

B. J. TAYMAN.

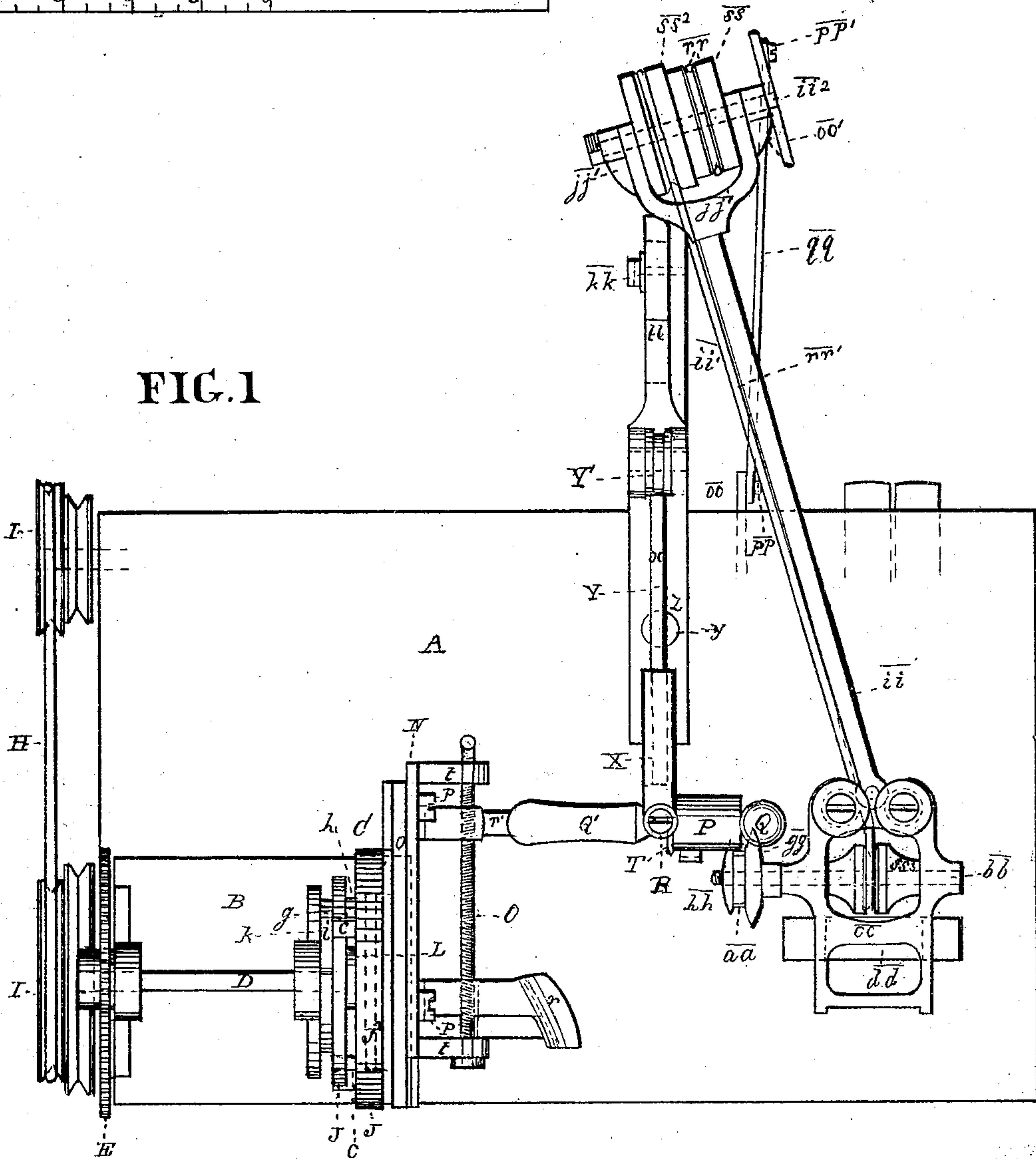
Machines for Trimming Shoe-Soles.

No. 151,806.

Patented June 9, 1874.

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FIG. 1



WITNESSES

Thomas J. Bayley.
Isaac Rindge

INVENTOR

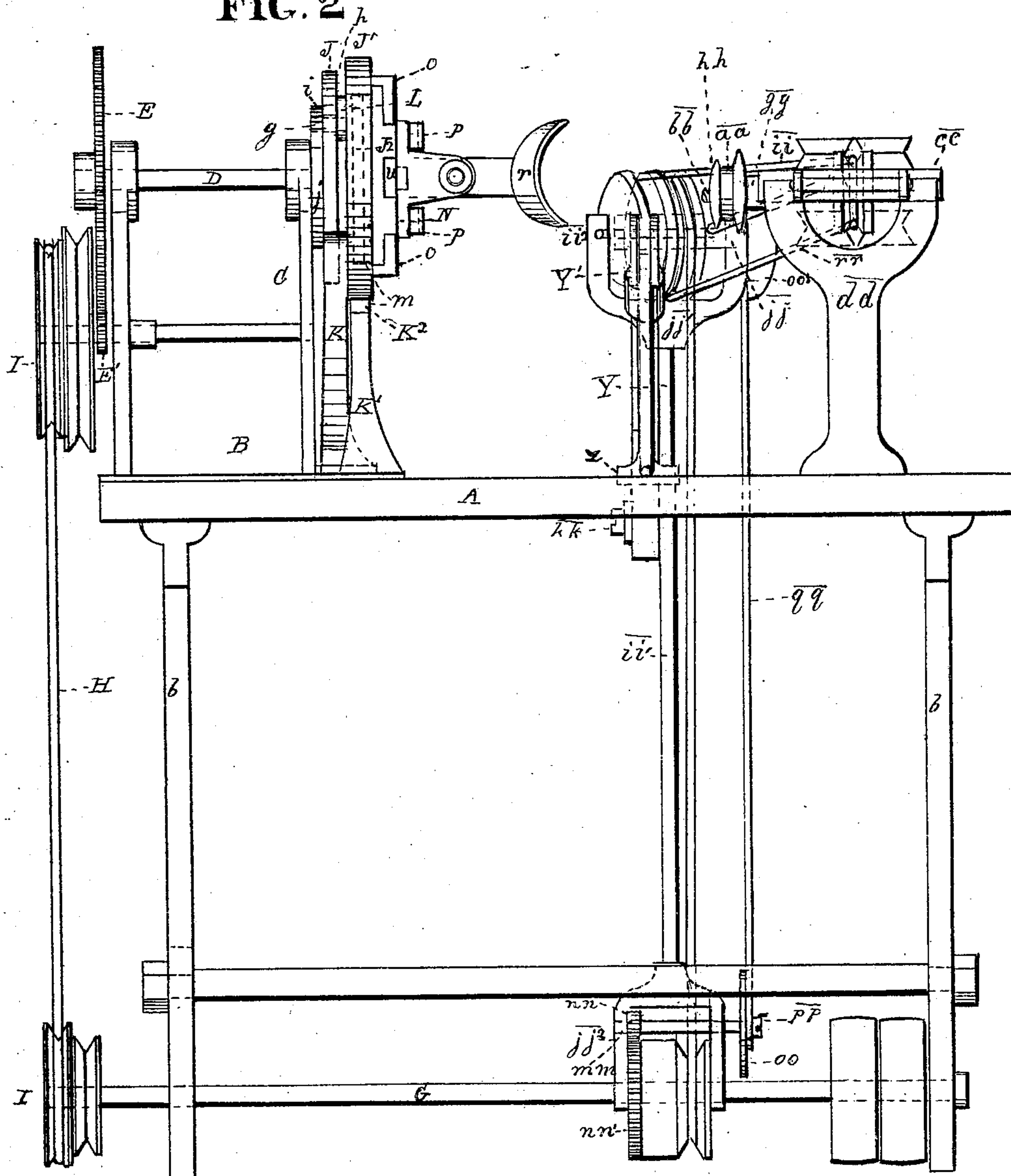
Benjamin J. Tayman
By His Attorney,
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FIG. 2



WITNESSES

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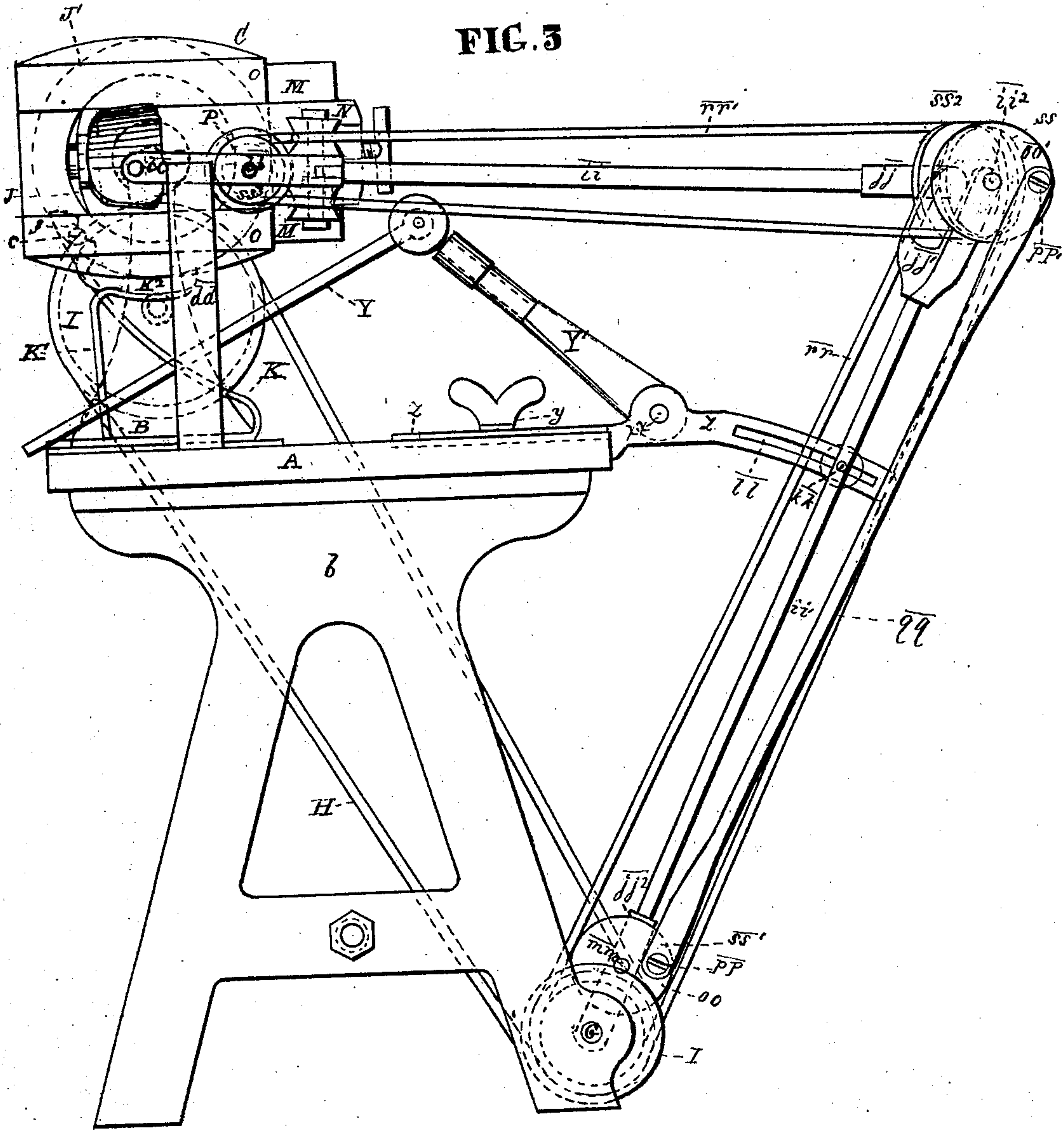
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FIG. 3



WITNESSES

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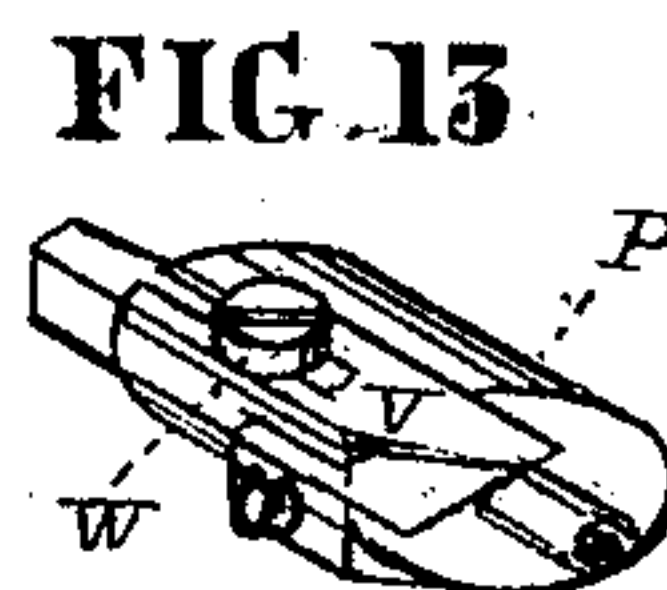
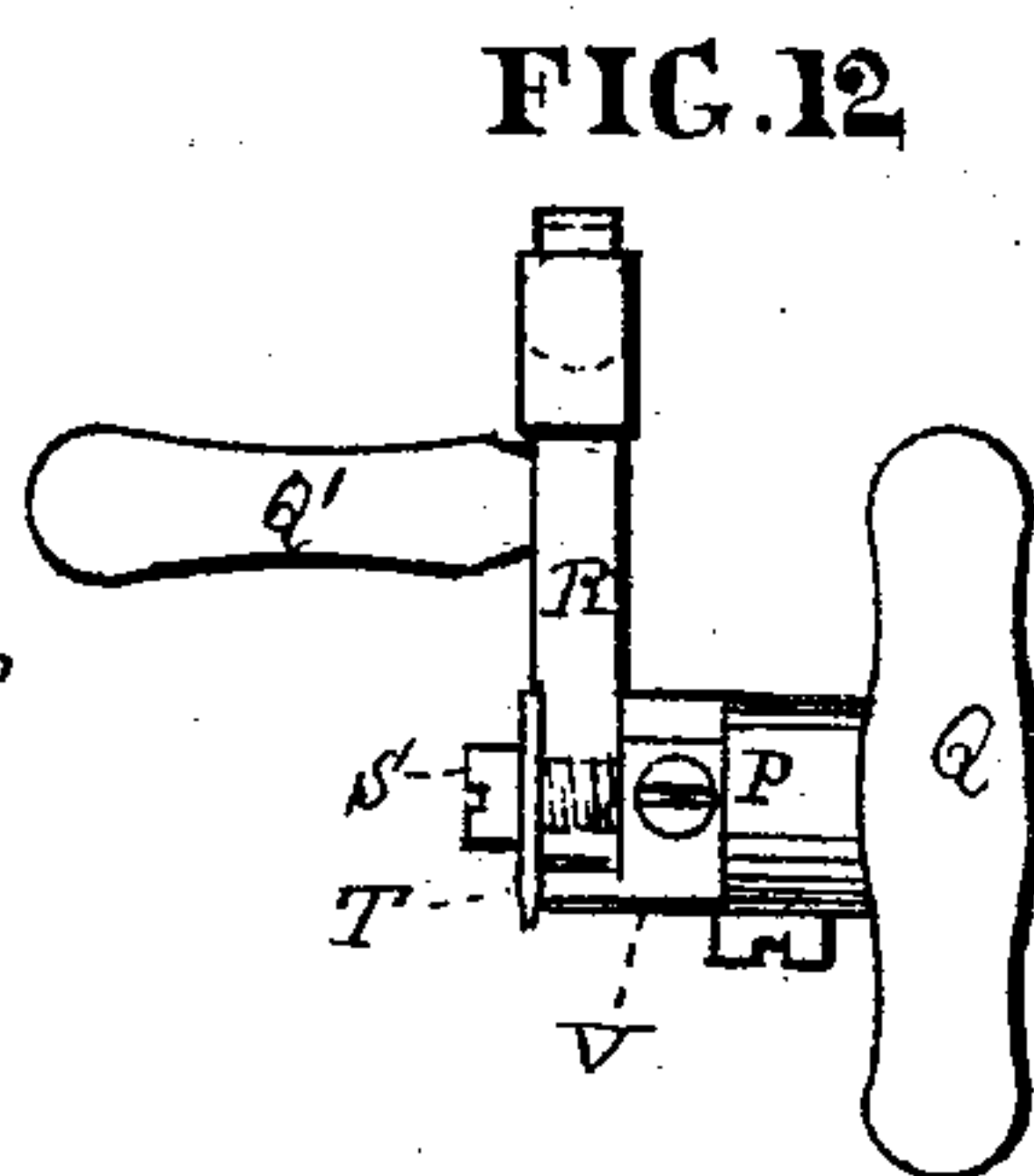
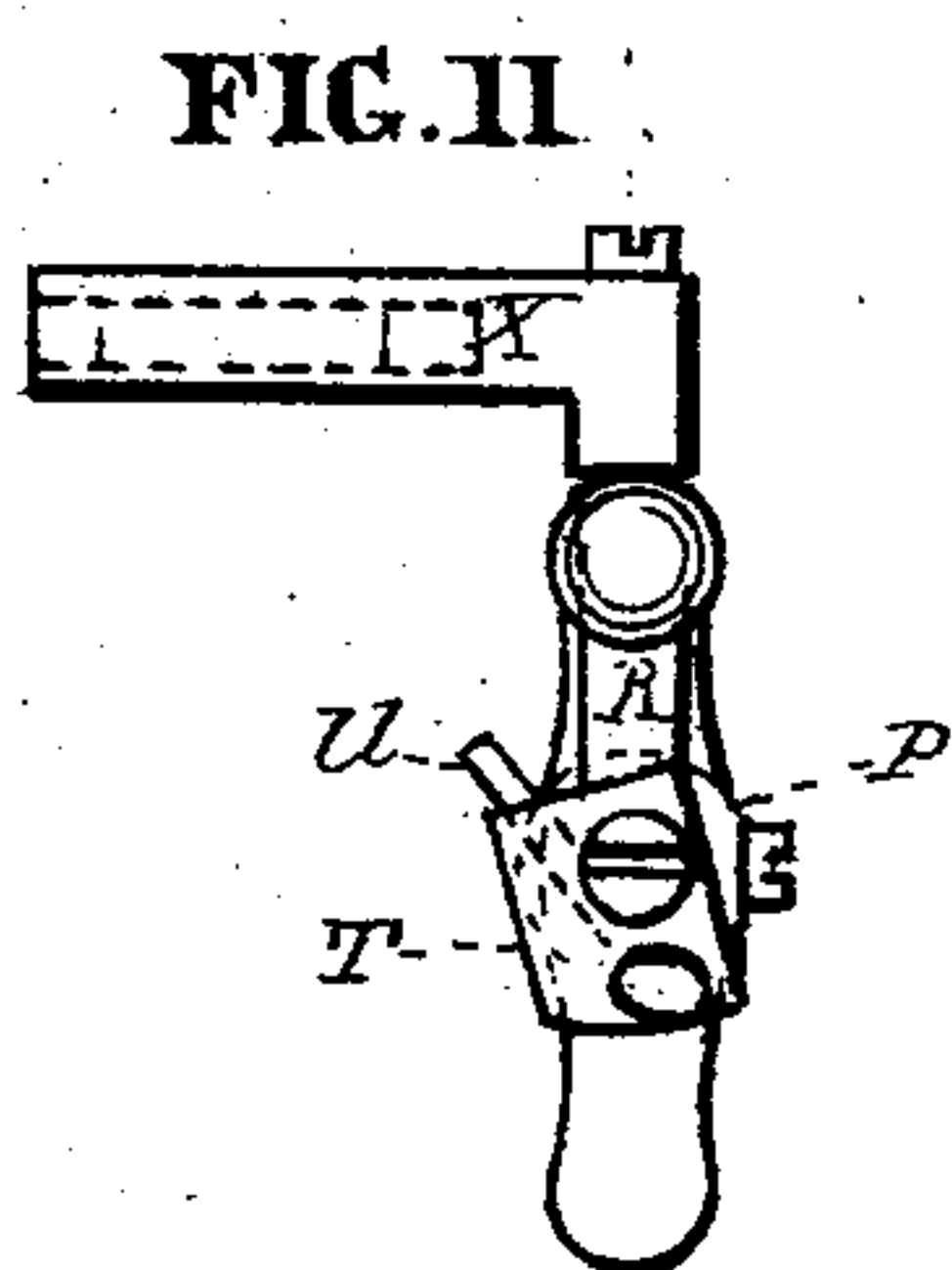
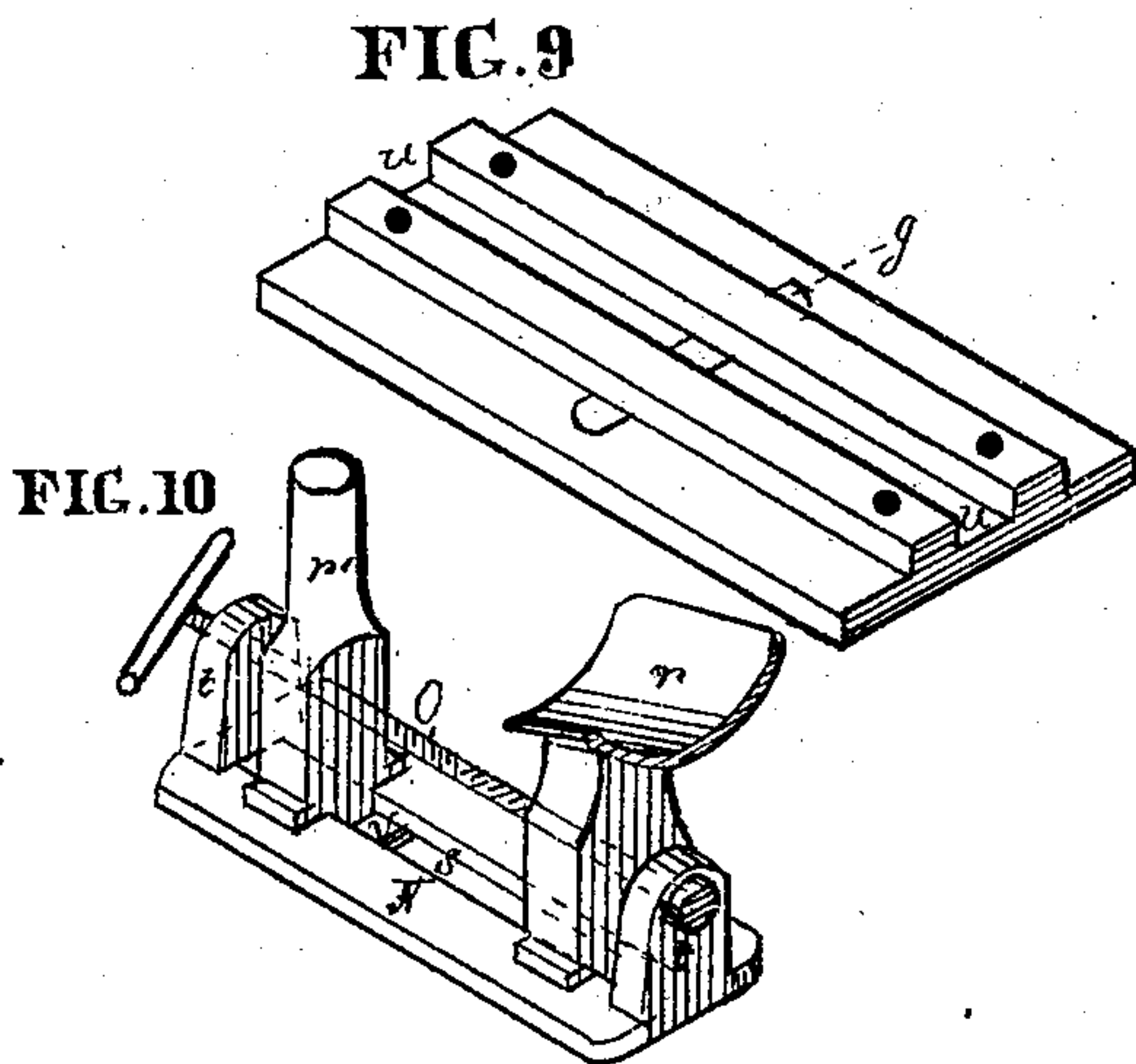
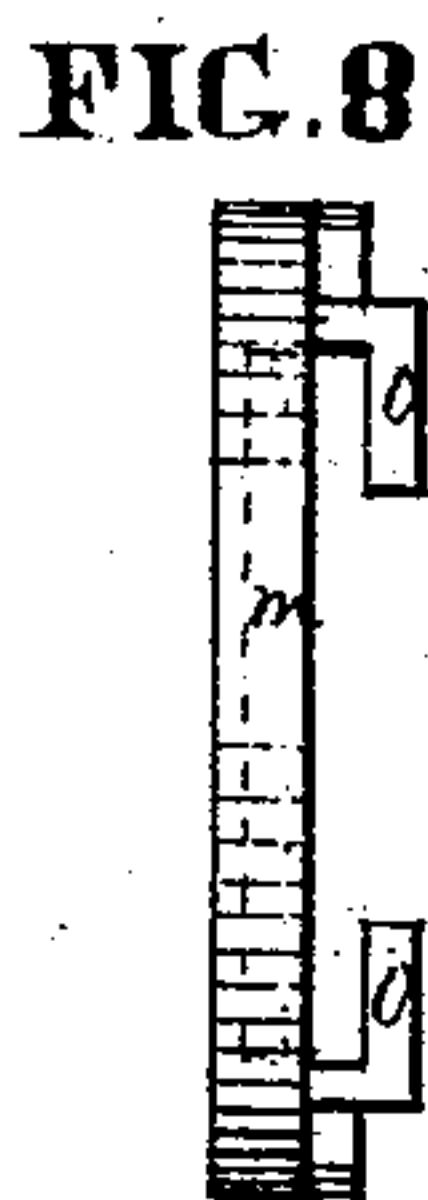
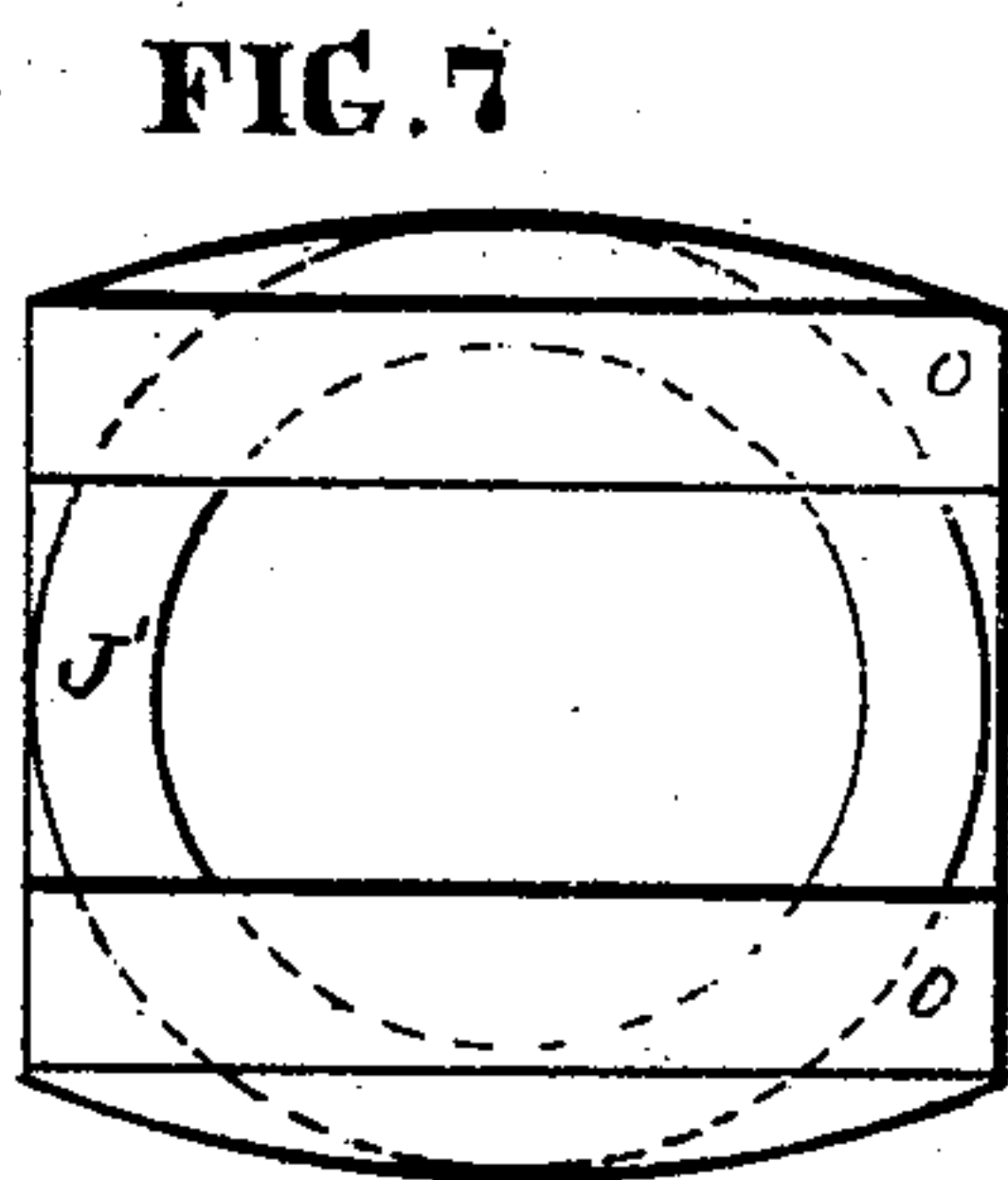
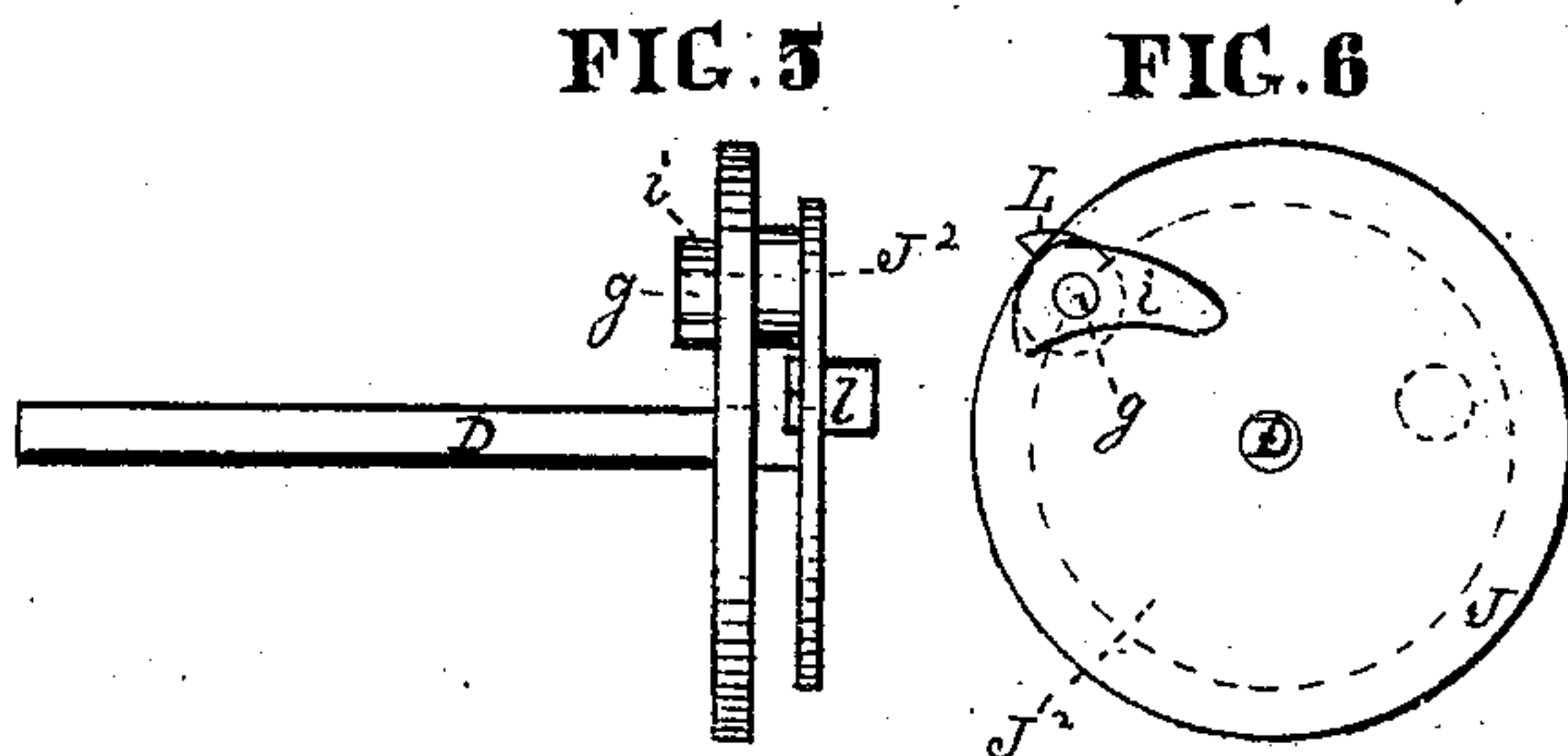
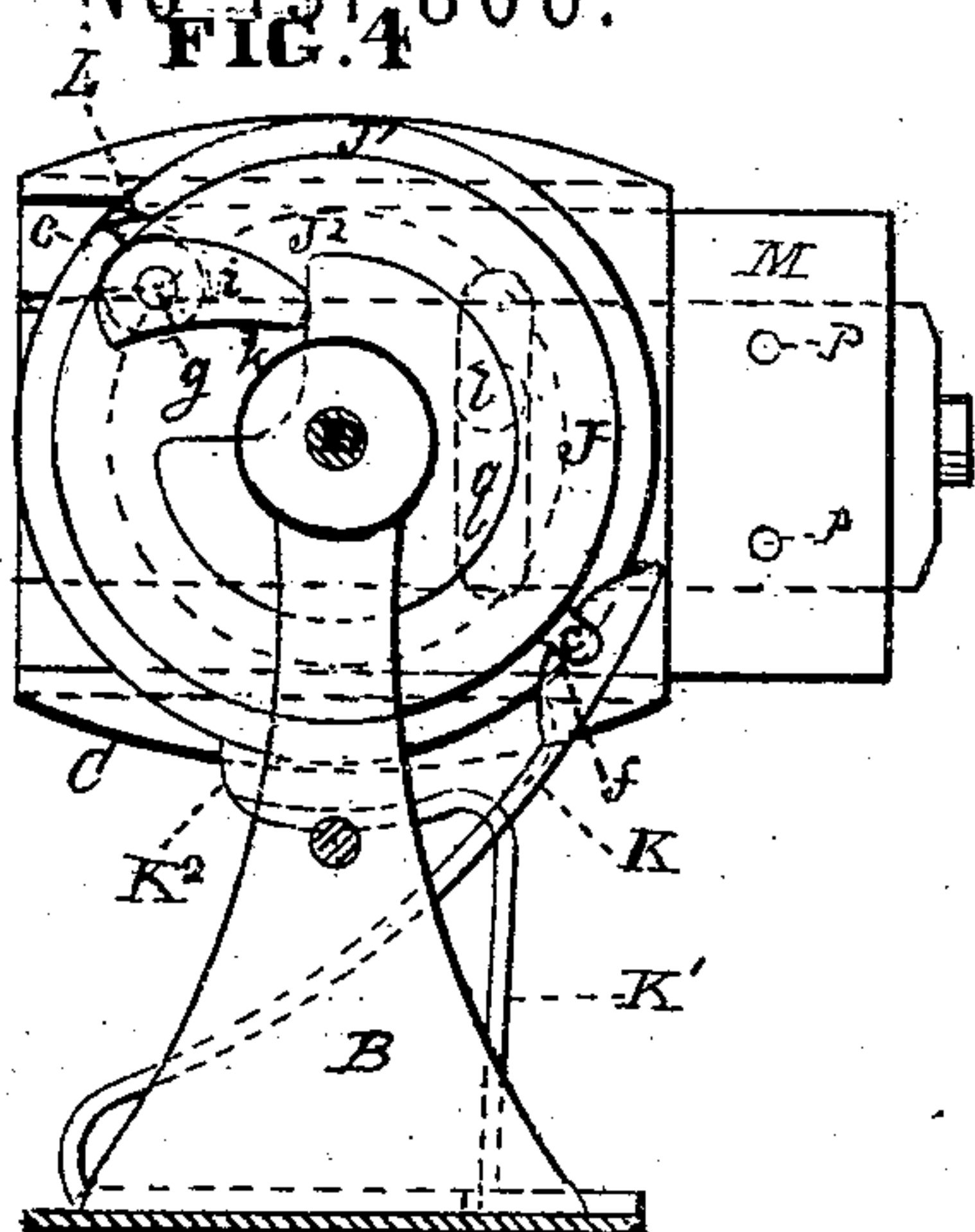
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WITNESSES
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UNITED STATES PATENT OFFICE.

BENJAMIN J. TAYMAN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR TRIMMING SHOE-SOLES.

Specification forming part of Letters Patent No. **151,806**, dated June 9, 1874; application filed September 28, 1872.

To all whom it may concern:

Be it known that I, BENJAMIN J. TAYMAN, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Machines for Trimming Shoe Soles and Welts, and edge-setting the same, of which the following is a specification:

My invention relates to a jack-carriage which has alternately a sliding and semi-rotating movement, produced by suitable mechanism, in such a manner that, in the semi-rotating movement, the heel and toe of a boot or shoe are brought into position to be operated upon by the trimming or burnishing tool, and, in the alternate sliding movements, the shank and fore parts are also brought to the tool, so that the whole circumference of the sole is presented to the tool while the carriage moves in an unvarying vertical plane. The invention further relates to the combination, with said carriage, of a jointed tool-holder, by means of which the operator is enabled so to guide the tool that it shall be caused to operate upon the edge of the sole throughout all the varying curvatures and bevels of said edge. The invention further relates to giving a reversible rotatory movement to the burnisher by means of crank-arms of unequal length on two shafts, one of which is intermediate between the burnisher, to which it is geared, and the other shaft, which has a continuous revolution.

Figure 1 is a plan view of the improved machine. Fig. 2, Sheet No. 2, is a front elevation of the same, the cutter-head P being left off. Fig. 3, Sheet No. 3, is an end view of the same. Fig. 4, Sheet No. 4, is an end elevation, partly in section, of the head B, provided with the jack C, by which the shoe is held for the trimming and burnishing operations. Figs. 5 and 6 are views at right angles to each other of the shaft D and disks J and J¹. Figs. 7 and 8 are like views of the disk J¹. Fig. 9 is an isometrical view of the sliding plate M. Fig. 10 is a like view of the carrier N. Figs. 11 and 12 are views at right angles to each other of the cutter-head P, and parts attached. Fig. 13 is a perspective view of the cutter-head, with its connections detached therefrom.

Like letters in all the figures indicate the same parts.

The several parts of the machine are supported by the table A, having ends *b b*. At one end of the table is a stationary head, B, which is provided with a jack, C, connected with the inner end of the revolving shaft D, which has a slow movement imparted to it by means of the spur-wheel E on its outer end gearing into the pinion E' on the shaft F, the said shaft being connected with the driving-shaft G by means of the belt H and pulleys I I. The several parts of the jack are shown in detail in figures from 4 to 10, inclusive. J is a disk, permanently connected with the revolving shaft D near the inner end, and J¹ a disk which has a loose fit on the same, to admit of the shaft turning freely in it at times when it remains in a state of rest, for the purpose hereinafter described, the said disk being provided with two pins, *c* and *c*, which fall alternately into the notch *f* of the spring-catch K during the revolutions of the shaft D, whereby the disk is held in a state of rest until the cam L, which is attached to the inner end of the pin *g* of the disk J, and which moves freely in the space *h* between the disks J and J¹, approaches the spring, and bears against the notched end and disconnects it from the pin *c* then in connection with it, the said cam being prevented turning by means of the inner edge of the arm *i* on the outer end of the pin resting against the concentric part of the plate *j* of the head B, and the cam, by thus bearing against the pin, causes the disk J¹ to revolve, in connection with the disk J, one-half around, and until the said arm *i* in the forward motion of the disk falls into the depression *k* of the plate *j*, as seen in Fig. 4, allowing the pin *g* to turn freely and disengage the cam from the pin *c*. Then the other pin *c* comes into connection with the notch *f* of the spring-catch K, whereby the disk J¹ is again held in a state of rest until the cam L comes around and releases the spring-catch from the pin. During the resting positions of the disk J¹ the crank-pin *l* of the shaft D, which projects from the disk J² in the recess *m* of the disk J¹, and which has a free movement in the cross-slot *n* of the sliding plate M, connected with the ways *o o* of the disk, having passed its dead-centers, carries the said plate forward, and thus gives a sliding movement to the

plate. N is a carrier for the shoes, and is made fast to the plate by means of the screws *p*, so as to have a revolving movement imparted to it to present the toe and heel of the shoe to the center, and a reciprocating movement to present the intermediate parts to the same. The throw of the carrier is regulated to suit different lengths of shoes by making the crank-pin *l* adjustable by means of the slot *q* in the disk *J*², the pin being fastened in its adjusted position by means of the nut *q'*. The carrier N is provided with a toe-rest, *r*², and a heel-pin, *r*³, which are movable in the longitudinal slot *s*, and adjusted by means of a right-and-left screw, O. The ends of the screw are connected with the projections *t t* of the carrier, the longitudinal groove *u* of the plate M guiding the sliding heads *v v* on the inner ends of the pieces *r*² and *r*³, the toe and heel rests being thus thrown in or out from the center of the carrier by the operation of the screw in adaptation to the different lengths of shoes. K¹ is a spring, which is provided with a shoe, K², that binds on the periphery of the disk *J*¹, to steady it as it is borne forward, and as it comes to a state of rest. P is a cutter-head. (Shown in Figs. 1, 11, 12, and 13.) The head has a cross-handle, Q, on the center stem *w*, for manipulating it, in combination with the handle Q', that projects from the jointed arm R, hung on the outer end of the stem, and confined by means of a screw, S, which also confines the guard T and welt-cutter U. V is the knife for trimming the edges of the soles, held in place by means of the screw W, which passes through its slotted end, and allows it to be set up against the guard as its angle edge wears away, the end being ground off, as occasion requires, to admit of the setting up. There is a socket, X, which is jointed at one end to the outer end of the arm R, and also connects with the front end of the rod Y, (seen in Figs. 1, 2, and 3,) so as to be capable of sliding backward or forward thereon in the adjustment of the cutter-head to the work. The said rod Y is jointed to the rod Y', and the latter, at its rear end, to the slotted rest Z, the rod Y' turning on the pin *x x*, to admit of the free forward movement of the cutter-head. The vertical slot *x*, through which the screw *y* passes, and confines the bar to the table A, admits of the bar being set backward or forward in accommodating the cutter to the right position of the shoe. With the rear end of the frame *c c* is connected one end of the rod *i i*, the other end of which is provided with a yoke, *j j*, with which is connected the yoke *j j*¹ on the upper end of the rod *i i*¹, the yokes being connected by means of the rod *i i*². The rod *i i*¹ is provided, at its lower end, with the yoke *j j*², that connects with the driving-shaft G. The rod is supported by means of the curved extension of the bar Z and the screw-bolt *k k*, which passes through the slot *l l* of the bar, for fastening the rod in its adjusted position, either backward or forward. The

said yoke *j j*² is provided with a revolving shaft, *m m*, on which is a pinion, *n n*, that gears into the wheel *n n'* on the driving-shaft G. On one end of the shaft *m m* is a disk, *o o*, and on one end of the rod *i i*² there is a similar disk, *o o'*. A crank-pin, *p p*, projects from the disk *o o*, and a like pin, *p p'*, from the disk *o o'*, but at a greater distance from the center of motion than that of the other disk. The rod *q q* is connected with the two pins. Then, by the revolutions of the driving-shaft G, the disk *o o* is caused to make successive revolutions, while the disk *o o'*, in consequence of the crank-pin being farther from the center of motion, makes only a partial revolution, and, consequently, has an alternately reverse movement. There is a belt, *r r*, which passes over the pulley *s s* on the rod *i i*², and the pulley *s s*¹ on the shaft *m m*; and a belt, *r r'*, is passed over the pulley *s s*² and the pulley *s s*³ on the burnisher-shaft *b b*. The former belt is dispensed with except when continuous rotary cutters are used instead of the ones above described. By the use of the latter belt, a reversible rotary motion is transferred from the rod *i i*² to the burnisher *a a*, whereby the latter is caused to perform its work in a similar manner to that of a hand-burnisher.

During the burnishing operation, the cutter-head may be removed from the machine, as in Figs. 2 and 3, and when the cutters are being used the connecting-shaft *q q* may also be removed.

I claim as my invention—

1. In machinery for trimming and burnishing the edges of boot and shoe soles, a jointed tool-carrier having the capacity to follow all the varying curvatures and bevels of the sole-edge, in combination with a jack and carriage having alternate semi-rotary and sliding movements, substantially as set forth.

2. The combination of a jack-carriage with the rotary toothed disk or wheel E, for imparting, through intermediate locking and unlocking devices, semi-rotary and sliding movements to said carriage and its jack, the said disk or wheel being arranged on the shaft D, which is the axis of rotation of said carriage, substantially as shown and described.

3. The combination of the sliding plate M, carrier N, shaft D, gear-wheel E, disks J and J¹, springs K and K¹, and brake-shoe K², together forming mechanism for giving the jack C its required semi-rotary and sliding movement, substantially as set forth.

4. The combination of the shaft *m m*, rod *i i*², disks *o o* and *o o'*, crank-pins *p p* and *p p'*, and connecting-rods *q q*, and intermediate pulleys *s s*² and *s s*³, all for the purpose of giving a reversible rotary motion to the burnisher *a a*, substantially as set forth.

BENJAMIN J. TAYMAN.

Witnesses:

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