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I.—*On the Patent Laws of the United Kingdom.* By John Lowry Whittle, Esq., Barrister-at-law.

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OUR system of Patent Law has lately attracted much attention. Within a few years there have been several parliamentary commissions to investigate its principles ; and the utility of such a system is one of the acknowledged social science questions in the sister kingdom. Here, it is true, patent law is not a matter of so much importance ; yet in some parts of Ireland, I am happy to say, inventive talent is at work ; and in the north, for instance, the question is regarded with continually increasing interest. I therefore thought it would not be an unreasonable occupation of the time of this Society to review the working of the system. We are perhaps the better qualified to discuss it on its own merits, as we are not led away by the powerful interests which surround this question in England.

Our present Patent Law derives its origin from an old statute, the 21st of Jac. I. This asserted the royal prerogative to grant monopolies in certain cases in favour of the "first and true inventor" of any mechanical or chemical combination, process, or new manufacture.

This statute, with some trifling additions, constituted our patent law for more than two centuries. In the year 1852, upon the report of a committee of the previous session, was passed the "Patent Law Amendment Act, 1852," which remains the law at the present day. The principal object of this Act was to cheapen the cost of obtaining patents, and in other ways to encourage the taking them out. This Act also abolished Irish patents, making one patent suffice for the United Kingdom. But it was in fact a mere administrative measure, adopting without the slightest modification

the principle of the Act of James. It is in that Act therefore that we are to seek the principle of the English Patent Law. The idea of its framers was to induce the inventor to disclose his invention for the public good, and in return for the disclosure to secure him during a certain number of years as great a monopoly of his invention as if he had kept it a secret. The effect of this statute may be stated roundly thus :—Anyone claiming to be the originator of any mechanical or chemical combination may, on presenting to the Patent Office a full detailed statement of such mechanical or chemical combination, prevent anyone else during the space of fourteen years from making use of such combination or process, without first obtaining the permission of the originator or his representative. All persons who choose to make use of this combination or process are obliged to purchase the consent of the patentee. A contract is made between the crown (or the public) and the patentee for their mutual benefit. The inventor is thus empowered to sell the use of his invention at any price he thinks it will fetch ; while the public provide by the specification that the invention shall not perish with the inventor. It is well known that in all manufacturing countries many valuable processes have from time to time been lost by the death of the inventors or their immediate descendants, and to remedy this evil was the principal object of the Act of James. In former times the isolation of our various manufacturing districts, and the small number of hands employed in each establishment made it a much easier matter than it is at present to keep such secrets. And *then* the patent system perhaps afforded the only chance of preserving new discoveries to posterity. Yet it had little effect till within the last century. It is to this period that belong most of the patents previous to 1852.

A system which seems to benefit the community in general, and at the same time to reward individual talent, claims much consideration ; and this was regarded by many as a solitary instance, wherein the light of our future commercial intelligence penetrated an age otherwise remarkably ignorant of social and trading principles. Accordingly the principle of the earlier law was re-affirmed in 1852. Yet some doubted its soundness, and the greater extension given to it in 1852 has only further developed its anomalies. The number of patents taken out between 1624 and 1850 was 14,300, but between 1852 and 1862 the number was over 21,000 ; thus within ten years exceeding by one-third the patents of the previous two hundred and twenty-six years.*

That the actual patent system has broken down is admitted on all hands. The law is found to have created a kind of property which peculiarly demands its protection from invasion, and which its present machinery is totally incompetent to protect ; and the advocates of patent rights propose new courts and a new system of judicature specially to protect these creatures of statute. The recent Royal Commission, while maintaining the propriety of a patent law, recommends that one of the judges should sit for the

* The exact figures for 9 years and 3 months after the Act of 1852, are 19,179 patents issued. *Report* 1865, p. 159.

trial of patent cases exclusively; that he should be assisted by scientific assessors; should sit without a jury, unless the parties desire a jury; and, when sitting without a jury, should decide questions of facts as well as of law. Again, the very cheapness of obtaining a patent encourages all sorts of useless patents to protect inchoate ideas never farther developed. This class of patents embarrasses the real inventor, and discourages him from many useful courses of experiments. Many of these patents, too, are not taken out merely from ignorance, but for the purpose of advertising particular houses in trade. Again, patent law not being universal among other nations, many with whom free trade has connected us are without these laws. The English manufacturer is then in this position. He has to pay a large per centage to the patentee; while his rival in Switzerland, for instance, manufacturing under this very patent, pays nothing, and is able to sell in the English market goods so manufactured at a proportionate reduction in price. To explain the first of these objections, namely, litigation, I must enter into some details.

The first step of the intending patentee is to register a petition at the Patent Office in London. This must be accompanied by what is called the provisional specification, setting out what the process or combination is, and the various objects to which it can be applied. Within six months he lodges his final specification, which is a more full and detailed statement of the same particulars. He then obtains a patent for three years. This is the second stage; and so far he has paid in fees to the Patent Office £30; that is to say, £5 on registering his petition, and £25 on obtaining his patent. If at the end of three years the patent has escaped the dangers of the law courts, he may extend it for four years more, paying £50. And at the end of that time he may extend the patent for seven years more on payment of £100; the whole cost of the fourteen years protection, as far as the Patent Office is concerned, being £180. It will be found hereafter that very few patents go through the last stage at all. The first two classes are the most mischievous, as employed by ignorant people or for advertising purposes.

One of the principal objects of the Act of James was the securing, for the public instruction, the statements contained in the specification. But in drawing these specifications the inventor has two different dangers to guard against. Surrounded by rivals, he often finds the hint he has thrown out taken up by others, and his patent rendered useless by some more effective and cheaper method of attaining the same object. He naturally endeavours then to give as little information as he can to his rivals. And the result is that, if the specifications were to be taken as records of scientific discovery, they would often be quite unintelligible. But, on the other hand, if his rivals succeed in applying his process to some object he has not specified, he has no right to control them. So here he endeavours to make the specification as wide as possible.* These difficulties make the drawing of specifications a matter of much legal nicety, and latterly it has become the business of counsel.

* *Evid. Rep. P. L. Commission, 1865, pages 656 and 1247.*

The patentee, however, having paid for his specification and his patent, has done little to secure its validity. For that the statutory requisites are novelty and utility; but of neither are the Patent Commissioners judges. If the specifications are framed in due form, the patent issues, as a matter of course, even though the same identical invention should be enrolled in the office or in general use throughout the country. The patentee may now fix what price he likes on his invention, or even refuse to fix a price at all; but he is liable to have his right impugned by any one claiming to be a previous patentee; or he may have to restrain others from working his invention without his consent. This brings me to the great evil of the present system, the cost and uncertainty of the litigation. Of the uncertainty no one can have an idea without perusing our reports. The necessity for an immense amount of skilled evidence is a great addition to the expense; and the general result is only to worry the jurors, and leave the ultimate decisions to rest on some point of law, novel and intricate, and bearing but little on the real merits of the question.

There is hardly any page in our social history more painful than this, where we find the law luring on men of talent and genius in pursuit of a phantom, till they are hopelessly immersed in the delays, technicalities, and expense of our courts. Many a man has abandoned a useful occupation, a suitable sphere of intellectual employment, to find, after years of anxiety, that the law was quite unable to give him the protection it professed to give. Nor must we forget the high price the class of inventors pay in endeavouring to secure this protection. The sum expended by this class in connection with fees for patents and specifications during the last ten years is estimated by Mr. Hawes at three millions.*

Again it is stated by Mr. Woodcroft, the chief manager of the Patent Office, that 3,200 petitions are registered annually. Of these, 2000 are actually patented; but only 550 reach the third stage of the four years' protection; and only 100 are found worth the seven years' additional. Thus, of the 3,200 petitions, only a thirty-second part are found worth the fourteen years' protection. But the Patent Commissioners, having no power to decide on the utility or practicability of any invention, the law gives an unlimited power of occupying ground which is very obstructive to real invention. A man gets hold of a crude idea, and takes out his patent; he may be quite incapable of developing his invention, from want of education, of talent, or industry. Its direct aim may be some scientific object which has long engaged a man of real inventive talent. What is the latter to do? Is he to go on at the risk of losing all fruit of his toil, owing to the more rapid development of the new patent? or, if he abandons his object altogether, he may perhaps find in three years that the question is just where it was before, and that the supposed invention has never since been heard of. Or, supposing again that he goes on, convinced of the futility of the rival patent, his work is perfected and patented. He has made use of some

* *Transactions of National Association for the Promotion of Social Science, 1863.*

combination, his own previous discovery, which may be found or supposed to be covered by the abortive patent. The dormant patentee wakes into life; and, if he does not dispute the credit of the whole invention, claims large compensation for the use of this incidental part of it. The mischief done in this way to the natural progress of science is very great; and, if the fees are still further lowered, must increase.

Another mischievous abuse of the present uncontrolled powers of taking out patents is the attempt, by a slightly enlarged specification, to extend old patents ready to expire. This Mr. Webster, in his evidence before the Patent Office Committee, states to be a matter of every month's experience.

Having endeavoured to point out the shortcomings of the patent system, shortcomings which are inherent in, and ineradicable from, any similar system of monopoly, I shall now enquire what necessity there is in our present scientific condition for anything of the sort. As a matter of fact, excepting some isolated discoveries, all the inventions of our time are the result of the general progress of science watched by practical sagacity. The same idea is constantly petitioned for at the same time by different people. It is quite common to find the same invention brought out by different people in England and America. This shows how little danger there is of inventions perishing with their discoverers, as in old time. The present state of scientific discovery has been described by Sir Wm. Armstrong, a great discoverer himself, in remarkable words:—"As in the vegetable kingdom fit conditions of soil and climate quickly cause the appearance of suitable plants, so in the intellectual world fitness of time and circumstances promptly calls forth appropriate devices. The seeds of invention exist as it were in the air, ready to germinate whenever suitable conditions arise, and no legislative interference is needed to secure their growth in proper season."

In the present state of competition every manufacturer of eminence is under the observation of all his brethren in England and elsewhere. They meet each other in those commercial tournaments of our times—the international exhibitions. Each is there, able to scan the result of his rival's resources. Each is ready to avail himself of every aid of science to secure the coveted pre-eminence, and to communicate his discoveries to the public, in order to prove his superiority, and to explain the bona fides of his reduced prices.

Nor are we to assume that of the one hundred patents that annually go through all the stages, the profits go into the pockets of the original inventors. A very large portion, indeed, goes to a class of persons who have been termed "patent speculators." This class of men look out for an inventor with a useful project, who either is without the means of paying the patent fees and the necessary accompanying costs, or, having gone to this first cost, is beset by law proceedings, and unable to go to the cost of defending himself. The speculator then steps in, buys up the patentee's right at any price he chooses to give, and fights out the case. That there are some few inventors who really obtain, by this system, the reward of their talent or their good fortune, as the case may be, is quite possible. That they are

very few is sufficiently evidenced from the fact that the number of patents at all successful is so small, and that even this small number supports the class of speculators I have mentioned. But, assuming that this class of patents was larger than it is, and that the profits of these patents went as they should do, there arises the question whether the allowing a successful patentee to fix his own price is good for him or fair to the public, or whether it would not be a reasonable thing to limit the patentee in some way, either by arbitration or otherwise. I was informed lately of a case in the North of England, where a successful patentee produced a machine at the cost of £200 for working in the linen trade. On this machine his *royalty* is £1000. If the patentee were obliged to sell at a lower royalty, he would probably make more by the increased sale; and consequently, the public would have the advantage of a more general use of the machine. This, of course, is only one of the details of the present system; but, where we find so much to remedy, the question fairly arises, whether the monopoly attempted to be established by patent law ought to be tolerated at all.

How improbable it is that we should suffer from these inventions remaining secret I have already pointed out. As to the stimulus which the Patent Law is supposed to give to inventive talent—that it calls many away from legitimate occupations in pursuit of a speculation, I admit; but I will not admit that this class of half-educated persons groping in the dark for some patent which is to give them fortune make any really valuable discoveries. On the contrary, they only worry the real inventor, by declaring themselves winners of a prize for which he is struggling legitimately. This class owes its existence to the Patent Law, and the sooner we are free from such a class, the better.

But the real inventor works with a consciousness of the light that is in him, and his course will not be diverted by the existence or non-existence of such laws as these. He revels too much in the exercise of the faculties God has given him; and the stream of inventive genius will continue to flow on after the fall of the patent system, as it did in older days before that system existed. All the most important inventions down to our own time were before the patent system. But it will be said here, as I have heard it said elsewhere, Because genius is generous enough to work for you, whether you reward it or not, will you therefore take the fruits of its toil, and bid it be content with the glory of serving you? To this I say, and to all such observations, distinctly No. I have endeavoured to show that the present system, so far from fostering genius, deludes it, ruins it, hands it over to the money-lender and the lawyer. And now I would ask you to consider what really effective plan might be proposed in its stead.

Inventors may be divided into two classes: There is the practical inventor, the engineer, the contractor, the architect, the mechanist whose skill is called out by the urgencies of some great work, and who invents as he goes along. To this same class belong all those inventors—manufacturers of a particular article, who, familiar with certain materials applied in certain ways, devise from time to

time cheaper and more expeditious methods of combining these materials. Now, this is a class whom the public, by the nature of things can reward themselves, and to the public they may be left. Remember their object is the accomplishment of a particular work, the invention is only a collateral discovery made by the way. They have their immediate reward in the success of their project, in the facility of their manufacture. But they have their more remote reward in the universal estimation in which their services—their manufactured articles—are held by the public. This is a legitimate and natural reward, and interferes not with each man's proper business. It does not involve him in the niceties of specification, nor drag him into endless litigation, wasting his time and capital. And this is the reward which other men of talent are accustomed to look to. If a physician, whose business is the cure of the sick, discovers a particular method of treating any malady, he cannot patent it; he is rewarded by increased reputation and an increased number of patients. It is true, if his new method consists in a particular combination of drugs, he may patent it as a medicine; but that the patent medicine class is a useful product of the patent laws few will maintain. Again, if a lawyer discovers a particular mode of pleading, he has no means of levying a contribution on his neighbour who employs the same after him. But it will be said, if the new invention is published, as I maintain it must be in our present times, what security is there that the inventor will gain at all, when the same article or plan is adopted by all his rivals. To return to the illustration of the medical man, if you wish for a particular method of treatment, even though all the profession have taken it up, would not you prefer going to the physician who had originated it? Would not you think him the best person to apply his treatment to your particular case? Free trade provides for this class of inventors, and to its operation they should be left.

But the second and more important class is that of the scientific inventor, the professional inventor, the inventor properly so called, the gifted man whose lot it is to strike out new roads to wealth and happiness for his fellow-men. And to secure him some reward of his toils is a most important duty. It is this class that supplies the most melancholy example of the working of our present system. They are the victims of the patent speculator; or, if rash enough to do without his aid, meet a still more miserable fate. They should have a provision which would enable them to pursue their investigations, and to enjoy the exercise of their talents. I know the intervention of the State is regarded with suspicion, and justly so, by many schools of social philosophers. But if, in overthrowing the patent laws, you enrich the public by the destruction of a monopoly, by freeing the channel of legitimate invention, we may fairly set apart a portion of this increased wealth to provide for inventors. Let there be a board of examiners, consisting of eminent scientific men, appointed on the plan of the Civil Service Commissioners. Let them have a museum of models like that at Washington, and a register of all inventions like what the present Patent Office professes to be. The actual number of new patents of some value I have

stated on Mr. Woodcroft's authority at about 100 per annum. What proportion of these come from the second class of inventors I have been unable to ascertain with any exactness, though I believe 20 per cent. would be found near the number. This gives an idea what number of inventors we should be prepared to reward. All this class should enroll their works at the registry I have suggested, and produce at a fitting time some evidence that their invention has been carried into effect—to what extent, and with what saving to the public. Let the commissioners then, according to the value of the invention so far ascertained, decide among the candidates who has done most service to the State in their respective departments of invention. The reward should be something in the shape of an exhibition of say £200 per annum for two years, to be extended in duration and increased in amount if the invention continues to work. If, at the end of ten years, the invention has become of general use and of sufficient value, this exhibition might be continued for life. To offer any detailed statement of such a plan would require more minute statistics than I have yet been able to obtain. I merely suggest this plan as pointing out the real class who require protection—the class of the scientific inventors. We have seen the State attempt in particular instances, as in the cases of Arkwright and Crompton, to remedy the absurdity and the injustice of the present system; and to invest some scientific body with this power, to be exercised regularly and on fixed principles, is what I urge.

But my proposition here is essentially negative. That the present patent system cannot maintain its ground, shackling invention, de-luding the inventor and involving him in ruinous costs, oppressing the home manufacturer through the operation of free trade, and serving no one class but that which claims least sympathy, the new class of patent speculators.*

DISCUSSION.

Dr. HANCOCK recommended the adoption of the plan pursued in the United States,† where a patent was never granted unless the invention was really a novel one. A proper scrutiny into this subject was prosecuted by duly qualified persons, the result was that two-thirds of the applications for patents were refused on this ground. In the United Kingdom this onerous duty devolved on some of the most overworked officials in the country, the Attorney-General, for instance.

* Mr. Macfie, who has devoted so much attention to this question, advocates the intervention of the State in this way, viz., that the invention should be bought up by a round sum. But how is the value of the invention to be ascertained till it has been some years before the public? By the plan I venture to suggest the reward could be increased according as the public received increased benefit.

† For a full explanation of the plans recommended by Dr. Hancock, see answer prepared for the Belfast Chamber of Commerce by Professor James Thomson and Dr. Hancock, and transmitted by the Chamber to the Patent Law Commissioners.—*Report of Commissioners on Law of Letters Patent of Inventions, 1865, p. 197.*

Dr. SHAW thought that Mr. Whittle had unjustly branded with censure the class of persons he called Patent Speculators ; nor could he agree with Mr. Whittle in thinking that the minor improvements that did not reach the last stage were to be decried.

Mr. JAMES HAUGHTON considered that if the present patent law were sound in principle, there should be no limit to the duration of the monopoly thereby created. Public policy, however, conflicted with such a principle, and the American plan seemed to him the best in practice, though if the system of giving an inventor a sum as direct remuneration could be carried out, it would be preferable ; the difficulty was how to estimate the reward.

Mr. J. W. GREGG dwelt on the frauds practised on the true inventor, by making some trivial change in the mechanism, while advocating the fundamental idea.

Mr. DILLON had suffered personally from the abuses complained of by the last speaker, and approved of the American system.

THE CHAIRMAN, (SIR ROBERT KANE) said that a great deal of the confusion, and waste of time and money resulting from the existing system, was due to the laws and the legal profession. Cases were tried before judges totally ignorant of the subject, and often without the assistance of a jury. A melancholy instance of the evil results of this system was afforded by the case of Fourdrinier, a Frenchman, who invented the process now in use for the manufacture of paper. At the trial which took place, the Chief Justice, Lord Ellenborough, saw nothing novel in this, and the patent was broken on the application of the paper makers, who, the morning the case came on for hearing, would, as they said, have cheerfully given the patentee £10,000 a year for his life, if he would have compromised it. He and his partners were both made bankrupt by the decision. This shewed the necessity of having such questions decided by men of proper scientific qualifications, and in this he entirely concurred with Dr. Hancock. The question of utility was a very difficult one at first, for it could not be determined till the patent had been for some time in operation. It was to be observed with respect to provisional patents, running only for a short time, that they were frequently taken out only for the purpose of protecting experiments which had to be made more or less in public. A beneficial change had taken place in the point of view in which patents were regarded by the bench. Formerly they were regarded as violations of public rights, and accordingly the patent was broken if the slightest flaw was discovered in the specification. Recently, however, the inventor had come to be regarded as a public benefactor ; so that minute differences no longer enabled an imitator to evade the effect of the patent. The principle of mechanical and chemical equivalents was now recognised. Formerly it would have been held that if another person produced the same result as the inventor by any process, mechanical or chemical, equivalent to that employed by the latter, it would have been no infringement of the patent. The rule was different at the present day.