

1990

## Application of the Doctrine of Equivalents to Patent Infringement Cases: A Patent Practitioner's Dilemma

Thomas J. Edgington

Follow this and additional works at: <https://dsc.duq.edu/dlr>



Part of the [Law Commons](#)

---

### Recommended Citation

Thomas J. Edgington, *Application of the Doctrine of Equivalents to Patent Infringement Cases: A Patent Practitioner's Dilemma*, 29 Duq. L. Rev. 91 (1990).

Available at: <https://dsc.duq.edu/dlr/vol29/iss1/6>

This Comment is brought to you for free and open access by Duquesne Scholarship Collection. It has been accepted for inclusion in Duquesne Law Review by an authorized editor of Duquesne Scholarship Collection.

# Application of The Doctrine of Equivalents to Patent Infringement Cases: A Patent Practitioner's Dilemma

## I. INTRODUCTION

A valid patent confers upon its owner the right to exclude others from making, using or selling their invention throughout the United States during the term of the patent.<sup>1</sup> Anyone who makes, uses or sells the patented item without the patentee's permission is liable for literal infringement.<sup>2</sup> The question of infringement, on the surface, appears to be somewhat straightforward. Indeed, the question of literal infringement may be properly framed as: did the alleged infringer make, use or sell the patented invention without the patent owner's permission? The Federal Circuit<sup>3</sup> has noted on many occasions that the determination of literal infringement encompasses a two step process.<sup>4</sup>

In conducting the Federal Circuit's two step approach, a court

---

1. 35 USC § 154 (Supp 1990) specifically provides:

Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, for the term of seventeen years, . . . of the right to exclude others from making using or selling the invention throughout the United States and, if the invention is a process, of the right to exclude others from using or selling throughout the United States, or importing into the United States, products made by that process . . .

Id.

Note however, that the term of a design patent is limited to a fourteen year period by 35 USC § 173 (1988).

2. 35 USC § 271(a) states that ". . . whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent." 35 USC § 271(a) (1988).

3. The Federal Circuit was created by the Federal Courts Improvement Act of 1982, Pub L No 97-164, § 126, 96 Stat 25, 37 codified as 28 USC § 1295 (1982 & Supp 1990) and has exclusive jurisdiction of all appeals in patent cases. The Federal Circuit replaced the Court of Customs and Patent Appeals and was created for the purpose of achieving uniformity in the application of substantive patent law. See for example, *Atari, Inc. v JS & A Group, Inc.*, 747 F2d 1422 (Fed Cir 1984); *Panduit Corp. v All States Plastic Mfg. Co.*, 744 F2d 1564 (Fed Cir 1984); *Chemical Engineering Corp. v Marlo, Inc.*, 754 F2d 331 (Fed Cir 1984).

4. See for example, *Moleculon Res. Corp. v CBS, Inc.*, 793 F2d 1261 (Fed Cir 1986), cert denied, 479 US 1030 (1987); *Mannesmann Demag Corp. v Engineered Metal Prods. Co.*, 793 F2d 1279 (Fed Cir 1986); *Standard Oil Co. v American Cyanamid Co.*, 774 F2d 448 (Fed Cir 1985); and *Palumbo v Don-Joy Co.*, 762 F2d 969 (Fed Cir 1985).

must first define what constitutes the "patented invention."<sup>5</sup> After the patented invention has been defined, the court must then determine whether the patented invention covers the accused device or process.<sup>6</sup> Simply stated, the court must first ascertain what is patented and thereafter determine whether the patented invention has been made, used or sold by another without the patentee's permission.<sup>7</sup> The most vexatious problem facing a court in executing this two step approach is couched in the determination of what constitutes the "patented invention."

A court begins this two step process by first reviewing and interpreting the patent claims. The patent statute<sup>8</sup> requires an inventor to particularly point out and distinctly claim the subject matter of his invention.<sup>9</sup> In accordance with 35 USC section 112, an inventor's claims must be set forth at the end of the patent application's written specification.<sup>10</sup> The United States Supreme Court in *White v Dunbar*<sup>11</sup> set forth the patent claim's importance as follows:

The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.<sup>12</sup>

Furthermore, Circuit Judge Nies explained in *Pennwalt Corp. v Durand-Wayland, Inc.*,<sup>13</sup> that "[a] patent claim is not intended to be and cannot be only a general suggestion of an invention."<sup>14</sup>

5. Id.

6. Id.

7. See for example, *Fromson v Advance Offset Plate, Inc.*, 720 F2d 1565 (Fed Cir 1983); and *SSIH Equip. S.A. v United States ITC*, 718 F2d 365 (Fed Cir 1983).

8. The patent statute is codified at 35 USC §§ 1-376 (1982 & Supp 1990).

9. 35 USC § 112 (1988). This section of the statute sets forth the requirements for the patent specification and provides in part:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Id.

10. Id.

11. 119 US 47 (1886).

12. *White*, 119 US at 52.

13. 833 F2d 931 (Fed Cir 1987), cert denied, 485 US 961 (1988). Judge Nies, in noting that no precedent was overruled or modified by the majority opinion, offered the quoted "additional comments" in an effort to review that precedent. *Pennwalt*, 833 F2d at 949.

14. Id.

Judge Nies further added, “[t]he invention is defined by the limitations set out in the claim which thereby fix the scope of protection to which the patentee is entitled.”<sup>15</sup>

After a court has determined the “essence” of the patented invention through careful interpretation of the patent claims, the court must then determine whether these claims “read on” the accused device.<sup>16</sup> This means that the alleged infringing device is reviewed to determine if it is substantially described by the claims.<sup>17</sup> If the claims are found to “read on” the accused device, then literal infringement is established.

However, if literal infringement cannot be established, infringement may still be found under the application of the “doctrine of equivalents.” Under the doctrine of equivalents, an accused device may be held to infringe a patent if “it performs substantially the same function in substantially the same way to obtain the same result.”<sup>18</sup> While the doctrine of equivalents serves an equitable purpose,<sup>19</sup> its use introduces an uncertainty concerning the scope of protection provided by the patent claims. Such uncertainty makes accurately assessing the likely outcome of infringement litigation difficult for patent practitioners.

Since its creation in 1982, the Federal Circuit has struggled to develop a systematic approach for applying the doctrine of equivalents to patent infringement issues. During this period, the Federal Circuit has vacillated greatly between strict and liberal applications of the doctrine of equivalents. Illustrative of the Federal Circuit’s struggle are the following three cases:<sup>20</sup> *Texas Instru-*

---

15. *Id.*

16. *Id.*

17. *Id.*

18. *Graver Tank & Mfg. Co. v Linde Air Prods. Co.*, 339 US 605, 608 (1950). The Federal Circuit stated in *Stewart-Warner Corp v City of Pontiac, Michigan*, 767 F2d 1563 (Fed Cir 1985), that assessing equivalency involves a determination of whether the claimed invention and alleged infringing device, which are necessarily different, perform substantially the same function in substantially the same way to give the same result. *Id.* at 1570.

19. See *Pennwalt Corp. v Durand-Wayland, Inc.*, 833 F2d 931 (Fed Cir 1987), cert denied, 485 US 961 (1988). In a lengthy commentary, Circuit Judge Newman pointed out that since the United States Supreme Court’s holding in *Winans v Demead*, 56 US 330 (1853), the decisions “have given full respect to the equitable purposes of the doctrine.” *Pennwalt*, 833 F2d at 960; see notes 24-27 and accompanying text. Circuit Judge Newman further explained that “[t]he decisions show a consistent concern for attempted evasions of patent rights by changes that do not affect the substance of the invention.” *Pennwalt*, 833 F2d at 960.

20. These cases have been referred to, by at least one commentator, as the “Federal Circuit Trilogy.” See Barry E. Bretschneider, *The Doctrine of Equivalents After Pennwalt and Texas Instruments*, 26 Patent Law Annual 3-1 (1988).

ments, *Inc. v United States Int'l Trade Commission*,<sup>21</sup> *Perkin-Elmer Corp. v Westinghouse Electric Corp.*,<sup>22</sup> and *Pennwalt Corp. v Durand-Wayland, Inc.*<sup>23</sup> This comment will review the Federal Circuit's treatment of the doctrine of equivalents and attempt to provide some insight concerning its application to patent infringement suits.

## II. HISTORICAL BACKGROUND

The doctrine of equivalents was first enunciated by the United States Supreme Court in the 1853 case of *Winans v Demead*.<sup>24</sup> In *Winans*, the patentee had claimed a conical railroad car that purported to have a number of benefits over the prior art.<sup>25</sup> The accused infringing device, though octagonal in shape, otherwise offered the same advantages as the patentee's invention.<sup>26</sup> In holding that the conical and octagonal shapes were substantially the same, the Court stated that:

Where form and substance are inseparable, it is enough to look at the form only. Where they are separable; where the whole substance of the invention may be copied in a different form, it is the duty of the courts and juries to look through the form for the substance of the invention - for that which entitled the inventor to his patent, and which the patent was designed to secure; where that is found, there is an infringement; and it is not a defen[s]e, that it is embodied in a form not described in the terms claimed by the patentee.<sup>27</sup>

As patent law continued to develop, the Supreme Court frequently applied the doctrine of equivalents to cases where literal infringement could not be established.<sup>28</sup> The Supreme Court's most recent treatment of the doctrine of equivalents occurred in *Graver Tank & Manufacturing Co. v Linde Air Products Co.*<sup>29</sup> In *Graver Tank*, the patent covered an electric welding process that utilized welding fluxes.<sup>30</sup> Specifically, the patentee had claimed

---

21. 805 F2d 1558 (Fed Cir 1986), rehearing denied, 846 F2d 1369 (Fed Cir 1988).

22. 822 F2d 1528 (Fed Cir 1987).

23. 833 F2d 931 (Fed Cir 1987), cert denied, 485 US 961 (1988).

24. 56 US 330 (1853).

25. *Winans*, 56 US at 332.

26. *Id.*

27. *Winans*, 56 US at 343.

28. For a thorough review of the United States Supreme Court's treatment of the doctrine of equivalents since the *Winans* decision, see Judge Newman's commentary in *Pennwalt Corp. v Durand-Wayland, Inc.*, 833 F2d 931, 954-75 (Fed Cir 1987).

29. 339 US 605 (1950).

30. *Graver Tank*, 339 US at 606. Welding flux is a blanket of molten metal compounds that "provides heating means, controls the rate, penetration and quality of welding and

fluxes that consisted essentially of a mixture of alkaline earth metal silicate and calcium fluoride.<sup>31</sup> The alleged infringing flux, on the other hand, was substantially similar to the claimed flux except that it substituted silicates of calcium and manganese for silicates of calcium and magnesium.<sup>32</sup> The Court noted that even though manganese was not an alkaline earth metal, the two fluxes produced the same kind of weld quality.<sup>33</sup>

The Court held that while the accused flux did not infringe the claimed flux literally, it did infringe under the doctrine of equivalents.<sup>34</sup> In reaching this conclusion, the Court noted that the doctrine of equivalents was created so that "one may not practice a fraud on a patent."<sup>35</sup> The Court went on to explain that "the theory on which [the doctrine of equivalents] was founded is 'that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.'"<sup>36</sup>

In emphasizing that there may be circumstances where the doctrine should be applied to combinations of old elements, the Court also noted that there may be instances where it might be appropriate to apply the doctrine against the patentee and in favor of the alleged infringer.<sup>37</sup> The Court explained that "where a device is so far changed in principle from a patented article that it performs the same or similar function in a substantially different way, but

---

protects the molten metal." *Linde Air Products Co. v Graver Tank & Mfg. Co.*, 167 F2d 531, 532-33 (7th Cir 1948).

31. *Graver Tank*, 339 US at 610. The Court noted that the claimed flux actually contained the mixture of silicate of calcium and silicate of magnesium. Id.

32. Id. The district court held that the claims in question were valid and thereby infringed. *Linde Air Prods. Co. v Graver Tank & Mfg. Co.*, 86 F Supp 191, 199-200 (N D Ind 1947). The district court also held, however, that the patentee's process claims and remaining flux claims were not valid and therefore could not be infringed upon by the defendant's invention. Id. The court of appeals affirmed the district court's finding of infringement, but reversed the district court as to the invalidity of the patentee's other claims. *Linde Air Prods. Co. v Graver Tank & Mfg. Co.*, 167 F2d 531 (7th Cir 1948). The Supreme Court granted certiorari and after reviewing the record, reversed the court of appeals and reinstated the district court's holding. *Graver Tank & Mfg. Co. v Linde Air Prods. Co.*, 336 US 271 (1949). The Supreme Court then granted rehearing on the issue of infringement and the applicability of the doctrine of equivalents to the alleged infringing claims. *Graver Tank & Mfg. Co. v Linde Air Prods. Co.*, 339 US 605 (1950).

33. *Graver Tank*, 339 US at 610.

34. Id.

35. Id at 608.

36. Id at 608 (citing *Union Paper Bag Machine Co. v Murphy*, 97 US 120, 125 (1878)).

37. *Graver Tank*, 339 US at 608. The application of the doctrine of equivalents against the patentee is known as the "reverse" doctrine of equivalents. See *SRI Intern v Matsushita Elec. Corp. of America*, 775 F2d 1107 (Fed Cir 1985).

nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee's action for infringement."<sup>38</sup>

In affirming the district court's holding in *Graver Tank*, the Supreme Court specifically stated:

The question which thus emerges is whether the substitution of manganese which is not an alkaline earth metal for the magnesium which is, under the circumstances of the case, and in view of the technology and the prior art, is a change of such substance as to make the doctrine of equivalents applicable; or conversely, whether under the circumstances the change was so insubstantial that the trial court's invocation of the doctrine of equivalents was justified.<sup>39</sup>

The Court based its holding on testimony which indicated that alkaline metals are often found in manganese ores and that "in the sense of the patent, manganese could be included as an alkaline earth metal."<sup>40</sup> The Court also took note of the fact that the prior art also disclosed the use of manganese silicate as an ingredient in welding fluxes, and that one of ordinary skill in the art would recognize that manganese silicate was interchangeable with magnesium silicate.<sup>41</sup>

In his dissent,<sup>42</sup> Justice Black stated that, while he agreed with the majority that "'fraud' is bad, 'piracy' is evil, and 'stealing' is reprehensible," he believed that the petitioners were not charged with such "malevolence" and that the majority's opinion amounted to a "sterilization of Acts of Congress and prior decisions."<sup>43</sup> Specifically, Justice Black believed that the majority was ignoring the statutory provisions that required the applicant to "particularly point out and distinctly claim the part, improvement or combination which he claims as invention or discovery," by permitting the patented claim to be broadened.<sup>44</sup> He further stated the Court's actions amounted to a departure from past precedent which:

---

38. *Graver Tank*, 339 US at 608-09 (citing *Westinghouse v Boyden Power Brake Co.*, 170 US 537, 568 (1898)).

39. *Graver Tank*, 339 US at 610.

40. *Id.* at 611.

41. *Id.* at 611, 612. In reviewing the prior art disclosures, the Court took note of two specific patents which taught the use of manganese silicate in welding fluxes. *Id.* The Court also noted that there was no evidence present that would indicate that the accused flux was a product of any research independent of the prior art. *Id.*

42. Justice Black was joined in dissent by Justice Douglas. *Graver Tank*, 339 US at 612.

43. *Id.* at 612-13.

44. *Id.* at 613.

forbids treating a patent claim 'like a nose of wax which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express. . . . The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.'<sup>45</sup>

Justice Black further noted that it was highly probable that the patentee intentionally excluded magnesium from the claims as filed for fear that such claims would have been denied or later invalidated in light of the teachings of the prior art.<sup>46</sup>

In his concluding remarks, Justice Black expressed a concern that the Court's application of the doctrine of equivalents made it impossible for the manufacturer to make business decisions based on the language of the patent claims.<sup>47</sup> He pointed out that the manufacturer "must be able, at the peril of heavy infringement damages, to forecast how far a court relatively unversed in a particular technological field will expand the claim's language after considering the testimony of technical experts in that field."<sup>48</sup>

Indeed, Justice Black's concerns continue to plague inventors and patent practitioners today. Still, the *Graver Tank* decision has, nevertheless provided the basis for the modern day application of the doctrine of equivalents to issues of patent infringement. In answer to the *Graver Tank* decision, the United States Court of Appeals for the Federal Circuit has attempted to provide some guidance in applying the doctrine of equivalents to patent infringement suits. Some practitioners argue, however, that the Federal Circuit's treatment of these issues has only served to further the confusion.<sup>49</sup>

---

45. *Graver Tank*, 339 US at 614 (citing *White v Dunbar*, 119 US 47, 51 (1886)).

46. *Graver Tank*, 339 US at 616-17.

47. *Id.*

48. *Id.*

49. See Harris, *Three Ambiguities of the Doctrine of Equivalents in the Federal Circuit*, 69 J Pat & Trademarks Off Soc'y 91 (1987). The three ambiguities were set forth as follows:

[The first ambiguity] involves varying statements of the basic test for applicability of the doctrine of equivalents. A second [ambiguity] involves the proper approach to the application of the doctrine, with reference to an approach which focuses upon comparison of particular elements of the claimed invention and the accused device . . . ; and an approach which views the claimed invention and the accused device as a whole. A third ambiguity concerns the proper relationship between the doctrine of equivalents and the section 112 equivalence doctrine.

*Id.* at 91-92.



### III. THE FEDERAL CIRCUIT'S APPROACH

#### A. *The Texas Instruments Decision*

Practitioners' concerns regarding the role of the doctrine of equivalents in patent infringement cases came to the forefront with the Federal Circuit's opinion in *Texas Instruments, Inc. v United States International Trade Commission*.<sup>50</sup> In *Texas Instruments*, the court affirmed an International Trade Commission ruling that various imported calculators did not, either literally or under the doctrine of equivalents, infringe Texas Instruments' patent claim.<sup>51</sup> Texas Instruments' patent claims were set forth in "means-plus-function"<sup>52</sup> language in accordance with 35 USC section 112, paragraph 6 which provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof and such claim shall be construed to cover the corresponding structure, material and acts described in the specification or equivalents thereof.<sup>53</sup>

In its patent infringement claim, Texas Instruments asserted that the accused calculators performed all of the steps as set forth

---

50. 805 F2d 1558 (Fed Cir 1986). This case was decided by a three judge panel: Senior Circuit Judge Cowen, Circuit Judge Davis and Circuit Judge Newman. Id at 1560. Circuit Judge Newman wrote the original opinion with Judges Cowen and Davis joining. Id. The Federal Circuit subsequently denied Texas Instruments' petition for rehearing. *Texas Instruments v United States Trade Commission*, 846 F2d 1369 (Fed Cir 1988). On rehearing, Judge Newman wrote an opinion in which Judge Cowen joined, while Judge Davis filed a separate concurring opinion. Id.

51. The International Trade Commission held that 19 USC section 1337 was not violated in that Texas Instruments' patent was not infringed by certain imported calculators; moreover, there was no industry in the United States practicing an invention covered by any of Texas Instruments' patent claims. *In re Certain Portable Electronic Calculators*, Inv. No. 337-TA-198, USITC Pub. No. 1732 (1985).

52. Means-plus-function language allows the applicant to broadly claim elements of his invention without specifically reciting structural elements. For example, assume the patentee wanted to claim an apparatus that included, among other elements, a helically wound spring for biasing a lever into an operable position. Instead of actually reciting a "helically wound spring" in the claim language, the applicant could, in accordance with 35 USC section 112, claim the element as follows: "means for biasing said lever into an operable position." This permits the applicant to somewhat broaden the scope of his patent claims because not only will the means-plus-function clause cover "helically wound springs," but also a myriad of other devices that a potential infringer might use to urge the lever into an operable position.

53. 35 USC § 112 (1984). Section 112 provides in relevant part:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

in the patent claims and that the detailed means by which those steps were to be carried out were the same as or equivalent to the means described in the patent specification.<sup>54</sup> The Administrative Law Judge held, however, that each of the functions as set forth in the patent claims was performed in the accused device by a means that was not specifically described in the patent, and that each such means was not equivalent to the means shown in the specification.<sup>55</sup> On appeal, the Federal Circuit affirmed the Administrative Law Judge's finding of no infringement even though it disagreed with the equivalents analysis.<sup>56</sup>

The Federal Circuit began its analysis by noting that the accused calculators did not literally infringe Texas Instruments' patent under 35 USC section 112. In its discussion of literal infringement, the court explained that "[a]s an aid in determining the breadth of equivalents to be afforded means-plus-function clauses under section 112, paragraph 6, the prosecution history, the other claims in the patent, expert testimony, and the language of the asserted claims may be considered in addition to the specification."<sup>57</sup> The court finally concluded this portion of its analysis by noting that there was no substantial evidence to support a factual finding of literal infringement.<sup>58</sup> Specifically, the court explained that because there were so many technological changes between what was disclosed in the specification and what was found in the accused devices it would "transcend the equitable limits" to find literal infringement.<sup>59</sup>

The Court then addressed the issue of whether infringement could be found under the doctrine of equivalents. The court explained:

[w]hether the issue is equivalency of a means that is described in the specification to perform a function in a "means" clause of a combination claim (*i.e.*, literal infringement), or equivalency to the claimed invention as a whole (*i.e.*, infringement by the *doctrine* of equivalents), the test is the

---

54. *Texas Instruments*, 805 F2d at 1564.

55. *Texas Instruments*, 805 F2d at 1564. Judge Newman pointed out that "[t]he [Administrative Law Judge], finding that each of the means of performing these functions in the accused calculators embodied, to varying degrees, new or improved technology over that known or developed at the time [Texas Instruments'] patent application was filed, held that the means of each step was not an equivalent to that shown in the specification, and thus found the claims not infringed." *Id.* at 1568.

56. *Id.*

57. *Texas Instruments*, 805 F2d at 1568. The court also stated that the pioneer status of the patented invention should also be considered. *Id.*

58. *Id.* at 1570-71.

59. *Id.* at 1571.

same three part test of history: does the asserted equivalent perform substantially the same function in substantially the same way to accomplish substantially the same result.<sup>60</sup>

The court stated that there was no infringement under the doctrine of equivalents, relying on the same reasons offered to support the finding of no literal infringement.<sup>61</sup> This holding seemed to directly conflict with the principle that the doctrine of equivalents requires the accused device to contain each claim element or its substantial equivalent, a principle that the court noted was "well settled" in *Lemelson v United States*.<sup>62</sup> In summary, the *Texas Instruments* court incorporated an "invention as a whole" equivalents analysis. Specifically, the court found that there could be no literal infringement even though the claims "read-on" the accused device and the accused device had a structure which was equivalent to that disclosed in the specification, when each means-plus-function element was viewed separately. The court then looked to the invention as a whole in performing its doctrine of equivalents analysis and also found no infringement. As one commentator put, "[t]he *Texas Instruments* court seemingly rejected reliance on the expressed words of the patent claims, looking instead to an amorphous 'invention as a whole.'"<sup>63</sup>

The Federal Circuit's holding in *Texas Instruments* was highly criticized by the patent bar. The court failed to indicate whether the invention-as-a-whole test relates to the general doctrine of equivalents or whether it is to be solely a creature of section 112, paragraph 6 equivalents. The American Intellectual Property Law Association ("AIPLA") filed an amicus brief with the Federal Circuit in support of *Texas Instruments'* petition for rehearing en

---

60. *Id.*

61. *Texas Instruments*, 805 F2d at 1571. The court explained that: When literal infringement under section 112 paragraph 6 is not present the doctrine of equivalents may nevertheless apply, and thereby secure to the patentee the fair scope of the patent . . . In this case, however, where the claimed functions are all performed in the accused devices, the considerations discussed in part A also apply to infringement determination in terms of the doctrine of equivalents.

*Id.* (Citations omitted.)

62. 752 F2d 1538, 1551 (Fed Cir 1985). Specifically, in its discussion of the doctrine of equivalents, the *Lemelson* court stated that "[i]t is also well settled that each element of a claim is material and essential, and that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in the accused device." *Lemelson v United States*, 752 F2d 1538 (1985) (citing *Interdent Corp. v United States*, 531 F2d 547, 552 (Ct Cl 1976); *Autogiro Co. of America v United States*, 384 F2d 391, 403 (Ct Cl 1967)).

63. See Nieman, *The Federal Circuit Resolves Ambiguities in the Doctrine of Equivalents*, 70 J Pat & Trademark Off Soc'y 153 (1988).

banc, arguing that the application of the invention-as-a-whole approach to the section 112 analysis was contrary to Federal Circuit precedent.<sup>64</sup> In response the Federal Circuit's opinions, which denied Texas Instruments' petition for rehearing, justified the court's finding of no literal infringement by stating that the accused components were not the equivalents of the components disclosed in the patent specification.<sup>65</sup> The court did not separately address the infringement issues under the doctrine of equivalents.<sup>66</sup>

### B. *The Perkin-Elmer Decision*

In the case of *Perkin-Elmer Corp. v Westinghouse Elec. Corp.*,<sup>67</sup> Perkin-Elmer claimed that Westinghouse's accused devices infringed upon Perkin-Elmer's patent for an "Electrodeless Discharge Lamp and Power Coupler" under the doctrine of equivalents.<sup>68</sup> Westinghouse conceded the validity of the patent if it were construed narrowly, but argued that if the patent was to be construed broadly it was invalid for lack of specificity, lack of novelty, and obviousness.<sup>69</sup>

The district court found that the accused devices did not literally satisfy various limitations of the asserted patent claim and that the accused device did not infringe upon the patent under the doctrine of equivalents.<sup>70</sup> On appeal, the Federal Circuit affirmed the district court's holding of no infringement by substantially focusing on one of the structural differences which caused the accused device to operate differently from the claimed invention.<sup>71</sup> In an attempt to address the concerns over the Federal Circuit's apparently new infringement analysis adopted in *Texas Instruments*, Chief Judge Markey commented on the Federal Circuit's prior decision in *Hughes Aircraft Co. v United States*.<sup>72</sup> Specifically, in *Hughes Aircraft*, the court held that it was legal error not to "apply the doctrine of equivalents to the claimed invention as a

---

64. See 33 PTCJ 163 (Jan. 1, 1987).

65. *Texas Instruments*, 846 F2d 1369 (Fed Cir 1988).

66. *Id.*

67. 822 F2d 1528 (Fed Cir 1987). Chief Judge Markey wrote the majority opinion with Judge Archer concurring. *Id.* Circuit Judge Newman filed a dissenting opinion. *Id.* at 1535.

68. *Perkin-Elmer*, 822 F2d at 1529.

69. *Id.*

70. See *Perkin-Elmer Corp. v Westinghouse Elec. Corp.*, No. 77 C 1923, Slip op at 16 (E D NY 1985).

71. *Perkin-Elmer*, 822 F2d at 1534-35.

72. 717 F2d 1351 (Fed Cir 1983).

whole.”<sup>73</sup> In writing the *Perkin-Elmer* decision, however, Chief Judge Markey explained that the court’s statement in *Hughes Aircraft* “dealt with an infringement inquiry implicating an entire claim, as distinguished from a section 112, paragraph 6 inquiry implicating only a ‘means plus function’ limitation of a claim.”<sup>74</sup> Chief Judge Markey was alluding to the fact that, while the court was not going back on the invention-as-a-whole test, such test has nothing to do with literal infringement of a means plus function claim under paragraph 6 of section 112. Judge Markey’s holding would appear to directly contradict the court’s literal infringement analysis set forth in *Texas Instruments*.

Judge Newman, the author of the *Texas Instruments* opinion, vigorously dissented in *Perkin-Elmer* claiming that the court had departed “from our consistent requirement that the invention as a whole be considered.”<sup>75</sup> Judge Newman maintained that if the Court would have applied the standards that it had previously established (i.e., the “function/way/result” test of *Graver Tank*<sup>76</sup>), the Westinghouse device would meet all of the requirements of equivalency as set forth by precedent.<sup>77</sup>

A careful analysis of *Perkin-Elmer* would indicate that the Federal Circuit disapproved of considering the invention as a whole when determining literal infringement of means-plus-function claims. The Federal Circuit in *Texas Instruments*, on the other hand, held that one must look to the invention as a whole to determine if the accused invention crossed the line of literal infringement. The patent practitioner was left once again to reconcile the court’s various approaches to patent infringement cases.

### C. *The Pennwalt Decision*

In *Pennwalt Corp. v Durand-Wayland, Inc.*,<sup>78</sup> the Federal Cir-

---

73. *Hughes Aircraft*, 717 F2d at 1364.

74. *Perkin-Elmer*, 822 F2d at 1533.

75. *Id.* at 1542 (citing *Martin v Barber*, 755 F2d 1564, 1568 (Fed Cir 1985); *Hughes Aircraft Co. v United States*, 717 F2d 1351, 1364 (Fed Cir 1983); *Carman Industries, Inc. v Wahl*, 724 F2d 932, 942 (Fed Cir 1983); *Tate Engineering, Inc. v United States*, 166 USPQ 329 (Ct Cl 1970)).

76. See notes 29-48 and accompanying text.

77. *Perkin-Elmer*, 822 F2d at 1542.

78. 833 F2d 931 (Fed Cir 1987), cert denied, 485 US 961 (1988). Circuit Judge Bissel wrote the majority opinion for the court in which Chief Judge Markey and Circuit Judges Archer, Davis, Friedman, Nies, and Rich joined. *Pennwalt*, 833 F2d at 932. Senior Circuit Judge Bennet filed a dissent-in-part, in which Senior Circuit Judge Cowen and Circuit Judges Newman and Smith joined. *Id.* Circuit Judge Nies filed additional views while Cir-

cuit had the opportunity to set the record straight and clarify its approach to issues of patent infringement. According to the record, Pennwalt Corporation sued Durand-Wayland for infringing Pennwalt's patent entitled "Sorter for Fruit and the Like."<sup>79</sup> The invention purported to rapidly sort items, such as fruit, by color, weight, or a combination of color and weight.<sup>80</sup> There were four claims at issue, each was constructed in the means-plus-function language.<sup>81</sup>

Claims 1 and 2 described a sorting machine that conveyed items along a track having an electronic weighing device that produced an electronic signal proportional to the weight of the item.<sup>82</sup> The device also included signal comparison means, clock means, position-indicating means, and discharge means, each of which performed specific functions.<sup>83</sup> Claims 10 and 18 described a multifunctional sorter, whereby an item is transported across the weighing device and then conveyed past an optical scanner that produces an electrical signal proportional to the color of the item.<sup>84</sup> The signals from the weighing device and the color sensing device are then combined and a signal is sent to discharge the item into the appropriate container.<sup>85</sup> Moreover, the patent's specification described the details of a "hardwired" network consisting of discrete electrical components which perform each step of the

---

cuit Judge Newman filed a commentary. *Id.*

79. *Pennwalt*, 833 F2d at 932. The United States District Court for the Northern District of Georgia found that the accused devices did not infringe any claim, literally or under the doctrine of equivalents. *Pennwalt Corp. v Durand-Wayland, Inc.*, 225 USPQ 558 (N D Ga 1984).

80. *Pennwalt*, 833 F2d at 933.

81. *Id.* Although the Pennwalt patent included 18 different claims, only four of them (i.e., claims 1, 2, 10, and 18) were at issue and thus considered by the district court. *Pennwalt*, 225 USPQ at 564.

82. *Pennwalt*, 833 F2d at 933. Pennwalt's claims 1 and 2 are reprinted in the district court's opinion. See *Pennwalt*, 225 USPQ at 564.

83. *Pennwalt*, 833 F2d at 933. Specifically, as the item to be sorted was weighed, the weighing device generated an electronic signal that was thereafter sent to the "signal comparison means." *Id.* The "signal comparison means" compared this signal to pre-developed reference signals and developed a resulting signal that was sent to the "position indicating means." *Id.* "Clock means" was incorporated in the design to signal a change in the position of an item as it progressed through the invention. See *Pennwalt Corp. v Durand-Wayland, Inc.*, 225 USPQ 558 (N D Ga 1984). The "position indicating means" received signals from the "comparison means" and the "clock means" and continuously indicated the position of the item to be sorted. *Id.* Finally, the "discharge means" responded to the electronic signal developed by the "position indicating means" by discharging the items to be sorted at various predetermined positions. *Id.*

84. *Id.* See *Pennwalt*, 225 USPQ at 564.

85. *Pennwalt*, 833 F2d at 933.

claims.<sup>86</sup>

Durand-Wayland manufactured and sold two different types of sorters.<sup>87</sup> The two Durand-Wayland sorters used computer software programs in lieu of a hardwired network of discrete electrical components.<sup>88</sup> The first sorter was operated by a central processing unit that used one of two possible software programs designed to permit sorting by weight alone.<sup>89</sup> The second of the Durand-Wayland sorters used a third software program that permitted the addition of a color detection device to permit sorting by both weight and color.<sup>90</sup>

The district court applied section 112, paragraph 6 to the claims in question by incorporating the structure disclosed in the specification into the means-plus-function clauses.<sup>91</sup> The court held there was no literal infringement because the accused sorters did not "use the 'hard-wired' components or elements which performed the identical functions as those described in the patent-in-suit, and these machines do not make the color decision until after the fruit has arrived at the electronic weight scale."<sup>92</sup> Upon finding no literal infringement, the district court went on to apply the doctrine of equivalents and thereby concluded that Durand-Wayland's sorters were not infringing.<sup>93</sup>

On appeal, Pennwalt argued that any embodiment which encompasses any function performed by the means described in the patent claims would literally infringe the patent.<sup>94</sup> Specifically, Pennwalt contended "that the district court erred in interpreting the claims by going beyond the means-plus-function language of a claim limitation and comparing the structure in the accused devices with the structure disclosed in the specification."<sup>95</sup> The majority responded to Pennwalt's contentions by explaining that "section 112, paragraph 6 rules out the possibility that any and every means which performs the function specified in the claim lit-

---

86. *Id.*

87. *Pennwalt*, 833 F2d at 933. The first accused device was called the "Microsizer" which sorts by weight only. *Id.* The second accused device sorts by both color and weight through the use of the "Microsizer" in conjunction with a color detection apparatus called a "Microsorter." *Id.*

88. *Id.*

89. See *Pennwalt*, 225 USPQ at 560.

90. *Id.*

91. *Id.* at 565.

92. *Pennwalt*, 225 USPQ at 569.

93. *Id.*

94. *Pennwalt*, 833 F2d at 933.

95. *Id.* (emphasis in original).

erally satisfies the limitation."<sup>96</sup> The court further explained that:

[i]f the required function is not performed *exactly* in the accused device, it must be borne in mind that section 112, paragraph 6, equivalency is not involved. Section 112, paragraph 6 plays no role in determining whether an equivalent function is performed by the accused device under the doctrine of equivalents.<sup>97</sup>

The court concluded that the district court therefore did not err when it compared the accused sorters' structures to the structure disclosed in Pennwalt's specification.<sup>98</sup>

The Federal Circuit then proceeded to address Pennwalt's claims of infringement under the doctrine of equivalents. Pennwalt argued "that the accused devices simply utilize a computer to perform the same activity the patent *illustrates doing with hard-wired circuitry*, and that this alone is insufficient to escape infringement." [Emphasis in original].<sup>99</sup> The court replied by stating that this was not the proper approach for determining infringement under the doctrine of equivalents.<sup>100</sup> Instead, the court explained that analysis of infringement under the doctrine of equivalents required an element-by-element comparison in order to determine whether the accused devices possessed an equivalent for each element.<sup>101</sup> Therefore, because the memory components of the accused sorters were not programmed to perform all of the functions the Pennwalt sorter could perform, the court rejected Pennwalt's classification of the doctrine of equivalents issue as one where Durand-Wayland simply substituted a software controlled microprocessor for hard-wired electronic components.<sup>102</sup> The Federal Circuit focused on the district court's finding that the accused devices did not have any position-indicating means.<sup>103</sup> Using the district court's reasoning, the Federal Circuit then explained that since the accused devices had no means that performed such a

---

96. Id at 934.

97. *Pennwalt*, 833 F2d at 934.

98. Id.

99. *Pennwalt*, 833 F2d at 935 (citing *Decca Ltd. v United States*, 544 F2d 1070, 1080-81 (1976)).

100. *Pennwalt*, 833 F2d at 935-39.

101. Id at 935.

102. Id at 939.

103. Id. Specifically the court stated that:

the [district] court concluded, as a fact, that no component in the Durand-Wayland devices performed a function within the permissible range of equivalents for the function of the first position indicating means. That function is required by all of the claims-at-issue.

Id.



function, there could be no literal infringement.<sup>104</sup> Likewise, the court explained that because no means with an equivalent function was substituted in the accused devices for performing the position-indicating function as described in the Pennwalt patent, no infringement could be found under the doctrine of equivalents either.<sup>105</sup>

#### IV. CONCLUSION

The Federal Circuit's opinion in *Pennwalt* fell short of supplying all the answers to the questions surrounding the application of the doctrine of equivalents. The foregoing cases illustrate that the fact-intensive nature of infringement cases involving the application of the doctrine of equivalents makes it difficult for the court to set forth an all-encompassing equivalents analysis. This being the case, the *Pennwalt* decision was somewhat of a disappointment to many members of the patent bar.

Critics have stated that the court settled the wrong issue in *Pennwalt*.<sup>106</sup> Some commentators believe that the court should have indicated exactly what an equivalent is, as opposed to focusing on whether the doctrine of equivalents should be applied on an element by element basis or whether it should be applied on an entirety basis.<sup>107</sup> These same commentators believe that until the Federal Circuit answers this question, great uncertainty will surround the doctrine of equivalents.<sup>108</sup>

Other commentators have expressed a concern for the "trilogy's" treatment of means-plus-function clauses under section 112, paragraph 6.<sup>109</sup> Such commentators have suggested that in view of the Federal Circuit's treatment of means-plus-function clauses, the wise patent drafter will make every effort to minimize any extraneous limitations in describing means-plus-function components whenever possible.<sup>110</sup> The uncertainty that still surrounds the doc-

---

104. *Id.*

105. *Pennwalt*, 833 F2d at 939.

106. See M. Adelman & G. Francione, *The Doctrine of Equivalents in Patent Law: Questions That Pennwalt Did Not Answer*, 137 U Pa L Rev 673, 695-700 (1989).

107. M. Adelman, *Doctrine of Equivalents*, 137 U Pa L Rev at 695 (cited in note 106).

108. *Id.* at 696.

109. See Bretschneider, *Doctrine of Equivalents*, 26 Patent Law Annual 3-1, 18 (cited in note 20).

110. Bretschneider, *Doctrine of Equivalents*, 26 Patent Law Annual at 3-21 (cited in note 20). The author points out that one should not use the word 'means' indiscriminately. *Id.* at 3-19. He goes on to explain that "if the word 'means' does not appear in the claim, then the statute and case law construing it do not come into play." *Id.*

trine of equivalents demands that the patent drafter meticulously choose the proper terminology when describing the scope of the invention in the patent claims.

Indeed many questions have not yet been resolved by the Federal Circuit concerning the doctrine of equivalents. However, the fact-intensive nature of its application may have patent practitioners walking the tightrope for years to come.

*Thomas J. Edgington*

