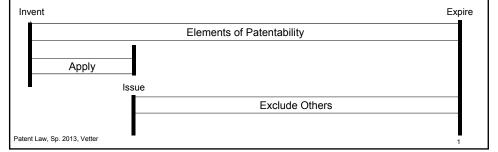


- **Patentable subject matter**, i.e., patent eligibility
- Useful/utility (operable and provides a tangible benefit)
- New (novelty, anticipation)
- Nonobvious (not readily within the ordinary skills of a competent artisan at the time the invention was made)
- Specification requirements / disclosure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





Infringement

- 35 U.S.C. §271
 - (a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.



35 USC §101

Whoever invents or discovers any new and useful

process,

"Product" claims or inventions

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

Patent Law, Sp. 2013, Vetter

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Basis for Patent Rights

Option	Problem				Benefit	Cost
No IP	Public good nature of info: -nonrivalrous -nonexcludable	Invest in R&D, create & sell product	Imitations sell at lower cost	May not be able to recover R&D costs	Getting info is "cost free"	Info under produced
IP	Costs associated with limiting access to info	Invest in R&D, create & sell product	IP rights block imitators to some degree	Recoup R&D with (hope- fully) a profit	Info is produced & supplied*	Limits to access of info, ↑ transaction costs

Patent Law, Sp. 2013, Vetter

It was beneficial to all parties, that the national government should possess this power; to authors and inventors, because, otherwise, they would have been subjected to the varying laws and systems of the different states on this subject, which would impair, and might even destroy the value of their rights; to the public, as it would promote the progress of science and the useful arts, and admit the people at large, after a short interval, to the full possession and enjoyment of all writings and inventions without restraint.

Federalism concerns place much of IP law at the Federal level

IP laws exist as a public policy tool to promote production of inventions and works for the public domain (eventually)

In short, the only boon, which could be offered to inventors to disclose the **secrets** of their discoveries, would be the **exclusive right** and profit of them, as a monopoly for a limited period.

Patent versus Trade Secret protection

And authors would have little *inducement to prepare elaborate works* for the public, if their publication was to be at a large expense, and, as soon as they were published, there would be an unlimited right of *depredation and piracy* of their copyright.

Copyright to support production and distribution of works

Story, Commentaries on the Constitution of the United States (1833) (emphasis added)

Patent Law, Sp. 2013, Vetter

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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 Law, Sp. 2013, Vetter

Patent - claims



Narrow

Broad

- 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*.
- 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.

Patent Law, Sp. 2013, Vetter

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Claim Example

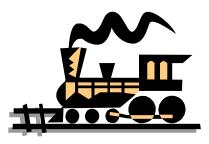
- Client shows you a machine she has devised. It has:
 - Chassis
 - 4 wheels
 - 10-cylinder engine
 - Brake on each wheel
 - 3-speed transmission
- How to Claim?
 - Rule 1 as broad as possible but must not cover any previously known configuration.
 - Rule 2 Claim must embrace something the inventor devised

- 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.

Patent Law, Sp. 2013, Vetter

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.

Patent Law, Sp. 2013, Vetter

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 horizontal support member; and (a)
- (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 horizontal seat;
- three legs each having one end connected to the bottom of said horizontal seat, (b)
- 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 horizontal seat; and (a)
- (b) three *legs* each having one end connected to the *bottom* of said horizontal *seat*.

Dependent claims

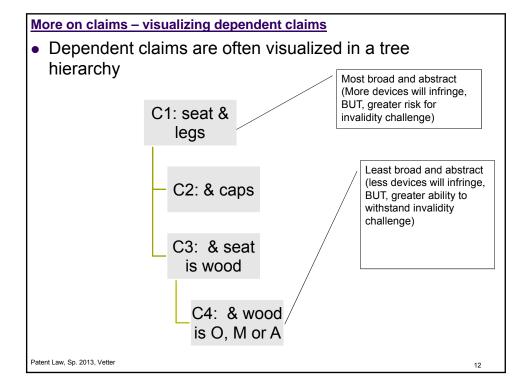
- 1. A seating apparatus, comprising:
 - (a) a horizontal seat; and
 - (b) three legs each having one end connected to the bottom of said horizontal seat.

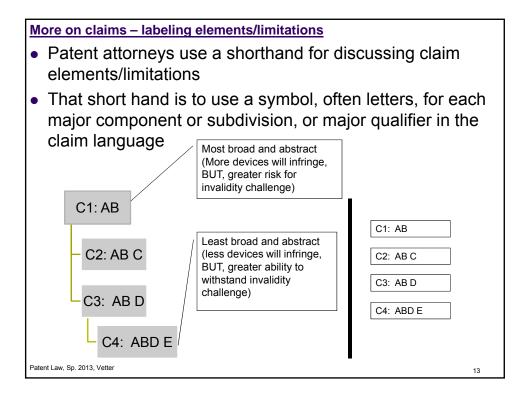
Examples of dependent claims:

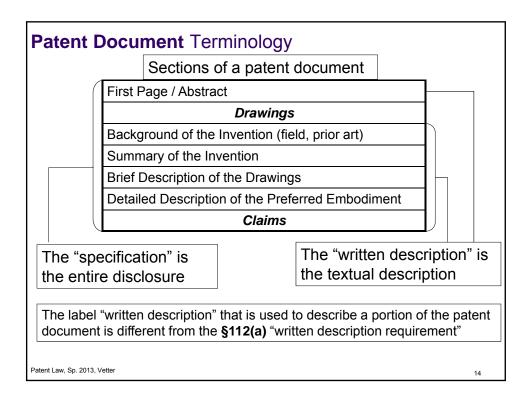
- 2. The seating apparatus of **claim 1** further including rubber caps at the end of each said leg opposite the end of said leg connected to the bottom of said horizontal seat.
- 3. The seating apparatus of *claim 1* wherein the said horizontal seat is made from wood.
- 4. The seating apparatus of *claim 3* wherein the wood is one of the following types: oak, mahogany or ash.

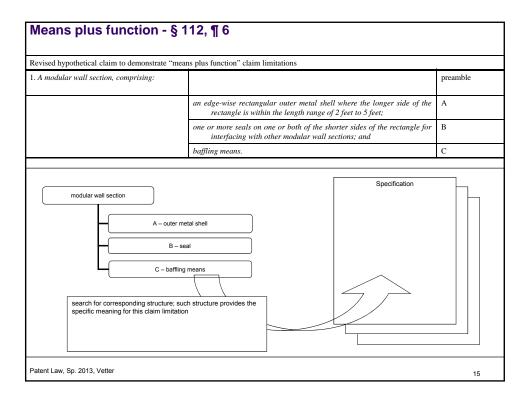
General rule of "claims scope": the independent claim is always "broader" than its dependent claims.

"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.





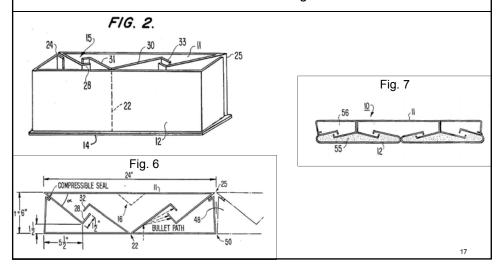




U.S. Pat. No. 4,677,798 (Phillips) United States Patent [19] 4,677,798 [11] Patent Number: **Phillips** Date of Patent: Jul. 7, 1987 STEEL SHELL MODULES FOR PRISONER tion and secured storage facilities provide good archi-DETENTION FACILITIES tectural properties and significant resistance to noise, fire and impact. Thus, steel shell modules are welded [76] Inventor: Edward H. Phillips, P.O. Box 979, together to produce steel inner and outer walls. The Fort Collins, Colo. 80522 modules contain strengthening and bullet deflecting [21] Appl. No.: 852,021 internally directed steel baffles and various types of [22] Filed: insulating materials. Construction is facilitated by pro-Apr. 14, 1986 viding modules that are welded together along only Int. Cl.4 E04H 3/08 two lines coinciding with mating end positions on the [52] U.S. Cl. 52/106; 52/79.4; steel plate inner and outer walls. Three steel panel 52/79.9; 52/144; 52/404; 109/79 eld of Search 52/106, 79.1, 79.4, 52/79.5, 79.9, 79.12, 144, 243, 404; 109/78, 79 [58] Field of Search . 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 References Cited three pieces which thereby form the internal baffles at U.S. PATENT DOCUMENTS angles for deflecting bullets. The baffles form an inter-mediate 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 dis-4,494,348 1/1985 Kastelic posed on either side of the intermediate barrier thus to Primary Examiner—J. Karl Bell Attorney, Agent, or Firm—Laurence R. Brown provide the best combination of impact, fire and sound resistant properties. ABSTRACT Vandalism resistant building modules suitable for deten-26 Claims, 18 Drawing Figures Patent Law, Sp. 2013, Vetter

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



Claim Interpretation – Sources / Canons / Procedure				
Source(s)		Canons		
Plain meaning	Dictionaries	Claim / Specification relationship - Don't read a limitation into a claim - One may look to the written description	to	
Specification	The specification can be used to enlighten the court as to the meaning of a claim term	define a term already in a claim limitation Presumptive breadth - Claim should be interpreted so as to prevalidity - If a claim is subject to two viable		
Prosecution history	Effect on claim construction? - considered if in evidence	interpretations, the narrower one should a Others - Inventor's interpretations after issuance given no weight	,	
Extrinsic Evidence	Proper to resort to extrinsic evidence?	 Claim differentiation Patentee can't construe narrowly before PTO and broadly in court 	the	

Procedure

 Markman – the meaning of the claims is a question of law, and thus subject to de novo review and a matter for the judge, not the jury

Patent Law, Sp. 2013, Vetter

Claim construction canons

- Ordinarily, each claim in a patent has a different scope; ordinarily, a dependent claim has a narrower scope than the claim from which it depends; and, ordinarily, an independent claim has a broader scope than a claim that depends from it. (these generalizations are referred to as the doctrine of claim differentiation);
- Ordinarily, claims are not limited to the preferred embodiment disclosed in the specification;
- Ordinarily, different words in a patent have different meanings;
- Ordinarily, the same word in a patent has the same meaning;
- Ordinarily, the meaning should align with the purpose of the patented invention:
- Ordinarily, general descriptive terms are given their full meaning;
- If possible, claims should be construed so as to preserve their validity;
- Ordinarily, absent broadening language, numerical ranges are construed exactly as written;
- Ordinarily, absent recitation of order, steps of a method are not construed to have a particular order; and
- Absent highly persuasive evidentiary support, a construction should literally read on the preferred embodiment.

Patent Law, Sp. 2013, Vetter

Unique Concepts v. Brown, 939 F.2d 1558 (Fed. Cir. 1991) U.S. Patent April 19, 1977 4,018,260 Fi q.3. Patent Law, Sp. 2013, Vetter

- "right angle corner border pieces"
 - preformed versus mitering?
- examiner interview?
- dissent

Claim preamble

- Role in the claim
 - States the general use or purpose of the invention
 - Helps to show the area of technology
- Under what conditions does it limit the claim?
 - Difficult rule to state
 - Issue arises in the claim construction process
 - Depends on importance of the preamble to give meaning to the claim
 - A preamble term serves as a limitation "when it matters"
 - Preamble has the import that the claim as a whole assigns to it
 - Other ways to formulate the test the preamble is limiting when
 - It is "essential to point out the invention defined by the claim"
 - The body of the claim refers back to terminology in the preamble
 - A preamble term "recites not merely a context in which the invention may be used, but the essence of the invention without which performance of the recited steps is nothing but an academic exercise"
- Hypo "A food-carrying box comprising . . ." from claim 1 of Hall '626 patent

Patent Law, Sp. 2013, Vetter

Claims - Transitional phrases				
Туре	Words	Meaning / Notes		
Open	Comprising [the steps of]	"having at least" The most common and desirable Does not exclude additional, unrecited elements or method steps		
Closed	consisting of	"having only" Closes the claim to the inclusion of other elements (except impurities)		
Partially closed	consisting essentially of	"having nothing else that affects operation" Limits the scope of the claim to the specified elements "and those that that do not materially affect the basic and novel characteristics"		

- Synonyms for "comprising"
 - including, having, characterized by, being, composed of, comprised of, containing
- Examples
 - Open: ABCX is within the scope of coverage of an open claim to ABC
 - Closed: ABCX is NOT
 - Partially closed: If element X would NOT materially change the composition, then ABCX IS within the scope of the partially closed claim to ABC

Jepson claims - In re Fout (CCPA 1982)

- Claim 1 of application:
 - In a process for producing a decaffeinated vegetable material suitable for consumption in beverage form wherein caffeine-containing vegetable material is extracted with a volume of recirculating liquid, water-immiscible edible fatty material in a decaffeination zone for a period of time sufficient to transfer caffeine from said vegetable material into said fatty material, and wherein the caffeine-laden fatty material resultant from extraction is separated from said vegetable material and is conveyed to a regeneration zone for removal of caffeine prior to recirculation to said decaffeination zone, the improvement which comprises

subjecting the caffeine-laden fatty material in said zone to regenerative vaporization conditions such as to vaporize caffeine from said fatty material and further to vaporize from said fatty material any fatty material degradation products present therein.

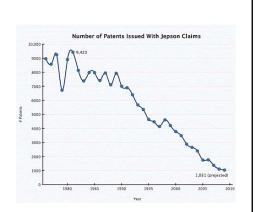
Held: Claim is obvious.

Patent Law, Sp. 2013, Vetter

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Jepson claims

- How does the Jepson claim help a patent examiner?
 - 1. The combination of A, B & C'
 - 2. In the combination of elements A, B & C, the improvement which comprises use of C' as the element C
- How does a Jepson claim help an applicant?



Patent Law, Sp. 2013, Vetter

"Markush" Claim elements/limitations

- There is a way of describing a claim element/limitation where adding items increases the scope of the claim
 - This occurs when a "Markush" group is used
 - Name is from a case which allowed listing of items in the alternative in specific situations
 - Traditionally used to claim chemical compounds, can be applied in any claim
- Example (compare the two claims on the next overhead)

Patent Law, Sp. 2013, Vetter

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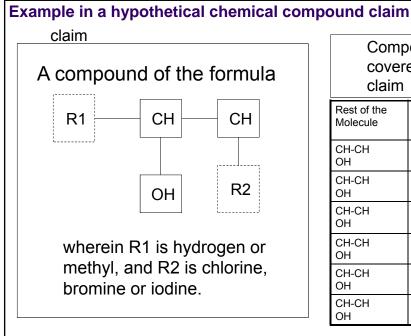
"Markush" Claim elements/limitations

Claim 4

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

Claim 5

- · A seating apparatus, comprising:
- (a) a horizontal seat; and
- (b) three legs each having one end connected to the bottom of said horizontal seat.
- (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, wherein the metal of said slim metal piece is brass, steel, iron, or tin.
- Alternative language for element/limitation 5(c):
- (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, wherein the metal of said slim metal piece is selected from the group consisting of brass, steel, iron, and tin.



covered by the claim			
Rest of the Molecule	R1	R2	
CH-CH OH	Н	С	
CH-CH OH	I	В	
CH-CH OH	Ι	I	
CH-CH OH	М	С	
CH-CH OH	M	В	
CH-CH OH	М	I	

Compounds

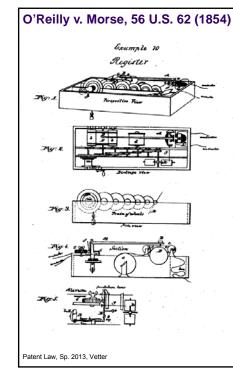
Patent Law, Sp. 2013, Vetter

"Markush" Claim

- Requirements for use
 - Ordinarily, the members of the group must belong to a recognized class
 - Also permissible in a process or combination claim if
 - The members of the group are disclosed in the specification to possess a property in common which is mainly responsible for their function in the claimed relationship, and
 - It is clear from their nature or the prior art that all possess the property

Potential Downside

- Prior art showing any single embodiment will invalidate claim
- Cf. multiple dependent claims (inference is that a multiple dependent claim contains separate claims)



- "the essence of my invention being the use of the motive being the use of the motive power of the electric or galvanic current, which I call electromagnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer." inventor or discoverer"
- scope
- enablement
- eligibility

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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) <u>In General</u> 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) <u>Conclusion</u> The specification shall conclude with one or more claims <i>particularly pointing out and distinctly claiming</i> the subject matter which the inventor or joint inventor regards as the invention.	Definiteness requirement.
Patent Law, Sp. 2013, Vetter	30

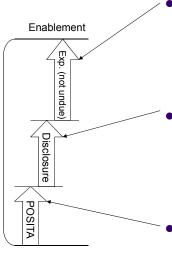
Presumption of validity

35 U.S.C. § 282 Presumption of validity; defenses. A patent shall be presumed valid. Each claim of a patent (whether in independent [or] dependent . . . form) shall be presumed valid independently of the validity of other claims; . . . dependent claims shall be presumed valid even though dependent upon an invalid claim. . . . The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

Patent Law, Sp. 2013, Vetter

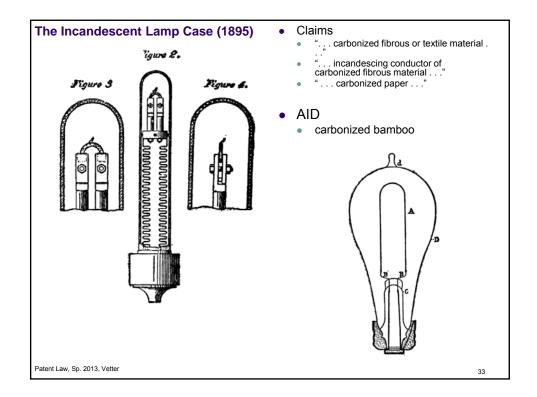
31

How to think about Enablement



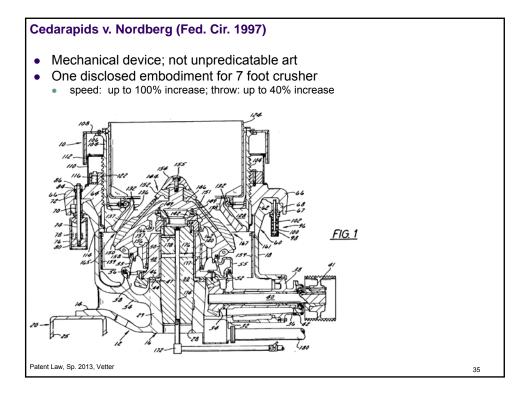
- Based on a number of factors, any experimentation required may or may not be "undue" – if it is "undue" the claim is not enabled
- The specification provides some additional level of information disclosure pertinent to making and using the claimed invention
- A POSITA would know some base level of information

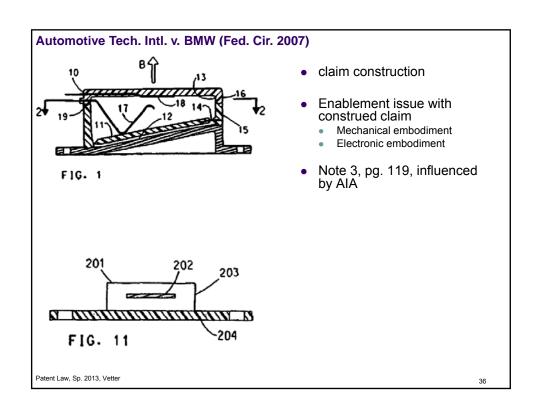
Patent Law, Sp. 2013, Vetter



Enablement – undue experimentation – Wands factors

- quantity of experimentation necessary
- amount of direction or guidance provided
- presence or absence of working examples
- nature of the invention
- state of the prior art
- relative skill of those in the art
- predictability or unpredictability of the art
- the breadth of the claims





Ariad Pharms., Inc. v. Eli Lilly & Co., 598 F.3d 1336 (Fed. Cir. 2010)

Possession Test: whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date

The term "possession," however, has never been very enlightening. ... "possession as shown in the disclosure" is a more complete formulation. . . .

This inquiry, as we have long held, is a question of fact. Thus, we have recognized that determining whether a patent complies with the written description requirement will necessarily vary depending on the context. Specifically, the level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology. For generic claims, we have set forth a number of factors for evaluating the adequacy of the disclosure, including "the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue."

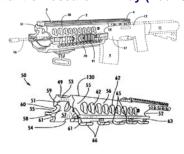
The law must be applied to each invention at the time it enters the patent process, for each patented advance has a novel relationship with the state of the art from which it emerges.

There are, however, a few broad principles that hold true across all cases. We have made clear that the written description requirement does not demand either examples or an actual reduction to practice; a constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement. Conversely, we have repeatedly stated that actual "possession" or reduction to practice outside of the specification is not enough. Rather, as stated above, it is the specification itself that must demonstrate possession. And while the description requirement does not demand any particular form of disclosure, or that the specification recite the claimed invention in haec verba, a description that merely renders the invention obvious does not satisfy the requirement.

- Original claims versus later-added/revised claims
- Three "hypothesized" types of molecules with the potential to reduce NFêB activity in cells: decoy, dominantly interfering, specific inhibitor
 - Disclosure of any specific molecules of these types?

Patent Law, Sp. 2013, Vetter 37

Atlantic Research v. Troy (Fed. Cir. 2011)



While claim 31 explicitly claims a barrel nut support point, it mentions nothing about a receiver sleeve support point. Before reaching the written description question, the district court construed claim 31 as permitting the barrel nut to provide complete support for the handguard accessory. The court then concluded, however, that the '465 specification "does not describe a handguard that can be supported solely by clamping to the barrel nut," and instead "describes an invention that is supported by both the barrel nut and attachment to the upper receiver via a receiver sleeve." After construing claim 31 to cover the barrel nut-only attachment design, but then finding that the specification did not disclose such a design, the court invalidated claims 31-36 for failing to meet the written description requirement of 35 U.S.C. § 112.

We must now incorporate the barrel nut-only claim construction into the written description analysis. As mentioned, it is undisputed that the written description for the '465 patent does not disclose to a person of ordinary skill in the art an invention where the yoke/barrel nut attachment point provides complete support for the handguard accessory. . . . Claims 31-36, however, clearly cover such a design. Put differently, claims 31-36 exceed in scope the subject matter that inventor Mr. Swan chose to disclose to the public in the written description. Therefore, we hold that the district court properly granted summary judgment invalidating claims 31-36 for failing to satisfy the written description requirement of 35 U.S.C. § 112. Mr. Swan used the reissue process to impermissibly obtain claims unsupported by the written description. . . .

Our holding is also reinforced by the fact that Mr. Swan viewed his barrel nut-only attachment design as a trade secret when he filed the patent application containing the disclosures that he later relied upon for his reissue claims, as illustrated by the positions taken by Atlantic Research throughout the trade secret portion of the case

Patent Law, Sp. 2013, Vetter

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Best Mode

Little remains of the best mode requirement after the AIA. As a longstanding feature of U.S. patent law, the pre-AIA best mode requirement was unique in at least two ways. First, it was a feature of U.S. patent law that made our law an outlier among the patent systems of the world. Second, the best mode requirement was unique within U.S. patent law because whether the inventor had a "best mode" is a subjective inquiry. One would ask: did the inventor have a mental belief that there was a "best" way to practice the invention? This subjective inquiry is in contrast to the POSITA's objective perspective with which the other requirements for patentability are evaluated.

Some believed that the best mode was oftentimes a trap for the unwary and served little additional purpose on top of the other disclosure requirements. Leading up to the AIA's enactment, many believed that eliminating the best mode requirement would benefit the patent system. However, the elimination was implemented in an awkward way: the best mode requirement remained in section 112, but was eliminated for use as a defense in section 282. Thus, patent applicants must still disclose a best mode, but there is virtually no practical enforcement of the requirement. One commenter appraised the situation as follows:

The legislative history provides no explanation for Congress's failure to simply repeal the best-mode requirement entirely. Nor is one apparent.

Joe Matal, A Guide to the Legislative History of the America Invents Act: Part II of II, 21 FED. CIR. B.J. 580, 584 (2012).

Those opposing removal of best mode from the U.S. patent system would sometimes cite the idea that its requirement would force disclosure of some of the trade secrets potentially associated with the invention. The patent instrument, however, can oftentimes omit many important secrets from disclosure because it must only enable and describe a prototype. The cases show a consistent stance against expanding the disclosure requirements to force manufacturing or production information from the patentee. This means, practically, that often a patent owner can keep as a trade secret some of the more useful commercial information related to scaling production to mass-market quantities or overcoming other manufacturing challenges. Should the disclosure requirements allow such a "loophole"? Is it unfair to call it a loophole when the claims do not cover those practical aspects of manufacturing the apparatus recited by the claim?

Patent Law, Sp. 2013, Vetter

Datamize v. Plumtree (Fed. Cir. 2005)

- Federal Circuit tests
 - "Not amenable to construction"
 - "Insolubly ambiguous"
 - "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." (Exxon, Fed. Cir. 2001)
- Cf. Supreme Court test
 - "[the claims] must clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise"

Datamize v. Plumtree (Fed. Cir. 2005)

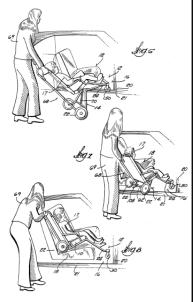
- After Exxon, could anyone possibly write an indefinite claim?
- Apparently so—claim that which is "aesthetically pleasing"
- Is there any reason whatsoever to include any of the limitations containing this term in the claim-atissue?

Patent Law, Sp. 2013, Vetter

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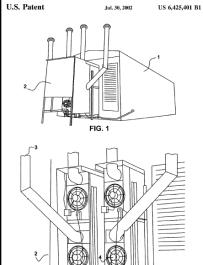
Claim definiteness – Orthokinetics (Fed. Cir. 1986) (Markey)

1. In a wheel chair having a seat portion, a front leg portion, and a rear wheel assembly. the improvement wherein said front leg portion is **so dimensioned** as to be insertable through the space between the doorframe of an automobile and one of the seats thereof whereby said front leg is placed in support relation to the automobile and will support the seat portion from the automobile in the course of subsequent movement of the wheel chair into the automobile, and the retractor means for assisting the attendant in retracting said rear wheel assembly upwardly independently of any change in the position of the front leg portion with respect to the sea portion while the front leg portion is supported on the automobile and to a position which clears the space beneath the rear end of the chair and permits the chair seat portion and retracted rear wheel assembly to be swung over and set upon said automobile seat.



Patent Law, Sp. 2013, Vetter

Star Scientific v. R.J. Reynolds Tobacco (Fed. Cir. 2008)



A process of substantially preventing the formation of at least one nitrosamine in a harvested tobacco plant, the process comprising:

drying at least a portion of the plant, while said portion is uncured, yellow, and in a state susceptible to having the formation of nitrosamines arrested, in a controlled environment and for a time sufficient to substantially prevent the formation of said at least one nitrosamine:

wherein said controlled environment comprises air free of combustion exhaust gases and an airflow sufficient to substantially prevent an anaerobic condition around the vicinity of said plant portion; and wherein said controlled environment is provided by controlling at least one of humidity, temperature, and airflow.

"anaerobic condition" – bounds depend on degree of oxygen deficiency

Patent Law, Sp. 2013, Vetter

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Halliburton Energy Servs. v. M-I LLC, 514 F.3d 1244 (Fed. Cir 2008)

- 1. A method for conducting a drilling operation in a subterranean formation using a *fragile gel* drilling fluid comprising:
- (a) an invert emulsion base;
- (b) one or more thinners;
- (c) one or more emulsifiers; and
- (d) one or more weighting agents, wherein said operation includes running casing in a borehole.

(emphasis added).

- Claim construction of "fragile gel"
 - no or low organophilic clay or lignite issue
 - Preamble phrase; why is it limiting?
 - Two aspects of the claim construction
 - 1) A gel that easily transitions to a liquid state upon the introduction of force (e.g., when drilling starts) and returns to a gel when the force is removed (e.g., when drilling stops); and
 - 2) At rest, is capable of suspending drill cuttings and weighting materials
- Is "fragile gel" definite?
 - A POSITA cannot determine how quickly the fluid will return to the liquid state, or its capacity for suspending drill cuttings and weighting materials
 - compared to "synergistically effective amount"