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35 U.S.C. § 112, ¶ 6—MEANS FOR BETTER PATENT PROTECTION

BRYAN K. WHEELOCK* AND EVAN R. SOTIRIOU**

INTRODUCTION

Since the 1952 Patent Act, inventors have been able to claim an element of an invention as “means for” performing a specified function instead of reciting a specific structural limitation. “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”¹ The statute explains that such a claim “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”² This possibility of extending protection beyond the disclosure to “equivalents” suggested to the patent bar that this was the broadest way to claim an invention. This belief was no doubt fostered by the U.S. Patent and Trademark Office’s treatment of means-plus-function elements as covering all possible means for performing the function.³ Two Federal Circuit decisions in 1987 clarified to the patent bar that rather than a catch-all for all possible means for performing the stated function, the reference to “equivalents thereof” in 35 U.S.C. §112, ¶ 6, is actually a limitation on the apparent broad scope of a means-plus-function limitation.

In *Pennwalt Corporation v. Durand-Wayland Inc.*, Pennwalt contended “that the district court erred in interpreting the claims by going beyond the means-plus-function language of a claim limitation and comparing the structure in the accused devices with the structure disclosed in the specification.”⁴ However, the Federal Circuit rejected this contention, and explained that means-plus-function does not include all possible means for

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1. 35 U.S.C. § 112, ¶ 6 (2000).

2. *Id.*

3. The Patent Office persisted in this treatment until the Federal Circuit’s 1994 decision in *In re Donaldson*, 16 F.3d 1189, 29 U.S.P.Q. 2d 1845 (Fed. Cir. 1994).

4. 4 U.S.P.Q. 2d (BNA) 1737, 1738 (Fed. Cir. 1987).

performing the function: “[S]ection 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim *literally* satisfies that limitation. While encompassing equivalents of those disclosed in the specification, the provision, nevertheless, acts as a restriction on the literal satisfaction of a claim limitation.”⁵ The Federal Circuit cited its decision from a few months earlier in *Data Line Corporation v. Micro Technologies, Inc.*, where it said that Section 112 “excludes some means which perform the specified function from *literally* satisfying the claim limitation.”⁶ While entirely consistent with the plain language of the statute, this was not how the patent bar at large understood Section 112.

The patent bar quickly responded to this “change,” and since 1987 the use of “means” in claims has steadily declined. As shown in Figure 1, before 1987, the use of the term “means” remained constant, appearing in the claims of about 60% of all utility patents.⁷ Since 1987, the use of the term “means” in claims has steadily declined, so that in 2002 the term “means” appeared in the claim of less than 30% of all utility patents. In recent years, various patent bar groups have proposed amending or even eliminating 35 U.S.C. § 112, ¶ 6.

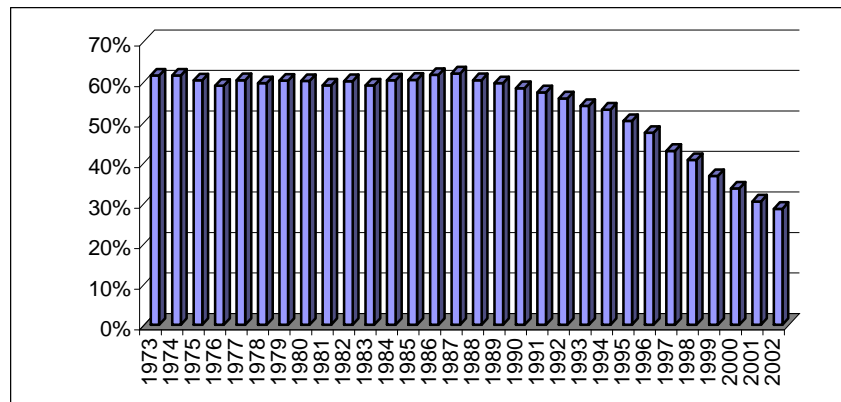


Figure 1 Percentage of Utility Patent Claims Containing “Means”

The authors propose that even in its current form, 35 U.S.C. § 112, ¶ 6 means-plus-function claims offer several advantages that make it an important part of comprehensive claim coverage of an invention. Part I of this article is a

5. *Id.* at 1739 (emphasis added).

6. 1 U.S.P.Q. 2d (BNA) 2052, 2055 (Fed. Cir. 1987) (emphasis added).

7. This is based on searches of the Patent and Trademark Office database for the total number of utility patents, and the total number of utility patents that contain the word “means.” The authors point out that use of the word “means” only creates a presumption that 35 U.S.C. § 112, ¶ 6 applies, but propose that use of the word “means” is a reasonable indicator of the use of means-plus-function claiming.

brief review of when 35 U.S.C. § 112, ¶ 6 applies; Part II is a review of the scope of protection provided by 35 U.S.C. § 112, ¶ 6; Part III of this article identifies the advantages 35 U.S.C. § 112, ¶ 6 means-plus-function claims have over other claims; and Part IV discusses how to attain those advantages.

I. APPLICATION OF 35 U.S.C. § 112, ¶ 6

The Federal Circuit has provided “a structured analysis for determining whether the elements of a claim are in means-plus-function form.”⁸ “Specifically, if the word ‘means’ appears in the claim element, there is a presumption that it is a means-plus-function element to which 35 U.S.C. § 112, ¶ 6 applies.”⁹ “This presumption is overcome if the claim itself recites sufficient structure or material for performing the claimed function or when it fails to recite a function associated with the means.”¹⁰ “Conversely, when an element of a claim does not use the term ‘means,’ treatment as a means-plus-function claim element is generally not appropriate.”¹¹ “However, when it is apparent that the element invokes purely functional terms, without the additional recital of specific structure or material for performing that function, the claim element may be a means-plus-function element, despite the lack of express ‘means’ language.”¹²

II. SCOPE OF A MEANS-PLUS-FUNCTION LIMITATIONS

A. *Literal Infringement*

Literal infringement of a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6 requires that the accused structure perform the *identical* function stated in the limitation. The patent owner first must show that the accused device performs the exact same function specified in the means-plus-function element.¹³ If the functions are not the same, then there is no literal

8. *Seal-Flex Inc. v. Athletic Track and Court Construction*, 50 U.S.P.Q. 2d (BNA) 1225, 1233 (Fed. Cir. 1999).

9. *Seal-Flex Inc.*, 50 U.S.P.Q. 2d (BNA) at 1233; *Sage Prod., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427 (Fed. Cir. 1997); *Greenberg v. Ethicon Endo-Surgery, Inc.*, 39 U.S.P.Q. 2d (BNA) 1783, 1785 (Fed. Cir. 1996).

10. *Seal-Flex Inc.*, 50 U.S.P.Q. 2d (BNA) at 1233; *Sage Prods.*, 126 F.3d at 1427-28; *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1574 (Fed. Cir. 1996).

11. *Seal-Flex Inc.*, 50 U.S.P.Q. 2d (BNA) at 1233; *Mas-Hamilton Group v. LaGard, Inc.*, 48 U.S.P.Q. 2d (BNA) 1010, 1016-18 (Fed. Cir. 1998).

12. *Seal-Flex Inc.*, 50 U.S.P.Q. 2d (BNA) at 1233; *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 530 (Fed. Cir. 1996).

13. *Mas-Hamilton*, 48 U.S.P.Q. 2d (BNA) at 1014 (“For literal infringement of a section 112, Para. 6 limitation, the fact-finder must determine whether the accused device performs an identical function to the one recited in the means-plus-function clause.”).

infringement.¹⁴ If the functions are the same, the patent owner must then show that the structure that performs the same function is identical to, or equivalent to, that disclosed in the specification.¹⁵ Not every structure that performs the claimed function infringes.¹⁶ “The literal scope of a properly construed means-plus-function limitation does not extend to all means for performing a certain function.”¹⁷

By the express terms of the statute, a means-plus-function claim is not limited to the specific structure disclosed in the specification.¹⁸ The statute guarantees the patentee some scope of equivalents to the structure disclosed specification. “Drafters of means-plus-function claim limitations are statutorily guaranteed a range of equivalents extending beyond that which is explicitly disclosed in the patent document itself.”¹⁹ “To interpret ‘means plus function’ limitations as limited to a particular means set forth in the specification would be to nullify the provision of § 112 requiring that the limitation *shall* be

14. *IMS Technology Inc. v. Haas Automation Inc.*, 54 U.S.P.Q. 2d (BNA) 1129, 1133 (Fed. Cir. 2000) (“If the identical function is performed, the next step is to determine whether the accused device uses the same structure, materials, or acts found in the specification, or their equivalents.”); *General Electric Co. v. Nintendo Co.*, 50 U.S.P.Q. 2d (BNA) 1910, 1913 (Fed. Cir. 1999) (“Where the function is different there is no literal infringement, but there can be infringement under the doctrine of equivalents.”); *Pennwalt Corp. v. Durand Wayland Inc.*, 4 U.S.P.Q. 2d (BNA) 1737, 1739 (Fed. Cir. 1987) (“If the required function is not performed exactly in the accused device, it must be borne in mind that section 112, paragraph 6, equivalency is not involved. Section 112, paragraph 6, plays no role in determining whether an equivalent function is performed by the accused device under the doctrine of equivalents.”).

15. *Pennwalt Corp.*, 4 U.S.P.Q. 2d (BNA) at 1739 (“Where the issue is raised, it is part of the ultimate burden of proof of the patent owner to establish, with respect to a claim limitation in means-plus-function form, that the structure in the accused device which performs that function is the same as or an equivalent of the structure disclosed in the specification.”); *Mas-Hamilton*, 48 U.S.P.Q. 2d (BNA) at 1014 (“If the identical function is performed, the fact-finder must then determine whether the accused device utilizes the same structure or materials as described in the specification, or their equivalents.”); *Cybor Corp. v. FAS Tech. Inc.*, 46 U.S.P.Q. 2d (BNA) 1169, 1184 (Fed. Cir. 1998) (“If the identical function is performed, the fact finder must then determine whether the accused device utilizes the same structure or materials as described in the specification, or their equivalents.”).

16. *Data Line Corp. v. Micro Tech., Inc.*, 1 U.S.P.Q. 2d (BNA) 2052, 2055 (Fed. Cir. 1987) (“Congress has provided this statute as a specific instruction on interpretation of this type of claim which otherwise might be held to be indefinite. Thus, the provision excludes some means which perform the specified function from literally satisfying the claim limitation.”).

17. *J&M Corp. v. Harley-Davidson Inc.*, 269 F.3d 1360, 1367 (Fed. Cir. 2001).

18. *Palumbo et al. v. Don-Joy Co.*, 226 U.S.P.Q. (BNA) 5, 8 (Fed. Cir. 1985) (“The statute expressly states that the patentee is entitled to a claim covering equivalents as well as the specified structure, material or acts.”); *Data Line Corp.*, 1 U.S.P.Q. 2d (BNA) at 2055 (“On the other hand, the provision precludes an interpretation that construes the means-plus-function limitation to cover only the means disclosed in the specification.”).

19. *McGinley v. Franklin Sports Inc.*, 60 U.S.P.Q. 2d (BNA) 1001, 1006 (Fed. Cir. 2001).

construed to cover the structure described in the specification *and* equivalents thereof.”²⁰ The scope of literal infringement is illustrated in Figure 2:

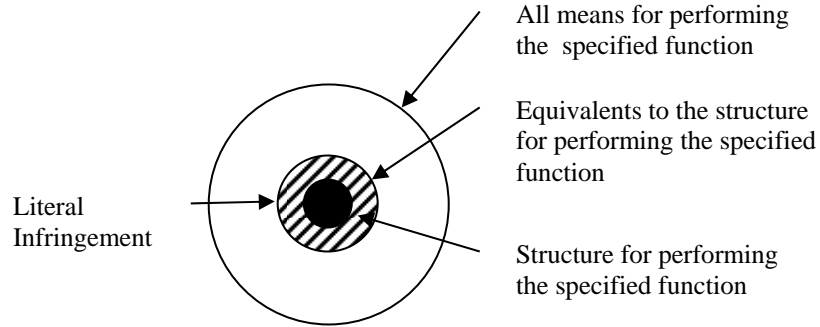


Figure 2 Literal Infringement Under 35 U.S.C. § 112, ¶ 6

As illustrated in Figure 2, there is a gap between all possible means for performing a specified function, and the coverage of a means-plus-function element. The inventor has some ability to close this gap by disclosing additional structures for performing the specified function. This is illustrated in Figure 3, where the addition of alternate structures for performing the specified function, and the resulting expansion of the equivalents to the disclosed structures, covers a larger portion of all possible means for performing the specified function.

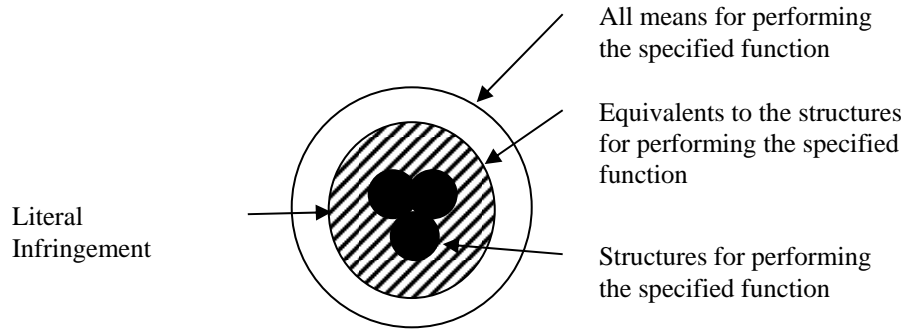


Figure 3 Literal Infringement Under 35 U.S.C. § 112, ¶ 6

20. *Palumbo*, 226 U.S.P.Q. (BNA) at 8 (emphasis added); *D.M.I., Inc. v. Deere & Co.*, 225 U.S.P.Q. (BNA) 236, 238 (Fed. Cir. 1985) (“To interpret ‘means plus function’ limitations as limited to a particular means set forth in the specification would nullify the provision of §112 requiring that the limitation shall be construed to cover the structure described in the specification and equivalents thereof.”).

Whether a structure is equivalent to the disclosed structure for purposes of 35 U.S.C. § 112, ¶ 6 is a question of fact.²¹ The statute provides no guidance as to what is equivalent, nor does the statutory history. However, “equivalent” is a term which has significance in other contexts in patent law—namely in the Doctrine of Equivalents. Thus, while decisions construing equivalents under 35 U.S.C. § 112, ¶ 6 state that equivalents under 35 U.S.C. § 112, ¶ 6 are different from equivalents under the Doctrine of Equivalents²² these decisions frequently borrow from Doctrine of Equivalents analyses.²³ The Supreme Court acknowledged distinctions between equivalents as used in 35 U.S.C. § 112, ¶ 6 and the Doctrine of Equivalents in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, stating that “equivalents under Section 112, Paragraph 6 is an application of the doctrine of equivalents in a restrictive role, narrowing the application of broad literal claim elements.”²⁴

“The fact that [*Graver Tank & Manufacturing Co. v. Linde Air Products Co.*]²⁵ preceded the 1952 Patent Act by two years and the last paragraph of §

21. *Asyst Technologies Inc. v. Empak Inc.*, 60 U.S.P.Q. 2d (BNA) 1567 (Fed. Cir. 2001); *Odetics Inc. v. Storage Tech. Corp.*, 51 U.S.P.Q. 2d (BNA) 1225, 1230 (Fed. Cir. 1999) (“Whether an accused device infringes a Section 112, Para. 6 claim as an equivalent is a question of fact.”); *King Instrument Corporation v. Otari Corp.*, 226 U.S.P.Q. (BNA) 402 (Fed. Cir. 1985) (“The scope of such equivalents is a question of fact, and once the accused device is found to be an equivalent under § 112 then literal infringement has properly been established.”); *Palumbo*, 226 U.S.P.Q. (BNA) at 8 (“Whether that accused device is a § 112 equivalent of the described embodiment is a question of fact.”).

22. *Al-Site Corp. v. VSI Int’l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1167 (Fed. Cir. 1999) (“This court has on several occasions explicated the distinctions between the term ‘equivalents’, found in Section 112, Para. 6 and the doctrine of equivalents.” (citing *Valmont Indus., Inc. v. Reinke Mfg. Co.*, 983 F.2. 1039, 1042-44 (Fed. Cir. 1993); *Chiuminatta Concrete Concepts v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1310; *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1222 (Fed. Cir. 1996); *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 1018-23 (Fed. Cir. 1998) (Plager, J., additional views) (Newman, J., additional views) (Michel, J., additional views)).

23. *IMS Technology Inc. v. Haas Automation Inc.*, 54 U.S.P.Q. 2d (BNA) 1129, 1138 (Fed. Cir. 2000) (“While acknowledging that there are differences between Section 112, Para. 6 and the doctrine of equivalents, this court on several occasions has indicated that the tests for equivalence under Section 112, Para. 6 and the doctrine of equivalents are closely related, involving similar analyses of insubstantiality of the differences.”); *De Graffenried v. U.S.*, 16 U.S.P.Q. 2d (BNA) 1321, 1339 (Ct. Cl. 1990) (“It is appreciated that applying the doctrine of equivalence is distinct from determining literal infringement of a claim using means plus function language under 35 U.S.C. §112. But in using the term ‘equivalents’ in Section 112, Congress intended to reference the *Graver Tank* concepts of equivalence.”); *Palumbo*, 226 U.S.P.Q. (BNA) 5, 8, n.4 (Fed. Cir. 1985) (“Although, as we pointed out in *D.M.I., Inc. v. Deere & Co.*, supra, there is a difference between a doctrine-of-equivalents analysis and a literal infringement analysis involving ‘equivalents’ under § 112, *Graver Tank* concepts of equivalents are relevant in any ‘equivalents’ determination.”).

24. 520 U.S. 17, 27 (1997).

25. 339 U.S. 605, 608 (1950).

112 was new, see Reviser's Note, 35 U.S.C. § 112, H.R. Rep. No. 1923, 82d Cong., 2d Sess. 19 (1952), suggests that the underlying principles of equivalents in *Graver Tank* could be used in a § 112 literal infringement analysis."²⁶ In cases such as *Kemco Sales Inc. v. Control Papers Co.*,²⁷ the Federal Circuit has applied a modified version of the *Graver Tank* famed tripartite function-way-result test: "Under a modified version of the function-way-result methodology described in [*Graver Tank*], two structures may be 'equivalent' for purposes of section 112, paragraph 6 if they perform the identical function, in substantially the same way, with substantially the same result."²⁸ In cases such as *Palumbo et al. v. Don Joy Co. et al.*,²⁹ the Federal Circuit has referenced the known interchangeability test from *Graver Tank*: "An important factor [in the determination of equivalents] is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was."³⁰ However, the known interchangeability test is not dispositive. As the Federal Circuit noted in *Chiuminatta Concrete Concepts Inc. v. Cardinal Industries Inc.*:³¹

Almost by definition, two structures that perform the same function may be substituted for one another. The question of known interchangeability is not whether both structures serve the same function, but whether it was known that one structure was an equivalent of another. Moreover, a finding of known

26. *Palumbo*, 226 U.S.P.Q. (BNA) at 11 n.4; *Accord Hale Fire Pump Co. v. Tokai*, 614 F.2d 1278 (C.C.P.A. 1980) (applying the *Graver Tank* concepts of equivalents in construing a "means" clause); *Lockheed Aircraft Corp. v. United States*, 553 F.2d 69 (Ct. Cl. 1977) (*Graver Tank* interchangeability test used in interpreting a "means plus function" claim for literal infringement purposes).

27. 54 U.S.P.Q. 2d (BNA) 1308 (Fed. Cir. 2000).

28. *Kemco Sales Inc.*, 54 U.S.P.Q. 2d (BNA) at 1315; *Smiths Indus. Med. Sys. Inc. v. Vital Signs Inc.*, 51 U.S.P.Q. 2d (BNA) 1415, 1422 n.4 (Fed. Cir. 1999) ("For an accused structure to be an equivalent under section 112, Para. ¶6, however, it must both have an equivalent structure and also perform the identical function as that recited in the claim language."). See also *Odetics Inc. v. Storage Tech. Corp.*, 51 U.S.P.Q. 2d (BNA) 1225, 1230 (Fed. Cir. 1999) ("As we noted above, such a limitation is literally met by structure, materials, or acts in the accused device that perform the claimed function in substantially the same way to achieve substantially the same result."); *IMS Tech.*, 54 U.S.P.Q. 2d (BNA) at 1129 ("Thus, a reduced version of the well-known tripartite test for the doctrine of equivalents has been applied in the Section 112, Para. 6 context to determine if the differences are insubstantial, i.e., after determining that the accused device performs the identical function, as required by statute, whether it performs the function in substantially the same way to achieve substantially the same result.").

29. *Palumbo*, 226 U.S.P.Q. (BNA) at 8.

30. *Id.* (citing *Graver Tank*, 339 U.S. at 609; *IMS Tech.*, 54 U.S.P.Q. 2d (BNA) at 1129 ("Evidence of known interchangeability between structure in the accused device and the disclosed structure has also been considered an important factor.")).

31. 145 F.3d 1303 (Fed. Cir. 1998).

interchangeability, while an important factor in determining equivalence, is certainly not dispositive.³²

As with the Doctrine of Equivalents, the ultimate focus of equivalents under 35 U.S.C. § 112, ¶ 6 is “insubstantial differences.”³³ “In order for an accused structure to literally meet a section 112, paragraph 6 means-plus-function limitation, the accused structure must either be the same as the disclosed structure or be a section 112, paragraph 6 ‘equivalent,’ *i.e.*, (1) perform the identical function and (2) be otherwise insubstantially different with respect to structure.”³⁴ In the context of section 112, an equivalent results from an insubstantial change that adds nothing of significance to the structure, material, or acts disclosed in the patent specification.³⁵

“In some cases, an analysis of insubstantial differences in the context of the invention results in a finding of equivalence under Section 112, Para. 6 even though two structures arguably would not be considered equivalent structures in other contexts, e.g., if performing functions other than the claimed function.”³⁶ “In any event, however, the term ‘equivalent’ in Section 112 should not be interpreted as being limited to structures that are ‘equivalent’ to the physical structure of the ‘means’ disclosed in a patent.”³⁷ “The literal wording of Section 112 contains no such requirement, it merely refers to structures ‘described in the specification and equivalents thereof.’ The statute does not state that the only possible ‘equivalents’ to the structures described in the specification are devices with equivalent physical structures.”³⁸ Limiting literal infringement of “means plus function” claims to objects that have physical structure equivalent to those objects specifically described in the patent specification would seriously undermine the usefulness of such claims.³⁹

32. *Chiuminatta*, 145 F.3d at 1309.

33. *Id.* (“The proper test is whether the differences between the structure in the accused device and any disclosed in the specification are insubstantial.”); *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1222 (Fed. Cir. 1996) (noting that equivalents under Section 112, Para. 6, and under the doctrine of equivalents both relate to insubstantial changes); *Valmont Indus., Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1043 (“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.”).

34. *Kemco Sales Inc. v. Control Papers Co.*, 54 U.S.P.Q. 2d (BNA) 1308, 1315 (Fed. Cir. 2000).

35. *Valmont Industries Inc.*, 25 U.S.P.Q. 2d (BNA) at 1455.

36. *IMS Tech. Inc. v. Haas Automation, Inc.*, 54 U.S.P.Q. 2d (BNA) 1129, 1139 (Fed. Cir. 2000).

37. *De Graffenried v. U.S.*, 16 U.S.P.Q. 2d (BNA) 1321, 1339 (Ct. Cl. 1990).

38. *IMS Tech.*, 54 U.S.P.Q. 2d at 1138. (“Indeed, the statute requires two structures to be equivalent, but it does not require them to be “structurally equivalent,” *i.e.*, it does not mandate an equivalency comparison that necessarily focuses heavily or exclusively on physical structure.”); *De Graffenried*, 16 U.S.P.Q. 2d (BNA) at 1339.

39. *Id.*

“Under such an interpretation, literal infringement of a claim may be avoided simply by replacing the structures specifically described in the patent specification with known functional equivalents that operate in substantially the same way but have fundamentally different structures.”⁴⁰

The “all elements” rule of the Doctrine of Equivalents does not apply to equivalents under 35 U.S.C. § 112, ¶ 6.⁴¹ A 35 U.S.C. § 112, ¶ 6 equivalent does not have to have an equivalent to each element of structure disclosed in the specification. “The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function.”⁴² Thus, “structures with different numbers of parts may still be equivalent under Section 35 U.S.C. § 112, ¶ 6, thereby meeting the claim limitation.”⁴³

The context of the invention should be considered when considering equivalence under 35 U.S.C. § 112, ¶ 6. “[W]hen in a claimed ‘means’ limitation the disclosed physical structure is of little or no importance to the claimed invention, there may be a broader range of equivalent structures than if the physical characteristics of the structure are critical in performing the claimed function in the context of the claimed invention.”⁴⁴

Timing is important in identifying equivalents under 35 U.S.C. § 112, ¶ 6. A structural equivalent under § 112 must have been available at the time of the issuance of the claim, and cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance.⁴⁵

As with any claim, in construing a means-plus-function claim, a number of factors may be considered, including the language of the claim, the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony.⁴⁶ “The specification is particularly important to the

40. *Id.*

41. *Odetics Inc. v. Storage Tech. Corp.*, 51 U.S.P.Q. 2d (BNA)1225, 1230 (Fed. Cir. 1999).

42. *Id.*

43. *Id.*

44. *IMS Tech. Inc. v. Haas Automation, Inc.*, 54 U.S.P.Q. 2d (BNA) 1225, 1138 (Fed. Cir. 2000).

45. *Al-Site Corp. v. VSI Int’l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1168 (Fed. Cir. 1999).

46. *King Instrument Corp. v. Otari Corp.*, 226 U.S.P.Q. (BNA) 402, 408 (Fed. Cir. 1985) (“As an aid for ascertaining the breadth of equivalents under § 112, a number of factors may be considered: the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony.”); *See also Palumbo et al. v. Don-Joy Co. et al.*, 226 U.S.P.Q. (BNA) 5, 8 (Fed. Cir. 1985) (“In construing a ‘means plus function’ claim, as also other types of claims, a number of factors may be considered, including the language of the claim, the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony Once such factors are weighed, the scope of the ‘means’ claim may be determined.”); *Intel Corp. v. Int’l Trade Comm’n*, 20 U.S.P.Q. 2d (BNA) 1161, 1179-80 (Fed.

construction of this limitation, because under section 112, paragraph 6, the corresponding structure described in the specification must be read into a means-plus-function limitation.”⁴⁷ “The court must construe the limitation to cover only the structures described in the specification or their equivalents.”⁴⁸

“Statements made during the prosecution relating to structures disclosed in the specification are certainly relevant to determining the meaning of the means-plus-function limitations of the claims at issue.”⁴⁹ The patentee can limit the scope of “equivalents” by disclaiming them in the application or during prosecution. Thus, when a patentee states that a particular structure does not perform the required function, it is not surprising that the patentee will not be permitted to claim that that structure is an “equivalent” for 35 U.S.C. § 112, ¶ 6 purposes.⁵⁰ “If an applicant specifically distinguishes a structure from what is claimed during prosecution, the applicant will be estopped from asserting a scope for the same claim that covers that structure.”⁵¹ This frequently occurs in the context of detailing shortcomings of the relevant prior art.⁵²

“Although under the doctrine of equivalents prior art restricts the extent to which patent protection can be equitably extended beyond the claims to cover an accused device, the policies underlying that concept are not served by

Cir. 1991) (“Thus, under section 112, paragraph 6, the aids for determining a structural equivalent to the structure disclosed in the patent specification are the same as those used in interpreting any other type of claim language, namely, the specification, the prosecution history, other claims in the patent, and expert testimony.”); *Davies v. U.S.*, 35 U.S.P.Q. 2d (BNA) 1027, 1031 (Ct.Cl. 1994) (“To construe a means-plus-function limitation such as this, the court may look to various factors, as it would in construing any other claim These factors include the claim itself, the specification, and the prosecution history.”).

47. *Davies*, 35 U.S.P.Q. 2d (BNA) at 1027.

48. *Id.*

49. *Alpex Computer Corp. v. Nintendo Co. Ltd.*, 40 U.S.P.Q. 2d (BNA) 1667, 1672 (Fed. Cir. 1997).

50. *Signtech USA Ltd. v. Vutek Inc.*, 50 U.S.P.Q. 2d (BNA) 1372, 1375 (Fed. Cir. 1999) (“Furthermore, by stating that the accused structure was ‘incapable’ of achieving the desired results of the invention, the patentee expressly excluded it as an equivalent of the disclosed structure.”).

51. *Alpex Computer Corp.*, 40 U.S.P.Q. 2d (BNA) at 1672.

52. *Ballard Med. Prod. v. Allegiance Healthcare Corp.*, 60 U.S.P.Q. 2d (BNA) 1493 (Fed. Cir. 2001) (“An inventor may use the specification and prosecution history to define what his invention is and what it is not—particularly when distinguishing the invention over prior art. ‘[J]ust as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under § 112, 6.’”) (citing *Cybor Corp. v. FAS Tech., Inc.*, 46 U.S.P.Q. 2d (BNA) 1169, 1175 (Fed. Cir. 1998)); *Signtech USA*, 50 U.S.P.Q. 2d (BNA) at 1372 (statements that a prior art structure was “incapable” of achieving the desired results of the invention held to be an “explicit disavowal of prior art structure, which was properly used in construing the means-plus-function claims.”).

restricting claim limitations in the same manner.”⁵³ Thus, 35 U.S.C. § 112, ¶ 6 equivalents are generally not limited by the prior art.⁵⁴ “Even if the prior art discloses the same or an equivalent structure, the claim will not be limited in scope thereby. It is only necessary to determine what is an equivalent to the structure disclosed in the specification which is performing the function at issue.”⁵⁵

B. Infringement Under the Doctrine of Equivalents

In addition to protection against literal infringement, in appropriate cases, even a means-plus-function limitation appears to be entitled to expansion under the Doctrine of Equivalents. The Doctrine of Equivalents can expand the scope of a means-plus-function limitation in two ways. First, while equivalents under 35 U.S.C. § 112, ¶ 6 is limited to structures that perform the *identical* function, the Doctrine of Equivalents can encompass structures that perform *substantially the same* function. This is illustrated in Figure 4:

53. *Intel Corp. v. Int’l Trade Comm’n*, 20 U.S.P.Q. 2d (BNA) 1161, 1179 (Fed. Cir. 1991).

54. *Intel Corp.*, 20 U.S.P.Q. 2d (BNA) at 1179 (“It is not necessary to consider the prior art in applying section 112, paragraph 6. Even if the prior art discloses the same or an equivalent structure, the claim will not be limited in scope thereby. It is only necessary to determine what is an equivalent to the structure disclosed in the specification which is performing the function at issue.”); *Alpex Computer Corp. v. Nintendo Co. Ltd.*, 40 U.S.P.Q. 2d (BNA) 1667, 1672 n.7 (Fed. Cir. 1997) (“The claims at issue contain limitations expressed in “means-plus-function” format. The court’s ruling is consistent with the rule that [i]t is not necessary to consider the prior art in applying section 112, paragraph 6. Even if the prior art discloses the same or an equivalent structure, the claim will not be limited in scope thereby.”) (citations omitted).

55. *Intel Corp.*, 20 U.S.P.Q. 2d (BNA) at 1179.

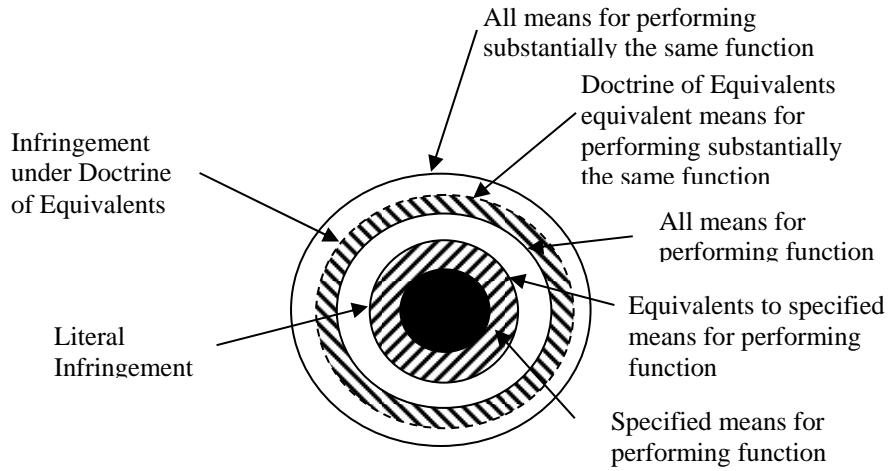


FIGURE 4 LITERAL INFRINGEMENT OF MEANS-PLUS FUNCTION ELEMENT UNDER THE DOCTRINE OF EQUIVALENTS

The Doctrine of Equivalents does not extend to structures that perform the identical function, but are not equivalents for purposes of 35 U.S.C. § 112, ¶ 6 unless the accused structures did not exist at the time the patent issued. This is shown in Figure 5:

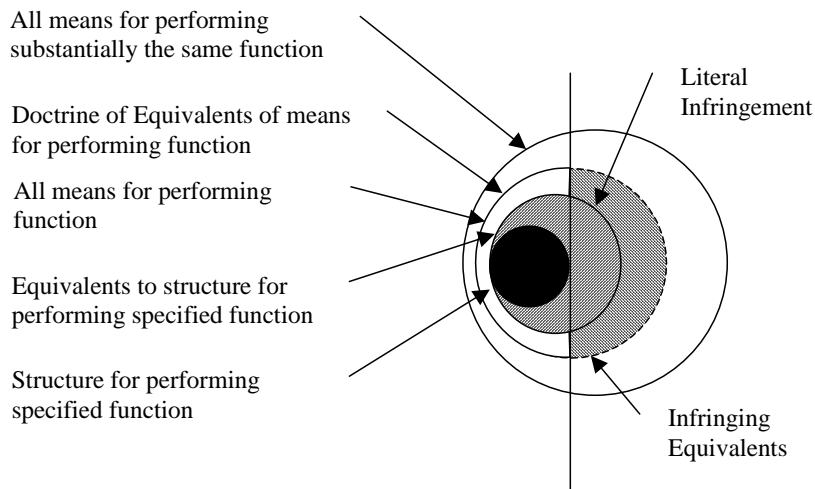


Figure 5 Literal Infringement of means-plus function element under the Doctrine of Equivalents

“If an accused structure is not a section 112, paragraph 6 equivalent of the disclosed structure because it does not perform the identical function of that disclosed structure and hence does not literally infringe, it may nevertheless still be an ‘equivalent’ under the doctrine of equivalents.”⁵⁶ “A key feature that distinguishes ‘equivalents’” under section 112, paragraph 6 and ‘equivalents’ under the doctrine of equivalents is that section 112, paragraph 6 equivalents must perform the identical function of the disclosed structure, . . . while equivalents under the doctrine of equivalents need only perform a substantially similar function”⁵⁷ “Furthermore, under Section 112, Para. 6, the accused device must perform the identical function as recited in the claim element while the doctrine of equivalents may be satisfied when the function performed by the accused device is only substantially the same.”⁵⁸ “Thus, if one applies the traditional function-way-result test, often referred to as the tripartite test, the accused structure must perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the disclosed structure.”⁵⁹ The tripartite test developed for the Doctrine of Equivalents, thus, is not wholly transferable to an analysis of equivalents under 35 U.S.C. § 112, ¶ 6 resulting from the functional identity requirement, and requires the application of a modified function-way-result analysis.⁶⁰

Further, because the “way” and “result” prongs are the same under the section 112, paragraph 6 and Doctrine of Equivalents tests, a structure failing the section 112, paragraph 6 test under either or both prongs also fails the Doctrine of Equivalents test for the same reasons.⁶¹ Therefore, when a court determines that the “way” or “result” is substantially different under a section 112, paragraph 6 equivalents analysis, a patentee cannot prevail under the Doctrine of Equivalents.⁶²

“However, when a finding of noninfringement under 35 U.S.C. § 112, paragraph 6, is premised on an absence of identical function, then infringement under the doctrine of equivalents is not thereby automatically precluded.”⁶³ “That is because infringement under the doctrine of equivalents may be premised on the accused and the patented component having substantially the

56. *Kemco Sales Inc. v. Control Papers Co.*, 54 U.S.P.Q. 2d (BNA) 1308, 1315 (Fed. Cir. 2000).

57. *Kemco Sales Inc.*, 54 U.S.P.Q. 2d (BNA) at 1316.

58. *Al-Site Corp. v. VSI Int’l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1168 (Fed. Cir. 1999).

59. *Kemco Sales Inc.*, 54 U.S.P.Q. 2d (BNA) at 1316.

60. *Id.* (citing *Odetics Inc. v. Storage Tech. Corp.*, 51 U.S.P.Q. 2d (BNA) 1225, 1229-30 (Fed. Cir. 1999)).

61. *Id.*

62. *Id.*

63. *Interactive Pictures Corp. v. Infinite Pictures Inc.*, 61 U.S.P.Q. 2d (BNA) 1152, 1160 (Fed. Cir. 2001).

same function, whereas structure corresponding to the disclosed limitation in a means-plus-function clause must perform the identical function.”⁶⁴ Thus, a patent claim may be infringed if an element of the infringing device is only substantially the same as a limitation of the patent claim.⁶⁵

“One important difference between Section 112, Para. 6 and the doctrine of equivalents involves the timing of the separate analyses for an “insubstantial change.”⁶⁶ “As this court has recently clarified, a structural equivalent under Section 112 must have been available at the time of the issuance of the claim.”⁶⁷ “An equivalent structure or act under Section 112 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance.”⁶⁸ “An ‘after arising equivalent’ infringes, if at all, under the doctrine of equivalents.”⁶⁹ Therefore, a finding that a component of an accused product is not a structure “equivalent” to the corresponding structure of a means-plus-function limitation for purposes of literal infringement analysis precludes a finding that the same structure is equivalent for purposes of the Doctrine of Equivalents, unless the component constitutes technology arising after the issuance of the patent.⁷⁰ The Doctrine of Equivalents, thus, “might come into play to determine infringement of a means-plus-function claim element if the accused device features technology that has arisen since the time of the patent issuance.”⁷¹ In such a case, the insubstantial difference analysis determines infringement and requires a comparison of the structure corresponding to the function (i.e., the literal meaning of the claim element) with the accused structure.⁷²

“Thus, the temporal difference between patent issuance and infringement distinguish an equivalent under Section 112 from an equivalent under the doctrine of equivalents.”⁷³ “In other words, an equivalent structure or act

64. *Interactive Pictures Corp.*, 61 U.S.P.Q. 2d (BNA) at 1160.

65. *Id.* at 1161 (citing *Warner-Jenkinson Co. Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997)). The court has upheld determinations of equivalence on the ground that hardware and software implementations of a component of an invention are interchangeable substitutes, even though such a substitution would require ancillary changes in affected circuitry and packaging. Thus, rather than focusing on physical or electronic compatibility, the known interchangeability test looks to the knowledge of a skilled artisan to see whether that artisan would contemplate the interchange as a design choice. *Id.* (citing *Overhead Door Corp. v. Chamberlain Group Inc.*, 194 F.3d 1261, 1269-70 (Fed. Cir. 1999)).

66. *Al-Site Corp. v. VSI Int'l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1168 (Fed. Cir. 1999).

67. *Id.*

68. *Id.*

69. *Id.*

70. *Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 61 U.S.P.Q. 2d (BNA) 1152, 1160 (Fed. Cir. 2001).

71. *Ishida Co. Ltd. v. Taylor*, 55 U.S.P.Q. 2d (BNA) 1449, 1453 (Fed. Cir. 2000).

72. *Ishida Co. Ltd.*, 55 U.S.P.Q.2d (BNA) at 1453.

73. *Al-Site Corp. v. VSI Int'l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1168 (Fed. Cir. 1999).

under Section 112 for literal infringement must have been available at the time of patent issuance while an equivalent under the doctrine of equivalents may arise after patent issuance and before the time of infringement.”⁷⁴ “An ‘after-arising’ technology could thus infringe under the doctrine of equivalents without infringing literally as a Section 112, Para. 6 equivalent.”⁷⁵

Additionally, “[a]lthough Section 112, Para. 6 and the doctrine of equivalents are different in purpose and administration, ‘a finding of a lack of literal infringement for lack of equivalent structure under a means-plus-function limitation may preclude a finding of equivalence under the doctrine of equivalents.’”⁷⁶ “Both equivalence analyses, after all, apply ‘similar analyses of insubstantiality of the differences.’”⁷⁷ “This confluence occurs because infringement requires, either literally or under the doctrine of equivalents, that the accused product or process incorporate each limitation of the claimed invention.”⁷⁸ “Therefore, if an accused product or process performs the identical function and yet avoids literal infringement for lack of a Section 112, Para. 6 structural equivalent, it may well fail to infringe the same functional element under the doctrine of equivalents.”⁷⁹ “This same reasoning may be applied in reverse in certain circumstances. Where, as here, there is identity of function and no after-arising technology, a means-plus-function claim element that is found to be infringed only under the doctrine of equivalents due to a jury instruction failing to instruct on Section 112, Para. 6 structural equivalents is also literally present in the accused device.”⁸⁰ However, “where the claim of infringement under section 112 paragraph 6 fails on the ground that the accused device is not equivalent to structure disclosed in the specification, the doctrine of equivalents is available only if, unlike this case, the accused device represents new technology developed after the issuance of the patent.”⁸¹

Thus, 35 U.S.C. § 112, ¶ 6 recites a mandatory procedure for interpreting the meaning of a means or step-plus-function claim element, and specifically that these claim limitations will be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.⁸² Further, an equivalent under 35 U.S.C. § 112, ¶ 6 informs the claim meaning for a literal infringement analysis. The doctrine of equivalents, on the

74. *Al-Site Corp.*, 50 U.S.P.Q. 2d (BNA) at 1168.

75. *Id.*

76. *Id.* (citing *Chiuminatta Concrete Concepts Inc. v. Cardinal Indus. Inc.*, 145 F.3d 1303, 1311 (Fed. Cir. 1998)).

77. *Id.*

78. *Id.* at 1168.

79. *Al-Site Corp.*, 50 U.S.P.Q. 2d (BNA) at 1168.

80. *Id.* at 1168-69.

81. *Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 60 U.S.P.Q. 2d (BNA) 1493, 1502 (Fed. Cir. 2001).

82. *Al-Site Corp.* 50 U.S.P.Q. 2d (BNA) at 1168.

other hand, extends enforcement of claim terms beyond their literal reach in the event “there is ‘equivalence’ between the elements of the accused product or process and the claimed elements of the patented invention.”⁸³

Section 112, paragraph 6 procedures restrict a functional claim element’s “broad literal language . . . to only those means that are ‘equivalent’ to the actual means shown in the patent specification.”⁸⁴ Section 112, paragraph 6 also restricts the scope of a functional claim limitation as part of a literal infringement analysis.⁸⁵ Therefore, under 35 U.S.C. § 112, ¶ 6, the accused device must perform the identical function as recited in the claim element while the Doctrine of Equivalents may be satisfied when the function performed by the accused device is only substantially the same.⁸⁶

Again, “[b]ecause the ‘way’ and ‘result’ prongs are the same under both the section 112, paragraph 6 and doctrine of equivalents tests, a structure failing the Section 112, Paragraph 6 test under either or both prongs must fail the doctrine of equivalents test for the same reason(s).”⁸⁷

On several occasions the statutory equivalence under 35 U.S.C. § 112, ¶ 6 and the judicial Doctrine of Equivalents have been compared.⁸⁸ On these occasions, while acknowledging that there are differences between 35 U.S.C. § 112, ¶ 6 and the Doctrine of Equivalents, the courts have indicated that the tests for equivalence under section 112, paragraph 6 and the Doctrine of Equivalents are “closely related,” involving “similar analyses of insubstantiality of the differences.”⁸⁹ “Thus, a reduced version of the well-known tripartite test for the doctrine of equivalents has been applied in the Section 112, Para. 6 context to determine if the differences are insubstantial, i.e., after determining that the accused device performs the identical function, as required by statute, whether it performs the function in substantially the same way to achieve substantially the same result.”⁹⁰ “Evidence of known

83. *Id.* (citing *Warner-Jenkinson Co. Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997)).

84. *Id.* (citing *Warner-Jenkinson*, 520 U.S. at 28).

85. *Id.* (citing *Warner-Jenkinson*, 520 U.S. at 28).

86. *Id.* at 1168.

87. *Kemco Sales Inc. v. Control Papers Co.*, 54 U.S.P.Q. 2d (BNA) 1308, 1316 (Fed. Cir. 2000).

88. *IMS Tech. Inc. v. Haas Automation Inc.*, 54 U.S.P.Q. 2d (BNA) 1129, 1138 (Fed. Cir. 2000); *See also, e.g.*, *Odetics Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1267 (Fed. Cir. 1999); *Al-Site Corp.*, 50 U.S.P.Q. 2d (BNA) at 1167-68; *Chiuminatta Concrete Concepts Inc. v. Cardinal Indus. Inc.*, 145 F.3d 1303, 1310 (Fed. Cir. 1998); *Cybor Corp. v. FAS Tech.*, 138 F.3d 1448, 1467 (Fed. Cir. 1998) (en banc) (Mayer, C.J., concurring); *Alpex Computer Corp. v. Nintendo Co.*, 40 U.S.P.Q. 2d (BNA) 1667, 1673-74 (Fed. Cir. 1996); *Valmont Indus. Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1042-44 (Fed. Cir. 1993).

89. *IMS Tech., Inc.*, 54 U.S.P.Q. 2d (BNA) at 1138 (citing *Chiuminatta*, 145 F.3d at 1310).

90. *Id.*

interchangeability between structure in the accused device and the disclosed structure has also been considered an important factor.”⁹¹

In light of the similarity of the tests for equivalence under 35 U.S.C. § 112, ¶ 6 and the doctrine of equivalents, the context of the invention may be considered when performing both a section 112, paragraph 6 equivalence analysis and a doctrine of equivalents determination.⁹² “As a result, two structures that are equivalent in one environment may not be equivalent in another.”⁹³ “More particularly, when in a claimed ‘means’ limitation the disclosed physical structure is of little or no importance to the claimed invention, there may be a broader range of equivalent structures than if the physical characteristics of the structure are critical in performing the claimed function in the context of the claimed invention.”⁹⁴ “Thus, a rigid comparison of physical structures in a vacuum may be inappropriate in a particular case. Indeed, the statute requires two structures to be equivalent, but it does not require them to be ‘structurally equivalent,’ i.e., it does not mandate an equivalency comparison that necessarily focuses heavily or exclusively on physical structure.”⁹⁵ “In some cases, an analysis of insubstantial differences in the context of the invention results in a finding of equivalence under Section 112, Paragraph 6 even though two structures arguably would not be considered equivalent structures in other contexts, e.g., if performing functions other than the claimed function.”⁹⁶

However, the similar analysis of equivalents under 35 U.S.C. § 112, ¶ 6 and the Doctrine of Equivalents does not, however, lead to the conclusion that a component-by-component analysis of structural equivalence under 35 U.S.C. § 112, ¶ 6 is performed.⁹⁷ Although, each element contained in a patent claim is material to determining the scope of the patented invention.⁹⁸ Thus, a claim limitation written in 35 U.S.C. § 112, ¶ 6 form, like all claim limitations, must be met, literally or equivalently, for a finding of infringement.⁹⁹ Such a limitation is literally met by structure, materials, or acts in the accused device that perform the claimed function in substantially the same way to achieve substantially the same result.¹⁰⁰ The individual components, if any, of an overall structure that corresponds to the claimed function are not claim

91. *Id.*

92. *Id.*

93. *Id.*

94. *IMS Tech., Inc.*, 54 U.S.P.Q. 2d (BNA) at 1138.

95. *Id.*

96. *Id.*

97. *Odetics Inc. v. Storage Tech. Corp.*, 51 U.S.P.Q. 2d (BNA) 1225, 1229-30 (Fed. Cir. 1999).

98. *Odetics Inc.*, 51 U.S.P.Q. 2d (BNA) at 1229-30.

99. *Id.*

100. *Id.*

limitations.¹⁰¹ Rather, the claim limitation is the overall structure corresponding to the claimed function.¹⁰² This is why structures with different numbers of parts may still be equivalent under 35 U.S.C. §112, ¶6, thereby meeting the claim limitation.¹⁰³ The appropriate degree of specificity is provided by the statute itself and the relevant structure is that which ‘corresponds’ to the claimed function.¹⁰⁴ Thus, deconstruction or parsing (i.e., component-by-component analysis) is improper in a 35 U.S.C. §112, ¶6 analysis, unlike the Doctrine of Equivalents analysis.¹⁰⁵

“The doctrine of equivalents has a different purpose and application than section 112 . . . [and] prevents a copyist from evading patent claims with insubstantial changes.”¹⁰⁶ “An equivalent under the doctrine of equivalents results from an insubstantial change which, from the perspective of one of ordinary skill in the art, adds nothing of significance to the claimed invention.”¹⁰⁷ “An equivalent under the doctrine of equivalents, though not literally meeting the claims, still infringes the patent.”¹⁰⁸ “The doctrine of equivalents involves the familiar three-part inquiry . . . : an accused device [that] performs substantially the same overall function or work, in substantially the same way, to obtain substantially the same overall result as the claimed invention.”¹⁰⁹

Thus, equivalents under the Doctrine of Equivalents should not be confused with the use of the word “equivalent” in Section 112.¹¹⁰ “In applying the doctrine of equivalents, the fact finder must determine the range of equivalents to which the claimed invention is entitled, in light of the prosecution history, the pioneer-non-pioneer status of the invention, and the prior art. It must then be determined whether the entirety of the accused device or process is so ‘substantially the same thing, used in substantially the same

101. *Id.*

102. *Id.*

103. *Odetics Inc.*, 51 U.S.P.Q. 2d (BNA) at 1229-30.

104. *Id.*

105. *Id.* See also *Caterpillar Inc. v. Deere & Co.*, 56 U.S.P.Q. 2d (BNA) 1305, 1310 (Fed. Cir. 2000). (“The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function.” *Odetics Inc.*, 51 U.S.P.Q. 2d (BNA) at 1230. Therefore, the district court conducted an impermissible component-by-component analysis to determine that no reasonable jury could find structural equivalence.)

106. *Valmont Indus., Inc. v. Reinke Mfg. Co., Inc.*, 983 F.2d 1039, 1043 (Fed. Cir. 1993).

107. *Valmont Indus., Inc.* 983 F.2d at 1043.

108. *Id.*

109. *Id.* at 1039 (citing *Penwalt Corp. v. Durand Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987)).

110. *Intel Corp. v. U.S. Int’l Trade Comm.*, 20 U.S.P.Q. 2d (BNA) 1161, 179 (Fed. Cir. 1991).

way, to achieve substantially the same result' as to fall within that range"¹¹¹ as opposed to "in a 'means plus function' analysis wherein the sole question is whether the single means in the accused device which performs the function stated in the claim is the same as or an equivalent of the corresponding structure described in the patentee's specification as performing that function."¹¹² Further, "prior art is considered in the context of a doctrine of equivalents analysis to ensure that "the patent holder does not obtain a *broader* right to exclude under that doctrine than could have been obtained from the patent office."¹¹³ "Although under the doctrine of equivalents prior art restricts the extent to which patent protection can be equitably extended beyond the claims to cover an accused device, the policies underlying that concept are not served by restricting claim *limitations* in the same manner. Claim limitations may, and often do, read on the prior art, particularly in combination patents."¹¹⁴

C. An Equivalent of an Equivalent

The question, as raised by Judge Plager in *Dawn Equipment Co. v. Kentucky Farms Inc.*, is there "something called an equivalent of an equivalent?"¹¹⁵ Although the Federal Circuit has addressed the difference between analysis of equivalents under a 35 U.S.C. § 112, ¶ 6 framework and under a Doctrine of Equivalents framework (i.e., temporal difference), the Court has not specifically addressed whether an equivalent of an equivalent may be found. The Court has suggested that "title 35 will not produce an 'equivalent of an equivalent' by applying both Section 112, Para. 6 and the doctrine of equivalents to the structure of a given claim element."¹¹⁶ However, there appears to be no clear answer to this question, and as Judge Plager stated in *Dawn Equipment*, "I write additionally because I find the law in this area confused and confusing."¹¹⁷

The authors submit that an equivalent of an equivalent should be allowed. As discussed herein, many federal circuit cases have held that the test for an equivalent under 35 U.S.C. § 112, ¶ 6 and under the Doctrine of Equivalents, although similar, are different. It is also well settled that each of these tests may be applied to the same means-plus-function claim to determine an equivalent. Therefore, the authors submit that if a patentee is *entitled* to equivalents under 35 U.S.C. § 112, ¶ 6, and a determination under the Doctrine

111. *Intel Corp.*, 20 U.S.P.Q. 2d (BNA) at 1179 (quoting *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950)).

112. *Id.*

113. *Id.*

114. *Id.*

115. 140 F.3d 1009, 1020 (Fed. Cir. 1998).

116. *Al-Site Corp. v. VSI Int'l Inc.*, 50 U.S.P.Q. 2d (BNA) 1161, 1177 n.2 (Fed. Cir. 1999).

117. *Dawn Equipment*, 140 F.3d at 1018.

of Equivalents requires a determination of whether an accused device has an equivalent structure, such a determination must necessarily include a determination of whether the equivalent structure under the Doctrine or Equivalents is equivalent to not only the various embodiments of the disclosed invention, but equivalents thereof as guaranteed and required by section 112, paragraph 6. To do otherwise would frustrate Congress' intent to allow a patentee to use means-plus-function claiming to encompass equivalents thereof.

Thus, the authors suggest that this is another consideration for claim drafters when drafting claims.

D. Application of 35 U.S.C. § 112, ¶ 6 to "Step For" Recitations

"An element of 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."¹¹⁸ This statutory provision applies to a combination of mechanical elements, as well as to a "combination of . . . steps in a process claim."¹¹⁹ As discussed herein, "the use of the word 'means' to describe a claim limitation 'gives rise to a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.'"¹²⁰ "Similarly, in the context of method claims, the use of the term 'steps for' signals the drafter's intent to invoke §112, paragraph 6."¹²¹ Section 112, paragraph 6 only applies, however, 'when steps plus function *without acts* are present.'¹²²

Similar to using 'means for' language, '[w]here the claim drafter has not signaled an intent to invoke § 112, paragraph 6 by using the 'steps for' language, [the courts] are unwilling to resort to that provision to constrain the scope of coverage of a claim limitation without a showing that the limitation contains nothing that can be construed as an act.'¹²³ This is because "[m]ethod claims are commonly drafted using the phrase 'steps of' followed by a list of the steps comprising the method claimed."¹²⁴ Thus, "[a]n application of § 112, paragraph 6 [in any case where 'steps of' is used] would render the scope of coverage of these method claims uncertain and disrupt patentees' settled

118. *Masco Corp. v. U.S.*, 303 F.3d 1316, 1326 (Fed. Cir. 2002).

119. *Masco Corp.*, 303 F.3d at 1326 (citing *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1582, (Fed. Cir. 1997)).

120. *Masco Corp.*, 303 F.3d at 1326 (quoting *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427 (Fed. Cir. 1997)).

121. *Id.*

122. *Id.* (citing *O.I. Corp.*, 115 F.3d at 1583 (Fed. Cir. 1997)) (emphasis added).

123. *Masco Corp.*, 303 F.3d at 1327.

124. *Id.*

expectations regarding the scope of their claims.”¹²⁵ Therefore, for a method claim, § 112, paragraph 6 is implicated only when steps-plus-function are recited without acts and “[m]erely claiming a step by itself, or a series of steps, without recital of a function does not trigger the application of § 112, paragraph 6.”¹²⁶

It should be noted that “method claims that ‘parallel,’ or have limitations similar to, apparatus claims admittedly subject to section 112, paragraph 6 are not necessarily subject to the requirements of § 112, paragraph 6.”¹²⁷ A review of each claim must be performed to determine if the specific claim falls within the scope of section 112, paragraph 6.¹²⁸ Further, a statement of purpose in the preamble to a claim does not necessarily provide the necessary function for a step-plus-function form.¹²⁹

Thus, with “the parallel format of [35 U.S.C. § 112, ¶ 6], a similar analysis applies to [both means-plus] and step-plus-function claim elements.”¹³⁰ For example, certain phrases may trigger a presumption that a claim is to be construed under 35 U.S.C. § 112, ¶ 6.¹³¹ However, other recitations of the element in the claim, “such as the recitation of a specific act, may overcome the presumption.”¹³²

Further, “claim interpretation focuses on what the claim limitation accomplishes, i.e., it’s underlying function, in relation to what is accomplished by the other limitations and the claim as a whole.”¹³³ “If a claim element recites only an underlying function without acts for performing it, then Section 112, Para. 6 applies even without express step-plus-function language.”¹³⁴ A similar analysis for determining whether Section 112, Paragraph. 6 is invoked thereby applies to means-plus-function claims and step-plus-function claims. That is, “[I]f the claim element uses the phrase ‘step for,’ then Section 112, Para. 6 is presumed to apply.”¹³⁵ Further, and consistent with analysis of means-for recitations under 35 U.S.C. § 112, ¶ 6, step-for recitation covers “only the specific acts recited in the specification for performing that function, and equivalent acts.”¹³⁶ Further, it should be noted that 35 U.S.C. § 112, ¶ 6 is “drafted with the permissive ‘may’ [modifying the step-plus language and

125. *Id.*

126. *Epcos Gas Sys., Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1028 (Fed. Cir. 2002).

127. *Id.*

128. *Id.*

129. *Id.*

130. *Seal-Flex, Inc. v. Athletic Track and Court Construction*, 50 U.S.P.Q. 2d (BNA) 1225, 1233 (Fed. Cir. 1999).

131. *Id.*

132. *Id.*

133. *Seal-Flex Inc.*, 50 U.S.P.Q. 2d (BNA) at 1234 (Rader, J., concurring).

134. *Id.*

135. *Id.*

136. *Id.*

therefore] the statute does not require that steps in a method claim be drafted in step-plus-function form, but rather allows for that form.”¹³⁷ Thus, “[m]erely claiming a step without recital of a function is not analogous to a means plus a function.”¹³⁸

III. ADVANTAGES OF MEANS-PLUS-FUNCTION CLAIMING

A. Convenience

Sometimes an element of an invention is easier to describe by what it does than what it is. “By specifically authorizing the use of ‘means plus function’ terminology, Congress apparently recognized that such terminology can be a highly efficient way to draft a patent claim, *i.e.*, to define the metes and bounds of the patentee’s invention.”¹³⁹ As the Federal Circuit stated in *O.I. Corporation v. Tekmar Co.*, “Section 112, Para. 6, as is well-documented, was intended to permit use of means expressions without recitation of all the possible means that might be used in a claimed apparatus.”¹⁴⁰ While this convenience comes at a price,¹⁴¹ means-plus-function claiming nonetheless provides a simple way to protect the structures disclosed in the specification, and some range equivalents beyond what was actually disclosed.

B. Narrow Scope

The Federal Circuit has said that the scope of a means-plus-function element “is sharply limited to the structure disclosed in the specification and its equivalents.”¹⁴² The very feature that has driven away most practitioners—narrow scope—is a principal benefit of section 112, paragraph 6. In an infringement suit, the patentee wants the narrowest claim that is still infringed. Comprehensively claiming an invention includes drafting claims of varying scope, and to the extent that a means-plus-function element is narrowly construed, it is more likely to survive a validity challenge.

137. *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997).

138. *O.I. Corp.*, 115 F.3d at 1583.

139. *De Graffenried v. U.S.*, 16 U.S.P.Q. 2d (BNA) 1321, 1339 (Ct. Cl. 1990).

140. *O.I. Corp.*, 115 F.3d at 1583. *See also* *B. Braun Med. Inc. v. Abbott Lab.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (referring to the convenience of 35 U.S.C. § 112, ¶ 6).

141. “The price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof.” *O.I. Corp.*, 115 F.3d at 1583.

142. *J&M Corp. v. Harley-Davidson Inc.*, 269 F.3d 1360, 1367 (Fed. Cir. 2001).

C. *Lack of Clarity*

The difficulty¹⁴³ in construing means-plus-function elements is sometimes cited as a reason to avoid them. However, given the presumption of validity, uncertainty is at least advantageous to the patent owner as an accused infringer and is probably more advantageous to the patent owner. A claim of uncertain scope can be a powerful deterrent to a competitor.

D. *Safety Net for Disclosed but Unclaimed Subject Matter*

Subject matter that is disclosed in an issued patent, but not covered by the claims cannot be recaptured by the Doctrine of Equivalents. However, a means-plus-function element is construed to cover the structure disclosed in the specification, and if multiple embodiments are disclosed, it is deemed to cover those multiple embodiments. Thus, judicious use of means-plus-function elements can catch subject matter disclosed in the specification, but not otherwise expressly claimed.

When a patent drafter discloses but does not claim subject matter, the unclaimed subject matter is dedicated to the public.¹⁴⁴ “Application of the doctrine of equivalents to recapture subject matter deliberately left unclaimed . . . ‘conflict[s] with the primacy of the claims in defining the scope of the patentee’s exclusive right.’”¹⁴⁵ “[A] patentee cannot narrowly claim an invention to avoid prosecution scrutiny by the PTO, and then, after patent issuance, use the doctrine of equivalents to establish infringement because the specification discloses equivalents.”¹⁴⁶ However, when drafting claims in a means-plus-function format, the claims are more likely construed to be narrow and allowable during prosecution, while the scope of these same claims are entitled to equivalents under 35 U.S.C. § 112, ¶ 6 during an infringement analysis. Thus, this type of claiming essentially captures equivalents of the subject matter disclosed but not claimed.

Further, “[a] patentee who inadvertently fails to claim disclosed subject matter, however, is not left without remedy [and] within two years from the grant of the original patent . . . may file a reissue application [in an] attempt to [broaden] the scope of the original claims to include the disclosed but previously unclaimed subject matter.”¹⁴⁷ This may include the addition of mean-plus-function claims, and the authors suggest such claims be added if not included in the original application. “In addition, a patentee can file a separate

143. Even federal circuit judges “find the law in this area confused and confusing.” *See supra* text accompanying note 117.

144. *Johnson & Johnston Assoc. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1054 (Fed. Cir. 2002).

145. *Johnson*, 285 F.3d at 1054 (citing *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1424 (Fed. Cir. 1997)).

146. *Id.*

147. *Id.*

application claiming the disclosed [but previously unclaimed] subject matter” (e.g., filing a continuation application claiming the disclosed subject matter before all applications in the chain of applications issue).¹⁴⁸

E. Preservation of Protection of “Equivalents”

In the wake of *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*,¹⁴⁹ the application of the Doctrine of Equivalents to limitations added by amendment is uncertain at best. However, 35 U.S.C. § 112, ¶ 6 entitles the owner of a claim with a means-plus-function element to coverage of not just what is disclosed in the specification, but to “equivalents thereof,” without resort to the Doctrine of Equivalents. “Moreover, the extent of equivalents must be interpreted in light of the disclosure of the invention in the specification, as a whole, as well as the prosecution history.”¹⁵⁰ In *J&M Corporation v. Harley-Davidson Inc.*, the patent applicants determined that their patent failed to claim the full subject matter to which they were entitled, and sought a reissue patent to more broadly claim their invention.¹⁵¹ The examiner rejected the new broader claims based upon a failure of the specification to support the subject matter of the claims.¹⁵² The examiner further stated that the new claims improperly introduced new matter into the application (i.e., matter not present in the original patent).¹⁵³ In response, the “[a]pplicants cancelled the rejected claims and [drafted] new claims in means-plus-function format.”¹⁵⁴ These claims were allowed after further amendment.¹⁵⁵

The claims added in means-plus-function format are statutorily entitled to encompass all embodiments of the means recitations in the claims as disclosed in the specification and their equivalents.¹⁵⁶ Therefore, by using means-plus-function claiming during prosecution, particularly when making amendments, protection of a claimed invention will extend to the disclosed embodiments and equivalents thereof. Thus, in *J&M Corporation*, the patentee was entitled to

148. *Id.*

149. 535 U.S. 722 (2002).

150. *J&M Corp. v. Harley-Davidson Inc.*, 269 F.3d 1360, 1367 (Fed. Cir. 2001). *See also* *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 863 (Fed. Cir. 1991); *Medtronic Inc. v. Intermedics, Inc.*, 799 F.2d 734, 742 (Fed. Cir. 1986); *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1220 (Fed. Cir. 1996) (holding that the prosecution history is relevant to determining the meaning of means-plus-function limitations); *Signtech USA v. Vutek, Inc.*, 174 F.3d 1352, 1357 (Fed. Cir. 1999) (holding that a means-plus-function limitation did not cover structure disclaimed in the specification).

151. *J&M Corp.*, 269 F.3d at 1363.

152. *Id.*

153. *Id.*

154. *Id.* at 1364.

155. *Id.*

156. *J&M Corp.*, 269 F.3d at 1365.

equivalents of embodiments of the invention as disclosed and supported in the application as filed.¹⁵⁷

However, in *J&M Corporation*, the scope of the means-plus-function claims was limited to a single embodiment disclosed and its equivalents as a result of the prosecution history. Thus, “the extent of equivalents must be interpreted in light of the disclosure of the invention in the specification, as a whole, as well as the prosecution history.”¹⁵⁸ In *J&M Corporation*, the prosecution history, including specifically the examiner’s rejection, coupled with the applicant’s acquiescence and substitution of narrower claims, limited the scope of the equivalents to a single embodiment of the invention disclosed and supported by the original application as filed.¹⁵⁹

Further, statements regarding the prior art may affect the scope of protection.¹⁶⁰ When faced with a rejection, acquiescence and canceling of the rejected claims, and substituting new claims drafted in the means-plus-function format can limit equivalents of the means-plus-function claims to a particular embodiment.¹⁶¹ Careful attention should be made when responding to examiner’s rejections, as well as amending and drafting additional claims.

Thus, even though *Festo* applies when a rejected claim is canceled and replaced by a narrowing claim, thus possibly preventing application of the Doctrine of Equivalents, if a replaced claim is drafted in means-plus-function format, the claim is entitled to a scope covering embodiments disclosed in the application and *equivalents* thereof, limited only by prosecution history.

F. Protecting Against the Undesired Application of 35 U.S.C. § 112, ¶ 6

Another reason to employ means-plus-function claiming is to make sure that specification contains sufficient disclosure to support functional claims. There is an increasing risk that a functional limitation—even those that do not contain the term “means”—will be determined to fall under 35 U.S.C. § 112, ¶ 6. By preparing the specification to support means-plus-function claims, the patentee is protected from the interpretation of limitations as means-plus-function limitation.

157. *Id.*

158. *Id.* at 1367. See also *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1220 (Fed. Cir. 1996) (holding that the prosecution history is relevant to determining the meaning of means-plus-function limitations); *Signtech USA v. Vutek, Inc.*, 174 F.3d 1352, 1357 (Fed. Cir. 1999) (holding that a means-plus-function limitation did not cover structure disclaimed in the specification).

159. *J&M Corp.*, 269 F.3d at 1367-68.

160. *Id.* at 1368.

161. *Id.* at 1366.

G. Different Decision Makers

Many of the issues surrounding infringement under the Doctrine of Equivalents revolve around claim construction, which is a question of law determined by the court. However, whether an accused structure is equivalent to the structure corresponding to a means-plus-function element is a question of the fact for the jury. Thus, means-plus-function elements can give the patentee the opportunity to try equivalence issues before both a jury and the judge.

“[D]etermination of infringement under § 112 ¶ 6 is a factual question.”¹⁶² “Whether an accused device or method infringes a claim with a Section 112, P. 6 limitation, i.e., whether it performs the identical function with the same structure, materials, or acts described in the specification or an equivalent thereof, is a question of fact.”¹⁶³ *Odetics, Inc. v. Storage Technology Corporation*¹⁶⁴ indicated that the holding in *Markman v. Westview Instruments, Inc.*¹⁶⁵ (that claim construction is a question of law) did not affect *Palumbo*, which held that whether an accused device is a section 112, paragraph 6 equivalent is a question of fact.

More particularly, under a 35 U.S.C. § 112, ¶ 6 framework:

“After the judge construes the means-plus-function limitations identifying structures, materials, or acts described in the patent’s specification, and their equivalents as determined by the fact finder [i.e., the jury] . . . the judge gives the construed claims to the fact finder . . . for a determination of infringement. For literal infringement, the fact finder must determine whether the accused device performs an identical function to the one recited in the means-plus-function clause. . . . If the identical function is performed, the fact finder must then determine whether the accused device utilized the same structure or materials as described in the specification, or their equivalents.”¹⁶⁶

“[T]he analytical effect of statements made during the prosecution of the patent on construction of the claims” is also different depending upon whether the analysis is for section 112, paragraph 6 or for the Doctrine of Equivalents.¹⁶⁷ “Under paragraph 112(6), a statement made during prosecution may confine the range of equivalent structures, materials, or acts that are directly claimed by the patent.”¹⁶⁸ However, in the context of a Doctrine of Equivalents analysis, protection is sought beyond the invention claimed by the patent.¹⁶⁹ Thus, “the judge’s claim construction, which includes the

162. *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1363 (Fed. Cir. 1998).

163. *IMS Tech. Inc. v. Haas Automation Inc.*, 206 F.3d 1422, 1430 (Fed. Cir. 2000).

164. 185 F.3d 1259, 1268-69 (Fed. Cir. 1999).

165. 52 F.3d 967, 976-79 (Fed. Cir. 1995).

166. *Cybor Corp. v. FAS Tech., Inc.*, 138 F.3d 1448, 1467 (Fed. Cir. 1998)

167. *Cybor Corp.*, 138 F.3d at 1467.

168. *Id.*

169. *Id.* at 1467-68.

interpretation of claim terms, may not be sufficient to remove from the jury's consideration all subject matter that was disclaimed during prosecution."¹⁷⁰

"Prosecution history estoppel [will exclude] any equivalents surrendered during prosecution."¹⁷¹ Specifically, "statements made to overcome rejections based . . . on prior art estop the patentee from extending its right to exclude others from making, using, or selling subject matter known to be insubstantially different from, or interchangeable with, claimed elements at the time of the alleged infringement."¹⁷² Both forms of equivalence require the examination of the prosecution history as part of construction of the claims, but "under the doctrine of equivalents, the judge gives the claim, properly construed to exclude disclaimed subject matter, to the jury and then, where appropriate, also instructs the jury on the possible range of equivalents that it may or may not consider due to prosecution history estoppel."¹⁷³

IV. HOW TO EMPLOY 35 U.S.C. § 112, ¶ 6

A. *Properly Invoke 35 U.S.C. § 112, ¶ 6*

Under the framework for analyzing 35 U.S.C. § 112, ¶ 6 established by the Federal Circuit, if the word "means" is used in combination with a function, there is a rebuttable presumption that 35 U.S.C. § 112, ¶ 6 applies.¹⁷⁴ It is not

170. *Cybor Corp.*, 138 F.3d at 1468.

171. *Id.*

172. *Id.*

173. *Id.*

174. *Allen Eng'g Corp. v. Bartell Indus. Inc.*, 299 F.3d 1336, 1347 (Fed. Cir. 2002) ("The use of the word 'means' 'triggers a presumption that the inventor used this term advisedly to invoke the statutory mandate for means-plus-function clauses."); *York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1574 (Fed. Cir. 1996); *Micro Chem. Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999) ("If the word 'means' appears in a claim element in association with a function, this court presumes that § 112, P. 6 applies."). *See also*, *Kemco Sales Inc. v. Control Papers Co.*, 208 F.3d.1352, 1361 (Fed. Cir. 2000) ("The term 'means' in this limitation creates a presumption that a section 112 has been invoked."); *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d.1308, 1318 (Fed. Cir. 1999) ("Specifically, if the word 'means' appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which § 112, ¶ 6 applies."); *Signtech USA Ltd. v. Vutek Inc.*, 174 F.3d.1352, 1365 (Fed. Cir. 1999) ("Typically, if the word 'means' appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which § 112, ¶ 6 applies."); *Unidynamics Corp. v. Automatic Prods. Int'l Ltd.*, 157 F.3d.1311, 1319 (Fed. Cir. 1998) ("The use of the term 'means' generally (but not always) shows that the patent applicant has chosen the option of means-plus-function format invoking § 112, ¶ 6 construction."); *Sage Prods. Inc. v. Devon Indus. Inc.*, 126 F.3d. 1420, 1427 (Fed. Cir. 1997) ("The use of the word 'means,' which is part of the classic template for functional claim elements, gives rise to 'a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.'" (citing *York Prods.*, 99 F.3d at 1574); *Wenger Mfg. Inc. v. Coating Mach. Sys. Inc.*, 239 F.3d. 1225, 1232 (Fed. Cir. 2001) ("In determining whether a claim limitation is a means-

necessary to use the exact language “means for” specified by the statute. For instance, in *Signtech USA Limited v. Vutek Inc.*,¹⁷⁵ the claim element at issue was “ink delivery means,” in which the Federal Circuit used the term “means” in association with a function, namely “ink delivery.” The Federal Circuit said that “[a]lthough the phrase ‘means for’ is not used, the phrase ‘ink delivery means’ is equivalent to the phrase ‘means for ink delivery,’ because ‘ink delivery’ is purely functional language. Furthermore, the claim does not recite disqualifying structure which would prevent application of Section 112, Para. 6.”¹⁷⁶

The failure to use the “means for” signal can affect the treatment of the language in the U.S. Patent and Trademark Office. According to the Manual of Patent Examining Procedure, section 2181, a claim element that does not include the phrase “means for” or “step for” will not be considered to invoke section 112, paragraph 6.¹⁷⁷ To receive treatment under 35 U.S.C. § 112, ¶ 6, the applicant must either amend the claim to include “means for” or “step for” or show that the claim limitation “is written as a function to be performed and does not recite sufficient structure, material or acts which would preclude application of 35 U.S.C. § 112, sixth paragraph.”¹⁷⁸

The word “means” only creates a rebuttable¹⁷⁹ presumption that section 112, paragraph 6 applies, because many patent attorneys are so enamored with the word “means,” they use it even when they do not want to invoke section 112, paragraph 6.¹⁸⁰ Thus, “[t]he mere use of the word ‘means’ after a limitation, without more, does not suffice to make that limitation a means-plus-function limitation.”¹⁸¹ “The presumption that 35 U.S.C. § 112 applies is rebutted where a claim uses the word ‘means’ but specifies no corresponding function for the ‘means.’”¹⁸² The presumption is also rebutted by showing that

plus-function limitation, ‘the use of the word means creates a presumption that § 112, ¶ 6 applies.’”) (citing *Personalized Media Communication, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 703 (Fed. Cir. 1998)).

175. *Signtech*, 174 F.3d at 1352.

176. *Id.* at 1356.

177. Manual of Patent Examining Procedure [hereinafter “MPEP”], § 2181 at p. 2100-214.

178. *Id.*

179. *Sage Prods.*, 126 F.3d at 1427 (“However, the presumption is not conclusive.”).

180. *Allen Eng’g Corp. v. Bartell Indus. Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002) (“As in *Cole*, the drafter of the ‘220 patent ‘was clearly enamored of the word ‘means.’”) (citing *Cole v. Kimberly Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996)).

181. *Allen Eng’g*, 299 F.3d at 1347 (citing *Cole*, 102 F.3d at 531).

182. *Id.* (“a claim element that uses the word means but recites no function corresponding to the means does not invoke §112, P6.”) (quoting *York Prods. Inc., v. Cent Tractor Farm Inc.*, 99 F.3d 1568, 1574 (Fed. Cir. 1996)). See also *Sage Prods.*, 126 F.3d at 1422 (“where a claim uses the word ‘means,’ but specifies no corresponding function for the ‘means,’ it does not implicate section 112.”); *Wenger Mfg. Inc. v. Coating Mach. Sys. Inc.*, 239 F.3d 1225, 1232 (Fed. Cir. 2001) (“However, a limitation that uses the word ‘means’ but does not recite a function that

the claim also specifies the structure for performing the function.¹⁸³ “[A]ccording to the language of the statute, § 112, ¶ 6 governs only claim elements that do not recite sufficient ‘structure, material, or acts in support [of the means- or step-plus-function element].’”¹⁸⁴

It can be difficult to determine when there is sufficient structure in the claim to remove the element from section 112, paragraph 6, so the practitioner must be very careful. In *Unidynamics Corporation v. Automatic Products International Limited*, the Federal Circuit held that the recitation of the word “spring” does not remove “spring means tending to keep the door closed” from 35 U.S.C. § 112, ¶ 6.¹⁸⁵ The Federal Circuit distinguished “spring means tending to keep the door closed” from the “perforation means” in *Cole v. Kimberly Clark*, because the latter included both a structure and a location.¹⁸⁶ “A claim term recites sufficient structure if ‘the term, as the name for structure, has a reasonably well understood meaning in the art.’”¹⁸⁷ For example, in *Envirco Corporation v. Clestra Cleanroom Inc.*, the court found that “[b]ecause the term baffle itself imparts structure, meaning surface that deflects air, its use in the claims rebuts the presumption that § 112 ¶ 6 applies.”¹⁸⁸

corresponds to the means does not invoke § 112, ¶ 6”) (citing *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1302 (Fed. Cir. 1999)).

183. *Allen Eng’g*, 299 F.3d at 1347 (“even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P 6 does not apply.”) (citing *Rodime*, 174 F.3d at 1302). See also *Cole*, 102 F.3d at 531 (“To invoke § 112, paragraph 6, the alleged means-plus-function claim element must not recite a definite structure which performs the described function.”); *Micro Chem. Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999) (This presumption collapses, however, if the claim itself recites sufficient structure, material, or acts to perform the claimed function.”); *Sage Prods.*, 126 F.3d at 1427 (“Likewise, where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.”); *Wenger Mfg.*, 239 F.3d at 1232 (“Likewise, even when a limitation does recite a function, if it also recites sufficiently definite structure for performing that function, then § 112, ¶ 6 does not apply.”).

184. *Signtech*, 174 F.3d at 1356. See also *Al-Site Corp. v. VSI Int’l Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999) (“Nevertheless, according to its express terms, Section 112, ¶ 6 governs only claim elements that do not recite sufficient structural limitations Therefore, the presumption that Section 112, P. 6 applies is overcome if the claim itself recites sufficient structure or material for performing the claimed function.”); *Texas Digital Sys. Inc. v. Telegenix Inc.*, 308 F.3d 1193, 1208 (Fed. Cir. 2002) (“Because this limitation is expressed in ‘means plus function’ language and because it does not recite definite structure in support of its function, it is subject to the requirements of 35 U.S.C. § 112, ¶ 6 (1994).”) (citing *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)).

185. 157 F.3d 1311 (Fed. Cir. 1998).

186. *Id.* at 1319-20.

187. *Allen Eng’g*, 299 F.3d at 1366 (quoting *Watts v. XL Sys. Inc.*, 232 F.3d 877, 880-81 (Fed. Cir. 2000)).

188. 209 F.3d 136 (Fed. Cir. 2000).

Ultimately, “[w]hether a limitation falls within § 112, ¶ 6 is a question of law.”¹⁸⁹ To reduce the risk of an unintended claim construction, practitioners should use “means for” when invoking 35 U.S.C. § 112, ¶ 6, and avoid all other uses of the term “means,” at least in the claims. Follow “means for” only with an identification of a function, and do not refer to any structure for performing the identified function, or location of the structure.

Further, “[t]he difficulty of distinguishing acts from functions in step-plus-function claim elements, however, makes identifying step-plus-function claims inherently more problematic.”¹⁹⁰ Thus, a drafter should take care to include language in claims with a definite and clear meaning.¹⁹¹ “To invoke a presumption of Section 112, P. 6 application, a claim drafter must use language that expressly signals the recitation of a function as distinguished from an act.”¹⁹² “Use of the word ‘step,’ by itself, does not invoke a presumption that 35 U.S.C. § 112, ¶ 6 applies.”¹⁹³ For example, method claim elements, which often begin with the phrase ‘steps of,’ may be used without invoking application of section 112, paragraph 6.¹⁹⁴ “The phrase ‘steps of’ colloquially signals the introduction of specific acts, rather than functions, and should therefore not presumptively invoke application of Section 112, P. 6.”¹⁹⁵ However, “[u]nlike ‘of,’ the preposition ‘for’ colloquially signals the recitation of a function.”¹⁹⁶ Thus, the phrase “step for” generally introduces functional claim language falling under 35 U.S.C. § 112, ¶ 6 and is conventionally used by drafters when intending to invoke 35 U.S.C. § 112, ¶ 6.¹⁹⁷ Therefore, when the phrase “step for” is recited in a method claim, a presumption arises that 35 U.S.C. § 112, ¶ 6 applies.¹⁹⁸

However, “[e]ven when a claim element uses language that generally falls under the step-plus-function format,” 35 U.S.C. § 112, ¶ 6 “still does not apply when the claim limitation itself recites sufficient acts for performing the specified function.”¹⁹⁹ Section 112, paragraph 6 applies only when the means

189. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106 (Fed. Cir. 2002). *See also* *Personalized Media Communications, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 702 (Fed. Cir. 1998); *Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1213-14 (Fed. Cir. 1998).

190. *Seal-Flex, Inc. v. Athletic Track and Court Constr.*, 172 F.3d 836, 848-49 (Fed. Cir. 1999) (Rader, J., concurring).

191. *Seal-Flex, Inc.*, 172 F.3d at 849.

192. *Id.*

193. *Id.*

194. *Id.*

195. *Id.* at 849.

196. *Seal-Flex, Inc.*, 172 F.3d at 849.

197. *Id.*

198. *Id.*

199. *Id.*

plus function recitation is provided without definite structure, including when “step for” language is recited without acts.²⁰⁰

Thus, practitioners should pay careful attention to the use of “step for” versus “step of” in their claims, with the former presumptively implicating 35 U.S.C. § 112, ¶ 6, and the latter, not giving rise to such presumption.

B. Avoid Unintentional Application of 35 U.S.C. § 112, ¶ 6

Just as the use of the word “means” creates a rebuttable presumption that 35 U.S.C. § 112, ¶ 6 applies, the absence of the word “means” creates a rebuttable presumption that means-plus function claiming under 35 U.S.C. § 112, ¶ 6 does not apply.²⁰¹ This presumption can be rebutted if the claim contains only function, without structure.²⁰² In an attempt to avoid the limitations of 35 U.S.C. § 112, ¶ 6, patent practitioners may claim an element functionally, but omitting the magic word “means.” However, where no structure is recited, and the terms used have no established structural connotation, the omission of the word “means” will not prevent the application of 35 U.S.C. § 112, ¶ 6.²⁰³ This was the case in *Mas-Hamilton Group Inc. v. LaGard Inc.*, where the court found that 35 U.S.C. § 112, ¶ 6 applied to the limitation “moving element” even though the claims did not use the word “means.”²⁰⁴ The Federal Circuit said, “In the instant case, even though the catch phrase is not used, the limitation’s language does not provide any structure. The limitation is drafted as a function to be performed rather than definite structure or materials.”²⁰⁵ The Federal Circuit said that if it did not apply 35 U.S.C. § 112, ¶ 6 to the claimed “moving element,” it “could be any

200. *Id.*

201. *Micro Chem. Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999) (“Without the term ‘means,’ a claim element is presumed to fall outside means-plus-function strictures.”). *See also Al-Site Corp. v. VSI Int’l Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999) (“Therefore, when an element of a claim does not use the term ‘means,’ treatment as a means-plus-function claim element is generally not appropriate.”).

202. *Micro Chem. Inc.*, 194 F.3d at 1257 (“[T]hat presumption can collapse when an element lacking the term ‘means’ nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function.”). *See also Al-Site*, 174 F.3d at 1318 (“However, when it is apparent that the element invokes purely functional terms, without the additional recital of specific structure or material for performing that function, the claim element may be a means-plus-function element despite the lack of express means-plus-function language.”); *Cole v. Kimberly Clark Corp.*, 102 F.3d 521, 531 (Fed. Cir. 1996) (“Merely because an element does not include the word ‘means’ does not automatically prevent that element from being construed as a means-plus-function element.”); *Mas-Hamilton Group v. LaGard Inc.*, 156 F.3d 1206, 1213-15 (interpreting “lever moving element” and “movable link member” under section 112, paragraph 6).

203. *See* MPEP, § 2181 at 2100-216 for examples of language that has triggered 35 U.S.C. § 112, ¶ 6, without the “means for” or “step for” signal.

204. *Mas-Hamilton*, 156 F.3d at 1206.

205. *Id.* at 1213.

device that can cause the lever to move.”²⁰⁶ The Federal Circuit said that “moving element” “cannot be construed so broadly to cover every conceivable way or means to perform the function of moving a lever, and there is no structure recited in the limitation that would save it from application of section 112, 6.”²⁰⁷

However, a limitation with a functional name may nonetheless avoid 35 U.S.C. § 112, ¶ 6 treatment, if it has a sufficiently well-known structural connotation. For example, in *Greenberg v. Ethicon Endo-Surgery, Inc.*, the Federal Circuit construed the term “detent mechanism” as not invoking section 112, paragraph 6 because “detent mechanism” had a generally understood meaning in the mechanical arts to describe structure.²⁰⁸

In drafting a claim, practitioners should remember that a limitation may be found to be a means-plus-function limitation if its name is a function and it cannot be shown to have a generally understood structural meaning in the art.²⁰⁹

C. *Broaden the Scope of Literal Infringement by Disclosing Alternate Structures*

Equivalence under 35 U.S.C. § 112, ¶ 6 is sufficiently broad that a patent owner should not have to “include in the patent specification an exhaustive list of structures that possibly could perform each function described in the claim.”²¹⁰ “Patentees are required to disclose in the specification some enabling means for accomplishing the function set forth in the ‘means plus function’ limitation.”²¹¹ “At the same time, there is and can be no requirement that applicants describe or predict every possible means of accomplishing that function.”²¹² “The statute, §112-6, was written precisely to avoid a holding that a means-plus-function limitation must be read as covering only the means disclosed in the specification.”²¹³ However, 35 U.S.C. § 112, ¶ 6 applies to all

206. *Id.* at 1214.

207. *Id.*

208. 91 F.3d 1580, 1583 (Fed. Cir. 1996).

209. *Mas-Hamilton*, 156 F.3d at 1206.

210. *De Graffenried v. U.S.*, 16 U.S.P.Q. 2d (BNA) 1321, 1340 (Cl. Ct. 1990).

211. *D.M.I., Inc. v. Deere & Co.*, 225 U.S.P.Q. (BNA) 236, 238 (Fed. Cir. 1985). *See also* *Epcon Gas Sys. Inc. v. Bauer Compressors Inc.*, 61 U.S.P.Q. 2d (BNA) 1470,1477-78 (CA FC 2002) (“[S]tructure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.”); *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997); *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1377 (Fed. Cir. 2001) (“As a quid pro quo for the convenience of employing §112, paragraph 6, Budde has a duty to clearly link or associate structure to the claimed function.”).

212. *D.M.I. Inc.*, 225 U.S.P.Q. (BNA) at 238 (Fed. Cir. 1985).

213. *Id.* at 238.

embodiments disclosed in the specification,²¹⁴ and thus disclosure of multiple embodiments does increase the scope of protection.

The drafter of the specification must do more than merely list elements, the disclosure of the structure must be complete. “[S]tructure supporting a means-plus-function claim under Section 112, Para. 6 must appear in the specification” and cannot be incorporated by reference.²¹⁵ Thus, where there are several embodiments of the invention disclosed, the means-plus-function element includes the corresponding structure in each of the embodiments.²¹⁶ While a patentee is not limited to the preferred embodiment, as the Federal Circuit has observed, many patent specifications disclose little else.²¹⁷ Thus, dissatisfaction with the scope of a means-plus-function claims in many cases is due to an inadequate specification. The Federal Circuit has said that by choosing means-plus-function language to recite a claim element, the patentee necessarily restricts the scope of this element to the structure disclosed in the specification and its equivalents.²¹⁸ But the extent of the restriction is in the hands of the patent drafter.

214. *Creo Products Inc. v. Presstek Inc.*, 64 U.S.P.Q. 2d (BNA) 1385, 1391 (Fed. Cir. 2002) (“[P]roper application of §112 ¶ 6 generally reads the claim element to embrace distinct and alternative described structures for performing the claimed function. Specifically, ‘disclosed structure includes that which is described in a patent specification, including any alternative structures identified.’”). *Accord* *Ishida Co. v. Taylor*, 55 U.S.P.Q. 2d (BNA) 1449, 1452-53 (Fed. Cir. 2000); *Serrano v. Telular Corp.*, 111 F.3d 1578, 1583, 42 U.S.P.Q. 2d (BNA) 1538, 1542 (Fed. Cir. 1997).

215. *Atmel Corp. v. Info. Storage Devices Inc.*, 53 U.S.P.Q. 2d (BNA) 1225, 1229-30 (Fed. Cir. 1999).

216. *Micro Chem. Inc. v. Great Plains Chem. Co.*, 52 U.S.P.Q. 2d (BNA) 1258, 1264 (Fed. Cir. 1999) (“When multiple embodiments in the specification correspond to the claimed function, proper application of Section 112, Para. 6 generally reads the claim element to embrace each of those embodiments.”). *See also* *Creo Products Inc. v. Presstek Inc.*, 64 U.S.P.Q. 2d (BNA) 1385, 1391 (Fed. Cir. 2002) (citing *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113-14, 63 U.S.P.Q. 2d (BNA) 1725, 1730 (Fed. Cir. 2002)). (“Accordingly, where the specification discloses different alternative embodiments, the claim is valid even if only one embodiment discloses corresponding structure.”).

217. *Signtech USA Ltd. v. Vutek Inc.*, 50 U.S.P.Q. 2d (BNA) 1372, 1375 (Fed. Cir. 1999) (“Although patentees are not necessarily limited to their preferred embodiment . . . interpretation of a means-plus-function element requires this court to consult the structure disclosed in the specification, which often, as in this case, describes little more than the preferred embodiment.” (citing *Serrano*, 111 F.3d at 1583)).

218. *Signtech USA*, 50 U.S.P.Q. 2d (BNA) at 1375 (“By choosing means-plus-function language to recite the ‘‘ink delivery means’’ claim element, the patentee necessarily restricted the scope of this element to the structure disclosed in the specification and its equivalents.”).

D. *Identify the Structure that Corresponds to the Means-Plus-Function Limitation*

It is the patent applicant's responsibility to identify the structure that corresponds to the means-plus-function element.²¹⁹ "[S]tructure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim."²²⁰ "This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing Section 112, Para. 6."²²¹ Therefore, "[i]f one employs means-plus-function language in a claim, one *must* set forth in the specification an adequate disclosure showing what is meant by the claim language."²²² "If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112."²²³ The Manual of Patent Examining Procedure provides detailed guidelines for adequacy of the specification to support the claims under 35 U.S.C. § 112, ¶ 2, as well as to comply with 35 U.S.C. § 112, ¶ 6.²²⁴

The corresponding structure(s) of a means-plus-function limitation must be disclosed in the written description in such a manner that one skilled in the art will know and understand what structure corresponds to the means limitation.²²⁵ 35 U.S.C. § 112, ¶ 6 does not contemplate the kind of open-ended reference to extrinsic works that paragraph one, the enablement provision, does.²²⁶ Information incorporated by reference cannot take the place of disclosure.²²⁷

219. *Micro Chem., Inc. v. Great Plains Chem. Co.*, 52 U.S.P.Q. 2d (BNA) at 1263 ("Application of Section 112, Para. 6 requires identification of the structure in the specification which performs the recited function."). *See also* *B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997).

220. *B. Braun Med.*, 124 F.3d at 1424. *See also* *Generation II Orthotics Inc. v. Med. Tech. Inc.*, 59 U.S.P.Q. 2d (BNA) 1919, 1928 (Fed. Cir. 2001) (*citing B. Braun Med.*, 124 F.3d at 1424 ("Structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim."); *Cardiac Pacemakers*, 63 U.S.P.Q. 2d (BNA) at 1730 ("In order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function.")).

221. *B. Braun Med.*, 43 U.S.P.Q. 2d (BNA) at 1900.

222. *Atmel Corp. v. Info. Storage Devices Inc.*, 53 U.S.P.Q. 2d (BNA) 1225, 1229 (Fed. Cir. 1999) (*citing In re Donaldson Co. Inc.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (*emphasis added*)).

223. *Id.* at 1228.

224. MPEP, § 2181 at 2100-217.

225. *Id.* at 1229. *See also Cardiac Pacemakers*, 63 U.S.P.Q. 2d (BNA) at 1730.

226. *Atmel Corp.*, 53 U.S.P.Q. 2d (BNA) at 1230.

227. *Id.* at 1230.

“This inquiry is undertaken from the perspective of a person of ordinary skill in the art.”²²⁸ In *In re Donaldson Co. Inc.*,²²⁹ the Federal Circuit also instructed the patent bar that it was up to the patent drafter to identify the structure that corresponds to the claimed “means,” and the failure to do so would mean the claim is indefinite under 35 U.S.C. § 112, ¶ 2, for failing to particularly point out and distinctly claim the invention:

Although paragraph six statutorily provides that one may use means-plus-function language in a claim, one is still subject to the requirement that a claim “particularly point out and distinctly claim” the invention. Therefore, if one employs means-plus-function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112.²³⁰

“Such limitations are ‘construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.’”²³¹ “To interpret ‘means plus function’ limitations as limited to a particular means set forth in the specification would nullify the provision of § 112 requiring that the limitation shall be construed to cover the structure described in the specification and equivalents thereof.”²³²

E. Carefully Specify the Function

The first step in construing a 35 U.S.C. § 112, ¶ 6 element, is to identify the function specified in the claim.²³³ One cannot change the function from what is stated in the claims,²³⁴ nor can one include structure beyond what is necessary to perform the function specified in the claim.²³⁵ More specifically,

228. *Cardiac Pacemakers*, 63 U.S.P.Q. 2d (BNA) at 1730 (citing *Amtel Corp.* 198 F.3d at 1378-79).

229. 29 U.S.P.Q. 2d (BNA) 1845, 1850 (Fed. Cir. 1994) (holding that “pursuant to this provision, structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim”).

230. *In re Donaldson*, 29 U.S.P.Q. 2d (BNA) at 1850.

231. *IMS Technology Inc. v. Haas Automation Inc.*, 54 U.S.P.Q. 2d (BNA) 1129, 1133 (Fed. Cir. 2000) (citing 35 U.S.C. § 112, ¶ 6 (1994)).

232. *D.M.I., Inc. v. Deere & Co.*, 225 U.S.P.Q. (BNA) 236, 238 (Fed. Cir. 1985).

233. *Asyst Tech., Inc. v. Empak Inc.*, 60 U.S.P.Q. 2d (BNA) 1567, 1571 (Fed. Cir. 2001) (“The first step in construing a means-plus-function limitation is to identify the function explicitly recited in the claim.”).

234. *Micro Chem. Inc. v. Great Plains Chem. Co.*, 52 U.S.P.Q. 2d (BNA) 1258, 1263 (Fed. Cir. 1999) (“The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.”).

235. *Asyst Tech.*, 60 U.S.P.Q. 2d (BNA) at 1571 (“Section 112 paragraph 6 does not ‘permit incorporation of structure from the written description beyond that necessary to perform the

“[s]tructural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations.”²³⁶ Therefore the definition of the function is important. The patent practitioner should not focus on the function performed by the particular structure selected by the inventor, but instead should attempt to step back to determine the ultimate function that has to be performed. For example, in *Unidynamics Corporation v. Automatic Products International Limited*, the claim required of “spring means tending to keep the door closed” that the Federal Circuit said, when read in light of written description, requires an element to provide closing action in addition to keeping the door closed once it is in a closed position.²³⁷ The patent drafter must try to identify the ultimate function, and not use terms that might suggest how the particular element selected by the inventor functions.

F. Avoid Actions That Potentially Could Limit The Scope of Equivalents

When drafting a specification and making statements (both written and verbal) during prosecution of a patent application, careful consideration should be given to the specific disclosures and statements to avoid unintended limitation of the scope of claim equivalents. “An inventor may use the specification and prosecution history to define what his invention is and what it is not, particularly when distinguishing the invention over prior art.”²³⁸ “[Not only] can prosecution history estoppel act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under Section 112, Para. 6.”²³⁹ For example, statements detailing the shortcomings of the relevant prior art have been used in limiting the scope of means-plus-function claims.²⁴⁰ “When a patentee advises the examiner (and the public after patent issuance) that a particular structure is not within his invention, the patentee is not permitted to assert in a subsequent infringement action that the same structure is equivalent to the structure described in the patent’s specification for purposes of section

claimed function.”). See also *Micro Chem.*, 52 U.S.P.Q. 2d (BNA) at 1263 (“Nor does the statute permit incorporation of structure from the written description beyond that necessary to perform the claimed function.”).

236. *Asyst Tech.*, 60 U.S.P.Q. 2d (BNA) at 1571.

237. 48 U.S.P.Q. 2d (BNA) 1099 (Fed. Cir. 1988).

238. *Ballard Med. Prod. v. Allegiance Healthcare Corp.*, 60 U.S.P.Q. 2d (BNA) 1493, 1499 (Fed. Cir. 2001).

239. *Ballard Med. Prod.*, 60 U.S.P.Q. 2d (BNA) at 1499.

240. *Id.* See, e.g., *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1357 (Fed. Cir. 1999) (Wherein the patentee, which used means-plus-function claim format, noted that the structure used by certain prior art was “incapable” of achieving the desired results of the invention. It was held to be an “explicit disavowal of prior art structure,” which was properly used in construing the means-plus-function claims.).

112, paragraph 6.”²⁴¹ Further, it should be noted that the same distinctions of the prior art that inform the claim construction under 35 U.S.C. § 112, ¶ 6, give rise to prosecution history estoppel and prevent the Doctrine of Equivalents from capturing structure that the patentee surrendered during prosecution.²⁴² Thus, care should be taken to characterize anything as falling outside the scope of the invention (e.g., in an amendment or inventor affidavit).

Further, it has been held that “claim differentiation can not broaden claims beyond their correct scope.”²⁴³ “That the patentee chose several words in drafting a particular limitation of one claim, but fewer (though similar) words in drafting the corresponding limitation in another, does not mandate different interpretations of the two limitations.”²⁴⁴ “Moreover, that the claims are presumed to differ in scope does not mean that every limitation must be distinguished from its counterpart in another claim, but only that at least one limitation must differ.”²⁴⁵ There must be support in the specification for using a broad definition to define a claim term, or some other demonstration that the definition is the normal and ordinary meaning.²⁴⁶ Thus, if each and every embodiment disclosed in the specification of an application discloses or teaches a particular structure, the applicant is limited to that structure.²⁴⁷

Further, it may not be sufficient to state generally in the specification that a particular element or component may take different forms, but specific alternatives or possible modifications for each element or component should be specifically disclosed.²⁴⁸ Also, statements in the specification relating to the intended purpose may be used to limit equivalents.²⁴⁹ “Prosecution history is similarly illustrative.”²⁵⁰ Further, the background of the invention portion of the patent, including problems described therein may be used to limit

241. *Ballard Med. Prod.*, 60 U.S.P.Q. 2d (BNA) at 1499.

242. *Id.* at 1502 (citing *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1480 (Fed. Cir. 1998)).

243. *Kraft Foods, Inc. v. Int’l Trading Co.*, 53 U.S.P.Q. 2d (BNA) 1814, 1818 (Fed. Cir. 2000).

244. *Kraft Foods, Inc.*, 53 U.S.P.Q. 2d (BNA) at 1818.

245. *Id.*

246. *Id.*

247. *Id.* at 1818-19 (With respect to the written description, every disclosed embodiment that employed a back panel employed one that was relatively stiff.).

248. *Kraft Foods, Inc.*, 53 U.S.P.Q. 2d (BNA) at 1819 (“[A]lthough the written description states that ‘[t]he back panel may take many different forms,’ the immediately succeeding sentences reveal that such variations relate only to the size or location of the back panel and do not discuss variations in stiffness.”).

249. *Id.* at 1819 (“[T]he written description reveals that at least one purpose of the ‘protecting back panel’ is to protect the bottom of the tray compartments against indentation and damage and the relatively rigid characteristic of the ‘protecting back panel’ promotes such protection.”).

250. *Id.* at 1819.

equivalents.²⁵¹ However, statements that merely indicate the patentees' preference may not have such a restrictive effect.²⁵² Although some of these limitations have been applied when performing a Doctrine of Equivalents analysis, their application appears to apply equally to a 35 U.S.C. § 112, ¶ 6 equivalents analysis, and should be considered when using means-plus-function claims.

Thus, practitioners should pay careful attention to ensure that the various embodiments disclosed in an application describe different structures, thereby potentially increasing the scope of equivalents when a 35 U.S.C. § 112, ¶ 6 claim interpretation is performed. Further, care should be taken when making statements during prosecution relating to structures disclosed in the specification, because such statements may have an adverse effect on claim construction of a means-plus-function limitation in a claim.²⁵³ Further, positions taken before the Patent Office may bar inconsistent positions on claim construction under 35 U.S.C. § 112, ¶ 6 similar to prosecution history estoppel estopping an equivalence assertion under the Doctrine of Equivalents.²⁵⁴

Thus, the authors strongly suggest including in the application as many alternatives and various embodiments as are possible to provide the broadest scope of equivalents under a 35 U.S.C. § 112, ¶ 6 analysis.

CONCLUSION

While means-plus-function claim limitations under 35 U.S.C. § 112, ¶ 6 do not have the broad scope that they were believed to have in their heyday when claims in the majority of issuing utility patents contained "means" or "means for", means-plus-function claims still provide important benefits that justify their more frequent use. Attempts at using broad functional language as an end run around 35 U.S.C. § 112, ¶ 6 will not work, and if a broad functional claim limitation is found to be a 35 U.S.C. § 112, ¶ 6 in an application that was not

251. *Id.* at 1821 (In *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 1114 (Fed. Cir. 1998), the background of the invention portion of the patent described problems with certain prior art mechanisms, which included the mechanism alleged to be equivalent, strongly suggested, if not mandated, judgment in the defendant's favor. The court held that the written description's "clear and uncontroverted" statements that the allegedly equivalent structure served a function entirely opposite to that of the recited structure, coupled with the patent holder's admission to the same effect, precluded the patent holder from asserting the Doctrine of Equivalents. *Dawn Equip. Co.*, 140 F.3d at 1114.).

252. *Kraft Foods, Inc.*, 53 U.S.P.Q. 2d (BNA) at 1822 (statements that although labels can be arranged in any suitable way, it is preferable that they not bridge gaps between compartments are not clear and uncontroverted statements).

253. *Alpex Computer Corp. v. Nintendo Co. Ltd.*, 40 U.S.P.Q. 2d (BNA) 1667, 1673 (Fed. Cir. 1996).

254. *Alpex Computer Corp.*, 40 U.S.P.Q. 2d (BNA) at 1671.

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prepared with 35 U.S.C. § 112, ¶ 6 in mind, the scope could be much narrower than that to which the inventor was entitled.

