new invention. In the present case, after the momentary scattering of the subject's habits by the intruder, the subject returned to the type of the first column. But it is notable that in returning to this type she returns to it in an enriched and more variable form. She preserves her own fashion, but with an addition which leads in two or three cases of the last column to what one might call a genuine novelty, namely, a new type of symmetrical figure.

(To be continued.)

THE PROTECTION OF INDUSTRIAL PROPERTY.*

By J. F. ISELIN.

THE subject with which I propose to deal is one of no small importance. Yet it has hitherto attracted so little attention in this country that the title which I have given to this paper is not one which is generally known or understood, although it has been officially recognized by the government of the country in treaties to which Great Britain is a party.

The term "Industrial Property," like many other general terms, is a French one. It expresses a conception which exists indeed in this country, but for which no generally accepted name has yet arisen.

There is a class of legal rights whose importance is almost wholly modern, which includes the right of an inventor to the fruits of his invention, of an author or artist to the work of literature or art which he has produced, of a trader to the mark which he uses to distinguish his goods, or to the name and good will of the business which have been made valuable by his skill and industry, and those of his partners and predecessors. These rights are in every respect analogous to ordinary rights of property, except, perhaps, that there is no material object to which they relate.

These rights are in French law comprised under the head of intellectual property (*propriété intellectuelle*), and this again is divided into literary and artistic property on the one hand and industrial property on the other. The first of these corresponds almost exactly with what is called in England copyright, except that copyright in designs intended for manufacturing and industrial purposes would in France come under the head of industrial property. The French classification has made its way over the Continent of Europe, and is not without influence in this country also, because it is observed in the international treaties upon the subject. Literary and artistic works are protected by the Berne Convention of 1887, while patents, trade marks and designs depend upon the Paris Convention of 1883, together with certain amendments made to it at Madrid in 1891. The subject of this paper is the latter only—that is to say, patents, trade marks, designs and certain other rights of the same kind. And I intend to consider the subject almost entirely from an international point of view.

The subject can be conveniently dealt with in an historical manner. The practice of securing the fruits of an invention to the inventor by giving him an exclusive right to use it was introduced, I believe, by the Tudor kings of England. The use which was made of the power of granting patents by Queen Elizabeth and by James I. led to a very severe struggle between the Crown and Parliament, which was finally settled in 1621 by the passing of the Statute of Monopolies, whereby it was declared that "all monopolies and all commissions, grants, licenses, charters and letters patent heretofore made or granted . . . of or for the sole buying, selling, making, working or using of anything . . . are altogether contrary to the laws of this realm;" but an exception was made in favor of "letters patent and grants of privileges for the term of fourteen years or under, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use."

This provision is the basis of our existing Patent Law. In consequence of the point of view which I am taking, it is necessary to point out that the law has always been interpreted in a strictly national manner, so that the person who introduces a new manufacture into the country is regarded as entitled to a patent for it, even though it be admitted that the actual invention has been made in a foreign country by some one else.

The protection of trade marks was introduced by the courts about the beginning of this century; that of designs was created by Act of Parliament in 1787. Numerous Acts of Parliament were subsequently passed dealing with all these subjects, and the whole law dealing with them all was consolidated and amended by the Patents, Designs and Trade Marks Act of 1883. The other parts of industrial property have all come into special prominence during the last few years, and have been regulated partly by the decisions of the courts, and partly by Acts of Parliament, the most important of which is undoubtedly the Merchandise Marks Act, 1887.

The reason which has made these subjects of special importance during the present century is the great growth of commerce and manufactures which began, roughly speaking, about the middle of the last century. But the movement for securing rights of industrial property for foreigners dates back only about a quarter of a century. The first impulse was given in 1873. In that year a Congress was held at Vienna on the occasion of the International Exhibition, which appointed a committee to work for the realization of the principles which had been then laid down. At a subsequent Congress, which was held in connection with the Paris Universal Exhibition of 1878, a project for the formation of an International Union for the Protection of Industrial Property was brought forward by the Austrian Society of Architects and Engineers. The Congress appointed a Permanent Commission to consider the project, and the French section of the Permanent Commission produced a draft which was laid before a diplomatic conference convened by the French government in 1880, and served as the basis of the Treaty of Union, which was signed by eleven Powers (Belgium, Brazil, France, Guatemala, Italy, the Netherlands, Portugal, Salvador, Servia, Spain and Switzerland) in 1883. The scope of the Union has since been widened by the adhesion of numerous other states (Great

Britain, Tunis and San Domingo in 1884, Sweden and Norway in 1885, the United States in 1887, and Denmark in 1894), so that it may now be said that the only great states which still remain outside it are Germany, Austria and Russia, and of these Austria last year gave notice of her intention to become a member of the Union.

It will not, I think, serve any good purpose to give here the provisions of the Paris Convention in full, but it is necessary to give a short account of its main provisions.

It begins by constituting the states which are parties to it into a Union, which any state is entitled to join by giving notice to the Swiss government. It is next provided that the subjects or citizens of any state which is a member of the Union shall enjoy in all the other contracting states all the advantages which the law of that country gives to natives as regards patents for inventions, industrial designs or models, trade marks and trade names. This is carried out by giving to any person who applies for a patent, or registers a design or trade mark, a certain period (which is six months in the case of patents and three in those of designs and trade marks) during which he enjoys a right of priority, and cannot be anticipated, or have his right destroyed, by the acts of other persons. The working of this provision may be shown by a simple example. A man patents an invention in France. Shortly after some one else takes out a patent for, or works, the invention in this country. The acts of the second inventor will not be any obstacle to the grant or to the validity of a patent in England to the original inventor, provided he makes application before the period of six months has expired.

To meet the very harsh laws relating to the working of patents which exist in many countries, it is provided that patentees shall be entitled to import patented articles into the country where the patent has been granted without liability to the forfeiture which the law sometimes decrees, as in France. On the other hand, the compulsory working clause—of the existence of which on the Continent so much complaint is made in this country and in the United States—is left unaffected.

As regards trade marks, it is provided that they shall be admitted for registration and protection in every State of the Union, "in the form originally registered in the country of origin." This article, and the preceding one—which deals with the compulsory working of patents—have been the subject of much difficulty and controversy ever since the convention was signed. I mention this here, shortly, because I intend to return to the subject later.

It is further provided that trade marks shall be protected in every country of the Union without any necessity for registration; while all goods falsely or unlawfully bearing a trade name or trade mark, or the name of a place with the addition of a fictitious trade name, or one borrowed with a fraudulent intention, are liable to seizure upon importation into a State of the Union.

Finally, the contracting States undertake to grant temporary protection to patentable inventions, industrial designs and models and trade marks, which are shown at an international exhibition in their territory, and to establish a special government department of industrial property, and an office for the publication of patented inventions, designs and trade marks. A central office was created at Berne, under the supervision of the Swiss government, for the purpose of collecting and publishing information of all kinds relating to industrial property. The creation of this central office is, perhaps, not the least valuable result produced by the convention of Paris. It publishes a monthly journal, *La Propriété Industrielle*, which contains most valuable information, and it is at the present time engaged in publishing a collection of all the industrial property laws of the world.

The convention provided for periodical conferences to revise and amend it. Three of these have been held up to the present. The first, which was held at Rome, in 1886, led to no result, and the amendments, which were carried after much discussion and difference of opinion, were not ratified by the governments of the contracting States.

The next, which met at Madrid four years after, was more successful. It produced four protocols. One was not ratified on account of the great opposition which it met in several States. Another has not yet been ratified by Servia and San Domingo and has, therefore, not yet come into force. A third relates to the substitution of a single registration at Berne for the many registrations which would otherwise be necessary in order to obtain complete legal protection for a trade mark in all the States of the Union. This is a mere question of administrative machinery, with which it is not necessary for us to concern ourselves, more particularly as for special reasons this country has hitherto been unable to become a party to it. The fourth, which is usually referred to as the Madrid arrangement, will require a little more consideration. This relates to what are called "false indications of origin" on goods—a subject which occupies a large place in the much discussed Merchandise Marks Act of 1887. It provides that all goods bearing an indication of origin which falsely describes any of the contracting States or a place situated in one of them as the place of origin of the goods shall be liable to seizure upon introduction into any of the contracting States. But it is provided that a seller shall not be prevented from placing his name or address on goods which come from a country different from that of sale, provided he at the same time clearly states where the goods actually come from. There is also an exception as regards place names which have become mere generic designations, and have thus ceased to be understood as indicating the place of origin of the goods—as, for example, Russian leather, Epsom salts, Brussels carpets. It is left to the courts of the different countries to decide which these are, but by a remarkable inconsistency, which is probably destined to give rise to a good many difficulties, it is specially stated that "regional appellations relating to the products of the vine" shall not be liable to be considered as generic designations, but must always be considered as indicating the origin of the wines or spirits to which they are applied. On account, probably, of the stringency of these provisions, this protocol was signed only by seven powers—Brazil, France, Great Britain, Portugal, Spain, Switzerland and Tunis.

The last of these conferences was held at Brussels in December of last year. The result of its deliberations has not yet become generally known. I have applied to the Foreign Office for information, but have not yet received a definite reply. From another source it has come to my knowledge that four subjects of special importance and difficulty have been reserved for further discussion at a later meeting of the conference, which is to be held, if possible, in the course of the present year. These are: the right of priority, the compulsory working of patents, the conditions of registration of foreign trade marks, and what is called on the Continent of Europe and in the United States "unfair competition," although the name has not yet found acceptance in this country. The term is applied to all those numerous cases where a trader attempts to appropriate or to destroy a part of the good will of a rival's business, the results of his skill and industry, without directly using either his name or his trade mark.

While the governments were thus progressing, private individuals were not idle. Congresses were held at the Paris Exhibition of 1889 and the Chicago Exhibition of 1893, but they appear to have dealt rather with general principles than with practical details, and but little seems to have resulted from their deliberations.

A more important movement arose in Germany and Austria, and it is to this that I desire to direct special attention. It had occurred to some people in these countries that it was undesirable for them to continue to remain outside the Union. Societies for the Protection of Industrial Property were founded in Germany and Austria, and at a conference of these societies which was held at Berlin in October, 1896, it was decided that an International Association should be formed, on the model of the International Literary and Artistic Association, which brought about the Berne Copyright Convention, for the purpose of holding periodical congresses for discussion, and of working for the extension and improvement of the existing Union and its treaties.

For this purpose negotiations were entered into with some of the most influential persons interested in the matter in England, France and other countries, and a meeting was held at Brussels in May of last year, at which the Association was definitely constituted and provided with an executive committee. The first congress of the Association was held at Vienna in October, and was attended by a large number of persons, including representatives of the French, German, Austrian, Belgian and United States governments, as well as of seventeen Continental Chambers of Commerce and many trade societies of great importance. I understand that the proposals which were adopted by the congress were laid before the diplomatic conference which met in Brussels, and were to a great extent accepted. This Association, which was founded less than a year ago, now numbers about 400 members. It has up to the present not met with much success in this country, although it already includes some of the principal members of the bar who are interested in these questions, and many of the principal patent agents.

I am persuaded that it has only to be better known to show the great service which it should be capable of doing in this country, where all matters connected with trade and commerce are always certain of receiving full and careful consideration.

It has been decided to hold the next Congress of the Association in London at the beginning of June. I have here several copies of the programme, which I shall be glad to give to any one who is sufficiently interested in the matter.

I should like, in conclusion, to give you one or two instances of the manner in which, as I think, the Association and its Congresses may be of use to British trade.

There is, first of all, the question of the compulsory working of patents, to which I have before alluded. In all countries, except England and the United States, it is provided with more or less stringency in the patent law that every patented invention shall be worked in the country by the production of the patented article there, under penalty of forfeiture if the invention is not worked within a certain period, generally two years. In France the law is even more severe, and the patentee is forbidden to import the patented article into the country under penalty of forfeiture. In this country, on the other hand, we have only a provision empowering the Board of Trade to grant licenses to manufacturers to work patented inventions upon such conditions as the Board consider just, but only in cases which are so infrequent that, I believe, hitherto it has never been found necessary to make use of the provision. The most severe part of the French law, that relating to the importation of patented articles, has, no doubt, been modified by the Convention of Paris; but the compulsory working clause remains intact both there and elsewhere. It is not unnatural, therefore, that manufacturers in this country consider themselves unfairly treated. Of late, opinion in Germany has become more and more opposed to the maintenance of the compulsory working clause; and a very able paper in this sense was read last year at the Vienna Congress by Mr. von Schütz, of the firm of Krupp. The opposition to its abolition comes from France and Belgium; yet, even there, it shows signs of giving way. The Association seems to me well qualified to help on the movement for the suppression of the compulsory working clause.

In regard to trade marks a position of no less difficulty has arisen. Although the Convention of Paris provides that trade marks, if duly registered in the country of origin, shall be admitted for registration and protection in every country of the Union in the form originally registered, and the act of 1883 was supposed to be sufficient to carry it into effect, it was found that the comptroller refused to register foreign trade marks unless they were such as the English law would recognize as trade marks. On two occasions an appeal was taken to the courts, and on each occasion the courts upheld the decision of the comptroller. He therefore continues to exercise his jurisdiction in accordance with the anomalous standards of the English law, and it is commonly said in France that we have not carried out the obligations into which we entered by signing the convention. The congress of the association should provide an opportunity for the discussion of the sub

* Paper read before the Society of Arts, February 16, 1898.

ject, and for the arrangement of measures for removing the injustice, if one exists.

Thirdly, there is the question of false indications of origin, or as we prefer to call them, false trade descriptions. It is a matter of common knowledge that in 1887 Parliament passed an act of great stringency for the purpose of dealing with fraudulent descriptions of this kind. Everyone knows also that some people think that we are paying rather heavily for our (as they think) excessive honesty in this matter, and that a very fierce controversy has recently taken place on the subject. Nevertheless, everyone is agreed that we should do our best to induce foreign nations to imitate us. The congress will provide an opportunity of showing them how far we are ahead of them, and of expressing our wishes that they should follow our example. In the meantime, however, we have entered into a treaty by which we are bound to protect the names of wine-growing countries against appropriation by persons outside of them. Does our law insure that this will be done? There are circumstances which seem to cast a doubt upon it. Here again the congress will afford an opportunity for discussion and consideration.

In 1896 Germany passed a law on the subject of unfair competition. The law contains a section providing that its benefits may be extended to the members of states which protect Germans by means of a notice in The Imperial Bulletin of Laws. There is no question that our law protects Germans, and that it is not less favorable than the German law. Yet the necessary notice extending protection to British subjects has not yet been issued, and one may perhaps believe that it is meant to be purchased by some further concession. The association should afford the means of bringing pressure to bear upon the German government.

Again, suppose a patentee has an invention which he wishes to patent in many countries. He will find that he has to comply with numerous and different sets of rules as to the form in which his application must be made, and often he will have to send in drawings of the same invention reduced to many different scales. Much may be done to help the inventor by making these regulations, particularly as to drawings, uniform—and this is the sort of work which the association will do. Or an inventor's position as regards searching for anticipations of his invention may be improved by making the classification of patents in different countries uniform—and this also the association proposes to do.

These matters seem to me of some importance. There must be many people to whom the proper decision of questions such as these is a matter of great pecuniary interest. These are but a few of the questions which are open for discussion. I have here a list of some more in the programme of the congress. New ones are arising every day. If you take any interest in the subject, or in the association and its congress, I can give you as much more information as you please, and, may I add, the committee of the congress will be glad of all the assistance you can give it.

A NEW ACETYLENE GENERATOR.

THE Prussian Minister of Public Works has recently decreed that hereafter a mixture of oil and acetylene gases shall be employed for the lighting of the cars upon the government railway lines. This mixture consists of three parts of oil gas and one part of acetylene, and gives an illumination of 16 candles for a consumption of about one cubic foot an hour.

Here again we have been outdone by our neighbors in the exploitation of a new process of lighting that the experiments made in France have greatly contributed toward bringing into prominence. After the satisfactory experiments of M. Chaperon on the Paris-Lyons-Mediterranean line in 1895, and of MM. Dumont and Hubon on the Railway of the East in 1896, has not a fitting solution of the problem been found? Or are we waiting, in order to be certain of coming in at the finish, until the majority of foreign companies have adopted acetylene for the lighting of their cars?

It must be admitted, without any fear of showing ourselves too exacting, that our railway cars should be better lighted. Fortunately, we are not getting discouraged, and researches are ever making with the same assiduity. Acetylene, which a few years ago had numerous detractors, seems now to have won its way, and the use of it is rapidly becoming general, owing to its numerous applications. The idea that first occurred was to produce it in central works and distribute it by pipes as is done with coal gas. The small volume of acetylene necessary to obtain a large amount of light would have permitted of laying pipes of very small diameter, and consequently of diminishing the cost of the first establishment. Moreover, since the gas is absolutely fixed, no frost could interfere with it. But, in order to be burned, acetylene requires a much higher pressure than coal gas, and from this may result leakages and explosions. So up to the present, the idea of distributing it by pipes has been abandoned. It has been principally used in private installations. In country seats and in towns that are not supplied with coal gas, lighting with acetylene is the cheapest and most practical process. In this case, generators in which the acetylene is produced by the fall of calcium carbide into water are employed. The gas is formed cold, since all the heat disengaged by the decomposition of the carbide is absorbed by the water, the temperature of which rises only a few degrees. On the contrary, in apparatus in which the water falls upon the carbide there is a considerable disengagement of heat. The gas becomes charged with the vapor of benzene and naphthalene, which diminishes its illuminating power to a notable degree and fouls the pipes.

The generators should contain a sufficient quantity of carbide to last for a week without renewal, during a normal operation. They may occasionally be made to vary in their operation and discharge, for example, in case of receptions, a volume of gas corresponding to the consumption of all the burners during the entire night, that is to say, the same apparatus may supply ten burners of 120 cubic inches five hours a day for a week, or forty burners of 240 cubic inches for ten hours during the same evening.

The following is a description of a new generator recently put upon the market by the Société Internationale d'Acetylene.

The apparatus consists (1) of a reservoir, C (Fig. 2),

containing granulated calcium carbide; (2) of a tank, A, filled with water up to within 4 inches of the edge, and in which the acetylene gas is formed; (3) of a gas holder, B, which moves in the tank, A; (4) of a vertical rod, T, provided with two conical parts, one of which (D) regulates the fall of the carbide into the

FIG. 1.—A NEW ACETYLENE GENERATOR.

tank, A, and the other (D) distributes it in all directions; and (5) of a disk, K, against which the vertical rod abuts when the column, B, moves downward. The operation of the apparatus is very simple. After the tank, A, has been filled with water and the holder, B, has been suspended, the carbide is introduced into the reservoir, C, and the cap, F, is screwed down. The holder is then disengaged from its stops, and, in order to permit it to descend, the cock of the tube, O, is opened so that the confined air may escape. The

FIG. 2.—VERTICAL SECTION OF THE GENERATOR.

A, tank; B, gas holder; C, carbide reservoir; D, valve; E, external reservoir; F, closing device; G, G, ring for weighting the holder; H, H, counterpoises; I, air cock; J, discharge cock; K, disk; L, safety tube; N, water level; O, gas tube; S, external tank; T, valve rod; X, starting and stopping lever; Z, pin for fixing the lever.

holder, under the action of its own weight, begins to descend and carries along with it the rod, T, which comes into contact with the disk, K. At this moment the valve rises and gives passage to a certain quantity of carbide, which falls into the water of the tank, A. Acetylene gas is immediately produced and enters the

FIG. 3.—APPARATUS AT REST, WITH LEVER DEPRESSED.

holder, B, which rises; and the valve, D, resuming its normal position, arrests the fall of the carbide.

This motion of the holder, B, continues as long as the reservoir, C, contains any carbide. When the supply is exhausted, it suffices, in order to put the apparatus in a state to operate, to fix the holder on

FIG. 4.—APPLICATION OF THE GENERATOR TO STREET LAMPS.

its stops, to empty the tank, put water into it again, and then fill the reservoir, C, with carbide.

In order to prevent any stoppage in the operation of the apparatus, in cases in which a continuous production of acetylene is necessary, a second receptacle is arranged above the reservoir, C. This receptacle, which

FIG. 5.—COMPARATIVE DIAMETERS OF ACETYLENE (A) AND COAL GAS (B) CONDUITS.

also contains carbide, supplies C through the simple maneuver of a cock, in measure as the gas is consumed.

As these generators are of pretty large dimensions, it became necessary (seeing the difficulty presented by the handling of the holder, owing to its weight) to seek an arrangement that should permit of easily setting the apparatus in operation. To this effect, the rod of the disk, K, has been provided with a lever. When the latter is raised, the disk, when there is a very slight