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# Section 112, Paragraph 6 - Means Claim and Limitation to Specific Algorithm - Is This a Stricter Standard Than Gentry Gallery and Related Mechanical Cases?

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# Section 112, Paragraph 6 — Means Claim and Limitation to Specific Algorithm — Is This a Stricter Standard Than *Gentry Gallery* and Related Mechanical Cases?

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## I. Introduction

Traditionally, juries had enjoyed virtually unlimited power to construe claims under Federal Circuit decisions that held claim construction could be a mixed question of fact and law submissible to the jury.<sup>1</sup> In many cases, a jury simply answered a special verdict question of whether it found a claim infringed,

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 1. See, e.g., *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 974 (Fed. Cir. 1985).

a question that must have necessarily been based upon some construction of the claim. This claim construction, however, was often not recorded, thus leaving nothing to inform the appellate court of the specific construction used by the jury. Perhaps it was for this reason, combined with a perceived increase in the number of patent infringement cases, and a feeling of frustration on the part of the courts, that in the landmark case of *Markman v. Westview Instruments, Inc.*,<sup>2</sup> the Federal Circuit stripped away the unfettered power of the jury. As a result of *Markman*, any dispute over the proper construction of any word or term used in a claim must be decided by a judge before the case goes to the jury.<sup>3</sup>

Taking claim construction out of the hands of the jury and placing it with the court has resulted in fewer cases reaching trial, a result which the Federal Circuit may have had in mind when it decided *Markman*. This is true because, in many cases, deciding the construction of a claim is tantamount to deciding the outcome of the case, and a significant number of cases that would formerly have reached the jury at trial are now being effectively decided through pretrial procedures.

One of the ways trial judges have recently disposed of or limited the questions presented to the jury in patent cases has been to find claims invalid, or to severely limit the breadth of claims under 35 U.S.C. § 112. These approaches represent a major departure from traditional claim construction, and are the subject of this paper.

## II. So What Is This § 112, Paragraph 1 Thing? – The Changing Role of § 112, Paragraph 1

The patent statutes' primary disclosure requirement, 35 U.S.C. § 112, paragraph 1, requires that the specification contain a written description of the invention sufficient to enable one skilled in the art to make and use the invention.<sup>4</sup> In addition to its "written description" component, the Court of Cus-

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2. 52 F.3d 967, 979 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996) ("We therefore settle inconsistencies in our precedent and hold that in a case tried to a jury, the court has the power and obligation to construe as a matter of law the meaning of language used in the patent claim.")

3. See *Markman v. Westview Instruments*, 517 U.S. 370, 372 (1996).

4. 35 U.S.C. § 112 (2001). Paragraph 1 reads:

toms and Patent Appeals, a predecessor to the Federal Circuit, has held that this paragraph of § 112 also has another purpose — to show that the inventor was in possession of the claimed invention at the time the application was filed.<sup>5</sup>

These seemingly straightforward concepts were well understood by patent practitioners, even if their application was not. Moreover, they were typically only of concern to patent prosecutors, and largely and rightfully ignored by patent litigators. Traditionally, a § 112, paragraph 1 issue took the form of a benign rejection which was easily overcome during patent prosecution by amending the specification to include the language from the claim that the patent examiner thought to be overly broad. Litigators typically did not address § 112, paragraph 1 issues in infringement opinions, and did not expect § 112, paragraph 1 issues to arise at trial. Indeed, substantially the only time § 112, paragraph 1 saw the inside of a courtroom was during appeal of a rejected patent application.

In light of recent Federal Circuit opinions, this is clearly no longer the case.

A. *Surprise, Your Claim Is Invalid - Gentry Gallery and Patent Invalidity Under § 112*

In *Gentry Gallery, Inc. v. Berkline Corp.*,<sup>6</sup> the Federal Circuit invalidated claims for failure to meet the written description requirement of § 112, paragraph 1.<sup>7</sup> The claim in question was directed to a sofa having side-by-side recliners, a fixed console between the recliners and control means for operating the recliners mounted on the seat sofa sections.<sup>8</sup> The specification described a sofa with side-by-side recliners, a fixed console be-

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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.

5. See *In re Application of Ruschig*, 379 F.2d 990, 996 (C.C.P.A. 1967) (stating that the pertinent question is as follows: "Does the specification convey clearly to those skilled in the art, to whom it is addressed, in any way, the information that appellants invented that specific compound?").

6. 134 F.3d 1473 (Fed. Cir. 1998).

7. See *id.*

8. *Id.* at 1475.

tween the recliners and control means for operating the recliners mounted on the seat sofa sections *on or within the console*.<sup>9</sup> The court held the claim invalid as not adequately disclosing the claimed invention pursuant to § 112, paragraph 1 stating: "It is a truism that a claim need not be limited to a preferred embodiment. However, in a given case, the scope of the right to exclude may be limited by a narrow disclosure."<sup>10</sup> The court distinguished the present case from earlier cases holding that the earlier cases make clear (apparently only to the Federal Circuit) "that claims may be no broader than the supporting disclosure, and therefore that a narrow disclosure will limit claim breadth."<sup>11</sup>

### B. *Or Is It?* - Enter Johnson Worldwide

*Gentry Gallery* appears to say that if an applicant discloses a preferred embodiment and states that the preferred embodiment solves a particular problem known in the art, then a claim is only valid if it is limited to that particular preferred embodiment. We may not like this rule, and we may think it ill-advised, but at least the Federal Circuit has delineated (for once) a clear-cut rule to guide patent drafters, right? Well, not exactly.

In *Johnson Worldwide Associates, Inc. v. Zebco Corp.*,<sup>12</sup> interpretation of the claim at issue required construction of the term "heading."<sup>13</sup> The preferred embodiment set forth in the specification operated such that the term "heading" was defined as the direction of the trolling motor.<sup>14</sup> The alleged infringer

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9. *See id.* at 1477-79.

10. *Id.* at 1479. The court also stated that "[a]n applicant complies with the written description requirement by describing *the invention*, with all its claimed limitations." *Gentry Gallery*, 134 F.3d at 1479 (quoting *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)).

11. *Gentry Gallery*, 134 F.3d at 1480. The court distinguished *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 93 F.3d 1572 (Fed. Cir. 1996), which held that "an applicant . . . is generally allowed claims, when the art permits, which cover more than the specific embodiment shown." *Gentry Gallery*, 134 F.3d at 1479 (quoting *Ethicon*, 93 F.3d at 583 n.7). In addition, the court distinguished *In re Rasmussen*, 650 F.2d 1212 (C.C.P.A. 1981), which held that "an applicant need not describe more than one embodiment of a broad claim to adequately support that claim." *Gentry Gallery*, 134 F.3d at 1478-79 (quoting *Rasmussen*, 650 F.2d at 1215).

12. 175 F.3d 985 (Fed. Cir. 1999).

13. *Id.* at 993.

14. *Id.*

argued, citing *Gentry Gallery*, that the claim would be invalid under 35 U.S.C. § 112, paragraph 1 for lack of an adequate written description if read to encompass both direction of the trolling motor and direction of the boat.<sup>15</sup> The court disagreed, distinguishing *Gentry Gallery* by characterizing it as considering “the situation where the patent’s disclosure makes crystal clear that a particular (i.e., narrow) understanding of a claim term is an ‘essential element of [the inventor’s] invention.’”<sup>16</sup>

C. *It’s Anybody’s Guess - Unanswered Questions After Gentry Gallery and Johnson Worldwide*

So what is one to take from *Gentry Gallery* and *Johnson Worldwide*? In *Johnson Worldwide*, the court appears to have returned to the general proposition that claims are to be read broadly — unless, that is, the disclosure makes “crystal clear” that a narrow reading is an essential element of the invention.<sup>17</sup> How is one to interpret this “crystal clarity” standard? Is it more stringent than the “clear and convincing” evidence standard? Less stringent than the “beyond a reasonable doubt” standard? What exactly will trigger a narrow reading of the claims? In *Gentry Gallery*, the court placed great weight on the fact that the patentee had recited a particular embodiment as meeting an object of the invention.<sup>18</sup> Was this the “crystal clear” evidence of which the court spoke? Perhaps it was the fact that the patent at issue in *Gentry Gallery* recited a clear and precise description of a preferred embodiment, whereas the patent at issue in *Johnson Worldwide* never precisely defined the term “heading,” thereby leaving it open to several interpretations.

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15. *Id.*

16. *Id.* (quoting *Gentry Gallery*, 134 F.3d at 1479) (alteration in original). The court further distinguished *Gentry Gallery*, stating:

[T]his case is unlike *Gentry Gallery*, in which this court’s determination that the patent disclosure did not support a broad meaning for the disputed claim terms was premised on clear statements in the written description that described the location of a claim element - the “control means” - as “the only possible location” and that variations were “outside the stated purpose of the invention.”

*Johnson Worldwide*, 175 F.3d at 993 (quoting *Gentry Gallery*, 134 F.3d at 1479).

17. See *Johnson Worldwide*, 175 F.3d at 993.

18. See *Gentry Gallery*, 134 F.3d at 1479.

In light of *Gentry Gallery* and *Johnson Worldwide*, a patent practitioner may be tempted to omit a precise description of a preferred embodiment of the invention for fear of making "crystal clear" that a narrow claim interpretation was intended. This may particularly be the case with software-related and computer-related patents, where the invention often includes one or more algorithms. If a specific algorithm which comprises an element of the invention is described in detail, particularly if it is connected with solving a problem associated with the prior art, the practitioner may be unsure, rightfully, whether a claim which is broad enough to cover the use of other algorithms for the claimed element will be found invalid. The practitioner must avoid this temptation, however, particularly when the algorithm is expressed in means-plus-function language.

### III. Why, You Ask? – The Requirements of § 112, Paragraph 6

In *Halliburton Oil Well Cementing Co. v. Walker*,<sup>19</sup> the Supreme Court held invalid the functional claims at issue in the case, asserting that they created patent rights broader than those which would have resulted had the applicant claimed the invention in structural terms.<sup>20</sup> The Court found significant the fact that the functional language occurred at the "point of novelty."<sup>21</sup>

At least partially in response to the Supreme Court's decision in *Halliburton*, Congress enacted what is now 35 U.S.C. § 112, paragraph 6, which clearly sanctioned the use of the means-plus-function format, and which effectively overruled *Halliburton*.<sup>22</sup> However, § 112, paragraph 6 also sets forth restrictions as to how such functional limitations are to be con-

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19. 329 U.S. 1 (1946).

20. *Id.* at 8.

21. *Id.*

22. 35 U.S.C. § 112 (2001). Paragraph 6 reads:

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.

*Id.*

strued: they are to be construed as covering what is disclosed in the specification and equivalents thereof.<sup>23</sup>

A. *Equivalents: Haven't I Heard That Term Before? — The Federal Circuit's Definition of Equivalents*

In determining whether an accused infringing device is an equivalent of the device disclosed in a patent's specification, the Federal Circuit has held, in *Valmont Industries, Inc. v. Reinke Manufacturing Co.*,<sup>24</sup> that: "In the context of section 112, however, an equivalent results from an insubstantial change which adds nothing of significance to the structure, material, or acts disclosed in the patent specification."<sup>25</sup> In *Valmont*, the claims were directed to an irrigation system having a long rotating arm carrying a rotatable extension arm which allowed for watering the corner regions of a rectangular field, and included a "means for controlling" the movement of the extension arm.<sup>26</sup> The patent disclosed that control of the arm could be accomplished by a system which monitored the angular position of the rotating arm, which generated signals to move the extension arm based thereupon.<sup>27</sup> The accused device employed a buried wire, which was sensed electromagnetically, to monitor position of the arm, and to generate control signals based thereupon.<sup>28</sup> The court found this difference to be more than insubstantial for the purposes of § 112, paragraph 6, but did not set forth an analysis for distinguishing substantial from insubstantial differences.<sup>29</sup>

In *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc.*,<sup>30</sup> the Federal Circuit suggested that the analysis of "insubstantial differences" for § 112, paragraph 6 equivalents is similar to function-way-result analysis under the doctrine of equivalents.<sup>31</sup> However, the court pointed out that one differ-

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23. *Id.*

24. 983 F.2d 1039 (Fed. Cir. 1993).

25. *Id.* at 1043.

26. *Id.* at 1040-41.

27. *Id.*

28. *Id.* at 1041.

29. *See Valmont*, 983 F.2d at 1044.

30. 145 F.3d 1303 (Fed. Cir. 1998).

31. *Id.* at 1310 ("Both § 112, ¶ 6, and the doctrine of equivalents protect the substance of a patentee's right to exclude by preventing mere colorable differences



ence between the two equivalents analyses is that, because of the nature of means-plus-function clauses themselves, § 112, paragraph 6 requires identical, not equivalent, function.<sup>32</sup> The court then analyzed infringement in the case by applying, essentially, a modified doctrine of equivalents analysis: it examined the accused device to determine if it performs the identical function recited in the claim, in substantially the same way to achieve substantially the same result as the structure recited in the specification.<sup>33</sup>

B. *So, What About Those Algorithms You Mentioned Earlier? — § 112, Paragraph 6 Applied to Algorithms*

The Federal Circuit applied these principles to a computer-related algorithm in *WMS Gaming, Inc. v. International Game Technology*.<sup>34</sup> At issue in the case was an electronic gaming device utilizing a random number generator for selecting stop positions for a reel.<sup>35</sup> The pertinent claim required a “means for assigning a plurality of numbers representing said angular positions of said reel,”<sup>36</sup> and a “means for randomly selecting one of said plurality of assigned numbers.”<sup>37</sup> For performing these “means for assigning” and “means for selecting,” the specification disclosed an algorithm which assigns single numbers to reel stop positions and selects one of these numbers.<sup>38</sup> The accused device included an algorithm which assigns combinations of numbers to reel stop positions, and selects one of these combinations of numbers.<sup>39</sup> The court found that the two algorithms were “structurally equivalent” (i.e., they operated in substantially the same way to achieve substantially the same result)

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or slight improvements from escaping infringement . . . They do so by applying similar analyses of insubstantiality of the differences.”).

32. *Id.* It should be noted that other differences between equivalents under § 112, paragraph 6 and the doctrine of equivalents exist, but are beyond the scope of this paper.

33. *See id.* at 1311.

34. 184 F.3d 1339, 1351 (Fed. Cir. 1999) (stating “our analysis of structural equivalence necessarily discusses the disclosed algorithm, which includes functional-type elements.”).

35. *See id.* at 1344.

36. *Id.* at 1347.

37. *Id.* at 1349.

38. *See id.* at 1344.

39. *WMS Gaming*, 184 F.3d at 1344.

within the meaning of § 112, paragraph 6.<sup>40</sup> However, the court refused to find literal infringement because the function of the accused algorithm was not identical to the claimed function.<sup>41</sup>

This holding, however, raises a curious issue. If, as was the case in *WMS Gaming*,<sup>42</sup> an algorithm is expressed in terms of its function, as is typically the case, how can an algorithm ever be found to be an equivalent within the meaning of § 112, paragraph 6 without being exactly what is described in the specification? Stated another way, if an algorithm is defined in terms of its function(s), and § 112, paragraph 6 equivalents requires identity of function, it appears that § 112, paragraph 6 equivalents would require an identical algorithm.

#### IV. Conclusion

One may wonder which is stricter, § 112, paragraph 6 or § 112, paragraph 1. There is, however, no clear answer.

In one respect, § 112, paragraph 1 appears to be stricter. Under *Gentry Gallery*, it appears that a patent claim may be held invalid if not limited to the precise embodiment disclosed in the specification if that embodiment achieves some particular stated objective.<sup>43</sup> Thus, the patent drafter should avoid stating strict objectives unless such are absolutely necessary for patentability. When objectives are stated, the patent drafter must now carefully consider the stated objectives to assure that the claims cannot be construed in such a way that they do not meet the stated objective.

In another respect, § 112, paragraph 6 may be considered stricter, particularly when the claimed invention incorporates one or more algorithms claimed using means-plus-function language. This is true because the Federal Circuit's decisions interpreting § 112, paragraph 6 effectively limit algorithms to

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40. *Id.* at 1352.

41. *Id.* (stating that “[b]ecause the WMS 400 slot machine assigns and selects combinations of numbers rather than single numbers, it does not perform a function identical to that of claim 1 of the Telnaes patent. Accordingly, although it has equivalent structure, the WMS 400 slot machine does not literally infringe the claim.”).

42. *Id.* at 1351 (stating that “our analysis of structural equivalence necessarily discusses the disclosed algorithm, which includes functional-type elements.”).

43. See *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479-80 (Fed. Cir. 1998).

only those precisely disclosed in the specification.<sup>44</sup> In this regard, since such a means-plus-function claim element will be construed as covering what is disclosed in the specification and equivalents thereof, the patent drafter must disclose as many embodiments as is practicable. This idea of broadly defining the “means” portion of the claim is not new. However, when algorithms, which are typically defined in terms of function, are being claimed, the patent drafter must now carefully consider the definition of the “function” portion of the claim as well. The claimed function must literally cover every embodiment disclosed, as well as equivalents thereof, to obtain meaningful coverage under § 112, paragraph 6.

Whichever is considered stricter, it is clear that both paragraphs 1 and 6 of § 112 are becoming increasingly important in patent litigation, and care must be taken during the patent drafting stage to ensure that the patent being drafted is not the patent at issue in the next Federal Circuit landmark decision.

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44. See, e.g., *WMS Gaming*, 184 F.3d at 1348.