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**Means Plus Function Claims After *Markman*: Is Claim Construction  
Under 35 U.S.C. § 112, ¶ 6 A Question of Fact or an Issue of Law?**

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## I. THE RELEVANT STATUTE AND A STATEMENT OF THE ISSUE

The sixth and final paragraph of Section 112 of Title 35 of the United States Codes states:

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.<sup>1</sup>

(Emphasis added.)

This provision governs the construction of “means-plus-function” limitations in a patent claim for a combination.<sup>2</sup> Such limitations are common in patents directed to the fields of electronic technology, computers, and applications involving computers and computer software. More and more of such patents are being litigated. An issue that will undoubtedly arise during litigation of patents reciting “means-plus-function” claim limitations, following the U.S. Supreme Court’s decision in *Markman v. Westview Instruments, Inc.*, 116 S. Ct. 1384, 38 USPQ2d 1461 (1996), is whether claim construction under 35 U.S.C. § 112, ¶ 6 is a question of fact for the jury to decide (if a jury is used) or an issue of law for the district court judge to decide.<sup>3</sup> A decision resolving that issue will have important ramifications on the conduct of patent prosecution and patent infringement litigation.<sup>4</sup>

## II. THE ISSUE IS UNRESOLVED

The Supreme Court has not spoken on means-plus-function clauses since *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1, 71 USPQ 175 (1946). The 1952 Patent Act first introduced the statutory provision expressly permitting means-plus-function claim limitations. Thus, the Supreme Court has not yet considered the statutory provision of interest.

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<sup>1</sup> Patent claim “interpretation” and patent claim “construction” are one and the same thing. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 n.6, 34 USPQ2d 1321, 1326 n.6 (Fed. Cir. 1995) (in bane), *aff’d*, 116 S. Ct. 1384, 38 USPQ2d 1461 (1996). This article adopts the terminology “construction” in deference to the statutory requirement that means-plus-function claims be “construed.”

<sup>2</sup> *In re Donaldson*, 16 F.3d 1189, 1192-93, 29 USPQ2d 1845, 1849 (Fed. Cir. 1994) (in bane). Note the statutory language “claim for a combination” (emphasis added). It is well-settled that a single limitation claim such as the following may not be written in means-plus-function language: “A device for shaking items in a container comprising: means for oscillating the container to shake the items.” See, e.g., *In re Hyatt*, 708 F.2d 712, 714, 218 USPQ 195, 197 (Fed. Cir. 1983) (the long-standing problem with a single means claim is that it covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor).

<sup>3</sup> A related question may arise during interference proceedings. See, e.g., *Genentech, Inc. v. Chiron Corp.*, No. 95-1508 (Fed. Cir. 1997) (“The pivotal question on appeal is the construction of a count, which is a question of law.”).

<sup>4</sup> Claim construction is “the central issue of nearly every patent appeal.” *Minco, Inc. v. Combustion Eng'g, Inc.*, 40 USPQ2d 1001, 1004 (Fed. Cir. 1996).

Recently, the U.S. Court of Appeals for the Federal Circuit (CAFC) decided-and the Supreme Court affirmed that patent claim construction (in general) is a matter of law to be decided exclusively by judges and not juries. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 34 USPQ2d 1321 (Fed. Cir. 1995) (in banc), aff'd, 116 S. Ct. 1384, 38 USPQ2d 1461 (1996). The issue addressed in this article is whether claim construction under 35 U.S.C. § 112, ¶ 6 falls (or should fall) within the scope of the Markman decision or whether means-plus-function claim limitations present a unique claim construction issue which the Seventh Amendment of the U.S. Constitution reserves to juries.

In its *Markman* opinion, the CAFC expressly reserved judgment on that issue, stating: “*Palumbo [v. Don-Joy Co.]*, 762 F.2d 969, 97475, 226 USPQ 5, 8 (Fed. Cir. 1985)] also presented the issue of construction of means-plus-function claim limitations under 35 U.S.C. § 112, para. 6. As that issue is not before us today, we express no opinion on the issue of whether a determination of equivalents under § 112, para. 6 is a question of law or fact.”<sup>5</sup> Thus, the issue is open to debate.

### III. PROPOSED RESOLUTION--IT’S AN ISSUE OF LAW FOR THE JUDGE TO DECIDE

#### A. *The Question of Infringement Under the Doctrine of Equivalents Is Unrelated to the Issue*

An “equivalent” for purposes of Section 112 should not be confused with the unrelated “doctrine of equivalents.” Determination of patent infringement is a two-step analysis.<sup>6</sup> First, the scope of the claims must be determined by construing the limitations of the claims. Issues raised by Section 112, ¶ 6 are considered in this first step. Once the limitations of a claim have been construed, those limitations are compared to the accused device or method accused of infringement. Infringement may be either literal or under the doctrine of equivalents and is resolved in the second step of the analysis.<sup>7</sup> The question of infringement under the doctrine of equivalents is a question of fact for the jury. *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.*, 41 USPQ2d 1865, 1870 (U.S. 1997). There is no analogy to be made, however, between the characterization of the doctrine of equivalents as a question of fact and the issue of whether a determination of equivalents under Section 112 is an issue of law or a question of fact. The Supreme Court rejected the petitioner’s argument, in *Hilton Davis*, that Congress negated the doctrine of equivalents in the 1952 Patent Act because Congress referred to “equivalents” when it enacted Section 112, ¶ 6 but did not enact a provision incorporating the doctrine.<sup>8</sup> Moreover, the Court distinguished 112, ¶ 6 equivalents from the doctrine of equivalents. The Court referred to Section 112, ¶ 6 as:

an application of the doctrine of equivalents in a restrictive role, narrowing the application of broad literal claim elements. We recognized this role for the doctrine of equivalents in *Graver Tank*

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<sup>5</sup> *Markman*, 52 F.3d at 977 n. 8, 34 USPQ2d at 1327 n. 8.

<sup>6</sup> *Carroll Touch, Inc. v. Electro Mech. Sys., Inc.*, 15 F.3d 1573, 1576, 27 USPQ2d 1836, 1839 (Fed. Cir. 1993).

<sup>7</sup> The seminal case on infringement under the doctrine is *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 85 USPQ 328 (1950).

<sup>8</sup> 41 USPQ2d at 1870.

itself, 339 U.S., at 608-609. The added provision [112, ¶ 6], however, is silent on the doctrine of equivalents as applied where there is no literal infringement.<sup>9</sup>

The CAFC has agreed whenever it has addressed the interplay between Section 112, ¶ 6 and the doctrine of equivalents<sup>10</sup>

The CAFC provided a particularly excellent distinction between Section 112, ¶ 6 and the doctrine of equivalents in *Valmont Industries, Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1043, 25 USPQ2d 1451, 1455 (Fed. Cir. 1993): “In sum, section 112, ¶ 6, and the doctrine of equivalents have separate origins and purposes. Section 112, ¶ 6, limits the broad language of means-plus-function limitations in combination claims to equivalents of the structures, materials, or acts in the specification. The doctrine of equivalents . . . expands exclusive patent rights.” Thus, Section 112, ¶ 6 acts like a reverse doctrine of equivalents and *limits* the scope of the patent claim; the doctrine of equivalents *expands* exclusive patent rights.

Many of the CAFC cases focus on the structural equivalents portion of Section 112, ¶ 6. The statute and the judicially created doctrine of equivalents also differ, however, with respect to the “function” aspect of the distinct concepts. Whereas the “function” component of the “function, way, result” test of the doctrine of equivalents may be met “substantially,” the “function” for equivalents under Section 112, ¶ 6 must be “identical.”<sup>11</sup>

At least before the U.S. Supreme Court’s decision in *Hilton Davis*, the prior art provided another distinction between Section 112, ¶ 6 and the doctrine of equivalents. It is not necessary to consider prior art in applying Section 112, ¶ 6. Even if the prior art discloses the same or an equivalent structure, the claim will not be limited in scope thereby. Claim limitations may, and often do, read on prior art—especially in combination patents.<sup>12</sup> In contrast, at least before *Hilton Davis*, the doctrine of equivalents was expressly limited by — and, of course, required consideration of — the prior art.<sup>13</sup>

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<sup>9</sup> 41 USPQ2d at 1870-71.

<sup>10</sup> See, e.g., *Alpex Computer Corp. v. Nintendo Co. Ltd.*, 102 F.3d 1214, 1222-23, 40 USPQ2d 1667, 1674 (Fed. Cir. 1996); *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1580-81, 12 USPQ2d 1382, 1387 (Fed. Cir. 1989); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 n. 1, 4 USPQ2d 1737, 1739 n. 1 (Fed. Cir. 1987) (in banc), *cert. denied*, 108 S. Ct. 1226 (1988); *D.M.L, Inc. v. Deere & Co.*, 755 F.2d 1570, 1575, 255 USPQ 236, 239 (Fed. Cir. 1985).

<sup>11</sup> See, e.g., *Lockwood v. American Airlines Inc.*, 41 USPQ2d 1961, 1969 (Fed. Cir. 1997) (“there is no need to compare the structure of the accused device to the structure disclosed in the patent” unless the accused device performs “the identical function as specified in the claims”) (citation omitted).

<sup>12</sup> See, e.g., *Teets v. Chromalloy Gas Turbine Corp.*, 83 F.3d 403, 409, 38 USPQ2d 1695, 1699 (Fed. Cir. 1996) (“Most, if not all, patentable ideas involve combinations of known elements.”); *Kearns v. Chrysler Corp.*, 24 F.3d 1088, 1092 n. 7, 31 USPQ2d 1746, 1750 n. 7 (Fed. Cir. 1994); *Intel Corp. v. U.S. ITC*, 946 F.2d 821, 842, 20 USPQ2d 1161, 1179 (Fed. Cir. 1991); *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1569, 1 USPQ2d 1593, 1603 (Fed. Cir.) (“Virtually all inventions are necessarily combinations of old elements.”), *cert. denied*, 481 U.S. 1052 (1987).

<sup>13</sup> See, e.g., *Wilson Sporting Goods Co. v. David Geoffrey & Assocs. d/b/a Slazenger*, 904 F.2d 677, 684, 14 USPQ2d 1942, 1948 (Fed. Cir.), *cert. denied*, 498 U.S. 992 (1990).

In *Hilton Davis*, however, the Supreme Court sought to balance the prohibition against enlarging the scope of the claims (because the claims define the patented invention and the public is entitled to clear notice of the scope of the patent) and the doctrine of equivalents (which prevents parties from copying the claimed invention while avoiding the literal language of the claims) and adopted the late Senior Judge Nies' proposed reconciliation: the doctrine of equivalents is an objective inquiry applied to each *element* of a claim and to the specific component substituted in the accused product or process, not to the claimed invention as a *whole* and not to the *overall* accused product or process as was the inquiry before the Supreme Court's decision. The scope of the claim is not enlarged, the Supreme Court stated, if courts do not go beyond the substitution of equivalent components and elements only.<sup>14</sup> This change in the law may undermine the principle that the doctrine of equivalents is limited by the prior art. If so, then the prior art may not distinguish Section 112, ¶ 6 from the doctrine of equivalents.

*B. A Means-Plus-Function Claim Limitation Should Be Construed The Same As Any Other Type of Claim Limitation*

In general, the rules are the same for construing means-plus-function claim limitations as for other types of claim limitations. The aids for determining a structural equivalent under Section 112, ¶ 6 are the same as those used in construing any other type of claim language: the specification, prosecution history, and other claims in the patent.<sup>15</sup>

*C. The Supreme Court Resolved The Issue in Markman Itself*

*Markman* teaches a method for determining whether a patent issue should be tried to a jury as a question of fact or decided by a judge as an issue of law. The Supreme Court retained and developed the "historical test" and considered three other factors: judicial precedent, the relative construction skills of judges and juries, and statutory policies. Application of this same method to the question of who should construe means-plus-function claim limitations leads to the conclusion that judges should do so as a matter of law.

*1. History Provides No Clear Answer*

The Patent Act of 1952 resulted from movements to amend, revise, and codify the patent laws. In 1949, Subcommittee No. 3 of the Committee of the Judiciary having jurisdiction over patents undertook a complete study of the patent laws with a view toward a comprehensive amendment of the patent statutes. The Committee reported a bill and, after several minor

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<sup>14</sup> 41 USPQ2d at 1871.

<sup>15</sup> See, e.g., *Sofamor Danek Group, Inc. v. Depuy-Motech, Inc.*, 74 F.3d 1216, 1220, 37 USPQ2d 1529, 1532 (Fed. Cir. 1996) (trial court erred by expanding scope of sources used to construe "means plus function" claim to include the prosecution history as well as the claim and the specification) (CAFC issued corrected version of this opinion deleting statement that there is no need to examine the prosecution history to construe patent claims); *In re Hayes Microcomputer Products, Inc.*, 982 F.2d 1527, 1543, 25 USPQ2d 1241, 1253 (Fed. Cir. 1992) ("Generally, a number of factors may be considered when determining the scope of a means-plus-function limitation, 'including the language of the claim, the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony.'"). See also *Intel Corp. v. U.S. Int'l Trade Comm'n*, 946 F.2d 821, 842-43, 20 USPQ2d 1161, 1179-80 (Fed. Cir. 1991); *Medtronic, Inc. v. Intermedics, Inc.*, 799 F.2d 734, 742, 230 USPQ 641, 645 (Fed. Cir. 1986); *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 975, 226 USPQ 5, 8 (Fed. Cir. 1985).

changes, the bill became law on July 19, 1952. The Committee also prepared a report called "Revision Notes," as a supplement to the bill, which set forth and explained to a small degree revisions which had been made. Formal legislative history is otherwise sparse.

Section 112 of Title 35 addressed the specification and incorporated many of the provisions of prior Rev. Stat. 4888. The Act of 1952 included a new provision in the last paragraph of Section 112, however, which related to functional claiming. The legislative history regarding this provision is limited: the Revision Notes state only that "a new paragraph relating to functional claims is added."<sup>16</sup> Congress reenacted Section 112, last paragraph, as the sixth paragraph of that Section in 1965, but failed to provide any comment in the legislative history at that time. In 1975, Congress again reenacted the sixth paragraph of Section 112. Once again, however, Congress did not provide any legislative history.<sup>17</sup>

It is generally understood that Congress enacted the last paragraph of Section 112 to restore the law regarding broad functional language in combination claims as it existed before *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946).<sup>18</sup> The Chairman of Subcommittee No. 3 of the Committee of the Judiciary, Hon. Joseph R. Bryson, Representative from South Carolina, discussed the provision of the bill which became Section 112, last paragraph, in an address to the Philadelphia Patent Law Association on January 24, 1952, stating: "This provision in reality will give statutory sanction to combination claiming as it was understood prior to the Halliburton decision. All the elements of a combination now will be able to be claimed in terms of what they do as well as in terms of what they are."<sup>19</sup> One of the authors who helped draft the Act, P.J. Federico, an Examiner-in-Chief of the Patent Office, published *Commentary on the New Patent Act*. Regarding the last paragraph of Section 112, Mr. Federico wrote:

The last paragraph of section 112 relating to so-called functional claims is new. It provides that an element of a claim for a combination (and a combination may be not only a combination of mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim) may be expressed as a means or step for performing a specified function, without the recital of structure, materials or acts in support thereof. It is unquestionable that some measure of greater liberality in the use of functional expressions in combination claims is authorized than had been permitted by some court decisions, and that decisions such as that in *Halliburton Oil Well Cementing Co. v. Walker*, 67 S. Ct. 6, 329 U.S. 1, 91 L. Ed. 3 (1946), are modified or rendered obsolete, but the exact limits of the enlargement remain to be

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<sup>16</sup> P. Federico, *Commentary on the New Patent Act*, reprinted in 75 J. Pat. & Trademark Off. Soc'y 161 (1993).

<sup>17</sup> See generally R. Nydegger, *Traversing the Section 112, Paragraph 6, Field of Land Mines: Does in re Donaldson Adequately Defuse the Problems*, 76 J. Pat. & Trademark Off. Soc'y 947 (1994).

<sup>18</sup> See, e.g., *In re Fuetterer*, 319 F.2d 259, 264 n.11, 138 USPQ 217, 222 n.11 (CCPA 1963).

<sup>19</sup> *In re Fuetterer*, 319 F.2d at 264 n.11, 138 USPQ at 222 n. 11.

determined. The language specifies “an” element, which says “any” element, and by this language, as well as by application of the general rule that the singular includes the plural, it follows that more than one of the elements of a combination claim may be expressed as different “means” plus statement of function. The language does not go so far as to permit a so-called single means claim, that is a claim which recites merely one means plus a statement of function and nothing else. Attempts to evade this by adding purely nominal elements to such a claim will undoubtedly be condemned. The paragraph ends by stating that such a claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. This relates primarily to the construction of such claims for the purpose of determining when the claim is infringed (note the use of the word “cover”), and would not appear to have much, if any, applicability in determining the patentability of such claims over the prior art, that is, the Patent Office is not authorized to allow a claim which “reads on” the prior art.<sup>20</sup>

Despite the lack of formal legislative history and the disagreement regarding the deserved weight of contemporaneous commentary, the statute most assuredly codifies the doctrine of functional claiming as developed in *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1853) (and its progeny), with the exception of the Supreme Court's decision in *Halliburton*.

Every clause of the last paragraph of Section 112 derived its meaning from the established law. The opening phrase, "An element in a claim for a combination," came from the Supreme Court cases applying the doctrine of *O'Reilly v. Morse*, which held single means clauses invalid as claiming functions or effects.<sup>21</sup> On the other hand, every Supreme Court case, with the exception of *Halliburton*, and every major commentary of the time, maintained that valid combination claims are appropriate despite the breadth and form of the limitations. The intermediate phrase, "may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof," again recognized the propriety of functional limitations in valid combinations. The phrase, by itself, served to restore the law to its state before *Halliburton* with regard to combination claims reciting functionally defined limitations.

The last phrase of Section 112, ¶ 6, the construction clause ("and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof"), codified the holding regarding the second claim in *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537 (1897). The second claim was drafted in functional terms and was the subject of discussion regarding the "function of a machine" rule. Succinctly put, the rule proscribed claims directed to the mere function-or effect-of a machine. To avoid the

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<sup>20</sup> P. Federico, *Commentary on the New Patent Act*, reprinted in 75 J. Pat. & Trademark Off. Soc'y 161, 186-87 (1993).

<sup>21</sup> See *supra* n.2.



function of a machine rule and to preserve the validity of the claim, the Supreme Court construed the claim to cover the embodiments disclosed in the specification.

In summary, the last paragraph of Section 112 codified and revised the law regarding functional claiming which had developed in the preceding ninety-nine years. The last paragraph of Section 112 made essentially no substantive innovations — except that it combined the function of a machine rule with otherwise valid combination claiming. Thus, every clause in Section 112, ¶ 6, can find its origin either in the well-developed and considered cases of *O'Reilly v. Morse* and its progeny or in the function of a machine rule. Nothing in the history relating to means-plus-function claims indicates that the rules for construing such claims differ from the rules for construing other types of claims.

## 2. *Judicial Precedent Provides No Clear Answer*

In *Markman*, the CAFC majority acknowledged its line of cases which held that disputes over the meaning of claim language may raise factual questions reviewed for substantial evidence or clear error as the case may be (also acknowledged were the dissenting opinions which argued that there are jury triable factual inquiries involved in determining the scope of the claim) — but chose to follow Supreme Court opinions which “repeatedly held that the construction of a patent claim is a matter of law exclusively for the court.”<sup>22</sup> The CAFC settled the inconsistencies in its precedent and placed the power and obligation on the court to construe as a matter of law, in a case tried to a jury, “the meaning of language used in the patent claim.”<sup>23</sup> The CAFC chose to follow the “fundamental principle of American law that ‘the construction of a written evidence is exclusively with the court.’”<sup>24</sup>

Similarly, a line of CAFC cases holds that the issue of whether an accused device is an equivalent under Section 112 of a described embodiment is a question of fact.<sup>25</sup> Other CAFC cases disagree and have reviewed a district court’s construction of means-plus-function limitations de novo as a matter of law.<sup>26</sup> Regardless of its prior precedent, the CAFC specifically left the issue open in its *Markman* decision.

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<sup>22</sup> *Markman*, 52 F.3d at 977, 34 USPQ2d at 1328.

<sup>23</sup> *Markman*, 52 F.3d at 979, 34 USPQ2d at 1329. Note that the CAFC did not modify its broad statement to exclude means-plus-function claim limitations, Markush expressions, or any other type of claim limitation. Thus, the broad statement would seem to include *all* claim limitations.

<sup>24</sup> *Markman*, 52 F.3d at 978, 34 USPQ2d at 1328 (citations omitted).

<sup>25</sup> See, e.g., *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 859, 20 USPQ2d 1252, 1254 (Fed. Cir. 1991); *In re Bond*, 910 F.2d 831, 833, 15 USPQ2d 1566, 1569 (Fed. Cir. 1990); *Durango Associates Inc. v. Reflange Inc.*, 843 F.2d 1349, 1357, 6 USPQ2d 1290, 1295-96 (Fed. Cir. 1988); *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1110, 2 USPQ2d 1826, 1833 (Fed. Cir. 1987); *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 862-63, 26 USPQ 402, 408 (Fed. Cir. 1985); *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 975, 226 USPQ 5, 10 (Fed. Cir. 1985); *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1575, 225 USPQ 236, 239 (Fed. Cir. 1985).

<sup>26</sup> See, e.g., *Interspiro USA, Inc. v. Figgie Int'l, Inc.*, 18 F.3d 927, 931, 30 USPQ2d 1070, 1072 (Fed. Cir. 1994) (the accused infringer argued that the district court incorrectly identified the structure disclosed in the specification that performed the function of one limitation and misconstrued the function performed by the other limitation) (“The district court’s construction of the means limitations at issue is reviewed de novo”). Cf. *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1536, 19 USPQ2d 1367, 1370 (Fed. Cir. 1991) (“The district court . . . erred, as a matter of law,

### 3. *Judges Trump Juries in the Battle of Relative Construction Skills*

When history and precedent provide no clear answers, functional considerations also play their part in the choice between judge and jury to define terms of art.<sup>27</sup> One such consideration is whether, as a matter of the sound administration of justice, the judge or the jury is better positioned to decide the issue. The Supreme Court expressly stated, in *Markman*: “The construction of written instruments is one of those things that judges often do and are likely to do better than jurors. . . .”<sup>28</sup> Therefore, at least in the view of the Supreme Court, there should be no dispute that judges are better positioned to construe means-plus-function claim limitations.

### 4. *Statutory Policies Favor Construction as a Matter of Law*

In *Markman*, the Supreme Court and the CAFC majority indicated that uniformity of construction and the need for competitors to understand the scope of a patent are valid policy reasons for allocating claim construction to judges. The Supreme Court also pointed out that desirable uniformity in the treatment of a given patent was one of the very reasons for the creation of the CAFC and that treating construction issues as purely legal will promote (though not guarantee) intrajurisdictional certainty.<sup>29</sup> The *Markman* decision, which is based in part on the stated policies, is likely to make the scope of patent claims more predictable. The same policies support the conclusion that construction of means-plus-function claim limitations should be allocated to judges. Patent attorneys will be able to rely on the patent, its specification, and its prosecution history to construe all patent claims with greater assurance that, if litigation occurs, the claims will not be construed in a different way because a jury is confused or is swayed by expert testimony. There should only be one correct construction of a means-plus-function claim limitation.<sup>30</sup>

### 5. *The Dropping Of “The Other Shoe”*

If construction of the word “inventory” in *Markman* is an issue for the judge, not the jury, why should not construction of the words “means for performing an inventory function” also be an issue for the judge, and not the jury? Does not the conclusion that construction of a means-plus-function claim limitation is an issue for the judge simply follow logically from the premise that all claim construction issues are for the judge? The conclusion is simply the proverbial “other shoe” which drops from the principle of law established by the CAFC and the Supreme Court in *Markman*.

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by . . . holding that this limitation was met merely because there was some means in the accused device that performed the stated function.”); *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1389, 21 USPQ2d 1383, 1387 (Fed. Cir. 1992) (properly construed, the patent claim required a function not performed by the accused device; therefore, “As a matter of law, under the proper claim interpretation, there is no literal infringement.”).

<sup>27</sup> *Markman*, 38 USPQ2d at 1470.

<sup>28</sup> *Id.*

<sup>29</sup> 38 USPQ2d at 1470-71.

<sup>30</sup> In deciding *Markman*, the CAFC adopted by analogy the statutory interpretation model (statutory interpretation is a matter of law strictly for the court; there can be only *one correct interpretation* of a statute that applies to all persons) as a more accurate model of patent claim construction than the contract model (questions of fact may arise in construing contracts). 34 USPQ2d at 1334-36.

The CAFC has already cast the shadow of that shoe. In *United States Surgical Corp. v. Ethicon, Inc.*, 41 USPQ2d 1225 (Fed. Cir. 1997), the CAFC implicitly held that construction of means-plus-function claim limitations is a matter of law for the court. At issue were jury instructions on claim construction which the district court had refused to give.<sup>31</sup> U.S. Surgical argued that its requested instructions construing the means-plus-function claims should have been given. The requested instructions would have simply repeated the words of the claim.<sup>32</sup> The CAFC stated: “We doubt that *Markman* requires the trial judge to instruct as to an undisputed ‘claim construction’ for every term, by simply parroting the words of the claim and then repeating the rule concerning infringement of means-plus-function claims.”<sup>33</sup> The court held that U.S. Surgical failed to show prejudicial error in the given jury instructions, which advised the jury how to construe means-plus-function claim limitations and how to apply those limitations to the accused devices. More important to the present discussion, however, the CAFC stated: “The *Markman* decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.”<sup>34</sup> This statement suggests that the means-plus-function claim terms at issue in *United States Surgical* fall within the general principle of *Markman*.<sup>35</sup>

Perhaps the strongest argument preventing the “other shoe” from dropping and supporting the conclusion that claim construction under 35 U.S.C. § 112, ¶ 6 should be a question of fact is that, by definition, one must go outside the patent specification to determine what constitutes an “equivalent” structure. There are at least two responses to this argument. First, the definition of an equivalent may be found in the prosecution history which, like the specification, is part of the “intrinsic” evidence normally used to construe patent claims. Second, the law permits courts to use “extrinsic” evidence, when necessary, to construe patent claims as a matter of law. Should resort to extrinsic evidence prove necessary to construe a means-plus-function equivalent, therefore, construction might still be deemed a matter of law.<sup>36</sup>

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<sup>31</sup> When a trial court sends the issue of claim construction to the jury, the CAFC treats the jury's claim construction as an advisory determination. *The Laitram Corp. v. NEC Corp.*, 62 F.3d 1388, 1394, 36 USPQ2d 1206, 1210 (Fed. Cir. 1995); *W.S. Molnar Co. v. IKG Indus., Inc.*, 39 USPQ2d 1219, 1220 (Fed. Cir. 1996) (nonprecedential) (infringement defendant is not entitled to a new trial even though the jury construed the patent claims).

<sup>32</sup> *E.g.*, “Clause i) of claim element lb) reads ‘means for storing a plurality of surgical clips.’ This is a means-plus-function claim element. The stated function, as I interpret it, is to store a plurality of surgical clips.” 41 USPQ2d at 1228.

<sup>33</sup> 41 USPQ2d at 1235.

<sup>34</sup> *Id.* at 1236.

<sup>35</sup> *See also Serrano v. Telular Corp.*, No. 96-1308 (Fed. Cir. 1997) (giving no deference to the district court's construction, the court stated: “we [i.e., the CAFC judges] construe the ‘determination means’ limitation to mean the function of determining when the last digit or number is dialed and to permit structure that includes digit analysis or use of a time-out feature, being implemented in discrete logic or with a microprocessor operating under software control, and equivalents of such structures.”) (emphasis added).

<sup>36</sup> *See infra* Section IV.B for a discussion of “intrinsic” versus “extrinsic” evidence.

#### IV. RAMIFICATIONS OF THE PROPOSED RESOLUTION

##### A. *Timing*

The district courts are now struggling over how to construe patent claims and to instruct juries. One aspect of that struggle is the issue of timing: When in the course of litigation should a court construe disputed claim language? An early resolution of claim construction disputes enables both parties to narrow discovery and to focus litigation strategy. It also may facilitate settlement and would allow sufficient time for a summary judgment motion, both of which might avoid the need for a trial.<sup>37</sup> Delayed resolution may disadvantageously force the parties to misdirect discovery efforts and incur needless cost by pursuing a cause of action or a defense under a claim construction later determined to be incorrect. Are there particular advantages associated with the timing of a *Markman* hearing (described in the following paragraph) depending on whether a party is the plaintiff or the defendant? A delayed hearing may favor the patent owner by giving the plaintiff time to conduct discovery directed to the accused product or process; such discovery may prove sufficient for the patent owner to develop a claim construction that encompasses the accused product or process.

Judge McKelvie of the U.S. District Court for Delaware has outlined three basic claim construction options for a district court complying with the requirements of *Markman*: “The court can attempt to resolve these disputes on the paper record. Second, the court can hold a trial to resolve the disputes. Finally, the court can wait until trial and attempt to resolve claim disputes before the jury must be instructed.”<sup>38</sup> Judge McKelvie’s second option has evolved, under district court practice, into a separate hearing typically called a “*Markman* hearing.” The district judges in Delaware have indicated that they will try to hold separate “*Markman* hearings” after discovery is complete and a few months before the trial.<sup>39</sup> Similarly, the Northern District

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<sup>37</sup> See, e.g., *Thorn EMI North Am., Inc. v. Intel Corp.*, 936 F. Supp. 1186 (D. Del. 1996) (based on claim construction, judge granted partial summary judgment of non-infringement); *Thomson S.A. v. Time Warner, Inc.*, C.A. No. 94-83-LON (D. Del. Order dated February 27, 1996, and Mem. Op. dated June 28, 1996) (on June 28, 1996, the court issued an opinion construing the disputed terms; promptly thereafter, two of the three remaining groups of defendants settled).

<sup>38</sup> *Elf Atochem North Am. Inc. v. Libby-Owens-Ford Co.*, 894 F. Supp. 844, 850, 37 USPQ2d 1065, 1069 (D. Del. 1995). See also J. Pegram, “The *Markman* Decision & Some of Its Implications,” 78 J. Pat. & Trademark Off. Soc’y 560, 566 (1996) (also noting timing of *Markman* hearings). For an example of a case in which the court construed patent claims, a few days before trial, based on the parties’ submissions and without conducting a *Markman* hearing, see *Ajinomoto Co. v. Archer-Daniels-Midland Co.*, C.A. No. 95-5218-SLR (D. Del. Order dated October 25, 1996). For an example of a case in which the court informed the parties of its decision construing the claims on the eve of the last day of trial, see *Johns Hopkins Univ. v. Cellpro, Inc.*, 894 F. Supp. 819, 826-27 (D. Del. 1995).

<sup>39</sup> See, e.g., *Manchak v. Stevenson*, C.A. No. 95-709-RRM (D. Del.) (Judge McKelvie conducted a three day *Markman* hearing on January 14-16, 1997); *Quantel Ltd. v. Adobe Sys. Inc.*, C.A. No. 96-18-RRM (D. Del. Revised Scheduling Order dated December 17, 1996) (Judge McKelvie has scheduled a two day *Markman* hearing for June 1997, which is after completion of all discovery and three months before trial); *General Signal Corp. v. Applied Materials, Inc.*, C.A. No. 94461-JJF (D. Del.) (Judge Farnan held a *Markman* hearing on January 21, 1997, in which he limited each party to three hours); *Ampex Corp. v. Mitsubishi Elec. Corp.*, C.A. No. 95-582-RRM (D. Del.) (Judge McKelvie held a three-day *Markman* hearing in late January 1997, two months before trial); *Revlon Consumer Prods. v. L’Oreal S.A.*, C.A. No. 96-192-MMS (D. Del. Feb. 12, 1997) (following the close of discovery, a one-day *Markman* hearing was held in November 1996); *Vergason Technology v. Masco Corp.*, C.A. No. 95-286-JJF (D. Del.) (court held a *Markman* hearing on November 7, 1996); *Dentsply Int’l, Inc. v. Sybron Corp.*, C.A. No. 89-167-JJF (D. Del.) (court held a *Markman* hearing on December 20, 1996).

of California has issued a set of proposed rules to be used exclusively in patent cases. The proposed rules contemplate the plaintiff designating and filing asserted claims within 45 days after the complaint is served. They ensure a *Markman* hearing (if one is to be held) within months after service of the complaint. The Northern District of Illinois has proposed its own set of rules governing *Markman* hearings.<sup>40</sup>

In fact, most courts that have faced the procedural issue have elected to conduct *Markman* hearings well in advance of trial and the *Markman* hearing is evolving as the most popular vehicle for litigants and courts forced to resolve disputes over the meaning of claims.<sup>41</sup> John Pegram believes that “It is likely that most courts will hold a ‘*Markman* hearing’ before the trial to receive argument by the attorneys and possibly expert testimony.”<sup>42</sup> In *Markman* itself, the CAFC clearly stated that the preferable practice is to instruct the jury regarding the meaning of terms in the claims before the jury deliberations.<sup>43</sup>

The developing procedures would hit a significant “snag” were the court to decide that means-plus-function claim limitations must be construed by the jury as questions of fact. Either the jury would have to be included in the *Markman* hearing, when construction of a means-plus-function claim had to be resolved, or the court would be forced to wait until after the trial was conducted before the jury. Moreover, an awkward procedure would be required: the jury would decide the fact questions raised by the means-plus-function claim limitations, then the judge would construe the remainder of the claims as a matter of law, then the jury would decide the factual question of infringement. In contrast, the developing procedures would comport well with a decision that means-plus-function claim limitations must be construed by the judge as issues of law.

#### B. *Extrinsic Evidence (e.g., Expert Testimony)*

In determining the proper construction of a claim, the court has numerous sources that it may properly use for guidance. These sources include both “intrinsic” evidence (e.g., other claims, the patent specification including the drawing, and the prosecution history) and “extrinsic” evidence (e.g., expert testimony, inventor testimony, dictionaries, technical treatises, and articles).<sup>44</sup> First, the court *must* look to the words of the claims themselves, both asserted and

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<sup>40</sup> Query whether a proliferation of somewhat different rules by the various district courts might promote “forum shopping.”

<sup>41</sup> See, e.g., *Ethicon Endo-Surgery v. United States Surgical Corp.*, 900 F. Supp. 172, 38 USPQ2d 1385 (S.D. Ohio 1995) (five day hearing).

<sup>42</sup> 78 J. Pat. & Trademark Off. Soc’y at 566.

<sup>43</sup> See also *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995); *Loral Fairchild Corp. v. Victor Co. of Japan*, 911 F. Supp. 76, 79 (E.D.N.Y. 1996 (Rader, J., sitting by designation)) (“a conscientious court will generally endeavor to make this ruling before trial”); but see *International Communication Materials, Inc. v. Ricoh Co.*, No. 95-1526 (Fed. Cir. 1997) (a district court may, in its discretion, defer final determination of the meaning or construction of a patent claim at the preliminary injunction stage when the court perceives that there are substantial issues and questions pertaining to claim construction that need to be litigated); *Motorola, Inc. v. Interdigital Tech. Corp.*, 1996 U.S. Dist. LEXIS 8673 at \*20 (D. Del. June 17, 1996) (patentee waived right to have claims construed by court by not requesting such construction).

<sup>44</sup> It is not necessary to consider prior art in applying Section 112, 6. See *supra* note 12 and accompanying text.

nonasserted, to define the scope of the patented invention. Second, it is *always* necessary to review the specification (and drawing) to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term. Third, the court *may* also consider the prosecution history of the patent — if it is in evidence. The record before the U.S. Patent and Trademark Office (PTO) is often of critical significance in determining the meaning of the claims.

In most situations<sup>45</sup> an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is *improper* to rely on extrinsic evidence; when the patent documents (which are part of the public record relied upon by members of the public) are unambiguous, extrinsic evidence regarding the meaning of a claim is entitled to no weight. Moreover, extrinsic evidence which is inconsistent with intrinsic evidence should be accorded no weight.<sup>46</sup>

The CAFC held in *Markman* that the trial court may receive extrinsic evidence, in its discretion, to aid the court in reaching the correct conclusion as to the true meaning of the language used in the patent. The U.S. District Court for the Eastern District of Pennsylvania properly rejected Markman's testimony and that of his patent expert on the issue, however, when the extrinsic evidence contradicted the court's construction of the claims based on the specification and prosecution history.<sup>47</sup> Such evidence is "entitled to no deference."<sup>48</sup> "[T]he court has complete discretion to adopt the expert legal opinion as its own, to find guidance from it, or to ignore it entirely, or even to exclude it."<sup>49</sup> Distinguish the court's reliance on extrinsic evidence to help it to understand the underlying technology from reliance on such evidence to construe claims. Previously, the CAFC had held that, although use of expert testimony is generally a matter of discretion with the trial judge and is not required in all cases, the failure to allow such testimony in a particular case involving complex scientific principles was an abuse of discretion.<sup>50</sup>

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<sup>45</sup> Other situations "will rarely, if ever, occur," per the CAFC. *Vitronics Corp. v. Conceptoronic, Inc.*, 39 USPQ2d 1573, 1579 (Fed. Cir. 1996).

<sup>46</sup> *J.T. Eaton & Co., Inc. v. Atlantic Paste & Glue Co.*, 41 USPQ2d 1641, 1646 (Fed. Cir. 1997) (trial testimony regarding the meaning of a claim cannot vary the meaning that is established by either the claim itself or by the claim as correctly understood by reference to the specification and the file history); *Vitronics Corp. v. Conceptoronic, Inc.*, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996); *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578, 34 USPQ2d 1673, 1678-79 (Fed. Cir.) ("expert testimony is entitled to no weight"; any other rule would be unfair to competitors who must rely on the patent documents without consideration of expert testimony), *cert. denied*, 116 S. Ct. 515 (1995).

<sup>47</sup> *Markman*, 52 F.3d at 981, 34 USPQ2d at 1331.

<sup>48</sup> *Id.* 52 F.3d at 983, at 1332.

<sup>49</sup> *Id.* 52 F.3d at 983, at 1333.

<sup>50</sup> *Advanced Cardiovascular Systems, Inc. v. Scimed Life Systems, Inc.*, 887 F.2d 1070, 1073-74, 12 USPQ2d 1539, 1542 (Fed. Cir. 1989) (district court erred by not considering expert declarations and dictionary definition of term at issue); *Moeller v. Ionetics, Inc.*, 794 F.2d 653, 657, 229 USPQ 992, 995 (Fed. Cir. 1986).

Most courts that have conducted *Markman* hearings have allowed expert testimony.<sup>51</sup> On the other hand, a few courts have excluded such testimony—either ostensibly or explicitly on the ground that resort to extrinsic evidence would be improper because the intrinsic evidence sufficed to resolve the disputed claim language.<sup>52</sup> A court is authorized to appoint an expert on its own motion to advise the court on the construction of a patent claim. Fed. R. Evid. 706. No reported cases have been found, however, in which this procedure was used for claim construction.

Like the procedures addressing the timing of claim construction, the developing procedures regarding expert testimony would also hit a significant “snag” were the court to decide that means-plus-function claim limitations must be construed by the jury as questions of fact. Expert testimony would almost always seem helpful in guiding a jury toward factual resolution of the meaning of a means-plus-function claim. The courts would rarely, if ever, exclude such testimony—even when the intrinsic evidence sufficed to resolve the disputed claim language. This practice would conflict with the general principle, that it is usually improper to rely on extrinsic evidence like expert testimony, were means-plus-function claim limitations construed as fact questions. In contrast, this potential conflict would be avoided by, and the developing procedures would comport well with, a decision that means-plus-function claims must be construed by the judge as issues of law.

### C. *Interaction with Appeal*

Appellate review of claim construction issues, which are issues of law, is conducted under the *de novo* standard of review. Thus, the CAFC will reach its own decision without deference to the decision of the district court and the losing party may want to appeal an adverse claim construction to the CAFC as soon as possible. The district court also may want the CAFC’s early decision; it would be more efficient for the CAFC to rule on claim construction before rather than after the jury tries the question of infringement. The possibility of an expedited appeal to the CAFC exists in at least four situations: (1) a dispositive motion for summary judgment under Fed. R. Civ. P. 56 is ruled upon,<sup>53</sup> (2) a question is certified for

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<sup>51</sup> See, e.g., *General Signal Corp. v. Applied Materials, Inc.*, C.A. No. 94-461-JJF (D. Del.) (Judge Farnan stated in a *Markman* hearing on January 21, 1997, that each side should present a person skilled in the art to testify on what the words of the claim mean, including the inventor if (s)he was involved in creating the lexicon; Judge Farnan also stated that, in the future, he would not allow testimony regarding infringement); *Ampex Corp. v. Mitsubishi Elec. Corp.*, C.A. No. 95582-RRM (D. Del.) (Judge McKelvie held a *Markman* hearing in late January 1997 during which he heard testimony and arguments); *Revlon Consumer Prods. v. L'Oreal S.A.*, C.A. No. 96-192MMS (D. Del. Feb. 12, 1997) (court candidly admitted its heavy reliance on the parties' expert testimony, noting that it lacked the necessary background in polymer chemistry to resolve these issues without such testimony, and noted that certain of the court's conclusions depended on a credibility judgment between the parties' experts where their testimony was directly contradictory); *Ethicon Endo-Surgery v. United States Surgical Corp.*, 900 F. Supp. 172, 38 USPQ2d 1385 (S.D. Ohio 1995); *Loral-Fairchild Corp. v. Victor Co. of Japan, Ltd.*, 911 F. Supp. 76 (E.D.N.Y. 1995).

<sup>52</sup> See, e.g., *ADC Telecommunications, Inc. v. Siecor Corp.*, 954 F. Supp. 820, 831 (D. Del. 1997) (court held that resort to extrinsic evidence would be improper because the intrinsic evidence sufficed to resolve the dispute); *Viskase Corp. v. American Nat'l Can Co.*, 1996 U.S. Dist. LEXIS 9221 at \*1-2 (N.D. 111. July 1, 1996); *Mars, Inc. v. Coin Acceptors, Inc.*, CA No. 90-49 (JCL) (D.N.J. June 28, 1996); *GTY Indus. v. Genlyte Group Inc.*, 38 USPQ2d 1801, 1810 (C.D. Cal. 1996).

<sup>53</sup> "The determination of the scope of the claims is a question of law, and a dispute respecting that legal issue does not preclude summary judgment." *George v. Honda Motor Co.*, 802 F.2d 432, 434, 231 USPQ 382, 383 (Fed. Cir.

appeal,<sup>54</sup> (3) an order grants or denies an injunction,<sup>55</sup> or (4) a partial final judgment is entered under Fed. R. Civ. P. 54(b) with respect to one claim or one party when multiple claims or parties exist.<sup>56</sup> See generally J. Pegram, “The Markman Decision & Some of Its Implications,” 78 J. Pat. & Trademark Off. Soc’y 560, 566 (1996).

The *de novo* standard of review under which the CAFC reviews claim construction issues has raised another concern. The CAFC may adopt on appeal a claim construction which neither the parties nor the district court envisioned.<sup>57</sup> If the entirely new claim construction is injected into the proceedings only after a full jury trial on infringement, the case may have to be retried with a jury instructed on the “correct” claim construction — a substantial waste of judicial resources. Alternatively, a petition for rehearing after the CAFC decision may be the advocate’s first opportunity to address the new claim construction. This concern increases the desirability of an expedited appeal to the CAFC.

Were the court to decide that means-plus-function claim limitations must be construed by the jury as questions of fact, the concern with delayed appellate review of claim construction issues would be exacerbated or, at least, rendered less likely to be abated. District courts would tend to delay the jury’s construction of claims, were they to involve factual issues, until later in the case. The jury would likely resolve the factual issues following the presentation of the entire case to the jury. Such delay would undermine the use of the summary judgment and certification tools by which the CAFC might give an expedited ruling on claim construction.

#### D. How To Prove “Identical” Function And “Equivalent” Structure

Perhaps the best advice, on how to prove that the function of an accused device or method step is identical to the function recited in a means-plus-function claim limitation or that the structure of the accused device or step of the accused method is equivalent to the structure or step recited, is to start with a carefully prepared patent application. A creative, inclusive listing of suitable structure in the specification and a well-conceived statement of the function in both

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1986); *General Mills, Inc. v. Hunt-Wesson, Inc.*, 41 USPQ2d 1440 (Fed. Cir. 1997) (reviewing claim construction dispute on a summary judgment basis).

<sup>54</sup> John Pegram suggests five reasons why a court might not want to certify its claim construction decision for immediate appeal and, therefore, “why such certification may not become common.” 78 J. Pat. & Trademark Off. Soc’y at 568.

<sup>55</sup> But “the trial court has no obligation to interpret [a patent claim] conclusively and finally during a preliminary injunction hearing.” *Sofamor Danek Group, Inc. v. Deputy-Motech, Inc.*, 74 F.3d 1216, 1221, 37 USPQ2d 1529, 1532 (Fed. Cir. 1996).

<sup>56</sup> Judge Rader issued a Rule 54(b) partial final judgment with respect to one party, so that there could be an appeal and *de novo* review of the patent claim construction issue by the CAFC before further proceedings involving the other defendants, in *Loral Fairchild Corp. v. Victor Co. of Japan*, CA No. 92-0128-ARR (E.D.N.Y. July 16, 1996) (Rader, J., sitting by designation).

<sup>57</sup> The CAFC did so in *Exxon Chern. Pats., Inc. v. The Lubrizol Corp.*, 64 F.3d 1553, 1556, 35 USPQ2d 1801, 1803 (Fed. Cir. 1995) (When the CAFC determines on appeal, as a matter of law, that a trial judge has misconstrued a patent claim, the court independently construes the claim to determine its correct meaning and then determines if the facts presented at trial can support the appealed judgment. If not, the CAFC reverses the judgment below without remand for a new trial on the correct law.), cert. denied, 116 S. Ct. 2554 (1996); see also *J.T. Eaton & Co., Inc. v. Atlantic Paste & Glue Co.*, 41 USPQ2d 1641 (Fed. Cir. 1997).



the specification and claim are irreplaceable. A general reservation in a patent specification that other structural means might be used does not provide any affirmative teaching as to what those other means might be.<sup>58</sup> Consequently, despite a statement that other structure may be used, the claim is limited to the use of the specific structure disclosed and its equivalents.<sup>59</sup>

More generally, presentations during *Markman* hearings should focus on intrinsic rather than extrinsic evidence to prove the meaning of a means-plus-function claim limitation. Judge Ellis of the U.S. District Court for the Eastern District of Virginia stated that he had no firm views on what would be helpful in a *Markman* hearing. He opined, however, that he would favor lucid briefs well in advance of the hearing narrowly focused on the intrinsic evidence. Judge Michel of the CAFC agreed, suggesting a claim chart comparing the relevant words of the asserted claim with illuminating language and relevant aspects of the prosecution history, combined with pictures or other clarifying evidence, as helpful in determining the meaning of a disputed claim term. Both judges counseled against the use of expert testimony.<sup>60</sup>

The suggestion that a “lucid” brief should be filed, focused on the intrinsic evidence, prompts the follow-up suggestion that the brief might be filed in the form of a compact disk-read only memory (CDROM) brief. Such a brief might include hyperlinks within the text that connect to hypertext consisting of the portions of the specification, claims, and prosecution history which should be used to construe the means-plus-function claim limitation. The claim chart and pictures suggested by Judge Michel could also be presented effectively.

If a CD-ROM brief is filed, the proponent should follow the guidelines which the CAFC provided in a recent case.<sup>61</sup> Specifically, the proponent should seek leave of the court to file the brief (which should provide information about the computer equipment needed to view the brief) and obtain the consent of the other party. Such consent might require the proponent to remove any prejudice to the other party by, for example, making the necessary computer equipment to view the brief available. A copyright license might be required before including certain materials in the brief (e.g., from West Publishing Co. for cited cases).

#### *E. What Is A “Means-Plus-Function” Claim*

Use of the term “means” generally invokes Section 112, ¶ 6, and the term “means for” is even more likely to be construed as a “means plus function” claim limitation — but neither term always prompts such construction. Similarly, use of a different formulation generally does not invoke Section 112, ¶ 6. But, again, not always. If the structure is sufficiently definite in the claim, the claim language “means for” may be held not to be a “means plus function” limitation subject to construction under 35 U.S.C. § 112, ¶ 6.<sup>62</sup> Conversely, the PTO and the CAFC have

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<sup>58</sup> *Minnesota Mining & Mfg. Co. v. International Biophysics Corp.*, 1997 U.S. App. LEXIS 549 \*9 (Fed. Cir. 1997).

<sup>59</sup> *Fonar Corp. v. General Electric Company*, 41 USPQ2d 1801, 1807 (Fed. Cir. 1997).

<sup>60</sup> *Markman* panel discussion, 1996 Meeting of the American Intellectual Property Law Association.

<sup>61</sup> *Yukiyo, Ltd. v. Watanabe*, No. 97-1115 (Fed. Cir. 1997) (Order) (CAFC granted Watanabe's motion to strike the compact disk-read only memory (CD-ROM) brief that Yukiyo submitted).

<sup>62</sup> *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 527, 41 USPQ2d 1001, 1003 (Fed. Cir. 1996) (“perforation means for tearing” is not a means-plus-function limitation); *York Prods., Inc. v. Central Tractor Farm & Family Center*, 99

rejected the argument that only the term “means” will invoke section 112, ¶ 6.<sup>63</sup> *See generally* M. Banner & D. Frischkorn, “What It Takes To Be A ‘Means-Plus-Function’ Claim,” *Intellectual Property Today* at 14 (Oct. 1996).

#### F. *Patent and Trademark Office Procedure*

Between 1952, when Section 112 was enacted, and 1994 the PTO construed means-plus-function claim limitations in light of their “broadest reasonable interpretation.”<sup>64</sup> Thus, the PTO did *not* interpret pending means-plus-function claim limitations as being limited to the structure, material, or acts described in the specification, or equivalents thereof, under the final clause of 35 U.S.C. § 112, ¶ 6.<sup>65</sup> More specifically, the PTO procedure meant that a means-plus-function claim limitation reads on any prior art which performed the same function, without regard to any corresponding structure or teachings in the specification. The CAFC soundly rejected the PTO’s procedure in 1994:

Accordingly, because no distinction is made in paragraph six between prosecution in the PTO and enforcement in the courts, or between validity and infringement, we hold that paragraph six applies regardless of the context in which the interpretation of means-plus-function language arises, i.e., whether as part of a patentability determination in the PTO or as part of a validity or infringement determination in a court. To the extent that *In re Lundberg*, 244 F.2d 543, 113 USPQ 530 (CCPA 1957), *In re Arbeit*, 206 F.2d 947, 99 USPQ 123 (CCPA 1953), or any other precedent of this court suggests or holds to the contrary, it is expressly overruled.

*In re Donaldson*, 16 F.3d 1189, 1193-94, 29 USPQ2d 1845, 1849 (Fed. Cir. 1994) (in banc).<sup>66</sup>

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F.3d 1568, 1574, 40 USPQ2d 1619, 1623 (Fed. Cir. 1996) (“mere incantation of the word ‘means’ in a clause reciting predominantly structure cannot evoke § 112, 6”); *AMP, Inc. v. Fujitsu Microelectronics, Inc.*, 853 F. Supp. 808, 820-21 & n. 11, 31 USPQ2d 1705, 1712-13 & n.11 (M.D. Pa. 1994) (“bus solder tail means . . . for mounting the bus . . . and for securing the housing” is not a means-plus-function limitation).

<sup>63</sup> *See* 1162 OG 59 n.2 (May 17, 1994) and MPEP § 2181 (giving examples); *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1584, 39 USPQ2d 1783, 1787 (Fed. Cir. 1996) (functional language introduced by “so that” is equivalent to “means for” claim language but “detent mechanism” defined in functional terms is not); *Surgical Laser Technologies Inc. v. Laser Indus. Ltd.*, 29 USPQ2d 1533, 1535 (E.D. Pa. 1993) (The term “means,” as opposed to the term “means for,” can be used in a claim which is not a means-plus-function claim to indicate a tool or device with a particular structure recited in the claim to carry out its intended function).

<sup>64</sup> During prosecution in the PTO, claims are given their broadest construction consistent with the specification, in view of the applicant’s freedom to amend. *In re Graves*, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995); *In re Bond*, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (means plus function claims); *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Heck*, 699 F.2d 1331, 1332, 216 USPQ 1038, 1039 (Fed. Cir. 1983).

<sup>65</sup> *In re Isaksen*, 23 USPQ2d 1001 (PTO Bd. Pat. App. & Inter. 1992); *In re Bowles*, 23 USPQ2d 1015 (PTO Bd. Pat. App. & Inter. 1992). *See generally* K. Adamo, *Do the Means Justify the End — A Matter of Bond, Bowles, The Office and 35 U.S.C. § 112*, Paragraph 6, 74 J. Pat. & Trademark Off. Soc’y 566 (1992).

<sup>66</sup> Contrast the CAFC’s view, expressed in *Donaldson*, with the comments of P.J. Federico, one of the authors of

In response to the *Donaldson* mandate that the PTO follow the requirements stated in 35 U.S.C. § 112, ¶ 6, the PTO issued guidelines for the examination of means-plus-function limitations in a patent claim.<sup>67</sup> The guidelines establish a five-step examination process starting with the threshold determination of whether the claim under examination comes within the purview of Section 112, ¶ 6. After such a determination is made, an examiner identifies all of the prior art which performs the identical function specified in the claim. The examiner then has the initial burden of verifying that the prior art is the same as or equivalent to the structure, material, or acts in the specification. Once an examiner finds prior art which performs the identified function and which is not excluded by the specification, a prima facie case of equivalence is established. This shifts the burden of proving non-equivalence to the applicant, who may carry that burden using teachings in the specification and in the prior art as well as declarations authorized under 37 C.F.R. § 1.132.

An applicant dissatisfied with the decision of the PTO may appeal to the CAFC.<sup>68</sup> The standard of review which the CAFC uses to review the PTO's decision is important to the CAFC's ultimate holding. "Standards of review" denote the strictness or intensity with which an appellate court evaluates the action of a trial tribunal. Standards of review involve complex and subtle questions of both law and tactics which often impact the appeal more than the facts and the substantive law issues. Different standards of review are applied depending upon whether the appeal involves a question of fact or an issue of law.<sup>69</sup> Accordingly, the characterization of the construction of a "means-plus-function" claim limitation as a question of fact or an issue of law will have important ramifications on the outcome of an appeal to the CAFC from a PTO decision (or, of course, from a district court decision).

Under clearly established precedent, the CAFC reviews PTO decisions of law "de novo" and decisions of fact for "clear error."<sup>70</sup> The PTO has attempted in recent years to convince the CAFC that the Administrative Procedure Act (APA)<sup>71</sup> applies to all PTO decisions and, therefore, that the PTO's decisions are entitled to more deference than they currently receive. At times, the PTO has argued that all PTO decisions should be reviewed merely for whether they were "arbitrary and capricious." At other times, the PTO has conceded that decisions on issues of law should be reviewed de novo, but argued that factual decisions should be reviewed merely for "substantial evidence."<sup>72</sup>

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Section 112. Mr. Federico stated that Section 112, ¶ 6 "would not appear to have much, if any, applicability in determining the patentability of [means-plus-function] claims over the prior art, that is, the Patent Office is not authorized to allow a claim which "reads on" the prior art." See *supra* n.20 and accompanying text.

<sup>67</sup> 47 Pat. Trademark & Copyright J. (BNA) 571 (April 28, 1994).

<sup>68</sup> 35 U.S.C. § 141 (1994).

<sup>69</sup> See *SSIH Equipment S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 379-383, 218 USPQ 678, 690-93 (Fed. Cir. 1983) (Nies, J., additional views) (summarizing standards of review); see generally T. Stoll, "A Clearly Erroneous Standard of Review", 79 J. Pat. Trademark Off. Soc'y 100 (Feb. 1997); C. Nard, *Deference, Defiance, and the Useful Arts*, 56 Ohio St. L.J. 1415 (1995).

<sup>70</sup> See, e.g., *In re Woodruff*, 919 F.2d 1575, 1577 16 USPQ2d 1934, 1935 (Fed. Cir. 1990).

<sup>71</sup> 5 U.S.C. §§ 701-06 (1994).

<sup>72</sup> "We reject the solicitor's suggestion that the Administrative Procedure Act's 'arbitrary and capricious' standard

“Substantial evidence” review is more deferential than review for “clear error” and basically asks whether the PTO’s decision was “reasonable.” Substantial evidence is “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.”<sup>73</sup> A finding is “clearly erroneous” when, although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.<sup>74</sup> In turn, the “arbitrary and capricious” standard of review is more deferential than the “substantial evidence” standard. Under the arbitrary and capricious standard, a finding will be upheld as long as “the decision was based on the relevant factors” and “there has [not] been a clear error of judgment.”<sup>75</sup> The standard basically asks whether the PTO’s decision was “rational.”

The PTO’s attempt to have its decisions reviewed by the CAFC under the APA is based on its status as an “agency.” In two 1995 opinions, the CAFC responded to the PTO’s arguments by avoiding a decision on whether and to what extent the APA applies to PTO decisions.<sup>76</sup> More recently, the CAFC chastised the PTO for “assuming” that the arbitrary and capricious standard applied to the PTO’s obviousness rejection.<sup>77</sup> It remains unclear, therefore, whether the PTO’s attempts will ultimately succeed or fail.

If the struggle between the PTO and the CAFC is viewed as whether the CAFC will cede any of its power over patent law decisions of the PTO, the CAFC’s power would largely be retained with respect to construction of means-plus-function claim limitations — whether the APA applies or not—were it to characterize such construction as an issue of law. The *de novo* standard is “the long-recognized appellate review standard for issues of law in the trial proceeding, regardless of whether the case was tried to a judge or a jury [or to the PTO].”<sup>78</sup> In its

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of review applies.” *In re Dixie Restaurants, Inc.*, 41 USPQ2d 1531, 1533 (Fed. Cir. 1997). The PTO “argues, however, that, sitting in *bane*, we should overrule our precedents and apply the more deferential standards of review provided by the Administrative Procedure Act, 5 U.S.C. §§ 701-706 (1994) (APA). More particularly, the Solicitor argues that either the APA’s ‘substantial evidence’ or ‘arbitrary and capricious’ standard should apply. We, as a panel, decline, however, to accept the Solicitor’s invitation to refer this issue to the whole court for *in bane* review. The APA’s more deferential standards of review have never been applicable to the Board’s decisions and we are not persuaded to change this practice.” *In re Lueders*, No. 96-1391 (Fed. Cir. 1997).

<sup>73</sup> *SSIH*, 718 F.2d at 382, 218 USPQ at 692 (quoting *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 477 (1951)).

<sup>74</sup> See *Anderson v. City of Bessemer City*, 470 U.S. 564, 573-74 (1985) (“If the district court’s account of the evidence is plausible in light of the record viewed in its entirety, the court of appeals may not reverse it even though convinced that had it been sitting as the trier of fact, it would have weighed the evidence differently.”).

<sup>75</sup> *SSIH*, 718 F.2d at 383, 218 USPQ at 693 (quoting *Citizens to Protect Overton Park v. Volpe*, 401 U.S. 402 (1971)).

<sup>76</sup> *In re Brana*, 51 F.3d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995), and *In re Napier*, 55 F.3d 610, 34 USPQ2d 1782 (Fed. Cir. 1995).

<sup>77</sup> *In re Kemps*, 97 F.3d 1427, 40 USPQ2d 1309 (Fed. Cir. 1996); cf. *In re Dixie Restaurants, Inc.*, 41 USPQ2d 1531, 1533 (Fed. Cir. 1997) (the CAFC again rejected the PTO’s suggestion that the APA’s “arbitrary and capricious” standard applied to a finding of likelihood of trademark confusion).

<sup>78</sup> *Markman*, 52 F.3d 967, 984 n.13, 34 USPQ2d at 1333 n.13.

de novo review of claim construction, an issue of law after *Markman*, the CAFC will “review the construction of the claims without deference to that of the district court.”<sup>79</sup>

## V. CONCLUSION

Although expressly an “open” issue, claim construction under 35 U.S.C. § 112, ¶ 6 should be characterized as an issue of law for the district court judge to decide rather than as a question of fact for the jury to decide (if a jury is used). Such a characterization follows logically from the analysis of the general claim construction issue provided by the Supreme Court in *Markman*; in essence, it would appear that the Supreme Court implicitly resolved the means-plus-function construction issue in that case. In addition, construction of a means-plus-function claim limitation as a matter of law would permit such limitations to be interpreted the same as any other type of claim limitation.

A decision resolving the issue will have important ramifications on the conduct of patent prosecution and patent infringement litigation. Important, practical consequences will impact when (i.e., timing) a means-plus-function claim limitation is construed; whether extrinsic evidence such as expert testimony is permitted as a construction aid; the timing and likely success of an appeal following construction by the district court or the PTO of a “means-plus-function” claim limitation; how to prove “identical” function or “equivalent” structure; whether a claim limitation even constitutes a “means-plus-function” claim limitation triggering the statutory provision of Section 112, ¶ 6; and the procedures by which PTO decisions involving means-plus-function claim limitations are reached and appealed. The consequences would be more consistent with existing and developing law and procedure were a decision reached that means-plus-function claims must be construed by the judge as an issue of law.

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<sup>79</sup> *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217, 36 USPQ2d 1225, 1229 (Fed. Cir. 1995).