

The American and French Patent Systems Compared.

One of the co-editors and proprietors of the *SCIENTIFIC AMERICAN*, Mr. S. H. Wales, is now, and for some time past has been in Europe, as Commissioner to the French Exhibition. At the request of an eminent engineer in Paris, he has written a few articles for *l'Invention*, a scientific journal published in Paris, in which he discusses and contrasts the American and French patent systems with considerable effect. The French inventors are laboring for a reform in their patent laws, which are too indiscriminate to fully meet the ends for which they are intended. Mr. Wales has been much complimented for the helping hand he has lent. We annex a translation of one of his articles, which touches on several points of interest and importance to American inventors:—

THE PRELIMINARY EXAMINATION.—In the June number of the *Invention*, I discussed in a summary manner the patent system of the United States, and endeavored to throw light on the utility of preliminary examination previous to the issue of letters patent. I intimated my preference for this system over any other now practiced, because the ultimate advantages to the patentee are, in my opinion, more likely to be secured and his rights protected by it. I also intimated that the system was not free from well grounded objection. The experience of twenty years, under the amended law of 1836, has revealed some objections to it which are gravely important and should not be passed over; but before mentioning some of them, it will be pertinent to the subject to state as a strong argument in support of a preliminary examination of all inventions for which patents are solicited, that this species of property has hitherto borne a commercial value in the United States equal in importance to other species of property; I could enumerate a great number of cases where patentees have suddenly risen from obscure poverty to an easy independence. I now refer to useful improvements. In the United States, as in all other countries, patents almost without number have been secured for useless vagaries in mechanics, and if their respective patentees have not been remunerated for them, the fault is not due to a defective system in the granting of the patent, but in the invention itself. If an inventor toils day after day in search of a perpetual motion or for some method of descending the Norwegian maelstrom, and afterwards finds no reward for this patient industry, it is no argument against a system that requires novelty as its first requisite to the issue of a patent for the invention; although under the rules of the Washington office, examiners are expected to withhold the patent, unless tolerable evidences of utility are suggested in the invention. In France, if I rightly apprehend the true state of the case, an inventor seldom finds a *bona fide* purchaser for his improvement, he is compelled usually to license out his patent to such parties as he may be able to find, who will undertake the sale of the article or machine, and in all such cases he is liable to the chances of an uncertain market and to the risk of broken integrity on the part of the licensee. He must also be able to establish the manufacture of the patented article by his own means so as to protect the licensee from the possibility of losing by an initiatory investment of money to carry it into practice.

An inventor is usually possessed of limited means and finds it out of his power to establish such manufacture, and is discouraged by the bleak prospect before him, from spending his time on improvements that overreach his financial ability to manage. In the United States it is a common thing for the patentee to sell his entire or partial right for a handsome sum of money, and is then free to carry forward any other improvements that he may discover. The system of a rigid preliminary examination of an invention inspires confidence in the legal value of the patent, and hence capitalists are more willing to embark their means in its purchase. Whoever will take the care to examine the weekly list of patents as they are officially published in the columns of the *SCIENTIFIC AMERICAN*, will be surprised to notice the activity that prevails among inventors in the United States. The foundation of this activity rests upon a good prospect of commercial success, otherwise it would not, it could not exist, and I argue from this point

that the United States system of granting patents, even with its defects, is the most perfect yet devised. The French are unquestionably an ingenious people, but their genius is passive, and not active, simply because they have little encouragement to ask for the patent seal of the Government with no reasonable safe-guard from litigation. Even with the letters patent in hand, they feel like one making his way in a dark and strange avenue, not knowing how soon he may stumble upon some foul breaker. Every species of manufacturing industry in France needs skillful improvement. The necessities of the times are demanding change. The agriculture of France is also suffering for improved implements to relieve the husbandman of his oppressive labors, and to enable him to make greater returns for his oftentimes misapplied industry. This result will not be gained until the Government seeks to foster more carefully the rights and guarantees made to inventors.

Under the present advanced condition of mechanical science, as it is developed in the three greatest producing countries of the world, France, England, and the United States, I readily conceive that an unlimited system of preliminary examinations could not be carried into effect. It would be sufficient for the French Government to confine itself to its own inventors without attempting to search the dusty records of foreign countries to see what has been before done in the same field. This latter would be an impossible, nay a fruitless labor; but with a faithful board of examiners aided by the noble works upon science that have been so honorable to the nation, a complete and beautiful system could be established that would start into life the slumbering genius of French inventors, and I am sure that the result within the next ten years would more than realize the hopes I have expressed in favor of the improved system.

One of the original defects in the system at present in vogue in the United States is the laborious necessity imposed upon examiners to search the published records of foreign countries. This is attended with great trouble, and is, after all, uncertain in its results, because it is out of reason to suppose that every publication of a scientific character will make its way into the library of the Patent Office.

Efforts are now being made to confine the range of examination within the United States, and at the same time freely open to foreign inventors the privilege of taking patents under the same regulations as shall be prescribed for citizens. The argument is:—The original inventor that offers a good invention for protection should be entitled to receive letters patent for it, if the invention has never before been known or practiced in the United States. With the necessary details for carrying it into effect the system would be admirable, and while the interests of inventors would be thereby greatly promoted, a corresponding result would accrue to the public interest. The interests of each are inseparable, and no legislation should suffer the claims of inventors to override the claims of the public.

I have thus briefly set forth the benefits, as I conceive them, of preliminary examination before the issue of letters patent for an invention, and in parting with the subject, I dare express the hope that the enlightened Government of France, having inaugurated a splendid exhibition of ingenuity, will not permit the occasion to pass without a more extended appreciation of the genius of its inventors by the establishment of a patent code that shall at once invite them to greater activity.

I feel confident that if France would take the initiative in this matter, other continental European countries would speedily follow.

Notes Relating to Science and Art.

A CLOCK FAN.—The Albany *Knickerbocker* calls for the invention of a fan moved by clock-work, and made portable, so as to be set upon a table, and about the size of a Yankee clock, and concludes as follows:

"Whoever takes out a patent for a successful invention of the sort may realize hundreds of thousands of dollars from it during the next summer. For throwing out the hint, the inventor can send us a sample. The sooner the better."

We think our cotemporary is somewhat mistaken. This same invention was patented by

Commodore Barron some twenty years ago, and has been re-invented, by different persons, several times a year ever since; but we never knew of any one who found it profitable. It has been presented to us as many as six times since May last, for our opinion as to its novelty,—each time by a different inventor.

NEWLY INVENTED PUMP.—A pump without a piston, greatly simplifying the construction, is much talked of among French mechanics. It is the invention of Monsieur de Malbeck.—The tube instead of being fixed, after the old plan, is made to work up and down, the lower end plunging into the water. At each plunge the water rises higher in the tube, the return of air from above being prevented by a valve, till at last a copious and steady stream is discharged by the spout. The pump is but little subject to derangement, is not liable to be frozen up, costs but little to keep in repair, and if made of galvanized iron, corrosive liquids or acids would not affect it. It is, moreover, of universal application.—[Charleston Mercury.]

[This pump is the same exactly as that illustrated in 1849, Vol. 4, *SCIENTIFIC AMERICAN*, the invention of Nehemiah Dodge, of this city.]

VOLTAIC ELECTRICITY.—Dr. Tyndall has just concluded a course of lectures at the Royal Institution, on voltaic electricity. In reviewing the progress and present condition of the science, he brought before his audience the recent discoveries, and stated the opinions of the most distinguished electricians, pointing out at the same time an immeasurable field that still lies open for investigation. He did little more than briefly notice the applications of electric force to the purposes of moving machinery, of illumination, of working in metals, and of transmitting intelligence. So far, indeed, as the probable substitution of electricity as a moving power instead of steam, it was shown that the only obstacle is the cost of the means yet known of exciting the electric force, and when it is considered that the chemical actions during the combustion of a candle are sufficient to generate more of this force than the most powerful voltaic batteries, if those actions could only be developed in the form of a voltaic current, there seems good reason to suppose that the means of thus generating electricity will ere long be discovered, and that there will then be supplied an almost illimitable source of power, applicable in numerous other ways than in mechanical action. It is, perhaps, in this direction that we must look for the accomplishment of marvels during the remainder of the nineteenth century, equal to those that have been effected since its commencement.—[London Mining Journal.]

Ericsson and Hot Air.

In our list of patent claims last week, it will be perceived that another patent has been granted to Capt. Ericsson for improvements on hot air engines. This corroborates the reports which have been in circulation for some time in this city, regarding new modifications of the very air engines which had been pronounced perfectly successful, "the greatest triumphs of modern genius," &c. The two claims of the new patent do not embrace any new discovery in science relative to hot air, nor do they relate to the heating furnaces (which were failures in the old engine), nor to any new method of obviating the difficulties of leakage, but simply to new modifications and arrangements of parts; these embrace the working of two pistons in one cylinder, and a method of working the pistons of the working cylinders by two sets of vibratory arms. We really regret to see an inventor like Capt. Ericsson throwing away his talents, science, skill, time, and toil upon such a chimera as the hot air engine.—Independent of the greater complexity of its parts, in comparison with the steam engine, the motive element—hot air—as a substitute for steam, never can be so used with success. The great bulk of fresh air which has to be fed in to an air engine at every stroke, is an objection to its use which cannot be overcome by any arrangement of machinery, and is sufficient of itself to *taboo* it. To say, as some have done, and as was reported of Capt. Ericsson's late engine, that *compressed* air would remove every difficulty, is neither more nor less than to make a statement destitute of truth. It requires the working cylinder to be filled with fresh air at

every stroke, and this has to be heated up to 491 degrees to exert a pressure of 15 lbs. on the square inch; to use less air will require a higher degree of heat, and to lower the temperature will reduce the pressure. In its very nature steam has many advantages over hot air, and as we believe there is great room for improvement in the saving of fuel in boilers, &c. we believe that Capt. Ericsson would do more good to himself and the world if he would quit hot air at once, and devote himself to the steam engine.

Steamboats on the South and Western Waters. The New Steamboat Law.

A very interesting report has been published in the *Cincinnati Gazette*, relating to steamboat statistics for the first six months of this year, by W. W. Guthrie, local inspector at Cincinnati. The report relates to steamboats on the Southern and Western rivers only. The number running on them is estimated at 600. During six months named, twelve were destroyed by fire, seven damaged by ice, fifty-two sunk and damaged by snags, five damaged by explosion, and seven damaged by collisions.

The number damaged by snags is very large, and amounts to 50 per cent of the entire loss. Our people in the South and West should look to improving the navigation of their rivers, for the loss amounts to nearly two millions' worth of property annually. The following, from the Report, is high testimony in favor of the workings of the new steamboat law:

"It is worthy of remark that there has been no explosion or collapse of flue of any boiler manufactured since the passage of the law by Congress, of August 30th, 1852, and coming under the reduction of steam pressure. In every instance, the disasters have been from boilers made previous to the passage of that law; many of them have been brought under its provisions which allows a greater steam pressure, and is actually necessary to that class of boats constructed under a different view of proportion between boilers and cylinders. It is true a limit is fixed, but it is far above that of the new boiler."

It is also stated that collisions are becoming less frequent on account of substituting the steam whistle for the bell in signaling.

Wire Brick and Brickwork.

Messrs. Editors:—To strengthen bricks so that they will stand a stronger crushing force, let several webs of wire of near their own size, be inserted at equal distances in the material, when they are molded, and then let them be baked as usual. When the bricks are laid up, let long webs of coarser wire, of near the width of the wall, be placed between each layer or between every two or three, &c., or so as to correspond with the pressure they have to sustain. As bricks are made narrow, perhaps the insertion of the webs between their layers in a wall would be sufficient; and thus dispense with their use in the bricks, which would be tedious to mold. In this way, by conforming wire webs to the articles to be manufactured, they can be greatly strengthened. They can be introduced into various articles of papier mache and pasteboard work, into glass ware, plaster work, into pottery and porcelain, and, in short, into a great many articles, to strengthen them, which are made of cast, molten, or plastic materials.

Yours, respectfully,

H. STRAIT.

Covington, Ky., July, 1855.

Steam Plow.

The last attempt to harness steam to the plow, took place at the exhibition of the Royal Agricultural Society at Carlisle, Eng., July 25. A steam cultivator was entered by Mr. Usher, but unhappily failed, by a short span, to reach the ground. While traveling on the road it mired in a soft spot and was not easily extricated. It is described as being complicated and clumsy of locomotion. A few experiments were made with it in plowing, but it seems to have been regarded as an invention more ingenious than useful. Notwithstanding this failure, we are strong in the faith that steam will yet be successfully introduced on the plowing field. Steam engines are coming into very common use in England, among the farmers. They use them for driving thrashing machinery, cutting fodder, raising water and a variety of other purposes.