Second Edition

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Preface and Acknowledgments

Between the first edition of this monograph in 1988 and this second edition in 1995, the work of the U.S. Congress and the federal courts has had a significant impact on patent law and practice in the United States. Although I have attempted to make this second edition as accurate as possible, new decisions of the U.S. Court of Appeals for the Federal Circuit will continue to influence the interpretation of the patent laws.

Patent Law and Practice is intended as a brief introduction to United States patent law and practice; thus the text and citations are not meant to be comprehensive. A number of more comprehensive works are identified in the Annotated Bibliography.

I would like to thank my colleague, James T. Canfield, a member of the New York Bar, who has performed yeoman service assisting in the preparation of the second edition. The assistance of Janet M. Stark, a member of the American Association of Law Libraries, and Carol Hoffman, a member of the Special Libraries Association, has been invaluable. The contributions of my partner Robert C. Morgan and my colleague Dr. Julie Blackman on the jury trial section as well as that of my partner Jeffrey H. Ingerman on the Patent and Trademark Office section are particularly appreciated. Judge Avern Cohn's suggestions were also of great help in preparing the jury trial section. However, in this edition, as well as in the first, the ultimate statements, opinions, and conclusions are mine.

In connection with the first edition, I am particularly indebted to Judges Howard T. Markey, Walter K. Stapleton, Avern Cohn, and William T. Conner for their comments on the draft. I would also like to acknowledge the assistance of my colleagues Mitchell P. Brook, Jeffrey H. Ingerman, and, especially, James T. Canfield, all of whom are members of the New York Bar; Janet M. Stark; and my wife, Nan B. Chequer, who is a member of the Connecticut Bar.

I. Introduction

The U.S. Constitution gives Congress the power to promote the progress of the useful arts by securing for inventors the exclusive right to their discoveries for limited times.¹ The idea of granting exclusive rights to inventors was well established when the Constitution was drafted in 1787. As early as 500 B.C. the Greek colony of Sybaris granted such rights.² Inventors were also given exclusive rights to their inventions by the Senate of the Republic of Venice pursuant to a law passed in 1474,³ by the English and German Empires on a regular basis in the middle of the sixteenth century,⁴ and by the colony of Massachusetts in 1641.⁵

Congress first exercised its constitutional power to grant exclusive rights to inventors in 1790, when it authorized the issuance of U.S. letters patent⁶ to inventors.⁷ Patents were a natural choice for conveying exclusive rights to inventors because many of the American colonies and states had used them previously for that purpose.⁸ A patent confers on its owner the right to exclude others from making,

1. U.S. Const. art. I, § 8, cl. 8.

2. Ramon A. Klitzke, *History of Patents Abroad, in* The Encyclopedia of Patent Practice and Invention Management 384 (Robert Calvert ed., 1964). *See also* Howard I. Forman, *Two Hundred Years of American Patent Law, in* 200 Years of English & American Patent, Trademark & Copyright Law 21, 33 n.1 (ABA 1977).

3. See Klitzke, supra note 2, at 385–86. See also Edward C. Walterscheid, The Early Evolution of the United States Patent Law: Antecedents (pt. 1), 76 J. Pat. & Trademark Off. Soc'y 697 (1994); Giulio Mandich, Venetian Origins of Inventors' Rights, 42 J. Pat. Off. Soc'y 378 (1960).

4. See Klitzke, supra note 2, at 386–93. See also, regarding the English Empire, Deller's Walker on Patents §§ 1–6 (2d ed. 1964); 1 William C. Robinson, The Law of Patents for Useful Inventions §§ 3–10 (1890). See also, regarding the German Empire, Hansjoerg Pohlmann, The Inventor's Right in Early German Law, 43 J. Pat. Off. Soc'y 121 (1961).

5. Ramon A. Klitzke, *History of Patents—U.S., in* The Encyclopedia of Patent Practice and Invention Management 394 (Robert Calvert ed., 1964).

6. "Letters patent," from the Latin *literae patentes*, means "open letters." Historically, open letters were used by the English monarchy to bestow exclusive rights on people. In an open letter from the English monarch, the Great Seal was affixed so that the document could be read without breaking the seal. Similarly, U.S. Letters Patent, which are generally called "patents," have a seal attached to the first page of the document. *See* Klitzke, *supra* note 2, at 384.

7. See Klitzke, supra note 5, at 397-99. See also 1 Robinson, supra note 4, § 48.

8. See Klitzke, supra note 5, at 394–96.

using, offering for sale, or selling the patented invention within the United States, its territories, and its possessions or importing the invention into the same areas for the life of the patent,⁹ a right that is potentially very valuable to the inventor. Because a patent can only be obtained in exchange for full disclosure of the invention to the public, patents provide an important incentive for people to invent and then to disclose their inventions. Such disclosure is potentially very valuable to the public. As stated by Abraham Lincoln, who was a patentee: "The patent system added the fuel of interest to the fire of genius."¹⁰

The procedure for processing patent applications introduced in 1790 required the examination of all applications; that is, an examining board investigated each patent application and issued a patent only when it deemed the invention sufficiently useful and important.¹¹ In 1793, Congress changed the patent application procedure to a registration system. Although under the Act of 1793, patents supposedly were issued only for novel inventions, the government did not examine each application to attempt to determine novelty. Instead, the government accepted an applicant's oath that the invention was novel, and the courts were left to decide whether an invention was novel if the patent ultimately appeared in litigation.¹² The considerable uncertainty of the validity of patents created by this system¹³ caused inventors difficulty in raising money to develop their inventions.¹⁴ In 1836, Congress returned the patent application

9. Additionally, if the invention is a process, a patent also confers the right to exclude others from using, offering for sale, or selling throughout the United States, its territories, and its possessions, or importing into the United States, its territories, and its possessions, products made by that process. 35 U.S.C.A. § 154 (West Supp. 1994). The changes to § 154 based on the General Agreement on Tariffs and Trade (GATT) (*see generally* note 28 *infra*) have been incorporated in this edition. As detailed *infra*, these changes became effective on either June 8, 1995, or January 1, 1996.

10. Lincoln received U.S. Patent No. 6,469 for a design that allowed a riverboat to navigate over the shoals. The quote is from a speech in Springfield, Illinois, on February 5, 1859. *See* The Story of the United States Patent Office 10–11 (Patent Office, Department of Commerce, 1972) [hereinafter The Story].

11. See Klitzke, supra note 5; 1 Robinson, supra note 4, § 48. The first examining board consisted of the Secretary of State (Thomas Jefferson), the Secretary of War (Henry Knox), and the Attorney General (Edmund Randolph).

12. See 1 Robinson, supra note 4, § 49 n.2.

13. See Klitzke, supra note 5; 1 Robinson, supra note 4, § 49.

14. See 1 Robinson, supra note 4, § 49; The Story, supra note 10, at 5.

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procedure to an examination system; this system is still in effect today.¹⁵ Despite the return to an examination system, the federal courts continued to have, and still have, an important role in deciding validity issues. They have this role probably because it is not uncommon for better or more complete evidence that bears on validity issues to be presented in an adversarial proceeding than is presented in the ex parte Patent Office proceeding.

By the late 1970s, it was evident that technological innovation throughout the rest of the world had increased as compared with that in the United States.¹⁶ This led to important legislative and judicial actions in the early 1980s that tended to enhance the value of patents. For example, until then it had been perceived that there was little national uniformity in the interpretation and use of the patent laws because the regional courts of appeals expressed different attitudes toward patents.¹⁷ Some studies suggested that the likelihood that a court would hold a patent invalid was greatly influenced by the regional circuit in which the case was tried.¹⁸ National uniformity in the application of the patent laws was perceived as a way of reducing uncertainty regarding the validity of patents and therefore increasing the value of patents. Increasing the value of patents, in turn, would increase the incentive to invent and to disclose, and would ultimately enhance technological innovation in this country.¹⁹ The establishment of a national court for all patent appeals, a concept that had been advanced for over 100 years,²⁰ was vigorously pursued as one way to achieve these goals.

The Court of Appeals for the Federal Circuit was created in 1982, and one of its primary goals is to create uniformity in various laws of this country, including patent law. As the remainder of this monograph makes plain, the Federal Circuit has had a dramatic impact on patent law.

17. See Frank P. Cihlar, The Court American Business Wanted and Got: The United States Court of Appeals for the Federal Circuit 3–5 (1982).

19. See Cihlar, supra note 17.

20. Subcommittee on Patents, Trademarks and Copyrights, Senate Comm. on the Judiciary, 85th Cong., 2d Sess., Study No. 20 (1959) [hereinafter Study No. 20].

^{15.} See 1 Robinson, supra note 4, § 50. A few other countries in the world now use a registration system. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

^{16.} Id. See also Tom Arnold, Innovation and the Patent System Role in It: A Patent Lawyer's Point of View, 8 APLA Q.J. 131 (1980).

^{18.} Id. at 11.

Other legislative and judicial actions during the early 1980s also served to buttress the patent system. For example, in 1980 Congress passed a reexamination statute, which allowed patent owners to strengthen their issued patents by having the Patent and Trademark Office (PTO) of the Department of Commerce reexamine them in light of certain types of "prior art."²¹ The Supreme Court's decisions in 1980 and 1981 regarding microorganisms²² and computer programs²³ recognized the broad scope of patentable subject matter.²⁴

Between the first edition of this monograph in early 1988 and this second edition in 1995, the legislature and courts continued to enhance the value of patents. For example, in 1988, Congress expanded the process patent's right to exclude, restricted the patent-misuse defense, and greatly widened appropriate venue for certain patent cases. Additionally, for a while at least, the number of preliminary injunctions that were granted in patent cases increased.²⁵ Damage awards in the late 1980s and early 1990s reflected this trend, the high-water mark being Polaroid's recovery of \$925 million at the end of its fifteen-year litigation against Kodak.²⁶

During the same time frame, the Federal Circuit continued to issue important decisions. Some patent issues impacted by these decisions were claim construction, infringement under the doctrine of equivalents, the inequitable conduct defense, punitive awards for willful infringement, and the equitable defenses of laches and estoppel.

This monograph is an introduction to U.S. patent law and practice as it exists today. Chapter 2 details the patent application process. Chapter 3 examines various procedural aspects of patent-related con-

24. In addition, commentators have argued that during this period the judicial trend of exalting antitrust law to the detriment of patent law ceased. *See* Edmund W. Kitch & Harvey S. Perlman, Legal Regulation of the Competitive Process 254–55 (2d ed. 1979 & Supp. 1984); Perry J. Saidman, *Patents: There Is Something New Under the Sun*, 14 Barrister 52 (1987).

25. See infra text accompanying notes 509-28.

26. Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481 (D. Mass 1990); correction for clerical errors, 17 U.S.P.Q.2d (BNA) 1711 (1991). See also Paul M. Janicke, Contemporary Issues in Patent Damages, 42 Am. U. L. Rev. 691, 693 n.11 (1993), which also details two other cases that resulted in the patent owner obtaining more than \$95 million.

^{21. 35} U.S.C.A. §§ 301-07 (4th Supp. 1994).

^{22.} Diamond v. Chakrabarty, 447 U.S. 303 (1980).

^{23.} Diamond v. Diehr, 450 U.S. 175 (1981).

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troversies. Chapter 4 discusses the conditions and requirements for a valid patent. Chapter 5 examines the types of acts that are violations of the patent right (known as infringement) and examines defenses to a charge of infringement. Chapter 6 discusses equitable defenses. Chapter 7 explores the remedies available to a patent owner. Chapter 8 examines the impact of juries on patent litigation and considers ways in which a court can manage patent jury trials.

II. Proceedings in the Patent and Trademark Office

The Patent

Three types of patents can be obtained: utility, plant, and design. Utility patents are issued for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof"²⁷ for a varying term,²⁸ subject to the payment of quadrennial maintenance fees.²⁹ Plant patents are issued for "any distinct and new variety of plant" also for a varying term.³⁰ Design patents are issued for "any new, original and ornamental design for an article of manufacture"³¹ for a term of fourteen years.³² This monograph focuses on the first type of patent, the utility patent.

A utility patent consists of a cover page that lists pertinent information,³³ a written description, and one or more claims. The written description, sometimes referred to as the specification and drawings, describes the invention, the preferred embodiment of the invention, and how to make and use it, so that the public has available the information needed to practice the invention. On expiration of the patent, the public may practice the invention freely. The claims of

27. 35 U.S.C.A. § 101 (1984).

28. 35 U.S.C.A. § 154 (West Supp. 1994). The legislation implementing the trade agreements resulting from the Uruguay Round of multilateral trade negotiations under the auspices of the General Agreement on Tariffs and Trade (GATT) (codified as Pub. L. No. 103–465) has had a significant impact on the patent system, including altering the patent term from seventeen years from date of issuance to the term that begins on the date the patent issues and ends twenty years from the date of the filing of the patent application or, under certain conditions, the date of earlier filed applications that are referenced in the later filed application. The term can be extended; see *infra* text accompanying notes 432-34.

29. 35 U.S.C.A. § 41(b) (West Supp. 1994).

30. 35 U.S.C.A. § 161 (1984).

31. 35 U.S.C.A. § 171 (1984).

32. 35 U.S.C.A. § 173 (1984).

33. This information includes the patent number and date, inventor's name, application number and date, title of the invention, assignee (if any), and other administrative details. Also listed on the cover page is all prior art considered during the patent application process (as discussed more fully later). The cover page concludes with an abstract of the invention and a reproduction of the drawing that is considered most illustrative of the invention, if there are any drawings.

the patent define the metes and bounds of the patent owner's exclusive rights during the life of the patent.

The Participants

The PTO examines patent applications and issues patents on some of those applications while rejecting others.³⁴ The PTO is headed by the Commissioner of Patents and Trademarks, who is also an Assistant Secretary of Commerce. The PTO currently receives over 188,000 applications per year; each application is reviewed by one of approximately 2,052 examiners, each of whom has expertise in some area of technology.³⁵ Although an applicant may proceed pro se before the PTO, most applicants are represented by a registered patent attorney or registered patent agent.³⁶

A patent application must be made in the name of the inventor.³⁷ If there is more than one inventor, each is referred to as joint inventor.³⁸ If an applicant transfers all or part of his or her interest in the

34. The PTO also examines trademark registration applications and registers or refuses to register trademarks on those applications.

35. The PTO conducts initial and continuing training of examiners. This training is both technical and legal. Examiners are divided among seventeen examining groups, each headed by a group director. Each examining group covers a broad area of technology and has a number of subgroups, known as art units, that have responsibility for applications whose subject matter falls into subsets of that broad area. As of fiscal 1993, there were approximately 154 art units in the PTO. Each art unit has primary examiners and assistant examiners and is headed by a supervisory primary examiner. Primary examiners have the authority to act on their own. Assistant examiners work under primary examiners and generally have less authority to act on their own. When an examiner is hired, he or she is assigned to the art unit that matches his or her technical background.

36. Drafting and prosecuting a patent application require special skill. Before someone can practice this skill on behalf of others, he or she must be registered with the PTO. To become registered, a person must pass an examination that is administered periodically or have adequate experience as a patent examiner. PTO registration and practice are open to lawyers and nonlawyers alike. Registered nonlawyers are called patent agents.

37. 35 U.S.C.A. § 111 (1984).

38. Although good faith errors in failing to name an inventor ("nonjoinder") or incorrectly naming a noninventor as an inventor ("misjoinder") can be corrected as late as the time of an infringement trial (35 U.S.C.A. § 256 (1984)), intentional misjoinder or nonjoinder can render a patent invalid. Only in certain limited circumstances, such as when an inventor is dead or legally incapacitated or when he or she refuses to sign an application, will an inventor not participate in the patent application process. invention to another, typically an employer, the transferee may also become involved in any action before the PTO as an assignee. Certain actions of the examiner in denying an application may be appealed to the Commissioner of Patents and Trademarks or to the Board of Patent Appeals and Interferences. The Board of Patent Appeals and Interferences also decides contests of priority (who is the first inventor) between two or more applicants claiming the same invention. Such contests are referred to as "interferences."³⁹ Decisions of the board can be appealed to the federal courts.

The Process

Although the patent application process may be thought of as beginning with the drafting of the application itself, this usually is preceded by other events. For example, an inventor may document his or her conception of the invention and his or her reduction of that conception to practice. In addition, much dialogue may occur between the inventor and the person drafting the application. Another event that might occur prior to the preparation of an application is a priorart search. This search for relevant prior patents and technical literature may be carried out on behalf of the applicant by a professional searcher in the Public Search Room maintained by the PTO in Arlington, Virginia. An applicant is under no obligation to conduct a search prior to filing an application,⁴⁰ and indeed, not all applications are preceded by a search.

Each application that can mature into a patent⁴¹ consists of a specification, one or more drawings (if necessary), an oath or declaration, and the required filing fees.⁴² The filing date of such an application is the date on which the specification and drawings (if necessary) and at least one claim are received at the PTO or the date they were deposited in a U.S. post office as Express Mail, provided that the

39. These are discussed in *infra* text accompanying notes 74-80.

40. American Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1362 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984).

41. GATT-implementing legislation created a "provisional application," which does not get examined and cannot mature into a patent. A provisional application requires fewer parts. For example, the claims do not have to be included. Priority can be claimed from the date of the provisional application. The provisional application legislation became effective on June 8, 1995.

42. 35 U.S.C.A. § 111 (1984). These four components need not reach the PTO at the same time, but additional fees are incurred if some parts arrive later than others.

mailing day was one on which the PTO was open. The specification and drawings can be insufficient in certain respects without affecting the filing date.⁴³

Specification. The nonprovisional specification can have any format the drafter desires, although the PTO prefers the following format:

- 1. title;
- 2. cross-reference to related applications;
- 3. statement regarding government rights;
- 4. background: (a) field of the invention, (b) description of related art;
- 5. summary of the invention;
- 6. brief description of the drawings;
- 7. detailed description of the invention, including the best mode (or description of the preferred embodiment);
- 8. claims;
- 9. abstract of the disclosure.⁴⁴

This suggested format is usually followed. The title is usually as short and specific as possible. The summary of the invention briefly states the nature and substance of the invention. The brief description of the drawings usually consists of one sentence for each drawing, describing very generally what is shown in that drawing. The abstract of the disclosure, printed on the cover page of the issued patent, enables the PTO and the public to grasp quickly the nature and extent of the disclosure.

In the background section of the application, the applicant explains what he or she believes is the relevant field or art and the state of that art. When appropriate, the inventor explains the problems existing in the art that his or her invention solves. Inventors, registered patent agents, registered patent attorneys, and any others involved in the seeking of a patent are held to a high ethical standard in their dealings with the PTO, particularly with respect to disclosure of the state of the art to the extent that they are aware of it. The high ethical standard is necessary because the patent application process is secret and ex parte. An applicant should not be

^{43.} For example, the specification might not be in English, or the drawings might not be on the right kind of paper. These and other deficiencies can be corrected later, although correction of some deficiencies requires payment of additional fees.

^{44. 37} C.F.R. § 1.77 (1993); Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure § 601 (6th ed. 1995) [hereinafter MPEP].

able to manipulate the process to obtain his or her exclusive rights merely because there is no one to state to the examiner the case against the application.⁴⁵

The detailed description of the invention constitutes the bulk of the specification. It must be written in terms sufficiently full, clear, concise, and exact to enable any person skilled in the art to which the invention pertains to be able to make and use the invention.⁴⁶ This section must contain a disclosure of the best mode of carrying out the invention known to the inventor at the time of filing.⁴⁷ In this section, the drawings are discussed in detail.

The nonprovisional specification concludes with one or more claims that particularly and distinctly define the subject matter that the inventor regards as his or her invention. The claims set the metes and bounds of the patent owner's exclusive rights. Books have been devoted to teaching the patent practitioner how best to draft claims.⁴⁸ Each claim is the object of a sentence that usually begins with "I [or We] claim" or "What is claimed is." The claims can be punctuated and laid out in whatever manner the drafter desires, except that there can be only one period, and it must come at the end of the sentence.

45. Generally, this "duty of candor and good faith" is fulfilled by filing one or more Information Disclosure Statements, which explain the relevance of known information believed to be material. The PTO defines *materiality* in section 1.56 of the Rules of Practice in Patent Cases, 37 C.F.R. ch. 1 (1993). Prior to March 1992, information was deemed material if a reasonable examiner would have considered the information important in deciding whether to allow the application to issue as a patent. After March 1992, information is deemed material "when it is not cumulative to information already of record or being made of record, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability."

37 C.F.R. § 1.56(b) (1993).

Breach of the duty of candor and good faith can give rise to an equitable defense against a claim for patent infringement. *See infra* text accompanying notes 442–64.

47. Id.

48. See, e.g., Thomas J. Greer, Jr., Writing and Understanding U.S. Patent Claims (1979); The Art of Drafting Patent Claims (Joseph Gray Jackson & G. Michael Morris eds., 1966); John L. Landis, Mechanics of Patent Claim Drafting (2d ed. 1978); Emerson Stringham, Patent Claim Drafting (2d ed. 1952).

^{46. 35} U.S.C.A. § 112, ¶ 1 (1984).

Words in the patent application are not necessarily held to their ordinary meaning. Each inventor, and his or her registered agent or registered attorney, can be his or her own lexicographer.⁴⁹ However, the application must define words being used in an uncommon manner.⁵⁰

A nonprovisional patent application generally has more than one claim. The claims of a patent may vary in scope. Broad claims include fewer elements, or limitations, than narrow claims and therefore cover a wider range of subject matter. Claims are often arranged in order of decreasing scope, that is, the broadest comes first and the narrowest comes last. Claims can be in independent, dependent, or multiple dependent form. An independent claim is completely self-contained. A dependent claim refers back to one earlier claim and is considered to include all of its own limitations as well as those of the referenced claim. A multiple dependent claim refers back to two or more claims and is considered to include all of its own limitations as well as those of any one of the referenced claims.⁵¹

Drawings. Drawings are not always a necessary part of the application. If the invention is for a process or method of doing something, drawings usually are not required. If drawings are required, there are formal rules governing their acceptability.⁵²

Oath or declaration. A written oath, or declaration, is part of a nonprovisional patent application. Except in certain limited situa-

50. Lear Siegler, 733 F.2d at 889.

There are certain words whose meanings cannot be changed. For example, the word "comprising" indicates that the claim is open (that is, that it covers the invention, including the elements set out in the claim, as well as any additional elements), whereas the phrase "consisting of" indicates that the claim is closed (that is, it covers the invention, including no more and no fewer than the listed elements). *See, e.g., In re* Gray, 53 F.2d 520 (C.C.P.A. 1931); *Ex parte* Jackson, 3 U.S.P.Q. (BNA) 314 (Pat. Off. Bd. App. 1929).

51. For an example of an independent claim, see John L. Landis, Mechanics of Patent Claim Drafting 17–18 (2d ed. 1978). For an example of a dependent claim, see Landis, *supra*, at 163. For examples of multiple dependent claims, see MPEP, *supra* note 44, \S 608.01(n).

52. An applicant, for example, must petition to use color drawings. Photographs are not accepted, except in very limited situations. However, for plant patent applications, color drawings sometimes may be required and photographs are acceptable.

^{49.} Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 888 (Fed. Cir. 1984); W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1558 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

tions, it must be signed by the actual inventor or joint inventors.⁵³ In addition to containing the applicant's name, citizenship, residence, and address, the oath or declaration must state that the person signing (1) has reviewed and understands the content of the specification, (2) believes that he or she is the original and first inventor of the claimed subject matter, and (3) acknowledges the duty to disclose material information.⁵⁴

Filing fees. The fees charged for filing a patent application vary depending on the number and form of the claims included in the application. Additional fees may be incurred during prosecution of the application if the number and form of the claims are changed by amendment.⁵⁵

Initial Processing of the Application

All papers arriving at the mail room of the PTO are stamped with the date of receipt ("filing date"). Any papers purporting to be a new application, whether complete or incomplete, are also stamped with an application number, which includes a two-digit "series code" and a six-digit serial number.⁵⁶

New applications are initially processed by the Application Division, which decides whether an application is complete and

53. 37 C.F.R. § 1.41 (1993). If the inventor is dead, insane, or legally incapacitated, a legal representative can sign the oath or declaration (37 C.F.R. §§ 1.42, 1.43 (1993)). If the inventor is missing and cannot be found after diligent effort, or the inventor simply refuses to sign the oath or declaration, someone with a sufficient proprietary interest can sign it upon making the appropriate showing (37 C.F.R. § 1.47 (1993)).

54. 37 C.F.R. § 1.63 (1993).

55. A 50% reduction in filing fees is given to applicants who qualify as "small entities," namely, individual inventors, nonprofit organizations, and "small business concerns" as defined by the Small Business Administration specifically for this purpose. 37 C.F.R. § 1.9 (1994), §§ 1.27, 1.28 (1993); 13 C.F.R. § 121.13 (1994).

56. Serial numbers repeat every few years, so the series code is needed to identify unambiguously an application. Applications traditionally were identified by serial number and filing date, which eliminated ambiguity. However, in 1995, design applications and provisional applications were assigned their own series codes, allowing for the possibility of two applications with the same serial number and filing date. To eliminate potential ambiguity, the PTO requires use of the full application number, but prints only the serial number on issued patents. As a result, many practitioners continue to refer to applications only by serial number and filing date. (In addition, many practitioners who use the application number continue to refer to it as a "serial number" and use it with the filing date.)

meets all formal requirements.⁵⁷ Any drawings accompanying the application are forwarded to the official draftsman, who checks to see if the drawings comply with the formal requirements. Any assignment of the application is forwarded to the Assignment Division, which records the assignment in its computer and microfilm records and returns it to the applicant with a notification of the reel and frame numbers in the microfilm records.

The PTO maintains a detailed classification system by which all technologies are broken down into specific categories. Within the classification system are hundreds of classes, each class having at least dozens of subclasses. The Application Division determines the appropriate class and subclass of the application. It then forwards the application, along with a notice of any "informalities" (failures to meet formal requirements) found in the application and a similar notice from the official draftsman regarding any informalities found in the drawings, to the examining group in charge of that class and subclass. These documents are kept in a file jacket known as a "file wrapper."

Examination and Prosecution

Formalities and search by the examiner

When a nonprovisional application reaches an examining group, it is assigned to the appropriate art unit and then to a particular examiner. The examiner first ascertains that the application contains the four elements required by 35 U.S.C. § 111, then reads the application to determine whether it is clear enough to be examined⁵⁸ and whether it contains more than one invention.

After determining that an application is sufficiently clear to be examined and contains only one invention, the examiner conducts a search for prior art relevant to the claimed subject matter, noting in a place provided on the file wrapper the classes and subclasses searched. Documents found in the search are called "references." The search can be conducted in the examiner's private materials, in a

^{57.} If an application is incomplete, the applicant is notified of the incompleteness and is given time to correct the defect. Depending on the type of defect, the application may or may not be accorded a filing date as of its date of receipt (see *supra* text accompanying notes 41–42). If a filing date is accorded, it may be lost if the defect is not corrected within the allowed time.

^{58.} For example, an application filed by a foreign applicant may not conform to idiomatic English or U.S. practice. *See* MPEP, *supra* note 44, § 702.01.

library maintained by the examining group (which is generally restricted to classes for which the group is responsible), or in the PTO Scientific Library, which contains nonpatent technical literature and all patents issued by most major countries. The quality and thoroughness of the examiner's search is a function of his or her searching skill, the time allocated for the search, and the completeness of the libraries searched.⁵⁹

First examiner's action

After this initial activity by the examiner, he or she communicates in writing to the applicant or to the applicant's attorney or agent, if one has been appointed. This communication is called an Examiner's Action. For historical reasons, an Examiner's Action is frequently referred to as an "Office Action." The Examiner's Action includes at least two parts: a form cover letter, on which the examiner summarizes the action by checking the appropriate boxes and filling in the correct blanks, and a typewritten explanation of the action. The Examiner's Action may also include various attachments, which are itemized in the cover letter.

Restriction and election requirements. If the examiner does not search the invention because there is more than one invention claimed in the application, the first Examiner's Action lists the inventions found by the examiner and includes either a "restriction requirement," if the inventions are clearly different, or an "election of species requirement," if the inventions. In response to either requirement, the applicant must choose one invention for prosecution. If there is a restriction requirement, the applicant who wishes to patent the non-elected inventions must present them in one or more "divisional" applications (see *infra* text accompanying note 69). If there is an election requirement, the nonelected claims will be rejoined to the application if a generic claim is allowed.

Request for clarification. If the examiner does not search the invention because the application is unclear, the first Examiner's Action simply requests that the applicant clarify the application by correcting defects in its language.

Substantive actions. The first substantive Examiner's Action (which is the second Examiner's Action in situations in which a first

59. 3 Patent Practice 11-4, 11-29 (Irving Kayton & Karyl S. Kayton eds., 5th ed. 1993).

action as described earlier was issued) can allow claims, reject claims,⁶⁰ object to claims, or object to the specification.⁶¹ It may also withdraw claims if the claims are drawn to an invention not elected in response to a restriction or election requirement. The first substantive action includes notices of informalities found by the Application Division or the official draftsman, if any. These informalities must be corrected within the time set by the examiner for response to the substantive issues raised.⁶²

Applicant's response

Within the period of time allotted for response, which usually can be extended up to a maximum statutory period of six months upon payment of a fee, the applicant must respond to all of the examiner's rejections and objections, or the application is abandoned.

Applicants may respond to claim rejections and objections by amendment of the claims, by argument, or by a combination of both.

60. Claims may be rejected if they are found to be anticipated by a reference (35 U.S.C.A. § 102 (1984)) or made obvious by a reference or combination of references (35 U.S.C.A. § 103 (West Supp. 1994)) (see *infra* text accompanying notes 229–308). Claims may also be rejected under 35 U.S.C. § 112 if they are too vague or indefinite to "particularly define and distinctly claim" the exclusive right to which the applicant is entitled, so that a third party cannot be certain he or she is not infringing (see *infra* text accompanying notes 366–67).

There are also less common grounds for rejection. For example, a claim will be rejected as being drawn to "nonstatutory subject matter" if it is drawn to something not enumerated in 35 U.S.C. § 101, § 161, or § 171. There are also several judicially created doctrines under which claims may be rejected (e.g., obviousness-type double-patenting, where (for example) the subject matters of two applications filed by the same applicant are obvious in view of each other).

61. The specification may be objected to under 35 U.S.C. § 112 if it does not describe the invention "in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use" it. This is generally referred to as "enablement." If a specification is objected to as being "nonenabling," all claims directed to subject matter with respect to which the specification is nonenabling are rejected on that basis.

62. Any substantive action (first or otherwise) can also include a Notice of References Cited (Form PTO-892), listing references found in the examiner's search, and an Information Disclosure Citation (Form PTO-1449). Form PTO-1449 is attached by the applicant to any Information Disclosure Statement filed and lists in a prescribed format the documents cited by the applicant. When the examiner considers the applicant's disclosure, he or she initials the form and returns it as evidence of having considered it.

Usually, a response includes both claim amendments and arguments designed to distinguish the invention as claimed from any prior art applied by the examiner. A response may also include affidavits as to the nonobviousness of the invention, or affidavits establishing invention prior to the date of some reference cited by the examiner.

If the examiner rejects or objects to a claim as not being supported by the specification, the applicant may respond by amending the specification to reflect the language of the claim. The applicant may also amend the specification in response to an objection asserting that it does not describe the invention with sufficient clarity.

In amending the application, and particularly in amending the specification, the applicant may not introduce "new matter,"63 that is, subject matter that was not in the application as filed. If the specification is amended to support an originally filed claim, there is no problem of new matter because the originally filed claim is part of the original disclosure.⁶⁴ However, if a claim is amended to overcome prior art, and in a second or subsequent Examiner's Action the examiner says that the amended part of the claim is not supported by the specification, the applicant cannot add any material to the specification, because such material will not be supported by any part of the original disclosure.⁶⁵ Similarly, if the objection is based on nonenablement, it may not be possible to amend the specification without introducing new matter. However, if the specification is objected to because, for example, it originated overseas and is not in grammatical English, it usually can be amended to correct the language without introducing new matter.

Reconsideration and allowance

After the applicant submits a response to the first Examiner's Action, the examiner reconsiders the application. If the examiner is satisfied with the response, he or she issues a Notice of Allowance. A Notice of Allowance is a form letter, the primary purpose of which is to inform the applicant of allowance of the application and to set a nonextendable three-month period by the end of which a statutory fee, called the "issue fee," must be paid to cause the patent to issue. The Notice of Allowance is frequently accompanied by a Notice of Allowability, which is similar to the cover letter of an Examiner's

^{63. 35} U.S.C.A. § 132 (1984).

^{64.} In re Myers, 410 F.2d 420, 427 (C.C.P.A. 1969).

^{65.} *In re* Rasmussen, 650 F.2d 1212, 1214–15 (C.C.P.A. 1981); *In re* Winkhaus, 527 F.2d 637, 640 (C.C.P.A. 1975).

Action and may have attachments, such as an Examiner's Amendment (an amendment entered by the examiner, sometimes after consultation with the applicant), a Notice of References Cited, or initialed PTO-1449 forms originally submitted by the applicant. The Notice of Allowability also reminds the applicant of any drawing corrections that are required but have been held in abeyance pending allowance.

Reconsideration and subsequent Examiner's Action; final actions; interviews

If the examiner is not satisfied by a response, he or she may issue another Examiner's Action. Unless a second or subsequent Examiner's Action is based on a new ground of rejection, such as newly discovered prior art, the examiner is allowed to make it "final." This does not mean that allowance is no longer possible; rather, (1) although the applicant may present new amendments and arguments, the examiner is no longer required to consider them as of right, and (2) by six months from the date of the final Examiner's Action, the application must be allowed or an appeal filed with the Board of Patent Appeals and Interferences, or the application will be considered abandoned.

At any time from the issuance of the first Examiner's Action until the issuance of a final Examiner's Action, the applicant or applicant's representative is entitled to a personal or telephonic interview with the examiner for the purposes of clarifying the issues separating them and reaching an agreement leading to allowance of the application. After a final Examiner's Action is issued, it is in the examiner's discretion to allow interviews and to consider responses. The examiner must make the substance of the interview of record by completing an Examiner Interview Summary Record form, and unless excused by the examiner, the applicant must also file a summary of the interview.⁶⁶

Responses to a final action

Responses filed after a final Examiner's Action are answered by a Notice of Allowance, a Notice of Allowability, or an Advisory Action, which is a form letter on which the examiner checks a box indicating why an amendment was not entered. For example, an amendment may be refused entry if it raises "new issues" (as distinguished from "new matter," which is always prohibited) or if it would require additional searching by the examiner. The examiner may also enter an

^{66. 37} C.F.R. § 1.133(b) (1993); MPEP, supra note 44, § 713.04.

amendment only for purposes of an appeal by the applicant to the Board of Patent Appeals and Interferences.

After a final rejection by the examiner, the applicant is faced with a choice: The applicant can abandon the application, file an appeal with the Board of Patent Appeals and Interferences, take the allowed claims and cancel the others, or file a continuing application.

Appeals. If the applicant files an appeal, he or she is given two months, extendable to six months, to file an Appeal Brief. After the Appeal Brief has been filed, the examiner must file an Examiner's Answer. There is no statutory or regulatory time limit for filing the Examiner's Answer. Within one month of the Examiner's Answer, the applicant may file a Reply Brief directed only to any new points that were raised in the Examiner's Answer.

The applicant may request an oral hearing.⁶⁷ The appeal is then placed on the board's calendar and assigned to a panel of three administrative patent judges. When an appeal is set for oral hearing, the applicant is given notice of the date of the hearing and, at that point, may waive the hearing.

After oral hearing, or if no oral hearing is requested, the appeal is considered by the board. The board may affirm the decision of the examiner in whole or in part, or may reverse it. After the board reaches its decision, the application is returned to the examining group for further prosecution. If the board affirms the examiner's decision, the applicant is in the same position as before the appeal—he or she must abandon the application or file a continuing application. If the board reverses the examiner's decision, the examiner must issue a Notice of Allowance. If the board affirms the examiner's decision in part, the examiner must issue an action reflecting that decision.

Cancellation of claims. If an applicant faces final rejection of some claims but allowance of others, whether or not as the result of an appeal, he or she may decide to take the allowed claims and cancel the others. A Notice of Allowance would then be issued.

Continuing applications. "Continuing application" is a generic term for patent applications that are entitled to the filing date of an earlier ("parent") application. The application is said to have as an "effective filing date" the filing date of the parent application. If an application has an effective filing date earlier than the actual filing

^{67.} The request should be filed within two months of the Examiner's Answer, but it can be filed at any time starting with the filing of the appeal. 37 C.F.R. § 1.194(b) (1994).

date, then prior art having a date between the effective and actual filing dates cannot be used against the application.

The three types of continuing applications are continuation applications, continuation-in-part applications, and divisional applications. The requirements for claiming continuing status are as follows: (1) the application must be filed while the parent application is still pending ("copendency"); (2) at least one inventor must be common to the two applications; and (3) the text of the second application must refer back to the first.⁶⁸

If an applicant faces a final rejection of all claims in an application, or a final rejection of claims that were canceled to allow other claims to issue, or if there are nonelected claims in the application at the time of allowance, the applicant may wish to file a continuing application directed to the canceled or nonelected claims. In addition, there may be other reasons for filing a continuing application, as discussed later.

A continuation application is an application whose specification is the same as that of the parent application, but whose claims may be the same or different from those of the parent application. A continuation application is entitled to the parent's filing date as to all subject matter contained in it. There are several reasons for filing a continuation. For example, a continuation might be filed if all claims are finally rejected in the parent and the applicant has new amendments or arguments to present. A continuation application is particularly appropriate if the new amendments or arguments were presented in the parent after final rejection and the examiner did not enter them because they raised new issues or required further searching but he or she indicated that they had some merit. A continuation might also be filed if only some claims were finally rejected in the parent. Those claims might be canceled from the parent, allowing the other claims to issue. The canceled claims may then be pursued, with or without change, in the continuation. Another reason for filing a continuation is that the applicant may have thought of a new way to claim the invention after allowance or final rejection of the parent, whereas before allowance or final rejection, the new claims could have been added directly to the parent.

A continuation-in-part application is an application that has some subject matter in common with the parent but also has new subject matter. A continuation-in-part is entitled to the parent's filing date as

^{68.} MPEP, supra note 44, §§ 201.06, 201.07, 201.08, 201.11.

to any subject matter in common, but only to its own filing date as to the new matter. A continuation-in-part might be filed if the applicant had to add limitations to the parent claims to distinguish a reference or references, but the added limitations were not supported by the specification of the parent and the examiner would not allow supporting material to be added to the specification because it introduced new matter. The applicant could file a continuation-in-part to include the new matter. A continuation-in-part, including newly conceived material, might also be filed if the applicant conceives of improvements to the invention described in the parent. A continuation-inpart filed for this reason may be filed at any time, regardless of the status of prosecution of the parent case, as long as the parent is still pending. In such a case, the parent application might be allowed to continue. If the applicant thinks the invention as described in the parent is not commercially significant, he or she might abandon the parent.

A divisional application is a continuing application that is based on a parent application and has the same specification except that the claims differ, usually because of a restriction requirement or an election-of-species requirement. The application is entitled to the parent's filing date for all purposes. A patent issued on the parent application cannot be used as prior art against such an application if division was made because of an examiner's requirement.⁶⁹ So-called voluntary divisions, by which the applicant selects different groups of claims and cancels some from the parent to be presented in a new application, are actually continuation applications. Such later applications are not protected from the prior-art effects of a patent issued on the earlier application.

Post-allowance activity

After a Notice of Allowance is issued, amendments can be made only on a showing of good cause why they were not made earlier, and submissions of additional prior art by the applicant will only be considered if the applicant certifies that the art was not known to the applicant more than three months prior to the date it is submitted.⁷⁰ If an amendment is made to correct something in an Examiner's Amendment accompanying the allowance, it is usually entered if it does not change the meaning of the allowed application. Similarly, if

69. 35 U.S.C.A. § 121 (1984). 70. 37 C.F.R. § 1.97(d) (1993).

an amendment is of no substantive consequence, such as an amendment to correct recently discovered typographical errors in the application, it will be entered. Even new claims may be entered, provided they are of the same scope as allowed claims and are supported by the specification. However, the standards by which amendments after allowance are judged become stricter after the issue fee is paid, because at that point preparations begin for printing the application as a patent and entering changes becomes more difficult.

An application may be withdrawn from issue at the initiative of the PTO or on petition by the applicant on showing of good cause, such as the discovery of new prior art that is relevant to the application. However, once the issue fee is paid, a patent will be withdrawn from issue only for "(1) [a] mistake on the part of the Office; (2) [a] violation of [37 C.F.R.] § 1.56 or illegality in the application; (3) [u]npatentability of one or more claims; (4) [f]or interference [see *infra* text accompanying notes 74–80]; or (5) [f]or abandonment to permit consideration of an information disclosure statement . . . in a continuing application."⁷¹ If the application is not withdrawn, a patent usually will issue about three or four months after the issue fee is paid.

Foreign priority

An applicant can claim the benefit of the filing date of an application filed abroad. Under the terms of the Paris Convention for the Protection of Industrial Property or (effective January 1, 1996) under GATT, both as implemented in this country under 35 U.S.C. § 119(a-d), the benefit of the filing date (referred to as "priority") from the first application for an invention filed in any country that is a party to either of those treaties can be claimed in a U.S. application as long as the U.S. application is filed within one year of the first application.⁷² Priority can be claimed at any time during the pendency of an application. A claim of priority is perfected by filing a certified copy

71. 37 C.F.R. § 1.313(b) (1993).

72. In addition to the application filed in a member country, an applicant (in certain circumstances) may rely on an "international application" filed pursuant to the Patent Cooperation Treaty (PCT), which is administered by the World Intellectual Property Organization (WIPO). The PCT is a multilateral treaty among more than fifty nations that is designed to simplify the patenting process when an applicant seeks a patent on the same invention in more than one nation. *See* 35 U.S.C.A. chs. 35–37 and PCT Applicant's Guide (1992, rev. 1994). of the foreign application. Whether benefit is claimed from a domestic or foreign application, materials published between the priority date and the application filing date are not prior art to the application. However, the one-year period of 35 U.S.C. § 102(b) (discussed at *infra* notes 313–39) is counted from the earliest effective U.S. filing date, not from a foreign priority date.⁷³

Interferences

If two or more applications claim the same subject matter, the applications are said to be "interfering" and the examiner, after determining patentability of the invention to each applicant, can declare an "interference" between them.⁷⁴ An interference can also be declared between a pending application and an issued patent. If the examiner does not declare the interference, the applicant can provoke an interference. An interference can relate to some or all of the claims in the application or patent.

A patent interference is an inter partes proceeding in the PTO which includes the taking of testimony, the introduction of evidence, and the filing of motions. The purpose of an interference is to determine which of the parties was the first to make the invention.⁷⁵

Invention, at least for the purpose of interference, includes conception and reduction to practice.⁷⁶ Reduction to practice can be actual or constructive. Constructive reduction to practice is the filing of a patent application. The activities relied on to establish invention must take place in the United States, in a North American Free Trade Agreement (NAFTA) country, or in a member country of the GATT-

73. In addition to the domestic priority available to a continuing application, GATT-implementing legislation added subsection (e) to 35 U.S.C. § 119, granting domestic priority based on a provisional application to any nonprovisional application filed within one year of the provisional application's filing date. How the one-year period of 35 U.S.C. § 102(b) will be applied to that type of domestic priority is unclear.

74. 37 C.F.R. § 1.605 (1993); MPEP, supra note 44, § 2305.

75. Changing the United States from a first-to-invent patent system to the first-to-file patent system used by almost every other country was the subject of many trade and legislative efforts in the early 1990s. On January 24, 1994, the United States ceased negotiations regarding this change, but held open the option to convert to a first-to-file patent system in the future. *See generally* 47 Pat. Trademark & Copyright J. (BNA) 285 (1994). *See also infra* text accompanying notes 264–65.

76. 35 U.S.C.A. § 102(g) (1984).

established World Trade Organization (WTO).⁷⁷ Therefore, an applicant whose invention was made outside the United States, Canada, Mexico, or a WTO-member country can rarely prove reduction to practice before the effective U.S. filing date of his or her application. For an invention made in a NAFTA or WTO country, the party who is both first to conceive the invention and first to reduce it to practice prevails.⁷⁸ However, if the first to conceive the invention is not the first to reduce it to practice, the additional element of "diligence" comes into play. If the party first to conceive but second to reduce to practice can prove he or she was diligently pursuing the invention between a time prior to the date of its conception by the other party and the date of his or her own reduction to practice, he or she will prevail.⁷⁹ Otherwise, the other party will prevail.⁸⁰

Other inter partes proceedings

Patent application proceedings are conducted ex parte. While patent applications are kept secret by the PTO, a third party may become aware of the existence of a particular application. If that third party is aware of prior art or public use that would affect the patentability of the invention, he or she may instigate a protest or a public use proceeding.⁸¹

Protest. A protest is a paper submitted by a third party citing prior art and explaining why, in the third party's opinion, the prior art should prevent the issuance of a patent. The protester is not given any additional opportunity to communicate with the PTO regarding the application and is not informed of further prosecution of the application.⁸² However, if the examiner in charge of the application believes that it is warranted, the applicant may be required to respond to the protest.⁸³

77. 35 U.S.C.A. § 104 (West Supp. 1994). Prior to the effective dates of legislation implementing the North American Free Trade Agreement (NAFTA) and GATT, only activity that occurred in the United States could be relied upon to prove the date of invention. The effect of the law was not made retroactive. The GATT-based changes to § 104, for example, do not become effective until January 1, 1996.

78. Tibbetts Indus., Inc. v. Knowles Elecs., Inc., 386 F.2d 209, 211 (7th Cir. 1967), cert. denied, 390 U.S. 953 (1968).

79. Gould v. Schawlow, 363 F.2d 908, 911 (C.C.P.A. 1966).

80. Id. at 920-21.

81. 37 C.F.R. §§ 1.291, 1.292 (1993).

82. 37 C.F.R. § 1.291(c) (1993); MPEP, supra note 44, § 1901.07(b).

83. 37 C.F.R. § 1.291(c) (1993); MPEP, supra note 44, § 1901.06.

Public use proceeding. Prior art consisting of public use or sale may be made the subject of either a protest or a public use proceeding if the public use or sale was by the applicant or his or her assignee. Such prior art must be made the subject of a public use proceeding if the use or sale was not by the applicant or his or her assignee. A public use proceeding is inter partes if the third-party petitioner is the other party in an interference with the application or if the application is a reissue application (see *infra* text accompanying notes 97–102).⁸⁴ A public use proceeding involves the taking of testimony and exchange of briefs and, in an inter partes case, an oral hearing. The examiner's decision in a public use proceeding is not appealable unless it is the basis of a rejection, which may be appealed like any other rejection.

Quality review

The PTO maintains an Office of Quality Review, which randomly checks the prosecution of allowed applications. This procedure is intended to improve patent quality and to increase the likelihood that patents will be held valid in the courts.⁸⁵

A predetermined number of allowed applications is selected from each art unit. The selected applications are chosen at random by the PTO's computerized file management system. Applications already reviewed by the Board of Patent Appeals and Interferences or by a court are excluded. Each application selected is reexamined by a patentability review examiner, who reviews the file and may make an independent prior-art search. If the review examiner has any questions about an application, the application is returned for further consideration by the group director of the examining group from which it came. The group director may resolve any questions on his or her own authority, or may refer the application to a panel that consists of the original examiner, the review examiner, the supervisory primary examiner, the director of quality review, and himself or herself. The group director renders the final decision. If warranted, the application may be withdrawn from issue (allowance rescinded) and prosecution reopened.

Appeals to the Courts

If an applicant is dissatisfied with a decision of the Board of Patent Appeals and Interferences in an appeal from a final rejection by the

^{84.} MPEP, supra note 44, § 720.

^{85.} MPEP, supra note 44, § 1308.03.

examiner, he or she may initiate a civil action against the Commissioner of Patents and Trademarks in the U.S. District Court for the District of Columbia. A party to an interference that is dissatisfied with the decision of the board may have remedy by civil action against the other party.⁸⁶ In the district court, the question of the applicant's or the interfering parties' right to a patent is tried de novo. An appeal from the decision of the district court is taken exclusively to the Federal Circuit.⁸⁷ Alternatively, an applicant may appeal directly from the PTO to the Federal Circuit.⁸⁸ In practice, most appeals are taken directly to the Federal Circuit. Decisions of the Federal Circuit are subject to the certiorari jurisdiction of the Supreme Court, as are decisions of any regional court of appeals.

Post-issuance Responsibilities

For the most part, the responsibility of the PTO ends when a patent is issued. However, in several limited circumstances, the PTO can act with respect to issued patents.

Disclaimers, Dedications, and Certificates of Correction

A patent owner may disclaim or dedicate to the public the entire term of an entire patent (all claims of a patent), the entire term of any complete claim (but not only part of a claim), or the terminal part of the term (that portion of the term beyond a certain date) of the entire patent (but not the terminal part of the term of only some of the claims of a patent).⁸⁹ Upon payment of a fee set by regulation, the PTO publishes a notice of the disclaimer or dedication in its *Official Gazette* and prints copies of the disclaimer or dedication for attachment to printed copies of the patent.⁹⁰

86. 35 U.S.C.A. §§ 145, 146 (1984 & Supp. 1994).

87. 28 U.S.C.A. § 1295 (1993 & Supp. 1994).

88. 35 U.S.C.A. § 141 (West Supp. 1994).

89. 35 U.S.C.A. § 253 (1984). An entire patent, or the entire term of a complete claim, might be disclaimed if the patentee discovers that there might be a substantial question as to the validity of the patent or claim. The terminal portion of the term of a patent might be disclaimed if the patentee realizes that he or she has duplicate coverage in another patent. The terminal disclaimer would cause both patents to expire on the same day, avoiding a "double patenting" situation. Such a disclaimer is effective only for obviousness-type double patenting. *See generally* 3 Donald S. Chisum, Patents § 9 (1978, rev. 1994).

90. 37 C.F.R. § 1.321 (1994).

If printing errors arise in the printing of a patent, the PTO must issue a certificate under seal, without charge, stating the nature of the errors, and attach a copy of the certificate to each printed copy of the patent.⁹¹ The issuance of a Certificate of Correction is published in the *Official Gazette*. The patent and certificate together have the same effect as to any actions arising after issuance of the certificate as the patent would have had it been issued correctly.⁹²

An applicant is entitled, on payment of a fee, to a Certificate of Correction for any clerical or typographical error that was the applicant's responsibility as long as it is obvious that the error was made in good faith.⁹³ Such a certificate has the same effect as a certificate issued to correct PTO errors.⁹⁴

The PTO will issue a certificate correcting the inventorship of an issued patent, either as a result of a court order in a case where inventorship was raised as an issue in litigation or as a result of a petition by the patent owner.⁹⁵ In each situation, the error in naming inventors must have been made in good faith.⁹⁶

Reissue

Section 251, 35 U.S.C.A., provides that a patent may be reissued by the PTO upon surrender of the original patent if the patent is "through error without any deceptive intention, deemed wholly or partly inoperative or invalid."⁹⁷ The types of error commonly forming the bases of reissue applications are (1) claims that are too narrow or too broad; (2) inaccuracies in the disclosure; (3) incorrect naming of inventors; (4) failure to claim or correctly claim foreign priority; and (5) failure to refer properly to a copending application, the filing date of which is claimed. The oath or declaration of a reissue application must set forth the error or errors forming the basis of the reissue application.

Claims may be broadened in a reissue application if such application is filed within two years of issuance of the patent and if it is signed by the inventor.⁹⁸ After two years, a reissue application may

91. 35 U.S.C.A. § 254 (1984).
92. 37 C.F.R. § 1.322 (1993).
93. 35 U.S.C.A. § 255 (1984).
94. 37 C.F.R. § 1.323 (1993).
95. 35 U.S.C.A. § 256 (1984).
96. 37 C.F.R. § 1.324 (1993).
97. 35 U.S.C.A. § 251 (1984).
98. 37 C.F.R. § 1.172(a) (1993).

be made only to narrow claims or to leave their scope unchanged. If claims are not being broadened, a reissue application may be signed by the assignee.

A reissue application must claim the same general invention as the original patent and cannot be used to recapture subject matter initially given up in order to convince the examiner to grant the original patent. No new matter (see *supra* text accompanying notes 63–65) may be added under the guise of correction. From 1977 to 1982, the PTO allowed the filing of "no-defect" reissue applications, whose purpose was to have the PTO consider new prior art, although that practice ended when reexamination (see *infra* text accompanying notes 103–110) became available.⁹⁹ Since March 1, 1977, reissue application files have been open to the public. Any member of the public can file a protest (see *supra* text accompanying notes 82–83). From 1977 to 1982, a protester was allowed to participate in the prosecution of a reissue application. However, since 1982, participation by a protester has been limited to the filing of a protest.

The examination of a reissue application is not limited to the prior art considered in the original examination. The examiner of a reissue application can consider de novo all issues affecting patentability.¹⁰⁰ When a patent is reissued, matter canceled from the original is printed in brackets, and matter added is italicized.¹⁰¹ If reissued claims differ in scope from the original claims, any person who was practicing subject matter not covered by the original claims but covered by the reissued claims may have "intervening rights" to the practice of that subject matter.¹⁰²

Reexamination

Citation of prior art

Any person may cite patents or printed publications for entry into the file of a patent during the period of its enforceability in order to inform the PTO and the patent owner of such prior art as may affect the patent.¹⁰³ The submitter may remain anonymous. A copy of each citation of prior art is to be served on the patent owner, but in the ab-

99. MPEP, supra note 44, § 1414.02.
100. 37 C.F.R. § 1.176 (1993).
101. MPEP, supra note 44, § 1455.
102. 35 U.S.C.A. § 252 (1984).
103. 35 U.S.C.A. § 301 (1984).

sence of evidence of such service, the PTO notifies the patent owner of each such citation that has been filed.

Reexamination

A citation of prior art under 35 U.S.C. § 301 can form the basis of a request for reexamination.¹⁰⁴ Any person may seek reexamination, provided he or she pays the required fee.¹⁰⁵ The requester may be the patent owner. A request by the patent owner may include proposed amendments to overcome the prior art. Also, the PTO may initiate reexamination on its own.

A request for reexamination can be filed at any time during the term of a patent, plus six years for the period during which a suit for damages may be brought, even though the patent has expired (see *in-fra* note 438). If an action for infringement has been filed, a request may be filed even after the above-mentioned period has run.

The standard for granting reexamination is that a "substantial new question of patentability" is raised by the cited art. A decision on the request, based on that criterion, must be made within three months of the filing of the request. The decision gives the examiner's reasons for granting or denying the request. If the request is denied, the denial can be petitioned from, within one month, to the commissioner. If the request is granted, an order for reexamination is issued.

If an order to reexamine is issued, the patent owner may file, within two months, a Patent Owner's Statement showing why the claims are patentable and presenting narrowing amendments, if desirable.¹⁰⁶ After such a statement is filed, the requester, if other than the patent owner, may file a reply within two months.¹⁰⁷ A patent owner may refrain from filing a statement and thereby deny the requester an opportunity to be heard.

After the period for statement has passed, the reexamination proceeds ex parte in a manner similar to the prosecution of an application. The routes of appeal from a final rejection are also available. In reexamination, claims may only be narrowed, although new claims, no broader than the original claims, may be added. On completion of reexamination, a Notice of Intent to Issue a Reexamination Cer-

107. 37 C.F.R. § 1.535 (1993).

^{104. 35} U.S.C.A. § 302 (1984).

^{105.} The fee is currently 2,250. 37 C.F.R. § 1.20(c) (1993). It is set high to discourage frivolous requests. If reexamination is not granted, \$1,690 of the fee is refunded. 37 C.F.R. § 1.26(c) (1993).

^{106. 37} C.F.R. § 1.530 (1993).

tificate, and subsequently the Reexamination Certificate itself, are issued. 108 The issuance of the certificate is published in the *Official Gazette*. 109

Reexamination files are open to the public. Any interested person may file a citation of prior art during the reexamination. If such a citation is received before reexamination is ordered, the art cited will be considered in the reexamination. If it is received after reexamination has been ordered, it will be entered in the file after reexamination is completed, and no action will be taken on it. If the submitter of the citation wants the art to be considered further, he or she will have to file a new request for reexamination. Intervening rights can arise from reexamination, as they can from reissue (see *supra* text accompanying notes 97–102).¹¹⁰

Patent Term Extension

The term of a patent for a product, method of using a product, or method of manufacturing a product will be extended if the product was the subject of a regulatory review period before commercial use and the extension is applied for during the unexpired term of the patent.¹¹¹ The length of such an extension is generally equal to the period of regulatory review, subject to certain exceptions.

108. The certificate, when issued, will

- a. cancel any claims determined to be unpatentable;
- b. confirm any patent claims determined to be patentable;
- c. incorporate into the patent any amended or new claims determined to be patentable;
- d. make any changes in the description approved during reexamination;
- e. include any statutory disclaimer filed by the patent owner;
- f. refer to unamended claims held invalid on final holding by another forum on grounds not based on patents or printed publications;
- g. refer to any patent claims not reexamined;
- h. be mailed on the day of its date to the patent owner at address provided for in 37 C.F.R. § 1.33(c) and a copy to the requester; and
- i. refer to patent claims, dependent on amended claims, determined to be patentable.

MPEP, *supra* note 44, § 2288.

109. A certain number of reexaminations will be reviewed by quality review examiners (see *supra* text accompanying note 85).

110. 35 U.S.C.A. § 307(b) (1984).

111. 35 U.S.C.A. § 156 (West Supp. 1994).
A patent term can be extended under 35 U.S.C. § 156 only once, and only one patent for a product subject to any one regulatory review period can have its term extended. The primary purpose of section 156 is to lessen the impact on drug producers of the lengthy regulatory review periods under the Food, Drug and Cosmetic Act for approval of new drugs and medical devices. Such reviews frequently consume a large portion of the statutory patent term. This limits the patentee's ability to exploit his or her patent for the full term, because the drug or medical device cannot be sold until it is approved.

A patent term can also be extended under 35 U.S.C. § 154 as amended by GATT-implementing legislation. Such an extension, which can be for up to five years, is to compensate for time lost from the patent term as a result of interference proceedings or imposition of secrecy orders, or when a decision of nonpatentability is reversed on appeal either by the PTO or by a federal court. Calculation of the time of extension is governed by detailed statutory provisions.

III. Proceedings in the Federal Courts

Parties

Who Can Assert the Patent Right

A patent gives its owner the right to exclude others from making, using, offering for sale, selling, or importing the patented invention.¹¹² Subject to patent misuse¹¹³ or antitrust concerns, this right can be shared, or completely or partially transferred through an assignment.¹¹⁴ Subject to the same concerns, the patent owner can wholly or partially exempt persons of his or her choosing from the exclusionary power of the patent through a patent license.¹¹⁵ Because the patent can be assigned, licensed, or both, many different parties can have sufficient interest in a patent to allow them to enforce that patent.

A patent owner can transfer all or part of his or her ownership interest through an assignment. There are three types of assignment: (1) the patent owner conveys all of his or her ownership interest; (2) the patent owner shares all or a piece of his or her ownership interest; and (3) the patent owner conveys all of his or her ownership interest for a determined time or place.¹¹⁶

The first type of assignment is very common; for example, inventors often assign all their rights in the patent to their corporate employer. In the second situation, the patent owner conveys a fractional, undivided share in the patent. This can be troublesome because, absent agreement to the contrary, the co-owners have equal rights despite possibly unequal shares (e.g., 1% and 99%).¹¹⁷ The third situation, a grant, is relatively rare. The grant can be territorial or temporal.¹¹⁸

112. See infra text accompanying notes 369-438.

113. See infra text accompanying notes 465–70.

114. 35 U.S.C.A. § 261 (1984).

115. William E. Currie, *Licenses Under U.S. Patent Rights, in* The Encyclopedia of Patent Practice and Invention Management 529 (Robert Calvert ed., 1964).

116. Waterman v. MacKenzie, 138 U.S. 252 (1891).

117. 35 U.S.C.A. § 262 (1984); 3 Peter D. Rosenberg, Patent Law Fundamentals § 16.01[1][a] (2d ed. 1986, rev. 1994).

118. 35 U.S.C.A. § 261 (1984); 2 William C. Robinson, The Law of Patents for Useful Inventions § 760 (1890).

Anyone with the entire ownership interest can enforce a patent: the original patent owner, an assignee in the first situation, and a grantee (in his or her time or territory).¹¹⁹ An assignee in the second situation can enforce the patent right, but only in conjunction with the other patent owner, because the assignee only owns an undivided share of the patent.¹²⁰

A patent owner can exempt persons from the exclusionary power of the patent by granting a patent license, which is a contract between the patent owner and another.¹²¹ The license can be either exclusive or nonexclusive. An exclusive license is one by which the patent owner agrees that nobody other than the exclusive licensee not even the patent owner—will be exempted from the patent's exclusionary power.¹²² Exclusivity may extend to all the United States for all purposes or may be limited to geographical areas, time periods, certain uses, or a combination thereof. An exclusive licensee has an interest in the patent that so closely approximates an ownership interest that he or she can assert the patent right,¹²³ but he or she cannot do so alone.¹²⁴ The exclusive licensee can do so only in conjunction with the patent owner/licensor.¹²⁵ A nonexclusive license contains no agreement not to exempt others,¹²⁶ and a nonexclusive licensee cannot assert the patent right at all.¹²⁷

As stated earlier, there are two instances in which more than one party is needed to assert the patent right: (1) when the patent owner/licensor exclusively licenses someone, and (2) when the patent owner/assignor assigns less than all of his or her interest in the patent. The latter situation is similar to one in which there are joint

119. Waterman, 138 U.S. at 252. Transfer of all "substantial" rights, while not formally an assignment, may have the same effect. Vaupel Textilmaschinen v. Meccanica Euro Italia, 944 F.2d 870, 873–76 (Fed. Cir. 1991).

120. Waterman, 138 U.S. at 252.

121. See generally Spindelfabrik Suessen-Schurr v. Schubert & Salzer, 829 F.2d 1075, 1081 (Fed. Cir. 1987), cert. denied, 484 U.S. 1063 (1988).

122. Raymond C. Nordhaus, Patent License Agreements § 11 (2d ed. 1986); Levi Case Co., Inc. v. ATS Products, Inc., 788 F. Supp. 428, 431–32 (N.D. Cal. 1992).

123. See, e.g., United Lacquer Mfg. Corp. v. Maas & Waldstein Co., 111 F. Supp. 139 (D.N.J. 1953).

124. Independent Wireless Co. v. Radio Corp., 269 U.S. 459 (1926).

125. 3 Peter D. Rosenberg, Patent Law Fundamentals § 17.09[1][b] (2d ed. 1986, rev. 1994).

126. See Nordhaus, supra note 122, § 11.

127. See, e.g., Gilson v. Republic of Ireland, 787 F.2d 655 (D.C. Cir. 1986).

inventors (i.e., there are co-owners). If all the necessary parties willingly join to assert the patent right, there is no problem. Trouble may arise, however, when a co-owner attempts to proceed without the other co-owners, when an exclusive licensee attempts to proceed without the patent owner/licensor, or when a patent owner/licensor attempts to proceed without his or her exclusive licensee.

Co-owners are usually indispensable parties to a suit to enforce their patent, and the suit cannot proceed without all co-owners.¹²⁸ Absent agreement, an unwilling co-owner cannot be compelled to join in a suit to enforce his or her patent.¹²⁹ An exclusive licensee usually cannot proceed without the patent owner/licensor, but the exclusive licensee can usually compel the patent owner/licensor to be an involuntary plaintiff.¹³⁰ A patent owner/licensor also usually cannot proceed without the exclusive licensee, but the patent owner/licensor can usually compel the exclusive licensee to join in an action.¹³¹

Who Can Attack the Patent

An action seeking a declaratory judgment that a patent is invalid, unenforceable, or not infringed can be brought by any party, including assignees and licensees attacking the assigned or licensed patent, if two conditions are satisfied: (1) The patent owner must have acted in a manner to cause the prospective declaratory judgment plaintiff a reasonable apprehension that he or she, or his or her customers, will be charged with infringement, and (2) the declaratory judgment plaintiff must have a sufficient interest at stake.¹³² A sufficient interest exists if the declaratory judgment plaintiff makes, uses, or sells an accused infringing product, contributes to allegedly infringing activity,

128. Rosenberg, supra note 125, § 17.09[1][b].

129. Id.

130. Independent Wireless, 269 U.S. at 472.

131. See, e.g., Birdsell v. Shaliol, 112 U.S. 485 (1884) (dictum); Norvell v. McGraw-Edison Co., 270 F. Supp. 57 (E.D. Wis. 1967).

132. C. R. Bard, Inc. v. Schwartz, 716 F.2d 874, 879 (Fed. Cir. 1983). The Federal Circuit has articulated different "tests" for evaluating declaratory judgments. *E.g., compare Bard with* Shell Oil Co. v. Amoco Corp., 970 F.2d 885, 887 n.2 (Fed. Cir. 1992). Regardless of the particular articulation of the test in a given case, there are "two core elements: (1) acts of defendant indicating an intent to enforce its patent; and (2) acts of plaintiff that might subject it or its customers to suit for patent infringement." Arrowhead Industrial Water, Inc. v. Ecolochem, Inc., 846 F.2d 731, 737 (Fed. Cir. 1988).

induces allegedly infringing activity, indemnifies alleged infringers, or has the intention and ability to engage in allegedly infringing activity.¹³³ "Reasonable apprehension" and "sufficient interest" have been interpreted in numerous decisions.¹³⁴

A declaratory judgment action must be brought against the proper defendant. Generally, the defendant is a proper one if he or she alone could assert the patent right.¹³⁵

Jurisdiction

The federal courts have had exclusive subject-matter jurisdiction over all cases arising under the patent laws since 1836.¹³⁶ This jurisdiction "extends only to those cases in which a well-pleaded complaint establishes either that federal patent law creates the cause of action or that the plaintiff's right to relief necessarily depends on resolution of a substantial question of federal patent law, in that patent law is a necessary element of one of the well-pleaded claims."¹³⁷ The Federal Circuit has held that the "well-pleaded complaint" rule includes compulsory counterclaims for patent infringement.¹³⁸

133. See, e.g., Indium Corp. of Am. v. Semi-Alloys, Inc., 781 F.2d 879 (Fed. Cir. 1985), cert. denied, 479 U.S. 820 (1986); Nippon Elec. Glass Co. v. Sheldon, 489 F. Supp. 119 (S.D.N.Y. 1980); Wallace & Tiernan, Inc. v. General Elec. Co., 291 F. Supp. 217 (S.D.N.Y. 1968); Technical Tape Corp. v. Minnesota Mining & Mfg. Co., 200 F.2d 876 (2d Cir. 1952). Additionally, the expanded rights given by the GATT-implementing legislation may also be found to create a sufficient interest.

134. See cases collected at 6 Donald S. Chisum, Patents § 21.02[1] nn.80-111 (1978, rev. 1994).

135. See, e.g., Owatonna Mfg. Co. v. Melroe Co., 301 F. Supp. 1296 (D. Minn. 1969). If the selected defendant could not assert the patent right alone, at least one additional defendant is necessary. See, e.g., Rheodyne, Inc. v. Ramin', 201 U.S.P.Q. (BNA) 667 (N.D. Cal. 1978).

136. 28 U.S.C.A. § 1338(a) (1993); Donald S. Chisum, *The Allocation of Jurisdiction Between State and Federal Courts in Patent Litigation*, 46 Wash. L. Rev. 633 (1971).

137. Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 808–09 (1988). See also, e.g., Additive Controls & Measurement Sys. v. Flowdata, 986 F.2d 476 (Fed. Cir. 1993).

138. Aerojet-General Corp. v. Machine Tool Works, 895 F.2d 736 (Fed. Cir. 1990).

Whether a particular case arises under the patent laws has already been decided for many common situations.¹³⁹ For example, a breach of a contract to pay royalties due on a patent license does not arise under the patent laws and yields only a state court cause of action.¹⁴⁰ Likewise, an action to remove a cloud on the title to a patent does not arise under the patent laws.¹⁴¹ In contrast, an action for patent infringement or for a declaratory judgment that a patent is invalid, unenforceable, or not infringed does arise under the patent laws.¹⁴²

The determination of a court's personal jurisdiction over a defendant, with one exception for nonresident patent owners, is made in a patent case as in any other case.¹⁴³ The Federal Circuit has applied the stream-of-commerce theory.¹⁴⁴

Venue

Venue in patent controversies depends upon the cause of action. When the plaintiff alleges patent infringement by a nonalien defendant, 28 U.S.C. § 1400(b), the patent venue statute, applies.¹⁴⁵ When the plaintiff alleges any other cause of action involving a patent, 28 U.S.C. § 1391, the general venue statute, applies.¹⁴⁶ When applying either venue statute to a case where the plaintiff has alleged infringement of more than one patent, each patent must be treated separately.¹⁴⁷ Venue must be appropriate for each patent asserted.¹⁴⁸

139. Nevertheless, regardless of what law the case arises under (patent or otherwise), determining the exact boundaries of "arising under" jurisdiction has been difficult for the federal courts for a long time. Chisum, *supra* note 134, § 21.02[1][a].

140. Schwarzkopf Dev. v. Ti-Coating, Inc., 800 F.2d 240 (Fed. Cir. 1986).

141. Beghin-Say Int'l v. Ole-Bendt Rasmussen, 733 F.2d 1568 (Fed. Cir. 1984).

142. C.R. Bard, Inc. v. Schwartz, 716 F.2d 874 (Fed. Cir. 1983).

143. VE Holding Corp. v. Johnson Gas Appliance Co., 917 F.2d 1574, 1583 n.20 (Fed. Cir. 1990), *cert. denied*, 499 U.S. 922 (1991). For the exception for nonresident patent owners, see 35 U.S.C.A. § 293 (1984).

144. Beverly Hills Fan Co. v. Royal Sovereign Corp., 21 F.3d 1558 (Fed. Cir. 1994), cert. dismissed, No. 93-1940, 1994 U.S. LEXIS 5206 (Aug. 9, 1994).

145. Fourco Glass Co. v. Transmirra Corp., 353 U.S. 222 (1957).

146. 28 U.S.C.A. § 1391 (1993).

147. Digital Equip. v. Electronic Memories, 452 F. Supp. 1262 (D. Mass. 1978).

148. Id.; Schroeder v. Owens-Corning Fiberglas Corp., 326 F. Supp. 594 (C.D. Cal. 1971).

The Patent Venue Statute—28 U.S.C. § 1400(b)

Section 1400(b) provides two independent tests for venue: (1) where the defendant resides, and (2) where the defendant has committed acts of infringement and has a regular and established place of business.

The effect of this special patent venue statute, which had been interpreted as giving alleged infringers extra protection by allowing suits against them only in those districts that satisfy a relatively narrow definition of venue,¹⁴⁹ was changed in part by the 1988 amendments to 28 U.S.C. § 1391(c), which changed the definition of "resides" as it applies to corporate defendants.¹⁵⁰

Section 1400(b)'s first test for venue is "where the defendant resides." If the defendant is an individual, he or she resides where he or she is domiciled.¹⁵¹ Determining domicile is no different in a patent case than in any other case.¹⁵²

If the defendant is a corporation, it resides in any judicial district in which it is subject to personal jurisdiction at the time the action is commenced.¹⁵³ If the state where a corporation resides has multiple judicial districts, then the corporation is deemed to reside in any district in that state within which its contacts would be sufficient to subject it to personal jurisdiction if that district were a separate state and, if there is no such district, then in the district within which it has the most significant contacts.¹⁵⁴

Whether the 1988 amendments to section 1391(c) which affect venue for corporate defendants also affect venue when the defendant

150. See VE Holding Corp. v. Johnson Gas Appliance Co., 917 F.2d 1574 (Fed. Cir. 1990).

151. Fourco Glass Co. v. Transmirra Corp., 353 U.S. 222, 226 (1957).

152. See, e.g., T.P. Lab., Inc. v. Huge, 197 F. Supp. 860 (D. Md. 1961).

153. 28 U.S.C.A. § 1391(c) (1993), which the Federal Circuit has held to apply to 28 U.S.C. § 1400(b). *VE Holding Corp.*, 917 F.2d 1574.

154. 28 U.S.C.A. § 1391(c) (1993).

^{149.} Schnell v. Peter Eckrich & Sons, 365 U.S. 260 (1961). This was a controversial point. See, e.g., 15 Charles Alan Wright et al., Federal Practice and Procedure: Jurisdiction 2d § 3823 (1986 & Supp. 1994); James W. Geriak, Fifteen Years of Fourco— The Needless Disputes Over Patent Venue, 24 Hastings L.J. 55 (1972); Neal A. Waldrop, The Patent Venue Statute, 28 U.S.C.A. 1400(b), Should Not Be Repealed, 4 APLA Q.J. 32 (1976); Richard C. Wydick, Venue in Actions for Patent Infringement, 25 Stan. L. Rev. 551 (1973).

is a partnership, an unincorporated association, or a sole proprietor-ship is not clear. 155

Section 1400(b)'s second test for venue has two elements, both of which must be met.¹⁵⁶ The defendant must (1) have committed acts of infringement in the district and (2) have a regular and established place of business in the district.

In regard to the issue of whether the defendant has committed acts of infringement in the district, the focus for determining venue is on the acts rather than the infringement. The question should be, Did the act happen in the district, not, Is the act an infringement?¹⁵⁷ Acts that satisfy section 1400(b) are making, using, or selling an accused product or process in the district; inducing in the district another to make, use, or sell an accused product or process; and contributing in the district to another's making, using, or selling of an accused product or process.¹⁵⁸

"Making" means manufacturing or assembling, and "using" means actual use, not mere possession.¹⁵⁹ Accordingly, a defendant who manufactures the accused product in the district, assembles the accused product in the district, or uses the accused product or process in the district has committed an act of infringement in the district.

What constitutes "selling" is not so easily stated and may be influenced by the GATT-implementing legislation that makes an offer to sell an infringement. Prior to this revision, selling an accused product or process in the district required that the defendant do something more than merely continuously and systematically solicit orders; however, how much more was required to establish venue depended upon the jurisdiction. Some jurisdictions required a "sale" within the meaning of the Uniform Commercial Code,¹⁶⁰ while other juris-

155. E.g., compare Kabb Inc. v. Sutera, 25 U.S.P.Q. 2d (BNA) 1554 (E.D. La. 1992) with Injection Research Specialists v. Polaris Indus., 18 U.S.P.Q. 2d (BNA) 1800, amended, 759 F.Supp. 1511 (D. Colo. 1991).

156. 15 Wright et al., supra note 149.

157. In re Cordis Corp., 769 F.2d 733 (Fed. Cir.), cert. denied, 474 U.S. 851 (1985).

158. Acts made infringing by the GATT-implementing legislation may also be held to satisfy § 1400(b).

159. See Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518 (1972); Lindly & Co. v. Karl H. Inderfurth Co., 190 F. Supp. 875 (E.D.N.C. 1961).

160. See, e.g., Picker Int'l v. Varian Assocs., Inc., 661 F. Supp. 347 (N.D. Ohio 1987).

dictions required only solicitation plus two demonstrations of the accused product in the district.¹⁶¹

A determination of whether inducing infringement or contributory infringement has occurred in the district requires distinguishing between two different actors: (1) the defendant who is alleged to be an inducer or contributor and (2) the one who does the actual making, using, offering for sale, or selling. As to the inducer or contributor, venue is appropriate only in the district where he or she acted.¹⁶²

The "regular and established place of business" element of section 1400(b)'s second test for venue does not require that the place of business be related to the alleged infringing act.¹⁶³ It is merely a requirement for a certain level of business presence in the district. The appropriate inquiry is whether the defendant does its business through a permanent and continuous presence in the district, not whether the defendant has a fixed physical presence, such as an office or store in the district.¹⁶⁴

The General Venue Statute—28 U.S.C. § 1391

When the plaintiff alleges a cause of action that arises under the patent laws, the action is appropriately filed in federal court, and if it is not a patent infringement action against a nonalien defendant, the general venue statute applies. A case in which the plaintiff seeks a declaratory judgment that a patent is invalid, unenforceable, or not infringed invokes the general venue statute. Even though this type of declaratory judgment action is the mirror image of a patent infringement case, a different venue statute is applied.¹⁶⁵

161. See, e.g., Union Asbestos & Rubber Co. v. Evans Prods. Co., 328 F.2d 949 (7th Cir. 1964).

163. Laitram Corp. v. Rexnord, Inc., 226 U.S.P.Q. (BNA) 971 (D. Md. 1985).

164. In re Cordis Corp., 769 F.2d at 737.

165. See, e.g., General Tire & Rubber Co. v. Watkins, 326 F.2d 926 (4th Cir.) cert. denied, 377 U.S. 909 (1964). See also VE Holding Corp. v. Johnson Gas Appliance Co., 917 F.2d 1574 (Fed. Cir. 1990), cert. denied, 499 U.S. 922 (1991).

^{162.} See, e.g., Case v. Goodyear Tire & Rubber Co., 223 U.S.P.Q. (BNA) 120 (D. Mass. 1983); Dover Corp. v. Fisher Governor Co., 221 F. Supp. 716 (S.D. Tex. 1963); Leesona Corp. v. Cotwool Mfg. Corp., Judson Mills Div., 201 F. Supp. 472 (W.D.S.C. 1962).

Presumption of Validity and Burden of Proof Regarding Validity

A patent is presumed valid.¹⁶⁶ Each claim of a patent is presumed valid independent of the validity of the patent's other claims.¹⁶⁷ This presumption of validity is never destroyed.¹⁶⁸ The burden on the party challenging validity is to show, by clear and convincing evidence, that the patent is invalid.¹⁶⁹ In a patent infringement suit, the alleged infringer usually challenges the patent's validity as a defense. The court must decide whether the alleged infringer has sustained his or her burden of proving the patent invalid. If the alleged infringer fails to prove the patent invalid, the court may conclude only that the patent has not been proven invalid and need not conclude that the patent is valid, because the patent is presumed valid.¹⁷⁰

Although courts are not bound by the PTO's decision to issue a patent, the PTO is due the deference given a qualified government agency that is presumed to have properly done its job.¹⁷¹ Therefore, if a challenger comes forward with no evidence different from that reviewed by the examiner who considered the patent application, the challenger's task is difficult.¹⁷² The challenger's task should be less difficult if the challenger presents material evidence that was not considered during the PTO application process.¹⁷³

Stays

A court has the power to stay proceedings before it because it is within the court's inherent power to control its docket.¹⁷⁴ Whether a

166. 35 U.S.C.A. § 282 (1984 & Supp. 1994).

167. Id.

168. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530 (Fed. Cir. 1983).

169. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987).

170. Stratoflex, 713 F.2d at 1534.

171. American Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1359 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984).

172. Id.

173. *Id.* at 1359–60. The burden of proof, however, is not lessened. Gillette Co. v. S.C. Johnson & Son, Inc., 919 F.2d 720, 723 (Fed. Cir. 1990).

174. Landis v. North Am. Co., 299 U.S. 248 (1936). GATT-implementing legislation added 28 U.S.C. § 1659, which mandates a stay under certain circumstances involving a parallel infringement proceeding in the United States International Trade Commission.

particular case should be stayed and whether the parties before the court should be enjoined from participating in another proceeding in another court are issues not unique to patent matters. However, deciding priorities between patent cases at times involves unique issues.¹⁷⁵

Allowing Other District Courts to Proceed First

It is not unusual to have more than one action involving the same patent in different federal courts at the same time. This situation arises because a patent owner can sue many different infringers and because any entity that has a reasonable apprehension that it will be sued as an infringer can request a declaratory judgment of invalidity and noninfringement of the patent.¹⁷⁶ For example, if a manufacturer makes an infringing product and sells it to others who, in turn, sell it to customers who use it, then all these entities are infringers who are jointly and severally liable and all are potential defendants.

In deciding which suits might be stayed, courts look to the identity of the parties. Generally, if the parties in the suits are the same, the priority rule applies so that the first-filed suit proceeds while the second-filed suit is stayed.¹⁷⁷ For example, if the first-filed suit is for patent infringement and is brought by the patent owner against an infringing manufacturer, and the second-filed suit is for a declaratory judgment brought by the same manufacturer against the patent owner, then the second-filed action is usually stayed.¹⁷⁸ An exception to the priority rule could occur if there is no reasonable basis for the plaintiff's choice of forum in the first-filed suit.¹⁷⁹

Which suit, if any, should be stayed¹⁸⁰ is usually not determined by priority alone if the parties in the suits are not the same. For example, if the first-filed suit is for patent infringement and is brought by the patent owner against a customer who uses an infringing product, rather than against the manufacturer of that product either alone or together with a customer, and the second-filed suit is for a declara-

177. Andco Envtl. Processes v. Niagara Envtl., 211 U.S.P.Q. (BNA) 544 (W.D.N.Y. 1981).

178. See, e.g., Pacesetter Sys., Inc. v. Medtronic, Inc., 678 F.2d 93 (9th Cir. 1982).

179. Rayco Mfg. Co. v. Chicopee Mfg. Co., 148 F. Supp. 588 (S.D.N.Y. 1957).

180. Other possibilities might include transfer pursuant to 28 U.S.C.A. § 1404 (1993) (change of venue) or § 1407 (1993) (multidistrict litigation).

^{175.} See generally Herbert F. Schwartz, Competing Claims for Jurisdiction Between Federal Courts in Patent Suits, 46 J. Pat. Off. Soc'y 685 (1964).

^{176.} Id.

tory judgment brought by the infringing manufacturer against the patent owner, then the priority rule is usually not followed.¹⁸¹ That the second-filed suit involves both real parties in interest as plaintiff and defendant is a significant factor to be considered along with peripheral issues in deciding which suit should go forward.¹⁸²

Allowing the Patent and Trademark Office to Proceed First

A district court may be asked to stay a patent infringement suit until a PTO proceeding involving the same patent is resolved. Reissues and reexaminations are two PTO proceedings involving already issued patents that are associated with requests for stays. The historical background of these proceedings (see *supra* text accompanying notes 97–110) is useful here.

From 1832 to 1977, reissue proceedings were available to the patent owner in the PTO to cure inadvertent defects in a patent.¹⁸³ In 1977, the PTO exercised its rule-making authority to expand reissue proceedings to allow patent owners to seek reissue of patents that had no known defects. In these expanded reissue proceedings, the PTO could examine patentability in light of such issues as invalidity for prior sale or printed publication, and invalidity and unenforceability for fraud. Third parties were allowed a limited role in these reissue/reexamination proceedings.¹⁸⁴ In 1980, Congress passed a statute introducing a PTO procedure called "reexamination" that allowed a patentee or any third party to request the reexamination of a patent in light of certain printed matter.¹⁸⁵ This statutory reexamination proceeding, which took effect in mid-1981, was of considerably narrower scope than the PTO reissue/reexamination proceedings.¹⁸⁶ In 1982, the PTO rescinded its rules concerning expanded reissue proceedings and returned to its pre-1977 practice.¹⁸⁷

181. William Gluckin & Co. v. International Playtex Corp., 407 F.2d 177 (2d Cir. 1969). See also Kahn v. General Motors Corp., 889 F.2d 1078 (Fed. Cir. 1989).

182. See, e.g., Gluckin & Co., 407 F.2d at 179–80; Codex Corp. v. Milgo Elec. Corp., 553 F.2d 735 (1st Cir.), cert. denied, 434 U.S. 860 (1977).

183. Thomas A. Miller, Court-Compelled Reissue-Reexamination—A Misplaced Exercise of Judicial Discretion, 86 Dick. L. Rev. 353 (1982).

187. 47 Fed. Reg. 21,746 (1982).

^{184.} Id.

^{185.} Id.

^{186.} Id.

This background helps put into context the significant body of case law regarding stays that comes from the 1977–1981 period. The reissue proceeding in effect at that time was popular with courts and many litigants because it allowed study of the patent in light of issues, such as alleged fraud, that were at the same time significant defenses to patent infringement suits.¹⁸⁸ The court and the parties became involved in the question whether to stay the district court patent case until the reissue/reexamination proceedings were voluntarily entered into by the patent owner. Some courts, however, compelled the patent owner to seek reissue/reexamination.¹⁸⁹

Because the intermediate proceeding no longer exists, and the statutory reexamination proceeding that does exist is considerably narrower than what previously existed, many of the benefits that justified granting a stay in the decided cases no longer exist. However, just because the reexamination statute that exists today is narrow does not mean that stays are inappropriate. Courts have both granted¹⁹⁰ and denied¹⁹¹ requests for stays pending reexamination.

Prior Adjudications Regarding Validity

It is not unusual for a patent to be infringed by more than one party. Because of the considerable expense of patent litigation, patent owners may sue multiple infringers seriatim rather than simultaneously. Then, depending on the outcome of an earlier suit, either an alleged infringer or the patent owner might try to use that outcome to its advantage during a later suit. For example, if the patent was held invalid in the earlier suit, a new defendant might argue that the outcome of the prior adjudication estops the patent owner from asserting that

188. Rohm & Haas Co. v. Mobil Oil Corp., 462 F. Supp. 732 (D. Del. 1978). See generally Fisher Controls Co. v. Control Components, 443 F. Supp. 581 (S.D. Iowa 1977), motion granted, 203 U.S.P.Q. (BNA) 1059 (S.D. Iowa 1978).

189. Dresser Indus., Inc. v. Ford Motor Co., 530 F. Supp. 303 (N.D. Tex. 1981).

190. See, e.g., GPAC, Inc. v. D.W.W. Enterprises, Inc., 144 F.R.D. 60 (D.N.J. 1992); Robert H. Harris Co. v. Metal Mfg. Co., 19 U.S.P.Q. 2d (BNA) 1786 (E.D. Ark. 1991); United Sweetener USA, Inc. v. Nutrasweet Co., 766 F. Supp. 212 (D. Del. 1991).

191. See, e.g., Rohm & Haas Co. v. Brotech Corp., 24 U.S.P.Q. 2d (BNA) 1369 (D. Del. 1992) (lifting previously granted stay); Wayne Automation Corp. v. R.A. Pearson Co., 782 F. Supp. 516 (E.D. Wash. 1991); E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 711 F. Supp. 1205, 1208 n.9 (D. Del. 1989).

patent again.¹⁹² In contrast, if the patent withstands a challenger's attack in the earlier suit, the patent owner may argue in the later suit that the prior adjudication weighs in his or her favor.

Patent Held Invalid

Prior to 1971, the rule of mutuality of estoppel was entrenched in the patent area; if one could not have been bound by an adverse judgment in the earlier suit, then one could not use the advantageous result for one's own benefit in a later suit. Accordingly, a patent owner whose patent was held invalid in a suit against one infringer was not estopped from later suing a different infringer on the same patent as long as the different infringer could not have been bound by an adverse determination in the earlier suit (i.e., the new defendant had neither been in privity with the earlier defendant nor been in control of the earlier litigation).¹⁹³

In 1971, the Supreme Court severely restricted the rule of mutuality in *Blonder-Tongue v. University Foundation*.¹⁹⁴ Thereafter, subject to one exception, a patent owner whose patent is held invalid in a final and appealable judgment is collaterally estopped from asserting that patent again.¹⁹⁵ *Blonder-Tongue* is not unfair to the patent owner who had his or her day in court, provided the patent owner had a full and fair opportunity to litigate the issue.

The rule that a single holding of invalidity is fatal to the patent applies even when there are inconsistent prior adjudications regarding validity. For example, if the patent was not held invalid in the first suit and then was held invalid in a second suit, the patent owner will be collaterally estopped from asserting that patent in a third suit.¹⁹⁶

192. The new defendant might also argue that prior holdings relating to claim construction or infringement provide an estoppel. *See, e.g.,* Molinaro v. Fannon/Courier Corp., 745 F.2d 651, 655 (Fed. Cir. 1984); FMC Corp. v. Manitowoc Co., 654 F. Supp. 915, 933–34 (N.D. Ill.), *aff'd*, 835 F.2d 1411 (Fed. Cir. 1987). *See generally* Robert L. Harmon, Patents and the Federal Circuit § 18.5 (3d ed. 1994).

193. 18 Charles Alan Wright et al., Federal Practice and Procedure: Juris
diction \S 4464 (1981 & Supp. 1994).

194. 402 U.S. 313 (1971).

195. *Id.* A judgment involving less than all the claims in a patent may estop the patent owner from later asserting the nonadjudicated claims. *See* Jervis B. Webb Co. v. Southern Sys., Inc., 742 F.2d 1388, 1399 (Fed. Cir. 1984); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1135–37 (Fed. Cir. 1985).

196. Mississippi Chem. Corp. v. Swift Agricultural Chems. Corp., 717 F.2d 1374 (Fed. Cir. 1983); Stevenson v. Sears, Roebuck & Co., 713 F.2d 705 (Fed. Cir. 1983).

However, if the patent owner can show that he or she did not have a full and fair opportunity procedurally, substantively, or evidentially to litigate the issue of validity in the suit in which the patent was held invalid, the patent owner will not be collaterally estopped from asserting the patent against a different defendant.¹⁹⁷

The Supreme Court presented five nonexclusive factors relevant to the inquiry of whether the patent owner had a full and fair opportunity to litigate. They are summarized as follows:

- 1. Did the patent owner pick the time and the place to litigate, that is, was the patent owner the plaintiff?
- 2. Did the patent owner have ample incentive to litigate?
- 3. Did the court that held the patent invalid apply the proper standards (specifically, the test regarding nonobviousness)?
- 4. Did the court that held the patent invalid completely fail to grasp the technical subject matter or the issues?
- 5. Was the patent owner deprived of crucial evidence?¹⁹⁸

Although these are nonexclusive factors, a court cannot consider factors that do not relate to the issue of whether the patent owner had a full and fair opportunity to litigate.

Patent Not Held Invalid

Whereas a single holding of invalidity is usually fatal to a patent, a single victory on the issue of validity does not confer invincibility. When a patent is not held invalid, it means that a particular challenger was not able to present clear and convincing evidence that the patent is invalid even though another challenger may be able to present better evidence on the issue of invalidity. Therefore, any challenger must be allowed to present his or her evidence. Nonetheless, a prior holding regarding validity is entitled to some weight, although this weight decreases as the quality and quantity of new evidence presented by a new challenger increase.¹⁹⁹

197. Blonder-Tongue, 402 U.S. at 313. See also Mendenhall v. Barber-Greene, 26 F.3d 1573 (Fed. Cir. 1994).

198. Blonder-Tongue, 402 U.S. at 333. See also Dana Corp. v. NOK, Inc., 882 F.2d 505 (Fed. Cir. 1989).

199. See generally Gillette Co. v. S.C. Johnson & Son, Inc., 919 F.2d 720, 723 (Fed. Cir. 1990); Hybritech, Inc. v. Abbott Lab., 849 F.2d 1446, 1451–53 (Fed. Cir. 1988) (motion for a preliminary injunction in a subsequent case); Stevenson, 713 F.2d at 711; Harrington Mfg. Co. v. Powell Mfg. Co., 623 F. Supp. 872 (E.D.N.C. 1985), aff'd, 815

Appeals

From 1891 until 1982, appeals from district court decisions in cases arising under the patent laws went to the regional circuit court for the particular district court. Since the creation of the Federal Circuit in 1982, appeals from final decisions of district courts in cases arising under the patent laws have gone to the Federal Circuit.

Efforts to create a national court for patent appeals began more than 100 years before the creation of the Federal Circuit.²⁰⁰ Initially, in the days before the regional circuit courts existed, the desire for a national appellate court for patent appeals was caused by the congested docket of the Supreme Court.²⁰¹ Later, after the regional circuit courts were given appellate jurisdiction for cases arising under the patent laws, the desire for a national appellate court was caused by the conflicting decisions of the circuit courts coupled with the unwillingness of the Supreme Court to resolve these conflicts in a timely fashion.²⁰²

The Federal Circuit has jurisdiction over appeals from a district court's final decision in an action that arises under the patent laws.²⁰³ Its jurisdiction includes appeals of nonpatent claims that accompany patent claims. For example, an appeal regarding antitrust claims will go to the Federal Circuit if the case in the district court also involved claims arising under the patent laws. However, although the Federal Circuit applies its own law when reviewing the patent claims, it applies the substantive law of that district court's regional circuit decides procedural issues that are unrelated to the patent issues in dispute by applying the law of the relevant regional circuit.²⁰⁵

202. Cihlar, *supra* note 17, at 3–4.

203. Christianson v. Colt Indus. Operating Corp., 486 U.S. 800 (1988); Atari, Inc. v. JS & A Group, Inc., 747 F.2d 1422 (Fed. Cir. 1984).

204. Atari, 747 F.2d at 1438-40.

205. Panduit Corp. v. All States Plastic Mfg. Co., 744 F.2d 1564 (Fed. Cir. 1984).

F.2d 1478 (Fed. Cir. 1986). *But cf.* Allen Archery, Inc. v. Browning Mfg. Co., 819 F.2d 1087 (Fed. Cir. 1987).

^{200.} Study No. 20, supra note 20.

^{201.} Id.

IV. Patentability

For an invention to be patentable, it must be (1) of patentable subject matter, (2) useful, (3) new, and (4) nonobvious. Before an inventor can obtain a patent for a patentable invention, he or she must (1) be an original inventor, (2) avoid the statutory time bars, (3) adequately disclose the invention, and (4) distinctly claim the invention.²⁰⁶

Conditions of Patentability

Patentable Subject Matter

Because the constitutional purpose for granting patents is to promote the progress of the useful arts, patents are granted only on certain tangible subject matter; specifically, processes, machines, manufactures, and compositions of matter.²⁰⁷ A patent cannot be obtained on an economic theory, for example, because no matter how useful that theory may be, economics is not one of the "useful arts" within the meaning of the Constitution.²⁰⁸

Machines, manufactures, and compositions of matter can be described as products.²⁰⁹ It is possible to have both product and process claims in a single patent.²¹⁰

A process is a way to produce a result. For example, mixing A with B under conditions C to get D is a process. The inventor need not know why the process works. A patent is granted for discovering and disclosing the process, not for the scientific theory behind it. No patent can be obtained for simply explaining the process, because ideas and theories are not patentable subject matter.²¹¹

Not all processes are patentable. Generally, processes that require mental participation, or the mechanical equivalent of mental partici-

206. As explained earlier (see supra text accompanying notes 41–55), an inventor must also satisfy many formal requirements of the PTO before a patent will be issued.

207. 35 U.S.C.A. § 101 (1984).

208. "Useful arts" can best be described today as "technological arts." *In re* Waldbaum, 457 F.2d 997 (C.C.P.A. 1972).

209. Nestle-Le Mur Co. v. Eugene, 55 F.2d 854 (6th Cir. 1932).

210. See, e.g., Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565 (Fed. Cir. 1983).

211. Parker v. Flook, 437 U.S. 584 (1978).

pation, are not patentable.²¹² Similarly, processes that require emotional reactions as an element are not patentable.²¹³

A *machine* is an assemblage of parts that transmit forces, motion, and energy to one another in a predetermined manner. A machine may also be a particular way of practicing a process. If the process of the machine is to be patented, all rules concerning processes apply.²¹⁴

A *composition of matter* is a new substance resulting from the combination of two or more different ingredients.²¹⁵

A *manufacture*, or an article of manufacture, is anything manmade that is not a machine or a composition of matter.²¹⁶ Because a manufacture is man-made, a product of nature is not within this patentable subject matter unless it has been altered by man.²¹⁷

Not all manufactured products are patentable. For example, printed matter is not a manufacture except when the structure of the printed matter or the relation between the printing and the structure is patentable.²¹⁸ A business form that has headings appropriate to data to be recorded on the form is nonpatentable printed matter,²¹⁹

212. 1 Donald S. Chisum, Patents § 1.03[6] (1978, rev. 1994). See, e.g., Johnson v. Duquesne Light Co., 29 F.2d 784 (W.D. Pa. 1928), *aff'd*, 34 F.2d 1020 (3d Cir. 1929). In *Johnson*, the process for testing a string of insulators on a live transmission line to determine if any of the insulators was defective required an experienced lineman to compare the arcs and sparks created for the test with expected arcs and sparks. This requirement for human participation rendered the process unpatentable.

213. See, e.g., Greenwalt v. Stanley Co. of Am., 54 F.2d 195, 196 (3d Cir. 1931), where one claim was for

[t]he method of combining sound and light for aesthetic expression, consisting in producing audible sounds in timed rhythmic relationship, flooding with light an area within the area of audibility of the sound and simultaneously producing gradual variations in the color and intensity of the light in timed relationship with the emotional or aesthetic content of a succession of such sounds.

214. In re Tarczy-Hornoch, 397 F.2d 856 (C.C.P.A. 1968).

215. Diamond v. Chakrabarty, 447 U.S. 303, 308 (1980).

216. Riter-Conley Mfg. Co. v. Aiken, 203 F. 699 (3d Cir.), cert. denied, 229 U.S. 617 (1913).

217. Chakrabarty, 447 U.S. at 309–10. See, e.g., U.S. Patents Nos. 5,175,383–85 issued in December 1992 for genetically engineered mice. See also 1 Martin J. Adelman, Patent Law Perspectives § 1.5 (2d ed. 1983, rev. 1994).

218. 1 Donald S. Chisum, Patents § 1.02[4] (1978, rev. 1994).

219. United States Credit Sys. Co. v. American Credit Indem. Co., 59 F. 139 (2d Cir. 1893).

whereas a railway transfer ticket with a detachable coupon is patentable. $^{\rm 220}$

When seeking a patent on a product, it is not necessary to specify into which of the three classes of patentable subject matter the invention fits.²²¹ Although genetically altered microorganisms have been held to be patentable subject matter, it is unsettled whether they are patentable as compositions of matter or manufactures.²²²

Useful

Consistent with the purpose for granting patents (i.e., to promote the progress of the useful arts), a product or process is not patentable unless it is useful.²²³ For a product or process to be useful it must, at the very least, work,²²⁴ although it does not have to work perfectly or even better than any competing products or processes that might exist.²²⁵ Nevertheless, not all products or processes that work are considered useful. For example, products or processes that can only be used for immoral or illegal purposes,²²⁶ products or processes that are not sufficiently safe,²²⁷ and processes that can only produce useless products are not considered useful.²²⁸

New

Because patents are granted to promote the progress of the useful arts, a product or process is not patentable unless it is new. Determining

220. Cincinnati Traction Co. v. Pope, 210 F. 443 (6th Cir. 1913).

221. See Nestle-Le Mur Co. v. Eugene, 55 F.2d 854 (6th Cir. 1932).

222. See Chakrabarty, 447 U.S. 303; Ex parte Allen, 2 U.S.P.Q. 2d (BNA) 1425 (Bd. Pat. App. & Interf. 1987).

223. 35 U.S.C.A. § 101 (1984).

224. Robert Ederer, On Operability as an Aspect of Patent Law, 42 J. Pat. Off. Soc'y 398 (1960). See, e.g., Newman v. Quigg, 877 F.2d 1575, 1581 (Fed. Cir. 1989), cert. denied, 495 U.S. 932 (1990).

225. Lowell v. Lewis, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8568). See also, e.g., Stiftung v. Renishaw PLC, 945 F.2d 1173, 1180–81 (Fed. Cir. 1991).

226. *Lowell*, 15 F. Cas. at 1019, citing as examples inventions to poison people, to promote debauchery, or to facilitate private assassination. *See also, e.g.*, Tol-O-Matic v. Proma Produkt-Und Marketing Gesellschaft, 945 F.2d 1546, 1552–53 (Fed. Cir. 1991).

227. See, e.g., dicta in *In re* Watson, 517 F.2d 465, 475 (C.C.P.A. 1975), that "a composition unsafe for use by reason of extreme toxicity to the point of immediate death under *all* conditions of its sole contemplated use in treating disease of the human organism" is not useful.

228. See, e.g., Brenner v. Manson, 383 U.S. 519 (1966), where a process for producing a steroid that had no known use was found to be not useful.

whether a product or process is within the patent statute's meaning of "new" requires comparing the product or process with the products or processes of the relevant prior art.²²⁹ A product or process is not new if all the elements of that product or process are present in a single piece of relevant prior art.²³⁰ It is not necessary that all the elements be expressly present in the single piece of prior art, because there is a judicially created doctrine of inherency, that is, a product or process lacks novelty if all its elements are present either expressly or inherently in a single piece of relevant prior art.²³¹ If a single piece of relevant prior art contains all the elements, it is said to anticipate the product or process.²³² Anticipation is a question of fact.²³³

Prior art can be an elusive concept because it is not defined in the patent statute, nor is there an all inclusive definition in the case law or literature.²³⁴ Prior art relevant to the novelty determination is established by 35 U.S.C. § 102(a), (e), and (g).

Section 102(a)

A person is not entitled to a patent if the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.

Section 102(a) causes knowledge, use, patents, and publications to be included within the prior art relevant to the novelty determination.

229. Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613 (Fed. Cir.), cert. dismissed, 474 U.S. 976 (1985).

230. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984).

231. See, e.g., Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1565 (Fed. Cir. 1992); Verdegaal Bros. v. Union Oil Co. of Cal., 814 F.2d 628 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987); Tyler Refrigeration v. Kysor Indus. Corp., 777 F.2d 687 (Fed. Cir. 1985); Michael D. Nelson, Doctrine of Inherency, 55 J. Pat. Off. Soc'y 589 (1973).

232. Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707 (Fed. Cir. 1984); General Elec. Co. v. Hoechst Celanese Corp., 740 F. Supp. 305, 312–13 (D. Del. 1990).

233. Scripps Clinic & Res. Found. v. Genentech, Inc., 927 F.2d 1565, 1576 (Fed. Cir. 1991); Ralston Purina Co. v. Far-Mar-Co., Inc., 772 F.2d 1570 (Fed. Cir. 1985).

234. See, e.g., Homer J. Schneider, The Unwritten Prior Art Statute—35 U.S.C.A. 102/103, in Developments—1984, at 1 (Donald W. Banner ed., 1984); Edward C. Walterscheid, The Ever Evolving Meaning of Prior Art (in nine parts), 64 J. Pat. Off. Soc'y 457, 571, 632 (1982), 65 J. Pat. Off. Soc'y 3, 477, 658 (1983), 66 J. Pat. Off. Soc'y 479, 573 (1984), and 67 J. Pat. Off. Soc'y 33 (1985).

Patentability

"the invention was known . . . by others in this country . . . before the invention thereof by the applicant for patent." "Known" has been interpreted to mean publicly known.²³⁵ Public knowledge is considered within section 102(a) only if it is sufficient to enable one with ordinary skill in the art to which the invention pertains to reduce the invention to practice.²³⁶ Private or secret knowledge is not within section 102(a) and, therefore, is not part of the prior art that can anticipate the subject matter in a patent application.²³⁷ For example, most knowledge presented under government security classification is not within section 102(a).²³⁸

"the invention was . . . used by others in this country . . . before the invention thereof by the applicant for patent." "Used" has been interpreted to mean publicly accessible use.²³⁹ Publicly accessible use means the absence of affirmative steps to conceal.²⁴⁰ For example, a machine that is operated in an open field is a publicly accessible use even if no one sees the machine.²⁴¹ In contrast, a machine that is operated in a windowless building where everyone who enters is sworn to secrecy is probably not public use.²⁴²

The publicly accessible use must be of the invention reduced to practice.²⁴³ The invention need not be commercially perfected, but it must be beyond the experimental stage.²⁴⁴

"by others in this country." Both prior knowledge and prior use must be by others and in this country. "By others" is simply a requirement that more than just one person other than the inventor have known or used the invention.²⁴⁵ The requirement that the prior

235. Baron v. Bausch & Lomb Inc., 25 U.S.P.Q. 2d (BNA) 1641, 1662 (W.D.N.Y. 1992). 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

236. Acme Flexible Clasp Co. v. Cary Mfg. Co., 96 F. 344 (C.C.S.D.N.Y. 1899), aff'd, 101 F. 269 (2d Cir. 1900).

237. Connecticut Valley Enters. v. United States, 348 F.2d 949 (Ct. Cl. 1965).

238. Del Mar Eng'g Lab. v. United States, 524 F.2d 1178 (Ct. Cl. 1975).

239. 1 Donald S. Chisum, Patents § 3.05[2][a] (1978, rev. 1994).

240. Id.

241. Rosaire v. Baroid Sales Div., Nat'l Lead Co., 218 F.2d 72 (5th Cir.), cert. denied, 349 U.S. 916 (1955).

242. See, e.g., Kimball Int'l, Inc. v. Allen Organ Co., 212 U.S.P.Q. (BNA) 584 (S.D. Ind. 1981).

243. Id. at 589.

244. Farmhand, Inc. v. Lahman Mfg. Co., 192 U.S.P.Q. (BNA) 749 (D.S.D. 1976), aff'd, 568 F.2d 112 (8th Cir.), cert. denied, 436 U.S. 913 (1978).

245. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

knowledge and prior use be "in this country"²⁴⁶ indicates that the novelty condition of patentability is not a condition of absolute novelty. Even if a U.S. applicant has reinvented something, his or her invention will not be anticipated by prior public knowledge or prior public use in a foreign country.²⁴⁷ The reasons given for ignoring foreign use and foreign knowledge when determining novelty are (1) difficulties of proving foreign use or foreign knowledge and (2) belief that foreign use and foreign knowledge are not readily accessible to those working in this country.²⁴⁸

"the invention was . . . patented . . . in this or a foreign country, before the invention thereof by the applicant for patent." If a patent is published, it is like other publications discussed in the text below (see *infra* text accompanying notes 253–60). All U.S. patents are published, but not all foreign patents are published. A published patent places all that it claims and discloses into the prior art relevant to the novelty determination,²⁴⁹ whereas an unpublished patent places only the material actually claimed into the prior art relevant to the novelty determination.²⁵⁰ The material in a published patent is part of the relevant prior art to the extent that it adequately describes the invention at issue (i.e., the description enables one with ordinary skill in the field to which the invention pertains to understand and make the invention).²⁵¹

An invention is generally considered patented for the purpose of the novelty determination as of the date when the patent both is publicly available (not necessarily through publication) and confers legal rights.²⁵² In the United States these events occur simultaneously on the issue date. In foreign countries they can occur on separate dates.

"the invention was . . . described in a printed publication in this or a foreign country, before the invention thereof by the applicant for

246. Roemer v. Simon, 95 U.S. 214 (1877).

247. An opposite result would have obtained under the Acts of 1790 and 1793. See Edward C. Walterscheid, Novelty in Historical Perspective (pts. 1–2), 75 J. Pat. & Trademark Off. Soc'y 689, 777 (1993).

248. Gayler & Brown v. Wilder, 51 U.S. (10 How.) 477, 496 (1850); Chambers & Mendham v. Duncan, Wilson, & Lauder, 9 Official Gaz. Pat. Off. 741 (Comm'r Pat. 1876).

249. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

250. Id.

251. Safetran Sys. Corp. v. Federal Sign & Signal Corp., 215 U.S.P.Q. (BNA) 979 (N.D. Ill. 1981).

252. Ritter v. Rohm & Haas Co., 271 F. Supp. 313 (S.D.N.Y. 1967).

patent." "Described" means a description adequate to enable one with ordinary skill in the field to which the invention pertains to understand and make the invention.²⁵³ "Printed" has been very broadly interpreted to mean all material accessible to the public in tangible form.²⁵⁴ Oral communication and most handwritten communications are excluded from the prior art relevant to the novelty determination.²⁵⁵

"Publication" has been interpreted to mean created for the public and accessible to the public.²⁵⁶ If copies of a paper were distributed at a conference, they would be publications,²⁵⁷ but if the recipients were asked to keep the paper secret, the copies would not be publications.²⁵⁸ The number of copies is not determinative. For example, a single book in a library is a publication if it is indexed and available to the public.²⁵⁹

The date of a publication is the date when it is first available to the public.²⁶⁰ Accordingly, although many scientific papers published in journals give the date the manuscript was received by the journal editor, the date the journal was published is the date the content was available to the public.

"in this or a foreign country." Prior patents and prior publications from foreign countries can anticipate a later invention because these pieces of prior art are believed to be readily accessible to those work-

254. 1 Donald S. Chisum, Patents § 3.04[3] (1978, rev. 1994). See, e.g., Universal Athletic Sales Co. v. American Gym, Recreational & Athletic Equip. Corp., 546 F.2d 530, 543 (3d Cir. 1976), cert. denied, 430 U.S. 984 (1977), where the Court held that a photograph can be a printed publication.

255. Gulliksen v. Halberg, 75 U.S.P.Q. (BNA) 252 (Pat. Off. Bd. App. 1937). But see Minnesota Mining & Mfg. Co. v. Ansul Co., 213 U.S.P.Q. (BNA) 1024 (E.D. Wis. 1981).

256. 1 William C. Robinson, The Law of Patents for Useful Inventions §§ 325–26 (1890). See generally Gerald Rose, Do You Have a "Printed Publication"? If Not, Do You Have Evidence of Prior "Knowledge or Use"?, 61 J. Pat. Off. Soc'y 643 (1978); 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

257. Ex parte Brimm & Gailey, 147 U.S.P.Q. (BNA) 72 (Pat. Off. Bd. App. 1963).

258. See General Tire & Rubber Co. v. Firestone Tire & Rubber Co., 349 F. Supp. 345 (N.D. Ohio 1972). See also Aluminum Co. of Am. v. Reynolds Metals Co., 14 U.S.P.Q. 2d (BNA) 1170, 1172–73 (N.D. Ill. 1989).

259. See, e.g., Ex parte Hershberger, 96 U.S.P.Q. (BNA) 54 (Pat. Off. Bd. App. 1952); In re Bayer, 568 F.2d 1357 (C.C.P.A. 1978); In re Hall, 781 F.2d 897 (Fed. Cir. 1986); In re Cronyn, 890 F.2d 1158 (Fed. Cir. 1989).

260. In re Bayer, 568 F.2d at 1361.

^{253.} Seymour v. Osborne, 78 U.S. 516 (1870).

ing in this country²⁶¹ and, as such, are part of the pool of knowledge available to a would-be inventor.

"before the invention thereof by the applicant for patent." For the knowledge, use, patent, or publication to be part of the prior art relevant to the novelty determination, the knowledge, use, patent, or publication must predate the applicant's invention. The applicant's date of invention is initially considered the filing date of his or her application. This date, however, can be carried back by the inventor to his or her actual invention date. For example, if an individual conceives an invention on February 1, 1975, after diligent effort reduces the invention to practice on March 1, 1975, and files a patent application on March 1, 1976, the PTO will take the date of invention to be March 1, 1976. The PTO examiner will search for section 102(a) type material prior to that date. If the PTO examiner finds a publication by someone else on March 2, 1975, the inventor can carry back the date of invention and remove the March 2, 1975, publication from the relevant prior art.²⁶² To do this, the applicant must submit evidence by way of declaration or affidavit supporting the earlier date.²⁶³

The U.S. patent system is almost alone in the world in determining the prior art by permitting the applicant an invention date that is earlier than the filing date.²⁶⁴ By determining the prior art as of the date of filing an application, other countries create a strong incentive for quick filing.²⁶⁵ The U.S. patent system provides its incentive for quick filing through statutory time bars (see *infra* text accompanying notes 313–44).²⁶⁶

Section 102(e)

Section 102(e) pushes back to the application date the time at which the information in an issued U.S. patent becomes effective.²⁶⁷ Section

261. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

262. Under certain circumstances, the inventor can carry back his or her date of invention to the conception date. *See generally* 3 Patent Practice ch. 12 (Irving Kayton & Karyl S. Kayton eds., 5th ed. 1993).

263. In an infringement suit, the defendant cannot merely attack the sufficiency of the affidavits. Greenwood v. Hattori Seiko Co., 900 F.2d 238 (Fed. Cir. 1990).

264. Charles R. B. Macedo, First-to-File: Is American Adoption of the International Standard in Patent Law Worth the Price?, 18 AIPLA Q.J. 193, 196 n.10 (1990).

265. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

266. Id.

267. Milburn Co. v. Davis-Bournonville Co., 270 U.S. 390 (1926).

102(e) modifies the effective date for the information in a U.S. patent even though, pursuant to section 102(a), the information in U.S. patents becomes effective when the patent is issued.

Section 102(g)

As noted in the context of foreign knowledge and foreign use, the novelty condition of patentability is not absolute. An example of this is found in section 102(g), which provides, in part, that an applicant is not entitled to a patent if, before the applicant's invention, the invention was made in this country by another who had not abandoned, suppressed, or concealed it. Accordingly, a second inventor's invention may be deemed new if the first inventor abandoned, suppressed, or concealed the invention he or she made in this country.

Abandoned, suppressed, and concealed are three ways to characterize an unreasonable delay on the part of the first inventor in applying for a patent, disclosing the invention to the public, or commercializing the invention.²⁶⁸ By delaying, the first inventor acted inconsistently with the goal of the patent system, that is, he or she did not try to promote the progress of the useful arts by promptly disclosing the invention to the public.²⁶⁹

When a dispute arises concerning who was the first inventor, almost all countries resolve it in favor of the one who first filed an application.²⁷⁰ The United States resolves the priority dispute in favor of the first one to invent. Section 102(g) codified pre-1952 case law concerning the first inventor.²⁷¹ With one exception, the first person to reduce the invention to practice is deemed the first inventor.²⁷² The exception allows the second person to reduce the invention to practice to be deemed the first inventor if he or she was the first to conceive the invention and he or she was reasonably diligent in reducing the invention to practice from a time prior to the other inventor's conception of the invention. Priority of invention is often determined in an interference proceeding in the PTO. (These

268. 3 Donald S. Chisum, Patents § 10.08[1], [2] (1978, rev. 1994).

269. See generally Paulik v. Rizkalla, 760 F.2d 1270 (Fed. Cir. 1985).

270. 2 Peter D. Rosenberg, Patent Law Fundamentals ch. 10 (2d ed. 1986, rev. 1994).

271. Paulik, 760 F.2d at 1279.

272. Standard Oil Co. (Indiana) v. Montedison, S.p.A., 664 F.2d 356 (3d Cir. 1981), cert. denied, 456 U.S. 915 (1982).

proceedings are discussed in *supra* text accompanying notes 74–80.²⁷³)

Nonobvious

A new and useful product or process is not patentable unless it was nonobvious when made. The standard for determining nonobviousness is found at 35 U.S.C.A. § 103. Section 103 was enacted in 1952 to codify a judicially created condition of patentability known as "invention."²⁷⁴

Invention first appeared as a condition of patentability in 1851 in *Hotchkiss v. Greenwood*.²⁷⁵ In *Hotchkiss*, the Supreme Court ruled that an improvement in doorknobs lacked the skill and ingenuity that is part of an invention. According to the Court, the improvement was the work of a skillful mechanic, not an inventor. Subsequent cases applied the judicially created invention condition until Congress created section 103.

Section 103 states, in pertinent part:

A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

In 1966, the Supreme Court, in *Graham v. John Deere Co.*,²⁷⁶ interpreted and applied section 103. The Supreme Court stated:

Under 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.²⁷⁷

273. See generally 6 Patent Practice ch. 24 (Irving Kayton & Karyl S. Kayton eds., 5th ed. 1993); Maurice H. Klitzman, Patent Interference: Law and Practice (1984).
274. Graham v. John Deere Co., 383 U.S. 1 (1966).
275. 52 U.S. (11 How.) 248 (1851).
276. 383 U.S. 1 (1966).
277. Id. at 17–18.

Patentability

Graham specified four factual inquiries, of which three were clear. The fourth inquiry, "secondary considerations," was less clear. Some regional circuits took secondary considerations into account only in close cases, and other regional circuits required that secondary considerations always be applied.²⁷⁸ The Federal Circuit resolved this ambiguity and now requires that secondary considerations be considered before deciding the nonobviousness issue.²⁷⁹ The Federal Circuit has said that only after considering the four *Graham* criteria²⁸⁰ together can the decision maker—the examiner, the Board of Patent Appeals and Interferences, the District Court, or the Federal Circuit make the legal determination of whether the invention was nonobvious.²⁸¹

278. See, e.g., Medical Lab. Automation v. Labcon, Inc., 670 F.2d 671 (7th Cir. 1981); Nickola v. Peterson, 580 F.2d 898 (6th Cir. 1978), cert. denied, 440 U.S. 961 (1979).

279. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530 (Fed. Cir. 1983).

280. The four criteria that underlie a proper application of § 103 are as follows:

- 1. a determination of the scope and content of the prior art,
- 2. a determination of the differences between the prior art and the claims at issue,
- 3. a determination of the level of ordinary skill in the pertinent art, and
- 4. a determination of which, if any, secondary considerations are relevant and what the effect is of those secondary considerations.

See, e.g., Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, 796 F.2d 443, 447 (Fed. Cir. 1986), cert. denied, 484 U.S. 823 (1987).

281. See Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566–68 (Fed.. Cir.), cert. denied, 481 U.S. 1052 (1987):

With the involved facts determined, the decisionmaker confronts a ghost, i.e., "a person having ordinary skill in the art," not unlike the "reasonable man" and other ghosts in the law. To reach a proper conclusion under § 103, the decisionmaker must step backward in time and into the shoes worn by that "person" when the invention was unknown and just before it was made. In light of *all* the evidence, the decisionmaker must then determine whether the patent challenger has convincingly established... that the claimed invention as a whole would have been obvious at *that* time to *that* person. 35 U.S.C. § 103. The answer to that question partakes more of the nature of law than of fact, for it is an ultimate conclusion based on a foundation formed of all the probative facts. (Footnote omitted.)

It is also important that the decision maker avoid hindsight reconstruction, i.e., using the claimed invention as a template for piecing together teachings contained in sepa-

Scope and content of prior art

The prior art relevant to nonobviousness includes that which is the same as the invention's art and those arts that logically relate to the inventor's concern.²⁸² For example, if one wishes to stack cheese slices so that they are easily separated, then the pertinent arts would include the cheese arts, the sliced food manufacturing and packing industry art, and any art concerned with stacking flexible materials.²⁸³

Considerable debate surrounds the content of the prior art relevant to nonobviousness.²⁸⁴ However, it is generally accepted that the content includes material established by the novelty sections of 35 U.S.C. § 102 (i.e., (a), (e), and (g)). Accordingly, prior art relevant to nonobviousness includes the following:

- 1. printed publications or patents from anywhere in the world that were published or issued before the applicant's date of invention;
- 2. prior use or prior knowledge that occurred in the United States before the applicant's date of invention;
- 3. a U.S. patent application that subsequently issued and was filed before the applicant's date of invention; and
- 4. another's invention that was made in the United States and that was not abandoned, suppressed, or concealed before the invention date of the invention in question.

In contrast to the novelty determination's strict identity requirement (i.e., anticipatory prior art must disclose each element of the claim either expressly or inherently), the nonobvious determination does not require strict identity.²⁸⁵ Therefore, although a foreign patent might not disclose all elements of the claim at issue and thus not be

rate pieces of prior art. *See, e.g., In re* Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992); Grain Processing Corp. v. American Maize-Products, 840 F.2d 902, 907 (Fed. Cir. 1988).

283. L.D. Schreiber Cheese Co. v. Clearfield Cheese Co., 540 F. Supp. 1128 (W.D. Pa. 1982), *aff'd without opinion*, 716 F.2d 891 (3d Cir. 1983).

285. In re Foster, 343 F.2d 980 (C.C.P.A. 1965), cert. denied, 383 U.S. 966 (1966).

^{282.} Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 620 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985). *See, e.g., In re* Clay, 966 F.2d 656, 658–60 (Fed. Cir. 1992).

^{284.} See, e.g., Donald S. Chisum, Sources of Prior Art in Patent Law, 52 Wash. L. Rev. 1 (1976); Walterscheid, supra note 234; Judge Giles S. Rich's and Judge Phillip B. Baldwin's opinions in *In re* Bass, 474 F.2d 1276 (C.C.P.A. 1973).

anticipatory prior art, it might still be relevant to the issue of nonobviousness.

Material defined by 35 U.S.C. § 102(b) (see *infra* text accompanying notes 313–39) is also considered prior art relevant to the issue of nonobviousness.²⁸⁶ For example, a printed publication from anywhere in the world that was published more than one year before the U.S. application date at issue can be used to show obviousness.

Differences between prior art and claims at issue

Examining the specific differences between the prior art and the claims at issue may help when determining whether the subject matter sought to be patented would have been obvious to the hypothetical person with ordinary skill in the pertinent art. Examining just these differences, however, can mislead the decision maker into believing that these differences are the invention.²⁸⁷ The subject matter sought to be patented must be considered as a whole when deciding nonobviousness under section 103.²⁸⁸

Level of ordinary skill in pertinent art

The decision maker is required to determine the level of ordinary skill in the pertinent art at the time the invention was made.²⁸⁹ What is or would have been obvious to a jury, a judge, a layperson, or a genius matters not at all. What is relevant is what would have been obvious to section 103's hypothetical person of ordinary skill in the art.²⁹⁰

Among the factors that may be considered when determining the level of ordinary skill in the pertinent art are the following:

- 1. type of problems encountered in the art,
- 2. prior art solutions to those problems,
- 3. rapidity with which innovations are made,
- 4. sophistication of the technology,

288. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1537 (Fed. Cir. 1983).

289. Kloster Speedsteel AB v. Crucible, Inc., 793 F.2d 1565, modified in part, 230 U.S.P.Q. 81 (Fed. Cir. 1986), cert. denied, 479 U.S. 1034 (1987).

290. Ryko Mfg. Co. v. Nu-Star, Inc., 950 F.2d 714, 718-19 (Fed. Cir. 1991).

^{286.} In re Kaslow, 707 F.2d 1366 (Fed. Cir. 1983).

^{287.} Jones v. Hardy, 727 F.2d 1524 (Fed. Cir. 1984).

- 5. educational level of the inventor, and
- 6. educational level of active workers in the field.²⁹¹

Secondary considerations

Secondary considerations may help the decision maker decide the nonobviousness issue.²⁹² These considerations tend to focus attention on economic and motivational issues rather than technical issues and are, therefore, more susceptible to judicial treatment than are the highly technical facts often present in patent litigation.²⁹³ Patent examiners, too, must evaluate secondary considerations when they are present because use of these facts may counterbalance a temptation to use hindsight when deciding nonobviousness.

One secondary consideration is long-felt but unsolved need.²⁹⁴ There once was a long-felt but unsolved need to lessen the amount of sulfur dioxide emitted into the air by smokestacks. When air pollution control devices could remove 97% of the sulfur before emission into the air, the desire was for even greater sulfur removal. A method found to remove 99.5% of the sulfur²⁹⁵ may have been a nonobvious invention because had it been obvious to invent the solution to the long-felt need, more likely than not, more than one person would have produced that solution.²⁹⁶

Another secondary consideration is commercial success.²⁹⁷ A commercially successful product or process appears to be a nonobvious invention because had it been obvious to create this commercial success, more likely than not, more than one person would have created it.²⁹⁸

291. Environmental Designs v. Union Oil Co. of Cal., 713 F.2d 693 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984). See, e.g., Micro Motion, Inc. v. Exac Corp., 741 F. Supp. 1426, 1434–35 (N.D. Cal. 1990).

292. Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966).

293. Id. at 35-36.

294. Id. at 16. See, e.g., Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1574–75 (Fed. Cir. 1992).

295. Environmental Designs, 713 F.2d at 693.

296. See generally Note, Subtests of "Nonobviousness": A Nontechnical Approach to Patent Validity, 112 U. Pa. L. Rev. 1169 (1964), reprinted in Nonobviousness—The Ultimate Condition of Patentability (John F. Witherspoon ed., 1980).

297. Graham v. John Deere Co., 383 U.S. 1, 17 (1966).

298. See, e.g., Symbol Technologies, Inc. v. Opticon, Inc., 935 F.2d 1569, 1578–79 (Fed. Cir. 1991). See generally Note, supra note 296.

Patentability

Some additional secondary considerations are failed efforts of others,²⁹⁹ copying by others,³⁰⁰ praise for the invention,³⁰¹ unexpected results,³⁰² disbelief of experts,³⁰³ commercial acquiescence,³⁰⁴ and simultaneous development.³⁰⁵ Two or more of these secondary considerations may appear together. For example, if there is a longfelt but unsolved need, there well may be failed efforts of others as well as commercial success.

Merely because secondary considerations are present does not mean that they are relevant to nonobviousness. For example, although products incorporating an invention may have enormous commercial success, their success may have come about for reasons completely unrelated to the invention (e.g., the seller's market position and the seller's advertising expenditures).³⁰⁶ Secondary considerations only merit attention as the fourth criterion underlying a proper application of section 103 when they serve as objective indicia of the nonobviousness of the claimed invention. Thus, a nexus between the invention and the secondary considerations is required before the evidence is relevant to the question of nonobviousness.³⁰⁷ If

299. Graham, 383 U.S. at 17.

300. Specialty Composites v. Cabot Corp., 845 F.2d 981, 991 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, 776 F.2d 281 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986).

301. Interconnect Planning Corp. v. Feil, 774 F.2d 1132 (Fed. Cir. 1985); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 671 F. Supp. 1369, 1376–77 (S.D.N.Y. 1987), *aff'd*, 868 F.2d 1251 (Fed. Cir. 1989).

302. Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452 (Fed. Cir. 1984).

303. United States v. Adams, 383 U.S. 39 (1966).

304. EWP Corp. v. Reliance Universal, Inc., 755 F.2d 898 (Fed. Cir.), cert. denied, 474 U.S. 843 (1985).

305. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1380 n.4 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987). *See, e.g.*, American Standard, Inc. v. Pfizer, Inc., 722 F. Supp. 86, 138–39 (D. Del. 1989).

306. Pentec, Inc. v. Graphic Controls Corp., 776 F.2d 309 (Fed. Cir. 1985).

307. Demaco Corp. v. F. Von Langsdorff Licensing Ltd., 851 F.2d 1387, 1392–94 (Fed. Cir.), *cert. denied*, 488 U.S. 956 (1988); Simmons Fastener Corp. v. Illinois Tool Works, 739 F.2d 1573 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1065 (1985). *See generally* Edward Philip Walker, *Objective Evidence of Nonobviousness: The Elusive Nexus Requirement*, 69 J. Pat. Off. Soc'y 175, 229 (1987).

such a nexus is shown, however, secondary considerations may be pertinent, probative, and revealing.³⁰⁸

Requirements of Patentability

Originality

A patent will not be granted for a patentable invention unless the named inventor is an original inventor.³⁰⁹ An original inventor is one who conceived the invention on his or her own.³¹⁰ If more than one person contributed to the conception of the invention, they are joint inventors.³¹¹ Any errors regarding the named inventor or inventors can be corrected in an application or in an issued patent, provided the error occurred without deceptive intent.³¹²

Statutory Bars

An inventor who does not promptly seek a patent runs the risk of losing the right to obtain a patent. An inventor loses the right to obtain a patent if one of the events set forth in 35 U.S.C. § 102(b), (c), or (d) occurs.

Section 102(b)

An inventor loses his or her right to obtain a patent if

the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

The section 102(b) items or events that can bar the issuance of a patent if they occur more than one year before the application date are domestic or foreign patents, domestic or foreign publications, domestic public use of the invention, and the invention being on sale domestically. These items and events can arise through either the acts of the inventor or the acts of others. Usually a section 102(b) bar arises because of the inventor's own actions.

308. Ashland Oil, 776 F.2d at 306.

309. 35 U.S.C.A. § 102(f) (1984). See, e.g., New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878 (Fed. Cir. 1992).

310. O'Reilly v. Morse, 56 U.S. 62 (1853).

311. 35 U.S.C.A. § 116 (1984 & Supp. 1994); Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co., 973 F.2d 911, 915–17 (Fed. Cir. 1992).

312. 35 U.S.C.A. § 116 (1984 & Supp. 1994). See, e.g., A.F. Stoddard & Co. v. Dann, 564 F.2d 556 (D.C. Cir. 1977).

"the invention." The statutory bars set forth in section 102(b) all refer to the "invention." Unlike the novelty determination discussed earlier, strict identity between the invention and the invention of the item or event at issue is not required when deciding whether a section 102(b) bar has arisen.³¹³ It is sufficient that the differences between the invention and the invention of the item or event at issue are obvious to one skilled in the art.³¹⁴

"the invention was patented or described in a printed publication in this or a foreign country . . . more than one year prior to the date of the application for patent in the United States." The words of section 102(b) dealing with patents and publications (i.e., "patented or described in a printed publication in this or a foreign country") are identical to the words used in section 102(a). The words have been interpreted the same way in both sections.³¹⁵

"the invention was . . . in public use . . . in this country, more than one year prior to the date of the application for patent in the United States." "Public use," within the meaning of section 102(b), is one public use of the product or process in its natural and intended manner.³¹⁶ The public use of the product or process need not be a publicly accessible use, as use is interpreted in section 102(a).³¹⁷ For example, a part of the internal mechanism of a safe is publicly used when the safe is used by the public even though nobody can see the safe's internal parts.³¹⁸ Section 102(b)'s public use bar can cause difficulty because "public use" is not always interpreted literally. The public use bar of section 102(b) has been extended to include some nonpublic uses. For example, if an inventor practices a patentable process in complete secrecy but sells goods made by that process, the inventor's use will usually be found to be a public use within the meaning of section 102(b).³¹⁹ The reason for finding an inventor's secret commercial use to be a patent-barring public use is to prevent the inventor from extending the patent period.³²⁰ If the secret

314. Id.

315. 2 Donald S. Chisum, Patents § 6.02[4] (1978, rev. 1994).

316. In re Blaisdell, 242 F.2d 779 (C.C.P.A. 1957).

317. Egbert v. Lippmann, 104 U.S. 333 (1881).

318. Hall v. Macneale, 107 U.S. 90 (1883).

319. Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co., 153 F.2d 516 (2d Cir.), cert. denied, 328 U.S. 840 (1946).

320. Id. at 520.

^{313.} In re Smith, 714 F.2d 1127, 1137 n.13 (Fed. Cir. 1983).

commercial use is by someone other than the inventor, and the inventor does not know of or consent to it, the secret commercial use usually will not be found to be a patent-barring public use.³²¹ The public-use bar does not include some uses that are completely public. Because some inventions can only be adequately tested in public,³²² an experimental public use need not be a section 102(b) bar. For example, if an inventor who has invented road pavement tests that pavement on a road used by the public, that use will not be deemed a public use within the meaning of section 102(b).³²³ A public use does not create a section 102(b) bar when the primary purpose for the use is experimental.³²⁴ Until recently, after a patent challenger presented evidence showing that the invention was used publicly, the burden of proof was shifted to the patent owner to come forward with evidence to show that the use was experimental. The Federal Circuit rejected this burden shifting and has held that the burden of proof never shifts to the patent owner.³²⁵ This does not mean, however, that the patent owner can never bear the burden of coming forward with evidence. If the patent challenger makes a prima facie case of public use, the patent owner must come forward with convincing evidence to counter that showing.³²⁶ Experimental use is one type of such evidence. Evidence relating to experimental use includes length of the test period, whether payment was received for the product, agreements as to confidentiality, who conducted the tests, how many tests were made, whether records were kept, and how long the testing period was in relation to tests of similar products.327 Subjective evidence of the inventor carries little weight.³²⁸

"the invention was . . . on sale in this country, more than one year prior to the date of the application for patent in the United States." The best evidence that the invention was on sale is an actual com-

321. W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

322. Elizabeth v. Pavement Co., 97 U.S. 126, 134 (1878).

323. Id.

324. Thomas J. Cione, Patent Law's Experimental Use Doctrine: An Analysis of Court Decisions Including Cases of the United States Court of Appeals for the Federal Circuit, 25 IDEA 225 (1985).

325. T.P. Lab., Inc. v. Professional Positioners, Inc., 724 F.2d 965 (Fed. Cir. 1984), cert. denied, 469 U.S. 826 (1984).

326. Id. at 971.

327. Id. at 971-72.

328. Id. at 972.
mercial sale. The sale does not have to be public.³²⁹ For example, a sale under a secrecy agreement will raise a section 102(b) on-sale bar.³³⁰ Offers for sale and solicitation for orders may also give rise to the on-sale bar.³³¹ The product offered for sale need not be on hand and ready for delivery, 332 but what creates an on-sale bar when the product does not exist is unclear.³³³ An offer to sell any patent rights that an inventor may obtain as a result of his or her invention does not raise the on-sale bar.³³⁴ Sales made primarily for a bona fide experimental purpose rather than for commercial exploitation do not raise a section 102(b) on-sale bar.335 To determine whether an invention was on sale, the decision maker must consider how the totality of the circumstances comports with the policies underlying the bar.³³⁶ Behind the on-sale bar are (1) a policy against allowing an inventor to extend the patent period, (2) a policy against removing inventions from the public domain that the public has justifiably come to believe are freely available because they have been put on sale by the inventor or others, (3) a policy of favoring prompt disclosure of inventions, and (4) a policy of allowing a reasonable

329. Dart Indus., Inc. v. E.I. du Pont de Nemours & Co., 489 F.2d 1359 (7th Cir. 1973), cert. denied, 417 U.S. 933 (1974).

330. See, e.g., Hobbs v. United States Atomic Energy Comm'n, 451 F.2d 849 (5th Cir. 1971).

331. See, e.g., In re Caveney, 761 F.2d 671 (Fed. Cir. 1985); Handgards, Inc. v. Ethicon, Inc., 743 F.2d 1282 (9th Cir. 1984), cert. denied, 469 U.S. 1190 (1985). But cf. Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 622–23 (Fed. Cir.), cert. dismissed, 474 U.S. 976 (1985).

332. Barmag Barmer Maschinefabrik AG v. Murata Mach., Ltd., 731 F.2d 831 (Fed. Cir. 1984).

333. Western Marine Elecs. v. Furuno Elec., 764 F.2d 840 (Fed. Cir. 1985). *See also* RCA Corp. v. Data General Corp., 887 F.2d 1056, 1061 (Fed. Cir. 1989); A.B. Chance Co. v. RTE Corp., 854 F.2d 1307, 1311 (Fed. Cir. 1988); UMC Elecs. Co. v. United States, 816 F.2d 647 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1025 (1988).

334. Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261 (Fed. Cir. 1986), cert. denied, 479 U.S. 1030 (1987).

335. Paragon Podiatry Lab. v. KLM Lab., 984 F.2d 1182 (Fed. Cir. 1993); LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 958 F.2d 1066, 1071 (Fed. Cir. 1992).

336. Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 549 (Fed. Cir. 1990). The same is true for determining whether there is a § 102(b) public-use bar. *Id*.

amount of time following sales activity to determine the potential economic value of a patent.³³⁷

"more than one year prior to the date of the application for patent in the United States." Section 102(b) encourages prompt disclosure.³³⁸ The reference point for section 102(b) items or events is the application date. To bar a patent, section 102(b) items or events must exist or occur more than one year before the application date. In effect, section 102(b) creates a one-year, risk-free period during which the inventor may perfect the invention, decide if the invention is worth patenting, prepare a patent application, and market the invention.³³⁹ No act of the inventor or anyone else that occurs within the risk-free period gives rise to a section 102(b) bar. However, if the inventor waits more than a year to file a patent application, the inventor risks a section 102(b) bar.

Section 102(c)

An inventor loses his or her right to obtain a patent if he or she abandons the invention. Section 102(c)'s abandonment concept is different from section 102(g)'s abandoned, suppressed, or concealed concept.³⁴⁰ When section 102(g) applies, an inventor's right to a patent is subordinated to a second inventor's right to a patent. When section 102(c) applies, an inventor loses his or her right to a patent.

Decisions under section 102(c) are rare. For section 102(c) to apply, an inventor must intend to abandon his or her invention.³⁴¹ The inventor's intent can be express, or it can be implied from a long and unexcused delay in filing a patent application.³⁴² Abandoning a patent application (discussed in *supra* chapter 2) does not constitute section 102(c) abandonment.³⁴³

337. Envirotech Corp. v. Westech Eng'g, Inc., 904 F.2d 1571, 1574 (Fed. Cir. 1990); Lawrence F. Scinto, *The Current Status of the "On Sale" Doctrine, in* Developments— 1985, at 75 (Donald W. Banner ed., 1985). *Cf.* 1 Martin J. Adelman, Patent Law Perspectives § 2.3[7.-6] (2d ed. 1983, rev. 1994).

338. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

339. See generally General Elec. Co. v. United States, 654 F.2d 55 (Ct. Cl. 1981); Gould, Inc. v. United States, 579 F.2d 571 (Ct. Cl. 1978).

340. 2 Donald S. Chisum, Patents § 6.03 (1978, rev. 1994).

341. Paul T. Meiklejohn, Abandonment Under § 102(c) and Forfeiture, 20 IDEA 227 (1978).

342. Id.; Electric Storage Battery Co. v. Shimadzu, 307 U.S. 5 (1939).

343. 1 Patent Practice ch. 4 (Irving Kayton ed., 5th ed. 1993).

Section 102(d)

An inventor loses his or her right to obtain a U.S. patent if (1) the inventor applied for a patent or an inventor's certificate on the invention in a foreign country more than 12 months before his or her U.S. filing date, and (2) the invention was patented or was the subject of an inventor's certificate prior to the U.S. filing date. An invention is patented, within the meaning of section 102(d), when it confers legal rights. Section 102(d), unlike section 102(a), does not require that the patent be publicly available. Section 102(d) encourages inventors to file applications promptly in the United States.³⁴⁴

Disclosure

The circumstances surrounding the issuance of a patent have been analogized to a contract between an inventor and the government.³⁴⁵ In consideration for receiving the right to exclude others from making, using, offering for sale, selling, or importing the invention for a specified period of time, the inventor must disclose his or her invention. The patent statute requires that an inventor submit a specification that contains

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.³⁴⁶

As noted earlier (in *supra* chapter 2), the specification may be in any format, but it must (1) describe the invention sought to be patented, (2) enable one skilled in the pertinent art to make or carry out the invention, (3) enable one skilled in the pertinent art to use the invention, and (4) set forth the best mode of carrying out the invention contemplated by the inventor.³⁴⁷ If the initially filed specification does not fulfill each of these four requirements, the inventor has to add new matter to the specification. Adding new matter causes the

346. 35 U.S.C.A. § 112, ¶ 1 (1984).

347. James R. Uhlir, Section 112: A Potent Patent Defense, 1978 Pat. Law Ann. 71. See generally Edward C. Walterscheid, Insufficient Disclosure Rejections (pts. 1–6), 62 J. Pat. Off. Soc'y 217, 229, 261, 361, 387, 546 (1980).

^{344.} In re Kathawala, 9 F.3d 942, 947 (Fed. Cir. 1993).

^{345.} Markman v. Westview Instruments, Inc., 52 F.3d 967, 984-85 (Fed. Cir. 1995), cert. granted, No. 95-26 (Sept. 28, 1995).

inventor to lose the original filing date, which, in turn, might cause the inventor to lose the right to obtain a patent because of statutory time bars. Not surprisingly, therefore, when the sufficiency of a disclosure is challenged, inventors try to show that the original specification fulfills the four requirements of section 112, paragraph 1.

Description of the invention sought to be patented

The inventor must describe in the specification the invention covered by the claims. Because the claims are an integral part of the specification, whatever is described in the original claims is necessarily described in the original specification.³⁴⁸ Problems arise when the inventor seeks to change his or her original claims while relying upon the original specification for a description of what is in the changed claims. The issue for the decision maker is whether the originally filed specification describes what is in the new claims.³⁴⁹

It is not necessary for the original specification to describe word for word what is in the new claims. It need only convey to those skilled in the art that the inventor has invented what is in the new claims.³⁵⁰ The decision of whether the description-of-the-invention requirement is satisfied is made on a case-by-case basis with little, if any, precedential value given to earlier, fact-specific decisions.³⁵¹

Enabling one skilled in the pertinent art to make or carry out the invention

The inventor is not required to enable the general public to make the claimed product or to carry out the claimed process. The inventor's specification need only enable one skilled in the pertinent art to make or carry out the claimed invention without undue experimenta-

348. Of course, the description must still be sufficient to satisfy § 112. See, e.g., Fiers v. Revel, 984 F.2d 1164, 1169–71 (Fed. Cir. 1993) ("An adequate written description of a DNA requires . . . a description of the DNA itself."). See also In re Hayes Microcomputer Prods. Patent Litig., 982 F.2d 1527, 1533–34 (Fed. Cir. 1992).

349. In re Wilder, 736 F.2d 1516 (Fed. Cir. 1984), cert. denied, 469 U.S. 1209 (1985).

350. Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991); Ralston Purina Co. v. Far-Mar-Co, Inc., 772 F.2d 1570 (Fed. Cir. 1985).

351. In re Wilder, 736 F.2d at 1516. See generally Charles L. Gholz, Recent Developments in the CCPA Relating to the First Paragraph of 35 USC 112, 54 J. Pat. Off. Soc'y 768 (1972); 2 Donald S. Chisum, Patents § 7.04 (1978, rev. 1994). For a further discussion of application amendment, see supra text accompanying notes 63–65.

tion.³⁵² Three important issues involved in determining whether the inventor's specification enables one skilled in the pertinent art to make or carry out the invention without undue experimentation are (1) how much does the section 112 hypothetical person skilled in the pertinent art know, (2) at what point in time must the specification be enabling, and (3) what is undue experimentation.

How much does the section 112 hypothetical person skilled in the pertinent art know? What the section 112 hypothetical person knows can be left out of the specification. The section 112 hypothetical person is presumed to know only what is generally and reasonably available to the U.S. public.³⁵³ The section 112 hypothetical person is not presumed to know as much as the earlier discussed section 103 hypothetical person, who is presumed to know all the prior art relevant to the nonobvious determination, including some material not publicly available.³⁵⁴

At what point in time must the specification be enabling? The specification must be enabling when it is filed.³⁵⁵ Therefore, if the specification is enabling only in light of something that happens after filing, then it does not satisfy section $112.^{356}$ A major exception to the requirement that the specification be enabling when filed is allowed when the specification indicates that the inventor can and will make the specification requires using an indescribable trade secret, such as a microorganism, section 112 is satisfied if the inventor agrees to make the trade secret available to the public at the time the patent issues.

What is undue experimentation? A specification that requires some experimentation to make or carry out the invention can be enabling.³⁵⁸ For example, if carrying out a process requires adjusting a

352. In re Buchner, 929 F.2d 660 (Fed. Cir. 1991); White Consol. Indus. v. Vega Servo-Control, 713 F.2d 788 (Fed. Cir. 1983).

353. In re Howarth, 654 F.2d 103 (C.C.P.A. 1981).

354. 2 Donald S. Chisum, Patents § 7.03[2][b] (1978, rev. 1994).

355. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987).

356. See, e.g., Gould v. Quigg, 822 F.2d 1074, 1078 (Fed. Cir. 1987).

357. In re Wands, 858 F.2d 731 (Fed. Cir. 1988); In re Lundak, 773 F.2d 1216 (Fed. Cir. 1985).

358. In re Vaeck, 947 F.2d 488, 495–96 (Fed. Cir. 1991); Atlas Power Co. v. E.I. du Pont de Nemours & Co., 750 F.2d 1569 (Fed. Cir. 1984).

parameter depending on the altitude at which the process is carried out, section 112 would be satisfied even though some experimentation might be necessary to determine what the parameter should be for a particular altitude.

A specification is not enabling if it requires a level of experimentation that is unreasonable under the circumstances.³⁵⁹ For example, if the invention requires the use of a computer doing X and the inventor does not supply the computer program that causes the computer to do X, section 112 would not be satisfied if programming a computer to do X would require years of effort.³⁶⁰

Enabling one skilled in the pertinent art to use the invention

The section 112 requirement that the specification enable one skilled in the pertinent art to use the invention is related to the utility condition of patentability (see *supra* text accompanying notes 223–28). For example, an invention that does not satisfy the utility condition because the invention does not work will not satisfy section 112's enable-to-use requirement. In contrast, because an invention satisfies the utility condition does not mean it will necessarily satisfy this requirement of section 112. For example, a compound may be useful if it kills fungi. Enabling one to use this compound would probably require at least one example of applying some amount of this compound to a particular fungus.³⁶¹

Best Mode Contemplated by the Inventor

The inventor must disclose in the specification the best mode of carrying out the claimed invention contemplated by the inventor at the time of filing.³⁶² For example, if the inventor knows or believes that an invention is best when run at 7 degrees Fahrenheit, then the inventor must disclose this. Section 112, paragraph 1 is satisfied if the inventor believed that the disclosed mode was the best mode, even if

359. Ex parte Formal, 230 U.S.P.Q. (BNA) 546 (Bd. Pat. App. & Interf. 1986).

361. Richard L. Schwaab, *Disclosure Requirements for U.S. Patent Applications*, 6 APLA Q.J. 313 (1978).

362. See generally Transco Prods., Inc. v. Performance Contracting, Inc., 32 U.S.P.Q. 2d (BNA) 1077 (Fed. Cir. 1994).

^{360.} White Consol. Indus. v. Vega Servo-Control, 713 F.2d 788 (Fed. Cir. 1983). See also Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 941–43 (Fed. Cir.), cert. denied, 498 U.S. 920 (1990).

it was not the best mode in reality.³⁶³ Proving that the best-mode requirement has not been met amounts to showing that the applicant knew of and concealed a better mode than the mode that was disclosed.³⁶⁴ Disclosure of particular manufacturing procedures is not necessarily required.³⁶⁵

Claims

In consideration for disclosing his or her invention, an inventor receives from the government the right to exclude others from making, using, offering for sale, selling, or importing the patented invention. The patented invention is defined by the patent's claims, which set the metes and bounds of the patent's exclusionary power. Because others look to the patent's claims to determine what cannot be done without the patent owner's permission, the inventor must present claims that are as definite as possible.³⁶⁶ Whether a claim is sufficiently definite is determined in light of the relevant prior art and the particular application.³⁶⁷ A claim is not necessarily indefinite because it defines the invention by what it does (function) or how it is made (product-by-process) rather than defining the invention by what it is.³⁶⁸

363. Id. See, e.g., Engel Indus., Inc. v. Lockformer Co., 946 F.2d 1528, 1531-33 (Fed. Cir. 1991).

364. Chemcast Corp. v. Arco Indus. Corp., 913 F.2d 923, 926–28 (Fed. Cir. 1990); Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384–85 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987).

365. Wahl Instruments, Inc. v. Acvious, Inc., 950 F.2d 1575, 1580 (Fed. Cir. 1991). See, e.g., Christianson v. Colt Indus. Operating Corp., 870 F.2d 1292, 1302 (7th Cir.), cert. denied, 493 U.S. 822 (1989).

366. See generally 2 Donald S. Chisum, Patents § 8.03 (1978, rev. 1994).

367. See, e.g., Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 1217–18 (Fed. Cir.), cert. denied, 112 S. Ct. 169 (1991) ("A decision as to whether a claim is invalid [for indefiniteness] requires a determination whether those skilled in the art would understand what is claimed.").

368. See, e.g., In re Swinehart, 439 F.2d 210 (C.C.P.A. 1971); In re Thorpe, 777 F.2d 695 (Fed. Cir. 1985).

V. Infringement

Elements of Proof

Infringement is an issue in most lawsuits involving a patent. Determining patent infringement requires determining whether someone³⁶⁹ (1) without authority (2) makes, uses, offers to sell, sells, or imports (3) the patented invention (4) within the United States, its territories, or its possessions (5) during the term of the patent.³⁷⁰

Without Authority

Authorization to make, use, or sell a patented invention within the United States during the term of the patent usually comes from the patent owner in the form of a patent license.³⁷¹ Accordingly, a licensee who is acting within the scope of the license does not infringe the licensed patent.³⁷² For example, if a patent license allows Company A to make and sell the patented invention east of the Mississippi River, then Company A does not infringe the patent when it sells the patented invention east of the Mississippi River, but does infringe the patent when it sells the patent when it sells the patent of the Mississippi River.

A doctrine of implied license has been judicially created; that is, once there has been an authorized sale of the patented invention, the

369. This includes "any State, any instrumentality of a State, and any officer or employee of a State or instrumentality of a State acting in his official capacity." 35 U.S.C.A. § 271(h) (West Supp. 1994). *See generally* Genentech, Inc. v. Eli Lilly & Co., 998 F.2d 931, 939–44 (Fed. Cir. 1993), *cert. denied*, 114 S. Ct. 1126 (1994).

370. 35 U.S.C.A. § 271(a) (1994) and Pub. L. No. 103–465, § 533, 108 Stat. 4809, 4988–90 (1994). As discussed in text accompanying *infra* notes 379–94, others may also be liable.

371. See supra text accompanying notes 121–22. See, e.g., Intel Corp. v. United States Int'l Trade Comm'n, 946 F.2d 821, 826–28 (Fed. Cir. 1991). For a very limited application, there is statutory authorization at 35 U.S.C. § 271(e)(1). Section 271(e)(1) (as modified by GATT-implementing legislation) allows the making, using, offering to sell, selling, or importing of a patented invention solely for uses related to meeting the reporting requirements of federal drug laws. This section has been held to cover certain medical devices, too. Eli Lilly & Co. v. Medtronic, Inc., 496 U.S. 661 (1990). See generally Telectronics Pacing Sys. v. Ventritex, Inc., 982 F.2d 1520 (Fed. Cir. 1992). Closely related to § 271(e)(1) is § 271(e)(2), which makes the seeking of regulatory approval an infringement in certain situations. See generally Eli Lilly, 496 U.S. at 678.

372. Saint Louis St. F. M. Co. v. Sanitary St. F. M. Co., 178 F. 923 (8th Cir. 1910), cert. denied, 219 U.S. 588 (1911).

buyer is impliedly authorized to repair, use, and resell the purchased item.³⁷³ For example, if Company *B* bought the patented invention sold by Company *A* east of the Mississippi River, then Company *B* can resell the purchased item anywhere, even west of the Mississippi River, without being an infringer.

The authorized sale of a nonpatented item that is used to practice a patented invention does not by itself create an implied license. Generally, if the item sold has any other use *and* the circumstances of the sale do not plainly indicate that the grant of a license should be implied, the sale of the item will not authorize the buyer to make, use, or sell the patented invention.³⁷⁴

Makes, Uses, Offers to Sell, Sells, or Imports

"Makes," "uses," and "sells" are terms that are not often litigated. "Offers to sell" and "imports" were terms added by GATT-implementing legislation that take effect on January 1, 1996. "Makes" means creating an operable assembly of the patented invention;³⁷⁵ "uses" means other than mere possession³⁷⁶ or nonprofit, experimental use;³⁷⁷ and "sells" means making a sale, not offering to sell or contracting for sale,³⁷⁸ even though an offer to sell is sufficient to give rise to an on-sale bar (as discussed in *supra* text accompanying notes 330–39) and will constitute infringement under GATT-implementing legislation.

373. See, e.g., Mallinckrodt, Inc. v. Medipart, Inc., 976 F.2d 700 (Fed. Cir. 1992) (restrictions on use may be legal); Standard Havens Prods. v. Gencor Indus., 953 F.2d 1360, 1375–76 (Fed. Cir. 1991), cert. denied, 113 S. Ct. 60 (1992); Everpure, Inc. v. Cuno, Inc., 875 F.2d 300 (Fed. Cir.), cert. denied, 493 U.S. 853 (1989). See generally 4 Donald S. Chisum, Patents § 16.03[2]–[3] (1978, rev. 1994).

374. Met-Coil Sys. Corp. v. Korners Unlimited, Inc., 803 F.2d 684 (Fed. Cir. 1986).

375. Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518, 529 (1972).

376. 4 Donald S. Chisum, Patents § 16.02[4] (1978, rev. 1994).

377. See Ronald D. Hantman, Experimental Use as an Exception to Patent Infringement, 67 J. Pat. Off. Soc'y 617 (1985). See, e.g., Baxter Diagnostics, Inc. v. AVL Scientific Corp., 798 F. Supp. 612, 620 (C.D. Cal. 1992). See generally Roche Prods. v. Bolar Pharmaceutical Co., 733 F.2d 858, 862–63 (Fed. Cir.), cert. denied, 469 U.S. 856 (1984).

378. Ardco, Inc. v. Page, Ricker, Felson Mktg., Inc., 25 U.S.P.Q. 2d (BNA) 1382, 1384–86 (N.D. Ill. 1992); Ecodyne Corp. v. Croll-Reynolds Eng'g Co., 491 F. Supp. 194 (D. Conn. 1979).

Infringement

Persons who make, use, or sell the patented invention are direct infringers.³⁷⁹ Persons who offer to sell or import may also be deemed direct infringers. Corporate officers can be personally liable for direct infringement by their corporation, but only if the corporate veil can be pierced.³⁸⁰ Direct infringers are not the only persons that can be held liable for infringing a patent, however. Since 1871, courts have recognized that persons who aid and abet direct infringers should also be held liable³⁸¹ as either contributory infringers or inducers of infringement. Congress codified the law relating to these infringers in the Patent Act of 1952 at 35 U.S.C. § 271(c) and (b).³⁸²

Contributory infringers are persons who aid and abet direct infringers without themselves making, using, offering to sell, or selling the patented invention.³⁸³ For example, if a patented invention is the mechanical combination of Parts A and B, a person who merely sells Part B could not be liable as a direct infringer; but if Part B is sold to someone who combines Part B with Part A (direct infringement), the seller might be liable as a contributory infringer. Pursuant to 35 U.S.C. § 271(c), the seller is liable as a contributory infringer if

- 1. the seller sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process;
- 2. the item sold constitutes a material part of the invention;
- 3. the seller knows that the item sold is especially made or especially adapted for use in an infringement of a patent; and
- 4. the item sold is not a staple article or commodity of commerce suitable for substantial noninfringing use.

379. See, e.g., 4 Donald S. Chisum, Patents ch. 16 (1978, rev. 1994); 3 Peter D. Rosenberg, Patent Law Fundamentals § 17.02[1] (2d ed. 1986, rev. 1994).

380. Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 552 (Fed. Cir. 1990). The requirement for piercing the corporate veil has caused dissent. *See, e.g.,* Symbol Technologies v. Metrologic Instruments, 771 F. Supp. 1390, 1402–04 (D.N.J. 1991); Phillip A. Rotman, *Piercing the Corporate Veil: Is It the Proper Standard for Determining Personal Liability for Direct Patent Infringement?*, 75 J. Pat. & Trademark Off. Soc'y 581 (1993). *See generally* Dangler v. Imperial Mach. Co., 11 F.2d 945 (7th Cir. 1926).

381. Wallace v. Holmes, 29 F. Cas. 74 (C.C.D. Conn. 1871) (No. 17,100).

382. See generally Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1468-69 (Fed. Cir. 1990).

383. See, e.g., Giles S. Rich, Infringement Under Section 271 of the Patent Act of 1952, 21 Geo. Wash. L. Rev. 521 (1953).

In addition, the buyer must be a direct infringer.³⁸⁴

Selling a material part of a patented product or process is probably the most common type of contributory infringement. As the enumerated elements show, liability for this type of infringement requires a certain level of knowledge, that is, the seller of the material part must know that the item sold is especially made or especially adapted for use in a product or process that infringes a patent.³⁸⁵ A letter from the patent owner to the seller of the material part which gives notice of the patent and alleges infringement satisfies the knowledge requirement of contributory infringement.³⁸⁶

Liability for selling a material part of a patented product or process also requires that the item sold not be suitable for substantial noninfringing use.³⁸⁷ For example, if a patented invention requires the use of gold, a mere seller of gold will not be liable even if the seller knows the buyer is using the gold to infringe the patent, because gold is suitable for substantial noninfringing uses.

Liability for aiding and abetting direct infringers is also imposed on one who "actively induces infringement of a patent." For example, a person who sells gold and instructs the buyer in how to use the gold to practice a patented invention can be liable for inducing infringement under section 271(b), even though he or she is not liable under section 271(c). Regardless of whether the corporate veil can be pierced, corporate officers can be held liable for actively inducing their corporation's direct infringement.³⁸⁸

As with all contributory infringement, liability for active inducement requires that there be direct infringement by someone other than the inducer.³⁸⁹ For example, if the gold buyer never practices the

384. Standard Havens Prods. v. Gencor Indus., 953 F.2d 1360, 1374 (Fed. Cir. 1991), cert denied, 113 S. Ct. 60 (1992).

385. See, e.g., Hewlett-Packard, 909 F.2d at 1469 n.4.

386. Aro Mfg. Co. v. Convertible Top Co., 377 U.S. 476 (1964).

387. See, e.g., C.R. Bard, Inc. v. Advanced Cardiovascular Sys., 911 F.2d 670, 673-75 (Fed. Cir. 1990).

388. Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 553 (Fed. Cir. 1990). *See also* Power Lift, Inc. v. Lang Tools, Inc., 774 F.2d 478 (Fed. Cir. 1985).

389. Rich, *supra* note 383. *See, e.g.*, Moleculon Research Corp. v. CBS, Inc., 872 F.2d 407, 410 (Fed. Cir. 1989). Within the context of 35 U.S.C. § 271(f)(1), discussed in *infra* text accompanying note 430, one court has held that one can actively induce oneself. T.D. Williamson, Inc. v. Laymon, 723 F. Supp. 587, 591–93 (N.D. Okla. 1989), *aff'd without opinion*, 923 F.2d 871 (Fed. Cir. 1990), *cert. dismissed*, 500 U.S. 901 (1991).

patented invention, the gold seller/instructor cannot be held liable for inducing infringement. Also, liability for active inducement requires specific, knowing intent to induce infringement.³⁹⁰

In the Process Patent Amendments Act of 1988, Congress expanded the range of rights conferred by a patent to include the right, when the patented invention is a process, to exclude others from using throughout the United States, or selling throughout the United States, or importing into the United States products made by the patented process.³⁹¹ A product will be deemed not to be made by the patented process if it is materially changed by subsequent processes or if it becomes a trivial and nonessential component of another product.³⁹² A product will be rebuttably presumed to be made by a patented process if the court finds a substantial likelihood exists that the product was made by the patented process and that the patent owner unsuccessfully made a reasonable effort to determine the process actually used in the production of the product.³⁹³ There are many statutory limitations on the damages available for the violation of this process-patent right and many detailed conditions relating to this right.³⁹⁴ In the GATT-implementing legislation of 1994, Congress further expanded the process-patent rights to include the right to exclude others from offering to sell or importing products made by the patented process.

The Patented Invention

There is infringement, generally, if any one of a patent's claims covers the alleged infringer's product or process.³⁹⁵ Before determining whether a patent claim covers the alleged infringer's

390. Water Technologies Corp. v. Calco, Ltd., 850 F.2d 660, 668 (Fed. Cir.), cert. denied, 488 U.S. 968 (1988); In re Certain Headboxes, 213 U.S.P.Q. (BNA) 291 (U.S. Int'l Trade Comm'n 1981).

391. 35 U.S.C.A. § 154 (West Supp. 1994). Such use, sale, or importation may make one liable as an infringer. 35 U.S.C.A. § 271(g) (West Supp. 1994). See Shamrock Technologies, Inc. v. Precision Micron Powders, Inc., 20 U.S.P.Q. 2d (BNA) 1797 (E.D.N.Y. 1991).

392. 35 U.S.C.A. § 271(g) (West Supp. 1994).

393. 35 U.S.C.A. § 295 (West Supp. 1994).

394. See 35 U.S.C.A. §§ 271(g) (West Supp. 1994) and 287(b) (West Supp. 1994). See also Allegheny Ludlum Corp. v. Nippon Steel Corp., 765 F. Supp. 224 (E.D. Pa. 1991) (interpreting the "Grandfather Clause").

395. SmithKline Diagnostics v. Helena Lab. Corp., 859 F.2d 878, 889 (Fed. Cir. 1988).

product or process, it is necessary to determine what the words in the claim mean.³⁹⁶ Determining what the words mean (claim construction) is a question of law that never goes to a jury;³⁹⁷ determining whether the claim as interpreted covers the alleged infringer's product or process is a question of fact.³⁹⁸

The words in a claim may mean what one skilled in the art would ordinarily expect them to mean³⁹⁹ or, because an inventor is allowed to be his or her own lexicographer, the meaning of the words may be different from that ordinary meaning.⁴⁰⁰ To determine what the words in a claim mean, courts look to the patent's specification (the written description, the drawings, and the other claims in the patent); the prosecution history as detailed in the file wrapper; and, possibly, extrinsic evidence, such as expert testimony from persons skilled in the art.⁴⁰¹ When interpreting means-plus-function language in a claim, such language is construed to include only the structure, material, or acts (and equivalents of the structure, material, or acts) that are described in the patent's specification as the means for performing the claimed function.⁴⁰²

After the words of a claim are interpreted, it is necessary to determine if the claim covers the alleged infringer's product or process. For there to be infringement, all of the claim's elements must be found in the accused product or process.⁴⁰³ If all of the claim's elements are

396. *Id.*; Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 796 (Fed. Cir. 1990). *See generally* Autogiro Co. of Am. v. United States, 384 F.2d 391 (Ct. Cl. 1967).

397. Markman v. Westview Instruments, Inc., 52 F.3d 967, 977–79 (Fed. Cir. 1995), cert. granted, No. 95-26 (Sept. 28, 1995).

398. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1570 (Fed. Cir. 1992); Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448 (Fed. Cir. 1985).

399. Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1571 (Fed. Cir. 1983).

400. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88 (Fed. Cir. 1992).

401. *Markman*, 52 F.3d at 979–81. Extrinsic evidence may be needed to help the court construe the claim language. Such evidence is not used to clarify ambiguity in the claims or to vary the terms of the claims. Whether to admit extrinsic evidence is discretionary with the court. *Id*.

402. In re Donaldson Co., 16 F.3d 1189, 1193 (Fed. Cir. 1994); 35 U.S.C.A. § 112, ¶ 6 (1984). See generally Mark H. Bloomberg & Esther H. Steinhauer, Interpreting Means-Plus-Function Claims, Tenth Annual Joint Patent Seminar, at II-17 (1994).

403. SmithKline Diagnostics v. Helena Lab. Corp., 859 F.2d 878 (Fed. Cir. 1988).

found literally, then there usually is literal infringement.⁴⁰⁴ If one or more (possibly all) of the claim's elements are found equivalently⁴⁰⁵ and the rest are found literally, then there usually is infringement under the doctrine of equivalents.⁴⁰⁶

Literal infringement

Generally, a claim is literally infringed if each properly construed claim element reads on the accused product or process.⁴⁰⁷ As mentioned above, for each claim element that is expressed in means-plus-function language, this occurs only when the accused product or process (a) employs means identical to the means disclosed in the patent's specification to perform the identical function of the claim element or (b) employs a means that is the structural equivalent of the means disclosed in the patent's specification to perform the identical function to perform the identical function of the claim element.⁴⁰⁸ Thus, for example:

(1) If a claim is for a three-bladed ceiling fan whose blades are attached to a solid rod that connects with a motor, then the claim literally reads on (a) a copy of a three-bladed ceiling fan whose blades are attached to a solid rod that connects with a motor and (b) some improved fans, such as a three-bladed ceiling fan whose blades are attached to a solid rod that connects with a motor and that also has a cord for switching the fan on and off.⁴⁰⁹ Each element of the claim is found in both infringing fans. In contrast, this claim would not literally read on a three-bladed ceiling fan whose blades are attached to a hollow rod that connects with a motor. The solid-rod claim element is not found in this other fan.⁴¹⁰

404. A judicially created exception, the reverse doctrine of equivalents, is discussed in the text accompanying notes 424–26.

405. Determining equivalence under the doctrine of equivalents is quite different from determining equivalence in the context of construing means-plus-function claims. *See generally* Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1043–45 (Fed. Cir. 1993).

406. Two limitations on the doctrine of equivalents are discussed in the text accompanying notes 416–23.

407. See generally Key Mfg. Group, Inc. v. Microdot, Inc., 15 U.S.P.Q. 2d (BNA) 1195 (E.D. Mich. 1990), rev'd, 925 F.2d 1444 (Fed. Cir. 1991).

408. Valmont Indus., 983 F.2d at 1042. Regarding interpreting the function specified, *see, e.g.*, Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388–89 (Fed. Cir. 1992).

409. See, e.g., Stiftung v. Renishaw PLC, 945 F.2d 1173, 1177-79 (Fed. Cir. 1991).

410. Claims expressed in product-by-process language read on products made by the identical process. Atlantic Thermoplastics Co. v. Faytex Corp., 970 F.2d 834 (Fed.

(2) If a claim is for a ceiling fan with a means for switching the fan on and off and the specification describes only a cord for switching the fan on and off, then the claim would cover only (a) a ceiling fan with a means for switching the fan on and off that is identical to the disclosed cord and (b) ceiling fans with a means for switching the fan on and off that is equivalent to the disclosed cord. Determining whether another means (e.g., a remote-control unit for turning the fan on and off) is equivalent is a question of fact.⁴¹¹

Although the maker, user, or seller of ceiling fans with hollow rods and remote-control units may have avoided the literal language of the claims in these examples, he or she might still be deemed an infringer through an application of the doctrine of equivalents.

Infringement under the doctrine of equivalents

The doctrine of equivalents, which has existed since 1853,⁴¹² allows a court to find infringement when someone steals the heart of an invention but avoids the literal language of the claim by making a noncritical change.⁴¹³ Equivalence is a question of fact.⁴¹⁴ The test for equivalence is whether there are insubstantial differences between the claimed invention and the accused product or process. Often, but not exclusively, this test is met by proving that the alleged infringer's product or process performs substantially the same function in substantially the same way to accomplish substantially the same result as the patented invention.⁴¹⁵ A three-bladed ceiling fan whose

Cir. 1992). The Federal Circuit is sharply divided concerning whether a product-byprocess claim covers the same products made by any other process. See the comments concerning the denial of rehearing en banc in *Atlantic Thermoplastics*, 974 F.2d at 1279, 1281, 1298, 1299.

411. See, e.g., Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533 (Fed. Cir. 1991).

412. Winans v. Denmead, 56 U.S. (15 How.) 330 (1853).

413. Valmont Indus., 983 F.2d at 1043. See generally Graver Mfg. Co. v. Linde Co., 339 U.S. 605 (1950); D. Dennis Allegretti & Stephen F. Sherry, *The Doctrine of Equivalents Today*, in Developments—1985, at 1 (Donald W. Banner ed., 1985). See also Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931 (Fed. Cir. 1987) (en banc), cert. denied, 485 U.S. 961 (1988).

414. *Graver*, 339 U.S. at 609; Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 35 U.S.P.Q. 2d (BNA) 1641, 1648 (Fed. Cir. 1995).

415. Hilton Davis, 35 U.S.P.Q. 2d (BNA) at 1648. This function/way/result test cannot be used in a manner that ignores the patent claim's limitations. Each limitation in the claim must be present (either literally or equivalently) in any device or process held to be infringing under the doctrine of equivalents. See Malta v. Schulmerich Carillons, Inc., 952 F.2d 1320, 1325–27 (Fed. Cir. 1991), cert. denied, 112 S. Ct. 2942

blades are attached to a hollow rod that connects with a motor and a ceiling fan with a remote-control unit for turning the fan on and off could be found to perform substantially the same function, in substantially the same way, and for substantially the same purpose as the patented three-bladed ceiling fan.

There are two major limitations on using the doctrine of equivalents to allow a patent owner a broader right to exclude than is given by the literal language of the claims.⁴¹⁶ First, not all inventions are accorded the same range of equivalents.⁴¹⁷ Whereas pioneer inventions, ones that mark a significant step forward in an art, are often entitled to a broad range of equivalents, inventions in a crowded field are frequently restricted to a narrow range of equivalents, if any.⁴¹⁸ Second, a patent owner can be estopped from benefiting from the doctrine of equivalents as a result of prosecution history estoppel (formerly known as file-wrapper estoppel);⁴¹⁹ that is, something an applicant gave up during the patent's prosecution in order to obtain allowance of the patent cannot be recaptured by the doctrine of equivalents.⁴²⁰ For example, if the original patent application of the inventor of the solid-rod, three-bladed ceiling fan had claims directed to a hollow-rod, three-bladed ceiling fan but the inventor amended

(1992); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257–61 (Fed. Cir. 1989); *Pennwalt*, 833 F.2d at 934–39.

416. See generally Wilson Sporting Goods v. David Geoffrey & Assocs., 904 F.2d 677, 683–85 (Fed. Cir.), cert. denied, 498 U.S. 992 (1990).

417. Allegretti & Sherry, supra note 413, at 25.

418. Hughes Aircraft Co. v. United States, 717 F.2d 1351 (Fed. Cir. 1983). One non-obligatory way to determine if prior art restricts the range of equivalents is to craft a hypothetical claim that would literally read on the accused product or process and then determine if that hypothetical claim would have been patentable. If the hypothetical claim is patentable, then the prior art is not a bar to applying the doctrine of equivalents. If, however, the hypothetical claim is not patentable, then finding infringement under the doctrine of equivalents is not proper. *Wilson Sporting Goods*, 904 F.2d at 684–86. *See also* Key Mfg. Group, Inc. v. Microdot, Inc., 925 F.2d 1444, 1449 (Fed. Cir. 1991).

419. See generally Hughes, 717 F.2d 1351; Mannesmann Demag Corp. v. Engineered Metal Prods., 793 F.2d 1279 (Fed. Cir. 1986); Tom Arnold & Michael Lynch, *Infringement of Inventions, in* Developments—1984, at 465 (Donald W. Banner ed., 1984).

420. *See* sources cited *supra* note 419. Unmistakable assertions made to the Patent Office in support of patentability may also give rise to an estoppel. Texas Instruments v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1174 (Fed. Cir. 1993).

those claims to cover only solid-rod, three-bladed ceiling fans in light of prior art cited by the examiner, then the patent owner would be estopped from claiming that hollow-rod, three-bladed ceiling fans support a finding of infringement under the doctrine of equivalents. Not all amendments to claims create prosecution-history estoppel.⁴²¹ For example, amendments that were not critical to the allowance of the patent do not create prosecution-history estoppel.⁴²² A test for determining what the applicant gave up (and, thus, what cannot be recaptured by the doctrine of equivalents) is what a business competitor was reasonably entitled to conclude from the prosecution history was given up to procure issuance of the patent.⁴²³

In addition to the judicially created doctrine of equivalents, there is a judicially created reverse doctrine of equivalents. The reverse doctrine of equivalents, which is a question of fact,⁴²⁴ allows a court to find no infringement even though the product or process of the alleged infringer contains each element of the patent's claim.⁴²⁵ The test for the reverse doctrine of equivalents is whether the product or process is so far changed in principle that it performs the same or similar function in a substantially different way.⁴²⁶

Within the United States, Its Territories, or Its Possessions

The patent owner's right to exclude others from making, using, offering for sale, selling, or importing the patented invention and the process-patent owner's additional right to exclude others from importing, using, offering for sale, or selling the products made by the patented

421. See, e.g., Andrew Corp. v. Gabriel Elecs., Inc., 847 F.2d 819, 825 (Fed. Cir.), cert. denied, 488 U.S. 927 (1988); Bayer Aktiengesellschaft v. Duphar Int'l Research, 738 F.2d 1237 (Fed. Cir. 1984).

422. Mannesmann, 793 F.2d at 1284-85.

423. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 952 (Fed. Cir. 1993); Haynes Int'l, Inc. v. Jessop Steel Co., 8 F.3d 1573, 1578 (Fed. Cir. 1993).

424. Polaroid Corp. v. Eastman Kodak Co., 789 F.2d 1556 (Fed. Cir.), cert. denied, 479 U.S. 850 (1986).

425. SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1125 (Fed. Cir. 1985) (en banc).

426. Graver Mfg. Co. v. Linde Co., 339 U.S. 605, 608–09 (1950). See, e.g., Mechanical Plastics v. Unifast Indus., 657 F. Supp. 502 (E.D.N.Y. 1987), aff'd without opinion, 846 F.2d 78 (Fed. Cir. 1988). See also Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1581 (Fed. Cir. 1991); U.S. Steel Corp. v. Phillips Petroleum Co., 865 F.2d 1247, 1253 (Fed. Cir. 1989).

process are, with one exception, in force throughout the United States, its territories, and its possessions.⁴²⁷ The one exception is that the use of a patented invention on a vessel, aircraft, or vehicle of any foreign country that enters the United States temporarily or accidentally is not an infringement, provided that (1) the foreign country provides similar privileges to U.S. vessels, aircraft, or vehicles, and (2) the patented invention is used exclusively for the needs of the vessel, aircraft, or vehicle, and is not sold in or used for the manufacture of anything to be sold in or exported from the United States.⁴²⁸

Contributory infringers do not escape liability by performing their acts outside the United States, its territories, and possessions. If an act of direct infringement occurs within the United States, its territories, or its possessions, those who aid and abet the direct infringement in a manner that satisfies 35 U.S.C. § 271(b) or (c) are liable,⁴²⁹ no matter where those acts are performed.

In certain limited situations, persons in the United States are liable for helping persons outside the United States do something that would constitute direct infringement if done in the United States. For example, if someone supplies in or from the United States all or a substantial portion of the components of a patented invention in such a manner as to actively induce the combination of the components outside the United States, that person is liable if the combining of the components would constitute infringement if done in the United States.⁴³⁰ Thus, if a patented invention is the combination of Parts A and B, and Company X in the United States supplies Parts A and B in separate boxes to Company Y outside the United States and instructs Company Y in how to combine the parts so as to practice the patented invention, Company X is liable for infringement. Similarly, liability for infringement is placed on anyone (1) supplying in or from the United States any component of a patented invention (a) that is especially made or especially adapted for use in the patented invention, (b) that is not a staple article or commodity of commerce suitable for substantial noninfringing use, and (c) that is not wholly combined, (2) knowing the component is so made or adapted, and (3) intending that the component will be combined outside the

^{427.} See 35 U.S.C.A. § 100(c) (1984), § 154 (West Supp. 1994).

^{428.35} U.S.C.A. § 272 (1984).

^{429.} Nippon Elec. Glass Co. v. Sheldon, 489 F. Supp. 119 (S.D.N.Y. 1980).

^{430. 35} U.S.C.A. § 271(f)(1) (West Supp. 1994).

United States in a manner that would infringe if done within the United States.⁴³¹

During the Term of the Patent

GATT-implementing legislation radically altered the term of U.S. patents. Prior to June 8, 1995, the term of a patent, with one exception, lasted for seventeen years from the day the patent was issued.⁴³² An exception was made for certain products that could not be commercially marketed without the approval of the Food and Drug Administration (e.g., human drugs). Patents for such products could have their seventeen-year terms extended, by a period not exceeding five years, to restore the time lost because of the regulatory approval process.⁴³³ For patent applications filed on or after June 8, 1995, the term of a U.S. patent begins on the date of issue and continues until the date that is twenty years after the date on which the application that resulted in the patent was filed or, under certain conditions, the date on which an earlier filed application (that is referenced in the later filed application) was filed. The patent term can be extended, for up to five years, to compensate for certain delays in the PTO or the courts. The patent term can still be extended for delays resulting from the FDA approval process.⁴³⁴ Under transitional provisions, patents that issue from an application that was pending prior to June 8, 1995, and patents whose terms have not expired by June 8, 1995, are entitled to either the seventeen-year-from-issue-date term or the twentyyear-from-earliest-effective-filing-date term, whichever is longer.435

A patent cannot be infringed before it is issued⁴³⁶ or after its term has expired. Accordingly, making, using, offering to sell, selling, or importing the patented invention prior to the issue date of the patent or after the exclusionary period ends⁴³⁷ is not infringement.

431. 35 U.S.C.A. § 271(f)(2) (West Supp. 1994).

432. 35 U.S.C.A. § 154 (West Supp. 1994).

433. 35 U.S.C.A. § 155 (1984), § 156 (West Supp. 1994). See, e.g., Hoechst Aktiengesellschaft v. Quigg, 917 F.2d 522 (Fed. Cir. 1990). In this case, a loophole in the statute allowed a 6.8-year extension of the patent term.

434. See generally the December 1994 amendments to 35 U.S.C. § 154.

435. 35 U.S.C.A. § 154 (West Supp. 1994). Legislation has been introduced in the 104th Congress to make this transitional provision apply to applications filed on or after June 8, 1995. H.R. 359, 104th Cong., 1st. Sess. (1995).

436. See 3 William C. Robinson, The Law of Patents for Useful Inventions \S 907 (1890).

437. Id. § 908.

Expiration of the patent's exclusionary power does not, however, affect a patent owner's right to sue for infringement that occurred during the life of the patent.⁴³⁸

Claims of Noninfringement

The alleged infringer can introduce evidence to show that the acts complained of do not constitute infringement. Following are some examples.

- 1. The properly interpreted claims do not read on the accused product or process.
- 2. The alleged infringer is acting within the scope of a license.
- 3. The alleged infringer has an implied license.
- 4. The alleged infringer's use is experimental and completely noncommercial.
- 5. The alleged infringer is acting within the scope of 35 U.S.C. § 271(e)(1).
- 6. The alleged infringer is entitled to the reverse doctrine of equivalents.
- 7. The patent owner is not entitled to apply the doctrine of equivalents because of prosecution-history estoppel.
- 8. The alleged infringer's use is on a vessel, aircraft, or vehicle of a foreign country that entered the United States temporarily or accidentally (and fulfills the other requirements of 35 U.S.C. § 272).

438. 4 Donald S. Chisum, Patents § 16.04[4] (1978, rev. 1994). Damages cannot, however, be recovered for any infringement that occurred more than six years prior to the filing of the complaint or counterclaim for infringement. 35 U.S.C.A. § 286 (1984).

Claims of InvalidityOnly valid patents give the patent owner the right to exclude others from making, using, offering for sale, or selling the patented invention and the process-patent owner the right to exclude others from importing, using, offering for sale, or selling the products made by the patented process. An invalid patent cannot be infringed.⁴³⁹ Therefore, an alleged infringer who can show that the patent asserted against him or her is invalid cannot be liable for infringement.⁴⁴⁰

There are two ways to establish that a patent is invalid: (1) prove that the patented invention does not meet one or more of the conditions of patentability (discussed in *supra* text accompanying notes 207–308), or (2) prove that the inventor did not satisfy one or more of the requirements of patentability (discussed in *supra* text accompanying notes 309–68). As detailed earlier (see *supra* text accompanying notes 166–73), a duly issued patent is presumed valid, and one seeking to prove that a patent is invalid must do so by clear and convincing evidence.

In addition, there is at least one nonsubstantive PTO requirement that may render a patent for an invention invalid if it is not satis-fied—the requirement to obtain a PTO license before filing a foreign patent application regarding the same invention.⁴⁴¹

439. See, e.g., Ever-Wear, Inc. v. Wieboldt Stores, Inc., 427 F.2d 373, 376 (7th Cir. 1970).

440. 35 U.S.C.A. § 282 (1984 & Supp. 1994).

441. 35 U.S.C.A. §§ 184-185 (West Supp. 1994).

VI. Equitable Defenses

Unclean hands, laches, and estoppel are three equitable principles that can preclude a patent owner from recovering for infringement.

Unclean Hands

Two defenses to a charge of infringement are derived from the ancient equitable doctrine of unclean hands. These are (1) inequitable conduct before the PTO and (2) patent misuse. If either defense is proven, the asserted patent is unenforceable.

Inequitable Conduct Before the PTO

Since the mid-1940s, the Supreme Court has endorsed the idea that a patent applicant's conduct during the application process may give rise to a defense to a charge of infringement.⁴⁴² Such a defense arises when the applicant's conduct constitutes either common-law fraud or some other inequitable conduct.⁴⁴³ Although this defense has always included conduct more easily proven than common-law fraud,⁴⁴⁴ the defense has usually been labeled "fraud on the Patent Office."⁴⁴⁵ The

442. Hazel-Atlas Co. v. Hartford Co., 322 U.S. 238 (1944) (dictum); Precision Co. v. Automotive Co., 324 U.S. 806 (1945). See Robert J. Goldman, Evolution of the Inequitable Conduct Defense in Patent Litigation, 7 Harvard J.L. & Tech. 37 (1993).

443. Norton v. Curtiss, 433 F.2d 779 (C.C.P.A. 1970). Regarding this defense, see generally Goldman, supra note 442; Peter D. Rosenberg, The Assertion of a Fraud upon the Patent Office as a Means of Defeating the Patent Monopoly, 50 J. Pat. Off. Soc'y 455 (1968); Laurence H. Pretty, Inequitable Conduct Before the PTO—The Law in the Federal Circuit, 13 APLA Q.J. 240 (1985); John F. Lynch, Fraudulent Procurement of Patents: Origins, Development and Perspectives, in Patent Antitrust, at 221 (PLI Patents, Copyrights, Trademarks & Literary Property Course Handbook Series No. 149, 1982); Herbert F. Schwartz, Fraud on the Patent Office as a Defense and as an Antitrust Counterclaim, in Patent Antitrust 1984, at 229 (PLI Patents, Copyrights, Trademarks & Literary Property Course Handbook Series No. 177, 1984).

If fraud can be proven, it can be used either defensively as mentioned or offensively as part of an antitrust claim. *See* Walker, Inc. v. Food Mach., 382 U.S. 172 (1965); Abbott Lab. v. Brennan, 952 F.2d 1346, 1353–55 (Fed. Cir. 1991), *cert. denied*, 112 S. Ct. 2993 (1992). *See generally* Schwartz, *supra*; 7 Julian O. von Kalinowski, Antitrust Laws and Trade Regulation ch. 59 (1969, rev. 1993).

444. See Precision Co., 324 U.S. at 816.

445. See, e.g., materials cited supra note 443.

Federal Circuit has expressed a preference for using the description "inequitable conduct before the PTO."⁴⁴⁶

The defense of inequitable conduct before the PTO appears in almost every patent infringement lawsuit.⁴⁴⁷ Proof of this defense renders all the claims of the asserted patent unenforceable for the life of the patent.⁴⁴⁸ The underlying elements of this defense must be proven by clear and convincing evidence.⁴⁴⁹

Proof of inequitable conduct before the PTO requires establishing that the applicant (or those aligned with him or her) engaged in inequitable conduct during the application process of the asserted patent. Such conduct includes submitting false information, submitting misleading information, misrepresenting information, and not disclosing information.⁴⁵⁰

Inequitable conduct must be both material and intended.⁴⁵¹ The defendant must establish at least a threshold level both of materiality and of intent to mislead the PTO.⁴⁵² Materiality and intent are factual issues.⁴⁵³ If the threshold levels of materiality and intent are met, the court balances the actual level of materiality and the actual level of intent, and determines, as a matter of equity, if inequitable

446. J.P. Stevens & Co. v. Lex Tex Ltd., 747 F.2d 1553 (Fed. Cir. 1984), cert. denied, 474 U.S. 822 (1985).

447. Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437 (Fed. Cir. 1984). This defense can be tried without a jury and separately from a jury trial on other issues. *See* Paragon Podiatry Lab. v. KLM Lab., 984 F.2d 1182, 1190 (Fed. Cir. 1993); Gardco Mfg., Inc. v. Herst Lighting Co., 820 F.2d 1209 (Fed. Cir. 1987).

448. Kingsdown Medical Consultants v. Hollister, Inc., 863 F.2d 867, 877 (Fed. Cir. 1988) (en banc), cert. denied, 490 U.S. 1067 (1989); J.P. Stevens, 747 F.2d at 1560–62.

449. LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 958 F.2d 1066, 1070 (Fed. Cir. 1992); *Kingsdown Medical Consultants*, 863 F.2d at 872.

450. J.P. Stevens, 747 F.2d at 1559; 5 D. S. Chisum, Patents § 19.03[2] (1978, rev. 1994).

451. Halliburton Co. v. Schlumberger Tech. Corp., 925 F.2d 1435, 1439 (Fed. Cir. 1991); J.P. Stevens, 747 F.2d at 1559–60.

452. *Halliburton*, 925 F.2d at 1439. 453. *Id.*

conduct before the PTO has occurred.⁴⁵⁴ A high level of materiality can offset a low level of intent, and vice versa.⁴⁵⁵

Information is material where there is a substantial likelihood that a reasonable patent examiner would consider the information important in deciding whether to allow the application to issue as a patent.⁴⁵⁶ This standard does not require that "but for" the misconduct the patent would not have issued.⁴⁵⁷ "Close cases should be resolved by disclosure, not unilaterally by the applicant."⁴⁵⁸ Information that is merely cumulative need not be cited.⁴⁵⁹

Direct proof of an intent to mislead or deceive the PTO is rarely available.⁴⁶⁰ Such an intent may be inferred from circumstantial evidence.⁴⁶¹ Conduct amounting to gross negligence does not, by itself, justify drawing an inference of intent to deceive.⁴⁶² When one makes

454. Id. See also Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 551 (Fed. Cir. 1990).

455. Halliburton, 925 F.2d at 1439; American Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1363 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984).

456. See, e.g., LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 958 F.2d 1066, 1074 (Fed. Cir. 1992) and *Halliburton*, 925 F.2d at 1440.

457. American Hoist & Derrick, 725 F.2d at 1362–63. See also, e.g., Merck & Co. v. Danbury Pharmacal, Inc., 873 F.2d 1418, 1421 (Fed. Cir. 1989). This standard comes from Rule 1.56(a) of the Patent and Trademark Office Rules, 37 C.F.R. ch. 1, which the Federal Circuit has said "is an appropriate starting point for any discussion of materiality, for it appears to be the broadest . . . and because that materiality boundary most closely aligns with how one ought to conduct business with the PTO." American Hoist & Derrick, 725 F.2d at 1363.

After five years of effort, the patent bar succeeded in having the PTO standard changed (see Goldman, *supra* note 442). The new Rule 1.56 standard, effective March 1992, is considerably narrower, i.e., less information is now defined as material. *See supra* note 45. Whether the Federal Circuit will apply this new PTO standard is not yet known.

458. LaBounty Mfg., 958 F.2d at 1076.

459. Halliburton, 925 F.2d at 1440.

460. LaBounty Mfg., 958 F.2d at 1076; Merck, 873 F.2d at 1422.

461. Hewlett-Packard Co. v. Bausch & Lomb, Inc., 882 F.2d 1556, 1562 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1076 (1990). *See also* Molins PLC v. Textron, Inc., 821 F. Supp. 1551, 1564 (D. Del. 1992).

462. Kingsdown Medical Consultants v. Hollister, Inc., 863 F.2d 867, 876 (en banc), cert. denied, 490 U.S. 1067 (1989).

a finding regarding intent to deceive the PTO, all circumstances, including those indicating good faith, must be considered.⁴⁶³

Regarding drawing the inference of intent to mislead, the Federal Circuit has stated:

No single factor or combination of factors can be said always to require an inference of intent to mislead; yet a patentee facing a high level of materiality and clear proof that it knew or should have known of that materiality, can expect to find it difficult to establish "subjective good faith" sufficient to prevent the drawing of an inference of intent to mislead. A mere denial of intent to mislead (which would defeat every effort to establish inequitable conduct) will not suffice in such circumstances.⁴⁶⁴

Patent Misuse

A patent is misused, for example, when its owner uses it in violation of the antitrust laws or uses it to expand the scope of the patent right with anticompetitive effect.⁴⁶⁵ Prohibiting a licensee from making or selling goods that compete with the patented invention is an example of patent misuse.⁴⁶⁶

In 1988, Congress restricted the scope of the patent-misuse defense⁴⁶⁷ by excluding from its scope

> the act of condition[ing] the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a sepa-

463. Paragon Podiatry Lab. v. KLM Lab., 984 F.2d 1182, 1190 (Fed. Cir. 1993); Halliburton, 925 F.2d at 1443; Kingsdown Medical Consultants, 863 F.2d at 876 (en banc).

464. FMC Corp. v. Manitowoc Co., 835 F.2d 1411, 1416 (Fed. Cir. 1987).

465. See Windsurfing Int'l, Inc. v. AMF, Inc., 782 F.2d 995 (Fed. Cir.), cert. denied, 477 U.S. 905 (1986); Robert J. Hoerner, *Patent Misuse*, 53 Antitrust L.J. 641 (1984); Antitrust Section, American Bar Association, Antitrust Law Developments, ch. IX (3d ed. 1992).

466. See Hoerner, supra note 465, at 649–54. For examples of acts that do not constitute patent misuse, see 35 U.S.C.A. § 271(d) (West Supp. 1994).

467. The Patent and Trademark Authorization Act of 1988 was a compromise between the Senate, which wanted to restrict the scope of patent misuse until it was coextensive with the antitrust laws, and the House of Representatives, which wanted to list specific acts that were and were not misuse. *See generally* William J. Gilbreth et al., *The Patent Misuse Defense, Its Continued Expansion and Contraction, in* Intellectual Property/Antitrust 1993, at 489 (PLI Patents, Copyrights, Trademarks, & Literary Property Course Handbook Series No. 365, 1993). rate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.⁴⁶⁸

A misused patent is unenforceable until the improper practice has stopped and the effects of the misuse have dissipated.⁴⁶⁹ To the extent that patent misuse and antitrust law are interrelated, changes in antitrust law affect the patent-misuse defense.⁴⁷⁰

Laches

The elements underlying the laches defense are (1) the patent owner unreasonably and inexcusably delayed filing suit for infringement, and (2) the alleged infringer has been materially prejudiced by the delay.⁴⁷¹ Laches focuses on the reasonableness of the patent owner's delay in bringing suit. The length of the delay, the seriousness of the prejudice, the reasonableness of the patent owner's excuses, and the alleged infringer's conduct are weighed by the court to determine whether the patent owner "dealt unfairly with the alleged infringer by not promptly bringing suit."⁴⁷²

The burden of proving the laches elements to a preponderance of the evidence is borne by the alleged infringer.⁴⁷³ However, if the alleged infringer can prove that the delay exceeded six years, the elements are presumed and a burden of going forward with evidence to "burst" the presumption is imposed on the patent owner, which can be met by either providing a reasonable excuse for the delay or by showing that the delay did not cause injury to the alleged infringer.⁴⁷⁴ Because the laches defense requires a balancing of equities, the patent

468. 35 U.S.C.A. \S 271(d)(5) (West Supp. 1994). The Act of 1988 also added \S 271(d)(4), but that merely codified existing law. See Gilbreth, supra note 467, at 498.

469. See U.S. Gypsum Co. v. National Gypsum Co., 352 U.S. 457 (1957); Gerald Sobel, *Exploitation of Patents and the Antitrust Laws, in* Technology Licensing 1987, at 7 (PLI Patents, Copyrights, Trademarks, & Literary Property Course Handbook Series No. 235, 1987).

470. Hoerner, *supra* note 465, at 642.

471. A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1032 (Fed. Cir. 1992) (en banc).

472. Id. at 1034.

473. Id. at 1038-39, 1045.

474. *Id.* at 1034–39. *See also* Hemstreet v. Computer Entry Sys. Corp., 972 F.2d 1290, 1293 (Fed. Cir. 1992). Evidence offered to "burst" the presumption need only be sufficient to raise a genuine issue. *A.C. Aukerman*, 960 F.2d at 1038.

owner can defeat a laches defense by showing that the alleged infringer acted egregiously.⁴⁷⁵ The egregious conduct must be related to the laches facts.

The period of delay begins when the patent owner knows, or in the exercise of reasonable diligence should have known, of the alleged infringer's acts.⁴⁷⁶ The patent owner asserting the patent is responsible for the delays of any previous owners of the patent.⁴⁷⁷

Reasonable excuses for delay include the following: the patent owner was suing a different party for infringement of the same patent; the patent owner was negotiating a license with the alleged infringer; and a war was being waged.⁴⁷⁸ The equities may require the patent owner to inform the alleged infringer of its reasons for delay.⁴⁷⁹ That the patent owner was too poor, the patent owner was sick, and the alleged infringer was not worth suing because he or she was too poor generally have been found to be unreasonable excuses.⁴⁸⁰

Prejudice to the alleged infringer resulting from the patent owner's delay can be either evidentiary or economic.⁴⁸¹ Examples of evidentiary prejudice may be loss of records, death of a witness, or the unreliability of memories of long past events.⁴⁸² Examples of economic prejudice may be loss of investments or damages that would likely have been prevented by an earlier suit.⁴⁸³

If laches is established, the patent owner is precluded from recovering for all infringement by the infringer that occurred before the complaint was filed.⁴⁸⁴ The patent owner is not, however,

475. A.C. Aukerman, 960 F.2d at 1033, 1038. See, e.g., Bott v. Four Star Corp., 807 F.2d 1567, 1575–76 (Fed. Cir. 1986). See generally Ethan Horwitz & Lester Horwitz, Patent Litigation: Procedure & Tactics § 1.02[4] (1988, rev. 1994).

476. A.C. Aukerman, 960 F.2d at 1032. Studiengesellschaft Kohle v. Eastman Kodak Co., 616 F.2d 1315 (5th Cir.), cert. denied, 449 U.S. 1014 (1980).

477. Nordek Corp. v. Garbe Iron Works, Inc., 221 U.S.P.Q. (BNA) 587 (N.D. Ill. 1982).

478. See cases collected at 5 Donald S. Chisum, Patents § 19.05[2][b] (1978, rev. 1994). See also A.C. Aukerman, 960 F.2d at 1033.

479. Hemstreet, 972 F.2d at 1293.

480. *See* cases cited *supra* note 478; *but see also A.C. Aukerman*, 960 F.2d at 1033. 481. *A.C. Aukerman*, 960 F.2d at 1033.

482. Id.

483. Id. See also Meyers v. Asics Corp., 974 F.2d 1304, 1307-08 (Fed. Cir. 1992).

484. Leinoff v. Louis Milona & Sons, 726 F.2d 734, 741 (Fed. Cir. 1984).

estopped from obtaining an injunction or recovering post-filing damages.⁴⁸⁵

Estoppel

If established, the defense of equitable estoppel precludes the patent owner from recovering from the alleged infringer for all past and all prospective infringement; it also precludes the patent owner from obtaining an injunction against the alleged infringer.⁴⁸⁶

Equitable estoppel focuses on what the alleged infringer was led to reasonably believe by the patent owner's conduct.⁴⁸⁷ Three elements⁴⁸⁸ underlie the usual⁴⁸⁹ defense of equitable estoppel:

- 1. Through *misleading conduct*, the patent owner leads the alleged infringer to reasonably infer that the patent owner does not intend to enforce its patent against the alleged infringer; misleading conduct may be specific statements, action, inaction, or silence where there was an obligation to speak.⁴⁹⁰
- 2. The alleged infringer *relies* on the patent owner's misleading conduct; reliance requires that the alleged infringer had a relationship or communication with the patent owner that lulled the alleged infringer into a sense of security in taking some action.⁴⁹¹
- 3. Because of its reliance, the alleged infringer will be *materially prejudiced* if the patent owner is allowed to proceed with its

486. See generally A.C. Aukerman, 960 F.2d at 1041. See also Advanced Hydraulics, Inc. v. Otis Elevator Co., 525 F.2d 477 (7th Cir.), cert. denied, 423 U.S. 869 (1975); Naxon Telesign Corp. v. Bunker Ramo Corp., 686 F.2d 1258 (7th Cir. 1982).

487. A.C. Aukerman, 960 F.2d at 1034.

488. The Federal Circuit, sitting en banc in 1992, significantly changed the law relating to equitable estoppel. For example, a widely accepted, four-part test for equitable estoppel (accepted by the Federal Circuit itself) was rejected. *See A.C. Aukerman*, 960 F.2d at 1042. Thus, considerable caution must be used in relying upon pre-*Aukerman* case law.

489. See A.C. Aukerman, 960 F.2d at 1042 n.17 for another type of equitable estoppel defense.

490. Id. at 1042.

491. Id. at 1042-43.

^{485.} Id.

claim.⁴⁹² Material prejudice can be either evidentiary or economic.⁴⁹³

Unlike the defense of laches, a six-year delay in bringing suit, which may be relevant to assessing whether the patent owner's conduct is misleading,⁴⁹⁴ does not give rise to any presumption.⁴⁹⁵ The alleged infringer's burden of proving the equitable estoppel elements (absent allegations of fraud or intentional misconduct) is to a preponderance of the evidence.⁴⁹⁶ Even if all three elements are established, the court must consider any other evidence respecting the equities of the parties when deciding whether to exercise its discretion to bar the suit because of equitable estoppel.⁴⁹⁷

492. Id. at 1028. See also Meyers v. Asics Corp., 974 F.2d 1304, 1308 (Fed. Cir. 1992); Hemstreet v. Computer Entry Sys. Corp., 972 F.2d 1290, 1294 (Fed. Cir. 1992).
493. A.C. Aukerman, 960 F.2d at 1043.
494. Id. at 1042.
495. Id. at 1043.
496. Id. at 1045–46.
497. Id. at 1043.

VII. Remedies

Remedies available to the patent owner whose patent has been infringed are (1) preliminary and permanent injunctions;⁴⁹⁸ (2) monetary damages generally corresponding to lost profits, established or reasonable royalties, and interest;⁴⁹⁹ (3) increased damages;⁵⁰⁰ and (4) attorney fees.⁵⁰¹

Section 284 mandates that the patent owner be awarded "damages adequate to compensate for the infringement, but in no event less than a reasonable royalty . . . together with interest and costs" Compensatory damages are awarded to restore a patent owner to the position he or she would have occupied if no infringement had occurred. Compensatory awards typically take the form of lost profits, established or reasonable royalties, interest, and costs. Damages may be increased "up to three times the amount found or assessed" at the discretion of the district court.⁵⁰²

Injunctions

The award of an injunction against further infringement for the life of the patent has been a remedy available to courts pursuant to statute since 1819,⁵⁰³ although the application of injunctive relief in patent cases has varied over the years. From the early days of the patent system into the nineteenth and early twentieth centuries, injunctive relief was generally granted as a matter of course. Injunctive relief is consistent with principles of equity and the notion that infringement causes irreparable injury to a patent owner.⁵⁰⁴

Two exceptions to injunctive relief developed over time. First, if an injunction would cause substantial injury to the public interest, it might be denied and, in effect, the patent holder would be compelled

498. 35 U.S.C.A. § 283 (1984). 499. 35 U.S.C.A. § 284 (1984). 500. *Id.* 501. 35 U.S.C.A. § 285 (1984). 502. 35 U.S.C.A. § 284 (1984). 503. The Patent Act of 1810.

503. The Patent Act of 1819 granted the federal courts "[u]pon any bill in equity [the] . . . authority to grant injunctions, according to the course and principles of courts of equity . . . on such terms and conditions as the said courts may deem fit and reasonable." Act of February 15, 1819, ch. 19, 3 Stat. 481, 481–82 (1819) (codified at 35 U.S.C. § 283.

504. See Note, Injunctive Relief in Patent Infringement Suits, 112 U. Pa. L. Rev. 1025, 1041–43 (1964).

to grant a license.⁵⁰⁵ Second, if the benefit to the patent owner would be severely outweighed by the detriment to the infringer, an injunction might be denied.⁵⁰⁶ However, there were only a few cases in which these exceptions were applied and in which injunctions were denied.⁵⁰⁷

Until the early 1980s, after a trial on the merits resulted in a decision for the patent owner, it was common for an infringer to obtain a stay of an injunction pending appeal to a higher tribunal by posting an adequate bond. It was not uncommon for the appellate process, including the denial of a writ of certiorari, to take one or two years from the date of entry of the judgment enjoining further infringement. Hence, because of the length of time required to prosecute a patent case from trial through appeals, and the inhospitableness to patents in many of the regional circuits, a typical perception in the business community was that enough time, money, and effort could, as a practical matter, successfully forestall injunctive relief.⁵⁰⁸

Preliminary Injunctions

In the mid-twentieth century, preliminary injunctions were very difficult to obtain because a patentee had to demonstrate that there was no reasonable doubt that the patent was both valid and infringed,⁵⁰⁹ and that he or she would suffer irreparable harm. The most acceptable way to satisfy the validity test was for the patent owner to show that the patent had been previously adjudicated valid. To show irreparable harm, the patent owner was required to establish that the defendant was either insolvent or about to become insolvent, or that the patent owner would suffer some drastic business reversal during the course of litigation.⁵¹⁰ For the purpose of a preliminary injunction, it was not presumed that the patent owner would be harmed irreparably by

505. See, e.g., Bliss v. Brooklyn, 3 F. Cas. 706 (C.C.E.D.N.Y. 1871) (No. 1,544).

506. See, e.g., McCrary v. Pennsylvania Canal Co., 5 F. 367 (C.C.E.D. Pa. 1880), aff'd, 141 U.S. 459 (1891); Dorsey Harvester Revolving Rake Co. v. Marsh, 7 F. Cas. 939, 945 (C.C.E.D. Pa. 1873) (No. 4,014).

507. See Foster v. American Machine & Foundry Co., 492 F.2d 1317 (2d Cir.), cert. denied, 419 U.S. 833 (1974); Royal-McBee Corp. v. Smith-Corona Marchant, Inc., 295 F.2d 1, 6 (2d Cir. 1961); Nerney v. New York, N.H. & H.R. Co., 83 F.2d 409 (2d Cir. 1936); Curtiss Aerocar Co. v. Springer, 81 F.2d 668 (5th Cir. 1936).

508. Herbert F. Schwartz, *Injunctive Relief in Patent Cases*, 50 Alb. L. Rev. 565, 566–67 (1986).

509. See Note, supra note 504, at 1030.

510. Id. at 1032-35.

Remedies

ongoing infringement. Consequently, the test for obtaining a preliminary injunction in patent infringement cases was very difficult. In contrast, if a trademark owner made a reasonable showing that the trademark was valid and infringed, it was presumed that the injury was irreparable.⁵¹¹ The same was true for copyrights.⁵¹²

Against this background, the Court of Appeals for the Federal Circuit, at the start of its second year of existence, ruled in *Smith International, Inc. v. Hughes Tool Co.* that "[w]here validity and continuing infringement have been clearly established . . . immediate irreparable harm is presumed."⁵¹³ The court went on to say that it was adopting for the patent area the same rule of irreparable harm that was already the law with respect to copyright matters.⁵¹⁴ Since the decision in *Smith International* there has been a dramatic increase in the number of preliminary injunctions granted in patent cases.⁵¹⁵ The Federal Circuit has cautioned, however, that a preliminary injunction is a drastic and extraordinary remedy that is not to be routinely granted.⁵¹⁶

Four factors must be considered when deciding whether a patent owner is entitled to a preliminary injunction.⁵¹⁷ Each factor and the circumstances surrounding each factor must be weighed and assessed against the other factors and circumstances and against the form and magnitude of the relief sought.⁵¹⁸ No factor or circumstance can be

511. E.g., Frisch's Restaurant, Inc. v. Elby's Big Boy, 670 F.2d 642, 649–50 (6th Cir.), *cert. denied*, 459 U.S. 916 (1982); Johnson & Johnson v. Carter-Wallace, Inc., 631 F.2d 186, 189–92 (2d Cir. 1980).

512. E.g., Roper Corp. v. Litton Sys., Inc., 757 F.2d 1266, 1271 (Fed. Cir. 1985); Apple Computer, Inc. v. Formula Int'l, Inc., 725 F.2d 521, 525 (9th Cir. 1984); Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1254 (3d Cir. 1983), *cert. dismissed*, 464 U.S. 1033 (1984).

513. 718 F.2d 1573, 1581 (Fed. Cir.), cert. denied, 464 U.S. 996 (1983).

514. Id. at 1581 n.7.

515. Allen H. Gerstein, Injunctions in Patent Cases: On the Brink of Leaving the Provincial for the Mainstream, in Patent Litigation 1993, at 213 (PLI Patents, Copyrights, Trademarks & Literary Property Course Handbook Series No. 376, 1993).

516. Intel Corp. v. ULSI Sys. Technology, Inc., 995 F.2d 1566, 1568 (Fed. Cir. 1993), cert. denied, 114 S. Ct. 923 (1994).

517. Intel, 995 F.2d at 1568.

518. *Id.*; Illinois Tool Works, Inc. v. Grip-Pak, Inc., 906 F.2d 679, 681 (Fed. Cir. 1990); Hybritech, Inc. v. Abbott Lab., 849 F.2d 1446, 1451 (Fed. Cir. 1988).

ignored when determining that the requested preliminary injunction should issue.⁵¹⁹ The four factors are as follows:

(1) whether the movant has sufficiently established a reasonable likelihood of success on the merits; (2) whether the movant would suffer irreparable harm if the injunction were not granted; (3) whether the balance of hardships tips in the movant's favor; and (4) what impact, if any, will the injunction have on the public interest.⁵²⁰

Regarding the first factor, a patent owner will show a reasonable likelihood of success on the merits if the patent owner clearly shows that the patent in suit is valid, enforceable, and infringed,⁵²¹ but a lesser showing can still be sufficient to provide a reasonable likelihood of success.⁵²²

Regarding the second factor, only a clear showing of validity and infringement raises the rebuttable presumption of irreparable harm.⁵²³ Circumstances that have been considered in rebutting the presumption include the patent owner's delay in bringing suit, the patent owner's licensing of the patent in suit, whether the patent owner practices the patent, the patent owner's large market share in

519. *Illinois Tool Works*, 906 F.2d at 681. Although it is preferable that all factors be considered when deciding to *deny* the requested preliminary injunction, the district court may deny the request based on the movant's failure to establish either of the first two factors. Reebok Int'l Ltd. v. J. Baker, Inc., 32 F.3d 1552 (Fed. Cir. 1994).

520. *Intel*, 995 F.2d at 1568. Regarding procedural matters relating to injunctions, the Federal Circuit will apply the law of the relevant regional circuit. Digital Equip. Corp. v. Emulex Corp., 805 F.2d 380, 382–83 n.3 (Fed. Cir. 1986).

521. Nutrition 21 v. United States, 930 F.2d 867, 869–70 (Fed. Cir. 1991). The presumption of validity is not evidence that can be weighed in determining likelihood of success; yet, if the alleged infringer does not challenge the patent's validity with evidence, then the patent owner need do nothing to establish its rights under the patent. If the alleged infringer challenges validity, the patent owner must show that the defense lacks substantial merit. New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878, 882–83 (Fed. Cir. 1992).

522. See, e.g., AMP, Inc. v. Foxconn Int'l, Inc., 30 U.S.P.Q. 2d (BNA) 1644 (C.D. Cal. 1994).

523. Hybritech, Inc. v. Abbott Lab., 849 F.2d 1446, 1456 (Fed. Cir. 1988); H.H. Robertson Co. v. United Steel Deck, Inc., 820 F.2d 384, 390 (Fed. Cir. 1987). *See also Nutrition 21*, 930 F.2d at 871; Roper Corp. v. Litton Sys., Inc., 757 F.2d 1266, 1271 (Fed. Cir. 1985); Calmar, Inc. v. Emson Research, Inc., 838 F. Supp. 453, 456 (C.D. Cal. 1993).

comparison with that of the alleged infringer, and the alleged infringer's inability to pay money damages. 524

Regarding the third factor, the court must balance the harm to the patent owner that will result from the denial of the preliminary injunction with the harm to the alleged infringer that will result if the injunction is entered.⁵²⁵ Circumstances that are considered include the effect on the patent owner's market share, business reputation, and goodwill as well as the effect on the alleged infringer's overall sales and its employees.⁵²⁶ That the patent will expire soon is not relevant.⁵²⁷

Regarding the fourth factor, the focus is typically on whether there exists some critical public interest that would be harmed by the grant of an injunction.⁵²⁸

Permanent Injunctions

In patent cases, the general rule is that an injunction will issue when infringement has been adjudged unless there is a sound reason for denying the injunction.⁵²⁹ An injunction may be denied if the court determines that a compulsory license is more equitable⁵³⁰ or finds that the damage award was a flat fee for a license for the life of the

524. Rosemount, Inc. v. United States Int'l Trade Comm'n, 910 F.2d 819, 821 (Fed. Cir. 1990); *Hybritech*, 849 F.2d at 1456–57; T.J. Smith & Nephew Ltd. v. Consolidated Medical Equip., 821 F.2d 646, 648 (Fed. Cir. 1987); *Roper*, 757 F.2d at 1273; B.F. Goodrich Flight Sys. v. Insight Instruments, 22 U.S.P.Q. 2d (BNA) 1832, 1844 (S.D. Ohio 1992), *aff'd without opinion*, 991 F.2d 810 (Fed. Cir. 1993). The alleged infringer's ability to pay money damages does not preclude the grant of a preliminary injunction. *Roper*, 757 F.2d at 1269 n.2.

525. Hybritech, 849 F.2d at 1457.

526. See, e.g., Illinois Tool Works, 906 F.2d at 683–84; Atlas Powder Co. v. Ireco Chems., 773 F.2d 1230, 1234 (Fed. Cir. 1985); Critikon Inc. v. Becton Dickinson Vascular Access, Inc., 28 U.S.P.Q. 2d (BNA) 1362, 1371 (D. Del. 1993); Tensar Corp. v. Tenax Corp., 24 U.S.P.Q. 2d (BNA) 1605, 1614 (D. Md. 1992).

527. Atlas, 773 F.2d at 1234. ("Patent rights do not peter out as the end of the patent term, usually 17 years, is approached.")

528. Hybritech, 849 F.2d at 1458. See also Critikon, 28 U.S.P.Q. 2d (BNA) at 1370–71.

529. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir.), *cert. denied*, 493 U.S. 853 (1989); W.L. Gore & Assocs., Inc. v. Garlock, Inc., 842 F.2d 1275, 1281 (Fed. Cir. 1988).

530. Foster v. American Machine & Foundry Co., 492 F.2d 1317, 1324 (2d Cir.), cert. denied, 419 U.S. 833 (1974).

patent.⁵³¹ Circumstances that do not amount to sound reasons for denying a permanent injunction include finding that the infringer's sales are small in comparison to the patent owner's sales, that the infringer would be put out of business, or that the infringer has stopped infringing.⁵³² The injunction that is issued must be specific regarding the enjoined conduct.⁵³³

Stays of Injunctions

Prior to the creation of the Federal Circuit it was fairly common in patent infringement cases for courts to grant a stay of injunction pending appeal if the defendant posted an adequate bond. This trend reversed early in 1985. In *Shiley, Inc. v. Bentley Laboratories, Inc.,*⁵³⁴ *S.C. Johnson, Inc. v. Carter-Wallace, Inc.,*⁵³⁵ and *Crucible, Inc. v. Stora Kopparbergs Bergslags, A.B.,*⁵³⁶ the respective district courts declined to stay injunctions during the appeals. However, the district courts in *Shiley*⁵³⁷ and *S.C. Johnson*⁵³⁸ allowed each defendant a transition period during which the defendant could seek a stay in the court of appeals or comply with the injunction. In both cases, the defendants moved the Federal Circuit to stay the injunction, and in

531. Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1565 (Fed. Cir. 1984).

532. W.L. Gore, 842 F.2d at 1281–82; Windsurfing Int'l, Inc. v. AMF, Inc., 782 F.2d 995, 1003 n.2 (Fed. Cir.), *cert. denied*, 477 U.S. 905 (1986).

533. Additive Controls & Measurement Sys. v. Flowdata, 986 F.2d 476, 479-80 (Fed. Cir. 1993).

534. 601 F. Supp. 964 (C.D. Cal. 1985), stay pending appeal denied, 782 F.2d 992 (Fed. Cir.), aff'd on the merits, 794 F.2d 1561 (Fed. Cir. 1986), cert. denied, 479 U.S. 1087 (1987).

535. 225 U.S.P.Q. (BNA) 968 (S.D.N.Y. 1985) (order denying motion for stay pending appeal), *stay pending appeal denied*, No. 85-2191 (Fed. Cir. July 9, 1985). The injunction against which the infringer sought a stay was granted in a decision on the merits. 225 U.S.P.Q. (BNA) 1022 (S.D.N.Y. 1985), *aff'd in part and vacated and remanded in part*, 781 F.2d 198 (Fed. Cir. 1986).

536. 226 U.S.P.Q. (BNA) 842 (W.D. Pa. 1985), *aff'd in part and remanded in part sub nom*. Kloster Speedsteel, A.B. v. Crucible, Inc., 793 F.2d 1565 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1034 (1987).

537. 601 F. Supp. at 971.

538. 225 U.S.P.Q. (BNA) at 973.
both cases, the court declined to grant a stay without rendering a written decision. 539

Probably the best-known case in which the Federal Circuit declined a stay of injunction is *Polaroid Corp. v. Eastman Kodak Co.*⁵⁴⁰ The district court held seven Polaroid patents valid and infringed by Kodak's instant cameras and film.⁵⁴¹ Of those seven patents, five had not expired as of the date of the court's decision.⁵⁴² The district court declined to stay the injunction but set its effective date 90 days later, giving Kodak time to appeal or to stop infringing the five Polaroid patents.⁵⁴³ Kodak made a motion in the Federal Circuit to stay the injunction pending an appeal on the merits. At the request of the court, the case was fully briefed on an accelerated schedule and argued on the merits two days before the injunction was to take effect. One day after the hearing and final submission to the court on the merits, Kodak's motion to stay the injunction was denied.⁵⁴⁴ On the following day, Kodak sought relief from the U.S. Supreme Court, and it was denied.⁵⁴⁵

When deciding whether to grant a stay of an injunction pending an appeal, ⁵⁴⁶ four factors are considered:

1. whether the stay applicant has made a strong showing that the applicant is likely to succeed in the appeal,

539. Shiley, Inc. v. Bentley Lab., Inc., 782 F.2d 992 (Fed. Cir. 1986); S.C. Johnson & Son, Inc. v. Carter-Wallace, Inc., No. 85-2191 (Fed. Cir. July 9, 1985) (order denying motion for stay pending appeal).

540. 641 F. Supp. 828 (D. Mass. 1985), aff'd, 789 F.2d 1556 (Fed. Cir.), cert. denied, 479 U.S. 850 (1986).

541. Id. at 877–78.

542. Id.

543. See id., 641 F. Supp. at 878; 228 U.S.P.Q. (BNA) at 342 (Memorandum of Decision and Order).

544. Polaroid Corp. v. Eastman Kodak Co., No. 86-604 (Fed. Cir. Jan. 7, 1986) (order denying motion to stay injunction pending appeal).

545. Eastman Kodak Co. v. Polaroid Corp., No. A-530 (U.S. Jan. 8, 1986) (Powell, J.) (denying application to stay injunction). The Federal Circuit ultimately affirmed the district court's decision on the merits in an extensive opinion. Polaroid Corp. v. Eastman Kodak Co., 789 F.2d 1556 (Fed. Cir. 1986). The Supreme Court denied certiorari on October 6, 1986. Eastman Kodak Co. v. Polaroid Corp., 479 U.S. 850 (1986).

546. The Federal Circuit applies the same factors regardless of whether it is deciding to stay a preliminary injunction pending its appeal or to stay a permanent injunction pending its appeal. *See, e.g.,* Critikon v. Becton Dickinson Vascular Access, non-precedential Order of Aug. 26, 1993 (Fed. Cir.).

- 2. whether the stay applicant will be irreparably injured if the stay is not granted,
- 3. whether issuing a stay will substantially injure the other parties interested in the appeal, and
- 4. where the public interest lies.⁵⁴⁷

The four factors need not be given equal weight.⁵⁴⁸

Regarding the first factor, if the harm to the stay applicant is great enough, something less than a "strong showing" will suffice.⁵⁴⁹ Regarding the second factor, circumstances that have been found relevant include the fact that the applicant would have to lay off employees, become insolvent, or suffer corporate death.⁵⁵⁰ Circumstances that have not been found relevant include the fact that the applicant would lose market share and suffer damage to its reputation.⁵⁵¹ Regarding the third factor, circumstances that have been considered relevant include the effect of a stay on the patent owner's ability to execute on the judgment⁵⁵² and the fact that the patent owner has licensed others.⁵⁵³ Regarding the fourth factor, public access to the infringing products is considered.⁵⁵⁴

Monetary Damages

The two traditional measures of monetary damages awarded under 35 U.S.C. § 284 are lost profits and royalties, either established or hypo-

547. Standard Havens Prods. v. Gencor Indus., 897 F.2d 511, 512 (Fed. Cir. 1990), cert. denied, 113 S. Ct. 60 (1992).

548. Id.

549. *Id.* at 512–13. *See, e.g.*, E.I. DuPont De Nemours & Co. v. Phillips Petroleum, 835 F.2d 277, 278–79 (Fed. Cir. 1987); but for an example of the result when a court concludes that there is almost no chance the applicant will succeed on appeal, see Polaroid Corp. v. Eastman Kodak Co., 228 U.S.P.Q. (BNA) at 343.

550. Standard Havens, 897 F.2d at 515–16; Pall Corp. v. Micron Separations, Inc., 792 F. Supp. 1298, 1328 (D. Mass. 1992); *In re* Hayes Microcomputer Prods. Patent Litig., 766 F. Supp. 818, 822–23 (N.D. Cal. 1991), *aff'd*, 982 F.2d 1527 (Fed. Cir. 1992).

551. Laitram Corp. v. Rexnord, Inc., 15 U.S.P.Q. 2d (BNA) 1161, 1175 (E.D. Wis. 1990).

552. Standard Havens, 897 F.2d at 515.

553. DuPont, 835 F.2d at 278; In re Hayes, 766 F. Supp. at 823.

554. *Compare Pall Corp.*, 792 F. Supp. at 1328 ("various important scientific and medical applications") with Laitram, 15 U.S.P.Q. 2d (BNA) at 1175–76 ("Public policy favors the innovator, not the copier.").

thetical.⁵⁵⁵ The lost profits measure is appropriate where the patent owner and infringer compete in the same market.⁵⁵⁶ The royalty measure is appropriate where there is an established royalty rate or where lost profits cannot be sufficiently proved or are otherwise inappropriate as the measure of damages.⁵⁵⁷ However, a patentee is not limited to these two measures; a patentee is entitled to damages adequate to compensate fully for the injuries proximately caused by the infringement⁵⁵⁸ even though such damages might be calculated by methods other than lost profits or royalties. In no event may damages be "less than a reasonable royalty."⁵⁵⁹

Lost Profits

The prevailing party in a successful suit for patent infringement is entitled to an award of profits lost because of diverted sales, price erosion, and increased costs, where provable. Such an award is usually composed of profits lost by the patent owner rather than profits made by the infringer.⁵⁶⁰

555. *See generally* Herbert F. Schwartz et al., Monetary Remedies in Patent Cases (Univ. of Houston Intellectual Property Program 1993).

556. Either the patent owner or an exclusive licensee may be awarded damages. *See* Weinar v. Rollform, Inc., 744 F.2d 797 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985). When the patent owner is attempting to exploit its patent commercially, the general rule is that damages are to be measured by lost profits, provided they can be fairly estimated. Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1326–27 (Fed. Cir. 1987); Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1484 (D. Mass. 1990).

557. Del Mar Avionics, 836 F.2d at 1328.

558. 35 U.S.C.A. § 284 (1984) as interpreted by the Federal Circuit en banc in Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538 (Fed. Cir. 1995). As the majority broadly stated:

> We believe that under § 284 of the patent statute, the balance between full compensation, which is the meaning that the Supreme Court has attributed to the statute, and the reasonable limits of liability encompassed by general principles of law can best be viewed in terms of reasonable, objective forseeability. If a particular injury was or should have been reasonably foreseeable by an infringing competitor in the relevant market, broadly defined, that injury is generally compensable absent a persuasive reason to the contrary.

Rite-Hite Corp., 56 F.3d at 1546.

559. Id.

560. Aro Mfg. Co. v. Convertible Top Co., 377 U.S. 476, 502-07 (1964). See generally Paul M. Janicke, Contemporary Issues in Patent Damages, 42 Am. Univ. L. Rev.

It was long held that lost profits must be proven as a matter of fact, not presumed as a matter of law.⁵⁶¹ For example, in *Seymour v. McCormick*, the patentee offered no evidence that he "could have made and sold a single machine more than he did,"⁵⁶² and the Supreme Court reversed a lost profits award. Recent decisions have eased the showing that a plaintiff must make to satisfy the burden of proof on this issue.

The Federal Circuit has said that a patent owner must show a reasonable probability that the owner would have made some or all of the infringer's sales.⁵⁶³ The patent holder need not rule out the possibility that purchasers might have bought another product.⁵⁶⁴ In *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.,* a widely used test was articulated by former Chief Judge Markey, then of the Court of Customs and Patent Appeals, sitting by designation in the Sixth Circuit:

To obtain as damages the profits on sales he would have made absent the infringement, i.e., the sales made by the infringer, a patent owner must prove: (1) demand for the patented product, (2) the absence of acceptable noninfringing substitutes, (3) his manufacturing and marketing capability to exploit the demand, and (4) the amount of the profit he would have made.⁵⁶⁵

The Federal Circuit has approved the *Panduit* test for proving lost profits and, although it has said that the *Panduit* standard is not nec-

691, 696 n.23 (1993). The Federal Circuit has, however, affirmed a district court decision that approximated lost profits by comparing the patent owner's claimed damages with the infringer's historical profits. Kori Corp. v. Wilco Marsh Buggies & Draglines, 761 F.2d 649, 653–55 (Fed. Cir.), *cert. denied*, 474 U.S. 902 (1985).

561. Dowagiac Mfg. Co. v. Minnesota Plow Co., 235 U.S. 641 (1915); Seymour v. McCormick, 57 U.S. (16 How.) 480, 490 (1853).

562. 57 U.S. (16 How.) at 488.

563. Central Soya Co. v. George A. Hormel & Co., 723 F.2d 1573, 1579 (Fed. Cir. 1983); Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983); Livesay Window Co. v. Livesay Indus., 251 F.2d 469, 471–72 (5th Cir. 1958).

564. Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1326 (Fed. Cir. 1987); American Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1365 (Fed. Cir.), *cert. denied*, 469 U.S. 821 (1984); Milgo Elec. v. United Bus. Communications, 623 F.2d 645, 663 (10th Cir.), *cert. denied*, 449 U.S. 1066 (1980).

565. 575 F.2d 1152, 1156 (6th Cir. 1978).

essarily the only way to prove lost profits,⁵⁶⁶ it remains the starting point for any analysis of lost profits damage.⁵⁶⁷

Assuming that the patent owner and the infringer sell substantially the same product, proof of a significant number of sales by the patent owner or the infringer is deemed compelling evidence of demand, the first of the *Panduit* elements.⁵⁶⁸

The second *Panduit* element, absence of acceptable noninfringing substitutes, has evolved into a requirement that the patent owner show "either that (1) the purchasers in the marketplace generally were willing to buy the patented product for its advantages, or (2) the specific purchasers of the infringing product purchased on that basis."⁵⁶⁹ Available noninfringing substitutes of significantly higher cost are not considered acceptable substitutes for the purpose of calculating damages.⁵⁷⁰ Proof of a long-felt need for the patented invention in the liability trial may be extrapolated into proof of lack of substitutes.⁵⁷¹ Market surveys showing that large numbers of the infringer's purchasers would have purchased the patentee's device are considered.⁵⁷² Testimony by third parties that they would have

566. Carella v. Starlight Archery, 804 F.2d 135, 141 (Fed. Cir. 1986); Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 552 (Fed. Cir. 1984); Bio-Rad Lab. v. Nicolet Instrument Corp., 739 F.2d 604, 616 n.* (Fed. Cir.), *cert. denied*, 469 U.S. 1038 (1984); *Central Soya*, 723 F.2d at 1578–79.

567. See, e.g., Kaufman Co. v. Lantech, Inc., 926 F.2d 1136 (Fed. Cir. 1991); Standard Havens Prods., Inc. v. Gencor Indus., Inc., 953 F.2d 1360 (Fed. Cir. 1991); State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990); Datascope Corp. v. SMEC, Inc., 879 F.2d 820 (Fed. Cir. 1989), cert. denied, 493 U.S. 1024 (1990).

568. BIC Leisure Prods. v. Windsurfing Int'l, 1 F.3d 1214, 1218–19 (Fed. Cir. 1993); Gyromat Corp., 735 F.2d at 552. See also Andrew Corp. v. Gabriel Elecs., Inc., 785 F. Supp. 1041, 1046 (D. Me. 1992); Ristvedt-Johnson, Inc. v. Brandt, Inc., 805 F. Supp. 557, 561 (N.D. Ill. 1992); AMP, Inc. v. Lantrans, Inc., 22 U.S.P.Q. 2d (BNA) 1448, 1452 (C.D. Cal. 1991).

569. *Standard Havens*, 953 F.2d at 1373. This second *Panduit* element "accounts for more appellate litigation . . . than any other aspect of patent damages law." Janicke, *supra* note 26, at 701. For a review of the evolution of this element, see Janicke at 701–06.

570. Gyromat Corp., 735 F.2d at 553-54.

571. Micro Motion, Inc. v. Exac Corp., 761 F. Supp. 1420, 1424 (N.D. Cal. 1991); Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1162 (6th Cir. 1978).

572. Bio-Rad Lab. v. Nicolet Instrument Corp., 739 F.2d 604, 616 (Fed. Cir.), cert. denied, 469 U.S. 1038 (1984).

bought from the patent holder absent the infringement⁵⁷³ or that purchasers considered other features of the infringer's product more important than the patented invention⁵⁷⁴ is also probative.

One method of analyzing lost profits damages that allows the patent owner to ignore the second *Panduit* element was approved by the Federal Circuit in *State Industries, Inc. v. Mor-Flo Industries, Inc.*⁵⁷⁵ In that case, the patent owner asserted that, but for the infringement, it would have sold additional units in proportion to its established market share for its products covered by the patent in suit. The *State Industries* analysis has been followed,⁵⁷⁶ but is not mandatory.⁵⁷⁷ The *State Industries* analysis does not apply, however, unless the patent owner and infringer compete in the same market, that is, that the infringer's customers would transfer their demand to the patent owner's product if the infringer's product was not available.⁵⁷⁸

The third *Panduit* element can be met by proving that the patent owner possessed adequate manufacturing and marketing capability to meet the additional demand.⁵⁷⁹ Even if adequate manufacturing capacity did not exist during the period of infringement, proof of an ability to expand to meet the additional demand is sufficient.⁵⁸⁰ Moreover, even if the patent holder bids on contracts that would cover only a small portion of the infringer's sales, the patent holder can recover lost profits on all of the infringing sales.⁵⁸¹

573. Livesay Window Co. v. Livesay Indus., 251 F.2d 469, 473 (5th Cir. 1958).

574. TP Orthodontics, Inc. v. Professional Positioners Inc., 20 U.S.P.Q. 2d (BNA) 1017, 1023 (E.D. Wis. 1991).

575. 883 F.2d at 1573, 1577-80 (Fed. Cir. 1989).

576. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, No. 4-86-359, 1991 U.S. Dist. LEXIS 11451 (D. Minn. Apr. 30, 1991), *aff'd*, 976 F.2d 1559 (Fed. Cir. 1992).

577. Slimfold Mfg. Co. v. Kinkead Indus., Inc., 932 F.2d 1453, 1458 (Fed. Cir. 1991).

578. BIC Leisure Prods. v. Windsurfing Int'l, 1 F.3d 1214, 1218–19 (Fed. Cir. 1993). 579. *Bio-Rad*, 739 F.2d at 616; Yarway Corp. v. Eur-Control USA, Inc., 775 F.2d 268, 276–77 (Fed. Cir. 1985).

580. *Bio-Rad*, 739 F.2d at 616; *Livesay Window Co.*, 251 F.2d at 473; Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1510–25 (D. Mass. 1990).

581. Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 554 (Fed. Cir. 1984).

Remedies

The final element of proof called for in *Panduit* involves the quantum of profit the patent owner would have made.⁵⁸² Where diversion of sales is proven, lost profits are measured by multiplying the marginal profit lost on the diverted sales by the sales total that the patent owner would have garnered.⁵⁸³

Gross sales of the infringer may be proven from the infringer's business records, public records, figures accumulated by trade associations, or other reliable sources. Uncertainties that arise from the infringer's failure to keep comprehensive or accurate records are resolved in favor of the patentee.⁵⁸⁴

When the patented feature makes up only a portion of the product, there may be a question whether the patentee should be awarded the entire profit on the product or only a proportionate share. Under the Federal Circuit's 1995 modification of the entire market value rule, the entire marginal profit, rather than only a portion, is used to compute damages if the unpatented components "function together with the patented component in some manner so as to produce a desired end product or result."⁵⁸⁵

In calculating marginal profit, only a reasonable approximation must be proven, and any uncertainty regarding the amount is resolved against the infringer.⁵⁸⁶ The margin of profit is determined by subtracting from expected revenue the incremental or marginal costs, not full absorption costs, that the patent holder would have incurred as a

583. King Instrument Corp. v. Otari Corp., 767 F.2d 853, 864 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1016 (1986); Paper Converting Mach. v. Magna-Graphics, 745 F.2d 11, 22 (Fed. Cir. 1984); *Gyromat Corp.*, 735 F.2d at 554–55; Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983).

584. Beatrice Foods v. New England Printing & Lithographing, 899 F.2d 1171, 1175–76 (Fed. Cir. 1990); *Lam, Inc.*, 718 F.2d at 1065.

585. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1549–51 (Fed. Cir. 1995) (en banc). King Instrument Corp. v. Perego, No. 91-1125, -1132, 1995 U.S. App. LEXIS 26349 (Fed. Cir. Sept. 19, 1995). See generally Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1327 (Fed. Cir. 1987); Hurlbut v. Schillinger, 130 U.S. 456 (1889); Manufacturing Co. v. Cowing, 105 U.S. 253 (1881); Electric Pipe Line v. Fluid Sys., 250 F.2d 697, 700 (2d Cir. 1957); cf. Deere & Co. v. International Harvester Co., 710 F.2d 1551, 1559 (Fed. Cir. 1983) (reasonable royalty case).

586. Del Mar Avionics, 836 F.2d at 1326; King Instrument, 767 F.2d at 864; Paper Converting, 745 F.2d at 22; Gyromat Corp., 735 F.2d at 554–55.

^{582.} Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156 (6th Cir. 1978).

result of the increased sales. Expected revenue is the expected price multiplied by expected sales. 587

Incremental costs are those costs that would have increased with a rise in sales volume. Normally, only variable costs, such as direct labor and materials, are taken into account. Not included are fixed costs, such as insurance; property taxes; and administrative, management, and noncommission sales expenses.⁵⁸⁸ The patentee's costs may be proven by his or her historical financial records if they are sufficiently detailed; otherwise, they may be reconstructed by expert testimony.⁵⁸⁹ Where proving the patentee's costs is not possible, the infringer's profits or normal industry profit margins may be examined as evidence of the patentee's lost profits.⁵⁹⁰ Once the patent owner has established his or her profit margin, it is up to the infringer to prove that the patent owner's proofs are unreasonable.⁵⁹¹

Preinfringement prices are generally used in calculating lost revenue so that the patent owner is not penalized because of price erosion caused by illegal competition.⁵⁹² Price erosion may be taken into

587. See, e.g., John O. Butler Co. v. Block Drug Co., 620 F. Supp. 771, 778–79 (N.D. Ill. 1985); Paper Converting, 745 F.2d at 22; Lam, Inc., 718 F.2d at 1059.

588. Milgo Elec. v. United Bus. Communications, 623 F.2d 645 (10th Cir.), *cert. denied*, 449 U.S. 1066 (1980); Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156–57 (6th Cir. 1978). District court decisions that apply the incremental income method include Ristvedt-Johnson, Inc. v. Brandt, Inc., 805 F. Supp. 557, 564–67 (N.D. Ill. 1992); Pall Corp. v. Micron Separations, Inc., 792 F. Supp. 1298, 1329–30 (D. Mass. 1992); Micro Motion, Inc. v. Exac Corp., 761 F. Supp. 1420, 1429 (N.D. Cal. 1991); Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1526 (D. Mass. 1990); Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, No. 4-86-359, 1991 U.S. Dist. LEXIS 11451, at *54 (D. Minn. Apr. 30, 1991), *aff'd*, 976 F.2d 1559 (Fed. Cir. 1992).

589. W.L. Gore & Assocs., Inc. v. Carlisle Corp., 198 U.S.P.Q. (BNA) 353, 359 (D. Del. 1978).

590. Kori Corp. v. Wilco Marsh Buggies & Draglines, 761 F.2d 649, 655 (Fed. Cir.), cert. denied, 474 U.S. 902 (1985).

591. Paper Converting, 745 F.2d at 21; Lam, Inc., 718 F.2d at 1065; John O. Butler, 620 F. Supp. at 778–79.

592. Yale Lock Co. v. Sargent, 117 U.S. 536, 552–53 (1886); TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 898 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986); *Lam, Inc.*, 718 F.2d at 1065.

account where prices would have increased in the absence of infringement.⁵⁹³

Reduced sales growth can be considered in calculating the quantity of lost sales.⁵⁹⁴ Other methods of projecting lost revenues, such as analyzing the pricing and sales policies that the patentee would practice as a rational patent-based monopolist, are acceptable.⁵⁹⁵ Damage to the market as a result of sales of inferior infringing products has also been considered.⁵⁹⁶

Prior to 1995, lost profits on accessories, spare parts, and supplies were recoverable when the patent owner could normally anticipate the sale of the nonpatented component together with the sale of patented components. Subsequent to the Federal Circuit's en banc ruling in *Rite-Hite v. Kelley Co.*, such profits can only be recovered if there is a functional relationship between the unpatented component and the patented invention.⁵⁹⁷

Reasonable Royalty

If lost profits are not claimed or proved, a reasonable royalty measure of damages is appropriate.⁵⁹⁸ A reasonable royalty determination may

593. Kalman v. Berlyn Corp., 914 F.2d 1473, 1485 (Fed. Cir. 1990); *Lam, Inc.*, 718 F.2d at 1065.

594. Lam, Inc., 718 F.2d at 1068.

595. Yale Lock Co., 117 U.S. at 552–53; see TWM Mfg., 789 F.2d at 902; Lam, Inc., 718 F.2d at 1065.

596. Lam, Inc., 718 F.2d at 1068.

597. *Rite-Hite*, 56 F.3d at 1549–50. For examples of pre-1995 case law, see *Kalman*, 914 F.2d at 1485; King Instrument Corp. v. Otari Corp., 767 F.2d 853, 865 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1016 (1986). *See also* Andrew Corp. v. Gabriel Elecs., Inc., 785 F. Supp. 1041, 1051 (D. Me. 1992).

598. Fromson v. Western Litho Plate & Supply Co., 853 F.2d 1568, 1574 (Fed. Cir. 1988); Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1078 (Fed. Cir. 1983) (citing Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1157 (6th Cir. 1978)). Many decisions report different royalty rates. Illustrative decisions in the range of 0.75% to 50% include *TWM Mfg.*, 789 F.2d at 902 (30% royalty rate); Deere & Co. v. International Harvester Co., 710 F.2d 1551 (Fed. Cir. 1983) (15% royalty rate); Trans-World Mfg. Corp. v. Al Nyman & Sons, 633 F. Supp. 1047 (D. Del. 1986), *aff'd in part and remanded in part*, 750 F.2d 1552 (Fed. Cir. 1984) (50% royalty rate); Georgia-Pacific Corp. v. United States Plywood-Champion Papers, Inc., 446 F.2d 295 (2d Cir.), *cert. denied*, 404 U.S. 870 (1971) (22.4% royalty rate); Devex Corp. v. General Motors Corp., 494 F. Supp. 1369, *aff'd*, 667 F.2d 347 (3d Cir. 1981), *aff'd*, 461 U.S. 648 (1983) (0.75% royalty rate); Georgia-Pacific Corp. v. United States Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970), *modified and aff'd sub nom*. Georgia-Pacific Corp. v.

be based upon an established royalty, if one exists,⁵⁹⁹ or upon a hypothetical royalty based on a supposed arm's length negotiation, at the time the infringement began, between a willing licensor and a willing licensee who had knowledge that the patent would be sustained as valid and infringed if litigated.⁶⁰⁰

The Federal Circuit has allowed district courts wide discretion in choosing an approach to assessing damages based on a reasonable royalty.⁶⁰¹ In several cases, it has approved the analytical approach set forth in *Georgia-Pacific Corp. v. United States Plywood Corp.*,⁶⁰² which allows the trial court to consider any facts that would affect either party's bargaining position in a hypothetical negotiation, subject to the section 284 requirement that the judicially set royalty compen-

United States Plywood-Champion Papers, Inc., 446 F.2d 295 (2d Cir.), cert. denied, 404 U.S. 870 (1971) (31.4% royalty rate).

599. An established royalty, if one exists, will usually be the best measure of what is a "reasonable" royalty. Nickson Indus., Inc. v. Rol Mfg. Co., 847 F.2d 795, 798 (Fed. Cir. 1988). A single licensing agreement is not sufficient proof of an established royalty. Trell v. Marlee Elecs. Corp., 912 F.2d 1443, 1446 (Fed. Cir. 1990); *Hanson*, 718 F.2d at 1078.

Use of an established royalty may, however, yield an inadequate award. *Nickson*, 847 F.2d at 798. The court has the power to increase the royalty rate to adequately compensate the patent owner for the infringement. *See generally* Fromson v. Citiplate, Inc., 699 F. Supp. 398, 407 (E.D.N.Y. 1988), *aff'd*, 886 F.2d 1300 (Fed. Cir. 1989). *See, e.g.*, Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1534–35 (D. Mass. 1990). Offers to license at a given rate, particularly offers made after infringement began and litigation was threatened or probable, do not demonstrate an established rate. *Hanson*, 718 F.2d at 1078; *Deere & Co.*, 710 F.2d at 1557.

600. Georgia-Pacific, 318 F. Supp. at 1121.

601. *TWM Mfg.*, 789 F.2d at 898. *See, e.g.*, SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 926 F.2d 1161, 1168 (Fed. Cir. 1991) ("[T]he determination of a reasonable royalty must be based upon the entirety of the evidence and the court is free to, indeed, must reject the royalty figures proffered by the litigants . . . where the record as a whole leads the court to a different figure.").

602. 318 F. Supp. at 1116.

sate for the infringement.⁶⁰³ The hypothetical licensing negotiation takes place at the time infringement began.⁶⁰⁴

Some courts have said that a reasonable royalty should leave an infringer with a reasonable profit.⁶⁰⁵ This hypothetical profit must be determined, however, as of the time of the hypothetical negotiations. It is irrelevant that, taking into consideration subsequent events, the infringer actually made little or no profit or that the reasonable royalty yields a damage award larger than an infringer's actual profits.⁶⁰⁶ A court may properly rely on internal memoranda projecting anticipated profits before infringement began.⁶⁰⁷ A court may also rely on proof of an infringer's actual profits as probative of anticipated profits.⁶⁰⁸ Increased profitability and estimated cost savings from use of the patented invention may also be considered.⁶⁰⁹

Other considerations applied in establishing a reasonable royalty in leading cases include the following:

- 1. royalties received for licensing the patent in suit;
- 2. royalty rates for comparable technologies;
- 3. nature and scope of the license (e.g., exclusive versus nonexclusive or territorial restrictions);

603. *TWM Mfg.*, 789 F.2d at 897. The Federal Circuit has cautioned, however, against emphasizing an individual inventor's lack of money or manufacturing capacity when hypothetically negotiating against a large corporation. *See* Fromson v. Western Litho Plate & Supply Co., 853 F.2d 1568, 1575 (Fed. Cir. 1988).

604. Wang Lab., Inc. v. Toshiba Corp., 993 F.2d 858, 869–70 (Fed. Cir. 1993). See also Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1079 (Fed. Cir. 1983); Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1158 (6th Cir. 1978).

605. Hanson, 718 F.2d at 1081; Georgia-Pacific Corp. v. United States Plywood Corp., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), modified and aff'd sub nom. Georgia-Pacific Corp. v. United States Plywood-Champion Papers, Inc., 446 F.2d 295 (2d Cir.), cert. denied, 404 U.S. 870 (1971).

606. Radio Steel & Mfg. Co. v. MTD Prods., 788 F.2d 1554, 1557 (Fed. Cir. 1986); Hanson, 718 F.2d at 1081; State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990) ("There is no rule that a royalty be no higher than the infringer's net profit margin."); Fromson, 853 F.2d at 1578 n.18.

607. See, e.g., Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1534 (D. Mass. 1990); TWM Mfg., 789 F.2d at 900.

608. Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1568 (Fed. Cir. 1984). See also TWM Mfg., 789 F.2d at 899.

609. Deere & Co. v. International Harvester Co., 710 F.2d 1551, 1558 (Fed. Cir. 1983); Smith Int'l, Inc. v. Hughes Tool Co., 229 U.S.P.Q. (BNA) 81, 96 (C.D. Cal. 1986).

- 4. patentee's policy and marketing practice of maintaining its patent monopoly by refusing to grant licenses;
- 5. commercial relationship between the patentee and the infringer (e.g., whether they are competitors);
- 6. value of the invention as a generator of derivative or convoyed sales;
- 7. duration of the patent;
- 8. established profitability of the product made under the patent, its commercial success, and its current popularity;
- 9. advantages of the patented invention over modes or devices previously used;
- 10. nature of the invention and benefits to users of the invention;
- 11. extent to which the infringer has made use of the invention;
- 12. the percentage of the profit or selling price normally allowed for use of the invention or analogous inventions in the particular business or in comparable businesses;
- 13. portion of the profit credited to the invention; and
- 14. expert testimony.⁶¹⁰

The impact on the respective bargaining positions of the willing licensee and willing licensor of anticipated collateral sales of a noninfringing product line, the desire to maintain market position, and the desire to enter a new market should also be taken into account.⁶¹¹

A royalty paid to settle an infringement claim, which may not be admissible under Rule 408 of the Federal Rules of Evidence,⁶¹² does

610. Georgia-Pacific Corp. v. United States Plywood Corp., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), modified and aff'd sub nom. Georgia-Pacific Corp. v. United States Plywood-Champion Papers, Inc., 446 F.2d 295 (2d Cir.), cert. denied, 404 U.S. 870 (1971). Stickle v. Heublein, Inc., 716 F.2d 1550, 1563 (Fed. Cir. 1983); Radio Steel, 788 F.2d at 1557; Arriflex Corp. v. Aaton Cameras, Inc., 225 U.S.P.Q. (BNA) 487, 489 (S.D.N.Y. 1984).

611. State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990); Deere & Co., 710 F.2d at 1559; Radio Steel, 788 F.2d at 1557; Trans-World Mfg., 750 F.2d at 1568; Arriflex Corp., 225 U.S.P.Q. (BNA) at 489; Mosinee Paper Corp. v. James River Corp. of Virginia, 22 U.S.P.Q. 2d (BNA) 1657, 1661–62 (E.D. Wis. 1992); Micro Motion, Inc. v. Exac Corp., 761 F. Supp. 1420, 1435 (N.D. Cal. 1991).

612. See generally Alpex Computer Corp. v. Nintendo Co., 770 F. Supp. 161, 163– 67 (S.D.N.Y. 1991), reaffirmed on reconsideration, 1994 U.S. Dist. LEXIS 3343 (S.D.N.Y. 1994), vacated in part, 1994 U.S. Dist. LEXIS 9963 (S.D.N.Y. 1994). But see Studiengesellschaft Kohle, M.b.H. v. Dart Indus., 862 F.2d 1564, 1570–73 (Fed. Cir. 1988). not prove an established royalty rate.⁶¹³ That the patentee might have accepted less than a reasonable royalty rate or that the infringer would not have accepted a license at that rate is of little relevance.⁶¹⁴

Availability to the infringer of acceptable alternatives to the patented device may decrease the royalty rate. The infringer's election to infringe and its withdrawal from the business after enforcement of an injunction are evidence of the absence of noninfringing alternatives.⁶¹⁵

Without rejecting the *Georgia-Pacific* approach to calculating reasonable royalty damages, the court in *Panduit* observed that awarding a reasonable royalty determined through an analysis that assumes the patentee and the infringer could willingly negotiate a license incorporates "a pretense that the infringement never happened. It would also make an election to infringe a handy means for competitors to impose a 'compulsory license' policy upon every patent owner."⁶¹⁶

Although the Federal Circuit has recognized that the reasonable royalty determination encompasses elements of "fantasy,"⁶¹⁷ the patent owner still has the burden of putting forth satisfactory evidence on the amount of a reasonable royalty.⁶¹⁸

Mixed Awards

Mixed awards using lost profits as the measure of damages on the part of the infringing sales that the patent owner proved it could have made and a reasonable royalty on the remainder have been approved by the Federal Circuit.⁶¹⁹ The practice of splitting awards is derived

613. Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1078 (Fed. Cir. 1983).

614. TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 899 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986); *Hanson*, 718 F.2d at 1081; Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1158–59 (6th Cir. 1978).

615. TWM Mfg., 789 F.2d at 900; Smith Int'l, Inc. v. Hughes Tool Co., 229 U.S.P.Q. (BNA) 81, 99 (C.D. Cal. 1986).

616. *Panduit Corp.*, 575 F.2d at 1158. See *supra* note 599, regarding increasing the royalty rate, if necessary.

617. Fromson v. Western Litho Plate & Supply Co., 853 F.2d 1568, 1575 (Fed. Cir. 1988).

618. See, e.g., Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 895 F.2d 1403, 1407 (Fed. Cir. 1990).

619. State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1577 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990); *TWM Mfg.*, 789 F.2d at 902; Radio Steel & Mfg. Co. v. MTD Prods., 788 F.2d 1554, 1555–57 (Fed. Cir. 1986); Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 551 (Fed. Cir. 1984).

from the equitable notion that because each act of infringement is separately compensable, losses incurred by infringers on some infringing sales should not be used to diminish awards based on other profitable sales in computing lost profits.⁶²⁰ Damage awards have been split between lost profits and reasonable royalties where the patent owner would have chosen to or been able to sell to some but not all of the infringer's customers,⁶²¹ where the patent owner would have chosen to penetrate only some of the infringer's geographic sales areas, but not all,⁶²² and where damages resulting from a reasonable royalty exceeded lost profits in some but not all of the years of infringement.⁶²³

Marking or Actual Notice—A Prerequisite to Recovering Damages

A patent owner that directly or indirectly sells patented articles and that seeks to recover damages for any infringement that occurred prior to the filing of the lawsuit for infringement must plead and prove compliance with the marking or actual notice requirements of 35 U.S.C. § 287(a).⁶²⁴ Damages may be recovered from the time when marking in compliance with section 287(a) began or from the time actual notice was given, whichever came first.⁶²⁵

Marking in compliance with section 287(a) requires the patent owner (or one making or selling any patented article for or under the patent owner⁶²⁶) to fix on the patented article the word "patent" (or the abbreviation "pat.") together with the patent's number or, when that cannot be done,⁶²⁷ to fix to the patented article or to the package

620. See Crosby Valve Co. v. Safety Valve Co., 141 U.S. 441, 457 (1891).

621. See, e.g., Radio Steel, 788 F.2d at 1555–57; Micro Motion Inc. v. Exac Corp., 761 F. Supp. 1420, 1426–27 (N.D. Cal. 1991); Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1532–33 (D. Mass. 1990).

622. Broadview Chem. Corp. v. Loctite Corp., 311 F. Supp. 447 (D. Conn. 1970).

623. H.K. Porter Co. v. Goodyear Tire & Rubber Co., 536 F.2d 1115 (6th Cir. 1976).

624. See generally Dunlap v. Schofield, 152 U.S. 244, 247–48 (1894); American Medical Sys. v. Medical Eng'g Corp., 6 F.3d 1523, 1537 (Fed. Cir. 1993); Calmar, Inc. v. Emson Research, Inc., 850 F. Supp. 861, 867 (C.D. Cal. 1994).

625. American Medical Sys., 6 F.3d at 1536–37.

626. See, e.g., Amsted Indus., Inc. v. Buckeye Steel Castings Co., 24 F.3d 178, 184–85 (Fed. Cir. 1994).

627. Compare Rutherford v. Trim-Tex, Inc., 803 F. Supp. 158 (N.D. Ill. 1992) with John L. Rie, Inc. v. Shelly Bros., 366 F. Supp. 84 (E.D. Pa. 1973).

that contains the patented article a label containing a like notice.⁶²⁸ The purpose behind the marking requirement is to give patent owners incentive to mark their products and thereby place the world on notice of the existence of the patent.⁶²⁹ Marking must be substantially consistent and continuous, but there is no time by when it must begin.⁶³⁰

Actual notice sufficient to satisfy § 287(a) "requires the affirmative communication of a specific charge of infringement by a specific accused product or device."⁶³¹ Whether actual notice was given is determined by focusing on the actions of the patent owner, not by focusing on the knowledge of the infringer.⁶³² Thus, it is irrelevant that the infringer knew of the patent or knew that he or she was infringing.⁶³³

Increased Damages

Damages may be increased up to three times at the discretion of the district court under 35 U.S.C. § $284.^{634}$ Provisions allowing treble damages have been in force since enactment of the Patent Act of $1793.^{635}$ Trebling was mandatory prior to the enactment of the 1836 act.⁶³⁶

628. 35 U.S.C. § 287(a) (1984 & Supp. 1994).

629. Amsted, 24 F.3d at 185; American Medical Sys., 6 F.3d at 1538.

630. *American Medical Sys.*, 6 F.3d at 1537. Regarding a possible *de minimis* exception, *see* Hazeltine Corp. v. Radio Corp. of Am., 20 F. Supp. 668, 671–72 (S.D.N.Y. 1937).

631. Amsted, 24 F.3d at 187. See, e.g., M-S Cash Drawer Corp. v. Block & Co., 26 U.S.P.Q. 2d (BNA) 1472 (C.D. Cal. 1992). See generally Maxwell v. J. Baker, Inc., 805 F. Supp. 728 (D. Minn. 1992).

632. Amsted, 24 F.3d at 187.

633. Id.

634. See, e.g., Great N. Corp. v. Davis Core & Pad Co., 782 F.2d 159, 166–67 (Fed. Cir. 1986); Yarway Corp. v. Eur-Control USA, Inc., 775 F.2d 268, 277 (Fed. Cir. 1985); American Original Corp. v. Jenkins Food Corp. 774 F.2d 459, 464 (Fed. Cir. 1985); Rosemount, Inc. v. Beckman Instruments, Inc., 727 F.2d 1540, 1547–48 (Fed. Cir. 1984); Leinoff v. Louis Milona & Sons, 726 F.2d 734, 742–43 (Fed. Cir. 1984); Central Soya Co. v. George A. Hormel & Co., 723 F.2d 1573, 1576–77 (Fed. Cir. 1983); Underwater Devices, Inc. v. Morrison-Knudsen Co., 717 F.2d 1380, 1389–90 (Fed. Cir. 1983).

635. Act of July 4, 1936, ch. 357, § 14, 5 Stat. 117 (1936) ("it shall be in the power of the court to render judgment for any amount above . . . the actual damages . . ., not exceeding three times the amount thereof . . ."); Act of July 8, 1870, ch. 230, § 55, 16 Stat. 201 (1870). See also Stanley L. Amberg, Willful Infringement/Increased

Increased damages, which are punitive rather than compensatory,⁶³⁷ serve as a deterrent to the tort of infringement.⁶³⁸ Accordingly, increased damages awards are based upon the culpable nature of the infringer's conduct, typically termed willful, intentional, or deliberate infringement.⁶³⁹

A district court's decision to increase damages requires two steps: (1) finding clear and convincing evidence that the infringement was willful (or that other circumstances justify an enhanced award) and (2) determining from the totality of the circumstances that damages should be increased.⁶⁴⁰ The district court should explain the basis for increasing damages.⁶⁴¹

Willful Infringement

The infringer's intent and reasonable beliefs are the primary focus of a willful infringement inquiry.⁶⁴² When a potential infringer has actual notice of the patent rights of another,⁶⁴³ he or she has an affirmative

Damages/Awards of Attorney's Fees to Patentees, in Current Developments in Patent Law 1985, at 171 (PLI Patents, Copyrights, Trademarks & Literary Property Handbook Series No. 213, 1985).

636. Act of Feb. 21, 1793, ch. 11, § 5, 1 Stat 318. (1793); Act of April 17, 1800, ch. 25, § 3, 2 Stat. 37, 38 (1800); Act of July 4, 1836, ch. 357, § 14, 5 Stat. 117 (1836).

637. Beatrice Foods v. New England Printing & Lithographing, 923 F.2d 1576, 1579 (Fed. Cir. 1991); Paper Converting Mach. v. Magna-Graphics, 745 F.2d 11, 23 (Fed. Cir. 1984). This can be contrasted with the award of increased damages in trademark actions, which may not be punitive and must be based on showing actual harm. Playboy Enters. v. P.V. Sorren Export Co., 546 F. Supp. 987, 988 (S.D. Fla. 1982).

638. Rite-Hite Corp. v. Kelley Co., 819 F.2d 1120, 1125–26 (Fed. Cir. 1987); Avia Group Int'l, Inc. v. L.A. Gear California, Inc. 853 F.2d 1557, 1566 (Fed. Cir. 1988).

639. See Rosemount, Inc. v. Beckman Instruments, Inc., 727 F.2d 1540, 1547-48 (Fed. Cir. 1984).

640. State Indus., Inc. v. Mor-Flo Indus., Inc., 948 F.2d 1573, 1576 (Fed. Cir. 1991) (two-step process); Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 628 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985) (clear and convincing evidence required).

641. See, e.g., Read Corp. v. Portec, Inc., 970 F.2d 816, 828 (Fed. Cir. 1992).

642. Ortho Pharmaceutical Corp. v. Smith, 959 F.2d 936, 944 (Fed. Cir. 1992).

643. An infringer cannot willfully infringe a patent of which he or she is unaware. Gustafson, Inc. v. Intersystems Indus. Prods., 897 F.2d 508, 511 (Fed. Cir. 1990). Actual notice has been deemed to have occurred where the patentee offered the infringer a license, where verbal notice of infringement was accompanied by presentation of a copy of the patent, and where there was notification by a third party even if that party opined that the patent was invalid. *See, e.g.*, Great N. Corp. v. Davis Core & Pad Co.,

duty to diligently ascertain whether he or she is infringing that patent.⁶⁴⁴

Seeking and obtaining competent legal advice before initiating possibly infringing activity is commonly cited as an important factor in determining willful infringement.⁶⁴⁵ There is no rule, however, that an opinion letter from counsel will necessarily preclude a finding of willful infringement,⁶⁴⁶ nor that lack of an opinion letter will automatically mandate a finding of willfulness.⁶⁴⁷ Furthermore, because the issue of willful infringement only arises if the infringer's counsel was wrong, the focus is not on the legal correctness of the opinion, but instead on whether the opinion was sufficient to instill a belief in the infringer that a court might reasonably hold the patent invalid, not infringed, or unenforceable.⁶⁴⁸ Thus, relevant facts include when the infringer sought the advice, what the infringer knew about counsel's independence, skill, and competence to provide the opinion, what the infringer knew about the nature and extent of the analysis performed by counsel, and what the infringer knew and had concluded about the credibility, value, and reasonableness of the opinion.649

Objective evidence of an adequate opinion from counsel was delineated by the Federal Circuit in *Underwater Devices, Inc. v. Morrison*-

782 F.2d 159, 167 (Fed. Cir. 1986); American Original Corp. v. Jenkins Food Corp., 774 F.2d 459, 465 (Fed. Cir. 1985); Ralston Purina Co. v. Far-Mar-Co, Inc., 772 F.2d 1570, 1577 (Fed. Cir. 1985).

644. Underwater Devices, Inc. v. Morrison-Knudsen Co., 717 F.2d 1380, 1389 (Fed. Cir. 1983).

645. See, e.g., Ortho Pharmaceutical, 959 F.2d at 944; Ralston Purina, 772 F.2d at 1577; King Instrument Corp. v. Otari Corp., 767 F.2d 853, 867 (Fed. Cir. 1985), cert. denied, 475 U.S. 1016 (1986).

646. Kori Corp. v. Wilco Marsh Buggies & Draglines, 761 F.2d 649, 656 (Fed. Cir.), *cert. denied*, 474 U.S. 902 (1985); Central Soya Co. v. George A. Hormel & Co., 723 F.2d 1573, 1577 (Fed. Cir. 1983); *Underwater Devices*, 717 F.2d at 1389–90.

647. Rolls-Royce, Ltd. v. GTE Valeron Corp., 800 F.2d 1101 (Fed. Cir. 1986); Machinery Corp. of Am. v. Gullfiber AB, 774 F.2d 467, 472–75 (Fed. Cir. 1985) (attorney's fee award reversed); *American Original Corp.*, 774 F.2d at 465; *King Instrument*, 767 F.2d at 867.

648. Ortho Pharmaceutical, 959 F.2d at 944.

649. Thorn EMI N. Am. Inc. v. Micron Technology, Inc., 837 F. Supp. 616, 620 (D. Del. 1993).

Knudsen Co.⁶⁵⁰ In that case, the infringer had obtained an opinion, but the opinion failed to rise to the level of competent legal advice:

Had [the opinion] contained within its four corners a patent validity analysis, properly and explicitly predicated on a review of the file histories of the patents at issue, and an infringement analysis that, *inter alia*, compared and contrasted the potentially infringing method or apparatus with the patented inventions, the opinion may have contained sufficient internal indicia of credibility to remove any doubt that M-K in fact received a competent opinion.⁶⁵¹

Factors bearing on the determination of the competency of an opinion letter include whether counsel examined the file history of the patent, whether the opinion was oral or written, whether the opinion came from in-house or outside counsel, whether the opinion came from a patent attorney, and whether the opinion was detailed or merely conclusory.⁶⁵² A competent opinion may not be probative on the issue of willfulness if the infringer did not rely on counsel's advice.⁶⁵³

In addition to an opinion of counsel, other factors that have been considered when determining the issue of willful infringement are evidence of copying versus attempts to design around the patent and evidence of frivolous litigation defenses versus substantial challenges to the patent.⁶⁵⁴

650. 717 F.2d at 1390.

651. Id. at 1390. Another opinion in that case was held inadequate because it contained "only bald, conclusory and unsupported remarks regarding validity and infringement." Id. at 1385.

652. See, e.g., Read Corp. v. Portec, Inc., 970 F.2d 816, 829 (Fed. Cir. 1992); Ortho Pharmaceutical, 959 F.2d at 944–45; Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1580–81 (Fed. Cir. 1992); Uniroyal, Inc. v. Rudkin-Wiley Corp., 939 F.2d 1540, 1546–47 (Fed. Cir. 1991); Studiengesellschaft Kohle M.b.H. v. Dart Indus., 862 F.2d 1564, 1574–79 (Fed. Cir. 1988).

653. *See, e.g., In re* Hayes Microcomputer Prods. Patent Litig., 982 F.2d 1527, 1543–44 (Fed. Cir. 1992); Radio Steel & Mfg. Co. v. MTD Prods., 788 F.2d 1554, 1559 (Fed. Cir. 1986); Central Soya Co. v. George A. Hormel & Co., 723 F.2d 1573, 1577 (Fed. Cir. 1983).

654. See, e.g., Spindelfabrik Suessen-Schurr v. Schubert & Salzer, 829 F.2d 1075, 1084 (Fed. Cir. 1987), cert. denied, 484 U.S. 1063 (1988); Jurgens v. McKasy, 927 F.2d 1552, 1562 (Fed. Cir.), cert. denied, 112 S. Ct. 281 (1991); Delta-X v. Baker Hughes Prod. Tools, 984 F.2d 410, 413 (Fed. Cir. 1993).

Remedies

Increasing Damages

The paramount determination in deciding to grant increased damages and the amount of the increase is the egregiousness of the infringer's conduct based on all the facts and circumstances.⁶⁵⁵ Factors that have been considered include: whether the infringer deliberately copied; whether the infringer, with knowledge of the patent, formed a goodfaith belief that the patent was invalid, not infringed, or unenforceable; the infringer's behavior as a party to the litigation; the infringer's size and financial condition; the closeness of the case; the duration of the infringer's misconduct; whether the infringer took any remedial action; the infringer's motivation for harm; and whether the infringer attempted to conceal its misconduct.⁶⁵⁶

Attorney Fees

The traditional American rule requires that each party to a lawsuit bear its own litigation expenses, including attorney fees.⁶⁵⁷ In 1946, the patent statute was amended to provide one of the statutory exceptions to this general rule.⁶⁵⁸ This amendment was designed to "discourage infringement of a patent by anyone thinking that all he would be required to pay if he loses the suit would be a royalty."⁶⁵⁹ However, the Senate Committee on Patents said that "[i]t is not contemplated that the recovery of attorney's fees will become an ordinary thing in the patent suits."⁶⁶⁰ The statutory provision for attorney fees was revised in 1952 by adding the words "in exceptional cases." Codified at section 285, this amendment was seen "as expressing the intention of the present statute as shown by its legislative history and as interpreted by the courts."⁶⁶¹

The Federal Circuit has indicated that there are four parts to section 285: (1) the case must be exceptional, (2) the district court may

655. Read, 970 F.2d at 826.

656. Id. at 826–27.

657. Alyeska Pipeline Co. v. Wilderness Soc'y, 421 U.S. 240, 247 (1975); Michael D. Green, From Here to Attorney's Fees: Certainty, Efficiency, and Fairness in the Journey to the Appellate Courts, 69 Cornell L. Rev. 207, 209–10 (1984).

658. 35 U.S.C.A. § 70 (1946).

659. S. Rep. No. 1503, 79th Cong., 2d Sess. 1, 2, reprinted in 1946 U.S.C.S. 1386, 1387.

660. Id.

661. S. Rep. No. 1979, 82d Cong., 2d Sess., reprinted in 1952 U.S.C.C.A.N. 2394, 2423.

exercise its discretion, (3) the fees awarded must be reasonable, and (4) the fees may be awarded only to the prevailing party.⁶⁶²

Regarding the first part, the prevailing party must establish the exceptional nature of the case by clear and convincing evidence.⁶⁶³ Extraordinary circumstances leading to awards of attorney fees when the patent owner prevails commonly are found where infringement is determined to be willful or deliberate or where the litigation is prolonged in bad faith.⁶⁶⁴ When the accused infringer prevails, extraordinary circumstances have been found where the patentee committed inequitable conduct in securing the patent or in attempting to enforce it.⁶⁶⁵ The district court should set forth the reasons for its findings when the issue of exceptional circumstances is litigated.⁶⁶⁶

Regarding the second part of section 285, even an exceptional case does not require the award of attorney fees.⁶⁶⁷ The district court is in the best situation to weigh the factors that contribute to a fair allocation of the burdens of litigation considering the policies of the laws being enforced, the matter in litigation, and the interests of justice.⁶⁶⁸

Regarding the third part of section 285, the Federal Circuit has recognized the standard "generally applicable in cases in which Congress has authorized an award of fees to a 'prevailing party'"⁶⁶⁹ that the Supreme Court set forth in *Hensley v. Eckerhart*.⁶⁷⁰ Under *Hensley*, calculation of the amount of a reasonable fee starts with a "lodestar" amount,⁶⁷¹ which is "the number of hours reasonably expended on

662. Machinery Corp. of Am. v. Gullfiber AB, 774 F.2d 467, 470-72 (Fed. Cir. 1985).

664. Rohm & Haas Co. v. Crystal Chem. Co., 736 F.2d 688, 690 (Fed. Cir. 1984). See, e.g., Kori Corp. v. Wilco Marsh Buggies & Draglines, 761 F.2d 649, 656 (Fed. Cir.), cert. denied, 474 U.S. 902 (1985) (willful infringement); Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1540 (D. Mass. 1990) (denying attorney fees.)

665. See, e.g., Hughes v. Novi Am., Inc., 724 F.2d 122, 124-25 (Fed. Cir. 1984).

666. See, e.g., S.C. Johnson & Son, Inc. v. Carter-Wallace, Inc., 781 F.2d 198, 201 (Fed. Cir. 1986). But see Consolidated Aluminum Corp. v. Foseco Int'l Ltd., 910 F.2d 804, 814 (Fed. Cir. 1990).

667. S.C. Johnson, 781 F.2d at 201.

668. *Id.* Factors that are considered include the closeness of the case, the tactics of counsel, and the conduct of the parties. *Id.*

669. Devine v. Sutermeister, 733 F.2d 892, 897 n.4 (Fed. Cir. 1984).

670. 461 U.S. 424, 433 (1983).

671. Copeland v. Marshall, 641 F.2d 880, 891 (D.C. Cir. 1980).

^{663.}Id.

the litigation multiplied by a reasonable hourly rate."⁶⁷² Generally, a reasonable rate corresponds to the prevailing rates in the relevant community.⁶⁷³ If, however, the prevailing party had a good reason for using non-local counsel, then the comparison may be to prevailing rates in the attorney's business location.⁶⁷⁴ To access the number of hours reasonably expended, courts look to the number of attorneys involved and their cumulative hours.⁶⁷⁵ Once the lodestar amount is determined, other factors are considered that may adjust the fee upward or downward.⁶⁷⁶ Among these factors are the results obtained; the attorney's normal billing rate; difficulty and novelty of the case; time and labor involved; loss of other business; fees customarily charged for similar services; whether the fee is fixed or contingent; reputation, experience, and ability of counsel; fees paid to opposing counsel; and expenses and advancements.⁶⁷⁷

Regarding the fourth part of section 285, when neither party has unilaterally prevailed, district courts have been given discretion to allow in part or to deny attorney fees.⁶⁷⁸

Prejudgment Interest

Before the Supreme Court decided *General Motors Corp. v. Devex Corp.*⁶⁷⁹ in 1983, courts in some jurisdictions resisted awarding prejudgment interest in patent infringement suits on the theory that prejudgment interest awards were restricted to exceptional cases.⁶⁸⁰

672. Hensley v. Eckerhart, 461 U.S. 424, 433 (1983); *see also* Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1068 (Fed. Cir. 1983) (billing rate and number of hours expended are among the factors that must support a reasonable award of attorney fees).

673. Howes v. Medical Components, Inc., 761 F. Supp. 1193, 1195 (E.D. Pa. 1990).

675. See, e.g., id. at 1197-99.

676. Hensley, 461 U.S. at 434.

677. *Id.*; Northcross v. Board of Educ. of Memphis City Schools, 611 F.2d 624, 642 (6th Cir. 1979), *cert. denied*, 447 U.S. 911 (1980); Swann v. Charlotte-Mecklenburg Bd. of Educ., 66 F.R.D. 483 (W.D.N.Y. 1975).

678. See, e.g., Slimfold Mfg. Co. v. Kinkead Indus., Inc., 932 F.2d 1453, 1459 (Fed. Cir. 1991); Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1553–54 (Fed. Cir. 1989).

679. 461 U.S. 648 (1983).

680. See Deere & Co. v. International Harvester Co., 218 U.S.P.Q. (BNA) 403, 408 (C.D. Ill. 1982), aff'd in part, rev'd in part, 710 F.2d 1551 (Fed. Cir. 1983); Columbia Broadcasting Sys. v. Zenith Radio Corp., 537 F.2d 896, 897 (7th Cir. 1976); Chesapeake & O. Ry. v. Kaltenbach, 124 F.2d 375, 377 (4th Cir. 1941).

^{674.} Id. at 1195-97.

The exceptional-case restriction is now of only historical interest in light of *General Motors Corp.*, in which the Supreme Court held that a 1946 amendment to the patent statute, codified at 35 U.S.C. § 284, changed the law, which had been hostile to awards of prejudgment interest, and that thereafter, prejudgment interest should ordinarily be awarded where necessary to afford a patentee full compensation for infringement.⁶⁸¹ Emphasizing the compensatory nature of a prejudgment interest award, the Court reasoned that an award of prejudgment interest is ordinarily necessary to ensure that the patent owner is placed in as good a position as he or she would have been had the infringer entered into a reasonable royalty agreement.

The Court stopped short of mandating prejudgment interest in all cases. Noting that section 284 "states that interest shall be 'fixed by the court,'" the Court reasoned that district courts retain "some discretion," but prejudgment interest should be awarded "absent some justification for withholding such an award."⁶⁸² The Court suggested that it might be appropriate to limit prejudgment interest when the patent owner had been responsible for undue delay in prosecuting the lawsuit.⁶⁸³ Nonetheless, the Court upheld the district court's ruling that a patentee had not caused undue delay even though the case had been litigated for over twenty-five years. Since *General Motors Corp.*, no decision denying prejudgment interest based upon undue delay has been upheld by the Federal Circuit.⁶⁸⁴ Although *General Motors Corp.* leaves open the possibility that other circumstances may allow prejudgment interest to be denied, the Federal Circuit has approved of none.⁶⁸⁵

Calculating prejudgment interest involves three elements: (1) the principal amount for which interest is awarded, (2) the interest rate,

685. See, e.g., Radio Steel & Mfg. Co. v. MTD Prods., 788 F.2d 1554, 1557 (Fed. Cir. 1986); T.D. Williamson, Inc. v. Laymon, 723 F. Supp. 587, 611 (N.D. Okla. 1989), aff'd without opinion, 923 F.2d 871 (Fed. Cir. 1990), cert. dismissed, 500 U.S. 901 (1991).

^{681.} Post-judgment interest is governed by statute. 28 U.S.C.A. § 1961 (1992); see also Goodwall Constr. Co. v. Beers Constr. Co., 991 F.2d 751, 759 (Fed. Cir. 1993).

^{682.} General Motors Corp., 461 U.S. at 656–57.

^{683.}Id.

^{684.} See, e.g., Allen Archery, Inc. v. Browning Mfg. Co., 898 F.2d 787, 791–92 (Fed. Cir. 1990); Kalman v. Berlyn Corp., 914 F.2d 1473, 1485–86 (Fed. Cir. 1990). The Federal Circuit has held that to support the denial of prejudgment interest, the undue delay must prejudice the alleged infringer. Lummus Indus., Inc. v. D.M. & E. Corp., 862 F.2d 267, 275 (Fed. Cir. 1988).

Remedies

and (3) the method used to accrue interest, that is, compound or simple. Regarding the first element, the principal amount must consist only of compensatory damages, that is, damages based on lost profits or reasonable royalty, and not consist of enhanced damages.⁶⁸⁶ The district court has the power to award prejudgment interest on attorney fees, if awarded.⁶⁸⁷ Regarding the second element, district courts have broad discretion in deciding what interest rate to apply.⁶⁸⁸ The rate may be higher than the generally established commercial rates (e.g., T-bill or prime)⁶⁸⁹ if the patent owner affirmatively demonstrates that a higher rate should be applied.⁶⁹⁰ State statutory rates have also been applied.⁶⁹¹ Regarding the third element, district courts have broad discretion in deciding whether to award simple or

686. Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 554–55 (Fed. Cir. 1984); Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1066 (Fed. Cir. 1983).

687. Mathis v. Spears, 857 F.2d 749, 760–61 (Fed. Cir. 1988). See, e.g., Water Technologies Corp. v. Calco, Ltd., 714 F. Supp. 899, 909 (N.D. Ill. 1989); Gardiner v. Gendel, 727 F. Supp. 799, 806 (E.D.N.Y. 1989), aff'd without opinion, 976 F.2d 746 (Fed. Cir. 1992).

688. Lam, Inc., 718 F.2d at 1066.

689. Decisions applying the T-bill rate include Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q. 2d (BNA) 1481, 1540–41 (D. Mass 1990), correction for clerical errors, 17 U.S.P.Q. 2d (BNA) 1711 (1991) and W.L. Gore & Assocs. v. Garlock, Inc., 10 U.S.P.Q. 2d (BNA) 1628, 1631 n.10 (N.D. Ohio 1989). Decisions applying the prime rate include Lemelson v. General Mills, 968 F.2d 1202, 1206 (Fed. Cir. 1992), cert. denied, 113 S. Ct. 976 (1993) and ALM Surgical Equip. Inc. v. Kirschner Medical Corp., 15 U.S.P.Q. 2d (BNA) 1241, 1257 (D.S.C. 1990).

690. Lam, Inc., 718 F.2d at 1066. This demonstration often involves proving the rate that the patent owner received on contemporaneous investments. See, e.g., Micro Motion, Inc. v. Exac Corp., 761 F. Supp. 1420, 1436 (N.D. Cal. 1991); Beckman Instruments, Inc. v. LKB Produkter AB, 703 F. Supp. 408, 410 (D. Md. 1988), aff'd in part, vacated in part, and remanded, 892 F.2d 1547 (Fed. Cir. 1989). This demonstration may also involve proving the rate that the patent owner paid to borrow money during the infringing period. See, e.g., Smith Corona Corp. v. Pelikan, Inc., 784 F. Supp. 452, 484–85 (M.D. Tenn. 1992), aff'd without opinion, 1 F.3d 1252 (Fed. Cir. 1993).

691. See, e.g., Brooktree Corp. v. Advanced Micro Devices, Inc., 757 F. Supp. 1101, 1102 (S.D. Cal. 1990); Ortloff Corp. v. Gulsby Eng'g, Inc., 706 F. Supp. 1295, 1309 (S.D. Tex. 1988), *aff'd without opinion*, 884 F.2d 1399 (Fed. Cir. 1989). For examples of other rates applied, see 5 Donald S. Chisum, Patents § 20.03[4][a][v] (1978, rev. 1994).

compound interest. 692 Regardless of the method, prejudgment interest is generally applied to damages as they would have been accrued. 693

692. Gyromat Corp., 735 F.2d at 557. Decisions awarding compound interest include Andrew Corp. v. Gabriel Elecs., Inc., 785 F. Supp. 1041, 1054–55 (D. Me. 1992); *Polaroid Corp.*, 16 U.S.P.Q. 2d (BNA) at 1540–41; Johns-Manville Corp. v. Guardian Indus. Corp., 718 F. Supp. 1310, 1317 (E.D. Mich. 1989), *aff'd without opinion*, 925 F.2d 1480 (Fed. Cir. 1991). Decisions awarding simple interest include *Micro Motion*, 761 F. Supp. at 1436; *In re* Hayes Microcomputer Prods. Patent Litig., 766 F. Supp. 818, 824 (N.D. Cal. 1991), *aff'd*, 982 F.2d 1527 (Fed. Cir. 1992); Bandag, Inc. v. Al Bolser Tire Stores, Inc., 228 U.S.P.Q. (BNA) 211, 212 (W.D. Wash. 1985), *aff'd without opinion*, 809 F.2d 788 (Fed. Cir. 1986).

693. See, e.g., Dragan v. L.D. Caulk Co., 12 U.S.P.Q. 2d (BNA) 1081, 1091 (D. Del. 1989), *aff'd without opinion*, 897 F.2d 538 (Fed. Cir. 1990); H.B. Fuller Co. v. National Starch & Chem. Corp., 689 F. Supp. 923, 954 (D. Minn. 1988).

VIII. Jury Trials

The first jury was empaneled in a United States patent case in 1804, during the presidency of Thomas Jefferson.⁶⁹⁴ The history of involvement by average Americans in the resolution of patent disputes is substantial. Their role is also controversial and viewed with ambivalence within the community of patent attorneys. While litigants in patent cases are entitled by the Constitution to trials by jury, the complexity of patent cases can work to undermine the jurors' ability to understand the issues and decide them fairly. Nonetheless, the common sense of a jury can be considerable. Juries can be both intelligent and sophisticated. Particularly in "high tech" areas of the country (e.g., Silicon Valley, California), jurors can be remarkably able to handle complex material.

Even so, it is easy to see why legal scholars' attention to this involvement has most often focused on the jurors' ability to comprehend the evidence and the instructions. It is worth noting that even in fairly simple patent cases, the nature of patent law requires the jurors to answer very complex intellectual questions. The question of invalidity, for example, with its requirement that obviousness be discerned, requires highly abstract thinking.

After presenting a brief overview of the extent and nature of reliance on jurors in patent cases over the last 200 years, this chapter discusses juror comprehension and how best to enhance it. Throughout, it is presumed that difficult material can be taught by relating it to the jurors' common experiences, using analogies, and using new teaching technologies in the courtroom (e.g., videos).

Reliance on Juries

From 1790 to 1793, the first patent act required juries to assess damages in patent cases.⁶⁹⁵ In 1793, the second patent act changed the way patent damages were assessed.⁶⁹⁶ Under this act, patent actions,

695. Act of April 10, 1790.

696. Act of February 21, 1793.

^{694.} Reutgen v. Kanowrs, Fed. Cas. 11,710 (C.C.D. Pa. 1804). Although there may have been earlier cases (*see* text accompanying notes 695–96), this is the earliest reported case I am aware of. There are earlier reported, non-U.S. patent jury cases. *See, e.g.*, The King v. Arkwright, Webster's Patent Cases 64 (1785).

which were actions at law, could use juries as fact-finding bodies.⁶⁹⁷ Thus, the parties to a patent action had the right to a jury trial.⁶⁹⁸

During the 1800s, the use of juries in patent trials declined dramatically. This decline likely began in 1819, when federal courts were given the equitable power to grant injunctions in patent cases.⁶⁹⁹ Although there were many ways for a court sitting in equity to involve a jury in the process,⁷⁰⁰ there was no right to a jury trial in equity.

Actions in equity, though beneficial, did not immediately replace actions at law because there was a significant disadvantage for a patent owner who brought an action in equity. Specifically, a court sitting in equity could not compensate the patent owner for damages sustained by the patent owner because of the infringement.⁷⁰¹ This disadvantage was removed in 1870, when federal courts were given the power to award damages in patent actions in equity.⁷⁰² Not surprisingly, by 1890, almost all patent actions were brought in equity,⁷⁰³ where there was no right to a jury.

The merger of law and equity in 1937 did not return juries to a prominent role in patent trials because, when a patent owner sought equitable relief, courts often tried the equitable claim first (which generally included the same factual issues as the legal claim), resulting in patent owners' being collaterally estopped from having the facts underlying their legal claims tried by a jury.⁷⁰⁴ Thus, it is not

697. See generally Gary M. Ropski, Constitutional and Procedural Aspects of the Use of Juries in Patent Litigation (pts. 1–2), 58 J. Pat. Off. Soc'y 609, 673 (1976); 5 Donald S. Chisum, Patents § 20.02[1] (1978, rev. 1994).

698. Ropski, supra note 697, at 609.

699. Act of February 15, 1819. Prior to this act, a patent owner could only obtain equitable relief in state court or in federal court when there was diversity of citizenship. Chisum, *supra* note 697, \S 20.02[1](c).

700. Chisum, supra note 697, § 20.02[1](c).

701. The court could order an accounting to divest the infringer of all the profits it made by virtue of the infringement, but there might not be any profits. *See generally* Birdsall v. Coolidge, 93 U.S. 64, 68–69 (1876).

702. Act of July 8, 1870.

703. 3 William C. Robinson, The Law of Patents for Useful Inventions § 932 n.5 (1890).

704. See generally Ralph W. Launius, Some Aspects of the Right to Trial by Jury in Patent Cases, 49 J. Pat. Off. Soc'y 112 (1967); Kennedy v. Lakso Co., 414 F.2d 1249, 1251–52 (3d Cir. 1969); Thermo-Stitch, Inc. v. Chemi-Cord Processing Corp., 294 F.2d 486, 488–90 (5th Cir. 1961).

very surprising that in 1940 (the first year such statistics were gathered), of all patent cases that were tried, only 2.5% were tried to a jury.⁷⁰⁵

In 1959, the Supreme Court held that the right to trial by jury must be recognized for issues historically tried by juries.⁷⁰⁶ No longer was the patent owner who sought equitable relief effectively barred from obtaining a jury trial.⁷⁰⁷ Although the parties in a patent suit had a right to a jury trial on certain issues after 1959, the rise in the use of juries in patent trials was slow. From 1960 through 1970, more than 95% of patent trials were to the bench.⁷⁰⁸ This apparent reluctance to embrace jury trials was probably due, at least in part, to a "fear of the unknown."⁷⁰⁹ By the 1970s, though, scholarly and practical interest in patent jury trials was growing.⁷¹⁰

705. Ropski, *supra* note 697, at 610. Similarly, only 3.4% of the patent cases that were tried from 1940 to 1959 were tried to a jury. *Id*.

706. See Kennedy, 414 F.2d at 1252, citing Beacon Theatres, Inc. v. Westover, 359 U.S. 500 (1959).

707. B. R. Pravel, Jury Trials in Patent Cases, Patent L. Ann. 23 (Southwestern Legal Foundation 1970).

708. Ropski, supra note 697, at 611.

709. Pravel, *supra* note 707, at 33; remarks of Don W. Martens at the 10th Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, 146 F.R.D. 205, 375 (1993) ("[Patent lawyers] used to always have a fear of juries.").

710. See, e.g., George B. Newitt & Jon O. Nelson, The Patent Lawyer and Trial by Jury, 1 John Marshall J. Prac. & Proc. 59 (1967); Launius, supra note 704; Pravel, supra note 707; Donald Zarley, Jury Trials in Patent Litigation, 20 Drake L. Rev. 242 (1971); Ernest E. Figari, Jr., Jury Trials in a Patent Context, Patent L. Ann. 189 (Southwestern Legal Foundation 1974); Ropski, supra note 697; James M. Wetzel, A Survey of Patent Jury Litigation for the Last Fifteen Years, 10 Intell. Prop. L. Rev. 378 (1978); V. Bryan Medlock, Jr., The Patent Jury Trial, in Patent & Trademark Litigation Institute, at M-1 (American Patent Law Association 1978).

It is probably not merely coincidental that this interest arose after the 1960s. During that decade, less than one out of four patent cases that were tried to the bench were found valid and, of the ones found valid, the odds were three to one the appellate court would reverse the district court. Wetzel, *supra. See also* Duane Burton, *Patent Jury Charge, in* Continuing Legal Education Institute on Patent Jury Litigation, at J-1, J-26 (American Patent Law Association 1981) (from 1953 to 1972, the patent owner prevailed at trial only 27% of the time).

From 1975 through 1994, the percentages of patent cases that were tried to a jury were as follows:⁷¹¹

1975	11.9%	1985	23.5%
1976	17.9%	1986	29.2%
1977	9.6%	1987	41.6%
1978	8.3%	1988	50.0%
1979	17.8%	1989	36.2%
1980	17.2%	1990	35.4%
1981	20.7%	1991	45.3%
1982	28.3%	1992	57.8%
1983	21.4%	1993	57.4%
1984	25.6%	1994	70.0%

As these statistics reflect, it is now common to have a jury involved in a patent trial. Trying a patent case to a jury, though, can present special problems, including (1) the jurors' ability to comprehend the evidence, (2) allowing the jury to decide more than the factual issues in dispute, (3) the court's choice of the form of verdict, and (4) adequately instructing the jurors on the law they are to apply.

Juror Comprehension

While patent law itself always calls for sophisticated reasoning, in cases that involve simple technology, the concern with juror comprehension is reduced.⁷¹² In patent cases involving complex technology, however, jurors may be confronted with remarkably complex evidence concerning inventions produced by the best minds in biogenetics, physics, computer technology, and so on.⁷¹³

711. Statistics compiled from Administrative Office of the U.S. Courts, Annual Reports of the Director, 1975–1994, at Table C-4.

712. As one Federal Circuit judge said in an interview:

In a simple patent case, if the claims are sufficiently straightforward and the case is sufficiently non-technical and you want to give it to the jury, I can't get too excited about it. But if you've got some of these terribly complex technologies and you take that to a lay jury, I just don't know whether that's sensible.

An Interview with Circuit Judge S. Jay Plager, 5 J. Proprietary Rights 2, 10 (1993).

713. See, e.g., Micro Motion, Inc. v. Exac Corp., 741 F. Supp. 1426, 1429 (N.D. Cal. 1990). This case was retried to the bench after a motion for a new trial was granted following an initial jury trial. The new trial motion was granted because of "the extremely complicated nature of the case," among other reasons. Micro Motion, Inc. v. Exac Corp., 5 U.S.P.Q. 2d (BNA) 1957, 1963 (N.D. Cal. 1987).

Whether there is a complexity exception to the Seventh Amendment that would allow the court to keep complex technical issues from the jury is an unresolved question in patent law that raises strong responses and academic debate.⁷¹⁴ Complexity, at times, calls for unusual creativity. This is an area of the law where, at times, there might not be one right answer, and the attorneys' and the court's insight and acumen can make a real and right difference. Until a complexity exception is recognized, jurors will be called upon to resolve complex technical disputes.

It is the trial attorneys' and the trial court's duty to conduct the trial in a way that educates the jurors and gives them comprehensible evidence.⁷¹⁵ The bar has many continuing legal education programs and practical journal articles aimed at enhancing the litigator's ability to try a patent case to a jury.

Experienced judges have offered suggestions for trial-management techniques in complex cases that might be applicable to the resolution of complex factual disputes sometimes arising in patent litigation. The following are some of these suggestions, culled from various sources, with particular reliance on the works of Judge William W Schwarzer and Judge Avern Cohn.⁷¹⁶ Commentary reflecting my perspective is presented along with the suggestions.

714. See, e.g., the comments of Federal Circuit Judges Howard T. Markey and Pauline Newman in SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1126–32 (Fed. Cir. 1985); the presentations at the 11th Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, 153 F.R.D. 177, 240–52 (1994); and the discussions at the 4th Biennial Patent System Major Problems Conference, 34 IDEA 77–103 (1994). See also the dissent of Judge Helen W. Nies in *In re Lockwood*, 1995 U.S. App. LEXIS 528 (Fed. Cir. Jan. 11, 1995).

715. Remarks of Federal Circuit Judge Haldane Robert Mayer at the 11th Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, 153 F.R.D. 177, 252 (1994); Brookings Institution, Charting a Future for the Civil Jury System, 18 (A.B.A./Brookings Symposium 1992) ("[I]f juries find issues and facts too complex, it is because the lawyers have failed to present their cases clearly or judges have failed to structure the proceedings in a way that would simplify matters for the jury to understand them."), *quoted in* 153 F.R.D. at 251; *see also* former Federal Circuit Chief Judge Howard T. Markey's statement that "the simplifying of patent trials is a duty of bench and bar that is today too often unmet." Howard T. Markey, On Simplifying Patent Trials, 116 F.R.D. 369 (1987).

716. William W Schwarzer, Reforming Jury Trials, 132 F.R.D. 575, 577-78 (1991) [hereinafter Schwarzer, Reforming Jury Trials]. Cohn, Thoughts on Jury Trial in a

1. Use pretrial conferences to narrow the issues and structure the trial so that it unfolds logically and comprehensively.⁷¹⁷ The court can search for those issues that can be resolved by the judge or with the consent of the litigants. Lawyers who feel confident about the way evidence will be presented at trial might even consider offering jury instructions to the judge at the pretrial conference.

2. Consider bifurcating the trial.⁷¹⁸ There are many published decisions dealing with bifurcating patent jury trials, including ones that consider whether to separate damages issues from liability issues,⁷¹⁹ how to handle the issue of willfulness,⁷²⁰ and whether to separate antitrust claims when presented.⁷²¹ Bifurcation is not barred by the Seventh Amendment.⁷²² Often, a court addresses concerns about overlapping evidence by conducting a multiple-phase trial with the same jury.⁷²³

Patent Case, 6 Proceedings of the Intellectual Property Law Section of the State Bar of Michigan 4 (1994).

717. SRI Int'l, 775 F.2d at 1131; Robert I. Berdon, Instructive Interrogatories: Helping the Civil Jury to Understand, 55 Conn. Bar J. 179, 197 (1981). Judge Avern Cohn believes that a proposed verdict form should accompany the proposed jury instruction. Cohn, supra note 716, at 4.

718. Schwarzer, *Reforming Jury Trials, supra* note 716, at 594–95; Cohn, *supra* note 716, at 4. *See generally* James W. Geriak & Armand F. Ayazi, *Bifurcated Patent Trials, in* Jury Trials in Patent and High-Tech Intellectual Property Litigation (American Conference Institute 1994).

719. Examples of decisions granting a motion to bifurcate are *In re* Recombinant DNA Technology, 30 U.S.P.Q. 2d (BNA) 1881, 1898–1901 (S.D. Ind. 1993, 1994), and Lemelson v. Apple Computer Inc., 28 U.S.P.Q. 2d (BNA) 1412, 1421–24 (D. Nev. 1993). Examples of decisions denying a motion to bifurcate are THK Am., Inc. v. NSK Co., 151 F.R.D. 625 (N.D. Ill. 1993), and Output Technology Corp. v. Dataproducts Corp., 22 U.S.P.Q. 2d (BNA) 1072, 1073 (W.D. Wash. 1991).

720. See, e.g., Neorx Corp. v. Immunomedics, Inc., 28 U.S.P.Q. 2d (BNA) 1395, 1396 (D.N.J. 1993), citing Quantum Corp. v. Tandon Corp., 940 F.2d 642, 643 (Fed. Cir. 1991). See also Laitram Corp. v. Hewlett-Packard Co., 791 F. Supp. 113, 116–18 (E.D. La. 1992).

721. See, e.g., In re Innotron Diagnostics, 800 F.2d 1077, 1084–86 (Fed. Cir. 1986) ("The district court noted cases reflecting the now-standard practice of separating for trial patent issues and those raised in an antitrust counterclaim.").

722. See Paine, Webber, Jackson & Curtis v. Merrill Lynch, Pierce, Fenner & Smith, 587 F. Supp. 1112, 1115 (D. Del. 1984). See also Avia Group Int'l, Inc. v. Nike, Inc., 22 U.S.P.Q. 2d (BNA) 1475, 1477 (D. Or. 1991).

723. See, e.g., Haney v. Timesavers, Inc., 26 U.S.P.Q. 2d (BNA) 1159, 1160 (D. Or. 1992) (one-week hiatus between phases); Armstrong Mfg. Co. v. Wright Machine Tool

Jury Trials

One recommendation, intended to improve jurors' comprehension, is to have validity and infringement issues tried separately from willfulness and damages issues, with a sixty- to ninety-day hiatus between the two trials.⁷²⁴ While there may indeed be exceedingly complicated issues involved that make bifurcation, on balance, a better choice, bifurcation does create a piecemeal quality to the trial. This may make it harder for the trier of fact to see the case as a whole. Furthermore, bifurcation may actually detract from trial quality by fostering an emphasis on particular issues, to the detriment of the proper overall focus on the fundamental question, Who is right and who is wrong?

Only when there is clearly a separable issue that would control the outcome is it easy to determine that juror comprehension would best be served by bifurcating the trial.

3. Consider trying one major issue at a time, whether or not there has been bifurcation.⁷²⁵ While it is probably still acceptable to try infringement prior to validity if the court so desires, trying infringement first and then trying validity only if there is a finding of infringement, a proposal from the late 1980s,⁷²⁶ appears untenable as a matter of law in light of the Supreme Court's 1993 ruling in *Cardinal Chemical Co. v. Morton International, Inc.*⁷²⁷ Both issues must be dealt with. The purpose is to get rid of invalid patents.

Other issues may also lend themselves to separate consideration. For example, jurors may benefit from being able to (a) consider different patents separately, (b) consider different claims of the same patent separately, or (c) separate method claims from apparatus claims.

4. Precharge the jury, explaining legal and technical terms that will be used during the trial.⁷²⁸ Define such legal terms as obvi-

Co., 22 U.S.P.Q. 2d (BNA) 1960 (D. Or. 1992) (two-week hiatus between phases); Laitram, 791 F. Supp. at 118 (no hiatus).

724. Cohn, *supra* note 716, at 4. To protect against losing some jurors in the course of the trials, Judge Cohn recommends starting with ten jurors and requiring a unanimous verdict of six at a minimum. *Id*.

725. SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1132 n.14 (Fed. Cir. 1985); Schwarzer, *Reforming Jury Trials, supra* note 717, at 595; Berdon, *supra* note 716, at 197. Judge Cohn believes it is better, if agreement can be reached, to have a bellwether trial on particular issues, with the result defining the conclusion on the separated issues. Cohn, *supra* note 717, at 4.

726. Howard T. Markey, On Simplifying Patent Trials, 116 F.R.D. 369 (1987).

727. 113 S. Ct. 1967, 26 U.S.P.Q. 2d (BNA) 1721, 1729-30 (1993).

728. SRI Int'l, 775 F.2d at 1131.

ousness, anticipation, and *infringement* (see the Plain English instructions in the Appendix). It is recommended that jurors hear about these terms in preliminary instructions, receive them in writing, and keep the written versions as a reference source to enhance their comprehension of the legal instructions.

5. Impose fair and reasonable time limits after consulting with counsel.⁷²⁹ Allow each side a set number of hours to use as it sees fit for all of its direct examination and cross-examination and hold each side to the time limit.⁷³⁰

6. *Limit the number of expert witnesses*.⁷³¹ Multiple experts should not cover the same ground, especially when one expert corrects mistakes of another. In my experience, multiple experts lead to more confusion

7. Use jury questionnaires to aid attorneys in conducting voir dire. Members of the venire can complete the questionnaires and return them to the judge and lawyers before oral voir dire begins.⁷³² Some judges also permit attorney-conducted voir dire, which can give attorneys the opportunity to communicate directly with the jurors and to consider their rapport with particular jurors as a factor in their use of peremptory challenges. Particularly when the issues are technically and legally complex, expanded voir dire is the best guarantee of able jurors and a fair trial. Furthermore, the more the trial attorney knows about the jurors, the better he or she can teach them.

8. Use a nonrandom selection process for seating jurors from the randomly selected venire.⁷³³ One method that has been used is for the judge, following voir dire of the venire, to select a sufficient number of prospective jurors based on criteria relevant to the case, meet in chambers with counsel to discuss the jurors, rule on challenges on the record, and seat the selected jurors.⁷³⁴ While an "extra-

729. Schwarzer, Reforming Jury Trials, supra note 716, at 578–79.

732. *Id.* at 581. Use of questionnaires allows screening for cause in advance. Cohn, *supra* note 716, at 4.

733. Id. at 580. Challenges for cause and peremptory challenges should be retained. Id.

734. Schwarzer, *Reforming Jury Trials, supra* note 716, at 581. Another method, again assuming consent, is to allow counsel for each side to select half the necessary jurors from the venire and then allow opposing counsel to challenge specific selections. *Id.*

^{730.} Id. at 579.

^{731.} Id. at 578.

qualified jury" presents some advantages, there are drawbacks to this approach, since any nonrandom selection criterion is likely to create a biased jury. Unfortunately, the nature of the bias may be difficult to detect. (Consider, for example, the use of "death qualifying" questions for potential jurors in criminal cases in which the prosecutors intend to ask for the death penalty. Research has demonstrated that jurors who make the grade (i.e., who would be morally comfortable deciding to put someone to death) are also far more likely than those who do not to convict the accused during the guilt/innocence phase of the trial.⁷³⁵)

9. Encourage the use of visual aids, including charts, diagrams, maps, enlarged photographs, models, and videotapes.⁷³⁶

10. Consider mounting photographs of each witness on a board in the courtroom to aid the jurors in remembering testimony.⁷³⁷

11. Refuse to admit marginally probative evidence that is most likely to confuse jurors.⁷³⁸ As articulated by Judge Schwarzer:

[T]he judge should not receive more written material than any juror could read and absorb within an hour or two. For what is the point of exhibits jurors will not read? Instead, summaries and excerpts should be used as much as possible, and for those exhibits that must be received in their entirety, jurors should be given finding aids to help them locate what they need during deliberations.⁷³⁹

12. Use "plain English."740

735. Donald N. Bersoff, Social Science Data and the Supreme Court: Lockhart as a Case in Point, 42 Am. Psychologist 52–58 (1987); Samuel R. Gross, Determining the Neutrality of Death-Qualified Juries: Judicial Appraisal of Empirical Data, 8 Law & Hum. Behav. 7–30 (1984); Craig Haney ed., Special Issue on Death Qualification, 8 Law & Hum. Behav. 1–196 (1984); Lockhart v. McCree, 476 U.S. 162 (1986); James Luginbuhl & Kathi Middendorf, Death Penalty Beliefs and Jurors' Responses to Aggravating and Mitigating Circumstances in Capital Trials, 12 Law & Hum. Behav. 263–81 (1988); Rick Seltzer et al., The Effect of Death Qualifications on the Propensity of Jurors to Convict: The Maryland Example, 29 How. L.J. 571–607 (1986); Welsh S. White, The Constitutional Invalidity of Convictions Imposed by Death-Qualified Juries, 58 Cornell L. Rev. 1176–1225 (1973).

736. SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1131 (Fed. Cir. 1985); Schwarzer, *Reforming Jury Trials, supra* note 716, at 588.

737. Schwarzer, Reforming Jury Trials, supra note 716, at 589.

738. SRI Int'l, 775 F.2d at 1131.

739. Schwarzer, Reforming Jury Trials, supra note 716, at 590.

740. Id. at 588.

13. Allow the jurors to take notes.⁷⁴¹ One concern with allowing the jurors to take notes is that this might empower the good note takers during deliberations. Even so, it is better to allow the jurors to take notes.

14. Avoid long side-bar conferences and avoid excusing the jury from the courtroom.⁷⁴² Some methods for achieving these goals are requiring that exhibits be marked before trial, ruling on exhibits before the trial begins, requiring a day's notice of witnesses to be called and documents to be used, and requiring objections and other legal matters to be raised outside of regular trial hours.⁷⁴³

15. Shield the jury from unnecessarily lengthy or complicated foundation laying.⁷⁴⁴

16. Provide an exhibit notebook for each juror from each side. Notebooks should contain a copy of the patent in suit and a copy of the principal exhibits.⁷⁴⁵ The notebook could also contain copies of the fact stipulations, the preliminary instructions, lists of witnesses, and a glossary of technical terms.⁷⁴⁶

17. Allow the jurors to ask questions during the trial.⁷⁴⁷ Caution jurors, at the beginning of the case, to ask questions only for clarification and not to ask questions to explore theories of their own. The judge must screen the questions, and the questions must be an-

741. SRI Int'l, 775 F.2d at 1132 n.14; Cohn, supra note 716, at 4–5; Schwarzer, *Reforming Jury Trials, supra* note 716, at 590–91 ("The judge should instruct that each juror's notes are only for his or her personal use and should not be read or given to anyone else."). See generally Larry Heuer & Steven D. Penrod, *Juror Notetaking and Question Asking During Trials: A National Field Experiment*, 18 Law & Hum. Behav. 121 (1994) (reporting on the results of a 160-trial survey).

742. Cohn, *supra* note 716, at 5. As Judge Cohn explains, "Jurors do not like it when they do not understand what is going on."

743. Schwarzer, *Reforming Jury Trials, supra* note 716, at 579; Cohn, *supra* note 716, at 5 ("If difficulty is anticipated with a line of questioning or particular exhibit the judge should be alerted in advance to enable the judge to deal with the matter before the jurors come to the courthouse or after they leave.").

744. SRI Int'l, 775 F.2d at 1131.

745. Cohn, *supra* note 716, at 4. Judge Cohn recommends that the notebook have an index and tabs and be supplemented periodically during the trial. *Id*.

746. Schwarzer, Reforming Jury Trials, supra note 716, at 589.

747. *SRI Int'l*, 775 F.2d at 1132 n.14; Cohn, *supra* note 716, at 3; Schwarzer, *Reforming Jury Trials, supra* note 716, at 591–93. *See generally* Heuer & Penrod, *supra* note 741.

swered by the judge or by the witness.⁷⁴⁸ In my opinion, as long as the judge filters the questions, there are no drawbacks, only advantages, for juror comprehension in allowing these questions. The judge must screen the questions for sense without knowing from whom they came. Questions from jurors can clarify major misunderstandings. Even if these questions function as "tea leaves" for the lawyers, no harm is done. In fact, hearing the questions may enable the lawyers to improve the comprehensibility of their presentations.

18. Allow jurors to discuss the evidence with one another as the trial progresses.⁷⁴⁹ This is a particularly radical suggestion which will dramatically change the nature of the trial. In effect, deliberations are ongoing, instead of limited to the trial's end. While this approach might enhance juror comprehension, especially if jurors are permitted to ask questions to resolve any problems that might arise from these discussions, it can create risks. The most significant risk is that jurors may reach a decision too soon, before all the relevant evidence is presented.

19. Grant reasonable jury requests to have testimony read back.⁷⁵⁰

20. Allow each side to provide periodic summations that are expository and not argumentative.⁷⁵¹ Such an approach can help to enhance juror comprehension by enabling attorneys to more quickly address ambiguities that they believe have developed during the trial. However, important questions remain about how best to monitor these expository summations so that they serve comprehension purposes only and are not used by the attorneys to argue their case.

21. Tell counsel to remind their witnesses that answers should be directed to the jurors. As Judge Cohn stated, "Too often lawyers and

748. Judge Schwarzer further recommends that jurors be told "that the questions will be subject to objections by counsel, that the court may rule them out of order with or without objection, and that [the jurors] are to draw no inferences from such rulings." Schwarzer, *Reforming Jury Trials, supra* note 716, at 593.

^{749.} Id. at 593–94.

^{750.} Id. at 594.

^{751.} SRI Int'l, 775 F.2d at 1132 n.14; Schwarzer, *Reforming Jury Trials, supra* note 716, at 595–96.

witnesses appear to be oblivious of the fact that it is the jurors who are the important listeners and viewers and not the judge."⁷⁵²

The Jurors' Role

While some commentators believe that the job of the trial court is to ensure that a jury does no more than decide disputed factual questions,⁷⁵³ the reality is that trial courts often allow a patent jury to resolve legal questions on the way to the jury's verdict.⁷⁵⁴

One question of law that cannot be decided by a jury is claim construction.⁷⁵⁵ It is the court's obligation to construe the meaning of claim language. After considering the evidence, which may include extrinsic evidence, the court must pronounce as a matter of law the meaning of the claim language. This pronouncement ordinarily can be done in the jury instructions, but it may also be done in the context of dispositive motions. And courts must find new techniques for dealing with this challenge. These might include requesting expert affidavits or even testimony prior to trial to help the court decide on claim construction.

If the trial court wants or is willing to restrict the jury's decisionmaking role to resolving disputed factual issues relating to a legal claim, then the court, *inter alia*,

- 1. may order a separate and prior⁷⁵⁶ nonjury trial of the inequitable conduct defense;⁷⁵⁷
- 2. may order a concurrent trial of the inequitable conduct defense (i.e., nonjury inequitable conduct defense trial held in

752. Cohn, *supra* note 716, at 5. Schwarzer, *Reforming Jury Trials, supra* note 716, at 580 ("Jurors will probably be more attentive when a witness looks at them while testifying.").

753. See, e.g., remarks of Professor Rochelle Dreyfuss at the 11th Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, *To What Extent Must Juries Be Used in Patent Cases?*, 153 F.R.D. 177, 245 (1993).

754. See generally Markey, supra note 726, at 371–72. See also Jurgens v. McKasy, 927 F.2d 1552, 1557 (Fed. Cir.), cert. denied, 112 S. Ct. 281 (1991).

755. Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995), cert. granted, No. 95-26 (Sept. 28, 1995).

756. Ordering a separate nonjury trial subsequent to a jury trial is also possible. Such a procedure might be useful if the court found that a factual issue in dispute relating to a legal claim was intertwined with the equitable defense. *See generally* Mag Instrument, Inc. v. J. Baxter Brinkman Corp., 123 F.R.D. 543, 546–47 (N.D. Tex. 1988).

757. Gardco Mfg., Inc. v. Herst Lighting Co., 820 F.2d 1209, 1211–13 (Fed. Cir. 1987). See also Paragon Podiatry Lab. v. KLM Lab., 984 F.2d 1182, 1190 (Fed. Cir. 1993).
the morning; other issues tried to the jury in the afternoon);⁷⁵⁸

- 3. may order a separate and prior nonjury trial of the equitable defenses of laches and equitable estoppel;⁷⁵⁹ or
- 4. may order a separate and prior nonjury trial of the equitable defense of patent misuse.⁷⁶⁰

In addition to withholding the equitable defenses from the jury, the court may want, or be willing, to keep the purely legal issues from the jury. The Federal Circuit has characterized many of the issues that routinely arise in patent cases as follows:

- 1. Questions of law:
 - enablement,⁷⁶¹
 - indefinite claiming,⁷⁶²
 - claim construction,⁷⁶³
 - prosecution history estoppel,⁷⁶⁴
 - implied license,⁷⁶⁵ and
 - repair, not reconstruction.⁷⁶⁶

758. Avco Corp. v. PPG Indus., Nos. 90-10316-y, 90-10688-y (D. Mass. 1993).

759. A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1028 (Fed. Cir. 1992) ("As equitable defenses, laches and equitable estoppel are matters committed to the sound discretion of the trial judge"). *See generally* Dewey Elec. Corp. v. Montage, Inc., 117 F.R.D. 73 (M.D. Pa. 1987).

760. In re Yarn Processing Patent Validity Litig., 472 F. Supp. 170 (S.D. Fla. 1979).

761. Morton Int'l, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1469 (Fed. Cir. 1993); Fiers v. Ravel, 984 F.2d 1164, 1171 (Fed. Cir. 1993); Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1573 (Fed. Cir. 1992); Newman v. Quigg, 877 F.2d 1575, 1581 (Fed. Cir. 1989), cert. denied, 495 U.S. 932 (1990).

762. North Am. Vaccine v. American Cyanamid Co., 7 F.3d 1571, 1579 (Fed. Cir. 1993), *cert. denied*, 114 S. Ct. 1645 (1994); Stiftung v. Renishaw PLC, 945 F.2d 1173, 1181 (Fed. Cir. 1991); Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986).

763. Texas Instruments v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1175 (Fed. Cir. 1993); Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1570 (Fed. Cir. 1992).

764. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 952 (Fed. Cir. 1993).

765. Met-Coil Sys. Corp. v. Korners Unlimited, Inc., 803 F.2d 684, 687 (Fed. Cir. 1986).

766. Porter v. Farmers Supply Serv., Inc., 617 F. Supp. 1175, 1185 n.6 (D. Del. 1985), *aff'd*, 790 F.2d 882 (Fed. Cir. 1986). *Cf.* Lummus Indus., Inc. v. D.M. & E. Corp., 862 F.2d 267 (Fed. Cir. 1988).

2. Questions of fact:

- utility,⁷⁶⁷
- novelty (anticipation),⁷⁶⁸
- an original inventor,⁷⁶⁹
- abandonment,⁷⁷⁰
- inadequate description,⁷⁷¹
- best mode,⁷⁷²
- literal infringement,⁷⁷³
- doctrine of equivalents,^{773a}
- reverse doctrine of equivalents,⁷⁷⁴
- lost profits,⁷⁷⁵
- reasonable royalty,⁷⁷⁶ and

767. Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1571 (Fed. Cir. 1992); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1268 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1030 (1987).

768. Westvaco Corp. v. International Paper Co., 991 F.2d 735, 746 (Fed. Cir. 1993); Standard Havens Prods. v. Gencor Indus., 953 F.2d 1360, 1367 (Fed. Cir. 1991), *cert. denied*, 113 S. Ct. 60 (1992); Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir.), *cert. denied*, 493 U.S. 853 (1989); Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 619 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985).

769. Daley v. Wiltshire, 293 F.2d 677, 680 (C.C.P.A. 1961); Beadle v. Rosenwald, 206 F.2d 928, 929 (C.C.P.A. 1953). Given that New England Braiding Co. v. A.W. Chesterton Co. (970 F.2d 878, 883 (Fed. Cir. 1992)) suggests that section 102(f) includes obviousness, this issue may be (in part) a question of law based on underlying questions of fact.

770. Electric Storage Battery Co. v. Shimadzu, 307 U.S. 5, 15 (1939).

771. Wang Lab., Inc. v. Toshiba Corp., 993 F.2d 858, 867 (Fed. Cir. 1993); *In re* Hayes Microcomputer Prods. Patent Litig., 982 F.2d 1527, 1533 (Fed. Cir. 1992).

772. Engel Indus., Inc. v. Lockformer Co., 946 F.2d 1528, 1531 (Fed. Cir. 1991); Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1578 (Fed. Cir. 1991).

773. Texas Instruments v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1172 (Fed. Cir. 1993); Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1570 (Fed. Cir. 1992).

773a. Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc., 35 U.S.P.Q. 2d (BNA) 1641, 1648 (Fed. Cir. 1995).

774. Polaroid Corp. v. Eastman Kodak Co., 789 F.2d 1556, 1573 (Fed. Cir.), *cert. denied*, 479 U.S. 850 (1986); SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1125 (Fed. Cir. 1985).

775. SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 926 F.2d 1161, 1164 (Fed. Cir. 1991).

776. Id. at 1164.

Jury Trials

• willful infringement.⁷⁷⁷

- 3. Questions of law that are based on underlying questions of fact:
 - statutory subject matter,⁷⁷⁸
 - nonobviousness,⁷⁷⁹
 - section 102(b) on-sale bar,⁷⁸⁰
 - section 102(b) public-use bar,⁷⁸¹
 - section 102(b) printed publication bar,⁷⁸² and
 - prior inventor.⁷⁸³

Form of Verdict

The choice of the form of verdict is left to the trial court's sound discretion.⁷⁸⁴ The form of verdict must be agreed on before the trial begins.⁷⁸⁵

If the court chooses to illuminate the jury's decision making, the court will use a special verdict⁷⁸⁶ or a general verdict accompanied by

777. American Medical Sys. v. Medical Eng'g Corp., 6 F.3d 1523, 1530 (Fed. Cir. 1993), *cert. denied*, 114 S. Ct. 1647 (1994); State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1581 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

While willfulness is clearly a question of fact, since it is only relevant as a possible basis for awarding enhanced damages, which is discretionary with the court (*see supra* text accompanying notes 634–40), there may be no right to a jury trial on this issue. *See, e.g.*, Laitram Corp. v. Hewlett-Packard Co., 791 F. Supp. 113, 116 (E.D. La. 1992).

778. Arrhythmia Research Technology v. Corazonix Corp., 958 F.2d 1053, 1055 (Fed. Cir. 1992).

779. Miles Lab., Inc. v. Shandon, Inc., 997 F.2d 870, 877 (Fed. Cir. 1993), cert. denied, 114 S. Ct. 943 (1994); Jurgens v. McKasy, 927 F.2d 1552, 1557 (Fed. Cir.), cert. denied, 112 S. Ct. 281 (1991); Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566–68 (Fed. Cir.), cert. denied, 481 U.S. 1052 (1987).

780. KeyStone Retaining Wall Sys. v. Westrock, Inc., 997 F.2d 1444, 1451 (Fed. Cir. 1993); Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 852 (Fed. Cir. 1991), *cert. denied*, 112 S. Ct. 2957 (1992); Sonoscan, Inc. v. Sonotek, Inc., 936 F.2d 1261, 1263 (Fed. Cir. 1991).

781. Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 549 (Fed. Cir. 1990).

782. Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 936 (Fed. Cir.), cert. denied, 498 U.S. 920 (1990).

783. Price v. Symsek, 988 F.2d 1187, 1190 (Fed. Cir. 1993).

784. Weinar v. Rollform, Inc., 744 F.2d 797, 809 (Fed. Cir. 1984), cert. denied, 470 U.S. 1084 (1985).

785. Cohn, *supra* note 716, at 4. Judge William W Schwarzer states that having the form of verdict drafted before the pretrial conference helps to focus the issues for trial. Schwarzer, *Reforming Jury Trials, supra* note 716, at 578.

interrogatories.⁷⁸⁷ A simple general verdict, while acceptable,⁷⁸⁸ is said to be rare in intellectual property cases.⁷⁸⁹

If a general verdict is used, though, Judge Cohn recommends that it be in multiple parts to lead the jury through the principal issues in the case.⁷⁹⁰ Even though such a procedure is not provided for in the Federal Rules of Civil Procedure, the Federal Circuit has approved its use in patent cases.⁷⁹¹

Another form of verdict that has been used in patent cases is one that consists of "instructive interrogatories."⁷⁹² This form of verdict was used in *Railroad Dynamics, Inc. v. A. Stucki Co.*⁷⁹³ In general, such a form of verdict consists of questions that are composed of, or accompanied by, instructions as to who has what burden of proof and other relevant information.⁷⁹⁴

Good verdict forms should take the jurors logically through the case. Plaintiffs usually want very general forms, whereas defendants usually want very detailed forms. Because of the tension between these two positions, it is hard to provide recommendation for good verdict forms. Certainly minimum requirements include careful attention to the use of clear language, the avoidance of leading questions, and the use of unbiased language.

786. Fed. R. Civ. P. 49(a) (1992). See Baumstimler v. Rankin, 677 F.2d 1061, 1071 (5th Cir. 1982) (Use of special interrogatories "accords with the inherent divisional lines between the roles of judge and jury."). See, e.g., Quaker City Gear Works, Inc. v. Skil Corp., 747 F.2d 1446, 1452–53 (Fed. Cir. 1984), cert. denied, 471 U.S. 1136 (1985).

787. Fed. R. Civ. P. 49(b) (1992).

788. Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 720 (Fed. Cir. 1984). *See, e.g.*, Deks v. Atlas Bolt & Screw Co., 14 U.S.P.Q. 2d (BNA) 1077 (Fed. Cir. 1989) (unpublished).

789. Patrick F. Bright et al., *The Written Aspects of Jury Patent Practice, Including Charge Conference Practice, in* Patent Litigation 1993, at 47, 82 (PLI Patents, Copyrights, Trademarks & Literary Property Course Handbook Series No. 376, 1993).

790. Cohn, *supra* note 716, at 4. Judge Cohn believes that a set of special questions keyed to the differences between the parties usually will make a general verdict unnecessary. *Id.*

791. Structural Rubber Prods., 749 F.2d at 720.

792. Berdon, supra note 717.

793. 727 F.2d 1506 (Fed. Cir.), *cert. denied*, 469 U.S. 871 (1984). The instructive interrogatories used in that case can be found at 1521–22. The Federal Circuit's discussion of these interrogatories can be found at 1515–17.

794. Bright et al., supra note 789, at 76.

Instructing the Jurors

It is essential that the jury be adequately instructed on the law it is asked to apply.⁷⁹⁵ The Federal Circuit reviews the adequacy of the jury instructions for prejudicial legal error.⁷⁹⁶

The jury instructions, when read as a whole, must be both legally correct and sufficiently comprehensive to address the factual issues in dispute.⁷⁹⁷ No instruction should be given regarding a proposition of law about which no competent evidence was introduced.⁷⁹⁸ It is the trial court's duty to give meaningful instructions—instructions that can be understood and given effect once the jury resolves the disputed factual issues.⁷⁹⁹

To aid their fellow judges, experienced judges have offered suggestions for instructing the jury, including the following:

1. Give preliminary instructions.⁸⁰⁰ The preliminary instructions must include a description of the patent system, an overview of the rules regarding validity and infringement, an explanation of what the parties agree on and what they disagree on, and some explanation of what the jurors will have to decide.⁸⁰¹

2. Use written instructions and allow the jury to read along with the judge and to take a copy into the jury room.⁸⁰² Tape-recording the oral charge and providing a copy of the tape to the jury is another option.⁸⁰³

3. Consider giving the substantive instructions at the close of evidence and before the arguments.⁸⁰⁴

795. See generally Railroad Dynamics, Inc. v. A. Stucki Co., 727 F.2d 1506, 1515 (Fed. Cir. 1984).

796. Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1563 (Fed. Cir. 1993), cert. denied, 114 S. Ct. 1540 (1994).

797. Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 853–54 (Fed. Cir. 1991), cert. denied, 112 S. Ct. 2957 (1992).

798. DMI, Inc. v. Deere & Co., 802 F.2d 421, 429 (Fed. Cir. 1986).

799. Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 723 (Fed. Cir. 1984).

800. Schwarzer, *Reforming Jury Trials, supra* note 716, at 583; William W Schwarzer, *Communicating with Juries: Problems and Remedies*, 69 Cal. L. Rev. 731, 755 (1981) [hereinafter Schwarzer, *Communicating with Juries*].

801. Cohn, supra note 716, at 4.

802. Id. at 5; Schwarzer, Communicating with Juries, supra note 800, at 756.

803. Schwarzer, Reforming Jury Trials, supra note 716, at 585.

804. *Id.* Judge Schwarzer advises that the jury be briefly instructed again after the closing arguments regarding their duties. *Id.*

4. Use instructions that integrate the relevant law with relevant facts. 805

5. As much as possible, avoid legal terminology.⁸⁰⁶

Model Patent Jury Instructions

Model jury instructions serve as a useful starting point for drafting instructions for a specific case.⁸⁰⁷ The following have written or collected model jury instructions for patent cases:

- the American Intellectual Property Law Association,⁸⁰⁸
- the Fifth Circuit,⁸⁰⁹
- the Ninth Circuit,⁸¹⁰
- the Eleventh Circuit,⁸¹¹
- the U.S. District Court for the District of Delaware,⁸¹² and
- Duane Burton.⁸¹³

A brief perusal of these proposals shows wide disparity among them. I offer, in the Appendix, some proposed instructions for issues

805. Schwarzer, Communicating with Juries, supra note 800, at 744-75.

806. Edward J. Devitt, Ten Practical Suggestions About Federal Jury Instructions, 38 F.R.D. 75, 76–77 (1966); Schwarzer, Communicating with Juries, supra note 800, at 743–44. See generally Robert P. Charrow & Veda R. Charrow, Making Legal Language Understandable: A Psycholinguistic Study of Jury Instructions, 79 Colum. L. Rev. 1306 (1979).

Words to avoid include *plaintiff*, *defendant*, *preferred embodiment*, *inference*, analogous field, burden of proof, and accused device. Robert C. Morgan & Richard G. Gervase, Jury Instructions in Patent Cases: General Considerations for Their Preparation and Use, in Jury Trials in Patent and High-Tech Intellectual Property Litigation (American Conference Institute 1994).

807. Devitt, supra note 806, at 77.

808. American Intellectual Property Law Association, Federal Litigation Committee, Guide to Jury Instructions in Patent Cases (1990).

809. Fifth Circuit Pattern Jury Instructions (Civil Cases) (1994).

810. Ninth Circuit Model Civil Jury Instructions (1993).

811. Eleventh Circuit Pattern Jury Instructions (Civil Cases) (1990).

812. Uniform Jury Instructions for Patent Cases in the United States District Court for the District of Delaware (1993). These instructions have not been adopted by the court as standard instructions.

813. 1 Duane Burton, Jury Instructions in Intellectual Property Cases, ch. 20 (1978, rev. 1993). This is a collection of instructions that were given in a number of cases.

that commonly arise in patent cases. 814 These instructions, which are based on the 1993 Delaware instructions, have been written in "plain English." 815

814. These instructions incorporate the relevant changes made by the GATT-implementing legislation.

815. Research by psycholinguists indicates that "[t]he use of legal jargon, as well as the use of all unfamiliar words in jury instructions, is probably responsible for causing confusion and for increasing the likelihood that jurors will misapply the law." Amiram Elwork et al., Juridic Decisions: In Ignorance of the Law or in Light of It?, 1 Law & Hum. Behav. 163, 165 (1977). Other factors identified by Elwork et al. as important for enhancing juror comprehension are use of concrete words, avoidance of homonyms, avoidance of negatively modified words, simple grammar, and good organization of ideas. See also Robert P. Charrow & Veda R. Charrow, Making Legal Language Understandable: A Psycholinguistic Study of Jury Instructions, 79 Colum. L. Rev. 1306 (1979). As Charrow and Charrow noted, "There has been a growing concern in recent years regarding the inability of lay persons to understand legal language. This concern has generated a movement to require legal documents in 'plain English."" 79 Colum. L. Rev. at 1306. See also Amiram Elwork et al., Making Jury Instructions Understandable (1982); J. Alexander Tanford, The Law and Psychology of Jury Instructions, 69 Neb. L. Rev. 71 (1990); J. Alexander Tanford, Law Reform by Courts, Legislatures and Commissions Following Empirical Research on Jury Instructions, 25 Law & Soc'y Rev. 155 (1991).

Appendix "Plain English" Jury Instructions

1. Patent Infringement

Here, the patent owner, makes a complaint. The one who makes the complaint is called the "plaintiff." So, in this case, the patent owner is the plaintiff. The person accused of infringement, in this case, is called the "defendant." The defendant must defend against the complaint.

You are here to decide whether the defendant, Corporation Z, has infringed the plaintiff's, Corporation X's, patent. A patent is said to be infringed if someone makes, uses, offers to sell, sells, or imports what is covered by the patent, without permission. "Without permission" means without the patent owner's permission or without other legal authority.

You must figure out whether or not the patent has been infringed. To figure out whether or not this patent has been infringed, you must rely on the patent claims. The patent claims are the numbered paragraphs at the end of the patent.

The claims define what the invention is. The language of the claims is often highly technical. The intent of the writers is to convey to other people in the field just what the inventor claims as his or her invention. I will tell you the proper meaning of the claim language. That is my duty. It is your duty as jurors to accept the meaning I tell you.

Claims are like the deed to a piece of land. The claims, just like a deed, define the boundaries of the property. Everything inside the boundaries belongs to the patent owner.

A claim also can be thought of as a recipe. There are claims that are like the apple pie itself and other claims that are like the instructions for how to prepare the apple pie. The claims that describe the apple pie, in terms of its ingredients, such as apples and crust, are called "apparatus claims." The claims that are like the instructions for how to make the pie are called "method claims."

According to the law, only the claims of the patent can be infringed. Other parts of the patent application, such as the written description of the invention or drawings of the invention, are not the bases for judging infringement.

Each numbered claim must be considered one at a time. If you find that even one claim is infringed, then you must find in favor of the

plaintiff, Corporation X. If even one claim is infringed, then the patent is infringed.

2. Dependent and Independent Claims

There are two different kinds of claims in the patent. The first type is called an independent claim. Independent claims can stand alone. You do not have to read any other claim first in order to know what an independent claim is about.

The second type, dependent claims, do not stand alone. Dependent claims refer to one or more other claims. Dependent claims incorporate whatever the other claim or claims say. You have to read at least the claim referred to in order to understand the meaning of the dependent claim. So, to know what a dependent claim means, you must read the dependent claim and the other claim or claims it refers to.

3. Ways to Infringe a Patent

Patent owners receive certain rights when a patent is granted. With a patent comes the right to prevent others from making, using, offering for sale, selling, or importing the patented invention. One way patent owners protect this right, if they believe it has been violated, is by filing a lawsuit for patent infringement, like this one.

The law says that anyone who makes, uses, offers to sell, sells, or imports any patented product, without the patent owner's permission or other legal authority, infringes the patent.

There are several ways to infringe a patent. Three of these are:

(1) Direct infringement, which is making, using, offering to sell, selling, or importing the patented invention.

(2) Intentionally inducing others to directly infringe a patent. This is called inducing infringement.

(3) Contributing to the infringement of a patent by offering to sell or selling an item that is a significant part of the invention, so that the buyer directly infringes the patent. This is called contributory infringement. The offeror or seller must know that the part he or she is offering or selling is designed specifically for infringing the patented invention and is not a common object, suitable for non-infringing uses.

4. Novelty

According to the law, you, as jurors, must decide whether or not the invention was "new" in light of the "prior art." Here is what being "new" and "prior art" mean in patent law:

Newness means that the invention, as it is, with all of its parts, cannot be found in any single piece of prior art.

Prior art includes things, prior to the invention, that were publicly known, or used in a publicly accessible way in this country, or that were patented or described in a publication in any country.

According to the law, inventors who believe their inventions are new, but who are incorrect in this belief, are not holders of valid patents. The patent is not valid even if the inventor did not recognize or appreciate that his or her invention had already been invented or already existed. If a specific device already exists with all of the same parts as the patented invention, then the patent is not valid.

By definition, prior art is publicly available. Therefore, if the inventor fails to realize that his or her invention is not truly new, this is no excuse. If it already exists, and is publicly available, the wouldbe invention is not patentable. If a patent claim was granted for something that already existed in the prior art, then the patent is not valid, even if the inventor was not aware of the prior art.

You must answer this question about each patent claim before you: Is the patent claim invalid because the invention was not new? If you find that the invention, as it is described in a numbered claim of the patent, already existed with all of its features in a single piece of prior art, then you must find the patent claim invalid. On the other hand, if you find that the invention was truly new and did not exist in the prior art, then the invention passes the newness test and the patent claim is not invalid for this reason.

5. Obviousness

For an invention to be worthy of a patent, it must have been not obvious. Something is not obvious if other skilled people working in the same field, looking at the same problem, would not have come up with the inventor's solution. Then the inventor has done something that is called "non-obvious."

The law takes into account the experiences of the people trying to solve the problem and says that an invention must not have been obvious to what are called "hypothetical people of ordinary skill in the art." This phrase refers to hypothetical people working in the field of the invention at the time the invention was made. This person is called "hypothetical" because, under the law, the hypothetical person knows every single piece of prior art.

For example, if the invention is in the field of biology, the hypothetical people of "ordinary skill in the art" are biologists. They are

people with training in biology. They are not judges. Nor are they geniuses. They are people of ordinary skill in their art.

The question you must answer is this: "Would the invention have been obvious to a person of ordinary skill in the art at the time it was invented?" If it would have been obvious, then it did not merit a patent and you should find the patent invalid. If it would not have been obvious, then the invention passes the test for obviousness and cannot be found invalid for this reason.

Here are the things you must ask in trying to answer the question about obviousness:

- 1. Think about what was done before the invention in this case. What was the prior art like? Think about the similarities and the differences between the prior art and the patent claims.
- 2. You should be able to say what you think the differences are between each claim of the patent and the prior art.
- 3. You should be able to describe what the level of "ordinary skill in the art" was at the time the invention was made.

By following these steps and considering the prior art, differences between the patent claims and the prior art, and the level of "ordinary skill in the art," you will be well on the way to answering the question of whether the invention of a patent claim would have been obvious or not.

Other, additional factors will help you to complete your answer to the obviousness question, "Was the invention obvious to a hypothetical person of ordinary skill in the art at the time it was invented?" Ask yourselves these questions:

Was the invention itself a commercial success? If it was, this tends to support the idea that the invention was not obvious.

Did the invention meet a need that people had felt for a long time? If it did, this tends to support the idea that the invention was not obvious.

Did others try, but fail, to solve the same problem? If they did, this tends to support the idea that the invention was not obvious.

Did other people get licenses under the patent and pay royalties to the inventor so that they would be able to use the invention? If they did, this tends to support the idea that the invention was not obvious.

Did other people come up with the same or similar inventions prior to or at about the same time? If they did, this tends to support the idea that the invention was obvious.

Annotated Bibliography

Specialized Reporter and Newsletter

The Bureau of National Affairs publishes The United States Patents Quarterly (USPQ). USPQ, which dates back to 1929, reports cases and decisions relating to patents, trademarks, and copyright law. Many, but not all, of these cases are also reported in the more familiar reporters published by West Publishing Co. Because some patent cases and decisions are published only in USPQ (*see, e.g.,* note 713), it is not uncommon for the parties involved in patent litigation to cite or refer to this reporter system.

In addition, the Bureau of National Affairs publishes BNA's Patent, Trademark & Copyright Journal (PTCJ). PTCJ, published weekly, contains synopses of recent cases, intellectual property legislation, and various association activities.

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- Donald S. Chisum, Patents (originally published 1978, constantly updated). This eight-volume, loose-leaf treatise is a good resource for patent law. It contains a comprehensive treatment of the case law and has a bibliography that exceeds fifty pages.
- Ethan Horwitz & Lester Horwitz eds., Intellectual Property Counseling and Litigation (1988, constantly updated). This fivevolume, loose-leaf treatise includes several chapters on patent law written by leading practitioners.
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- William C. Robinson, The Law of Patents for Useful Inventions (1890). This three-volume treatise contains the best theoretical treatment of patent law. It is a good starting place for serious historical research.

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- Ethan Horwitz & Lester Horwitz, Patent Litigation: Procedures & Tactics (1971, constantly updated). This loose-leaf work is designed primarily as a practical guide for patent litigators.
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- Thomas J. Greer, Jr., Writing and Understanding U.S. Patent Claims (1979).
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Emerson Stringham, Patent Claim Drafting (2d ed. 1952).

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Code of Federal Regulations. Chapter 1 of Title 37 contains the PTO's regulations.

Manual of Patent Examining Procedures (6th ed. 1995). This work, intended as a handbook for patent examiners, is a comprehensive and annotated treatment of patent examining procedures.

Journals

Although scholarly articles relating to patent law occasionally appear in general, school-affiliated law reviews, patent law and patent practice articles are more commonly found in specialized journals. Some of these journals are the following:

- Journal of the Patent and Trademark Office Society, which was first published in 1918.
- American Intellectual Property Law Association Quarterly Journal, which was first published in 1973 (under the title American Patent Law Association Quarterly Journal).
- IDEA, which was first published in 1957 (under the title Patent, Trademark, and Copyright Journal of Research and Education).
- Journal of Proprietary Rights, which was first published in 1988.
- High Technology Law Journal, which was first published in 1986 by Boalt Hall School of Law, University of California.
- Harvard Journal of Law & Technology, which was first published in 1988.
- Albany Law Journal of Science & Technology, which was first published in 1991.

Regularly Published Proceedings

There are many conferences, lectures, seminars, and continuing legal education programs for the patent bar. Frequently, collections of papers presented at these meetings are published. Three series of such papers are the following:

Course Handbooks series (Practicing Law Institute).

- Developments series (Center for Intellectual Property Law, John Marshall Law School).
- Annual Conference on Intellectual Property (Albany Law School).

Databases

- LEXIS (Mead Data Central, Inc.). LEXIS has two database files that are particularly useful for the patent lawyer:
 - PATENTS, which contains the full text of U.S. patents issued since 1975; and

- IPOMNI, which contains, among other things, patent, trademark, and copyright cases decided by the Supreme Court (since 1850), regional circuit courts of appeals (since 1938), district courts (since 1948), Court of Customs and Patent Appeals (1952–1982), Court of Claims (1960–1982), Claims Court (all), and Federal Circuit (all).
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