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FIFTEEN THOUSAND PATENTS SECURED THROUGH OUR AGENCY.

The publishers of this paper have been engaged in procuring patents for the past sixteen years, during which time they have acted as Attorneys for more than FIFTEEN THOUSAND patentees. Nearly all the patents taken by American citizens in FOREIGN countries are procured through the agency of this office.

Pamphlets of instructions as to the best mode of obtaining patents in this and all foreign countries are furnished free on application.

For further particulars as to what can be done for inventors at this office, see advertisement on another page, or address MUNN & Co.,

No. 37 Park-row, New York.

PROGRESS OF THE ELECTRIC TELEGRAPH.

The rapid development and extensive application of the electric telegraph seem more like miraculous results than the efforts of man. This discovery confers upon human beings powers almost akin to those possessed by the Omniscient Governor of the universe. With a few plates of platinum and zinc immersed in dilute acid, a coil of copper wire surrounding an iron bar, and an iron cord stretched upon poles extending along the highway, man can now hold instantaneous converse with his fellow man from one end of a continent to the other. With materials so simple in form and arrangement, such a power seems, indeed, to be superhuman.

The march of invention has been regular in all its cadences;—every note is situated in its appropriate place and all its numbers flow harmoniously.

The invention of the compass for navigating seas enabled the daring mariner to cross unknown oceans and discover new realms. After this came the progression of peoples to the western hemisphere and the settling of new continents and isles of the sea, thus uniting distant lands by the ties of kindred and commerce. Emigration and trade soon afterward increased in an unprecedented ratio, and the wings of the wind were found all too slow for wafting the merchant's bark across the billows. Some great improvement was then felt to be necessary for increasing commercial facilities and obtaining more frequent communication with separated friends. As if designed to supply the want, steam power then joined in the march of invention, long voyages were shortened upon the sea, and by the railway distant settlements were more nearly linked together.

But while these improvements undoubtedly brought separated nations and kindred closer together, they also, at the same time, tended to invite the enterprising to the exploration of new and more distant realms. As the result of this influence, the golden slopes of the Pacific have been peopled in a very few years with many thousands of human beings whose native hearths are on the shores of the Atlantic. It really appears as if the wide earth, through the influence of discoveries in science, had of late years been growing more and more like the abode of one family, for there is scarcely a household in any civilized community which has not a representative in some far-off land, and with whom frequent communication is much desired. And now the telegraph joins in to complete the grand roll of social improvements. The electric cord now spans the continent of the New World, and faster than the earth revolves upon its axis, messages speed along the slender wire between the Atlantic and Pacific cities.

The first scientific suggestion for the construction of the present electric telegraph was made by Ampere, in 1820, and he applied the subtile galvanic coil—the principle upon which the electric-magnetic telegraph is based. In 1837 Professor Morse publicly described his telegraph, which was invented in 1832, but Cook and Wheatstone, of England, first applied the electric telegraph to public business in 1838. In 1844 the first public telegraph line in America was erected between Washington and Baltimore, and since then we may truly assert the whole world has been *electrified* by the invention. It is but seventeen years since the first line of 44 miles was erected, and now there are no less than 56,000 miles of line in operation in America. What an astounding development of the agencies for rapid communication!

But with the triumph of the Pacific telegraph inventors and telegraph companies must not fold their hands under the supposition that we are at the end of improvement. We take this opportunity to suggest, as we did on a former occasion, that the telegraph is capable of being improved and adapted to a much greater extent than it is, as a substitute for the post-office system. Of course improvements are necessary for increasing the number of messages sent by each machine, and the cost of operation must be greatly reduced. One man can write as fast as a common sounding instrument can receive messages; but this is too slow for the present electric age. Companies for working short independent lines should be formed in every city and in all thickly peopled districts, for introducing the telegraph as a substitute for the "Penny post." The powers of each machine may be greatly increased by modifying its parts and adapting it for working four, five or more wires—such a number not being objectionable on short lines. This is an important subject and it deserves general attention.

CHANGES IN OUR MANUFACTURES.

If the war should continue for any considerable length of time, it will make some very important changes in our manufacturing industry. Our cotton mills must cease running for want of the raw material. What will be the effect? Will the owners shut themselves up in their houses, and doze away the rest of their lives in idleness? And will the workmen all fold their hands in helpless imbecility, and die of starvation? Events now passing before our eyes are a complete answer to the question. We see the expansion of our cotton manufacture suddenly brought to a stop, and a ready investment by our cotton manufacturers in great establishments for making arms. That great impelling power of industrial operations—the love of gain—one of the most useful and valuable principles that have been planted in the heart of man by his beneficent Creator, fortunately drives our manufacturers to seek new employments for their capital; and thus our industry, instead of being destroyed, is simply diverted. If a continuance of the war should make a permanent change desirable, we may be sure that it will take place. The active, ingenious and versatile Yankee is not going naked if he cannot get cotton; much less is he going to starve to death for the want of that particular vegetable fiber. Men lived and clothed themselves very well before cotton came into general use as an article of clothing, and if a blight should seize the cotton plant so that no more of it should ever grow, it would take mankind but a very short time to adapt themselves to the change.

The idea that the persons employed in any particular industry must perish if that industry is destroyed results simply from an ignorance of the nature of wealth and the process of its production. There is no limit to the demand for the products of labor. If a man cannot produce one article of property let him produce another. He will be sure to find a market for it at some price. It is true that he may pay such prices for his raw material and for labor that his article will cost him more than it will bring. But the enlightened self-interest of each manufacturer will save him from this error, and will so distribute the labor of the country that it will be generally remunerative. There will be an enormous increase in the number of our woolen and linen mills, though we look for the largest expansion in our iron manufacture. This is the industry which has had the steadiest and most vigorous growth throughout the world, and this growth is unquestionably destined to continue. New uses are constantly being discovered for this most valuable metal, and new improvements in the process of its manufacture. Both of these classes of discoveries tend to increase the amount of its consumption. We published last week a statement from the London *Engineer* that the Bessemer steel of excellent quality can now be made for $35 per tun, or 1¾ cents per pound. It is impossible for any person to conceive the extent to which this single improvement will increase the consumption of iron. There are thousands of uses for which iron is adapted but for which it is not used on account of the cost, and every reduction of the cost increases enormously the amount of its consumption.

Any community that leans exclusively upon one branch of manufactures is more exposed to general disaster than a community whose industry is varied. It is fortunate for this country at the present time that we are not so exclusively devoted to the cotton manufacture as some of the districts of England. If the war has the effect to direct the attention of our manufacturers to the hundreds of openings which exist for the profitable employment of capital, and thus to give a greater variety to our occupations, its effects may be ultimately favorable to the prosperity of the county.

THE GREAT INDUSTRIAL EXHIBITION—IMPORTANT TO INVENTORS.

The approaching great Industrial Exhibition, which is to open in London early next year, promises to equal, if it does not outrival, its great prototype of 1851. The building is rapidly progressing, and already the number of applicants for space is very large. The particulars in reference to applications on behalf of proposed exhibitors were given in our last number, together with a full list of Commissioners. Persons desirous of contributing must have their articles entered without delay and accepted, as all articles, if to be sent by public conveyance, must be ready for shipment at New York by the 1st of January, 1862. A brief description of the articles will be required, with the space they will probably occupy. The exhibition is to open on the 1st of May next, and our country is likely to be well represented.

It is important to inventors who propose to exhibit their articles to know that they cannot safely do so without first obtaining protection under the English Patent Law. They cannot introduce their inventions to public notice without forfeiting their rights to protection under that law. Patents must first be secured, and the claims should be prepared with great care and by experienced attorneys; otherwise they will not stand the test of judicial examination. The proprietors of the SCIENTIFIC AMERICAN have had many years' experience in soliciting European patents. Their agency in London is one of the oldest and most reliable in England, and the utmost care is taken to prepare the case to stand the most searching investigation. Inventors and patentees who wish to secure their patents under the English law can obtain all needful advice by addressing MUNN & Co.

LAMP CHIMNEYS.—The greatest expense and trouble connected with burning coal and petroleum oil, arises from the frequent breaking of lamp chimneys. These are made of clear white glass, and are brittle to a proverb. They could be made of a stronger and cheaper glass, such as that used for making bottles. A patent has lately been taken out by Mr. Bailey, of Wolverhampton, England, for making such chimneys, and also lamp globes of bottle glass, moderately colored, to modify the intense glare of the flame. Oil merchants and refiners of coal oil should encourage such an improvement, as more coal oil would be used were it not for the trouble experienced with the common miserable chimneys furnished for oil lamps.

THE manufacture of large Armstrong guns for the navy has been suspended by the British authorities. The *Engineer* states that they have been found inferior to the common 68-pounder smooth bore cannon.