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THE SCIENTIFIC AMERICAN SUPPLEMENT

No. 486,

For the Week ending May 10, 1884.

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PATENTS TO FOREIGNERS.—GOVERNMENT PURCHASE OF PATENTS.

Senator James C. George, of Mississippi, has introduced the following resolution, which on motion was referred to the Patent Committee:

"*Resolved*, That the Committee on Patents be instructed to report a bill to prevent hereafter the granting of any patent for any invention or discovery made by any person not at the time of such invention or discovery a citizen and resident of the United States; and the committee is further instructed to inquire into the expediency of providing by law that all patents hereafter granted shall be subject to purchase by the United States for the public use, upon a fair valuation thereof."

By industry we thrive. The object of the law in granting patents to foreigners is to encourage the multiplication and prompt introduction of new industries. What matters it where the residence is of the author of a new and gigantic industry like the Bessemer steel process, from which the nation has already derived many millions of dollars of profit, and thousands of millions are still to follow? Is it generous, is it good policy, to deny to such inventors the pittance of a patent certificate, by means of which, during a short period of 17 years, they may, if they work hard, perhaps realize a small personal reward? We think not.

Mr. George believes that the law should be changed so that patents may be taken at any time, by payment from the national treasury, and made free to the public.

As the law stands, all patents become free to the public at the end of 17 years from date—a period so brief that it is a mere dot in the time-history of a great nation. The reaper and mower, the planing machine, the turning machine, the sewing machine, the electric telegraph—hundreds of other great inventions might be named—all have become free to our people by operation of the present law. It does not seem as if Senator George's proposed law would be an improvement. Take the telephone patent, for example. A low present valuation, perhaps too low to be fair, would be three hundred millions of dollars. The patent has nine years to run. It must be confessed the public is now pretty well served by the telephone owners. Would it be of advantage to the people now to pay three hundred millions of dollars from the Treasury to extinguish a patent that will so soon expire? We doubt it.

The present law provides for the acquisition by the public of all patents that may hereafter be granted on terms much more convenient and at far less cost, we think, than the system proposed by the honorable Senator from Mississippi.

A SUGGESTION AS TO OVERHEAD WIRES.

What shall be done with the wires which, like threads of a huge web, hold the New York streets in a mesh-like tangle, is a question as perplexing as it is important.

The Board of Aldermen says that such of them as pertain to electric lighting plants must be buried after May, 1885; one branch of the Legislature says that both electric light and telephone wires must be underground by June 1, 1885, in cities of 50,000 inhabitants or over. Lastly, the sub-committee appointed by the representatives of the electrical companies, exclusive of Western Union, after considering the subject for several months, have decided that wires of all descriptions should go underground, and suggest that the municipality provide suitable subways for their reception. Singularly enough, neither the Legislative investigating committee nor yet that appointed to represent private interests considered what would seem to be by far the most important point bearing upon the subject in hand, viz., the convenience of the general public.

No reasonable person will deny that electric mains carrying powerful and dangerous currents should be placed out of reach. But telegraphic and telephonic wires are dangerous neither to life nor property, and so far as they are concerned the question would seem to be: Is their unsightliness and the annoyance attendant upon their repair of more importance to the general public than the additional expense of their use which it is but reasonable to look for when the costly subways and tunnels shall have been built?

If the telegraph and telephone were only for the rich, that is, for the few, it would be neither surprising nor illogical if the many should object to the invasion of the streets and the roofs of their houses. But such is not the case. Both services have become generally popular, and already so much used as to have become almost a necessity.

So far as the telegraph is concerned, the public is looking forward to a very decided reduction in the rates, and, considering the conditions under which the service is performed to-day, there seems to be no reason why they should not be gratified. But if no one is willing to be the least inconvenienced for the sake of the general welfare, if no one is willing to have a wire pass his door or cross his roof, he may not reasonably expect at the same time to have a cheap service.

It is much the same with the telephone. Increase the expenses of the companies, and you force them to increase their rates for service. This tends, as a natural consequence, toward limiting its usefulness, for no matter how convenient it may be in the transaction of the ordinary affairs of life, it cannot, if it be expensive, be popular.

If a man objects to the clatter of the milk wagon and the baker's wagon before his door, he can, if he does not mind the additional expense, have his milk and bread brought to him by hand. But it would be manifestly unfair and unreasonable to expect that his less fortunate neighbors should incur a like expense that he might not be disturbed. Equally absurd would it be, should he expect his milkman and baker to go to the additional trouble of serving him by special messenger at the same rates, and still worse, to even demand a reduction in these. The fact is, every one should be willing to sacrifice something for the general welfare. With this view, it would seem as though a plan might be devised by which the telegraph and telephone wires could be systematically led over the roofs of the houses, without proving a special hardship or annoyance to any one; and we must confess it seems somewhat surprising that no such plan has, so far as we know, been considered. There is good reason to believe that, with proper supervision by constituted authorities, the general and indiscriminate scrambling over roofs, now indulged in by line men, could be avoided in great measure. The unsightly street poles could be done away with, and the wires now strung on them be laid in the same order over roofs of the houses. When damage of any kind resulted, such as injury to a chimney or roof, those who had general supervision over all the wires could readily decide who was responsible for it, and hence who must repair the injury done.

Nor is it by any means certain that the construction of subways through the main thoroughfares would, though increasing the cost of service, abate the alleged nuisance of stringing the wires over the houses. Telephones and burglar alarms are usually run over the tops of the houses and across the yards and courts, and unless all the side streets, as well as the avenues, were undermined, and so unnecessary and costly an undertaking has not, we believe, even been contemplated, there would be little or no diminution in the number of wires crossing the roofs.

In the plan we have suggested, the telephone and telegraph wires could readily be kept apart, as indeed could the lines of the various companies.

What most commends this plan is its cheapness and convenience, which characteristics, if we mistake not, are the essentials to every scheme in which the general public is looked for to take part.

The public demands cheap telegraph and telephone service, and that this may be had by any of the recent plans to sink the wires, we must in candor confess there are grave doubts.

THE MAXIMUM OF SUN SPOTS.

The sun is behaving in a strange fashion, and refuses to obey the laws laid down for him by terrestrial observers in regard to his spot producing activity. As is well known, the sun's spot cycle is completed in a little more than eleven years. For two or three years the spots are larger and more numerous, and continue so until the cycle has reached its maximum. They then begin to diminish, and in five or six years reach the minimum; the passage of another six years brings the return of the maximum, and completes the cycle. The intervals are, however, irregular, and the laws of the period are not determined with certainty.

The present irregularity is beyond the usual bounds, and is unaccountable. The last maximum of sun spots occurred in 1870, and the last minimum in 1878. The return of the maximum was, therefore, looked for in 1882, and the return of the minimum is expected in 1889. But the agitation of the solar surface did not diminish in 1883, and the activity continues thus far in 1884.

Astronomers who make solar physics a specialty are hard at work in the effort to find out the cause of this anomalous proceeding on the part of the great day star, and several of them have come to conclusions at variance with each other, as is the case in most theories about the sun.

M. Faye, the distinguished French astronomer, reports as the result of his close observation that the solar activity is actually decreasing. He thinks that the number of days when the sun was free from spots was greater in 1883 than it was in 1882; that the number will be larger in 1884; and that the increase will be still more rapid in 1885, 1886, and so on, until the minimum is reached in 1889. This careful observer is confirmed in his view of the question from the conclusions reached by Schwabe, who systematically observed the sun during a large part of a long life. He determined the periodicity, not by counting the number of spots, but by noting the number of days the sun was free from spots. At the maximum there is scarcely a day when spots are not visible. After its passage there are occasional days when the sun's face is unmarred, the number increasing until the minimum is reached, when the sun is clear of spots for nearly half the year, oftentimes for many days in succession.

M. Wolf, of Zurich, is the renowned astronomer who, making use of the observations of Schwabe, traced back the periodicity to the time of Galileo, and proved its existence beyond a doubt. He partially agrees with M. Faye. According to Wolf's observations, the average of the relative number of spots is greater in 1883, but the greatest monthly average is found in 1882. The number of days without spots is four times greater in 1883. M. Wolf thinks that, with our present knowledge of the sun, there is no means of determining with certainty when the spot cycle passed or will pass the maximum.

M. Tacchini, the Director of the Observatory at Rome, whose views have great weight in the scientific world, holds a different theory. He comes to the conclusion that the solar activity has increased since 1882. He reaches this result by comparing his data collected in 1883 with those