RESEARCH WORKERS AND THE PATENT SYSTEM*

I. SHOULD INVENTIONS BE PATENTED?

BY

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THE first question which arises before the mind of a person who has made an invention is whether it is desirable for him to protect it by means of a patent. Presuming that the inventor can take out a patent for his invention, this question can be considered either from the standpoint of an inventor who from purely altruistic motives wants to make his invention freely available to the public so that they may enjoy its full benefits, or from the point of view of an inventor who has the motive of enjoying as many of the benefits of his invention as possible. To decide whether it will be worth the inventor's while to take out a patent in order to achieve either of the two above-mentioned objects, a thorough estimate of the assets and liabilities which will accrue to the inventor by taking out a patent for his invention must be made.

Before trying to analyse what will be on the credit and the debit sides if a person takes out a patent, it will not be out of place here to refer to a few misconceptions about the patent system, which are prevalent in the minds of many people.

There is a class of people who seem to think that a patent is akin to a certificate of merit whereby the utility claimed for the inventions is endorsed by the Government. This is not so. By the grant of the Patent rights, the Patent Office does not in any way vouch for all that is expounded or claimed by the patentee.

Another misconception is, that by possessing a patent a person would be able to manufacture an article by a slight alteration of a manufactured article based on an existing patent, so that the new article produced embodies all the essential features of the old one in addition to slight variations in non-essential details. This also is not true, as a later patent can in no circumstances prejudice the rights of an earlier patentee.

Now, a patent is a privilege or a right conferred by the Government by which the patentee can enjoy the exclusive right of working the patented invention, or authorising others to do so, as long as the patent right is in force. This right, however, is conferred on him subject to the condition that he makes a complete disclosure of his invention so that after the termination of the patent, the public would be able to make a free use of his invention. Other conditions which are imposed on him are, that he would not exercise his patent injuriously to the public, or in restraint of trade, or for illegal or immoral purposes, and that he would continue to pay an annual fee to keep the patent in force for the period for which the patent has been granted.

Coming back now to the main question, let us examine how the object of the philanthropic inventor would be achieved with regard to his intention of making over his invention for the free use of the public as early as possible. Such a person has two alternatives before him. He can either protect his invention and then make over the rights of using it to any one free of charge, or else, he can just leave it open to anyone who cares to make use of it. Some people, however, feel that if a patent is taken out for an invention,—the benefits of the invention are only enjoyed by the patentee. These people, in thinking so, overlook a number of relevant factors which play an important rôle in ensuring the availability of a useful invention for the public use. These factors are considered below.

First, in order that the public may become aware of his invention, information about it should be accessible to the public at a place where they would normally look for it. The Patent Offices are universally regarded as the repositories of all the ideas and suggestions put forward from time to time by inventors about various industries; and therefore, the Patent Office records are the most natural sources where the public would look for new ideas to improve their industries. It follows therefore that an

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* The views contained in this article reflect the views of the author only and do not represent those of the Government and should not be taken as committing the Government in any way.

inventor who does not patent his invention, does not make use of the Patent Office records and thus foregoes the facilities provided by the most important agency through which the publicity of his invention amongst those who are likely to be interested in it, can be ensured.

The second factor which is generally overlooked, is the full appreciation of the fact that considerable expense has to be incurred by the manufacturer to develop an invention to such a degree of perfection that when the public come to know of it they should like it; and in order that they may also adopt it for practical use, he should make the article available to the public at an attractive price by manufacturing it by mass production. This also will involve a considerable outlay of capital because numerous experiments will have to be made during the development of the invention into a finished article. In the ordinary course of events, there is very little likelihood of anybody coming forward to undertake the trouble or to risk his capital for these purposes, unless he can reasonably hope to recover all the initial expenses incurred and subsequently to enjoy a fair margin of profit as a return for the financial risk and trouble he has taken.

To drive this point further home, the examples of Herbert Spencer's[1] easy-chair and Laval's[2] cream separator are given here. Herbert Spencer once invented an excellent invalid chair and wanting to give it to the world without any recompense, did not patent it. The result was exactly contrary to what he aimed at. No manufacturer dared to undertake its manufacture. Each thought to himself that if he succeeded, competitors would spring up and rob him of most or all of his profits, while there was always present the risk that he might fail.

The case of Laval's cream separator is equally illustrative. Many years ago, Laval designed a hand-worked cream separator for use in the household. In the interest of the world—as he mistakenly thought then—he threw his design open to any one who desired to make use of it. But no one did so, and instead of a plentiful supply of the cream separators at low prices, none were manufactured because no one would obtain a monopoly for their manufacture.

The third consideration is that even if a person does not take out a patent, he cannot prevent others from patenting the same invention and thereby deprive the public and himself from enjoying the benefits of his invention.

Then there is another danger in not taking out a patent. All the inventions are not usually published in scientific journals and those which are published may not embody in the publications all the essential features of the invention. This leaves a loophole for the man who imitates the invention in all the essential details and in his patent application puts forward a claim or claims which have not been clearly implied in the publications of the original inventor. The result is, that the imitator can get away with some one else's invention, as under the circumstances, the real inventor may not be able to oppose the patent successfully on the grounds of any valid anticipation. In cases where the original inventor has not taken out a patent for his invention but some one else has, the inventor, even if he is in a position to prove ultimately that he had made the invention available to the public before his rival appeared on the scene, will have to undergo no end of trouble and expense to prove that he was a prior inventor, that he had given publicity to the invention, or that he had used the invention to such an extent as to bar the subsequent grant of a valid patent for it. Moreover, in such contested cases, the expenses incurred in proving the invalidity of such patents, run into thousands or tens of thousands of rupees. On the other hand, if the inventor adopts the ordinary expedient of taking out a patent for his invention as soon as it is made, then it would cost him almost nothing to establish either his priority of invention or the non-patentability of the invention by his rival. Therefore, in the interest of the public as well as in his own interest, it is advisable for an altruistic inventor to take out a patent for his invention before it is too late.

It is a fact that there is always an innate prejudice against new ideas and especially new ideas when they happen to be in the technical field. Even an invention possessing great merit and advantages cannot, therefore, earn a good name unless the manufacture of spurious and inferior goods is as far as possible eliminated. To do this effectively, it must be possible for the

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[1] *Economics of Our Patent System*, by Vaughan, p. 30.

[2] *The Engineer*, **156,** No. 4056, p. 335.

inventor to control the production of new articles in their early stages of manufacture, in a pure and standardised form. How this sort of control can be exercised by means of the Patent system is very well illustrated in the case of the manufacture of 'Insulin' which was patented as soon as it was invented. The inventors then issued licences only to competent and reliable manufacturers, and the result of this control was that 'insulin' was manufactured in the standardised form only, so that medical practitioners could appreciate its good properties and 'insulin' became known as a very reliable drug. It is a moot point, however, whether the good effects of 'insulin' would have been appreciated as promptly as they have been, if the control in its manufacture, which was exercised by the patentees before it gained in popularity, had not been so exercised.

The above analysis of the question therefore shows that even from the point of view of the altruistic inventor, his object would be better served by patenting his invention rather than throwing it open to the public without any protection.

Next the question of the Research Worker and the Patent System will be considered from the standpoint of the inventor who wants to enjoy for himself all the possible benefits likely to accrue from his inventions. There are two ways by which he can do so. One is by keeping his invention an absolute secret while exploiting it, and the other is by patenting it. For the latter, the inventor will have to disclose it fully and the monopoly rights will be in force for a limited period only.

Let us take first of all the case of the man who wants to rely on secrecy as the preferred form of ensuring personal profits. A large number of inventions by their very nature are inherently incapable of being protected by secrecy. In the case of machinery, for example, the moment it is put in the market, it is subjected to the minutest scrutiny by the public with the result that secrets cannot exist as regards machine construction. Even in the case of "process" inventions which theoretically can be kept secret, a person who relies on secrecy relies on a thoroughly undependable method, for secrets are notorious for their tendency to leak out. Whatever precautions an inventor may take to maintain the secrets of his invention, there comes a time, and invariably this happens too soon, when his secrets leak out. An interesting case occurred a few years ago when an inventor found out at great expense the secret process of spraying glass with a certain chemical compound so that the sprayed glass presented a golden lustre. The inventor left nothing to chance in order that his secret may not leak out. When chemicals arrived in sealed carboys, he removed the labels on them and substituted instead new ones with wrong names, so as to hide the identity of the chemicals. He used to mix the spraying mixture in the sealed sprayers with his own hands. Thus whatever was physically possible to keep his secrets, he did. But when a rival firm came to know of the bangles with golden lustre, they sent a few of their very clever men in the guise of workmen to the factory to find out the secret process. These disguised men got employment in the factory, and during the spraying operation, they sprayed a little quantity of the chemical on their shirt sleeves. On going home, they got the sprayed chemical analysed and thus the secret was out. An idea of the extent to which the inventor suffered monetary loss can be gauged from the fact that before the secret leaked out, lustre bangles used to sell for Re. 1 a pair and after the leakage of the secret similar bangles were available for as little as an anna a pair! At this point the reader may say that as the bangles became cheaper it was all for the good of the people. It is pointed out therefore that this person had to spend thousands for securing this secret process from abroad and by failing to get a patent for his invention at the proper time he became a ruined man. One can only speculate how many other industries suffer the same fate when the inventors do not protect them by means of patents.

Let us now examine how an inventor who decides to take out a patent for his invention benefits himself under the Patent System. As already pointed out, a patent gives an inventor the right whereby he can enjoy the exclusive privilege of working his invention. Hence, with a patent for an invention in his possession, even the most impecunious inventor can approach a financier on terms of equality and arrive at a satisfactory financial agreement with him with regard to the exploitation of his invention. The prospect of a monopoly will also induce the financier to undertake the exploitation of the invention. Hence there is no danger

of any useful inventions going waste or of their being exploited by others without an adequate and equitable reward. This will facilitate the progress of negotiations between inventors and manufacturers for the purpose of commercially developing the inventions to their mutual benefit.

So far we have dealt with the subject of Patent System in relation to the research worker and have shown, that viewed at from all points of view, the Patent System provides the best form of securing the objectives of an inventor irrespective of whether he is actuated by altruistic motives or by motives of self interest. This is of course subject to the provision that proper steps and precautions are taken to secure a valid patent. What these steps and precautions are will be discussed in subsequent parts of the article.

ON THE MALABAR CYCLONE OF MAY 1941

BY

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RARELY do the cyclonic storms coming direct from the sea strike the Malabar coast. Since 1845, there have been only three storms which have developed in the Arabian Sea and hit Malabar. A few others, however, after forming in the Bay of Bengal have moved westwards across Malabar into the Arabian Sea. The storms of the first type cause more destruction in the coastal districts than the others, as they come straight from the sea without losing any of their energy in crossing the Ghats. The cyclone which struck Malabar on the 26th May 1941, belonged to the first type. A brief history of its development and movement is given below:—

On the morning of the 22nd May, the upper winds over Minicoy were blowing at 25–35 m.p.h. from the westsouthwest up to 2·0 km. and Colombo reported rough seas and 6″ of rain. These observations suggested that the southwest monsoon was advancing in the southeast Arabian Sea. The monsoon continued its progress during the course of the day and burst on the Malabar coast by the next morning; Trivandrum reported 10″, Cochin 7″ and Calicut 5″ of rain on the morning of the 23rd. Pressure started falling along the Malabar coast from the 23rd, the fall being greatest near Trivandrum on the 24th. On the morning of the 25th, an area of negative pressure departures appeared off the Malabar coast. The upper winds over Minicoy were blowing this morning from the west with gale force at least up to 1 km. while those over Mangalore, which on the previous day were blowing at 15–20 m.p.h. from the south or southwest, had strengthened to 20–30 m.p.h. and backed to south or southeast at all levels up to 4 km. These observations indicated that a depression had formed in the southeast Arabian Sea with centre near Amini Devi. By 17 hours of the 25th, the upper winds over Minicoy and Mangalore strengthened further and the seas along the Malabar coast became rough, pointing to an intensification of the depression into a cyclonic storm. Till 15 hours of the 26th, the cyclonic storm remained practically stationary with centre near Amini Devi. Then it began to move eastwards and was centred close to the coast south of Calicut at 22 hours I.S.T. It struck the coast about 30 miles to the south of Calicut (near Ponnani) just before midnight. Calicut recorded a pressure deficiency of about 0·27″ when the cyclone crossed the coast. The barometric depth at the centre of the storm might have been about 0·50″. After