

New Inventions.

Improvements in Switches for Railroads.

We cannot conceive how the above name ever came to be employed for this railroad device for shifting the movable part of a track, but as it is in use, we suppose we must employ it, although track-shifter, or rail-key would be more appropriate. Of the many improvements made in such devices, David Demarest, of this city, who is well known as an inventor, has applied for a patent for a very simple method for keeping the switches of railroad tracks at the bottom of the grooves, and in contact with either of the sides of the groove in the rail; also for preventing the loose forward end of a switch from rising above the rear end, and thus save it from being forced to the one side or broken, when the wheels of a cart or other vehicle comes in contact with it. A shoulder is made in the groove of the stationary rail, where the switch rail matches on it, and this prevents it from rising, and there is also a bolt for holding it down, and these are applied in such a manner, that the wheel of no vehicle can throw out the switch, if it gets between the rails. Much trouble has been experienced with city railroad switches, from the great number of vehicles running on the tracks and the wheels running between the rails at the switches. It is believed that this simple improvement will afford an effectual remedy for these evils.

Cleaning Boiler Flues.

The cleaning out of boiler flues when they get foul, is both a troublesome and a disagreeable business. Any good improvement for accomplishing this work without going into the flues in the usual way, we consider to be both a humane and an economical invention. John Leinweber, of Covington, Ky., has taken measures to secure a patent for an improvement which promises to be the very thing desired. It consists in placing within each and any flue of a boiler, a perforated pipe, in which steam can be admitted when desired from the boiler, and from which it escapes in jets which strike the interior surface of the flue and loosens the soot, &c. By giving the perforations in the pipe a slanting direction, the jets of steam will not only loosen the soot, &c., in the flues, but will also drive it out of the flues.

Governor for Steam Engines.

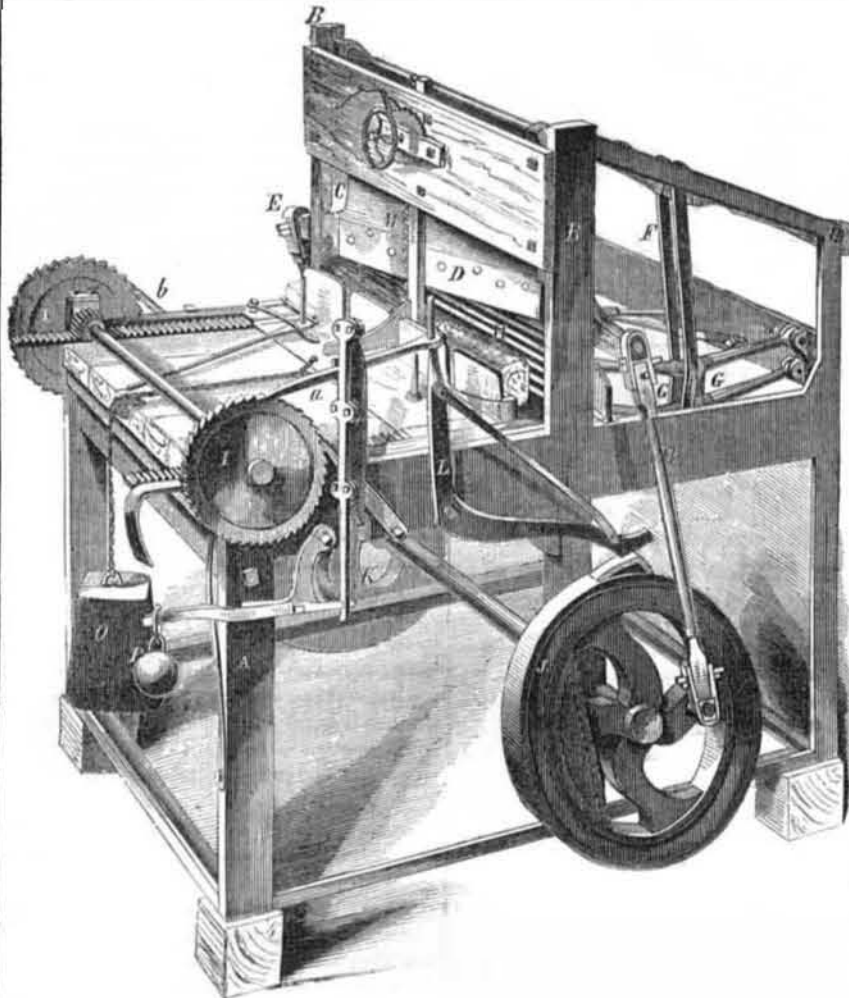
A patent has recently been applied for by Elmer C. Ford, of Bridgeport, Ct., for an improvement in governors for steam engines. This governor, like the common one, depends for its action upon two forces, namely: centrifugal and gravity—each tending to counteract the other. By the manner of hanging the balls, these forces in the common governor are prevented from acting in directions natural to them—the natural direction of the force of gravity being in a vertical line, while the centrifugal force is at right angles to the axis, the balls being compelled to move in a circle. This it is asserted, causes irregularity in the action of the governor. The object of this improvement in the governor is to obviate such irregularity in the action of these forces, and to this end Mr. Ford employs two balls or weights which are fitted to run freely in horizontal ways, rigidly attached to a revolving vertical spindle, and which supports an angular frame, the gravity of which tends to force the balls towards the spindle. The centrifugal force of the balls acts horizontally in opposition to the gravity of the frame, which acts vertically. As the balls support the frame, and as one or other of the forces predominates, the frame rises or falls and gives the necessary action to the throttle valve, which regulates the quantity of steam to be used.

Iron Wheel Felloes.

Frederick Bowen and Isaac Pedrick, of Bridgetown, N. J., have taken measures to secure a patent for constructing felloes either of wrought or malleable iron, made hollow and of a gothic arch shape, which thus combines great strength of form with lightness.

LATH CUTTING MACHINE.

This engraving is a perspective view of an improved lath cutting machine, for which a patent was granted on the first of last Feb. to Charles F. Packard, of Greenwich, Fairfield Co., Ct. A series of horizontal cutters are employed in conjunction with a vertical slitting knife, by which the laths are cut out of the solid log in slices, as it were, with great rapidity. A is the lower part and B the upper part of the frame. D is the clearing cutter, and H is a log in the machine. Behind this log there is shown a series of horizontal knives, which are actuated by the connected rod E, (on wheel J) which actuates toggle levers, G G, moving them upwards and downwards in the guide, F, and which give a horizontal motion to the slitting knives, which score into the face of log H. Whenever they have done this and are drawn back, down comes the blade, D, and cuts out a slice of slats from the log. The knife, D, is secured to the stock, M, which has a reciprocating motion. The log is fed forward on its bed



by the spur wheels, I I, the ratches, a b, of which are operated by a cam on the side wheels, J, which strikes the bellcranks, L (one on each side) once for every cut, by the revolution of J, and shifts the ratches one notch. This allows the pinions on the shaft of the wheels, I I, to move the racks of the log bed one notch forward for every cut of laths taken off the log, H.—The weight, P, on the lever of the ratchet, a, (one for each side) keeps the ratchet firm in the tooth of the wheel, except when it is shifted every stroke by the rotary cam on the side of wheel J. When the log is all cut up into laths by lifting up the weight, P, and unengaging the feed ratchets, a b, the weight, O, on

the feed bed will run it back to receive another log. The log is secured in its place by a dog or clamp, which has a rack on it, and which is operated by a toothed wheel on the top cross beam of the frame, B.

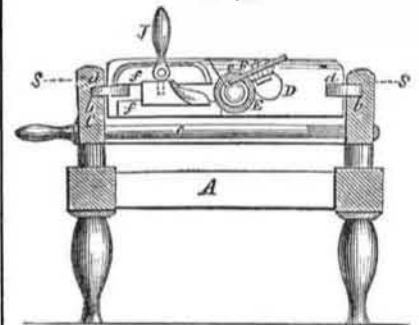
By this description, the operations of this machine will be understood by all. It is simple in its arrangements and operates with great satisfaction to the patentee. A series of saws moving horizontally across the face of the log, may be substituted for the horizontal slitting knives.

More information may be obtained by letter addressed to Mr. Packard, at Mianus P. O., Conn.

and providing said stock with two peculiarly shaped cutters, one stationary, and the other movable, the stationary cutter being of such shape that it forms the tapering part of the pin, while the movable cutter is of a proper shape and construction to form a round head on the pin and simultaneously therewith cut off the pin from the block ready for being discharged.—Second, in making all the pins of a set of an uniform length by employing a spring plug or gauge, and by the same means effecting their discharge after they have been turned, headed, and cut off.

A represents an ordinary turning lathe having the improvement attached to it; the lathe is shown as it appears when in operation. A block, S, from which pins are to be turned being shown secured in the chuck, B, of the same—a pin is also represented as completed and cut off and ready for discharge. C represents a frame carrying the improvement; this frame is secured by set screws to the top of the lathe. It has two ways, b b, for the cutter stock, D, to slide in; these ways can be moved nearer together or further apart by the set screws, c c, and thereby the sliding block or cutter stock can be kept in place while the heading and cutting off the pin is being performed. D is the cutter stock; it has tongues, d d, which fit and move in the ways, b b, as the pin is turned. This stock has a circular horizontal recess cut in its center in which a barrel, E, fits snugly, this barrel is just large enough for the pin to move freely in, and is made of a gradually tapering shape to correspond to the desired shape of the pin. This barrel has an open space, e, cut in its top for the cutting edge of the inclined cutter, F, to pass through and turn the pin to the right size as it passes into the circular recess or barrel, E; this barrel is open at its front and wide end, and closed at its back or taper end; G is a spring plug which moves and plays freely in the barrel, E, this plug is forced against the back end of the barrel by means of the pin as it is gradually turned; this plug serving to gauge the length of all the pins and make them of an uniform length. The spring, H, of the plug yields as the pin is forced into the barrel and consequently is expanded; by thus expanding the spring the discharge of the pin after being finished can be easily effected, for by sliding the block, D, from the chuck, space will be made and the pin allowed to escape, it

FIG. 2.



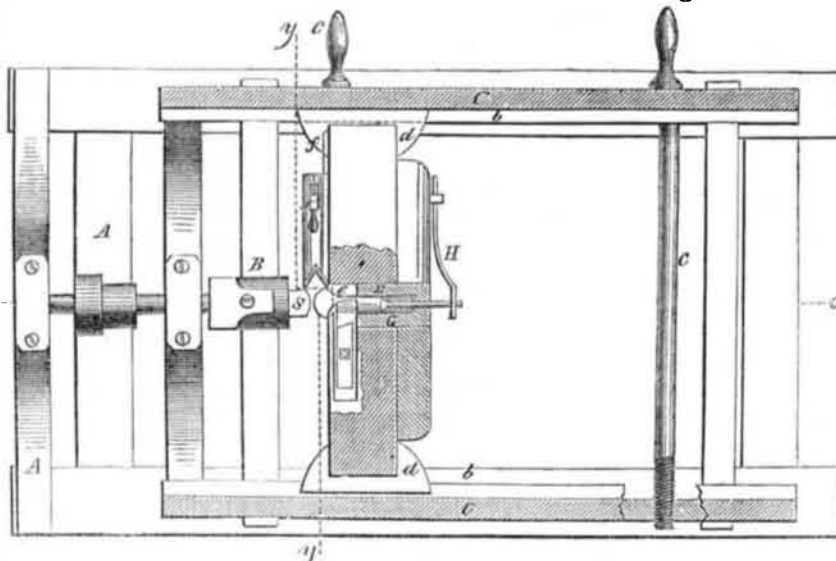
being forced out of the barrel by the contraction of the spring, this contraction taking place as soon space is formed between the chuck and the stock.

There is a V-shaped or a similar cutter; it is connected loosely to the cutter stock, and is made to slide in dovetail, or otherwise, f f, when the lever, J, is operated. This V-shaped cutter is moved up to the block by means of the lever, J, after the taper portion of the pin is turned and cuts the round head on the pin, and simultaneously therewith cuts off the pin from the unturned block. After the V cutter has performed its duty it is moved back, at the same time the screws, c c, are slackened and the cutter stock which was secured fast for the heading operation, loosened and moved back a short distance simultaneously with the backward movement of the cutter stock. After the pin is discharged the cutter stock is again moved up to the block, until the cutter, F, turns off another pin, &c., and so the operation is continued, and bed pins produced very rapidly.

Any shaped pin or knob may be produced by this machine by changing the form of the cutters.

More information may be obtained by letter addressed to the patentee.

MACHINES FOR MAKING BED PINS.—Figure 1.



On the 28th of last February, a patent was granted to Wm. McBride, of Bristolville, Ohio, for improvements in machines for making bed-pins, said improvements being represented by the annexed engravings, figure 1 being a partial plan and horizontal section through s s.

Figure 2 is a vertical transverse section of the machine through the line y y, in fig. 2. The same letters of reference are placed in both figures. The improvement consists of two parts; first: in attaching to a common turning lathe a cutter stock or sliding block,