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The Patent Prosecution Process

By Peter Corcoran

Patents are legal documents, but they capture and preserve rights to important engineering ideas. For this reason, they are very important to the corporations and research institutions that employ engineers. And as a result, it is pretty difficult for a good engineer to avoid getting involved in the patenting process at some point in his career. Or if you happen to be a company owner or senior manager, you will also find patents are going to enter your day-to-day workflow from time to time. Hopefully, not too often, but when they do, you need to know what they mean.

I have previously written a short overview for engineers on the patenting process [1] **<AU: Please note that references section is missing in the original file.>** and also, in this column in past issues, about understanding the role and uses of patent applications [2]. In this column, we are going to take a look at what happens up to three years after you have filed a patent when the patent office actually starts to examine your patent filing and decide if you actually have an invention and your claims are valid. This process of examination, combined with mechanisms to allow your patent attorney to respond to the outcome of examination, is generally known as patent prosecution.

Note that it does not encompass legal actions you might take later to defend your intellectual property (IP) **<AU:**

Please check whether IP is spelled out correctly.> rights as defined in any patent you hold. These are known as patent litigation and occur in the normal courts of the land. The prosecution process only involves the patent office and your patent attorney. By the end of this process, you will either have an allowed patent, your application will have been rejected, or you will have decided that the costs of obtaining a patent do not justify its value to you, and it will be abandoned.

Let us begin, however, at the start of this process when the assigned patent examiner gets around to blowing the dust off your patent application file down in the patent office.

THE HUNT FOR PRIOR ART

This is the basis of patent prosecution. It takes a long time to get here—typically three years unless you decide to accelerate your application. On the other hand, your patent is valid for 20 years, and markets tend to develop slowly, so if your idea was ahead of the market, that three-year delay may not be too much of an issue. And you will be able to claim royalties from the time your patent application is published (which is normally after 18 months), so you will have a backlog of royalty income to that date. However, if you are in a fast-paced market, you can speed up the process and fast-track your patent, on payment of an additional fee.

However you get there, the goal of this process is for the patent examiner

to scrutinize your application in detail and satisfy himself as to the validity of your legal claims. He does this by searching through the prior art, which includes academic research papers as well as published patent documents.

BEFORE WE GO A HUNTING...

Different examiners have different search strategies, but typically they will begin with a claim analysis of your invention. Yes, to all intents and purposes, they skip past all the engineering details that are provided in the specification to the patent document and dive headlong into the obscure and cryptic legalese that your patent attorney has constructed.

The examiner will separate out the different elements of your claims and then he begins the process of demonstrating that they do not meet the criteria for inventiveness. Just in case you are new to the world of patents, the criteria include 1) novelty—your invention must be something that no-one has built or implemented before; 2) utility—it must perform some useful function or solve a practical problem; and, finally, the one that tends to become the nub of most patent prosecutions, 3) nonobviousness—the combination of techniques that you have used must not be an obvious approach to solve the problem. Obviousness is based on the state of knowledge in the field of the invention at the time the invention was filed.

Typically, your attorney will be good enough to present your ideas in the right context to satisfy the novelty



A bear.

criterion. And it is likely that your technique has some utility or your employer would not have invested the money to file a patent in the first place. The patent examiner knows this. He also knows that you are likely to have searched around the main claims of your invention. (You did do that, didn't you?)

Thus, his first line of attack is going to be about the obviousness of the



A wolf (Photo courtesy of Wikipedia.com/Monsterteeth.)



A meerkat. (Photo courtesy of Wikipedia.com/Fir0002/Flagstaffotos.)

invention. He will commence by breaking down your main claim into its component parts, grouping these into subclusters that he knows he will find easily in the prior art.

THE HUNT BEGINS

Now when you put your patent application together, you might have rightly thought that the examiner would be going bear hunting. But he does not. He takes your bear and breaks him down into his component elements—claws, big teeth, ability to stand on his hind legs, and so on.

Now the examiner knows that you have checked out all over the woods and you are pretty sure there are no other bears, but he does not need that. He just needs to find another animal with big teeth (e.g., a wolf), one with sharp claws (e.g., a raccoon), and another that can stand on its hind legs (e.g., a meerkat). Next comes the clever part where the patent examiner, in an act of interspecies breeding that would put Dr. Moreau to shame, combines the wolf, raccoon, and meerkat to arrive at, yes, your bear.

In a normal patent examination, there are typically two initial outcomes: the patent examiner actually finds a bear—i.e., an element of prior art that is so similar to your invention that it anticipates everything that you had claimed—or you will be faced with a miracle in cross-breeding that produces something very close to your bear.

Now sometimes the examiner does feel a bit of compassion and will admit that his animal is not quite as good as yours. For example, he might acknowledge that your bear has a better camouflage and is better able to hide than his



A raccoon (Photo courtesy of Wikimedia Commons/Jeremy Johnson.)

hybrid miracle. This is usually a hint that he is open to allowing you scope to focus your legal claims on this aspect of your invention.

In my own experience, I have noticed that often the aspect that an examiner hints at tends to narrow the scope of your claims and in some cases may even render your invention inoperable. Thus, you should be wary of such an offering from the examiner—often your patent attorney will not fully understand the engineering implications of these offerings, and so it is worthwhile to keep in contact with your attorney during the search and examination process. After all, for the patent attorney, any grant of claims implies success—he got you a granted patent. For the engineer, it is only worthwhile if the granted scope of claims can actually be put into practice.

“A gruffalo? What’s a gruffalo?”

“A gruffalo! Why, didn’t you know?

He has terrible tusks, and terrible claws,

And terrible teeth in his terrible jaws.”

—The Gruffalo by Julia Donaldson

BUILDING A GRUFFALO

As I have indicated, it is a very rare case where the patent examiner allows



A Gruffalo sculpture. (Photo courtesy of Lloyd MacKenzie, via Flickr @ http://www.flickr.com/photos/saffron_blaze/.)

a patent immediately and without restriction. I have only seen this happen a handful of times and I have been technical advisor on hundreds of prosecutions. The normal outcome of this first stage of the prosecution process is a detailed report, known as an *office action*, from the patent examiner, which rejects all of your claims, explaining why a wolf, a raccoon, and a meerkat can be interbred to yield an animal equivalent to a bear.

Naturally, you and your attorney are not going to agree with this opinion, and so the patent office allows you a few months to respond. Going through an office action is actually quite a time-consuming process as the examiner will often have provided very detailed arguments regarding individual claims.

Sometimes the examiner's arguments are pretty robust and you really have to look into his arguments surrounding each and every claim to find a chink in his armor. More often, however, there will be some misplaced reasoning in his crossbreeding process. You might feel, for example, that the DNA of a meerkat does not have the same number of chromosomes as that of a wolf or raccoon, and so such interbreeding is simply not possible. Or there might be an even more blatant incompatibility—after all, the result of this cross-breeding is going to be much smaller in size and stature than your bear and if that size is essential to its functionality, then it will not work as well as your bear. Or will it?

This is where you need to get your thinking cap on and work out a list of potential responses to the examiner. There is always more than one approach, assuming you put sufficient thought and background research into your original patent filing.

*“Silly old Owl! Doesn't he know,
There's no such thing as a
gruffal...?”*
...OH!”

*But who is this creature with
terrible claws*

*And terrible teeth in his terrible
jaws?*

*He has knobby knees, and turned-
out toes,*

*And a poisonous wart at the end of
his nose.*

*His eyes are orange, his tongue is
black,*

*He has purple prickles all over his
back...*

“Oh help! Oh no!

It's a gruffalo!”

—*The Gruffalo* by
Julia Donaldson

DISSECTING THE GRUFFALO...

Normally, you will come up with a handful of good arguments and then select the best of these approaches. It is important in your response to an office action to be quite focused, so it is unlikely that you will be able to present more than two or three counter-arguments so best to limit yourself and develop each of these fully.

Strategic thinking is important here as there may be an obvious compromise, but it limits the scope of your claims. So your best approach may not be your strongest argument. A good patent attorney will use the first office action to probe the examiner and try to figure out how much he is willing to give. Often in the first office action an examiner can be very broad in his interpretation of the prior art; he is also testing you and your attorney so do not be afraid to challenge his arguments.

One other thing your attorney is likely to do on a first response is to modify the main claim of the patent application. This is a formal action and it means you cannot return to the original claim set, but it can often provide a simple way to overcome the examiner's arguments. To return to our example, you might decide to restrict your bear to have no more than three sharp claws on each limb, whereas the raccoon has four sharp claws. So the bear delivers the same function, but with fewer claws. You have restricted your claim scope, but this might secure allowance without further objections from the examiner.

*“My favorite food!” the Gruffalo
said.*

*“You'll taste good on a slice of
bread!”*

*“Good?” said the mouse. “Don't
call me good!”*

*I'm the scariest creature in this
wood.*

*Just walk behind me and soon you'll
see,*

Everyone is afraid of me.”

—*The Gruffalo* by
Julia Donaldson

BACK TO THE WOODS... ?

So you have read the first office action and drafted a response to the examiner. Now you sit around and wait for a bit as he gets some time to review your arguments and come up with his response to them. Often he will do a new search, covering your new claims (if you changed them); he may offer counter-arguments to yours, or introduce new prior art documents. Occasionally, he will agree with you and move to allow your patent.

Around this time, either the examiner or your attorney is likely to propose a teleconference to discuss the case. Your examiner may want to explore with the examiner in what direction he should push his response to an office action; or the examiner himself may want to indicate to the attorney that he would be well-disposed to a certain approach.

I must admit that I am rarely invited to participate in these informal teleconferences, but they do seem to help resolve things more quickly, reduce the number of office actions involved, and tend to lead to an allowance of some of your claims. Maybe not exactly the claim set you really wanted, but once you have got that allowance, your patent attorney can say he has gotten you a granted patent and the patent examiner can mark his case as closed. And naturally, both attorney and examiner are primarily judged based on their success rate—the attorney on numbers of patents granted per quarter and the examiner with the number of cases he closes.

*“It's Fox,” said the mouse. “Why,
Fox, hello!”*

Fox took one look at the Gruffalo.

“Oh help!” he said, “Goodbye, little mouse!”

And off he ran to his underground house.

“Well, Gruffalo,” said the mouse. “You see?”

Everyone is afraid of me!

*—The Gruffalo by
Julia Donaldson*

HOW LONG IS A PIECE OF STRING?

At this point, we have probably spent nearly four years to get to a point where your patent is allowed—three years plus three to four months for a first office action, plus three to four months for a response, plus one month to arrange a timeslot for a teleconference and another two months to complete paperwork and issue a notice of allowance, followed by starting the formal process to finally grant the patent and have it registered at the U.S. patent office.

Now that is a fast case; it would not be unusual to have three to four office actions and corresponding responses. These could run for two to three years after the examination process starts. So, it is not uncommon to wait for five or more years before you even know that you have a granted patent and the scope of final claims.

GRUFFALO VERSUS BEAR?

Of course, once in a while you run into an examiner with a very rigid worldview and after multiple office actions your patent and all the associated claims will be rejected. In fact, not just rejected—it is a final rejection.

However, as with most things legal, this is not at all the end of the road because you can still request to make oral arguments with the examiner, complain to his boss via a preappeal process, or if all else fails, initiate a full appeal process. Patent examiners can often be quite awkward and will cling on to some prior art that is marginally relevant no matter how you try to present counterarguments. In such cases, a preappeal letter to the examiner’s supervisor can frequently restore reason and common sense to the proceedings.

Where all else fails, an appeal may be lodged via the patent office. Or, as an alternative, it is possible to appeal directly via a court of law. For an appeal to be successful, you must prove that the patent office applied the law incorrectly, interpreted the claims of the patent application wrongly, or applied the prior art in the context of the filed patent incorrectly.

On success of the appeal, the patent office may order that a patent be issued based on the application, or in the case of a court it may order that the patent office correct its examination of the application.

“Well, Gruffalo,” said the mouse. “You see?”

Everyone is afraid of me!

But now my tummy’s beginning to rumble.

My favourite food is – gruffalo crumble!”

“Gruffalo crumble!” the Gruffalo said,

And quick as the wind he turned and fled.

*—The Gruffalo by
Julia Donaldson*

CONCLUSION

This is only the beginning of the life cycle of your patent. You might want to extend and develop its scope, or it may be refined by new techniques as you move toward commercializing your technology. Your claim scope may have been restricted in a certain way by the patent examiner, but there may be alternative ways to restrict your claim set that you would also like to protect. You may also have other related patents that you would like to incorporate.

There are mechanisms to achieve these goals. However we have already been on a long and arduous trek through the woods. Hopefully, it has been a worthwhile and enjoyable one, but for now I think you might like to rest a little. Thus I will postpone a detailed discussion of these for a follow-up article.

“All was quiet in the deep dark wood.

The mouse found a nut and the nut was good.”

*—The Gruffalo by
Julia Donaldson*

REFERENCES

<AU: Please provide all references that are listed in the body text. Also, please include a reference for *The Gruffalo*, which is cited numerous times in the text.>

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