CHAPTER 1
The Inventor

The inventor is an almost mythological figure. Think of Albert Einstein, Alexander Graham Bell, Leonardo da Vinci, and many others. Besides the big names in science and technology, you will find in the "inventors club" many well-known people who advance and modernize our lives and, in doing so, improve its quality. The inventor is the one who will take us to the road that leads to the development of an invention and, as a result, to a patent that protects it. It is, therefore, appropriate to start our journey to the land of patents by allowing the inventor to introduce himself and his world to us.

Simplistically, we can define the inventor as "one who contributed to an invention that is the subject of a patent application." Inventions can be made by a sole inventor or by joint inventors. A joint inventor is an individual whose contribution to the invention is substantial and without which the invention would have looked different. A patent application may name a number of inventors, who may have contributed differently to it. It is possible, as an extreme example, to have a patent application with, say, 30 claims and two inventors, in which the first inventor invented the subject matter claimed in 29 claims, and the contribution of the second inventor was limited to the single remaining claim. Regardless, they will both be the inventors named in the patent application. For example, let's assume that the invention is a novel dispensing machine and the main inventor designed all the electronic elements and the mechanical parts that make it work smoothly. Those elements are claimed in claims 1

through 29. However, the second inventor discovered that since the machine is to be located outside, it is expedient to paint it white so it doesn't heat up too much during the day. This is important because heat may cause some of the mechanical elements to malfunction. Claim 30 will claim the dispensing machine of claims 1–29, which is white in color.

Being mentioned as an inventor does good to your ego (and, in some cases, also involves remuneration). Therefore, it is not uncommon to get requests to mention a person as an inventor in a patent application because "he worked hard on the project and it would be impolite not to include him." This is common practice with scientific articles in academia, but doing so in a patent application is courting trouble for a number of reasons that will become apparent as we proceed in peeling the many layers of the patent system.

As a rule, the rights to a patent application—and to the invention—are assigned to the patent applicant by the inventors, who are the original owners of what they have invented. If the applicant and the inventor are not the same person, the rights can be assigned to the applicant by the inventor, as a matter of law, if the inventor is an employee of the assignee (more on that later) or as a result of an agreement between the inventor and the assignee. However, in some cases, the development of an invention is done by a team that includes persons who are not employees of the applicant and who, as such, are under no obligation to assign their rights to him. In such cases, it is even more important to be precise in determining the identity of the inventors.

Please make a note of this: **A corporation cannot be an inventor; only an actual person, with a brain, can make an invention.** You wouldn't believe how often this simple truth has to be repeated to people who think they have found a clever way around the need to mention an inventor.

Then we have to deal with the inevitable paperwork. When filing patent applications in different countries, the inventors are often required to sign formal papers that include declarations as to their status as inventors and deeds of assignment transferring their rights to the applicant. If, after the filing of a patent application, it turns out

that the list of inventors was wrong, this may cause substantial costs and undesirable administrative complications.

Moreover, a willful false statement on the part of the inventors, omitting the name of a rightful inventor or adding someone who is not an inventor to the list of inventors for a specific patent application, may have serious consequences and should be avoided at all costs.

How, then, should we determine who is and who isn't an inventor? The answer, at least on the first level, is not complicated: as explained, an inventor is someone who made a real contribution to the invention. This contribution is not measured "quantitative" but rather "qualitative": one inventor may have invested one hour to come up with an idea and to plan how to carry it into practice, while a technician who follows the inventor's instructions may have to work for months in a laboratory to turn that idea into a practical result. In this example, only the first person is the inventor; the technician is not an inventor, because he did not make any original contribution to the invention, in spite of the long hours that he worked at the project. However, if during his laboratory work, the technician comes up with an idea that changes or substantially improves the direction in which the invention is developing, it is possible that the technician has contributed to the inventive process and that his name will, therefore, have to appear in the list of inventors on the patent.

Since the question of whether a person who participated in a project made an inventive contribution is not always a simple one and is often influenced by emotional and personal considerations, the applicant would be well advised, whenever questions arise in this respect, to place the task of investigating the names of the inventors in the hands of a neutral person, who can make that determination on the basis of professional considerations that are not tinged by foreign influences. In any case, one should not be tempted to include in the list of inventors individuals who didn't make an inventive contribution, just to avoid confrontation or to make someone happy, because this mistake may come back to haunt him in the future.

CHAPTER 2
The Inventor Who Knew Too Much

Every patent attorney is sick and tired of having his clients complain to him in these words: *"I don't understand how they gave him a patent on that. It's trivial!"* This sentence often punctuates the unpleasant discovery that we had an important invention in our hands some time ago, and while we were busy sitting on our fannies, contemplating the universe, a competitor got a patent on it. This always reminds me of John Lennon's clever saying: "*Life is what happens to you while you're busy making other plans."*

It's ironic that, in many cases, this should have happened because the speaker excels in his field. This problem, which I like to call "the experts syndrome," is a result of the lack of ability of an expert to detect the value of the intellectual property (IP) he has developed.

You don't need to be an expert in patent law to know that you cannot obtain a patent for a development (be it a product, a process, or a method) that is "obvious," because it will lack "inventive step," which is a basic requirement for patentability (more on inventive step in Chapter 4). What happens, then, is that when the expert feels that he got the result easily, or if he immediately saw the solution to a problem that was put to him, he may feel that whatever he developed is not worthy of a patent because he didn't work "hard enough" on the way to creating it. This is where the big mistake lies: the yardstick

by which the inventive step—in other words, the non-obviousness—of the invention is measured is based on the difficulty encountered by "a man of ordinary skill in the art," and what is to be determined is whether such an "ordinary" man (not an expert) will view the invention as "obvious."

Defining a person of "ordinary skill in the art" is a problem in itself, because it is not a universal definition that is applicable across technologies and automatically in each case. A comparable problem would be defining the actions of a "reasonable person." For instance, would it be "reasonable" to jump off a bridge? Well, if you are a bungee-jumping instructor, it probably is, but not so much if you are a Wall Street operator who's had a bad day.

Without defining who is a person of ordinary skill in the art in respect of a specific invention—a person who is less than an expert and more than a clueless beginner—it is impossible to determine whether that invention possesses inventive step. Surprisingly, despite all the mountains of paper that were used to write about this issue by different patent authorities and courts all over the world, in most fields, there is a relatively uniform understanding of what constitutes inventive step. However, when coming to examine a specific invention, it is still necessary to apply a set of considerations and to look at the invention from different points of view. An expert, who is the inventor, cannot fairly be expected to be able to judge his own invention from a distance, at least because of three reasons: first of all, he is the inventor and, therefore, his point of view is too close to the invention. Second, he is, as said, an expert, and very few experts are able to take a step back and turn themselves, even only for a moment, into a man of "ordinary skill in the art." Third, the inventor usually lacks the experience and the broad techno–legal approach required to place the invention in the right light relative to other inventions in the same field.

Because of all these reasons, an expert in his field must abstain from judging his own invention and must place this task in the hands of someone who, from a distance, can take all the required considerations into account. In doing so, he can reduce the danger that valuable inventions will go wasted. This danger is very tangible

today in many high-tech companies, be they small start-ups or established companies, that often wake up to the reality that they had the key to an important development but refrained from protecting it and, thus, allowed a competitor to reap its benefits.

From all the above, we now understand that an invention that at the time of filing a patent application would appear to be obvious to a person of ordinary skill in the art, lacks inventive step and, therefore, is not patentable. We don't want to waste resources on unpatentable inventions, so we need a way to screen them out. In theory, we have a simple solution: whenever we are in doubt as to whether our invention is patentable, we can go to a person of ordinary skill in the art and ask him. However, we will have a hard time finding such "ordinarily skilled person," who should be someone who understands the relevant field sufficiently without being an expert in it. He must be capable of functioning in the relevant technological field but must not be endowed, God forbid, with an inventive spark.

So what happens when the invention is interdisciplinary? Let's take, for instance, a computer-operated medical device that is to be used for a complex surgery. The developing team will most likely include a physician, a mechanical engineer, an electronic engineer, and a software engineer. The resulting contraption may superficially look pretty much like other existing devices, but the genius is in the integration between the internal subsystems that make the device special. In this situation, there is no single person who is able to judge the inventive step embodied in the device, because it is constructed of elements coming from different fields. Therefore, it has been ruled that the "person" of ordinary skill in the art can also be a team of skilled persons who collectively judge the obviousness (or not) of the invention.

To make this already complex equation even more complicated, beside the conclusion of our virtual ordinarily skilled person, to reach a determination, we need to also take into account legal tests based on various facts. A good example is the "long-felt need" test, according to which if it turns out that there was a need for the invention and it was not met for a long time, this is an indication of the existence of inventive step. Support for inventive step can also be found in the

substantial commercial success of the invention. These are not the only tests, and each single test is not conclusive, but we need to look at the invention from different angles and weigh all factors carefully and then, perhaps, we can reach a conclusion.

In various places in the world, the question of inventive step is determined by different kinds of people, some of whom have legal but no technical education, who have learned to view the approach of the (virtual) person of ordinary skill in the art through the eyes of the technical experts. Others have a technical background and have learned with time to apply the legal tests properly. Taking into account how different the patent systems can be in different countries, it is sometimes amazing to find that in different jurisdictions with different patent cultures, in many cases, similar conclusions are reached in this complex question. It turns out that it is possible to practice and learn how to address this issue in many different cases and technical fields and, eventually, to reach an in-depth understanding of this important aspect of patent law. However, arriving at the correct conclusion requires substantial experience and a deep understanding of difficult and complex questions. This is why we must be very suspicious of opinions on obviousness and inventive steps that are expressed by hobbyists, no matter how bright and smart, because it is impossible to reach a deep level of understanding of what constitutes inventive step without dealing with it in detail for a long time.