ABSTRACT

Functional claims have caused many headaches for academics, judges and practitioners who have struggled to define precisely what constitutes “functional” claim language and to determine the proper scope afforded to broad means-plus-function claim elements. The debate between academics and judges regarding functional claim interpretation has typically focused on Congressional intent behind the statute, specifically whether 35 U.S.C. § 112, ¶ 6 was intended solely as a claim interpretation tool or only as means for narrowing functional claims during an infringement analysis. The Federal Circuit famously adopted a hybrid approach in In re Donaldson, but since then several authors have levied serious criticisms of the current framework. For practitioners, the trigger for evoking the statute has always been somewhat ambiguous and the Federal Circuit’s recent opinion in Massachusetts Institute of Technology v. Abacus Software only exacerbates the confusion. This comment consolidates the critiques of the Federal Circuit’s current approach and proposes that the perceived inequities of the current system can be resolved by adopting a separate claims prosecution process for functional claims.
Rudimentary patent law concepts teach us that the claims narrowly define a patent’s breadth, forming the basis of any action for infringement. The claims also stand alone to determine whether the patent will withstand facial challenges during prosecution (claim “patentability”) or litigation (claim “validity”). Functional claim language, however, allows patentees to vaguely approximate the metes and bounds of their inventions. 35 U.S.C. §112, ¶ 6 (“Paragraph 6”), the statute governing functional claim language, allows drafters of combination claims to express an element in a claim as a means or step for performing a specified function without reciting the structure, material or acts supporting that function. This provision expressly sanctions broad, functional means or step-plus-function claim language. Interpreted literally, means and step-plus-function claims would provide expansive protection for any patentee. Of course, functional claim language, by its very nature, casts too wide a net, trapping technology and undermining the advancement of the useful arts. Thus, Congress sought to reduce the scope of functional claims by adding the equivalents clause to the statute.

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4 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, materials or acts described in the specification and equivalents thereof.
5 See generally OReily, 56 U.S. at 120 (criticizing functional claim writing for its overbreadth); Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (noting that if a functional claim were read literally it could encompass "every conceivable means for performing the function" and holding that the equivalents clause should thus be used to limit such claims to their specifications); 3 DONALD S. CHISUM, CHISUM ON PATENTS § 8.04 (2006) (discussing that functional claim writing is not preferred because it (1) allows the patentee to claim something beyond what she has invented and (2) defines the invention in a vague and ambiguous manner thus providing little notice to the rest of the world as to what claim covers precisely).
The Crossroads of Patentability & Validity

The Federal Circuit’s jurisprudence restricts the use of functional claim language by limiting what equivalents are covered and rarely finds claims in step-plus-function format. Beginning from the widely accepted supposition that the scope of functional claims must be narrowed, this comment addresses an ongoing debate within the literature and the Federal Circuit: whether Congress intended the equivalents clause to be applied during (1) claim patentability and validity challenges or (2) a separate infringement analysis. In either case, the Federal Circuit’s adoption of a hybrid approach has led it to misuse the equivalents clause with grievous consequences for owners of patents containing functional elements. Irrespective of when the equivalents clause is applied during litigation, many inconsistencies will subsist in the current framework for narrowing functional claims and separation of the equivalents analysis will not solve every problem without further action.

In Part I this comment details the historical underpinnings of Paragraph 6 and discusses how the Federal Circuit determines when the patentee sought to evoke means or step-plus-function treatment. Part II examines the Federal Circuit’s conflicting standards of review and conflicting statements of congressional intent behind Paragraph 6. Part II also elucidates the disparity between the doctrine of equivalents and Paragraph 6’s equivalents clause and criticizes the Federal Circuit’s current framework as violating a patentee’s Seventh Amendment rights, as articulated by the Supreme Court in Markman.

Part III proposes Congress and the Patent and Trademark Office (“PTO”) recalibrate the existing framework by (a) amending the statute to clarify Congress’s intent behind Paragraph 6 and (b) creating a separate prosecution process for functional claims.

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6 In re Donaldson Co., 16 F.3d 1189, 1194 (Fed. Cir. 1994); see also Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310 (Fed. Cir. 1998) (using the equivalents clause of 35 U.S.C. § 112, ¶ 6 to articulate the after-developed technology doctrine, limiting the scope of functional patent claims).


8 Chiuminatta, 145 F.3d at 1310 (articulating the after-developed technology doctrine, which limits the scope of functional patent claims to those technologies described in the specifications and providing protection from non-disclosed technologies only if they were developed after the patent was issued).


11 In re Donaldson, 16 F.3d at 1193 (holding Paragraph 6 should be applied during both litigation and claim interpretation before courts or the PTO).


The Supreme Court's 1946 decision in Halliburton Oil Well Cementing Co. v. Walker\textsuperscript{13} marked the nadir for functional claim language.\textsuperscript{14} In Halliburton, the patentee successfully sued for infringement of his patent for a device used in measuring oil well distances.\textsuperscript{15} On appeal, the Supreme Court held the plaintiff's claim language functional\textsuperscript{16} and went on to state that where the invention claims a combination, the patentee must explicitly describe the new combination of old devices.\textsuperscript{17} The Court held the patent's “blanket claims” were invalid because they were functional at the “point of novelty.”\textsuperscript{18} The Court insisted that upholding such claim language would undermine patent’s public notice function and thereby chill innovation.\textsuperscript{19} Halliburton unequivocally ended functional claim language until Congress resurrected it in the 1952 Patent Act.\textsuperscript{20} In Part I (A), this comment examines the historical and legal underpinnings of Paragraph 6 and summarizes the Federal Circuit's understanding of Congress's intent behind the statute. Part I (B) discusses the modern “intent to evoke” standard developed by the Federal Circuit that determines when the patentee sought to evoke means or step-plus-function treatment, i.e. the Federal Circuit's test for determining what constitutes "functional" claim language.

A. Statutorily Overruling Halliburton

Six years after the Supreme Court's decision in Halliburton, Congress enacted the 1952 Patent Act which added then Paragraph 3, currently Paragraph 6, expressly sanctioning functional claim language.\textsuperscript{21} This provision is widely accepted as the

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\textsuperscript{13} 329 U.S. 1 (1946).
\textsuperscript{14} Id. at 14; see generally William F. Lee & Eugene M. Paige, Means Plus and Step Plus Function Claims: Do We Only Know Them When We See Them? 80 J. PAT. & TRADEMARK OFF. SOC'Y 251, 253–54 (1998) (discussing the impact of the Halliburton decision as a precursor to Congress's enactment of then 35 USC § 112, ¶ 3).
\textsuperscript{15} Halliburton, 329 U.S. at 2, 7–8.
\textsuperscript{16} Id. at 9 (citing Gen. Elec. Co. v. Wabash Appliance Corp., 304 U.S. 364, 371 (1938), for the then well known proposition that patent claims employing conveniently functional language at the exact point of novelty are invalid because they claim the function (what the invention achieves) and fail to describe its physical components (how it operates)).
\textsuperscript{17} Id. at 11.
\textsuperscript{18} Id. at 12 (recognizing the Halliburton device achieves the same function as plaintiff's patent, rather than claiming the structure of the new combination, the claim used functional terms describing what the new device accomplished, e.g. removing background noise by employing an “electric filter”). See also Wabash Alliance Corp., 304 U.S. at 371 (coining the phrase “functional... at the exact point of novelty”); Davis Sewing Mach. Co. v. New Departure Mfg. Co., 217 F. 775, 782 (6th Cir. 1914).
\textsuperscript{19} Halliburton, 329 U.S. at 10 (acknowledging functional claim language provides little notice to competitors and licensees of precisely what the patentee has created and monopolized).
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congressional response to the Supreme Court’s opinion in *Halliburton*.

The federal judiciary has cited PJ Federico’s commentary on the Patent Act, written while he was U.S. Patent Office Examiner-in-Chief, as an authoritative source for unveiling congressional intent. In that commentary, Mr. Federico found it "unquestionable" that the "use of functional expressions in combination claims is authorized" and further remarked that the new Patent Act rendered *Halliburton* obsolete.

Ever since then, however, the Federal Circuit has struggled to define the precise boundaries of functional claims.

From 1952–1994 the PTO resisted granting patents with broad, functional language. In an early case, *In re Fuetterer*, a patent applicant appealed the decision of the PTO to deny his application seeking to patent a new tire tread combination improving traction under wet conditions. The patent claimed that by adding an effective amount of inorganic salt combined with other ingredients, the tire tread gained better traction. The PTO denied his claim as "indefinite and ambiguous" because it listed only four inorganic salts when there existed thousands of other salts capable of producing similar or better results.

On review, the court held the 1952 Patent Act specifically authorized a more liberal use of functional claims than had previously been permitted by some stricter statutes.

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22 Warner-Jenkinson, 520 U.S. at 27–28 (“Congress enacted § 112, ¶ 6 in response to *Halliburton*’); see also Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582 (Fed. Cir. 1996). In place of the *Halliburton* rule, Congress adopted a compromise solution, one that had support in the pre-*Halliburton* case law: Congress permitted the use of purely functional language in claims, but it limited the breadth of such claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof. *Id.; In re Fuetterer*, 319 F.2d 259, 264 n.11 (C.C.P.A. 1964) (stating that the case law before *Halliburton* permitted claims involving “means, plus a statement of function” and quoting Rep. Joseph R. Bryson (D-SC) who chaired the sub-committee “in charge of the . . . Patent Act” and stated, “[§ 112, ¶ 3] will [permit] combination claiming as it was understood before the Halliburton decision”).


25 Id. (insisting that the new paragraph “modified or rendered obsolete” the *Halliburton* decision). See also Charles J. Zinn, *Commentary on New Title 35, U.S. Code “Patents”, 1952 U.S.C.C.A.N. 2507, 2514 (1952) (noting that the new paragraph recognizes the validity of combination claims where the novelty is expressed in functional terms in order to offset the *Halliburton* case).


27 See generally *In re Fuetterer*, 319 F.2d 259, 264 (C.C.P.A. 1963) (rejecting the argument of the Patent Office Solicitor that the “third paragraph of 35 USC § 112 (now paragraph 6) is necessarily in derogation of the previous case law” and therefore “must be strictly construed”); *In re Donaldson Co.*, 16 F.3d 1189, 1192–93 (Fed. Cir. 1994) (reversing the PTO’s forty-two year long policy of not reading the specifications into claims when interpreting a means or step-plus-function claim).

28 319 F.2d 259.

29 Id. at 260.

30 Id. at 265 (“[A]pplicant regards as his invention’ the combination with his other tread ingredients of any inorganic salt capable of ‘maintaining the carbohydrate, the protein, or mixture thereof, in colloidal suspension.’”).

31 Id. at 262.
court decisions (e.g. *Halliburton*). Thus, Mr. Fuettner's functional claims were patentable despite the thousands of other likely potent salts the application failed to list. According to the court, requiring such an exhaustive list, where the patent act clearly allowed functional language, would place an undue burden on the patentee. The court cautioned, however, that holding the claims patentable did not mean the patent would protect the patentee from an alleged infringer who simply used one of the unlisted inorganic salts.

Despite this holding, it was not until 1994, after being chastised by the Federal Circuit, that the PTO began looking beyond the claims and at the specifications to determine patentability. The court held this approach was more in line with Congress's dual intent behind the statute. Thus, the two decisions cleared the mounting tension between the PTO and the Federal Circuit regarding functional claims and expressly sanctioned their use, opening the floodgates of litigation regarding functional claims.

### B. Finding Means and Step-Plus-Function Claims: Moving Away from Judge Rader's Bright-Line

Modern means and step-plus-function analysis attempts to determine when the patentee's claim language evokes the statute, i.e., what constitutes "functional" language. There are no "magic words" which will consistently invoke means-plus-function treatment. Judge Rader of the Federal Circuit, however, remains the most

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32 Id. ("Title 35, U.S.C. . . . specifically authorizes [functional claim language].").
33 Id. at 265.
34 Id. at 265–66.
35 Id. If others in the future discover what inorganic salts additional to those enumerated do have such properties, it is clear appellant will have no control over them per se, and equally clear his claims should not be so restricted that they can be avoided merely by using some inorganic salt not named by appellant in his disclosure. *Id.*
36 *In re Donaldson Co.*, 16 F.3d 1189, 1194 (Fed. Cir. 1994) (rebuking the PTO Board's policy of neglecting to read the specifications into the claims for means-plus-function applications, thereby denying functional language claims that would otherwise be patentable).
38 *In re Donaldson*, 16 F.3d at 1193–94 & nn.3–4 (holding PTO's policy undermined Congress's intent to simultaneously sanction functional claims yet restrict their scope—"paragraph six applies regardless of the context in which the interpretation of means-plus-function language arises, i.e., whether as part of a patentability determination by the PTO or as part of a validity or infringement determination in a court").
40 Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed. Cir. 1997).
41 Lee & Paige, *supra* note 14, at 267 (noting while use of the word "means" in a claim will get you closer "than anything else" to evoking 35 U.S.C. § 112, ¶ 6, however use of the word is not definitive); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) (noting the PTO has "rejected the argument that only the term 'means' will evoke section 112(6)" but ultimately
outspoken advocate of adopting a bright-line rule whereby use of "means" or "steps for" gives rise to a rebuttable presumption that the patentee intended to evoke Paragraph 6.42

1. Means-Plus-Function Analysis

While the Federal Circuit derogates from finding a single claim in step-plus-function format and rarely reviews such claims43 the court frequently adjudicates means-plus-function claims.44 Judge Rader's opinion in Sage Productions, Inc. v. Devon Industries, Inc.45 espouses a bright-line rule: use of the term "means for X," where X is the recital of some function, gives rise to a rebuttable presumption that the patentee intended to evoke the statute if the claim fails to specify the underlying structure, materials or acts supporting that function.46 For example, in a claim for a clothes washer, the patentee evokes the statute by claiming "means for washing clothes" without providing any details regarding the structure of the machine (i.e. the tub, lid, gearbox, plumbing system, etc.) or how the machine combines detergent with water to clean the clothes.47

holding "it is fair to say that use of the term 'means' . . . generally invokes section 112(6) and that the use of a different formulation generally does not.".48

42 Lee & Paige, supra note 14, at 267; Sage, 126 F.3d at 1427–28 (noting "use of the word 'means,' is part of the "classic template for functional claim elements" giving rise to "a presumption that the inventor used the term advisedly to evoke" the statute); Cole v. Kimberly Clark, 102 F.3d 524, 533 (Fed. Cir. 1996) (Rader, J., dissenting); Seal-Flex, Inc. v. Athletic Track & Court Constr., 172 F.3d 836, 850 (Rader, J., concurring) (asserting "step for" in step-plus-function claims raises the same rebuttable presumption that "means" raises in means-plus-function claims).49

43 CHISUM, supra note 5, § 18.03(5)(e)(iii) (“There were virtually no court decisions addressing ‘step’ clauses until the late 1990’s.”); Lee & Paige, supra note 14, 267 (recognizing that there is "uncertainty about what a 'step-plus-function' claim actually looks like" and suggesting that the dilemma may continue into the foreseeable future since "very few claims have been drafted in this manner"); Seal-Flex, 172 F.3d at 850 n.5 (Rader, J., concurring) (citing to the only two pre-Federal Circuit opinions interpreting step-plus-function claims).

44 CHISUM, supra note 5, § 18.03(5)(e)(iii). In the first four decades under the new patent act appellate courts decided few cases implicating 35 U.S.C. § 112, ¶ 6 (previously ¶ 3), however, since the 1990’s the court has decided several cases involving means-plus-function claims. Id.

45 126 F.3d 1420 (Fed. Cir. 1997).

46 Id. at 1427; see also Loral Fairchild Corp. v. Victor Co., 906 F. Supp. 798, 808 (E.D.N.Y. 1995). Sitting by designation as a district court judge, Judge Rader, citing several cases interpreting claims using the term "means" in means-plus-function, lamented "the recitation of some structure does not remove a claim from the ambit of section 112." Id.

47 Example provided by author for illustrative purposes. The patentee would then describe the underlying structure, materials or acts in the corresponding specifications, as called for in the statute. 35 U.S.C. § 112, ¶ 6. The more typical example given of a means-plus-function claim is "a means for fastening" where any screw, nail or adhesive could work. MARTIN J. ADELMAN, ET. AL, CASES AND MATERIALS ON PATENT LAW 556 (2d ed. 2003). However, as the analysis below indicates, use of functional language at the point of novelty is much more problematic than using it to describe minor or insubstantial elements of a claim, such as fastening. See, e.g., Valmont Indus., Inc. v. Reinke Mfg., Co., 983 F.2d 1039, 1043 (Fed. Cir. 1993); Cross Med. Prod., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1317 (Fed. Cir. 2005).
Over the last decade, this “intent to evoke” test has become a major component of the Federal Circuit’s analysis regarding means-plus-function claims. Under Judge Rader’s analysis, once a litigant establishes the presence of functional claim language, the burden shifts to the patentee to rebut the presumption that she intended, to evoke the statute by advisedly using terms known to be functional in nature. The Federal Circuit, however, has been very careful not to adopt Judge Rader’s approach wholesale. Instead the court has returned to pre-Sage reasoning and declared that means-plus-function claims may exist without the patentee using specific claim language (e.g. “means for X”). Despite numerous Federal Circuit opinions interpreting means-plus-function claims, the court still fails to adequately illuminate the dark boundaries of functional claim language. Instead, the Federal Circuit’s framework attempts to synthesize Judge Rader’s intent-based presumption with a more paternal approach whereby any claim language that lacks “sufficient structure” can invoke the statute, irrespective of whether the claim drafter knew she was using functional language.

2. Step-Plus-Function

Commentators are apt to point out that the law regarding step-plus-function remains significantly undeveloped. Since its inception in 1982, the Federal Circuit

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48 Biomedino, LLC v. Waters Tech. Corp., 490 F.3d 946, 950 (Fed. Cir. 2007); Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed. Cir. 2003) (adhering to Judge Rader’s bright-line rule that specific claim language gives rise to a presumption of intent to evoke Paragraph 6).

49 York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1574 (Fed. Cir. 1996) (noting “the word ‘means’ triggers a presumption” but ultimately holding the presumption was rebutted by the claim’s recital of structure).

50 Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353–54 (Fed. Cir. 2006) (digressing from Judge Rader’s intent based formula and ruling even claim language without “means” may nevertheless receive means-plus-function treatment where the claim term fails to recite “sufficiently definite structure” or recites “function without . . . structure for performing that function”).

51 Id. (“[G]eneric terms ‘mechanism,’ ‘means,’ ‘element,’ and ‘device,’ typically do not connote sufficiently definite structure.”); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1997) (noting use of the word “means” is not dispositive for or against means-plus-function treatment); see also Lee & Paige, supra note 14, at 267 (discussing that Judge Rader’s presumption is not dispositive).


53 See Mass. Inst. of Tech., 462 F.3d at 1353.

54 Durham, supra note 1, at 64–65 (noting that courts seldom apply step-plus-function limitations to claims and proposing that the “problematic language” giving rise to step-plus-function claims should simply be repealed); Lee & Paige, supra note 14, at 267. The Federal Circuit also notes that, due to a lack of jurisprudence on such claims, construing the claim in step-plus-function format would upset the patentees investment backed expectations or “render the scope of the coverage of these method claims uncertain and disrupt the patentees’ settled expectations . . . .” Masco Corp. v. United States, 303 F.3d 1316, 1327 (Fed. Cir. 2002).
has yet to find a claim written in step-plus-function form. The limited case law on step-plus-function resolves little: the Federal Circuit suggests it will construe a claim in step-plus-function format only when the claim drafter signals his intent to invoke Paragraph 6 by using "steps for" language but not "steps of" and then only when "steps plus function without acts are present." Furthermore, the court consistently refuses to apply the statute to common method claims, finding claims using "steps of" and gerunds such as "passing, heating, reacting, transferring" are not in step-plus-function. Again, the Federal Circuit’s application of Paragraph 6 is guided by their understanding that Congress’s limited purpose was to overrule Halliburton, thus leading the court to suggest both means and step-plus-function claims should undergo roughly the same analysis. The only guidance of any substance from the Federal Circuit comes from Seal-Flex, Inc. v. Athletic Track & Court Construction and O.I. Corp. v. Tekmar Co, where Judge Rader has modeled step-plus-function analysis on the means-plus-function “intent to evoke” formula.

55 See generally Cardiac Pacemakers Inc v. St. Jude Med., Inc. (Cardiac Pacemakers II), 381 F.3d 1371, 1382 (Fed. Cir. 2004) (holding use of “steps of” in a claim preamble was not in step-plus-function form): Masco Corp., 303 F.3d at 1327 (reversing decision that “transmitting a force” was in step-plus-function form); Epcos Gas Sys., Inc. v. Bauer Compressors, 279 F.3d 1022, 1028 (Fed. Cir. 2002); Serrano v. Telular Corp., 111 F.3d 1578, 1583 (Fed. Cir. 1997) (claim language using “step” was not functional and therefore could not fall within the ambit of Paragraph 6). However, there are two pre-Federal Circuit opinions finding claims in step-plus-function form. Ex Parte Zimmerly & Beck, 153 U.S.P.Q. 367, 369 (B.P.A.I. 1966) (interpreting “raising the pH” in step-plus-function form and stating the patent act “sanctions functionally defined steps in claims drawn to a combination of steps”); In re Roberts, 470 F.2d 1399, 1402 (C.C.P.A. 1973) (holding use of functional language does not “in and of itself” render a claim invalid).

56 Masco Corp., 303 F.3d at 1327 (adjudicating a claim involving “steps of” language the court held “we are unwilling to resort to [Paragraph 6] . . . without a showing that the limitation contains nothing that can be construed as an act.”) (emphasis added); O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997) (stating that the statement in a claim’s preamble describing its overall process, combined with claim language calling for “steps of,” is not enough to evoke Paragraph 6); Epcos Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1028 (Fed. Cir. 2002); Utica Enters., Inc., v. Fed. Broach & Mach. Co., 100 F. App’x 403, 409 (Fed. Cir. 2004).

57 Tekmar, 115 F.3d at 1582–84 (stating that any mention of the word “step” in the claim preamble is essentially meaningless for Paragraph 6 purposes): Cardiac Pacemakers II, 381 F.3d at 1381 (reaffirming Tekmar holding a preamble recitation of “steps of” does not create a Paragraph 6 presumption, only “steps for” language does).

58 Tekmar, 115 F.3d at 1583. [W]e must be careful not to extend the language of this provision to situations not contemplated by Congress. If we were to construe every process claim containing steps described by an “ing” verb, such as passing, heating, reacting, transferring, etc. into a step-plus-function limitation, we would be limiting process claims in a manner never intended by Congress. Id.

59 Id. See also Masco, 303 F.3d at 1326 (citing Federico’s commentary, the court held “steps for” in a step-plus-function claim gives rise to the same presumption as “means” in the means-plus-function context).

60 Tekmar, 115 F.3d at 1583 (stating that means and step-plus-function claims undergo the same analysis, "structure and materials go with means, acts go with steps . . . only when means plus function without definite structure are present, and that is similarly true with respect to steps, that the paragraph is implicated only when steps plus function without acts are present.”) (emphasis in original).

61 Seal-Flex, Inc. v. Athletic Track & Court Const., 172 F.3d 836, 848 (Fed. Cir. 1999) (Rader, J., concurring) (analogizing the means-plus-function test to step-plus-function analysis, “[g]iven the parallel format of the statute, a similar analysis applies to step-plus-function claim elements.”); Tekmar, 115 F.3d at 1583.
Judge Rader’s concurrence in Seal-Flex attempts to create a bright-line rule whereby claim drafters mark their intent to evoke Paragraph 6 by advisedly implementing specific claim language. Using his opinion in Sage as a guide, Judge Rader elucidates an intent to evoke test whereby the presence of specific functional claim language gives rise to a rebuttable presumption of intent to evoke the statute. This test removes any ambiguity from the statute by defining “functional” language as any claim employing “steps for X.” The patentee can rebut the presumption that Paragraph 6 was knowingly evoked by showing that the claim states sufficient acts, in support of the steps, to define the invention.

Judge Rader, no doubt mindful of his brethren’s recalcitrance to adopt a clear bright-line rule, continues stating a step-plus-function claim may exist, without “steps for language,” if the patentee claims the underlying function (what the element accomplishes) without reciting acts (how those functions are accomplished) for performing the function. This led the court to distinguish “acts” from “functions” making it nearly impossible to know exactly when a drafter intends to evoke the statute. Thus a claim, absent the signaling “steps for” language, could nevertheless be construed in step-plus-function format if the claim has broad functional language describing what the element does without describing how those steps are achieved. This final qualification makes the definition of “functional language” ambiguous, and leaves one wondering when, if ever, a step-plus-function claim arises. The Federal Circuit offers little guidance, issuing a perfunctory judicial catch-all, reminding litigants that a step-plus-function claim requires “careful analysis.”

C. Seventh Amendment Considerations

Applying the intent to evoke test in the abstract (e.g., during claim prosecution) is much less complicated than in litigation where the constitutional imperative requiring separation of legal and factual issues compounds the difficulty. The

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62 Seal-Flex, 172 F.3d at 848–50: see also Masco Corp., 303 F.3d at 1326 (Fed. Cir. 2002).
63 Seal-Flex, 172 F.3d at 849 (noting the phrase “steps for” marks the patentee’s intent to evoke paragraph six, “the phrase ‘step for’ in a method claim raises a presumption that § 112, ¶ 6 applies.”).
64 Id.
65 Id. at 849–50. Several courts have reaffirmed the holding in Seal-Flex. See, e.g., Masco Corp., 303 F.3d at 1327; Epcon Gas Sys. Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1028 (Fed. Cir. 2002) (citing to Judge Rader’s concurring opinion in Seal-Flex, the court concluded that the lack of the words “step for” and the recital of “a series of steps without the recital function” does not bring a method claim within the ambit of Paragraph 6); Utica Enters., Inc. v. Fed. Broach & Mach. Co., 109 F. App’x 403, 409 (Fed. Cir. 2004) (citing the rule that absent “steps for” language, a claim is subject to Paragraph 6 “only if it recites steps for performing a specified function but does not recite any act in support of that function”).
66 Seal Flex, 172 F.3d 836, 849–50 (Fed. Cir. 1999) (Rader, J., concurring); see also Masco, 303 F.3d at 1327 (noting construing method claims as step-plus-function limitations would unsettle inventors' expectations).
67 Seal-Flex, 172 F.3d at 849–50.
68 Id. at 849 (reminding litigants and lower courts to employ a “careful analysis” of the claim element in the context of the overall claim and the patent’s specifications).
Supreme Court’s landmark decision in *Markman v. Westview Instruments, Inc.*, elucidated the relative positions of judges and juries in patent litigation. In typical patent cases involving non-functional claims, courts construe the claims to determine patent validity and juries decide infringement. Judges are thus instructed to bifurcate the proceedings into two separate phases: claim construction, where judges interpret the claims as a matter of law; and infringement, where fact finders, mindful of the judge’s claim construction, resolve factual issues of equivalence and infringement. Litigation involving functional claims, however, remains somewhat amorphous.

Before the Supreme Court’s opinion in *Markman*, the Federal Circuit handed down *In re Donaldson Co.*, where the court applied Paragraph 6 to (1) patentability decisions before the PTO, (2) validity decisions in courts, and (3) infringement decisions. *In re Donaldson* marked the first time the court applied Paragraph 6 to validity decisions and was also a resounding mandate to the PTO, ordering it to use Paragraph 6 during claim prosecution. In retrospect, *In re Donaldson* seems at least somewhat inconsistent with *Markman*: the former permits judges to apply Paragraph 6 to both legal and factual issues, while the later explicitly bifurcates the process into legal and factual inquiries. *In re Donaldson* instructed lower courts, adjudicating claims involving functional elements, to look to the specifications twice: once to determine the patent’s validity and again to determine whether the accused device infringed. This seemingly benign ruling profoundly impacts a litigant’s Seventh Amendment rights, further blurring the line between issues of law and fact.

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69 Id. at 391.
70 Id. at 384–85 (squarely addressing the relative positions of judges and juries in patent cases, the Supreme Court held there are “two elements of a simple patent case, construing the patent and determining whether infringement occurred . . . . The first is a question of law . . . . The second is a question of fact, to be submitted to a jury.”).
71 Id.
72 Id.
73 16 F.3d 1189 (Fed. Cir. 1994).
74 Id. at 1193–94 (Fed. Cir. 1994).
75 Id. at 1194–95: 1162 U.S. PAT. & TRADEMARK OFFICE OFFICIAL GAZETTE 59 (May 17, 1994) (criticizing the Federal Circuit’s decision in *In re Donaldson* but recognizing that it mandated a new examining procedure despite the well known policy the PTO had followed “for at least the last forty-two years”). See also ADELMAN, supra note 10, § 2.9[5] n.84.
76 Rigamonti, supra note 7, at 183–84 (criticizing the Federal Circuit’s theory of functional claiming as blurring the line between factual and legal issues).
77 In re Donaldson, 16 F.3d at 1193; see also Rigamonti, supra note 7, at 178.
D. After-Developed Technology Doctrine

Once claim construction has closed and the court decides to construe a claim element in means or step-plus-function format, the court proceeds to trial to determine infringement, unless the case is disposed on summary judgment. In a case involving non-functional terms, the court proceeds to trial where the fact finder determines whether the claim is literally infringed. Alternatively, the court may apply the doctrine of equivalents to determine whether the accused device infringes.

The Federal Circuit has expressly distinguished the doctrine of equivalents from means-plus function equivalents under Paragraph 6. Cases have held that the equivalents clause is neither an equitable doctrine nor was it an attempt by Congress to codify the doctrine of equivalents and that both have different origins.

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79 See generally Applied Med. Res., Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed. Cir. 2006) (“Claim construction of a means-plus-function limitation includes two steps. First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs that function.”) (internal citations omitted).

80 Jeneric/Pentron, Inc. v. Dillon Co., Inc., 205 F.3d 1377, 1382 (Fed. Cir. 2000) (stating the test for literal infringement).

81 Warner-Jenkinson, Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 38 (1997) (suggesting, in dicta, that the doctrine of equivalents is an issue of fact). The court reaffirmed its adherence to the doctrine of equivalents and rejected defendant’s argument that Paragraph 6 was Congress’s implicit rejection of the doctrine of equivalents. Id. at 27. The court applied the function-way-result test to determine whether the alleged infringing device incorporates an insubstantial difference but preserves the same function so that the two products “do the same work in substantially the same way, and accomplish substantially the same result.” Id. at 35. See also CHISUM, supra note 5, § 18.03(5)(a) (explaining that if functional claims were interpreted literally, they would be afforded expansive, unduly broad protection and patentee’s would thus cast a net so wide, nearly nothing would escape it); Valmont Indus., Inc. v. Reinke Mfg., Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (noting if functional claims were read literally they “could encompass any conceivable means for performing the function”).

82 Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310–11 (Fed. Cir. 1998) (noting while both doctrines seek to prevent pirating by making insubstantial changes, the doctrines “are not coextensive” because, unlike the doctrine of equivalents, § 112 ¶ 6 equivalence requires “identical, not equivalent function” and only protects the patentee from later developed technology); see also Odetics, Inc. v. Storage Tech. Co., 185 F.3d 1259, 1267 (Fed. Cir. 1999) (stating means-plus-function limitations must have functional identity with an accused infringer’s claim for both literal and non-literal infringement); Frank’s Casing Crew & Rental Tools, Inc. v. Weatherford Int’l Inc., 389 F.3d 1370, 1379 (Fed. Cir. 2004) (same); D.M.I., Inc. v. Deere & Co., 755 F.3d 1570, 1575 (Fed. Cir. 1985) (“Thus the word ‘equivalent’ in § 112 should not be confused, as it apparently was here, with the ‘doctrine of equivalents.’”); Dawn Equip. Co. v. Ky. Farms Inc. 140 F.3d 1009, 1016–18 (Fed. Cir. 1998) (holding, after a jury found infringement, the defendant’s motion for judgment as a matter of law should have been granted because of the difference in equivalents standards); Nomos Corp. v. Brainlab USA, Inc., 357 F.3d 1364, 1369 (Fed. Cir. 2004) (following Chiuminatta and recognizing the difference in the two equivalents standards).

83 Valmont Indus., 983 F.2d at 1043 (stating that, unlike the doctrine of equivalents, the equivalents clause is not an equitable doctrine and holding that only the doctrine of equivalents “equitably expands exclusive patent rights”); see also Rigamonti, supra note 7, at 185 (noting the Federal Circuit’s opinion in Warner-Jenkinson, which ruled the doctrine of equivalents was a factual inquiry for the jury and thus, a fortiori, not an equitable doctrine).

84 Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 28 (1997) (stating, in dicta, the equivalents clause may be used to narrow broad claim elements, and that it may be Congress’s approval of the reverse doctrine of equivalents for claim interpretation, but that the clause
and purposes. The Federal Circuit has repeatedly held that, under the equivalents clause, a means-plus-function claim's corresponding specifications limit the protection afforded to its claims, unlike non-functional claims, which enjoy a wider scope of protection. Although there has never been an analogous ruling for step-plus-function claims, the Federal Circuit's analysis indicates that a step-plus-function claim would be similarly restricted. This leads commentators to aptly point out that while using functional language may be easier, or even impossible to avoid in some cases, it is far from desirable considering the ramifications it has on the patent's scope, particularly after the Federal Circuit's decision in Chiuminatta Concrete Concepts v. Cardinal Industries, Inc.

In Chiuminatta, the Federal Circuit limited the scope of protection afforded to functional claims. The court espoused the after-developed technology doctrine for means and step-plus-function claims whereby such claims are only protected against those technologies explicitly listed in the specifications or developed after the date of

ultimately has no bearing on literal infringement); Tate Access Floors, Inc. v. Interface Architectural Res., Inc., 279 F.3d 1357, 1368 (Fed. Cir. 2002) (citing to In re Donaldson and stating Congress did not intend to codify the reverse doctrine of equivalents into Paragraph 6).

Valmont Indus., 983 F.2d at 1043–44 (Fed. Cir. 1993) (stating that it is important to distinguish the equivalents clause of Paragraph 6 and the doctrine of equivalents because each has "separate origins and purposes"), Ky. Farms, 140 F.3d at 1022 (Newman, J., additional views) (stating that the difference between the two has "long been understood by practitioners of patent law").

Cardiac Pacemakers, Inc. v. St. Jude Med. Inc. (Cardiac Pacemakers I), 296 F.3d 1106, 1113 (Fed. Cir. 2002) ("The specification must clearly associate the structure with performance of the function" such that one skilled in the art can see a link between the function listed in the claim and the "corresponding" function described in the specification).

See D.M.I., 755 F.2d at 1575 (articulating the rule for means-plus-function claims—"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"); Apex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1221–22 (Fed. Cir. 1996); Chiuminatta, 145 F.3d at 1310–11 (requiring patentees claiming functional elements to list existing technologies, unlike non-functional patentees); Ky. Farms, 140 F.3d at 1023 (Michel, J., additional views) (noting means-plus-function claims are only entitled to protection from "structural equivalents" of those elements found in the specifications; therefore, the specifications determine the scope of a means-plus-function claim); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 180, 1582 (Fed. Cir. 1996) (stating that when Congress allowed for functional claiming by enacting 35 U.S.C. § 112, ¶ 3 they did so with the proviso that such broad claims would be constrained by their specifications).

Seal-Flex, Inc. v. Athletic Track & Court Const., 172 F.3d 836, 850 (Fed. Cir. 1999) (Rader, J., concurring). In sum, similar to means-plus-function claims, this court employs a straightforward analysis for identifying a step-plus-function claim .... Because the phrasing "step for" would appear to claim every possible act for performing the recited function, in keeping with § 112, ¶ 6, such a claim covers only the specific acts recited in the specification for performing that function, and equivalent acts. Id.

145 F.3d 1303, 1311 (Fed. Cir. 1998). See e.g., Lee & Paige, supra note 14, at 252 (patentee's may "prefer these claims when a patent is being drafted" because of their ease of use but "may well prefer to be rid of these claims during litigation ...."); 2 JOHN GLADSTONE MILLS III, DONALD C. REILEY III & ROBERT C. HIGHLEY, PATENT LAW FUNDAMENTALS § 14:36 nn.1 & 65–69 (2007) (advising practitioners that functional expressions can be helpful in "overcoming the absence of the existence of just the right word" but later warning that such claims will be narrowly construed).

Chiuminatta, 145 F.3d at 1311.
the patent application. Any technologies that pre-date the patent's issue date must be disclosed in the specifications in order for the patent to receive protection from infringing devices that serve the same function, but simply accomplish it with equivalent material, structure or acts. Thus, patentees of functional claims must compose exhaustive lists of comparable technologies and include these lists in their specifications in order to successfully argue for literal infringement. Any unlisted technology will not infringe. Furthermore, the doctrine is applied as the alternative to literal infringement, foreclosing the patentee from arguing infringement under the doctrine of equivalents and forcing her to rely on literal infringement of those technologies disclosed in the specifications. The analysis of infringement under Paragraph 6 also differs in an important, yet easily overlooked, way: timing. Unlike their nonfunctional counterparts, functional claim elements must have been understood to be equivalent at the time of issuance.

II. HOUSE OF CARDS: INCONSISTENCIES WITHIN THE CURRENT FRAMEWORK

The Federal Circuit's current hybrid analysis of applying the equivalents clause during facial challenges and infringement (1) blurs the line between factual and legal issues, which confuses the standard of review and (2) narrows the patent's scope whenever functional language is employed. Additionally, the court's reluctance to embrace Judge Rader's bright-line presumption erects several prohibitive barriers to

91 Id.
92 Id. at 1310–11. See also Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1321 n.2 (Fed. Cir. 1999) (citing favorably to Chiuminatta and elucidating the after-developed technology doctrine). Cf. Cross Med. Prod., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1315 (Fed. Cir. 2005) (limiting Chiuminatta but also stating the patentee's "failure to explicitly recognize set screws as a means for securing" suggests the jury could find for the accused infringer on remand).
93 Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1372–73 (Fed. Cir. 2000) (noting, in dicta, that Chiuminatta precludes application of the doctrine of equivalents where the alleged infringing product involves technology that was known to the patentee at the time of the application but went undisclosed in his specifications).
94 Chiuminatta, 145 F.3d at 1311 ("There is no policy-based reason why a patentee should get two bites at the apple. If he or she could have included in the patent what is now alleged to be equivalent, and did not . . . why should the issue of equivalence have to be litigated a second time?"); Furnace Brook, LLC v. Overstock.com, Inc., 230 F. App'x 984, 988 (Fed. Cir. 2007) (applying Chiuminatta's later-developed technology doctrine). But see Valmont Indus., Inc. v. Reinke Mfg., Co., 983 F.2d 1039, 1043 (Fed. Cir. 1993) (recognizing that even functional claims are protected against those changes which add "nothing of significance to the structure, material or acts disclosed in the patent specification"); Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1222 (Fed. Cir. 1996) (noting that functional claims are protected against insubstantial changes).
95 Chiuminatta, 145 F.3d at 1310; Al-Site Corp., 174 F.3d at 1321 n.2; see also Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l Inc., 389 F.3d 1370, 1378–79 (Fed. Cir. 2004) (citing Chiuminatta and holding non-infringement as a matter of law where the accused technology was known to the patentee yet went undisclosed in his specification); Bateman v. Por-Ta Target, Inc., 155 F. App'x 511, 516–17 (Fed. Cir. 2005) (finding of non-literal infringement precluded finding of infringement under doctrine of equivalents).
96 Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 37 (1997) (recognizing the proper time for evaluating equivalents under the doctrine of equivalents is at the time of infringement, not at the time the patent was issued).
97 Al-Site Corp., 424 F.3d at 1320 (holding the proper time for recognizing equivalents is at the time the patent was issued, not when it was infringed); Frank's Casing Crew, 389 F.3d at 1379.
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functional claim writing. Part II (A) addresses the conflicting standards of review used by the Federal Circuit interpreting Paragraph 6 claims. Part II (B) discusses the Federal Circuit's use of the after-developed technology doctrine to limit a functional claim's scope and elucidates the disparity between the doctrine of equivalents and the equivalents clause of Paragraph 6. Part II (C) criticizes the Federal Circuit's conflicting expressions of congressional intent.

A. Breaking the Promise of Markman

The Federal Circuit was presented with three opportunities to clarify whether application of the equivalents clause to a functional claim was a factual or legal issue and in each instance the Federal Circuit declined to provide a framework for teasing out these issues. In In re Donaldson the court held, contrary to established precedent and legislative history,98 that it had the authority to decide both validity and infringement issues under Paragraph 6, despite only being presented with an appeal of the PTO's claim construction.99 After making such a bold pronouncement, the court failed to provide guidelines to carefully tease out factual (infringement) and legal (patentability or validity) issues. Courts and litigants were left to ponder whether equivalents could be decided by a judge at the summary judgment stage, or if doing so abrogated a litigant's Seventh Amendment rights.

In Markman, the Federal Circuit, rather than clarify the issue, chose to relegate its analysis to a footnote.100 The Supreme Court, affirming the Federal Circuit’s ruling, clearly indicated that factual and legal inquiries should be separated but also chose not to directly address the Seventh Amendment’s impact on functional claims.101

In Chiuminatta, the Federal Circuit explicitly maintained that it would not decide whether infringement under Paragraph 6 was an issue of fact or law102 and then proceeded, as a matter of claim construction, to enter summary judgment of non-infringement, sua sponte.103 This holding has, for all intents and purposes,

98 ADELMAN, supra note 10, § 2.9[5] n.58 (criticizing In re Donaldson as contrary to Congressional intent).
99 In re Donaldson, 16 F.3d 1189, 1193 (Fed. Cir. 1994). The issue before the court was clearly one of claim construction only and thus, despite lacking the record to decide whether the equivalents clause was part of the infringement analysis, the court reached beyond the record to decide the issue. Id. at 1192.
100 Markman v. Westview Instruments, Inc., 52 F.3d 967, 977 n.8 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996) (“[W]e express no opinion on the issue of whether a determination of equivalents under § 112, para. 6 is a question of law or fact.”). The claims at issue in Markman were not functional and therefore the court exercised judicial restraints, deciding it was inappropriate to decide an issue it was not squarely presented with. Id.
101 Markman, 517 U.S. at 384.
102 Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1309 (Fed. Cir. 1998) (leaving open the issue of “whether a determination of equivalents under § 112, para. 6 is a question of law or fact”).
103 Id. at 1311. This holding made a procedural leap from reserving judgment on the issue of whether the equivalents clause is for courts or juries to entering summary judgment of non-infringement as a matter of law because the specifications did not list the accused pre-existing technology. Id. at 1310-11.
made infringement of unlisted previously developed technologies a legal issue. The propriety of this approach has been subject to debate, even within the Federal Circuit, with compelling policy and constitutional arguments on both sides. Judge Rader himself has, on several occasions, pointed out the folly in deciding infringement on summary judgment, criticizing the court for conducting de novo review of factual issues that should be reviewed under the more deferential clearly erroneous standard. The Federal Circuit’s approach arguably confuses infringement with patentability issues, thus allowing judges to use the equivalents clause to simultaneously decide claim construction and infringement as a matter of law. This framework engenders ambiguity over a litigant’s constitutional right to a jury apropos the equivalents clause.

101 Al-Site Corp. v. VSI Int’l Inc., 174 F.3d 1308, 1321 (Fed. Cir. 1999). The court clarified that pre-existing technologies, if unlisted in the specifications, can’t literally infringe a functional element because “under § 112 [the equivalent] must have been available at the time of the issuance of the claim.” Id. The court did recognize, however, that after-arising technology should be analyzed under the usual doctrine of equivalents analysis, noting that “under the doctrine of equivalents” a Paragraph 6 equivalent “may arise after patent issuance and before the time of infringement.” Id.

102 See, e.g., Dawn Equip. Co. v. Ky. Farms Inc., 140 F.3d 1009, 1015 n.2 (Fed. Cir. 1998) (noting the conflicting views of the Judges on the Federal Circuit regarding the proper application of the equivalents clause). Cf. Cross Med. Prod., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1317 (Fed. Cir. 2005). The patent described “securing means” and listed only an “external nut” while the accused device employed a “set screw.” Id. at 1306–07. The court reversed a finding of infringement but stated the equivalence of a “set screw” to an “external nut” created an issue of fact for the jury, precluding a finding of infringement as a matter of law. Id. at 1317. Thus leaving the question for the jury on remand, rather than stating that, as a matter of law, the unlisted technology could not be equivalent. Id.

103 Cole v. Kimberly-Clark Corp, 102 F.3d 524, 533 (Fed. Cir. 1997) (Rader, J., dissenting) (reminding the court “because the district court did not address any structural equivalents under 35 U.S.C. § 112, ¶ 6 genuine issues of material fact remain” thus indicating that infringement (whether an accused element is an equivalent of a functional claim) is an issue of fact); see also Loral Fairfield Corp. v. Victor Co. of Japan, Ltd., 906 F. Supp. 798, 808 n.1 (E.D.N.Y. 1995) (Sitting as a district court judge by designation, Judge Rader indicated “the final inquiry as to whether an accused element is ‘an equivalent thereof’ is a question of fact.”); Overhead Door Corp. v. Chamberlain Group, Inc., 194 F.3d 1261, 1266, 1269–70 (Fed. Cir. 1999) (Citing to both Chiuminatta and Sage, Judge Rader, construing a functional claim, notes summary judgment should only be granted where “no reasonable fact-finder could find equivalence” and makes no mention of the after-developed technology doctrine).

104 Palumbo v. Don-Joy Co., 762 F.2d 969, 975 (Fed. Cir. 1985) ("Whether [the] accused device is a § 112 equivalent of the described embodiment is a question of fact."); D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1573 (Fed. Cir. 1985) (recognizing “[b]ecause infringement is itself an issue of fact . . . it should be approached with [some] care” the court held summary judgment for the defendant in an infringement suit where the claims fell under Paragraph 6 was impermissible); Overhead Door, 194 F.3d at 1266, 1269–70. The contrary view has since been expressed, in some cases limiting or abrogating the Palumbòs categorical rule. Markman v. Westview Instruments, Inc., 52 F.3d 967, 977 n.8 (Fed. Cir. 1995). aff’d, 517 U.S. 370 (1996); Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1539 (Fed. Cir. 1991); Chiuminatta, 145 F.3d at 1308, 1311; Al-Site Corp., 174 F.3d at 1321 n.2 (suggesting equivalence of unlisted preexisting technologies may be decided as an issue of fact); Bateman v. Por-ta Target, Inc., 155 F. App’x 511, 514, 516–17 (Fed. Cir. 2005). For means-plus-function limitations, the doctrine of equivalents reduces to whether or not there is an “insubstantial difference” between the limitation’s corresponding structure and any after-invented technology found in the accused device. Where, as here, the equivalence issue does not involve later-
1. Competing Perspectives: Equivalents Clause as an Issue of Fact or Law

Everyone agrees functional claims are too broad and if left unchecked would forestall innovation. From this standpoint, Chiuminatta's after-developed technology doctrine is simply the current framework for constricting functional claims.\(^1\) Because means and step-plus-function claims are, by their very nature, vague, adopting a rule permitting judges to decide infringement as a matter of law would better serve the patent's public notice function, thereby advancing uniformity in the patent system.\(^1\) Deciding infringement as an issue of law also decreases the burden on the federal courts, enabling judges to decide more cases on summary judgment, thereby dispensing large case loads and increasing efficiency in the federal docket. Also, given Chiuminatta's after-developed technology doctrine, should the patentee fail to list the accused "means" in his specification, the defendant could not infringe as a matter of law and the jury, therefore, is properly removed from the equation.\(^1\) Finally, the equivalents clause is another arrow in the quiver for those advocating for a specialized patent court system which eliminates juries altogether.\(^1\)

Opponents of the current trend toward making infringement an issue of law point to a myriad of procedural complications which generally concentrate on the inherent unfairness of the existing approach.\(^1\) First, should the Federal Circuit definitively hold infringement under the equivalents clause is a matter of law, developed technologies, "a finding of nonequivalence . . . precludes a contrary finding under the doctrine of equivalents." \(^{109}\) Id. (internal citations omitted).


\(^{111}\) Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 10–13 (1946). Judges' consistent interpretation of claims is crucial to our intellectual property regime. Markman v. Westview Instruments, Inc. 517 U.S. 370, 390 (1996) (noting that patent disclosures serve an important public notice function, informing licensees and competitors of the scope of invention that has been occupied). The Federal Circuit has aptly pointed out the need for clear notice is greater with means-plus-function claims since the functional claim language alone does not define the invention's scope for competitors. Dawn Equip. Co. v. Ky. Farms, Inc., 140 F.3d 1009, 1023 (Fed. Cir. 1998) (Michel, J., additional views).

\(^{112}\) Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l Inc., 389 F.3d 1370, 1378–79 (Fed. Cir. 2004) (noting the court compares "the accused structure with the disclosed structure" emphasizing that the disclosed structure is the only way to narrow overly broad functional claims and therefore unlisted technologies cannot infringe as a matter of law); Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1321 n.2 (Fed. Cir. 1999).


\(^{114}\) Rigamonti, supra note 7, at 183–84.
opponents argue such a rule would violate their Seventh Amendment right to a jury under Markman. The Federal Circuit's current formulation, which presumes an "intent to evoke" Paragraph 6, also seems somewhat at odds with the presumption of validity that patents enjoy. If issued patents are presumed valid, allowing the accused infringer to shift the burden onto the patentee simply by pointing to allegedly functional claim language seems unfair, especially if the patentee never could have known his issued patent contained functional language (e.g. where her claims lack "means for X"). During claim construction, the presumption of validity should require more from accused infringers. Finally, judges, after construing a claim in means or step-plus-function, are more inclined to grant summary judgment to accused infringers, i.e. to find the patent's narrow claims could not be infringed as a matter of law.

B. The After-Developed Technology Doctrine: Using the Equivalents Clause to Punish Functional Claim Writing

For practitioners, the stigma attached to Paragraph 6 is not confined to any perceived unfairness or confusion regarding the appropriate standard of review. At a much more basic level, patentees and practitioners are reticent to evoke Paragraph 6 because of the implications such a decision will have on a patent's scope. Furthermore, practitioners are uneasy about employing functional claims due to exhortations from Chiuminatta and several other Federal Circuit opinions where the court suggests its general disapproval of means and step-plus-function claims. Some opinions even border on paternalism, punishing functional claims for overreaching.

115 Supra note 106 and accompanying text; Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1473–75 (Fed. Cir. 1998) (Rader, J., dissenting) (criticizing the Federal Circuit's de novo review of claim construction and noting the adverse impact on litigant's Seventh Amendment jury rights after Markman).
116 35 U.S.C. § 282 (2006); see also FED. R. EVID. 301 (stating the party against whom the presumption operates carries the burden of providing evidence to rebut or meet the presumption); Monsanto Co. v. Scruggs, 459 F.3d 1328, 1336–37 (Fed. Cir. 2006) (recognizing the long held standard that the litigant seeking to have a patent declared invalid bears the burden of showing invalidity by clear and convincing evidence).
117 SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357 (Fed. Cir. 2006) (stating that patent's enjoy a presumption of validity and requiring the summary judgment movant to show clear and convincing evidence of invalidity, e.g. that no reasonable juror could find otherwise).
118 See Cybor, 138 F.3d at 1475 (Rader, J., dissenting).
119 Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310–11 (Fed. Cir. 1998) (Chastising patentee for not including known technology in his specifications, the court remarked "no policy based reason why a patentee should get two bites at the apple.").
120 O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997) (recognizing a patentee's right to invoke Paragraph 6, and harshly criticizing employing step-plus-function claims). 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. Id. Similarly, a step for accomplishing a particular function in a process claim may also be claimed without specificity subject to the same price. Id.; Biomedino, LLC v. Waters Tech. Corp., 490 F.3d 946, 948 n.1, 952 (Fed. Cir. 2007); Kahn v. GM Corp., 135 F.3d 1472, 1476 (Fed. Cir. 1998) ("The duty to link or associate structure in the specification with the function is the quid pro quo for the convenience of employing [functional claim elements]."); Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993)
The after-developed technology doctrine obviously limits a functional claim's scope but it also makes it incredibly easy for competitors to design around functional claims. A competitor, reading the publicly available functional claim, may simply use different structures, materials or acts to achieve the same function and avoid infringement provided that technology was known to the patentee and went undisclosed in her application. Thus, a competitor could also avoid infringement by simply employing different structure to achieve an identical purpose. Proponents of the after-developed technology doctrine argue that it better serves a patent's public notice function because it forces functional claim writers to be much more explicit in the specification, narrowing their vague claims. Still, opponents contend such devastating results were never intended by Congress's understanding of the equivalents clause. Furthermore, it seems the after-developed technology doctrine is fundamentally at odds with the intent-based approach developed by Judge Rader. It is simply non-pragmatic to suggest that a patentee would ever intend to evoke Paragraph 6 given the ramifications it would have on the scope of his patent. Judge Rader's intent-based approach could have halted the Federal Circuit's amorphous framework and provided the district courts with procedural guidance when adjudicating means-plus-function claims. Had the Federal Circuit adopted this test, the district courts would be easily guided through litigation. The absence or presence of certain language would give rise to the presumption of means-plus-function treatment which could be rebutted. The specific talismanic language would grow slowly over time and provide notice to practitioners and patentees that specific language would trigger Paragraph 6. However, this did not happen and instead, the standard for what constitutes "functional" language

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121 Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1317 (Fed. Cir. 2005). The replicating device might avoid infringement by adding a well known (old) technology to the patentee's device. Id. For example, suppose the patentee claims "a means for opening and closing a three ring binder" and the accused infringing binder employs two clips at the proximal and distal ends. If the patentee failed to list the clips in his specifications, the accused device would not infringe. There are cases suggesting, however, that making insubstantial changes, e.g. changing a nail to a screw where the patentee only disclosed a nail in the specifications, would still infringe functional claims. Id. Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1222 (Fed. Cir. 1996). Of course, in either case, while the accused device might avoid infringement, it is doubtful it would be patentable in itself. See 35 U.S.C. § 103 (2006).


123 See supra note 111 and accompanying text. But see In re Fueterer, 319 F.2d 259, 264 (C.C.P.A. 1963) (holding the plaintiff's combination patentable despite the lack of such an exhaustive list).

124 Todd, supra note 109, at 179; Rigamonti, supra note 7, at 173–74.

125 Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427–28 (Fed. Cir. 1997).
remains ambiguous.\textsuperscript{126} The intent-based formula, when combined with the after-developed technology doctrine, is simply not in step with reality.

C. Congressional Intent Under the Federal Circuit

Throughout the turbulent history of Paragraph 6, courts and academics have offered conflicting expressions of congressional intent. The congressional record is silent on whether the equivalents clause should be applied during facial challenges or infringement.\textsuperscript{127} However, considering where Paragraph 6 appears within the Patent Act itself suggests, as a matter of statutory construction, Congress intended it to only affect patentability determinations.\textsuperscript{128} Furthermore, the holding of \textit{Halliburton}, which Paragraph 6 statutorily overruled, was merely a decision of patent invalidity, not infringement.\textsuperscript{129} Therefore, had Congress also intended for this clause to resolve more than facial challenges during litigation, they could have more explicitly said so. Thus an argument could be made that Paragraph 6 was enacted simply to make functional claims patentable and the court’s analysis, during litigation, should begin and end with a determination of validity.\textsuperscript{130} Recalibrating the framework in this way casts even further doubt on \textit{Chiuminatta}: given the effect that ruling has on a patent’s scope, it does not appear Congress, in permitting the use of functional claims, meant to create a lower class of patents subject to less protection.\textsuperscript{131} Therefore, if we treat functional claims like all others, infringement of

\textsuperscript{126} \textit{Mass. Inst. of Tech. v. Abacus Software}, 462 F.3d 1344, 1353–54 (Fed. Cir. 2006) (holding a claim lacking the term “means” does give rise to a presumption that Paragraph 6 does not apply and recognizing the word “mechanism” alone was enough to evoke Paragraph 6 treatment because the generic term appeared in a claim that did not recite “sufficiently definite structure”); \textit{Greenberg v. Ethicon Endo-Surgery, Inc.}, 91 F.3d 1580, 1584 (Fed. Cir. 1996) (citing \textit{Raytheon Co. v. Roper Corp.}, 724 F.2d 951, 957 (Fed. Cir. 1983) and suggesting that a means-plus-function claim may exist without the “means for” trigger and providing “so that” as an example).


\textsuperscript{128} 35 U.S.C. § 112, ¶ 6 (2006) (appearing in the chapter on “Application for Patent” and the subsection dealing with patentability and disclosures, which are generally part of a validity or patentability analysis, not infringement). \textit{See generally} 73 AM. JUR. 2D § 108 (2007): \textit{ADELMAN, supra} note 10, ¶ 2.95 [n.62 (criticizing \textit{In re Donaldson} as inimical of Commissioner Federico’s commentary and stating Paragraph 6’s clear language (“to cover”) meant the clause should be used for infringement only). \textit{But see} United States v. Jac Natori Co., Ltd., 108 F.3d 295, 299 (Fed. Cir. 1997) (“[T]itles of statutes are simply reference guides and cannot limit or contravene the statutory text.”).

\textsuperscript{129} \textit{Halliburton Oil Well Cementing Co. v. Walker}, 329 U.S. 1, 2 (1946). While the district court found the patent “valid and infringed” the only issue on appeal was the validity of respondent’s claims. \textit{Id.} at 8.

\textsuperscript{130} \textit{See}, e.g., \textit{Cardiac Pacemakers I}, 296 F.3d 1106, 1113–14 (Fed. Cir. 2002) (holding a means-plus-function claim invalid due to indefiniteness under 35 U.S.C. § 112, ¶ 2). If Congress only intended Paragraph 6 be used as a tool during validity determinations, \textit{Cardiac Pacemakers I} provides an excellent example of what the simplified analysis might look like in every case involving functional claims: the court briefly reviewing the corresponding specifications to determine if the required disclosures are met. \textit{Id.}

\textsuperscript{131} \textit{The Patent Act of 1952: Hearing Before Subcomm. No. 3 of the H. Comm. on the Judiciary, 82nd Cong. 62} (1952) (statement of Cecil C. Kent). The only testimony found in the Congressional Record which extensively speaks directly to functional claiming under 35 U.S.C. § 112, ¶ 3 (1952) was that of Cecil C. Kent where he suggests (1) functional claiming is preferred to all other types of claim language because it allows the inventor to better define his invention and (2)
functional claims, either literally or under the doctrine of equivalents, would be an issue of fact.\textsuperscript{132} If this is true, much of the Federal Circuit's jurisprudence would violate the patentee's Seventh Amendment rights. However, applying Paragraph 6 to facial challenges only has not gained traction with courts\textsuperscript{133} or commentators.\textsuperscript{134} Instead, the debate over congressional intent focuses on \textit{In re Donaldson} and the struggle between the PTO's long-standing practice and the Federal Circuit's groundbreaking approach.

The Federal Circuit's hybrid approach from \textit{In re Donaldson} is generally viewed as the source of ambiguity regarding whether infringement under the equivalents clause should be made by juries or judges\textsuperscript{135} and the confusion surrounding the proper application of the equivalents clause.\textsuperscript{136} In \textit{In re Donaldson}, the court explicitly overruled \textit{In re Lundberg},\textsuperscript{137} where the Federal Circuit's predecessor court held the specifications should not bear on a functional claim's patentability.\textsuperscript{138} Furthermore, both the Supreme Court, in \textit{Warner-Jenkinson}, and the Federal Circuit have cited to Federico's commentary on the New Patent Act for legislative intent.\textsuperscript{139} However, the Federal Circuit's reliance on his commentary seems somewhat disingenuous given their holding in \textit{Donaldson} where the court states Federico's commentary, which speaks directly on how the equivalents clause should be applied, was \textit{not} authoritative.\textsuperscript{140} Finally, the court, rather than defer to the PTO's practice the new paragraph should be used to help define claims, leading one to believe he believed the new act would only be allowed in patentability decision, though he never expressly states a view either way. \textit{Id.} at 71–73.

\textsuperscript{132} Gart v. Logitech, Inc., 254 F.3d 1334, 1339 (Fed. Cir. 2001); Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l Inc., 389 F.3d 1370, 1376 (Fed. Cir. 2004).

\textsuperscript{133} Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 28 (1997) ("'[E]quivalents' appears to be no more than a prophylactic against potential side effects of [functional claiming]-—e.g., overbreadth, which is part of the infringement analysis").

\textsuperscript{134} See, e.g., ADELMAN, supra note 10, \textsection 2.9(5) n.65 ("However, Congress did not choose the word 'mean.' Instead it used the word 'cover.' Cover is a word commonly used in the patent profession to describe infringing acts.").

\textsuperscript{135} See Rigamonti, supra note 7, at 155–66 (noting that only the first clause of Paragraph 6 was necessary to overrule \textit{Halliburton} and thus the inclusion of the equivalents clause must have been intended to provide an infringement test); Todd, supra note 109, 179 ("\textsection 112, \textsection 6 is the doctrine of equivalents codified for functional language.").

\textsuperscript{136} See Rigamonti, supra note 7, at 182 (noting the conflicting standards of review applied to decisions under the equivalents clause and ultimately endorsing an infringement only approach); Casey, supra note 39, at 865 (endorsing \textit{Markman} but noting the host of unresolved issues in deciding infringement under the equivalents clause).

\textsuperscript{137} In re Donaldson, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (holding Paragraph 6 should be applied to both patentability and validity decisions, before courts or the PTO, and infringement).

\textsuperscript{138} \textit{Id.} at 547–48 (defining patentability).

\textsuperscript{139} Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 27–28 (1997) (citing to Mr. Federico's commentary and stating Paragraph 6 is "an application of the doctrine of equivalents in a restrictive role").

\textsuperscript{140} \textit{In re Donaldson}, 16 F.3d at 1194 n.3 (stating Congress, despite having the PTO's examiner in chief present during committee proceedings, was not aware of the PTO's sweeping practice of \textit{not} using the specifications to interpret claims and relegating Federico's commentary on the equivalents clause to a footnote and calling them his mere "personal views"). \textit{Contra} Federico, supra note 23, at 187 ("[The equivalents clause] relates primarily to the construction of such claims for the purposes of determining when the claim is infringed (note the use of the word 'cover' [in the statute]) and
of not using Paragraph 6 to determine patentability, mandated the PTO begin applying the statute to functional claims.\(^\text{141}\)

Examining pre-Halliburton case law sheds further light on the penumbra surrounding the statute.\(^\text{142}\) In re Lundberg and other early cases suggest functional equivalents was the second part of a two-step analysis during which (1) patentability was decided by the claim language alone, without reference to the specifications and (2) infringement was determined by looking to the written descriptions.\(^\text{143}\) Therefore, if Congress, as the Supreme Court and Federal Circuit suggest, was merely restoring pre-Halliburton understandings of functional claiming, then they must have intended the equivalents clause to be used only for infringement decisions.\(^\text{144}\) In other words, when Congress chose to sanction these claims, it was fully aware of Supreme Court precedent denying the claims due to over-breadth and, one can assume, sought to constrict the scope of these claims with a separate infringement analysis under the equivalents clause.\(^\text{145}\)

III. THREE CONVERGING POLICY CRITIQUES

Seemingly, everything comes down to Congress's understanding of two rudimentary patent law concepts, patentability and infringement. Ascertaining the policy Congress sought to advance when sanctioning functional claiming helps bring these issues into focus, but neither approach completely resolves all the problems inhering in the current framework. If Congress sought solely to provide guidelines for determining the patentability of functional claims, then the Federal Circuit’s understanding of means and step-plus-function claims could be subject to serious criticism: the court’s jurisprudence would (1) unjustifiably create a lower class of patents subject to less protection and higher scrutiny and (2) unfairly impinge on

\(^\text{141}\) See also, ADELMAN supra note 10, § 2.9[5] n.52.

\(^\text{142}\) Id. at 166-71; In re Lundberg; 244 F.2d at 548. If this looks familiar, it should, it was essentially the same distinction drawn by the Supreme Court in Markman to separate legal and factual issues. Markman v. Westview Instruments, Inc., 517 U.S. 370, 378-83 (1996).

\(^\text{143}\) Rigamonti, supra note 7, at 170.

litigant’s Seventh Amendment rights.\textsuperscript{146} Despite cogent arguments supporting this approach, this framework has not been well received and instead the debate rages between the Federal Circuit and academics.\textsuperscript{147}

Academics argue Federico’s commentary makes clear Paragraph 6 was only intended “to cover” infringing materials, structures or acts found in the specification.\textsuperscript{148} While an “infringement only” approach narrows the scope of these broad claims, it does nothing to help determine their patentability. Presumably, adopting such a reading of Congress’s intent would return the courts and the PTO to pre-\textit{In re Donaldson} claim construction, forcing patentees to distinctly claim their invention without reference to the specifications.\textsuperscript{149} However, practitioners and lower courts are provided no guidance regarding what language triggers the statute.

The Federal Circuit’s hybrid approach of applying Paragraph 6 to patentability, validity, and infringement determinations feigns fidelity to Congress’s dual intent behind the statute. Separating Paragraph 6 into two separate clauses, simultaneously sanctions functional claiming while restricting its over-breadth.\textsuperscript{150} However, this analytic framework, as applied by the Federal Circuit, has many faults. First, Federico’s commentary, the best source of Congress’s intent behind the 1952 Patent Act, suggests a discordant theory.\textsuperscript{151} Second, this approach fails to distinguish patentability from infringement analysis, causing (a) confusion over the appropriate standard of appellate review\textsuperscript{152} that has (b) led to a silent, yet salient rejection of \textit{Markman’s} bifurcated analysis with respect to functional claims,\textsuperscript{153} allowing (c) federal judges to routinely decide factual issues, such as infringement, on summary judgment, abrogating a litigant’s Seventh Amendment rights.\textsuperscript{154} This single paragraph should not be interpreted to lead to procedurally inapposite propositions.

The Federal Circuit’s trigger\textsuperscript{155} for evoking the statute is also flawed.\textsuperscript{156} Judge Rader’s modified “intent to evoke” test, as currently applied is (1) non-pragmatic, (2)

\begin{itemize}
\item \textsuperscript{146} See \textit{ supra} section II(C).
\item \textsuperscript{147} See \textit{ supra} notes 133 & 134 and accompanying text.
\item \textsuperscript{148} See \textit{ supra} note 140 and accompanying text.
\item \textsuperscript{149} 35 U.S.C. § 112, ¶ 2 (2006). The approach of denying functional claims under Paragraph 2 is part of the Federal Circuit’s post-\textit{In re Donaldson} approach; if the court reversed \textit{In re Donaldson}, it would presumably employ only this first step of the analysis, holding functional claims invalid if they failed to set out “corresponding function” in the specifications. \textit{See generally} Biomedino, LLC v. Waters Tech., Corp., 490 F.3d 946, 948 (Fed. Cir. 2007) (indicating a failure to disclose the claimed function in the specifications is a failure to “particularly point out and distinctly claim the invention as required by the second paragraph of § 112”); \textit{Cardiac Pacemakers I}, 296 F.3d 1106, 1114–15 (Fed. Cir. 2002) (using the first clause of Paragraph 6 to determine claim validity where the patentee failed to list any structure in the specifications corresponding to the means-plus-function claim).
\item \textsuperscript{150} See, e.g., \textit{Biomedino}, 490 F.3d at 953 (holding functional claim invalid under Paragraph 2); Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 27–28 (1996) (recognizing the equivalents clause is a “prophylactic” for narrowing the scope of the claim).
\item \textsuperscript{151} See \textit{ supra} notes 23 & 139–140 and accompanying text.
\item \textsuperscript{152} Rigamonti, \textit{ supra} note 7, at 190, 193–94.
\item \textsuperscript{153} See \textit{ supra} notes 78, 106–109 and accompanying text.
\item \textsuperscript{154} See \textit{ supra} Section II (A).
\item \textsuperscript{155} See \textit{ supra} Section I (B).
\item \textsuperscript{156} See \textit{ supra} Section II (B).
\end{itemize}
inefficient and (3) unfair given the limited scope of protection afforded such claims.\textsuperscript{157} Rather than maintain a bright-line rule, the Federal Circuit instead relegated Judge Rader's formula from \textit{Sage} to a small component of the overall muddled means-plus-function analysis, which leaves litigants scratching their heads as to precisely what language evokes the statute.\textsuperscript{158} Under the modernized intent-based formula, the patentee may evoke the statute without ever knowing it, upsetting her investment-backed expectations in the monopoly granted to her.\textsuperscript{159} Intent requires knowledge of actions that will produce a desired result. The absence of a clear bright-line formula makes speaking of an “intent to evoke” the statute absurd and impractical, especially given the devastating consequences \textit{Chiuminatta} can have on a functional patent’s scope.\textsuperscript{160} From a practitioner’s standpoint, \textit{intending} to evoke Paragraph 6 may even be prima facie grounds for a malpractice suit, considering the limiting protection afforded such claims.

This test also inefficiently expands the appellate docket. Without clear boundaries as to what constitutes “functional” language evoking the statute, litigants have every incentive, under de novo review of claim construction, to appeal the final judgment. An amorphous “intent to evoke” standard, combined with de novo review, virtually guarantees every means-plus-function claim will be appealed to the Federal Circuit, regardless of the outcome.

Finally, The Federal Circuit’s synthesis punishes patentees by limiting the scope of such patents.\textsuperscript{161} These deliberate impediments have resulted in a cessation of functional claim language, causing more and more accused infringers to frequently summon Paragraph 6 as an alternate defense to infringement. The current framework has transformed Paragraph 6 from a statute permitting functional claiming to a defense against infringement. But perhaps therein lies the genius of the Federal Circuit’s approach: by restricting the scope of these claims, the court has made them radioactive, causing practitioners to more carefully draft their claims to avoid means or step-plus-function treatment. If functional claims were unregulated, they would undoubtedly cast a very wide net trapping otherwise valid patents and thereby undermining technological advancements.\textsuperscript{162} The past decade, however, teaches us that the obverse is also true: excessive regulation creates a lower class of patents entitled to far less protection. It is clear that the Federal Circuit’s current framework goes too far in all directions and must be reined in. However, neither the patentability nor the infringement-only approach remedies all of the problems surrounding functional claims.

\textsuperscript{157} See supra notes \textsuperscript{125} \& \textsuperscript{126} and accompanying text.

\textsuperscript{158} See supra note \textsuperscript{126} and accompanying text.

\textsuperscript{159} Masco Corp. v. United States, 303 F.3d 1316, 1327 (Fed. Cir. 2002).

\textsuperscript{160} Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310–11 (Fed. Cir. 1998) (enunciating the after-developed technology doctrine).

\textsuperscript{161} See supra note \textsuperscript{120} and accompanying text.

\textsuperscript{162} See supra text accompanying note 5.
A. Status Quo

The 110th Congress, which many anticipate will pass patent reform, could resolve the debate between validity and infringement. Specifically, Congress could decide the precise application of the equivalents clause in relation to the doctrine of equivalents and address the soundness of the Federal Circuit’s current analytic framework. This can be accomplished in any of several ways: enacting a provision similar to Paragraph 6 under the section for infringement, holding hearings and amending Paragraph 6 (accompanied by advisory findings) or simply repealing Paragraph 6 altogether.

Adding a subsection in section 271, with language nearly identical to Paragraph 6, would effectively endorse the Federal Circuit’s In re Donaldson approach, allowing courts to use Paragraph 6 for patentability and infringement decisions. However, if this is done, courts would still be left without a method for teasing out the factual and legal issues. Additionally, this would still leave patentee’s to “pay the price” for their functional claiming with the after-developed technology doctrine, which, under Abacus, many patentees never saw coming.

Amending Paragraph 6 would allow Congress to restore some balance between the constitutional rights and statutory entitlements of patentees and the public interest. By simply adding two words, “infringement of” to the equivalents clause, Congress can definitively resolve the dispute over functional claiming in favor of Federico’s commentary, restoring the equivalents clause to part of the infringement analysis only. The appropriate level of appellate scrutiny for this factual inquiry would be, a fortiori, the deferential clearly erroneous standard, stopping the court’s current trend toward a de novo approach dead in its tracks. Patentability of such claims would be governed by looking to Paragraph 2 of the statute to determine whether the corresponding specifications distinctly claim the invention.

However, the conflict between validity and infringement is, for all practical purposes, an academic distinction without a difference. Courts no more discern the bounds of a functional claim during claim construction than infringement. After amending the statute, courts would still be left to determine the scope and validity of the claims in front of them, they would just use Paragraph 2 instead of Paragraph 6 to invalidate them. Thus, while adding these two words to the statute draws a line

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164 See supra Section II.
166 See supra notes 123 & 126 and accompanying text.
167 35 U.S.C. § 112, ¶ 6. The proposed equivalents clause would thus read “and infringement of such a claim shall be construed to cover the corresponding structure, materials or acts described in the specification and equivalents thereof.” Id.
168 See supra notes 130 & 149 and accompanying text.
169 See Rigamonti, supra note 7, at 178 (suggesting that applying the equivalents clause at either the claim construction or infringement analysis will have no bearing on the ultimate outcome of a particular case).
170 See id. at 192-93 (recognizing In re Donaldson was wrong and endorsing a historical infringement only test). Of course, while this approach may be sound it does not provide guidance for district courts to ferret out functional claims, leaving the PTO responsible for narrowing overly broad means-plus-function claims. Id.
in the sand separating issues of fact and law, it doesn't make functional claims any clearer and thus courts would still use the specifications during facial challenges or infringement. Also, because the equivalents clause would have no bearing on the patentability of such claims, this would, by default, effectively endorse the after-developed technology doctrine as the only available means of roping in overly broad functional claims. Thus, adopting the much lauded Federico approach probably will not change anything in real-world litigation and still leaves several residual problems: (1) determining what constitutes “functional” language and (2) whether the inherent unfairness of the after-developed technology doctrine can be justified.

B. Deus Ex Machina: Notice to the Patentee

Many of the problems and inequities of the current system could be resolved by simply amending the MPEP.\textsuperscript{171} I propose the PTO develop an alternative claims prosecution process for means and step-plus-function claims: the PTO should notify the patentee of a functional claim and explain that her claim evokes Paragraph 6.\textsuperscript{172} The PTO should further require the patentee to either concede such treatment or simply amend and re-write the functional claim as non-functional. Either way, the patentee has fair notice and concedes a narrower scope of her invention. The patentee can no longer justifiably complain that means or step-plus-function treatment will limit the scope of their right or upset their investment backed expectations when they can easily amend their application to include other technologies or simply get rid of the functional language altogether. By providing notice, claim interpretation would be efficiently resolved early in the patent process: during prosecution history or a \textit{Markman} hearing, both of which would have preclusive effect and conserve judicial resources.\textsuperscript{173} If the file wrapper clearly shows the patentee used functional language, the appellate docket will not be consumed by cases asking whether the patentee evoked the statute.\textsuperscript{174}

\textsuperscript{171} U.S. PAT. & TRADEMARK OFFICE, U.S. DEP’T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2181 (6th ed., 6th Rev. 2007) [hereinafter MPEP]. Despite the decision in \textit{In re Donaldson}, the PTO is free to establish its own procedures and I have proposed a new prosecution approach for functional claims.

\textsuperscript{172} Id. § 2184. While the guidelines suggest the applicant may amend his application to remove the functional language, they do not provide a mechanism for providing notice of an examiner’s opinion that the claim language evokes the statute. Id.

\textsuperscript{173} See Warner-Jenkinson Co. v. Hilton Davis Chem., Co., 520 U.S. 17, 30–32 (discussing file wrapper estoppel whereby the patentee is precluded from subsequently recapturing concessions made during patent prosecution with the PTO, unless the patentee can show amendments were made for reasons unrelated to patentability). Once the patentee is informed of the functional language, she can either narrow the patent by removing the functional language, stand on the claim and appeal the examiner’s decision or roll the dice and take the claim encumbered by the functional element. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 737–38 (2002); \textit{Markman} v. Westview Instruments, Inc., 517 U.S. 370, 391 (1996) (noting issue preclusion will foster uniformity of patent construction).

\textsuperscript{174} Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353–54 (Fed. Cir. 2006). Additionally, this will increase the patent’s presumption of validity since a lack of Paragraph 6 treatment by the PTO would place a higher burden on the accused infringer to show the language is functional. 35 U.S.C. § 282 (2006). Of course, there will still be instances where the PTO failed to
Finally, from a business and practitioner standpoint, adopting Judge Rader’s bright-line rule would provide the inventive community with much needed guidance on what constitutes a “functional” claim. Congress should statutorily adopt a bright-line test and endeavor to create an exhaustive list of functional terms. There will no doubt be exceptions to any exhaustive list, but this will provide a better baseline for avoiding functional claims, which, under the current system, must be constrained to the technologies listed in the specifications and after-developed technologies. Congress could statutorily overrule *Chiuminatta* but in doing so it would have to provide an alternative method for narrowing functional claims broad scope. At any rate, doing so is unnecessary should an alternative claims prosecution process. With notice from the PTO, practitioners could either remove functional terms or provide exhaustive lists of technologies in their specifications.

**CLOSING REMARKS**

Functional claiming addresses the heart of our IP regime: what do we, as a society, recognize as the inventive moment and how much protection do we award for disclosing new art? If we view invention as a mere recombination of known elements, then functional claims should enjoy the same protection as all other claims and perhaps we shouldn’t restrict their scope at all. While this view has been rejected and conventional analysis restricts the scope of functional claims, it is important to remember that the PTO, despite the functional language, decided to grant a patent. Given the appellate procedure within the PTO and their guidelines for examining means and step-plus-function claims, every granted patent should enjoy the same presumption of validity other non-functional patents enjoy, even if we must, out of necessity, restrict their scope. *In re Donaldson* was wrong because it contradicted both long standing precedent and Federico’s commentary, laying the foundation for the Federal Circuit to sit as a supra-examining board and treat functional claims as second class patents.

While Congress clearly acknowledged that functional claims suffer overbreadth problems, they nevertheless authorized their use and codified pre-*Halliburton* conceptions of such claims. Rather than let these claims evolve, the Federal Circuit has stifled their use and employed the equivalents clause to narrow claims the patentee could not have reasonably perceived as evoking the statute. While it may be necessary to narrow broad claims, the current system has many unnecessary problems. Many of these inconsistencies can be resolved, thereby saving the current

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175 *The Patent Act of 1952: Hearing Before Subcomm. No. 3 of the H. Comm. on the Judiciary, 82nd Cong. 58, 62 (1952) (statement of Cecil C. Kent) (“Scientifically speaking we do not ‘invent.’ We can only reorganize known structures and thereby produce new relations.”).*

176 *Id.* at 70 (expressing his opinion that then 35 U.S.C. § 112, ¶ 3 addressed the essence of what we, as a society, regard as the invention); See also Costakos & Zimmerman, supra note 52, at 111 (noting in the first decade under the Federal Circuit functional, claims enjoyed very broad protection).


178 See supra Part II (B).
system of narrowing broad functional claims, if Congress and the PTO wills it. However, if Congress or the PTO do not amend the statute or claim prosecution process or both, the Supreme Court should not allow *Chiuminatta, In re Donaldson* and *Abacus* to fester and should overrule them and their progeny. Otherwise, they may establish an insurmountable body of case law establishing the Federal Circuit as a paternal supra-examining board, abrogating litigant’s Seventh Amendment rights and providing the inventive community with little guidance on what a “functional” means or step-plus-function claim looks like. However, if the status quo persists, then patentees will be better off without Paragraph 6 altogether and Congress should repeal it. Patentees and practitioners would much rather have functional claims rejected for obviousness or over-breadth than spend hundreds of thousands of dollars and years on futile litigation resulting in patent claims so choked off they provide virtually no protection.

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179 Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310–11 (Fed. Cir. 1998). *Chiuminatta*’s after-developed technology doctrine is a good method for narrowing claims, it’s just been encumbered by unnecessary problems. If these problems are addressed in the statute or MPEP, then the doctrine can serve its vital role. Otherwise, an alternative mechanism for narrowing functional claims will have to be adopted.

180 Rigamonti, *supra* note 7, at 194 (concluding that the Federal Circuit misconstrued 35 U.S.C. § 112, ¶ 6 such that the only way to restore certainty and flexibility to such claims is to strike out the paragraph altogether). Many critics have suggested simply repealing 35 U.S.C. § 112, ¶ 6 altogether or removing the language creating step-plus-function claims. DURHAM, *supra* note 1, at 65 (suggesting the step-plus-function language should be removed).