

# Scientific American

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY

At No. 37 Park-row (Park Building), New York.

O. D. MUNN, S. H. WALES, A. E. BEACH.

TERMS—Two Dollars per annum.—One Dollar in advance, and the remainder in six months.  
Single copies of the paper are on sale at the office of publication, and at all the periodical stores in the United States and Canada.  
Sampson Low, Son & Co., the American Booksellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the SCIENTIFIC AMERICAN.  
See Prospectus on last page. No traveling agents employed.

VOL. V. NO. 23. . . . [NEW SERIES.] . . . Seventeenth Year

NEW YORK, SATURDAY, DECEMBER 7, 1861.

## 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.

## INFLUENCE OF INVENTORS UPON THEIR AGE.

Truly the race of invention is the race of progress. Nations may have won fame in arms, arts and literature; they may have acquired distinction for the wisdom of their national polity, and for the astuteness of their statesmen and rulers, but while such gifts and acquisitions may have tended to a partial and short-lived glory, or to individual distinction and power, they never laid the basis of permanent national greatness; they did not contribute to the widespread prosperity of peoples; they did not resolve the grand social problem of conferring the greatest amount of happiness upon the greatest number. Literature, arms, arts, science or statesmanship, however grand in themselves, have not conduced in the necessary degree to the development of the material resources which Providence has implanted in every clime. They have not multiplied the results of human labor; they left unfulfilled that grand desideratum as anxiously looked for as the discovery of the philosopher's stone by the alchemists of old—"the annihilation of time and space"—and if their most distinguished professors ever conceived the design, they never succeeded in carrying it out, "to make two blades of grass grow where only one grew before." Though they may have crowned the Corinthian column, they never constituted the column itself, which must be based upon a wider consideration of popular life and human interest.

The accomplishment of these miracles was left exclusively to the inventors, who are emphatically among the true benefactors of their age. It is they who have applied science in all its ramifications to the elucidation and production of the wants and requirements of every-day life. It has been said that "there is no royal road to knowledge;" but who can deny that there have been discovered by our inventors royal roads in abundance to reach splendid results in seconds of time which could only be rudely obtained by long days of wearisome and intense application? Have not our inventors lightened the burdens in every department of human labor? Behold their grand achievements of the steam engine and the electric telegraph, whose superhuman agencies have left the mind lost in amazement, which have not only rendered the age illustrious, but have absolutely astounded the world! Indeed, we ask in

what species of human effort have not the inventor's labors been beneficently felt! Does not the range of his influence extend from the cottage to the palace? Are not the workings of his genius felt at the desk of the merchant and the bureau of the statesman? Is it not seen in the room of the humble seamstress, as her busy needle plies with electric speed in the sewing machine, marvelously abridging her labors while it multiplies her profits? It is seen in the machine which reaps a hundred fold the superabundance of the teeming valley, as well as in that which climbs the mountain and brings fertility to its arid sides.

Our own nation may not be able to boast of as many achievements in literature, arms or arts as the old nations of Europe; but there are men among us who have taught those old nations the most useful lessons for the multiplication of their domestic comforts, the development of their material prosperity, their social advancement and their national progress.

But our American inventors can afford to shed light upon the old world. They have a superabundant fertility of inventive resource. They have a professional pride, and although they have a proper and natural desire to reap a well-earned pecuniary advantage from their labors, they must be proud to feel that they have contributed so many blessings to the world at large.

Hitherto our inventors have proved worthy of themselves, of their own high calling and of their country. Let them now continue their glorious and beneficent labors on even a larger scale than ever. The times in which we live are making the very epic of national history, and they certainly afford our inventors grand opportunities to become national benefactors of their own beloved country, as well as to acquire fortune and fame for themselves and their families. Let national pride combine with personal interest to inspire our great inventors to renew their efforts to bring forward something worthy of their own fame—worthy of the national crisis; something which in war as well as in peace will prove them equal to every emergency—will demonstrate to the world that they are capable of producing what has not only promoted our national greatness, but what will preserve our national independence.

For ourselves, identified as we are for so many years with our age and nation in their best improvements, their advancement and their greatness, we shall rejoice personally as well as professionally in every new triumph in the field of invention; and whether such triumph conduces to meet our present great national emergency, or some useful purpose of domestic economy or agricultural or other utilizing necessity, our columns shall record it with pride and pleasure.

## ENGLAND AND THE UNITED STATES.

In accordance with a time-honored custom which has existed in London for upward of six hundred years, the Lord Mayor's day was celebrated in that famous old city on the 9th of November. The new Lord Mayor (Cubitt) gave a grand entertainment to a large and brilliant assemblage of guests, among whom were several distinguished members of the diplomatic corps.

The Lord Mayor, in proposing the health of the American Minister, Hon. Charles Francis Adams, gave utterance to the following encouraging words:—"I am about," he says, "to associate with this toast the name of a gentleman whose mind must necessarily, under the circumstances, be occupied much with the affairs of his own country, which, unhappily, is at this moment in a condition to require the sympathies of the world. *In no country will those sympathies be yielded more readily than in this.* (Cheers.) I need not say I allude to America. I will associate with this toast the name of the American Minister, and I can assure him—taking on myself for the moment to be the exponent of the feeling and sentiments of this great city, over which I have the honor to preside—I can assure him of the entire sympathy of the citizens of London, and I think I may say of the whole British people. I can assure him that our most earnest desire is to see the day when those difficulties, which we hope are only temporary, shall be entirely eradicated from the soil of that great and free country. (Loud cheers)."

Mr. Adams responded in a very excellent speech, which was well received not only by the guests present, but also by the press of London.

Lord Palmerston also gave utterance to kind and fraternal sentiments toward this country, and expressed deep sympathy with our people in the struggle. The course which the British government has pursued in this unhappy controversy has appeared to us eminently conservative from the commencement, and we cannot but believe that, in spite of the bullying and blustering of certain journals on both sides, all complications arising between the two governments will be settled through the ordinary channels of peaceful diplomacy. It cannot be denied, however, that there is in this country an uneasy, reckless class of persons mostly led on by miserable, defunct politicians who would delight in nothing more than to see the United States involved in a war with Great Britain. On the other hand, if we may judge from the temper of a portion of the British press, this feeling is reciprocated in that country. How far those disorganizing and dangerous factions may succeed in their nefarious designs remains yet to be seen, but we assert, without fear of successful contradiction, that nine-tenths of the wealth and intelligence of the American people are sincerely desirous of preserving peace with the mother country, and we are free to say that we are of the opinion that the better classes of England, including the government, have no wish to become involved in a war with us. We hope and believe that there is wisdom enough in these two great governments to steer clear of all difficulties. We are warring against a rebellion that threatens the overthrow of our government, which is compelled to protect itself against all the machinations of the enemy, who will leave no arts untried to accomplish its ends. It seems to us that no true-hearted Briton can fail to respond to the noble words recently uttered by the Duke of Argyll: "I know of no government," said he, "which has ever existed in the world that could possibly have admitted the right of secession from its own allegiance. There are some things worth fighting for, and national existence is one of them."

In reference to the Slidell-Mason affair we believe, in spite of newspaper clamor, that the respective governments will deal with the questions growing out of their seizure with calmness and deliberation—the one demanding nothing but what is right, the other yielding to nothing that is wrong—and that the matter which seems now grave in some of its aspects will be satisfactorily adjusted. We are pleased to see that that able journal, the *Toronto Globe*, is disposed to discuss the subject calmly and without prejudice. This is as it should be. Our government has a right to claim the sympathy of every other liberal government on earth, and in dealing with many questions likely to grow out of its defence, on land and sea, it has claim to a generous forbearance from all nations with whom we are at peace.

## INTERESTING FACTS ABOUT ELECTROPLATING

The art of electroplating sprung from a discovery made at the same time, about twenty-five years ago, by Mr. Spencer, of England, and Professor Jacobi, of Russia. They noticed that when a galvanic current was passed through a solution of copper, it deposited pure metal upon a conducting surface, and from this they advanced to the copying of medals and other objects by electricity. Being unable to agree about taking out a joint patent, the discovery was published and given to the world. When first announced, persons of all grades and sexes became electrified with it, and amateur electrotypers with their molds and batteries were to be found in almost every household. From an amusement, the discovery has grown up to be a grand and beautiful art. It essentially consists in coating articles, such as table spoons, cups and various vessels, made of brass, copper or white metal with a skin of pure silver or gold by a current of electricity passed through the solution in which the articles to be plated are immersed. The electric current which is most commonly employed in electroplating is derived from the decomposition of zinc plates in what is called a "Smee battery," which consists of alternate large plates of zinc and a negative element, such as copper or a platinized plate. A constant quantity current of electricity derived from a magneto-electro machine (such as the one illustrated on another page) is equally applicable, and is now practically employed, for this purpose. We will describe the art of electroplating in such a manner that it may be very generally understood.