

IMPROVED SELF-HEATING FLUTING AND SAD IRON.

The invention herewith illustrated consists of two flat and one polishing irons combined in one, to which, when desired, and by simple means, various fluting irons may also be attached. The essential feature is that the device is self-heating, as its interior contains arrangements whereby gasoline or other light petroleum product is consumed. This, the inventor claims, is easily and safely accomplished at a cost of not over one cent per hour.

The engravings represent a perspective view, Fig. 1, and a sectional view, Fig. 2, the former showing the iron with the fluting attachment in position. The body of the device is three-sided, two sides serving as flat irons and the other having rounded edges for polishing purposes. The rear portion, A, is detachable, and is seated, by means of its flanged hub, upon the fluid supply pipe, B, so as to turn freely upon the latter. It is locked to the body by hooks and shoulders below, and by a spring latch, C, which engages with an inclined shoulder of the body. Suitable perforations are provided in the latter at the apex, corners, and rear, in order to admit sufficient air to the interior to support complete combustion of the hydrocarbon. The supply pipe, B, is firmly secured in the handle stock, D, and passes at a slight inclination into the lower portion of the oil reservoir, E, which last is fastened to the stock. The spring latch, F, shown at the middle of the stock, catches in a recess on the rear portion. A recess is provided in each corner of the latter, so as to fasten the handle similarly when any one of the three faces is turned down into use. G is a pivoted top latch placed beneath the protecting shield, H, which drops into other recesses at the corners of the body and so gives additional support to the handle stock. In order to detach the latch, E, a curved rod, provided for the purpose and shown on the right of Fig. 2, is pushed into the opening at the corner of the body, so that its end shoves the latch clear of the shoulder.

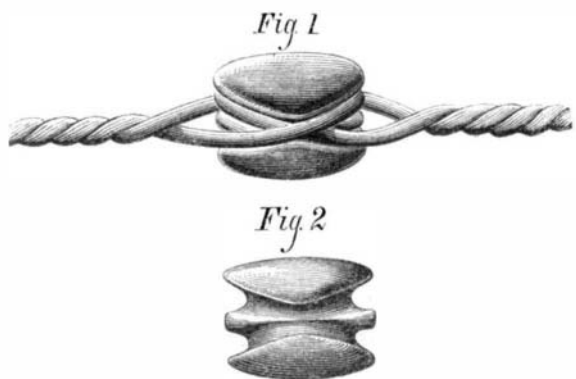
The gasoline is introduced into the reservoir through the faucet shown above, the latter extending down through the receptacle and being seated in the solid portion of the same at the entering point of the supply pipe. Into the latter the oil passes through a groove cut along the faucet, connection being opened or closed by suitably turning the latter. The upper end of the faucet has an orifice for pouring in oil, which is closed by a suitable plug, and also a small vent hole for letting air into the receptacle. By turning this stopper on its seat, the air communication may be closed, thus preventing any escape of the liquid into the supply pipe. The latter, on its outer end, carries a cap piece, back of the flanges, in which small issuing orifices are made. The oil is fed uniformly through cotton or similar material placed in the supply pipe. A burner, I, of triangular shape, divides the flame which heats the sides of the iron.

Fluting irons, J, Fig. 1, of various shapes, double or single, are attached by rear and side lugs, the latter being secured to a V-shaped spring wire, K, which is held by the locking spring, L. This last is seated in one of the corner air holes of the body, and serves to complete the firm connection.

Patented February 2, 1875, through the Scientific American Patent Agency. For further particulars relative to sale of territory and rights, address the inventor, Mr. C. R. Rand, 568 Mission street, San Francisco, Cal.

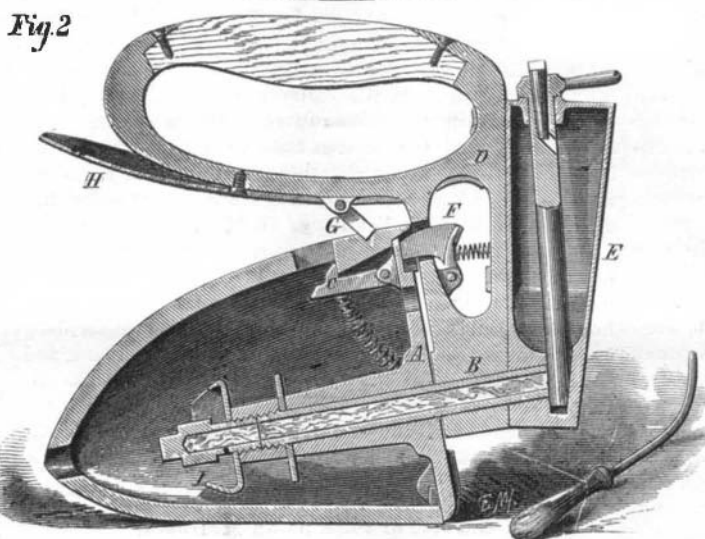
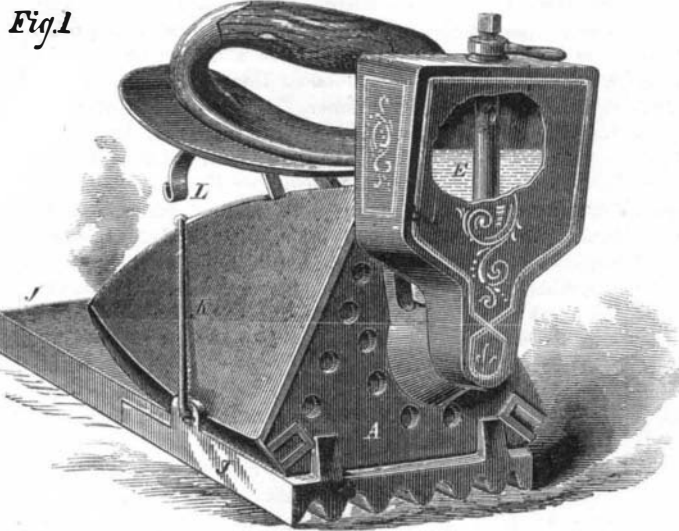
IMPROVED BALE TIE FOR WIRE BANDS.

Wire bands, for confining pressed bales, have, within a few years, to a great extent superseded ropes and wooden hoops, which change is due to the economy, strength, and neatness of wire for this purpose. To obtain the full advantages of its use, the bends should be made large, as short and abrupt bends weaken the wire.



The tie which is here illustrated is a block of cast iron made in a single piece. By multiplying the patterns a large number can be molded at a time in a single flask. Upon this block, and extending entirely around it, are two similar grooves crossing upon opposite sides of the block. These grooves each receive an end of the wire, so that the wires, when placed in them, cross each other, which brings the two wires into such a position that they draw from the same side of the block, consequently it cannot turn over or be upset by any strain, however severe; and as the wires draw against each other, the strain upon the tie is compressive instead of tensile. This renders the use of cast iron practicable for the purpose. As the wires conform to the bottom

of the grooves, they have an easy bend, and retain their full strength. When the angle of the grooves to each other is sufficient to admit of its being done, a spur is placed between them, as shown in the engraving, the object of which is to confine each wire to its own groove. But when the angle is too acute to admit of this, the spur is then placed in one of the grooves over against one side of the tie. Each form has its advantages, depending upon the size of the wire. Before putting the band on the bale, an end of the wire is twisted into one of the grooves, and the other end twisted into a loop, which will just slip over the tie and pass into the other groove. For inserting the tie and forming the loop, the inventor has devised a simple hand tool, with which the purchaser can prepare his own bands. After the bale has been released from the press, the expansion will draw the wire tightly into the groove and change its shape, so that it cannot unhook in handling. The illustration shows a full sized



RAND'S SELF-HEATING FLUTING AND SAD IRON.

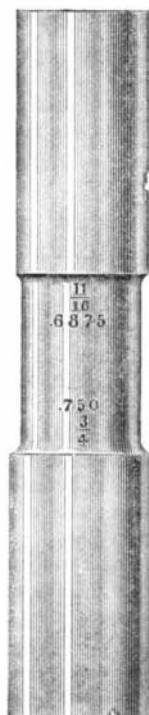
tie for an ordinary hay band, but a more correct idea of its size may be formed by comparison with a one cent nickel coin, which has the same diameter.

A patent has been allowed for this invention to James M. Albertson, New London, Conn. Information regarding the right to manufacture can be obtained by addressing him as above.

CYLINDRICAL STANDARD GAGES.

Those who have been familiar with the improvements made in machine work, for a few years past, will be able to trace the important influence resulting from the use of accurate and finely divided rules in producing more uniformity in measurement in the different workshops and in the improvement in the quality of individual workmanship. Rules graduated to sixty-fourths and hundreds, and vernier calipers reading to thousandths of an inch were, a few years since, looked upon as hardly of practical utility in machine shops. But in addition to such rules, which are now indispensable, fixed standards are frequently needed for those diameters most used, in order to avoid the errors resulting from measurements taken from rules and vernier calipers, and also to save time. Such standards are of constant use in all regular machine work and are especially valuable because they tend to produce uniformity and interchangeability in the parts of machinery manufactured.

The accompanying engraving illustrates a form of gage claimed to meet this requirement. The first cost is small; and in case of accident or wear from constant use, the device can be readily replaced. Standards of this kind have heretofore been so costly as not to admit of their use



by workmen generally, and therefore machine makers have not realized the advantages which will result from their daily use. The diameters are stamped upon each gage in thousandths of an inch, and also in the ordinary fractional parts. The gages are made of best cast steel, hardened and ground accurately to sizes indicated. Parties interested can obtain further information by addressing the Brown & Sharpe Manufacturing Company, at Providence, R. I.

Useful Recipes for the Shop, the Household, and the Farm.

To renovate old feather beds, when no steam apparatus is convenient, put them outdoors during a heavy rain. Let them dry in the sun, beating them occasionally with sticks to loosen the feathers. They should be turned over several times, and thoroughly dried. A paste of soft soap and starch will take stains out of bed ticking. Spread it over the spots.

When dry, scrape off and wash with a damp sponge

A good cheap paint for floors is made of five pounds of French ocher, one quarter of a pound of glue, and a gallon of hot water. When well dried, apply one or two coats of linseed oil.

Stains on wall paper can be cut out with a sharp penknife and a piece of paper so nicely inserted that no one can see the patch.

Do not use martingales on working teams. See that the hames are buckled tight enough at the top to bring the draft iron near the center of the collar. If too low, it not only interferes with the action of the shoulder, but gives the collar an uneven bearing.

In removing ink spots from delicate colors, a concentrated solution of sodium pyrophosphate may be employed when oxalic acid or chloride of lime cannot be used without injuring the color.

A membrane of extraordinary firmness may be obtained by dissolving collodion cotton in equal volumes of ether and absolute alcohol, to which a small quantity of balsam of copaiba is added.

Brass, when laid in a leaden vessel containing hydrochloric and a little arsenic acid, assumes iridescent colors, and may be removed when any desired shade of blue is obtained.

A new case-hardening compound, said to be very efficacious for iron, consists of 16 parts lamp-black, 18 of sal soda, 4 of muriate of soda, and 1 of black oxide of manganese.

To clean flasks which have contained resinous solutions, wash with caustic alkaline lyes and rinse with alcohol; if they have held essential oils, wash with sulphuric acid and rinse with water.

Blocks of wood intended for veneers may be steamed in a solution of borax and ammonia. They will then become soft and easy to cut, and, beside, will retain their flexibility for a long time.

Tracing paper, from which a drawing may be removed by washing, is prepared by first saturating writing paper with benzine, and then immediately coating it lightly with a varnish composed of boiled bleached linseed oil, 20 parts; lead shavings, 1 part; oxide of zinc, 5 parts; Venice turpentine, 1/2 part. Mix, boil for 8 hours, and, after cooling, add white gum copal, 5 parts, and gum sandarac, 1/2 part.

LIFE-PRESERVING MATTRESS.

Mr. J. F. Peck, of Springfield, Mass., is the inventor of the novel form of life-preserving mattress represented herewith. The body of the article is stuffed with cork, and it has a pillow or cushion at each end, by means of straps on which it is secured to the person, as depicted in the illustration. The device is designed as an ordinary berth mattress,



and thus requires no extra space for separate storage. When adjusted, it sustains the wearer's head and shoulders above water, and at the same time protects the body from injury by floating wreck, or in coming in contact with rocks. Several of these mattresses, secured together and attached to spars, will make a life raft. Patented March 21, 1874.