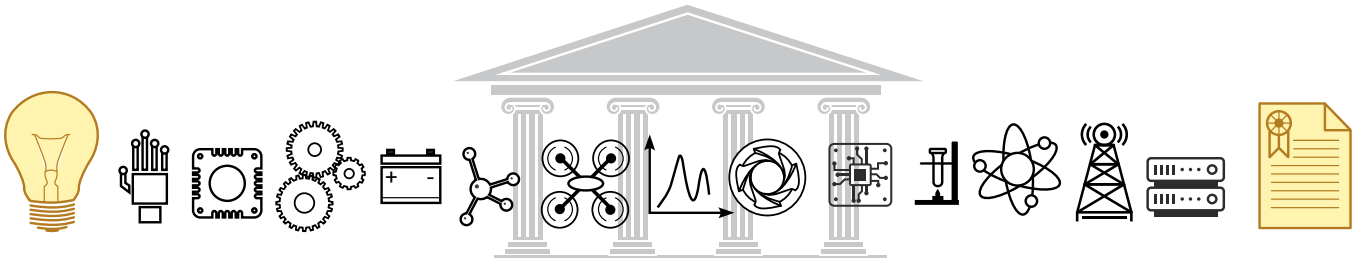
Looking at Patent Law: Why Are Patents Often Referred to as Intellectual *Property*?

by E. Jennings Taylor and Maria Inman



The subject of this column is patents, inventions, and inventors. According to U.S. law,[1] patented inventions may be afforded the right to exclude others from

"[M]aking, using, offering for sell or selling the invention throughout the United States or importing the invention into the United States. ..."

Note that a patent does not give one the right *to use or practice* the patented invention; rather the patent provides a right *to exclude others from using or practicing* the subject invention. Additionally, this right is for a period of 20 years from filing for utility patents. And finally, the rights associated with U.S. patents are limited to the U.S.

Patents are often referred to as a type of "intellectual property," the others being copyrights, trade secrets, and trademarks. Interestingly, U.S. law stipulates[2] that patents

"[S]hall have the attributes of personal property. ..."

A helpful analogy is to compare a personal residence or real property to patents (Fig. 1). Similar to real property, a patent is a "social artifact" in it is also "created" from the public domain.[3] Specifically, real property has an owner or owners and may be sold and/or purchased subject to the terms of a contract. Similarly, patents have an inventor or co-inventors. If the inventors are employed by a company, university, or the federal government, they generally assign their rights in the subject invention to their employer via an employee "intellectual property rights" agreement. If the inventor or co-inventors are independent or not subject to an intellectual property rights agreement, then they are the assignees of the patent. Patents may similarly be sold and acquired by their assignees. In addition, the owner of real property may rent the property subject to the terms of a rental or lease agreement. These terms generally include the length of the lease, the frequency of payments, and who is responsible for the utilities and upkeep of the real property. The assignee of a patent may similarly license the patent subject to the terms of a license agreement. These terms generally include length of the license, the frequency of the payments, and the basis of the payments may include a percent of product sales or of manufacturing savings. In order to maintain ownership, taxes must be paid to the municipality where the real property resides. Similarly, for a patent to remain in force the assignee must pay maintenance fees to the U.S. Patent & Trademark Office. If these taxes/maintenance fees are not paid, the real property or patent are repossessed or abandoned, respectively. As part of the right to "exclude others" noted above, the owner of real property may collect damages for trespassing in a court of law and the assignee of a patent may collect damages for infringing the patent in a court of law. And, the owner/assignee may use the real property/patent as collateral for a mortgage or to secure a loan or financing, respectively.

Real Property		Intellectual Property
Δ Owner	↔	Δ Inventor/Assignee
Δ Sell/Purchase	↔	Δ Sell/Acquire
Δ Charge Rent	↔	Δ Charge License Fee
Δ Pay Taxes	↔	Δ Pay Maintenance Fees
Δ Repossessed	↔	Δ Abandoned
Δ Trespass	↔	Δ Infringe
Δ Mortgage	↔	Δ Loan/Financing
Δ Deed	↔	Δ Claims "metes and bounds"
Δ Survey/Title Search	↔	Δ Examination/Prior Art Search

Fig. 1. *Analogous terms in real property and patents.*

Patent law requires that a patent contain a specification or written description of the invention and[4]

"[C]onclude with one or more claims particularly pointing out and distinctly claiming the subject matter ... as the invention ..."

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As noted by former Judge Giles S. Rich of the Court of Appeals for the Federal Circuit (i.e., the patent court)[5]

"The name of the game is the claim."

Whereas the deed defines the boundaries of ownership of real property, the claims of a patent define the boundaries of the patent. In the case of real property, modern surveying methods lead to precise determination of the boundaries of the real property. In the case of a patent, the boundaries are often referred to as the "metes and bounds" of the patent. The "metes and bounds" description is derived from an early system of defining the boundaries of real property, where the boundaries are described by the local geography of the parcel of land. For example, begin at the oak tree at the fork of the creek and proceed towards the large granite rock; after twenty paces turn due east and proceed towards another oak tree; after fifty paces … and so on until the boundaries of the property have been "defined." By definition, the "metes and bounds" is a less precise way of describing the boundaries and is appropriate for describing the boundaries of a patent in intellectual property space.

The final informal analogy between real property and a patent is related to ensuring that there are no legal encumbrances in order to present a clear title to the real property or to the issued patent. Specifically, when a prospective owner initiates the purchase of a parcel of land, a survey/title search is conducted for real property to ensure there are no previous owners or legal encumbrances on the real property. When an inventor/assignee files a patent application, an examination/prior art search is performed to ensure there are no previous owners of all or part of the claimed invention. In both cases there are associated fees in the form of "closing costs" and "filing and issue fees" for real property and patents, respectively.

Figure 2 depicts the examination (i.e., prosecution) of a patent application using the real property analogy. In Fig. 2a, the claims representing the "metes and bounds" of the patent application are defined in the public domain. In Fig. 2b, neighboring prior art references or disclosures are identified by the examiner during the prior art search. These prior art references generally include patents, published patent applications, and other publications. In Fig. 2c, because there is no overlap in the boundaries of the neighboring prior art and the patent application, the patent issues as claimed.

As noted above, the purpose of examination of the patent application by the U.S. Patent & Trademark Office is to ensure that there are no legal encumbrances or previous owners of any or all of the invention claimed in the patent application. There are two concepts that determine whether or not an invention is patentable. First, the invention must be novel and not anticipated by the prior art.[6] A patent application rejection due to lack of novelty is generally based on a single prior art reference with the same or "equivalent" claims of the patent application. Second, the invention must be non-obvious to one of "ordinary skill in the art."[7] A patent application rejection due to obviousness is generally based on a combination of two or more prior art references. (As a cautionary note, technical obviousness and legal obviousness are very different and will be the subject of a subsequent *Interface* column.) A rejection by the U.S. Patent & Trademark Office based on lack of novelty and/or obviousness is generally stating that if the patent application were to be issued as claimed, the resulting patent would "trespass" on one or more prior art references. In this case, either the scope of the claims of the patent application is limited by amending the claims to overcome the prior art reference or references or the patent application is abandoned.

Figure 3 depicts the real property analogy of the examination (i.e., prosecution) of a patent application which is modified to overcome the prior art rejection. In Fig. 3a, the claims representing the "metes and bounds" of the patent application are defined in the public domain. In Fig. 3b, a prior art reference overlapping part of the claims of the patent application is identified by the examiner during the prior art search. In this case, the scope of the claims of the patent application are limited by amendment to overcome the prior art reference and the patent issues with the claims of reduced scope as depicted in Fig. 3c.

A conceptual example of the situation described in Fig. 3 could be as follows. Assume a first inventor invents a television (TV) using black and white display technology. The inventor contacts a professional, who could be either a patent attorney (who is admitted to the patent bar and holds a law degree) or a patent agent (who is admitted to the patent bar, but does not have a law degree) to discuss the potential patentability of the invention. The patent attorney determines that the invention meets the basic criteria of *usefulness* required by the patent statute[8]

"[U]seful process, machine, manufacture, or composition of matter … may obtain a patent …"

The patent attorney conducts a prior art search and reviews the prior art with the inventor. Based on this review, they believe the invention is both novel[6] and non-obvious.[7] The patent attorney prepares a patent application describing the TV with a black and white display. Since they did not identify any related prior art, the patent broadly claims a TV, without limiting the TV to a black and white display. The patent application is submitted to the U.S. Patent & Trademark Office, the examiner conducts a prior art search, and "allows" the TV patent to issue as filed.

Subsequent to the first TV invention, assume a second inventor invents a color TV. The second inventor contacts a different patent attorney who determines that the invention meets the basic criteria of *usefulness*.[8] They conduct a prior art search and believe the invention is both novel[6] and non-obvious.[7] The patent attorney prepares a patent application describing the TV with a color display. Since the patent attorney and inventor did not identify any related prior art, the patent broadly claims a TV, without limiting the TV to a color display.

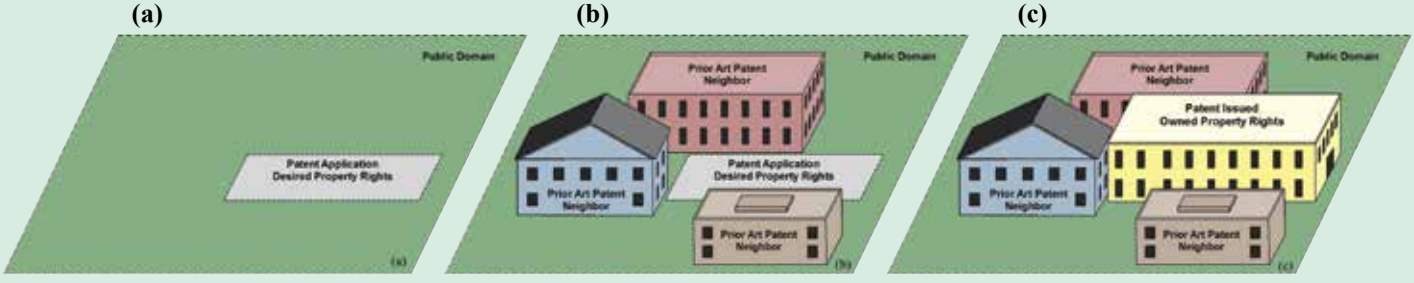

Fig. 2. *Real property analogy of the examination of a patent application with neighboring art.*

During a prior art search by the U.S. Patent & Trademark Office, the examiner discovers the prior art patent of the first inventor claiming a TV and rejects the patent application of the second inventor based on a lack of novelty[6]. The patent attorney reviews the office action with the second inventor and agrees with the basis of the examiner's prior art rejection. Recall that although the first inventor of the prior art TV patent was only making TVs with black and white picture tubes, the first inventor had broadly claimed a TV, and did not limit the claims to a TV with a black and white picture tube. Therefore, the "metes and bounds" of the color TV patent application of the second inventor overlapped the metes and bounds of the prior art TV patent of the first inventor. Based on the advice of the patent attorney, the second inventor agrees to amend and limit the claim to a TV with a color picture tube. By doing so, the amended patent application limited to a TV with a color picture tube no longer overlaps the claims of the prior art TV patent and issues as a U.S. patent.

Recall from above that a patent gives one the right to *exclude* others from practicing the invention but not the right to practice the invention. In this case, the first inventor of the prior art TV patent can continue making TVs and selling them in the market place as long as they do not use the color picture tube covered in the color TV patent. Specifically, the first inventor can only make TVs with a black and white picture tube. In contrast, the second inventor of the patent claiming a TV with a color picture tube could not practice his/her patent because that would infringe on the prior art TV patent, which broadly claimed a TV. In legal terms, the inventor of the color TV patent does not have the "freedom to operate" regarding the patented color TV invention. A likely outcome of this situation is a cross license by the holders of the two patents in order to fully exploit the much bigger color TV market. In fact, this is precisely the purpose of the U.S. patent system[9]

"[T]o promote the progress of science and the useful arts …"

In summary, patents have a number of attributes analogous to real property. This analogy provides a basis for understanding the patent application and examination process. In our next *Interface* column, we will briefly discuss the constitutional basis of the U.S. patent system and the distinction between the inventor/co-inventor of a patent and the author/co-author of a journal publication. In a subsequent column, we will discuss the obviousness rejection and some strategies to overcome such rejection.

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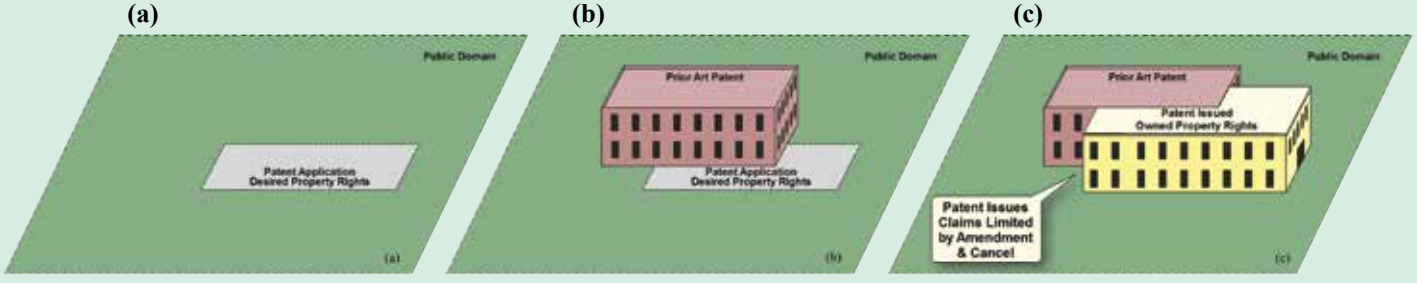

Fig. 3. *Real property analogy of the examination of a patent application with prior art rejections.*