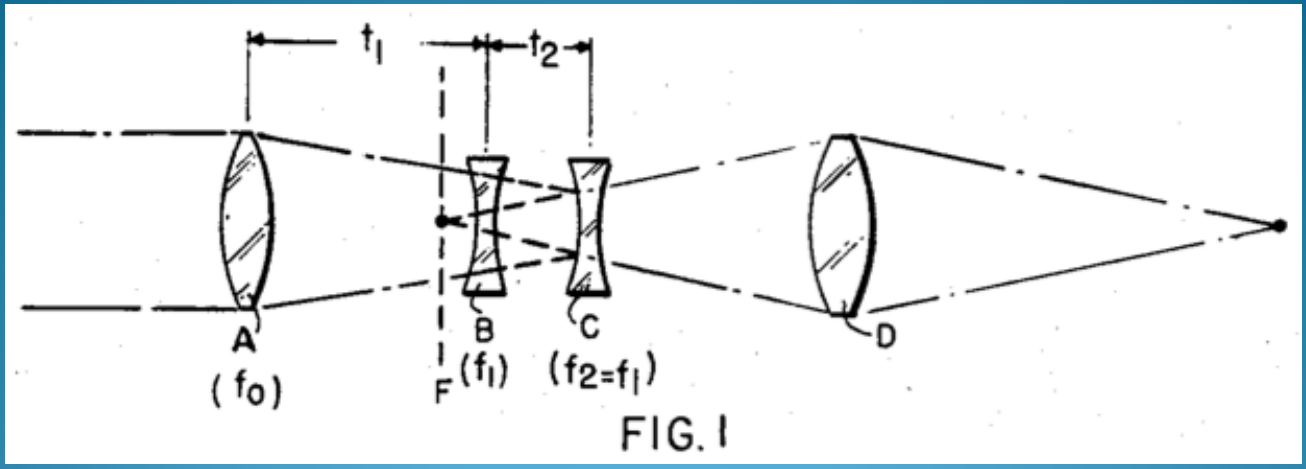
Patent Drafting With Focus

(Focus the Claims on Novelty, and Focus the Specification on the Claims)



Legal Advice Disclaimer

- The content of this presentation is for educational purposes, and is not legal advice.

- Those seeking legal advice should consult a licensed attorney to address their specific situation.

Patents Have Many Audiences

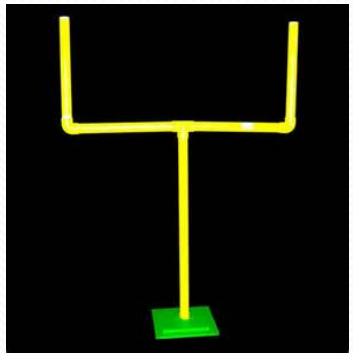
- The Inventor
- The Examiner
- The Licensor
- The Investor
- The Judge
- The Jury
- The Press and Public

Patents are Documents that are Legally Binding on the Public

- A legal grant to the inventor of "the right to exclude others from making, using, offering for sale, or selling" the claimed invention, issued by the United States Patent and Trademark Office (35 U.S.C. §154(a)(1)).
- The claims present "limitations" that limit what the USPTO grants to the inventor (35 U.S.C. §112(c)-(d)).
- A patent drafting goal is to only limit the USPTO grant to the smallest extent possible.
- Only put limitations on the grant that are absolutely necessary, as required by the prior art and USPTO rules:
  - Only add claim limitations that are necessary; and
  - Only present specification disclosure that is necessary to support the claims.
  - Anything additional overly limits the USPTO grant to the inventor.

Make a Plan for the Patent Application(s)

- Understand the client goals and purposes for obtaining the patent.
- Understand the invention as much as possible before writing.
  - Many times your understanding of the invention will be revised as the patent application drafting process proceeds.
- Understand the differences between the prior art and the invention.
  - Chart the inventive elements vs. the prior art.
- Create plan to which the client consents:
  - How many patents will be filed;
  - What each patent will be focused upon; and
  - Whether international filings are to be included.



The Specification Supports the Claims

- 35 U.S.C. §112(a): The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.
- Thus, the specification must include (MPEP §2161):
  - A written description of the invention;
  - The manner and process of making and using the invention; and
  - The best mode contemplated by the inventor of carrying out the invention.

Limit the Claim Limitations

- In the broadest claim:
  - Include a single novel limitation that is the most important to the clients objectives; and
  - Add only enough supporting claim limitations (not necessarily novel) that are needed to allow the single novel limitation to be understood.
  - More narrow and dependent claims can be added that claim less important elements of the invention.
- Put other features in dependent claims or narrower independent claims.

Limit the Claim Limitations

- Shorter claims (claims with less words) are generally broader than longer claims.
- Broader claims provide the patentee with a broader monopoly grant.
- Only add enough words/concepts to the claims to have them comply with the basic legal requirements and define at least one point of novelty.
  - Claims must define something useful, including processes, machines, manufactures, and compositions of matter (35 U.S.C. §101; MPEP §2107).
  - Claims must particularly point out and distinctly claim the invention (MPEP §2173).
    - 35 U.S.C. §112(b): ". . . claims particularly pointing out and distinctly claiming the subject matter. . ."
    - Clear and concise claims optimize patent quality by providing clear notice to the public of the boundaries of the inventive subject matter protected by a patent grant, and this fosters innovation and competitiveness.

Limit the Claim Limitations

- Keep the broadest claims as broad as the prior art will allow, because the breadth of a claim is not to be equated with indefiniteness. *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971); *In re Gardner*, 427 F.2d 786, 788, 166 USPQ 138, 140 (CCPA 1970).
- A broad claim is not indefinite merely because it encompasses a wide scope of subject matter, provided the scope is clearly defined (MPEP §2173.04).

Theories of Drafting Mechanical Claims

- Define a frame and hang parts on it.
- Define the elements from bottom to top, left to right, or vice-versa.
- Define the elements in the order in which they interact with a workpiece.
- Define the most important element, and add surrounding structure needed to define that element backwards from that element.

Claim Format

U.S. Patent 9,236,677

Preamble

What is claimed is:

1. A power supply apparatus comprising:

an arm having a contact end,

said contact end comprising a curved planar surface having a first edge and a second edge and terminating at an end edge,

said first edge and said second edge extending along parallel curved lines within said curved planar surface and defining a width dimension of said contact end,

said end edge following a straight line, and

said contact end comprising a non-linear slot extending from said end edge along said curved planar surface positioned equally between said first edge and said second edge.

Invention

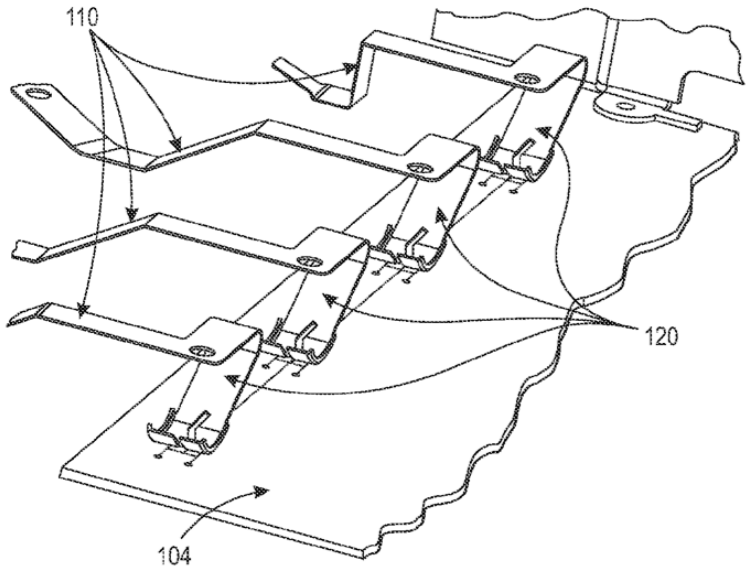
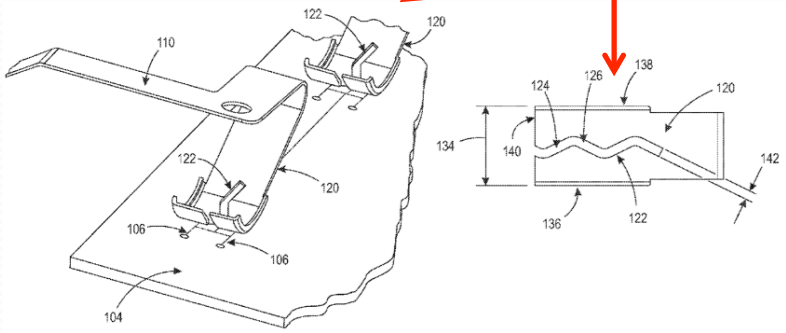


FIG. 3

Body

Invention



Claim Format

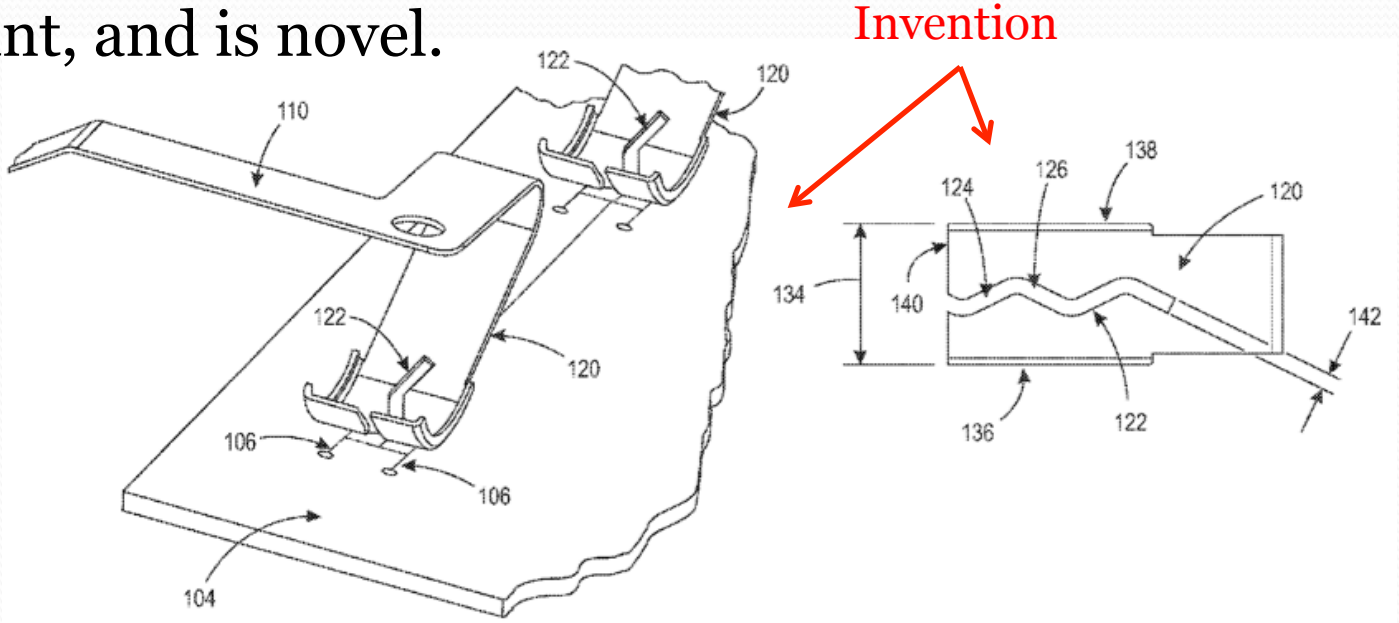
- The preamble is that language in a claim appearing before the transitional phase, e.g., before "comprising," "consisting essentially of," or "consisting of"; the body of the claim follows the transitional phrase (MPEP §2163).
- Preamble and transitional phrase of Claim 1 of U.S. Patent 9,236,677:
  - "A power supply apparatus comprising:"

Claim Format

- The body should use terms having proper "antecedent basis" (MPEP §2173.05(e)).
  - A claim which refers to "said aluminum lever," but recites only "a lever" earlier in the claim, is indefinite because it is uncertain as to which lever reference is being made.
- "Said" vs. "The"
  - Either is proper - MPEP §2173.05(e), so do what your boss/client prefers.
  - If you use "said," it is easier to use "the largest"; "the first"; etc.

Build the Claim From Novelty Backwards

- "A power supply apparatus comprising:"
- What next? The feature the client feels is most important, and is novel.
- Here:



- Client's most important feature: "the slot."

Build the Claim From Novelty Backwards

- 1st try:
  A power supply apparatus comprising:
  a slot.

- That claim does not define any structure.

- Add limitations to show where the slot is:

  A power supply apparatus comprising:
  an arm,
  said arm having a slot.

- That is not novel.

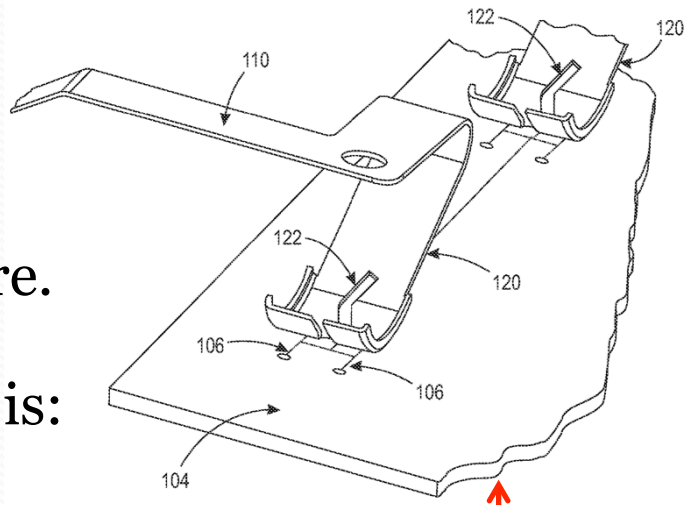


FIG. 5

Invention

Build the Claim From Novelty Backwards

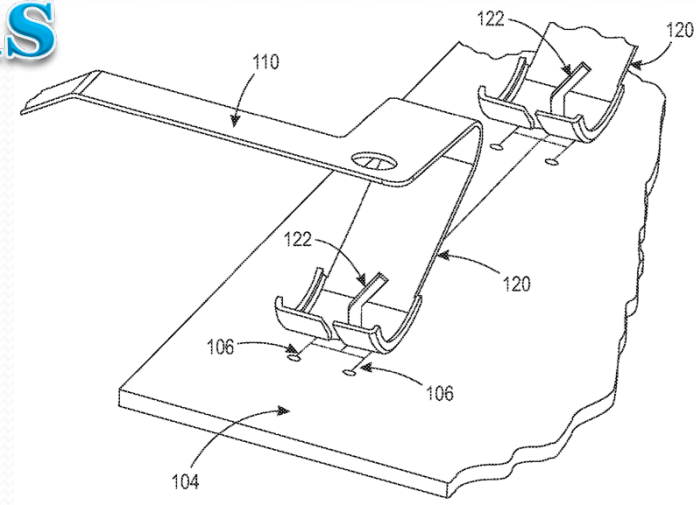


FIG. 5

Invention

- Add more limitations about where the slot is on the arm:

  A power supply apparatus comprising:

  an arm having a contact end,

  said arm having a slot extending from said contact end.

- Still not novel.

Build the Claim From Novelty Backwards

- Add more limitations about the location of the slot on the curved part of the arm:

A power supply apparatus comprising:

an arm having a contact end,

said contact end comprising a curved planar surface having a first edge and a second edge and terminating at an end edge, and

said contact end comprising a slot extending from said end edge along said curved planar surface positioned equally between said first edge and said second edge.

Invention

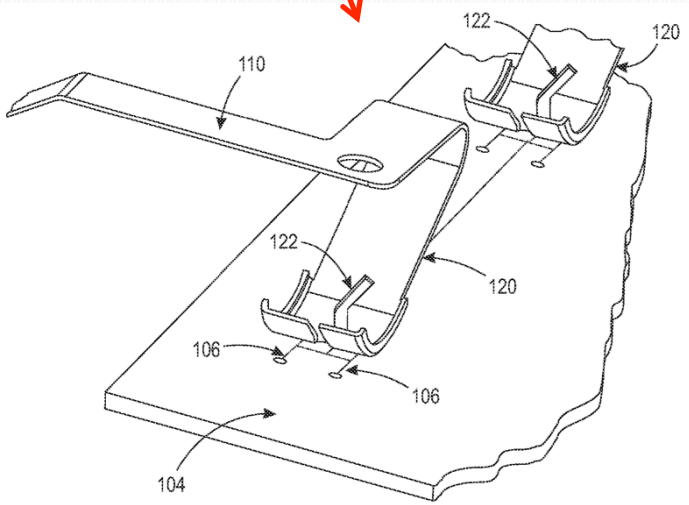


FIG. 5

Build the Claim From Novelty Backwards

- Prior Art shows slot on a curved arm:

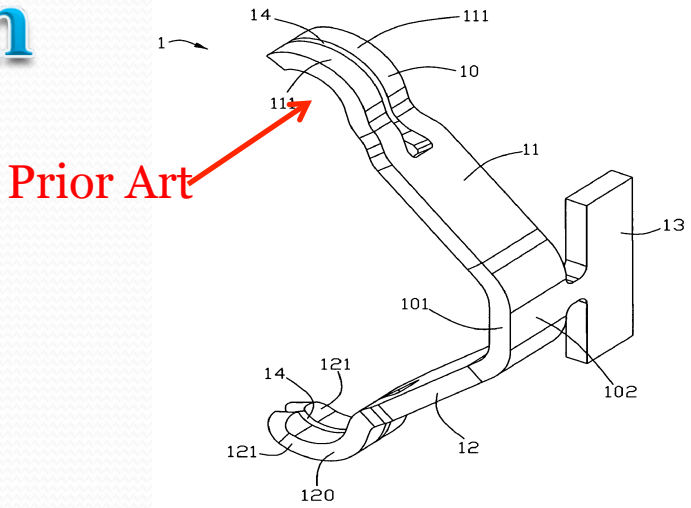
A power supply apparatus comprising:

an arm having a contact end,

said contact end comprising a curved planar surface having a first edge and a second edge and terminating at an end edge,

said first edge and said second edge following a curved line, and

said contact end comprising a non-linear slot extending from said end edge along said curved planar surface positioned equally between said first edge and said second edge.



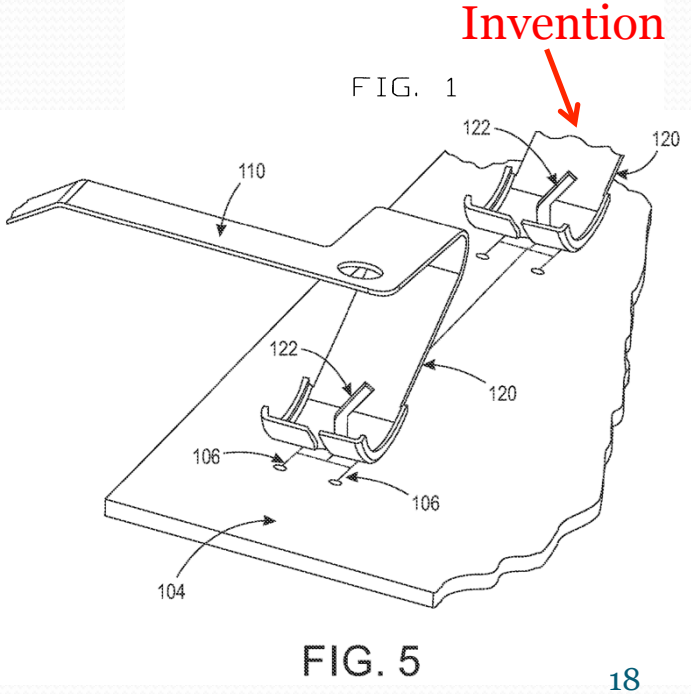


FIG. 5

Build the Claim From Novelty Backwards

- Examiner wanted more clarity:

A power supply apparatus comprising:

an arm having a contact end,

said contact end comprising a curved planar surface having a first edge and a second edge and terminating at an end edge,

said first edge and said second edge extending along parallel curved lines within said curved planar surface,

said end edge following a straight line, and

said contact end comprising a non-linear slot extending from said end edge along said curved planar surface positioned equally between said first edge and said second edge.

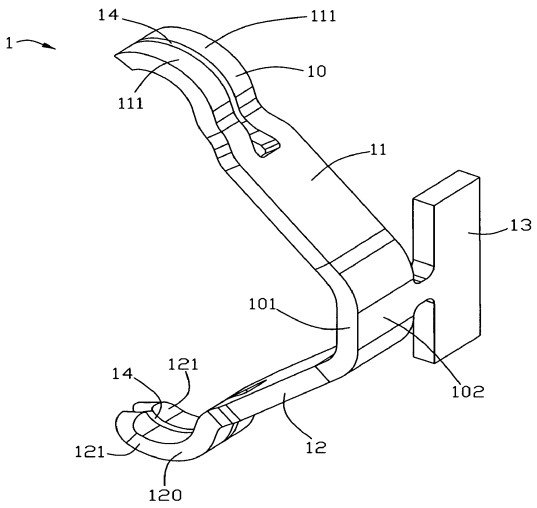


FIG. 1

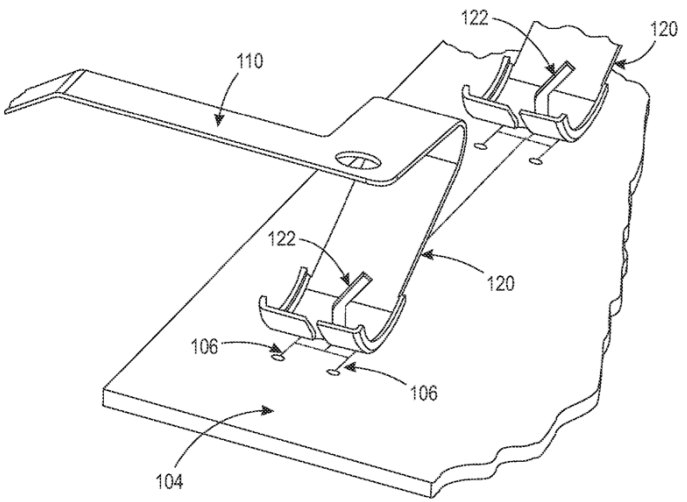
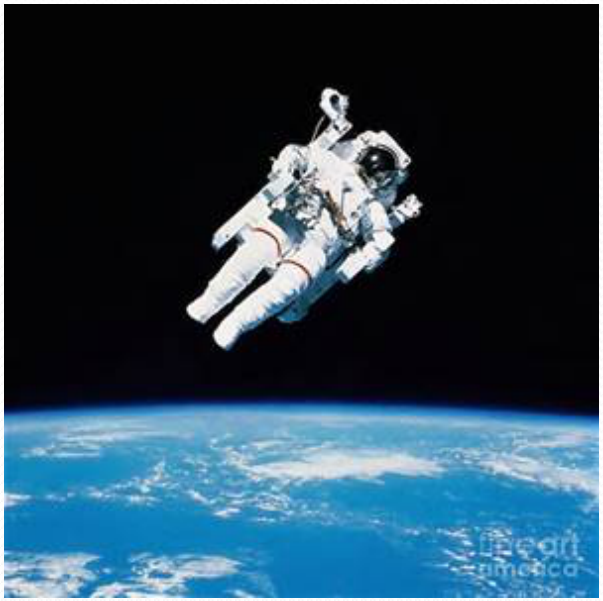


FIG. 5

Review Claims After all Iterations

- Every limitation should relate to a previous limitation.
  - One test: every limitation (after the first) should include the word "said" or "the."
- Every limitation should be used later in the claim.
  - Check to see if there are any lonely elements just floating in space.
- Check that the claims do not positively claim a workpiece or elements of a different device that the claimed device interacts with.



Review Claims After all Iterations

- Remove "benefits" from any claim limitations, so that only structure is defined.
- Combine elements that overlap or are substitutes.
- Try to define only one of each element, even though the structure will include many.
  - If the claim defines a single item (e.g., "a cycle comprising: a wheel") bicycles and unicycles will both infringe, but if you define "a bicycle having wheels" the unicycle will not.
  - Look for plurals that can be made singular, or can be changed to "at least one," etc.

Draft Multiple Sets of Claims

- Different theories:
  - Define very broad independent claims first, then add elements in more narrow independent claims and dependent claims.
  - Define very narrow independent claims first ("kitchen sink" or "picture" claims), and then move some elements to dependent claims, and strip out other elements to create broader independent claims.

Draft Multiple Sets of Claims

- Define as many different types of claim sets as can be separately licensed:
  - Apparatus
  - Method of making the apparatus
  - Method of using the apparatus
  - Method of assembling the apparatus
  - Individual claim sets for each novel component/ subcomponent of the larger device. Some preambles of independent claims where the spoke of a bicycle wheel is novel:
    - A cycle comprising:
    - A wheel of a cycle comprising:
    - A spoke of a wheel of a cycle comprising:

Use Claim Checking Software

III. **Antecedents Errors/Warnings**[3]

Claim	Error/Warning
1. (Currently Amended) A method of identifying failed components in an integrated circuit, comprising: creating a multi-level coil inductor around a through-silicon-via (TSV) in a multi-layer semiconductor substrate, said TSV electrically connecting layers of *said multi-layer semiconductor*, and said multi-level coil inductor comprising a coil having several turns around said TSV; passing an electrical current through said TSV; sensing a voltage induced in said multi-level coil inductor by said electrical current flowing in said TSV, using a computerized device; comparing said voltage to a reference voltage, using said computerized device; and identifying failure of said TSV based on said voltage not matching [[to]] said reference voltage, using said computerized device.	***Double-check:*** "said multi - layer semiconductor." Is "a multi - layer semiconductor substrate" in claim 1 the proper antecedent reference for this term?
6. (Original) The method according to claim 1, further comprising: detecting one of a voltage spike, a voltage dip, a maximum voltage, and a minimum voltage, based on *said electrical signature*, using said computerized device.	***No antecedent:*** "said electrical signature."
7. (Currently Amended) A method of identifying failed components in an integrated circuit, comprising: forming a wafer comprising a multilayer silicon substrate;	***No antecedent:*** "said multi - layer semiconductor."

Claim Clarity (Definiteness)

- Claim clarity is important because the claims place the public on notice of the scope of the patentee's right to exclude (*Johnson & Johnston Assoc. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1052, 62 USPQ2d 1225, 1228 (Fed. Cir. 2002)).
- MPEP §2173.02: Definiteness of claim language must be analyzed, not in a vacuum, but in light of:
  - The content of the particular application disclosure;
  - The teachings of the prior art; and
  - The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

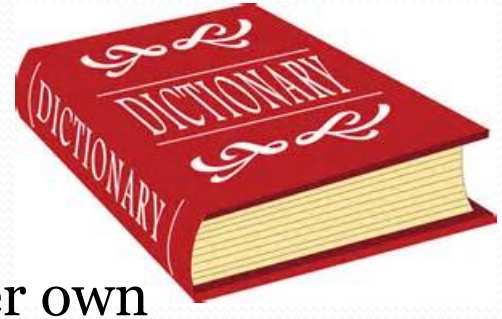
Claim Clarity (Definiteness)

- 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 (MPEP §2173.05(a)).
- Applicants need not confine themselves to the terminology used in the prior art, but are required to make clear and precise the terms that are used to define the invention so that the metes and bounds of the claimed invention can be ascertained (MPEP §2173.05(a)).

Claim Clarity (Definiteness)

- When the specification states the meaning that a term in the claim is intended to have, the claim is examined using that meaning. *In re Zletz,* 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989).

Your Specification Defines
Your Claim Terms



- A patentee or applicant is free to be his or her own lexicographer, and a patentee or applicant may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings, if the written description clearly redefines such terms. See, e.g., *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

Relative Claim Terminology

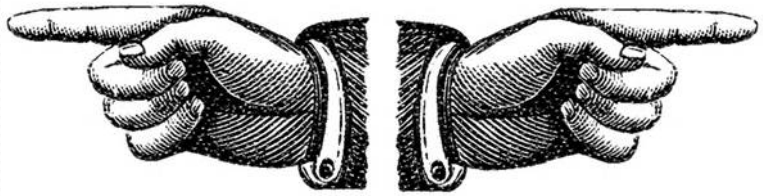
- It is permissible (but not preferable) to use phrases such as "relatively shallow," "of the order of," "about," "substantially," "essentially," and "an effective amount"; but only if such terminology is defined in the specification, otherwise it is vague (*Ex parte Oetiker*, 23 USPQ2d 1641 (1992) and (MPEP §2173.05(b)).
- Do not claim "small," "large," "high," etc., but do claim that "A is faster than B," or "C has a size between A and B."
- Do not claim "above," "below," "over," etc.; but do claim "A is at said first end and B is at said second end"; or "layer C is between said layer A and said layer B."

Alternative Limitations (Markush Groups)

- An optional limitation "containing A, B, and optionally C" may or may not be vague, depending upon context (*Ex parte Cordova*, 10 USPQ2d 1949 (Bd. Pat. App. & Inter. 1989)).
- A Markush claim "**selected from the group consisting of A, B, and C**;" are generally not vague (MPEP §2173.05(h)).
- Inventions in metallurgy, refractories, ceramics, pharmacy, pharmacology and biology are most frequently claimed under the Markush formula, but purely mechanical features or process steps may also be claimed by using the Markush style of claiming (*Ex parte Head*, 214 USPQ 551 (Bd. App. 1981).

Alternative Limitations

- 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: "made entirely or in part of"; "at least one piece"; and "iron, steel or any other magnetic material." (*In re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975)).



This or That

Put Examples in Specification, Not Claims (MPEP §2173.05(d))

- Claim language which has been held to be indefinite:
  - "R is halogen, for example, chlorine";
  - "material such as rock wool or asbestos" *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1949);
  - "lighter hydrocarbons, such, for example, as the vapors or gas produced" *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949);
  - "normal operating conditions such as while in the container of a proportioner" *Ex parte Steigerwald*, 131 USPQ 74 (Bd. App. 1961); and
  - "coke, brick, or like material". *Ex parte Caldwell*, 1906 C.D. 58 (Comm'r Pat. 1906).

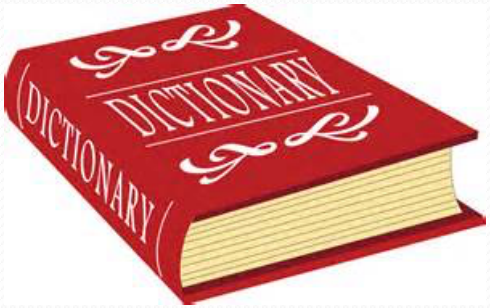
Functional Limitations

- Functional language is proper and defines an element by what it does rather than by what it is ("a fastening member" instead of "a rivet") *In re Swinehart*, 439 F.2d 210, 212, 169 USPQ 226, 229 (CCPA 1971).
- Functional language broadens the claim, but caution must be used with functional language, because it may be interpreted as means-plus-function language (MPEP §2173.05(g) and 35 U.S.C. §112(f)).

Functional Limitations

- Functional language is highly dependent on context (e.g., the specification and the knowledge of a person of ordinary skill in the art). *Halliburton Energy Servs.*, 514 F.3d at 1255, 85 USPQ2d at 1663).
- If functional limitations are included in the claims, they should be defined in the specification with as many device examples as possible.

Your Specification Defines
Your Claim Terms



Functional Limitations

- Functional language found to be proper:
  - "operatively connected," which means that the claimed components must be connected in a way to perform a designated function *(Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004);
  - "incapable of forming a dye with said oxidizing developing agent" (In re Barr, 444 F.2d 588, 170 USPQ 330 (CCPA 1971));
  - "adapted to be positioned," "resiliently dilatable," and "slidably positioned" (*In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976)).
  - "transparent to infrared rays" (*In re Swinehart*, 439 F. 2d 210, 212, 169 USPQ 226, 229 (CCPA 1971)).

Negative Limitations

- Generally the claims and the specification should define and describe what the invention is, instead of what the invention is not *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). However, sometimes the invention will be the omission of a well-known element.
- There is nothing inherently ambiguous or uncertain about a negative limitation, so long as the recited elements are definite (MPEP §2173.05(i)).
- Any negative limitation or exclusionary proviso must have basis in the original disclosure (*Ex parte Parks*, 30 USPQ2d 1234, 1236 (Bd. Pat. App. & Inter. 1993).

Sample Application Exercise

- Invention (Spoon-Fork-Knife: “Sporknife”):

Sample Application Exercise

- Prior Art #1:

Gibb & Riley, LLC, Annapolis, MD
(GibbIPLaw.com)

Sample Application Exercise

- Prior Art #2:

Sample Application Exercise

- Prior Art #3:

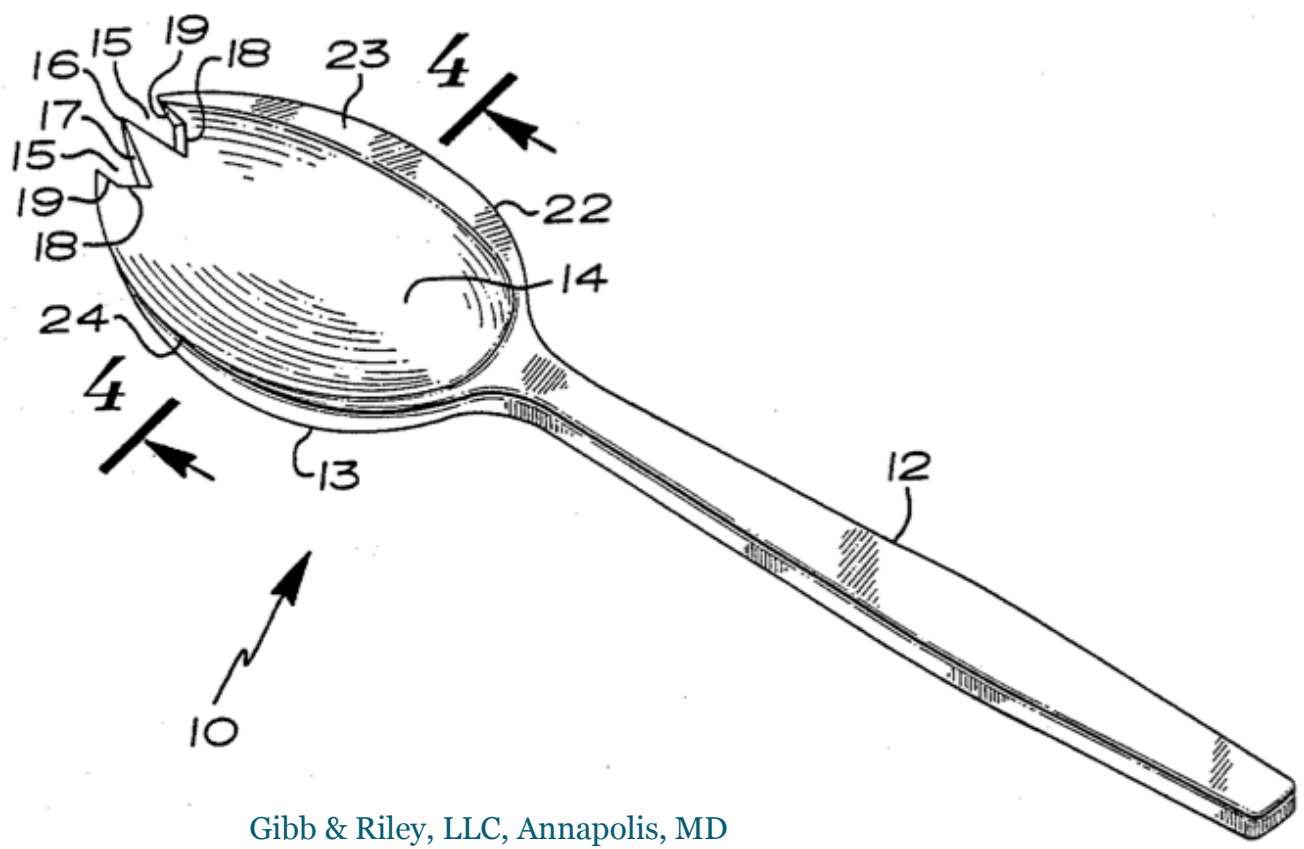
Sample Application Exercise

- CLAIM DRAFTING WORK SHEET

Content of Prior Art	Key Elements of Invention
(1) _____	(1) _____
(2) _____	(2) _____
(3) _____	(3) _____
(4) _____	(4) _____
(5) _____	(5) _____
(6) _____	(6) _____
(7) _____	(7) _____

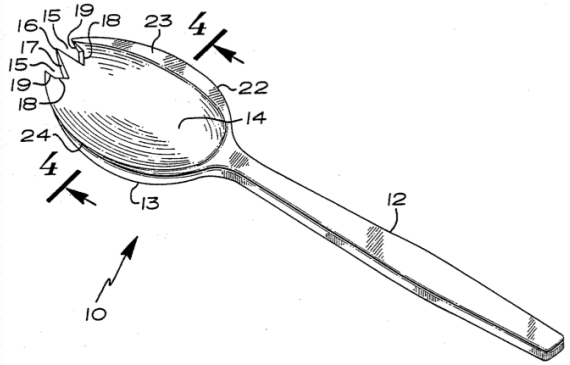
Sample Application Exercise

- US Patent 4,535,538



Sample Application Exercise

- US Patent 4,535,538:



1. A non-disposable eating utensil molded from an inert plastic material, comprising:

a handle of sufficient rigidity to withstand vigorous manual pressure and having a concave-convex scoop at one end, said scoop being generally in the shape of a spoon;

tines extending outwardly from one end of said scoop, said tines functioning generally in the manner of a fork;

said scoop having first and second edges and a basin bowl, said first edge being parallel to the plane of said handle and beveled along its length to function as a knife, and capable, under rocking pressure, to sever food, said first edge being nonserrated to prevent injury to the mouth of a user, said scoop having a smoothly uninterrupted concave upper surface;

said handle being centered proportionally between said first and second edges of said scoop so as to provide balance; and

said scoop including a plurality of indentations between said tines, said indentations including a short and a long edge, said short and long edges being connected by a downwardly sloping edge, said indentations cooperating with said tines so that the upper surface of the latter is co-extensive with the upper concave surface of the scoop thereby maximizing surface area for containment of liquid materials within said basin bowl of said scoop.

2. The non-disposable eating utensil of claim 1 wherein said handle, scoop and tines are made of polystyrene, thereby promoting strength to the utensil.

* * * * *

Thank You

- Questions?