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More Encroachments on the Patent Office.

We learn from good authority, that, on the 22nd ultimo, the President of the United States, under the escort of the Secretary of the Interior, paid an official visit of inspection to the Patent Office building. The wily Secretary took advantage of the occasion to descant upon the pressing requirements of the Interior, the Land, and the Indian Departments, and then grew eloquent upon the unnecessary space occupied by the Patent Office, proposing to lop off a branch here, another there, &c., &c. The President is stated to have replied, in his bland and modest manner, that as far as he saw, the Patent Office appeared to need an extension rather than a restriction.

To this sensible view, we are sorry to say, he did not adhere. Yielding to the solicitations of the Secretary, and the plea that fire-proof space, for the preservation of certain important Indian papers, *must* be had, the President assented to the absorption of six of the Patent Office rooms, and they have, we are informed, been accordingly transferred. Thus was consummated another of those official outrages on the rights of inventors and the interests of the country, regarding which we have felt it our duty, of late, so bitterly to complain. New movements by the Secretary, placing the Patent Office more completely than ever under his thumb, and adding insult to injury, are now, we understand, in progress.

Under the laws of the Republic, the Patent Office, as it now stands, is almost an independent Department. Its chief is required to report the state of its affairs directly to Congress. It has ever been the desire of our statesmen to isolate it, as far as practicable, from politics, to relieve it from outside subservience, to promote its dignity, to increase its facilities, and in every way to encourage its growth. In its first organization it was nominally attached to the State Department, but was never regarded by any of the Secretaries of that branch of government as subject to their interference or control.

The law which created the Secretaryship of the Interior, merely transferred the nominal connection then existing between the Patent Office and the State Department to the Interior Department. The Secretary of the Interior has never received, by statute, a single iota more of authority over the Patent Office than the Secretary of State formerly held. But, in the absence of a Commissioner of Patents, the Secretary of the Interior becomes his own law-maker, and aspires to self-constituted powers. Ignorant of the wants of the Patent Office, and disregarding of the views of its officers, he assumes a control over it for which he is utterly unqualified by nature, and unjustified by right.

There is but one permanent remedy for this miserable state of affairs, and it consists in the absolute separation of the Patent Office from the Interior Department. If inventors will but rouse up, appeal to their Representatives, and show a determined spirit in the matter, this much-needed reform may, we doubt not, be triumphantly carried through the next Congress.

The Weight of Coal.

It is rather remarkable that the price of coal this season is about one dollar less per ton than it was last year. If it had been cheaper then it would have proven a greater blessing, because of the great numbers who were suffering for want of employment in all our cities, and were, consequently, less able to purchase winter fuel. We do not understand how one coal dealer can sell coal for half a dollar (and in some cases more) per ton less than another, but such is the fact. The dealer who charges the high price asserts that those who sell for less must cheat in the weight, and thus he makes an excuse for himself. This may be so, we cannot say; but we take this opportunity to tell our readers the same story we did last year, viz., that a ton of coal is not 2,000 lbs. merely, but 2,240 lbs., and every person should receive this weight, as it is the legal amount provided by law, and any seller giving less can be sued

for fraudulent dealing. We are afraid that many dealers sell 2,000 lbs. for a ton; and we think that some high-priced sellers of coal are no more scrupulous about the exact weight than those who sell at lower prices. Last fall we directed the attention of our city authorities to this matter, and demanded some means for the public weighing of coal, in order to impose a healthy check upon those who might presume to deceive by false weights. Nothing has been done to carry out the reform in our city, but in Boston, on the other hand, as we have been informed, the city authorities have provided means whereby every buyer of coal can easily have even-handed and exact justice done to him, by demanding his coal to be weighed at public scales if he suspects he has not received the full amount.

Reminiscences of the Paris Industrial Exhibition. No. 2.

CLOCKS, ELECTRIC APPARATUS.—It is now about five hundred years (according to the best information we can gather upon the subject) since the first clock was invented and put into operation; and for more than two hundred years their manufacture was carried on only upon a very limited scale. The kings and nobles of Europe were the only ones, during this period, who were able to support the luxury of a clock.

The invention is not due to a single mind. On the contrary, a great many men of genius have been successively engaged in rendering the clock what it is to-day, an almost unerring recorder of the passing moments.

The old mummy-looking wooden clock, "that ticked behind the door" when we were boys, made its appearance in Holland about 200 years ago; and within the past quarter of a century the clock has been reduced and simplified till it is no longer regarded as a curious machine. The farmer with his jack-knife and tweezers is no longer afraid to perform a surgical operation upon his diseased time-keeper; and that ghost of a "clock fixer" has disappeared from the public highway.

The clock has become an article of such common use for the dwelling and the office that we forget its value and importance. And it is interesting to reflect what great improvements have been made in this branch within a few years; and so cheap are they now that every family can support one or more institutions of this kind; and its tickings are suggestive monitors of man's mortality.

In the great French Exhibition the display of clocks was very grand, and we were surprised to find so many large clock manufactories in Paris. The traffic in this branch is immense; and no matter how poor or how rich a Frenchman happens to be, he is sure to have a good looking clock in almost every room in his house. The Yankees beat the French "all hollow" for cheap clocks. For fifty cents we can supply ourselves with time enough to last from 20 to 24 hours every day; but for beauty of finish and good style of casing, the French are in advance of us. The leading clockmaker in Paris is Paul Garnier. His workshops are a model of neatness and good order, and his skill as a manufacturer is unsurpassed; his clocks are used by nearly all the continental railway companies. Among his beautiful collection on exhibition we were particularly well pleased with some small traveling clocks of a paralleloiped form, having four crystal faces to show the time on all sides, and so constructed as to stand the roughest usage. The finest monumental clock we ever beheld was one placed over the American Department. It was encased in a splendid glass cover where every part of its works could be readily examined. It presented no special novelty in its arrangement of mechanism, but it exhibited the highest order of skill in workmanship.

Collin & Wagner exhibited some beautiful clocks, embracing a peculiar uniform movement, which was obtained by a differential pendulum and two friction cones. The escapement consisted of pallets actuating a horizontal ratchet wheel, and the regulating movement was produced by the friction cones. This clock was provided with a style which traced out a straight line on the co-ordinates and abscissa of a cylinder, thus giving evidence of its uniform movement.

Electric clocks were exhibited in great abundance, but they were more remarkable for

beauty of construction than for anything specially novel. No essential improvements seem to have been added to them since 1852. In that year the beautiful electric clock of De-touche & Gobert, in the Exhibition, was illustrated in the Sci. Am., Vol. 8, page 24.

The Electric Telegraph is now becoming very generally employed in Europe, and it is gratifying to our countrymen to know that Morse's American system is generally adopted. Certain restrictions, unknown in this country in the use of this wonderful invention, exist on many parts of the European continent, and it is thus made an instrument in the hands of Governments, and not as a means of social and commercial promotion. In France, all messages to be sent by telegraph must be submitted to the Government authorities at the stations, who have full power to refuse or permit their transmission. In Prussia there are special signs for the use of the officers of the army, and also for civil functionaries, differing from each other, and understood only by them.

Paul Garnier, of Paris, exhibited a telegraph "commutator" of very ingenious construction, intended to be used with Morse's telegraph. Instead of operating the key by hand for sending messages in the common way, the message was composed beforehand, and disposed helically along a cylinder, which is provided with two thousand keys, made of some non-conducting substance, and according as they are arranged on the cylinder they effect the breaking and closing of the circuit and write the message. The operator turns a small winch, and his message is written a thousand miles distant, in dots, dashes, and spaces, with the greatest rapidity. We witnessed a dispatch of two hundred and ten words transmitted by this apparatus in one minute. The mere idea thus ingeniously carried out by M. Garnier, as applied to the Morse telegraph, is undoubtedly new; but it was substantially applied to Bain's telegraph in 1847, as published in the Sci. Am. Vol. 3, page 273.

Bain composed his messages on strips of perforated dry paper, which opened and closed the circuit. These strips were run between rollers by simply turning a small winch, and thus the message was sent buzzing through the wires at a great rate. We are very glad the same principle has been applied to the Morse telegraph. Like the famous revolver, the commutator is previously supplied with a number of charges ready for action at the moment required.

Perhaps the most distinguished maker of telegraph apparatus in France is M. Breques. He exhibited quite a number of beautiful signal dial telegraphs, such as were in general use in Europe a few years since, but are now bending before the superior American system. M. Garnier had an eye, no doubt, to the future of the Morse telegraph in Europe, when he applied his genius to the construction of his "commutator."

Express Charges on Models.

We would advise inventors who are shipping models to us by express, to send us their receipts of pre-payment of freight charges. We are often called upon to pay charges on boxes when they are delivered, and upon informing the inventor of this fact he has sent us a receipt showing that the charges were prepaid.

Express companies ought to be more careful or honest in their accounts. This attempting to collect the freight charges the second time is a very mean business, and is carried on to a great extent, it is time it was abandoned.

Machine for Re-sawing Boards.

Pearson Crosby, of Fredonia, N. Y., has applied to the Commissioner of Patents for an extension of the above important patent for seven years from the original date, which expires on the 2d of November next. The case is to be heard on the 22d of this month. Parties who have opposition to make to the extension must appear at the Patent Office at that time.

The art of gilding, plating, and electrotyping is practiced in this country with great perfection. P. J. Clark, 14 Fifth street, Pittsburg, Pa. has sent us a medalion likeness of Henry Clay. It is an elegant piece of work, and reflects great credit upon Mr. Clark's skill in this beautiful electrotyping art. We thank him for his highly prized gift.

Great Fair of the American Institute.

The Twenty-seventh Annual Exhibition of the American Institute opened at the Crystal Palace, New York, on the 4th inst., and is now in the highth of its glory.

The old Institute has done well this year. Young go-ahead America has ruled in her councils. Dropping from her Committee lists some of her oldest old fogies, and appointing in their places younger men, of energy and discrimination, she has taken a stride far in advance of any of her previous achievements.

The display this season is a splendid one, creditable, in the highest degree, to all the parties concerned in its realization. It is true that the Palace building, stripped of its many partitioned compartments, with their rich and splendid linings, and their crowds of rare and wonderful objects, products of every clime, does not present such a vast and diverse array of attractions as were once gathered within its walls; it is true that the present display by no means fills up its allotted space, and that the visitor has ample room to walk around each particular object without the least danger of being jostled by the crowd; still, the collection of industrial specimens is a very large one, and possesses peculiar interest from the fact that the whole, or nearly the whole, is of American production.

The success of the present exhibition leads us to believe that, if proper steps were taken, there would be no difficulty in annually filling an edifice as large as the Crystal Palace, from top to bottom, with magnificent specimens of home industry and genius. Would that there were some national organization of this sort, whereby each State might be separately represented, and the manufacturers, mechanics, and artisans of all might assemble to vie with each other in honorable contests for superiority of skill and perfection of results.

The Mechanical Department.

The mechanical department of the exhibition will first claim our attention. In glancing over it we were struck with the general novelty of the machines there shown, and the large number of recently patented inventions now, for the first time, publicly developed. There is a marked absence of several of the old stereotyped features of former Fairs, to wit—steam engines of common construction, noted only for beauty of polish; iron planing machines and lathes, with which everybody is familiar; dusty grist mills, having no special novelty, &c. Such-like articles, that have hitherto usurped the most conspicuous places, are made to stand one side, and in their lieu we have fresh improvements, of novel form and peculiar characteristics.

Motive Power.

The motive power which gives life to the whole machine room is derived from six engines, of which four are driven by steam, one by gas, and one by a combination of steam and air, called by its inventor the Cloud Engine. The two last are intended as substitutes for steam. Of the four steam engines, the larger one is of the horizontal kind—12 horse power—exhibited by Tyler & Co., of Springfield, Mass. Its only peculiarity is in its truss frame, which has great strength, with a comparatively small weight of metal.

Oscillating Engines.

There are three portable steam engines and locomotive boilers, the engines being constructed on the oscillating plan, and placed on top of the boilers. They look, for all the world, like monkeys on horseback. Notwithstanding their odd appearance they are very effective. Two of them are from the well known manufactory of Geo. Vail & Co., Morristown, N. J. The other is a new invention, by Mr. J. A. Reed, of this city, and is now for the first time exhibited in this country. It is called the "Chronometer Oscillator," owing to the perfect regularity with which it moves. This improvement was illustrated in the last number of the SCIENTIFIC AMERICAN; it was also patented in Europe through the Scientific American Patent Agency. One of these engines is at work in the Parisian Exhibition, where it has greatly attracted the notice of European engineers. It seems to be a highly valuable invention.

Gas Engine.

Our attention is next fixed upon the "Ignition Engine," invented and patented by