

The Limited Monopoly™

Staking Your (Patent) Claims - Part I

by Robert Gunderman, PE and John Hammond, PE

Very few topics in the field of patent law are as misunderstood and mysterious as “claims,” the language at the end of a patent or patent application that appears to be written by some long ago purveyor of the English language. This is the first of a two part series on the topic of patent claims. It is intended only to discuss a few basic principles. Most books on the topic of claims, such as *Landis On Mechanics of Patent Claim Drafting* are extensive, to say the least. The Landis text is 970 pages.

Why Claims Are Important

Claims define the boundaries or property lines of an invention similar to the way in which a survey, an abstract of title, or a miner's claim from bygone years defines the boundaries of a plot of land. They are the metes and bounds of what you can exclude others from making or using. In claims, virtually every word is important, and the way in which a claim is structured is equally so. Claim language is put under the proverbial microscope first when a patent application is examined by the Patent Office during prosecution, and oftentimes later in its life when the patent is under scrutiny by a potential infringer or is being litigated in court.

During prosecution, a Patent Examiner may reject the claims in an application for a variety of reasons. In responding to a rejection, claims may frequently be amended in an attempt to avoid a prior art patent or publication that is the subject of the rejection. Amending a claim involves changing the wording, usually adding words to the claim.

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The practice of amending claims can change a broad claim to a narrow one, analogous to reducing the area of a “plot of land” defined in a survey. If a claim undergoes too much narrowing, it may be allowed by the Patent

or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” This is where it all starts. Claims must also be directed to an invention defined within one of the statutory classes of patentable subject matter. For utility patents, the classes are machine (apparatus), process, article of manufacture, and composition of matter. Design patents and plant patents are separate statutory classes; claims for these classes are governed under different laws.

Some Formatting Basics

The widely accepted formatting of a patent claim in the United States has developed over the years based on the statutes as well as court decisions, and commonly accepted practices. Claim practice in other countries may differ.

In the U.S., claims are placed after the specification as noted above according to 35 U.S.C. 112.

Standard U.S. practice is that each claim be only one sentence, beginning with a capital letter and ending with a period, regardless of how many words are in the claim. There is also an introductory phrase that is stated only once at the beginning of the set of claims that reads “I claim,” “We claim,” “What is claimed is,” or the equivalent.



Office, but it may also have little or no commercial value, since it may be easy to design around. Some narrowing is commonly needed to overcome a prior art reference, but it is critical to give up as little as possible. The future value of the patent, as well as that of the applicant's products and business may be at stake.

In The Beginning

Title 35 of the United States Code, section 112 states that “The specification shall conclude with one

Claims must be numbered, each claim starting with an Arabic numeral. In the rare instance in which only one claim is presented, a number is not required. In utility applications, more than one claim is usually submitted; an applicant is allowed to submit twenty claims with the basic application filing fee. In design patent applications and plant patent applications, only one claim is permitted. Claims are typically arranged in order of scope so that the first claim is the broadest. They are also organized in groups by composition, article, apparatus, or process (method), so that they are presented in a logical order.

The Anatomy of a Claim

The anatomy of a claim is complex. A few basic definitions are as follows:

The Preamble

A preamble is an introductory statement that usually indicates the statutory class of the claim and further defines what is to be claimed. An example would be “A survey apparatus for digitally rendering property lines...”

Transitional Word or Phrase

Most claims require a transitional word or phrase between the preamble and the body of the claim. Two common transitional phrases are “which comprises” or “comprising.” The word “comprises” is a very standard word in patent law. It means “including the following elements [as listed in the body of the claim], but not excluding others.” It provides an open claim. Less often used words such as “including,” “having,” or “containing” are similar in meaning to “comprising,” but are not as commonly used.

In contrast to the open nature of the word “comprising,” the transitional word “consisting” or “consisting of” means that the claim covers an invention having only the recited elements, and no more or no less. The transitional word “consisting” should not be used unless additional elements would never be expected to be part of the invention being claimed. The

word “consisting” is used at times in chemical cases because adding a new element to a chemical composition often has an uncertain outcome. There is also the transitional phrase “consisting essentially of” that has a bit more flexibility than “consisting,” but is not as open as “comprising.” It allows for the presence of small amounts of other elements not claimed that are not significant, but are nonetheless present.

Body

The body of the claim lists the elements of the combination of what is claimed, and further describes how each element works with another, is related to another element, or cooperates with other elements or the whole. Think of the body as listing the gears in a gearbox and describing how each gear (element) is connected to another. It is important to avoid unnecessary or laudatory statements. The body of the claim should describe the invention or the part of the invention claimed, and not how good it is. Most claims have multiple elements. There is the rare case of a single element claim, such as the claim for Teflon®. In United States Patent 2,230,654 to Roy Plunkett, a DuPont chemist, Claim 1 reads simply, “1. Polymerized tetrafluoroethylene.” This is extremely uncommon, however. Most claims have multiple elements and a fair number of words, even though they are still one long sentence.

Formatting Options

Simpler claims are often written in a single paragraph format, with commas or semicolons between the elements in keeping with the single sentence requirement.

It is also common to see a colon after the transitional phrase. Frequently, each element is set off in a subparagraph or tabular form, or lettered. Oftentimes if there are groups of elements, the groups are further offset by indentations or letters. These various formatting options make the claim easier to read and follow, which

is something the Examiner and others who read the patent application or patent will appreciate.

Antecedent Basis

An important rule to remember is the use of “a” the first time an element is mentioned in a claim, and the use of “the” or “said” if the element has been mentioned at least once in the claim. The word “said” and the word “the” have essentially the same meaning in a claim. “Said” has a decidedly older tone, and there is no benefit to using “said” instead of “the”, even though the word “said” is still found in many contemporary claims.

Independent and Dependent Claims

Independent claims stand alone, while a dependent claim refers back to and further limits another preceding claim or claims in the same patent application. Our next article will discuss the various types of claims including independent and dependent claims, apparatus or machine claims, method or process claims, composition of matter claims, article of manufacture claims, biotechnology claims, and more peculiar claims like Jepson claims and Markush claims.

Photo credit: gold panning circa 1860 in Nelson Gulch, Montana, provided courtesy of the Western History/Genealogy Department of the Denver Public Library.

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Staking Your (Patent) Claims - Part II

by Robert Gunderman, PE and John Hammond, PE

Our last article discussed a few basic principles of the often misunderstood and sometimes mysterious world of patent claims. This article will briefly describe some of the types of claims you may encounter in United States utility patents and published patent applications.

There are three forms of claims in patent applications: independent claims, dependent claims, and multiple dependent claims. Utility patent applications have at least one independent claim and usually (but not always), several dependent claims. The United States Patent and Trademark Office charges an application filing fee that is based upon the number of claims submitted. Currently, three independent claims and 20 total claims can be submitted for the basic filing fee. There is a charge for each independent claim in excess of three, and a further charge for total claims in excess of 20. But if those extra claims mean an obstacle to a competitor or increased licensing revenue, the additional fees are insignificant. Multiple dependent claims are not as frequently used in patent applications, mainly because the Patent Office charges dearly for them.

The Independent Claim

An independent claim stands alone and is self contained. It does not depend on or include limitations of any other claim in the patent application to make it complete. An independent claim is always broader than the dependent claims that follow. In many patent applications, several independent claims are submitted. Each independent claim attempts to broadly cover the invention on which a patent is desired. It is good practice to use the number of independent claims necessary to cover the solutions to all problems solved by the invention.

I claim:

1. Polymerized tetrafluoroethylene.

An example of a fictitious independent claim is *"1. A hammer comprising a wooden handle and a metal head attached to the handle."*

The Dependent Claim

A dependent claim refers back to and further limits another claim or claims in the same patent application. Dependent claims are construed to include all the limitations of the parent claim, and are incorporated by making reference back to the parent claim.



An example of a dependent claim is: *"2. The hammer of claim 1, wherein the metal head is cylindrical."*

Another example of a dependent claim is: *"3. The hammer of claim 1, further including a nail claw comprising a pair of wedges extending from the head and separated by a gap."*

A dependent claim incorporates by reference everything in the parent claim¹, and adds some

further statements, limitations, or restrictions. These limitations may be directed to one or more of the elements of the parent claim (as in the example above where the metal head was further limited to being cylindrical). The limitations may also be the addition of one or more elements (as in the example above where the claimed hammer was limited to further include a claw for removing nails).

Dependent claims allow one to completely cover the invention and the various embodiments of the invention. A dependent claim is narrower in scope than the parent claim. It is important to note that a dependent claim cannot subtract an element from the parent claim. For example, the claim, *"The hammer of claim 2 without the handle,"* or the claim, *"The hammer of claim 1, wherein the handle is not made of wood"* are both improper. In order to delete an element from a claim, a new claim must be written. There is no limit to the number of dependent claims that may depend upon an independent claim (except possibly financial limitations).

Multiple Dependent Claims

A multiple dependent claim is any dependent claim which refers to more than one other claim, and must refer to such other claims in the alternative only.² So an example of an acceptable multiple dependent claim is *"A hammer according to claims 2 or 3, further comprising a neoprene layer over the handle."* An example of an improper multiple dependent

claim is “A hammer according to claims 2 and 3, further comprising a neoprene layer over the handle.” A multiple dependent claim also cannot serve as the basis for any other multiple dependent claim. Multiple dependent claims have high filing fees, and can result in more complicated prosecution. They are generally not necessary, as properly structured and less costly dependent claims can be used more effectively.

Omnibus Claims

Omnibus claims are not permitted in the United States because they do not “particularly point out and distinctly claim” the invention. An example of an omnibus claim is “All of the features of novelty of the hammer as shown and described.” Some countries allow omnibus claims or variations of them.

Apparatus and Machine Claims

Apparatus and machine claims can be independent, dependent, or multiple dependent. The term “apparatus” refers to machines or devices. They may be largely mechanical machines, electrical circuits, hydraulic devices, computer apparatus, or anything having cooperating parts that accomplish some useful result. A fictitious example would be “An apparatus for driving nails comprising a cartridge for holding nails, a pneumatic cylinder having an actuating head in proximity to the cartridge, and a source of compressed air connected to the pneumatic cylinder.”

Method and Process Claims

Method and process claims can be independent, dependent, or multiple dependent. They recite the inventive steps to accomplish something useful. Typically, method claims are used for computer, electrical and mechanical inventions and process claims are used for chemical related inventions. The elements of a method or process claim are acts or steps, usually written as gerunds (i.e., “striking”). A simple fictitious example of a method claim is “A method for hammering a nail comprising the steps of grasping the nail with one hand, placing the nail against a workpiece, grasping a hammer with another hand, and striking the nail repeatedly with the hammer.” It is interesting to note that methods or process steps can be patented, with the exception of medical or surgical procedures that do not involve patented pharmaceuticals or patented devices.³

Composition of Matter Claims

A composition of matter is a product where the chemical makeup of the substances or materials used is the defining characteristic. Composition of matter claims are largely used

in chemical related patent applications. An example of a fictitious composition of matter claim is “A cleaning solution for wooden handled hammers comprising an aqueous solution of citric acid from about 10 to 60 grams per liter; and an alkaline pH-modifying substance in an amount sufficient to adjust the pH to a value of from about 4.5 to 6.”

Article of Manufacture Claims

An article of manufacture claim is very similar to a machine or apparatus claim. The article of manufacture is usually a combination of elements that interrelate and are useful. An article of manufacture usually has no moving parts, whereas a machine or apparatus does. Our previous example of an independent claim “A hammer comprising a wooden handle and a metal head attached to the handle” is an article of manufacture claim.

Product-by-Process Claims

A product-by-process claim is where the article or at least one element of an article is claimed by reciting the process for fabricating the article or element.⁴ A fictitious example would be “A citric acid cleaning solution produced according to the process of claim 7.”

Biotechnology Claims

Biotechnology involves the use of living organisms to make products and processes. The U.S. Supreme Court has held living organisms to constitute patentable subject matter, and patents have been granted on processes by which new animal life may be created. But if the living organism is a human being, patent protection in the U.S. has been found to be unconstitutional.⁵

Jepson Claims

A Jepson claim is a claim that starts with what is existing or known, followed by a phrase such as “wherein the improvement comprises,” and then sets out the elements that the applicant considers new and improved. The style of a Jepson claim points out what is prior art and what the applicant considers the improvement. “Jepson” refers to a 1917 court case by the same name.

Markush Claims

A Markush claim is mainly used in chemical cases. It recites multiple functionally equivalent chemical entities. An Exemplary Markush claim is, “The nail of claim 1, further comprising a surface coating containing a lubricant selected from the group consisting of a silicone, a fluorocarbon, and a hydrocarbon.” Markush claims were named after Eugene Markush, the first inventor to use such a claim

style in a patent. Markush style claims and their resulting number of possible compounds makes patent searching of chemical related inventions difficult and time consuming.

Beauregard Claims

A Beauregard claim is a computer readable media claim named after the court decision by the same name. A Beauregard claim recites a computer readable storage device (such as a CD or memory) that is considered an article of manufacture where the storage device contains a set of instructions that causes a computer to perform a process.

Some Concluding Thoughts

Claim drafting is a specialized skill that should not be taken lightly. There are some basic requirements that must be met just to get the claims through prosecution within the Patent Office with an allowance of the application. A well drafted set of claims needs to not only stand up to Patent Office scrutiny, but also must be able to stand up to attack in possible litigation, where every word in every claim is taken apart, analyzed, and interpreted. This article just touches on a few general concepts.

1. MPEP 608.01(n).

2. 237 CFR 1.75(c).

3. See our February 2009 article “Under the Knife - Patenting Surgical Procedures.” Free reprints of this article can be obtained at www.patenteducation.com/patentarticles.html. The article is listed under the heading “Patentability of Inventions.”

4. MPEP 2113, 2173.05(p)

5. See our January 2008 article “Defining Patentable Subject Matter- Software and Silicon Life Forms”. Free reprints of this article can be obtained at www.patenteducation.com/patentarticles.html. The article is listed under the heading “Patentability of Inventions.”

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