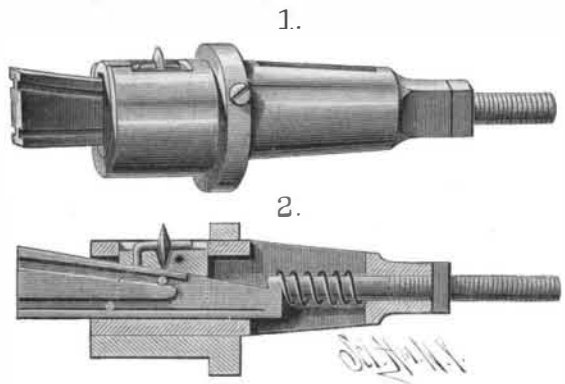
IMPROVED TUBE CUTTER.

The accompanying engraving represents an implement for cutting off boiler tubes within the boiler, in case the tubes must be removed. This tube cutter is the invention of Mr. John C. Mineo, of Bunker Hill, Ill. The tubular stock is formed with a tapered shank, provided at its end with a squared part fitting a key, by means of which the stock can be turned. In the stock is a longitudinal slot, and in the shank is a slot extending entirely through it, as shown in the sectional view, Fig. 2. Passing through the stock is a wedge piece, provided with a groove along its beveled edge and along its straight edge. In the slot in the stock is a block having a groove in its bottom for receiving the beveled edge of the wedge piece. Pins from the sides of the groove pass into the upper grooves in the wedge piece, and pins from the sides of the stock enter the lower grooves. A cutting disk is pivoted in the block.

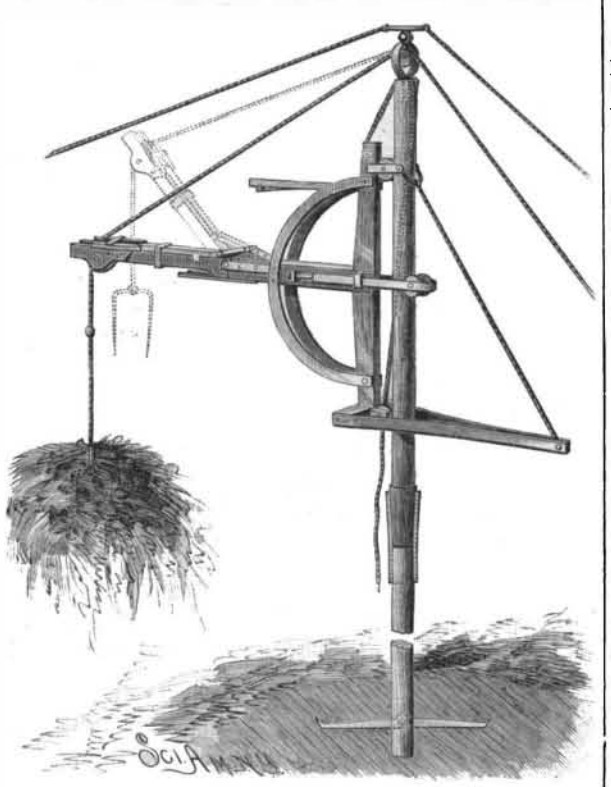


MINEO'S IMPROVED TUBE CUTTER.

A stem projects from the inner end of the wedge piece through the shank, and has its outer end screw-threaded to receive a nut. A spiral spring on the stem presses the wedge piece out. Before inserting the implement, the wedge piece is so moved as to draw the block into the stock until the cutter does not project. The implement is then inserted and the nut is turned to draw the wedge piece in the opposite direction, thereby forcing the block outward and pressing the cutter against the inner surface of the boiler tube. The key is then pushed from the nut to the squared part of the shank and the tool turned, the cutter cutting into the tube. The cutter is gradually moved outward by turning the nut. In case the tube has a greater diameter than the stock, an eccentric sleeve, having a flange, is slipped on the stock and is held in place by a binding screw.

HAY STACKER.

To the lower end of the pole, which is made in two or more parts united by ferrules, are pivoted the inner ends of two prongs so formed that when the end of the pole is pushed down into a heap of hay or straw they will be forced into a horizontal position, and thereby form a rest for the pole and keep it from entering the hay too far. The pole is held in an erect position by guy ropes attached to a plate



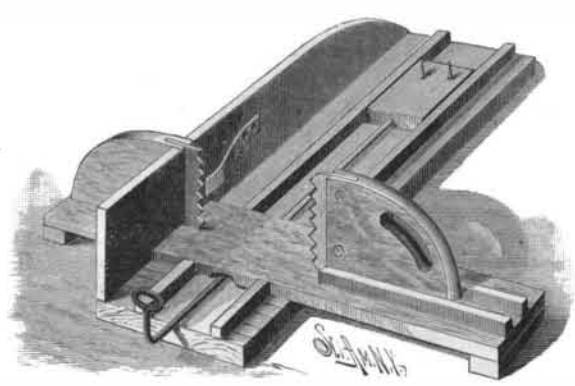
SOSEMAN'S HAY STACKER.

pivoted to its upper end. The derrick arm is made in two parts hinged to each other at the upper edges of their adjacent ends, so that the outer part of the arm is free to swing upward, but cannot swing downward below a horizontal position. This derrick arm is held to the pole by a frame provided with suitable rollers, as shown in the engraving, and may be raised up or down, or swung around the pole. The hoisting rope passes from the place where the power is applied over a pulley hung in the small pivoted frame at the top of the mast, then over a pulley pivoted in bearings attached to the opposite sides of and projecting beyond the outer end of the derrick arm. The end of the rope is fastened to an ordinary hay fork, to raise the hay or straw to be packed. Attached to the rope a little distance from the fork is a ball, which, when the loaded fork has been raised to the required height, passes over the arm pulley and comes in contact with the lower side of the forward ends of two bars, by which the rope is prevented from passing any further over the pulley, and is made to raise the forward part of the arm (as shown by the dotted lines) into a vertical position, bringing the fork nearer the center of the stack and allowing the load to be deposited at any desired place by swinging the arm around the pole. While being swung around, the arm is held in the forked outer end of a horizontal arm attached to the top of the supporting frame. The hoisting rope is also prevented from swinging about by a properly arranged forked bar. As the forward part of the derrick arm is raised, the bars at its outer end are made to clamp the rope, to prevent its being drawn further through and to allow that part of the arm to be drawn down into a horizontal position by pulling upon the trip rope. These bars are unclamped as the arm comes to a level position.

This invention has been patented by Messrs. L. & T. Soseman, whose address is P. O. box 397, South Bend, Ind.

ICE CUTTING MACHINE.

The table forming the body of the machine is provided with a central longitudinal slot, to which is loosely fitted a slide, provided with spurs and having a rod attached to it, extending through the slot and bent up at the end to form a handle, by which the slide is drawn forward. Fixed to the back of the table is a board, to guide and hold the block of ice.



ELLIOTT PAGE & LEWIS' ICE CUTTING MACHINE.

A slotted bar, secured to the table at right angles, supports at one end a block provided with a serrated steel cutter, as shown in the cut, and having at the opposite end a guide in which slides a head carrying a second cutter. The block of ice to be cut is placed upon the table and moved forward between the cutters, when the sliding head is reciprocated to bring its cutter into engagement with the ice, which at the same time is pushed against the stationary cutter This quickly separates the block. These machines can be made in different sizes, to adapt them for use in connection with different sized blocks of ice.

This invention has been patented by Messrs. R. S. Elliott, L. W. Page, and H. F. Lewis, of Shreveport, Louisiana.

Care of the Hands.

There are not nearly as many secrets in hand treatment as people imagine. A little ammonia or borax in the water you wash your hands with, and that water just lukewarm, will keep the skin clean and soft. A little oatmeal mixed with the water will whiten the hands. Many people use glycerine on their hands when they go to bed, wearing gloves to keep the bedding clean; but glycerine does not agree with every one. It makes some skins harsh and red. These people should rub their hands with dry oatmeal and wear gloves in bed. The best preparation for the hands at night is white of egg with a grain of alum dissolved in it. Quacks have a fancy name for it; but all can make it and spread it over their hands, and the job is done. They also make the Roman toilet paste. It is merely white of egg, barley flour, and honey. They say it was used by the Romans in olden time. Any way, it is a first-rate thing; but it is a sticky sort of stuff to use, and does not do the work any better than oatmeal. The roughest and hardest hands can be made soft and white in a month's time by doctoring them a little at bed time, and all the tools you need are a nail brush, a bottle of ammonia, a box of powdered borax, and a little fine white sand to rub the stains off, or a cut of lemon, which will do even better, for the acid of the lemon will clean anything.

PLUMBER'S FURNACE.

This simple furnace, the invention of Mr. John Clegg, of 119 Richmond Street, Providence, R. I., produces a powerful draught in a very short time. The cast iron pot or bowl is secured on top of a metal frame fastened on a base. Into an aperture in the bottom of the pot projects the neck of a blower casing. Suitably mounted cogwheels and pinions, operated by a crank handle, revolve the fan in the blower very rapidly. The powerful current of air thus produced

CLEGG'S PLUMBER'S FURNACE.

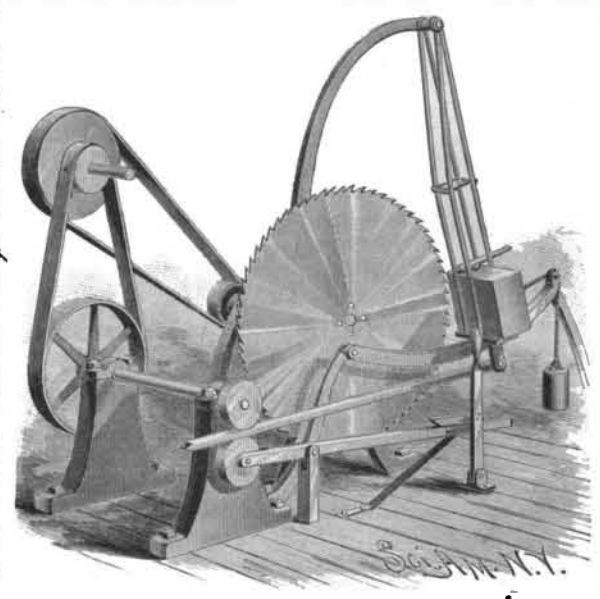
is directly delivered on the charcoal in the pot. As a high degree of heat is produced in a short time, the metal in the melting pot is melted in a few minutes. The furnace can be easily carried from place to place by means of the bail.

To Clean the Hands.

Petroleum jelly serves to clean and take away all traces of dirt from the hands after work in the shop or laboratory. For that purpose, you need only rub the hands with a small amount of the jelly, which, penetrating into the pores of the skin, incorporates itself with the greasy matters which are there. Wash them with warm water and Castile soap, and the hands become cleansed and softened.

FEED MECHANISM FOR SHINGLE MACHINES.

The shingle machine is of the ordinary kind, having a saw revolving in a vertical plane and a swinging block-carrying frame moving above a concave bed piece, and carrying the block, which is swung past the saw in the operation of removing a shingle from the block. The swinging frame is returned to the starting position by a weight attached to a rope passing over a pulley on the outer end of the curved bed, and secured to the swinging frame. To a short arm, projecting from the bottom of the swinging frame, is pivoted the end of a bar that passes between two rollers, one mounted on a shaft receiving its motion directly from the mandrel or through a countershaft as shown, and the other mounted in the end of a lever pivoted in the top of a standard in front of the saw. The other end of this lever can be depressed to cause the rollers to gripe the



PURVES' FEED MECHANISM FOR SHINGLE MACHINES.

bar, and feed the block to the saw by means of a vertical hand lever pivoted to the floor. The pressure exerted, of course, controls the force of the grip of the rollers and the speed of feeding. The outer end of the lever is pressed upward and the rollers separated by a spring secured to the floor. If desired, the lever can be so arranged as to be operated by the foot.

This invention has been patented by Mr. W. L. Purves, of Waddington, N. Y.