Five Ways Great Inventions Ended up with Not-So-Great Patents

This Patent Stuff and My Semiconductor Business – Part 33

Welcome to this post about patents and chips. Not a lot has been written about this combination, but there is a lot to know, especially for the innovators and entrepreneurs themselves. In this three-weekly series, I talk about various aspects, from a dual perspective of a patent agent and a semiconductor entrepreneur. If you like the article and read it on LinkedIn, give it a thumbs up, and/or click on Follow. If you like to work with us for your next patent, "contact us" info is on www.icswpatent.com. You can also subscribe/unsubscribe for short email alerts when the next post is available.

Some of the things you see when digging into the prosecution history of chip patents are so outrageous that they bubble up from time to time, meaning, I mention them in posts in relevant places. But I've never listed them systematically. As a practitioner you meet inventors of varying degrees of geniality, but they seldom mess up. They do their jobs, and when they know they've done something that they haven't seen from somebody else before, they tell their bosses. Their bosses send them to us patent practitioners to get a patent. Things are not always patentable, and not always new. It happens that a truly brilliant idea was patented several years before by somebody else who was equally brilliant, but earlier. Sometimes you can still squeeze a patent out of it, and sometimes not. But when an invention is truly brilliant, and first of its kind, the practitioner better be ready for the job. And be the right match.

Of course, I'd be the last one who'd want to scare off an inventor or an entrepreneur. But let's go through five of the worst ways, preventable ways, that I've seen a brilliant invention end up with a worthless patent. Knowing these, you should be armed to prevent that it happens to you. It's hard to prioritize them, because their effects can all vary considerably. So, they're in no particular order.

The Application Patented the Wrong Thing

This case happened in a company where a co-inventor wanted his bonus for filing a patent, but had already lost trust in the company he worked for. Also, the main inventor was a contractor, who'd have no rights and no bonus, whereas the co-inventor as an employee could get the bonus. They switched places (the order of inventors listed has no legal consequence). The company worked with an outside patent attorney who listed a broad range of experience, including consumer electronics, semiconductor devices, and computer systems. The invention was for a mixed-signal circuit on an IC.

The main inventor, although listed second, wrote up a description. The co-inventor made drawings. The attorney changed some words and phrases, and added claims. Only the co-inventor reviewed the draft, and it was filed and eventually allowed. When the main inventor finally saw the patent, half a year after it was issued, he commented that only one of the later claims came somewhat close to the actual invention, but missed relevant parts of it. He correctly concluded that he'd be free to use the real invention in other designs.

What went wrong? First and foremost, nobody cared. The practitioner took the description at face value, and never attempted to fully understand the invention, and check his understanding with the inventors. He made a guess, and guessed wrong. The co-inventor, who had reviewed the draft, saw that the description matched the original description provided by the main inventor, and saw no issues with the claims (he may have skipped reading them). He approved the draft. In this particular case, the main inventor would have known something was wrong, because he had much more hands-on experience with claim strategies. But he had never been asked to review.

This kind of problem can be reduced by asking at least the main inventor(s), to specifically review the application's claims.

The Patent Protected the Applicant from Its Customers

This was another sad case. It happened to a foundry (the patent's applicant). Again, this was a case where the practitioner didn't understand the invention. The foundry has a special technology for wireless chips that distinguishes it from other foundries. That special technology wasn't relevant for the invention, although it helped the circuit's performance. The practitioner wrote a claim set for the invention, and, reasonably, wrote a dependent claim that included the foundry's special technology.

When an office action came, the practitioner didn't really know how to respond to it. In those cases, he should have contacted the inventor and presented alternative responses and ask for guidance, or he should have contacted the inventor and just discussed the issue. He didn't. He responded to the office action arguing that the foundry's special technology had not been disclosed by the prior art, and should therefore be allowable. He moved the foundry's special technology from the dependent claim into the independent claim and asked the examiner to reconsider his rejection.

That was a huge mistake. By including the foundry's technology in the independent claim, he made the technology an essential part of the claimed invention. In other words, anybody who implemented the invention without the special technology would be free to do so. Unfortunately, this 'anybody' includes each one of the foundry's competitors. And the invention works fine without that technology. The only people who'd use the technology were the foundry's customers. As if the foundry would want to stop them from using the invention!

In this case, none of the inventors was to blame. The patent practitioner did not care about the business objectives of the foundry. Unless the foundry's patent strategy was focused on volume only, this practitioner should not have worked for this customer. Problems can be prevented when companies have frank discussions with their patent firm about business objectives and IP protection strategies. Patent firms need to disseminate that information internally.

A Feature That Was Essential for the Invention Was Not Described

Many of the most brilliant chip design inventions are difficult to understand. It's a fact of life. It is also what makes electronics challenging, interesting, and fun. A patent practitioner involved in chip design inventions almost always finds

himself or herself having to learn new things in preparation for writing a new patent application. And always having to analyze an invention to the core to find out which of its elements are essential.

Practitioners who work on a broad range of inventions other than chip designs are not necessarily used to that. Many non-chip inventions are straightforward and easy to understand. There is some thingy with a bunch of attributes, and you claim the thingy, with a couple of attributes, at least one of which you guess nobody may have claimed before in this combination. You put all the other attributes in dependent claims. When an office action comes that rejects everything you may have to hustle the attributes until you have a combination in your independent claim that isn't in the prior art. When the examiner believes you, you're done.

The basic way of working for a chip design patent application is not necessarily different. But you have to be much more careful, because you can only claim stuff that you have clearly described. You cannot add new information.

In this particular case, the practitioner hadn't done a thorough analysis of the invention. Many practitioners, including otherwise really good ones, believe that it is inevitable that there is stuff you won't understand and that you have to rely on the inventors' say-so. Many clients believe that it is inevitable that patent practitioners don't fully understand the invention. In my opinion, both believes are wrong, and I urge you to be stubborn about it, too.

When an office action came, with rejections for all claims, the practitioner contacted the inventors. They talked it through. The practitioner finally started understanding the invention. He now understood that his base claim, the independent claim, had to include a feature that was mentioned in the detailed description, but not described. He had to add the feature in his independent claim, but knew that without further details it would be rejected again. The problem is that you can't patent something that is not fully described. Since he wasn't allowed to add those details because they had not been described, the practitioner had no other option than to find a legal loophole. He created some vague language that he could push through, and the examiner had no other option than to allow the patent with the newly amended claim.

Pyrrhus, King of Epirus, 297-272 BCE

The patent was issued, but it was a victory that reminds of King Pyrrhus. The patent was worthless because competitors can get around the inserted vague language and use the essential attribute that wasn't properly claimed.

You can prevent this sort of situation by insisting that your patent practitioners understand each invention and review their draft application with the inventor(s). Make sure that the inventors know that the practitioner must understand.

Only One Implementation Was Patented

You may have read this a hundred times by now. If not, consider this. An idea that is not superficial may be implemented in many different ways. A patent will only protect what was claimed as the invention. Although formally it has to be something with utility, and therefore something that is real or that could be real, the patent process has no formal procedure to check if something is real. There is no formal process to check if something works, or could possibly work. And there certainly isn't a formal process to review what the broadest invention could be. If I apply for a patent for a

flying carpet with a "Made in Utopia" label, then the patent is not going to protect all flying carpets for me, but only the ones that have the "Made in Utopia" label. If I patent an electronic circuit made of 5 or more NMOS transistors, then anybody can make essentially the same circuit with 5 or more PMOS transistors, without anything to fear from me. If I sue them, I'm going to lose, because their implementation is not covered by my claims.

Now, these examples are simple. In real life, the same thing happens quite often, but not necessarily so obviously. A patent must describe not just how your inventor did it, it must also describe and claim ways that your competitors can make the same thing while making different implementation choices.

The Practitioner Used Vague Language

There is actually a law that says you can't do this. The statute, 35 U.S.C. 112, says that the invention must be clearly described in a way that enables anybody to make it (my words here, feel free to Google it for the exact text). Yet, claims often include language that is vague enough that you wonder what in the world it could possibly mean. The problem is of course that the difference between clear and vague is a sliding scale by itself. If you use the word "about", then almost certainly a claim will be rejected. But there is plenty of vague language that makes it into actual patents. Personally, I hate those. But litigators love them, because it allows them to reinterpret the meaning of a claim during a lawsuit. Thus, practitioners who are also litigators may like to use vague language. There are other reasons why a patent may end up with vague language. For example, some companies want to have as many patents as possible and they don't necessarily care about the quality of the underlying inventions. They use their portfolio defensively: if they ever get accused of an infringement, they will countersue and accusing you of infringing 150 of their patents. You can't possibly win that kind of fight unless you can throw even more dung at them. So those companies patent everything and the kitchen sink, not caring whether there is an invention or not. A patent practitioner working on such an application finds himself or herself in a situation where you can't get a patent on the technical merits. He or she checks the application to see if there is any word, phrase, or expression that the quoted prior art doesn't use—regardless of its meaning, or lack thereof. Once such verbiage is found, it is worked into claim 1 and the other independent claims. Voilà, the independent claims are different than the prior art, and the patent is granted.

Too bad that it doesn't mean anything anymore. Litigators will be delighted, though. Just remember their hourly rate.

Upcoming:

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