

New Inventions.

Alarm and Thief Detector.

Mr. Nichols, of the U. S. Pay Department at New Orleans, has invented two very ingenious machines to answer for the purposes stated in the caption above. The alarm is made so as to produce a great noise when opened, similar to a locomotive whistle. This is followed by the descent through a tube of a quantity of sonorous balls (marble or brass, as may be chosen) which are at length thrown successively from a hopper to the floor, rattling with terrific force. In the midst of the confusion of sounds produced by the falling balls, a bell begins to toll, and so loud as positively to startle even a person who is prepared to encounter the alarm.

The machinery which puts in operation the alarm, occupies but a small space and can be put inside money safes, armories, or other pieces of furniture in which valuables are preserved. The noise created by it extends to a great distance and would effectually scare a thief to a precipitate flight. The Thief Detector is a simple and more portable piece of machinery, designed to be placed inside doors or windows of stores or dwelling houses, as a protection against depredators. It consists of a heavy grating which is suspended within a cable groove in the upper part of the door or window frame, and connected by a spring with the floor beneath. Immediately the foot of the robber presses on the floor inside the threshold, the spring is put in action, when down falls the grating, and the intruder is caught like a rat in a trap.

A New Propeller.

Mr. J. Martin, of Philadelphia, is in this city, with a beautiful working model of a new improved single blade propeller, the invention of Mr. Alex. Bond, of Philadelphia, and to which Mr. Martin has added some important improvements. It is a very peculiar invention, having only a single blade, which, by a nearly direct action from the piston rods of two horizontal cylinders, attached to a slotted vibrating horizontal beam, operates the propelling blade at the stern, with a powerful sculling motion. The invention is a very simple, but a very particular contrivance at the same time. With a very clumsy boat, not made for a fair test at all, it ran with a small engine at the rate of 8 miles per hour, on the Schuylkill, at Philadelphia. It is patented in America; and as improved, measures have been taken to secure it in Europe.

A Controversy to be Settled.

It is well known that an empty bottle hermetically sealed, when lowered to a great depth at sea, will come up full of water. The why and the wherefore of this result has long been a matter of controversy among scientific men. A gentleman who entertains an opinion that a bottle can be made that cannot be filled with water, has taken some pains to establish his position, by having two bottles of the form of globes made, of the thickness of three-quarters of an inch, which are without holes in any part. The bottles are to be entrusted to the care of Capt. E. E. Morgan, who sails on the 8th of February, in the packet ship "Southampton" for London,—one is plain, and the other ground with the name on it of "Southampton."

The subject is one that has occupied the speculation of so many, that this trial has occasioned a good deal of remark. The bottles are made with the belief that former experiments of the kind will be controverted by this trial. The result will be highly important and interesting.—N. Y. Express.

This experiment has been fully tested already. See a letter, page 269, vol. 4, Scientific American. A glass tube hermetically sealed was sunk 89 fathoms on board the ship Tarolinta bound for California. It came up without the least particle of salt water in it.

Sign Letters of Earthenware.

A number of signs have been put up in Elizabethtown, N. J., made of baked clay, of different kinds. Some of them are glazed and some gilt.

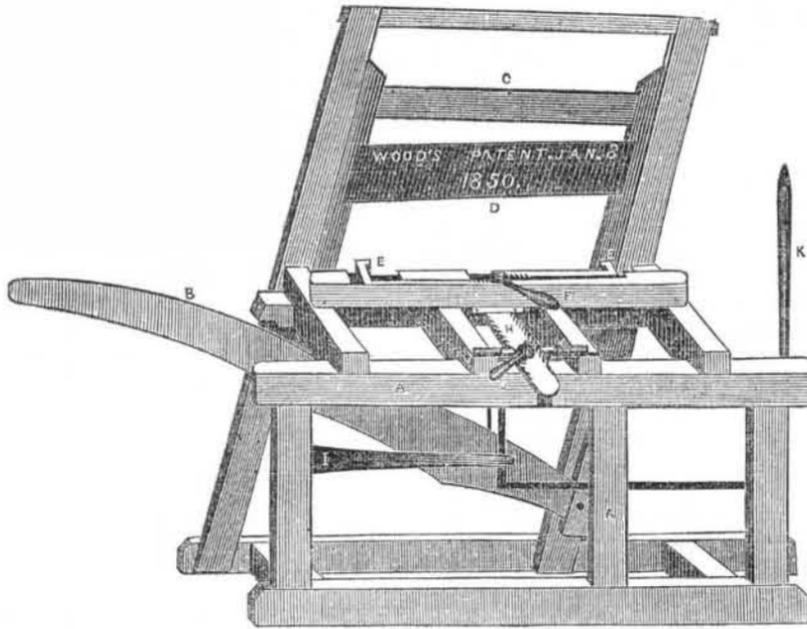
Safety Apparatus for Steam Boilers.

Mr. J. H. Rawlins, of Hope Mills, Wrexham, England, has contrived an apparatus for steam-boilers, to prevent all accidents from explosion, whether occasioned by short water or over pressure. It consists in connecting to the common water-gauge of the boiler and wheel, with counterpoise, a hollow brass or iron tube, in lieu of the solid rod that works in the boiler top. The bottom of this tube is filled up with fusible metal, and the top is open, having attached to it a whistle. A small hole is bored in the pipes, outside the boiler, just above where the pipe stands when the water is at its right height; and should this fall, say a single inch, the whole being within the boiler, a clear passage for the steam is caused, and

the whistle sounds the alarm. On the other hand, if the boiler is overloaded from stoppage of the valves or any other cause, the temperature of the water rises, the fusible metal falls out and leaves a free passage for the steam as before. The cost of this apparatus is literally nothing, beyond that of the whistle, which may be a common mouth whistle, at the price of a shilling or two. At the same time it is never liable to get out of order, and may be put up by a workman of the most ordinary capacity.—[Exchange.]

[An apparatus of this kind was patented in 1847, in the United States. The inventor we believe, is Mr. Fernald, of Boston. There are many good inventions, respecting which the patentees are in great error in being so quiet about them.]

WOOD'S PATENT SHINGLE AND STAVE MACHINE.



Sawed shingles, however simple the machine which makes them, are very inferior articles for use, in themselves, and besides the waste of timber in making them is enormous. No person will use any kind but the split shingle, who has any judgment in the matter. Those machines, therefore, which split a good shingle and which are simple in their construction, are certainly the best. Among all the machines for this purpose, which have been brought before the public, from time to time, the one we now introduce to our readers, stands at the top of the list. As the feeding motion of shingle machines, is the main and most particular feature about them, it will be observed by the following referential letters that the feed bar has a beautiful side to side vibratory motion and a progressive motion forward at the same time, to move the block to be split in that peculiar manner requisite to cut the shingles, finishing them in good style, ready for use as they come from the machine.

A is the frame; B is the lever for operating the slide and knife when hand power is employed; C is the slide or knife frame; D is the knife; E E are two dogs, which have a rack upon each of their inner ends, whereby they are moved nearer or farther apart from one another, by a pinion on the end of the handle, F. These dogs secure the block that is to be cut into shingles. H is a feeding rack bar which moves the small frame, represented by the transverse bar to feed in the block for forward every new cut. This rack bar has a vibratory side to side forward motion, given to it by two palls, V V, the one catches alternately on the rack bar on the frame, at the

right angle to the knife, to cut the shingle.—There are two cams (not seen) on the front end of the rack bar, and these are struck alternately by the slide, C, when it comes down to vibrate the bar, H, changing the catch of one of the palls, V. On the back of the bar, H, is a knob, against which is braced a vertical rod, and I is a spring that presses always against it, to urge forward the rack feed bar. This spring keeps the feed up better than by employing the usual plan of weights, &c. K is a lever for throwing the feed table back when the block is cut into shingles.

One man and boy can cut 6,000 shingles per day by hand, or 20,000 by steam or water power. There are three sizes, the 1st cuts an 18 inch shingle—price \$100; 2nd cuts a 24 inch shingle—price \$110; 3rd, 28 inch shingle—price \$120; with the right to use the machine in one place. Experience has fully demonstrated that these machines are among the best in use, being very simple and perfect in their operation. This patent was granted on the 8th Jan., 1848. Orders addressed (p. p.) to J. D. Johnson, Easton, Conn., or to Wm. Wood, of Westport, Conn., will meet prompt attention, as the machines are constantly being manufactured at the above places. Town, County or State rights can be obtained by application to either of the above named. For the benefit of our readers they can order the machines through this office, by enclosing the amount for either of the sizes named above. Specimens of the work may also be seen, by application, at this office, and they are such as will warrant us to say "they cannot be surpassed."

Newly Constructed Oven.

Mr. John Case, of Burlington, N. J., has in operation an oven which is said to be of a new construction—the fire being in a separate chamber, while a valve in the chimney draws the smoke, gas, &c., entirely out of the oven before the bread is introduced, and the oven is kept constantly hot, by which mode bread, dinners, pies, or cakes can be baked at any hour when they may be wanted.

In our next number we shall publish an engraving, of the Great Dam at Hadley Falls, Mass., furnished us by Mr. Foote, Assistant Engineer of the work.

To Dye Black Satinet, Muslin de Laine, and other Goods which have a Wool-len Weft and Cotton Warp.

Dye the woollen part first by preparing the wool with the sulphate of iron, about 3 oz. to the pound of wool and a small quantity of the sulphate of copper. At this ratio of iron preparation the woollen goods should be boiled in a suitable quantity of water for three-fourths of an hour. If the goods are in pieces they have to be kept continually turning on what is termed a winch. After this boiling they are taken out, dried, and dripped. They are then dyed with logwood, at the rate of three pounds to the ten pounds of goods. The boiling should be continued one hour at least. They are then to be taken out and well washed, and then left to steep for eight hours in cold weak sumac. They are then to get a dye of what is termed the cotton process; viz., first handled in weak cold limewater, then taken out, dripped, and run through a solution of copperas, then dripped, well washed and afterward run through (not very strong) a solution of logwood. All they want now is to be washed and dried. This dyes both the wool and cotton. As wool is an animal and cotton a vegetable production, the processes to dye them are entirely different, and this is the reason why so many fail to dye a black upon such kinds of goods. No hot sumac should be used, or else the wool will become very brownish in color.

Scientific.

M. M. Malaguti Durocher, and Sarzeaud announce that they have detected in the waters of the ocean the presence of copper, lead and silver. The water examined appears to have been taken some leagues off the coast of St Malo, and the fucoidal plants of that district are also found to contain silver. They state also that they find silver in sea salt, in ordinary muriatic acid, and in the soda of commerce; and that they have examined the rock salt of Lorraine, in which also they discover this metal. Beyond this, pursuing their researches on terrestrial plants, they have obtained such indications as leave no doubt of the existence of silver in vegetable tissues. Lead is said to be always found in the ashes of marine plants, usually about an 18-1000000th part—and invariably a trace of copper. Should these results be confirmed by further examination, we shall have advanced considerably towards a knowledge of this phenomena of the formation of mineral veins.—[London Athenaeum.]

[We believe the above to be a piece of sheer nonsense. It is wonderful how many strange discoveries are made in France.]

The Britannia Bridge.

We learn from Menai there is at length a complete roadway over the Straits, the second great tube having been safely raised to its 100 feet elevation, and forming by its junction with the other tubes a continuous rigid wrought iron highway 1840 feet long, and between 5000 and 6000 tons in weight. The workmen are now engaged, day and night, in completing the junctions and adjustments. The greater portions of the permanent way and rails for the trains is laid. The grand approaches to the bridge at either end, where the colossal lions rest, are finished, including the continuation of the line of rail to the stations on each side at Bangor and Lanfair, and every exertion is being made to have the line complete by the end of February, for the first trial trains to go through.

The Cuban Plow

The plow seed in Cuba, is of the rudest form:—A pointed piece of iron, shaped like a wedge, attached to a wooden tongue and drawn by a pair of oxen, without yokes; the beasts there bear the weight of their burden upon their heads, (not necks) and pull by their foreheads, the rope being drawn tightly around the horns. Of course, the plough just described turns no furrow, but merely roots up the ground.

Great Steamboat.—Scientific Challenge.

We would call the attention of our readers to the letters containing a most extraordinary steamboat challenge, on another page. If accepted tens of thousands are ready to be bet upon the result.