

PROTECTING INNOVATION

Patent Application Fundamentals

*Patent Searches, Novelty and Obviousness
Considerations, Written Description and Enablement
Requirements*



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Patent Application Fundamentals

Most entrepreneurs believe that their innovation will make a contribution to the marketplace or to society. Certainly, the vast majority also expect that there will be some financial reward that will flow from their hard work to justify the time and expense associated with obtaining a patent.

Yet all too often, entrepreneurs consider filing for patent protection as a piece of due diligence rather than as a fundamental part of business strategy. It's a risky proposition as patents are, for many businesses, the single most valuable asset they own.



Before rushing through the patent process, be sure to understand the fundamentals of what goes into creating a successful patent application and be sure you have the right experts on your team to get it done right. Three specific areas to understand are:

- 1) Patent Searches
- 2) Novelty and obviousness considerations
- 3) Written descriptions and enablement requirements

Unassisted Patent Searches – Risk or Reward?

While most people understand the value of patent protection, many are hesitant to pay a legal expert to thoroughly search for publications that are related to the science or technology underlying the invention before they file an application.

After all, why pay someone to review published literature when they are intimately familiar with what is known, understood and speculated about in their area of expertise? And yet, while it may seem counterintuitive, getting the right legal counsel early can be a huge money-saver down the road. Before you embark on a DIY patent search and application, make sure you understand the risks.

What most new inventors and start-up companies fail to completely understand is that a patent application is a legal document, not a scientific or technical one.



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Patent applications are very different from a manuscript submitted for peer review or from a grant proposal submitted to obtain funding. Not only does the patent application have to meet certain legal requirements, but the words used to describe the invention and the claims must be carefully chosen because so many common words have acquired specific legal meanings from litigation and court decisions. Most inventors are either not aware of this or have only a vague appreciation of it.

Beyond Jargon

Furthermore, most inventors tend to use the jargon common to their field of expertise to describe their inventions. This may hamper identifying existing publications relevant to the invention during a search and has a significant effect on the ease with which the patent application will progress.

When a patent application is filed, it is assigned to an Examiner with subject-matter expertise in the science or technology underlying the innovation. The first thing that the Examiner does is to search all publications that have a publication date that is up to one day earlier than the earliest date associated with the patent application. Those publications are called “prior art”

because they were published *prior* to the date accorded the patent application and because they are in the same area of science/technology (*i.e. art*) as the subject matter of the patent application.

Even inventors comprehensively aware of what is going on in their area of science/technology can miss something that an Examiner will find. The Examiner is looking at the patent application as the legal document that it is and so is weighing the disclosure in the prior art against what the claims of the patent application state. The Examiner is also using technical terms in addition to jargon when searching.

As an example, a scientist who has invented a new method of conducting PCR (polymerase chain reaction) to be used for identifying new organisms in deep ocean thermal vents may not necessarily be aware of PCR methods associated with forensic applications used at crime scenes. The Examiner, on the other hand, has no bias as to how PCR is used or what the ultimate point of using PCR is (*e.g.* identifying a new organism), and so the publications that s/he searches could easily come up with a publication about which the scientist was totally unaware or which had been dismissed as unrelated because it was



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directed to something other than identifying new organisms.

Similarly, if a scientist uses the term “amplicon” in a patent application, the Examiner will likely search using that term, but also using the term “PCR product” (or vice versa) because both of these terms can describe the result of a PCR reaction.

Understanding the Value an Attorney Brings

This is where the value of hiring a professional legal expert comes in. Like the Examiner, an attorney demonstrates no particular bias about the invention and will use pertinent, yet neutral, terms when conducting the prior art search. Consequently, the searcher has a much higher probability of identifying prior art that an Examiner would consider relevant to the patent application – even if it does not immediately appear to be intimately related to the exact same end-product, approach, or implementation as that presented in the patent application.

There is a huge advantage in knowing what an Examiner might find when searching the prior art for publications related to the invention. Once one knows what an Examiner is likely to find, it is then possible to draft the patent application in such a way as to

distinguish the invention from that prior art.

This has two main benefits. The first is that if the invention is successfully distinguished from the prior art, the Examiner will not base any rejections on that prior art. This will generally result in a much more directed and compact prosecution of the application.

And that leads to the second benefit – reduced patent prosecution costs. Generally speaking, the costs associated with having to point out to the Examiner the differences between the prior art and the claimed invention are far greater than doing a prior art search up-front so that those distinctions can be incorporated into the patent application.

Patent Application Drafting – Considering Novelty and Obviousness

Most inventors understand the importance of keeping an invention secret until they have a patent application on file. So it is no surprise that once they have a complete idea of the invention or have developed a working prototype, they are eager to begin the patenting process and be at liberty to discuss the invention, initiate marketing and begin to seek funding.



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Yet drafting a patent application is not a trivial task. Inventors who try to short-cut the process do so at their peril. Among the common misconceptions of patent applications is the understanding of the legal terms “novelty” and “obviousness.”

In order to obtain a patent, the invention must be defined in the application in terms known as “claims,” which describe the required elements of the invention. Each claim must be fully supported by the description in the body of the application, which is known as a “specification.” For example, if our invention is a chair, the claim might state:

“A seating device comprising a seat, four legs, a back and two arms.”

Here, the claim has four elements:

- (1) *a seat*
- (2) *four legs*
- (3) *a back*
- (4) *two arms.*

The specification, therefore, must fully describe the four elements, teach how to make and use the chair invention and, ideally, point out the advantages and differences between the claimed chair invention and what was previously known.

The patent application and the invention claimed must meet several requirements: (a) novelty, (b) non-obviousness, (c) enablement and (d) written description. In other words, it must include a sufficiently detailed description so that someone working in the same area of science or technology would understand that the inventor actually had the invention in hand at the time the application was filed.

All of these requirements must be initially addressed in the specification because it is rare that the information can be changed once the application has been filed.

What makes this task more complicated is that the meaning of each of these four requirements is not necessarily what a scientist or engineer would envision.

Novelty

Take the requirement for novelty, for example. To most scientists and engineers – in fact most lay people – “novelty” means just what the Merriam-Webster dictionary says: “The quality or state of being new, different, and interesting; something that is new or unusual; something novel.”

But in patent law, novelty doesn’t mean exactly that. Instead, novelty means that when an Examiner searches the



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patent, scientific, and popular literature (“prior art”) that was published before the earliest filing date for the application, she or he *cannot find one single publication that has each and every element of the claim.*

To illustrate, consider our claim for a chair. If an Examiner’s prior art search finds a publication that describes a four-legged stool, that publication is lacking elements (3) and (4) – a back and two arms. So our invention would have novelty compared to the four-legged stool publication. Similarly, if the Examiner finds a publication for a beach chair that has a back, two arms, and a seat which is a piece of fabric that lays on top of the sand, that beach chair publication lacks element (1) – four legs. So our invention, again, has novelty when compared to this publication.

Clearly, if a search of the prior art was done before beginning to draft the patent application, these publications would likely have been identified. Then it would be possible to point out the differences between the invention and the publications and discuss the advantages of the claimed invention. It would also be possible to describe other features of the invention, for example a foot rest, that did not appear in any of the publications identified and, while it

might not initially be claimed, it could later be added to the claim if need be.

Non-obviousness

Like novelty, the terms “non-obviousness” and “obvious” also have a special meaning in patent law. Once more, the focus is on the elements of the claim. But while novelty requires that each and every element of the claim is present in a single publication, in order to destroy non-obviousness and show that an invention is obvious, an Examiner *is allowed to combine two or more references so that each and every element of the claim is represented.*

Turning again to our chair invention, the Examiner could state that the claimed chair is obvious in view of the four-legged stool and beach chair publications. Certainly, the combination of these two publications describe each and every element of the claim. The four-legged stool lacks the back and arms, but these are provided by the beach chair. Conversely, the beach chair lacks four legs, but these are provided by the four-legged stool.

Once again, the benefits of conducting a prior art search before patent application drafting begins are apparent. Here, we would appreciate that while we have novelty over these two publications, the invention could be considered



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obvious. So we could then further define the invention to include the footrest, for instance. Since nothing is discussed in the four-legged stool publication about a footrest and similarly nothing appears in the beach chair publication, including the foot-rest in the claims could provide both novelty and non-obviousness.

Because the disclosure in a patent application cannot be altered once it has been filed, it is critical that the application is thoughtfully drafted and that a prior art search has been conducted. This allows the invention to be fully described and helps the inventor focus his/her efforts on altering the initial product/method design to achieve both novelty and non-obviousness, which in turns provides the best chance to move through the patenting process to granted patent with the minimal amount of argument and expense.

Patent Application Drafting – The Written Description and Enablement Requirements

A third aspect of patent applications that is important to understand is the description.

The requirement “Written Description” sounds simple, but when it comes to describing an invention in order to

obtain a patent, it can be a tricky element to fulfill.

In fact, many inventors fail to appreciate the significance of the Written Description requirement, as well as that of Enablement, when applying for patent protection.

To appreciate the importance of these requirements it is important to remember that a granted patent is essentially a limited monopoly awarded to the inventor by the government. In exchange for that monopoly, the government wants some assurance that once the patent expires the invention will be available to the public. So the requirements for Written Description and Enablement are designed to put “the public in possession of the invention and to enable those skilled in the art to make and use the invention.”^[1]

Written Description

On its face, the Written Description requirement sounds pretty easy to fulfill – just describe what you have invented in a way that discloses the technologic knowledge underlying the invention and shows that the applicant had possession of the invention. But the Written Description requirement can actually be a bit tricky to fulfill.

Specifically, the courts have stated that



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the Written Description requirement, “implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor’s obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention this is claimed.” [2]

For example, let’s say once again that the invention is a chair with four legs, a seat, a back and two arms. The inventor has crafted the chair out of wood, but realizes that metal would work as well. He is also thinking that the chair would be more comfortable if the seat and the back were padded. So he writes the application stating that the chair can be made out of wood or metal, that the various parts are held together with glue, nails or screws, and that the seat can optionally be padded.

During examination of the application, the inventor wants to introduce a claim to a chair made of plastic and another claim directed to a chair with a padded back. But there is a problem: he did not describe plastic as a suitable material or a padded back as an option. There is no Written Description for a plastic chair or a chair with a padded back. Consequently, the inventor cannot claim what he did not disclose to

the public or have in his “possession” at the time the application was filed.

So does it make sense to simply think of all of the possible materials and/or combinations that could be present in an invention and describe those? Not necessarily.

Most patent applications are published before examination begins. Once the application is published, in some circumstances that publication can be used to reject the same inventor’s future inventions/patent applications. As a result, one must be careful to say enough so that any changes to the claims have written description support, but not too much so that patent applications directed to the second and/or third generations of the claimed product are rejected for novelty or non-obviousness over the initial patent application. Because you need to walk such a fine line between what you should and should not say, you need to be well-versed in the law to ensure the description is written in a way that best protects your interest.

Enablement

The Enablement requirement adds another layer of complexity. The purpose of the Enablement requirement is to ensure that a description of the invention is communicated in the body



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of the application (aka the “specification”) in such a way so that someone working in the same area of technology would know how to make and use the invention.

While this sounds very similar to the Written Description requirement, the two are separate and distinct. The purpose of the Written Description requirement is broader than to merely explain how to “make and use.”

For example, considering the chair invention discussed above, while a claim directed to a chair with a padded back would be rejected for lack of Written Description, it would likely be considered enabled/meeting the Enablement requirement. That is because just stating in the claim that the back could be padded would probably be enough so that another chair maker would know how to make and use a chair with a padded back.

How can one analyze whether a patent application is enabled? Is it necessary to describe every little detail in order to fulfill the Enablement requirement? No, a patent application does not need to teach or describe – and preferably omits – what is well known in the area of technology involving the invention. Instead, the Supreme Court has stated

that the proper question to ask is “Is the experimentation needed to practice the invention undue or unreasonable?”^[4]

The fact that experimentation may be complex does not necessarily make that experimentation undue as long as that type of complex experimentation is typically engaged in by the area of technology associated with the invention.

When determining whether experimentation is undue, one considers the level of predictability in that area of technology, the level of skill of ordinary practitioners in that technology and what is already known in the literature associated with the invention’s technology, among other things.

Using the chair example to illustrate, the inventor described that parts of the chair could be held together with glue, but did not indicate what types of glue. So would a claim to the chair being assembled with glue be enabled? Probably yes because while there are many different types of glue, a chair maker would be aware of the types of glue generally used for assembling furniture and the amount of experimentation that would be required before finding a glue that would work would not be undue or unreasonable.

These over-simplified examples illustrate the Written Description and Enablement requirements, but the analysis for actual inventions is far more complex. Clearly, drafting a patent application that will provide enough disclosure to satisfy the Written Description and Enablement requirements – but not too much so that future applications are adversely affected – is an intensive and challenging task that requires significant knowledge and understanding of the rules and court decisions interpreting those rules. Consequently, most inventors find that collaborating with a patent attorney provides the best insurance for being able to move through the patenting process to granted patent in the most efficient manner.

Summary

Intellectual property is the single most valuable asset of any business. It is a source of revenue, a key to accessing new markets, and a way to improve upon existing product lines. Yet too often, businesses get caught up in the day-to-day demands of the company and fail to think long-term about how to maximize this most valuable resource.

Understanding patent fundamentals provides greater understanding of the complexities that go into protecting what is like the most valuable asset associated with a business venture.

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[1] Manual for Patent Examination and Procedure (MPEP) § 2162

[2] *Capon v Eshhar*, 76 USPQ2d 1078, 1084 (Fed Cir. 2005)

[3] MPEP 2161.01

[4] *Mineral Separation v Hyde*, 242 U.S. 261, 270 (1916)