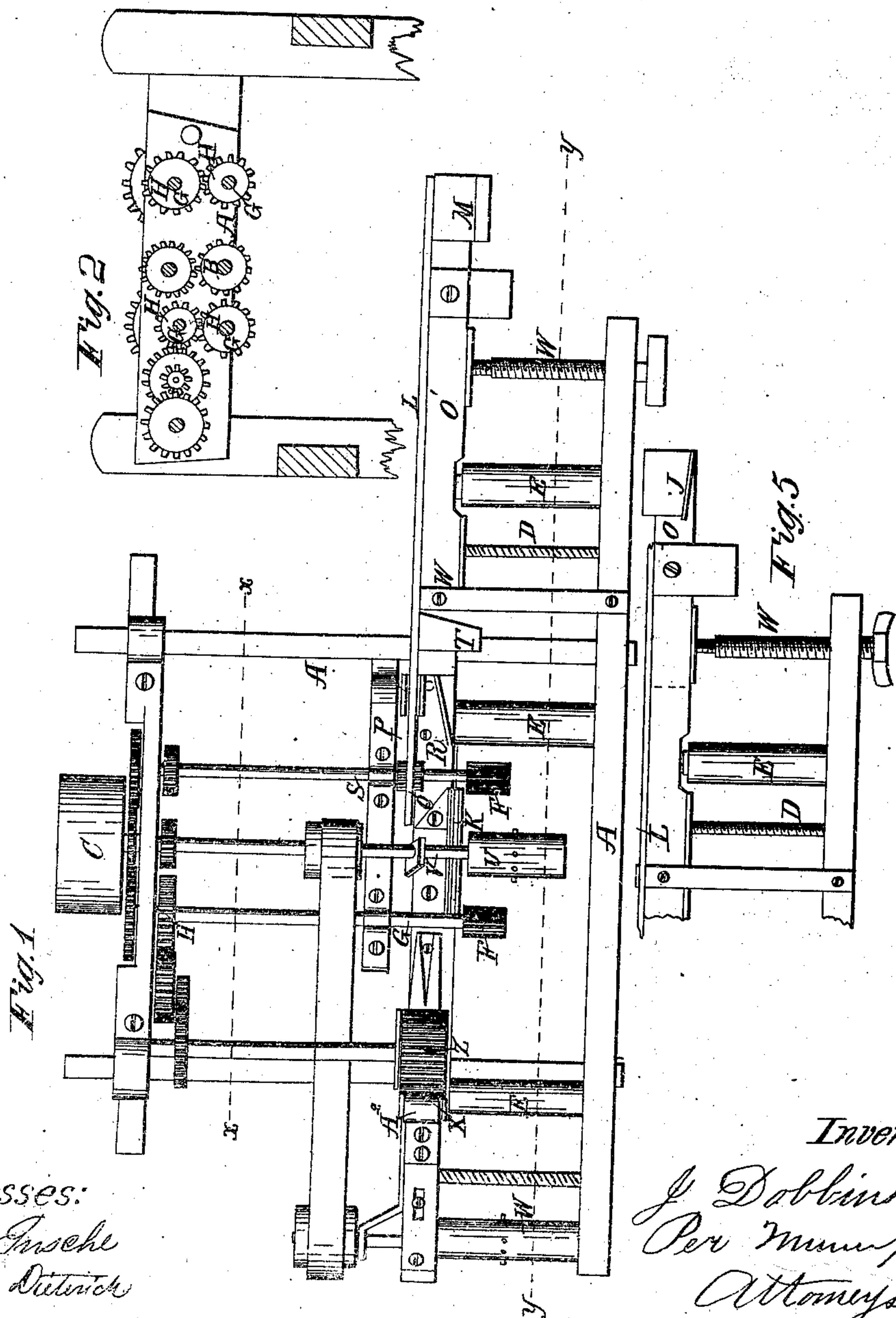


J. Dobbins,
Making Hoops.
N^o 80,154. Patented July 21, 1868.

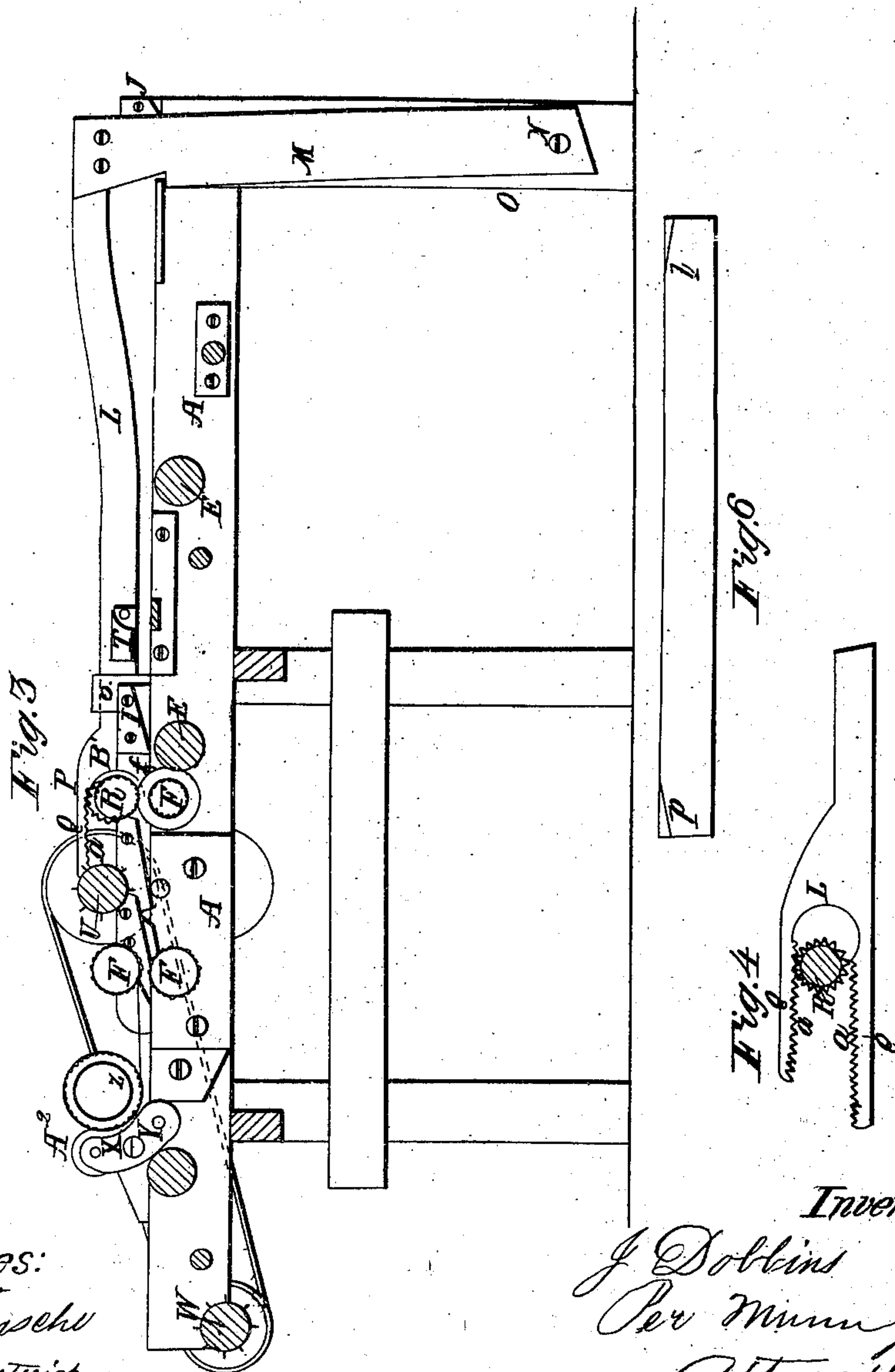


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United States Patent Office.

JACOB DOBBINS, OF LITCHFIELD, MICHIGAN.

Letters Patent No. 80,154, dated July 21, 1868.

IMPROVEMENT IN MACHINES FOR CUTTING HOOPS FOR BARRELS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JACOB DOBBINS, of Litchfield, in the county of Hillsdale, and State of Michigan, have invented new and useful Improvements in Machines for Cutting and Bending Hoops, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists—

First, in an arrangement for cutting the lap, or, in other words, for tapering the ends to the hoops, in which arrangement two additional knives are placed for operation in an oblique position to cut a corner from each end of the board from which the hoops are cut, before it reaches the knives for cutting the hoops. To force the board against the knives for tapering the hoop-ends, and up against the feed-rollers, a double rack-bar is arranged for such action upon the board when placed in position under a slide projecting from the side of the rack-bar in front; as the board, by means of this slide, raises the bar so that the teeth in the lower jaw come in contact with the pinion-wheel, which forces it forward to the place where there are no teeth, and there remains until the board passes from under the slide, when the weight of the bar brings the teeth in the upper jaw in contact with the pinion-wheel, which throws it back to its first position, ready for the board. A roller or treadle may be used in place of the slide, if preferred.

Second, in an arrangement for returning the board back to the place where it is fed into the machine, which is done by means of rollers set with points, and attached to the shafts, which move in concert with each other by means of pulleys and a belt, or otherwise, whereby, as soon as the board has passed through the feed-rollers, it will at once drop on the left-hand or furthestmost pointed roller, and be returned to the place for feeding the machine.

Third, it consists in combining a couple of small rollers with a concave metallic surface, in connection with the large roller, for the purpose of bending the hoops.

Fourth, in the form of the knives, and also in the plan of fastening them to the machine.

In the accompanying plates of drawings my improvements in machines for cutting and bending hoops are illustrated—

Figure 1, plate 1, being a plan or top view of a machine made according thereto.

Figure 2, plate 1, a vertical section taken in the plane of the line *x x*, fig. 1.

Figure 3, plate 2, a longitudinal vertical section, taken in the plane of the line *y y*, fig. 1; and

Figure 4, plate 2, a detached view, to be hereinafter referred to.

Figure 5 is a detached plan view, partly in section, to show the position of the outer knife.

Figure 6 is a view of the board from which the hoops are cut, to be hereinafter referred to.

A, in the drawings, represents a framework, of any suitable construction, to support the various working parts of the machine.

B, the driving shaft, arranged to turn in suitable bearings of the framework A, and provided with a pulley, C, by which, through a belt, it is to be connected with the driving-power employed.

D, the bed or frame, along and in which the board passes to be split or cut into hoops according to this invention. This bed D is provided with a series of friction-rollers, E, arranged at suitable points.

F, a series of feed-rollers arranged in the line of the bed D, so as to feed the board along and over the same, the board passing between them, they being arranged in pairs, and through their shafts G and pinion-wheels H, suitably connected with the driving-shaft B, to receive the necessary and required movement.

I and J are two cutters secured to the frame, and inclined in opposite directions. The one, I, is located upon the frame, near its centre, and the other, J, upon the upper end of the standard or support O. These two knives serve to cut the lap upon each end of the hoop, and their operation will be presently described.

K, the knife or cutter-blades, attached to the framework A, in position for splitting the board into hoops after the laps have been cut.

L is a lever-arm hung at one end to the upper end of a vertical swinging lever or arm, M, pivoted at its lower end, N, to the post O of the framework.

This lever L is extended forward in a line with the bed, over which the board passes, for being split, passing through a guide, O, and at its outer end, P, made of a forked shape, with each prong, Q, provided with teeth, α , and projecting respectively over and under a spur-wheel, R, fixed to the shaft, S, of the upper feed-roller of the first set of rollers. By throwing the forked lever so as to bring the teeth of its upper prong into connection with the spur-wheel R, the lever is made to move forward until the smooth recess S' is reached by the spur-wheel R, when the lever drops by its own gravity, and the upper arm Q engages with the spur-wheel R to be moved back.

T is a loop secured to the side of the lever P, and serves to hold the board, from which the hoops are cut, upon the table or rollers E.

U, a drum, arranged, by its shaft, V, turning in suitable bearings of the framework A, to bear upon the under surface of the board, and W a drum arranged to bear upon the under side also.

These drums are connected through a belt and pulleys properly arranged, and are both provided with teeth suitable for carrying the board along back after having been split.

X, a concave edge of an upright frame, Y, between which concave and the serrated or grooved drum Z the hoop is placed, and therein, by the rotary movement, imparted to the said drum, by properly connecting it with the driving-power A², friction-rollers, one at each end of the concave, the hoop is bent.

The operation of cutting the laps for the hoops, or for cutting the corners of the board, is as follows:

The board is placed under the loop T, parallel to the lever P, raising the latter sufficiently to engage, by its lower arm, with the spur-wheel R. It is moved forward by this pinion until the end of the board is brought against the edge of the knife I, which, owing to its inclined position, cuts a corner from the board in a diagonal line, as seen at p, fig. 6. The feed is continued until the inclined or bevelled end of the board is brought in contact with the bevelled flange f upon the lower feed-roller F'. This flange guides the bevelled end of the board toward the outer end of the roller F, and therefore throws the outer end of the board correspondingly in an opposite direction, bringing it in contact with the cutter or knife J to cut the bevel, as shown at z, fig. 6. In order to increase or diminish the bevel given to this end of the board, the rear end of the frame is adapted to be adjusted laterally, by means of the adjusting-screw W and the pivot w, in the piece O' of the frame. This piece is cut out at the bearing of the roller E, in order to allow the requisite degree of lateral movement.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

The arrangement of the inclined knives I J and the flange f of the feed-roller F, substantially as described, for the purpose specified.

JACOB DOBBINS.

Witnesses:

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