the Sweeney patent as a prior art reference by showing actual reduction to practice before


\(^{1197}\) See 37 C.F.R. § 1.31 (1995).

\(^{1198}\) See Lacotte v. Thomas, 758 F.2d 611, 619, 225 U.S.P.Q. (BNA) 633, 634 (Fed. Cir. 1985) (stating reduction to practice must be proven by preponderance of evidence).


\(^{1200}\) 68 F.3d 442, 33 U.S.P.Q.2d (BNA) 1921 (Fed. Cir. 1995).

\(^{1201}\) \textit{Id.} at 443, 33 U.S.P.Q.2d (BNA) at 1921.


\(^{1203}\) \textit{Id.} at 443, 33 U.S.P.Q.2d (BNA) at 1921-22.
the April 1987 filing date of the Sweeney patent application.\textsuperscript{1205} Asahi relied solely on trade articles published before April 1987 that
contained photographs of the double containment pipe system
claimed in the Asahi patent.\textsuperscript{1206} The Board agreed, however, with
the patent examiner that Asahi's evidence was insufficient to prove an
actual reduction to practice, and that the Sweeney patent thus stood
as anticipatory prior art to the Asahi patent.\textsuperscript{1207}

The Federal Circuit held that the double containment pipe systems
depicted in the photographs conformed to the claims of the Asahi
patent.\textsuperscript{1208} In addition, the court ruled that in view of the simple
nature of the claimed invention, mere construction was sufficient to
satisfy the criteria for actual reduction to practice.\textsuperscript{1209} The Federal
Circuit thus reversed the invalidity holding and remanded.\textsuperscript{1210}

\textit{b. Nonobviousness}

To receive patent protection, an invention must be nonobvious at
the time of the invention to one of ordinary skill in the relevant
art.\textsuperscript{1211} Nonobviousness is a question of law that the Federal Circuit
reviews de novo.\textsuperscript{1212} The conclusion of nonobviousness, however,
is subject to underlying factual findings, which the Federal Circuit
reviews for clear error.\textsuperscript{1213}

During patent prosecution, the patent examiner bears the burden
of establishing a prima facie case of obviousness.\textsuperscript{1214} Once the
examiner meets this initial burden, the burden shifts to the applicant
to provide rebuttal evidence to overcome the examiner's rejection.\textsuperscript{1215}

\begin{footnotes}
\textsuperscript{1205} \textit{Id.}, 33 U.S.P.Q.2d (BNA) at 1922.
\textsuperscript{1206} \textit{Id.}, 33 U.S.P.Q.2d (BNA) at 1922.
\textsuperscript{1207} \textit{Id.} at 444, 33 U.S.P.Q.2d (BNA) at 1922.
\textsuperscript{1208} \textit{Id.} at 446-47, 33 U.S.P.Q.2d (BNA) at 1924.
\textsuperscript{1209} \textit{Id.} at 447, 33 U.S.P.Q.2d (BNA) at 1924.
\textsuperscript{1210} \textit{Id.}, 33 U.S.P.Q.2d (BNA) at 1924.
\textsuperscript{1212} See \textit{In re Donaldson Co.}, 16 F.3d 1189, 1192, 29 U.S.P.Q.2d (BNA) 1845, 1848 (Fed. Cir. 1994) (in banc).
\textsuperscript{1215} See \textit{id.; see also In re Dillon}, 919 F.2d 688, 692-93, 16 U.S.P.Q.2d (BNA) 1897, 1901 (Fed. Cir. 1990) (in banc) ("Such rebuttal or argument can consist of . . . any other argument or presentation of evidence that is pertinent."), \textit{cert. denied}, 500 U.S. 904 (1991).
\end{footnotes}
In *In re Deuel*,¹²¹⁶ the Federal Circuit reversed the Board’s decision, which upheld the patent examiner’s final rejection of the claims as obvious.¹²¹⁷ The subject matter of the application involved DNA encoding heparin-binding growth factor (“HBGF”) of bovine and human origins.¹²¹⁸ As such, this appeal presented the Federal Circuit with the challenge of merging the technical realities of biotechnology inventions with traditional patent law principles.¹²¹⁹ The arrival of such appeals has been recent, only since *In re O’Farrell* and uncommon, with only about fourteen substantive cases since 1988.¹²²¹ The frequency of these appeals, however, will likely increase as continually greater numbers of biotechnology patent applications are filed with USPTO.

Deuel achieved the claimed invention by first isolating bovine uterine HBGF protein and determining the amino acid sequence of a small beginning portion of the protein.¹²²² Next, Deuel chemically synthesized a single strand of DNA (“oligonucleotide”) corresponding to this short amino acid sequence.¹²²³ Using this oligonucleotide, Deuel isolated the naturally occurring bovine HBGF gene from

¹²¹⁶. 51 F.3d 1552, 34 U.S.P.Q.2d (BNA) 1210 (Fed. Cir. 1995).
¹²¹⁸. *Id.*, 34 U.S.P.Q.2d (BNA) at 1211. The application at issue was U.S. Application Serial No. 07/542,232. *Id.* at 1553, 34 U.S.P.Q.2d (BNA) at 1211.
¹²¹⁹. For a comprehensive treatise on biotechnology patent law, see HAROLD C. WEGNER, PATENT LAW IN BIOTECHNOLOGY CHEMICALS & PHARMACEUTICALS (2d ed. 1994).
¹²²⁵. *Id.*, 34 U.S.P.Q.2d (BNA) at 1212.
a collection of DNAs ("cDNA library") encoding bovine uterine proteins in general. Deuel then determined the entire nucleotide sequence of the bovine uterine HBGF gene and predicted the amino acid sequence of the remaining unknown portion of the bovine uterine HBGF protein. These bovine sequences constituted part of the claimed invention.

In addition, Deuel used the oligonucleotide to isolate the naturally occurring human HBGF gene from the human placental cDNA library. Similarly, Deuel then determined the entire nucleotide sequence of the human placental HBGF gene and predicted the amino acid sequence of the complete human placental HBGF protein. These human sequences also constituted part of the claimed invention.

The patent examiner asserted that the claimed invention would have been prima facie obvious in view of the prior art. The prior art upon which the examiner relied included a reference ("Maniatis") describing gene cloning methods and a reference ("Bohlen") disclosing the partial amino acid sequences of proteins composing a subclass of human and bovine HBGF. The examiner maintained that Bohlen would have motivated one skilled in the art to clone the respective human and bovine HBGF genes according to Maniatis to produce human and bovine HBGF protein.

In rebuttal, Deuel contended that the prior art taught away from the claimed invention, that is, Bohlen suggested that one skilled in the art would not have been motivated to use the same oligonucleotide to isolate the genes for human and bovine HBGF, as Deuel ultimately did. The examiner rejected Deuel's "teaching away" argument, however, apparently relying on the unfounded notion that HBGF genes were homologous across species. The Board upheld the examiner's rejection, focusing instead on the allegedly routine nature of cloning.

1224. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1225. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1226. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1227. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1228. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1229. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1230. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1231. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1232. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1233. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1234. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1235. Id., 34 U.S.P.Q.2d (BNA) at 1212.
1236. Id., 34 U.S.P.Q.2d (BNA) at 1212.
In reversing the rejection of Deuel's claims, the Federal Circuit relied on precedent stating that, absent prior art suggesting the specific claimed DNA, a particular DNA sequence is not obvious simply because the prior art discloses general methods for isolating DNA.\textsuperscript{1236} The court further applied precedent regarding chemical inventions that the prior art disclosure of a broad genus does not necessarily render obvious a specific compound within the genus.\textsuperscript{1237} Because many different DNA sequences can encode the identical protein, the court concluded that the simple disclosure of the protein does not render any particular one of those DNA sequences obvious, absent prior art specifically pointing one out.\textsuperscript{1238} The Federal Circuit also discounted the Board's contentions regarding the routine nature of Deuel's work as mere speculation and impermissible hindsight reconstruction of the claimed invention.\textsuperscript{1239}

In \textit{In re Ochiai},\textsuperscript{1240} the Federal Circuit held that a claimed process is not prima facie obvious based solely on its conventional nature where the process involves a novel, nonobvious compound.\textsuperscript{1241} Recently enacted legislation amended 35 U.S.C. § 103 to provide statutory authority for this rule.\textsuperscript{1242} This provision, however, was limited to certain biotechnology process inventions.\textsuperscript{1243} Through its holding in \textit{Ochiai},\textsuperscript{1244} the Federal Circuit has essentially facilitated the general application of this new legislation.\textsuperscript{1245}

The subject matter of the application was a process for preparing a cephem compound having antibiotic properties.\textsuperscript{1246} Specifically, the claimed process required the reaction of the acyl side chain of a particular organic acid having a 2-aminothiazolyl group with certain amines.\textsuperscript{1247} The novelty and nonobviousness of the organic acid starting material and the cephem product was not in dispute.\textsuperscript{1248}

\textsuperscript{1236} \textit{Id.} at 1559, 34 U.S.P.Q.2d (BNA) at 1215 (reaffirming \textit{In re Bell}, 991 F.2d 781, 785, 26 U.S.P.Q.2d (BNA) 1529, 1532 (Fed. Cir. 1993)).
\textsuperscript{1237} \textit{Id.}, 34 U.S.P.Q.2d (BNA) at 1215 (citing with approval \textit{In re Baird}, 16 F.3d 380, 29 U.S.P.Q.2d (BNA) 1550 (Fed. Cir. 1994)).
\textsuperscript{1238} \textit{Id.} at 1559-59, 34 U.S.P.Q.2d (BNA) at 1215.
\textsuperscript{1239} \textit{Id.} at 1559, 34 U.S.P.Q.2d (BNA) at 1215.
\textsuperscript{1240} 71 F.3d 1565, 37 U.S.P.Q.2d (BNA) 1127 (Fed. Cir. 1995).
\textsuperscript{1241} \textit{In re Ochiai}, 71 F.3d 1565, 1569-70, 37 U.S.P.Q.2d (BNA) 1127, 1131 (Fed. Cir. 1995).
\textsuperscript{1243} \textit{Id.}
\textsuperscript{1244} \textit{Id.}
\textsuperscript{1246} \textit{Ochiai}, 71 F.3d at 1566-67, 37 U.S.P.Q.2d (BNA) at 1128-29. The application at issue was U.S. Application Serial No. 07/462,292. \textit{Id.} at 1566, 37 U.S.P.Q.2d (BNA) at 1128.
\textsuperscript{1247} \textit{Id.} at 1566-67, 37 U.S.P.Q.2d (BNA) at 1128-29.
\textsuperscript{1248} \textit{Id.}, 37 U.S.P.Q.2d (BNA) at 1128-29.
The patent examiner nevertheless rejected the process claims as obvious over six prior art references. Although the prior art described a standard acylation process for producing cephem compounds with the claimed amines, the prior art contained no suggestion or motivation to make the claimed cephem compounds using the claimed organic acids.

The Board upheld the patent examiner’s obviousness rejection. The patentability of the starting materials or final products, the Board ruled, was irrelevant to the obviousness of the claimed process. Relying on the Federal Circuit’s holding in In re Durden, the Board concluded that the claimed process was obvious based on the routine nature of the acylation reaction, which the prior art amply demonstrated.

On appeal, the parties asserted that an irreconcilable conflict existed in the relevant Federal Circuit precedent. The Federal Circuit disagreed, stating that despite the existence of “minor tensions” in these opinions, the actual holdings presented no actual conflict. The court emphasized that the precedent was in clear agreement concerning the inappropriateness of per se rules in the fact-specific obviousness inquiry. In this case, the Federal Circuit concluded that the those of ordinary skill in the art could hardly have chosen the novel, nonobvious, claimed organic acid starting material to acylate the known amine to produce the claimed cephem compounds.

The court discounted the Board’s reliance on an asserted similarity between the claimed organic acids and those described in the prior art. The absence in the prior art of any teaching or suggestion to obtain the particular claimed cephem

1250. Id. at 1567-68, 37 U.S.P.Q.2d (BNA) at 1129.
1251. Id. at 1568, 37 U.S.P.Q.2d (BNA) at 1130.
1252. Id., 37 U.S.P.Q.2d (BNA) at 1130.
1254. Ochiai, 71 F.3d at 1568-69, 37 U.S.P.Q.2d (BNA) at 1130.
1256. Ochiai, 71 F.3d at 1571, 37 U.S.P.Q.2d (BNA) at 1132.
1257. Id. at 1571-72, 37 U.S.P.Q.2d (BNA) at 1133.
1258. Id. at 1569-70, 37 U.S.P.Q.2d (BNA) at 1131.
1259. Id. at 1570-71, 37 U.S.P.Q.2d (BNA) at 1131-32.
products by the claimed process mandated the conclusion of nonobviousness. The Federal Circuit thus reversed the Board’s decision.

In *In re Chu*, the Federal Circuit held that the USPTO may not disregard evidence and arguments that an applicant proffers to traverse an obviousness rejection simply because the specification does not contain this information. The court reiterated that a proper obviousness inquiry entails a consideration of the totality of the record. On the merits, the Federal Circuit concluded that the features which distinguished the claimed invention over the prior art were not mere design choices and would not have been obvious to one skilled in the art. The court thus reversed the Board’s decision.

The subject matter of the claims involved a device to control fossil fuel emissions following combustion in boilers. The patent examiner rejected the claims as obvious in view of two prior art patents ("Doyle" and "Szymanski"). According to the examiner, the Doyle patent disclosed a device having all the claimed elements except a housing for fabric filter bags, which contained bag retainers with a selective catalytic reduction catalyst inside. In addition, the Szymanski patent taught a filter containing a catalyst in the filter fabric rather than in the bag retainer.

Chu responded that Doyle was not prior art, because Chu’s application was a continuation-in-part of the application from which the Doyle patent issued. Furthermore, Chu argued that in any event neither patent even suggested placing the catalyst in the bag retainers as claimed. Chu asserted that this placement provided the

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1260. *Id.* at 1570, 37 U.S.P.Q.2d (BNA) at 1132.
1265. *Id.* at 299, 36 U.S.P.Q.2d (BNA) at 1095.
1266. *Id.*; 36 U.S.P.Q.2d (BNA) at 1095.
1267. *Id.* at 294-95, 36 U.S.P.Q.2d (BNA) at 1090-92. The application at issue was U.S. Application Serial No. 07/995,546. *Id.* at 294, 36 U.S.P.Q.2d (BNA) at 1090.
1268. *Id.* at 295, 36 U.S.P.Q.2d (BNA) at 1092.
1269. *Id.*; 36 U.S.P.Q.2d (BNA) at 1092.
1270. *Id.* at 296, 36 U.S.P.Q.2d (BNA) at 1092.
1271. *Id.*; 36 U.S.P.Q.2d (BNA) at 1092.
1272. *Id.*; 36 U.S.P.Q.2d (BNA) at 1092.
unexpected advantage of stability during pulse-jet cleaning.\textsuperscript{1273} Chu also submitted technical evidence to support this assertion.\textsuperscript{1274}

The Board rejected Chu’s first contention, reasoning that the Doyle patent was prior art under the circumstances because of the lack of complete identity of inventors between the applications.\textsuperscript{1275} In addition, the Board concluded that the claimed catalyst placement was an obvious variation as a mere design choice.\textsuperscript{1276} In so ruling, the Board found Chu’s evidence unpersuasive because the specification made no mention of such an unexpected property.\textsuperscript{1277}

The Federal Circuit agreed with the Board’s conclusion regarding the prior art effect of the Doyle patent but for a different reason.\textsuperscript{1278} The court held that Chu was not entitled to rely on the filing date of the Doyle patent application because it did not disclose the subject matter that Chu now claimed.\textsuperscript{1279} The Doyle patent was thus prior art to Chu’s application.\textsuperscript{1280} The appellate court, however, concluded that the Board erred in discounting the impact of Chu’s rebuttal evidence concerning catalyst placement.\textsuperscript{1281} The Federal Circuit noted the absence of any legal authority holding that the failure to specify an unexpected property of the invention in the specification constitutes a waiver of any such subsequent argument to overcome an obviousness rejection.\textsuperscript{1282} Moreover, on the totality of the record, Chu’s claimed invention would not have been obvious in view of the prior art patents.\textsuperscript{1283}

In \textit{In re Soni},\textsuperscript{1284} the Federal Circuit reversed the Board’s decision, which upheld the patent examiner’s final rejection of the claims as obvious.\textsuperscript{1285} The subject matter of the application involved conductive polymer compositions.\textsuperscript{1286} In rebuttal to the patent examiner’s rejection of the claims as prima facie obvious, Soni argued that the claimed compositions exhibited unexpectedly improved physical and

\textsuperscript{1273} Id., 36 U.S.P.Q.2d (BNA) at 1092.
\textsuperscript{1274} Id. at 299, 36 U.S.P.Q.2d (BNA) at 1095.
\textsuperscript{1275} Id. at 296, 36 U.S.P.Q.2d (BNA) at 1092.
\textsuperscript{1276} Id. at 298, 36 U.S.P.Q.2d (BNA) at 1092.
\textsuperscript{1277} Id., 36 U.S.P.Q.2d (BNA) at 1092.
\textsuperscript{1278} Id. at 297, 36 U.S.P.Q.2d (BNA) at 1093.
\textsuperscript{1279} Id., 36 U.S.P.Q.2d (BNA) at 1093.
\textsuperscript{1280} Id., 36 U.S.P.Q.2d (BNA) at 1093.
\textsuperscript{1281} Id. at 298, 36 U.S.P.Q.2d (BNA) at 1094.
\textsuperscript{1282} Id. at 299, 36 U.S.P.Q.2d (BNA) at 1095.
\textsuperscript{1283} Id., 36 U.S.P.Q.2d (BNA) at 1095.
\textsuperscript{1284} 54 F.3d 746, 34 U.S.P.Q.2d (BNA) 1684 (Fed. Cir. 1995).
\textsuperscript{1285} In \textit{re Soni}, 54 F.3d 746, 748-49, 34 U.S.P.Q.2d (BNA) 1684, 1685-86 (Fed. Cir. 1995).
\textsuperscript{1286} Id. at 747-48, 34 U.S.P.Q.2d (BNA) at 1685. The application at issue was U.S. Application Serial No. 07/462,893. Id. at 747, 34 U.S.P.Q.2d (BNA) at 1685.
electrical properties compared to lower-weight prior art compositions.\textsuperscript{1287} Soni's contention failed to persuade the examiner or the Board.\textsuperscript{1288} The Board noted especially that Soni's position was unsupported by any data.\textsuperscript{1289} The Federal Circuit disagreed, relying on specific data in Soni's specification showing improved properties.\textsuperscript{1290} The court held that absent evidence to the contrary, an applicant's assertion of surprise supported with a showing of substantially improved results suffices to establish unexpected results.\textsuperscript{1291} Given Soni's duty of candor, and the absence of a sound basis to question Soni's assertion, the Federal Circuit held that the Board clearly erred in finding that Soni did not establish unexpected results.\textsuperscript{1292}

In In re GPAC Inc.,\textsuperscript{1293} the Federal Circuit held that a proper obviousness inquiry requires consideration of prior art not only in the field of the invention, but also in analogous arts.\textsuperscript{1294} The court concluded that certain references cited by the patent examiner constituted analogous prior art because they were "reasonably pertinent to the particular problem confronting the inventor."\textsuperscript{1295} The Federal Circuit affirmed the Board's decision, which upheld the patent examiner's final rejection of the claims as obvious in light of analogous prior art.\textsuperscript{1296}

The context of the case was a second reexamination proceeding questioning the validity of GPAC's patent.\textsuperscript{1297} The USPTO had issued a reexamination certificate after a first proceeding in which GPAC overcame the patent examiner's rejections for anticipation and obviousness.\textsuperscript{1298} The subject matter of the application involved the control of airborne asbestos contamination during asbestos removal from an existing building.\textsuperscript{1299} To provide a stronger factual basis for obviousness in the second reexamination, the patent examiner

\textsuperscript{1287} Id. at 748, 34 U.S.P.Q.2d (BNA) at 1685.
\textsuperscript{1288} Id., 34 U.S.P.Q.2d (BNA) at 1685.
\textsuperscript{1289} Id. at 749, 34 U.S.P.Q.2d (BNA) at 1686.
\textsuperscript{1290} Id. at 750, 34 U.S.P.Q.2d (BNA) at 1687.
\textsuperscript{1291} Id. at 751, 34 U.S.P.Q.2d (BNA) at 1688.
\textsuperscript{1292} Id., 34 U.S.P.Q.2d (BNA) at 1686.
\textsuperscript{1293} 57 F.3d 1573, 35 U.S.P.Q.2d (BNA) 1116 (Fed. Cir. 1995).
\textsuperscript{1295} Id. at 1578, 35 U.S.P.Q.2d (BNA) at 1120 (quoting In re Wood, 599 F.2d 1032, 1036, 202 U.S.P.Q. (BNA) 171, 174 (C.C.P.A. 1979)).
\textsuperscript{1296} Id. at 1576, 1581-84, 35 U.S.P.Q.2d (BNA) at 1118, 1122-25.
\textsuperscript{1297} Id. at 1576, 35 U.S.P.Q.2d (BNA) at 1118-19.
\textsuperscript{1298} Id., 35 U.S.P.Q.2d (BNA) at 1118.
\textsuperscript{1299} Id. at 1575, 35 U.S.P.Q.2d (BNA) at 1118. The reexamination proceeding involved U.S. Patent No. 4,604,111. Id., 35 U.S.P.Q.2d (BNA) at 1118.
cited twelve references not before the USPTO in the first proceeding. The patent examiner used these twelve references in combination with a principal reference to support an obviousness rejection. The Board upheld the rejection.

The Federal Circuit recognized that the field of invention was asbestos removal with containment control. In contrast, the twelve references described dampers designed to stop the back flow of air caused by negative pressure in a ventilation system. The court, however, concluded that although these references involved different fields of endeavor, an inventor concerned primarily with asbestos containment nonetheless logically would have considered them. The Federal Circuit thus discerned no clear error in the decision to consider these twelve secondary references as analogous art.

In In re Napier, the Federal Circuit affirmed the Board’s decision, which upheld the patent examiner’s final rejection of the claims as obvious. The subject matter of the application involved noise-reduced auxiliary power units (“APUs”) that jet aircraft use when on the ground. The patent examiner stated that the claimed invention was obvious in view of a prior art patent issued to Johnson, which taught a nozzle designed to reduce noise from jet aircraft engines during takeoff. Napier argued that one of ordinary skill in the art would not have been motivated to apply the teachings of Johnson regarding jet engines to accomplish noise reduction in APUs. The Board disagreed, holding that the desire for significant aircraft noise reduction supplied the requisite motivation. Discerning no clear error in the Board’s findings, the Federal Circuit affirmed the decision.

1300. Id. at 1576, 35 U.S.P.Q.2d (BNA) at 1118.
1301. Id., 35 U.S.P.Q.2d (BNA) at 1118.
1302. Id., 35 U.S.P.Q.2d (BNA) at 1118.
1303. Id. at 1578, 35 U.S.P.Q.2d (BNA) at 1120.
1304. Id., 35 U.S.P.Q.2d (BNA) at 1120.
1305. Id. at 1578-79, 35 U.S.P.Q.2d (BNA) at 1120-21.
1306. Id. at 1579, 35 U.S.P.Q.2d (BNA) at 1121.
1309. Id. at 612, 34 U.S.P.Q.2d (BNA) at 1783.
1310. Id., 34 U.S.P.Q.2d (BNA) at 1783.
1311. The application at issue involved U.S. Application Serial No. 07/467,179. Id. at 611, 34 U.S.P.Q.2d (BNA) at 1783.
1312. Id., 34 U.S.P.Q.2d (BNA) at 1783.
1313. Id., 34 U.S.P.Q.2d (BNA) at 1783-86.
3. Disclosure requirements

To obtain patent protection, an inventor must set forth an adequate written description of the invention. In addition, an inventor must provide a disclosure sufficient to enable any person skilled in the art to practice the invention. The adequacy of a written description is a question of fact that the Federal Circuit reviews for clear error.

In *In re Brana*, the Federal Circuit reversed the Board’s decision, which upheld the patent examiner’s rejection of the claims of the application for failure to satisfy the requirements of the first paragraph of 35 U.S.C. § 112. As in *Deuel*, the court here considered the technical realities of a biotechnology invention with traditional patent law principles. The subject matter of the application involved pharmaceutical compositions having antitumor activity in humans.

In the final office action, the patent examiner rejected the claims of the application, because the specification failed to (1) “disclose a specific disease against which the claimed compounds are useful” and (2) “establish a reasonable expectation that the claimed compounds had a practical utility.” The Board upheld the examiner’s rejection under § 112, first paragraph, but stated that a rejection under § 101 would likewise have been proper.

Regarding the examiner’s first ground for rejection, the Federal Circuit noted that the applicants had tested the claimed compounds on tumor cell lines derived from animals suffering from lymphocytic leukemias. The court thus concluded that the disclosed ameliorative activity of the claimed compounds on tumor cells constituted a proper allegation of sufficiently specific use. As for the second ground for rejection, the Federal Circuit held that the patent examiner failed to satisfy the initial burden of challenging a presum-
tively correct assertion of utility in the disclosure. The court noted that the prior art references upon which the Board relied did not question the usefulness of any related compound as an antitumor agent. Moreover, one of the references disclosed compounds, structurally similar to those of the claimed invention, that possessed proven in vivo effectiveness as chemotherapeutics against various types of tumors. The Federal Circuit held that even had the USPTO satisfied its initial burden, the applicants provided evidence of statistically significant animal tests sufficient to convince one skilled in the art of the inventions' asserted utility. To require in vivo human testing akin to Phase II clinical studies conducted by the Food and Drug Administration would place a higher standard for § 112, first paragraph, compliance on applicants seeking patent protection for pharmaceuticals for humans.

In Eiselstein v. Frank, the Federal Circuit affirmed part of the Board's decision, upholding the interference examiner's determination that certain claims were invalid for anticipation. Eiselstein and Frank, respectively, owned an issued patent and a patent application to the same invention of certain sturdy, tensile, and corrosion-resistant, nickel-based alloys used to make deep-drilling equipment in the mining and oil industries. In an interference proceeding, Eiselstein claimed priority over Frank as the first inventor of this subject matter. In particular, the parties both alleged first invention of such a nickel-based alloy having a nickel content "with nickel being at least about 50% of the alloy." Although the Eiselstein patent issued from an application filed in October 1986, Eiselstein sought the benefit of the earlier effective filing date of April 1981, based on its "grandparent" application. This would antedate the May 1986 filing date of Frank's patent application. In considering this issue, the examiner determined that certain claims

1325. Id. at 1566, 34 U.S.P.Q.2d (BNA) at 1441.
1326. Id., 34 U.S.P.Q.2d (BNA) at 1441.
1327. Id., 34 U.S.P.Q.2d (BNA) at 1441.
1328. Id. at 1567, 34 U.S.P.Q.2d (BNA) at 1441-42.
1329. Id. at 1567-68, 34 U.S.P.Q.2d (BNA) at 1442.
1330. 52 F.3d 1035, 34 U.S.P.Q.2d (BNA) 1467 (Fed. Cir. 1995).
1333. Id., 34 U.S.P.Q.2d (BNA) at 1468.
1334. Id. at 1037, 34 U.S.P.Q.2d (BNA) at 1468.
1335. Id. at 1036-38, 34 U.S.P.Q.2d (BNA) at 1468-69.
1336. Id. at 1036, 34 U.S.P.Q.2d (BNA) at 1468.
of the Eiselstein patent were not entitled to the benefit of the filing date of the grandparent application, because the grandparent application did not adequately describe the invention claimed in the Eiselstein patent.\(^{1337}\) Furthermore, the examiner decided that these claims of the Eiselstein patent were invalid as anticipated by Eiselstein’s European patent application, which published in December 1982.\(^ {1338}\) The issues of priority of invention and invalidity of the claims of the Eiselstein patent therefore both depended on whether the grandparent application contained an adequate written description of the claimed invention.\(^ {1339}\) Eiselstein appealed the anticipation issue.\(^ {1340}\)

The examiner’s written description ruling relied on the fact that the grandparent application recited a nickel content of “45% to 55%,” whereas one set of claims of the Eiselstein patent specified a nickel content of “about 50% to about 60%” (“claim set one”), while a second set of claims stated a nickel content of “about 45% to 55%” (“claim set two”).\(^ {1341}\) The Board upheld the examiner’s finding of inadequate written description as to claim set one and further held claim set two unpatentable for the same reason.\(^ {1342}\) The Federal Circuit affirmed the Board’s decision as to claim set one but reversed as to claim set two.\(^ {1343}\)

As an initial matter, the Federal Circuit recited precedent that an earlier application from which a party seeks a filing date benefit for its later application need not contain a written description employing the exact same words as those found in the later application.\(^ {1344}\) The court noted that the grandparent application here used vague, imprecise language to express amounts of metal contained in its alloys.\(^ {1345}\) One skilled in the art, having read the grandparent application, would interpret “45% to 55%” to mean “about 45% to about 55%.”\(^ {1346}\) Because one skilled in the art would readily know that Eiselstein possessed the subject matter claimed in claim set two at the time of filing the grandparent application, claim set two of the Eiselstein patent was entitled to the benefit of the earlier filing date.

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\(^{1337}\) Id. at 1087, 34 U.S.P.Q.2d (BNA) at 1469.

\(^{1338}\) Id., 34 U.S.P.Q.2d (BNA) at 1469.

\(^{1339}\) Id. at 1088, 34 U.S.P.Q.2d (BNA) at 1469-70.

\(^{1340}\) Id., 34 U.S.P.Q.2d (BNA) at 1469-70.

\(^{1341}\) Id. at 1089, 34 U.S.P.Q.2d (BNA) at 1470.

\(^{1342}\) Id. at 1087-89, 34 U.S.P.Q.2d (BNA) at 1470.

\(^{1343}\) Id. at 1089-40, 34 U.S.P.Q.2d (BNA) at 1470-71.

\(^{1344}\) Id. at 1088-89, 34 U.S.P.Q.2d (BNA) at 1470.

\(^{1345}\) Id. at 1089, 34 U.S.P.Q.2d (BNA) at 1471.

\(^{1346}\) Id., 34 U.S.P.Q.2d (BNA) at 1471.
of the grandparent application. The Federal Circuit thus held that the Board clearly erred in finding claim set two invalid as anticipated.

As for claim set one, the Federal Circuit affirmed the Board's decision. The court found that however imprecise the grandparent application was regarding nickel content, that is, even if construed as "about 45% to about 55%," the grandparent application simply did not describe nickel-based alloys having "about 50% to about 60%" as set forth in claim set one of the patent. The disparity was just too great.

B. Patent Office Matters

During 1995, the Federal Circuit issued two precedential opinions regarding aspects of practice before the USPTO.

1. Maintenance fees

After a patent issues, the patent holder must make periodic payments of maintenance fees throughout the patent term. The penalty for failure to pay the required fees in a timely manner is expiration of the patent. The Commissioner of Patents and Trademarks has discretion to accept late payments upon a showing of unavoidable delay. The applicable standard is the level of due care that a reasonably prudent person would exercise.

In Ray v. Lehman, the Federal Circuit affirmed the district court's summary judgment in favor of the Commissioner. The patent agent responsible for Ray's application retired from practice after the patent issued in August 1984. Ray discovered in March 1990 that his patent had expired for failure to pay the maintenance fees. 1349. Id., 34 U.S.P.Q.2d (BNA) at 1786. The patent-in-suit was U.S. Patent No. 4,466,797. 1350. Id., 34 U.S.P.Q.2d (BNA) at 1786.

1347. Id. at 1039-40, 34 U.S.P.Q.2d (BNA) at 1471.
1348. Id. at 1040, 34 U.S.P.Q.2d (BNA) at 1471.
1349. Id., 34 U.S.P.Q.2d (BNA) at 1471.
1350. Id., 34 U.S.P.Q.2d (BNA) at 1471.
1351. Id., 34 U.S.P.Q.2d (BNA) at 1471.
1353. Id.
1354. See id. § 41(c)(1) (discussing payment of maintenance fees).
1358. Id., 34 U.S.P.Q.2d (BNA) at 1786. The patent-in-suit was U.S. Patent No. 4,466,797. Id., 34 U.S.P.Q.2d (BNA) at 1786.
fee due in 1988.\footnote{1359} Ray's patent agent had been unable to contact Ray.\footnote{1360} Ray asserted lack of knowledge of the payment requirement, and filed a petition to reinstate his patent for failure to pay the required maintenance fees.\footnote{1361} The Commissioner denied Ray's initial and reconsideration petitions, finding that lack of knowledge did not constitute unavoidable delay.\footnote{1362} The district court affirmed the Commissioner's decision.\footnote{1363}

The Federal Circuit rejected Ray's contentions that the Commissioner's standard for unavoidable delay here was inconsistent with the analogous standard as used in other statutory provisions.\footnote{1364} In addition, the Federal Circuit declined to decide whether the USPTO has a duty to provide actual notice to patent holders of the maintenance fee deadlines.\footnote{1365} The court noted that, in this case, the USPTO had in fact attempted to issue such notices.\footnote{1366}

2. Admission to practice

Only registered patent agents and attorneys may practice before the USPTO.\footnote{1367} In general, applicants for registration must possess certain technical qualifications and pass the examination for admission.\footnote{1368}

In Premysler v. Lehman,\footnote{1369} the Federal Circuit affirmed the district court's summary judgment in favor of the Commissioner.\footnote{1370} The Commissioner had denied an application to sit for the USPTO registration examination.\footnote{1371} The Commissioner concluded that Premysler was unable to show the requisite technical expertise.\footnote{1372} The Federal Circuit held that the Commissioner did not abuse his discretion by rejecting Premysler's application.\footnote{1373}
Premysler did not have a bachelor's degree in a scientific subject as required by regulation. He first sought to take the registration examination in 1990, but the Office of Enrollment and Discipline rejected his application. In 1990, an applicant could demonstrate the requisite technical competence through scientific course credit and practical experience. Already working with a registered patent attorney, Premysler enrolled in physics courses to satisfy the requirements. In 1991, however, the requirements changed. By 1993, when Premysler again applied to sit for the examination, the requirements no longer allowed the combination of course credit and apprenticeship experience as proof of technical competence.

In any event, the Commissioner considered evidence of Premysler's apprenticeship experience. The Commissioner, however, found the length and nature of Premysler's apprenticeship insufficient. The Commissioner thus denied Premysler's application. The Federal Circuit ascertained no reversible error in either the promulgation of the interpretive rules or the Commissioner's actions.

IV. THEMES

This last section of the Article briefly considers jurisprudential themes developed through the opinions of the court issued during 1995. Beyond the significance of the substantive patent law holdings of this past year's cases, the decisions, particularly the in banc decisions, appear to reflect an attempt by the Federal Circuit to merge general legal principles with the arguably esoteric nature of the patent law. Two themes are most apparent: (1) the Seventh Amendment implications of parsing roles for the judge and the jury in the resolution of particular individual patent law issues; and (2) the inconsistency between the Federal Circuit's present standard of review of USPTO decisions and the standard of review of agency decisions under the Administrative Procedure Act. Repeated statements by the court in both holdings and dicta this past year suggest a level of

1374. Id. at 388-89, 37 U.S.P.Q.2d (BNA) at 1058.
1375. Id. at 389, 37 U.S.P.Q.2d (BNA) at 1058.
1376. Id. at 388, 37 U.S.P.Q.2d (BNA) at 1058.
1377. Id. at 389, 37 U.S.P.Q.2d (BNA) at 1059.
1380. Id. at 390, 37 U.S.P.Q.2d (BNA) at 1060.
1381. Id., 37 U.S.P.Q.2d (BNA) at 1060.
1382. Id., 37 U.S.P.Q.2d (BNA) at 1060.
1383. Id., 37 U.S.P.Q.2d (BNA) at 1060.
concern about these issues that will likely continue in the year to come.

A. Roles of Judge and Jury

On several occasions during 1995, the Federal Circuit visited the issue of the respective roles of the judge and the jury in patent cases. These instances have invoked a broad spectrum of reactions by members of the court. Indeed, the various opinions in Markman and Hilton Davis offered some dramatic statements regarding this matter. For example, in Markman, Judge Mayer concurred in the judgment but vigorously criticized the majority's reasoning that eliminated any role of the jury in proper claim construction. Judge Mayer wrote:

Today the court jettisons more than two hundred years of jurisprudence and eviscerates the role of the jury preserved by the Seventh Amendment of the Constitution of the United States; it marks a sea change in the course of patent law that is nothing short of bizarre. Sadly, this decision represents a secession from the mainstream of the law. It portends turbulence and cynicism in patent litigation. For this is not just about claim language, it is about ejecting juries from infringement cases. All these pages and all these words cannot camouflage what the court well knows: to decide what the claims mean is nearly always to decide the case.

But today’s action is of a piece with a broader bid afoot to essentially banish juries from patent cases altogether. . . . Declaring that the jury is a “black box” incapable of a “reasoned decision,” several judges of the court have already advised that they are aboard this campaign. The quest to free patent litigation from the “unpredictability” of jury verdicts, and generalist judges, results from insular dogmatism inspired by unwarrantable elitism; it is unconstitutional.

1384. A likely cause of this is the steady increase in recent years of the relative number of patent cases tried to a jury. See Administrative Office of the U.S. Courts, Annual Reports of the Director, 1975-1994, at Table C-4 (1995) (providing percentage statistics of patent jury trials). In 1994, 70% of district court patent cases were jury trials, as compared with 11.9% in 1975.

1385. See Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1537, 35 U.S.P.Q.2d (BNA) 1641, 1662 (Fed. Cir. 1995) (in banc) (Plager, Archer, Rich, & Lourie, JJ., dissenting) (“By today’s opinion, the majority essentially blesses the continued unfettered use of the doctrine of equivalents, at the discretion of a jury, noting that in some cases at least the ritual chant will be quite sufficient justification for a rewriting of the claimed limitations.”), cert. granted, 116 S. Ct. 1014 (1996).


1387. Id. at 989, 34 U.S.P.Q.2d (BNA) at 1337-38 (Mayer, J., concurring) (citations omitted).
With Markman and Hilton Davis, the Federal Circuit clearly committed claim construction to the judge, and the determination of infringement under the doctrine of equivalents to the jury. The Federal Circuit's attention this past year to the roles of the judge and the jury in patent cases is remarkable. Certainly, concerns over the Seventh Amendment implications of delineations in jury responsibility in patent trials did not originate with Markman and Hilton Davis. In addition, the actual holdings in these cases represent only a questionable shift in patent jurisprudence. Nonetheless, during 1995, the Federal Circuit strongly developed a litigant's right to a jury determination of specific patent issues as a theme in its opinions.

In In re Lockwood, the Federal Circuit issued an order granting the petition by American Airlines, Inc., for a rehearing by the panel, but denying its petition for a rehearing in banc. Lockwood had sued American Airlines alleging infringement of its patents to automated ticketing systems. Lockwood's complaint included a jury trial demand. American Airlines counterclaimed for a declaratory judgment of noninfringement and, alternatively, patent invalidity and unenforceability. On American Airline's motion, the district court granted summary judgment of noninfringement.

The district court decided not to certify the summary judgment for interlocutory appeal but instead proceeded with trial on the remaining issue of invalidity. Furthermore, the district court concluded that the remaining claims were equitable in nature. The district court thus held that Lockwood was no longer entitled to a jury

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1389. See infra notes 1390-1406 (discussing Federal Circuit's emphasis on role of jury in In re Lockwood).


1392. Id. at 968, 33 U.S.P.Q.2d (BNA) at 1407.

1393. Id., 33 U.S.P.Q.2d (BNA) at 1407.

1394. Id., 33 U.S.P.Q.2d (BNA) at 1407.

1395. Id., 33 U.S.P.Q.2d (BNA) at 1407.

1396. Id. at 968-69, 33 U.S.P.Q.2d (BNA) at 1408.

1397. Id. at 969, 33 U.S.P.Q.2d (BNA) at 1408.
Lockwood petitioned the Federal Circuit for a writ of mandamus to direct the district court to reinstate the jury demand. In a nonprecedential order, the Federal Circuit granted Lockwood’s petition for a writ of mandamus directing the district court to reinstate its jury demand. On American Airline’s petition for rehearing and rehearing in banc, the Federal Circuit characterized American Airline’s declaratory judgment suit as an inversion of an infringement action involving an affirmative defense of patent invalidity. The court therefore held that the equitable nature of the declaratory judgment action did not divest Lockwood of its Seventh Amendment right to a trial by jury on the issue of patent validity.

Judge Nies, joined by Chief Judge Archer and Judge Plager, dissented from the denial of a rehearing in banc. As an initial matter, the dissenting opinion commented that the Seventh Amendment right to a jury trial in patent infringement cases does not delineate the respective roles of judge and jury in resolving the individual issues involved. In addition, the dissent noted the absence of Supreme Court precedent as to whether a litigant has a Seventh Amendment right to a jury trial on the factual questions underlying an issue of law. The Supreme Court resolved this issue in April 1996, affirming the Federal Circuit’s decision in Markman.

B. Judicial Deference to the USPTO

The Administrative Procedure Act sets forth a standard for judicial review of federal agency determinations. The Federal Circuit

1400. Id. at 968, 33 U.S.P.Q.2d (BNA) at 1407.
1401. Id. at 974-75, 33 U.S.P.Q.2d (BNA) at 1412-13.
1402. Id. at 980, 33 U.S.P.Q.2d (BNA) at 1417.
1403. Id., 33 U.S.P.Q.2d (BNA) at 1908 (Nies, J., dissenting).
1404. Id. at 981, 33 U.S.P.Q.2d (BNA) at 1908 (Nies, J., dissenting).
1405. Id. at 989, 33 U.S.P.Q.2d (BNA) 1916 (Nies, J., dissenting).
1406. 116 S. Ct. 1384 (1996) (holding that relegation of claim construction exclusively to judge did not violate Seventh Amendment, but rather fostered consistency in patent infringement case resolution).
1407. Administrative Procedure Act, 324, § 10(e), 60 Stat. 237, 243-44 (1946) (codified as amended at 5 U.S.C. § 706 (1994)). The statute provides that the reviewing court shall:
   “(2) hold unlawful and set aside agency action, findings, and conclusions found to be—
   (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”
presently applies the same standard of review in appeals from the United States district courts and the USPTO. The court reviews questions of law de novo and questions of fact for clear error. With regard to the Federal Circuit’s review of the USPTO’s factual findings, the presently applied clearly erroneous standard is more stringent than the APA’s arbitrary and capricious standard.

Particularly since the Supreme Court’s holding in *Chevron, U.S.A., Inc. v. Natural Resources Defense Council*, the USPTO has asserted entitlement to the judicial deference accorded other federal agencies. However, the presumed agency expertise rationale, which typically militates for judicial deference to agency actions, may be less significant with the USPTO. The specialized subject matter jurisdiction of the Federal Circuit and the exclusivity of its appellate relationship with the USPTO, arguably undercut the basis for judicial deference under the APA.

In any event, the USPTO has adopted the practice of raising the standard of review issue in its briefs to the Federal Circuit. For

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1408. *Compare* Heisig v. United States, 719 F.2d 1153, 1158 (Fed. Cir. 1983) (explaining that Federal Circuit applies clearly erroneous rule to district court’s findings of fact and upholds their legal conclusions unless they are incorrect) with *In re* Kulling, 897 F.2d 1147, 1149, 14 U.S.P.Q.2d (BNA) 1056, 1057 (Fed. Cir. 1990) (noting Federal Circuit is bound by USPTO’s findings of fact unless clearly erroneous) and *In re* Caveney, 761 F.2d 671, 674, 226 U.S.P.Q. (BNA) 1, 3 (Fed. Cir. 1985) (observing that standard for reviewing legal conclusions of USPTO “is correctness or error as a matter of law”).


1411. See, e.g., *In re* Napier, 55 F.3d 610, 614, 34 U.S.P.Q.2d (BNA) 1782, 1785 (Fed. Cir. 1995) (acknowledging that current standard of review is “more stringent than” APA’s standard); *In re* Brana, 51 F.3d 1560, 1569, 34 U.S.P.Q.2d 1436, 1444 (Fed. Cir. 1995) (finding Board’s error reversible under both clear error and arbitrary and capricious standards and declining to address change from clearly erroneous standard).


1413. *See Napier*, 55 F.3d at 614, 34 U.S.P.Q.2d (BNA) at 1785 (rejecting Commissioner’s plea to apply APA standard of review to USPTO decisions); *Brana*, 51 F.3d at 1568-69, 34 U.S.P.Q.2d (BNA) at 1445 (noting Commissioner’s contention that USPTO decisions should be accorded deferential standard of review).

1414. *See Moy, supra* note 1412, at 434-35 (considering assumptions upon which Supreme Court’s holding in *Chevron* rests).

1415. *See Moy, supra* note 1412, at 435 (noting Federal Circuit was given doctrinal responsibility for patent law in order to increase expertise of court).
example, in *In re Wodkiewicz*,\textsuperscript{1416} the principal brief of the USPTO Solicitor contained the following footnote:

The Commissioner believes that the standard of review for factual determinations made by the agency should be the arbitrary and capricious standard set forth in the Administrative Procedure Act, 5 U.S.C. § 706. However, in this case the findings are not clearly erroneous and thus should survive review under either standard. *See In re Napier*, No. 93-1363, slip op. at 9 (Fed. Cir. May 22, 1995).\textsuperscript{1417}

In two precedential opinions during 1995, the Federal Circuit recognized the USPTO's position on this matter but declined to decide the issue. In *In re Brana*,\textsuperscript{1418} the Federal Circuit held that the disposition of the case did not turn on the standard of review.\textsuperscript{1419} Similarly, in *In re Napier*,\textsuperscript{1420} the Federal Circuit held it unnecessary to decide the question.\textsuperscript{1421} The respective opinions of the court in *Brana* and *Napier* make clear that the Federal Circuit will not consider the appropriate standard of review of USPTO determinations until faced squarely with an appeal in which the standard of review will dictate the outcome. Perhaps the Federal Circuit will decide such an appeal in 1996.

**CONCLUSION**

The majority of the precedential opinions issued by the Federal Circuit during 1995 concerned matters of enforcing patent rights rather than obtaining patent rights. During this past year, the court repeatedly addressed issues involving the more procedural aspects of patent litigation. The impact of trial procedure on the disposition of substantive patent issues will likely continue to receive attention by the Federal Circuit even after the Supreme Court's review in 1996 of the respective roles of judge and jury in patent cases.

\textsuperscript{1416} 66 F.3d 347 (Fed. Cir. 1995) (mem.).
\textsuperscript{1417} Brief for Appellee at 12 n.1, *In re Wodkiewicz*, 66 F.3d 347 (Fed. Cir. 1995) (No. 95-1280).
\textsuperscript{1418} 51 F.3d 1560, 34 U.S.P.Q.2d (BNA) 1436 (Fed. Cir. 1995).
\textsuperscript{1419} *In re Brana*, 51 F.3d 1560, 1569, 34 U.S.P.Q.2d (BNA) 1436, 1444 (Fed. Cir. 1995).
\textsuperscript{1420} 55 F.3d 610, 34 U.S.P.Q.2d (BNA) 1782 (Fed. Cir. 1995).
\textsuperscript{1421} *In re Napier*, 55 F.3d 610, 614, 34 U.S.P.Q.2d (BNA) 1782, 1785 (Fed. Cir. 1995).