

Scientific American.

NEW YORK, SEPTEMBER 17, 1853.

Our New Volume.

We commence volume 9, of the "Scientific American," with a full dress of new and beautiful type. The paper in this volume will be superior to any in our former volumes, and will make a very handsome book when bound up at the end of the year. Our matter will be, as heretofore, compact and clear, and we shall endeavor to be more careful than ever in respect to its quality. Impartiality, with perfect independence of power or party, will characterize our reviews of all subjects of our criticism. Our correspondence embraces a wide area, and our contributors are men on whose information and statements the utmost reliance can be placed.—All the patent claims, as issued by the Patent Office, will be published every week, and all the notices of the Commissioner of Patents to those interested in the extension of patents, will be found in our columns. On this account no man interested in patents should be without the "Scientific American," and if he is wise for himself, he will not. There is not a manufacturer in our land but should be a subscriber, because he does not know but some invention may come up any week to revolutionize his whole business. Those who are content to plod along in stolid indifference to improvement are sure to fall behind in this age of progress. Every mechanic should read the "Scientific American," unless he does so he cannot be an intelligent one, for it is the mechanics' paper, and the only one in this country. No paper can be of more advantage in a family, especially if there are sons in it who have an ingenious turn of mind, or young mechanics learning any trade whatever. We are very careful of the moral influence which should be exerted by such a paper, because such an influence is the most important of all. Our readers may expect a greater number of more beautiful engravings in this volume than have appeared in any of our former ones, and in every particular we shall endeavor to make it much superior to all its predecessors. It affords us no small degree of pleasure to know that many of our countrymen have been greatly benefitted in circumstances because they have been readers of the "Scientific American." Their minds have been directed thereby to inventions, which have been the means of advancing their fortunes, and elevating them in position. A paper of such importance to our mechanics should receive their universal support, and instead of 25,000 subscribers which we hope to have for this volume, we should have 100,000. There are at least 6,000,000 of our population interested in inventions, science, chemistry, and the arts; out of this number is it too much to expect 100,000 subscribers for such a paper as the Scientific American? It surely is not. Our old friends, we believe, will still use their good influence for the extension of its circulation. We believe that every place where the "Scientific American" is circulated and read is directly benefitted thereby; this consideration gives us confidence and warmth of heart in asking our people to become subscribers, because we feel that we offer them a paper of a real substantial and useful character, one which will do them good, and for which their money cannot be more profitably expended.

Eight Years of Progress.

It is now eight years since the first number of the "Scientific American" was published. During these years, few though they be, many important improvements have been made, the progress of Mechanic Art has been great, and the national advantages in connection with it have neither been few nor far between. In 1845 there was not a good line of railroad in this State, west of Syracuse—all were laid with the flat rail, and were little better than "man-traps." Our railroads were then but in their infancy, in number, quality, and management, in comparison with what they are now. There was not a single line of Telegraph then through our State, nor was there one, we believe, west of the Alleghenies: at the present moment there are more than 20,000 miles of telegraph wire in our

country, binding its different parts together with electric cords. Then there was not a single Ocean Steamer belonging to our commercial marine, not one,—now we have nearly one hundred, and some of them the largest in the world, which nobly maintain the honor of our country at home and abroad. It is indeed cheering to reflect that although the paddle-wheels of no American steamship broke the waters of a single ocean eight years ago, that now they cleave the waters of every ocean and every sea, from the Bay of Manhattan to the shores of the German and Pacific Oceans. No American ocean steamship was then seen entering or leaving New York or any Bay in the United States, either upon or after a voyage: now, every week, from four to six magnificent steamships enter and leave our harbor, with the regularity of mail coaches. During the same period a new race of sailing vessels have also sprung into existence—we allude to our large clipper ships which have gained such renown for speed and beauty. Since 1845 Gutta Percha has been discovered—Steam Hammers introduced—Cast Iron Houses and Towers constructed, and a thousand inventions besides—the most useful and interesting of which have been illustrated and described in the eight Volumes of the "Scientific American" which have been published.

It would take up too much space to name all of these,—we can only allude to them and say it affords us no small amount of satisfaction that such improvements have been so intimately related to our own purpose of life,—that we have been the advocate and herald of many of them while they were in their cradles, and that their progress has been in some measure like our own. We believe that there is an intimate relationship existing between a paper devoted to science and inventions themselves. An intelligent and honest paper, devoted to such objects, is surely a powerful lever to lift them onward and upward. Our country has made greater progress in Science and the Mechanic Arts, during the past eight years, than during any similar number of years in her history. We make this statement without any reservation, for we know it cannot be refuted. The past affords us a solid foundation for the future progress of our country in mechanical improvements and discoveries in Science. It will be our object to labor zealously for such a useful purpose, for in doing so we experience a peace of mind, in striving to benefit our fellow-man, our country, and ourselves.

Nothing Like India Rubber.

It was an old watchword with tanners and shoemakers, "There is nothing like Leather;" but this venerable motto must give way to the reply, "There is nothing like India Rubber."—This substance can be made soft, hard, elastic, stiff, thick and thin, into every shape, and can be adapted to almost every purpose: it can stand heat and cold—can be made into boots, caps, coats, canes, combs, and we do not know how many other things besides,—the last application of it is to artificial teeth. An "India rubber conscience" was something well known of old, but India rubber teeth to some may appear to cap the climax of its adaptation. This is not so, however: its application to judiciary bamboozlement affords one of the most wonderful and striking examples of the divisibility and extension of matter on record. All our readers will remember the celebrated legal contests between C. Goodyear versus Horace H. Day; and how, from Massachusetts to Jersey, year after year, Goodyear endeavored to vanquish Day, and at last, under the championship of the great Webster, he accomplished his purpose, and obtained an injunction. But, like John Barleycorn, who was hacked, mashed, and finally drowned, up has sprung the India rubber case again, and it is no longer Goodyear versus Day, but Day against his former pursuers. The tables are completely turned, and on the 6th inst. Day obtained an injunction against Dr. Hartshorn and D. & N. Hayward, at Providence, R. I., his former opponents, to prevent them manufacturing India rubber goods, unless the defendants should give bonds, with security, to be approved by the Court, to account for all profits arising from the use of Chaffee's invention, and to pay over the same according to the order of the Court. This decision was made by Judge

Pitman, and it will no doubt be of great interest to our readers to know how the tables have been turned in H. H. Day's favor.

About eighteen years ago, all the India rubber goods made in our country were manufactured from India rubber dissolved by the spirits of turpentine into a pasty mass, which was afterwards spread upon cotton fabrics and dried. This method of dissolving India rubber was expensive, disagreeable, and the goods were of a very inferior quality to those now made. In 1836, Edwin N. Chaffee, a working mechanic of New Brunswick, N. J., made an invention which completely revolutionized the whole business, and he secured a patent for it August 31st of the same year. This discovery was nothing less than the rendering of India rubber soft and pasty by mechanical manipulation in machinery while hot, and spreading it upon the cloth in that state. This obviated the necessity of chemical solvents, and at the same time produced better goods. It has been stated that Chaffee's invention reduced the expenses of manufacturing India rubber goods to a third of what they were before. Charles Goodyear, of Massachusetts, by some means, became the owner of Chaffee's patent, and sold rights to various persons for manufacturing goods, realizing thereby an enormous amount of money. During the fourteen years of the patent, from 1836 to 1850, the proprietors of it, and the manufacturers of goods under it, pocketed millions of dollars for their own benefit; and how much do our readers think they, in their swelling generosity, paid to Edwin N. Chaffee, the inventor? They could afford to be generous, and many long-winded speeches were made by their counsel about patent pirates, and so on, whom they pursued as fringers. Well, they paid to E. N. Chaffee the enormous sum of \$100. Oh what [India rubber] consciences some men have!

In 1850, Edwin N. Chaffee applied for an extension of his patent, and Mr. Ewbank granted it. The extension was opposed by H. H. Day with fierce pertinacity, and after it was granted, he published long articles, with lawyer's opinions attached, asserting that the Commissioner of Patents had granted the extension illegally. This single act of Mr. Ewbank, of extending the patent of this poor inventor, deserves great credit. After the extension, which, according to law, gives no favor to the former owners, H. H. Day sagaciously found a way to become its sole proprietor. The terms are far more favorable, we believe, to Mr. Chaffee, and we hope he will realize (as he deserves) a handsome fortune out of it for his old age. It is by the extension of the patent that the position of the parties have become reversed, and H. H. Day is now the pursuer of H. H. H., (Hartshorn, and the Haywards.) We have not a single word of praise for Mr. Day, unless he pays Chaffee well for his invention, and if he does, for that we will give him credit. As for those who have made themselves rich by Chaffee's invention—the Company against whom the conditional injunction has been granted having made \$250,000 of clear profits in 14 years—we have no language to express our feeling. They have been flaunting about in their gilded array, while the man who made them increase in riches has been for fourteen years generously rewarded with the bounteous sum of \$100. Oh! shame! There are men in our country who pretend to be the friends of inventors, and terribly savage upon patent pirates, that are really the plunderers of genius, the horse leeches of inventors.—We defend and uphold the owners of patents in their rights, and we know that there are many generous men in our country who have purchased patent rights, and liberally rewarded the inventors. We do not find fault with those who buy a patent right at a low price, when there are doubts about its profits, but those who buy such rights and make money by them, should not, in their prosperity, forget the inventors. The owners of Chaffee's patent have been a company of monopolists. They have done evil to our country by keeping up the prices of such goods for their own benefit, and to the hurt of all others. Such conduct we always must condemn, because such men do great injury to the rights of inventors in the community by raising prejudices against patents which are granted intentionally to benefit inventors, not their crafty deluders.

Inventions and Discoveries—Gutta Percha.

It cannot be denied that the mechanical inventor has produced many revolutions in the world, and such revolutions as have not merely changed the ways and workings of one or a few kingdoms, but have completely changed the ways of men—they have revolutionized the world. At the same time, we are equally indebted to chemistry, for her beneficial and useful discoveries, and perhaps this field, for improvement and progress, is much wider than that of mechanism. The discovery of gutta percha was only made a few years ago, and yet to what purpose is it not now applied. It is used for a hundred different purposes, and no other substance is like it, and were it cheaper it would, no doubt, be used to an hundred-fold greater extent than it now is. There are some hopes of a cheap substitute being discovered, and we trust that the experiments instituted will lead to such a favorable result. By recent news from Europe, we learn that Dr. R. Riddell, of Madras, in making experiments on the Muddar plant of India, found that its milky juice, when dried, became tough and hard like gutta percha, and precisely analogous to it. It is charred by sulphuric acid, converted into a yellow resinous substance by nitric acid, and but little, or not at all, acted on by muriatic or acetic acid or alcohol. Spirits of turpentine dissolves it into a viscid glue, which, when taken between the thumb and finger, pressed together and then separated, shows numberless minute threads, all which results correspond with those of gutta percha. The Muddar also produces an excellent fibre, useful in the place of hemp and flax. An acre of land cultivated with it would produce a large quantity of fibre and juice.

We may be allowed to indulge a hope that this substance will yet be cultivated in the United States; at the same time we exhort our people to look out for such discoveries from the natural products of our own country.

Our Title Page.

Our readers, we know, will all be pleased with the beautiful and appropriate frontispiece on our last number. The two figures represent science and practice conversing together, or Venus the beautiful, and Vulcan the swarthy but strong-armed forger of bolts and bars. The Patent Office of the United States is represented behind the figures, on an elevation in the distance. A steamboat and steamship, together with a line of telegraph, flank a viaduct on the New York and Erie Railroad, along which the iron horse is seen panting with his huge train. Agricultural and various instruments are represented, to show that industry and the arts are the true emblems of our country's greatness and glory.

The ornamental work was designed by Otto Heineigke, and the mechanical by Chas. Parsons. The engraving was executed by Frank Leslie; Wm. Filmer was the electrotyper of it, and it was printed by E. J. Johnston.

Our Prizes.

We would again direct attention to our prizes, they are more numerous and of more value than those offered last year. They are free as air, and worth contending for. Those who endeavor to obtain subscribers have many arguments to advance to those whom they may solicit to subscribe. We commend to their attention the article headed "Our New Volume."

Clubs can obtain the "Scientific American" at a very low price; it is really the cheapest mechanical paper in the world.

The New York Sun.

The twentieth anniversary of this extensively circulated newspaper was celebrated on Saturday evening, the 5th inst. The whole building was grandly illuminated, brilliant fireworks were displayed, and a sumptuous banquet was given by the proprietor to his employees and invited guests.

The utmost cordiality of feeling prevailed, and the whole affair reflected much credit upon Mr. Beach, whose enterprising management has placed the "Sun" among the most influential and successful papers of the day, its circulation is understood to be much greater than any other daily paper in the world. Continued success to the New York "Sun" and its enterprising manager.