

Scientific American.

NEW YORK, FEBRUARY 25, 1864.

American Scientific Literature.

Invidious comparisons between the great men of our own and those of other countries, and of science as cultivated here and in other countries, exhibit either envy or vanity. The great and the truthful require no inflated panegyrics of friends, and they have nothing to dread from the censure of foes. The true fame of no country can be increased by detracting from that of another; and that man is the best friend of his country, who points out her faults, for he incites her to deeds of true glory.

There is, no doubt, a natural and honest national pride experienced in the consideration of our own native land being the birth-place of great men; and our feelings grow warmer when we speak of Franklin and Rittenhouse, than of Wollaston or Ferguson. America has added greatly to the domain of science, and we feel proud of her achievements, but she can and must do more.

What is our country now doing to increase her scientific fame? Much, no doubt, in every department of science and art. Our countrymen have made many valuable contributions to astronomy during the present age; and an American lady—Miss Mitchell—maintains an honorable position among the living explorers of the starry heavens. Learned societies and an admiring monarch have awarded her prizes, and presented her tokens of admiration. In electro-magnetic discovery, no nation, perhaps, equals our own. In chemistry and geology, we have many eminent names. For new and useful inventions, no country in the world, possessing an equal number of inhabitants, is so prolific, and it is to this feature in her progress, that we wish to direct attention, at present, by way of comparison.

Do we, as a nation numbering twenty-four millions of inhabitants, stand out equal to France or England in respect to scientific fame? Not if the general literature of some of our Scientific Associations, is to be taken as a criterion. We know that there are men in our country whose scientific reputation is inferior to that of no others in the world; we speak not of them, we merely allude to what may be termed the Scientific Literature of some of our "Learned Associations," which, in our opinion, does no great credit to our country. This opinion is formed, from readingsome of the transactions of "The Smithsonian Institute," "The American Association for the Advancement of Science," and the "American Academy of Arts and Sciences." There is much in the proceedings of these Associations which is really valuable and instructive, but we really did not believe until latterly that such an amount of useless matter could have emanated from Bodies having such a reputation for learning and scientific acquirements—it is more conspicuous for futurity than utility.

In all that relates to the practical and useful, our countrymen are pre-eminent, and we are not a little flattered that this should be so, in the particular departments to which the "Scientific American" is more immediately devoted. This is acknowledged by our foreign scientific cotemporaries, who speak of it in such flattering terms as to afford us no small reason for congratulation. The influence of such literature for good, is all powerful, and the more so as it is popular. This we know it is, both at home and abroad, among all men and all classes, for science is democratic. Learned professors in our colleges, and mechanics working at the forge, contribute equally to its columns—and being the mirror of American popular science, it has quickened the genius of thousands of our people, and incited them to useful and successful efforts in every branch of the useful arts. This is the spirit we have always cultivated—it tends to progress and improvement, the welfare, elevation, and true fame of our people.

Sewing Machine Controversy.

We are frequently questioned by those who feel interested as to the probable result of the controversy now pending before the Commissioner of Patents, upon the claim to the eye-

pointed needle and shuttle for forming the interlock stitch in sewing machines. Our own impression is, that Howe's claim will be sustained; should, however, Hunt establish his claim to originality, we believe that the Commissioner will decide that he cannot be regarded as having a title to a patent, on the ground of abandonment. We cannot conceive of a subtlety sufficient to make out any just claim on the part of Hunt, and we shall be surprised if the Commissioner does not so decide. Seventeen years is a *little* too long to allow an invention to slumber in obscurity, after the inventor has had it in successful operation, as Hunt asserts that he has, with the eye-pointed needle and shuttle.

The Late Telegraph Decision.

Since we noticed the decision of the Supreme Court of the United States, on page 173, relating to the "Great Telegraph Case," on which the Court passed its opinion of the legality of the claims of Prof. Morse's patent, we have seen a great number of articles, *pro* and *con*, on the subject, in various papers. We stated on the page referred to, that the Court had decided according to the doctrines, we had advocated in the Scientific American, namely, that an art, independent of the means of carrying it out, is not patentable. The eighth claim of the Morse patent was declared by the Court to be invalid. That claim is as follows:—

"I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims, the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for the marking or printing intelligible characters, signs or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer."

This decision simply means, that independent of the means to accomplish a result—the machinery to produce the effect—a patent, if granted, is void. It was upon such grounds that we attacked the decision of Judge Kane, on page 67, Vol. 7, "Scientific American," wherein he stated that Morse's patent was founded on two patentable subjects; the one on the discovery of a *new art*; the other the means of practising it. What now becomes of the "discovered new principle," so strongly insisted upon by the Hon. Amos Kendall, in his letter to the "Scientific American," on page 170, Vol. 8.

The art of Telegraphing is not claimed in the patent of Prof. Morse, but the art of recording messages by the motive power of electro-magnetism as embraced in this eighth claim. The appeal on which the above decision was made, had no connection with the House *Printing* or the Bain *Chemical* Telegraphs, but as the fifth claim of the Morse patent is for the alphabet composed of recorded *dots*, *spaces*, and *horizontal dashes*, to represent words and numerals, it may prevent the use of the chemical telegraph, for which the same symbolic alphabet is used. But this has nothing to do with the principle of action of the two telegraphs, which are as different as night and day, and we think that for Morse to sustain a suit against the chemical telegraph, the result of the two being obtained by quite different means, his alphabet should be embraced in a separate patent, as the product of a process, independent of the means of obtaining it. In either case it does not affect the use of the Roman alphabet of the House Telegraph; nothing can do this but a decision that all methods of recording electro-magnetic telegraph messages, are infringements of the Morse patent, like that of Judge Kane; but this decision of the Supreme Court, rejecting the eighth claim, precludes the possibility of such a decision in any of the Circuit Courts. This very point is discussed favorably to the Morse claim in a letter to the Baltimore "Sun." As we believe the author of that letter to be mistaken in his views, and as truth is our aim, we will quote them, and present our opinions on the subject. He says:—

"The Court maintains the fifth claim, which patents Morse's Alphabet. The Roman Letters which House prints, though not the same in form, are precisely the same in substance.—Morse's dot is equivalent to House's E, and House's E, is equivalent to Morse's dot. Both

convey precisely the same idea to the mind.—So it is through the whole Alphabet. Letters of precisely the same sound, and having the same name, assume different forms in our own language, and still other forms in other languages, and even other names. If I have a patent for making an E, in one form, can any other person get a patent to make the same letter for the same purpose in another form?

Letters used telegraphically are not *results*; but they are *instrumentalities*. They are apart of the means used to communicate ideas from one mind to another. The court decides that instrumentalities are the only proper subjects for protection by patents, and that when patented all equivalents are infringements."

These views in defence of the Morse alphabet are exceedingly funny. Letters, according to his theory, are not telegraphic *results*, only *instrumentalities*. The persons, therefore, who receive messages by Morse's Telegraph—the receiving operators—must be the *telegraph results*. How innocently he asks, "if I have a patent for making E in one form, can any other person get a patent for making the same letter for the same purpose, in another form?" Certainly he can, sir. Your views of the question, if sustained, would give Prof. Morse a patent for *all* written languages. Did he invent any alphabet but his own? Did he invent the old Roman alphabet? No. How in the name of common sense, then, can any of his friends claim for him the exclusive use of that which he never invented; of that which was used by a civilized people, when the forefathers of Prof. Morse and House could not scribble a sentence, although they no doubt knew the difference between a *result* and an *instrumentality*—a sword and a cloven head? It is very unwise for the friends of the Morse patent to set up such absurd claims; they do not require to do so, for they have so many strong ones to stand upon, that it seems to us they weaken their cause by assuming such untenable positions. We have always accorded to Prof. Morse the honor of being the first inventor of using the power of an electro-magnet, to record telegraph messages, and this claim, we think, he can sustain against the world. His invention is a beautiful and useful one; he is a benefactor to his race, and his telegraph is an honor to our country.

Fire-Proof Buildings for Places of Public Amusement.

We see it stated that a new Metropolitan Hall, is to be erected in this city to take the place of the one recently destroyed by fire. If this be so, we would direct the attention of the public to the necessity of having it, and indeed all other buildings of similar character wholly fire-proof. Motives of economy alone should lead to this if there were no more imperative considerations. An additional expense of a few thousand dollars properly expended at the time when the noble edifice of which we have spoken was erected, would have preserved it from the disastrous conflagration which has buried it in ruins. Indeed, the additional expense would not have been so much as the aggregate of insurance would have amounted to in a few years.

It is well known that the rates demanded by insurance companies on this class of buildings is enormously high, and we think we are speaking within due limits when we say that an insurance covering the whole value of the building, if such could be effected, would, in ten years, amount to much more than the expense incurred in rendering such a building fire-proof at the time of its erection.

But there are other considerations more important than these. Suppose the recent fire at the Metropolitan Hall had broken out when it was closely packed with human beings, as it was on some of the evenings during the continuance of Jullien's Concerts. The consequences would have been too horrible for pen to portray. Even an alarm of fire in such a building, though it was certain that it could not spread to a dangerous extent, would probably cause the death of many. To prove that this is not all fancy, we need only refer to the burning of the theatre in Montreal a few years since.

The means of egress from these buildings should also be ample. The vomitories of all our Theatres and Concert Rooms are altogether

too small, and we would urge attention to this point. They might be usually closed, but if made to easily open outwards, they could be made available in case of an alarm of fire. At any crowded gathering there is generally much difficulty from the narrowness of the aisles and egress passages.

We think this should be made a subject of legislative interference. We know well that such buildings are generally erected by those who are not likely to be most careful of the public safety, and there is no good reason why they should not be compelled to do what they would otherwise be most likely to neglect.

Though the danger to human life is not so great in the case of other public buildings, yet there are ample reasons why all of these, of whatever kind should be built fire proof. They generally contain valuable public documents and the rescue of them from the flames, often endangers the lives of the firemen. There is a probability that several important public edifices will be erected in this city within the coming year, and we hope that due attention will be given to this matter by the authorities. The example, if several splendid structures of this kind should be erected would be very valuable. Let the press and the public speak out relative to this matter.

Pure and Impure Gas.

It is the duty of our Municipal authorities to see that our city is supplied with pure gas for illumination. They should therefore—not unfrequently—have the gas as it comes from the burner pipes, analyzed by a competent chemist. We are confident that much of the gas which is supplied by our city Gas Companies, is very impure. All coals contain carbon, hydrogen, oxygen, and nitrogen; and bituminous coals in general, contain some sulphur. In the distillation of coal to produce illuminating gas, a considerable quantity of ammonia comes over, which, if not completely separated, is carried off with the gas, and detracts from its illuminating powers. It is also injurious to the health of the people, by mixing with the atmosphere, and being inhaled at every respiration. Being exceedingly volatile, and yet not difficult to condense,—much of it escapes through leaks in the large gas conductors, and condenses in the soil beneath the streets and buildings; this is evident, when any of our streets are trenched for the purpose of examining pipes or opening drains. An odor of ammonia is always observable for a considerable space around an exposed street excavation. If this is the case now, how much worse must the evil be in nine or ten years from the present date? The continued accumulation of such an impurity in the soil beneath our streets, will, in the course of time, find its way into drains, ooze out into the atmosphere and pollute it. Nothing but pure carburetted hydrogen should ever be suffered to pass from the gas reservoirs into the conducting pipes; every impurity should be removed from it in the course of the manufacture.

If there is any sulphur in the coal from which gas is made, it results in the production of sulphuric acid, which, if not separated in the "Purifier," such a product will injure books and cotton fabrics which may be in the apartments where the gas is burned. Cannel coal being free from sulphurets, is to be preferred for making gas; and if our Gas Companies do not now use the American cannel in place of bituminous coal, they exhibit an amazing want of good sense and sound information, in relation to the best kind of coal to employ in their business. Will our Reform Common Council pay some attention to this subject?

Ointment for Chilblains.

Take olive oil 10 oz., turpentine 3 oz., yellow wax 1 oz., balsam of Peru 4 oz., and camphor 10 grains. Melt all these together in a clean earthenware vessel under a gentle heat, and when they are all well incorporated it is fit to be put up in boxes for use by rubbing. This is for broken chilblains. For unbroken chilblains, the following composition makes a good salve:—Olive oil, 2 oz., turpentine 1 oz., and 20 grains of sulphuric acid. These are all mixed together cold and well stirred. It is applied to the chilblains morning and evening, by being well rubbed in with the hand.