

Improved Metallic Cotton-bale Fastener.

Metal bands are fast superseding the use of ropes to fasten bales of goods, and especially for the purpose of securing raw cotton. It is well known that a bale of cotton as usually compressed is not readily combustible. It is only when the fastenings become loosened, allowing the cotton to spread and the air to permeate its mass, that free combustion is possible. If the fastenings are of rope—often tarred, or if not, of a loose texture—they soon burn away and allow the elasticity of the cotton to open its fibers to the flame. When the bale is opened the rope is frequently unfit for using again, and as junk, is worth only about 33 per cent of the value of the iron bands. But metallic bands, as used with this fastener, it is claimed, can be used over and over again.

The device consists of clasps, A, of metal—malleable iron being most suitable—in combination with bands, B, of hoop iron. The clasps may be of two forms as shown. Each has its peculiar advantages, although both are constructed on the same principle. In one form one end of the strap is passed through a curved slot, and in this the clasp can be removed by turning only one way. In the other, the perfect C-shaped, both jaws are alike and it can be turned either way, opening from either end of the strap.

The bale, being under pressure, one end of the band is passed around it and bent as shown at C, the other being bent at the proper point when the jaws are slipped through the loop. These loops may be riveted if desired, although the grasp of the fasteners is such that it is not considered necessary. The bearing of each jaw on the loop is perfectly square, as seen, preventing any accidental disengagement. When it is required to loosen the bands to open the bale, it can be done by means of the holes seen in the face of the couplers. By inserting a cotton hook in these the fastener may be easily slipped, when it and the band are ready to again do duty as fasteners.

The device is the subject of patents in this country and Great Britain, a United States patent having been obtained Oct. 20, 1866, and an English patent Oct. 29th, same year. The patentee is desirous of disposing of the entire right, Address Arthur Barbarin, Lock Box 691, P. O., New Orleans, La.

The Composition of Alloyed Metals.

- Below are a few of the alloys commonly used in the arts:—
- Chinese White Copper.*—Copper, 40 4; nickel, 31 6; zinc, 25 4; and iron, 2 6 parts.
- Manheim Gold.*—Copper, 3; zinc, 1 part; and a small quantity of tin.
- Bath Metal.*—Brass, 32; and zinc, 9 parts.
- Speculum Metal.*—Copper, 6; tin, 2; and arsenic, 1 part: or copper, 7; zinc, 3; and tin, 4 parts.
- Hard Solder.*—Copper, 2; zinc, 1 part.
- Blanched Copper.*—Copper, 8, and arsenic, 1/4 part.
- Britannia Metal.*—Brass, 4; tin, 4 parts; when fused, add bismuth, 4; and antimony, 4 parts. This composition is added at discretion to melted tin.
- Plumber's Solder.*—Lead, 2; tin, 1 part.
- Tinman's Solder.*—Lead, 1; tin, 1 part.
- Peewterer's Solder.*—Tin, 2; lead one part.
- Common Pewter.*—Tin, 4; lead, 1 part.
- Best Pewter.*—Tin, 100; antimony, 17 parts.
- A Metal that Expands in Cooling.*—Lead, 9; antimony, 2; bismuth, 1 part. This metal is very useful in filling small defects in iron castings, etc.
- Queen's Metal.*—Tin, 9; antimony, 1; bismuth, 1; lead, 1 part.
- Mock Platinum.*—Brass, 8; zinc, 5 parts.
- Ring Gold.*—Pure copper, 6 1/2 pwts.; fine silver, 3 3/4 pwts.; pure gold, 1 oz. and 5 pwts.
- Mock Gold.*—Fuse together copper, 16; platinum, 7; zinc 1 part.

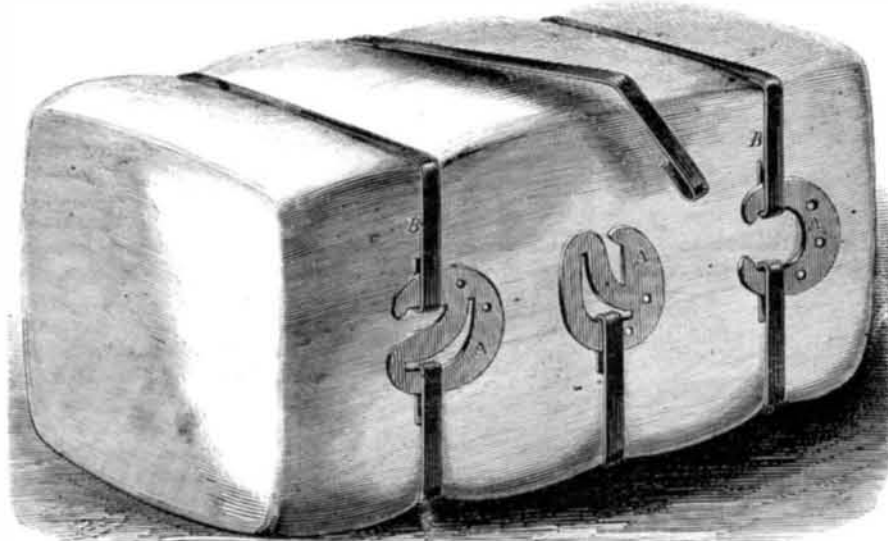
Scientific Snow Storm.

The *Springfield Republican* thus picks up the New York *Tribune* on its very scientific account of our recent snow storm:—"The snow storm in New York must have been astounding. Its effect upon the intellects of the metropolitans may be inferred from the philosophical deduction of the *Tribune*, that 'immense forces, imperfectly explained on the hypothesis of an ever-shifting vacuum, dwell in the atmosphere, and we are continually surprised by their action.' Up here in the country we know that snow is only frozen vapor, and that when the wind blows it drifts, and we are not in the least astonished thereat. The 'ever-shifting vacuum' we suspect to be exclusively metropolitan."

Government Tests for Iron.

During the last few weeks considerable quantities of the plate iron sent into Chatham Dockyard by the contractors supplying that establishment have been rejected by the officials, on the ground of its alleged inferior quality and its failing to reach the standard of excellence insisted upon. The contractors have appealed to the Admiralty on the subject,

and, after a long correspondence and numerous official reports, their lordships have upheld the decision of their officers. The standard of excellence insisted upon by the Admiralty is that the plate iron shall stand a strain of from 20 to 22 tons to the square inch with the grain, and 18 to 20 tons across the grain—a degree of excellence which, under the trials with the apparatus in use at Chatham, the iron rejected has failed to attain. The contractors, however, assert that the iron thus rejected is superior to the standard laid down, and refuse to submit to the dockyard tests, which, they contend, are not to be relied on, inasmuch as the testing apparatus is imperfect. In proof of this they have placed in the hands of the Admiralty reports from two of the most eminent iron testers, in which the samples of iron rejected by the dockyard officials

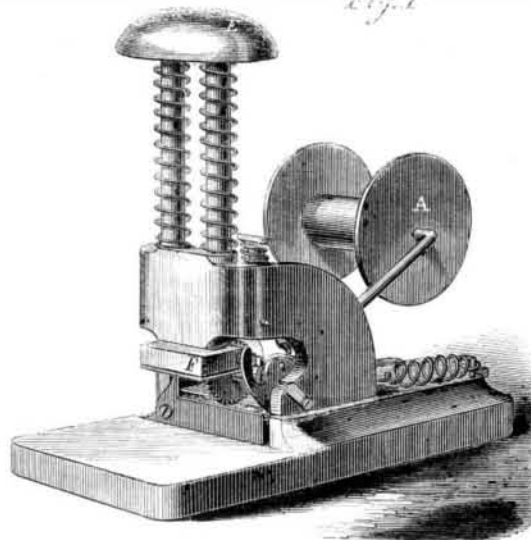


BARBARIN'S METALLIC COTTON-BALE FASTENER.

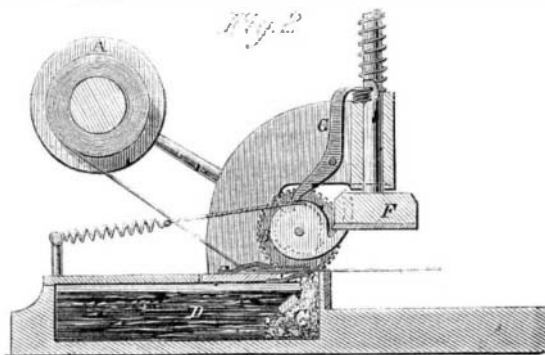
were, on being tested by them, found to be of even better quality than the standard required by the board. Private and perfectly independent tests have likewise been made, and again the results have been adverse to the ruling of the Admiralty officials. Under these circumstances the firm more particularly concerned has intimated the intention of commencing legal proceedings against the Admiralty for the heavy loss they have sustained.—*London Times.*

SILL'S STAMP AFFIXER.

The engraving represents, in perspective and in section, a handy office implement intended to obviate the slow and disagreeable process of affixing stamps. Where the amount of



correspondence is large, or in an office which issues many documents to which stamps are necessary to give them validity, the work of affixing them is not only laborious but very annoying. The friction of the stamps on the tongue and lips induces sores, and the operation, after long exercise, becomes painful.



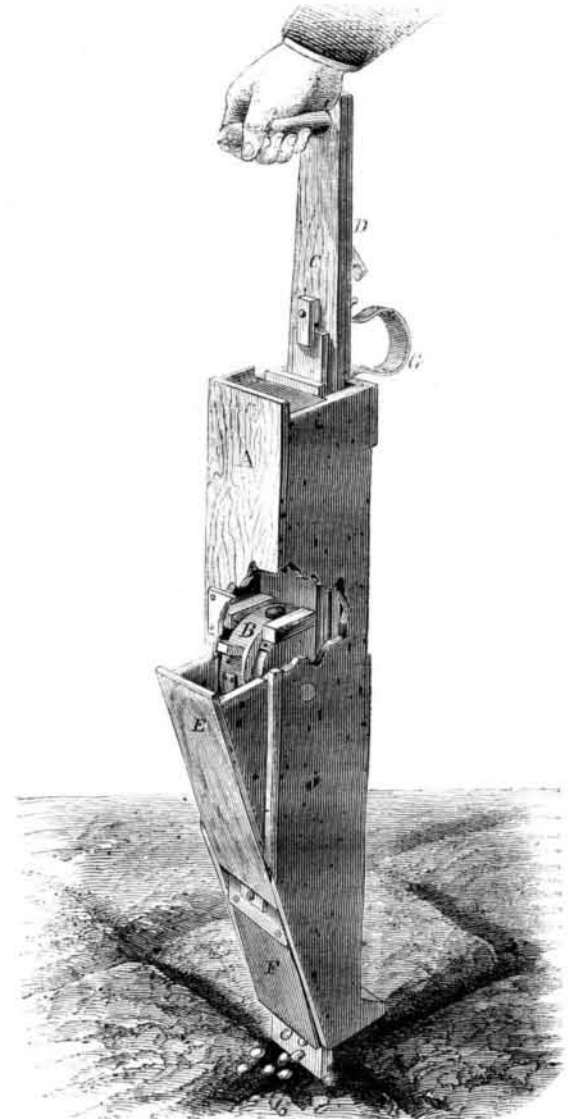
With this machine all this annoyance is obviated. The stamps in slips are wound on the reel, A, and led under the ratchet wheel, B, and over a sponge, C, in the water reservoir, D. By pressure upon the handle, E, the affixer, F, is thrown down and the pawl, G, is actuated against teeth on the wheel, B, rotating it and bringing forward the strip the length of a stamp. The affixer or platen, F, has a steel edge on its inner surface which acts against a fixed steel blade on the platform, the two forming shears for clipping off the stamp.

The pressure downward on the handle, E, not only moves the platen and cutter, but operates the pawl, G, thus rotating the wheel, B, and bringing forward the stamp to position. The upward movement of the plungers does not rotate the feed wheel as the pawl is prevented from acting by a minute coiled spring under its upper end. Its operation can be readily understood by an examination of the engraving.

Application for a patent is pending through the Scientific American Patent Agency, by C. B. Sill, Wilkins P. O., Pa. Address as above or at 308 North Sixteenth st., Philadelphia, Pa.

BATCHELLER'S HAND PLANTER.

Those of our readers who twenty years ago were engaged in the operations of the farm can well remember the wearisome labor of dropping the corn from a bag suspended to the waist, the care required to place every kernel in its proper position, the difficulty of this performance on a windy day, and



the annoyance of seeing the corn come up in straggling blades, some in and some between the hills. All this is obviated by simple implements like that shown in the engraving. We have illustrated the instrument as in actual use, with a portion cut away to show the main working parts. Externally it is a rectangular box the lower part inclined at one side at an angle. The upper portion, A, is a seed receptacle, the bottom of it being formed by the roller, B. This roller is insured a partial rotation as the slide, C, is raised or depressed by the hand, by means of straps secured at one end of the periphery of the roller and at the other to another parallel slide, D, which raises and falls with C. The roller has a depression or cell on its circumference which by the rotation of the roller is presented to the seed in the hopper when the slide, C, is depressed. By raising the slide the roller is turned in the opposite direction and the seed is thrown into the trough, E, and falls to the bottom, where it is held by the spring plate, F, until a downward movement of the plunger opens the plate and permits the seed to escape. A simple device of a friction brush bearing against the periphery of the roller, retains the seed in the sell until it arrives in the proper position to be dropped; the strap, G, with a snag on the roller, determines the length of the reciprocating movement of the plunger, C. No further description appears to be necessary to insure a perfect understanding of the device. It is the subject of two patents obtained through the Scientific American Patent Agency, and dated March 9th, 1858, and Oct. 13th 1863, by H. F. Batcheller, Sterling, Ill., whom address for rights, etc.

A New Anchor.

An anchor weighing twenty-six hundred weight called Martin's self-canting anchor, was lately tested by the Admiralty trial near Newcastle, England, which, after sustaining the full Admiralty proof of twenty-five and five-eighths tons was further tested by an additional strain of fifty per cent, and exhibited no signs of permanent deflection. The anchor is of peculiar shape and construction. Both arms, or flukes, take hold of the bottom and the steadying stock, set at a certain angle, and of a particular form, acts in conjunction with the arms and increases their hold to a great degree, especially on soft and yielding bottoms. As every usually projecting part is brought into action no portion really projects, so that fouling is almost, if not quite, impossible. Alongside the ship it cuts as flat as a board. It is made without welds, being of three separate pieces,