

# Introduction to the U.S. Patent System

An Online Continuing Education Course for Engineers

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# Introduction to the U.S. Patent System

Danny Graves, P.E.

## Introduction

A patent is a grant, made by a specific government that gives an inventor the exclusive right to make, use, and sell that invention for a certain period of time. A patent is a piece of property that can be sold, licensed, assigned, etc. to another entity although the inventor listed on the patent never changes.

If the invention is valuable, a patent can be a crucial defensive or offensive business tool. Many industrialized countries have some form of patent process and inventions are often patented in more than one country. In fact, many countries adhere to the Patent Cooperation Treaty (PCT), enacted in 1978, which facilitates a more streamlined process for filing a patent application in more than one country.

Prior to the America Invents Act of 2011, the U.S. had a “first to invent” policy meaning that the first person to invent something has the right to get the patent for the invention. Most of the rest of the world already had a “first to file” policy which means that the first person to file a patent application for an invention has the right to get a patent on it even if they were not the first to invent it. America Invents Act of 2011 shifts the U.S. to a “first to file” policy. The “first to invent” policy seems more fair but it is harder to manage than the “first to file” policy. It is easier for the patent office to verify who filed an application first as opposed to who invented something first. While worldwide patent protection and the patent policies of other countries are very important topics, this course is only concerned with introducing the student to the U.S. patent system.

## Where do you get a U.S. patent?

The United States Patent and Trademark Office (USPTO) is in charge of issuing patents in the United States. The USPTO has been around for over 200 years. They are headquartered in Alexandria, Virginia. Their Web site, [www.uspto.gov](http://www.uspto.gov), is a wealth of information including the ability to electronically search patents and pending patent applications. In addition, the Manual of Patent Examining Procedure (MPEP) is available on the USPTO Web site. The MPEP is a huge document, with many chapters, that has the answer to just about every question you could have about completing a patent application. The trick is being able to ferret out the specific data

you need in the massive amount of information. Having the MPEP on computer so that you can use the “find” feature of a word processor or Acrobat Reader is very handy.

The USPTO Web site also contains United States Code (USC) Title 35 which contains the patent laws. In addition, the USPTO Web site contains the Code of Federal Regulations (CFR) Title 37 which contains the patent rules. These two documents, along with the MPEP, will tell you everything you ever wanted to know (and more) about patents. Of the three documents, the MPEP is the most practical since it sort of sums up the contents of the 35 USC and 37 CFR. Of course, if there is any disagreement, the *law* takes precedence over the MPEP.

The USPTO Web site front page is shown in Figure 1.

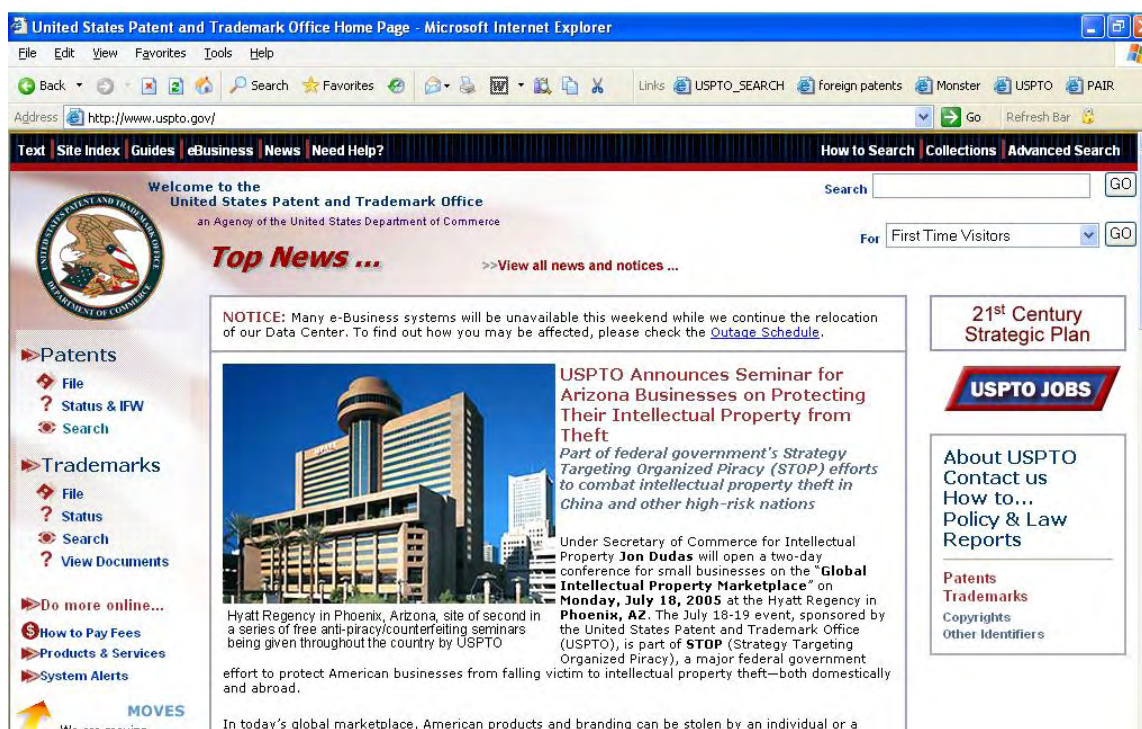


Figure 1. The USPTO Web site.

## Types of U.S. Patents

What type of invention do you need to protect? Is it a unique shape for a cell phone, a better mousetrap, or a new variety of petunia? There are three types of U.S. patents to choose from: design, utility, and plant.

### Design Patents

Design patents protect the way a product *looks* but not the way it functions. MPEP Chapter 1500 defines the *design* of an article as the visual characteristics embodied in or applied to an article. It is **not** the article itself that is the subject of a design patent but instead the ornamental design. A unique shape for a cell phone or a novel computer icon would qualify for a design patent.

Design patents are less expensive to get and maintain than a utility patent. Generally, they are also easier to get approved or “allowed” by the USPTO. Design patents expire 14 years from the date of grant of the patent.

### Utility Patents

Utility patents are typically what people think of when they hear the term “patent.” A utility patent protects the way an article is used and works. A utility patent is the most difficult to get approved and costs the most money to obtain and maintain. If you designed a mousetrap that works better, you would need to get a utility patent (note that if you wanted to also protect the way your mousetrap looks, you could get a design patent in addition to the utility patent). Utility patents require well-written claims (defined in the next section) in order to be effectively used as an offensive weapon (sue others for infringing) in the future. The specification must also be well written, *fully* describing the invention, in order to be used defensively (keep others from patenting the idea). Currently, utility patents will expire 20 years after the filing date of the application.

If the inventor needs to get a utility invention “on file” at the USPTO as quickly as possible or they don’t have the time or resources to file a regular “nonprovisional” utility patent application, they can file a “provisional” patent application. They can refer to the date of filing this provisional application if they need it to show they invented it first. The provisional application does not require all the parts of a regular nonprovisional utility patent application so it is cheaper and easier to file. A regular nonprovisional utility patent application must be filed within one year of the filing date of the provisional application or the ability to use the provisional application’s date will be lost. Provisional applications do not work for design patents.

## Plant Patents

Concerning plant patents, MPEP Chapter 1600 states “Whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefore, subject to the conditions and requirements of this title. The provisions of this title relating to patents for inventions shall apply to patents for plants, except as otherwise provided. In the case of a plant patent, the grant shall include the right to exclude others from asexually reproducing the plant, and from using, offering for sale, or selling the plant so reproduced, or any of its parts, throughout the United States, or from importing the plant so reproduced, or any parts thereof, into the United States.”

With a plant patent, it is essential that the plant was *asexually* reproduced. Currently, a plant patent will expire 20 years after the filing date of the application. Note that a utility patent could also be obtained for some plants although it is usually more difficult to obtain than a plant patent.

## **Parts of a utility patent application**

MPEP Chapter 600 defines the parts, form, and content of a utility patent application. The main parts of the utility patent application are the specification, oath/declaration, drawings, and filing fee. The appropriate transmittal forms must also accompany the application. Figure 2 shows an example of the first page of a utility patent showing the inventor information, title, abstract, etc.

The specification is where the invention is completely described in a manner which would enable a person, skilled in the subject, to make the invention. The specification also includes the *claims* of the patent. A claim is a statement, of specified construction, that points out a specific, special feature(s) that you want patented. The claims portion of the specification usually begins with “We claim:” or a similar statement. Figure 3 shows the claims section of an issued utility patent. The feature that is claimed must be adequately described elsewhere in the specification. A utility patent application may have more than one claim. In fact, utility patents usually contain many claims and there are some issued patents literally containing hundreds of claims. If there are more than three independent claims (claims that don’t reference another claim), there is an additional fee. If a claim references more than one other claim, it is termed a multiple dependent claim and there is an additional fee. For any type of claims in excess of twenty, there is an additional fee. You get the point...fees, fees, fees! These are in addition to the basic filing fee which you must include with the application.

If drawings are necessary to understand the invention they must be included with the patent application. The drawings initially submitted with the patent application need not be formal. The formal drawings can be submitted later. MPEP Chapter 600 details the drawing requirements. You can't just submit the drawings from your engineering department. There are requirements for things such as margins, fonts, shading methods, line widths, etc. NOLO press's book *How To Make Patent Drawings Yourself* is a great reference for making patent drawings.

Photographs can also be included but most of the time are not because of difficulties such as adding reference numbers/other graphics as well as the cost of producing photographs as compared with properly prepared drawings.

An inventor must sign and date the application, and must provide an address, etc and a statement of the inventor's residence. The inventor must also provide a statement to which it is directed.

### Parts of a patent application

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Good quality drawings are essential for a patent application. The drawings should be too detailed to be understood by a fully claim-determined person.

A design patent is a patent for an ornamental design for a new article of manufacture.

### Parts of a plant patent application

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plant patent application. A plant patent application must include a drawing of the plant, a botanical description, a statement of the inventor's residence, and appropriate transmittal forms along with the specification, claims, abstract, oath/declaration, and appropriate fees. Like a design patent, more than one claim is not permitted in a plant patent. It is common for plant patents to contain photographs instead of drawings.

