

REMEDIES FOR PATENT INFRINGEMENT: A COMPARATIVE STUDY OF U.S. AND CHINESE LAW

GUANGLIANG ZHANG

Abstract

Compared with the long history of U.S. patent law, Chinese patent law is still in its infancy. Nevertheless, there are similarities between the two laws in terms of remedies available for patent infringement. Both provide injunctive relief, damages and provisional rights remedies. Nevertheless, in granting each remedy, there are some differences. China has made consistent efforts to upgrade its patent laws to provide patent owners with adequate remedies. However there is still large room for improvement in the standards for granting preliminary injunctions, and in determining lost profits and reasonable royalties. Additionally, the Supreme Court of China should reconsider the issues of limitations on damages and attorney fees in order to balance the interests of the patent owners and innocent infringers. Unquestionably, the theories and experiences provided by U.S. patent law are good "prior art."

Copyright © 2001 The John Marshall Law School

Cite as 1 J. MARSHALL REV. INTELL. PROP. L. 35

REMEDIES FOR PATENT INFRINGEMENT: A COMPARATIVE STUDY OF U.S. AND CHINESE LAW

GUANGLIANG ZHANG*

I. INTRODUCTION

A patent confers upon its owner the right to exclude others from making, using, offering for sale, or selling its patented invention.¹ Just like any other right, the patent right would mean nothing to the patentee without adequate remedies for infringement in the law. The purposes of remedies are to compensate the patentee for past infringement and to enjoin future infringement.²

The first U.S. Patent Act was passed in May 1790.³ Nearly two centuries later, the first Patent Act of the People's Republic of China was enacted.⁴ These two patent acts, though enacted at different times, have the similar ultimate purpose of promoting the progress of science and the useful arts.⁵ Both laws have provided remedies for patent owners as a legal guarantee for that worthy goal.

During the early 1990's, the United States and China negotiated intellectual property ("IP") issues several times, and reached an important bilateral agreement.⁶ The last two decades of the past century have witnessed the rapid development of China's IP legislation and progress on the enforcement of IP laws. It is well known that the United States has attached great importance to the protection of IP. An analysis of the similarities and differences between the IP systems of the two countries should therefore be an interesting and meaningful topic. This paper will focus on a small part of this extensive topic: the remedies for patent infringement. The main purpose of this paper is to examine the remedies for patent infringement under U.S. law and under Chinese law and to make a comparative study between them.

^{*}Judge, Beijing No. 1 Intermediate People's Court. Judge Guangliang Zhang received an LL.M. in Intellectual Property Law from The John Marshall Law School in June 2001 and is a Ph.D. Candidate at Peking University Law School. The author deeply appreciates the help and direction provided by Professor Janice Mueller while preparing this paper.

¹ 35 U.S.C. § 154 (1994 & Supp. 1999); see also Zhonghua Renmin Gongheguo Fagui Huibian 1979-2001 [Patent Law of the People's Republic of China] art. 11, translated in CHINALAW No. 190 [hereinafter Patent Act of PRC] (providing that "no entity or individual may, without the authorization of the patentee, exploit the patent, that is, make, use or sell the patented product, or use the patented process for production or business purposes").

² Atlas Powder Co. v. Ireco Chems., 773 F.2d 1230, 1232 (Fed. Cir. 1985).

³ United States Patent Act of 1790, Ch. 7, 1 Stat. 109-12 (Apr. 10, 1790).

⁴ Patent Act of PRC, *supra* note 1. The Patent Act of PRC was passed on March 12, 1984. *Id.* The first and second amendments to the law were passed respectively on September 2, 1992 and August 25, 2000. *Id.*

⁵ U.S. CONST. art. I, § 8, cl. 8; see also Patent Act of PRC, supra note 1, art. 1 ("This law is enacted to protect patent rights for invention-creations, to encourage inventions-creations, to foster the spreading and application for inventions-creations, and to promote the progress of science and technology, for meeting the needs of the construction of socialist modernization.").

⁶ Memorandum of Understanding on the Protection of Intellectual Property, January 17, 1992, U.S. P.R.C., 1992 U.S.T. LEXIS 80.

Members of the international community have made consistent efforts to cooperate on IP matters, which is evidenced by a series of international conventions and treaties on IP.⁷ However, it was the World Trade Organization ("WTO") Agreement on Trade-Related Aspects of Intellectual Property ("TRIPS") that set the minimum standards for IP enforcement for all WTO members for the first time.⁸ The United States is an important member of the WTO, and China will eventually become a member as well.⁹ Therefore, this paper will briefly discuss the minimum requirements for remedies under TRIPS and whether the United States and China have met the requirements.

Parts II and III of the paper will review the remedies for patent infringement under U.S. law and Chinese law respectively. Part IV will consist of a comparison between the two laws. The different legal systems and histories of patent laws of the U.S. and China do not make the remedies for patent infringement totally different. In fact, there are many similarities. The U.S. patent law and the courts' decisions have provided patent owners with reliable remedies. While enacting and amending the Patent Act of China, the legislators have "borrowed" some good experiences from foreign patent systems. Though the remedies for patent infringement under Chinese law conform to the minimum requirements provided by TRIPS, the Chinese Supreme Court's Interpretations and more court decisions are needed to construe relatively abstract provisions of the Patent Act. In addition, there is still large room for improvement in the standards for granting preliminary injunctions and determining lost profits and reasonable royalties in the Chinese law. Chinese courts should also reconsider the issues of limitations on damages and attorney fees in order to balance the interests of patent owners and innocent infringers.

II. REMEDIES UNDER U.S. LAW

There are three types of remedies under the U.S. Patent Act: injunctive relief,¹⁰ damages,¹¹ and provisional rights for certain claims.¹²

⁷ See, e.g., Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, as last revised at Paris, July 24, 1971, 828 U.N.T.S. 221; The Patent Cooperation Treaty, June 19, 1970, TIAS 8733, 28 U.S.T. 7645; The WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty, April 12, 1997, 1996 U.S.T. LEXIS 56; Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, as last revised at Stockholm, July 14, 1967, 21 U.S.T. 1583.

⁸ General Agreement on Tariffs & Trade-Multilateral Trade Negotiations: Agreement on Trade-Related Aspects of Intellectual Property Rights, including trade in counterfeit goods, Apr. 15, 1994, 33 I.L.M. 81 [hereinafter TRIPS].

⁹ Sina Net at http://www.sina.com.cn (last visited Feb. 26, 2001). On Feb. 26, 2001 Long Yongtu, the deputy minister of the Economy and Trade Department of PRC and the chief negotiator for the WTO accession negotiation, said that China's accession to the WTO was definite, and the specific time of accession was not important. *Id.* China had finished negotiating with 24 WTO members, including the U.S., by Feb. 24, 2001. *Id.*

¹⁰ 35 U.S.C. § 283 (1994 & Supp. 1998).

¹¹ 35 U.S.C. § 284 (1994 & Supp. 1999).

¹² 35 U.S.C. § 154(d) (1994 & Supp. 1999).

A. Injunctive Relief

From the patentee's point of view, the right to enjoin the alleged infringer from continuing infringing activities is perhaps a more important remedy than compensation for past infringement in the form of damages.¹³ The Patent Act provides that the court "may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable."¹⁴ In patent infringement cases, preliminary injunctions, temporary restraining orders, and permanent injunctions are available to the patentee.

1. Preliminary Injunctions

Courts issue preliminary injunctions to protect the patentee during the pendency of the lawsuit upon a strong showing that certain standards have been met.¹⁵ The standards for preliminary injunctions in patent suits are basically the same as for preliminary injunctions in other types of cases.¹⁶ To obtain a preliminary injunction in a patent infringement suit, the plaintiff must establish: (a) a reasonable likelihood of success on the merits; (b) an irreparable harm; (c) the balance of hardships tipping in the patentee's favor; and (d) a tolerable effect on the public interest.¹⁷

a. Reasonable Likelihood of Success on the Merits

In order to prove a reasonable likelihood of success on the merits, a plaintiff must establish "clear title" to the patent.¹⁸ In *Filmtec Corp. v. Allied-Signal Inc.*, the Court of Appeals for the Federal Circuit ("Federal Circuit") held that when there are serious doubts as to who owns the patented invention, the court should not grant a preliminary injunction.¹⁹

In addition to establishing clear title, the plaintiff must make a "clear showing" that the patent is valid and infringed.²⁰ A patent shall be presumed valid, and the burden of establishing invalidity of the patent, or any claim thereof, shall rest on the party asserting such invalidity.²¹ If the plaintiff is likely to withstand the alleged infringer's validity attacks on the patent and is "reasonably likely" to succeed on the

¹³ ROBERT P. MERGES, PATENT LAW AND POLICY: CASES AND MATERIALS 973 (2d ed. 1997).

¹⁴ 35 U.S.C. § 283.

 $^{^{15}}$ 7 Donald S. Chisum, Chisum on Patents § 20.04, at 659 (2000).

¹⁶ *Id.* at 660.

¹⁷ Samuel K. Lu, The Fundamentals of Preliminary Injunctions, Permanent Injunctions, and Temporary Restraining Orders in Patent Cases, 572 PLI/PAT 169, 175 (1999).

¹⁸ CHISUM, *supra* note 15, §20.04[1][b], at 672.

¹⁹ 939 F.2d 1568 (Fed. Cir. 1991).

²⁰ Atlas Powder Co. v. Ireco Chems., 773 F.2d 1230, 1233 (Fed. Cir. 1985).

²¹ 35 U.S.C. § 282 (1994 & Supp. 1999).

infringement claim, the plaintiff will be held to have met the requirement.²² With respect to the infringement claim, both literal infringement and infringement under the doctrine of equivalents should be considered.²³

b. An Irreparable Harm

In patent suits, irreparable harm has been presumed when the plaintiff has made a clear showing of patent validity and infringement.²⁴ The presumption of irreparable harm "derives in part from the finite term of the patent grant, for patent expiration is not suspended during litigation, and the passage of time can work irreparable harm. The opportunity to practice an invention during the notoriously lengthy course of patent litigation may itself tempt the infringer."²⁵

There are other facts that may support the presumption of irreparable harm. These facts include: (i) the possible loss of the patentee's market share; (ii) the difficulty of determining the potential injuries to the patentee; and (iii) the harm to the patentee's goodwill or reputation.²⁶

The alleged infringer may rebut the presumption of irreparable harm.²⁷ The facts that establish a lack of irreparable harm to the patentee may include: (i) the patentee's undue delay in seeking a preliminary injunction; (ii) the patentee's pattern of granting licenses under the patent, where it may be reasonable to expect that infringement can be compensated by damages; (iii) the patentee's failure to exploit the patented invention; (iv) the alleged infringer's decision to cease the allegedly infringing activities; and (v) the patentee's large market share.²⁸

c. Balance of Hardships Tipping in the Patentee's Favor

Once the patentee establishes the validity and infringement of the patent, the court has considerable discretion in the decision to grant or deny a preliminary injunction.²⁹ To exercise its discretion, the court will balance the relative conveniences and inconveniences to the respective parties, and consider the effect on the public interest.³⁰ As for the date from which the balance of hardships should be viewed, the Federal Circuit implied that it should be the date that the alleged infringer began the infringing activity, rather than the date of the order.³¹

²⁹ CHISUM, supra note 15, § 20.04[1][f], at 729.

 30 Id.

²² Surfco Hawai'i v. Fin Control Systs. Pty, Ltd., No. 00⁻1238, 2000 U.S. App. LEXIS 8705 (Fed. Cir. Apr. 3, 2000).

 $^{^{23}}$ Id.

²⁴ Smith Int'l, Inc. v. Hughes Tool Co., 718 F.2d 1573, 1581 (Fed. Cir. 1983).

²⁵ H.H. Robertson, Co. v. United Steel Deck, Inc., 820 F.2d 384, 390 (Fed. Cir. 1987).

²⁶ Lu, *supra* note 17, at 169.

²⁷ Polymer Techs., Inc. v. Bridwell, 103 F.3d 970, 974 (Fed. Cir. 1996).

 $^{^{28}}$ Lu, supra note 17, at 184.

³¹ Atlas Powder Co. v. Ireco Chems., 773 F.2d 1230, 1232 (Fed. Cir. 1985).

d. Public Interest

Courts often find that there is a strong public interest in the enforcement of patents that are valid and infringed.³² It is very rare that the grant or denial of a preliminary injunction in a patent suit will seriously affect the public interest.³³ However, if the accused invention pertains to health care, the environment, or another area of critical public interest, the public interest factor will play a greater role.³⁴ A two-step analysis is needed to consider the public health or safety interest. The first question is whether the accused product or process is vital to the public health or safety.³⁵ The second question is whether there is an adequate supply of acceptable noninfringing substitutes for the accused product or process if the preliminary injunction is granted.³⁶

None of the four factors discussed above are necessarily decisive, when taken individually.³⁷ The trial court has the discretion to grant or deny the preliminary injunction based on the four factors, and the grant or denial of a motion for a preliminary injunction will not be vacated or reversed on appeal unless the trial court abused its discretion.³⁸

The applicant for a preliminary injunction is required to give a bond, or security, in accordance with Rule 65(c) of the Federal Rules of Civil Procedure, which provides:

[n]o restraining order or preliminary injunction shall issue except upon giving of security by the applicant, in such sum as the court deems proper, for the payment of such costs and damages as may be incurred or suffered by any party who is found to have been wrongfully enjoined or restrained.³⁹

2. Temporary Restraining Orders

The standards for granting temporary restraining orders, like preliminary injunctions, are the same for both patent suits and other suits.⁴⁰ The applicant for a temporary restraining order must also submit a bond, or security, to the court.⁴¹ The trial court may grant a temporary restraining order without written or oral notice to the adverse party or its attorney.⁴²

Rule 65(b) of the Federal Rules of Civil Procedure provides that the applicant for a temporary restraining order must show "by affidavit or by the verified complaint that immediate and irreparable injury, loss, or damage will result to the applicant

³² Lu, *supra* note 17, at 186.

³³ CHISUM, *supra* note 15, § 20.04[1][f][ii], at 740.

³⁴ Id. at 746.

 $^{^{35}}$ Lu, supra note 17, at 188.

 $^{^{36}}$ Id.

³⁷ Chrysler Motors Corp. v. Auto Body Panels of Ohio, Inc., 908 F.2d 951, 953 (Fed. Cir. 1990).

³⁸ Lu, *supra* note 17, at 193.

³⁹ FED. R. CIV. P. 65(c).

⁴⁰ Id.

⁴¹ *Id.*

⁴² FED. R. CIV. P. 65(b).

before the adverse party or that party's attorney can be heard in opposition."⁴³ As an emergency remedy, the term of a temporary restraining order shall not exceed ten days, though that term may be extended by another ten days upon a showing of good cause.⁴⁴ Temporary restraining orders are rarely granted in patent cases.⁴⁵

3. Permanent Injunctions

The Patent Act empowers the court "to grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable."⁴⁶ Article I, section 8, clause 8 of the U.S. Constitution authorizes Congress to award exclusive rights for "limited Times to Authors and Inventors . . . to their respective Writings and Discoveries."⁴⁷ However, the ultimate purpose of awarding those exclusive rights is to "promote the Progress of Science and useful Arts,"⁴⁸ in which a strong public interest is embodied. The value of a patent is the right granted to the patent owner to exclude others from exploiting the patented invention. Therefore, the general rule is that the court will issue an injunction when infringement has been adjudged, absent a sound reason for denying it.⁴⁹

Like the decision to grant or deny a preliminary injunction, the decision to grant or deny a permanent injunction, after a decision on the merits, is within the discretion of the trial court.⁵⁰ Though prevailing patentees are rarely denied permanent injunctions,⁵¹ where an important public interest will be prejudiced, the reason for denying injunctive relief may be compelling.⁵² In *Vitamin Technologists, Inc. v. Wisconsin Alumni Research Foundation,* the court held that concerns for the health of great numbers among the public warranted refusal of an injunction on irradiation of oleomargarine.⁵³ In another case, the court refused to grant an injunction against city operation of a sewage disposal plant, for if the plant closed, raw sewage would flow into Lake Michigan and endanger the public health.⁵⁴

In addition to circumstances where important public interests dictate the denial of permanent injunctions, it is well-settled law that "an injunction shall not issue with respect to any infringing product for whose infringement the patentee has been awarded full compensation."⁵⁵ Once a patentee has been fully compensated by an infringer for the use of an infringing device, a court may not grant an injunction

⁵⁰ Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1564 (Fed. Cir. 1994).

⁵³ Id. at 946.

⁵⁴ Milwaukee v. Activated Sludge, Inc., 69 F.2d 577, 593 (7th Cir. 1934).

⁵⁵ Odetics, Inc. v. Storage Tech. Corp., 14 F. Supp. 2d 785, 788 (E.D. Va. 1998), *affd*, 185 F.3d 1259 (Fed. Cir. 1999).

⁴³ Id.

⁴⁴ Id.

⁴⁵ CHISUM, *supra* note 15, § 20.04[1], at 659-60.

⁴⁶ 35 U.S.C. § 283 (1994 & Supp. 1998).

⁴⁷ U.S. Const. Art. I, § 8, cl. 8.

⁴⁸ Id.

⁴⁹ Richardson v. Suzuki Motor Co., Ltd., 868 F.2d 1226, 1247 (Fed. Cir. 1989).

⁵¹ Lu, *supra* note 17, at 195.

 $^{^{52}}$ Vitamin Technologists, Inc. v. Wis. Alumni Research Found., 146 F.2d 941, 944 (9th Cir. 1944).

preventing the infringer from using or repairing that device.⁵⁶ This rule stems from an implied license that the patent owner grants to the infringer when the infringer pays the patent owner the damages awarded by the court for the infringement.⁵⁷

B. Damages

The U.S. Patent Act provides that "[u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court."⁵⁸ The court "may increase the damages up to three times the amount found or assessed."⁵⁹ Expert testimony may be received by the court "as an aid to the determination of damages or of what royalty would be reasonable under the circumstances."⁶⁰

The goal of damages for patent infringement is to provide full compensation to the patentee.⁶¹ "[A]dequate damages should approximate those damages that will fully compensate the patentee for infringement."⁶² The best approximation of the amount of damages is the amount necessary to restore the owner to the financial position she would have enjoyed had the infringer not engaged in the infringement.⁶³ Under § 284 of the Patent Act, there are three types of damages: basic damages, increased damages, and interest on damage awards.⁶⁴ In addition, the court may award reasonable attorney fees to the prevailing party in exceptional cases.⁶⁵

1. Basic Damages

Basic damages are the actual damages suffered by the patentee. Lost profits and a reasonable royalty are the two methods of determining basic damages in patent infringement cases.⁶⁶ Lost profits are based on the patentee's actual lost profits, proven to result from the infringement. A reasonable royalty method is most commonly used when the patentee's actual lost profits cannot be proven.⁶⁷ Under

⁵⁶ Amstar Corp. v. Envirotech Corp., 823 F.2d 1538, 1549 (Fed. Cir. 1987).

⁵⁷ See Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 344-46 (1961) [hereinafter Aro I]; Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 498 (1964) [hereinafter Aro II]; see also Stickle v. Heublein, Inc., 716 F.2d 1550, 1563 (Fed. Cir. 1983) (showing that the injunction against infringement must be modified to permit use of existing machine possessed by the infringer because the reasonable royalty as to an infringer who is using a machine is, under the circumstances, a flat sum rather than a use-based royalty). Such modification is a license implied in law rather than a compulsory license. *Id.*

⁵⁸ 35 U.S.C. § 284 (1994 & Supp. 1999).

⁵⁹ Id.

⁶⁰ Id.

⁶¹ CHISUM, *supra* note 15, § 20.01, at 7.

⁶² Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc).

⁶³ CHISUM, *supra* note 15, § 20.01, at 7.

⁶⁴ 35 U.S.C. § 284 (1994 & Supp. 1999).

⁶⁵ Id.

⁶⁶ Hartness Int'l, Inc. v. Simplimatic Eng'g Co., 819 F.2d 1100, 1112 (Fed. Cir. 1987).

 $^{^{67}}$ Id.

certain circumstances, the court may also grant a mixed award, using lost profits as a measure for some infringing sales and royalties as a measure for other infringing sales. 68

a. Lost Profits

To recover lost profits, the patentee must show causation. That is, the patentee must show that but for the infringement, the patentee would have made greater sales, charged higher prices, or incurred lower expenses.⁶⁹ In addition to causation, the patentee must establish a reasonable approximation of the amount of lost profits.⁷⁰ In *Rite-Hite Corp. v. Kelley Co.*, the Federal Circuit recognized a foreseeability requirement in addition to the causation requirement.⁷¹ The court held that the balance between full compensation, which is the meaning that the Supreme Court has attributed to § 284 of the Patent Act, and the reasonable limits of liability, encompassed by the general principles of law, could best be viewed in terms of reasonable, objective foreseeability.⁷² In *Rite-Hite*, the Federal Circuit held that the patentee's "lost sales of the ADL-100, a product that directly competed with the infringing product, was reasonably foreseeable."⁷³ There are a number of different methods available to calculate the patentee's lost profits, including: (i) diverted sales, (ii) increased costs, and (iii) price erosion.⁷⁴

i. Diverted Sales

Lost profits based on diverted sales are awarded when the court finds a patentee would have made all, or a portion of, the sales made by the alleged infringer.⁷⁵ A patentee is entitled to all of the sales made by the infringer if the patentee can establish: (1) demand for the patented product; (2) absence of acceptable noninfringing substitutes; (3) manufacturing and marketing capability to exploit the demand; and (4) the amount of the profit the patentee would have made.⁷⁶ These four factors ("Panduit factors"), established by the court in Panduit Corp. v. Stahlin Bros. Fiber Works, Inc.,⁷⁷ have been applied in many patent decisions.⁷⁸

⁶⁸ State Indus. v. Mor·Flo Indus., 883 F.2d 1573 (Fed. Cir. 1989).

⁶⁹ CHISUM, *supra* note 15, § 20.03[1], at 70.

 $^{^{70}}$ Id.

⁷¹ 56 F.3d 1538 (Fed. Cir. 1995) (en banc).

⁷² Id.

⁷³ Id.

⁷⁴ See Minco, Inc. v. Combustion Eng'g, Inc., 95 F.3d 1109, 1118 (Fed. Cir. 1996) ("This court has clarified that adequate damages can include lost profits due to diverted sales, price erosion, and increased expenditures caused by infringement.").

⁷⁵ CHISUM, *supra* note 15, § 20.03[1][b] at 76.

 ⁷⁶ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152 (6th Cir. 1978).
 ⁷⁷ Id.

⁷⁸ PETER S. CANELIAS, PATENT PRACTICE HANDBOOK § 19, at 16 (2000).

(1) Demand for the Patented Product

The patentee must prove a demand for the patented product during the period of infringement. Sales of the patented product or products made by the patented process support the finding of demand.⁷⁹ A substantial number of sales of the infringing product is also evidence of demand for the patented product.⁸⁰ The patentee's commercial success with the patented product is the best evidence of such demand.⁸¹ The infringer's commercial success with the infringing product, especially when the infringer advertised the patented features of the infringing product, can also prove the demand for the patented product, though the patent owner often overlooks this kind of evidence.⁸² In proving the four *Panduit* factors, the demand factor is relatively easy for the patent owner to prove. Few patentees have been denied lost profit damages for failure to prove demand.⁸³

(2) Absence of Acceptable Noninfringing Substitutes

Whether there are acceptable noninfringing substitutes is perhaps the most heavily litigated question in lost profit cases.⁸⁴ In *Standard Havens Products, Inc. v. Gencor Industries, Inc.*, the Federal Circuit summarized the patentee's burden to prove this *Panduit* factor as follows: "to prove that there are no acceptable substitutes, the patent owner must 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."⁸⁵ Acceptable substitutes are those products that offer the key advantages of the patented products but do not infringe.⁸⁶ If a substitute has those advantages for which consumers seek out the patented product, it will be deemed an acceptable substitute. An acceptable substitute need not have all the advantages of the patented product.⁸⁷

The substitute itself should not be infringing. An infringing product of a third party is not an acceptable substitute for the patented product. Its presence in the marketplace does not defeat the patentee's entitlement to lost profit damages.⁸⁸

The substitute should have not only the desired advantages of, but also a comparative price to the patented product.⁸⁹ A substitute that has a disparately higher price than, or possesses characteristics significantly different from the patented product, is not an acceptable substitute.⁹⁰ In order to qualify as an

⁸⁶ Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q.2d (BNA) 1481, 1491 (D. Mass. 1990).

⁸⁸ Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211 (Fed. Cir. 1995).

⁷⁹ State Indus. v. Mor Flo Indus., 883 F.2d 1573, 1578-1579 (Fed. Cir. 1989).

⁸⁰ Slimfold Mfg. v. Kinkead Indus., 932 F.2d 1453, 1458 (Fed. Cir. 1991).

⁸¹ JOHN M. SKENYON ET AL., PATENT DAMAGES LAW & PRACTICE § 2:29, at 47 (1999).

⁸² Id.

⁸³ Id.

⁸⁴ SKENYON, *supra* note 81, § 2:34, at 54.

⁸⁵ 953 F.2d 1360, 1373 (Fed. Cir. 1991).

⁸⁷ SKENYON, *supra* note 81, § 2:35, at 58.

⁸⁹ SKENYON, *supra* note 81, § 2:36, at 59.

⁹⁰ Kaufman Co. v. Lantech, Inc., 926 F.2d 1136, 1142 (Fed. Cir. 1991).

acceptable substitute, the alternative must be available to consumers during the period of infringement.⁹¹

Acceptable substitutes may be products of the defendant or a third party, or they may be the unpatented products of the patent owner. As for patented products of the patent owner, the Federal Circuit has made clear that they cannot constitute acceptable noninfringing substitutes because such products are not available from anyone except the patent owner.⁹²

(3) Manufacturing and Marketing Capability to Exploit the Demand

The patent owner had to have the physical ability to make the lost sales in order to be entitled to lost profits.⁹³ The demand capacity that the patentee must have is measured by combining the sales of the infringer and the patent owner.⁹⁴ The Federal Circuit has held that that this factor is only relevant to the demand existing in the market and the patentee's ability to meet that demand. Customer loyalty to or preference for the defendant is irrelevant.⁹⁵

The Federal Circuit has been particularly liberal in determining the manufacturing and marketing capacity of the patentee.⁹⁶ The court has held that a patentee had the capacity to meet the demand when the patentee could have subcontracted the work to manufacture the patented products for the infringer's consumers.⁹⁷ In another case, the Federal Circuit accepted evidence that the patentee could have expanded its facilities to meet the demand.⁹⁸ However, where a patentee had no manufacturing facilities, the court found that it could not meet the demand.⁹⁹ A patentee who has not begun to manufacture the patented product will bear a much heavier burden to prove that its actual damages are much larger than a reasonable royalty.¹⁰⁰

Nevertheless, at least one court has adopted much more stringent standards for this *Panduit* factor. In the *Polaroid Corp. v. Eastman Kodak Co.*, the court implemented a test incorporating an analysis of Polaroid's forecasting and decisionmaking skills as well as its technical and physical potential.¹⁰¹ The court found that Polaroid did not have the capacity to manufacture film packs for the entire market based on its finding that the company's forecasting ability was "poor."¹⁰²

In addition to manufacturing capability, this factor also requires that the patentee have marketing capability. The Federal Circuit has been liberal in determining marketing capability. The patentee's substantial sales and the fact that

⁹¹ Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1571 (Fed. Cir. 1996).

⁹² Rite Hite Corp. v. Kelley Co., 56 F.3d 1538, 1540 (Fed. Cir. 1995) (en banc).

⁹³ SKENYON, *supra* note 81, § 2:44, at 70.

 $^{^{94}}$ Id. at 71.

⁹⁵ See Datascope Corp. v. SMEC, Inc., 879 F.2d 820, 825 (Fed. Cir, 1989).

⁹⁶ SKENYON, *supra* note 81, § 2:44, at 70.

⁹⁷ Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549 (Fed. Cir. 1984).

⁹⁸ Bio⁻Rad Lab. Inc. v. Nicolet Instrument Corp., 39 F.2d 604, 616 (Fed. Cir. 1984).

⁹⁹ Water Techs. Corp. v. Calco, Ltd., 850 F.2d 660 (Fed. Cir. 1988).

¹⁰⁰ Hebert v. Lisle Corp., 99 F.3d 1109, 1120 (Fed. Cir. 1996).

 $^{^{101}}$ Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q.2d (BNA) 1481, 1511 (D. Mass. 1990). 102 Id.

it was known in the market were held to be persuasive evidence of the patentee's marketing capability in one case. 103

(4) Amount of Profit the Patentee Would Have Made

The amount of profit the patentee would have made is relevant to the calculation of the amount claimed as lost profits in order to make the patentee whole.¹⁰⁴ A patent owner who failed to establish this factor would not be entitled to its lost profits on lost sales. The patent owner must provide the court with a fairly detailed computation of its lost profits by a preponderance of the evidence.¹⁰⁵ The amount of lost profits should not be speculative.¹⁰⁶ However, a comprehensive, exact proof of the amount of lost profits is not required. When the amount of damages cannot be ascertained precisely, any reasonable doubt is appropriately resolved against the infringer.¹⁰⁷

There are two steps for the patent owner to follow in the process of calculating the amount of lost profits. The first step is to calculate the amount of the lost sales. The second step is to establish the monetary net lost profit on those lost sales.¹⁰⁸ "The number of lost sales" refers not merely to the sales lost due to the infringement, but to the number of sales affected by the infringement, including the number of sales lost, sales made at eroded prices, and affected future sales.¹⁰⁹

Calculating the number of lost sales sometimes may be quite simple. In a twosupplier market, it is reasonable to infer that the patent owner would have made all of the sales of the infringer, absent the infringement.¹¹⁰ In this situation, the lost profits due to diverted sales would be the number of sales of the infringing product multiplied by the pre-infringement profit on the patentee's own product. It would be rather difficult to calculate the number of lost sales and the lost profits in a multiplesupplier market, where a market share theory would be applied.

If the patent at issue is for a mere improvement of a product, or the patented product contains quite a few features, only one or a few of which are patented, the question is whether the patent owner should apportion the profits between the patented and unpatented elements of the product when calculating the lost profits. In *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, the Federal Circuit held that if the patent owner proves that it could reasonably anticipate the sale of the unpatented components together with the patented components, then it might prove the extent of its lost profits by the entire market value rule.¹¹¹ The entire market value rule "permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for

¹⁰³ Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 554 (Fed. Cir. 1984).

 $^{^{104}}$ Skenyon, supra note 81, § 2:44, at 72.

 $^{^{105}}$ Id. at 72.

¹⁰⁶ Id.

¹⁰⁷ Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1327 (Fed. Cir. 1987).

¹⁰⁸ Id.
¹⁰⁹ SKENYON, supra note 81, § 2:47, at 76.

¹¹⁰ Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1144 (Fed. Cir. 1991).

¹¹¹ 836 F.2d 1320 (Fed. Cir. 1987).

customer demand."¹¹² In *Rite-Hite Corp. v. Kelly Co.*, Judge Lourie noted, "[a]ll the components together must be analogous to components of a single assembly or be parts of a complete machine, or they must constitute a functional unit."¹¹³

While the above-discussed *Panduit* test has been adopted by the Federal Circuit, and has been frequently applied in lost profit cases, it is not necessarily the exclusive test for the issue of causation (i.e., that the patent owner would have made sales but for the infringement).¹¹⁴ Moreover, the *Panduit* test is only applicable when determining causation with respect to patented products. The inclusion of unpatented products in the damage computation is governed by another test, such as the entire market value rule.¹¹⁵

Under the entire market value rule, the patent owner is entitled to lost profits due to lost sales of not only the patented product but also unpatented products, if the owner can prove that the unpatented products are either competitive with or function with the patented products.¹¹⁶ In *Rite-Hite*, the Federal Circuit agreed with the conclusion of the trial court that Rite-Hite's lost sales of ADL-100, a product not covered by the patent at issue but directly competing with the infringing products, were reasonably foreseeable, and held that the compensation for such losses constituted the full compensation set forth by Congress, as interpreted by the Supreme Court.¹¹⁷ The Federal Circuit further noted that refusal to award reasonably foreseeable damages, necessary to make Rite-Hite whole, would be inconsistent with the meaning of § 284 of the Patent Act.¹¹⁸

Under the entire market value rule, the patent owner may be entitled to recover lost profits on unpatented accessories, parts, or supplies, if there is evidentiary support that the patent owner can anticipate the sales of the unpatented spare parts together with the patented components.¹¹⁹ In addition, the patent owner may be entitled to recover lost profits if there is a reasonable probability that the patent owner would have made the sale of the spare parts had the infringer not made the infringing sales.¹²⁰

ii. Increased Costs

When calculating the lost profits of the patent owner, the court must consider the costs that the patentee would have incurred had the patentee made the sales actually made by the infringer. In most cases, the court has held that it was improper to allocate a portion of fixed or overhead costs of the hypothetically

¹¹² State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1580 (1989).

¹¹³ 56 F.3d 1538, 1550 (Fed. Cir. 1995) (en banc).

¹¹⁴ SKENYON, *supra* note 81, § 2:28, at 44.

 $^{^{115}}$ Skenyon, supra note 81, § 2:53, at 95.

¹¹⁶ Cf. Rite Hite, 56 F.3d at 1570 (noting that the "clear purpose of the patent law [is] to redress competitive damages resulting from infringement of the patent," Judge Lourie found no basis for extending that recovery to include damages for items that are neither competitive with nor function with the patented invention).

¹¹⁷ Id.

¹¹⁸ Id.

¹¹⁹ King Instrument Corp. v. Ontari Corp., 767 F.2d 853, 865 (Fed. Cir. 1985).

¹²⁰ Kaufman Co., v. Lantech, Inc., 926 F.2d 1136, 1141 (Fed. Cir. 1991).

increased sales.¹²¹ In one case, the Federal Circuit noted that "the increased income approach to the computation of lost profits is well established in the law relating to patent damages Thus, fixed costs, or those costs which do not vary with increase in production, such as management salaries, property taxes, and insurance, are excluded when determining profits."¹²² Under this method, the patent owner's lost profits will be the difference between the gross dollar amount that the patentee would have received from the lost sales and the dollar amount of the variable costs.¹²³ Hence, the patent owner's lost profit for each infringing sale will be greater than the profit that the patentee actually makes out of each of her own sales.¹²⁴

iii. Price Erosion

Price erosion, or price reduction, is another type of damage that may be awarded to a prevailing patentee. In *Yale Lock Manufacturing Co. v. Sargent*, the Supreme Court held that "[r]eduction of prices, and consequent loss of profits, enforced by infringing competition, is a proper ground for awarding of damages."¹²⁵ Price erosion damages and lost sales damages stand on the same ground.¹²⁶ In many patent infringement cases, both price erosion and lost sales damages were awarded to the patent owners.¹²⁷

There are several types of price erosion damages. First, is the price reduction that the patent owner is forced to make to meet the infringer's competition.¹²⁸ Second, is the discounts the patent owner offers for similar reasons.¹²⁹ Third, is the damages the patent owner suffers where it is unable to raise¹³⁰ or lower¹³¹ its prices to the planned rates due to the infringement.

¹²² Paper Converting Machine Co. v. Magna Graphics Corp., 745 F.2d 11, 22 (Fed. Cir. 1984).

¹²⁴ Id. at 74.

¹²⁶ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1157 (6th Cir. 1978).

¹²⁸ See Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1067 (Fed. Cir. 1983) (affirming a damage award where the district court had found there were only two suppliers, and that the plaintiff reduced its prices to meet the defendant's competition).

¹²⁹ See TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 902 (Fed. Cir. 1986) (determining that an award, which is "adequate to compensate," should consider the totality of the circumstances including the special discounts that the plaintiff had to give to compete with the defendant's pricing practices).

¹³⁰ Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1579 (Fed. Cir. 1992). In *Minnesota Mining*; the patent owner contended that it would have raised its prices by 4 percent during the time of infringement to match the rate of inflation. *Id.* The infringer argued that the patent owner could not raise its price at all as there would have been zero inflation in the relevant market. *Id.* The Special Master elected a figure between the 4 percent asserted by the patent owner and the 0 percent asserted by the infringer, finding that the patent owner was forced to forego a 2 percent price increase per annum due to the infringement. *Id.* The Federal Circuit affirmed the finding. *Id.*

 131 Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1579 (Fed. Cir. 1992). In *Brooktree*, the plaintiff had planned to lower its prices of its patented products by 10 percent annually, however, due to the infringement, the plaintiff was forced to lower its prices by 30 percent

¹²¹ CHISUM, *supra* note 15, § 20.03[1][d], at 160.

¹²³ SKENYON, *supra* note 81, § 2:46, at 73.

¹²⁵ 117 U.S. 536, 551 (1886).

¹²⁷ SKENYON, *supra* note 81, § 2:4, at 10.

To obtain price erosion damages, the patent owner must establish that it would have obtained higher prices for its products during the infringement period "but for" the infringement.¹³² If the patent owner fails to prove this, and the infringer can demonstrate that market forces other than the infringement forced the patent owner to lower its prices, the owner would not be entitled to lost profits due to price erosion.¹³³ In a two-supplier market where the patent owner and the infringer are head-to-head competitors, it will obviously be much easier for the patent owner to prove causation, that is, that its price erosion was due solely to the infringement. In a multi-supplier market, where the patent owner has more than one competitor, the patent owner must show the extent to which the price erosion was due to the infringement.¹³⁴ The court may award the patent owner partial price erosion damages if there are other factors, besides the infringement, causing the price erosion.¹³⁵

b. Reasonable Royalty

The patent owner may recover a reasonable royalty as a measure of damages. A reasonable royalty is generally the amount that a person desiring to manufacture and sell a patented product at a reasonable profit as a business proposition would be willing to pay as royalty to the patent owner.¹³⁶ As a measure of recovery, a reasonable royalty is intended to provide a just recovery to a patentee who cannot prove lost profits for evidentiary or other reasons.¹³⁷ A reasonable royalty is the baseline for damages awarded to a prevailing patentee. Section 284 of the Patent Act provides that the court shall award the successful patent claimant "in no event less than a reasonable royalty."¹³⁸ The finding of infringement will establish that the patent owner is entitled to reasonable royalty damages.¹³⁹ Nevertheless, the patent owner must still prove the amount of the reasonable royalty damages.¹⁴⁰ This is unlike lost profit damages, for which the patent owner has to prove both the fact and amount of damages.¹⁴¹ Basically, there are three approaches by which a court may arrive at a reasonable royalty: (i) adoption of an established royalty; (ii) hypothetical negotiations between a willing licensor and licensee; or (iii) an analytical approach.¹⁴²

¹³⁸ 35 U.S.C. § 284 (1994 & Supp. 1999).

instead. Id. The court held that the losses were reasonable and awarded the plaintiff lost profits due to price erosion. Id. at 1580-81.

¹³² SKENYON, *supra* note 81, § 2:3, at 8.

¹³³ BIC Leisure Prods., Inc. v. Windsurfing Int'l, Inc., 1 F.3d 1214, 1220 (Fed. Cir. 1993).

¹³⁴ Boesch v. Graff, 133 U.S. 697, 706 (1890).

¹³⁵ Micro Motion, Inc. v. Exac Corp., 761 F. Supp. 1420, 1433 (N.D. Cal. 1991).

¹³⁶ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1157-58 (6th Cir. 1978).

¹³⁷ CHISUM, *supra* note 15, § 20.03[3], at 180.

¹³⁹ Lindemann Maschinenfbrik GmbH v. Am. Hoist & Derrick Co., 895 F.2d 1403, 1407 (Fed. Cir. 1990).

¹⁴⁰ See Unisplay S.A. v. Am. Elec. Sign Co., 69 F.3d 512, 517 (Fed. Cir. 1995) (asserting that any reasonable royalty rate determined by the trier of fact must be supported by relevant evidence in the record).

¹⁴¹ SKENYON, *supra* note 81, § 3:3, at 5.

¹⁴² Id. §§ 1:13, 3:8.

i. Adoption of an Established Royalty

Many decisions describe an established royalty as the best, true, or primary measure of damages in cases where one exists.¹⁴³ An established royalty rate is a uniform rate freely negotiated and paid by a number of licensees.¹⁴⁴

Not every negotiated royalty is credited as an established royalty by the court. To set an established royalty, the previously negotiated royalty must be:

(1) paid or secured before the infringement complained of; (2) paid by such a number of persons as to indicate a general acquiescence in its reasonableness; (3) uniform at the place where the licenses are issued; (4) not paid under threat of suit or in settlement of litigation; (5) for comparable rights or activity under the patent.¹⁴⁵

A patent owner who has proven the existence of an established royalty should not be awarded less on a reasonable royalty theory.¹⁴⁶ If the patent has not yet gained public recognition or acceptance, there has been widespread infringement, or the patent owner set the royalty very low to avoid challenges to the patent, then the established royalty might be set at too low a level to be reasonable.¹⁴⁷ Under these circumstances, a higher figure may be awarded to the patent owner.¹⁴⁸

Absent a sound public interest, a patent owner should have the absolute right to license or not license, to utilize the patented invention, and to choose licensees. Theoretically, damages awarded to the patent owner should always be higher than the established royalty in order to deter infringement.¹⁴⁹ Otherwise, it would "make an election to infringe a handy means for competitors to impose a 'compulsory license' policy upon every patent owner.¹⁵⁰ Such a policy would be "against the will and interest of the person wronged, [and] in favor of the wrongdoer.¹⁵¹

ii. Hypothetical Negotiations Between a Willing Licensor and Licensee

The second approved method of determining a reasonable royalty is often called the "willing licensor-willing licensee" approach.¹⁵² The willing licensor-willing licensee negotiation requires that the royalty rate be determined on the assumption that the patent is valid and infringed.¹⁵³ The court should analyze the negotiation as

¹⁴³ CHISUM, *supra* note 15, § 20.03[2][a], at 169-71.

¹⁴⁴ CHISUM, *supra* note 15, § 20.03[2], at 168.

¹⁴⁵ CHISUM, *supra* note 15, § 20.03[2][b], at 171-74.

¹⁴⁶ U.S. Nat'l Bank of Portland v. Fabri-Value Co. of Am., 235 F.2d 565, 568 (9th Cir. 1956).

¹⁴⁷ Phillips Petroleum Co. v. Rexene Corp., 1997 WL 781856, at *17 (D. Del. Sept. 4, 1997).

¹⁴⁸ Nickson Indus., Inc. v. Rol Mfg. Co., Ltd., 847 F.2d 795, 798 (Fed. Cir. 1988).

 ¹⁴⁹ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1158 (6th Cir. 1978).
 ¹⁵⁰ Id.

 ¹⁵¹ Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1328 (Fed. Cir. 1987).
 ¹⁵² SKENYON, *supra* note 81, § 3:5, at 10.

 $^{^{153}}$ TP Orthodontics, Inc. v. Prof
l Positioners, Inc., 20 U.S.P.Q.2d (BNA) 1017, 1025 (E.D. Wis, 1991).

of the date the infringement occurred.¹⁵⁴ but may consider events after that date as evidence.155

The hypothetical negotiation should be employed in such a way as to dissuade would be infringers from believing "that blatant, blind appropriation of inventions patented by individual, nonmanufacturing inventors is the profitable, can't-lose course."¹⁵⁶ The primary inquiry in fixing a reasonable royalty is what the parties would have agreed upon if both were reasonably trying to reach an agreement.¹⁵⁷

Courts have developed a number of factors that are probative of the royalty rate that would have been set in such a hypothetical negotiation. In Georgia-Pacific Corp., v. U.S. Plywood Corp., the trial court offered a list of 15 evidentiary facts that may be relevant to the determination of the reasonable royalty for a patent license.¹⁵⁸ These factors generally can be divided into two groups.¹⁵⁹ The first group, which relates to the specific and general market conditions in the pertinent industry, includes: "(i) prior and existing licenses under the patent, (ii) industry custom and licenses on comparable patents, and (iii) the patent owner's licensing policy and the relation between the parties."¹⁶⁰ The second group, which relates to the anticipated profitability of the patented product or process, includes: "(iv) [the] infringer's anticipated profits, (v) comparative utility and noninfringing alternatives, (vi) collateral benefits and convoyed sales, (vii) improvements, small parts, and apportionment, (viii) state of development and commercial success, and (ix) duration of the patent."¹⁶¹ This second group of factors, in a sense, sets the range of feasible rates, while the first group of factors points to the rate that the parties would have set within that range.¹⁶²

The setting of a reasonable royalty after infringement cannot be regarded as an equivalent of ordinary negotiation between a willing patentee and licensee. Such a view would constitute a pretense that the infringement never happened.¹⁶³ The reasonable royalty reached through such hypothetical negotiation may be greater than a royalty actually negotiated in order to adequately compensate the patentee,¹⁶⁴ but the patentee must demonstrate circumstances that would support such an award.¹⁶⁵ A court may award against an infringer a sum in addition to a reasonable royalty calculated under the hypothetical negotiation. For example, in Maxwell v. J. Baker, Inc., the Federal Circuit held that the trial court did not err in asking the jury to determine both a reasonable royalty and additional damages necessary to compensate for the infringement.¹⁶⁶

¹⁵⁴ Id.

¹⁵⁵ Fromson v. W. Litho Plate & Supply Co., 853 F.2d 1568, 1575 (Fed. Cir. 1988). ¹⁵⁶ Id.

¹⁵⁷ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1163 (6th Cir. 1978).

¹⁵⁸ Georgia Pacific Corp., v. U.S. Plywood Corp., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), modified and affd, 446 F.2d 295 (2d Cir. 1971).

¹⁵⁹ CHISUM, *supra* note 15, § 20.03[3][b], at 195.

 $^{^{160}}$ Id.

 $^{^{161}}$ Id.

 $^{^{162}}$ Id.

¹⁶³ State Indus. V. Mor Flo Indus., 8 U.S.P.Q.2d (BNA) 1971, 1981 (E.D Tenn. 1988).

¹⁶⁴ Fromson v. Citiplate, Inc., 699 F. Supp. 398, 407 (E.D.N.Y. 1988).

¹⁶⁵ Nickerson Indus. V. Rol Mfg. Co., 847 F.2d 795, 799 (Fed. Cir. 1988).

¹⁶⁶ 86 F.3d 1098 (Fed. Cir. 1996).

iii. Analytical Approach

The analytical approach is another approved method of arriving at a reasonable royalty. The analytical approach involves the following steps: (1) establish the projected gross profit margin from the infringing sales at the outset of the infringement; (2) subtract the overhead expenses from the projected gross profit to get the anticipated net profit margin of the infringer; and (3) subtract the standard industry net profit margin from the anticipated net profit margin of the infringer. The balance will be the reasonable royalty rate. This royalty rate is then applied to the actual infringing sales to determine the total reasonable royalty damages.¹⁶⁷

In *TWM Manufacturing Co. v. Dura Corp.*,¹⁶⁸ the Federal Circuit approved the analytical approach. Using this approach, the infringer's profit projection document, at the time the infringement began, is of great importance. Nevertheless, the absence of such a document does not necessarily preclude the application of this approach, as the patentee can base this approach on other evidence including the infringer's actual profits.¹⁶⁹

c. Mixed Awards

The damages awarded to the patent owner "may be split between the lost profits as to the extent that they are proven and a reasonable royalty for the remainder."¹⁷⁰ Such an award is an appropriate method when the infringement occurs under different market conditions in terms of customer type, product type, time period, or geographic area, so that the extent and provability of the damages to the patentee is altered.¹⁷¹ In *H.K. Porter Co. v. Goodyear Tire & Rubber Co.*, the damages awarded to the patent owner are a good illustration of this method.¹⁷² In that case, the court of appeal affirmed an award of lost profits for the years 1964-67 but a reasonable royalty for the years 1962-63 and 1968-71.¹⁷³ Before 1964, the lost profit was less than a reasonable royalty, a minimum measure as viewed by the court. After 1967, the patentee sold one of its plants and therefore lacked the capacity to meet the demand.¹⁷⁴

When a patentee and an exclusive licensee sue an infringer as joint plaintiffs, it may be proper to award a reasonable royalty to the former and lost profits to the latter in view of their respective interests.¹⁷⁵ In this circumstance, it would be impossible for the patent owner to prove causation. However, the infringement itself would establish that the patent owner is entitled to reasonable royalty damages if the owner can prove the sum of the royalty.¹⁷⁶

¹⁶⁸ Id.

¹⁶⁷ TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 899 (Fed. Cir. 1986).

¹⁶⁹ SKENYON, *supra* note 81, § 3:4, at 9.

¹⁷⁰ State Indus., Inc. v. Mor Flo Indus., Inc. 883 F.2d 1573, 1577 (Fed Cir. 1989).

¹⁷¹ CHISUM, supra note 15, § 20.03[1][e], at 164.

¹⁷² 536 F.2d 1115 (6th Cir. 1976).

¹⁷³ Id.

¹⁷⁴ Id.

¹⁷⁵ CHISUM, supra note 15, § 20.03[1][e], at 167.

¹⁷⁶ See supra section II.B.1.b.

2. Increased Damages

Section 284 of the Patent Act, the statutory basis for increased damages, authorizes the court to "increase the damages up to three times the amount found or assessed."¹⁷⁷ Though the statute does not state the basis upon which a trial court may increase the damages, it is well-settled law that increased damages must be based on willful infringement or bad faith.¹⁷⁸ In Jurgens v. CBK, Ltd., the Federal Circuit distinguished bad faith in litigation and bad faith infringement.¹⁷⁹ The court stated that only the latter justified increased damages because bad faith infringement was merely a type of willful infringement.

Whether an increased damage award is for the purpose of punishment or for compensation is a longstanding controversy in the law.¹⁸⁰ Perhaps the best view is that an increased damage award serves both purposes.¹⁸¹ The Federal Circuit held that "enhanced damages may be awarded only as a penalty for an infringer's increased culpability, namely willful infringement or bad faith."¹⁸² Increased damages cannot be awarded solely for compensation without a finding of increased culpability of the infringer.¹⁸³

It is obvious that the finding of willful infringement is crucial in the damage award. Nevertheless, there are no "hard and fast" per se rules with respect to willfulness.¹⁸⁴ In order to assist the district court in evaluating the degree of the infringer's culpability and in determining whether, and to what extent, to increase damages, the Federal Circuit listed the following factors in *Read v. Portec, Inc.*: (a) whether the infringer deliberately copied the ideas or design of another; (b) whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; (c) the infringer's behavior as a party to the litigation; (d) the defendant's size and financial condition; (e) the closeness of the case; (f) the duration of the defendant's misconduct; (g) remedial action of the defendant; (h) the defendant's motivation for harm; and (i) whether the defendant attempted to conceal its misconduct.¹⁸⁵

None of the factors is decisive in finding willfulness. Willful infringement is a conclusion of fact.¹⁸⁶ The test for willful infringement is "whether, under all the circumstances, a reasonable person would prudently conduct himself with any confidence that a court might hold the patent invalid or not infringed."¹⁸⁷

 181 Id.

¹⁸³ Id.

¹⁸⁵ 970 F.2d 816, 826-27 (Fed. Cir. 1992).

¹⁷⁷ 35 U.S.C. § 284 (1994 & Supp. 1999).

¹⁷⁸ Beatrice Foods Co. v. New England Printing & Lithographing Co., 923 F.2d 1576 (Fed. Cir. 1991).

¹⁷⁹ 80 F.3d 1566, 1570 (Fed. Cir. 1996).

¹⁸⁰ CHISUM, *supra* note 15, § 20.03[4][b][iii], at 336.

¹⁸² Beatrice Foods Co., 923 F.2d at 1579.

¹⁸⁴ Rolls-Royce Ltd. V. GTE Valeron Corp., 800 F.2d 1101, 1110 (Fed. Cir. 1986).

¹⁸⁶ Paper Converting Machine Co. v. Magna-Graphics Corp., 785 F.2d 1013, 1015 (Fed. Cir. 1986).

¹⁸⁷ Hall v. Aqua Mfg., Inc., 93 F.3d 1548, 1555 (Fed. Cir. 1996).

Willfulness refers to the state of mind of the alleged infringer¹⁸⁸ on either the day it began its infringing activities or the day it became aware of the patent, whichever is later.¹⁸⁹ The court emphasized that a person with knowledge of a patent is under an affirmative duty to exercise due care to determine whether he will infringe a valid patent right before beginning the possibly infringing activity.¹⁹⁰

Obtaining the advice of counsel does not mandate a finding of non-willfulness. Conversely, the absence of advice of counsel does not mandate a finding of willfulness.¹⁹¹ Nevertheless, willful infringement is often found if the defendant has failed to obtain and follow the opinion of counsel.¹⁹² Good faith reliance on the competent advice of counsel constitutes a defense to willfulness.¹⁹³ A written opinion prepared by an outside, independent, U.S. patent attorney or agent, based on all available facts, is most likely to be held competent.¹⁹⁴

The law is clear that while willful infringement may allow enhanced damages, such a finding does not compel the district court to grant them.¹⁹⁵ The decision to grant or deny increased damages remains firmly within the scope of the trial court's reasoned discretion, informed by the totality of the circumstances.¹⁹⁶ After a finding of willful infringement, a trial court refusing to increase damages, without providing any reasoning in support of its denial, will be held to have abused its discretion.¹⁹⁷

In addition to the award of enhanced damages for willful infringement, the extent of enhancement is also committed to the discretion of the district court.¹⁹⁸ The trial court may increase damages at different amounts based on the degree of the infringer's culpability at the different stages of infringement.¹⁹⁹ In *Stryker Corp. v. Davol Inc.*, the trial court increased the damages for pre-trial infringement by 50% and doubled damages for infringement post-verdict until entry of the permanent injunction.²⁰⁰ The Federal Circuit held the award to be a reasonable measurement of Davol's culpability and well within the district court's discretion.²⁰¹ However, this discretion is limited to a trebling of the basic damage award.²⁰² Therefore, the maximum amount of damages allowed by the statute is three times the amount of the basic damage award, including the amount of basic damages.²⁰³

¹⁹³ Mahurkar, 79 F.3d at 1579.

¹⁸⁸ Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1579 (Fed. Cir. 1996).

¹⁸⁹ CHISUM, *supra* note 15, § 20.03[4][b][v], at 395-97.

¹⁹⁰ Underwater Devices Inc. v. Morrison Knudsen Co., 717 F.2d 1389, 1390 (Fed. Cir. 1983).

¹⁹¹ Spindelfabrik Suessen-Schurr v. Schubert & Salzer Maschinenfabrik AG, 829 F.2d 1075, 1084 n.13 (Fed. Cir. 1987).

¹⁹² SKENYON, *supra* note 81, § 4:19, at 31.

¹⁹⁴ SKENYON, *supra* note 81, § 4:19, at 31-32.

¹⁹⁵ Read Corp. v. Portec, Inc., 970 F.2d 816, 826 (Fed. Cir. 1992).

¹⁹⁶ Jurgens v. CBK, Ltd., 80 F.3d 1566, 1570 (Fed. Cir. 1996).

¹⁹⁷ Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 959, 963 (Fed. Cir. 2000).

¹⁹⁸ Read, 970 F.2d at 826 (Fed. Cir. 1992).

¹⁹⁹ Stryker Corp. v. Davol Inc., 234 F.3d 1252, 1260-61 (Fed. Cir. 2000).

 $^{^{200}}$ Id.

²⁰¹ Id.

²⁰² Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352, 1358 (Fed. Cir. 1999).

 $^{^{203}}$ Id.

3. Interest on Damage Award

Section 284 of the Patent Act provides that the court should award a prevailing claimant "damages adequate to compensate for the infringement . . . together with interest and costs as fixed by the court."²⁰⁴ The rationale for awarding interest to a successful patent owner is the same as in other areas of law. Pre-judgment interest is simply compensation for the use or forbearance of money owed, and post-judgment interest serves to further compensate a winning plaintiff from the time of a judgment until payment is made.²⁰⁵

a. Pre-judgment Interest

The Supreme Court noted in 1983 that, absent some justification for withholding such award, pre-judgment interest should ordinarily be awarded to afford the patent owner full compensation for infringement.²⁰⁶ The trial court's decision to award or not to award pre-judgment interest will only be set aside if the decision constitutes an abuse of discretion.²⁰⁷ Pre-judgment interest will be denied when patent owners unduly delay in bringing the infringement suit,²⁰⁸ or for a stay of the litigation that patent owners themselves request.²⁰⁹

Pre-judgment interest, the purpose of which is for compensation not punishment, should be awarded from the date of infringement until the date of judgment.²¹⁰ Hence, pre-judgment interest should not be awarded on the punitive or increased portion of the damages,²¹¹ nor be awarded on future lost profits.²¹² As for the interest rate, it is within the trial court's discretion to fix the rate at the statutory rate or a higher rate based on a proper evidentiary showing.²¹³

b. Post-judgment Interest

Post-judgment interest is awarded on monetary judgment recovered in all civil cases.²¹⁴ The purpose of post-judgment interest is to compensate the winning plaintiff for the loss from the time between the ascertainment of damages and payment by the defendant.²¹⁵ Because the rates of prejudgment interest are usually higher than those of the post-judgment interest, the determination of the demarcation line between the pre-judgment and post-judgment interests becomes

²⁰⁴ 35 U.S.C. § 284 (1994 & Supp. 1999).

²⁰⁵ Transmatic, Inc. v. Gulton Indus., Inc., 180 F.3d 1343, 1347-48 (Fed. Cir. 1999).

²⁰⁶ General Motors Corp. v. Deves Corp., 461 U.S. 648, 655 (1893).

²⁰⁷ SKENYON, *supra* note 81, § 4:3, at 4.

²⁰⁸ Mainland Indus., Inc. v. Standal's Patents Ltd., 799 F.2d 746, 748 (Fed. Cir. 1986).

²⁰⁹ Uniroyal, Inc. v. Rudkin-Wiley Corp., 939 F.2d 1540, 1546 (Fed. Cir. 1991).

²¹⁰ Oiness v. Walgreen Co., 88 F.3d 1025, 1033 (Fed. Cir. 1988).

 ²¹¹ Underwater Devices, Inc. v. Morrison-Knudsen Co., 717 F.2d 1380, 1389 (Fed. Cir. 1983).
 ²¹² Id.

²¹³ Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1144 (Fed. Cir. 1991); Lam., Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1066 (Fed. Cir. 1983).

²¹⁴ 28 U.S.C § 1961(a) (1994 & Supp. 1999).

²¹⁵ Poleto v. Consol. Rail Corp., 826 F.2d 1270, 1280 (3d Cir. 1987).

important.²¹⁶ The Federal Circuit held this to be a nonpatent issue.²¹⁷ The Federal Circuit further noted that, regarding nonpatent issues, it generally conformed its law to that of the regional circuit, without regard to the relationship of the issue to its exclusive jurisdiction when there was an existing and expressed uniformity among the circuits.²¹⁸

There is a consensus among the regional circuit courts that post-judgment interest begins with the date of entry of judgment.²¹⁹ In 1990, the Supreme Court held that post-judgment interest should run from the date of ascertainment of the damages,²²⁰ thus establishing a meaningful ascertainment test, which has been followed by some circuits.²²¹

4. Attorney Fees

The "American Rule" is that each party bears its own attorney fees and expenses.²²² Section 285 of the Patent Act was enacted by the Congress to make some patent cases an exception to that rule.²²³ The Patent Act provides that the court "in exceptional cases may award reasonable attorney fees to the prevailing party."²²⁴

It is a two-step process to determine whether to award attorney fees under § 285 of the Patent Act. The first step is to determine whether the case is exceptional. The second step is to determine whether attorney fees should be awarded.²²⁵ In the two-step process, there will be three crucial issues to be decided by the trial court: (a) whether it is an exceptional case; (b) who is the prevailing party; and (c) what constitutes reasonable attorney fees.

a. Exceptional Cases

The prevailing party must prove the case is exceptional before the trial court decides whether to award attorney fees.²²⁶ There must be an adequate basis in the record to support a finding that the case is exceptional.²²⁷ A case may be exceptional for either of two basic reasons: (i) misconduct of a party giving rise to the litigation (e.g., willful or deliberate infringement by the infringer or fraud or inequitable conduct by the patent owner in obtaining the patent), or (ii) misconduct of a party

 223 Id.

²¹⁶ Transmatic, Inc., v. Gulton Indus., Inc., 180 F.3d 1343, 1347 (Fed. Cir. 1999).

²¹⁷ Id.

 $^{^{218}}$ Id.

 $^{^{219}}$ Id.

²²⁰ Kaiser Aluminum & Chem. Corp. v. Bonjorno, 494 U.S. 827, 838 (1990).

²²¹ See, e.g., Kelly v. HUD, 97 F.3d 118 (6th Cir. 1996).

²²² See Mathis v. Spears, 857 F.2d 749 (Fed. Cir. 1988) (awarding attorney fees to the prevailing party under 35 U.S.C. § 285).

²²⁴ 35 U.S.C. § 285 (1994 & Supp. 1999).

²²⁵ Enzo Biochem, Inc., v. Calgene, Inc., 188 F.3d 1362, 1370 (Fed. Cir. 1999).

²²⁶ Cambridge Prods., Ltd. v. Penn Nutrients, 962 F.2d 1048, 1050 (Fed. Cir. 1992).

²²⁷ Stickle v. Heublein, Inc., 716 F.2d 1550, 1564-65 (Fed. Cir. 1983).

during the litigation (e.g., discovery abuse, frivolous suit, or a violation of an injunction). 228

Willful infringement or bad faith by the infringer is sufficient to make a case "exceptional."²²⁹ After an express finding of willful infringement, a trial court was held to have abused its discretion in refusing to find the case exceptional for the purpose of awarding attorney fees without providing any reasons.²³⁰

Nevertheless, the finding of an exceptional case does not mandate the awarding of attorney fees.²³¹ The grant or denial of attorney fees is within the discretion of the trial court.²³² The trial court may weigh such factors as "the degree of culpability of the infringer, the closeness of the question, litigation behavior, and any other factors whereby fee shifting may serve as an instrument of justice" in making its decision.²³³ Attorney fees for appeal may be awarded if the appeal itself is exceptional.²³⁴

b. Prevailing Party

Under § 285 of the Patent Act, only the "prevailing party" is entitled to a reasonable attorney fee. However, sometimes it is a quite complicated task to determine who is the prevailing party in a patent infringement suit. The suit may involve more than one claim, patent, or accused infringing product or process.²³⁵

The Federal Circuit addressed the definition of "prevailing party" in *Manildra Mill Corp. v. Ogilvie Mills, Inc.*, where the court adopted the Supreme Court's definition from *Farrar v. Hobby.*²³⁶ The Supreme Court held that "a plaintiff prevails when actual relief on the merits of his claim materially alters the legal relationship between the parties by modifying the defendant's behavior to the plaintiff's benefit... . . The Court held that a plaintiff who wins nominal damages is a prevailing party."²³⁷

In cases where one party prevails on some claims while the other party prevails on other claims, the Federal Circuit has held that one resolution might be either to deny fees entirely or to grant fees only to the extent that a party prevailed.²³⁸ The court further noted that even if the fees were awarded, "the amount of the fees awarded to the prevailing party should bear some relation to the extent to which that party actually prevailed."²³⁹

²²⁸ Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1574 (Fed. Cir. 1996).

²²⁹ SKENYON, *supra* note 81, § 4:29, at 57.

²³⁰ Jurgens v. CBK, Ltd., 80 F.3d 1566, 1573 (Fed. Cir. 1996).

²³¹ See Nat'l Presto Indus. v. West Bend Co., 76 F.3d 1185, 1193 (Fed. Cir. 1996) (holding that the district court's decision to not award attorney fees in a case of willful infringement was not an abuse of discretion).

²³² Delta-X Corp. v. Baker Hughes Prod. Tools, Inc., 984 F.2d 410, 414 (Fed. Cir. 1993).

²³³ Nat'l Presto, 76 F.3d at 1193.

²³⁴ Rohm & Haas Co. v. Crystal Chem. Co., 736 F.2d 688, 692 (Fed. Cir. 1984).

²³⁵ CHISUM, *supra* note 15, § 20.03[4][c][v] at 503.

²³⁶ Manildra Mill Corp. v. Ogilvie Mills, Inc., 76 F.3d 1178, 1183 (Fed. Cir. 1996) (citing Farrar v. Hobby, 506 U.S. 103 (1992)).

²³⁷ Farrar, 506 U.S. at 112.

 $^{^{238}}$ Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1553–54 (Fed. Cir. 1989). 239 Id.

c. The Amount of Reasonable Attorney Fee

Determination of the amount of the attorney fee is also within the district court's discretion.²⁴⁰ Courts have adopted a variety of approaches to decide what constitutes a reasonable attorney fee, using actual fees in some instances, but more often balancing a number of factors to set the fees.²⁴¹ An award of attorney fees may include "those sums that the prevailing party incurs in the preparation and performance of legal services related to the suit."²⁴² Besides fees for the lawyer's time, the attorney fees awarded may include such litigation expenses as consultant and expert witness fees, lodging expenses, and overhead clerical services (e.g., paralegal work).²⁴³ Courts may also award attorney fees for time the attorney spends on issues involving the attorney fee award.²⁴⁴ Courts divide on whether premium or contingency fees recognizing counsel's success,²⁴⁵ or reasonable fees for in-house counsel should be awarded to the prevailing party.²⁴⁶

C. Provisional Rights Remedies

The American Inventor Protection Act of 1999 provides new "provisional rights," which permit a patentee to be awarded a reasonable royalty for activities performed by another between the publication date of the patent application and the issuance of the patent.²⁴⁷ The remedies for provisional rights are only a reasonable royalty.²⁴⁸ The amount awarded cannot be increased under § 284 of the Patent Act.²⁴⁹ There are several prerequisites for the provisional rights remedy.

First, provisional rights do not accrue until a patent is actually granted.²⁵⁰ Where no patent issues, no provisional rights remedies exist.

Second, provisional rights remedies are only for activities occurring during the period from the date of publication to the date of issuance of the patent.²⁵¹ Activities that give rise to the provisional rights remedies include making, using, offering for sale, selling the patented products, or products made by a patented process in the United States, or importing patented products or products made by a patented process into the United States.²⁵²

Third, the published applicant should give actual notice of the published application to the person who is obliged to pay the reasonable royalty.²⁵³ The applicant should also explain what acts are regarded as giving rise to provisional

 243 Id.

 246 Id. at 528.

 251 Id.

²⁴⁰ Hughes v. Novi Am., Inc., 724 F.2d 122, 124 (Fed. Cir. 1984).

²⁴¹ CHISUM, supra note 15, § 20.03[4][c][vii], at 515-16.

²⁴² Cent. Soya Co. v. Geo. A. Hormel & Co., 723 F.2d 1573, 1577 (Fed. Cir. 1983).

 ²⁴⁴ Trend Prod. Co. v. Metro Indus., Inc., 10 U.S.P.Q.2d (BNA) 1539, 1540-41 (C.D. Calif. 1989).
 ²⁴⁵ CHISUM, *supra* note 15, § 20.03[4][c][vii], at 518.

²⁴⁷ 35 U.S.C. § 154(d) (1994 & Supp. 1999).

²⁴⁸ 35 U.S.C. § 154(d)(1).

²⁴⁹ 35 U.S.C. § 284 (1994 & Supp. 1999).

²⁵⁰ 35 U.S.C. § 154(d).

²⁵² 35 U.S.C.§ 154(d)(1)(A).

²⁵³ 35 U.S.C.§ 154(d)(1)(B).

rights remedies.²⁵⁴ The reasonable royalty for the provisional rights will probably be calculated from the date that actual notice is given, rather than from the date of the publication of the patent application.²⁵⁵

Fourth, the invention as claimed in the patent must be substantially identical to the invention as claimed in the published patent application.²⁵⁶ The standard for "substantially identical" is intended to be the same as that applied for intervening rights in the context of reissue and reexamination application.²⁵⁷ It seems that courts will decide the substantially identical issue through a case-by-case analysis, based on a claim comparison, the prior art, and even extrinsic evidence such as expert testimony.²⁵⁸ The time limitation on obtaining a reasonable royalty is six years from the date the patent is issued.²⁵⁹

III. REMEDIES UNDER CHINESE LAW

The three types of remedies for patent infringement under Chinese law include civil, criminal, and administrative remedies. Civil remedies, the most common remedies, are available to every patent owner. In addition to civil remedies, the patent owner may seek criminal or administrative remedies for certain infringing activities, which will be discussed below in detail.

A. Civil Remedies

Under Chinese law, civil remedies for patent infringement include injunctive relief, damages, other civil remedies, and provisional rights for certain claims.

1. Injunctive Relief

Injunctive relief includes preliminary injunctions and permanent injunctions. Under Chinese law, courts usually grant permanent injunctions after finding infringement.²⁶⁰ In fact, to the author's knowledge, there has been no such case in which the patent owner has been denied a permanent injunction. That is not to say

²⁵⁴ Philippe Signore, *The New Provisional Rights Provision*, 82 J. PAT. & TRADEMARK OFF. SOC'Y, 742, 748 (2000).

²⁵⁵ Id. at 750.

²⁵⁶ 35 U.S.C. § 154(d)(2).

²⁵⁷ Signore, *supra* note 254, at 752-53.

²⁵⁸ Id. at 754.

²⁵⁹ 35 U.S.C. § 154(d)(3).

²⁶⁰ See Zhonghua Renmin Gongheguo Fagui Huibian 1979²001 [General Principles of the Civil Law of the People's Republic of China] art. 118, translated in CHINALAW No. 346 [hereinafter General Principles of the Civil Law] (providing that the owner is entitled to demand the infringer desist, the ill effect be eliminated and damages be compensated, upon the finding of infringement of copyright, patent, or trademark rights); see also id. art. 134(1) (providing that desisting from infringement is a basic form of civil liability).

that courts cannot deny permanent injunctions in patent cases. If a major public interest will be affected, the court can deny a permanent injunction.²⁶¹

The patent owner may request that the court grant a preliminary injunction. However, before the Patent Act of 2000²⁶² was enacted, there was a general misunderstanding among attorneys that preliminary injunctions were not available in patent cases. Now section 61 of the Patent Act dissipates that misunderstanding by providing that:

[a] patent owner of the interested party who can establish that an infringement is going on or is going to occur, which will cause irreparable harm to the owner if the activities are not stopped timely, may apply to the people's court for such rulings as to order the related party to desist from the activities or to adopt provisional security measures, before filing the lawsuit.²⁶³

Prior to the Patent Act of 2000, there was, however, a legal basis, though not so explicit, upon which the court could grant preliminary injunctions. One is section 93 of the Civil Procedure Law of the People's Republic of China.²⁶⁴ The other is section 97 of the Civil Procedure Law of the People's Republic of China and the Supreme Court's interpretation thereof.²⁶⁵ Therefore, a preliminary injunction may be in either of the following two forms. One form is the property preservation measure under section 93 of the Civil Procedure Law, which includes sequestration, attachment, and freezing of the alleged infringing products. The other form is preliminary execution under section 97 of the Civil Procedure Law, which is an order given by the court that the alleged infringer should desist from the allegedly infringing activity before the decision of the case on the merits. For example, in *Tian Guohua & Wei Sauying v. Zhengzhou Guancheng Hydraulic Control Equipment Factory*, the court granted the plaintiff's application for preliminary execution, and

Article 93 of the Civil Procedure Law provides that the people's court, at the request of the parties concerned, can order preliminary execution in cases involving urgent circumstances that require preliminary execution. *Id.*

 $^{^{261}}$ See *id.* art. 7 (providing that civil activities shall respect social ethics and should not harm the public interest).

²⁶² See Patent Act of PRC, supra note 1.

 $^{^{263}}$ Id. art. 61.

²⁶⁴ See Zhonghua Renmin Gongheguo Fagui Huibian 1979-2001 [Civil Procedure Law of the People's Republic of China] art. 93, translated in CHINALAW No. 119. The Civil Procedure Law of the People's Republic of China provides that any interested party whose lawful rights and interests, due to urgent circumstances, would suffer irreparable harms without immediate application of property preservation, may, before filing the lawsuit, apply to the people's court for the adoption of property preservation measures. *Id.* The applicant shall provide a bond. If the applicant fails to do so, his application shall be rejected. *Id.* After receiving a party's application, the people's court must make an order within 48 hours concerning property preservation; if property preservation is granted by an order, the implementation thereof shall begin immediately. *Id.* If the applicant fails to bring an action within 15 days, after the people's court has adopted the preservation measures, the people's court shall cancel the property preservation. *Id.*

²⁶⁵ Id. art. 97; see also SUP. PEOPLE'S CT. DIRECTIVE ON THE IMPLEMENTATION OF THE CIVIL PROCEDURE LAW § 107 (July 14, 1992) (construing the "urgent circumstances" provided by article 252(3) of the Civil Procedure Law and stating that urgent circumstances include cases in which certain activities need to be stopped immediately).

ordered the defendant to shut down the factory that only manufactured the alleged infringing product.²⁶⁶

In practice, the court will consider two factors in determining whether to adopt the property preservation or preliminary execution measures. The first factor is the probability of the applicant winning the case. The second factor is the irreparable harm to the patent owner absent those measures.

An applicant for the property preservation measure should provide a bond.²⁶⁷ The bond should be equivalent to the value of the property preserved.²⁶⁸ There are no legal provisions regarding whether the applicant for preliminary execution should also give a bond, but the court usually requires the applicant to do so to prevent potential harm to the alleged infringer. If the applicant fails to provide a bond, his application will be rejected.²⁶⁹

2. Damages

A prevailing patent owner is entitled to damages to reasonably compensate for the patent owner's actual losses caused by the infringement.²⁷⁰ The following are measures for damages provided by the Patent Act²⁷¹ and the Interpretations of the Supreme Court.²⁷²

a. Actual Pecuniary Loss of the Patent Owner

Actual pecuniary loss of the patent owner is a measure provided by the Directive of the Supreme Court.²⁷³ A similar measure provided by the Patent Act is "losses of the patent owner suffered from the infringement."²⁷⁴ As "losses of the patent owner" is such a broad concept, the author believes that courts will continue to apply the measure established by the Supreme Court. Under this measure, damages will be the sum of lost sales of the patent owner caused by the sales of the infringing products (or products produced by the patented process in suit) multiplied by the unit net profits on the patented product produced by the patent owner.²⁷⁵ This measure is inapplicable to situations where there is a big demand for the patented product in the

²⁷³ Id.

²⁶⁶ Tian Guohua & Wei Sauying v. Zhengzhou Guancheng Hydraulic Control Equipment Factory, China L. & Prac., Oct. 9, 1989 (Zhengzhou Municipal Intermediate People's Court).

²⁶⁷ See Civil Procedure Law of the People's Republic of China, supra note 264, art. 93.

²⁶⁸ See Sup. PEOPLE'S CT. DIRECTIVE ON THE IMPLEMENTATION OF CIVIL PROCEDURE LAW § 98 (July 14, 1992).

²⁶⁹ See Civil Procedure Law of the People's Republic of China, supra note 264, art. 93.

²⁷⁰ See Sup. People's Ct. Directive on the Hearing of Patent Cases § 4 (Dec. 31, 1991).

²⁷¹ Patent Act of PRC, *supra* note 1, art. 60. Damages may be determined by either the losses of the patent owner or the illegal enrichment of the infringer; or by reference to the amount of royalty, which may be multiplied to determine the damages reasonably, in case that the losses of the patent owner or the illegal enrichment of the infringer is unascertainable. *Id.*

²⁷² SUP. PEOPLE'S CT. DIRECTIVE ON THE HEARING OF PATENT CASES § 4 (Dec. 31, 1991).

²⁷⁴ See Patent Act of PRC, supra note 1, art. 60.

²⁷⁵ SUP. PEOPLE'S CT. DIRECTIVE ON THE HEARING OF PATENT CASES § 4 (Dec. 31, 1991).

market, or the sales of the patent owner increase rather than drop even though the infringing products are put into the market.

b. The Entire Profits of the Infringer

The entire profits of the infringer is another measure provided by the Interpretation of the Supreme Court.²⁷⁶ A similar measure provided by the Patent Act is "illegal enrichment of the infringer."²⁷⁷ Under this measure, damages will be the amount of the infringing sales in the market multiplied by the unit net profit of the infringing product, (including products produced by the patented process in suit) that is, the entire profits of the infringer.²⁷⁸

c. In a Reasonable Sum No Less Than a Royalty

A reasonable sum no less than a royalty is a measure provided by the Interpretation of the Supreme Court.²⁷⁹ A similar measure provided by the Patent Act is "by reference to the amount of royalty, which may be multiplied to determine the damages reasonably, in case that the losses of the patent owner or the illegal enrichment of the infringer is unascertainable."²⁸⁰

The patent owner should establish that there was a royalty rate for the patent at issue, or for a patent comparable to the patent at issue. Then the court will decide whether the royalty is reasonable. If the royalty is reasonable, the court then will decide whether, or to what extent, to increase the royalty. Some courts in Beijing usually increase the royalty up to five times to deter infringement.

d. Fixed Sum Compensation

In a directive document concerning damages for IP, the Supreme Court stated that, for those cases in which neither the losses of the plaintiff nor the illegal profits of the defendant are ascertainable, the IP owner may be awarded damages not less than 5000 Yuan (about \$605) or not more than 300,000 Yuan (\$36,275), whatever amount the court considers just.²⁸¹ This provision is applicable to patent cases. When setting the award amount, the court will consider such factors as the infringer's state of mind (whether the infringement is willful), the type of patent (whether the patent is for an invention, utility model, or design²⁸²), and the duration of the patent.

²⁷⁶ Id.

²⁷⁷ See Patent Act of PRC, supra note 1, art. 60.

 $^{^{278}}$ Id.

²⁷⁹ Id.

 $^{^{280}}$ Id.

²⁸¹ See Memorandum of the Symposium on the Adjudication of Intellectual Property Cases, Document No.: Fa [1998] 65 (July 20, 1998).

²⁸² Zhonghua Renmin Gongheguo Fagui Huibian 1979-2001 [Implementation Regulations for the Patent Law of the People's Republic of China] art. 2 (Dec. 21, 1992) [hereafter Implementation

e. Other Reasonable Measures Agreed upon by the Patentee and the Infringer

The Supreme Court's Interpretation provides that a court should credit any other measures for damages, which are negotiated and agreed upon by the patent owner and the infringer, provided that they are fair and reasonable.²⁸³ The patent owner is entitled to choose one of these measures of damages. It should establish the amount of the damages with clear and convincing evidence.

There are no provisions concerning attorney fees or costs in civil law or patent law. Traditionally, each party had to bear its own attorney fees or costs. However, in *DeFrance v. Beijing Suncity Market*, a trademark infringement case, the court held that the attorney fees and investigation costs were also losses to the plaintiff, which should be compensated.²⁸⁴ After *DeFrance*, courts in Beijing have generally granted reasonable attorney fees and costs to prevailing patent owners in all IP cases.²⁸⁵ The court may also award a prevailing defendant attorney fees and costs if the patent owner brought the lawsuit frivolously. There are a variety of ways to set the fees. If the court holds that the attorney fees are too high to be reasonable, it will determine what the reasonable attorney fees should be by reference to the fee rates set by the Attorney and Public Notary Administration Division under the Ministry of Justice.²⁸⁶

3. Civil Remedies Other Than Injunctive Relief and Damages

If the infringement caused an ill effect to the goodwill or reputation of the patent owner or its products, the court may order the infringer to take measures to eliminate the ill effect,²⁸⁷ such as publishing a notice in the newspaper or other media to make an apology to the patent owner.²⁸⁸ If the infringement is very serious and blatant, the court may order civil punitive measures in addition to granting injunctive relief and awarding damages to the patent owner. Such civil punitive measures may include confiscation of illegal profits or the property used in carrying out the infringing activities, or imposition of a fine or detention upon the infringer.²⁸⁹

²⁸³ SUP. PEOPLE'S CT. DIRECTIVE ON THE HEARING OF PATENT CASES § 4 (Dec. 31, 1991).

²⁸⁴ See Beljing High People's Court IP Tribunal, Protection of Intellectual Property Rights Cases and Comments 259 (2000).

 285 The courts in different areas divide on this issue. Maybe the Supreme Court will give a directive to resolve this issue.

 286 This document was promulgated in 1990. Some attorneys believe that the fee rates are too low.

²⁸⁷ See General Principles of the Civil Law, supra note 260, art. 118.

²⁸⁸ See Zhou Lin v. Beijing Aomeiguang Co., *in* BEIJING HIGH PEOPLE'S COURT IP TRIBUNAL, PROTECTION OF INTELLECTUAL PROPERTY RIGHTS CASES AND COMMENTS 357 (2000).

²⁸⁹ See General Principles of the Civil Law, supra note 260, art. 134.

Regulations for Patent Law]. Under Chinese Patent Law, there are three kinds of patents: invention, utility model, and design. *Id.* "Invention" means any new technical solution relating to a product, a process or an improvement thereof. *Id.* "Utility model" means any new technical solution relating to the shape, the structure, or of their combination, of a product, which is fit for practical use. *Id.* "Design" means any new design of the shape, pattern, color, or their combination, of a product, which creates an aesthetic feeling and is fit for industrial application. *Id.* Usually, the award for an invention patent is much higher than the award for a utility model patent or for a design patent, because an invention generally needs more inventive or creative labors than the other two.

4. Provisional Rights

Section 13 of the Patent Act of 1992 and section 61(2) of the Patent Act of 2000 authorize provisional rights remedies. Section 13 provides that "[a]fter the publication date of the patent application for an invention, the applicant may demand the entity or individual exploiting the patent to pay an appropriate royalty."²⁹⁰ Section 61(2) adds a time limitation on the provisional rights remedies, providing that:

[t]he time limitation on obtaining an appropriate royalty for the exploitation of the invention by another during the period from the date of publication of the application to the date of issuance of the patent is two years, counting from the date on which the patent owner knew or should have known of the exploitation of the patent, or from the date of the issuance of the patent in a case where the patent owner knew or should have known the exploitation prior to the issuance of the patent.²⁹¹

There are several characteristics of provisional rights remedies. First, provisional rights remedies are only available to owners of patents for inventions, not to owners of patents for utility models or designs.²⁹² Second, the right to obtain the appropriate royalty does not accrue until the patent is issued. If the patent has never been issued, the applicant has no right to obtain the royalty. Third, the invention as claimed in the patent should be substantially identical to the invention as claimed in the patent application and exploited by others. Fourth, the activities of "exploiting the invention" that give rise to the provisional rights remedies include making, using, offering for sale, or selling the patented products, or products made by a patented process into China.²⁹³

B. Criminal Remedies

Under Chinese law, there are criminal remedies available to those patent owners whose patents have been passed off by others. Section 216 of the Criminal Code of the People's Republic of China provides that "[i]n serious circumstances, those passing off other's patent, shall be sentenced to imprisonment for a period less than 3 years or imposed a penal servitude, with a fine concurrently or separately."²⁹⁴

Passing off patents refers to acts of an infringer that put the patent notice or patent number of the patent owner on the infringer's similar products or on the package of the product, to deceive the consumers that those products are the patented products of the patent owner.²⁹⁵ The rationale for imposing severe

²⁹⁰ Patent Act of PRC, *supra* note 1, art. 13.

²⁹¹ Patent Act of PRC, *supra* note 1, art. 61(2).

 $^{^{292}\,}$ See Patent Act of PRC, supra note 1, art 13.

²⁹³ Id. art. 11.

²⁹⁴ See Zhonghua Renmin Gongheguo Fagui Huibian 1979-2001 [Criminal Law of the People's Republic of China] art. 216.

²⁹⁵ See Beljing High People's Court IP Tribunal, Protection of Intellectual Property Rights Cases and Comments 259 (2000).

punishment for this kind of infringement is that the general public usually believes that patented products are high quality products. This kind of act not only infringes upon the rights of the patent owner, but also harms the interests of the consumers. Patent passing off also goes against the public interest underlying the granting of patents.

C. Administrative Remedies

Like criminal remedies, administrative remedies are limited to patent passing off activities. The Patent Act of 2000 provides that the patent administration agencies are empowered to order the offender to correct its activities, and the agencies have the power to publicize the offense.²⁹⁶ In addition, the illegal enrichment of the offender will be confiscated, and a fine in an amount of no more than three times the illegal enrichment, or no more than 50,000 Yuan (about \$6,045), will be imposed concurrently if there is no illegal enrichment.²⁹⁷ Any abovementioned order made by the patent administration agencies shall be subject to a judicial review in accordance with the Administrative Procedure Law of the People's Republic of China.²⁹⁸

IV. COMPARISON OF U.S. AND CHINESE LAW

Compared with the long history of U.S. patent law, Chinese patent law, with its history of less than 20 years, is still in its infancy. Nevertheless, there are similarities between the two laws in terms of remedies available to patent owners for patent infringement. Both provide injunctive relief, damages and provisional rights remedies. However, in granting each remedy, there are some differences, which will be discussed below.

A. Injunctive Relief

Under U.S. law, there are well-established standards or rules for granting or denying injunctive relief. In China, though preliminary injunctions are available under the law, the courts in different areas may adopt different standards in

Id. ²⁹⁷ Id.

²⁹⁶ Patent Act of PRC, *supra* note 1, art. 63.

Besides the civil liabilities, the patent administration agencies may order those passing off another's patent to correct, publish the offense, confiscate the illegal enrichment; the agencies may impose a fine in the amount of no more than three times the illegal enrichment concurrently, or a fine no more than 50,000 Yuan in case that there are no illegal profits. If the offense constitutes a crime, the criminal liability of the offender will be prosecuted.

²⁹⁸ See Zhonghua Renmin Gongheguo Fagui Huibian 1979[.]2001 [Administrative Procedure Law of the People's Republic of China]. This law was adopted on Apr. 4, 1989, and became effective on Oct. 1, 1999.

granting this remedy. Specifically, some courts have taken much more stringent standards than other courts. Therefore, the standards for granting preliminary injunctions need to be improved in order to set forth a uniform criterion among the courts. As for permanent injunctions, the circumstances under which they should be denied also need to be studied, as there are few or even no particular cases or legislation dealing with this issue.

B. Damages

As discussed above, the damages of the patent owner in the U.S. can be measured by the lost profits of the patent owner, a reasonable royalty, or a mixed award under a market share rule.²⁹⁹ In China, the damages can be measured in variety of ways, but the basic measures are lost profits, illegal enrichment, or a reasonable royalty.³⁰⁰ Whether the damages of the patent owner can be measured by the illegal profits of the infringer is a big difference between the U.S. and China.

Prior to the enactment of the Patent Act of 1946, the patent owner was entitled to recover the infringer's profit in U.S. equity actions. In 1946, Congress changed the law by dropping any reference to the infringer's profits.³⁰¹ In *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, the Supreme Court noted that the Patent Act of 1946 expressly eliminated the recovery of the infringer's profits as a measure of damages.³⁰² Now, except for design patent cases,³⁰³ the patent owner cannot recover the infringer's profits though they may be considered as evidence in establishing a reasonable royalty.³⁰⁴ In China, the illegal profits of the infringer are still an important measure for the damages of the patent owner.

As for the lost profits of the patent owner, there is no "entire market value" rule in China. The patent owner cannot recover the lost profits of those products not covered by the patent. The reasonable royalty measure, which is only a basic method for computing the damages, is not the baseline for damages. The basic evidence for a reasonable royalty is a negotiated royalty, and there is no "hypothetical negotiation" approach or analytical approach for setting a reasonable royalty.

There are two additional differences in determining damages between U.S. and Chinese law. One is whether there should be a "notice of infringement" requirement in order to get damages. Under U.S. law, a patent owner is only entitled to damages for infringing acts occurring after actual or constructive notice of infringement is given to the accused infringer.³⁰⁵ There is no such "notice of infringement" requirement for the patent owner in China. The patent owner is entitled to damages for any actual infringement except as otherwise provided by the law. The court usually holds that the publication of the issuance of a patent is a constructive notice of the patent, and everyone is obliged to use due care not to infringe it. This kind of approach is probably harsh toward innocent infringers. In reality, it is unrealistic to

²⁹⁹ See supra Part II.B.1.

³⁰⁰ See supra Part III.A.2.

³⁰¹ CHISUM, *supra* note 15, § 20.02[4], at 53.

³⁰² Aro Mfg. Co. v. Convertible Top Replacement Co., 337 U.S. 476 (1964).

³⁰³ 35 U.S.C § 289 (1994).

³⁰⁴ See supra Part II.B.1.b.

³⁰⁵ 35 U.S.C. § 287(a) (1994 & Supp. 1999).

expect innocent infringers, especially ordinary individuals or small businesses, to pay enough attention to dull patent gazettes to avoid infringement. This rule should be changed in the future.

Another difference lies in the issue of who determines the damages. In a jury case in the United States, the jury will usually determine the amount of damages, and it is within the judge's discretion to increase the damages up to three times in a case of willful infringement.³⁰⁶ That is not the scenario in China, where judges determine the damages. In cases where a people's assessor³⁰⁷ (who is not like a juror in the United States) participates in the trial of a case, the assessor has the same power as that of a judge. The people's assessor may decide the factual and legal issues of the case.³⁰⁸ In addition, judges usually do not increase the damages measured by lost profits or illegal profits even after finding willful infringement, but they may impose a fine or other civil sanction against the infringer. If damages are measured by a reasonable royalty, the judge may increase the damages up to five times after finding a serious violation.³⁰⁹ However, there are no specific provisions on how many times the court may increase the damages by the law.

C. Provisional Rights Remedies

The provisional rights remedies in the United States allow patent owners to obtain a reasonable royalty, while the remedies in China provide an appropriate royalty. An appropriate royalty is a sum of money that the two parties can agree upon through negotiation. If the parties fail to agree, the court will decide the appropriate royalty. Unlike patent owners in the United States, there is no requirement for the patent owners in China to give actual notice to those exploiting the invention during the period from the publication of the application to the issuance of the patent in order to get these remedies.

D. Criminal Remedies

Perhaps the biggest difference between the two countries' laws is in the remedies for patent passing off under Chinese patent law, and "false marking"³¹⁰ under U.S. patent law. As discussed in Part III of this paper, patent passing off, or counterfeiting, is regarded as a patent infringing activity in China. The patent owner may sue for patent infringement and is entitled to all civil remedies including injunctive relief and damages. A criminal sanction or severe administrative sanction

³⁰⁶ See supra Part II.B.2.

³⁰⁷ See Zhonghua Renmin Gongheguo Fagui Huibian 1979-2001 [Criminal Procedure Law of the People's Republic of China] art. 105, translated in CHINALAW No. 40 (providing that cases of first instance shall be tried in a people's court by a collegial panel consisting of both judges and people's assessors or of judges alone, and people's assessors shall have equal rights and duties with the judges when carrying out their duties).

 $^{^{308}}$ Id.

³⁰⁹ See Wang Yongguang v. Ningbo Chunfeng Co., China L. & Prac., (Beijing No. 1 Intermediate People's Court) (doubling the damages measured by a reasonable royalty).

³¹⁰ 35 U.S.C. § 292 (1994 & Supp. 1999).

may even be imposed on the offender if the offense is serious. Consumers may also sue for damages. The cause of action is false advertising.

In contrast, false marking offenders in the U.S. are much luckier. Though anybody may sue them for penalty,³¹¹ the penalty is only a fine of not more than \$500 for every offense.³¹² In a strict sense, patent passing off, or false marking, is not a patent infringing activity in the U.S. because this type of activity is not regulated under chapter 28 of the Patent Act.³¹³ The offender does not infringe upon the right of the patent owner to exclude others from exploiting the patented invention. Whether a specific act like patent passing off or false marking should be severely punished remains a question. The answer will be determined by such factors as the purpose of the legislation and the legislative history.

E. TRIPS Requirements

As discussed in Part I of this paper, TRIPS has set forth minimum requirements for the enforcement of IP rights. Have the U.S. and China already met the minimum requirements? The answer is yes.

The basic remedies provided by TRIPS are injunctions³¹⁴ and damages.³¹⁵ As for injunctions, there is no question that both the Patent Act of the U.S. and that of China have provided that remedy for patent owners. Hence both countries have already met that basic requirement. As for damages, TRIPS puts a limitation on damages. The right owner is only entitled to damages when the infringer knew or had grounds to know that he was engaged in infringing activities.³¹⁶ The limitation on damages provided by the U.S. Patent Act is consistent with this provision. The Patent Act of China does not provide such a limitation. For the reasons stated above, Chinese courts hold that a patent owner is entitled to damages for any infringement. The fact that the infringer did not know or should not have known he was infringing is not a defense for damages. In this respect, the protection for the patent owner in China is well above the requirement set forth by TRIPS.

TRIPS also provides that appropriate attorney fees should be paid to the right owner. This is not a problem in the U.S., nor in some courts in China. However, as discussed in Part III, the Supreme Court of China should promulgate a judicial interpretation to unify the decisions of the lower courts on the issue of attorney fees after China's access to the WTO.

As for the TRIPS provision that the right owner may recover profits and/or payment of pre-established damages even where the infringer did not know or had no reasonable ground to know that he was engaged in infringing activity,³¹⁷ it does not pose a problem in the United States, since the requirement of this provision is not compulsory.

³¹¹ 35 U.S.C. § 292(b).

³¹² 35 U.S.C. § 292(a).

³¹³ 35 U.S.C. §§ 271-273 (1994 & Supp. 1999).

³¹⁴ See TRIPS, supra note 8, at art. 44.

 $^{^{315}}$ See TRIPS, supra note 8, at art. 45.

 $^{^{316}}$ Id.

 $^{^{317}}$ See TRIPS, supra note 8, at art. 45(2).

TRIPS does not require that courts impose criminal sanctions upon patent infringers. Therefore, the criminal liability imposed upon those passing off patents by Chinese laws is above the requirement.

As a member state, the U.S has already met the minimum requirements provided by TRIPS. China, as a would-be member, meets the requirements too, especially after the amendments to its patent laws in 2000.

V. CONCLUSION

China has made consistent efforts to upgrade its patent laws to provide patent owners with adequate remedies. However, as discussed above, with respect to the standards for granting preliminary injunctions, and in determining lost profits and reasonable royalties, there is still large room for improvement. Additionally, the Supreme Court of China should reconsider the issues of limitations on damages and attorney fees in order to balance the interests of the patent owners and innocent infringers. Unquestionably, the theories and experiences provided by U.S. patent law are good "prior art."