

US Patent Law: Functional Claiming and the Evolving Standard

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What is Functional Claiming?

Claim 1. An apparatus comprising:

an image unit configured to obtain an image from an external source;

and a reading unit configured to read the obtained image;

a generating unit configured to generate a corresponding image based on the read image.

So What?

Functional Claiming – Covers **all** devices which perform a recited function.

Example:

an image unit configured to obtain an image – can cover cameras, printers, iPad, smartphones, televisions, etc. (**broad scope of coverage**)

Great!

Let's Always Use Functional Claiming – Broad Scope

Other examples – “configured to”, “permitting...”,
“programmable means for”, “capable of engaging”,
“adapted to,”, “for...ing”, “operable to..”, “mechanism”,
“data processing system”, “mechanism for”, “module
for”, “device for”, “unit for”, “component for”, “element
for”, “member for”, “apparatus for”, “machine for”,
“system for”

Wait? This is a trap right? It can't be that easy!

Functional Claims Must Satisfy 35 U.S.C. § 112(a):

- 1) Written Description: Specification must adequately describe the invention as a whole. In other words, the specification must describe the claimed functions, the structures of the invention, and **the correlation or relationship between the claimed functions and the structures of the invention**
- 2) Enablement: Specification must provide sufficient disclosure of an apparatus if the apparatus is not readily available (**the amount of guidance is inversely related to the amount of knowledge in the art**)

Wait? This is a trap right? It can't be that easy!

Functional Claims Must Also Satisfy 35 U.S.C. § 112(b):

3) Definite: The claims must make clear the boundaries of the subject matter for which protection is sought. In other words, is there a **clear cut indication of scope** of the claimed subject matter, is there **well-defined boundaries** of the functional language, and would one of ordinary skill in the art know from the claim terms what **structure or steps are encompassed** by the claim?

So I satisfy the requirements of 35 U.S.C. § 112(a)-(b): My claim should be fine right?

Watch out for 35 U.S.C. § 112(f): Means-Plus Function

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

(Legislative Response to Functional Claims)

Means-Plus Function? What Does that Mean?

Claim 1. An apparatus comprising:

an image unit configured to obtain an image from an external source;

a reading unit configured to read the obtained image; and

a generating unit configured to generate a corresponding image based on the read image.

Patent Grants in 1990 (means-plus function interpretation): Covers cameras, printers, televisions, but not iPad or smartphones

Patent Grants in 1990 (not means-plus interpretation): Covers cameras, printers, televisions, iPad, and smartphones (any devices performing the functions recited, even if not in existence when application is filed)

Wait! The claim does not recite the term "means-for"

1) If claim uses the term "means-for" or "step for" and includes functional language, there is a rebuttable presumption that the claim invokes 35 U.S.C. § 112(f)

2) However, if the claim does not use the terms "means-for" or "step for", there is a rebuttable presumption that the claim does not invoke 35 U.S.C. § 112(f)

3) Exception to Exception: If the claim does not use the term "means-for" or "step for", but does not include the necessary structure for carrying out the recited function, the claim invokes 35 U.S.C. § 112(f)

Invoking 35 U.S.C. § 112(f): "Exception to Exception"

February 9, 2011 U.S. Patent Office Federal Register:

1) Examples of Non-Structural Terms Invoking 35 U.S.C. § 112(f): "module for", "mechanism for", "device for", "unit for", "component for", "element for", "member for", "apparatus for", "machine for", and "system for"

2) Examples of Structural Terms Not Invoking 35 U.S.C. § 112(f): "circuit for", "detent mechanism", "digital detector for", "reciprocating member", "connector assembly", "perforation", "sealingly connected joints", and "eyeglass hanger member"

3) Computer or Processor? Gray area – Required to be more than a general purpose computer or microprocessor

Recent Federal Circuit Decisions

1) Aristocrat Techs. Austl. Ply Ltd. V. Int'l Game Tech, 521 F.3d 1303, 1316 (Fed. Cir. 2008): "the structure disclosed in the specification **needs to be more than simply a general purpose computer or microprocessor**"

2) In re Katz, 639 F.3d 1303, 1316 (Fed. Cir. 2011): an algorithm need not be disclosed when the function can be achieved by any general purpose computer without special programming (**contradicts Aristocrat?**)

3) ePlus v. Lawson, 700 F.3d 509 (Fed. Cir. 2012): link between computer-implemented means-plus-function must be clearly understood by the specification and/or prosecution history (**skilled artisan's knowledge not enough**)

Recent Patent Trial and Appeals Board Decisions

1) Ex Parte Erol, Appeal 2011-001143 (March 13, 2013): a processor adapted to perform an action in response to identifying the at least one object descriptor that matches a first object descriptor

2) Ex Parte Lakkala, Appeal 2011-001526 (March 13, 2013): a processor configured with the program to control creation of metadata and control collection of content data

3) Ex Parte Smith (March 14, 2013): a processor programmed to generate an opinion timeline

Non-Precedential Opinions Regarding Processors

Recent Patent Trial and Appeals Board Decisions

Ex Parte Erol, Ex Parte Lakkala, Ex Parte Smith

- 1) The term "processor" is a non-structural term that would not be understood by a skilled artisan as having sufficiently definite structure to perform the recited functions and, therefore is used as a substitute for the term "means for" and so invokes 35 U.S.C. § 112(f)
- 2) Therefore, given that the "processor" invokes 35 U.S.C. § 112(f), the structure in the specification of the processor-limited function must include an algorithm, for performing the recited function, that transforms the general purpose processor to a special purpose processor programmed to perform the disclosed algorithm
- 3) Patent Trial and Appeals Board finds claims indefinite

What about our Initial Functional Claim?

Claim 1. An apparatus comprising:

an image unit configured to obtain an image from an external source;

a reading unit configured to read the obtained image; and

a generating unit configured to generate a corresponding image based on the read image.

Initial Issues:

- 1) Where is the structure in the claim?
- 2) Enablement, Written Description, and Definite?
- 3) Means-Plus Function Invoked?

Adding Structure to our Functional Claim

Claim 1. An apparatus comprising:

at least one processor which executes:

an image unit configured to obtain an image from an external source;

a reading unit configured to read the obtained image; and

a generating unit configured to generate a corresponding image based on the read image.

Initial Issues:

- 1) Where is the structure in the claim? See Above
- 2) Enablement, Written Description, and Definite?
- 3) Means-Plus Function Invoked?

Enablement, Written Description, and Definite Specification

[080] Another exemplary embodiment may disclose that any of the image unit 110, the reading unit 120, and the generating unit 130 may include **at least one of a processor, a hardware module, or a circuit for performing their respective functions**. In the exemplary embodiment, the processor may comprise **a hardware image processor** for performing the respective functions of the image unit 110, the reading unit 120, and the generating unit 130.

Initial Issues:

- 1) Where is the structure in the claim?
- 2) Enablement, Written Description, and Definite?
See Above
- 3) Means-Plus Function Invoked?

Overcoming Means-Plus Function

Claim 1. An apparatus comprising:

at least one hardware image processor which executes:

an image unit configured to obtain an image

from an external source;

a reading unit configured to read the

obtained image; and

a generating unit configured to generate a

corresponding image based on the read image.

Initial Issues:

- 1) Where is the structure in the claim?
- 2) Enablement, Written Description, and Definite?
- 3) Means-Plus Function Invoked? See Above

Takeaways About Functional Claiming

- 1) Using Functional claiming gives claims a **broad scope of coverage**
- 2) However, claims may need to be narrowed in prosecution to recite **structural features** during USPTO Examination
- 3) In order to recite structural features without narrowing claimed features at filing, consider **including at least one paragraph in the specification which recites structural features**, such as a specific processor for performing an algorithm, a circuit, etc.

Takeaways About Functional Claiming

- 4) Important to recite **different structural features** in the specification (not just general processor, but specific processor)
- 5) If possible, also include **sufficient algorithms** for performing all recited functions
- 6) Include **structural modifiers**

Any Questions?



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