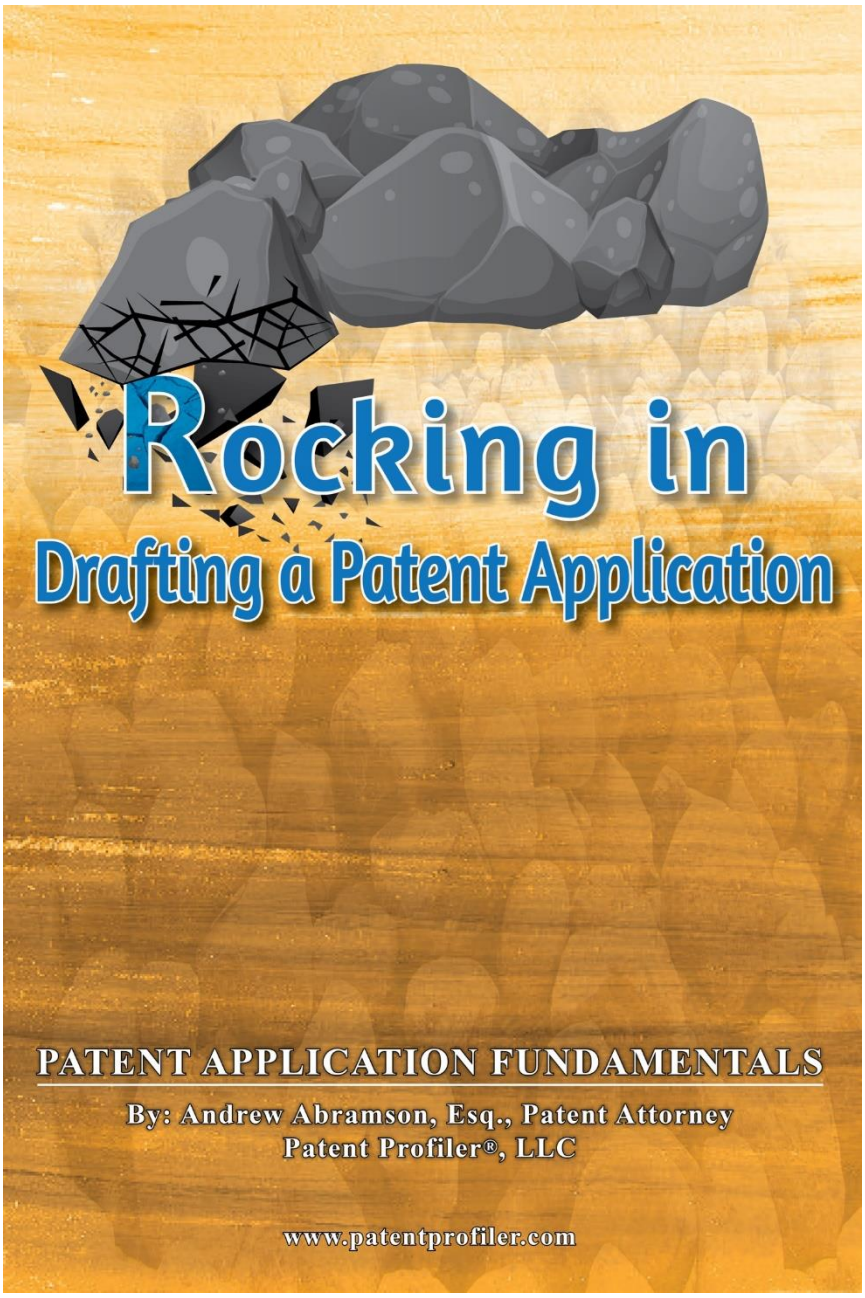
Rocking in
Drafting a Patent Application
PATENT APPLICATION FUNDAMENTALS
By: Andrew Abramson, Esq., Patent Attorney
Patent Profiler®, LLC
www.patentprofiler.com

A DO IT YOURSELF GUIDE TO DRAFTING A PATENT APPLICATION

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1st Edition

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1. Introduction to Intellectual Property

Intellectual property is a valuable asset for any company. Often, the only way a small business can compete with the Goliaths of the world is through their intellectual property. Intellectual property takes many forms, such as copyrights, trade secrets, trademarks, and patents.

Copyrights protect works of expression expressed in a tangible medium, such as an artist's painting on a canvas, a musician's song lyrics written on paper, software in computer memory, or a written work such as a book or magazine article. Copyrights protect the copying of the work of expression and so if two people create very similar paintings independently, no copyright infringement has occurred. Copyrights include several rights, such as a right to produce copies or reproductions of the work and to sell those copies, a right to import or export the work, a right to create derivative works, a right to perform or display the work publicly, a right to sell or assign these rights to others, and a right to transmit or display by radio or video. In the United States, most existing works have a copyright for a term ending 70 years after the death of the author. If the work was a work for hire (e.g., a work created by an employee of a corporation within the scope of the employee's employment, in which case the corporation is awarded the copyright), then the copyright lasts for 120 years after creation or 95 years after publication, whichever is shorter. An author obtains a copyright once the work of expression is materialized in a tangible medium. They can also be registered with the U.S. Copyright Office to obtain additional benefits.

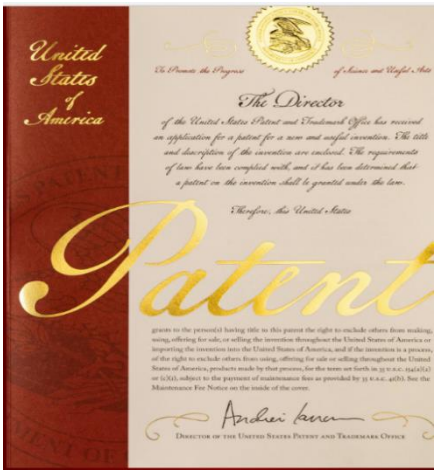
Trade secrets protect secrets of a company that provide a competitive advantage. The formula for Coke® is a classic example. Trade secrets last indefinitely as long as they remain secret. To have a trade secret, a company has to perform steps to keep the information secret, such as by only allowing a few key people to know the secret, securing the information (e.g., formula) in a safe, etc. If someone else finds out about the secret or reverse engineers a product to determine the secret, the trade secret protection is lost for good.

Trademarks are one or more words, graphics, logos, and/or scents that identify a source or origin of a product or service. An example is the Nike® Swoosh. To obtain a trademark

registration, one has to apply for the trademark with the U.S. Patent and Trademark Office (USPTO). The USPTO performs a search to see if any other marks exist that are too similar to the application. If there is a likelihood of confusion with another mark, the USPTO will reject the application. If you can convince the USPTO that your application should be granted, and if the USPTO does grant the application, generally, the trademark is valid throughout the United States. If you register your trademark, you obtain a presumption of validity and ownership. A You also have rights to potentially stop people not just for what is listed in the registration, but closely related goods / services or anything that would be confusingly similar. Typically, the owner of a registered mark can prevent unauthorized use of the mark in relation to products or services which are identical or similar to the registered products or services. The test is always whether a consumer of the goods or services will be confused as to the identity of the source or origin.

TM

Patents are legal documents filed with the USPTO that describe and protect inventions. Patents provide the right to exclude others from making, selling, using, or importing the patented invention. People often think of a patent as a monopoly in the claimed invention for a limited period of time. Patents are valid for twenty years from the earliest filing date (excluding provisional applications (as described below)). In exchange for the monopoly granted by the U.S. government for a limited period of time, the patented invention is published so that others can learn from the patented invention and potentially build upon the knowledge.



a. Is this e-book right for you?

Most inventors face many hurdles before their ideas become successful products. From inception of the idea to manufacturing the product to gaining market acceptance, developing a product is difficult work. One key step in this process of bringing a new invention to market is protecting the intellectual property associated with the invention.

Patents are one of the strongest protections of intellectual property you can obtain. Patent applications are typically prepared by a patent attorney (or a patent agent). A patent attorney has to have a science or engineering undergraduate degree, a law degree, and has to pass the legal bar of a state and a separate patent bar issued by the USPTO. A patent agent also has to have a science or engineering undergraduate degree and has to pass the patent bar issued by the USPTO. As patent attorneys typically charge anywhere between $9,000 - $15,000 to prepare a patent application on your invention, the costs to get a patent application on file are not cheap. If you run or are employed by a small business, you may not be able to afford these law firm rates or you may just want to save money. If you have an idea for an invention but don't yet have a business, many law firms won't even take you on as a client because, for example, they may think there is too much risk (such as that you won't pay your legal bills or that you will sue them for malpractice if you think they did a poor job on the patent application).

Nonetheless, you realize that a patent would be extremely valuable to you and/or your business. The act of filing an application with the USPTO enables you to write on your product the words "patent pending". These words lend credibility to your product, may increase sales, and may cause competitors to think twice before copying your product. Additionally, you will

have many more rights if you have a patent application on file with the USPTO than if you didn't file before you speak to a company about your product that may manufacture and/or sell your product in the future. Also, if you ever need to speak to a potential investor to try to get funding for your business, the investor will usually ask if you have any patents or patent applications on file. Answering yes to these questions will typically help facilitate obtaining funding. Further, if you are granted a patent, you can prevent people from copying your invention. You can also license your invention to another company. This company can then make and sell a product based on your patent while you build your wealth by collecting royalties.

This e-book describes the process and steps to get to patent pending without a patent attorney or patent agent. Instead of hiring a patent attorney or patent agent to prepare and file a patent application for you, you can, with the help of this e-book, prepare a patent application yourself. Additionally, even if you do decide to hire a patent attorney or patent agent to prepare and file a patent application for you, you will be much better informed as to the patent process and patent law in general. This will result in a better understanding for you as to what your patent counsel instructs and the steps needed to prepare a patent application. By understanding more about the patent process and patents in general, you will better be able to understand and answer questions from your patent counsel, which will result in a better patent application. So read on!

b. Requirements to Obtain a U.S. Patent

A patent application describes an invention. The invention has to be either a method, machine, article of manufacture, composition, or new use of one of these. As described above, the government effectively gives you a monopoly in your invention for a limited period of time.

In the U.S., it is currently important for an inventor to maintain one or more lab notebooks describing his or her invention and the steps taken in the development of the invention. In your notebook, the pages should be permanently bound and should be numbered so that it shows that no page was inserted at a later date. If the pages are not numbered, number them yourself. All steps that you take in the conception and development of your idea should be entered into your notebook, in sequence and dated. Each page should be dated and witnessed by

two people (e.g., coworkers). Each witness should write the following statement next to the date: "The above material is confidential, and I have read and understood this page." If someone else came up with the same idea after you and this person contested your patent application, your lab notebooks would prove that you invented the idea first. Keeping good notes also helps you keep track of the steps you have taken during the development of your invention. You then have to be diligent in building your invention or filing a patent application (or provisional patent application) on your invention.

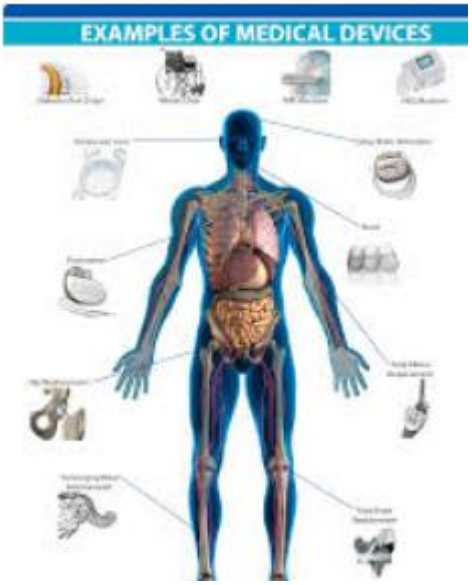
On September 16, 2011, President Obama signed into law the America Invents Act. This law changes the U.S. from a first-to-invent country to a first-inventor-to-file country, and this change was effective starting on March 16, 2013. This legislation in effect creates a first-to-disclose patent system, where the first inventor to disclose the invention (e.g., through a public disclosure, a written article, or the filing of a patent application or provisional patent application) usually wins the race. Specifically, an inventor has one year from the date of disclosure to file a patent application. In many instances, the America Invents Act creates a "race" to the USPTO (in other words, a race to file a patent application with the USPTO). In light of the America Invents Act, I recommend filing many provisional patent applications that build on each other to patent your invention as it develops so that you secure a filing date as early as possible.

Under the America Invents Act (and effective after March 16, 2013), if an inventor discloses an invention and then someone else later files a patent application on the same invention, and the inventor can prove that the filing party derived or stole the invention from the true inventor, the true inventor can use a "derivation proceeding" to try to obtain a patent in his or her invention.

Please consult a patent attorney if this occurs to you, as this is outside the scope of this e-book. In order to obtain a patent on an idea, the idea has to meet three requirements. The idea has to be novel or new, has to have utility or usefulness, and has to be non-obvious. Novelty is a comparison of what the idea is relative to what else is known before the date of your invention. Utility is a relatively easy standard to meet, as just about anything has utility. Non-obviousness is a tougher requirement to satisfy, as an invention can't be obvious in view of other known ideas or combination of ideas. Obviousness is viewed in light of "one of ordinary skill in the art" which is a fictitious person who is skilled in the technology described in the patent application.

After you file your patent application, you can argue to the USPTO that your invention is not obvious in light of other references if the references do not teach or suggest your invention. You would highlight the differences in your invention over the teachings of the cited prior art. Factors that strengthen your case that your invention is not obvious include commercial success, long felt but unsolved needs, failures of others, and/or evidence that the claimed invention yields unexpected results or properties. Sometimes a small change in a method or system yields unexpected results and this small change would likely be considered non-obvious. Another example of a non-obvious invention is if every other product in an industry does something a specific way and your invention does the same thing in a different way. This difference would likely be considered non-obvious and patentable.

Almost any idea can be patented. For example, software, business methods, methods of manufacture, systems, apparatuses, medical devices, algorithms, consumer products, and biotechnology can be patented. There are a few concepts, however, that cannot be patented. In particular, abstract ideas, natural phenomena, and laws of nature, such as the theory of relativity, cannot be patented.



c. Actions that Can Affect Your Patent Rights

There are a few actions that, if you perform, can negatively impact your patent rights. The first action is selling your product or offering your product for sale. If you either sell the product that you would like to get a patent on or offer the product for sale to a potential customer, you start a clock running in the U.S. from the date of the sale or offer for sale. With an offer for sale, you don't even have to have a physical product – if you offer your product for sale by showing detailed drawings of how your product would be built or would work is enough to start the patent clock. You then have one year from that date to file a patent application with the USPTO. If you do not file a patent application on or before that one year deadline, you lose all rights in your invention in the U.S. Speaking from experience, the year goes by quickly and often sneaks up on inventors. Therefore, I recommend filing a patent application before or soon after one of these events occurs to be on the safe side. This is known as the "on-sale bar".

The second action that can negatively affect patent rights is if you make your idea publicly available. For example, presenting your idea at a conference or in a poster, publishing your idea in a paper, or publishing your idea on a web site can affect your patent rights. Like selling your product or offering your product for sale, publishing your idea starts a one year clock in the U.S. You then have to file a patent application within that year. If you don't, you lose all rights in your idea.

The third action that can negatively affect patent rights is if you use your product publicly (public use). For example, if you install your new gravel onto a road to make the road more resilient, this would start the clock running and you would have one year from this public use to file a patent application. There is, however, an exception to this rule. If your use is an experimental use, then the clock does not start. So, using the same example, if you are testing your gravel and are making changes to your gravel as cars go over the gravel over a period of time (and keeping records of these changes), then the clock would not start running because you are experimenting with your gravel and your invention has not been finalized. Once you stop experimenting, the clock would start.

Currently, the fourth action that can negatively affect your patent rights is if you "abandon" your invention. For example, if you start working on your invention and then stop pursuing it for a prolonged period of time (and have no valid reason (e.g., lack of funds) for stopping work on your invention), and later want to get a patent on your invention, and your work stoppage becomes known, you would lose your right to get a patent. You have to work diligently on your invention before filing your patent application.

Once you file your patent application, you can discuss your product and/or sell your product freely. When trying to sell your product, a patent or patent application provides a big boost in the product's credibility. Additionally, if you discuss your product with a potential licensee or manufacturer, the patent or patent application can help facilitate the making of a deal with your product.

Also, prior user rights now exist for commercial use occurring in the U.S. The use must have occurred at least one year before the earlier of: 1) the effective filing date of the claimed invention, or 2) the date on which the claimed invention was disclosed to the public. If the use is a prior commercial use, then the user is not liable for infringement of a patent for that use. This may affect whether a party determines to keep something as a trade secret (and rely on prior user rights) or to go after patent protection.

d. Steps to Get From Patent Pending to Issued Patent

Once you file a patent application, the journey is just beginning on being awarded a patent. As stated above, you can write the words "patent pending" on your product associated with the patent application.

But how do you get to an issued patent? After a period of time, an examiner at the UPSTO will examine your patent application. Most of the time, they will send a communication back to you describing why they think your idea is not patentable. In this communication, which is called an Office Action, the examiner will typically refer you to different parts of other publications and say that these publications already show your idea. Therefore, they will say, you cannot be awarded a patent because your idea is already known or is obvious in light of what is known.

You have to respond to the USPTO's Office Action with a Response. If you can convince the Examiner that your idea is different than what they are pointing to, the Examiner will either issue a new Office Action or will award you a patent on your invention. The process of trying to get a patent, such as by arguing with the USPTO on the patentability of your invention, is called "prosecution" of a patent application.

e. Typical Costs Associated with a Patent Application and a Patent

The following few paragraphs are to give you a general sense of what to expect in terms of costs to get a patent. Although this e-book describes the steps needed to draft a patent application, I wanted to provide a brief description of the costs associated with actually getting a patent. It is best to know this information up front so that you can budget correctly for intellectual property costs.

Patents are expensive because of the valuable intellectual property rights they confer. As stated above, patent attorneys typically charge between $5,000 - $15,000 to prepare a full-blown patent application. The range of costs is often associated with the complexity of the invention – a more complex invention will typically cost more money. One way to save costs on filing a patent application is to draft the patent application yourself and then hire a patent attorney or patent agent to review and comment on your draft. Patent attorneys and patent agents typically charge several hundred dollars an hour, but this is much better than paying the $5,000 - $15000 fee you would have to pay in order for the patent attorney / agent to draft the application for you from scratch.

You can find a listing of patent attorneys and patent agents on the USPTO web site (www.uspto.gov) by clicking on the link: Legal Assistance and Resources, click on "Finding a Patent Practitioner," click on Patent Attorney/Agent Search, click on Download Practitioner Roster, and finally download the file.

I recommend getting names of some patent attorneys / agents in your area and then doing a Google search on their names to determine where they work and their phone number / email. Alternatively, you could hire me to file a patent application or trademark application for you.

Filing fees for a patent application change yearly. The US government provides a discount for a company with equal to or fewer than 500 employees (referred to as a small entity). The fees don't end there. As stated above, after filing a patent application, you will most likely receive an Office Action and a Response to the Office Action has to be prepared. If a patent attorney prepares the Response, it will typically cost you anywhere between $2500 - $6000. You may have to pay this fee numerous times, depending on how many Office Actions you receive. Also, if you receive what's called a Final Office Action, you will have to pay a filing fee for a

Request for Continued Examination (RCE) with your Response. The USPTO fees are included in the USPTO web site. If you convince the USPTO that you should be awarded a patent, you have to pay an issue fee. Additionally, to keep a patent in force, you have to pay maintenance fees to the USPTO 3 - 3 ½ years from issuance, 7 - 7 ½ years from issuance, and 11 - 11 ½ years from issuance. As stated above, these values are halved for a small entity. The USPTO publishes its current fees on its website by navigating to www.uspto.gov and selecting Fees and Payments.

Additionally, the America Invents Act created another class of inventors, a "micro entity." As stated above, a 50% reduction for certain fees is available for applicants qualifying for small entity status. Micro entities, however, are eligible for a 75% reduction in fees. To qualify as a micro entity, an applicant 1) has to qualify as a small entity, 2) has not been named as an inventor on more than four previously filed patent applications, 3) did not, in the calendar year preceding the calendar year in which the applicable fee is paid, have a gross income exceeding 3 times the median household income, and 4) has not assigned, granted, or conveyed (and is not under obligation to do so) a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is paid, had a gross income exceeding 3 times the median household income.

2. Should I Do a Search on My Idea Before Filing a Patent Application?

A common question that I often hear from inventors is whether they have to or should perform a search for their idea before filing a patent application. Let's set the record straight - performing a search is not required before filing a patent application. You do not have to perform a single search on your idea before filing a patent application. It may, however, be beneficial to you to do a search before filing a patent application to determine what else is out there that is similar to your idea and to determine whether it makes sense for you to go forward with the filing of a patent application.

There are several ways to do a search on your idea before filing a patent application. You can do a Google search on your idea using one or more keywords. You can also do a search for issued patents and/or published patent applications by going to the USPTO web site

(www.uspto.gov) and clicking on the "search for patents" link on the top of the home page. You can then search for USPTO Patent Full-Text and Image Database and/or the USPTO Patent Application Full-Text and Image Database. After clicking on one of these links, you can type in keywords and search the USPTO databases to pull up patents and/or published patent applications having your keywords. When you search using keywords, try to do different searches with different keywords. Use synonyms and consult a thesaurus if necessary to find different words to describe your invention. Additionally, if you select the Advanced Search, you can tailor your queries using field limiters, such as only searching for keywords in the title of the application / patent, searching for patents / applications by particular inventors, using wildcards (e.g., * or ?) to search for a portion of a word, using Boolean connectors such as AND and OR, etc. Click on the Help button to learn how to search using field limiters, wildcards, etc. You can also perform a search for patents or patent publications using Google Patents (www.google.com/patents).

One caveat to searching patent applications for your idea is that patent applications publish 18 months after their (earliest) filing date. Therefore, there may be patent applications that disclose your idea that have been filed but have not published yet. There is nothing you can do about this – it is a risk that you have to weigh before deciding to file your application.

You can also do a search of foreign patents and patent publications by going to http://worldwide.espacenet.com. I typically go to Advanced Search and then search different keywords in the Worldwide database. Once you perform a search, a listing will come up of the patents or patent publications that match your query. Once you select one of the patents / publications, you can then select to view the Original Document, Description, etc. by clicking one of the options on the left of your screen.

Additionally, if you do decide to do a search and you find documents that are relevant to your idea, keep a record of the documents you find. As described in more detail below, if you decide to file a patent application on your idea after doing a search, you will have to submit a listing of the relevant documents you found to the USPTO. In some situations (described in more detail below), you will also have to submit a copy of the reference to the USPTO. This duty to submit relevant prior art is ongoing – it exists when you file your patent application as well as after you file it. Thus, if you file a patent application and later learn of a relevant

document (technically from any country and in any language, but most often a previously issued patent or patent publication) that was filed before your filing date (called prior art), you have to submit a listing of the document and possibly the document itself to the USPTO.

Don't be discouraged that you have to submit a listing of the relevant documents that you found to the USPTO. In reality, the submission of relevant documents will eventually make your patent stronger if your application issues as a patent. The reason is that the Examiner will consider the prior art that you cite in light of your application. If your application gets allowed, a listing of the considered art is listed on the patent and the patent has been issued in light of the Examiner considering the cited prior art.

Before drafting your patent application, you should thoroughly review the references you found to determine what you can patent. It may be helpful to take notes on each reference, such as writing down what the reference discloses and the problem or problems the reference solves. You should focus your patent application on the patentable subject matter not disclosed in the references.

Also, remember during your searching that all inventions build upon what is known. You may locate references that disclose your broad invention, but don't get discouraged! You may have to change your view of what part of your idea is patentable, but sometimes the most valuable patents are patents that protect an incremental change in a specific area.

3. Provisional Patent Application

a. Introduction

As a small business or a solo inventor, you may not be sure whether you want to take the plunge and file a full-blown patent application (also called a utility patent application). You are not sure if your idea is patentable. Further, if you read no further and you decide to pay a patent attorney to prepare a patent application for you, you may not have the funds necessary to pay the patent attorney's fees. Or you may not have perfected your idea and you may need more time to flesh out the details of your idea.

Instead of filing a utility patent application, you can file a placeholder patent application, also called a provisional patent application. You do get a filing date for the provisional application. A provisional patent application, however, must be converted into a utility patent application on or before its one year anniversary. If the one year anniversary ends on a weekend or holiday, you can file the utility patent application on the next business day. If you don't decide to convert the provisional patent application into a utility patent application by the one year anniversary date of the provisional filing date, the provisional patent application expires and remains unknown (does not publish).

For example, suppose you file a provisional patent application on March 28, 2017. By March 28, 2018, you have to file a utility patent application that claims priority back to the provisional patent application to get the earlier filing date of the provisional application. If you do not file a utility patent application that claims priority back to the provisional patent application by the March 28, 2018 deadline, then the provisional patent application expires and is no longer in force.

b. Format

As described in more detail below, a utility patent application has a specific format that it must follow. A provisional patent application, however, can have any format. For example, I

have submitted printouts of Powerpoint slides, white papers, notebook pages, notes, hand drawings, etc. as part of a provisional patent application.

Although a provisional application can have any format, you should not include statements in your provisional patent application that a court could use to limit your invention. I recommend staying away from definitive qualifiers, such as: always, never, must, absolutely, always, only, crucial, essential, every, important, very important, necessarily, necessary, obviously, preferred, require, or requires. Also, you can and should use the words "can" and "may" in your provisional application. Further, you should use the phrase "for example" or "in one embodiment" (which means "in one example") often at the start of a sentence when the sentence provides an example or is one step in a process. Do not, however, indicate that an embodiment is a preferred embodiment.

Please note that a provisional patent application is only as strong as what is disclosed in the application. For example, if your idea relates to a new widget, and you only disclose that you glue together parts A, B, and C to make the widget and you don't disclose that you also need part D (because you don't realize you also need part D), then part D does not obtain the earlier provisional filing date once you file a utility application disclosing part D. As described in more detail below, the claims of a patent application can have different dates. If a provisional does not disclose part D, and you later claim part D in your utility patent application (filed on March 28, 2018) that is related to the provisional patent application (filed on March 28, 2017), then part D only gets the March 28, 2018 date and not the earlier March 28, 2017 date. Therefore, it is best to describe everything you can about your idea in a provisional patent application so that your provisional patent application is as strong as possible. Additionally, you can file multiple provisionals (e.g., on incremental improvements to your invention) and can then claim priority to all of these provisionals in one utility application. Each claim of the utility application will get the filing date of whichever provisional it was first disclosed in.

c. Costs

Provisional patent applications are relatively inexpensive. If you hire a patent attorney to prepare a provisional application for you, the cost is typically between $700 - $5000, depending on how much work goes into the provisional application.

4. Utility Patent Application

As described above, a utility patent application is a patent application that is typically prepared by a patent attorney but can also be prepared by you, an inventor, owner, or employee of a business. By investing some time and following the steps described in this e-book, you can prepare your patent application and potentially save yourself many thousands of dollars.

a. Parts of the Application

A utility patent application includes several parts – the specification, figures, claims, and abstract. As described in more detail below, the specification is the description of your invention, including a background section, a summary of your invention, and a detailed description of your invention. The drafter of the patent application is his or her own lexicographer – this means that the patent drafter can invent and/or define terms. In fact, it is often beneficial to include definitions of key terms in your application so that there is no question what is meant by those terms.

You should be aware that once you file your patent application, you cannot change or add to your specification (except to correct minor typographical errors). Therefore, it is important to be complete and thorough in your application. You should describe your invention in sufficient detail to enable one of ordinary skill in the art to make and use your invention after reading your application without much additional work.

The figures are one or more drawings that help describe your invention. Each figure should include reference numbers that point to a part of the drawing and that are referred to in your specification. For example, if you have a server computer in your drawing, you can point to

it with a lead line and at the end of the line have reference number 105. In your detailed description, you will refer to your server computer as “server computer 105”. You should draft the sentences in the specification as if the reference numeral was not present. For example, “The server computer 105 transmits the data to the client computer.”

Each figure should be on a single page. If you need more than one page for a single figure, you can draw a line with an arrow at the end of the line and state next to the arrow “To Fig. X” where X is the next figure number. For example, one figure can encompass Figs. 1A and 1B, where Fig. 1A includes a line with an arrow at the end of it stating “To Fig. 1B”.

The claims are the sentences that define your invention. They are the legal metes and bounds of your invention. They are similar to a property deed to a house – they define the boundaries of your invention. The claims are supported by the specification and figures. To determine the meaning of claim terms, one initially looks at the specification and figures.

The patent application also includes an abstract. The abstract is at the end of the document and is mainly used for searching purposes. The abstract is typically a brief summary of your invention and must be 150 words or less.