

## The History of Patents.

To the *Practical Engineer* (London) we are indebted for the following facts and anecdotes relative to early patents, the names of many discoverers, and the date of the inventions: While the lawyers and the treasury were wrangling over who could consume the greatest amount of seed corn wrung from inventors, about the year 1775 the treasury made one of its fiscal errors (so costly to the nation), which had an important bearing on patents of invention. Just as it shamefully overtaxed impoverished inventors now, without rhyme or reason, on a fiscal error which has lost it (or rather the public) £50,000,000 since 1852, so in the year 1775 it tried taxing the American colonies in the matter of tea entering Boston harbor. The colonies would not pay its exaction, and, fortunately, were far enough off to resist. A war followed, lasting many years, until on September 3, 1783, we had to acknowledge the independence of the colonies, and swallow the unpleasant fact that the fiscal error of the treasury had lost us America. One effect of this separation of the colonies was that all the old "£4 16s. 6d. extra fee" colonial patents running in America were, of course, canceled thereby. New patent laws were required in America in place of the old law, deceased, and the outcome was the creation, in 1790—1793, under George Washington, by Jefferson, of the best patent law that has ever existed—a law which has not only scattered untold benefits throughout America, but from which we in this country are also receiving reflected benefits. The fundamental principle of the American act is that "inventors and authors have equal and similar claims to the protection of the legislature"—in other words, that protection to inventors should be valid, and not a sham, and that lawyers and the treasury should not be allowed to plunder them. It is not difficult to realize why America took such care to cut absolutely clear from our chancery system. It would result from the fine object lesson chancery had previously given the world in their treatment of James Watt. If our patent system had been anything but a delusion and a snare, it would have protected an inventor such as James Watt, who gave the world the steam engine. It did nothing of the kind, but let him in for ruinous lawsuits, that ate up the whole of his profits for the natural term of his patent. What likelihood could there possibly be of protection for any humbler inventor, after such treatment of Watt? None whatever. The protection sold by the British Patent Office was evidently a farce, a very costly farce, too, at about £400 per patent for the United Kingdom. To such a miserable strait had the wrangling lawyers brought our patent laws at this period.

The establishment of the American patent system in 1790 was the protest of business men against the violation of all the true interests of invention by lawyers, who could not appreciate them. The movement was to invention what Luther's movement was to the abuses of the old Catholic Church: the spirit of invention was preserved, but the mummery was thrown aside. Inventors should remember that date—1790—as that when invention asserted its freedom. To avoid the old chancery trickery over worthless titles, leading to endless lawsuits, the American system introduced the preliminary examination system, and granted only patents which were as valid and safe from lawsuits as they could possibly be made. It gave these valid titles with business dispatch, instead of with endless legal delay, it printed its specifications in English, on paper, so that they could easily be consulted by inventors, instead of "engrossing them on skins, in black hand, in the Latin language," which was only fooling with invention. It gave 17 instead of 14 years for the duration of a patent, or 21 per cent more time. It charged only £7, instead of £400 for a United Kingdom patent, or only one fifty-seventh part of the lawyer's price. Here was abuse done away with at a stroke, but the effect on the fee hunters of chancery and the treasury would make them hate the American patent system as the Pope hated Luther. First, they would hate it because they would feel that for 167 years they had betrayed their trust, and been plundering instead of encouraging invention. Secondly, they would hate it because the business men at the head of the American Patent Office would be no party to the issue of worthless titles to patents out of which the lawyers could make "six or twelve fold law costs" in subsequent trials. Third, they would hate it because, if America issued patents at one fifty-seventh of their charges, it demonstrated beyond question that fifty-six parts out of the 57 charged had never been other than shameless extortion. Fourth, above all they would hate it from the fiscal error of the treasury having lost the American colonies, so that nothing coming from America could possibly have any merit in it whatever. The effect of this deep hatred of all things American 100 years ago has blinded us to the intrinsic merit of America's patent system, and withheld from the English people that which in their own interest they ought to have had from the very first.

The American patent system, working in the interest of the public, demonstrated to them its commercial value in the first few years. In 1791 Fitch, and

in 1793 Fulton, invented practical steamboats. In 1794 Whitney invented the cotton gin. Cotton planting at that time was languishing, and Whitney's invention made it exceedingly prosperous. Congress voted sums to assist invention, and at Washington a fine museum was erected, containing models and records of considerable public interest. When General Ross took Washington, in 1812, and burnt the Capitol, it was proposed to treat the Patent Museum after the same fashion. "A loaded cannon was trained upon it, when its director, Dr. Thornton, put himself before the gun, and in a frenzy of excitement exclaimed, 'Are you Englishmen, or only Goths and Vandals? This is the Patent Office, the depository of the ingenuity and inventiveness of the American nation, in which the whole world is interested. Would you destroy it? If so, fire away, and let the charge go through my body.' The effect is said to have been magical upon the soldiers, and to have saved the Patent Office from destruction." Our soldiers would report this incident when they returned home to England; news would be constantly reaching our persecuted inventors of the success of friends and relatives in America, under its patent system; many of our ablest inventors would leave this country for America in consequence, while a general feeling of unrest under our vicious, lawyer-ridden system would spread far and wide in this country. The knowledge among inventors that justice is granted them in America, and withheld them here, has led to the frequent forcing of the patent question on Parliament during the century. The 1790 prejudice against the American system has, however, always been sufficient to continue gross abuses in our patent system down to the present day. We have seen what came of a fiscal error of the treasury in 1775. Is it not about time it dropped the present one paralyzing invention?

During the 167 years from 1623 to 1790, the discouragement of the chancery system was such that only one useful invention appeared at an average of  $3\frac{1}{4}$  years interval.

The best list of useful inventions that can be made out for this period only gives 14 of such for the first 100 years, and 37 for the remaining 67 years, up to 1790. Many of these inventions were not patented under chancery at all. They are as follows:

- 1623. Mannsell's glass patent.
- 1630. Ramsey's fire engine patent.
- 1643. Torricelli's barometre.
- 1649. Pascal's hydraulic press.
- 1650. Otto Guericke's air pump.
- 1657. Huygen's pendulum clock.
- 1664. Hill's breechloader.
- 1672. Wooden railroads.
- 1676. Barlow's repeaters.
- 1688. Papin's steam engine patent.
- 1698. Savary's steam engine patent.
- 1716. Floating docks.
- 1721. Halley's diving apparatus.
- 1723. Streets lighted with hydrogen gas.
- 1727. Leupold's high pressure engine.
- 1732. Ledemour's pump.
- 1736. Hull's steam tug.
- 1738. Iron rails nailed to wooden sleepers.
- 1739. Emerton's wood preserving patent.
- 1747. Watson's electric telegraph.
- 1748. Paul's carding patent.
- 1752. Franklin's lightning rod.
- 1756. Strutt's stocking frame.
- 1758. Dolland's achromatic telescope.
- 1762. Wedgewood ware patented.
- 1764. Blackley's tubular boilers.
- 1765. Spedding's gas light.
- 1767. Hargraves' spinning jeuny.
- 1768. Lace machinery.
- 1769. Watt's steam engine patent.
- 1769. Arkwright's spinning frame patent.
- 1771. Crompton's mule patent.
- 1774. Lesargis telegraph.
- 1776. De Jouffroy's steamboat trial.
- 1777. Bushnell's torpedo.
- 1780. Pickard's crank patent.
- 1780. Leblanc's artificial soda.
- 1780. Burgand's argand burners.
- 1783-4. Cort's iron patents.
- 1784. Bramah's lock patent.
- 1784. Montgolfier's balloon.
- 1784. Watt's locomotive patent.
- 1785. Cartwright's locomotive patent.
- 1785. Arkwright's power loom patent.
- 1786. Lebon's gas light.
- 1787. Betancourt's electric telegraph.
- 1787. Hamer's wool shearing.
- 1787. Symington's steam engine patent.
- 1788. Miller's steamboat trial.
- 1789. Galvani's batteries, etc.
- 1789. Present rails and wheels invented.

THREE new torpedo boats have been ordered of Yarrow & Co. by the British naval authorities. They are to be 140 feet long by 14 feet 6 inches beam, and to have a guaranteed speed of 27 knots, which is equal to a little over 31 miles per hour.

## Correspondence.

## Scald the Scoundrels.

To the Editor of the *Scientific American*:

I see in some of late newspapers that five masked men halted and boarded a locomotive of the California express, June 10, 1893, and forced the engineer to take a sledge, batter in the door of the express car, wounded the messenger, and robbed the express. Now, I am an old engineer—too old to do good service, nearly 73 years old—and it grieves my soul to read of an engineer being forced to compliance to such devils as those. I think every locomotive that travels on those long, lonesome roads should be furnished with a hot steam jet, one on the fireman's side and one on the engineer's side, with elastic pipes that they can point the jet in any direction and blow a masked man's eyes out with steam before he had time to use a revolver, or any other suspicious character that comes within 20 feet of the locomotive. Now, please make this idea known to the master mechanics or superintendents of locomotives everywhere, and I know they can furnish them and extend a steam jet into the express car, so that they can turn steam into the car and scald train robbers to death before they could get out of the car, and put a mark on them that they could be distinguished for a month after. I am too nervous to write much. Please scatter the idea as broad and as quick as you can, and oblige an old man that loves his fellow man that is honest and hates a dishonest person.

THOMAS R. ALLEN.

Lucas, Lucas County, Iowa, June 17, 1893.

## Shapes of Eggs.

Various attempts have been made to account for the diversity in shape seen in eggs. A recent study convinces Dr. Nicolsky that the differences may be all traced to gravity, and he finds his idea confirmed by all the eggs in the zoological collection of the St. Petersburg University. He supposes that pressure by the sides of the ovary tends to elongate the egg before the shell has hardened. In birds which keep a vertical position while at rest, as do the falcon and the owl, the soft egg is made short by the action of the weight of the body against the ovarian pressure; while in birds that, like the grebe, are nearly always swimming, the egg is lengthened because the bird's weight acts with the compression by the ovary. The egg is made more pointed at one end than at the other in birds that, like the guillemot, are frequently changing their position—sometimes swimming and diving, sometimes perching on the rocks, etc.

## Soapsuds as a Lubricator.

I had a curious lubricating experience a few years ago that I would like to put on record, observes Gulf in *Railway Appliances*. The machine that gave me the trouble was for experimental purposes, for what purpose it matters not. The trouble lay in the lubrication of a shaft that had to make 4,000 revolutions per minute. It was about four and a quarter inches in diameter, with journals from eight to nine inches long, and carried a weight of 1,800 pounds. The thing simply wouldn't run cool. We cut oil grooves in the boxes; we scraped them; we used every kind of metal that we could think of; we hitched on a pump and pumped gallons of oil through those bearings; and yet, in from five to ten minutes, they would commence to heat, and nothing seemed to be able to stop it but the stoppage of the machine.

One day, in a fit of despair, we put soapsuds in the tank instead of oil and started to pump that in. Presto! The bearing had found the food for which it was craving, and proceeded to do its work with the cheerfulness of an old campaigner. It seemed that it was not so much the quantity of lubricant that was needed as a regular and continuous supply. The oils that we were able to use had a consistency that unfitted them for reaching the remote points under the rapidly revolving bearings, so it heated, while the soapy water was thin enough to be forced over the entire surface and keep everything all right. I presume that there are oils that would have done the same thing, only we did not happen to get hold of them. But if you ever attempt to use water, remember that you will need it all the time and in large quantities.—*Railway Review*.

## Use of Compressed Air to Cool Journal Bearings.

In any place where air compressors are used steadily, or where an air supply is convenient, it is quite convenient to conduct a pipe so as to blow air upon the heated bearings, and thus cool their heated brows, as the air will conduct heat away nearly as well as water. Air has an additional advantage in the fact that it cools in expanding so as to still further aid in the cooling of boxes where this scheme is applied. We are inclined to agree with an exchange that it may seem visionary, but if you have a good chance try it, and see if it don't help keep them cool, the help depending upon the flow of air and the pressure from which it expands, as expanding air cools very rapidly.—*Railway Review*.