
STRUGGLING AGAINST ENTROPY: MONETARY PATENT INFRINGEMENT DAMAGES AFTER *EBAY*

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ABSTRACT

“Just as the constant increase of entropy is the basic law of the universe, so it is the basic law of life to be ever more highly structured and to struggle against entropy.”¹

Abusive patent litigation is currently one of the biggest topics in patent law. The Federal Trade Commission issued a report on the economic damage caused by patent trolls in October 2016, and the Federal Reserve Bank of St. Louis issued a working paper in 2012 arguing the nation should eliminate the patent system entirely. The power of Congress to create a patent system appears in the Constitution and the First Patent Act was passed in 1790. How did a system that began 225 years ago reach such a crisis stage?

This Article argues that more than 200 years of court decisions and statutory changes have introduced bits of entropy that magnified over time. Early U.S. Supreme Court decisions reveal Justices understood that there was a difference between patentees having an interest in keeping their monopoly close and those, such as trolls, who merely desire to license. This fundamental differentiation was slowly forgotten as time passed and more patentees filed bills in equity, rather than cases at law, to enforce their patents. Because they were entitled to equity jurisdiction, patentees in equity courts received the equitable remedy of an injunction almost as a matter of course and monetary damages reflected such patentees’ entitlement to a close monopoly through assessing an infringer’s profits.

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1. VÁCLAV HAVEL, *LIVING IN TRUTH: TWENTY-TWO ESSAYS PUBLISHED ON THE OCCASION OF THE AWARD OF THE ERASMUS PRIZE TO VÁCLAV HAVEL* 23 (Jan Vladislav ed. 1986) (quoting the Czech writer, philosopher, poet, anti-communist resister, dissident, and president of the Czech Republic).

After merger of equity and law, courts began forgetting to first establish entitlement to an equitable injunction before awarding monetary damages based upon an infringer's profits.

The U.S. Supreme Court case of eBay Inc., v. MercExchange, L.L.C. in 2006 returned the courts to assessing the equitable factors before granting injunctions. However, when awarding monetary damages, the courts still award damages under the Georgia Pacific Corp. v. U.S. Plywood Corp. standards, which include consideration of an infringer's profits, in virtually all cases. This Article recommends returning monetary infringement damages awards to their historical roots so that when a patent holder does not receive an injunction under the eBay factors, in most cases it is not entitled to consideration of the threat of deprivation under the Georgia-Pacific standards and thus is not entitled to assess an infringer's profits to determine a reasonable royalty. Instead, such a patentee is limited to valuation of the technology itself. This may include basing a reasonable royalty on license evidence, valuation of comparable technology, or the purchase price of the patent sold on the open market.

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I. INTRODUCTION

The Second Law of Thermodynamics is often summarized as entropy always increases. In other words, the disorder of a complex system increases

over time.² Perhaps no other legal subject evinces this tendency towards disorder more than patent law.³ The first patent statute was passed by the First Congress in 1790.⁴ Thus, courts have been issuing decisions in patent cases, and thereby increasing the disorder of this complex system, for two-and-a-quarter centuries. The struggle against entropy is perpetual.

The Supreme Court case of *eBay, Inc. v. MercExchange, L.L.C.* attempted to bring order to patent damages.⁵ The *eBay* Court held the Federal Circuit general rule awarding an injunction to a patentee against an infringer absent “exceptional circumstances” was incorrect.⁶ Instead, a patentee post-*eBay* must meet the traditional four-factor test used by courts of equity to obtain an injunction.⁷ Those four factors are: (1) irreparable injury, (2) inadequate remedies at law,⁸ (3) an injunction is warranted after consideration of the balance of harms to patentee and infringer, and (4) the public interest would not be disserved by an injunction.⁹

When *eBay* was decided, it was uncertain how courts would apply these factors.¹⁰ Now that a decade has passed since *eBay*, statistics show that patent holders with strong patents constituting most, if not all, of the value of a product, as well as patentees who practice their patents, almost always get injunctions.¹¹ However, non-practicing entities (NPEs) who have patents that are only a small part of an entire product they do not manufacture

2. See Jim Lucas, *What Is the Second Law of Thermodynamics?*, LIVE SCI. (May 22, 2015), <http://www.livescience.com/50941-second-law-thermodynamics.html>.

3. See generally Craig Edgar, *Patenting Nature: Isn't It Obvious?*, 50 CREIGHTON L. REV. 49 (2016) (showing how courts have confused the Patent Act's Section 103 obviousness with Section 101 patentability over time).

4. An Act to Promote the Progress of Useful Arts, ch. 7, 1 Stat. 109–12 (1790), *repealed by* ch. 11, 1 Stat. 318–23 (1793).

5. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

6. *Id.* at 393–94.

7. *Id.* at 391.

8. This is the most foundational aspect of equity jurisdiction. “[S]uits in equity shall not be sustained in either of the courts of the United States, in any case where plain, adequate and complete remedy may be had at law.” An Act to Establish the Judicial Courts of the United States, ch. 20, 1 Stat. 73–93 (1789), *repealed by* ch. 31, 2 Stat. 156–67 (1802).

9. *eBay Inc.*, 547 U.S. at 391.

10. See *infra* notes 283–88 and accompanying text.

11. Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 IOWA L. REV. 1949, 1952–53 (2016) [hereinafter Seaman, *Permanent Injunctions*].

themselves rarely get injunctions.¹²

Regardless of whether an injunction issues, courts generally award monetary damages to NPEs based upon the threat of deprivation. The theory behind this is that any patentee should be able to receive “a reasonable royalty for the use made of the invention by the infringer.”¹³ This statutory language means patent damages calculations require assessing “use,” thereby implying a court must assess the profit the infringer realized by his unauthorized use and award damages based upon this use.

This Article argues that all monetary patent-damages awards post-*eBay* should focus on whether patentees are entitled to consideration of the potential benefit from the threat of deprivation. Historically, patent damages were divided between “at law” damages and equitable damages. A patentee could choose to file suit at law against an infringer, file a bill in equity, or file in both and receive law and equity remedies if successful in both fora.¹⁴ However, the true distinction between the two, at least in the patent arena, arose by entropy rather than design.¹⁵ Further, the differences between the damages awarded under the two systems were much less stark than is currently believed.¹⁶ Instead, both law and equity courts tried to award patentees damages based upon the value of the technology to the particular patentee, and mostly used the same tools to arrive at the amount.¹⁷ This Article argues that the historical differentiation in patent-damages cases turned on whether the patentee benefited from a “close monopoly” rather than whether the patentee sued at law or in equity.¹⁸ Further, this Article argues the U.S. Supreme Court began the struggle to return patent damages to their historical roots through *eBay*, although perhaps unwittingly.¹⁹

12. *Id.* at 1952–53 n.8.

13. 35 U.S.C. § 284 (2012).

14. Historically, of course, law courts used juries and equity courts did not. Accordingly, throughout most of our history, juries did not determine patent validity because granting a patent was an act of the sovereign. Instead, this task was left to the judge. See Mark A. Lemley, *Why Do Juries Decide if Patents Are Valid?*, 99 VA. L. REV. 1673, 1678, 1686 (2013). Lemley opines that the recent use of juries to decide this issue is a “puzzle.” *Id.* at 1674.

15. See *infra* Part III.

16. Lemley, *supra* note 14, at 1679.

17. *Id.* at 1678.

18. See *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489–90 (1853).

19. See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 390 (2006).

The first Part of this Article provides a detailed history of patent damages showing that early courts and congresses wisely built the patent system in an effort to meet the constitutional goal of advancing science.²⁰ The second Part shows how over time, the courts and Congress became confused about the separation between law and equity cases, thereby causing patent entropy to make its first appearance.²¹ Once it appeared, the rate of increase in entropy quickened, thereby causing greater confusion as time passed.²² Finally, this Article argues that, post-*eBay*, courts have an opportunity to continue the struggle against patent entropy and to return monetary patent damages to their historic roots.²³

II. HISTORY OF PATENT DAMAGES

A. *Building the Complex System*

1. *Constitutional Grant of Authority to Congress*

The authority of Congress to create a patent system is granted by the Patent and Copyright Clause of the U.S. Constitution.²⁴ Article I, Section 8 begins, “Congress shall have the power,” and the Patent and Copyright Clause completes by stating, “To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”²⁵ Thus, Congress alone possesses the power to determine the damages awarded when an infringer violates the patentee’s “exclusive right” to his invention.²⁶

2. *Early Congressional Attempts to Create a Patent System*

a. *Patent Act of 1790*. The Patent Act of 1790 was one of the first statutes passed by the First Congress.²⁷ It was enacted over 225 years ago on April 10, 1790.²⁸

20. *Infra* Part II.

21. *Infra* Part III.

22. *Infra* Part V.

23. *Infra* Part VI.

24. U.S. CONST. art. I, § 8, cl. 8.

25. *Id.*

26. *Id.*

27. James Ryan, Note, *A Short History of Patent Remedies*, 6 CYBARIS INTELL. PROP. L. REV. 150, 155 (2015).

28. An Act to Promote the Progress of Useful Arts, ch. 7, 1 Stat. 109–12 (1790), repealed by ch. 11, 1 Stat. 318–23 (1793).

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That upon the petition of any person or persons to the Secretary of State, the Secretary for the department of war, and the Attorney General of the United States, setting forth, that he, she, or they, hath or have invented or discovered any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used, and praying that a patent may be granted therefor, it shall and may be lawful to and for the Secretary of State, the Secretary for the department of war, and the Attorney General, or any two of them, if they shall deem the invention or discovery sufficiently useful and important, to cause letters patent to be made out in the name of the United States, to bear teste by the President of the United States, reciting the allegations and suggestions of the said petition, and describing the said invention or discovery, clearly, truly and fully, and thereupon granting to such petitioner or petitioners, his, her or their heirs, administrators or assigns for any term not exceeding fourteen years, the sole and exclusive right and liberty of making, constructing, using and vending to others to be used, the said invention or discovery; which letters patent shall be delivered to the Attorney General of the United States to be examined, who shall, within fifteen days next after the delivery to him, if he shall find the same conformable to this act, certify it to be so at the foot thereof, and present the letters patent so certified to the President, who shall cause the seal of the United States to be thereto affixed, and the same shall be good and available to the grantee or grantees by force of this act, to all and every intent and purpose herein contained, and shall be recorded in a book to be kept for that purpose in the office of the Secretary of State, and delivered to the patentee or his agent, and the delivery thereof shall be entered on the record and endorsed on the patent by the said Secretary at the time of granting the same.²⁹

The portion of the statute concerning assigning damages is Section 4.

That if any person or persons shall devise, make, construct, use, employ, or vend within these United States, any art, manufacture, engine, machine or device, or any invention or improvement upon, or in any art, manufacture, engine, machine or device, the sole and exclusive right of which shall be so as aforesaid granted by patent to any person or persons, by virtue and in pursuance of this act, without the consent of the patentee or patentees, their executors, administrators or assigns, first had and obtained in writing, every person so offending, shall forfeit

29. *Id.*

and pay to the said patentee or patentees, his, her or their executors, administrators or assigns *such damages as shall be assessed by a jury, and moreover shall forfeit to the person aggrieved, the thing or things so devised, made, constructed, used, employed or vended, contrary to the true intent of this act*, which may be recovered in an action on the case founded on this act.³⁰

The damages to be assessed upon proof of patent infringement appear completely open. The statute grants the jury total discretion to assign damages based on the evidence placed before it.³¹ Further, the statute also explicitly requires the infringer to forfeit the infringing articles to the patentee.³² The statute's disgorgement language appears as though it would have an effect close to the remedy we would describe today as an injunction.³³ However, it is unknown how the federal courts interpreted this language.³⁴ Although patent cases were apparently brought under this Act, no court opinions survive.³⁵

This early attempt quickly showed its unworkability in practice. The requirement that the Secretary of State, the Secretary of War, and the Attorney General—"the patent board"—review and approve patents by at least a two-to-one margin was unsurprisingly unwieldy.³⁶ Secondly, the requirement that a patent be not just useful, but "sufficiently useful and important," meant the members of the president's cabinet comprising the patent board were required to conclude an invention had magnitude before issuing a grant.³⁷ Thus, only a few patents were actually issued under this Act, and it probably took more than a year for most patents to issue.³⁸

30. *Id.* § 4 (emphasis added).

31. P. J. Federico, *Operation of the Patent Act of 1970*, 18 J. PAT. OFF. SOC'Y 237, 251 (1936).

32. *Id.* at 237.

33. § 4, 1 Stat. at 111.

34. *See* Federico, *supra* note 31, at 245–47.

35. *Id.*

36. *Id.* at 238.

37. *See id.*; E.C. Walterscheid, *Thomas Jefferson and the Patent Act of 1793*, <http://library.law.columbia.edu/urlmirror/CVLAJLA/> (last visited Nov. 20, 2017) (follow "24 Colum.-VLA J.L. & Arts" hyperlink; then follow "24 Colum.-VLA J.L. & Arts 47" hyperlink; then follow "<http://etext.lib.virginia.edu/journals/EH/EH40/walter40.html>" hyperlink at FN26).

38. *See* Federico, *supra* note 31, at 244–45 (noting that only 57 patents issued under the Patent Act of 1790).

b. *Patent Act of 1793*. The impracticality of the Patent Act of 1790 caused Congress to quickly reconsider its patent framework. On December 9, 1790, only seven months after its passage, the House appointed a committee to amend the 1790 Act.³⁹ The changes Congress ultimately made in the Patent Act of 1793 were substantial and perhaps an overcorrection of the perceived problems with the earlier Act. Section 1 entirely eliminated the review process and made granting a patent purely ministerial.⁴⁰ The damages section was significantly modified.

That if any person shall make, devise and use, or sell the thing so invented, the exclusive right of which shall, as aforesaid, have been secured to any person by patent, without the consent of the patentee, his executors, administrators or assigns, first obtained in writing, every person so offending, *shall forfeit and pay to the patentee, a sum, that shall be at least equal to three times the price, for which the patentee has usually sold or licensed to other persons*, the use of the said invention; which may be recovered in an action on the case founded on this act, in the circuit court of the United States, or any other court having competent jurisdiction.⁴¹

Thus, the Act eliminated the disgorgement requirement.⁴² Further, the Act eliminated the broad discretion granted to the jury to calculate damages.⁴³ Instead, damages were to be calculated as three times the amount which the patentee “has usually sold or licensed” his patent to other persons.⁴⁴ Again, there are no court decisions available to determine how courts interpreted this language.⁴⁵ However, the Supreme Court in an early case explained that this language meant damages were only available if a patentee either “sold” the patent or licensed its use to others.⁴⁶ It did not provide damages for patentees who commercialized an invention and wished

39. Walterscheid, *supra* note 37.

40. Act of Feb. 21, 1793, ch. 11, 1 Stat. 318–23, *repealed by* ch. 357, 5 Stat. 117–25 (1836); *see* Walterscheid, *supra* note 37. The intent behind this was to relieve the busy members of the President’s cabinet from deciding questions of patentability and to pass that task onto the courts. *Id.*; *see* Grant v. Raymond, 31 U.S. (6 Pet.) 218, 242–43 (1832) (discussing that the Secretary of State’s function within the Act is ministerial and that patentability questions are judicial ones).

41. § 5, 1 Stat. at 322 (emphasis added).

42. *See id.*

43. *See id.*

44. *Id.*

45. *See* Federico, *supra* note 31, at 247.

46. *See* Seymour v. McCormick, 57 U.S. (16 How.) 480, 488 (1853).

to keep their monopolies for themselves.⁴⁷

c. *Patent Act of 1800*. The Patent Act of 1793 did not survive very long. In 1800, Congress changed the damages measure to read “three times the *actual damages* sustained by [the] patentee.”⁴⁸ This Act reinstated the jury’s broad discretion to consider any evidence properly placed before it to determine the actual damages sustained by the patentee, including considering an infringer’s profits, and courts would uphold the jury’s determination unless it was “merely hypothetical, imaginary or speculative.”⁴⁹

d. *Summary of Early Creation Steps*. These early Acts changed the measure of infringement damages, but all determinations were made “at law” or by jury.⁵⁰ The Acts did not allow judges to issue the equitable remedy of injunction against an infringer.⁵¹ Further, while the Act of 1790 gave a jury broad discretion to determine damages, it limited recovery to damages plus disgorgement.⁵² The Act of 1793 eliminated the disgorgement requirement, but replaced it with a mandatory three-times damages multiplier.⁵³ However, it limited the jury to considering only the amount the patentee received from licensing his or her patent to others.⁵⁴ The Act of 1800 broadened the evidence a jury could consider when assigning damages, but limited it to

47. *See id.* The Court said the 1793 Act was changed in 1800 because “experience began to show that some inventions or discoveries had their chief value in a monopoly of use by the inventor, and not in a sale of licenses, the value of a license could not be made a universal rule as a measure of damages.” *Id.* *But see* Herbert Hovenkamp, *The Emergence of Classical American Patent Law*, 58 ARIZ. L. REV. 263, 269 (2016) (stating the 1793 Act protected patentees who practiced their own inventions or licensed out to other individuals). This Act indeed protected patentees who practiced their own patents, but only if they also licensed the patent to others. *See McCormick*, 50 U.S. at 488.

48. Act of Apr. 17, 1800, ch. 25, § 3, 2 Stat. 37, 38, *repealed by* ch. 357, 5 Stat. 117–25 (1836) (emphasis added).

49. *See Whitney v. Emmett*, 29 F. Cas. 1074, 1085 (E.D. Pa. 1831). However, a patentee was entitled only to damages “‘he can actually prove, and has in fact sustained.’ It must not rest in conjecture, but must be susceptible of proof, and be actually proved.” *Id.*

50. *See* § 3, 2 Stat. at 38; Act of Feb. 21, 1793, ch. 11, 1 Stat. 318–23, *repealed by* ch. 357, 5 Stat. 117–25 (1836); An Act to Promote the Progress of Useful Arts, ch. 7, 1 Stat. 109–12 (1790), *repealed by* ch. 11, 1 Stat. 318–23.

51. *See* § 3, 2 Stat. at 38; 1 Stat. 318–23; 1 Stat. 109–12.

52. § 4, 1 Stat. at 111.

53. § 5, 1 Stat. at 322.

54. *Id.*

“actual damages.”⁵⁵ However, the mandatory three-times multiplier still applied.⁵⁶ Lastly, none of the early statutes provided for prospective relief. Damages were limited to retrospective relief. If infringement continued after the lawsuit, the only remedy a patentee had was to sue the infringer again.⁵⁷

B. Formation of the Complex System

1. Patent Act of 1819

The problems inherent in not granting prospective relief caused Congress to modify the patent statute in 1819.⁵⁸ This Act conferred upon circuit courts the ability to grant injunctions to remedy patent infringement “according to the course and principles of courts of equity.”⁵⁹ However, it

55. § 3, 2 Stat. at 38.

56. *Id.*

57. Ryan, *supra* note 27, at 159.

58. Act of Feb. 15, 1819, ch. 19, 3 Stat. 481–82, *repealed by* ch. 357, 5 Stat. 117–25 (1836).

59. *Id.* *But see also* Ryan, *supra* note 27, at 188. Ryan’s article is an excellent introduction to the history of patent remedies. However, the Author disagrees with Ryan’s assertion that the Act of 1819 conferred all equitable remedies to federal courts (both injunctions and accountings). The Act of 1819 explicitly authorized only the power to issue an injunction. *Id.* at 169–70. Equitable accountings probably began under the “actual damages” criterion of the Patent Act of 1800. *See* § 3, 2 Stat. at 38. Although there is no case law available, it is unlikely courts began ordering accountings only after obtaining the statutory authority to grant injunctions. The assessment of actual damages under the Act of 1800 was intended to change the requirement limiting damages to license evidence from the Act of 1793. *Id.* Courts determined early that an assessment of actual damages and retrospective damages often required assessing profits. *See supra* note 49 and accompanying text; *infra* note 67 and accompanying text.

The answer to this question hinges upon whether the courts believed they were truly ordering equitable accountings which required equitable jurisdiction. *See* *Whitney v. Emmett*, 29 F. Cas. 1074, 1086 (E.D. Pa. 1831). Historically, in order to obtain a true equitable accounting, a plaintiff had to show a fiduciary relationship with the defendant. *See* Joel Eichenrun, *Remedying the Remedy of Accounting*, 60 *IND. L.J.* 463, 463–65 (1985). Courts of law, however, could order an accounting by transferring a case to an equity court to appoint a master to review a defendant’s books and depose witnesses when necessary. *See* *Burdell v. Dening*, 92 U.S. 716, 720 (1876). These early cases were prior to courts of law having the ability to order discovery as we know it today. *See* Eichenrun, *supra*, at 476–77; *see also* *Sinclair Ref. Co. v. Jenkins Petrol. Process Co.*, 289 U.S. 689, 693 (1933) (granting the remedy of discovery in a breach of contract dispute over a failure to assign a patent); *Root v. Ry. Co.*, 105 U.S. 189, 214–15 (1881) (holding ordering an accounting does not require equitable jurisdiction, but if a court does not have equitable jurisdiction, a jury must determine damages).

also retained trebling actual damages.⁶⁰

2. Patent Act of 1836

With the availability of injunctions, Congress began to question the necessity of the mandatory treble damages award. The Patent Act of 1836 returned the requirement that a patent be examined before issuance; it also set up a federal agency to examine patent applications.⁶¹ Regarding damages, it eliminated the existing mandatory treble and made trebling a discretionary determination by the court.⁶² The most a court could award was three times the actual damages suffered and proved by the patentee.⁶³

This question is complicated because federal courts often granted injunctions in patent cases prior to the Act of 1819. However, in those cases their authority to grant injunctions stemmed not from federal law but from state law and only arose in cases where diversity of citizenship was the basis for federal jurisdiction. *See Root*, 105 U.S. at 193.

60. Ryan, *supra* note 27, at 162 (questioning why Congress would continue to mandate treble actual damages while also awarding an accounting under equitable principles). According to Ryan, the trebling was intended to adequately compensate a patentee who was not able to meet the “difficult procedural rules” that accompanied equitable jurisdiction. *Id.* In actuality, the only equitable remedy for infringement under the Act of 1819 was an injunction. 3 Stat. at 481. The Act of 1819 allowed injunctions to provide prospective relief. *Id.* Retrospective relief remained unchanged.

It remains unknown why mandatory trebling persisted after injunctions were added as an available remedy. Legislative histories from this era are limited, so the actual reason will probably remain unknown. However, it is likely, at least initially, Congress intended treble damages to deter infringers and as prospective relief. It is true, as Ryan argues, that there were “difficult procedural rules” that a patentee had to meet before he was entitled to the equitable remedy of an injunction. *See Ryan, supra* note 27, at 162. However, mandatory trebling was first introduced in the Patent Act of 1793. § 5, 1 Stat. at 322. That statute, however, based damages on the amount the patentee “usually sold or licensed [his patent] to other persons.” *Id.* With such a limited base, trebling was not a significant sum. However, upon the introduction of “actual damages” in the Patent Act of 1800, Congress might have simply not contemplated the amount of damages that could be awarded in an infringement suit and thus be subject to trebling. § 3, 2 Stat. at 38. Additionally, the first Patent Act both granted juries broad discretion and required disgorgement. An Act to Promote the Progress of Useful Arts, ch. 7, § 4, 1 Stat. 109, 111 (1790), *repealed by* ch. 11, 1 Stat. 318–23 (1793). The trebling requirement might have been a replacement for disgorgement because a monetary award would have been easier to enforce and a more traditional remedy imposed by a jury.

61. Act of July 4, 1836, ch. 357, § 11, 5 Stat. 117, 121, *repealed by* ch. 263, 5 Stat. 543–45 (1842).

62. *Id.* § 14.

63. *Id.*

That whenever, in any action for damages for making, using, or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or by any patent which may hereafter be granted, a verdict shall be rendered for the plaintiff in such action, *it shall be in the power of the court to render judgment for any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs*; and such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name or names of the person or persons interested; whether as patentees, assignees, or as grantees of the exclusive right within and throughout a specified part of the United States.⁶⁴

a. *Judicial Interpretation*

i. *Seymour v. McCormick*. Beginning with the Patent Act of 1836, there is evidence of the way courts interpreted this language. One example is *Seymour v. McCormick*.⁶⁵ When assessing “actual damages” under this statutory scheme, the jury may consider an infringer’s profits in certain circumstances, but those circumstances are limited.⁶⁶

It must be apparent to the most superficial observer of the immense variety of patents issued every day, that there cannot, in the nature of things, be any one rule of damages which will equally apply to all cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted. A man who invents or discovers a new composition of matter, such as vulcanized India rubber, or a valuable medicine, may find his profit to consist in a close monopoly, forbidding any one to compete with him in the market, the patentee being himself able to supply the whole demand at his own price. If he should grant licenses to all who might desire to manufacture his composition, mutual competition might destroy the value of each license. This may be the case, also, where the patentee is the inventor of an entire new machine. If any person could use the invention or discovery by paying what a jury might suppose to be the fair value of a license, it is plain that competition would destroy the whole value of the monopoly. In such cases the profit of the infringer may be the only criterion of the actual damage of the patentee. But one who invents some improvement in the machinery of a mill could not claim that the

64. *Id.* (emphasis added).

65. *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489 (1853).

66. *See id.* at 488–89.

profits of the whole mill should be the measure of damages for the use of his improvement.⁶⁷

However, this remedy was not only disfavored, it was only used as a last resort: “It is only where, from the peculiar circumstances of the case, no other rule can be found that the defendant’s profits become the criterion of the plaintiff’s loss.”⁶⁸ Most often, license evidence establishes the full measure of the plaintiff’s loss.⁶⁹

ii. *City of New York v. Ransom*. The patentee in *City of New York v. Ransom* held a patent “for a new and useful improvement in the mode of applying water to fire engines so as to render their operation more efficient.”⁷⁰ In a case at law, the patentee offered evidence that the City was able to reduce the total number of fire engines it purchased and therefore

67. *Id.* at 489. *Garretson v. Clark* is often cited as the foundational apportionment case. 111 U.S. 120, 121 (1884); *see, e.g., Westinghouse Elec. & Mfg. Co. v. Wagner Elec. & Mfg. Co.*, 225 U.S. 604, 615 (1912). *McCormick* preceded *Garretson* by more than 30 years.

68. *McCormick*, 57 U.S. (16 How.) at 490.

69. *Id.* at 491.

It appears, from the evidence in this case, that McCormick sold licenses to use his original patent of 1834 for twenty dollars each. He sold licenses to the defendants to make and vend machines containing all his improvements to any extent for thirty dollars for each machine, or at an average of ten dollars for each of his three patents. The defendants made and sold many hundred machines, and paid that price and no more. They refused to pay for the last three hundred machines under a belief that the plaintiff was not the original inventor of this last improvement, whereby a seat for the raker was provided on the machine, so that he could ride, and not be compelled to walk as before. Beyond the refusal to pay the usual license price, the plaintiff showed no actual damage.

Id.

The trial court awarded the patentee the full profits of the infringer for all reapers sold. *Id.* at 488. This amounted to “damages to the enormous sum of \$17,306.66.” *Id.* This is equivalent to over a half million dollars today. *The Inflation Calculator*, WESTEGG, <http://www.westegg.com/inflation> (last visited Jan. 4, 2018). The Court reversed, but it did not hold license evidence was the full measure of patentee’s damages. *See McCormick*, 57 U.S. (16 How.) at 491. Instead, it issued a *venire facias de novo* (a writ for summoning a new jury panel) with instructions to apportion the infringer’s damages related to the improvements in the patent, rather than the entire product. *See id.* (“We think, therefore, that it is a very grave error to instruct a jury ‘that as to the measure of damages the same rule is to govern, whether the patent covers an entire machine or an improvement on a machine.’”); *see also Venire Facias de novo*, BLACK’S LAW DICTIONARY (9th ed. 2009).

70. *City of New York v. Ransom*, 64 U.S. (23 How.) 487, 488 (1859).

argued the “actual damage” from the infringement was reflected in the total price of the number of fire engines the City would have had to purchase had it not infringed his patent.⁷¹ The Court found this measure improper.⁷² General evidence is allowed to prove actual harm, but actual harm to a patentee is not a benefit to a defendant.⁷³ “If there had been any proof that the selling price of a single license for a single engine was four hundred dollars, the jury would have had something to support their verdict for \$20,000.”⁷⁴ Using perhaps its best quotation to describe the difference between harm to a patentee and benefit to an infringer, the Court explained:

If the plaintiffs, unable to furnish any other data for a calculation, had proved that the defendants had made a certain amount of money by putting out the fires in New York, which the plaintiffs would otherwise have made by use of their invention, he might with some reason contend that this was a proper measure.⁷⁵

71. *Id.* at 490. The Court also noted the cost of modifying a fire engine with the patentee’s technology was approximately \$25 per engine. *Id.* at 489.

72. *Id.* at 490–91. The trial court instructed the jury that the cost saved by not purchasing additional fire engines, as a result of “using” the patentee’s technology, was the proper measure of damages. *Id.*; see 1 SAMUEL S. FISHER, REPORTS OF CASES ARISING UPON LETTER PATENT FOR INVENTIONS, DETERMINED IN THE CIRCUIT COURTS OF THE UNITED STATES 255–77 (1870) (providing the trial court opinion).

If the invention is valuable, if by its use the power and efficiency of the fire-engines belonging to the defendant are so increased, that fifty engines used with this improvement are equal in practical effect to seventy-five, or any other number of engines, used without this improvement, the jury are at liberty to infer, if they think the inference is a just one, that the defendant, in its corporate capacity, has saved the cost of the purchase and operation of the additional number of engines which would have been required to produce the same results if this invention had not been used; and that the corporate authorities, if they had admitted the plaintiffs’ rights, *would have paid the amount of this additional cost, or a large portion of it, as the consideration for a license* to use this invention rather than to abandon its use; and that the plaintiffs have therefore lost by the infringement what the defendants would have so paid to secure such license.

Ransom, 61 U.S. (23 How.) at 489–90 (emphasis added). The *Ransom* Court specifically rejected that measure. *Id.* at 490–91.

73. *See id.* at 489.

74. *Id.* This was an award equivalent to approximately \$540,000 in 2016. *The Inflation Calculator*, *supra* note 69.

75. *Ransom*, 61 U.S. (23 How.) at 491. The impertinence of this quotation is often lost on scholars today. For example, see Daniel Harris Brean, *Ending Unreasonable Royalties: Why Nominal Damages Are Adequate to Compensate Patent Assertion Entities*

The plaintiff was awarded nominal damages.⁷⁶ The Court contrasted its holding in *Ransom* against *McCormick*:

In the case of *Seymour v. [McCormick]*, . . . it was decided by this court that where the profit of the patentee is derived neither from an exclusive use of the thing patented, nor from a monopoly of making it for others to use, the actual damage which he suffers by the use of his improvement without his license, is the price of it, with interest, and no more. It is to his advantage that every one should use his invention, provided he pays for a license. The only damage to the patentee is the non-payment of that sum when the infringer commences the use of the invention.⁷⁷

iii. *Suffolk Co. v. Hayden*. In *Suffolk Co. v. Hayden*, the patentee filed suit against a manufacturer and argued it was unnecessary for him to prove he had an established royalty or to show any license evidence in order to receive damages.⁷⁸ Instead, he could base his presentation to the jury on

for *Infringement*, 39 VT. L. REV. 867, 891 (2015). Brean interprets this quotation as allowing a jury to assess damages for infringement based upon the value the infringer gained by the “use” of the invention “as long as the profit was proven to be linked to the infringing feature.” *Id.* This is incorrect. The patentee in *Ransom* did not manufacture fire engines, but invented a way to improve them. *See Ransom*, 64 U.S. (23 How.) at 488. In a case where he could not benefit from maintaining a close monopoly, it was improper to base actual damages on the total cost of a fire engine. *See generally id.* at 488–89. The patentee suffers no loss from New York City putting out fires. *See id.* at 488. Further, and perhaps more importantly, the City of New York likewise earns no profit putting out fires. *See also Elizabeth v. Pavement Co.*, 97 U.S. 126, 140 (1877) (stating a city makes no profit from purchasing and having installed an allegedly infringing roadway).

76. *Ransom*, 64 U.S. (23 How.) at 488.

77. *Id.* at 489 (internal citation omitted). *McCormick* was between two manufacturers, which meant the patentee would benefit from a “monopoly of making it for others to use.” *Id.* In *Ransom* then, we have the first discussion of what a reasonable royalty would, or should have, become. *See id.* In instances where a patentee could not benefit from a close monopoly and has no license evidence, the only recourse is to provide evidence of the *value of a hypothetical license*, not the *value of the technology*. *See id.*; *see also Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489 (1853) (stating that for patentees who benefit from a close monopoly, “[i]f any person could use the invention or discovery by paying what a jury might suppose to be the fair value of a license, it is plain that competition would destroy the whole value of the monopoly”).

78. *Suffolk Co. v. Hayden*, 70 U.S. (3 Wall.) 315, 320 (1865). Contrast the holdings in *McCormick*, *Hayden*, and *Ransom*. In *McCormick*, the patentee sued a competing manufacturer of a mechanical reaper. *See* 57 U.S. (16 How.) at 480–81. In *Hayden*, the patentee sued a textile plant (one of the largest textile mills in the United States during the period around the Civil War). *See Hayden*, 70 U.S. (3 Well.) at 315. The mill’s turbine

general evidence.⁷⁹ That is, evidence of the value of the improvement the patented technology afforded to the infringer.⁸⁰ The Court held:

There being no established patent or license fee in the case, in order to get at a fair measure of damages, or even an approximation to it, general evidence must necessarily be resorted to. And what evidence could be more appropriate and pertinent than that of the utility and advantage of the invention over the old modes or devices that had been used for working out similar results? With a knowledge of these benefits to the persons who have used the invention, and the extent of the use by the infringer, a jury will be in possession of material and controlling facts that may enable them, in the exercise of a sound judgment, to ascertain the damages, or, in other words, the loss to the patentee or owner, by the piracy, instead of the purchase of the use of the invention.⁸¹

b. *Summary of Status Under Patent Act of 1836.* The language of the Patent Act of 1836 awarding “actual damages” to a patentee for infringement did not necessarily mean a patentee had to show an established royalty to get an award beyond nominal damages.⁸² Instead, the jury was

was restored and is now part of Lowell National Historical Park. *See Suffolk Mills Turbine Exhibit*, NAT'L PARK SERV., <https://www.nps.gov/lowe/planyourvisit/upload/suffolk.pdf> (last visited Mar. 29, 2017). In *Ransom*, the patentee did not sue a manufacturer, but a user of his technology. *See Ransom*, 64 U.S. (23 How.) at 488–89.

79. *Hayden*, 70 U.S. (3 Wall.) at 319–20.

80. *Id.*

81. *Id.* at 320.

82. It is true *Whittemore v. Cutter* establishes the grant of nominal damages under the Patent Act of 1800's definition of “actual damages” and thus was the first reported nominal damages case. *Whittemore v. Cutter*, 29 F. Cas. 1123, 1125 (D. Mass. 1813). However, in that case the jury found the defendants made an infringing machine, but had not yet used it to produce infringing articles. *Id.* Despite this finding, it awarded the plaintiff \$350 as damages. *Id.* This is equivalent to approximately \$4,400 in 2016 dollars. *The Inflation Calculator*, *supra* note 69. Justice Joseph Story found this award inconsistent with the jury's finding of no “use” of the machine. *Whittemore*, 29 F. Cas. at 1125. He ordered a new trial stating,

If the jury are of opinion, that an user of the machine is actually proved in this case, the rule of damages should be the value of the use of such a machine, during the time of the illegal user. If the jury are of opinion, that a making of the machine only is proved, as there is no evidence in the case, to show any actual damages by the making, they ought to give nominal damages to the plaintiffs.

Id. Justice Story did not limit the evidence presented to the jury by the plaintiff to established royalty or license evidence. *See id.* Making a machine that is unused costs the maker, not the patentee. *Id.*

given discretion by the court to determine what the term “actual damages” encompassed.⁸³ However, a patentee could not base its damages calculation on an infringer’s profits without first showing he would have gained from holding a close monopoly.⁸⁴ In a situation like *Ransom*, where a patentee had an interest in everyone using his invention, suing a user absent license evidence resulted in a nominal damages award.⁸⁵

Additionally, a patentee could not receive monetary damages for future infringement; an injunction was the sole remedy for prospective relief.

It is proper to say, as was said in the court below, that the jury, in ascertaining the damages upon this evidence, is not to estimate them for the whole term of the patent, but only for the period of the infringement. A recovery does not vest the infringer with the right to continue the use, as the consequence of it may be an injunction restraining the defendant from the further use of it.⁸⁶

Thus, early in the patent-system development, damages were only to be awarded by juries (and not by the judge, thus making those “legal” damages and not equitable relief) and were supposed to be “actual damages.”⁸⁷ Equitable accountings were available, but were not intended to punish infringers.⁸⁸ Mandatory trebling ended with the Patent Act of 1836,

83. *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489 (1853); *see supra* note 67 and accompanying text.

84. *See McCormick*, 57 U.S. (16 How.) at 491.

85. *City of New York v. Ransom*, 64 U.S. (23 How.) 487, 488 (1859); *see supra* notes 70–77 and accompanying text.

86. *Hayden*, 70 U.S. (3 Wall.) at 320.

87. *See id.*

88. *See Jones v. Morehead*, 68 U.S. (1 Wall.) 155, 165 (1863). *Jones* must be one of the most unusual patent cases ever ruled upon by the Supreme Court. In *Jones*, the patentee invented a new type of door lock which he argued could be used interchangeably in both right-handed and left-handed opening doors. *Id.* at 156–57. With prior-art locks, the lock for an opposite-opening door had to be flipped upside down which resulted in forcing the owner to insert the key upside down. *Id.* at 163. The patentee’s invention was a lock that was merely cased or “faced” on both sides so that it could be attached to the outside of the door on either side. *Id.* The complainant called this a “double-faced” lock. *Id.* The accused infringer invented an improvement called the “Janus-faced” lock, which besides having two faces, also had a double key entry so that the key could be inserted on either side and also could be imbedded inside the door. *Id.* The Janus-faced lock was an immediate economic success, and no locks were ever made under the original patent grant besides two examples made by the inventor himself. *Id.* Nevertheless, the patentee sued the manufacturers of the Janus-faced lock

which made it discretionary with the court (thereby allowing some consideration of equitable principles in the award of monetary damages).⁸⁹

3. *Shift to Equity*

Unsurprisingly, fewer patent cases were brought at law as the nineteenth century progressed.⁹⁰ There were multiple reasons for this shift,

arguing that because both locks were double-faced and capable of being used on both right-handed and left-handed doors, they violated his patent. *Id.* at 164. The patentee received an injunction and an award of profits in the amount of \$13,282.92 (approximately \$263,000 today). *Id.* at 160, 162; *The Inflation Calculator*, *supra* note 69. In answer to the plaintiff's suit, the defendants initially argued they were the proper holders of the patent and admitted they had manufactured and sold locks that met the terms of the patent. *Jones*, 68 U.S. (1 Wall.) at 158. Upon proof, it was shown that several old locks that predated patentee's lock were indeed double-faced, and his patent was invalidated due to lack of novelty. *Id.* at 164. However, because defendants had admitted they made infringing articles in their answer, the plaintiff nevertheless demanded payment. *Id.* at 158. The Court held:

The fact that the defendants did manufacture and sell locks of the character of those patented by Sherwood, must be accepted as established in this case by the pleadings. The admission, however, need go no further than its terms necessarily imply. The language of the admission is satisfied, by assuming that the smallest number of *locks* were made, consistent with the use of that word in the plural, and with the use by defendants of any part of the patent which is valid.

The Circuit Court, by its decree, ordered an injunction, restraining defendants from making, using, and vending said invention, or *any part thereof*, mentioned in said patent; and the payment by defendants to plaintiffs of \$13,282.92 profits made by them.

The result of the views we have expressed is, that this decree must be reversed, and the injunction modified so as to restrain the defendants from using any part of the Sherwood patent, except that embraced in the first claim of invention mentioned in the schedule attached to said patent, and a decree rendered for a nominal sum of one dollar for profits.

Id. at 165 (emphasis in original).

89. Act of July 4, 1836, ch. 357, § 14, 5 Stat. 117, 123, *repealed by* ch. 263, 5 Stat. 543–45 (1842).

90. Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 *YALE L.J.* 848, 913–14 (2016). Beauchamp opines the shift to equity began in the 1850s and 1860s and was “closely linked” to an increase in large-scale patent litigation that arose during this period. *Id.* at 914. Large-scale patent litigation and resulting public consternation was certainly an important factor, and Beauchamp's article is an excellent analysis of the patent litigation explosion that occurred during the mid- to late-nineteenth century. *See*

but a strong reason may have been the likelihood of receiving a nominal damages award, even after successfully convincing a jury a patent was both valid and infringed. Patentees unable to prove they would benefit from a close monopoly probably thought twice before filing suit. The three decades between 1840 and 1870 saw a radical drop in the ratio of patent cases filed at law and in equity.⁹¹ In 1840 the vast majority of patent infringement actions were filed at law; by 1870 almost every infringement action was brought in equity.⁹²

C. Complex System Emerges

1. Patent Act of 1870—Statutory Law

The Patent Act of 1870 was a major revamp of the patent system. That statute had two sections devoted to damages.⁹³

That all actions, suits, controversies, and cases arising under the patent laws of the United States shall be originally cognizable, as well in equity as at law, by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court, or by the supreme court of the District of Columbia, or of any Territory; *and the court shall have power, upon bill in equity filed by any party aggrieved, to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for an infringement, the claimant [complainant] shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby*, and the court shall assess the same or cause the same to be assessed under its direction, and the court shall have the same powers to increase the same in its discretion that are given by this act to increase the damages found by verdicts in actions upon the case; but all

id. at 852. However, Beauchamp ignores the different remedy measures applied to law cases (which were more likely to be brought by a patentee who would not benefit from a close monopoly) and equity cases (which were more likely between competitors). *See supra* notes 65 and 70 (*McCormick* was decided in 1853; *Ransom* in 1859). It is true that patent-assertion entities in the nineteenth century brought infringement actions against users of technology. However, damages were based upon license evidence, not infringer's profits. *See Beauchamp, supra*, at 867–84.

91. Beauchamp, *supra* note 90, at 922–23.

92. *Id.*

93. *See* Act of July 8, 1870, ch. 230, §§ 55, 59, 16 Stat. 198, 206–07.

actions shall be brought during the term for which the letters-patent shall be granted or extended, or within six years after the expiration thereof.⁹⁴

Thus, after 1870, a patentee who filed a bill in equity could receive not only an injunction, but also an award of “the profits to be accounted for by the defendant” and “the damages the complainant has sustained thereby.”⁹⁵ Secondly, for cases filed at law:

[D]amages for the infringement of any patent may be recovered by action on the case in any circuit court of the United States, or district court exercising the jurisdiction of a circuit court, or in the supreme court of the District of Columbia, or of any Territory, in the name of the party interested, either as patentee, assignee, or grantee. And whenever in any such action a verdict shall be rendered for the plaintiff, *the court may enter judgment thereon for any sum above the amount found by the verdict as the actual damages sustained, according to the circumstances of the case, not exceeding three times the amount of such verdict, together with the costs.*⁹⁶

Thus, although post-1819 the patent system awarded at-law, or “actual damage,” as found by the jury and granted the equitable remedy of injunction “according to the course and principles of courts of equity,”⁹⁷ the Act of 1870 explicitly separated equitable jurisdiction from law jurisdiction.⁹⁸ Circuit courts had the power to hear both law and equitable cases, but the remedies varied. Now, a court could grant both an injunction and monetary damages via an accounting of the infringer’s profits “according to the course and principles of courts of equity.”⁹⁹ In a case brought at law, the jury decided “the actual damages sustained.”¹⁰⁰ A court could raise that amount “according to the circumstances of the case,” but could not exceed three times the amount found by the jury.¹⁰¹ Further, a patentee who succeeded under equity could receive both an equitable accounting and “the damages

94. *Id.* § 55 (alteration in original) (emphasis added).

95. *Id.*

96. *Id.* § 59 (emphasis added).

97. *See* discussion *supra* Part II.B.1.

98. *See* §§ 55, 59, 16 Stat. at 206–07.

99. *Id.* § 55.

100. *Id.* § 59.

101. *Id.*

the [patentee had] sustained thereby.”¹⁰²

2. Patent Act of 1870—Judicial Interpretation

The first Supreme Court case to interpret the 1870 Act was *Mowry v. Whitney*.¹⁰³ *Mowry* involved two separate patents held by both Mowry and Whitney concerning a better process to manufacture railway wheels.¹⁰⁴ Such a wheel needs to be tough and soft on the outside, where it runs against the rails where friction is greatest, but strong and hard in the hub where the weight of the railcar and its contents rest.¹⁰⁵ When casting, iron cooled quickly becomes hard and brittle, while iron cooled slowly is tough but softer.¹⁰⁶ Both Mowry and Whitney patented methods to improve the prior-art methods of decreasing the cooling rate of the outside of the wheel while simultaneously increasing the cooling rate of the hub.¹⁰⁷ The trial court found for Whitney—ruling Mowry infringed—and assigned a master in equity to assess profits.¹⁰⁸ The trial court awarded Whitney the full profit of the sale of

102. *Id.* § 55. This did not mean a patentee could receive both profits and damages. In a court of equity, it was allowable to receive damages in addition to profits only where profits did not adequately compensate the patentee. See *Birdsall v. Coolidge*, 93 U.S. (3 Otto) 64, 69 (1876).

[In addition to profits, legal damages should be awarded] in certain cases, where the gains and profits made by the respondent are clearly not sufficient to compensate the complainant for the injury sustained by the unlawful violation of the exclusive right secured to him by the patent. Gains and profits are still the proper measure of damages in equity suits, except in cases where the injury sustained by the infringement is plainly greater than the aggregate of what was made by the respondent; in which event the provision is, that the complainant “shall be entitled to recover, in addition to the profits to be accounted for by the respondent, the damages he has sustained thereby.”

. . . Examples of the kind may be mentioned where the business of the infringer was so improvidently conducted that it did not yield any substantial profits, and cases where the products of the patented improvements were sold greatly below their just and market value, in order to compel the owner of the patent, his assignees and licensees, to abandon the manufacture of the patented product.

Id.

103. *Mowry v. Whitney*, 81 U.S. (14 Wall.) 620 *passim* (1871).

104. *Id.* at 626, 629.

105. *Id.* at 621.

106. *Id.*

107. *Id.* at 626, 628–29.

108. *Id.* at 631.

Mowry's wheels.¹⁰⁹

The Supreme Court held this erroneous.¹¹⁰ The profit to be accounted for was not the full value of the wheel, but the value of the improvement of Whitney's manufacturing process over prior-art methods.¹¹¹ However, the Court also addressed the issue of awarding interest before the court decree:

We add only that in our opinion the defendant should not have been charged with interest before the final decree. The profits which are recoverable against an infringer of a patent are in fact a compensation for the injury the patentee has sustained from the invasion of his right. They are the measure of his damages. Though called profits, they are really damages, and unliquidated until the decree is made. Interest is not generally allowable upon unliquidated damages.¹¹²

Thus, an award of properly apportioned profits are "compensation for the injury the patentee has sustained" when the litigants are competitors.¹¹³ As such, they are "actual damages."¹¹⁴ Properly apportioned awards of profits are compensatory, not restitutional.¹¹⁵

III. ENTROPY EMERGES

A. Initial Appearance

Shortly after the Patent Act of 1870 was passed, entropy began its initial ascent. The statutory separation between legal "damages" and equitable "profits" caused the U.S. Supreme Court to place great importance on whether a patentee filed a bill in equity or sued at law. Any reliance on profits in damages calculations gradually began to be seen as an equitable remedy.¹¹⁶

109. *Id.* at 634. Including interest, the total award amounted to \$122,465.29 (roughly \$2.5 million today). *Id.*; *The Inflation Calculator*, *supra* note 69.

110. *Mowry*, 81 U.S. (14 Wall.) at 650.

111. *Id.* at 651.

112. *Id.* at 653 (emphasis added).

113. *Id.*

114. *Id.*

115. *Contra* Amanda Frye, Note, "Inextricably Commingled": A Restitution Perspective in Patent Remedies, 26 HARV. J.L. & TECH. 669, 670 (2013).

116. *See, e.g.*, *Root v. Ry. Co.*, 105 U.S. 189, 207 (1881).

1. *Burdell v. Denig*

Burdell v. Denig was filed at law, and the evidence was submitted to a jury for resolution.¹¹⁷ Plaintiffs sought consideration of an infringer's profits in the damages award.¹¹⁸ The Supreme Court here first began to confuse the need for equitable jurisdiction to assign a master to consider profits.¹¹⁹

... Profits are not the primary or true criterion of damages for infringement in an action at law. That rule applies eminently and mainly to cases in equity, and is based upon the idea that the infringer shall be converted into a trustee, as to those profits, for the owner of the patent which he infringes,—a principle which it is very difficult to apply in a trial before a jury, but quite appropriate on a reference to a master, who can examine defendant's books and papers, and examine him on oath, as well as all his clerks and [employees].

On the other hand, we have repeatedly held that sales of licenses of machines, or of a royalty established, constitute the primary and true criterion of damages in the action at law.

No doubt, in the absence of satisfactory evidence of either class in the forum to which it is most appropriate, the other may be resorted to as one of the elements on which the damages or the compensation may be ascertained; but it cannot be admitted, as the prayer which was refused implies, that in an action at law, the profits which the other party might have made is the primary or controlling measure of damages.¹²⁰

The Court thus noted that it is difficult to assess profits before a jury, because law courts cannot "examine defendant's books and papers, and examine him on oath."¹²¹ Prior to the Federal Rules of Civil Procedure being adopted, this sort of discovery required using the Federal Equity Rules.¹²² However, a court of law had authority to order an equitable accounting

117. 92 U.S. 716, 719 (1876).

118. *Id.* at 719–20.

119. *Id.* at 720.

120. *Id.*

121. *Id.*

122. See generally Stephen N. Subrin, *Fishing Expeditions Allowed: The Historical Background of the 1938 Federal Discovery Rules*, 39 B.C. L. REV. 691 *passim* (1998) (discussing the history of discovery rules, including the change from Federal Equity Rules to the Federal Rules of Civil Procedure).

without equitable jurisdiction when necessary.¹²³

2. *Root v. Lake Shore & M.S. Ry. Co.*

The invention at issue in *Root v. Lake Shore & M.S. Railway Co.* was an improvement in railroad brakes.¹²⁴ The patentee filed a bill in equity after the patent expired, seeking the entire “gains, profits, and savings” the infringer enjoyed from use of the technology.¹²⁵ The Court held that because it did not have equitable jurisdiction, it must dismiss the equitable bill.¹²⁶ The patentee argued merely holding an infringed patent warranted equitable jurisdiction, even when not entitled to an injunction.¹²⁷ The Court disagreed:

It is the fundamental characteristic and limit of the jurisdiction in equity that it cannot give relief when there is a plain and adequate and complete remedy at law; and hence it had no original, independent, and inherent power to afford redress for breaches of contract or torts, by awarding damages; for to do that was the very office of proceedings at law. *When, however, relief was sought which equity alone could give, as by way of injunction to prevent a continuance of the wrong, in order to avoid multiplicity of suits and to do complete justice, the court assumed jurisdiction to award compensation for the past injury, not, however, by assessing damages, which was the peculiar office of a jury, but requiring an account of profits, on the ground that if any had been made, it was equitable to require the wrong-doer to refund them, as it would be inequitable that he should make a profit out of his own wrong.*¹²⁸

In short then, the Court began in *Root* to believe a jury’s task is to “award [damages] for . . . past injury,” which could be done at law, and equitable damages based on profits, which were now considered restitutorial.¹²⁹ That is, they are gains the infringer made by being a

123. Act of Feb. 15, 1819, ch. 19, 3 Stat. 481–82, *repealed by* ch. 357, 5 Stat. 117–25 (1836).

124. *Root v. Ry. Co.*, 105 U.S. 189, 190 (1881).

125. *Id.*

126. *Id.* at 217.

127. *Id.* at 190–91.

128. *Id.* at 207 (emphasis added).

129. *Id.*

The court has no jurisdiction to give to a plaintiff a remedy for an alleged piracy, unless he can make out that he is entitled to the equitable interposition of this court by injunction; and in such case the court will also give him an account, that

wrongdoer.¹³⁰ However, it also still understands profits may be considered as damages at law and sees no reason why a patentee could not receive the full measure of damages by proceeding at law.¹³¹

Our conclusion is, that a bill in equity for a naked account of profits and damages against an infringer of a patent cannot be sustained; that such relief ordinarily is incidental to some other equity, the right to enforce which secures to the patentee his standing in court; that the most general ground for equitable interposition is, to insure to the patentee the enjoyment of his specific right by injunction against a continuance of the infringement; but, that grounds of equitable relief may arise, other than by way of injunction, as where the title of the complainant is equitable merely, or equitable interposition is necessary on account of the impediments which prevent a resort to remedies purely legal; and such an equity may arise out of, and inhere in, the nature of the account itself, springing from special and peculiar circumstances which disable the patentee from a recovery at law altogether, or render his remedy in a legal tribunal difficult, inadequate, and incomplete; and as such cases cannot be defined more exactly, each must rest upon its own particular circumstances, as furnishing a clear and satisfactory ground of exception from the general rule.¹³²

his remedy here may be complete. If this court do not interfere by injunction, then his remedy, as in the case of any other injury to his property, must be at law.

Id. at 209–10 (quoting *Smith v. London & Sw. Ry. Co.*, 6 CP 14 (1870–71)).

130. *Id.* at 207–08.

131. *Id.*

132. *Id.* at 215–16. In response to the argument that because an accounting is ordered the court has equitable jurisdiction, the Court held:

It is true that it is declared in those cases that, in suits in equity for relief against infringements of patents, the patentee, succeeding in establishing his right, is entitled to an account of the profits realized by the infringer, and that the rule for ascertaining the amount of such profits is that of treating the infringer as though he were a trustee for the patentee, in respect to profits. But it is nowhere said that the patentee's right to an account is based upon the idea that there is a fiduciary relation created between him and the wrong-doer by the fact of infringement, thus conferring jurisdiction upon a court of equity to administer the trust and to compel the trustee to account. That would be a *reductio ad absurdum*, and, if accepted, would extend the jurisdiction of equity to every case of tort, where the wrong-doer had realized a pecuniary profit from his wrong. All that was meant in the opinions referred to was to declare according to what rule of computation and measurement the compensation of a complainant

B. *The Pace Quickens*

1. *Tilghman v. Proctor*¹³³

Even prior to the Patent Act of 1870, the Supreme Court compensated patentees whose inventions resulted in cost savings to the manufacturer.¹³⁴ Absent license evidence, a jury was able to consider the “uses and advantages” of the patentee’s improvement over prior-art manufacturing methods.¹³⁵ Further, such evidence was proof of actual damages and hence recoverable at law.¹³⁶ *Tilghman v. Proctor* held that even when there is an established royalty, the patentee could instead elect to receive the savings the manufacturer enjoyed from using the patented technology.¹³⁷ At first glance, *Tilghman* seems to be a major change in the law of patent damages because it appeared to hold that a patentee at equity can choose equity damages, even where an “adequate and complete remedy may be had at

would be ascertained in a court of equity, which, having acquired jurisdiction upon some equitable grounds to grant relief, would retain the cause for the sake of administering an entire remedy and complete justice, rather than send him to a court of law for redress in a second action. The rule adopted was that which the court in fact applies in cases of trustees who have committed breaches of trust by an unlawful use of the trust property for their own advantage; that is, to require them to refund the amount of profit which they have actually realized. This rule was adopted, not for the purpose of acquiring jurisdiction, but, in cases where, having jurisdiction to grant equitable relief, the court was not permitted by the principles and practice in equity to award damages in the sense in which the law gives them, but a substitute for damages, at the election of the complainant, for the purpose of preventing multiplicity of suits.

Id. at 214–15; *see also supra* note 59. Thus, much of the analysis regarding treating the infringer as a “trustee” of the patentee was invoked because courts found themselves ordering accountings to assess damages, which under traditional notions of equity required equitable jurisdiction.

133. 125 U.S. 136, 159–60 (1888), *superseded by statute*, Remedies for Infringement of Patent, and Other Actions, 35 U.S.C. 284 (2012), *as recognized in* Gen. Motors Corp. v. Devex Corp., 461 U.S. 648, 651 (1983). *General Motors Corp. v. Devex Corp.* recognizes that 35 U.S.C. § 284 superseded *Tilghman* only on the issue of awards of prejudgment interest. *General Motors Corp.*, 461 U.S. at 651–52.

134. *See, e.g.*, *Suffolk Co. v. Hayden*, 70 U.S. (3 Wall.) 315, 319–20 (1865).

135. *See id.* (noting that the lower court permitted this type of evidence).

136. *See id.* at 317–18 (discussing that the lower court “stated the rule as prescribed by the statute, which is the actual damages that the plaintiff has sustained from the infringement”).

137. *Tilghman*, 125 U.S. at 148–49.

law.”¹³⁸ The *Tilghman* Court believed it was rejecting an established royalty—a legal award—and allowing the patentee to choose an equitable remedy.¹³⁹ Further, it believed this result was permitted by the Patent Act of 1870, which divided the remedies available at law and in equity.¹⁴⁰

Instead, the Court in *Tilghman* awarded legal damages just as it had done in *Hayden* when it held that proof of cost savings in the manufacturing process was proof of actual damages.¹⁴¹ *Tilghman* involved the patentee electing between two at-law remedies, rather than between a legal and an equitable remedy. The *Tilghman* Court clearly stated that proof of cost savings is not dependent on the infringer’s profits.¹⁴² The rule the *Tilghman* Court wished to follow is better expressed by *City of Elizabeth v. American Nicholson Pavement Co.*, although the Court in that case also erred when it used the term “profits.”¹⁴³

. . . [A] patentee is entitled to recover the profits that have been actually realized from the use of his invention, although, from other causes, the general business of the defendant, in which the invention is employed, may not have resulted in profits,—as where it is shown that the use of his invention produced a definite saving in the process of a manufacture. . . . On the contrary, though the defendant’s general business be ever so profitable, if the use of the invention has not contributed to the profits, none can be recovered. The same result would seem to follow where it is impossible to show the profitable effect of using the invention upon the business results of the party infringing. It may be added, that, where no profits are shown to have accrued, a court of equity cannot give a decree for profits, by way of damages, or as a punishment for the infringement.¹⁴⁴

138. See *supra* note 8.

139. See *Tilghman*, 125 U.S. at 148–49.

140. *Id.* at 148.

141. See *Hayden*, 70 U.S. (3 Wall.) at 320; see *supra* note 81 and accompanying text.

142. *Tilghman*, 125 U.S. at 146 (“[I]f the defendant gained an advantage by using the plaintiff’s invention, that advantage is the measure of the profits to be accounted for, even if from other causes the business in which that invention was employed by the defendant did not result in profits. If, for example, the unauthorized use by the defendant of a patented process produced a definite saving in the cost of manufacture, he must account to the patentee for the amount so saved.”).

143. *Elizabeth v. Pavement Co.*, 97 U.S. 126, 138–39 (1877).

144. *Id.* (emphasis added) (citations omitted). Use of the term “profits” resulted in court confusion. Lost profits were a legal award, but they were also based on profits. Evidence of savings in the cost of manufacture to a patentee who would benefit from a

2. *Rude v. Westcott*¹⁴⁵

In *Rude v. Westcott*, the patentees filed a bill in equity for an accounting of the defendants' profits under the Patent Act of 1870.¹⁴⁶ The trial court held the patent valid and infringed, and the court ordered an equitable accounting of the infringers' profits.¹⁴⁷ When the master submitted his report, the plaintiffs waived their claim for profits and decided to rely on the proofs they had submitted to establish a "fixed license fee or royalty."¹⁴⁸

The Supreme Court first agreed with the trial court that the license evidence plaintiffs submitted to the master could not be used to support a finding for an established royalty because the payments were made either under the threat of litigation or in settlement of litigation.¹⁴⁹ If an established royalty had been proved, it would have been a good measure of actual damage to patentees.¹⁵⁰ However, the Court allowed plaintiffs to try to prove actual damages to themselves beyond established royalty.¹⁵¹ The trial court had ordered the master to go back and review the evidence submitted by plaintiffs to see if they had shown any other reliable proof of damages including witness testimony.¹⁵² The evidence presented, however, was found lacking.¹⁵³

Of the witnesses produced by the complainants, it does not appear that any ever manufactured or used the patented machines. One of the principal witnesses stated that he had never read the patent, had never seen a drill made like that described, had no experience in the matter of licenses, and that he placed his estimate of the value of the claim patented at what he considered would be a fair recompense to the inventor. The estimates of all the witnesses of the complainants were merely conjectural; that is, were made without having knowledge of any saving secured either in the cost of the machine or in the labor required for its use, they simply stating that they considered that the amounts

close monopoly was proof of actual damages, and hence legal. However, this too was based upon profits. Because legal suits were rare, any use of profits began to be considered an equitable remedy.

145. *Rude v. Westcott*, 130 U.S. 152, 153 (1889).

146. *Id.*

147. *Id.* at 159.

148. *Id.*

149. *Id.* at 164.

150. *Id.* at 165.

151. *See id.*

152. *Id.* at 166.

153. *See id.* at 167.

named by them would be a reasonable and fair royalty or license fee for the patented drill. Naturally estimates founded upon supposed but not known benefits were widely apart, varying from three to six dollars for a two-horse drill and half those sums for a single horse drill. On the other hand, witnesses produced by the defendants, who had examined, and some of whom had used, the patented drills, stated that they did not consider them of any more utility than other seeding drills in use, and that they did not bring any greater price in the market. The master does not appear to have given weight to the judgment of any of the witnesses, but concluded, though by what process of reasoning is not perceived, that seventy-five cents on each one-horse drill and double that sum on each two-horse drill would be the proper amount to allow, and as he had found, though upon testimony equally loose and insufficient, that there were one thousand one-horse drills and an equal number of two-horse drills, he reported that the complainants were entitled to \$2250 as damages. The court was not satisfied with his conclusion, and, without stating the ground of its action, ordered the amount to be reduced to \$1800 as damages which the plaintiff should recover, besides costs, and \$150 fee for the master, sustaining the exceptions to the report so far as it was inconsistent with that decree, and in other respects overruling them.¹⁵⁴

Unsurprisingly, based upon this “loose and insufficient” evidence, the Court overruled the finding of the trial court and awarded only nominal damages.¹⁵⁵ Thus the *Rude* Court allowed general evidence to prove actual damages.¹⁵⁶ Further, this general evidence explicitly included consideration of the value of the technology absent license evidence.¹⁵⁷ However, when that evidence is insufficient or unsupported, only nominal damages are appropriate.¹⁵⁸

154. *Id.* at 166 (emphasis added). This weak evidence may be why the patentees elected to waive their right to collect profits. It is also worth noting that \$1,800 in 1889 is equivalent to approximately \$50,000 in today’s dollars. *The Inflation Calculator*, *supra* note 69. This is certainly a substantial sum.

155. *Rude*, 130 U.S. at 167.

156. *Id.*

157. *Id.* at 166–67.

158. *Id.* This is not unlike Justice Story’s decision in *Whittemore*. See *supra* note 82. “There was no question in this case of damages arising from lost sales, or injurious competition, for no machines had been manufactured and put on the market by the patentee, or by the complainants, his assignees.” *Rude*, 130 U.S. at 167.

3. *Coupe v. Royer*¹⁵⁹

The subsequent case of *Coupe v. Royer* was brought at law.¹⁶⁰ In *Coupe*, the only evidence the plaintiffs presented regarding damages was one of the complainants who testified regarding the amount he believed infringers had saved by using its patented technology versus the old method.¹⁶¹ The *Coupe* Court found the patentee's damages evidence lacking:

The evidence upon which the plaintiffs relied tended to show that the defendants had treated, upon their own machines, sixty-six thousand hides. They also called Herman Royer, one of the plaintiffs, who testified that in his opinion there would be a saving of \$4 or \$5 dollars a hide by using his machine over what it would cost to soften hides by any other method, and that he knew that the difference between the cost of softening the rawhide by mechanical action in his machine and doing the same work by hand or by any other devices known would be more than one dollar a hide.

This was all the evidence offered on the subject by the plaintiffs. The defendant *Coupe* testified that there was no advantage in the use of the plaintiffs' mechanism, and that he would not take such a machine as a gift.¹⁶²

Thus, although there was conflicting damages evidence, plaintiffs did not produce satisfactory evidence of a specific amount.¹⁶³ According to one complainant, damages could be anywhere between four or five dollars per hide, but no less than one.¹⁶⁴ The jury awarded \$18,000¹⁶⁵ which, assuming it agreed with Mr. Royer regarding the amount of hides treated, amounted to roughly one-quarter dollar per hide. Instead of merely holding the patentee had not met his burden of proof regarding damages and awarding only nominal damages, the *Coupe* Court misconstrued the difference between legal and equitable damages.¹⁶⁶

There is a difference between the measure of recovery in equity and that applicable in an action at law. In equity, the complainant is entitled

159. *Coupe v. Royer*, 155 U.S. 565 (1895).

160. *Id.* at 581.

161. *Id.* at 581–82.

162. *Id.* at 581.

163. *Id.* at 582.

164. *Id.* at 581.

165. *Id.* at 566.

166. *See id.*

to recover such gains and profits as have been made by the infringer from the unlawful use of the invention, and since the act of July 8, 1870, in cases where the injury sustained by the infringement is plainly greater than the aggregate of what was made by the defendant, the complainant is entitled to recover the damages he has sustained, in addition to the profits received. At law the plaintiff is entitled to recover, as damages, compensation for the pecuniary loss he has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his unlawful acts—the measure of recovery in such cases being not what the defendant has gained, but what plaintiff has lost.¹⁶⁷

From *Coupe* onward, the Court believes any consideration of the value of a patent to the manufacturer is an equitable remedy and that actual damages only involve consideration of “what plaintiff [lost].”¹⁶⁸ This error increases the pace of the shift from law to equity. Because few cases are filed at law, it becomes increasingly difficult to determine whether an award is legal or equitable. The true fulcrum upon which patent damages rest is whether the patentee benefits from maintaining a close monopoly.¹⁶⁹ If the patentee does—and meets the burden of proof—he or she gets a fair award based upon consideration of the value of the technology with the threat of deprivation. This may include profits and manufacturer savings. If not, the best the patentee can get is royalty based on license evidence.¹⁷⁰ If this burden of proof cannot be met, nominal damages are awarded.¹⁷¹

167. *Id.* at 582.

168. *See id.*

169. *See generally* Yale Lock Mfg. Co. v. Sargent, 117 U.S. 536 (1886). Under a bill filed in equity where there is no license evidence and no evidence an infringer made a profit by infringing, a plaintiff who can prove he or she had the capacity to make all the sales infringer did, and therefore shows there would have been a benefit by maintaining a close monopoly, may receive the difference between what would have been charged for the item had there been no infringement and what was actually charged. *Id.* at 552. Lost profits would appear legal as “actual damages.” If a patentee can prove he or she would have made all the sales the infringer did, are not those lost sales actual damages to himself? The Supreme Court thought so in 1853. *See* Livingston v. Woodworth, 56 U.S. (15 How.) 546, 560 (1853), *superseded by statute*, Act of July 8, 1870, ch. 230, 16 Stat. 198, 206–17, *as recognized in* Robert Bosch, LLC v. Pylon Mfg. Corp., 719 F.3d 1305 (Fed. Cir. 2013).

170. *See* cases cited *supra* note 77.

171. *Rude v. Westcott*, 130 U.S. 152, 167 (1889).

IV. THE RISE OF REASONABLE ROYALTY

A. *Consternation with Nominal Damages*

1. *Westinghouse Elec. & Mfg. Co. v. Wagner Elec. & Mfg. Co.*

The number of cases in which courts awarded nominal damages in infringement actions led to efforts by infringers to avoid paying damages. In *Westinghouse Electric & Manufacturing Co. v. Wagner Electric & Manufacturing Co.*, the Supreme Court held in an equity suit that a plaintiff who is unsuccessful at apportioning an infringer's profits to the patented invention did not receive nominal damages.¹⁷² If it is impossible for a plaintiff to separate defendant's profits using all the evidentiary tools available because the infringer made insignificant "improvements," the burden falls on the infringer to avoid having his entire profit awarded to the patentee.¹⁷³

2. *Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*

Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co. is the first Supreme Court case finding a "reasonable royalty" is the proper method to apportion profits in an equity suit when there is no established royalty or lost profits (i.e., legal damages), and it is both impossible to apportion the defendant's profits and inequitable to award the entire profit to the

172. *Westinghouse Elec. & Mfg. Co. v. Wagner Elec. & Mfg. Co.*, 225 U.S. 604, 620 (1912).

173. *Id.* at 620–21. *Westinghouse* is often misunderstood as having awarded too much to the patentee and thus having led to the Court's adoption of reasonable royalty just three years later. See *Recovery in Patent Infringement Suits: Hearing on H.R. 5231 Before the H. Comm. on Patents*, 79th Cong. 2d Sess. 8 (1946) (statement of Conder C. Henry, Assistant Comm'r of Patents) [hereinafter Statement of Conder C. Henry]. Mr. Henry calls the *Westinghouse* rule "unjust" and "unsound" because it allows a patentee to receive the total amount of infringer's profits in a situation with a complex device where it is impossible for either patentee or infringer to apportion the amount of profit that is a result of the patentable improvement. *Id.* This was not the holding of *Westinghouse*. Instead, the master found that the non-infringing changes the infringer made to the device were not improvements at all; they "added nothing to the profits, but, on the contrary, had crippled the coil and lessened the electrical efficiency of the transformer." *Westinghouse Elec & Mfg. Co.*, 225 U.S. at 616–17. It was inequitable to award the plaintiff only nominal damages, because the infringer was successful in making apportionment impossible for the patentee by making either insignificant "improvements" or changes that actually made the device less efficient. *Id.* at 620–21. In such a situation, it was equitable to award the patentee the infringer's full profit from selling the infringing device. *Id.*

plaintiff.¹⁷⁴ The Court remanded the case to the trial court to take general evidence to determine what a “reasonable royalty” would be “considering the nature of the invention, its utility and advantages, and the extent of the use involved.”¹⁷⁵ To those who would argue this holding is inconsistent with *Coupe*, the Court reminded readers:

In that case—an action at law —there was no proof of what would have been a reasonable royalty but only of what the defendant had made or might have made out of the infringement; and all that the court held was (a) that the damages were not to be measured by what the defendant had gained or might have gained but by what the plaintiff had lost, and (b) that, as the evidence disclosed . . . “no license fee, no impairment of the plaintiff’s market, in short, no damages of any kind,” the verdict could not exceed a nominal sum.¹⁷⁶

Thus, calculation of a reasonable royalty is an equitable remedy.¹⁷⁷ However, it involves both traditionally legal and equitable calculation factors.¹⁷⁸ If legal damages will adequately compensate plaintiff for the injury suffered, equitable factors may not be considered.¹⁷⁹ When apportionment is impossible without fault to either party in an equity suit, reasonable royalty is used to compensate the patentee.¹⁸⁰ If it is possible to apportion, but the plaintiff does not adequately develop and present evidence, nominal damages remain the proper award, even in equity.¹⁸¹

B. Patent Act of 1922

Congress appreciated the wisdom the Supreme Court expressed in *Dowagiac*. Only a few years later, its holding was codified in the Patent Act of 1922.¹⁸²

The several courts vested with jurisdiction of cases arising under the

174. *Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*, 235 U.S. 641, 649 (1915). “The patent was valid, and the invention meritorious. The infringing sales covered 2500 or more drills, the profits were substantial, and the damages, if rightly measured, were evidently more than nominal.” *Id.* at 650–51.

175. *Id.* at 648–49.

176. *Id.* at 649.

177. *See id.*

178. *See id.*

179. *See id.*

180. *See id.*

181. *See id.* at 648.

182. *See Act of Feb. 18, 1922, ch. 58, sec. 4921, § 8, 42 Stat. 389, 392.*

patent laws shall have power to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction. *If on the proofs it shall appear that the complainant has suffered damage from the infringement or that the defendant has realized profits therefrom to which the complainant is justly entitled, but that such damages or profits are not susceptible of calculation and determination with reasonable certainty*, the court may, on evidence tending to establish the same, in its discretion, receive opinion or expert testimony, which is hereby declared to be competent and admissible, subject to the general rules of evidence applicable to this character of testimony; and upon such evidence and all other evidence in the record the court may adjudge and decree the payment by the defendant to the complainant of a *reasonable sum as profits or general damages* for the infringement¹⁸³

This statute had two major effects.¹⁸⁴ First, in equity a complainant was now entitled to receive a reasonable sum from the defendant, but only if the defendant has realized profits from the infringement “to which the complainant is justly entitled.”¹⁸⁵ Second, in cases at law, the complainant is again entitled to a reasonable sum “for the damages the complainant has sustained” as a result of the infringement.¹⁸⁶ Although this language came directly from Supreme Court cases, it codifies the confusion within the courts regarding assessing the value of the technology, especially the *Hayden* and *Tilghman* rule that awards a patentee the cost savings the technology afforded a manufacturer.¹⁸⁷ In a case at law, a complainant was only entitled to actual damages.¹⁸⁸ In equity, a complainant was entitled to receive the

183. *Id.* (emphasis added).

184. Congress did not intend to *change* the law so much with the Patent Act of 1922 as merely codify the changes occurring within the federal courts.

185. § 8, 42 Stat. at 392.

186. *See id.*

187. *Tilghman v. Proctor*, 125 U.S. 136, 144 (1888), *superseded by statute*, Remedies for Infringement of Patent, and Other Actions, 35 U.S.C. 284 (2012), *as recognized in* *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 651 (1983); *Suffolk Co. v. Hayden*, 70 U.S. (3 Wall.) 315, 320 (1865).

188. *Tilghman*, 125 U.S. at 143.

profits the defendant received from the infringement, but because the “reasonable sum” remains equitable, a complainant must show he is “justly” entitled to the award.¹⁸⁹

It is interesting, however, that the statute uses the term “reasonable sum” rather than “reasonable royalty.”¹⁹⁰ The courts treated “reasonable sum” as a basis for assessing the infringer’s profits in order to assess damages.¹⁹¹ A reasonable sum included assessing how much the infringer made from the piracy.¹⁹² Therefore, the problems associated with performing equitable accountings continued. Members of the patent bar continued to have concerns regarding the time and effort required to conduct an equitable accounting and the resulting delays when awarding damages.¹⁹³

V. ENTROPY INTENSIFIES

A. Attempts to Reduce Problems Associated with Equitable Accountings

1. Patent Act of 1946

In order to reduce the problems associated with conducting equitable accountings in patent infringement suits, Congress changed the damages statute in 1946.¹⁹⁴

The several courts vested with jurisdiction of cases arising under the patent laws shall have power to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and upon a judgment being rendered in any case for an infringement the complainant shall be entitled to recover general damages which shall be due compensation for making, using, or selling the invention, not less than a reasonable royalty therefor, together with such costs, and interest, as may be fixed by the court.

....

189. See *supra* note 183 and accompanying text.

190. See § 8, 42 Stat. at 392.

191. See *id.*

192. See *id.*

193. See *id.*

194. Act of Aug. 1, 1946, ch. 726, 60 Stat. 778 (codified as amended at 35 U.S.C. § 284 (2012)).

The court shall assess said damages, or cause the same to be assessed, under its direction and shall have the same power to increase the assessed damages, in its discretion, as is given to increase the damages found by verdicts in actions in the nature of actions of trespass upon the case¹⁹⁵

Two things are important to keep in mind regarding the changes made in the Patent Act of 1946. First, Congress used the term “reasonable royalty” instead of “reasonable sum.”¹⁹⁶ This was a deliberate alteration intended to reduce the number of equitable accountings that were ordered.¹⁹⁷ Because the court would be estimating a reasonable royalty, it was unnecessary for an inquiry into the infringer’s profits in every case.¹⁹⁸ “Reasonable royalty for the use” was intended to be different than “reasonable sum as profits.”¹⁹⁹ Congress intended the floor of recovery should be a reasonable royalty, based on an assessment of the value of a license, to a patentee who wished to license his patent to everyone interested and therefore would not benefit from a close monopoly.²⁰⁰ Consideration of an infringer’s profits was unhelpful to this determination.²⁰¹ Congress clearly appreciated that apportionment was difficult to render, even as early as 1946.²⁰²

[In the early days of patent law] patents were almost always on simple things which were made and sold, and it was possible in such

195. *Id.*

196. *See id.*

197. *See* Statement of Conder C. Henry, *supra* note 173, at 7 (“By making it unnecessary to have proceedings before masters and eliminating the element of profits except as an element of general damages in patent infringement suits and empowering equity courts to assess general damages, the measure represents proposed legislation which in my judgment is long overdue.”).

198. *See id.* The problems associated with apportionment were apparent to Congress, even in 1946. *See id.* (“Frequently a suit for patent infringement involves the infringement of only an improvement in a complex machine, and it is impossible to apportion profits due to the improvement. In such circumstances the proceedings before masters, which are conducted in accordance with highly technical rules and are always expensive, are often protracted for decades and in many cases result in a complete failure of justice.”).

199. *See id.*

200. *See supra* note 77.

201. *See* *City of New York v. Ransom*, 64 U.S. (23 How.) 487, 491 (1859).

202. *See Recovery in Patent Infringement Suits, Hearing on H.R. 5231 Before the H. Comm. on Patents, 79th Cong. 2d Sess. 3 (1946)* (statement of Robert K. Henry, Rep. in Cong. from the State of Wis.) [hereinafter Statement of Robert K. Henry].

cases to determine the profits wrongfully made by the infringer.

Now, however, by far the greater number of patents that are in litigation are on special and often relatively insignificant parts of complex structures to which the patented feature is so related that it is absolutely impossible to apportion the profits due to the invention

The result is that there is a complete failure of justice in almost every case in which supposed profits are recovered or recoverable.²⁰³

Instead, license evidence and evidence of the value of a license to a patentee would be more controlling than an infringer's profits. A reasonable royalty would not be based on a threat of deprivation because the patentee had no interest in depriving the infringer of the technology, but wished to license to all takers.²⁰⁴ The patent itself is worthless to such an NPE because it has to be used by someone to create value.

Secondly, separation between law and equity courts ended in the federal system with the adoption of the Federal Rules of Civil Procedure in 1938.²⁰⁵ Thus, the Patent Act of 1946 was the first patent act passed after there was no longer separation between the two fora.

Importantly, the Patent Act of 1946 was intended to *reduce* the number of equitable accountings and to make accountings easier by inserting more

203. *Id.*

204. John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 786–87 (2013) (quoting *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1158 (6th Cir. 1978)).

205. *Jurisdiction: Equity*, FED. JUD. CTR., <https://www.fjc.gov/history/courts/jurisdiction-equity> (last visited Oct. 24, 2017).

court oversight.²⁰⁶ It was not intended to eliminate accountings.²⁰⁷ It especially was not intended to impose inquiry into an infringer's profits in every case.²⁰⁸

Let me state what the bill does: Under the present law, if a suit is maintained for the infringement of a patent, the measure of damages is the profit made by the alleged infringer and also general compensatory damages which might have been suffered by the claimant.²⁰⁹

Experience has proven that it is such a difficult accounting matter to determine what the profit of the alleged infringer has been that there is almost always an interminable delay in connection with the recovery sought.²¹⁰

206. Statement of Robert K. Henry, *supra* note 202, at 13.

Then, another thing: After the case goes to the master for an accounting, it is entirely out of the control of the court. In other words, the court lets the master take control of the case and the master has to go on and find out what is infringement and what is not. Of course, motions can be made to the court, but the court usually lets the master go ahead and take accountings upon any devices that may be developed after injunction has been granted and the master has the burden of determining long after the decision is rendered what would be an infringement of the patent as it was originally construed by the court.

Recovery in Patent Infringement Suits: Hearing on H.R. 5231 Before the H. Comm. on Patents, 79th Cong. 2d Sess. 12 (1946) (statement of Edwin B. H. Tower, Jr., Legis. Comm., Milwaukee Patent Bar Ass'n)[hereinafter Statement of Edwin B. H. Tower]. After adoption of the Federal Rules of Civil Procedure, legal courts had the ability to order discovery and could therefore better control the discovery process so that appointment of a master was no longer necessary. Subrin, *supra* note 122, at 743.

207. *See id.*

208. Statement by Edwin B. H. Tower, *supra* note 206, at 12.

209. 92 Cong. Rec. 9188 (1946) (statement of Sen. Pepper) [hereinafter Pepper Statement] (referencing Act of Aug. 1, 1946, ch. 726, 60 Stat. 778 (codified as amended at 35 U.S.C. § 284 (2012))). *But see supra* note 102. Legal damages were only awarded in equity where an accounting would not adequately compensate plaintiff for the infringement.

210. Pepper Statement, *supra* note 209. Equitable accountings were very problematic.

I think everyone here probably knows that many [equitable accountings] run from 10 to 20 years. I have been in some that run as high as 10 years, and others I have known have gone on for 20 years. Some now are running that have been running 20 years and all the people that started in the accounting are dead.

Statement of Edwin B. H. Tower, *supra* note 206, at 13.

Consequently, the basis laid down by this bill is general compensatory damages which the plaintiff in the suit sustains. Of course, that may include profits, but it is not limited to profits; and it is not necessary to prove profits, if the plaintiff does not find it appropriate to do so.²¹¹

2. Patent Act of 1952

The modifications made to the damages provisions of the Patent Act of 1952 are minor. Further, this portion of the patent law is unchanged and remains current.²¹²

Upon 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.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.²¹³

The provision regarding equity remedies was separated from the monetary damages provision.²¹⁴ “The several courts having jurisdiction of cases under this title may grant injunctions . . . on such terms as the court deems reasonable.”²¹⁵

Congress did not intend any of the changes made in the damages portion of the Patent Act of 1952 to change the application of the damages provision of the Patent Act of 1946.²¹⁶ The 1952 Act, however, removed the word “general” that the 1946 Act used to describe damages.²¹⁷ Instead of the

211. Pepper Statement, *supra* note 209.

212. *See generally* 35 U.S.C. § 284.

213. *Id.* Changes made since 1952 are insignificant, at least to purposes here.

214. *See id.*; 35 U.S.C. § 283 (2012).

215. 35 U.S.C. § 283.

216. Erick S. Lee, *Historical Perspectives on Reasonable Royalty Patent Damages and Current Congressional Efforts to Reform*, 13 UCLA J.L. & TECH. 2, 8 (2009).

217. Vincent P. Tassinari, *Patent Compensation Under 35 U.S.C. § 284*, 5 J. INTELL. PROP. L. 59, 127 (1997).

claimant being “entitled to recover general damages which shall be due compensation . . . [.]” the 1952 Act changed the wording to require the court to “award the claimant damages adequate to compensate for the infringement.”²¹⁸ If anything, Congress intended this language to further limit consideration of an infringer’s profits.

B. *Aro Manufacturing Co., Inc. v. Convertible Top Replacement Co., Inc.*

The first Supreme Court case to address the damages provisions of the Patent Act of 1952 was *Aro Manufacturing Co. v. Convertible Top Replacement Co.*²¹⁹ In *Aro*, the patent at issue concerned fabric tops used on convertible automobiles.²²⁰ Aro manufactured replacement fabric used to repair the convertible tops.²²¹ For a few years, General Motors had a license to use the technology in its automobiles while Ford did not.²²² The patentee subsequently negotiated a license with Ford that covered all previous use of the patent by Ford and a future license again limited to tops manufactured by Ford.²²³ However, the license specifically exempted repair of convertible tops by any entity other than Ford.²²⁴

After entering into the license with Ford, the patentee filed suit against Aro, arguing its replacement fabric used to repair the tops constituted contributory infringement of its patent.²²⁵ The Court first held that once Aro became aware of the patent and that its fabric was used to repair infringing articles, it was liable for contributory infringement for sales made to owners of Ford cars after such knowledge and prior to the license.²²⁶ Despite the parties’ intentions otherwise, after the date of the license there could no longer be any infringing repair of an infringing article because no Ford cars manufactured after the date of the license contained infringing tops.²²⁷

Next, the Court addressed the assessment of damages for the fabric

218. *Id.* at 127 (quoting Act of Aug. 1, 1946, ch. 726, 60 Stat. 778 (codified as amended at 35 U.S.C. § 284 (2012)); Act of July 19, 1952, ch. 29, 66 Stat 812–17 (codified at 35 U.S.C. § 284) (emphasis omitted)).

219. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 478 (1964).

220. *Id.*

221. *Id.* at 482.

222. *Id.* at 478–79.

223. *Id.* at 494.

224. *Id.* at 494–95.

225. *Id.* at 482.

226. *Id.* at 491.

227. *Id.* at 497–500.

sales that occurred prior to the license date.²²⁸ The Court determined that the payment made by Ford to the patentee for its pre-licensed sales constituted full satisfaction for the patentee's damages.²²⁹ The analysis the *Aro* Court uses, however, is imprecise and thus often misinterpreted by current commentators.²³⁰

The Court first analyzes the language of the damages statute.²³¹ This statute, the Court explains, "from the language, the legislative history and the prior law . . . allows the award of a reasonable royalty, or of any other recovery, only if such amount constitutes 'damages' for the infringement."²³² Further, instead of looking at *Coupe* as discussing the difference between damages in equity and at law, the Court short-circuits that analysis and states the Patent Act of 1946 was intended to "eliminate the recovery of profits as such and allow recovery of damages only."²³³

This language is often misunderstood as completely eliminating profit awards in patent infringement suits pursuant to statutory language.²³⁴ This is

228. *Id.* at 500.

229. *Id.* at 502–03.

230. *See infra* note 234.

231. *Aro Mfg. Co.*, 377 U.S. at 504–05; *see also* 35 U.S.C. § 284 (2012).

232. *Aro Mfg. Co.*, 377 U.S. at 505.

233. *Id.*; *see also supra* note 197.

234. *See, e.g.,* Edward V. Filardi, *The Adequacy of Compensation for Patent Infringement—An Analysis of Monetary Relief Under 35 U.S.C. § 284*, 3 *FORDHAM INTELL. PROP., MEDIA & ENT. L.J.* 57, 70–72 (1992) (stating *Aro* "completely put to rest" any idea of awarding profits in a patent infringement action); *see also* Lee, *supra* note 216, at 30–31 (stating the Supreme Court in *Aro* affirmed that the Patent Act of 1946 eliminated award of infringer's profits in infringement actions); Brean, *supra* note 75, at 901 (stating that the Supreme Court in *Aro* held that "the 1946 Act eliminated such profits as recoverable"). Brean goes further and argues *Aro* "effectively overruled the *Ransom*, *Nock*, and *Dowagiac* lines of cases." *Id.* at 900. Brean's inclusion of *Nock* in his list is peculiar. *Philp v. Nock* held attorney fees and other costs associated with litigation were not "actual damages" and hence were unrecoverable in an infringement action. *Philp v. Nock*, 84 U.S. (17 Wall.) 460, 462–63 (1873). Additionally, the *Nock* Court held:

Where the plaintiff has sought his profit in the form of a royalty paid by his licensees, and there are no peculiar circumstances in the case, the amount to be recovered will be regulated by that standard. If that test cannot be applied, he will be entitled to an amount which will compensate him for the injury to which he has been subjected by the piracy. In arriving at their conclusion, the profit made by the defendant and that lost by the plaintiff are among the elements which the jury may consider.

Id. at 462. Rather than overruling these cases as Brean suggests, the Court follows them.

false.²³⁵ *Aro*'s holding is not dependent on the Patent Acts of 1946 or 1952, and is entirely consistent with historical precedent.²³⁶ Unfortunately for patent damages, entropy expands its rise here. The ultimate holding in *Aro* was no different than any other infringement action ever decided by the Supreme Court, whether legal or equitable. The patentee had no interest in maintaining a close monopoly, but wished to license to everyone.²³⁷ In such cases, profits are unrecoverable, before or after the Patent Act of 1952. License evidence—when present—is the only criterion to assess damages.²³⁸

C. Georgia-Pacific Corp. v. U.S. Plywood Corp.

Georgia-Pacific Corp. v. U.S. Plywood Corp. is the seminal reasonable royalty calculation case. Its famous, and increasingly now infamous, 15 factors are considered in virtually every case where a court awards reasonable royalty damages.²³⁹ In *Georgia-Pacific*, the patentee held a patent on Weldtex, a type of striated fir plywood.²⁴⁰ Plywood is made by gluing or cementing together several layers of wood that have alternating grain directions in order to increase strength.²⁴¹ The patent at issue used deep grooving in the top layer of the plywood in order to mask cracking on the surface and diminish separation of the layers at the edging.²⁴²

See Brean, *supra* note 75, at 900. License evidence provides the full extent of patentee's damages in many cases. *See supra* note 69 and accompanying text.

Even the Supreme Court has accepted that *Aro* eliminated profits when calculating patent damages. *See* SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC, 137 S. Ct. 954, 964 (2017). "The equitable remedy of an accounting, however, was not the same as damages. The remedy of damages seeks to compensate the victim for its loss, whereas the remedy of an accounting, which Congress abolished in the patent context in 1946, sought disgorgement of ill-gotten profits." *Id.* (emphasis added) (citing *Aro Mfg. Co.*, 377 U.S. at 505).

235. *See Aro Mfg. Co.*, 377 U.S. at 507. Note here the Court sought to avoid having the damages question be assigned to a master on remand. *Id.* at 502. If the Court intended to hold unequivocally the Patent Acts of 1946 or 1952 foreclosed *any* award of an infringer's profits in all cases, it would have been unconcerned its decision would lead to the appointment of a master on remand.

236. *See supra* note 234 and accompanying text.

237. *Aro Mfg. Co.*, 377 U.S. at 510–11.

238. *See supra* notes 67–69 and accompanying text.

239. Jarosz & Chapman, *supra* note 204, at 779.

240. *Ga.-Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1117 (S.D.N.Y. 1970) [hereinafter *GP2*].

241. *Plywood*, OXFORD ENGLISH DICTIONARY (3d ed. 2006).

242. *Ga.-Pac. Corp. v. U.S. Plywood Corp.*, 243 F. Supp. 500, 503 (S.D.N.Y. 1965) [hereinafter *GPI*].

United States Plywood owned the patent on Weldtex, and its competitor, Georgia-Pacific, filed suit for a declaratory judgment alleging the patent was invalid and its product was not infringing.²⁴³ The trial court initially held the patent invalid, but the decision was overturned on appeal.²⁴⁴ On remand, the case was assigned to a master for assessment of profits.²⁴⁵ United States Plywood argued it was entitled to lost profits, but the master ruled in his report the company could not show it would have made all the sales absent the infringement.²⁴⁶ Under the mistaken impression that if a patentee fails to submit adequate proof of actual damages or adequate proof of apportionment then the appropriate measure in equity is the full profit a defendant made selling the infringing article, the master awarded \$685,837.²⁴⁷ The *GPI* court reversed, finding the reasonable royalty must be used to determine damages.²⁴⁸ Because the master had not determined what the reasonable royalty should be, the court declined to rule on an amount, in part with the hope the parties would reach an agreement.²⁴⁹ Unfortunately, the parties failed to agree, leading to *GP2*.²⁵⁰

The *GP2* court held that when determining the reasonable royalty, 15

243. *GP2*, 318 F. Supp. at 1117.

244. *Id.*

245. *Id.* It is interesting to note the Special Master held that “although an accounting for profits was no longer mandatory since the 1946 amendment (Act of Aug. 1, 1946, ch. 726, § 1, 60 Stat. 778), evidence of GP’s profits should be adduced in connection with the determination of the ‘damages adequate to compensate for the infringement.’” *GPI*, 243 F. Supp. at 502.

246. *GPI*, 243 F. Supp. at 511.

Although the court is cognizant of the onerous burden of proof placed on the owner of an infringed patented article, particularly where he must show as actual damages his own loss of sales or his own loss of profits, the court agrees with the Report that USP’s factually unproved contentions—predicated upon USP’s allegedly substantially identical amounts of GP sales or upon USP’s allegedly measurable percentage (at least 80 percent) of amounts of GP’s sales or upon USP’s net profits allegedly calculated on GP’s sales—are not permissible as a basis for an award of damages because such contentions, in the light of the record herein, fall outside the considerable latitude in speculation sometimes necessary in this type of case.

Id.

247. *Id.* at 513. Again, this is the proper remedy only where the infringer is at fault for the lack of apportionment. *See supra* note 173.

248. *GPI*, 243 F. Supp. at 513.

249. *Id.* at 514.

250. *GP2*, 318 F. Supp. at 1119.

factors should be evaluated.²⁵¹ Several factors concern gathering license evidence, either established or otherwise.²⁵² License evidence is traditionally evidence of actual damages when a patentee does not benefit from a close monopoly.²⁵³

Additionally, however, several of the factors include consideration of an infringer's profits.²⁵⁴ An infringer's profits are relevant where the patentee and alleged infringer are competitors, or at least market participants, because "[i]f any person could use the invention or discovery by paying what a jury might suppose to be the *fair value of a license*, it is plain that competition would destroy the whole value of the monopoly."²⁵⁵ However, when a patentee wishes to license to all takers, "[i]t is to his advantage that every one should use his invention, provided he pays for a license."²⁵⁶ Because a patentee has no interest in denying the infringer the

251. *Id.* at 1120. Interestingly, the *GP2* court did not say these factors were the last word in reasonable royalty calculation. "A comprehensive list of evidentiary facts relevant, in general, to the determination of the amount of a reasonable royalty for a patent license may be drawn from a conspectus of the leading cases. The following are some of the factors *mutatis mutandis* seemingly more pertinent to the issue herein" *Id.* (emphasis added).

252. *Id.* The specific factors and their proper application have been the subject of numerous articles and are beyond the scope of this one. See generally Jarosz & Chapman, *supra* note 204 for a superb review and critique.

253. Commentators often overly criticize early court decisions for requiring a patentee at law to prove his royalty was "established" before he was entitled to anything beyond nominal damages. See, e.g., The Sedona Conference, *Commentary on Patent Reasonable Royalty Determinations* 2–3 (The Sedona Conference Working Paper Grp. on Patent Damages and Remedies, Paper No. WG9, 2016). This is untrue. Even *Rude* itself allowed a patentee to show proof of actual harm using something other than established royalty. See *supra* text accompanying notes 150–52. The *Rude* Court merely was unswayed by the patentee's witness testimony because it was not sufficiently specific. See *supra* note 154 and accompanying text. Instead, the licenses the patentee wished to use to prove damages were held inadmissible under basically the same criteria we follow today: Federal Rule of Evidence 403. See *supra* note 154 and accompanying text; see also *Prism Techs. LLC v. Sprint Spectrum L.P.*, 849 F.3d 1360, 1370–71 (Fed. Cir. 2017). The Federal Circuit in *Prism* was incorrect when it stated the law has "changed significantly since *Rude*." *Id.* at 1372. Although some of the language of *Rude* appears to forbid reliance on settlement agreements unequivocally, the *Rude* Court basically excluded the license at issue for not accurately reflecting the value of the patented technology. *Id.*; see also *supra* notes 149–54 and accompanying text.

254. *GP2*, 318 F. Supp. at 1120.

255. *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489 (1853) (emphasis added).

256. *City of New York v. Ransom*, 64 U.S. (23 How.) 487, 489 (1859); see also *supra* notes 67, 77 and accompanying text.

use of the technology, the measure of damages is “the fair value of a license.”²⁵⁷

Thus, the *GP2* factors are valuable when calculating a reasonable royalty for a patentee who benefits from a close monopoly.²⁵⁸ However, when a patentee benefits from licensing to everyone—that is, when the patentee does not benefit from holding a close monopoly—the *GP2* factors overcompensate.²⁵⁹ The primary problem with *GP2* is that it was decided after *Aro* and cites that decision in the opinion.²⁶⁰ It is certainly not incorrect in the way it analyzes the factual situation placed before it. However, because it was decided after *Aro*, courts began to believe the *GP2* factors should be applied in all patent infringement cases because this was a way to calculate actual damages and that the Patent Act of 1952 mandated this analysis.²⁶¹ That is, consideration of all *GP2* factors was required by statute and was a proper method to calculate a reasonable royalty according to statute.²⁶² This remains the current state of the law.²⁶³ While an NPE may have certain factors limited or minimized under the *GP2* factors, an infringer’s profits nevertheless remain integral to damages calculations.²⁶⁴ Courts ceased to appreciate the historical separation between a patentee who benefited from a “close monopoly” and one who did not and began treating all patentees nearly, if not exactly, the same.²⁶⁵ The result,

257. *McCormick*, 57 U.S. (16 How.) at 489.

258. *See id.*

259. *See* Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent-Damages*, 2010 BYU L. Rev. 1661, 1666 (2010) [hereinafter Seaman, *Reconsidering the Georgia-Pacific Standard*].

260. *See* *Ga.-Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1143 n.5 (S.D.N.Y. 1970) (citing *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 505-06 (1964)).

261. *See* 35 U.S.C. § 284–93 (2012).

262. *See id.*

263. *See id.* § 284.

264. *See GP2*, 318 F. Supp. at 1120.

265. *GP2* factor four touches on evaluating the patentee’s desire to maintain a close monopoly. *Id.* This is appropriate when estimating a reasonable royalty between market participants, as the level of desired “closeness” affects the willingness of the patentee to license the technology. However, when considered as only one factor among many, maximizing this factor does not achieve a valid royalty rate, as it only imposes downward pressure. A patentee who wishes to license to all has no interest whatsoever in maintaining a close monopoly. Such a patentee earns nothing if no one uses the technology. *See City of New York v. Ransom*, 64 U.S. (23 How.) 487, 488 (1859) (“The invention in this case was not one which enabled the patentee to make a profit by a

regrettably, was a rise in the damage awards granted to NPEs.²⁶⁶

Also, historically, most NPEs would not have been able to obtain an equitable accounting, or in other words, an inquiry into the profits gained by an infringer. If a patentee could not benefit from a close monopoly, an infringer's profits were irrelevant to his damages.²⁶⁷ A court would not assign a master to conduct an equitable accounting if it were unnecessary to do so.²⁶⁸ It is often suggested courts have not ordered an equitable accounting in a case since *Aro*.²⁶⁹ While technically true, this is incomplete. In almost every patent infringement case since *Aro*, discovery is allowed in analysis of an infringer's profits, and since this inquiry is relevant to several *GP2* factors, this evidence is admitted in almost every case.²⁷⁰ Although under the liberal discovery rules established in Federal Rules of Civil Procedure it is no longer necessary to assign a master under Rule 53, in essence an "equitable" accounting is conducted in virtually every patent case.²⁷¹ It is true that masters no longer determine what damages should be and provide a recommendation to the court.²⁷² Instead, litigants provide company documents and give deposition testimony directly to opposing counsel, a process which would have been wholly inconceivable during the nineteenth century.²⁷³ Experts and attorneys review and analyze this information and submit to a jury for resolution. However, an infringer's profits are considered in nearly every patent infringement case now, regardless of whether the patentee would benefit from a close monopoly or would be entitled to an equitable injunction.

monopoly of its use.").

266. See *GP2*, 318 F. Supp. at 1120.

267. See *Ransom*, 64 U.S. (23 How.) at 489.

268. See Statement of Conder C. Henry, *supra* note 173, at 7.

269. See, e.g., Michael J. Stimson, *Damages for Infringement of Research Tool Patents: The Reasonableness of Reach Through Royalties*, 2003 STAN. TECH. L. REV. 3, ¶7 (2003).

270. See, e.g., *Spectralytics, Inc. v. Cordis Corp.*, 649 F.3d 1336, 1345–46 (Fed. Cir. 2011), *abrogated by* *Halo Elecs. v. Pulse Elecs. Inc.*, 136 S. Ct. 1923 (2016).

271. See, e.g., *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 394 (2006).

272. See FED. R. CIV. P. 53(a)(1)(B)(ii).

273. See *supra* note 59.

VI. THE STRUGGLE AGAINST ENTROPY BEGINS

A. Entropy Arrested

The rise in damages awards to NPEs caused considerable consternation among attorneys, politicians, courts, economists, and accused infringers.²⁷⁴ Entropy can be impeded and reversed in any human endeavor.²⁷⁵ The Supreme Court began this process when it decided *eBay Inc. v. MercExchange, L.L.C.*²⁷⁶

The shift to equity from law unsurprisingly resulted in injunctions being granted almost to the point of right. After all, an injunction was an equitable remedy.²⁷⁷ If a patentee was not entitled to equitable jurisdiction, he or she would not be in an equitable court in the first place.²⁷⁸ As fewer patent cases were brought at law, infringement actions where an injunction was not granted became rare.²⁷⁹ Courts and practitioners began to believe an injunction was merely a logical outgrowth of the “exclusivity” right of a patent grant.²⁸⁰ The *eBay* Court rejected the adoption of a general rule that found an injunction should issue in all patent cases absent “exceptional circumstances.”²⁸¹ Instead, the Court held the traditional four-factor test of equity must be met before granting an injunction in patent cases.²⁸²

Although there was no dissent in *eBay*, there were two concurrences.²⁸³ The concurrence authored by Chief Justice John Roberts suggested that while a patentee is not “entitled” to an injunction, as a “historical practice” courts have granted them “in the vast majority of patent cases.”²⁸⁴ Therefore,

274. See James Gleick, *Patently Absurd*, N.Y. TIMES MAG. (Mar. 12, 2000), <http://www.nytimes.com/2000/03/12/magazine/patently-absurd.html>; see also Seaman, *Reconsidering the Georgia-Pacific Standard*, *supra* note 259, at 1675–76 n.74 (explaining NPEs bring a disproportionate number of patent infringement suits, often suing a large number of companies and seeking individual settlements).

275. See *supra* note 1 and accompanying text.

276. *eBay Inc.*, 547 U.S. *passim*.

277. See *Root v. Ry. Co.*, 105 U.S. 189, 207 (1881).

278. See *id.*

279. See *eBay Inc.*, 547 U.S. at 392.

280. *Id.* (“According to the Court of Appeals, this statutory right to exclude alone justifies its general rule in favor of permanent injunctive relief.”).

281. *Id.* at 393–94.

282. See *id.* at 391.

283. *Id.* at 394–97.

284. *Id.* at 395. (Roberts, C.J., Scalia and Ginsburg, JJ., concurring).

even with added discretion, injunctions should continue to be commonly granted.²⁸⁵

In Justice Anthony Kennedy's concurrence, he discouraged courts from granting injunctions to NPEs.²⁸⁶ He argued the historical practice outlined by the Roberts concurrence was inapplicable to the present.²⁸⁷ Justice Kennedy opined that as the twenty-first century began, "quite unlike" patent litigation in the past, NPEs used the threat of an injunction to "charge exorbitant fees to companies that seek to buy licenses to practice the patent."²⁸⁸

From at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases. This "long tradition of equity practice" is not surprising, given the difficulty of protecting a right to *exclude* through monetary remedies that allow an infringer to *use* an invention against the patentee's wishes—a difficulty that often implicates the first two factors of the traditional four-factor test.

Id.

285. *Id.*

... [T]here is a difference between exercising equitable discretion pursuant to the established four-factor test and writing on an entirely clean slate. "Discretion is not whim, and limiting discretion according to legal standards helps promote the basic principle of justice that like cases should be decided alike." *Martin v. Franklin Capital Corp.*, 546 U.S. 132, 139 (2005). When it comes to discerning and applying those standards, in this area as others, "a page of history is worth a volume of logic." *New York Trust Co. v. Eisner*, 256 U.S. 345, 349 (1921) (opinion for the Court by Holmes, J.).

Id.

286. *Id.* at 396–97 (Kennedy, J., concurring) (warning courts to only rely on historical practice in applying the four-factor test to grant injunctions "when the circumstances of a case bear substantial parallels to litigation the courts have confronted before").

287. *Id.* at 396.

288. *Id.* Actually, weak patents and improper apportionment have been issues since the beginning of the patent system. See *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 491 (1853); *supra* note 69. The patent at issue in *McCormick* was not the entire reaper, or even an integral part, but the addition of a seat which enabled the user to sit down rather than walk. *McCormick*, 57 U.S. (16 How.) at 491; see also *Atlantic Works v. Brady*, 107 U.S. 192, 200 (1883). In a criticism of weak patents, the Court in *Atlantic Works v. Brady* stated the following:

The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly for every trifling device, every

Thus, when the *eBay* decision was rendered, it was unclear whether federal courts would continue to grant injunctions in the “vast majority” of cases or if NPEs would find injunctions more difficult to obtain. Now that a decade has passed, statistics show courts have significantly reduced the percentage of NPEs receiving injunctions.²⁸⁹ In the unusual circumstance where an NPE gets an injunction, it usually must have at least attempted to practice the patent and failed.²⁹⁰ Patentees who compete with an infringer generally receive injunctions.²⁹¹ However, even between competitors, where a patent is only a small part of a complex product, injunctions are rarely issued.²⁹² Analysis of the “irreparable harm” criterion focuses on harm to the patentee’s established business interests, an issue that does not concern

shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the art. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith.

Id.

289. See Seaman, *Permanent Injunctions*, *supra* note 11, at 1988.

290. *Id.* *Continental Paper Bag Co. v. East Paper Bag Co.* is often cited as establishing the rule that there is no requirement a patentee practice a patent in order to receive an injunction. 210 U.S. 405 *passim* (1908). This is true enough. The Supreme Court in *eBay* cites this case for the proposition that an injunction may issue even when a patentee “unreasonably” fails to practice a patent. *eBay Inc.*, 547 U.S. at 393 (citing *Cont’l Paper Bag Co.*, 210 U.S. at 422–30). The *eBay* Court states the district court was incorrect to make a “categorical rule” denying injunctions to all NPEs. *Id.* Seaman argues his findings showing the majority of NPEs no longer receive injunctions is a “near-categorical denial” of injunctions and is “in tension” with *Cont’l Paper Bag Co.* Seaman, *Permanent Injunctions*, *supra* note 11, at 2003. There is no tension. The litigants in *Cont’l Paper Bag Co.* were competitors. *Cont’l Paper Bag Co.*, 210 U.S. at 406. This type of patent holder benefits from holding his monopoly close, even if he never uses or licenses the patent, because he stops his competitors from using the technology. Under Seaman’s analysis, market participants continue to receive injunctions post-*eBay*, even if they do not practice the patent. *But see* Oskar Liivak & Eduardo M. Peñalver, *The Right Not to Use in Property and Patent Law*, 98 CORNELL L. REV. 1437, 1476–77 (2013) (making a Utilitarian argument that the goal of the patent system should be to promote use).

291. Seaman, *Permanent Injunctions*, *supra* note 11, at 1990.

292. *Id.* at 1991. There is an exception to this rule regarding patents for medical devices. *Id.* Often, rulings on these patents involve public-interest concerns because courts fear an injunction will harm public health. *Id.*

those NPEs merely seeking licenses.²⁹³ Whether an infringement is willful does not have a statistically significant effect on the likelihood of an injunction grant.²⁹⁴ Perhaps unwittingly, courts returned to considerations of whether a patentee benefits from holding a close monopoly when granting injunctions after *eBay*.²⁹⁵ A patentee seeking to license his patent to everyone has no interest in maintaining a close monopoly.²⁹⁶

B. Ongoing Royalties

When injunctions were granted in infringement actions, as a matter of course, they always compensated for the possibility of prospective relief.²⁹⁷ To avoid violating the injunction, a manufacturer who wanted to continue manufacturing his product either had to find a non-infringing alternative or negotiate a license.²⁹⁸ Now that many NPEs no longer receive injunctions, courts started awarding so-called ongoing royalties after *eBay*, and the number of times they have done so continues to increase.²⁹⁹ When

293. *Id.* at 1992.

294. *Id.* at 1998–99; see *City of New York v. Ransom*, 64 U.S. (23 How.) 487, 491 (1859). Willfulness has no effect on the patentee’s interest in maintaining a close monopoly. See *Ransom*, 64 U.S. at 490–91; *supra* note 75. Although a medical doctor by trade, Dr. Franklin Ransom collaborated with former chief engineer of the New York City fire department, Uzziah Wenman, to patent an improvement to fire engines. He presented his invention to the mayor of New York City in 1841, and it is likely the city stole his invention without compensation; Dr. Franklin Ransom ultimately brought a lawsuit to the Supreme Court. See *BASE BALL FOUNDERS: THE CLUBS, PLAYERS AND CITIES OF THE NORTHEAST THAT ESTABLISHED THE GAME* 59 (Peter Morris et al. eds., 2013) [hereinafter *BASE BALL FOUNDERS*]. Intentional willfulness did not stop the Court from awarding nominal damages. See *Ransom*, 64 U.S. (23 How.) at 488, 490. Dr. Franklin Ransom was an original founder of the *New York Knickerbockers* and played in the first recorded organized baseball game in Hoboken, New Jersey, on June 19, 1846, on behalf of the opposing club. *BASE BALL FOUNDERS*, *supra*, at 12, 59. His *New Yorks* (or *New York Nine*) defeated the *New York Knickerbockers* 23–1 in four innings. See *id.* Both teams were comprised mostly of New York City firemen. This game is mentioned in another Supreme Court case regarding monopolies. *Flood v. Kuhn*, 407 U.S. 258, 260–61 (1972). *Flood* continued the Court’s recognition of baseball’s antitrust exemption. *Id.* at 285.

295. See Seaman, *Permanent Injunctions*, *supra* note 11, at 1953.

296. See *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489 (1853).

297. Christopher B. Seaman, *Ongoing Royalties in Patent Cases After eBay: An Empirical Assessment and Proposed Framework*, 23 *TEX. INTELL. PROP. L.J.* 203, 207 (2015).

298. See *id.* at 207–08.

299. *Id.* at 233.

calculating an ongoing royalty rate, the most common method is to apply the *GP2* factors, just as when calculating retrospective damages.³⁰⁰ This analysis is appropriate in actions between competitors and market competitors, but fails when the dispute is between an NPE and a manufacturer.³⁰¹ In most situations where an injunction is not granted, it is because the NPE does not benefit from a close monopoly.³⁰² Accordingly, the lack of an injunction means the patentee is not entitled to consideration of the benefit of the threat of deprivation or consideration of an infringer's profits.³⁰³ An ongoing royalty is appropriate in both NPE and market-participant instances where the patent term continues, but the method of calculation should be different where the patentee does not benefit from a close monopoly.³⁰⁴

C. Compulsory Licenses

Critics of treating NPEs and market participants differently in patent law generally point to the exclusivity of the patent grant.³⁰⁵ In short, if the power of deprivation is not considered when awarding damages, the result is, in effect, a compulsory license.³⁰⁶ Compulsory licenses, critics argue, run afoul of the basics of the patent system.³⁰⁷ Trepidation toward imposing

300. *Id.* at 227–28.

301. *See, e.g.*, Apple, Inc. v. Samsung Elecs. Co., No. 12–CV–00630–LHK, 2014 WL 6687122, at *13 (N.D. Cal. Nov. 25, 2014) (concluding the *GP2* factors are appropriate in a competitor-versus-competitor situation to assess an ongoing royalty in lieu of an injunction). *But see, e.g.*, Paice LLC v. Toyota Motor Corp., 609 F. Supp. 2d 620, 624 (E.D. Tex. 2009) (applying the *GP2* factors to assign an ongoing royalty where the patentee is an NPE and the infringer is a manufacturer).

302. *See* Seymour v. McCormick, 57 U.S. (16 How.) 480, 489 (1853).

303. *See* Statement of Robert K. Henry, *supra* note 202, at 3.

304. *See* Statement of Edwin B. H. Tower, *supra* note 206, at 13.

305. *See* eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 392 (2006).

306. *See, e.g.*, Christopher Anthony Cotropia, *Compulsory Licensing Under TRIPS and the Supreme Court of the United States' Decision in eBay v. MercExchange*, in PATENT LAW: A HANDBOOK OF CONTEMPORARY RESEARCH 559 (Toshiko Takenaka & Rainer Moufang, eds., 2008) (“Compulsory licensees take away the patentee’s exclusive control over the patented technology. The patentee can, and quite often does, authorize others to practice the patented technology, which is usually done for a negotiated fee. Compulsory licenses, in contrast, are basically ‘involuntary contracts between a willing buyer and an unwilling seller imposed or enforced by the state.’ Compulsory licenses are an abrogation of a patentee’s right, where the government allows itself or a third party to practice the patented invention without the patentee’s consent.”).

307. *Id.*

The concept of compulsory licensing runs counter to basic patent theory.

The possibility of compulsory licensing and the involuntary breaking of exclusivity can erode the incentive to invent. A would-be inventor can no longer depend on patent exclusivity as a means of recouping costs because of the uncertainty of such exclusivity. As the likelihood that the patent system will bust patents via compulsory licenses increases, the incentive to create patentable inventions decreases. Compulsory licensing also harms a patentee's ability to recover invention costs by controlling distribution and pricing of the patented technology across different markets. Given that compulsory licensing may deter the creation of the very technology the patent system intends to foster, there must be a significant countervailing interest to justify such licensing. There needs to be some overriding 'political or social objective' that requires a compulsory license for the objective to be met.

Id. at 560. Actually, the patent system was never designed to promote the recoupment of development costs. *See id.* at 559. Often, even the simplest technology has enormous economic value, while a very expensive technology leads to little benefit. Further, when negotiating a license, it is unlikely infringers will be concerned with the cost of developing the technology; rather, they will likely only be concerned with its economic benefit. *See Jarosz & Chapman, supra* note 204, at 795 ("Economic reasoning further suggests the amount that the infringer should be *willing to pay* is up to the incremental benefits that the infringer realized as a result of the infringement that are specifically attributable to the patent."). Eli Whitney's cotton gin was a very inexpensive technology, requiring only "a negligible amount of real engineering." Robert O. Woods, *A Turn of the Crank Started the Civil War*, MECHANICAL ENGINEERING-CIME, Sept. 1, 2009, at 1. Yet prior to Whitney, it took one individual 10 hours of labor to remove the seeds from one pound of cotton fiber. *Id.* at 2. Using a cotton gin, a team of two or three could produce 50 pounds per day. *Id.* Because the technology was so easy to pirate, Whitney never received the economic rewards commensurate with his invention's impact. *Id.*

Likewise, the patent system was not designed "to foster both efficient creation of inventions *and* efficient distribution of those inventions to those who can use them." *Contra* Oskar Liivak, *When Nominal Is Reasonable: Damages for the Unpracticed Patent*, 56 B.C. L. REV. 1031, 1066 (2015). Instead, the goal of the patent system is to advance science by promoting disclosure. *See* Edgar, *supra* note 3, at 76–77 n.164. In the twenty-first century, we often misapprehend the desire to promote disclosure through the patent system that the Founders intended in the late-eighteenth century. *See id.* The patent grant was intended either as a reward that naturally arose from the inventive process or as a reward after completion of a social contract. *Id.* Either way, it was not meant to promote reimbursement of invention costs, nor was it meant to be used as a tool to advance the economy. *See id.* Rather, it was meant to promote the advancement of science. *See id.* The social contract of a patent completes upon disclosure. *See id.* Advancement of the economy or return of invention costs may be a benefit of the patent system, but not its purpose. *Contra* Liivak, *supra*, at 1066. Accordingly, harm results at the point of infringement because the infringer was not the discloser. *Contra id.* at 1067. This is true regardless of whether the harm was intentional, the infringer received actual or constructive notice of the patent through the patent system, or if the patentee practices his patent. *Id.* *But see* Liivak & Peñalver, *supra* note 290, at 1447–48 (arguing *ex ante* licenses in which the patentee offers to transfer technology to a user should be

compulsory licenses on patentees began long ago.³⁰⁸ Intellectual property should be viewed as equivalent to real property. Allowing an infringer to use a patent without permission, therefore, is no different than forcing a property owner to share his home with an intruder, with only the caveat that the invader pay a reasonable rent.³⁰⁹ If no injunction follows infringement, payment of a reasonable royalty is equivalent to the government forcing a citizen to open his home to a trespasser, even after it has ruled the trespass illegal. As the argument goes, once a court finds a patent valid and infringed, any infringement after that determination is willful, and when an injunction does not issue, an ongoing royalty set at the same rate as past infringement violates exclusivity—the basic foundation of the patent system.³¹⁰

viewed as better for society than an ex post license which is a promise not to sue someone who is already using the technology). The amount of injury varies, but not its existence. True, the harm for a truly worthless disclosure might be zero. *See Coupe v. Royer*, 155 U.S. 565, 581 (1895) (noting the accused infringer would not accept the patentee's machine, even if given as a gift). However, those circumstances are rare and should be caught when determining validity. *See Edgar*, *supra* note 3, at 81.

308. *See* Statement of Conder C. Henry, *supra* note 173, at 17–21.

309. The legislative history of the Patent Act of 1946 contains an interesting discussion between Mr. Stedman, the representative from the Department of Justice, and Mr. Henry, the Assistant Commissioner of Patents. *See id.* The DOJ suggested Congress establish patent damages based solely on assessing a reasonable royalty in all patent cases. *Id.* at 17. Mr. Stedman argued such a change would be “different” from compulsory licensing because a judge would retain the authority to grant injunctions and impose exemplary damages when warranted. *Id.* at 19. Mr. Henry disagreed:

The difference is tweedledee and tweedledum. You suggested amendments to the bill which would provide that only reasonable royalties could be collected, even in cases of wanton infringement, regardless of any other damages the patent owner might sustain. How would such an arrangement work out in cases of trespass to realty? . . . Is it unreasonable to suppose that a person intending to trespass upon and occupy the realty would first offer to purchase a lease and, upon refusal, proceed to trespass and occupy anyway knowing full well that he wouldn't be out of pocket any more if his offer had been accepted in the first place? The right to injunction in cases of patent infringement does not alter the situation because the granting of an injunction is not mandatory.

Id.

310. *See Amado v. Microsoft Corp.*, 517 F.3d 1353, 1362 (Fed. Cir. 2008); *see also* Cotropia, *supra* note 306, at 572. Cotropia opines that failing to award an injunction in an infringement case post-*eBay* is not a compulsory license, so long as the ongoing royalty assigned for future infringement is enhanced over the past royalty rate to reflect the infringer's “intentional disregard for the patentee's rights.” *Id.* at 574; *see also eBay Inc.*, 547 U.S. at 395 (Roberts, C.J., concurring) (stating injunctions should continue to be awarded in patent cases “given the difficulty of protecting a right to *exclude* through

D. Mesne Profits

Under the common law, the damages historically assessed against a trespasser to realty were not intended to be punitive. Although trespass to land is an intentional tort, it is unnecessary the tortfeasor know the land is owned by another.³¹¹ The act of intentionally moving onto the land establishes the necessary intent, even if the trespasser believed the land was his.³¹² However, the damages assessed against trespassers, whether conducted in good faith or bad, were intended to only compensate the owner for the owner's actual damages.³¹³ Just as in a patent infringement matter, in cases in which law damages did not fully compensate the owner, equity allowed an accounting of rents and profits when necessary.³¹⁴ Once an owner received a writ of ejectment, he could receive an award for past and future injury—known as mesne profits—for the amount due to the owner for rent that the trespasser owed.³¹⁵ Mesne profits are based upon “the benefit derived from the wrongful use of the property itself.”³¹⁶ Even under an unjust enrichment theory, a restitution-based claim is not intended to be punitive.³¹⁷

monetary remedies that allow an infringer to *use* an invention against the patentee's wishes”); *supra* note 284. Interestingly, Chief Justice Roberts was the author of the Court's opinion in *Impression Prods., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523, 1527 (2017). In *Lexmark*, the Court chastened the Federal Circuit for incorrectly approaching the patent-exhaustion doctrine from the viewpoint of the patent-damages statute by ruling that after the sale of the patented item, the patentee could nevertheless continue to regulate its use under a theory that infringement can occur post-sale when it violates the patentee's wishes (i.e., his right to exclude). *Id.* Instead, the exhaustion doctrine, the Court held, “is a limit on the scope of the patentee's rights.” *Id.*

311. RESTATEMENT (SECOND) OF TORTS § 164 cmt. a (AM. LAW INST. 2017).

312. *Id.* § 164.

313. *See Green v. Biddle*, 21 U.S. (8 Wheat.) 1, 66 (1823).

314. *See id.* at 6–7; *see also Eichengrun, supra* note 59, at 464–65. Mesne profits reflect the value of the use of land wrongfully held. *Action for Mesne Profits*, BLACK'S LAW DICTIONARY (10th ed. 2014). Technically, trespass damages covered past injury and mesne profits were awards for future damages. *See id.*

315. *See Chirac v. Reinicker*, 24 U.S. (11 Wheat.) 280, 280–81 (1826); *see also, e.g., N.M. STAT. ANN. § 42-4-9* (West 2017). Damages for trespass to real property are reasonable rent and are not based on the profits the cable company earned using the trespassing cable. *Martin v. Comcast Cablevision Corp.*, 338 P.3d 107, 111 (N.M. Ct. App. 2014).

316. *Martin*, 338 P.3d at 111. Compare this language to “reasonable royalty for the use made of the invention by the infringer.” 35 U.S.C. § 284 (2012); *see also supra* note 213 and accompanying text.

317. *Martin*, 338 P.3d at 109 (awarding the property owner \$200 for every past month as reasonable rent and ordering the cable company to continue to pay \$200 per month

Because reasonable rent awards for trespass to realty do not offend the traditional notions of exclusivity in private property, such awards likewise do not violate the basic foundations of the patent system.³¹⁸ It is often difficult to determine the amount of a reasonable royalty, especially in situations where the invention is merely a portion of a complex product. Nevertheless, the right of a patentee to “exclusive use” of an invention does not always equate to monetary damages that reflect a right to deprive the infringer of the ability to sell an infringing product.³¹⁹ If an NPE will not benefit from holding a close monopoly, the award cannot be based on an ability to withhold the technology.³²⁰

E. Good Trolls

Those who argue NPEs should not be treated differently than market participants often argue that inventors such as Eli Whitney,³²¹ Thomas Edison,³²² and research universities³²³ are “patent trolls” because they did not practice their inventions at the time they filed suit. They warn that any remedy meant to stifle trolls might enmesh these “good trolls,” as well.³²⁴ “Bad trolls”—unlike individual inventors whose patents cover the entire value of the item or who attempted but failed to commercialize the patent, or universities who desire to sell the patent—are affected by the *eBay* decision.³²⁵ Likewise, so-called good trolls remain untouched by the continuing struggle against patent entropy.³²⁶

in future damages until it buried the cable).

318. See *supra* note 310.

319. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 395 (2006).

320. See *Yale Lock Mfg. Co. v. Sargent*, 117 U.S. 536, 552–53 (1886).

321. Robert H. Resis, *History of the Patent Troll and Lessons Learned*, 17 INTELL. PROP. LITIG., no. 2, 2006, at 1.

322. Adam Mossoff, *Thomas Edison Was a “Patent Troll”*, SLATE (May 19, 2014), http://www.slate.com/articles/technology/history_of_innovation/2014/05/thomas_edison_charles_goodyear_and_elias_howe_jr_were_patent_trolls.html.

323. Joe Nocera, *The Patent Troll Smokescreen*, N.Y. TIMES (Oct. 24, 2015), <https://www.nytimes.com/2015/10/24/opinion/the-patent-troll-smokescreen.html>.

324. *Id.*

325. See *supra* notes 289–96 and accompanying text.

326. See FTC, PATENT ASSERTION ENTITY ACTIVITY: AN FTC STUDY 3 (2016), https://www.ftc.gov/system/files/documents/reports/patent-assertion-entity-activity-ftc-study/p131203_patent_assertion_entity_activity_an_ftc_study_0.pdf. According to the Federal Trade Commission, the two types of bad trolls are “portfolio” and “litigation” patent-assertion entities (PAEs). *Id.* Portfolio PAEs buy a large number of patents and then negotiate licenses to manufacturers, often without litigation. *Id.* Litigation PAEs

F. If Not Profits, Then What?

A patentee who will not benefit from a close monopoly is left without the ability to recover nominal damages after a finding of infringement where there is no comparable license evidence.³²⁷ The instigation behind a reasonable royalty award was consternation with the number of times a patentee was awarded nominal damages in a suit against an infringer.³²⁸ This

usually have a smaller number of patents but file suits to enforce them. *Id.* at 4.

327. See Nocera, *supra* note 323. *Contra* Brean, *supra* note 75, at 900.

An illustration might be helpful. Imagine two property owners. One owns a home, the other a large apartment complex. The landlord owns so many apartments, he never reaches full occupancy and thus constantly searches for tenants. One day, he discovers a trespasser has been living in one of his apartments for five years unbeknownst to him. Is he out nothing if he is unable to prove he did not have all of his apartments occupied? After all, as long as the trespasser did no damage to his property, did the landlord suffer any “actual damage” because he cannot prove the apartment would have been occupied without the trespass? What if the apartment owner sues the trespasser and gets a judgment for past rent plus interest, and the trespasser then asks the court if he can stay and continue paying rent until he vacates? Would an economically wise landlord agree? Should the trespasser be punished by forcing him to pay a premium rent for the period after discovery? Does it make a difference if the trespasser believed he actually owned the apartment? What if there are no other vacant apartments in the neighborhood and the trespasser must choose to either vacate—harming his business due to increased travel costs and time—or pay a premium rent? Should a court consider the profit from the trespasser’s business when awarding damages, or should it just look at the rent paid for the other apartments? What if none of the apartments are rented, so there is no “license” evidence, and the apartment complex is the only one of its type in the neighborhood? Should a court then look at the profit from the trespasser’s business when awarding damages, or should it base its inquiry solely on the value of the property?

Next, imagine a homeowner living and working on his property. A trespasser moves in, but the homeowner never actually sees him. The trespasser conducts business inside the home and makes a significant amount of money while living and working there. Five years later, the homeowner finally spots the interloper and sues. Are his damages the same as the landlord’s? Is the homeowner entitled to some of the benefit the intruder earned from conducting business inside his home? What if the trespasser pays a reasonable rent for his unauthorized occupancy? What if he asks a court to be allowed to stay as long as he continues paying reasonable rent? Would this amount fully compensate the homeowner? Should a court look at the income the trespasser earned working in the home to establish damages? What if the trespasser and the homeowner were both in the same business? What if they both manufactured vacuum cleaners in the basement workshop and sold them door-to-door in the neighborhood? What if one manufactured and sold vacuum cleaners and the other brooms? What if the trespasser knew the owner lived there and spent five years hiding, hoping to avoid detection? What if neither knew the other existed and merely passed like ships in the night for five years?

328. Seaman, *Reconsidering the Georgia-Pacific Standard*, *supra* note 259, at 1670.

award became so common that infringers deliberately added unnecessary and unhelpful “improvements” to a patented technology in order to force the claimant into a nominal damages award.³²⁹ This unfairness was a prime motivation for Congress’s adoption of a “reasonable sum” as the proper measure of damages in the Patent Act of 1922.³³⁰ NPEs—even bad trolls—suffer some loss from infringement. A bad troll paid an inventor or another previous holder for a patent right. As with any other property, a purchaser of intellectual property is entitled to reasonable rent when someone trespasses.³³¹ Reasonable rent is based upon the market value of the property.³³² Economists base the expected amount of rent from a property upon its capitalization rate, or “cap rate.”³³³ Therefore, one strong consideration should be the amount the patent holder spent to buy the patent on the open market, just as the purchase price of real property is reflected in its cap rate.³³⁴ Patentees who do not receive an injunction under *eBay* are entitled to a reasonable royalty when their property right is infringed.³³⁵ That calculation should rarely involve consideration of an infringer’s profits.³³⁶

329. *See supra* note 173.

330. *See* Act of Feb. 18, 1922, ch. 58, 42 Stat. 389, 392.

331. *See* 35 U.S.C. § 284 (2012). Current law provides that a patentee is entitled to “in no event less than a reasonable royalty for the use made of the invention by the infringer.” *Id.*

332. *See Capitalization Rate*, INVESTOPEDIA, <http://www.investopedia.com/terms/c/capitalizationrate.asp> (last visited June 6, 2017).

333. *Id.* The cap rate for a property is equal to the net operating income (NOI) divided by the current market value. *Id.* NOI is “all revenue from the property minus all reasonably necessary operating expenses.” *See Net Operating Income–NOI*, INVESTOPEDIA, <https://www.investopedia.com/terms/n/noi.asp> (last visited Jan. 4, 2018). The cap rate of a patent will of course vary depending upon its value to the renter, and this will be reflected in any hypothetical negotiation between a “renter” and a “property owner” at the time the renter moves in. Nevertheless, cap rate is independent of the renter’s income.

334. *But see* *Spectralytics, Inc. v. Cordis Corp.*, 649 F.3d 1336, 1347 (Fed. Cir. 2011) (holding the sale price of a patent did not affect the reasonable royalty determination), *abrogated by* *Halo Elecs. v. Pulse Elecs. Inc.* 136 S. Ct. 1923 (2016). However, in *Spectralytics*, the parties were competitors, and the patentee received an injunction. *Id.* at 1339, 1340.

335. *See* 35 U.S.C. § 284.

336. There are of course some exceptions where an injunction is denied not because of failure to show “irreparable harm,” but because of other concerns such as public health. *See* *Seaman, Permanent Injunctions*, *supra* note 11, at 1961–62.

G. *It's Just Not Fair*

Unfortunately, the error of considering an infringer's profits in bad-troll NPE cases results not only in bad awards to NPEs, but also unnecessary problems for market participants and good trolls.³³⁷ Troubling, the Federal Circuit's insistence on treating all patentees the same has bled into suits between competitors.³³⁸ For example, in the 2016 term, the Supreme Court overturned the Federal Circuit for imposing a more heightened enhanced-damages test for willful infringement than warranted by statute and history.³³⁹ As the Court stated, much of the motivation behind seeking to retain this heightened test was concern that trebling of large infringement damages awards would benefit bad trolls.³⁴⁰ However, willfulness does not affect whether a patentee is entitled to an injunction under *eBay*, nor does it affect whether consideration of an infringer's profits when assessing damages is proper.³⁴¹ If courts return monetary damages awards to be consistent with historical principles, concern for enhanced damages to bad trolls subsides.³⁴²

In another example, the Federal Circuit applied the "entire market value rule" in *Rite-Hite Corp. v. Kelly Co.*, a case between two competitors in which the court granted an injunction.³⁴³ This rule states that in an apportionment case for a complex product where the patent is but a small part, one should not start with the profit of the entire product as the base and move down unless the patented feature is the basis for consumer demand.³⁴⁴ This decision is questionable in a case between competitors because the goal behind awarding a reasonable royalty is to reach a fair outcome—not the starting point.³⁴⁵ However, after *Rite-Hite*, the Federal Circuit applied the entire market value rule to eliminate the "25 percent rule of thumb" in *Uniloc USA, Inc., v. Microsoft, Inc.*,³⁴⁶ a case between a "bad"

337. See *Halo Elecs. Inc.*, 136 S. Ct. at 1935.

338. *Id.* at 1931.

339. *Id.* at 1935.

340. *Id.*

341. See *supra* notes 294–97.

342. See *supra* note 60.

343. *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1548–51 (Fed. Cir. 1995).

344. Aaron R. Fahrenkrog, *Farewell, Entire Value Market Rule*, LAW 360 (Apr. 16, 2015), <https://www.law360.com/articles/634837/farewell-entire-market-value-rule>.

345. *Id.*

346. *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011).

NPE and a market participant.³⁴⁷

Like the entire market value rule, the 25 percent rule of thumb was used as a starting point for profit apportionment. The idea is to start with the patent being responsible for 25 percent of the profit of the infringing product and then move up or down depending upon the importance of the patent to the finished product.³⁴⁸ However, in the *Uniloc* case, use of the rule resulted in a verdict of \$388 million.³⁴⁹ Rather than appreciating that consideration of infringer's profits was the true culprit behind such an enormous award, the Federal Circuit blamed the toolbox, finding the rule of thumb "fundamentally flawed" and determining its use violated the *Daubert* standard.³⁵⁰

Besides the 25 percent rule of thumb, the "smallest salable patent-practicing unit" (SSPPU) tool has devolved into a hazard for unwary market

347. See Austin Meyer, *Notes From the Battlefield in the Patent War*, ROLL CALL (May 27, 2015), <http://www.rollcall.com/news/home/notes-from-the-battlefield-in-the-patent-war-commentary>. Others describe Uniloc as a market participant or an "operating company" because it sells some products related to its patents. Christopher A. Cotropia et al., *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649, 667–68 (2014). However, whether a company sells some products related to its patents does not necessarily mean it benefits from holding its monopoly close. In Meyer's case, he developed a computer flight-simulator program. Meyer, *supra*. Uniloc sued him for infringing its e-commerce patent when marketing his Android app. *Id.*

348. *Uniloc USA, Inc.*, 632 F.3d at 1312–13; see also Robert Goldscheider, *The Classic 25% Rule and the Art of Intellectual Property Licensing*, 2011 DUKE L. & TECH. REV., 115, 119–20. The "classic" 25 percent rule was employed to allocate profits in patent infringement cases for 50 years. *Id.* at 118.

349. *Id.* at 1311.

350. *Id.* at 1315. The 25 percent rule of thumb is based upon the Nash Bargaining Solution (NBS). See generally William Choi, *Don't Shoot the Methodology: Misuse of Nash Bargaining*, LAW 360 (Mar. 12, 2014), <https://www.law360.com/articles/511405/dont-shoot-the-methodology-misuse-of-nash-bargaining> (discussing the relationship between the 25 percent rule of thumb and the NBS). Both the 25 percent Rule of Thumb and the NBS, rejected by the Federal Circuit in *Virnetx, Inc. v. Cisco Systems, Inc.*, 767 F.3d 1308, 1333–34 (Fed. Cir. 2014), are profit allocation starting points. Lance Wyatt, *Keeping Up With the Game: The Use of the Nash Bargaining Solution in Patent Infringement Cases*, 31 SANTA CLARA HIGH TECH. L.J. 427, 442–43 (2015). The NBS is an economic negotiation theory developed by John Nash, a Princeton mathematician who won the Nobel Prize for Economics in 1994 for this theory and who was the inspiration behind the movie *A Beautiful Mind*. Erica Goode, *John F. Nash Jr., Math Genius Defined by a "Beautiful Mind." Dies at 86*, N.Y. TIMES (May 24, 2015), <https://www.nytimes.com/2015/05/25/science/john-nash-a-beautiful-mind-subject-and-nobel-winner-dies-at-86.html>. Therefore, the Federal Circuit is in the odd position of invalidating an economic rule based on an idea deemed worthy of a Nobel Prize.

participants. SSPPU began as a method to assist a jury in paring down complex patents and products to their lowest essential element, thereby assisting proper apportionment.³⁵¹ Once the Federal Circuit attempted to apply it in a bad troll case, it was used by the claimant to seek a large profit award from a market participant.³⁵² Next, SSPPU was used in an attempt to limit damages by trying to deflect attention away from the profit made by infringement to the profit earned by the manufacturer of the chip which enabled the infringement.³⁵³

VII. CONCLUSION

Because U.S. patent law began with the First Congress in 1790, courts have had over two-and-a-quarter centuries to resolve patent conflicts. In general, the Supreme Court has performed this task admirably. However, as with any human function, small errors in analysis inflate over time so that even when a case at issue is decided correctly, the misanalysis grows until it begins to substantively affect jurisprudence.³⁵⁴ Confusion between equitable “profits” and legal “actual damages,” especially after the Patent Act of 1870, caused courts to conflate the two systems so that any consideration of an infringer’s profits began to be considered an equitable remedy based upon “the gains the infringer made” rather than “what the patentee lost.”³⁵⁵ The shift to equity, caused in part by this misinterpretation, resulted in injunctions being misunderstood as merely a normal outgrowth of

351. *See* *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 287–88 (N.D.N.Y. 2009). Interestingly, Chief Judge Randall Rader, then of the Federal Circuit, served as trial judge by designation in this matter.

352. *See* *Virnetx, Inc.*, 767 F.3d at 1327.

353. *See* *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303–04 (Fed. Cir. 2015); *see also* *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, No. 6:11–CV–343, 2014 WL 3805817, at *5 (E.D. Tex. 2014), *vacated and remanded* by 809 F.3d at 1303–04).

The benefit of the patent lies in the idea, not in the small amount of silicon that happens to be where that idea is physically implemented. . . . Basing a royalty solely on chip price is like valuing a copyrighted book based only on the costs of the binding, paper, and ink needed to actually produce the physical product. While such a calculation captures the cost of the physical product, it provides no indication of its actual value.

Id. at *11.

354. *See supra* Part III.

355. *See* discussion *supra* Part III.A.

exclusivity.³⁵⁶ Courts then began to award injunction-type damages to patentees who did not benefit from holding a close monopoly—the historical fulcrum upon which the determination whether to consider an infringer’s profits in damages calculations hinged.³⁵⁷ Further, awarding injunction-type damages was believed to be statutorily mandated.³⁵⁸ This has caused the Federal Trade Commission to write a report on the economic harm caused by “bad” NPEs³⁵⁹ and has prompted the Federal Reserve Bank of St. Louis to urge the nation to eliminate the patent system.³⁶⁰

Although perhaps unwittingly, the decision by the Supreme Court in *eBay* arrested the entropy process.³⁶¹ The patent system must continue the struggle against entropy by returning monetary damages awards to their historical roots. This return will eliminate much of the patent-trolling problem and restore monetary damages to amounts that better reflect the value of the technology disclosed to the public via the patent. It is imperative we have a patent system that supports innovation and disclosure, enjoys public support, fairly compensates injured patentees, and can be defended as a valid use of governmental power.

356. See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006).

357. See *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 491 (1853).

358. See *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 505 (1964).

359. See *supra* note 326.

360. Michele Boldrin & David K. Levine, *The Case Against Patents* 1 (Fed. Reserve Bank of St. Louis, Research Div., Working Paper 2012-035A), <https://files.stlouisfed.org/files/htdocs/wp/2012/2012-035.pdf> (“[T]here is no empirical evidence that [patents] serve to increase innovation and productivity . . .”).

361. See *supra* Part VI.A.