

New Inventions.

Machine for Turning Spokes.

Asa Landphere and Samuel Remington, of Ilion, N. Y., have invented an improvement in machinery for turning spokes and other irregular forms, on which they have made application for a patent. The nature of the invention consists in planing the stuff longitudinally by means of two sets of rotary cutters which are arranged above the timber to be turned, and have their bearings in swinging frames, that rise and fall, according to the profile of a plate over which they pass. Another profile plate causes a transverse movement of the cutter shaft in its bearings.

Cutting and Grinding Corn Stalks.

Wm. G. Huyett, of Williamsburg, Pa., has invented an improvement in machines for the above purpose, on which he has applied for a patent. His invention consists in the employment of a revolving cutting knife in combination with a revolving disc, both secured on the same shaft, and revolving simultaneously. The knife is of such a shape, and is so arranged in relation to the feed hopper and grinding disc that it serves to cut up the stalks and prepare them and feed them to the grinding disc, which turns in a toothed concave, grinding them as fast as cut. If this machine should work well it will be a very useful invention.

Corn Harvesters.

Gardner A. Bruce, of Mechanicsburg, Ill., has invented an improvement in machines for harvesting corn stalks, on which he has applied for a patent. The nature of the invention consists in so arranging the cutters that they will be caused to revolve and cut in an upward direction and after cutting the stalks will give them a direction toward the center of the machine. Inclined revolving shafts are also employed with arms for bending and holding the stalks while being cut, and afterward throwing them into the receiver at the center of the machine. The propelling wheels are each provided with a separate axle, so that an open space is thus left at the center, and two revolving shafts with radial arms, in combination with a spring catch are employed for holding the stalks until a bundle is collected.

Hot Air Furnaces.

John P. Hayes, of Philadelphia, has invented an improvement in Hot Air Furnaces which consists in a peculiar arrangement of hot-air tubes, and passages, whereby the heat from the fire chamber of the furnace is more perfectly radiated. A perforated chamber is placed above the upper part of the fire-chamber, which is connected with an air pipe communicating with the external air. This chamber allows the cold air to escape in small jets into the fire chamber, and the oxygen uniting with the gases in the fire-chamber, causes a more perfect combustion. A patent has been applied for.

Improved Metal Drill.

Wm. Bushnell, of New York City, has invented and applied for a patent upon an improved hand metal drill. The nature of this invention consists in a novel and simple arrangement of mechanical devices for rendering hand drills perfectly self-acting in their feed-motion. The upper end of the mandril is connected with a screw rod, which is actuated by a worm gear taking its motion from the crank, so that it is fed downward with a slow and regular motion, thus removing all liability to chip off the iron when the hole is nearly bored, as is the case with those machines in which the feed motion is obtained from a weight or spring. This is an excellent improvement and we can recommend it to mechanics. A few of the drills have been left at our office for sale. Price \$25.

Improved Joint for Air Heating Pipes.

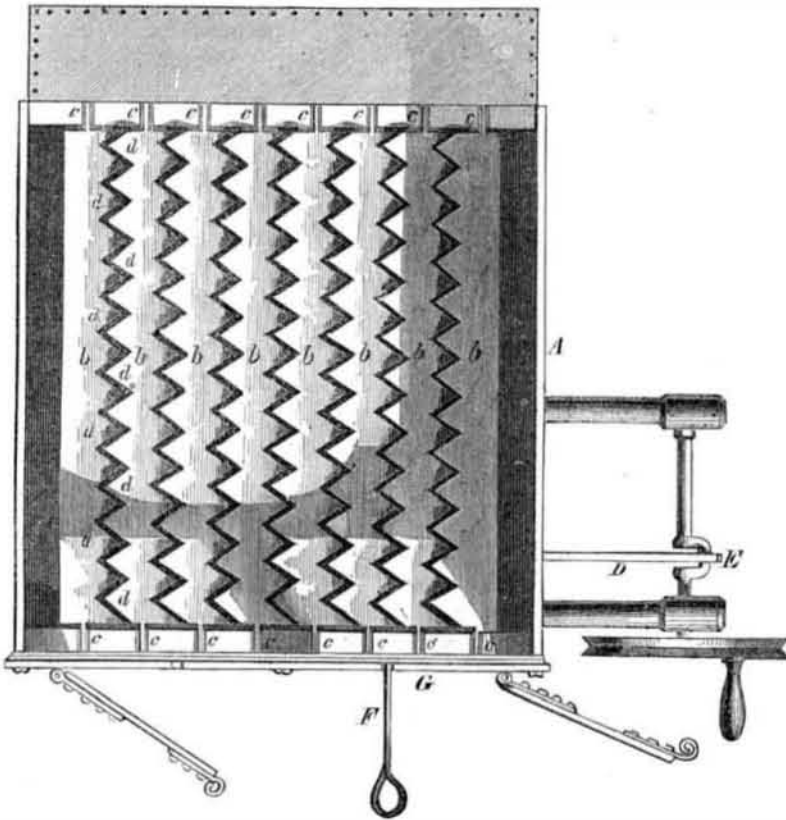
Jesse Young, of Franklin Furnace, Ohio, has applied for a patent upon an improved joint for connecting air-heating pipes, whereby a perfectly tight joint is obtained by the unequal expansion of the metals of which the joint is formed. The nature of the invention consists in boring out or forming a recess at the connection or joints of the pipes, sufficiently large to receive

a thimble, the inner diameter of which will correspond with that of the pipes. The thimble is to be turned perfectly true on its outer side, and made of a metal more expansive than that of which the pipes are formed, so that when the thimble is heated it will expand and bind tightly against the sides of the recess, thus forming a tight joint.

Light-houses.

There are now in operation in the United States 347 light houses; 27 are in the course of construction, and 44 more authorized, but not yet commenced. There are 44 light vessels in operation, and 5 in the course of construction. The estimate for this service, for the fiscal year ending June 30, 1853, is \$906,161.

IMPROVED GRATE BAR FOR FURNACES--Fig. 1.



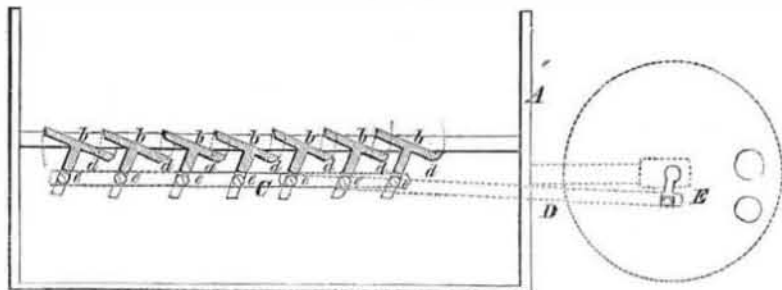
George W. Cotton, of St. Louis, Mo., has invented an improved grate bar of which the annexed engravings are illustrations. Figure 1, being a plan view, and figure 2 a vertical section. Similar letters of reference indicate corresponding parts.

The nature of the invention consists in having T-shaped bars, the upper or horizontal portions of which having serrated edges. Each bar is hung upon pivots, and the serrated edges of the bars fit into or between each other. The several bars are connected at the ends by pivots to a transverse bar, from which a vibratory

motion is communicated to the whole series of bars, as will be hereafter seen.

G is the front end of the furnace, and b b are the grate bars pivoted in the cross-bars, c c. d d are the serrated edges fitting into each other as shown, and e e are the pivots attaching the stems of the bars to the cross-piece, C, which is actuated by the lever, D, and the crank, E. All that is necessary, then, to stir the fire, is to turn the crank and the agitation communicated to the grate bars will be all that is required. Or if more convenient, the lever, F, can thus be inserted in a hole in the cross-bar, and having its ful-

Figure 2.

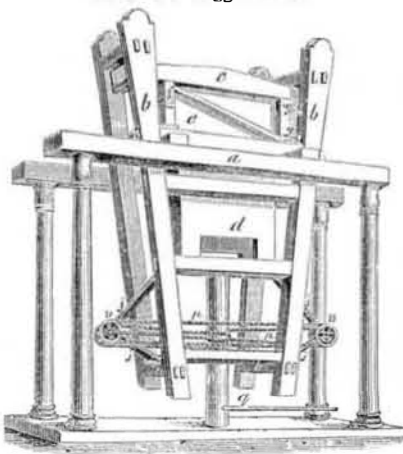


crum in the front plate of the furnace, the grate bars can be actuated the same as by the motion of the crank. A belt can be passed around the crank pulley, and a slow continuous motion given to the bars if desired.

The advantages of this invention are that the fire may be effectually stirred with closed doors,

and the fireman will thus be relieved from exposure to the intense heat. The grate bars are also less liable to become warped than when made in the ordinary form, neither are they liable to crack from alternate expansion and contraction. For further information address the inventor as above.

McComb's Toggle Press.



We herewith present our readers an illustra-

tion of an improved Press for baling hay, cotton, hemp, &c., patented on the 27th February, 1849, by David McComb, now residing at Memphis, Tenn. Its power is derived, as will be hereafter seen, from the combined action of the lever, pulley, and the toggle joint, and it must, if properly constructed, be very efficient. The illustration is a perspective view.

a a are two horizontal parallel timbers, between which the press is constructed. It is better that these should be securely framed in the building in which the press is erected. b b is the frame of the press suspended between them, the four corner posts inclining inward. c is the sliding head-block, against which the bale is pressed, it is made to slide in and out between timbers fastened to the frame in such a manner as to form two horizontal parallel grooves; d is the box in which the follower

works, made in the usual manner. e e are the hinged doors of the box in which the substance to be pressed is placed, and these are secured by the dart-shaped fastener, f, while the bale is being pressed, opening afterwards upon the hinges, g g. h h are two horizontal timbers of the frame, upon which are supported the castings, i, forming the boxes or bearings of the lower ends of the toggles. j j j j are the four limbs of the toggle joints, pressing against a box secured upon the follower working inside of the box, d.

n n n n, are four channeled pulleys working upon the connecting pins that pass through the ends of the toggles. Cords pass around these pulleys, leading to the windlass, o, placed under the center of the bale. This windlass is turned by the lever, q, to which the power is applied. p is the rope passing through an opening in the windlass, and after passing around the pulleys, its ends are attached to the joint pins upon which the pulleys are placed.

From the description already given the operation of this press will be readily understood. The substance to be pressed is placed in the box, e, and the bagging or hoops properly arranged. By turning the lever, q, the rope will be wound around the shaft, o, the pulleys drawn towards the center, and the follower forced upward by the action of the toggles.

The claims upon this machine are lengthy and efficiently cover all its principal parts. Any further information may be obtained by addressing the inventor as above.

Apparatus for Condensing Smoke.

A patent was issued on the 29th of November last to J. Bloom, of Woburn, Mass., for an improved mode of condensing smoke and gases, rendering them innocuous. The nature of this invention consists in passing the smoke and other products of combustion through water, it being conducted in pipes to the hollow of a suitable reservoir made air-tight and nearly filled with water, which reservoir is kept constantly exhausted by air pumps. The smoke passes through a pipe leading nearly to the bottom of the water in the cistern, and as the air above the water is exhausted, the smoke will evidently pass through the water, and thus become purified from its soot and cinders. It is evident that the draught of the furnace will be increased by the exhausting force of the air pump, and the ordinary draught cannot act in opposition to the action of the pump so that no great amount of force will be required to produce the desired effect. Travelers on railroads would be very grateful if some such plan were adopted. We recommend this to the consideration of all concerned, and hope that some one will give it the attention it deserves. The inventor is at present in this city.

The Newly Discovered Sea Bank.

In accordance with information furnished by George W. Blunt, Esq., of New York, of the supposed existence of a bank of forty fathoms, about ninety miles east of Boston light, Lieut. T. B. Huger was despatched in the schooner "George Steers," one of the vessels of the U. S. Surveying Party, to search for it and determine its position. In a spot near lat. 42° 47' N., and lon. 69° 13' W., Lieut. Huger discovered a bank, about three miles in extent, from north to south, and two miles east and west, on which he got soundings at a depth of from thirty-six to forty fathoms. This was in a spot where one hundred fathoms are laid down in the charts. The character of the bottom, so far as he was able to obtain it, was coarse sand in the thirty fathoms water, and soft mud in the deeper water. Prof. Bache, Superintendent of the Coast Survey, says that this is probably Fippenies Bank, the true position of which is further to the eastward than is laid down in the charts.

Gold Resources of America.

Since the California discoveries were first made in 1849, the quantity entered at the United States Mint, in Philadelphia, has been constantly on the increase, and there are no signs of a falling off yet. In 1849 \$10,491,675 were received; in 1853, \$53,426,205. The whole amount received since 1849, amounts to \$196,143,988.