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## Closing One Loophole and Opening Another: Why Section 271(f) Patent Infringement Should Apply to Method Patents After Cardiac Pacemakers

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# Closing One Loophole and Opening Another: Why § 271(f) Patent Infringement Should Apply to Method Patents After *Cardiac Pacemakers*

MICHAEL SILHASEK\*

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## I. INTRODUCTION

A United States patent holder has likely spent significant time and resources in the invention's creation and prosecution through the United States Patent and Trademark Office (USPTO).<sup>1</sup> The patentee must also continue to spend further resources on monitoring domestic infringement<sup>2</sup> and has the right to exclude others from making, using, or selling the invention.<sup>3</sup> In the event another does make, use, or sell the invention without authorization, the owner is also entitled to a civil remedy.<sup>4</sup>

If someone attempts to avoid the infringement statute by selling part of the invention to a third party in the United States and the third party actually infringes the patent, the seller is likely liable for inducing or contributory infringement.<sup>5</sup> Regardless of what the patented invention

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1. In addition to the cost of discovering the unique invention, attorney's fees to prosecute the patent alone can cost between \$5000 and \$15,000. *See* Gene Quinn, *The Cost of Obtaining a Patent in the US*, IPWATCHDOG (Jan. 28, 2011, 1:14 PM), <http://ipwatchdog.com/2011/01/28/the-cost-of-obtaining-patent/>. Over 710,000 patent applications pending before the USPTO have led to an application process that can last over three years. Todd Spangler, *Detroit To Get Regional Patent Office, 100 Examiner Jobs*, DETROIT FREE PRESS, Dec. 17, 2010, available at 2010 WLNR 24933481. Such a backlog has led to several initiatives, including the creation of a USPTO satellite office in Detroit, Michigan. *See id.*

2. An interesting alternative is patent litigation insurance, in which, as the name suggests, the patentee pays a yearly fee for protection in case of future infringement. *See generally* J. Rodrigo Fuentes, Note, *Patent Insurance: Towards a More Affordable, Mandatory Scheme?*, 10 COLUM. SCI. & TECH. L. REV. 267 (2009) (focusing on the insurance aspect of managing patent litigation risk).

3. A patent does not give its owner the right to actually practice the invention because doing so could be illegal or infringe another patent. *See* *Leatherman Tool Grp. Inc. v. Cooper Indus., Inc.*, 131 F.3d 1011, 1015 (Fed. Cir. 1997) (citing *Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 548–49 (1852)).

4. 35 U.S.C. § 281 (2006).

5. *See id.* § 271(b)–(c).

is—process, machine, manufacture, or composition of matter—there is a remedy available against the seller in the United States.<sup>6</sup> Consider the same scenario except that the third party resides outside the United States. Because the infringing act does not occur within the United States, the seller is not liable for inducing or contributory infringement.<sup>7</sup> If the patented invention is a machine, manufacture, or composition of matter, 35 U.S.C. § 271(f) creates an infringement cause of action against the seller. If the patented invention is a process, however, the same section—under the same circumstances—will not assist the patentee.<sup>8</sup>

This asymmetry, whether purposely drafted into the infringement statute or created by the Federal Circuit's interpretation of the statute, is illogical and deserves the attention of patent practitioners and Congress. Process patents, like all other patents, are valuable to society and require infringement protection to incentivize future invention.<sup>9</sup> In enacting § 271(f), Congress increased the protections of patent owners and the incentive to invent. The Federal Circuit, however, has interpreted the statute such that it does not apply to processes.<sup>10</sup> Therefore, Congress should amend the statute and explicitly extend similar infringement protection to patented processes.

This Comment will address the applicability of § 271(f) to method patents compared with other patented inventions—machines, manufactures, and compositions of matter. Part II will briefly discuss the primary purpose of the infringement statute, which is to encourage inventive

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6. The term *patented invention* is defined as “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” *Id.* § 101. Judges disagree whether a statute that discusses supplying components of a patented invention implicitly limits this definition. *See infra* Part V.D.

7. Inducing and contributory infringement, also known as indirect infringement, require a showing that somebody directly infringed the patent. *See* C.R. Bard, Inc. v. Advanced Cardiovascular Sys., Inc., 911 F.2d 670, 675 (Fed. Cir. 1990).

8. This section creates a cause of action against anyone who supplies the components or a single component especially made for the invention to a third party outside the United States. *See* 35 U.S.C. § 271(f) (2006).

9. *Patent Law Improvements Act: Hearing on S. 1535 and S. 1841 Before the Subcomm. on Patents, Copyrights and Trademarks of the S. Comm. on the Judiciary*, 98th Cong. 1 (1984) [hereinafter *Hearing*] (statement of Sen. Charles Mathias, Jr., Chairman, S. Comm. on Patents, Copyrights and Trademarks) (“While we annually honor an inventor of the year, I suppose we are implying an honor every year to the U.S. patent system which provides the incentive for the inventors to keep pushing forward on the frontiers of science and the applications of science.”).

10. *See* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348, 1365 (Fed. Cir. 2009).

action by granting rights to a patent holder. Part III will discuss the history of § 271(f) and the section's applicability to process patents. The Federal Circuit questioned the section's applicability to method patents, then affirmed it, then questioned it again, and then, most recently, rejected it. Part IV will examine other foreign activity that could lead to domestic infringement. Part V will take a step back and evaluate infringement analysis for apparatus and method patents. Specifically, it will question whether it makes sense to provide protection to some patents while denying it to others. A handful of cases and scenarios will illustrate why it does not. Finally, Part VI will suggest what can be done to fix this inconsistency. Although recognizing the difficulties inherent in addressing this problem, this Comment will suggest legislation that will evenly distribute infringement protection for patented inventions.

## II. THE POLICY BEHIND DIRECT AND INDIRECT PATENT INFRINGEMENT

The United States Constitution empowers Congress 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.”<sup>11</sup> This clause charged Congress to create a statute that encouraged invention by granting limited monopolies but avoided the potential stifling of competition that usually accompanies them.<sup>12</sup> The current patent system gives the patent owner the right to exclude others from making, using, selling, or offering to sell an invention or importing the invention into the United States.<sup>13</sup> These rights, given in exchange for disclosure of the invention, are designed to encourage the next inventor to advance technology.<sup>14</sup> It is maintained that this patent protection, which fosters invention, is an overall boon to the nation's economy.<sup>15</sup> If this is true, it follows that poor patent protection will diminish the incentive to invent at the individual level and negatively impact the economy at the national level.<sup>16</sup>

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11. U.S. CONST. art. I, § 8, cl. 8.

12. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989). The Supreme Court noted the limited duration of patents and the unpatentability of common knowledge as examples of this balance. *Id.* (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966)).

13. 35 U.S.C. § 154(a)(1) (2006).

14. *Bonito Boats*, 489 U.S. at 150–51.

15. F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 698–99 (2001).

16. Competing theories question whether strong patent protection actually encourages the inventive process. For example, as infringement protection increases for an established invention, the probability that a later invention infringes the earlier invention's patent also increases. This fear of infringement could actually discourage the inventive process.

The infringement statute is the primary enforcement mechanism of the patentee's rights. Anyone who performs one of these functions without the patent owner's authorization directly infringes the patent.<sup>17</sup> Section 271(a) prohibits infringement of a "patented invention," which includes the unauthorized use of a patented machine and the unauthorized use of a patented process.<sup>18</sup> By enforcing the patent owner's right to exclude, the direct infringement cause of action indirectly encourages others to invent.

The Supreme Court has also held that individuals cannot insulate themselves from liability for infringement by refraining from directly infringing a patent and merely assisting *another* person to infringe a patent.<sup>19</sup> Congress codified the court-made doctrine of contributory infringement when it passed the Patent Act of 1952 and added §§ 271(b) and 271(c) to the infringement statute.<sup>20</sup>

Section 271(b) states that "[w]hoever actively induces infringement of a patent shall be liable as an infringer."<sup>21</sup> By using the term *patent*, this

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See Nancy T. Gallini, *The Economics of Patents: Lessons from Recent U.S. Patent Reform*, 16 J. ECON. PERSP. 131, 136 (2002). Regardless, the amount of protection offered to patents seeks to maximize the incentive to invent and innovate. See *id.* at 150.

17. 35 U.S.C. § 271(a) (2006).

18. *Id.* Inventions patentable include "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." *Id.* § 101.

19. See *Wallace v. Holmes*, 29 F. Cas. 74, 80 (C.C.D. Conn. 1871) (No. 17,100) ("It cannot be, that, where a useful machine is patented as a combination of parts, two or more can engage in its construction and sale, and protect themselves by showing, that, though united in an effort to produce the same machine, and sell it, and bring it into extensive use, each makes and sells one part only, which is useless without the others, and still another person, in precise conformity with the purpose in view, puts them together for use. If it were so, such patents would, indeed, be of little value. In such case, all are tort-feasors, engaged in a common purpose to infringe the patent, and actually, by their concerted action, producing that result."):

20. See Patent Act of 1952, Pub. L. No. 82-593, § 271(b)–(c), 66 Stat. 792, 811 (codified as amended at 35 U.S.C. § 271(b)–(c) (2006)). This is different from joint infringement, in which the actions of multiple parties infringe a patent. Under the theory of joint infringement, two parties infringe a patented process under § 271(a) if one party's actions are attributable to another party under agency law. See *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311, 1319 (Fed. Cir. 2010); *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1379 (Fed. Cir. 2007) ("In the context of patent infringement, a defendant cannot thus avoid liability for direct infringement by having someone else carry out one or more of the claimed steps on its behalf."):

21. 35 U.S.C. § 271(b) (2006).

statute applies to patented processes and products.<sup>22</sup> Therefore, a party faces liability under this subsection if it intends to induce an action of another that it knows will infringe a patent.<sup>23</sup> Although the inducing party is not the one actually infringing the patent, its intent for the other party to infringe makes it just as culpable as the direct infringer.<sup>24</sup> Thus, the courts and Congress agree that a patent owner may exert its rights to exclude and exact damages from both a direct infringer and a person who specifically intends to induce a third party to directly infringe the patent.

Congress also enacted the contributory infringement statute to extend infringement liability to another set of indirect infringers.<sup>25</sup> Section 271(c) imposes liability on whoever sells or imports a component of a patented invention or an apparatus that can perform a patented process knowing that the third party will use the component or apparatus to infringe the patent.<sup>26</sup> Like the inducing infringement statute, the contributory infringement statute makes those who assist others in infringing a patent potentially liable.<sup>27</sup> Like inducing infringement, contributory infringement requires intent to infringe the patent as opposed to the strict liability of direct infringement. Courts require proof that the contributory infringer actually knew of the allegedly infringed patent and knew the component

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22. *See id.* § 101; *see also* *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 669 (Fed. Cir. 1988) (holding defendant liable for inducing others to infringe bacteria and process patents).

23. Although both inducing and contributory infringement require intent, direct infringement does not. *See Manville Sales Corp. v. Paramount Sys., Inc.*, 917 F.2d 544, 553 (Fed. Cir. 1990) (“It must be established that the defendant possessed specific intent to encourage another’s infringement and not merely that the defendant had knowledge of the acts alleged to constitute inducement.”). Whether actual knowledge of the patent or deliberate indifference to the rights of others is required under § 271(b) is currently before the Supreme Court. *See Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 458 (U.S. argued Feb. 23, 2011).

24. Before the Patent Act of 1952 created inducement and contributory infringement, courts considered the indirect infringer just as culpable as the direct infringer. *See Thomson-Houston Elec. Co. v. Ohio Brass Co.*, 80 F. 712, 721 (6th Cir. 1897) (“It is well settled that where one makes and sells one element of a combination covered by a patent with the intention and for the purpose of bringing about its use in such a combination he is guilty of contributory infringement and is equally liable to the patentee with him who in fact organizes the complete combination.”).

25. *See* Patent Act of 1952, Pub. L. No. 82-593, § 271, 66 Stat. 792, 811 (codified as amended at 35 U.S.C. § 271 (2006)).

26. Section 271(c), in its entirety, states:

Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

35 U.S.C. § 271(c).

27. *See supra* text accompanying note 23.

was especially made for the patented invention.<sup>28</sup> Although the contributory infringer does not directly infringe the patent by making, using, or selling a material component of a patented machine, its intent to contribute to eventual direct infringement warrants liability.<sup>29</sup>

This review of indirect infringement illustrates a basic point about infringement policy. A person does not need to make, use, or sell a patented invention to be liable for infringement. Rather, a person may be liable for infringement by doing anything that assists another in making, using, or selling a patented invention. Again, infringement liability to enforce the rights of patent holders is part of the larger scheme to encourage invention and innovation.

An interesting aspect about § 271(c) is that the term *patented invention*, as seen in § 271(a), is replaced with its defined elements—process, machine, manufacture, and composition of matter.<sup>30</sup> Contributory infringement prohibits supplying “a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process.”<sup>31</sup> Congress has therefore expressly separated process patents from all other patents with respect to contributory infringement. Congress may have bifurcated the meaning of patented invention because it is difficult to visualize how one would sell a component of a process patent.<sup>32</sup> Regardless, in passing § 271(c), Congress provided some form of protection for processes and illustrated a general principle that all classes of patents, including processes, deserve some form of protection from contributory infringement.<sup>33</sup>

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28. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 488 (1964) (“[Section] 271(c) does require a showing that the alleged contributory infringer knew that the combination for which his component was especially designed was both patented and infringing.”); 5 DONALD S. CHISUM, *CHISUM ON PATENTS* § 17.03[2] (2010).

29. *See supra* text accompanying note 24.

30. 35 U.S.C. §§ 101, 271(c) (2006).

31. *Id.* § 271(c).

32. In *Cardiac Pacemakers*, the majority held that the terms *supply* and *component* precluded the statute’s application to process patents. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348, 1363–64 (Fed. Cir. 2009). Likewise, one could make a similar argument for the terms *sell* and *component* and thus explain the bifurcation.

33. *See* 35 U.S.C. § 154(a)(1) (2006) (guaranteeing patentees the right to exclude for process inventions specifically).

### III. HISTORY OF EXTRATERRITORIAL METHOD INFRINGEMENT

#### A. *Avoiding Patent Infringement*—Deepsouth Packing Co. v. Laitram Corp.

In *Deepsouth Packing Co. v. Laitram Corp.*, the Supreme Court addressed the extraterritorial limits and technical statutory construction of the patent infringement statute.<sup>34</sup> At the time, patent infringement consisted of direct infringement, inducement, and contributory infringement.<sup>35</sup> Therefore, one who “makes, uses or sells any patented invention, within the United States” directly infringed a patent.<sup>36</sup> Likewise, one who knowingly or intentionally assisted another to directly infringe a patent indirectly infringed the patent as well.<sup>37</sup>

In *Deepsouth*, the Laitram Corporation held two patents for mechanically deveining shrimp.<sup>38</sup> Deepsouth Packing Company attempted

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34. *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 523–31 (1972), *superseded by statute*, Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383, *as recognized in* *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007).

35. At the time of *Deepsouth*, the original patent infringement statute from 1952 governed infringement liability:

- (a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.
- (b) Whoever actively induces infringement of a patent shall be liable as an infringer.
- (c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.
- (d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

Patent Act of 1952, Pub. L. No. 82-593, § 271, 66 Stat. 792, 811 (codified as amended at 35 U.S.C. § 271 (2006)).

36. 35 U.S.C. § 271(a). Congress has slightly amended the direct infringement statute by making liable those who offer to sell a patented invention and import a patented invention into the United States. *See* Uruguay Round Agreements Act, Pub. L. No. 103-465, § 533(a)(1), 108 Stat. 4809, 4988 (1994) (codified as amended at 35 U.S.C. § 271 (2006)).

37. Indirect infringement differs notably from direct infringement by requiring knowledge or intent. 5 CHISUM, *supra* note 28, § 16.02[7]. A direct infringer, on the other hand, infringes regardless of knowledge or intent. *Id.* § 16.02[2].

38. *Deepsouth*, 406 U.S. at 519–20.

to avoid infringing Laitram's patent by selling the unassembled materials to foreign purchasers, who then constructed the patented machines outside the country in roughly an hour.<sup>39</sup> Citing the patent infringement statute, Deepsouth claimed it did not make, use, or sell the patented machines and therefore was not guilty of infringement.<sup>40</sup> Laitram countered that Deepsouth's interpretation of the statute came from a "hypertechnical reading," which, if accepted, would fail to reward Laitram's scientific ingenuity.<sup>41</sup>

The Supreme Court carefully analyzed the situation in light of the infringement statute. In order to infringe the patent under § 271(a), Deepsouth must have made, used, or sold Laitram's machines within the United States.<sup>42</sup> Deepsouth clearly did not "use" the patented product within the United States.<sup>43</sup> Despite sales materials advertising that the product was the same as the patented machine, the Court ruled that Deepsouth could not "sell" the patented machines unless it "made" them first.<sup>44</sup> Citing prior cases that protected the whole of a combination patent and not its individual parts, the Court held that Deepsouth did not "make" the patented machines and therefore did not directly infringe Laitram's patent.<sup>45</sup> Noting the result may not seem fair to the patent holder, the Court observed that Congress did not intend for domestic patent law to spill into the foreign arena.<sup>46</sup>

#### *B. Congress Responds to Deepsouth—Enactment of § 271(f)*

Twelve years after the *Deepsouth* decision, Congress passed the Patent Law Amendments Act of 1984.<sup>47</sup> The newly enacted section imposed infringement liability on anyone who supplied components of a patented invention to a third party outside the United States with the intention for the third party to combine the components in a manner that would infringe the patent if done in the United States.<sup>48</sup>

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39. *Id.* at 523 n.5, 524.

40. *Id.* at 524.

41. *Id.*

42. *Id.* at 527.

43. *Id.*

44. *Id.*

45. *Id.* at 528–29.

46. *Id.* at 531 (quoting *Brown v. Duchesne*, 60 U.S. (19 How.) 183, 195 (1856)).

47. Patent Law Amendments Act of 1984, Pub. L. No. 98-622, § 101(a), 98 Stat. 3383 (codified as amended at 35 U.S.C. § 271(f) (2006)).

48. The statute, unchanged since its enactment, states:

Congress expressly intended to close the loophole highlighted by the *Deepsouth* case.<sup>49</sup> Discerning the true breadth of the statute, however, requires further investigation. At a minimum, this statute is applicable to machine patents because Congress passed § 271(f) to expressly override the *Deepsouth* decision—a case involving a patented machine.<sup>50</sup> However, it is uncertain whether the statute is applicable to process, manufacture, and composition of matter patents because *Deepsouth* did not involve those patents.<sup>51</sup> Depending on how one interprets the statute, the wording “component of a patented invention” may indicate the statute is inapplicable to patented processes.<sup>52</sup> Comparing the language

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- (1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.
  - (2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

35 U.S.C. § 271(f).

49. S. REP. NO. 98-663, at 6 (1984) (“This proposal responds to a comment by the United States Supreme Court in *Deepsouth Packing Co. v. Laitram Corp.* calling for a legislative solution to close a loophole in patent law.” (citation omitted)).

50. The congressional report might suggest that the statute only applies to situations similar to *Deepsouth* in which an infringer tries to avoid U.S. patent law by selling unassembled patented products. That is because the Senate Report discussed the proposed statute in direct response to *Deepsouth*, a case in which the patented invention was a machine. *Id.* at 2–3. However, the Senate Judiciary Committee used the term *patented invention* in discussing the statute. *Id.* at 2.

51. A congressional override

could stand for several different propositions: that Congress generally agreed with the Court’s interpretation and reasoning but carved out a specific exception that would supersede the specific holding of the case; that Congress disagreed with the specific holding of a case and specifically disagreed with the interpretive reasoning applied by the court as well, suggesting that the “opposite” (or at least different) reasoning should apply and thus that the preexisting statutory language should be understood differently; or that Congress, in passing the override, “nullified” the prior case, both its holding and underlying rationale, so that it is as if it had never been decided and should have no more precedential weight.

Deborah A. Widiss, *Shadow Precedents and the Separation of Powers: Statutory Interpretation of Congressional Overrides*, 84 NOTRE DAME L. REV. 511, 532 (2009) (discussing the broad and narrow effects of congressional overrides).

52. See, e.g., 5 CHISUM, *supra* note 28, § 16.02[7] (“Both 271(f)(1) and (f)(2) refer to a ‘component of a patented invention.’ The use of the preposition ‘of’ seems to

to other subsections may illuminate the correct interpretation of § 271(f). Section 271(c), for example, refers to “a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process.”<sup>53</sup> Section 271(a), on the other hand, uses the term *patented invention* to include process patents.<sup>54</sup> A more limited interpretation of this statute is that only machines, manufactures, and compositions of matter have components, and therefore § 271(f) only applies to nonprocess patents. A broader interpretation of this statute, however, is that Congress could have limited § 271(f) to nonprocess patents but explicitly did not do so when it used the broad term *patented invention*.<sup>55</sup>

C. *Process Patents and § 271(f)*—Union Carbide Chemicals & Plastics Technology Corp. v. Shell Oil Co.

The Federal Circuit substantially addressed the potential ambiguity of § 271(f) for the first time in *Union Carbide Chemicals & Plastics Technology Corp. v. Shell Oil Co.*<sup>56</sup> The plaintiff, Union Carbide, held a process patent for the production of ethylene oxide.<sup>57</sup> One of the process steps required the inclusion of a specific catalyst to reduce the reaction

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exclude application of the provisions to a component to be used in ‘carrying out a patented process abroad.’”).

53. The contributory infringement statute bifurcates patented inventions into two groups by imposing liability for two different types of actions: (1) supplying a component of a machine, manufacture, combination, or composition; and (2) supplying a material or apparatus used in a process. See 35 U.S.C. § 271(c) (2006).

54. See *id.* § 271(a).

55. The Senate Report also proposed amending the direct infringing statute to include a cause of action for using, selling, and importing products made outside the United States using a patented process, which was meant to “broaden the protection afforded by process patents.” S. REP. NO. 98-663, at 5. Because the committee limited this amendment to one particular type of patent, it follows that the committee would have done the same with respect to the § 271(f) amendment if it had so intended.

56. *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366 (Fed. Cir. 2005), *overruled by* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009). The Federal Circuit addressed the issue before, but with little discussion. See *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (declining to extend § 271(f) in a case in which the alleged infringer exported a machine that could perform the patented process).

57. *Union Carbide*, 425 F.3d at 1369–70. Ethylene oxide is a toxic and flammable compound used in synthesis of ethylene glycol and in sterilization and fumigation. See *Ethylene Oxide*, MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/ethylene%20oxide> (last visited Apr. 20, 2011).

temperature and make a more efficient reaction.<sup>58</sup> Union Carbide alleged the defendant, Shell, commercially sold a catalyst falling within the patented specification range and therefore infringed its patented process under § 271(f).<sup>59</sup> At trial, the district court excluded damages for Shell’s alleged patent infringement—selling the catalyst to foreign purchasers—because it interpreted § 271(f) as inapplicable to process patents.<sup>60</sup> Union Carbide subsequently appealed the decision.<sup>61</sup>

The Federal Circuit panel surveyed several other 2005 infringement cases in *Union Carbide*. In *Eolas Technologies Inc. v. Microsoft Corp.*, the alleged infringer exported software that, after downloaded onto a computer, infringed a patented software product.<sup>62</sup> In response to the argument that § 271(f) only applied to tangible machines and not software, the *Eolas* court noted that “every form of invention eligible for patenting falls within the protection of section 271(f)” and that sound patent policy and the legislative history of § 271(f) supported this broad interpretation of the statute.<sup>63</sup> In *AT&T Corp. v. Microsoft Corp.*, the alleged infringer also exported software that, after downloaded onto a computer, infringed a patented software product.<sup>64</sup> The foreign party, however, first copied the software abroad and then used the copied versions of the software to allegedly infringe the patent.<sup>65</sup> Nonetheless, the *AT&T* court ruled that § 271(f) applied because supplying software inherently involved copying it as well.<sup>66</sup> Finally, in *NTP, Inc. v. Research in Motion, Ltd.*, the alleged infringer sold phones to customers and performed a patented process in both the United States and Canada.<sup>67</sup> The *NTP* court expressed doubt over how one could supply a component of a patented process to another and ruled that supplying a phone used to perform the process did not implicate § 271(f).<sup>68</sup>

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58. *Union Carbide*, 425 F.3d at 1370.

59. *Id.* at 1371–72.

60. *Id.* at 1378.

61. *Id.* at 1369.

62. *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1331–32 (Fed. Cir. 2005), *overruled in part by* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009).

63. *Id.* at 1339–40.

64. *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1368 (Fed. Cir. 2005), *rev’d*, 550 U.S. 437 (2007).

65. *Id.*

66. *Id.* at 1370.

67. *See NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1289–90 (Fed. Cir. 2005). The process involved routing e-mail from the user’s e-mail server in the United States to Research in Motion’s wireless network in Canada and back to the user’s phone in the United States. *Id.*

68. *Id.* at 1322–23.

Comparing Shell's actions to those in the past cases, the Federal Circuit held that Shell infringed Union Carbide's process patent by selling the catalyst to foreign customers.<sup>69</sup> Unlike the alleged infringer in *AT&T*, Shell's customers used the actual catalyst, not copies, in the patented process abroad.<sup>70</sup> Also, unlike the defendant in *NTP*, Shell provided the components to a foreign customer.<sup>71</sup> In light of the *Eolas* ruling that § 271(f) is invention neutral, the court awarded Union Carbide damages for Shell's infringing activities.<sup>72</sup>

#### D. Microsoft Corp. v. AT&T Corp.

The Supreme Court's first and only analysis of § 271(f) came recently in *Microsoft Corp. v. AT&T Corp.*<sup>73</sup> The Court limited its holding to the statute's applicability to machine patents because this case involved a patent for a computer.<sup>74</sup> However, the Court referenced *Union Carbide* in a footnote when it stated: "If an intangible method or process, for instance, qualifies as a 'patented invention' under § 271(f) (a question as to which we express no opinion), the combinable components of that invention might be intangible as well."<sup>75</sup> The Court also emphasized that only clear congressional intent will override the presumption against extraterritorial application of United States patent law.<sup>76</sup> When this intent to apply domestic law extraterritorially is unclear, the presumption applies.<sup>77</sup> To at least one commentator, this decision foreshadowed the reversal of *Union Carbide* and the end of process patents under § 271(f).<sup>78</sup>

Concurring in the decision, Justice Alito opined that software, separate from a CD-ROM, is not a component of the computer.<sup>79</sup> Justice Alito

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69. *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366, 1380 (Fed. Cir. 2005), *overruled by* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009).

70. *Id.* at 1379.

71. *Id.* at 1380.

72. *See id.*

73. *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007).

74. *See id.* at 441.

75. *Id.* at 452 n.13.

76. *See id.* at 444.

77. *See id.* at 454–55.

78. *See* Dennis Crouch, *Cardiac Pacemaker v. Jude: Challenging 271(f) Liability for Components of a Method*, PATENTLY-O (Feb. 3, 2009), <http://www.patentlyo.com/patent/2009/02/cardiac-pacemaker-v-jude-challenging-271f-liability-for-components-of-a-method.html>.

79. *Microsoft*, 550 U.S. at 461–62 (Alito, J., concurring in part).

concluded that a component of the machine must be “physical.”<sup>80</sup> Although his analysis only applied to an apparatus, it strongly suggested that intangible components in general are not protected under § 271(f).<sup>81</sup>

*E. Process Patents and § 271(f)—Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*

In light of the Supreme Court’s suspected disagreement with the *Union Carbide* decision, the Federal Circuit reexamined § 271(f) in *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*<sup>82</sup> Prior to this en banc decision, both a district court<sup>83</sup> and a Federal Circuit panel<sup>84</sup> deferred to the *Union Carbide* decision and awarded damages to the plaintiff for the infringement of a method claim under § 271(f).

The plaintiff and appellant, Cardiac Pacemakers, held a number of patents for cardiac defibrillators.<sup>85</sup> U.S. Patent 4,407,288 (’288 patent) was for a “method of heart stimulation using an implantable heart stimulator.”<sup>86</sup> This patent first claimed a method that used an implantable heart stimulator to detect the existence of a heart condition, choose a particular operation to treat the heart, and perform the selected treatment.<sup>87</sup> The patent’s fourth claim, which depended on the patent’s first claim, was a similar method with the limitation that the implantable heart stimulator included a cardioversion<sup>88</sup> mode of operation.<sup>89</sup> As a method patent, the ’288 patent was a list of steps that accomplished a result when performed together.<sup>90</sup>

The defendant, St. Jude, sold an implantable cardioverter defibrillator (ICD) that could accomplish the exact same steps described in the fourth

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80. *Id.* at 462.

81. Whether software can be a component of a patented invention is an issue the courts have avoided. Although Justice Alito presents his view in the concurring opinion, there are many reasons for and against viewing software as a component. See Alan M. Fisch & Brent H. Allen, *The Application of Domestic Patent Law to Exported Software: 35 U.S.C. § 271(f)*, 25 U. PA. J. INT’L ECON. L. 557, 573–84 (2004).

82. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009).

83. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 418 F. Supp. 2d 1021, 1044 (S.D. Ind. 2006), *rev’d en banc*, 576 F.3d 1348.

84. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 303 F. App’x 884, 893–94 (Fed. Cir. 2008), *vacated*, 315 F. App’x 273 (Fed. Cir. 2009) (per curiam).

85. *Cardiac Pacemakers*, 576 F.3d at 1352.

86. U.S. Patent No. 4,407,288 col.21 ll.9–10 (filed Mar. 16, 1981).

87. *Id.* col.21 ll.9–23.

88. *Cardioversion* is defined as an “application of an electric shock in order to restore normal heartbeat.” *Cardioversion*, MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/cardioversion> (last visited Apr. 20, 2011).

89. ’288 Patent, col.21 ll.30–32.

90. See 1 CHISUM, *supra* note 28, § 1.03.

claim of the '288 patent.<sup>91</sup> Domestic and foreign customers purchased these ICDs, implanted them, and effectively performed the patented process in the United States and other countries. For these actions, Cardiac Pacemakers sued St. Jude for infringement of the '288 patent.<sup>92</sup> After a lengthy trial and appeals process,<sup>93</sup> a district court awarded damages to Cardiac Pacemakers for St. Jude's domestic and foreign ICD sales.<sup>94</sup> St. Jude appealed the inclusion of damages for the foreign sales in response to this decision.<sup>95</sup>

The Federal Circuit reviewed the application of § 271(f) to method patents. The court began its analysis with the text of the statute.<sup>96</sup> The statute uses the term *patented invention*, which includes “any new and useful process, machine, manufacture, or composition of matter.”<sup>97</sup> The court, however, diverged from the statutory definition and limited the meaning of *patented invention* by the terms *component* and *supply*, which also appear in the statute.<sup>98</sup> The court noted the fundamental difference between apparatus patents and method patents: although a component of an apparatus patent is a tangible item, a component of a method patent is an intangible step in the patented process.<sup>99</sup> Cardiac Pacemakers argued that a component of a method patent could include an item—St. Jude's product—that completes one or more steps of a method patent.<sup>100</sup> Dismissing this claim, the court referenced § 271(c), which applies to “a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process.”<sup>101</sup> Congress did not use this language in § 271(f) and thus did not intend for the statute to apply to an item that can practice the

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91. Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 576 F.3d 1348, 1352 (Fed. Cir. 2009). ICDs are small medical devices that detect heart rhythm and apply electrical shocks. *Id.*

92. *Id.*

93. Cardiac originally brought this suit against St. Jude in 1996. *Id.* at 1352–55.

94. Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 418 F. Supp. 2d 1021, 1044 (S.D. Ind. 2006), *rev'd en banc*, 576 F.3d 1348.

95. *Cardiac Pacemakers*, 576 F.3d at 1358.

96. *Id.* at 1362.

97. 35 U.S.C. § 101 (2006). Inventions patentable include “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” *Id.*

98. *Id.*; *Cardiac Pacemakers*, 576 F.3d at 1363–64.

99. *Cardiac Pacemakers*, 576 F.3d at 1362.

100. *Id.* at 1363.

101. 35 U.S.C. § 271(c) (2006) (emphasis added).

patented process.<sup>102</sup> Therefore, the steps of a patented process are the only components of that process.<sup>103</sup> The court concluded the term *patented invention* in this section of the statute did not include process patents because the statute requires the infringer to supply a component, and supplying an intangible step of a process is impossible.<sup>104</sup>

The court also consulted the statute's legislative history in analyzing the term *patented invention*. Congress enacted § 271(f) in response to the loophole identified by the *Deepsouth* decision.<sup>105</sup> The congressional record went into little detail about the statute.<sup>106</sup> Therefore, the court concluded that § 271(f) did not apply to processes and justified its interpretation on both the language of the statute and its legislative history.<sup>107</sup> Because *Cardiac Pacemakers* held a process patent rather than a product patent, the Federal Circuit reversed the damages for St. Jude's foreign ICD sales.<sup>108</sup>

In a lone dissenting opinion, Judge Newman considered the context of the statute, the legislative history, and the plain language of the text and disagreed with the majority's ruling that § 271(f) does not apply to method patents.<sup>109</sup> Section 101 defines patentable inventions as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."<sup>110</sup> Judge Newman explained that other subsections of § 271 explicitly apply to a subset of patented inventions.<sup>111</sup> This limitation of applicable patents was necessary, Judge Newman argued, because the term *patented invention* always includes processes, machines, manufactures, and compositions of matter.<sup>112</sup> Furthermore, Judge Newman argued that unambiguous statutes do not need further interpretation.<sup>113</sup> The Supreme Court encountered a similar

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102. *Cardiac Pacemakers*, 576 F.3d at 1363–64.

103. *Id.* at 1364.

104. *Id.*

105. *See supra* Part III.B.

106. The legislative history indicates that one person mentioned that § 271(f) would apply to process patents. *See Hearing, supra* note 9, at 46 (statement of Donald W. Banner, President, Intellectual Property Owners, Inc.). The Federal Circuit, however, found this evidence too thin to represent the true intent of Congress. *See Cardiac Pacemakers*, 576 F.3d at 1364–65.

107. *See Cardiac Pacemakers*, 576 F.3d at 1365.

108. *Id.* at 1365–66.

109. *Id.* at 1366–74 (Newman, J., dissenting).

110. 35 U.S.C. § 101 (2006).

111. *Cardiac Pacemakers*, 576 F.3d at 1368–69 (Newman, J., dissenting). The contributory infringement statute imposes liability for supplying components of a patented machine, manufacture, combination, or composition and for supplying a material or apparatus for use in practicing a patented process. 35 U.S.C. § 271(c) (2006). Another subsection imposes liability for importing a product made by a patented process. *Id.* § 271(g).

112. *See Cardiac Pacemakers*, 576 F.3d at 1367 (Newman, J., dissenting).

113. *See id.* at 1366–68.

situation with the term *patented invention* in § 271(e).<sup>114</sup> The Supreme Court declared that other language could not indirectly limit such a defined term when Congress could have easily done so directly.<sup>115</sup> This, however, is exactly what the Federal Circuit did in *Cardiac Pacemakers*.

Regarding the statute's legislative history, Judge Newman noted that Congress waited many years before promulgating a response to *Deepsouth*—a response that aimed to close the loophole highlighted in the case, as well as other loopholes that may develop.<sup>116</sup> Indeed, Congress initially drafted the statute to explicitly exclude method patents but eventually changed it to cover method patents as well.<sup>117</sup> This illustrates that although Congress certainly intended to overrule *Deepsouth*, it also intended to close future loopholes that infringers might use to avoid patent infringement law. In the end, Judge Newman did not believe Congress would *implicitly* exclude method patents from this section by the inclusion of additional terms because Congress could have *explicitly* excluded method patents, which it had done in other sections of the statute.<sup>118</sup>

#### IV. EXTRATERRITORIAL APPLICATION OF U.S. PATENT LAW

Courts have long recognized that a patentee's rights extend only to the United States' borders, and that therefore a patentee has no claim under U.S. law for foreign infringement.<sup>119</sup> Minor foreign activity, however, does not make federal patent law irrelevant.<sup>120</sup> Many Federal Circuit decisions focus on the domestic effects of the allegedly infringing

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114. *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 665–69 (1990).

115. *Id.* at 667–68.

116. *Cardiac Pacemakers*, 576 F.3d at 1369–71 (Newman, J., dissenting).

117. *Id.* at 1370 (“Subsequent bills, including S.1535, 98th Cong., 1st Sess. (1983), replaced [‘patented machine, manufacture, or composition of matter’] with the encompassing term ‘patented invention.’ . . . The ensuing change in legislative language, embodied in S.1535, demonstrates the purposeful action to include processes in § 271(f), instead of the more limited scope of earlier versions of the legislation.”).

118. *See id.* at 1373.

119. *See, e.g., Brown v. Duchesne*, 60 U.S. (19 How.) 183, 195 (1856).

120. *See Litecubes, LLC v. N. Light Prods., Inc.*, 523 F.3d 1353, 1363 (Fed. Cir. 2008) (“There is no absolute rule prohibiting the extraterritorial reach of federal statutes.”); Timothy R. Holbrook, *Extraterritoriality in U.S. Patent Law*, 49 WM. & MARY L. REV. 2119, 2145 (2008) (“Although some Federal Circuit decisions declined to allow U.S. patent rights to cover foreign acts, others demonstrated a willingness to extend the protection afforded by patents to activities outside the United States.”).

actions rather than strictly where the actions took place.<sup>121</sup> Although foreign infringement by itself cannot sustain a cause of action for infringement, Congress has indicated that certain foreign activities are restricted.<sup>122</sup> An overview of extraterritoriality in patent law shows how a variety of foreign activities implicates U.S. patent law and, in particular, patented processes.

#### A. Exportation

The exportation of patented inventions is largely irrelevant in direct infringement cases if the patented invention has already been made, used, or sold in the United States.<sup>123</sup> Direct infringement occurs at the point of creation, usage, sale, or offer of sale within the United States.<sup>124</sup> Therefore, before an alleged infringer exports such an invention, the alleged infringer has already directly infringed the patent, and the analysis ends there.<sup>125</sup>

A more complex direct infringement situation arises when someone makes or uses a patented invention across national borders by exporting something outside the United States.<sup>126</sup> In *NTP*, for example, NTP held system and method patents for an electronic mail system.<sup>127</sup> Research in Motion, the alleged infringer, utilized a data retrieval system consisting of phones located in the United States and computer servers located in Canada.<sup>128</sup> The allegedly infringing act occurred when Research in Motion's Canadian servers transmitted data to and from a user's phone

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121. See Holbrook, *supra* note 120, at 2154 (“[T]here will be liability for infringement of the U.S. patent if there is some sort of ‘effect’ on the market for the patented good within the United States.”).

122. For example, performing a patented process abroad and importing the resulting product infringes the patent. 35 U.S.C. § 271(g) (2006); Holbrook, *supra* note 120, at 2139–41.

123. See 35 U.S.C. § 271(a) (2006).

124. See *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 527 (1972), *superseded by statute*, Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383, *as recognized in* *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007). In order to “sell” a patented invention, the alleged infringer must first “make” the invention; therefore, in exporting cases, the sell analysis is highly dependent on the make analysis. *See id.*

125. 5 CHISUM, *supra* note 28, § 16.05[2].

126. See, e.g., *Microsoft*, 550 U.S. at 441–42; *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1338–39 (Fed. Cir. 2005), *overruled in part by* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009); *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1313–15 (Fed. Cir. 2005); *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113, 1115–16 (Fed. Cir. 2004).

127. *NTP*, 418 F.3d at 1288.

128. *Id.* at 1289–90. Research in Motion sells the popular BlackBerry communication devices and the associated software that transmits e-mail messages from the user's e-mail system to Research in Motion servers to the user's device. *Id.*

in the United States.<sup>129</sup> Therefore, the alleged infringing act occurred partially inside and partially outside the United States.<sup>130</sup> This case involved “an added degree of complexity” because components of both method and system patents were spread across different countries.<sup>131</sup> The Federal Circuit ruled that the use of the claimed system is in “the place where control of the system is exercised and beneficial use of the system obtained.”<sup>132</sup> The use of a claimed process, however, is where all steps of a patented process occur.<sup>133</sup> Therefore, one can infringe a system in the United States despite some foreign activity if the beneficial use is in the United States. However, one cannot infringe a process if one step of the process, no matter how minor, occurs outside the United States. By focusing on the place of beneficial use of a system, the Federal Circuit explicitly applied U.S. patent law to foreign actions and eroded the traditional territorial principles of patent law.<sup>134</sup>

If there is any doubt remaining whether U.S. patent law applies to infringing actions occurring abroad, the enactment of § 271(f) clearly supports the argument that limited extraterritoriality of U.S. patent law on foreign activities is acceptable.<sup>135</sup> Both subsections impose infringement liability on a party who contributes to or induces infringement “outside of the United States in a manner that would infringe the patent if such combination occurred within the United States.”<sup>136</sup> Such language unquestionably enforces domestic patent laws on foreign activity.<sup>137</sup>

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129. *Id.*

130. *Id.* at 1313, 1317.

131. *Id.* at 1313.

132. *Id.* at 1317.

133. *Id.* at 1318. For a discussion of the difference between a process and a system, see *infra* Part V.A.

134. Holbrook, *supra* note 120, at 2153–54. The *NTP* case also highlighted another loophole regarding processes in patent law that is beyond the scope of this Comment. See *infra* text accompanying notes 238–46.

135. The Supreme Court has demanded a “clear congressional indication of intent to extend the patent privilege” to cases in which a patented invention’s components are sold in the United States and the invention is made abroad. *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 532 (1972), *superseded by statute*, Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383, *as recognized in* *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007). Congress clearly expressed this intent with the passage of § 271(f). See S. REP. NO. 98-663, at 6 (1984).

136. 35 U.S.C. § 271(f) (2006); see, e.g., *Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1222–23 (Fed. Cir. 2006) (holding defendant infringed patent by supplying components and instruction to foreign customers to build patented wastewater tanks).

137. See Fisch & Allen, *supra* note 81, at 566–67 (“Congress specifically extended the reach of U.S. patent law beyond the borders of this [country].”).

## B. Importation

Congress also imposed infringement liability on a number of acts that involve importing patented inventions into the United States.<sup>138</sup> In 1994, in accordance with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Congress amended several subsections of the infringement statute to include liability for importing a patented invention into the United States during its protected term.<sup>139</sup> Congress amended § 271(a) to include liability for whoever imports a patented invention into the United States.<sup>140</sup> Likewise, Congress amended § 271(c) to include liability for importing a “component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process.”<sup>141</sup>

Prior to TRIPS, Congress passed the Process Patent Amendments Act of 1988.<sup>142</sup> This Act added § 271(g), which imposes liability for importing products made by patented processes performed in foreign countries.<sup>143</sup> By passing this section, Congress purposely increased the rights of process

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138. See 35 U.S.C. § 271(a), (c), (g) (2006) (imposing liability for importing certain items into the United States).

139. The TRIPS agreement states that a “patent shall confer on its owner the following exclusive rights”:

- (a) where the subject matter of a patent is a product, to prevent third parties not having the owner’s consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product;
- (b) where the subject matter of a patent is a process, to prevent third parties not having the owner’s consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process.

Agreement on Trade-Related Aspects of Intellectual Property Rights art. 28, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 108 Stat. 4809, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement] (footnote omitted).

140. Uruguay Round Agreements Act, Pub. L. No. 103-465, § 533(a)(1), 108 Stat. 4809, 4988 (1994) (codified as amended at 35 U.S.C. § 271(c) (2006)).

141. 35 U.S.C. § 271(c).

142. Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, § 9003, 102 Stat. 1107, 1563-64 (1988) (codified as amended at 35 U.S.C. § 271(g) (2006)).

143. Section 271(g) states:

Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a product unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A product which is made by a patented process will, for purposes of this title, not be considered to be so made after—

- (1) it is materially changed by subsequent processes; or
- (2) it becomes a trivial and nonessential component of another product.

35 U.S.C. § 271(g).

patent owners to bar the importation of unpatented products made using the patented process abroad.<sup>144</sup> Courts have applied this theory of infringement to those who use or sell the unpatented products in the United States.<sup>145</sup> Indeed, the legislative history shows Congress intended to increase the rights of patent process holders regardless of where the process is performed.<sup>146</sup> By enacting this statute, Congress reaffirmed the protection of process patents in the United States and abroad.<sup>147</sup>

### C. Foreign Activity

Inducing the infringement of a patent in the United States may also lead to infringement liability regardless of where the inducement occurs.<sup>148</sup> Section 271(b) simply states that “[w]hoever actively induces infringement of a patent shall be liable as an infringer.”<sup>149</sup> In order to qualify as inducement, the induced acts must constitute direct infringement.<sup>150</sup> With no jurisdictional restriction, however, courts have imposed inducement liability for actions occurring entirely outside the United States, as long as the direct infringement occurred in the United States and the foreign party intended for the domestic party to infringe the patent.<sup>151</sup> In *DSU Medical Corp. v. JMS Co.*, for example, ITL, the alleged inducing infringer, manufactured and sold a needle guard in Malaysia and Singapore, and to its customer JMS.<sup>152</sup> JMS eventually

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144. 5 CHISUM, *supra* note 28, § 16.02[6][d][ii].

145. *See, e.g.*, *CNET Networks, Inc. v. Etalize, Inc.*, 528 F. Supp. 2d 985, 995 (N.D. Cal. 2007) (holding that defendant could infringe process patent by performing process outside the United States and selling resulting unpatented product catalog in the United States).

146. H.R. REP. NO. 100-576, at 1085–86 (1988) (Conf. Rep.) (amending the infringement statute to allow process patent holders “the right to exclude others from using or selling in the U.S., or importing into the U.S. products made by that process” with no restriction on where the process is performed).

147. *See* Holbrook, *supra* note 120, at 2139.

148. Because § 271(b) does not contain a territorial restriction, courts have applied § 271(b) to foreign acts when those acts induce direct infringement within the United States. 2 ROBERT A. MATTHEWS, JR., ANNOTATED PATENT DIGEST § 10:57 (2010), available at ANPATDIG § 10:57.

149. 35 U.S.C. § 271(b) (2006).

150. 5 CHISUM, *supra* note 28, § 17.04[1].

151. *See, e.g.*, *U.S. Philips Corp. v. Iwasaki Elec. Co.*, 607 F. Supp. 2d 470, 480 (S.D.N.Y. 2009) (finding infringement in a case in which the defendant manufactured patented lamps in Japan knowing that its customers would eventually sell the lamps in the United States).

152. *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1298–99 (Fed. Cir. 2006).

sold the device to an American company in the United States, thereby directly infringing the plaintiff's patent.<sup>153</sup> Although ITL did not have the requisite intent to induce infringement, the court discussed that ITL's purely foreign actions could have sufficed for inducing infringement liability.<sup>154</sup>

Despite the general presumption that legislation only applies within the borders of the United States unless explicitly noted,<sup>155</sup> Congress and the courts have established an extraterritorial trend in patent law. The examples above clearly indicate that many foreign actions constitute infringement and are unlawful. The global economy blurs country lines and creates intricacies that do not comport with the rule against extraterritoriality.<sup>156</sup> Furthermore, Congress enacted several statutes that explicitly apply U.S. patent law to extraterritorial actions.<sup>157</sup> Although there is a presumption against the extraterritorial application of U.S. patent law without clear intent by Congress, Congress arguably expressed this intent with the passage of § 271(f). In light of the policy considerations for protecting process patents,<sup>158</sup> Congress should explicitly express this intent by amending § 271(f) and override the Federal Circuit.

#### V. VIEWING § 271(F) INFRINGEMENT IN LIGHT OF CURRENT U.S. PATENT POLICY

Given the policy reasons for protecting patents generally<sup>159</sup> and the many foreign activities that implicate U.S. patent law,<sup>160</sup> § 271(f) should apply to process patents. Congress enacted § 271(f) to prevent potential infringers from avoiding the infringement statute by performing certain activities abroad.<sup>161</sup> If preventing circumvention of the patent infringement statute is a general goal of U.S. patent policy, it would behoove Congress and practitioners to survey the infringement landscape

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153. *Id.* at 1302.

154. *Id.* at 1305–06.

155. *See, e.g.*, *Foley Bros. v. Filardo*, 336 U.S. 281, 285 (1949).

156. For example, one person can copy and transmit software to all corners of the world within seconds. *See* Eric W. Gutttag, *When Offshore Activities Become Infringing: Applying § 271 to Technologies that “Straddle” Territorial Borders*, 14 RICH. J.L. & TECH. 1, 1 (2007).

157. *See supra* text accompanying notes 122–50.

158. *See infra* Part V.

159. *See supra* Part II.

160. *See supra* Part IV.

161. *See* S. REP. NO. 98-663, at 3 (1984) (“[Section 271(f)] is needed to help maintain a climate in the United States conducive to invention, innovation, and investment. Permitting the subterfuge which is allowed under the *Deepsouth* interpretation of the patent law weakens confidence in patents among businesses and investors.”).

and consider if the courts evenly and optimally administer the statute. A potential infringer may actually use a number of loopholes to avoid infringement liability altogether. Presumably, the goal of Congress was to close such loopholes when it amended the infringement statute to include § 271(f).<sup>162</sup> However, it is evident that process patents receive significantly less protection than their counterparts under this section. This discrimination against process patents is illogical on many levels.<sup>163</sup>

#### A. *Process and Product Claim Basics*

In the Patent Act of 1790, Congress made useful arts, manufactures, engines, machines, and devices patentable.<sup>164</sup> Product or system claims, which include machines, manufactures, and compositions of matter, pertain to tangible entities.<sup>165</sup> Process claims differ from product claims most notably because processes are not tangible entities.<sup>166</sup>

The Supreme Court has defined a process as “an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery.”<sup>167</sup> A process patent, also known as a method patent, is fundamentally different from other types of patents because it consists of a series of steps that lead to a useful result.<sup>168</sup> Courts have dealt with machine patents much more easily than process patents

162. Congress enacted § 271(f) as “a legislative solution to close a loophole in patent law.” *See id.* at 6.

163. Donald Chisum predicted the *Cardiac Pacemakers* decision long ago: [T]he statute is incomplete. It covers the manufacture and export of unpatented components of patented machines and other structural combinations. It does not cover manufacture and export of a component for use in a patented *process*—even though many valuable inventions take the form of new processes for using materials or components.

Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997).

164. Patent Act of 1790, ch. 7, 1 Stat. 109, 110 (repealed 1793). Congress eventually replaced the word *art* with the word *process*. *See* Patent Act of 1952, Pub. L. No. 82-593, § 101, 66 Stat. 792, 797 (1952) (codified as amended at 35 U.S.C. § 101 (2006)). The Supreme Court has ruled, however, that this word change did not affect the patentability of processes. *See* *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (“Analysis of the eligibility of a claim of patent protection for a ‘process’ did not change with the addition of that term to section 101.”).

165. 1 CHISUM, *supra* note 28, § 1.02.

166. *See id.*

167. *Cochrane v. Deener*, 94 U.S. 780, 788 (1876).

168. 1 CHISUM, *supra* note 28, § 1.03.

because product patents consist of tangible objects rather than amorphous steps.<sup>169</sup>

Despite their differences, product and process patents can be very similar.<sup>170</sup> Practitioners are advised to claim an invention as both a product and a process.<sup>171</sup> Indeed, courts have found that method and apparatus claims may be so similar that it is difficult to distinguish between the two.<sup>172</sup> Thus, this application of § 271(f) to products but not processes is untenable because the infringement statute should protect an invention regardless of how it is claimed.<sup>173</sup>

### *B. Section 271(f) Was Modeled After Inducement and Contributory Infringement Statutes*

Accepting the proposition that U.S. patent law readily applies to many foreign activities,<sup>174</sup> the application of § 271(f) should parallel the application of the inducement and contributory infringement statutes. In particular, Congress should implement a uniform application of § 271(f) to all classes of patents because (1) a uniform application is practical in light of current infringement policy, (2) a competent patent agent can easily avoid the situation presented in *Cardiac Pacemakers* by claiming an invention as both a system and a process, (3) Congress arguably intended to do so when it originally enacted § 271(f), and (4) a simple and standardized patent infringement statute would further encourage invention, discourage infringement, and ease the judicial application of the statute.

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169. *Risdon Iron & Locomotive Works v. Medart*, 158 U.S. 68, 77–79 (1895) (discussing the restrictions on patentability of some processes); *see also* 1 CHISUM, *supra* note 28, § 1.03.

170. For example, patents covering a sandwich-making system and a method of making a sandwich may be indistinguishable. *See* Richard H. Stern, *Tales from the Algorithm War: Benson to Iwahashi, It's Deja Vu All Over Again*, 18 AIPLA Q.J. 371, 378 (1991).

171. *See* ROBERT C. FABER, *LANDIS ON MECHANICS OF PATENT CLAIM DRAFTING* § 7:2 (5th ed. 2008) (“For fullest protection wherever an invention is capable of being claimed in more than one of the different ways, it is recommended that that be done.”); JEFFREY G. SHELDON, *HOW TO WRITE A PATENT APPLICATION* § 7:5.4 (2d ed. 2010) (“Whenever possible it is advisable to include different statutory classes of claims in an application. This increases the chance of catching an infringer and can increase the number of potential infringers.”).

172. In evaluating the exhaustion doctrine, the Supreme Court has noted that applying the doctrine to apparatuses but not to processes would undermine its effectiveness because the claims are so similar. *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 628–30 (2008). This Comment argues that the same theory applies to § 271(f) infringement.

173. *See supra* text accompanying notes 159–63.

174. *See supra* Part IV.

Congress passed § 271(f) in 1984, twelve years after the *Deepsouth* case.<sup>175</sup> Although Congress enacted this statute to directly overrule *Deepsouth*, it intended, in more general terms, to close loopholes in patent law.<sup>176</sup>

The similarities between the language of § 271(f) and the indirect infringement statutes elucidate the meaning of this statute.<sup>177</sup> Section 271(f)(1) prohibits supplying “all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to *actively induce* the combination of such components.”<sup>178</sup> Section 271(b) similarly prohibits “actively induc[ing] infringement.”<sup>179</sup> Because the statutes are similar, Congress may have intended to prohibit activity that would be actionable under § 271(b) but is not because direct infringement in the United States is not present.

The § 271(f)(1) infringer must actively induce the infringement of another, much like an indirect infringer who violates § 271(b).<sup>180</sup> Congress began imposing liability on anyone who intentionally induces another to directly infringe a patent when it passed § 271(b).<sup>181</sup> This expansion of infringement liability reflects the policy that indirect infringement inhibits invention and innovation just as much as direct infringement does.<sup>182</sup> Similar principles should apply under § 271(f). Courts have applied this statute to those who supply the components of a patented machine intending for the recipient to combine the components.<sup>183</sup>

175. See Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383 (codified as amended at 35 U.S.C. § 271(f) (2006)).

176. See S. REP. NO. 98-663, at 3 (1984) (“The bill is needed to help maintain a climate in the United States conducive to invention, innovation, and investment. Permitting the subterfuge which is allowed under the *Deepsouth* interpretation of the patent law weakens confidence in patents among businesses and investors.”).

177. Congress admittedly borrowed language from both §§ 271(b) and 271(c) in drafting § 271(f). See *id.* at 6–7.

178. 35 U.S.C. § 271(f)(1) (emphasis added).

179. *Id.* § 271(b); see also *T.D. Williamson, Inc. v. Laymon*, 723 F. Supp. 587, 591–92 (N.D. Okla. 1989) (discussing the similarities between § 271(b) infringement and § 271(f) infringement), *aff’d mem.*, 923 F.2d 871 (Fed. Cir. 1990).

180. Compare 35 U.S.C. § 271(f)(1), with *id.* § 271(b).

181. See *supra* text accompanying notes 19–23.

182. See 35 U.S.C. § 271(b); see also *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 669 (Fed. Cir. 1988) (holding defendant liable for inducing others to infringe bacteria and process patents).

183. See, e.g., *Williamson*, 723 F. Supp. at 591–92. Although there is no direct infringement in the United States under § 271, courts have justified the use of this statute by noting the patentee’s loss in actual and potential customers. See, e.g., *id.* at 603–04.

Congress passed this statute to increase infringement liability, to close a loophole highlighted in *Deepsouth*, and to prevent copiers from avoiding U.S. patent law by moving outside the country.<sup>184</sup> Both statutes require that the alleged infringer possess the intent for another party to commit an action that would constitute direct patent infringement if such action occurred in the United States.<sup>185</sup> Because § 271(f)(1) was modeled after § 271(b), which applies to process patents, § 271(f) should also apply to process patents.

The language of § 271(f)(2) is also very similar to § 271(c). Section 271(f)(2) prohibits a person from intentionally providing a component of a patented invention to someone outside the United States if that person knows that the combination of the components in the United States would constitute infringement.<sup>186</sup> Again, because the statutes are so similar, Congress may have intended for the statutes to reach similar actions and classes of patents.

Like an indirect infringer who violates § 271(c), a § 271(f)(2) infringer also contributes to a direct infringement. Under § 271(c), Congress again did not require that the infringer actually infringe the patent; instead, Congress imposed liability on one who contributes to another's infringement.<sup>187</sup> This expansion of infringement liability reflects the policy that indirect infringement stifles the inventive process just as much as direct infringement. The same principles should apply under § 271(f)(2). The legislative history clearly indicates that the statute derived from § 271(c).<sup>188</sup> The component must be made or adapted for the patent, and the infringer must intend for the component to be combined in a way that would infringe the patent if done in the United States.<sup>189</sup> The common denominator in both statutes is that the alleged infringer contributes to an action that would constitute direct patent infringement if such action occurred in the United States.

An important distinction between these two statutes, however, involves the term *patented invention*.<sup>190</sup> Section 271(c) applies to anyone who

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184. *See id.* at 592.

185. *See* 35 U.S.C. § 271(b), (f)(1) (2006).

186. *Id.* § 271(f)(2).

187. *See supra* text accompanying notes 25–27.

188. *See* S. REP. NO. 98-663, at 6–7 (1984) (drawing language for § 271(e), now appearing in § 271(f)(2), from §§ 271(b) and 271(c)); *see also Hearing, supra* note 9, at 22–23 (statement of Hon. Gerald J. Mossinghoff, Assistant Sec'y and Comm'r of Patents and Trademarks, Patent and Trademark Office) (discussing the application of indirect infringement principles abroad in the context of § 271(f)).

189. *See Hearing, supra* note 9, at 22–23 (statement of Hon. Gerald J. Mossinghoff, Assistant Sec'y and Comm'r of Patents and Trademarks, Patent and Trademark Office).

190. *See* *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348, 1368–69 (Fed. Cir. 2009) (Newman, J., dissenting) (discussing the umbrella term *patented invention* and how it is selectively applied throughout the infringement statute); *see also* *Eli Lilly*

supplies “a component of a patented machine, manufacture, combination or composition,” or an “apparatus for use in practicing a patented process.”<sup>191</sup> However, much like § 271(a), § 271(f) applies to anyone who supplies components of a patented invention.<sup>192</sup> That is, § 271(f) omits reference to an apparatus that can complete the steps of a process patent yet uses the term *patented invention*, which by definition includes processes.<sup>193</sup>

This language difference between the two statutes highlights the major issue the Federal Circuit addressed first in *Union Carbide* and then again in *Cardiac Pacemakers*. In *Union Carbide*, the defendant supplied a special chemical used in a patented process to a foreign purchaser who later performed the process.<sup>194</sup> A Federal Circuit panel ruled that § 271(f) applied to “components used in the performance of patented process/method inventions” and held the defendant liable for patent infringement.<sup>195</sup> In *Cardiac Pacemakers*, however, the court placed special emphasis on the terms *component* and *supplies*.<sup>196</sup> The court ruled § 271(f) did not apply to process patents in light of the *Deepsouth* decision and the difficulty of supplying a process component to someone else.<sup>197</sup>

The result in *Cardiac Pacemakers*, however, does not comport with U.S. patent policy reflected in § 271(f). In the *Deepsouth*, *Cardiac Pacemakers*, and *Union Carbide* cases, each defendant induced or contributed to the actions of a third party. These actions would have directly infringed the patent had they occurred in the United States.<sup>198</sup> In

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& Co. v. Medtronic, Inc., 496 U.S. 661, 665–69 (1990) (holding that the term *patented invention* is not limited to drug-related inventions because it is statutorily defined and because Congress would have expressly indicated this intent).

191. 35 U.S.C. § 271(c) (2006).

192. *Id.* § 271(f). The legislative history indicates that the statute was initially drafted to only apply to supplying components of “a patented machine, manufacture, or composition of matter.” *Cardiac Pacemakers*, 576 F.3d at 1369–70. Later versions changed this to the current language. *Id.* at 1370.

193. *See* 35 U.S.C. § 271(f).

194. *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366, 1372 (Fed. Cir. 2005), *overruled by Cardiac Pacemakers*, 576 F.3d 1348.

195. *Id.* at 1378–80.

196. *See Cardiac Pacemakers*, 576 F.3d at 1363–64.

197. *Id.* at 1364–65.

198. *See Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 524, 526 (1972), *superseded by statute*, Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383, *as recognized in Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007); *Cardiac Pacemakers*, 576 F.3d at 1352; *Union Carbide*, 425 F.3d at 1380.

*Deepsouth*, the defendant supplied the components of a shrimp-deveining machine to a foreign purchaser.<sup>199</sup> If the foreign purchaser had assembled or used the machine in the United States, the purchaser would have directly infringed the patent.<sup>200</sup> In *Union Carbide*, the defendant supplied an essential chemical catalyst to a foreign purchaser.<sup>201</sup> If the foreign purchaser had completed the process using the catalyst in the United States, the purchaser would have directly infringed the patent.<sup>202</sup> Finally, in *Cardiac Pacemakers*, the defendant supplied a foreign purchaser with a machine that could perform a patented process.<sup>203</sup> If the foreign purchaser had used the machine to complete the process in the United States, the purchaser also would have directly infringed the patent.<sup>204</sup> Framing these cases by the actions of the domestic party highlights the inducing or contributing behavior of each defendant and the asymmetric application of § 271(f) to products but not processes. The *Cardiac Pacemakers* court rationalized this asymmetry and reopened an infringement loophole by reading into the statutory language and disregarding the legislative record.<sup>205</sup> The statute should apply to all patented inventions, including processes, unless Congress expressly states otherwise because Congress enacted § 271(f) to generally prevent avoidance of the infringement statute.

### C. Ease of Transitioning from Process to System Claims

The ease with which the patent application drafter can transform a method patent into an apparatus patent further undermines the *Cardiac Pacemakers* decision.<sup>206</sup> Both the majority<sup>207</sup> and dissent<sup>208</sup> touched on the fact that apparatus and method claims are often indistinguishable from each other. The court did not consider that many patentees will claim their inventions as both method and apparatus claims in order to

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199. *Deepsouth*, 406 U.S. at 524.

200. *See id.* at 526.

201. *Union Carbide*, 425 F.3d at 1369, 1380.

202. *See id.* The district court also found Shell liable for contributory infringement because it sold the catalyst to domestic customers. *See id.* at 1369, 1380.

203. *Cardiac Pacemakers*, 576 F.3d at 1352.

204. *See id.* at 1365. The district court found St. Jude liable for infringement for all ICDs that remained in the country and used the patented process. *Id.* at 1358–59.

205. *See id.* at 1374 (Newman, J., dissenting).

206. *See* John R. Thomas, *Of Text, Technique, and the Tangible: Drafting Patent Claims Around Patent Rules*, 17 J. MARSHALL J. COMPUTER & INFO. L. 219, 225 (1998) (“Even the most novice claims drafter would encounter scant difficulty in converting a patent claim from artifact to technique and back again.”).

207. *See Cardiac Pacemakers*, 576 F.3d at 1362–63 (majority opinion).

208. *See id.* at 1372 (Newman, J., dissenting).

avoid being in Cardiac Pacemakers' position.<sup>209</sup> Thus, depending on the alleged infringing action, the patentee can protect the invention as a method or an apparatus.<sup>210</sup> Undoubtedly, the holding in *Cardiac Pacemakers* will simply encourage the practice of claiming inventions in both process and apparatus form. This practice, although shrewd, is not improper.<sup>211</sup>

The simple transformation between method and system claims is illustrated in the *Deepsouth*, *Union Carbide*, and *Cardiac Pacemakers* cases.<sup>212</sup> The plaintiff in *Deepsouth* could have easily drafted a shrimp deveining process. A step-by-step description of the shrimp deveining process would likely be patentable. Likewise, the plaintiff in *Cardiac Pacemakers* could have drafted a system for detecting and regulating an irregular heart condition.<sup>213</sup> When a patentee can easily exploit this loophole, the effect of the law is uneven and the statute's legitimacy is questionable. There undoubtedly will be patentees, however, who are not aware of this double standard or who cannot afford the extra prosecution required to cover themselves after *Cardiac Pacemakers*. This could create a set of infringers who simply search for such patents and exploit them internationally.

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209. See generally 3 ERNEST BAINBRIDGE LIPSCOMB III, PATENT CLAIMS § 20:3 (3d ed. 2007) (describing the conditions to claim one invention as both a process and an apparatus).

210. There are limitations to claiming both a process and an apparatus; the USPTO will treat the two claims as separate inventions if the process can be performed by a materially different apparatus or by hand, or if the claimed apparatus can practice a materially different process. U.S. PATENT & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 806.05(e) (8th ed., rev. 8, 2010). Applicants cannot claim multiple independent and distinct inventions within the same application. 37 C.F.R. § 1.141 (2009).

211. The Federal Circuit has stated:

It is commonplace that the claims defining some inventions can by competent draftsmanship be directed to either a method or an apparatus. The inventor of such an invention has the option as to the form the claims in his patent will assume. There is nothing improper in this state of affairs, however, and the exercise of that option is to be respected in interpreting such claims as do ultimately issue from prosecution.

*Bandag, Inc. v. Al Bolser's Tire Stores, Inc.*, 750 F.2d 903, 922 (Fed. Cir. 1984) (citation omitted).

212. See, e.g., Stern, *supra* note 170, at 378 (illustrating the similarities between a method of making a sandwich and a sandwich-making system).

213. *Cardiac Pacemakers* held at least one patent for a cardioverting device that was eventually invalidated. See U.S. Patent No. 4,316,472 (filed Aug. 9, 1979).

#### D. Statutory Interpretation

In *Cardiac Pacemakers*, the Federal Circuit meticulously analyzed the history of § 271(f) before reversing the *Union Carbide* decision and limiting the application of the statute to nonprocess claims.<sup>214</sup> The first step in statutory interpretation is to consider the language of the statute.<sup>215</sup> The majority and dissent both explained how their respective interpretations of the statute squared with the term *patented invention* and its statutory definition.<sup>216</sup>

The majority interpreted other language in the statute to modify the term *patented invention* and excluded processes from this particular use of the term. In particular, the majority found the words *supply* and *component* inconsistent with a patented process.<sup>217</sup> Noting the inherent differences between process patents and apparatus patents, the majority stated that the components of process claims are steps, rather than pieces of a machine.<sup>218</sup> The majority found it difficult to imagine supplying such intangible steps and buttressed its argument by comparing the statute to § 271(c), in which a component applies only to a patented machine, manufacture, combination, or composition.<sup>219</sup> Finally, the majority concluded its analysis by noting that Congress purposely drafted the statute narrowly in direct response to *Deepsouth*.<sup>220</sup> Because *Deepsouth* involved a patented machine and the legislative history did not mention process patents, the term *patented invention* did not include method patents.<sup>221</sup> The majority did not explain, however, why Congress did not simply replace *patented invention* with its constituent parts, as Congress did in § 271(c).<sup>222</sup>

The dissent emphasized the statute's use of *patented invention*.<sup>223</sup> Placing heavy emphasis on the statutory definition of *patented invention*, the dissent argued that this statute should apply to processes as well as

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214. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348, 1359–65 (Fed. Cir. 2009).

215. *Estate of Cowart v. Nicklos Drilling Co.*, 505 U.S. 469, 475 (1992).

216. Patentable subject matter includes “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101 (2006).

217. *See Cardiac Pacemakers*, 576 F.3d at 1362 (“[W]e cannot disregard all the other language of that section, which, as we shall demonstrate, makes it clear that it does not extend to method patents.”).

218. *Id.* (quoting *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002)).

219. *See id.* at 1363–64.

220. *Id.* at 1364.

221. *Id.* at 1364–65.

222. 35 U.S.C. § 271(c) (2006).

223. *See Cardiac Pacemakers*, 576 F.3d at 1366–68 (Newman, J., dissenting).

machines, manufactures, and compositions of matter.<sup>224</sup> Although some infringement sections support this argument by specifically breaking *patented invention* into its elements, others do not.<sup>225</sup> Sections 271(a) and 271(d) apply to a patented invention.<sup>226</sup> Section 271(b) applies to a patent.<sup>227</sup> Section 271(c) is the first statute to use the elements of an invention. Under this section, infringement includes the supplying of a component of a “patented machine, manufacture, combination or composition” or the supplying of a “material or apparatus for use in practicing a patented process.”<sup>228</sup> Finally, § 271(g) applies to a product made by a patented process.<sup>229</sup> These nuances indicate that Congress carefully chooses its words when enacting legislation.<sup>230</sup>

In interpreting § 271(f), the majority violated the first step of statutory interpretation by ignoring the statute’s plain language.<sup>231</sup> When the language of the statute is plain, the court need only enforce the statute.<sup>232</sup> Although the majority paid special attention to the words *component* and *supply*, it placed little emphasis on the term *patented invention*. This term, as defined in the statute, plainly includes patented processes.<sup>233</sup> Despite the court’s frustration with the statute, it is the prerogative of Congress, not of the court, to amend the statute. Interpretation of legislative history must cede to the plain meaning of the words Congress chose.<sup>234</sup>

When the statutory language is ambiguous, a court must turn to the legislative history to determine the intent of Congress.<sup>235</sup> The legislative history reveals that Congress initially drafted the statute as applicable

224. *Id.* at 1367.

225. *See id.* at 1368.

226. *See* 35 U.S.C. § 271(a), (d) (2006).

227. *See id.* § 271(b).

228. *See id.* § 271(c).

229. *See id.* § 271(g).

230. *Cardiac Pacemakers*, 576 F.3d at 1369 (Newman, J., dissenting) (“My colleagues appear to have misinterpreted these distinct usages, for the different subsections reinforce that the legislators carefully structured each for a distinct purpose.”).

231. *See* Estate of Cowart v. Nicklos Drilling Co., 505 U.S. 469, 475 (1992) (“In a statutory construction case, the beginning point must be the language of the statute, and when a statute speaks with clarity to an issue judicial inquiry into the statute’s meaning, in all but the most extraordinary circumstance, is finished.”).

232. *See id.*

233. *See* 35 U.S.C. § 101 (2006).

234. *See* Van Wersch v. Dep’t of Health & Human Servs., 197 F.3d 1144, 1152 (Fed. Cir. 1999).

235. *Hoechst Aktiengesellschaft v. Quigg*, 917 F.2d 522, 526 (Fed. Cir. 1990).

only to a “patented machine, manufacture, or composition of matter” before changing the language to its current form.<sup>236</sup> Furthermore, the legislative history does not specifically exclude processes. It follows, then, that Congress intended for the final statute to apply to processes when it changed the original language, which did not include processes, to a term that statutorily included processes.<sup>237</sup>

*E. The Cardiac Pacemakers Decision Will Allow Method Patent Infringers To Go Unpunished*

The *NTP* decision illustrates another major loophole in the patent infringement statute.<sup>238</sup> An infringer must perform every step of the process in the United States to directly infringe a patented process, but an infringer must only receive beneficial use of the system in the United States to directly infringe a patented system.<sup>239</sup> The *NTP* decision essentially provides infringers with a court-sanctioned way to avoid infringement by completing a single step, whether material or not, outside the country.<sup>240</sup> The logic of this case is further questioned when, under § 271(g), someone can infringe a process patent by performing all of the steps outside the United States and importing the resulting product into the United States.<sup>241</sup>

The *Cardiac Pacemakers* decision offers no help with this dilemma. Although patentees could have used the *Union Carbide* decision to impose § 271(f) liability on the infringers, the *Cardiac Pacemakers* decision forecloses this opportunity.<sup>242</sup> It is ironic that a statute created

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236. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348, 1370 (Fed. Cir. 2009) (Newman, J., dissenting).

237. *See Russello v. United States*, 464 U.S. 16, 23–24 (1983) (“Where Congress includes limiting language in an earlier version of a bill but deletes it prior to enactment, it may be presumed that the limitation was not intended.”).

238. By practicing *NTP*’s invention, *Research in Motion* essentially infringed *NTP*’s method and system patents concurrently. The Federal Circuit, however, only imposed liability for the system patent infringement and let the method patent go unpunished. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1316–18 (Fed. Cir. 2005).

239. *See supra* notes 122–33 and accompanying text.

240. *See Zoltek Corp. v. United States*, 51 Fed. Cl. 829, 836 (2002) (“[T]he language of 35 U.S.C. § 271 did not prevent a prospective infringer from moving merely one step of a patented process to a foreign country, thereby avoiding infringement.”).

241. *See* 35 U.S.C. § 271(g) (2006); *see also* Position Statement, IEEE-USA, Closing the Off-Shore Patent Infringement Loophole (Nov. 19, 2010), *available at* <http://www.ieeeusa.org/policy/positions/PatentLoophole1110.pdf> (calling for Congress to reverse *NTP* by amendment).

242. *NTP*, *Union Carbide*, and *Cardiac Pacemakers* all involved different ways in which the alleged infringer interacted with the patented process. In *NTP*, the alleged infringer practiced a single step outside the country. *NTP*, 418 F.3d at 1289–90. In *Union Carbide*, the alleged infringer exported a chemical used in a step. *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366 (Fed. Cir. 2005), *overruled by*

to close loopholes has opened another. This infringement loophole will simply encourage patentees to claim their inventions as systems rather than processes. It will also encourage foreign infringement of patented processes.

The downside to this proposition is that multiple countries could potentially hold an infringer liable for performing part of the process in those countries.<sup>243</sup> Again, however, the current patent law regime already allows for this if the invention is patented in the foreign country.<sup>244</sup> Many patentees have the option to sue in multiple countries but choose to sue in U.S. courts.<sup>245</sup> Other patentees simply do not expend the resources to get protection anywhere other than the United States. Opening up infringers to double liability would not change anything that is already done.<sup>246</sup>

## VI. PROPOSED LEGISLATION

Congress should amend § 271(f) to mirror the contributory infringement statute to protect all classes of patents and to close major loophole in patent infringement. Such a statute might read:

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*Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 576 F.3d 1348 (Fed. Cir. 2009). In *Cardiac Pacemakers*, the alleged infringer exported a device that performed the entire patented process. *Cardiac Pacemakers*, 576 F.3d at 1365–66. Although all of these cases are different, *Union Carbide* provided a framework in which to apply § 271(f). See *supra* text accompanying notes 192–200.

243. See Holbrook, *supra* note 120, at 2177 (“[A]llowing the infringement suit to proceed in the United States would place the accused infringer in the position of potentially facing double liability—the infringer could be infringing both the foreign patent and the U.S. patent.”).

244. In enacting § 271(f), Congress was aware that the patent owner could potentially have two causes of action, one in the United States for the U.S. patent and one in the foreign country for the foreign patent. See *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972) (“Respondent holds foreign patents; it does not adequately explain why it does not avail itself of them.”), *superseded by statute*, Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383, *as recognized in* *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007).

245. Patentees may also attempt to enforce their foreign patents in U.S. courts. Although U.S. courts apply foreign law in many other areas of law, few patentees attempt this, suggesting that the practice is not worth the effort. Chisum, *supra* note 163, at 610.

246. If serious abuse actually occurred, member countries of the large intellectual property agreements could address this double liability issue. See TRIPS Agreement, *supra* note 139, art. 41 (“[Enforcement] procedures shall be applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse.”).

(f)(1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented *machine, manufacture, combination, or composition*, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, *or a material or apparatus for use in practicing a patented process, constituting a material part of the invention in such manner as to actively induce the completion of the process outside of the United States in a manner that would infringe the patent if such completion occurred within the United States*, shall be liable as an infringer.

(f)(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented *machine, manufacture, combination, or composition* that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, *or a material or apparatus for use in practicing a patented process, constituting a material part of the invention in such manner as to actively induce the completion of the process outside of the United States in a manner that would infringe the patent if such completion occurred within the United States*, shall be liable as an infringer.<sup>247</sup>

The proposed statute would address many of the issues identified above without extending U.S. patent law into uncharted extraterritorial waters. Under the current infringement statute, exportation, importation, and purely foreign activity are already unlawful if they promote direct infringement.<sup>248</sup> Adding the words *machine, manufacture, combination, and composition* would align the current interpretation of § 271(f) under *Cardiac Pacemakers* with the plain language of the statute.<sup>249</sup> This amendment would also impose infringement liability for exporting a material or apparatus capable of practicing a patented process with the requisite intent. Much like the current statute, there is no requirement of direct infringement because one cannot directly infringe a U.S. patent abroad.

This amendment would also clarify the statute by aligning the statutory language with other infringement statutes.<sup>250</sup> The *Cardiac Pacemakers*

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247. The proposed statute borrows from §§ 271(f) and 271(c). Emphasis has been added to the proposed additions. This statute would not affect the *NTP* decision, which is another process infringement decision that creates a process patent loophole. Although beyond the scope of this Comment, such a statute might read: “(f)(3) When part of a patented process is performed outside of the United States, whoever performs a portion of the steps of the process in the United States, such that the primary benefit of the process is derived in the United States, shall be liable as an infringer.”

248. See *supra* Part IV.

249. See *supra* Part V.D.

250. Section 271(c) is the only other statute that uses the *component of language*, but it splits *patented invention* into its constituent parts. See 35 U.S.C. 271(c) (2006).

court was arguably correct in its opinion that supplying a component of a process seems ambiguous.<sup>251</sup> It does not make sense, however, to use the term *patented invention* when Congress could have easily used the term's constituent parts.<sup>252</sup> This amendment would therefore end the long litigation that has ensued since the statute's creation as to the meaning of the statute.<sup>253</sup>

The amended statute would also close infringement loopholes created by the *Cardiac Pacemakers* decision. Under this proposal, plaintiffs like Cardiac Pacemakers would now recover against domestic parties who avoid U.S. patents by completing the method patent in a foreign country.<sup>254</sup>

Finally, the amended statute would punish all domestic parties who attempt to escape infringement by moving their activities out of the country. Under contributory infringement, the infringer who supplies components of a patented machine is just as liable as the infringer who supplies an apparatus that can perform a patented process.<sup>255</sup> Likewise, the infringer who supplies components of a patented machine outside the country to avoid indirect infringement is just as culpable as the noninfringer who supplies an apparatus that can perform a patented process. This amendment would hold both parties liable for infringement, enforce the patentee's rights, and therefore encourage the inventive process.

## VII. CONCLUSION

Although there is a longstanding presumption against the extraterritorial application of U.S. law, Congress and the courts have

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251. See *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1322 (Fed. Cir. 2005) (“[I]t is difficult to conceive of how one might supply or cause to be supplied all or a substantial portion of the steps of a patented method in the sense contemplated by the phrase ‘components of a patented invention’ . . .”).

252. If Congress had intended to limit the scope of *patented invention*, it could have done so more clearly. See, e.g., *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 667 (1990).

253. Ambiguously and poorly drafted federal statutes pervade all types of law, including criminal law. See Marie Gryphon, *It's a Crime?: Flaws in Federal Statutes that Punish Standard Business Practice*, in 12 CIV. JUST. REP., Dec. 2009, at 1, 6–8, available at [http://www.manhattan-institute.org/pdf/cjr\\_12.pdf](http://www.manhattan-institute.org/pdf/cjr_12.pdf) (discussing the ambiguous language of federal mail- and wire-fraud statutes and their unintended effects).

254. This follows similar logic used when originally enacting § 271(f). See S. REP. NO. 98-663, at 6 (1984) (“[The statute] will prevent copiers from avoiding U.S. patents by shipping overseas the components of a product patented in this country so that the assembly of the components will be completed abroad.”).

255. See *supra* Part IV.B.

broadened the ways in which a party may infringe a patent by way of foreign activity. In *Cardiac Pacemakers*, the Federal Circuit reduced infringement protection by ruling that § 271(f) does not apply to process or method patents. This decision does not make sense for several reasons. Section 271(f) borrows heavily from §§ 271(b) and 271(c), which both apply to method patents. Although the legislative intent of § 271(f) was to close a loophole and impose liability on culpable conduct, this case opens a new loophole and protects parties who knowingly induce or contribute to infringement. Unfortunate patentees who claim methods but not products are more disadvantaged than patentees who can easily claim both methods and products. The economic justification for protecting product patents but not method patents is wanting. Finally, the statute, on its face, plainly applies to all claim types.

By amending the statute, Congress can clarify its intentions and apply § 271(f) evenly so that all claim types are protected when a domestic party tries to avoid U.S. patent law by exporting components of a patented invention or an apparatus that can perform a patented process.