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Reading a Patent - Part II
The Description and the Claims

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Abstract - In my last article in the May 2000 issue, I described the information that is printed on the cover page of a patent. This month's article describes the heart of the patent, that is the description of the invention and the claims. The description includes a specification and drawings, and discloses how an invention is made and how it is used. The claims are based upon the description and set out the legal limits of what is protected by the patent.

A patent is a complex document made up of several parts, including a description that includes the drawings and the specification and a series of claims after the specification. The specification describes the invention and how to make and use it. Drawings are included if necessary to understand the invention. The claims specify what the actual invention is, that is what is protected by the patent.

When reviewing a patent for any reason, non-patent professionals tend to jump immediately to the claims. The claims are thought to be the most important part of the patent. In certain circumstances, this is true. However, in many if not most cases, it is the description of the invention that is of paramount importance.

When an inventor reviews a draft patent application the description, not the claims, should be the focal point of the review. The description cannot be amended to include new matter after an application is filed. The claims can be amended after filing, but only to the extent that they claim what is described in the specification or shown in the drawings.

The description is also the most important part of a patent when trying to determine if your invention is patentable in view of an existing patent, that is in studying a patent for its prior art disclosure. If an invention is described in a printed publication, such as a patent, more than one year before a patent application is filed for the invention, the invention will not be patentable. In reviewing a patent for its prior art effect, the specification and drawings should be the primary focus of study, not the claims.

The claims are analyzed to determine the scope of protection of a patent. This is important when deciding if your product infringes a competitor's product or if the competitor's product infringes your patent. The claims are also useful in

figuring out how to “design around” a patent so that you do not infringe an existing patent. In the infringement analysis, the specification may also be reviewed, but it is primarily used to define any terms in the claims that may be unclear.

1. The Description

- A. Drawings

The description contains two parts, a specification that describes the invention and drawings. Because the drawings are part of the description, claims may be based on what is shown in the drawings, even if not described in the specification. Drawings are not always included as a part of the application. They are only used if necessary to understand the invention.

In patents claiming a mechanical apparatus, drawings are almost always present. The drawings show the various parts of the invention, each of which is assigned a reference number that is defined in the specification.

In biotechnology or pharmaceutical patents, drawings are not always present. For example, in a patent that claims a combination of ingredients used to make a pharmaceutical preparation and a method of making and using the combination of ingredients, a drawing would not be included because it is not necessary to understand the patent.

Drawings that may be encountered in biotechnology and pharmaceutical patents include gene or amino acid sequences, schematics of plasmids or recombination schemes, electrophoresis gels, and chemical formulas. Unlike mechanical drawings, the elements of these types of figures may lack identifying numerals.

B. The specification is the heart of the patent. It is the part of a patent that describes what the invention is, how to make it, and how to use it. The specification also discusses the prior art and how the invention overcomes the problems that were unsolved before the invention. The specification contains the following parts.

1. Title

The title in the specification is the same as that which is on the patent cover page.

2. Statement of Patent History

The first line of the patent discloses the existence of any prior applications that the present patent is based upon, and the fate of those applications, whether they were abandoned or eventually issued as patents.

3. Statement that the U.S. government has rights in the invention, if applicable. This occurs typically when the patented invention is a result of federally sponsored research.

4. Statement that a Microfiche Appendix is included as part of the specification, if applicable. This occurs when a computer program that is longer than 10 pages is part of the patent. Programs of this length are not printed with the patent but are available on microfiche.

5. Field of the Invention

This is a brief paragraph, typically one to two sentences long, describing the field to which the invention pertains.

6. Background of the Invention

In this section, the patent describes the problems that have not been solved by the prior art and that are solved by the patented invention. Prior art documents, such as patents or scientific articles, are discussed to show how previous efforts have failed to provide an answer to problems that are addressed in this patent.

7. Summary of the Invention

This section briefly summarizes the invention. It describes the invention in broad terms and how it overcomes the disadvantages of the prior art.

8. Brief Description of the Drawings

The figures are briefly described in broad terms, typically in one sentence, such as “Figure 1 shows a side view of the apparatus of the invention” or “Figure 2 shows the nucleotide sequence of gene X”. The figures are described in greater detail in the next section of the patent.

9. Detailed Description of the Invention

This longest section of the patent describes the invention in detail. It describes each of the features of the invention and how to practice the invention, that is how to make the invention, and how to use it. It also discloses what is known as the “best mode”, which is the best way conceived by the inventor to practice the invention.

The detailed description of most patent applications in the biology and chemistry fields contains several examples. The examples describe in great detail how a biological or chemical invention is made. In a patent claiming a recombinant protein, there may be examples describing the growing of suitable microorganisms to be transformed, plasmid construction, isolation of DNA, transfection of the microorganisms, expression of the protein, and isolation of the expressed protein.

Examples typically describe what an inventor has actually done in making and using the invention. Additionally, examples known as “prophetic examples”

may be included that describe what has been conceived in the mind of the inventor as being a part of the invention but which has not yet been performed.

The last paragraph of the specification typically is a statement that the invention is not limited to what is described, but also includes undescribed equivalents of the invention that is recited in the claims.

C. The Claims

Because the claims define the invention that is protected by the patent, they are in some ways the most important feature of the patent. They provide guidance to competitors in steering clear of the patent. They indicate the scope and bounds of the patent so that a court can determine if the patent is infringed. The claims follow a set format with an unusual grammatical style that is sometimes difficult for non-patent professionals to understand.

The first part of the claim is the “preamble”, which states in general terms what the invention relates to. Examples of preambles are “A bicycle”, “A nucleic acid”, “A pharmaceutical composition”, “A method for treating arthritis”, and “A device for accelerating wound healing”. Generally, the wording of the preamble does not affect the scope of the patent protection.

Following the preamble is a “connector”, which is usually either “comprising”, “consisting of”, or “consisting essentially of”. The choice of

connector is very important and has a tremendous impact on the breadth of the patent.

The term “comprising” in a claim means that the patent will be infringed by an article, device, or a process that contains all of the features of the claimed device as described in the claim, even if the potential infringer contains additional features. As an example, if a claim recites a table comprising four legs and a top, the patent will be infringed by a table having five legs, or having four legs, a top, and a shelf below the tabletop.

The term “consisting of” in a claim means that the patent will be infringed by anything that contains all of the features of the claimed invention, but will not be infringed if it contains additional features. A table consisting of four legs and a table top would not be infringed by a table having five legs or having a shelf below the tabletop. Because the term “consisting of” significantly narrows a patent claim, it is generally avoided by patent attorneys unless it is felt to be necessary in order to avoid very close prior art.

The term “consisting essentially of” is seen occasionally in patent claims in the biological and chemical fields. It means that a patent claim will be infringed if a potential infringer contains all the features of the claimed invention plus additional features that do not substantially change the nature of the invention. In

the case of a pharmaceutical composition, the presence of an additive that enhances the effect of the patented composition, such as by increasing its shelf life or its potency, will infringe the patent. On the other hand, the presence of an additional ingredient that changes the nature of the composition, for example that makes it unsuitable for use as an acne medication but makes it suitable for increasing cardiac output, would not infringe the patent.

Following the connector is the body of the patent, describing the elements of the invention and how they are interrelated. These may be a series of mechanical parts and how they are put together. They may be a series of steps in a process to make or to use something. In order to infringe the patent, a device, composition of matter, or process must contain every one of the listed elements, or their equivalents.

Claims come in two types: independent and dependent. Independent claims are those that can exist by themselves and typically begin with the word “A”, for example, “A nucleotide sequence, comprising . . .” Dependent claims refer to a previous claim, which can be an independent claim or another dependent claim. They contain all the features of the claim or claims that they depend from, plus one or more additional features. An example of a dependent claim is “The nucleotide sequence of claim 1, which further comprises . . .”

Generally, when determining whether a patent might be infringed, the first step is to determine if the potentially infringing article or process literally includes each of the features recited in the independent claims. Initially, there is often little reason to examine the dependent claims because, if the independent claims are not infringed (assuming that they contain the connector “comprising”), the dependent claims also will not be infringed. If there is no literal infringement of the claims, it will usually be necessary to obtain and review the prosecution history of the patent as it was examined in the Patent Office, referred to as the “file wrapper”, to determine if there is infringement based on equivalents of the elements of the claims.