



## New Inventions.

### New Morticing Machine.

Mr. Levi S. Enos, of Wellsboro, Pa., has invented an improvement on a Morticing Machine, which has some advantages over many others, and of morticing machines there are a great number. In this one the timber to be morticed is set out true beneath the chisel, and is held firm until all the mortices are made. The work is not shifted, but the cutter. This we think is one advantage for many kinds of work. The cutting chisel is operated by a horizontal lever giving it a reciprocating motion, and simply by moving a set screw on the one side, and by lifting a ratchet, and working the chisel lever, the small sliding frame on which the chisel lever is fixed, is moved from side to side, and backwards and forwards. This method of operating the chisel, affords great latitude of operation on the work to be morticed.

### New Spike Machine.

Mr. E. B. White of Nashua, N. H., has invented a new improvement on Spike Machines which promises to be valuable, as it is very simple. The machine consists of two steel rollers with half cresces the shape of the spike cut on each. The bar of iron for the spike is cut off on the top of one roller by a vibrating hollow cutter, and it is then carried between the two rolls when the cresces meet, and at that period, a reciprocating header forms the head of the spike. The header is a die, and it forms a most beautiful head. The rolls therefore have an intermittent rotary motion, communicated by pall and ratchet. The inventor has taken measures to secure a patent.

### Improvements in Cotton Manufacturing Machinery.

Mr. G. W. Howard of Providence, R. I., has invented some improvements in machinery for manufacturing cotton, which promise to be valuable.

1st A coiling motion which although not better than any other, as to the quantity or quality of the work, it will perform; is so arranged as to attach one to each and every card, and by varying the height, or length of cams used, the roving is made ready for either mule, or throstle, or ring spinner, or dead spindle flyer.

2d. An attachment to the warp spinners for sizing the yarn, ready for the loom; saving the operations of spooling and dressing and consists in a reservoir to each frame; and a tube running the length of the frame each side, made of copper rolled thin and not closed, but being set on a level and supplied by a regular feeder, is always kept full of size of sufficient consistency to coat the thread immediately on leaving the rollers, but not saturating the yarn so much, but what it will dry at an ordinary heat before it reaches the bobbin, and for wet weather there is an air tube, supplied by a blower from a furnace, which is to be arranged in a convenient manner to open or shut off, as the necessity of the case may require.

3d. An improvement to obviate the difficulty of using so many bobbins on the warper as would be required for a whole warp and only to use 1-4 of the required number for fine yarn, and wide goods; but for coarse and narrow calicoes to warp  $\frac{1}{2}$  of the web on a beam, for the loom; and by inverting one beam on the loom, he can with the addition of one roller lay the warp even, but in using 4 beams, they will be only half the length of the wide loom, and 2 of them will be on a level rod below, the other 2 inverted above one end of each of these section beams being made very thin, in order to join close in the middle and the other end geared for the let off motion, or by a better way, equally weighted and fastened to a spring inside the loom.—

These 4 beams will require rather more care, to keep them evenly weighted and banded to make even cloth.

### A New Telegraph at Berlin.

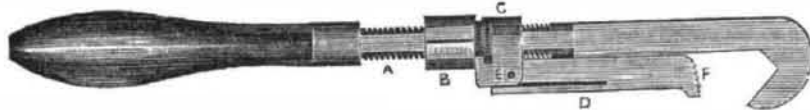
On the 30th of May last, Mr. C. W. Siemens of Berlin, read before the Society of Arts an account of a new telegraph in constant operation in Germany, an invention of E. W. Siemens, his brother. One advantage it has, is in the small amount of electricity required to work it; the current is broken in each instrument before the attraction of the armature of the electro-magnet is completed; but the more intense the supply of magnetism the quicker they work. The principal feature in Siemens's invention consists in breaking and restoring the galvanic current by the electro magnet itself, at the moment when the vibration of the armature to the one side or the other is ended. This makes it a self-acting machine. By this telegraph all important de-

bates in the German Parliament at Frankfurt are conveyed 350 miles to Berlin, and published next morning.

### Cotton Rope.

The editor of the Charleston S. C. Mercury speaks in terms of strong praise of a sample of cotton rope, manufactured in Barcelona, Old Spain, which has been presented to him by the captain of a Spanish vessel. The donor states that he has been using it for years on board his vessel for various purposes, and considers it, in many respects, superior to hempen cordage. It works remarkable free, and retains its softness and pliability in the coldest weather, and as an evidence of its durability, he affirmed that the cotton tiller rope then on board his vessel, had been in use for more than three years, while the same article made of hemp, had to be renewed at the end of every voyage. It is manufactured out of refuse cotton.

## IMPROVED WRENCH.



This is a tool invented and manufactured by Mr. S. Merrick, of Springfield, Mass. It is a most excellent article and is intended for grasping and turning round bolts, nuts, gas pipes, fittings, &c. and is readily adjusted to any size within its compass. Mechanics will readily perceive that the form of its jaws are different from others and it is well known that the only tool now in use for the same purpose as this is designed, is a clumsy pair of tongs for each particular size of pipe. A, is the screw shank of the fixed jaw. B, is the nut that moves the collar C of the jaw F. This jaw is secured to the collar C, by a pin E, passing through which forms a pivot joint.

D, is a flat spring attached to the jaw and resting on the front of the collar C. This spring keeps the jaw F, firm, and the joint E, stiff. The object of this spring and the joint is this. When a twist or wrench is given to a nut, by exerting a slight pressure outwards on F, the spring D, allows the jaw to open a little—on its joint, and the wrench in a moment is turned back for another catch. This is a very excellent arrangement. It will be observed that a small ring of the nut B, works into a recess of the collar C, to slide it, and thus move the jaw. There is no tool in use for the same purpose, that can approach this one.

### Improved Hand Drill.



A is the drill spindle. B is a small iron flywheel firmly secured to the spindle. C is the handle; it is made of wood and has an opening through which the spindle passes, of a sufficient bore to allow the said handle to be moved freely up and down. E is a fixed button on the top of the spindle. D, D, are two cat-gut or other good cords, secured to the extremities of the arms, and also secured on each side at the top of the spindle forming the apex of the cone. Operation.—When the drill is placed on that part of the iron work in the position represented above, to bore a hole, the handle C is held firmly while the flywheel B is turned round, coiling up the cord D on the spindle, and raising up the handle C.—When the handle is raised up some distance, (according to the stroke you want to make,) it is pressed down, the flywheel D flies back, and when the handle comes down to the length of its string it is quickly raised up, the cord coils round again, the handle is again brought down, and so on; the flywheel keeping up a semi rotative motion and enabling the operator to drill small work with great ease. It is the pressing down of the handle, which by the coiled cord acts as a spring, operates the drill; while the first momentum given to the flywheel to coil up the cord, always acts again, through the fly wheel, to coil up the cord and

raise the handle for another effort. This is a very handy tool in any machine shop, especially for drilling some metal articles that would be troublesome to put in the lathe. Any person can make one by the foregoing description.

### New Chimney Cap.

The Washington Republican states that Mr. Charles W. Russel of that city has perfected an invention for curing smoky chimneys, for which he claims and has filed the necessary papers for obtaining a patent. The principle is simple, and those who are troubled with smoky chimneys know practically its utility. There are two chambers—one small, the other large—the small one to admit the rarefied air from the fire into the larger one; and, once there, it has no chance of escape but to ascend, the expansion forcing a current of air through all opposition. The invention has been tested and works to a charm.

Mr. Russell is now employed by the Secretary of the Senate and Clerk of the House in rectifying the chimneys of the Capitol, which have long been a source of annoyance on account of their smoking very badly in windy weather; and many methods have been tried without success to cure them.

### Gas from Wine Dregs.

Two French chemists in Paris, Messrs. Livemis and Berhardt, have ascertained that the decomposition of grape skins, after the last pressing and lees of wine, disengages a carbonated hydrogen gas of a superior quality.—A pound of dried grape skins, placed in a white-hot retort, turished, in less than seven minutes, 350 quarts of excellent carbonated hydrogen gas. The gas burns with a brilliant white flame, is without odor, and emits little smoke in comparison with that produced from pit coal and rosin. An experiment with the dried dregs of wine was equally satisfactory.

### New Copal Solvent.

A beautiful varnish can be made by dissolving copal in chloroform, it can also dissolve other resinous substances, and also fatty matter, and is therefore enabled to make a very excellent leather varnish.

### Application of Gun Cotton to the Silvering of Looking Glasses.

Mr. H. Vohl, of the Paris Academy of Sciences, has recently discovered that a solution of gun cotton in a caustic alkaline ley, possesses in a high degree, the property of precipitating silver from its solutions in the metallic form. If gun cotton be placed in contact with a caustic alkaline ley of sufficient strength, the cotton dissolves in the ley, with the disengagement of considerable heat, and of ammonia, and furnishes a deep brown liquor, sometimes rather thick; which, on the addition of an acid, gives rise to a brisk effervescence, with disengagement of carbonic acid, and nitrous acid.

The manner in which the gun cotton comport itself in this case, shows, that this substance is not dissolved as such, but undergoes a decomposition, in which the atoms of the oxygen of the nitric acid combine with an atom of the carbon of the cotton, and give rise to the carbonic acid; which, as well as the nitrous acid, combines with a portion of the potash. A new decomposition of the nitrous salt by the potash, in presence of substances containing hydrogen, furnishes the ammonia.

The most remarkable property of this alkaline solution, is the following:—If a few drops of nitric silver, be added to the solution and enough ammonia added, so that the oxide of silver which is formed becomes redissolved, and heat gently applied by means of a water bath, a moment arrives when the liquid assumes a dark brown color, showing an effervescence, and all the silver is precipitated on the sides of the wood containing the solution, as a polished mirror. The mirror thus obtained, surpasses considerably in brilliancy that which is produced by ethereal oils or ammoniacal aldehyde; and its ready production must give it an important place in many practical applications.

It is not only the gun cotton which possesses this property; it is found that cane sugar, milk sugar, mannite gums, and other substances, which become explosive when treated with nitric acid, act the same. The picrozoic acid itself, under the same circumstances, produces a bright metallic surface; and it would appear that this reaction takes place with all those bodies which, treated with nitric acid, do not furnish the products of oxidation; but another series of bodies which admit nitric acid as such into their constitution, and at the same time abandon the equivalent of water.

### Utility of Nettles.

The Medical Times says it is a singular fact that steel dipped in the juice of the nettle becomes flexible. Dr. Thornton, who has made the medical properties of our wild plants his peculiar study, states that lint dipped in nettle juice and put up the nostril, has been known to stay the bleeding of the nose, when all other remedies have failed—and adds that fourteen or fifteen of the seeds ground into powder, and taken daily will cure the swelling in the neck known by the name of goitre, without in any way injuring the general habit.

### A North Carolina Factory.

At Salisbury, N. C., there is the Rowan Factory which has 3000 spindles and 70 looms in constant operation; and the number of hands employed, male and female, is 120. The machinery is propelled by an engine of fifty horse power, which consumes from five to six loads of wood per day. Not less than 60 barrels of flour are used in starch, and 1000 bales of cotton are used up in a year.

The cloth, which weighs three yards to the pound, and appears to be of an excellent quality, is made of No. 14 and 15 yarn; it is called 4-4 sheetings. Besides supplying the home demand, there were shipped in five months, to the Northern market, 249,000 yards of cloth, and 6400 pounds of batts.

A spinning frame in this factory, made by the Matteawan Company of New York, produces nine skeins per spindle per day.

The Commissioners on Drunkenness in Great Britain estimate the value of labor lost through intemperance annually at \$200,000,000. This is a sum nearly equal to the whole income of the Government.