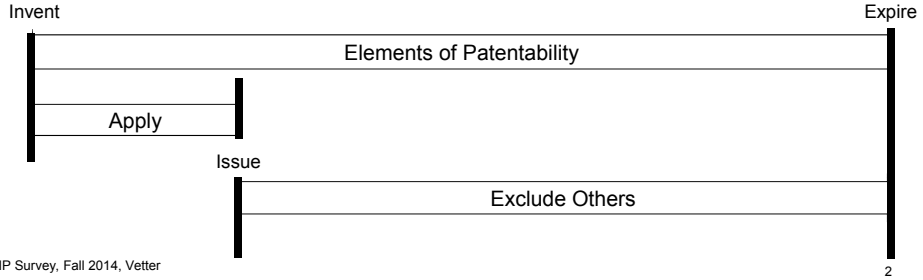
IP Survey

- Patent Law

The elements of Patentability

- ***Patentable subject matter***, i.e., patent eligibility
- ***Useful/utility*** (operable and provides a tangible benefit)
- ***New*** (novelty, anticipation)
- ***Nonobvious*** (not readily within the ordinary skills of a competent artisan at the time the invention was made)
- ***Specification requirements / disclosure requirements*** (enablement, written description, best mode, definiteness)



35 USC §101

Whoever invents or discovers any new and useful

process,

machine, manufacture, or composition of matter,

or any new and useful improvement thereof,

may obtain a patent therefor, subject to the conditions and requirements of this title

"Product" claims or inventions

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- Patent application for genetically engineered bacteria
  - It had the property of breaking down multiple components of crude oil
  - Its intended application was to treat oil spills (never field tested or applied)
- Claim to the bacteria itself:
  - "a bacterium from the genus *Pseudomonas* containing therein at least two stable energy-generating plasmids, each of said plasmids providing a separate hydrocarbon degradative pathway."
- Various other claims in other claim formats
- Issue – is the bacteria a "manufacture" or "composition of matter" within the meaning of those terms as they apply from 35 U.S.C. §101?

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- Mode of analysis (in essence common to all of the patent eligibility cases)
  - First, determine whether the claim is "within" the meaning of one of the four statutory terms
    - Apply statutory interpretation "argument categories"
      - Meaning of the words (statutory definitions, plain meaning, canons of construction, past court opinions on the meaning)
      - Inferences from the provisions or structural characteristics of the statute or other related statutes (same word used in other places in the statute, significance of sectioning, divisions, cross-references, etc.)
      - Legislative History (a number of principles and "canons" are sometimes used to structure use of legislative history; for example, the sometimes employed doctrine that the legislative history should only be authoritative if the statutory language is ambiguous)
      - Policy and/or historical arguments
  - Second, even if the analysis from the first step seems to indicate that the claim is within one of the terms, evaluate whether the claim fits into one of the various remaining exceptions to patent eligibility
    - These exceptions are judicially created, so the mode of analysis looks more like the common law than like statutory interpretation (for example, the line of cases dealing with the now mostly defunct "mathematical algorithm" exception)

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- PTO rejection
  - Examiner rejected bacterial claims on two grounds
    - micro-organisms are "products of nature"
    - that as ***living things micro-organisms are not patentable subject matter under § 101***.
      - A new "proposed" exception, or does it fit within one of the three exceptions? (natural phenomenon? but, human-made)
- Meanings of terms
  - Manufacture
    - produce articles for use from raw or prepared materials by giving these materials new forms, qualities, properties, or combinations
  - Composition of matter
    - all compositions of two or more, all composite articles – whether chemical or mechanical union/mixture, whether gases, fluids, powers or solids
  - Both "wide scope" terms

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- Legislative History
  - Language of 101 tracks closely with Jefferson's originally-authored 1793 patent act
  - Embodies Jefferson's philosophy that "ingenuity should receive a liberal encouragement"
  - Congress intended patentable subject matter to include "anything under the sun that is made by [humans]"
- Exceptions - Physical phenomena?
  - Compare to Funk (US 1948):
    - Applicant discovered certain bacteria whose characteristics where such that when mixed together they assisted the process of nitrogen fixation in plant roots
    - In rejecting the application the court said that the "use in combination does not improve in any way their natural functioning"
    - "they perform in their natural way"
  - Chakrabarty's bacteria has "markedly different characteristics" from those in nature
  - Chakrabarty ***transformed*** the natural bacteria into his own handiwork
- Other considerations
  - Consider the definition of "invention" in §100, which says that "invention" means both "invention and discovery"

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- First counter argument
  - 1930 Plant Patent Act (seedless "asexual" reproduction)
  - 1970 PVPA (sexual reproduction, excluded bacteria)
  - Passage of both acts evidences congressional understanding that "manufacture" or "composition of matter" do not include living things – if they did, neither act necessary
    - Only one specific PPA legislative history provision stating that "the patent laws . . . at the present time are understood to cover only . . . inanimate nature"
- Not persuasive because there were other reasons to pass both acts
  - PPA – work of the breeder "in aid of nature" was patentable
    - Prior to 1930, even artificially bred plants considered "products of nature" (an instance of "natural phenomena")
    - Written description problem for plant patent (may differ only by color or perfume) (relaxed by PPA)
    - ***Relevant distinction is not between living and inanimate things, but between products of nature, whether living or not, and human-made inventions***
  - PVPA – sexually reproduced plants not included in PPA because new varieties could not be reproduced true-to-type through seedlings in 1930
    - PVPA excluded bacteria (i) simply in agreement with a court case that held that bacteria were not plants under PPA, or (ii) because prior to 1970 the PTO had granted some patents on bacteria

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

- Second counter argument – need Congress to authorize patents on micro-organisms, genetic technology unforeseen when §101 enacted
  - Flook: the judiciary "must proceed cautiously when . . . asked to extend patent rights into areas wholly unforeseen by Congress"
  - Congress has spoken, court says it is simply doing its Marbury duty to say what the law is – high policy choice is not for the court and has already been made by congress
    - Congress is free to amend to exclude these inventions, and has similarly done so for nuclear weapons technology

Madey v. Duke Univ., 307 F.3d 1351 (Fed. Cir. 2002)

- Embodiments
  - An infrared FEL called the "Mark III FEL," embodying the '994 patent and the '103 patent (by incorporating the microwave electron gun in the infrared FEL).
  - A "Storage Ring FEL," embodying the same patents as the Mark III FEL because it incorporates a Mark III FEL.
  - A "Microwave Gun Test Stand," embodying the '103 patent (by incorporating the microwave electron gun).

Problem

Phillips Modular Wall (PMW) is a nonprofit that makes modular wall sections for easy construction of temporary housing. Their biggest customers are other nonprofit entities that setup housing after disasters, such as hurricanes, or for the homeless. In its R&D lab, PMW devises a new type of optical microscope. Unbeknownst to PMW, a U.S. patent is in force at the time PMW devised and began using the microscope. The PMW microscope is an embodiment of claim 1 in that patent. Putting aside any questions about what monetary damages amounts might or might not flow if the acts where infringement, which of the following are acts of infringement?

1. During manufacturing, PMW uses the first microscope to examine the welds on its walls to ensure quality.

2. PMW makes a second microscope exactly the same as the first and donates it to the optometry department of a local university. A professor there studies it to discover how it works, and uses it to expose six images to a digital camera. Then she puts the images on her web site with an explanation of how the microscope works. Thereafter, she retires the microscope to the school museum.

3. A chemistry professor at the local university sees the microscope in the school museum and secures permission from the optometry professor to remove it to his lab. There he regularly uses it to study the structure of different welding patterns on metal in furtherance of his research grant from the (hypothetical) National Welding Quality Assurance Society.

4. PMW makes a third microscope and donates it to a local public high school. The school uses it in the physics lab as another educational tool to help teach high school physics.

5. The high school physics lab technician doesn't know where the microscope came from. From her perspective, it just showed up one day. She likes the microscope so much that she searches in the marketplace for it and finds the patent owner as a supplier. Never realizing it is a different source of supply, she purchases six microscopes from the patent owner.

6. The lab technician sells the donated microscope and one of the purchased microscopes to QOX, a for profit competitor of PMW. QOX uses both to inspect welds in its manufacturing line. Later, QOX sells both to RPY, a regular microscope purchaser from the patent owner.

eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388 (2006)

35 U.S.C. 283 Injunction.
The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

- Trial Court outcome?
- Federal Circuit outcome?
- Supreme Court . . .

According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate:

(1) that it has suffered an irreparable injury;
(2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury;
(3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and
(4) that the public interest would not be disserved by a permanent injunction.

The decision to grant or deny permanent injunctive relief is an act of equitable discretion by the district court, reviewable on appeal for abuse of discretion.

Claims

- Claims are the heart of the patent system
- ***Inventors*** are those who thought of something covered by the claims, not those who learned it from someone else
  - You may not know who they are until claims are drafted
- Claims define the scope of coverage of the right to exclude
- Those who ***operate within the language of the claim*** are subject to an infringement action

Patent – claims

1. A ***seating apparatus***, ***comprising***:

   (a) a horizontal ***seat***; and

   (b) three ***legs*** each having one end connected to the ***bottom*** of said horizontal ***seat***.

1. A device for supporting objects, ***comprising***:

   (a) a horizontal support member; and

   (b) three vertical support members each having one end connected to the same face of said horizontal support member.

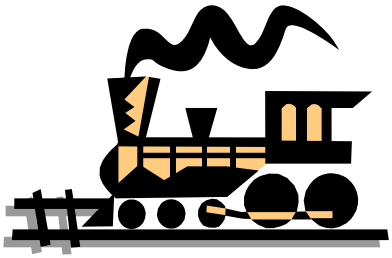
Claim Example

- Client shows you a machine she has devised. It has:
  - Chassis
  - 4 wheels
  - 10-cylinder engine
  - Brake on each wheel
  - 3-speed transmission

- How to Claim?
  - Rule 1 - as broad as possible but must not cover any previously known configuration.
  - Rule 2 - Claim must embrace something the inventor devised
- Assume that the closest previously known machine is the horse-drawn wagon
- Claim 1:
  - A vehicle, comprising:
    - a chassis;
    - a plurality of wheels attached to said chassis; and
    - an engine for turning one of said wheels.
- Goals
  - Don't give up broadest claim scope
  - Write many other, narrower, claims in case Claim 1 is found to violate Rule 1.

Claim Example (cont'd)

- New information on prior art
  - You learn at some point that the locomotive pre-existed your client's development of the car



- This generates a need to amend the claim
- (amended) Claim 1:
  - A vehicle, comprising:
    - a chassis;
    - a plurality of wheels attached to said chassis;
    - an engine for turning one of said wheels;
    - A steering device for turning at least one of said wheels.

Claim elements/limitations

- In claims using the transition word "comprising," adding more elements/limitations makes the claim more narrow (i.e., there are a smaller number of items that might be covered by the claim)
  - There are other ways to make the claim more narrow, this is not the only way
- For example, arrange these three claims from most to least broad:

Claim 1

- A device for supporting objects, comprising:
- (a) a horizontal support member; and
- (b) three vertical support members each having one end connected to the same face of said horizontal support member.

Claim 3

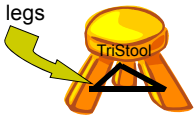
- A ***seating apparatus***, comprising:
- (a) a horizontal ***seat***;
- (b) three ***legs*** each having one end connected to the ***bottom*** of said horizontal ***seat***; and
- (c) said connection between said legs and bottom of said horizontal seat being a slim metal piece partially traversing some of said leg and said seat.

Claim 2

- A ***seating apparatus***, comprising:
- (a) a horizontal ***seat***; and
- (b) three ***legs*** each having one end connected to the ***bottom*** of said horizontal ***seat***.

Patent – claims

Ver. I	Ver. II	Ver. III	Ver. IV
Narrow			Broad
1. A seating apparatus, comprising: (a) a horizontal circular seat; (b) three vertical legs of equal length each having one end connected to the bottom of said horizontal seat; and (c) three horizontal support members connecting said three vertical legs	1. A seating device, comprising: (a) a flat, substantially elliptical board; (b) three rods, each connected at one end to the same side of said board; (c) wherein the point of connection between each rod and said board is located an equal distance from the point of connection of every other rod	1. A seating apparatus, comprising: (a) a horizontal seat; and (b) three legs each having one end connected to the bottom of said horizontal seat.	1. A device for supporting objects, comprising: (a) a horizontal support member; and (b) three vertical support members each having one end connected to the same face of said horizontal support member.



Dependent claims

1. A seating apparatus, comprising:
   (a) a horizontal seat; and
   (b) three legs each having one end connected to the bottom of said horizontal seat.

Examples of dependent claims:

*2. The seating apparatus of **claim 1** further including rubber caps at the end of each said leg opposite the end of said leg connected to the bottom of said horizontal seat.*

*3. The seating apparatus of **claim 1** wherein the said horizontal seat is made from wood.*

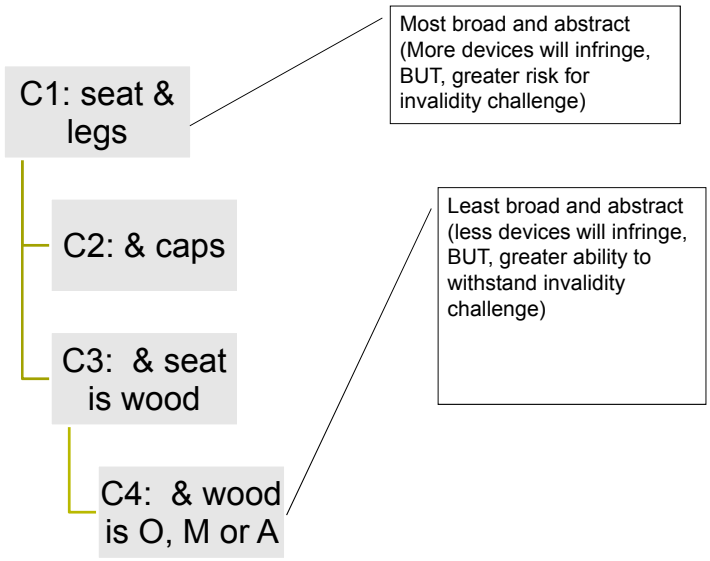
*4. The seating apparatus of **claim 3** wherein the wood is one of the following types: oak, mahogany or ash.*

General rule of "claims scope": the independent claim is always "broader" than its dependent claims.

"comprising" is a magic word. It makes the claim "open-ended" - any device or method that includes all the limitations after the word comprising will infringe, e.g. a four-legged stool infringes claim 1.

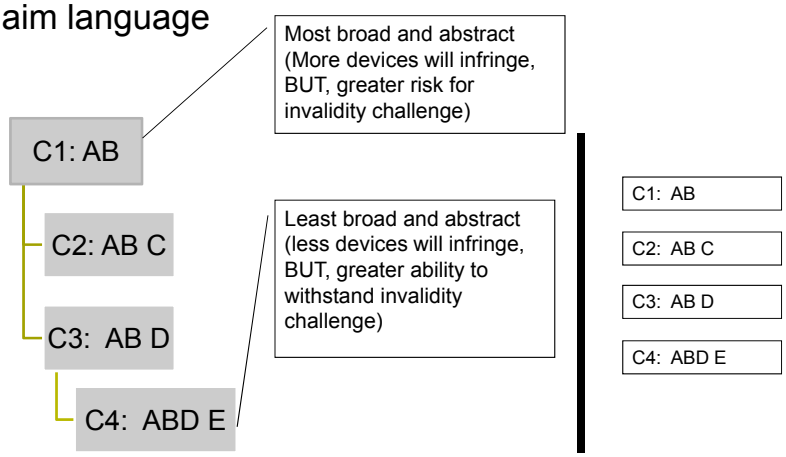
More on claims – visualizing dependent claims

- Dependent claims are often visualized in a tree hierarchy

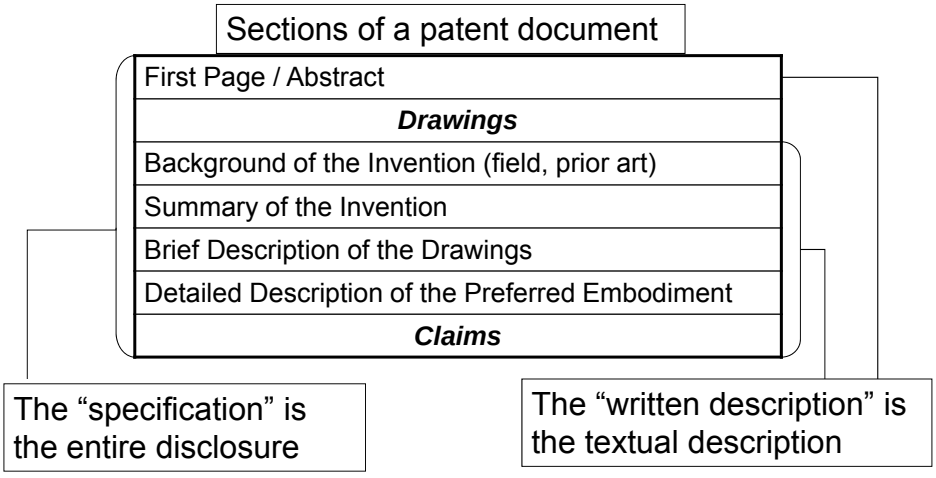


More on claims – labeling elements/limitations

- Patent attorneys use a shorthand for discussing claim elements/limitations
- That short hand is to use a symbol, often letters, for each major component or subdivision, or major qualifier in the claim language



Patent Document Terminology

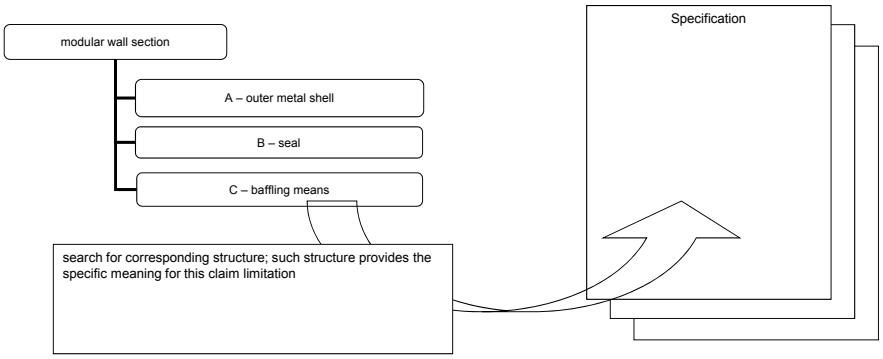


The label "written description" that is used to describe a portion of the patent document is different from the **§ 112 ¶1** "written description requirement"

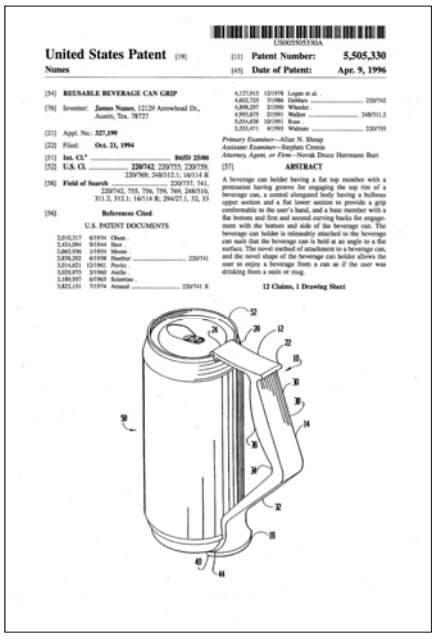
Means plus function - § 112, ¶ 6

Revised hypothetical claim to demonstrate "means plus function" claim limitations

1. *A modular wall section, comprising:*		preamble
	an edge-wise rectangular outer metal shell where the longer side of the rectangle is within the length range of 2 feet to 5 feet;	A
	one or more seals on one or both of the shorter sides of the rectangle for interfacing with other modular wall sections; and	B
	baffling means.	C



Example Patent - U.S. Pat. No. 5,505,330 (Nunes)



United States Patent [19]
Nunes

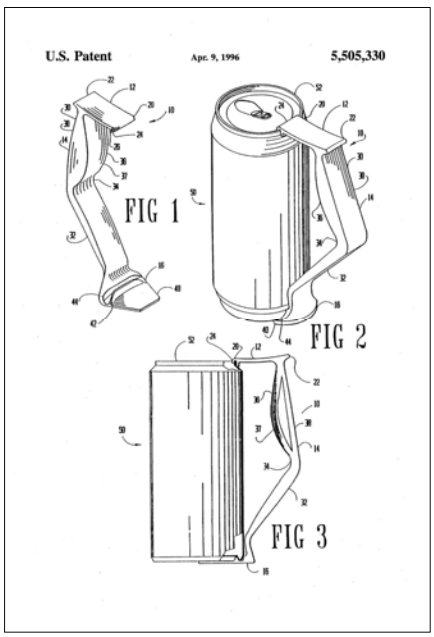
[11] Patent Number: 5,505,330
[45] Date of Patent: Apr. 9, 1996

[54] REUSABLE BEVERAGE CAN GRIP

[57] ABSTRACT

A beverage can holder having a flat top member with a protrusion having grooves for engaging the top rim of a beverage can, a central elongated body having a bulbous upper section and a flat lower section to provide a grip conformable to the user's hand, and a base member with a flat bottom and first and second curving backs for engagement with the bottom and side of the beverage can. The beverage can holder is releasably attached to the beverage can such that the beverage can is held at an angle to a flat surface. The novel method of attachment to a beverage can, and the novel shape of the beverage can holder allows the user to enjoy a beverage from a can as if the user was drinking from a stein or mug.

12 Claims, 1 Drawing Sheet



U.S. Pat. No. 4,677,798 (Phillips)

United States Patent [19]

Phillips

[11] **Patent Number: 4,677,798**

[45] **Date of Patent: Jul. 7, 1987**

[54] **STEEL SHELL MODULES FOR PRISONER DETENTION FACILITIES**

[76] Inventor: **Edward H. Phillips**, P.O. Box 979, Fort Collins, Colo. 80522

[21] Appl. No.: **852,021**

[22] Filed: **Apr. 14, 1986**

[51] **Int. Cl.**[4] **E04H 3/08**

[52] **U.S. Cl.** **52/106**; 52/79.4; 52/79.9; 52/144; 52/404; 109/79

[58] **Field of Search** 52/106, 79.1, 79.4, 52/79.5, 79.9, 79.12, 144, 243, 404; 109/78, 79

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,100,804	6/1914	White .	
3,312,019	4/1967	Faerber	52/106
3,722,152	3/1973	Schlatter et al.	52/106 X
3,769,766	11/1973	Speidel	52/79.4
3,899,043	8/1975	Hall	52/79.9 X
4,494,348	1/1985	Kastelic	52/404 X

Primary Examiner—J. Karl Bell

Attorney, Agent, or Firm—Laurence R. Brown

[57] **ABSTRACT**

Vandalism resistant building modules suitable for detention and secured storage facilities provide good architectural properties and significant resistance to noise, fire and impact. Thus, steel shell modules are welded together to produce steel inner and outer walls. The modules contain strengthening and bullet deflecting internally directed steel baffles and various types of insulating materials. Construction is facilitated by providing modules that are welded together along only two lines coinciding with mating end positions on the steel plate inner and outer walls. Three steel panel pieces are formed into a module, each being partly triangular in cross section so that only one weld seam between two of the panels is required in assembling the three pieces which thereby form the internal baffles at angles for deflecting bullets. The baffles form an intermediate barrier between the walls and flanges at the ends of the module between which an insulating rope is compressed to provide a thermal and sound barrier between the inner and outer steel walls. Different types of internally disposed insulating materials may be disposed on either side of the intermediate barrier thus to provide the best combination of impact, fire and sound resistant properties.

26 Claims, 18 Drawing Figures

Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc)

- Degree of influence on meaning for the claim term “baffle” from:
  - The dictionary
  - The disclosure (“specification”)
  - Function intended for structure recited in the claim
- Internal versus External sources of meaning and context

FIG. 2.

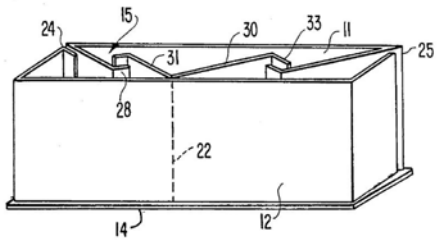


Fig. 7

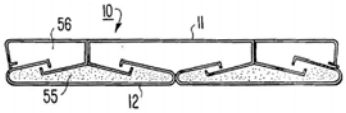
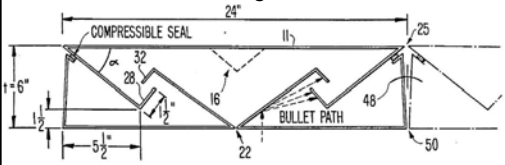


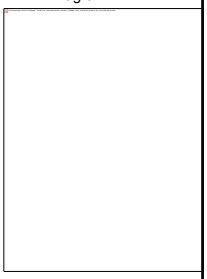
Fig. 6



Problem

A handle for a beverage can, comprising:
a handle body;
a top connector;
a bottom connector;
a flexible joint that facilitates the attachment of the handle to the beverage can; and
a handle grip connected between the top connector and the bottom connector; wherein the handle grip further comprises one or more bulbous handle portions forming the handle grip.

Diagram1



1. Dependent claim 2 is as follows: "2. The handle for a beverage can of claim 1, further comprising a vertical height in the range of four inches to five inches." Would an AID the same as Diagram 1 that is half a foot high literally infringe if made in the United States?

2. You make AID_1 in the United States and it is the same as Diagram 1, 4.5 inches high, made of steel, but painted pink. AID_2 is the same as AID_1, but is made of pink fiberboard. Do either AID_1 or AID_2 or both literally infringe claim 1, or claim 2 from the prior problem? Would your analysis change if the fiberboard was not pink? Would your analysis change if claim 1 instead recited "a plastic handle body" for limitation A, but claim 2 retained its form as given in the prior note?

3. The specification of the patent containing claim 1 makes this statement: "the handle body should be made of a pliable plastic." AID_3 is the same as Diagram 1, but its handle body is made of styrofoam. A POSITA would testify that styrofoam is pliable, but no POSITA would state that styrofoam is made of, or similar to, plastic. What might the claim construction for the handle body limitation look like? What are the chances of meeting that claim limitation literally for AID_3? Would your analysis change if claim 1 instead recited "a plastic handle body" for limitation A?

Problem . . .

4. Is owning a U.S. patent claiming ABCD infringement of a claim in a third party U.S. patent to ABCD? Your only act was to purchase the patent claiming ABCD. Thereafter you let the patent sit in your desk drawer in Chicago. In this problem, ignore any consternation that reasonably might arise as to having two patents issued for the same invention; it happens more often than you might expect.

. . .

5. You own a U.S. patent claiming ABCDE. You discover someone in Hong Kong making and selling an AID that embodies ABCDE. What recourse does your U.S. patent provide?

Specification Requirements – Objective Disclosure Requirements

- Enablement is the central doctrine
  - It fulfills the "public disclosure" part of the patent bargain
  - It helps delimit the boundaries of patent protection by ensuring that the scope of a patent claim accords with the extent of the inventor's technical contribution
- Written description doctrine
  - Historical role in policing new matter
  - Role as a standalone requirement

§§ 112(a)-(b) **Language**	
(a) **In General**.-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,	Written Description requirement. Enablement requirement.
and shall set forth the ***best mode*** contemplated by the inventor or joint inventor of carrying out his invention.	Best Mode requirement (subjective in part).
(b) **Conclusion**.-The specification shall conclude with one or more claims ***particularly pointing out and distinctly claiming*** the subject matter which the inventor or joint inventor regards as the invention.	Definiteness requirement.