

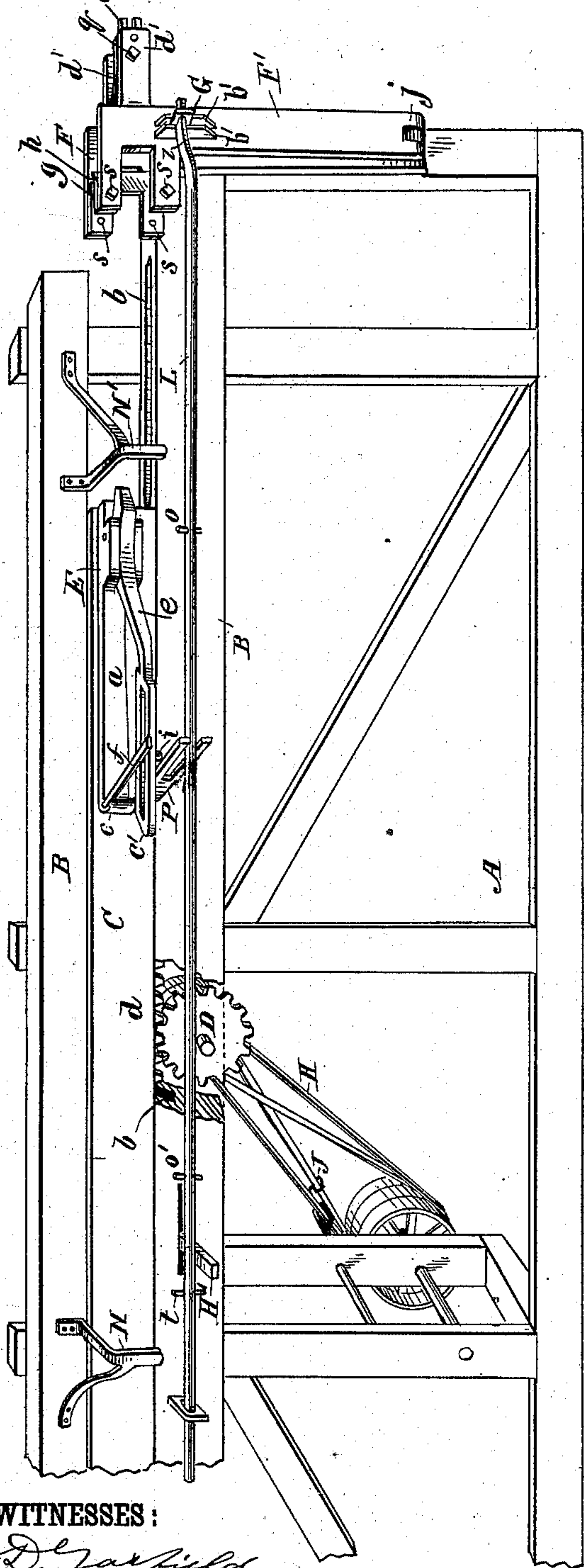
(No Model.)

J. PRINCE.
HOOP SHAVING MACHINE.

No. 274,029.

Patented Mar. 13, 1883.

fig 1



WITNESSES:

J. D. Garfield
C. Bedgwick

fig 3

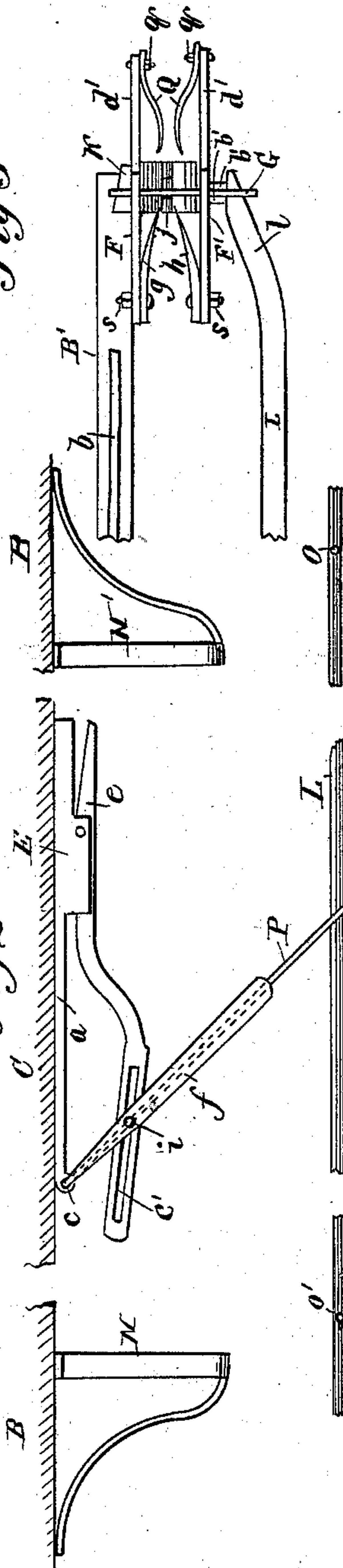
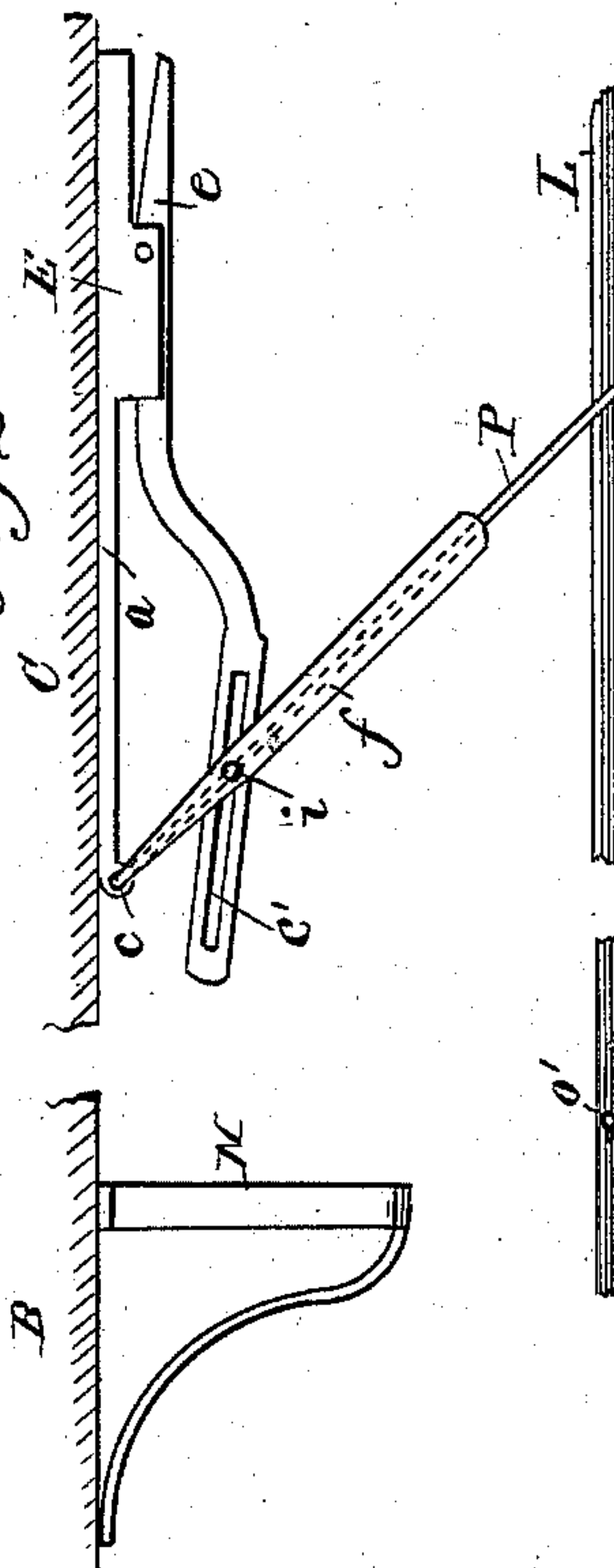


fig 2



INVENTOR:

J. Prince
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UNITED STATES PATENT OFFICE.

JOHN PRINCE, OF WEST RANDOLPH, VERMONT.

HOOP-SHAVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 274,029, dated March 13, 1883.

Application filed June 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN PRINCE, of West Randolph, in the county of Orange and State of Vermont, have invented a new and Improved Hoop-Shaving Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a practical hoop-shaving machine, and one which shall be automatic and rapid in its action.

My improved machine consists of a reciprocating carriage provided with clutch mechanism for grasping the hoops, which is automatically operated by suitable stops on the frame, and of suitable knives, which are also automatically operated, (opened and closed,) for receiving and shaving the hoop by a sliding wedge or cam plate passing through a slotted bar held in the plates which hold the knives. Suitable springs are provided for guiding the hoop as it is drawn between the knives for shaving.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view, partly in section, of my improved hoop-shaving machine.

Fig. 2 is a detailed plan view, showing the clutch and the lever for operating it; and Fig. 3 is a detailed plan view of the forward part of the machine, showing the knives, guide-springs, and the forward end of the cam or wedge plate for operating the knives.

To the frame A of the machine are secured the horizontal parallel beams B B', between which the reciprocating carriage C is held and moved. This carriage is by preference operated by the pinion D, which meshes with the rack d, formed upon or secured to the under side of the carriage. The beam B' is guttered upon the upper side, as shown at b, to receive and clear the rack in the movement of the carriage, as will be understood from Fig. 1.

To the outside of the carriage C is secured the clutch E, which grasps the hoops to be shaved and draws them between the knives g and h, secured to the forward end of the machine. The clutch is composed of the plate a, bolted to the carriage C, the member e, hinged

to the said plate a, as clearly shown in Fig. 2, and the lever f, which is secured to the plate a in the eye c, and operates the member e by means of the stud i thereof moving in the slot c' of the said member, the lever being reciprocated by being brought, as the carriage is reciprocated, alternately in contact with the overhanging arms N and N', secured to the beam B.

The knife g is secured to the upper end of the plate F, which is bolted to the forward end of the machine, and the knife h is secured to the upper end of the plate F', which is hinged at j to the plate F, as shown in Fig. 1. These plates are tied together near their upper ends by means of the bar G, which passes through corresponding passages or slots formed through the plates. The bar G is slotted to receive the wedge K at one end, outside of the plate F, and the forward end of the knife-operating bar L at the other end, outside of the plate F'. The forward end of the knife-operating bar L is made wedge-shaped, as shown at l in Fig. 3, and receives reciprocating movement from the carriage C by means of the bifurcated arm P, secured to the carriage, coming in contact with the pins o o', fixed in the bar, as shown in Fig. 1.

Q Q are the guide-springs, secured to the extensions d' d' of the plates F F', in front of the knives, as shown in Figs. 1 and 3. The hoops are fed to the machine between these springs, and they hold the hoops firmly, while being drawn between the knives, at a point in front of the knives, which keeps the hoops steady and obviates all danger of the hoops being cut off in shaving past short bends in the hoop, and the springs also cause the knives to follow the grain of the wood; and these springs Q Q are adjustable by means of the bolts q q, by which they are secured to the said extensions d' d', and the knives are easily adjustable, by means of the bolts s s, for setting their edges at different angles for giving the hoops greater or less bevel, as desired, and the contiguity of the edges of the knives may be changed, for producing hoops of different thicknesses, by passing the wedge K a greater or less distance through its slot in the bar G.

The pinion D is run by means of the straight

belt H and the crossed belt J, passing over suitable fixed and loose pulleys, to which pulleys the belts are alternately shipped, for giving the reverse motion to the pinion, by means of the shipping-lever H', which is given a backward and forward movement by the pins *o' t*, fixed in the rod L, upon either side of the lever, as will be understood from Fig. 1.

In use, the machine being set in motion, it is only necessary to feed the blanks or hoops to be shaved endwise between the springs Q Q and the edges of the knives into the clutch. This is to be done about the time the carriage reaches the limit of its forward movement, as at this time the knives and springs are open for the reception of the blanks or hoops, the same having been opened by the previous backward movement of the carriage, causing backward movement of the bar L. About the time the carriage reaches the limit of its forward movement the lever *f* strikes the arm N, which causes the clutch to firmly grasp the end of the hoop to be shaved, and at this time the knives and springs are closed upon the hoop, so that upon the reverse or backward movement of the carriage, which now begins by reason of the shipping of the belts, the hoop will be drawn between the knives and shaved. About the time the carriage reaches the limit of its backward movement the lever *f* strikes the arm N', which opens the clutch and releases the hoop. At this time the belts are again shipped and the machine repeats the operation.

In this manner it will be seen that the machine is entirely automatic, requiring only to be fed, and that it may be run at great speed, and that the hoops will be made of even thickness throughout, and that no short bends will be left in the hoops. Besides these advantages, the machine is cheap and simple and not liable to get out of order.

Upon the outside of the plate F' are formed the flanges *b' b'*, between which the plate G is placed, and upon which the lower or inner edge of the plate L bears, as shown in Fig. 1. By this construction the action of the bar L is more direct upon the plate F' than it would be if the bar were made to bear upon the broad surface of the said plate.

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

1. In a hoop-shaving machine, the combination of the plates F F', carrying the knives *g h* and the guide-springs Q Q, the convergent ends of the latter being arranged toward the convergent ends of the knives, the slotted tie-plate G, wedge or key K, and the sliding wedge-shaped bar L, substantially as and for the purpose set forth.

2. In a hoop-shaving machine, the combination, with the bar or plate *a*, attached to the carriage C, member *e*, hinged or pivoted to the bar *a*, and having an elongated slot, *c'*, and the lever *f*, having a stud, *i*, entering the slot of member *e*, of the arms N N', depending in a fixed position in the plane of the movement of the lever *f*, substantially as and for the purpose set forth.

3. In a hoop-shaving machine, the carriage C, provided with the bifurcated arm P, in combination with and adapted to embrace the knife-operating rod L, said rod having stops or projections *o o' t*, the shipper or lever H', and the carriage-operating gear and belts H J, substantially as and for the purpose set forth.

4. The hoop-shaving machine consisting of the knives *g h* and guide-springs Q Q, affixed to the carrying plates or bars F F', hinged or pivoted together at their lower ends, the sliding wedge-shaped bar or rod L, having pins or stops *o o' t*, and connected to the slotted plate G, keyed to the bars F F', the reciprocating carriage C, the automatic clutch mechanism comprising the plate *a*, studded lever *f*, slotted member *e*, and the arms N N', the bifurcated arm P, the shipper or lever H', and the carriage-operating gear and belts H J, substantially as set forth.

5. The knife-carrying plate F and the plate F', hinged thereto, in combination with the slotted bar G, wedge K, and sliding wedge-shaped bar L, substantially as and for the purposes set forth.

6. The plate F', formed with the flanges *b' b'*, in combination with the plate F, slotted bar G, and the knife-operating bar L, substantially as described.

JOHN PRINCE.

Witnesses:

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