

ANNUAL REPORT OF THE COMMISSIONER OF PATENTS.

The law requiring the Commissioner of Patents to communicate to Congress an annual report, contemplates that in addition to statistical statements and tables, such as have been above given, he should present his reflections upon the working of the laws he is called upon to administer, and exhibit a view of the progress of the arts of the country, which it is his peculiar privilege to observe. In discharging this duty, I shall take the liberty of departing from the formality of a mere official communication, and address myself through Congress, by whose munificence the reports of this office are so widely disseminated, to the public, for whose benefit they are mainly intended.

The subjects to which I shall call attention are, the policy of any system of protection by patents; the advantages of our own system as compared with those of other leading industrial nations, and particularly Great Britain; the state of the industrial arts in this country as exhibited by the inventions examined in this office within the last one or two years; and the modifications of patent laws which in my judgment, would give greater efficiency to our patent system.

POLICY OF PROTECTION BY PATENTS.

I am aware that to most inventors in this country it would seem not less preposterous to question the right of property, or the fundamental laws of morality, than to inquire into the right and policy of granting patents for inventions; but we cannot shut our eyes to the fact that within the last few years the policy of patent laws has been the subject of grave discussion in Europe. No later than 1862, a distinguished member of the House of Commons, in England, gave notice of a motion to consider, not the working, but the policy, of the patent law itself; and in a debate which arose in May, 1862, upon a motion of Sir Hugh Cairnes for an address to the crown, praying for the appointment of a commission to inquire into the working of the law relating to patents for inventions, members of Parliament stated that year by year the opinion had grown more general that, practically, patents did more harm than good to inventors. In 1852 a select committee of the House of Lords was appointed to consider a bill proposed to amend the then existing law of patents. The voluminous evidence taken before this committee has been published, and is full of instruction as to the working of the patent laws in Great Britain, and the questions which arose as to the policy of those laws. The character of the questions which were raised as to the policy of any patent system is exhibited by some of the interrogatories proposed by the committee:—

“Do you not think that the fact of a patent being granted is a considerable obstruction to anybody else inventing in that line?”

“You think that in no case where a useful improvement in the course of a manufacture suggests itself to the mind of a man, he would be deterred from making that improvement for fear of being dragged into litigation by reason of his infringing some other patent?”

“Do not you think that the stimulus which a patent gives to a man withdraws a great many ingenious artisans from their usual and more useful work in order to invent things which, when invented, are of no use whatever?”

A question put to Mr. Brunel, an engineer of acknowledged eminence, is: “The result of your evidence is, that you are very decidedly of opinion that the whole patent system should be abolished?”

His answer is: “Yes; I think it would be an immense benefit to that unfortunate class of men whom we call inventors, who are at present ruined and their families ruined, and who I believe are a great injury to society.”

“And you think that those consequences, such as ruin to inventors, and evils of that description, would subsist equally, though the patent laws were made simple and effective?”

“Yes, I think they would be very much increased; and if patents are continued, I hope the principle will be carried out thoroughly, and then it will not stand for two years.”

“I can see every day that the poorer class of inventors ruin themselves by the attempt to work out some idea for the sake of getting a patent, while in

all probability, if the man had gone to his master and said: ‘Well, it strikes me, that by such a means we should be able to get through more work and do something better; what do you think about it?’ the chances are that most masters would, if they saw it was a good idea, give the man £1 or a £5 note; and the man the next day would be at work at something else, and you would have out of that man’s brains an immensely greater portion of invention, and I believe he would get much better paid for it. I believe he would really make money; whereas, now, everybody acquainted with these men knows that they lose money by it, and that an inventor, a schemer, is a poor man, who is more likely to go to the work-house than anything else.”

Mr. J. L. Ricardo, a member of the House of Commons, in his answer to the questions of the committee, forced the free-trade doctrines of his eminent name-sake to the utmost verge.

He says: “The result of my experience and observation has been a conviction that the whole system of granting patents at all is very injurious to the community generally, and certainly not of any advantage whatever to the inventor. I consider that it is in a great measure a delusion upon the inventor to suppose that the patent privileges which are granted to him render his invention more valuable than it would be, supposing there did not exist any monopoly with regard to it.” He regards a monopoly with respect to a particular trade as being in exactly the same situation as a monopoly respecting any particular invention. “The object of a patent is to monopolize a particular trade.” He quotes Mr. Say, who considers a patent as a recompense which the Government grants to the inventor at the expense of the consumer. He quotes the opinion of Lord Kenyon, in the case of Hornblower against Bolton, in which he says: “I confess I am not one of those who greatly favor patents; for although in many instances, and particularly in this, the public are greatly favored by them; yet, on striking the balance on the subject, I think that great oppression is practiced on inferior mechanics by those who are more opulent.” He does not refer to the views of Lord Mansfield, the great founder of commercial law, who held that “in all work of the mind and of genius, the common law of England ought to be held as giving an absolute property.” He refers to Lord Bacon, who in his advice to Sir George Villiers, says: “Especial care must be taken that monopolies, which are the canker of all trading, be not admitted under the specious pretext of public good.” But he makes no mention of the tribute to inventive genius which Lord Bacon proposes in his “Atlantis,” where he says: “Upon every invention of value we erect a statue to the inventor, and give him a liberal and honorable reward.”

The objectors to the policy of a system of protection by patents, as appears by the questions propounded by the committee of the House of Lords, and the answers above quoted, may be resolved into three classes:

1. Those who honestly doubt whether the system of patents affects the assumed development of the industrial resources of the nation; 2, those who believe that the progress of a nation is to be secured only through the encouragement and instrumentality of the favored classes; and, 3, those who, carrying the abstract principles of free trade to too great a generalization, deny the policy of any law which savors of a monopoly, or effects even a temporary protection of industry or genius. The objections of the first class I will hereafter attempt to answer in detail. Those of the second class not openly favored under the present political condition of affairs in this country, have found sympathy with a class now, happily, perhaps, removed from us, who always regarded with contempt the poor inventors of the North. It is this spirit which breathes in the language of the eminent engineer, who conceives that the poor inventor would be sufficiently rewarded by receiving a one-pound or five-pound note from his master. It is unnecessary to reply seriously to this class of objectors. They can be found only in a country where the avowed objects of the laws which regulate the descent of property are the concentration of wealth in the hands of the few, and the support of hereditary aristocracy; where the husbandmen on small properties have been driven from the land, in order that 2,000 proprietors may possess among them one-third of the land and

the total revenue of the three kingdoms; where the doctrines of political economy prevail that large farms, large machine shops, large cotton mills, and large iron works, can produce cheaper than small ones, and therefore very properly supersede and obliterate them; and where a theologian no less respected than Dr. Chalmers can be found to affirm the blessings of a splendid aristocracy, “that from this higher galaxy of rank and fortune there are droppings, as it were, of a bland and benign influence on the general platform of humanity.”

There is, unfortunately, in this country more sympathy with the last class of objectors, who regard, with Mr. Ricardo, a patent obnoxious as a remnant of the old abuse of monopolies, by which an individual obtained from the Crown the exclusive right to exercise some particular trade, and who consider the patent laws as a product of the semi-barbarous age of Queen Elizabeth. During her reign the sole right to buy and provide steel within her realm was granted to a single nobleman. The sale of salt, starch, leather, paper, &c., was restricted to favored persons, who in some cases raised the prices to 1,000 per cent. and upwards. It was this class of monopolies against which Lord Bacon inveighed. The evils of this policy increased to such an extent, that it was considered by the Parliament of James I. altogether incompatible with the prosperity of the country. This feeling produced, in the 21st of James I., the famous “statute of monopolies”—famous not only for the abolition of the former unjust monopolies of trade, but for establishing the rights of inventors, which date, according to Blackstone and other English jurists, from that law. The statute suppresses monopolies by making void the future grants of all such as do not come under the following proviso: “Provided also, and be it enacted, that any declaration before mentioned shall not extend to any 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 manufacture within the realm, to the true and first inventor or inventors of such manufacture, which others at the time of making such Letters Patent shall not use, so as also they be not contrary to law, nor mischievous to the State, by raising the prices of commodities at home, or hurtful of trade or generally inconvenient.” Certain patents, more of the character of the old monopolies of trading, which paid a yearly rent to the exchequer, were exempted from the operation of the statute. The date of the act was 1624. In 1639, great discontent having arisen in the public mind with respect to the monopolies and privileges which remained, there was issued a proclamation abolishing a great many of the privileges which still existed, and among others “all patents for new inventions not put in practice from the date of their respective grants.” There was thus in the general statute abolishing monopolies, and the subsequent proclamation clearing away such as subsisted, a distinct recognition of the claims of useful inventions to exemption.

It is a curious fact in the general history of the origin of the patent policy, that the original object in granting patent privileges in France, as stated by M. Wolowski, professor of commercial legislation, in the evidence before the committee of the House of Lords, was to break up the monopoly of the guilds of trade which formerly existed in France, as well as in almost every city in Europe. All the persons practicing any one art or trade in a particular city, such as the tailors, the brewers, the tanners, the goldsmiths, &c., were united into a company, which received from the Government the exclusive right to practice their vocation. The competition of the art or trade was thus restricted to those who had been made free of the company; and no person could be made free until he had complied with regulations, often intentionally made numerous and vexatious in order to prevent too many persons entering the business. No member of the guild could work except in conformity with its rules. An inventor of any improvement in the trades practiced by the guild, not a member thereof, could not employ his own invention; a patent gave the inventor the right of working individually, in derogation of the chartered monopoly of the guild. According to M. Wolowski, patents are now granted in Austria for the same object. Thus the dawn of the rights of inventors has been actually coeval with the destruction of monopolies, odious to the common

justice of men. And the common sense of mankind has marked a distinction between such monopolies and the exclusive rights conceded to inventors. Their rights under patents are called monopolies only from the poverty of language, which has failed to express in words a distinction which no less clearly exists. The odious monopolies, or those properly so called, such as were given in the time of Elizabeth, for the sale of salt, starch, paper, steel, &c., were grants simply to aid individuals in amassing wealth, and favored the aggregation of property in a few hands without opening new sources of national wealth, and were thus in derogation of the rights of others without compensatory public benefit, and were therefore positively injurious. Prof. Bowen has shown, in opposition to dogmas of Adam Smith, that individual and national wealth are not identical; that individuals grow rich by the acquisition of wealth previously existing; nations, by the creation of wealth that did not previously exist. "Invention," says Mr. Ray, according to Prof. Bowen, "is the only power on earth that can be said to create. It enters as an essential element into the process of the increase of national wealth, because that process is a creation, and not an acquisition. It does not necessarily enter into the process of the increase of individual wealth, because that may be simply an acquisition, not a creation." "Hence," continues Mr. Bowen, "the most frequent cause of the increase of national wealth is the increase of the skill, dexterity and judgment, and of the mechanical contrivances, with which national labor is applied." In this view, how can a monopoly of a trade be compared with the exclusive right in an invention? How can the exclusive privilege to sell salt in Elizabeth's time, which added not one bushel to the production, but which enriched the monopolist and robbed the community, as was the fact, by raising the price from sixteen pence a bushel to fifteen shillings, and the exclusive right of Whitney to his invention of the cotton gin, which has added hundreds of millions to the products and exports of the country, be both branded, with equal justice, with the odious name of monopoly?

The argument of the distinguished member of Parliament, Mr. Ricardo, against patents, on the ground of their being monopolies, may have less weight when the immediate practical grounds of his objections are considered. It appears from his evidence before the committee that he was chairman of the Electric Telegraph Company—the great company which, under Mr. Wheatstone's patents and a charter from Parliament, exclusively controlled the system of telegraphic communication in England.

It appears that the company paid for the patent rights under Mr. Wheatstone the sum of £140,000, and that the company had paid nearly £200,000 in buying patents and litigating them; that the company had bought up a very large number of patents which interfered with their exclusive rights, because they had made it a rule, if a man offered reasonable terms, to buy an invention, however bad it might be, sooner than litigate it; and that they paid for one patent—that of Mr. Bains—£8,000 or £9,000, which, although it did not quite come up to the expectation of the company, they found useful in combination with other patents. The obvious question occurs, how, but for the existence of the patent laws which recognized the rights of the company to the exclusive use of Mr. Wheatstone's and Mr. Bains's patent, for which they had paid the inventor a full equivalent, could they have had the means of reimbursing themselves for the vast expenditure for the original and competing patents? What more instructive illustration could be found, except the whole free-trade policy of Great Britain, of the fallacy of political economy founded simply upon the individual interests of men and nations?

It is gratifying to observe that Mr. J. S. Mill, admitted to be the ablest living writer upon political economy, and a strong advocate of free trade, thus frankly admits the reasonableness of granting patent rights: "The condemnation of monopolies," he says, "ought not to extend to patents, by which the originator of a new process is permitted to enjoy, for a limited period, the exclusive privilege of using his own improvement. This is not making the commodity dearer for his benefit, but merely postponing a part of the increased cheapness which the public owe to the inventor, in order to compensate and reward

him for the service. That he ought to be both compensated and rewarded for it, will not be denied; and also, that if all were at once allowed to avail themselves of his ingenuity, without having shared the labors or the expenses which he had to incur in bringing his idea into a practical shape, either such expenses and labors would be undergone by nobody, except by very opulent and very public-spirited persons, or the state must put a value on the service rendered by the inventor, and make him a public grant. This has been done in some instances (as when Parliament offered a reward of £20,000 for a method of finding a ship's longitude at sea), and may be done without inconvenience, in cases of very conspicuous public benefit; but, in general, an exclusive privilege of temporary duration is preferable, because it leaves nothing to any one's discretion; because the reward conferred by it depends upon the inventions being found useful, and the greater the usefulness the greater the reward; and because it is paid by the very persons to whom the service is rendered, the consumers of the commodity."—Political Economy, vol. II., page 497.

[We shall continue these extracts until we complete the full report.]

Cleansing Wheat.

About the year 1846 a Mr. Bantz invented and patented a process for "unbranning" and cleansing wheat. The object of the process, with its later improvements, is to remove from the grain of wheat, before grinding, the outer innutritious cuticle, and to leave only the nutritious part of the grain to be ground up. The process is based on a close scientific analysis of the structure of the wheat kernel, and takes off merely the thin outer layer or hull, leaving intact the layer immediately within, which is found to be rich in nutritious substance. The kernel of wheat subjected to this process comes out whole, clean, and of light color. It has lost its whole exterior coating, excepting in the deep crease which marks one side of it, and is freed from every impurity.

Besides the diminished liability to injury by heat or insects, in wheat thus prepared, a very remarkable gain is made in its usefulness. In the old process of grinding up the grain whole and separating the bran by bolting, a part of the good flour is carried off with the bran. A part of the grain which the chemist pronounces the most valuable, but which cannot be separated from the worthless hull by grinding, is lost. Bantz's process, however, removing the worthless part and that alone, leaves the whole of the rest of the grain for use and leaves it in a state, too, which greatly improves the quality of the bread made from it. The economical results of this improvement are remarkable. The matter is touched upon in the report of Mr. Tremenheere, who was appointed in England to investigate the grievances of the journeymen bakers, and reported in 1862. Mr. Tremenheere gives the statement made by the Messrs. Hadley, of the London City Flour Mills, who had experimented with Bantz's process. We make the following extract from their evidence:—

"By the ordinary mode of grinding the result obtained is 76 per cent. of flour for human use. By the new process we find, by a series of very careful experiments, extending over several months, that we obtain about 86 per cent. of the berry available to make bread. The money value of this increase of 10 per cent. is subject to a deduction of about one-half in consideration of the lessened quantity of offal, the value of which we may take at half of that of the flour, if used as human food. The offal is used for many purposes, which give it a value larger than would at first sight be conjectured. In addition to this net increase of 5 per cent. in value of flour available for human food, the flour made by this process, containing all the nitrogenous or nutritious matter existing in the portion of the berry hitherto lost, yields a large increase in the number of loaves per sack. From the trials which we have ourselves made, we are satisfied that that increase may be safely stated at 20 lbs. of bread per sack of flour. This, taking the common yield of a sack of flour at 90 4-lb. loaves, or 360 lbs. of bread, amounts to an increase of upward of 5 per cent. on the bread (18 lbs. would be exactly 5 per cent.). The aggregate gain in flour and bread may therefore safely be stated at 10

per cent. There is another source of gain in a national point of view, in the increased nutritive value of the whole mass of the flour made by this process."

A company is now being organized in Boston for the purpose of using this process.

FOREIGN INTELLIGENCE

NEW USES OF IODINE.—From the specifications recently issued, of a patent by Professor Hofmann, of London, we learn that a new coloring matter, which dyes silk and wool of a beautiful violet, blue violet, or red violet tint, has been produced by the application of iodine extracted from sea-weed. It has long been thought that if iodine could be used as a coloring substance it would be one of the most powerful known. The patented process consists of mixing in certain proportion the substance called rosaniline with the iodides of ethyl, methyl, or amyl. This dye may be used in the same manner as the aniline colors, and is already in the hands of practical people in all the manufacturing districts, and bids fair to be "the color" of the season. The use of iodine as a disinfectant has also been noticed by Dr. Richardson, who states that iodine, placed in a small box with a perforated lid, is a good means of destroying organic poison in rooms. During the late epidemic of small-pox in London he has seen the method used with benefit.

A YEAR'S LABOR DEFEATED BY THE BREAKING OF A BAR OF IRON.—An unfortunate accident has just occurred in the studio of M. Dubray, statuary, at Passy. That artist has just terminated, after a year's labor, the model of an equestrian figure of Napoleon I., destined for the city of Rouen. The committee charged to report on the work had willingly accepted the statue, being satisfied that a sculptor had never been more successful. The Prefect of the Seine-Inférieure, attracted by the report of the committee, called on the artist to see the work, and the statue was being turned on its axis to exhibit it from different points of view, when the bar of iron by which the whole mass was supported suddenly broke in two, and the work was precipitated to the ground, rider and horse being reduced to a thousand pieces. It is impossible to depict the consternation of all present, but after the first emotion was passed, M. Dubray announced that he should commence that very day on the work of preparing a new model.

THE drains of Paris are declared to be the most wonderful work of the kind ever executed. Hundreds of hollow tubes, each one a marvel of solidity and skill, run from every quarter of the town to one immense receptacle of the filth and waste water thus carried off. Before the mouth of this hideous reservoir is placed a grating through which the mass of infection pours night and day. This grating is meant to prevent the passage of any object beyond a certain size, which might otherwise obstruct the tube. The police reports of the past year record the detection of more than ten thousand new born infants thrown at the moment of birth into the drains, which had carried them to the horrid grating, there to leave them to be gathered as the most damning evidence of neglect and abandonment.

A SUBMARINE boat propelled by compressed air has been built at Rochelle, France. It is intended to pierce an enemy's vessel under water, leave a combustible shell on her side, and then to discharge it by means of electricity as the boat retires to a safe distance.

M. GODARD, the aeronaut, has started in Paris a newspaper devoted to aeronautic subjects, and called *Le Montgolfier*. He is building a new monster balloon called *L' Aigle*.

IN the commune of Hure, near La Reole, France, is a vine loaded with 2,500 bunches of grapes, each being from eight to ten inches in length.

ANOTHER steamer, the *General Hunter*, has been destroyed by a torpedo on a river in Florida. It will not do hereafter to say that torpedoes are incapable of doing damage.

THE iron pavement so long in use in Cortlandt street has been removed, and is to be replaced by Belgian pavement. Frost disturbed the iron blocks and rendered them unsafe.