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Drafting Persuasive U.S. Patent Applications

The careful drafting of a patent application is critically important to any intellectual property program. A well-drafted patent application can mean millions in royalties; a poorly drafted patent application can be an invitation to litigation and severe economic distress.

A patent application should be ultimately edited and rewritten by a patent attorney or agent. Nevertheless, there is no good reason why an inventor who is ready, willing and able should not take a first crack at drafting the application.

A typical non-provisional U.S. Patent Application should include the following headings:

1. Title of the Invention
2. Cross-references to Related Applications (if any)
3. Statement Regarding Federally Sponsored Research or Development (if any)
4. Background of the Invention
5. Field of the Invention
6. Description of Related Art (including information disclosed under 37 CFR §1.97-1.99)
7. Summary of the Invention
8. Brief Description of the Drawings
9. Description of the Preferred Embodiment
10. Sequence Listing
11. Claims
12. Abstract of the Disclosure

The following describes the contents typically found under each of the above headings:

Title

The title is typically a short description of the invention, preferably in 10 words or less.



Cross Reference to Related Applications

This section is found after the TITLE and before the BACKGROUND OF THE INVENTION section and identifies patent applications on inventions related to the present invention. If filing a non-provisional application within one year of the filing of a corresponding provisional application, claim the benefit of the provisional filing date here. A typical example is:

This application claims the priority of U.S. Provisional Application Serial No. _____ entitled “_____” filed on _____, the entire contents and substance of which are hereby incorporated in total by reference.

Statement Regarding Federally Sponsored Research or Development

If the invention was made under a government contract, include the required contract clause here. For example, “This work was supported by National Institute of Health Grant No. _____”.

Background of the Invention

1. Field of the Invention

This is a one-sentence description of the field in which the invention is found. This field is only for the benefit of Classification Branch of the Patent Office and might typically read something like the following:

“This invention relates to a device for safely removing and recovering syringe needle caps.”

2. Description of Related Art

This section of the application is very important and typically poorly understood. A well written “Description of Related Art” includes the following information:

- a. A general description of the historical problem.
- b. A description of related and relevant prior art. The prior art typically comprises a description of related U.S. patents but could easily include a description of related foreign patent prior art, publications or other sources. In general it is desirable to take the most relevant references and write a short paragraph about each. Each paragraph would usually include one or two sentences describing the relevance of the patent and a few sentences at the end describing the shortcoming of the particular patent or reference.

If there are other references that are less relevant, it may be possible to lump them together and discuss them as a unit.



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Lastly, it is also useful to provide a paragraph or two at the end describing in total the shortcomings of the prior art. Hopefully a U.S. patent examiner reading this section might ask him or herself, “How did they solve this problem?”

Summary of the Invention

This section typically begins with the following sentence:

“Briefly described, the invention comprises...” This section typically ties in the broadest claim.

The Summary is generally longer than the Abstract and comprises two to three moderate-sized paragraphs that give more details than the Abstract but doesn’t give the details found in the Description of the Preferred Embodiment. One does not refer to Figures or element numbers in the Summary.

The last sentence of the Summary usually ends with the following sentence:

“The invention may be more fully understood by reference to the following drawings.”

Brief Description of the Drawings

Each figure is described in a **one-paragraph** sentence per figure. In some cases it is possible to group figures having common subject matter together (i.e., Figs. 21A – 21F). Patent applications in the chemical arts typically do not contain formal drawings but rather have structural formulas and flow charts.

Detailed Description of the Preferred Embodiment

The patent statutes require that an inventor submit a disclosure that contains:

“A written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.”

This section frequently begins with the following sentence:

“During the course of this description like numbers will be used to identify like elements according to the different views which illustrate the invention.”

The detailed discussion usually begins with the preferred embodiment, which is labeled 10. In general, the labeling of the elements is done in the following sequence:



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10 = the preferred embodiment of the invention
12 =
14 =
etc.

In other words, the numbers 1-9 are not found in the element numbers (to prevent confusion with the figure numbers, which always begin with Fig. 1). In addition, most elements are numbered 10, 12, 14, etc., using even numbers so that if it is necessary to insert a new number, an odd number (e.g., 15) can be placed in the appropriate sequence.

The discussion of the detailed invention follows a logical order starting with Figure 1 and ending up with Figure 10 (or more, if necessary). In addition, it is highly desirable to discuss the elements according to their numbering sequence, i.e., discuss element 16 before element 18, if possible.

Always make sure that you provide enough detailed information so that one of ordinary skill in the art can make and use the device without having to experiment. In electronic cases, it is often advisable to include an electronic parts list and a printout of the computer code and logic flow diagrams. In biotechnology applications dealing with microorganisms, cell lines, fusion genes, etc., it may be necessary to deposit a biological sample in an approved depository such as the ATCC (American Type Culture Collection). See MPEP (Manual of Patent Examining Procedure), §608.01(p)(c) and Chapter 2400 for details.

It is generally desirable to summarize the advantages of the invention at the end of the Detailed Description of the Preferred Embodiment.

If there are alternative embodiments of the invention, they are discussed **after** a complete discussion of the Preferred Embodiment.

The last sentence of the Detailed Description of the Preferred Embodiment (i.e., right before the claims) usually ends with the following boiler plate:

“While the invention has been described with reference to the preferred embodiment thereof, it will be appreciated by those of ordinary skill in the art that modifications can be made to the structure and elements of the invention without departing from the spirit and scope of the invention as a whole.”

Sequence Listing

If your application contains a nucleotide or amino acid sequence, it must be described in accordance with sequence rules described in 37.C.F.R §1.821-1.825. See MPEP §242.0 and following sections



for rules and the availability of “Patent In,” a program for submitting the sequence in electronic form. (The MPEP is available online at <http://www.uspto.gov>.)

The SEQUENCE LISTING is found after the DESCRIPTION OF THE PREFERRED EMBODIMENT and before the CLAIMS.

Claims

Claims should be drafted **first** – it gives you a good idea of what you want to support in the disclosure. Try to draft claims initially in a “Christmas Tree Fashion,” with Claim 1 as broad as you think an examiner might **possibly** allow on a really good day with Claims 20 (or whatever) depending upon Claim 19 and relatively narrow. Think of the initial claims as the opening round of negotiations. What the inventor is trying to determine from the examiner is **where** he or she believes patentability lies, **not if** patentability lies somewhere.

Examples of Typical Claims

A. Mechanical Claims (U.S. Patent 2,716,689)

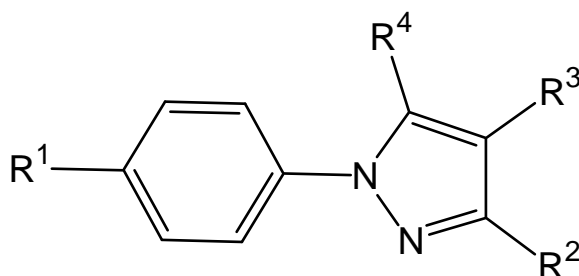
1. A can-opener, which comprises:
 - A frame having a can-receiving space
 - A can punch
 - Means for mounting the punch on the frame above the can-receiving space for movement into and out of engagement with the top of a can position in said space
 - A can-sensing member movably mounted on the frame and having a portion thereof normally projecting into said space for engagement and movement by a can inserted in the space
 - Means, responsive to the engagement and movement of said can-sensing member by a can positioned in said can-receiving space, for moving the punch into engagement with the can top for perforation thereof

B. Chemical Process Claims (U.S. Patent 2,308,588)

1. An improved process of purifying crude maleic anhydride containing chromogenic impurities, wherein crude maleic anhydride is subjected to a hot-aging process in liquid phase, wherein the improvement comprises:
 - Conducting the hot-aging process in the presence of a compound selected from the group consisting of the oxides and hydrated oxide of boron to convert the chromogenic impurities to produce which are relatively nonvolatile compared to maleic anhydride; and then
 - Separating the maleic anhydride from such products by fractional distillation.
2. A process as recited in claim 1, wherein the hot-aging process is carried out at a temperature between about 140°C and 200°C.



- C. Chemical Composition of Matter Claims (U.S. Patent 5,466,823)
1. A compound of Formula I



wherein R^1 is sulfamyl;
wherein R^2 is haloalkyl;
wherein R^3 is selected from hydrido and alkyl; and
wherein R^4 is selected from aryl, cycloalkyl, and cycloalkenyl; wherein R^4 is optionally substituted at a substitutable position with one or more radicals selected from halo, alkylthio, alkylsulfinyl, alkyl, alkylsulfonyl, cyano, carboxyl, alkoxy carbonyl, amido, N-monoalkylamido, N-monoarylamido, N,N-dialkylamido, N-alkyl-N-arylamido, haloalkyl, hydroxyl, alkoxy, hydroxyalkyl, haloalkoxy, sulfamyl, N-alkylsulfamyl, amino, N-alkylamino, N,N-dialkylamino, heterocyclic, nitro and acylamino;

or a pharmaceutically acceptable salt thereof.

2. Compound of claim 1 wherein R^2 is lower haloalkyl;
wherein R^3 is hydrido; and

wherein R^4 is selected from aryl, cycloalkyl, and cycloalkenyl; wherein R^4 is optionally substituted at a substitutable position with one or more radicals selected from halo, lower alkylthio, lower alkylsulfinyl, lower alkyl, lower alkylsulfonyl, cyano, carboxyl, lower alkoxy carbonyl, amido, lower N-monoalkylamido, N-monoarylamido, lower N,N-dialkylamido, lower N-alkyl-N-arylamido, lower haloalkyl, hydroxyl, lower alkoxy, lower hydroxyalkyl, lower haloalkoxy, sulfamyl, lower N-alkylsulfamyl, amino, lower N-alkylamino, lower N,N-dialkylamino, heterocyclic, nitro and acylamino;

or a pharmaceutically acceptable salt thereof.



- D. Biotech Composition of Matter Claims (U.S. Patent 5,837,492)
1. An isolated DNA molecule coding for a BRCA2 polypeptide, said DNA molecule comprising a nucleic acid sequence encoding the amino acid sequence set forth in SEQ ID NO:2.
 2. The isolated DNA molecule of claim 1, wherein said DNA molecule comprises the nucleotide sequence set forth in SEQ ID NO:1.
- E. Business Method Claims
1. A method of placing an order for an item comprising:
 - Under control of a client system,
 - Displaying information identifying the items; and
 - In response to only a single action being performed, sending a request to order the item along with an identifier of a purchase of the item to a server system;
 - Under control of a single-action ordering component of the server system,
 - Receiving the request;
 - Retrieving additional information previously stored for the purchaser identified by the identifier in the received request; and
 - Generating an order to purchase the requested item for the purchaser identified by the identifier in the received request using the retrieved additional information; and
 - Fulfilling the generated order to complete purchase of the item whereby the item is ordered without using a shopping cart ordering model.

Abstract of the Disclosure

This section comprises a single page at the end of the application and should not exceed 100 words in length.

Never use “means,” “comprises” or other patents here. Begin first sentence with something that captures the essence of the invention. Make it short and interesting and do not start too many successive sentences with “The” or “A” – it gets boring. Suggest the following opener for a typical application:

“A syringe needle cap remover is capable of safely removing needle caps of three (3) different barrel sizes...”.

According to the Manual of Patent Examining Procedure (MPEP), all pages should be numbered, including the Abstract.



Helpful Hints

1. Try to draft claims first – it helps to structure the invention.
2. When drafting the application (after drafting the claims), it is highly desirable to try to **dictate** (or computer impose) the entire application in one sitting, i.e.. **in one day** (dictating is 5-6 times faster than typing!). That way, you can get all your thoughts on paper. It is generally easier to edit than it is to do the original drafting.
3. Try to get your drawings prepared on a **parallel** course. In other words, organize your drawings and numbering at the **very beginning** when you do the claims so that they can be sent to the draftsman **while** you are working on the disclosure.
4. As a rule of thumb, it takes four to six weeks to completely prepare an application to the point that it is ready for filing. It usually takes two to four drafts sent to the inventor and returned before both parties are satisfied with the application.

A useful source for drafting patent claims is Landis, “The Mechanics of Patent Claim Drafting” by the PLI Press.

Other Resources:

The reader may wish to refer to the following patents as useful examples:

US 7,553,480	Topical personal care compositions and methods of use
US 7,498,307	Combinations of DnaK inhibitors with known antibacterial agents
US 7,470,404	Fluid sample collection and isolation cup
US 7,464,423	Convertible nursing bag
US 7,411,048	Diagnostic method for diseases by screening for hepcidin in human or animal tissues, blood or body fluids
US 7,374,950	Immunoassay device for diagnosing congestive heart failure and predicting mortality in congestive heart failure patients
US 7,374,744	Harmonic ultrasound imaging with microbubbles
US 7,367,196	Spinning cold plasma apparatus and methods relating thereto
US D567,858	Display board
US 7,338,769	Methods for identifying agonists of cypin
US 7,320,894	Diagnostic method for diseases by screening for hepcidin in human or animal tissues, blood or body fluids and therapeutic uses therefor
US 7,250,180	Anti-prostate cancer composition and therapeutic uses therefor
US 7,169,405	Methods and devices for the treatment of intervertebral discs
US 7,141,235	Stabilized gas emulsion containing phospholipid for ultrasound contrast enhancement



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US 7,081,092	Methods and apparatus for monitoring and quantifying the movement of fluid
US 7,005,120	Osmotically stabilized microbubble preparations
US 6,953,569	Mixed gas microbubble compositions
US 6,939,531	Ultrasonic imaging system utilizing a long-persistence contrast agent
US 6,372,249	Senescent cell-derived inhibitors of DNA synthesis
US 5,840,845	Senescent cell derived inhibitors of DNA synthesis
US 5,810,311	Holder for vehicle security device
US 5,596,079	Mimetics of senescent cell derived inhibitors of DNA synthesis

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