

## New Inventions.

### Improved Iron Bridge.

Mr. Lyman A. Gouch, architect, now of this city, has made some valuable improvements on Iron Bridges which must command attention, and for which he has taken measures to secure a patent. He employs the inverted arch and trusses with iron (cast and wrought) screw stanchions, or braces, to keep the bridge braced according to the expansion or contraction of the metal from variation of temperature. The mode of bracing the stringers, &c., is done by breaking the joints, tying each two together by a screw brace, thus making each one strong and inflexible. The bridge is well planned to secure it against vibration, (the great evil to guard against) by the greatest weight of metal being placed at and near the abutments, thus throwing it off the centre, which in other cases, acts against the parts of a bridge, when a carriage is passing over it, like swinging the greatest weight at the longest end of the lever. It is well planned to work in sections, on a turn table draw, and thus it can be rendered the very object desired for crossing canals or navigable rivers.

### Ventilating Bricks.

The London Builder says that there has been registered in the Patent Office a brick so shaped that when two are placed end to end a circular space is left at the junction. This circular space connecting from course to course, a wall formed with them is, to a certain extent, hollow, and admits of currents of air through it, either heated or otherwise. Each brick is nine inches square and three inches thick, the size of two common bricks, so that only half the usual number is required to do a rod of brickwork, and as they pay but one duty, and are laid with a very little more labor than a common brick, work may be executed at a considerable saving. A common brick is used at the angle of each course.

### Ingenious Plan.

A post office has been recently established at Scotland, in Pennsylvania. The Chambersburg Sentinel thus speaks of the arrangements of the new office to get the mails:—"Quite a feature of the new establishment is the novel and ingenious manner in which the mail is conveyed from the railroad to the office, a distance of perhaps of one-fourth of a mile. A line of posts planted at suitable distances is traversed by a wire, acting as an endless chain and carrying a small car, to which the mail-bags are attached. When the cars reach the point of delivery, the agent fastens the bag to the small car, and by means of a spring, sets it in motion, when in the course of a few seconds it reaches the office, and a return is made in the same space of time. This simple contrivance has also been adapted to the conveyance of water from different springs to barns and dwellings. It is like Cox's Hydrulator, which appeared in our last volume, and which since then has been patented.

### Vertical Gate.

Mr. Lorenzo Smith, of Easton, Mass., has invented and patented an improved gate, which opens and shuts vertically, with great ease, thus requiring no space on which to swing, and having other advantages over the ordinary gate.

[The above is from an exchange. There surely must be some mistake about it. It surely is not lifted high above, away out of the reach of a hay wagon, nor down below into a pit in the ground.]

### Scientific Memoranda.

All wooden posts intended to be set in the ground should be placed in an inverted position to that of the tree from whence they were taken. The moisture ascends from the root, hence the reason for inverting the post, which practice proves to be correct, in making the posts last longer.

### Strength of Gutta Percha Tubes.

A series of experiments to test the strength of gutta percha tubes, were tried at the Birmingham (England) Water Works, to test its fitness to convey water, in place of the iron pipes. The London Athenaeum says, that the experiments were made under the direction of Mr. H. Rofe, engineer, upon tubes of three quarters of an inch diameter, and one-eighth thick of gutta percha. These were attached to the iron main, and subjected for two months to a pressure of 200 feet head of water without being in the slightest degree deteriorated. In order to ascertain, if possible, the maximum strength of the tubes, they were connected with the water company's hydraulic proofing pump, the regular load of which is 250 lbs. on the square inch. At this point they were unaffected; and the pump was

worked up to 337 lbs.—but to the astonishment of every one the tubes still remained perfect. It was then proposed to work the pump up to 500, but it was found that the lever of the valve would bear no more weight. The utmost power of the hydraulic pump, therefore, could not burst the tubes. The gutta percha being slightly elastic, allowed the tubes to become a little expanded by the extraordinary pressure which was applied, but on its withdrawal they resumed their former size.

### Millstone Cement.

Alumn water mixed with plaster of Paris is said to make the best cement for Burr millstones. Some put a little weak glue in the composition, but it must be very little, or it will be injurious, and it would do well enough without it.

### Hovey's Straw Cutters.

We understand that Mr. Wm. Hovey, of Worcester, Mass. the celebrated manufacturer of "Hovey's Patent Straw Cutters," has succeeded in making some valuable improvements in his machines, whereby they are rendered more portable, and less expensive in their transportation, which is a very important desideratum in all machines. Our mechanics should study economy in the construction of machinery, and by all possible means to render it cheap, and still durable as possible, which can be done in many instances by avoiding unnecessary complexity. Mr. Hovey intends to patent his improvement, and we have no doubt it will enhance the value of his excellent machines.

### Electric Telegraph between London and Paris.

The French Government has accorded to Mr. Jacob Brett the authorization to establish on the coast of France a submarine electric telegraph between Calais and Boulogne, which, crossing the channel, will go to Dover on the coast of England. The treaty entered into with Mr. Brett guarantees certain advantages to the French Government, and leaves all the expense at the charge of Mr. Brett, assuring him, however, a privilege for ten years in case the experiment should succeed. The works must be terminated by Sept. 1, 1850, at the latest; but it is probable that it will be finished sooner. This first application of the submarine electric telegraph, if it should succeed, as from long examinations which have been made there is every reason to hope, will produce on the relations between France and England results of which it is impossible at present to estimate the importance. Dover, the point at which the submarine telegraph is to join England, is united to London by a direct telegraph line; the capitals will, therefore, be in this manner in almost instantaneous communication.

### Another Whitewash.

The editor of the Horticulturist, in answer to the queries of a correspondent, gives the following recipe for a whitewash. We have published a good many recipes for this purpose, but believe we have never published this. He recommends it as most excellent, as a cheap and durable wash for wooden fences and buildings. He thinks that it owes its durability to the white vitriol which it contains.

Take a barrel and slake a bushel of freshly-burned lime in it, by covering the lime with boiling water. After it is slaked, add cold water enough to bring it to the consistence of good whitewash. Then dissolve in water, and add one pound of white vitriol (sulphate of zinc) and one quart of fine salt. To give this wash a cream color, add one half pound of yellow ochre, in powder. To give it a fawn color, add one fourth of a pound of Indian red. To make a handsome gray stone color, add one half pound of French blue, and one fourth pound of Indian red. A drab will be made by adding one half pound of burnt sienna, and one fourth pound of Venetian red. For brick or stone, instead of one bushel of lime, use a half bushel of lime and half bushel of hydraulic cement.

### Coast Survey Signals.

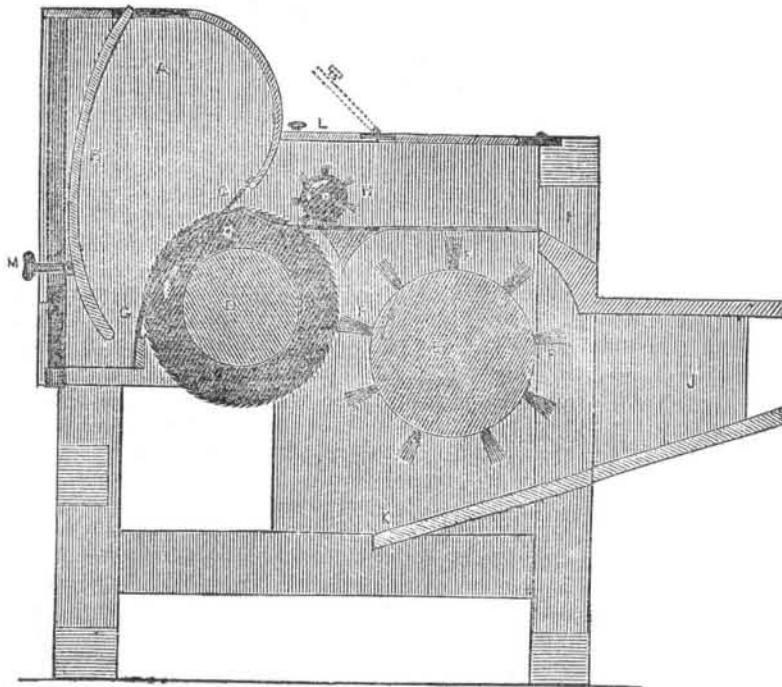
We understand, says the Gloucester (Mass.) Telegraph, that some mischievous persons have destroyed several of the signals erected on the hills by the officers of the United States coast survey for the purpose of aiding them in performing their labor. We are sorry for this, for we supposed there were none in our community as to wish to hinder the operations of those engaged in so useful a work—that of obtaining an accurate survey of our coast. Instead of obstructing, every one should be willing to render such assistance as lies in their power.

[The scamps who did the evil spoken of above, deserve a touch of the thumb-screws.]

### To Plant Lima Beans.

These kind of beans should always be planted on their edges, with their eyes downward, and covered with only about one and a half inches of soil. It has been discovered by experience that if they are planted flat, they are not liable to spring up, especially if they covered to deep with soil.

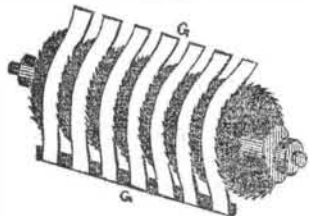
## IMPROVEMENTS IN THE COTTON GIN.—Figure 1.



This is an improvement on the Cotton Gin invented by Mr. John Du Bois, of Greensboro', Green Co., Alabama. The nature of the improvement is the better removing of the mots, &c., from cotton, in ginning.

Figure 1 is a vertical section showing the interior, and fig. 2 is a view of the saws playing between the ribs or plates. The same letters refer to like parts on each.

FIG. 2.



Many people do not know the principal features of the cotton gin, although almost every person has heard of Eli Whitney, the inventor of it. A cotton gin, in principle, is a series of fine circular saws, C, fixed on a revolving shaft playing between the ribs, G G, as represented in fig. 2. The saws and ribs are confined inside of a casing, represented in fig. 1. A is the frame and casing; B is a curved hinged board, having two screws, M, (one seen) as the axis of the hinge. This board

### Composition for Stopping Decayed Teeth

Take some powdered gum mastic, and digest it for several days in sulphuric ether, kept in a phial well corked; then strain it through a cloth and add some powdered alum until it is formed into a mouldable consistency. It is then put into a bottle, or phial, according to the quantity along with some camphorated alcohol and essence of cloves. The phial being well secured from the atmosphere, it is thus kept for constant use, when it is introduced into the cavity of the decayed tooth, which must first be well cleaned and dried. This stopping composition acquires a great degree of hardness.

There are only three ways of getting out of a scrape—write out, back out, but the best way is to keep out.

gauges the opening of the hopper or roll box, which admits the cotton into the chamber, represented in front of the saw; from this chamber the saws, C, drag in the cotton between the metal ribs, G, separating, by this action, the cotton from the seed. The brush, E, revolving on a shaft, is placed with its axis of motion, below that of the saw axis, D. F F are the tufts of the brush; H is another minor revolving brush, in a chamber separate from the brush, E. L is an opening above it; this small brush is to remove the mots when thrown up by the saws through another series of short ribs, as represented by the saws projecting above in figure 1. This mot brush constitutes a good improvement, which can be added to any of the old machines. The ginned cotton is thrown out from the brush, E, into the cotton room through the sprout, J, having an inclined bottom board, K, down which the heavier impurities fall; J is the mouth of the mot box. Those acquainted with the cotton gin, will at once perceive that the large brush is arranged different to the saws, with those in the old machines, and that the mot brush, H, is an additional improvement. Measures have been taken to secure a patent. More information may be acquired by letter to the respected inventor at his place of residence, mentioned above.

### Naptha versus Chloroform.

In the Edinburgh Surgical Hospital, Prof. Simpson, has been testing the properties of Naptha, which seems to be as good as ether for inducing temporary insensibility. Professor Simpson administered the naptha to two patients, a man and a boy, on whom Mr. Miller performed the painful operation of extracting portions of necrosed bones from the tibia, by perforating the newly formed shell with the trephine, and removing the sequestra with the forceps. The sleep induced was deep and tranquil, and the breathing was less sterforous than when the chloroform is employed; but it was remarked that the effect of the naptha upon the heart's action was much greater, the pulse becoming extremely rapid and fluttering thus rendering it less safe as anæsthetic agent than chloroform.