

UPDATE

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FUNCTIONAL CLAIMING AND FUNCTIONAL DISCLOSURE

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Patent attorneys sometimes claim inventions based on the functions that they perform, instead of reciting their structural elements. This is

sometimes referred to as “functional claiming.” The use of “functional” language in a patent claim may increase the likelihood that the claim will be held unpatentable or invalid. Consider the following hypothetical claim:

Claim 1: An apparatus configured to:

- receive a satellite signal;
- process the signal to detect a synchronization indicator;
- extract the synchronization indicator; and
- display the synchronization indicator on a display device.

This claim would apparently cover any apparatus that is “configured to” perform the functions recited in the body of the claim. Yet the validity of such a claim might be subject to attack on a number of grounds.

FAILURE OF ENABLEMENT OR WRITTEN DESCRIPTION—SCOPE OF CLAIM EXCEEDS SCOPE OF DISCLOSURE

A first line of attack would be to challenge the validity of the hypothetical claim on the basis that it is not fully enabled, or that it lacks sufficient written description. Because the claim purports to include every type of apparatus that performs the recited functions, its breadth is likely not commensurate with the scope of the structures disclosed in the specification for performing such functions.

In *LizardTech, Inc. v. Earth Resource Mapping, Inc.*,¹ the Federal Circuit held that a patent claim was invalid on that basis.

LizardTech’s patent specification repeatedly described a compression process as [MORE>](#)



First Line of Attack

¹ 424 F.3d 1336 (Fed. Cir. 2005).



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“seamless.” According to the Federal Circuit, the specification only described a single way of performing a “seamless” compression, but that single way was not recited in the claim at issue. The court stated that “a person of skill in the art would not understand how to make a seamless DWT generically and would not understand LizardTech to have invented a method for making a seamless DWT, except by ‘maintaining updating sums of DWT coefficients,’” a feature that was not recited in the claim. Therefore, the claim was invalid because the full breadth of the claim scope was not enabled.

INDEFINITENESS: IMPROPER MIXING OF STATUTORY INVENTION CATEGORIES

A second possible attack would be to allege that the claim is indefinite because it improperly mixes two statutory categories of invention—a machine (apparatus) and a method (process steps). The preamble identifies the statutory category of the invention as an apparatus, but the body of the claim recites only functions or steps.

The Federal Circuit invalidated a claim on that basis in *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*,² because it was unclear whether infringement of the claim occurred upon creation of a system that allowed the user to perform the recited step, or whether infringement occurred only when the user actually used the claimed apparatus in the recited manner.

The Federal Circuit revisited this issue in *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*,³ noting that, “apparatus claims are not necessarily indefinite for using functional language... [f]unctional language may also be employed to limit

the claims without using the means-plus-function format.”⁴

MAY THE USPTO IGNORE “FUNCTIONAL” FEATURES OF APPARATUS CLAIMS?

The United States Patent and Trademark Office (USPTO) has taken the position that an apparatus claim must be *structurally distinguishable* from the prior art. See MPEP § 2114 (“While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function... Apparatus claims cover what a device is, not what a device does,” citing *In re Schrieber*⁵ and *Hewlett-Packard Co. v. Bausch & Lomb Inc.*⁶).

Assuming that a USPTO examiner were to apply that rule to the examination of the hypothetical claim above, it would seem to run afoul of established USPTO practice. There do not, however, appear to be any Federal Circuit decisions invalidating a claim on that basis or ignoring functional limitations in apparatus claims. In view of established precedent stating that “functional” limitations are permitted in apparatus claims, it does not appear that the USPTO may ignore “functional” recitations in apparatus claims.

INDEFINITENESS: CLAIMING FUNCTION WITHOUT METRICS

Sometimes the patent drafter may use an adjective or adverb in a claim to describe a property in functional, non-numeric terms. For example, in *Halliburton Energy Services, Inc. v. M-I LLC*,⁷ the patent drafter used the term “fragile gel” in a claim directed to a drilling fluid. Because “fragile” is an adjective that defines a function or **MORE▶**

² 430 F.3d 1377 (Fed. Cir. 2005).

³ 520 F.3d 1367 (Fed. Cir. 2008).

⁴ *Id.* at 1375.

⁵ 128 F.3d 1473 (Fed. Cir. 1997).

⁶ 909 F.2d 1464, 1468 (Fed. Cir. 1990).

⁷ 514 F.3d 1244 (Fed. Cir. 2008).

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property of the claimed gel, it was attacked on the ground that the specification provided no meaningful definition of “fragile.”

The Federal Circuit agreed, concluding that “it is ambiguous as to the requisite degree of the fragileness of the gel, the ability of the gel to suspend drill cuttings (i.e., gel strength), and/or some combination of the two.” The court cautioned that, “When a claim limitation is defined in purely functional terms, the task of determining whether that limitation is sufficiently definite is a difficult one that is highly dependent on context...”⁸

IS “PURELY” FUNCTIONAL CLAIMING PERMITTED?

One might think that the principles for “functional claiming” have by now been fairly well settled. Claiming an invention by its function rather than its structure is permissible as long as certain requirements are met.

But a recent precedential opinion by the USPTO’s Board of Patent Appeals and Interferences may have called into question the extent to which “purely functional” claiming is permissible. In *Ex Parte Miyazaki*,⁹ an expanded five-member panel of the Board declared that “purely functional” claim language does not comply with the patent statute.

The Board entered a new ground of rejection for a claim under 35 U.S.C. § 112, first paragraph, on the basis that the claimed “sheet feeding area operable to feed” was “a purely functional recitation with no limitation of structure.”¹⁰ The basis for the rejection was lack of enablement—i.e., the scope of the claim was insufficiently enabled.

The Board relied on the Supreme Court’s 1946 *Halliburton* case, but not more recent

Federal Circuit cases involving “functional” claiming. The Federal Circuit earlier that year had decided *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*,¹¹ in which the court explained, “As this court recently stated, apparatus claims are not necessarily indefinite for using functional language... Functional language may also be employed to limit the claims without using the means-plus-function format.”¹² Although the Federal Circuit was addressing “functional” claim language in the context of the definiteness requirement of the patent statute, it is unclear whether the *Miyazaki* decision is consistent with *Microprocessor Enhancement*. At least one district court has declined to follow it.¹³

More recently, another expanded panel of the Board decided *Ex Parte Rodriguez*,¹⁴ holding that “configuration generator configured to generate,” a “system builder configured to build,” and a “simulation verification environment configured to verify” were purely functional recitations involving no known structures, and the claims were unpatentable on two different grounds: (1) failure to disclose corresponding structure in the specification, assuming that the claims were interpreted as means-plus-format clauses;¹⁵ and (2) following *Miyazaki*, purely “functional” claiming without any recitation of specific structure.¹⁶ According to the Board, “Appellants’ claim recites no meaningful structure. *Instead, the scope of the functional claim language of claim 1 is so broad and sweeping that it includes all structures or means that can perform the function.*”¹⁷

Although the Federal Circuit has not yet addressed this specific issue—i.e., whether “functional claiming” without any recitation of recognized structures renders a claim invalid or unpatentable—patent applicants would be

⁸ *Id.* at 1255.

⁹ 89 USPQ2d 1207, 2008 WL 5105055 (B.P.A.I. 2008).

¹⁰ *Id.* at *10.

¹¹ 520 F.3d 1367 (Fed. Cir. 2008).

¹² *Id.* at 1375.

¹³ *American Med. Sys., Inc. v. Laser Peripherals, LLC*, 712 F.Supp.2d 885, 910 (D. Minn. 2010) (rejecting a “purely functional” invalidity attack on the claims).

¹⁴ 92 USPQ2d 1395, 2009 WL 3756279 (B.P.A.I. 2009).

¹⁵ 92 USPQ2d at 1406.

¹⁶ *Id.* at 1409–11.

¹⁷ *Id.* at 1409.

well-advised to steer clear of apparatus claims that recite little or no recognized structural elements while reciting functions. At least before the USPTO, such claims are unlikely to make it out into the real world.

CONCLUSION

Until the Federal Circuit provides more guidance as to whether there are any limits to “functional” claiming, patent applicants and litigants should keep in mind several basic principles when drafting or asserting claims involving functional language.

First, the enablement requirement may impose limits to overly-broad functional claiming. As set forth in the hypothetical claim at the beginning of this paper, for example, claiming a machine solely by reciting the functions it performs without reciting any structural elements may run afoul of that requirement. Adding dependent claims with varying levels of structural detail may provide a fall-back validity position for aggressive functional claiming strategies.

Second, when prosecuting applications before the USPTO, it may be more difficult to procure patents involving “functional” elements unless at least *some* structural elements are claimed in combination with the functions. And the structural elements must correspond to recognized or known structures, not generic elements that have no corresponding real-world meaning.

Finally, when drafting functional limitations in combination with structural features, care should be taken to avoid running afoul of the *IPXL Holdings* case, which was found to improperly mix an apparatus claim with a method of using the apparatus. ■



Structural and Functional