

KEY IDEAS:

The Statutory Context1

Infringement of Means-Plus-Function Claims1

Construction of Means-Plus-Function Claims2

“Equivalents” and Literal Infringement of Means-Plus-Function Claims2

Doctrine of Equivalents Infringement of Means-Plus-Function Claims3

Comparing and Contrasting § 112, ¶ 6 and the Doctrine of Equivalents4

Conclusions4

DON'T GET SPOOKED BY MEANS-PLUS-FUNCTION 'EQUIVALENTS'

Patent attorneys often shudder when it comes to “means-plus-function” claims and the related term *equivalents*. At every turn, from the *Markman* hearing to infringement, even the best practitioner can be bedeviled.

As you know, relying on 35 U.S.C. § 112, ¶ 6, “an applicant can describe an element of his invention by the *result accomplished* or the *function served*, rather than describing the item or element to be used (e.g., ‘a means of connecting Part A to Part B,’ rather than ‘a two-penny nail’).”¹ But, in exchange for using the abbreviated means-plus-function style, the applicant’s claims are construed to include only the structure, material or acts (and *equivalents*) that are described in the patent’s specification as the means for performing the claimed function.² We explore here the precise meaning and effect of often-scary *equivalents* in an infringement case.

The Statutory Context

Means-plus-function claims are a creature of statute. 35 U.S.C. § 112, ¶ 6 states:

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

The statute’s plain language limits the applicant to the structure, material or acts in the specification and their equivalents.³ At the same time, because of the reference to “equivalents,” there is no requirement that applicants describe or predict every possible means of accomplishing that function. The statute 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.”⁴

Prepared by:

Infringement of Means-Plus-Function Claims

An infringement analysis of a means-plus-function claim involves the same two-step process used for all claims.⁵ First, the claims are construed to determine their scope. Second, a court determines whether the accused device falls within the scope of the claims as construed.⁶ “Equivalents” can play heavily in the infringement analysis.

PETER STRAND
Washington, D.C.
(202) 783-8400
pstrand@shb.com



Peter is a partner in the Firm’s Intellectual Property & Technology Litigation Practice. He holds an LLM in intellectual property law from the University of Houston School of Law.

1 Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 27 (1997).
2 Valmont Indus., Inc. v. Reinke Mfg. Co., Inc., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (citation omitted).
3 See id.
4 D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1989).
5 IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1429 (Fed. Cir. 2000).
6 ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1087 (Fed. Cir. 2003).

Literal infringement of a means-plus-function claim limitation “requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or *equivalent* to the corresponding structure in the specification.”

The proper test for determining the “equivalents” of relevant structures under § 112, ¶ 6 is whether the differences between the structure in the accused device and any disclosed in the specification are insubstantial.

Construction of Means-Plus-Function Claims

The Patent Act provides explicit guidance for interpretation of claim elements expressed in means-plus-function terms.⁷ Construing a § 112, ¶ 6 limitation requires the court to (1) identify the function set out in the claim language, and (2) determine the corresponding structure for performing the function disclosed in the specification.⁸

Correctly identifying the claimed function is critical, because “an error in identification of the function can improperly alter the identification of the structure [and equivalents] . . . corresponding to that function.”⁹ Once the function is properly identified, the written description must be examined to determine the structure that corresponds to and performs the function recited in the claim.¹⁰

“Equivalents” and Literal Infringement of Means-Plus-Function Claims

Literal infringement of a means-plus-function claim limitation “requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or *equivalent* to the corresponding structure in the specification.”¹¹ Logically, the infringement analysis begins with the finder of fact determining whether the accused device or method performs a function identical to the one recited in the claim.¹² If not, there is no literal infringement.

- Tests for Identifying “Equivalents” – If the identical function is performed by the accused product, the next step is to determine whether the accused device uses the same structure, materials or acts found in the specification, or their *equivalents*, to perform the function.¹³

The proper test for determining the “equivalents” of relevant structures under § 112, ¶ 6 is whether the differences between the structure in the accused device and any disclosed in the specification are insubstantial.¹⁴ Importantly, although the statute requires two “structures” to be equivalent, 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.¹⁵

Another way the Federal Circuit Court of Appeals identifies “equivalents” is to use a “reduced version” of the test for the doctrine of equivalents and ask whether the structures perform the same function in substantially the same way to achieve substantially the same result.¹⁶

The Federal Circuit has also opined that evidence of the interchangeability of the two structures—the one in the accused product and the one identified in the claimed invention—should be considered in a § 112, ¶ 6 equivalence determination.¹⁷

- The Date the Equivalent Structure Was Available Is Critical – “[A] structural equivalent under § 112 must have been available at the time of the issuance of the claim.”¹⁸ An equivalent structure or act under § 112 **cannot** embrace technology developed after the issuance of the patent

7 *Valmont Indus., Inc. v. Reinke Mfg. Co., Inc.*, 983 F.2d 1039, 1041 (Fed. Cir. 1993).

8 *See, e.g., IMS Tech.*, 206 F.3d at 1430 (Fed. Cir. 2000); *ACTV, Inc.*, 346 F.3d at 1087.

9 *ACTV, Inc.* 346 F.3d at 1087 (citation omitted).

10 *Id.*

11 *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1099 (Fed. Cir. 2008) (citation omitted); *See, e.g., WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1347 (Fed. Cir. 1999); *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303 (Fed. Cir. 1998); *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1575 (Fed. Cir. 1989).

12 *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1430 (Fed. Cir. 2000); *see NOMOS Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364, 1369 (Fed. Cir. 2004).

13 *IMS Tech., Inc.*, 206 F.3d at 1430.

14 *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1309 (Fed. Cir. 1998); *see, e.g., Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1316 (Fed. Cir. 1999); *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1222 (Fed. Cir. 1996), *cert. denied*, 521 U.S. 1104 (1997).

15 *IMS Tech., Inc.*, 206 F.3d at 1436 n.3 (helpfully illustrating the point).

16 *Id.* at 1435, 1437.

17 *Id.* at 1435-36.

18 *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1320 (Fed. Cir. 1999) (citing *Chiuminatta Concrete Concepts, Inc.*, 145 F.3d at 1310 (Fed. Cir. 1998)).

When an accused product satisfies § 112, ¶ 6 claim limitations using a structure *equivalent* to that described in the specification (and otherwise satisfies the requirements for infringement), the infringement is deemed *literal* infringement.

Section 112, ¶ 6 equivalents are determined as of the date of issuance of the patent.

because the literal meaning of a claim is fixed upon its issuance. “In other words, an equivalent structure or act under § 112 for literal infringement must have been available at the time of patent issuance . . .”¹⁹

Thus, literal infringement of a means-plus-function claim may involve an *equivalent*. When an accused product satisfies § 112, ¶ 6 claim limitations using a structure *equivalent* to that described in the specification (and otherwise satisfies the requirements for infringement), the infringement is deemed *literal* infringement.²⁰

Doctrine of Equivalents Infringement of Means-Plus-Function Claims

While it is now well established that means-plus-function claims can be infringed under the doctrine of equivalents, the law has not always been so clear.²¹

In *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc.*,²² the Federal Circuit Court of Appeals clarified the law. The court initially found a means-plus-function claim was not literally infringed.²³ Notwithstanding the lack of literal infringement, the patentee argued the patent was infringed under the doctrine of equivalents.²⁴

While rejecting patentee’s argument, the Federal Circuit paved the way for doctrine of equivalents infringement when it focused on a critical difference between “equivalents” under § 112, ¶ 6 and the doctrine of equivalents. Section 112, ¶ 6 equivalents are determined as of the date of issuance of the patent. The same is not true for the doctrine of equivalents, where only later—“after-arising”—developments are considered as possible equivalents. Such a variant, based on after-developed technology, cannot be a § 112, ¶ 6 equivalent, but it can be an equivalent under the doctrine of equivalents.²⁵

The *Chiuminatta* court found the alleged doctrine of equivalents infringement involved technology that **predated** the invention and could have been included in the patent. Thus, § 112, ¶ 6 was implicated, but the structure of the accused device differed substantially from the disclosed structure. The court then concluded, “why should the issue of equivalence have to be litigated a second time? . . . An element of a device cannot be ‘not equivalent’ and equivalent to the same structure.”²⁶

Even though use of doctrine of equivalents infringement was precluded in the *Chiuminatta* case, the case suggests that such infringement may exist under two specific circumstances:

- First, if the “equivalent” structure in the accused device came into existence **after** the issuance of the patent, infringement under the doctrine of equivalents is possible (while literal infringement is not).²⁷
- Second, case law confirms that, even if the structure disclosed in the patent and the accused device are equivalent under § 112, ¶ 6, doctrine of equivalents infringement may exist because of a lack of identical function (so long as the equivalent function is after-arising technology).²⁸

19 *Id.* (citing *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 37 (1997)).

20 *Dawn Equip. Co. v. Kentucky Farms, Inc.*, 140 F.3d 1009, 1018 (Fed. Cir. 1998) (additional views of Judge Plager) (noting that use of an “equivalent” under § 112, ¶ 6, leads to literal infringement rather than infringement under the doctrine of equivalents).

21 See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 28 (1997) (noting that § 112, ¶ 6 “is silent on the doctrine of equivalents as applied where there is no literal infringement.”); *Dawn Equip. Co.*, 140 F.3d at 1015 n.2, 1018 (Fed. Cir. 1998) (additional views of Judge Plager where he asked, “What place then is there for the doctrine of equivalents with regard to [means-plus-function] claim limitations?”).

22 145 F.3d 1303 (Fed. Cir. 1998).

23 *Id.* at 1310.

24 *Id.*

25 *Id.*

26 *Id.*

27 See *Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 274 F.3d 1371, 1381 (Fed. Cir. 2001). (citing *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1311 (Fed. Cir. 1998)).

28 *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1353 (Fed. Cir. 1999); *Al-Site Corp. v. VSI Int’l*,

ABOUT SHB

Shook, Hardy & Bacon offers expert, efficient and innovative representation to our clients. We know that the successful resolution of intellectual property issues requires a comprehensive strategy developed in partnership with our clients.



OFFICE LOCATIONS

- Geneva, Switzerland**
+41-22-787-2000
- Houston, Texas**
+1-713-227-8008
- Irvine, California**
+1-949-475-1500
- Kansas City, Missouri**
+1-816-474-6550
- London, England**
+44-207-332-4500
- Miami, Florida**
+1-305-358-5171
- San Francisco, California**
+1-415-544-1900
- Tampa, Florida**
+1-813-202-7100
- Washington, D.C.**
+1-202-783-8400

Thus, if both literal infringement and infringement under the doctrine of equivalents are asserted, a court must conduct a separate infringement analysis under the doctrine of equivalents after conducting an analysis of literal infringement for claim limitations written in means-plus-function format.²⁹

Comparing and Contrasting § 112, ¶ 6 and the Doctrine of Equivalents

While evidence and arguments concerning equivalents under § 112, ¶ 6 may substantially overlap those concerning the doctrine of equivalents, the two types of equivalents are by no means perfectly coextensive.³⁰ The similarities and differences are important.

Key similarities between § 112, ¶ 6 “equivalents” and the doctrine of equivalents include:

- Both involve similar analyses of the insubstantiality of differences between the patent and the accused product.³¹
- Both protect the substance of a patentee’s rights by preventing mere colorable differences or slight improvements from escaping infringement. To do so, § 112, ¶ 6 incorporates equivalents into the literal scope of a functional claim limitation, while the doctrine of equivalents encompasses equivalent products beyond the literal scope of the claim.³²

Key differences between § 112, ¶ 6 “equivalents” and the doctrine of equivalents include:

- The dates for determining “equivalence.” The doctrine of equivalents relates to after-arising technology, while § 112, ¶ 6 relates only to equivalents as of the date of issuance.
- Section 112, ¶ 6 limits the broad language of means-plus-function limitations to equivalents of the structures disclosed in the specification, while the doctrine of equivalents equitably expands exclusive patent rights.³³
- Section 112, ¶ 6 compares one structure corresponding to the mean-plus-function limitation within a claim to an accused product to determine the presence of one element of a claim, while the doctrine of equivalents compares an entire patent claim with the accused product.

Conclusions

Keep five things in mind when dealing with § 112, ¶ 6 equivalents:

- What is the “function” described in the means-plus-function claim?
- Does the “equivalent” infringing product perform the identical function?
- Are the differences between the product and the disclosed structure “insubstantial” or are the two structures “interchangeable”?
- When did the “equivalent” technology arise?
- If there is no literal infringement, is infringement under the doctrine of equivalents a possibility?

Inc., 174 F.3d 1308, 1320-21 (Fed. Cir. 1999) (an accused device can infringe under the doctrine of equivalents without infringing literally under 35 U.S.C. § 112, ¶ 6, because the doctrine only requires substantially the same function, not the “identical” function required in § 112, ¶ 6).

29 *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1094 (Fed. Cir. 2003) (citing *Apex Inc. v. Ritaran Computer, Inc.*, 325 F.3d 1364, 1378 (Fed. Cir. 2003)).

30 *ACTV, Inc.*, 346 F.3d at 1094.

31 *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1435 (Fed. Cir. 2000) (citing *Chiuminatta Concrete Concepts, Inc.*, 145 F.3d at 1310 (internal quotation marks omitted)).

32 *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1310 (Fed. Cir. 1998).

33 *Valmont Indus., Inc. v. Reinke Mfg. Co., Inc.*, 983 F.2d 1039, 1043-44 (Fed. Cir. 1993); see *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1320 (Fed. Cir. 1999).