Drafting Patent Claims

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The **Purpose of Claims**

- **To Obtain Commercially Valuable Protection of Patentable Ideas**
- Patent claims are the part of a patent or patent application that defines the scope of protection granted by the patent.
- The claims define, with certainty and detail, the metes and bounds of the invention for the purposes of:
  - patentability; and
  - determining infringement.
The **Statutory basis** for claims

**35 U.S.C. 112**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
Statutory classes

• The Supreme Court held that 35 U.S.C. 101 should include “anything under the sun that is made by man.” *Diamond v. Chakrabarty*, 447 U.S. 303, 308-09, 206 USPQ 193, 197 (1980).

• However, 35 U.S.C. 101 also requires that the claims fit into one of the following statutory classes:
  • A Process;
  • A Machine;
  • An Article of manufacture;
  • A Composition of matter; or
  • Any new and useful improvement thereof.
Process (or method) Claims include:

- conventional process claims
- software process claims
- business method claims
- manual method claims
- Method of Treatment Claims (e.g. use of probe for gene to identify carcinomas, use of protein to treat cancer)
Machine Claims include:

- conventional machine claims (e.g. mechanical device)
- software machine claims
- System claims - (BE CAREFUL) Many e-commerce systems cross country borders
- Apparatus claims
An *Article of manufacture* Claims may include:

- **Apparatus claims**
- **Computer Product Claims (Beauregard claims)**
- **Product-by-Process Claims**
  - a product claim that defines the claimed product in terms of the process by which it is made, is proper. *In re Luck*, 476 F.2d 650, 177 USPQ 523 (CCPA 1973)
  - e.g. a fusion protein produced by the process comprising ....
Composition of Matter Claims may include:

- Genes,
- Proteins,
- Antibodies
- Chemical formulations
Two types of claims

- **Independent claims**: Stand alone and does not need to be read with other claims.

- **Dependent claims**: Further limit a previous claim.
  - Add additional element(s)
  - Add additional characteristic to component(s)
Example Apparatus claims

1) An apparatus, comprising:
   a first element;
   a second element interconnected with said first element;
   and
   a third element interconnected with said second element.

2) The apparatus according to claim 1, further comprising a fourth element interconnected to said third element.

3) The apparatus according to claim 2, wherein said second element is interconnected with said first element using a bolt.
Example Method claims

Method

1. A method for signaling, comprising:
   (a) receiving an information signal;
   (b) modulating a light beam with the information signal; and
   (c) transmitting the modulated beam.

2. The method according to claim 1, further including directing said modulated beam to an optical switch.

3. The method according to claim 1, wherein said light beam comprises an infrared light beam.
Format - Location

The claim(s):

• must commence on a separate physical sheet or electronic page

• must appear after the detailed description of the invention (35 U.S.C. § 112 – “specification shall conclude with one or more claims.”)
Format - Heading

Claims start with an introductory phrase before the first claim such as:

• “I claim”
• “We claim”
• “What is claimed is”
• “The invention claimed is”
Format – Numbering

If there is only one claim it is not numbered.

Multiple claims are numbered in sequence.
Format - Grouping

• Claims should be grouped logically.
• Dependent Claims should be grouped with their respective independent claims.
• Within any group, claims should be arranged in order of scope with the broadest claim presented first.
• Separate species should be grouped together
• Product and process claims should be grouped together.
Format - Punctuation

• Begin with a capital letter
• End with a period
• Sets of three or more elements separated by commas
• For subsets
  • use semicolons for sets; and
  • use commas for subsets.
Subsets

A control system comprising:

- a computing device;
- a sensor communicatively connected to the computing device, the sensor comprising a membrane, a piezoelectric crystal mechanically connected to the membrane, and an attachment mechanism configured to hold the sensor against a window; and
- an actuator communicatively connected to the computing device.
Components - Preamble

- Purpose is to introduce statutory class and state the intended use or purpose of the invention

- Introductory name of the claimed invention

- Generally better to be broad than narrow
Components – Preamble cont.

- Do not put unnecessary limitations in the preamble.

Components – Preamble cont.

• **Software** patents need to be claimed so that it fits under one of the statutory classes.

• Software claims MUST transform the software into more than an Abstract Idea. (See *Alice Corp. v. CLS Bank International*)

• This is no longer enough. “A non-transitory tangible computer readable medium containing instructions configured to cause one or more processors to execute a process comprising:”

• **RECITE NONSTANDARD HARDWARE CONFIGURATIONS**
Components - Transition

- Divides preamble from the body of the claim.
- Uses terms of art
- Effects the scope of the claim
Components – transition cont.

“comprising,” “comprises” or “which comprises”

- synonymous with “including,” “containing,” or “characterized by”
- Broadest scope
- Inclusive or Open-ended
- Must have all of the elements that follow, but can have more.

See Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004)
Components – transition cont.

“consisting of”

- Narrowest scope
- Closes-ended
- Excludes any element, step, or ingredient not specified in the claim.

*In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931)
Components – transition cont.

“consisting essentially of” or “which consists essentially of”

• Intermediate Scope

• limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention.

  *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976).
Components – Body of the claim

• Recitation of main elements
• **Must recite how elements work together or relate to each other**
• Subparagraph form (preferred, but not required)
• Each component should list
  • A name for the component
  • Any distinctive features
  • Any cooperation with other components
Components – Body of the claim cont.

Component names should be:

- well *defined*
- Accurate
- Unique
Antecedent Basis

• A claim is indefinite when it contains words or phrases whose meaning is unclear.
• Antecedent means a term has been “previously” introduced.
• Clarity may be increased by indicating when a term is either new or previously introduced.
• The first time a term is used, precede it by “a” or “an”
• For subsequent recitations of a term, precede the term with “said” or “the”
Components – Body of the claim cont.

Multiple elements

• Use adjectives to distinguish between similar elements. e.g. a first widget, a blue widget, etc.

• “at least n widgets”

• “no more that n widgets”

• “a multitude of widgets”
Components – Body of the claim cont.

Distinctive features

• Describe features that are essential to the operation of the invention.
• Features may include:
  • positions
  • conditions
  • size
  • etc.
*Doctrine of Claim Differentiation*

- A judicially created rule of construction that states that when two claims in the same patent have an apparently similar or identical meaning, an effort should be made to adopt an interpretation that will give them a different meaning.
- An independent claim is broader than its dependent claims.
- There is an intended difference in scope between any two claims in the same patent.
Means plus function

35 USC 112, paragraph 6 states:

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

- Use with care
- Courts are constantly reinterpreting this
- **May be limited to disclosed embodiments**

Where means plus function language is used to define the characteristics of a machine or manufacture invention, claim limitations must be interpreted to read on only the structures or materials disclosed in the specification and “equivalents thereof.”

*In re Donaldson, 16 F.3d 1189*
Means plus function cont.

A **single means claim**, i.e., where a means recitation does not appear in combination with another recited element of means, may be subject to an **undue breadth** rejection under 35 U.S.C. 112, first paragraph.

Claim Terminology

• The meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed.

• Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art.
  

• The inventor’s lexicography must be understood and interpreted as it would be understood and interpreted by a person in that field of technology.
  
  See Phillips, 415 F.3d at 1313.
Claim Terms need to be definite

- The requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available.

- Therefore, a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.
Functional Language

Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought.

See *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971).
Negative Limitations

• Acceptable so long as the boundaries of the patent protection sought are set forth definitely with the requirements of 35 U.S.C. 112, second paragraph.

• Try to recite the negative limitation positively (e.g. recite a hole as a slit, notch, gap, etc.)

• Support the limitation in the specification.

• See MPEP 2173.05(i)
Alternative Expressions

Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. MPEP 2173.05(h)
Markush Groups

- recite members as being “selected from the group consisting of A, B and C.”

  See *Ex parte Markush*, 1925 C.D. 126 (Comm’r Pat. 1925).

- Can get a rejection if group renders the claims indefinite or results in undue multiplicity
Alternative Expressions cont.

“OR” Terminology

Alternative expressions using “or” are acceptable, such as “wherein R is A, B, C, or D.” The following phrases were each held to be acceptable and not in violation of 35 U.S.C. 112, second paragraph in In re Gaubert, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975): “made entirely or in part of”; “at least one piece”; and “iron, steel or any other magnetic material.” MPEP 2173.05(h)
Alternative Expressions cont.

The **Laundry List:**

wherein said widget includes at least one of the following:

- a first element;
- a second element;
- a third element; or
- a combination of the above.
Alternative Expressions cont.

“Optionally”

- In *Ex parte Cordova*, 10 USPQ2d 1949 (Bd. Pat. App. & Inter. 1989) the language “containing A, B, and optionally C” was considered acceptable alternative language because there was no ambiguity as to which alternatives are covered by the claim.

- However, you can get a rejection under 35 U.S.C. 112, second paragraph if the list of potential alternatives can vary and ambiguity arises.
It depends on what the meaning of “is” is.

- In patents, “is” is too limiting.
- Just say NO to “is.”
- **Use** terms like:
  - “comprises” and
  - “includes”
Relative Terminology

• The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph.


• Issue is Whether One Of Ordinary Skill In The Art Would Be Apprised Of The Scope Of The Claim
Relative Terms held definite

• “about”
  

• “essentially”
  

• “substantially”
  
Relative Terms held indefinite

• “at least about”
   Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200 (Fed. Cir. 1991)

• “Similar”
   Ex parte Kristensen, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

• “Type”

• “relatively shallow” and “of the order of” –
   Ex parte Oetiker, 23 USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

• “or like material”
   Ex parte Caldwell, 1906 C.D. 58 (Comm’r Pat. 1906).

• “comparable” and “superior”
Exemplary Language **Indefinite**

- Examples:
  - “such as”
  - “for example”

- Exemplary claim language has been held to be indefinite when the intended scope of the claim was unclear.
Functional Limitations

• A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients).

• There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper.

  *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).
Common terms for introducing a functional limitation

- “to”
- “for”
- “whereby” or “wherein”
- “thereby” or “therein”
- “adapted to” or “adapted for”
- “configured to” or “configured for” (this may be interpreted as being structural)
Connecting terms

• “coupled to” – most broad term, can include other elements.
• “attached to” – much more limited
• “connected to” – in between “coupled to” and “attached to”
Other relating terms

- disposed (between, outwardly, inwardly, etc.)
- positioned
- located
- arranged
Step language

• 35 USC 112, paragraph 6 explicitly uses the term “step for”
• Therefore, to prevent a regular method claim from being interpreted as a “means plus function” claim, do not use the term “step” in any claim that is not a means plus function claim.
• Particularly, in a method claim
Temporal relationships

Unless a temporal relationship is specified (or otherwise required), order of steps should not be limiting.
*Inferential Claiming

• Inferential claiming allows components which are not elements of the claimed invention to be introduced as limitations.

• For example:
  • A lock including a rotor for receiving a key.
  • elements of the claimed invention include:
    – The lock; and
    – The rotor.
  • The key NOT an element of the claimed invention.
Inferential Claiming (continued)

• Second example:
  • A client processor configured to receive operational information from a server processor.
    – elements of the claimed invention include:
      • The client processor; and
      • The operational information.
    – The server processor limitation is NOT an element of the claimed invention.
Inherency

• Inherency refers to the essential character of something.

• Claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable.


• Inherent Feature Need Not Be Recognized At The Time Of The Invention

Prolax

• Avoid claims that contain such long recitations or unimportant details that the scope of the claimed invention is rendered indefinite. i.e. the metes and bounds of the claimed subject matter cannot be determined.

• These kinds of claims may be rejected as prolix. MPEP § 2173.05(m).
Multiplicity

• 37 CFR 1.75 (b) More than one claim may be presented provided they differ substantially from each other and are not unduly multiplied.

• Where, in view of the nature and scope of applicant’s invention, applicant presents an unreasonable number of claims which are repetitious and multiplied, the net result of which is to confuse rather than to clarify, a rejection on undue multiplicity based on 35 U.S.C. 112, second paragraph, may be appropriate.
  – MPEP 2173.05(n)

• The rule of reason should be practiced and applied on the basis of the relevant facts and circumstances in each individual case.”
Incorporation by reference

• Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims.

  See MPEP § 608.01(m).

• Incorporation by reference in the claims to a specific figure or table “is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim. Incorporation by reference is a necessity doctrine, not for applicant’s convenience.”

  Ex parte Fressola, 27 USPQ2d 1608, 1609 (Bd. Pat. App. & Inter. 1993). See also MPEP § 2173.05(s).
Trademarks or Trade Names

• a trademark or trade name is used to identify a source of goods, and not the goods themselves.

• A claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph when it uses a trademark or trade name in a claim as a limitation to identify or describe a particular material or product.
  – See Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982).

• Better to explicitly describe the goods associated with the trademark or trade name.
Unclaimed Essential Matter

• **Matter essential** to the invention for which protection is sought **MUST** be claimed.

• A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling.
  
  – *See In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976)

• However, applicants can change what they regard as their invention during the pendency of the application.
  
  – *See In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971)
Factors affecting Claim interpretation

• Examination of the claim itself
  – See Phillips, 451 F.3d at 1314.

• Examination of the claim in light of the specification
  – See Phillips, 451 F.3d at 1314.

• Examination of the claim in light of the prosecution history.
  – See Phillips, 451 F.3d at 1314.

• Extrinsic evidence
  – See Phillips, 451 F.3d at 1314.
Designing Claims to Avoid Prior Art

- **Identify Prior Art**
  - Ask Inventor
  - Do a patent search
  - Use search engines and research databases

- **Identify unique component(s) not in the prior art**

- **Claim at least one of the unique component(s) in the independent claims.**

- **Inventor may decide to modify the invention in light of the identified prior art.**
Claim Drafting Strategies

• Be **concise**, avoid unnecessary words

• Be **clear**, avoid unnecessary adjectives, relative terms

• **CONSIDER LIKELY INFRINGING PRODUCTS**, make sure the claims cover the most likely infringing device(s) while inactively sitting on a shelf.
Claim Drafting Strategies

• Draft claims to include elements and limitations that clearly distinguish over known prior art.

• Write independent claims to describe what the prior art IS NOT

• Draft numerous claims - Cover invention with claims of varying scope and statutory classes.

• Write independent claims that do NOT describe any embodiments of the invention
Claim Drafting Strategies

Isolate points of novelty between claims

- Put only one point of novelty (distinguishing element or limitation of an element) in each independent claim
- Use dependent claims to spell out features and details of the invention - diversified among various different dependent claims
Claim Drafting Strategies

Claim reasonably foreseeable equivalents

• Use **dependent claims** to protect each and every reasonable equivalent and substitute for each element and/or every limitation

•
Claim Drafting Strategies

- Diversify claims according to clear structural components
  - Claim the invention in its smallest granular pieces
  - AND claim the invention in rational combinations of those smallest granular pieces (alone/as a part)

- Segment claim elements and limitations so you can try to “quarantine” amendments
Claim Drafting Strategies

Don’t shoot yourself in the foot:
• Make sure the claims particularly point out the invention
• Review and carefully proof your claims since they define the heart of the invention, to prevent:
  • Misnumbered claims, improper claim dependence, typos of any sort, copy-and-paste errors
  • Inconsistent or erroneous claim terminology
  • Improper claim form or lack of antecedent basis
  • Improper Markush claim format (a closed set)
  • Indefinite claims, alternative terms, negative limitations, lack of clarity or precision in claims
Claim Drafting Strategies

- Consider drafting a second set of claims at least one day later.
- Make sure the claims correspond with the specification and drawings.
- Make sure the claims actually describe the invention.
Just Remember

“[T]he name of the game is the claim.”

*In re Hiniker Co.*, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998)