

From the simplicity of their construction, the original cost of these machines is quite small and from certain peculiarities of arrangement, they are subject to but little wear and tear. The cutters are so adjusted that the friction necessarily attendant on them becomes a sharpening process, and the beds into which they are set are so firm and solid, that little injury arises from the motion of the machinery. A wonderful revolution must inevitably follow the introduction of these machines. The old method of dressing stone by the tedious process of hammer and chisel must yield before it, and stone cutting by hand, from being a mere laborious drudgery, is raised at once to the dignity of an art.

The use of dressed stone as a building material must be indefinitely increased, because the great obstacle to its universal employment, viz., its great cost, will be done away.

The demand for skillful hand labor in ornamental work must be proportionably increased, so that what seems at first to the operative to be an evil, is really calculated to open to him a wide and more desirable field of labor.

We commend this remarkable invention to the attention of capitalists, builders, and all interested in the growth and decoration of our city.

## MISCELLANEOUS.

### The Electric Telegraph in France.

It is well known that the Government of France is far behind in the establishment of telegraphs, and it has always thrown obstacles in its way. The "National" paper complains as follows about it, in which it appears the philosopher Leverrier receives and deserves censure:—

"It is in vain that all foreign nations are rivalling each other in activity to realize this marvellous invention which has placed the lightning at the disposition of the mail; our Administration has discovered the secret in making electricity itself go at a walk. M. Leverrier has put in the way the thickness of his own mind, and the most subtle of all fluids cannot get across it. A few odds and ends of wire stretched along the lines of railroads; a small office in the Ministry of the Interior, where a dispatch, subjected to the most inquisitorial formalities, and to an exorbitant charge, is transmitted by most wretched contrivance—this is all we possess; and you will yet see the galvanic fluid make the tour of the globe, passing by Moscow and Peking, before there will be an electric telegraph between Lyons and Chalons-sur-Sone.

Now what is wanted to bring about this latter result! A line of poles planted along the line of the Soane, after the American manner—a thing of course out of the question.—To accomplish the first, you must span two oceans; yet the English will do it; and if they do not make haste the duty will devolve upon the citizens of the United States. The question is already under study, and the submarine wire that connects the two shores of the Channels is only a specimen, by way of trial. If, in the execution of this new work, French engineers are condemned to inaction, they can at least assist by their ideas, and it is in this view we must receive a proposition made by one of the them to the Academy of Sciences; M. Aristide Dumont, applying to the ocean telegraph the observations he has made upon the land wires, proposes to suspend the electric cable to floating buoys instead of laying it upon the bed of the sea or sinking it to a certain depth. This original idea developed by the author and supported by numerical calculations, deserves the attention of the engineers, who, in bringing together the two shores of the country are to accomplish the most splendid industrial work of the country."

### Atmospheric Pressure as a Telegraphic and Mechanical Agent.

The Southern Press referring to the paragraph recently published, stating that experiments were making on a section of the Boston and Providence Railroad, to test the practicability of sending letters to a distance by means of atmospheric pressure, says:—

"A friend of ours possesses an invention of a very similar character, which we think he should take measures to bring out and verify

by experiment. Taking the description given to be tolerably correct, some difficulties suggest themselves to our mind, which the invention of our friend seems to us to overcome. We should be glad to know the results of experiments made with both plans. The one we have alluded to combines the advantage of transmitting letters and newspapers in a small compass, with that of application on a large scale to the transmission of goods and passengers.

The importance of such an invention can hardly be overrated; and if experiment shall prove it to be practicable, it will completely change the present system of railway travelling. The construction of the road would be cheaper—the speed would be vastly increased, while the danger would be less. At the same time, by our friend's plan, the cars can cross from one set of lines to the other without any difficulty, an object hitherto unattainable upon atmospheric roads. The invention would have been put to the test of experiment long ago, had not the inventor been deterred by the expense. We consider it very worthy the attention of monied men, who interest themselves in such matters."—[Boston Journal.

[In 1823 a plan was proposed in the Glasgow Mechanics' Magazine, for sending parcels through an air tight tube by exhausting it at one end by an engine. A few years ago a plan was tried in France of working machinery by compressed air driven through a tube two miles long, worked by a water wheel—a cheap power. The plan was plausible but failed entirely to produce the mechanical results anticipated. More than one atmospheric railroad has been tried in England on a large scale. They have all failed. To employ compressed air as a mechanical agent through a long tube, is like employing an exceedingly long belt or chain, which is well known to be impracticable beyond a given length. For short distances, atmospheric pressure and exhaustion can be made to work very well, and in one coal mine in Glasgow, Scotland, the principle has been very successfully applied in what is termed Potts' Atmospheric File Driver.

### A Japanese Compass.

Captain Lee, of the schooner Elizabeth, which recently arrived at this port from San Francisco, brought a curiosity of the most rare and interesting character. It is the compass that was taken by the captain of the bark Auckland, from the Japanese junk, the crew of which vessel, with some of its effects, were also taken and conveyed into San Francisco, as has been before reported. Capt. Jennings, of the Auckland, having been a schoolfellow of Captain Lee, presented him with this singular piece of mechanism, as a token of esteem and memento of former times. It has, instead of a floating card, like that of the mariner's compass, a needle similar to our little surveying pocket compass needles. It has the different points marked on the top of the box in Japanese characters, being sixteen in number. Capt. Lee designs sending it to Washington, to be placed in the cabinet of curiosities in the Patent Office.

### No Evading the Tolls.

The Circuit Court, of Washington county, Md., decided lately, that no one has a right to pass round a toll-gate with a view to evade the payment of the toll; and that nothing but absolute business can be pleaded in justification of such a violation. C. Hildebrand, the defendant in the case, was fined \$2 and costs, by a magistrate, for going round the toll-gate to avoid paying three cents toll, and the Circuit Court sustained his decision.

### California Quicksilver.

The New Almaden quicksilver mines are now in full operation, giving employment to two hundred or more of laborers, and yielding about 10,000 pounds of quicksilver daily. The company are excavating a passage into the hill from which the cinnabar is taken, through which, by means of cars, it can be run out more rapidly than by the present method, and with greater ease to the workmen. This improvement will cost the company a large amount of money, but when completed will greatly facilitate their operation. The ore is now raised to the surface by shafts, and brought down the steep hills on pack mules.

### The Burial Place of John Fitch.

We have in this place many excellent mechanics. Messrs. Russell & Sisco, your subscribers, especially. A Mr. John Carothers, who has recently died in this place, has left on hand many new and curious articles as yet unfinished, among which is an immense machine by which he intended to make bricks at the rate of 46,000 per hour, and the amount of work already done has amounted to over \$1,000, to have finished it would have cost \$5,000; in its success he had the fullest confidence; there are also unfinished machines for making sausages, cutting lard, meat, &c. A Mr. Lilly, though kept down by poverty, is administering to the pleasures of farming by his great improvements in the agricultural implements. Here is the native place, and not two hundred feet from where we now stand, is the grave of the unfortunate John Fitch, the first real inventor of the steamboat navigation. Before Robert Fulton was ever heard of, John Fitch exhibited to wondering crowds a miniature steamboat which glided swiftly across a large pond in the vicinity of this place. Poverty, and the incredulity of his fellow-citizens, have made him lose that position among the great men of the country which he so greatly deserved.

The writer of this boasts himself a mechanic by nature, and wavered sometime as to whether he would become an apprentice to Mr. James Carothers or not, but want of industry predominated, and he can boast of nothing now but some new ideas in the way of rat traps, &c. E. & Co. Bardstown, Ky.

### To Promote Adhesion in Locomotive Wheels.

MR. EDITOR.—Having noticed several complicated plans for increasing the "bite" of locomotive wheels, and having myself frequently witnessed the difficulty in starting heavy freight trains from the slipping of the wheels of the engine, the following simple plan has suggested itself to me, and not knowing if it has ever been tried, I submit it to your judgment, with the liberty of offering it through your paper to builders of engines, if you think it worth anything:—I would run from the back end of the engine frame a stout piece of timber well secured to it, under the front end of the tender, just low enough to clear the frame of it. Through the front end of the frame of the tender, I would insert a stout screw running down into a pivot bearing on the timber spoken of, with a suitable arrangement on the upper part of the screw for turning it with the necessary force. The operation of this simple arrangement would be thus. When the engineer wished to make his drivers "bite harder" for the purpose of starting a heavy train, he would turn the screw down into its bearing sufficiently to place the weight of the end of the tender upon the back end of the engine, and of course upon the driving wheels, as soon as the train is in motion, a backward turn of the screw places matters as they were before. It seems that this simple arrangement will work better than many of the complicated plans I have seen. G. T. W.

Hartford, Conn.

[In No. 27, Vol. 1, Sci. Am., there is an engraving of Dr. Lewis's locomotive for increasing the bite on the rails. He employed extra small wheels, and by a screw could throw the weight on to them in the same way as that proposed above. The freight engine which won the prize at the Lowell Mechanics Fair, had a great amount of driving surface, and it started with its load without the least hesitation, while others found great difficulty in so doing.

### A Great Blast.

One of the most gigantic engineering operations ever effected, took place, says Galignani, a few days ago, near Welschmetz, in the Italian Tyrol. A quantity of stone being required for the construction of viaducts and bridges for a railway, it was resolved to use a huge rock, 360 feet high, and 85 feet wide, which rose like a wall. In two places only was this rock connected with the chain of Alps. First of all it was entirely separated from the mountain (a very difficult operation, which occupied 800 workmen for some time); then seven or eight large openings were effected at the base, so that the immense mass

was supported on columns; and then trains of gunpowder were placed in each opening.—Everything having been prepared, fire was set to the trains. In eleven minutes a frightful explosion took place, and the mass came down. The fall shook the earth for a distance of nearly two leagues, and the pieces of rock spread over nearly ten acres.

### To Our City Patrons.

Those of our subscribers who reside in the lower wards of the city, and who have not received their papers regularly for the past few weeks, are informed that a new carrier has been placed upon the route who will in future serve the paper promptly.

Subscribers will oblige the publishers by rendering all possible aid to the new carrier, who will in turn serve them with the paper regularly and in good condition.

Any omission which may accidentally occur will be promptly corrected by registering the complaint upon the carrier's book at the office.

### Cure for Headaches.

A work has been published in Paris, by an eminent physician, in which is described a new remedy for headaches. He uses a mixture of ice and salt, in proportion of 1 to 2, as a cold mixture, and this he applies by means of a little purse of silk gauze, with a rim of gutta percha, to limited spots on the forehead or other parts of the scalp, where rheumatic headache is felt. It gives instantaneous relief. The skin is subjected to the process from half a minute to one and a half minutes, and it is rendered hard and white. It is said to be good in erysipelas and diseases of the skin.

### The Magnetic Telegraph Predicted.

At a banquet given on the occasion of the opening of the sub-marine telegraph between England and France, Mr. John Brett stated that it was over a cup of tea, early in 1845, that his brother and he first discussed the project, the successful completion of which they were then celebrating; and in the month of July, in the same year, they drew up a plan for not only uniting England and France, but Ireland, and the most distant colonies in India. Some of the most eminent engineers, he said, regarded the scheme as impracticable; but the jest of yesterday was the fact of today. Mr. Brett mentioned the remarkable fact, that in 1666 one Gilbert published a book, in which he said that the day was not far distant when men would be able to communicate from one end of the world to the other by means of electricity. This prediction may now be said to be in course of realization, if not actually realized; and Mr. Brett believes that "not only Paris and Vienna, but Constantinople, Calcutta, Peking, and America, will in a few years be next-door neighbors."

### Suspension Bridge Over the St. Lawrence.

Mr. E. W. Serrell, C. E., of this city, has been employed by the corporation of the city of Quebec, to ascertain the practicability of throwing a bridge over the St. Lawrence. He has made an examination and reported that a suspension bridge across that river is perfectly practicable in a scientific point of view at about 6 miles above Quebec. The span would be 1,600 feet, and the roadway 160 feet above the water; this we believe would be the largest suspension bridge in the world.

### Spontaneous Combustion.

At a recent trial at the Capital of the Grand Duchy of Hesse Darmstadt, in which the question of the possibility of spontaneous combustion of the human body was involved.—Prof. Liebig and Bischoff were called to give evidence on the subject; the evidence of these two eminent chemists, was opposed to the possibility of such an occurrence.

### Railroads in England.

There are 6,464 miles of English railroads constructed, at the cost of £205,160,000; the number of Engines working on them is 2,436; the average distance run per day being 110,333 miles; the profits on the traffic paying from £11,000,000 to £11,500,000 to the shareholders.

The Assembly of Citizens, of Bremen, have resolved to send, in the name of that city, a stone with a suitable inscription, for the monument about to be erected at Washington in honor of Washington.