

J. DOBBINS.
Machine for Planing and Pointing Hoops.
No. 215,512. Patented May 20, 1879.

Fig. 1.

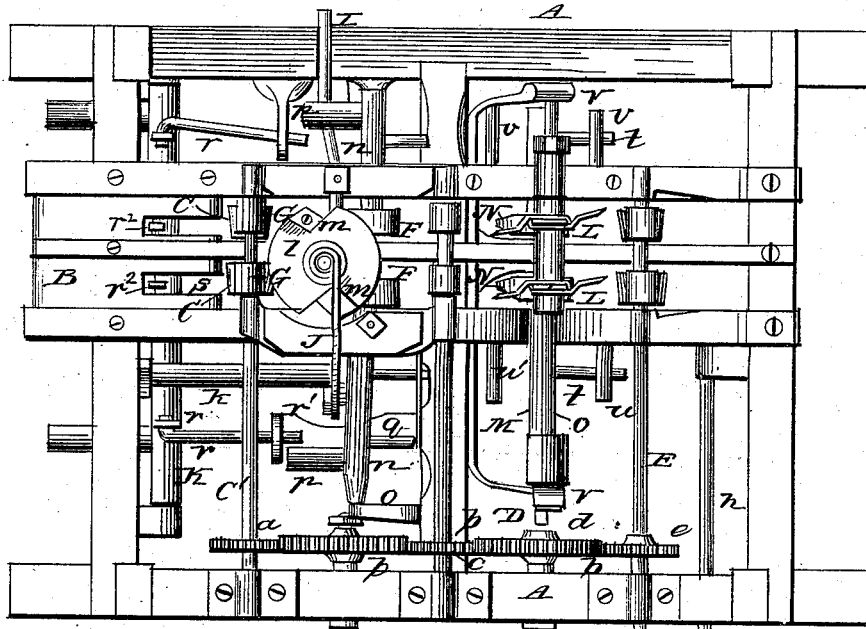
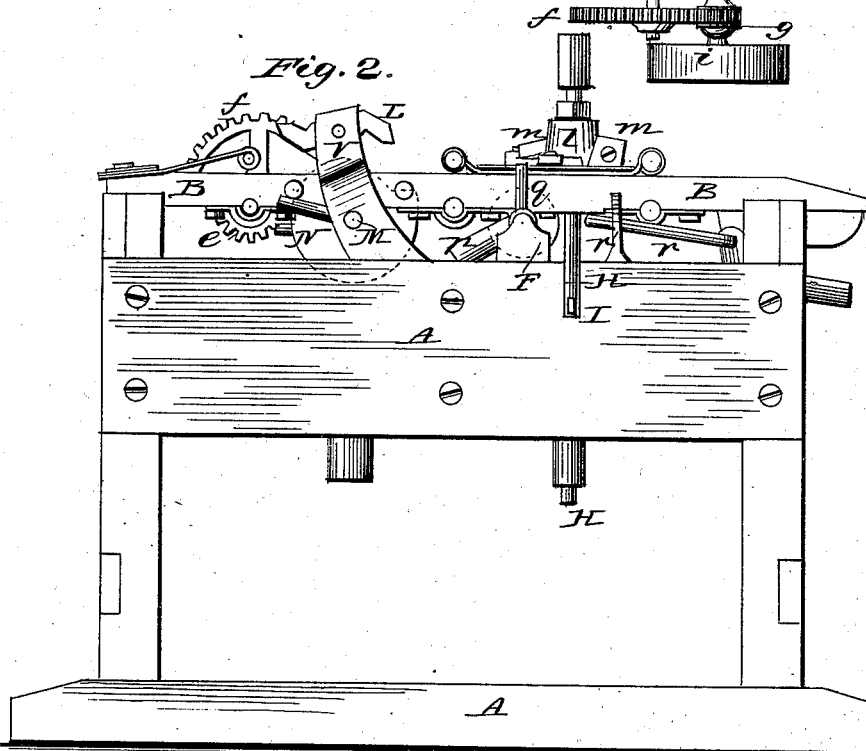


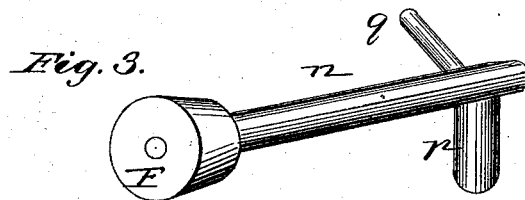
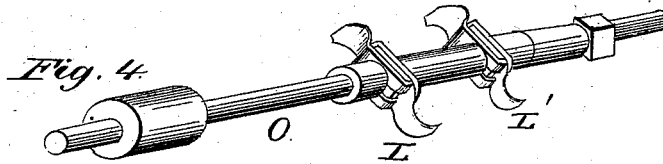
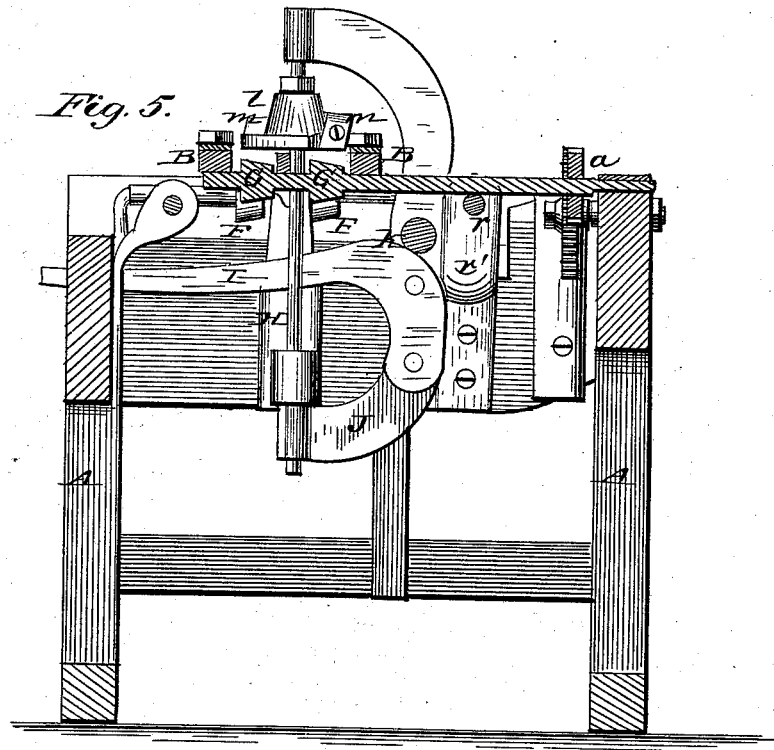
Fig. 2.



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UNITED STATES PATENT OFFICE.

JACOB DOBBINS, OF LITCHFIELD, MICHIGAN.

IMPROVEMENT IN MACHINES FOR PLANING AND POINTING HOOPS.

Specification forming part of Letters Patent No. **215,512**, dated May 20, 1879; application filed October 28, 1878.

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 certain new and useful Improvements in Hoop-Planing Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of my improved hoop-finishing machine. Fig. 2 is a side elevation of the same. Fig. 3 is a detailed view of the eccentric hoop feed-roller by which the process of lapping is performed. Fig. 4 is a similar view of the pointing and beading knives. Fig. 5 is a transverse section of the machine.

The same part in the several figures is denoted by the same letter.

This invention appertains to certain improvements in machines for finishing hoops when removed in blank form from the machine with which they are cut directly from the raw material, and has particular reference to the lapping and beading and pointing of the hoops.

To these ends it consists, therefore, in the particular construction and arrangement of the mechanism for bringing about these results, substantially as hereinafter set forth.

In the drawings, A refers to a frame suitably constructed for supporting the respective parts of my device. B is a table upon which the hoop in its unfinished condition is fed to the knives to be lapped, as hereinafter more fully set forth.

Arranged directly in front and close proximity with the bed or table B is a serrated feed-roller, C, upon a shaft, C', hung in bearings in one of the side pieces of the bed or table B and the frame A, and having a gear-wheel, *a*, receiving motion through a train of gear-wheels, *b*, *c*, *d*, and *e*, every other one attached to a similar feed-roller shaft, D E, hung one a little beyond the lapping mechanism, and the other similarly hung with reference to the pointing and beading mechanism, and provided with a second gear-wheel, *f*, gearing with a pinion, *g*, on the driving-pulley shaft *h*,

the pulley lettered *i*. The feed-rollers C are conical in vertical section, (they being hung upon horizontal shafts,) to effect the planing or shaving of the hoop, tapering in transverse section, the cutter-head being inclined relatively to the conical eccentric feed-roller F, by which the ends of the hoop are tapered in longitudinal section, or the lapping process is performed, as presently specified. Above each feed-roller C are hung, on suitable shafts, rollers G G, to assist the holding and feeding of the hoop.

H is an upright shaft, whose bearings are connected together by a bow or other suitably-shaped support, J, which support is hung upon a shaft, *k*, in the frame A, rendering it and the shaft H, carrying the cutter-head *l*, having the planing-knives *m*, susceptible of being lifted to instantly free the knives from any obstruction or clogging, and for convenience in sharpening or removing the knives. A lever, I, connected to the support enables the convenient lifting thereof.

The lapping feed-roller or eccentric F is hung upon a shaft, *n*, supported in vertically-adjustable supports *o o*, to permit of the varying of the height of the said roller or its vertical adjustment in regulating the amount of lap to be imparted to the hoop.

It will be observed that the shaft of the feed-roller or eccentric F is weighted, as at *p*, to cause the eccentric to stand in its normal position with its eccentric or elongated portion next to the knife or cutter-head, by which the passage for the hoop to and between the knives and said roller or eccentric is narrowed to enable the thinning of the hoop at its ends; as it will be seen that as the hoop is fed upon said roller or eccentric it will be cut a certain thickness by the knives above, which cutting will be gradually lessened until the reverse side or face of the eccentric has been presented to the hoop, the forward movement of the latter thereon rotating the eccentric or roller, when the cutting or planing will be uniform until the other or rear end of the hoop has been reached, at which time the hoop will be cut thinner a second time, thereby thinning both ends of the hoop. This is termed "lapping." To hold the reverse face of the feed-roller or eccentric next to the hoop, or rather

prevent its continued rotation, to obtain the uniform shaving or planing of the hoop, an arm, q , is attached to the shaft of said eccentric, which, when the face of the eccentric is brought next to the hoop, will come in contact with a similar arm, r , guided in an eye plate or bar, r^1 , fastened to frame A, and which arm r projects from a shaft, K, hung in said frame, and provided with a second arm, r^2 , arranged at about right angles to the arm r , and projecting, in its normal position, up through a slot, s , in the bed or table B. When the work or hoop, in its unfinished condition, is placed upon the table or bed B and fed forward to the knives, at which period it (the hoop) is being thinned at its forward end, the arm r^2 will simultaneously be moved in the direction of the knives, or rather forwardly, thrusting the arm r forward to meet the arm q of the eccentric-shaft and arrest the movement of said shaft and eccentric, and thus prevent the continued rotation of the roller or eccentric, or the return of its elongated side to the hoop, until nearly the entire length of the hoop has been uniformly planed. At this juncture, or when the arm r^2 has been released from the forwardly-moving hoop, the arm r will likewise be freed from the eccentric-shaft arm q , and the falling of the elevated weight p of the said shaft will swing or rotate the elongated side of the eccentric next to the hoop, and thus bring the latter nearer the knives, when its rear portion will be thinned.

As the hoop passes on from the eccentric feed-roller, whence it has been lapped, as just described, it is presented to the action of the pointing and beading knives L L', which process or processes will now be described.

M is another weighted shaft hung in vertically-adjustable supports or bearings fastened to the frame A, and which shaft is provided with an arm, t , which strikes, at different times, the pins or projections $u u'$ on the side of the bed or table frame. Upon this shaft is a cam or eccentric feed-roller, N, which is so held by the arm t , when resting against the projection u' and the weight attached to its shaft, as to present its elongated portion to the approaching hoop, which, as it moves upon the eccentric-roller N, will be elevated or carried upwardly near the heel of the knives L L', arranged and shaped to cut both sides of the hoop and bead the point, after which, as

the hoop moves forward, the cam or eccentric will descend with the hoop, thus causing it to be cut tapering to form the point. The hoop is then slightly rounded or beaded by one knife on the thick edge, while by the other knife it is trimmed to a given width.

The arm t , as the cam or eccentric N thus rotates, will be limited in its rotation by striking against the projection u . It is returned to its normal position after the passage of the hoop by its weighted shaft.

The knives L L' are detachably adjusted to a shaft, O, hung in supports V V, fastened to the frame A. The shaft O is driven by a belt and pulley suitably connected to the motor from whence the whole machine receives its motion.

The hoop is discharged from the knives L L' by means of the last roller C and its fellow above.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a hoop-planing machine, the eccentric F, arranged to receive the hoop while being planed and hung upon weight-shaft n , having an arm, q , in combination with shaft K, having arms $r r^2$, one of which, r^2 , projects up through a slot, s , in the table or bed B, substantially as and for the purpose set forth.

2. In a hoop-planing machine, the combination, with the knives L L', of the cam or eccentric N, whose shaft is weighted and provided with an arm, t , arranged to strike at different times the projections $u u'$ of bed-frame, substantially as and for the purpose described.

3. In a hoop-planing machine, the combination of the slotted bed B, shaft K, having the arms $r r^2$, cutters or knives, weighted shaft provided with an arm, q , and eccentric feed-roller F, knives L L', and shaft provided with cam feed-roller N, having arm t , and the projections $u u'$ upon the bed-frame, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JACOB DOBBINS.

Witnesses:

WARREN JACKSON,
W. J. ALDRICH.