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What Are Patents Worth?

H. A. Toulmin

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By H. A. Toulmin, Jr.

The patent-appraisal problem is just beginning to be appreciated. The value of competent patent appraisals based upon provable evidence is not only of importance in tax work, but is of increasing moment in the establishment of values for consolidations and sales of industrial properties. A patent appraisal is vital as a basis for the granting of licences and cross-licences and for the formulation of royalty agreements.

The recent decision of the supreme court in the General Electric case has opened the door to licences and cross-licences under important patents with the accompanying provision for the maintenance of prices legally. It is the only legal method of price maintenance for manufacturers.

Consequently, the value of patents as a weapon of competition and as a basis of agreement with competitors has vastly increased. Accurate patent appraisals are necessary in order to determine the proper licence fees for such cross-licences and as a basis for the establishment of prices which can be fairly maintained without the violation of any economic law.

REASONABLE ROYALTIES

The courts for a considerable period have been gradually formulating a set of rules as to the proper return upon inventions. Such returns have been denominated as "reasonable royalties." A reasonable royalty is such a payment for the monopoly granted by patent property that a prudent business man would pay in order to enjoy the monopoly and the extra privileges under the patent, and at the same time make a reasonable manufacturing profit out of the venture.

In arriving at reasonable royalties the courts have selected a per cent. of the sales price. Usually it hovers around 20 per cent. but there are many exceptions to this rule in certain special industries. In the case involving a Ford shock absorber which sold for $6.25, the court awarded a reasonable royalty of 50 cents per shock absorber. The cost of manufacturing the shock absorber was $1.25. In another case a court awarded a 20 per cent. reasonable royalty on a radio tube that sold at $4.00. A New

York court awarded a reasonable royalty of ½ cent a pound on powdered milk which was sold at a profit of 2.17 cents a pound.

A Chicago court, in a furnace case, allowed a royalty of $21\frac{11}{100}$ per cent. on the sale price of a furnace attachment. In a case of a machine for making iron pipe, an Ohio court awarded $25,000 royalty for the use of the machine which had been doing $677,000 of business. In a toy case where a velocipede, made by a Wisconsin manufacturer, sold for $3.50 with a net profit of 90 cents, the court found that a reasonable royalty was 40 cents. In a rubber-tire case, a western court found that 5 cents a pound of the rubber used in an infringing tire was a reasonable royalty. The profit per pound was 6.7 per cent. A number of royalty agreements were found ranging from 5 cents up, and the court found that 5 cents a pound would be a reasonable royalty.

In an interesting case on the Pacific coast where a patented pavement was involved and licensees were licensed so that they could make a profit of 45 cents a square yard, the court awarded a reasonable royalty of 25 cents a square yard. As an indication of patent values the courts seek for patent licences that have been granted. Take the case of an automotive accessory where licences were granted to competitors at a stipulated rate on condition that the purchasing automobile companies would give not less than 50 per cent. of their business to the licensor, while the purchasing automobile company would be permitted to buy the other 50 per cent. from some licensed source in order to have two separate sources of supply.

The licence fees in such cases are not the only return from the licensees; the licensor also derives profit and advantage by having such profitable business assured to it, consisting of 50 per cent. of the requirements of the purchaser. Such profits are due in part to the setting up of production schedules and the decrease in sales expense.

In arriving at these reasonable royalties the courts have taken into consideration the volume of the business, the spread between cost and sales price, the requirements of overhead in that particular industry and the type of sales expense involved, and so adjust the reasonable royalty that it is a tax which can be safely placed upon any business and still permit it to earn the ordinary manufacturing profit.

THE LICENCE

One evidence of patent value is the income derived from the licences that may have been granted. It is a mistake in appraising patents merely to take the amount of money specified in the licence as the measure of value of the patent. There are other factors, sometimes of even greater financial importance, which reflect the true value of the patent.

For instance, take the case of a manufacturer of water wheels. Assume that such a manufacturer has sold a number of infringing water wheels which have been placed in power houses under large masses of concrete, and the electrical generating equipment has been installed above these hydraulic turbines. In such circumstances an injunction against this turbine manufacturer's customers would work great hardship not only upon the customers but upon the communities which they serve. If such a suit is settled by his licence agreement, it is obvious that the amount of money paid by the licensee manufacturer represents more than the value of the patent.

ECONOMIES AS EVIDENCE OF PATENT VALUE

Savings in factory space, in investment, in inventory, in labor, increased safety of employees and reduction of insurance premiums and accident recoveries, all may be indicative of patent values.

A careful analysis of manufacturing costs, of the space occupied by equipment of the improved type compared with the old, of the improvement in quality of the product and of the decrease in losses from rejections should be made by the appraiser of patents.

Take the excellent illustration of this situation in an artificial-silk factory. The decrease by an improved patented process of the fire and explosion hazard, and the increase in the stability of the product by reducing the care necessary in handling it were directly reflected in the costs. The difference between the old process and the new patented process was an income value directly attributable to the new patent covering the new and safer process.

Consider the case of the production of synthetic alcohol as distinct from the alcohol made directly from the wood. The old process required elaborate distillation equipment and vast sources

of natural raw material. The utilization of a purely synthetic process reduced the amount of equipment, the extent of the buildings and the inventory in raw material so effectively that a marked difference in costs was immediately effected. More important still, the value of the patent was indicated by the fact that with the synthetic product competition from abroad could be met, which the old industry using the natural product would have been totally incapable of even approaching in price.

If the new patent would thus result not only in the saving of cost but in making it possible to meet competition, its value could be indicated in the same terms as the value of the entire industry.

STUDY OF THE PRIOR ART

It is a common mistake to regard a patent as an independent entity. To value a patent it is necessary to know the patents that have been taken out before it appeared. Its broad terms must be interpreted in the light of the history of other previous patents in the same art. The claims that it makes must have subtracted from them the store of common knowledge that is open to others in order to find out what is the net monopoly to which the patentee is fairly entitled. Hence, to investigate and appraise patents it is necessary to know thoroughly the previous advances in the industry as shown in United States and foreign patents and in the technical literature of one or more countries where the particular industry has flourished.

These prior patents and the prior literature should be obtained and studied and carefully valued in order to determine what is the real advance in the art that is attributable to the patent under appraisal.

Then, the commercial value of this particular patent can be determined from the evidence at hand, the cost records of the company and the competitive conditions that surround the industry.

ACQUIESCENCE IN THE PATENT MONOPOLY

The value of a business can be no more effectively proved as attributable to a particular patent than by the practical tribute paid to the patent by the rest of the members of the industry voluntarily staying out of the field that it covers.

I recall an excellent instance, where the manufacturer of an improved type of label has enjoyed for many years a perfect

monopoly. The business of this label manufacturer is founded upon a patent. No other manufacturer, in making labels of various kinds, has attempted to invade this particular field even though it is not one that presents any technical difficulties in manufacture. There are no special sales problems in the field.

Confronted with such a condition, the appraiser of the patent in question would be fully justified in attributing the entire profits of that business to the patent, less the normal return upon capital and equipment invested.

PRORATING OF PATENT VALUES: MULTIPLE PATENTS

Another proof of the assertion that patents do not stand alone is found where a company owns a number of patents, each one of which is relatively narrow in itself; but when all the patents are put together, each monopolizing its own part of the business, the composite group presents a very formidable array.

Each patent may be likened to the post of a fence surrounding a piece of property; a single post or a single patent would be ineffective for protecting the property, but the coöperative effect of all results in a fence of no mean proportions.

Take the case of an ice-cream-cone machine or a bottle-making machine or a cash register. There may be dozens of inventions and patents covering them necessary to make a complete, composite, complicated machine. Each patent in itself may cover only one independent feature of the machine. The problem often is how to appraise one or more of these patents.

If savings can be directly attributed to the improved feature of the patent under appraisal, the problem is relatively simple; but under conditions where this is not true, the following plan is often necessary.

First, assume that each one of the patented features requires about the same amount of machinery, factory space and overhead cost to insure its incorporation in the machine, in proportion to its actual cost, as that cost bears in relationship to the cost of the whole machine.

Second, the following steps should be taken in the appraisal:

1. The total value of the investment of the whole business should be obtained.
2. The total cost of the machine should be obtained.
3. The percentage of cost of the patented part which is being appraised should be determined with respect to the entire cost.

4. This per cent. should be taken as the measure of the investment which was authorized to produce the patented feature in the machine.
5. The same per cent. of the total profit on the machine should be utilized to find the total profit attributable to parts containing the patented improvement.
6. The difference between the normal return on the investment employed to produce the patented improvement, and the total profit attributable to the patent improvement would represent the income attributable to the patent in question.

On the other hand, often one patented feature is acknowledged as the sole reason for the sale of the machine, or as the sole reason for a price on the machine higher than that of competitors, even though other patents are actually embodied in the machine.

In such instances the single patent should have attributed to it all the resulting profits and the remaining patents should be given no more value than some pieces of improved machinery that are incidental to any up-to-date factory. Trade conditions and an examination of the prior patent art will aid in this determination.

SETTLEMENT LITIGATION

The appraiser of patents may find a contract between two companies settling patent litigation between them and cross-licensing each other. The value of the patents so cross-licensed, if not otherwise commercially susceptible of appraisement, may be well indicated by the estimated savings in the cost of litigation, the cost of executives' time devoted to the litigation and the savings resulting from the trade of the respective parties escaping interference due to litigation with resulting cutting of prices and diversion of the trade to other sources of supply.

To sum up, patent appraisals are of value in consolidations or sales of plants, in licences and cross-licences, in issue of capital stock for inventions, and satisfaction of "blue sky" commissions relative thereto, and in tax questions.