

EDWARD TYRRELL.

Improvement in Machines for Labeling Round Boxes.

No. 115,789.

Patented June 6, 1871.

Fig. 1.

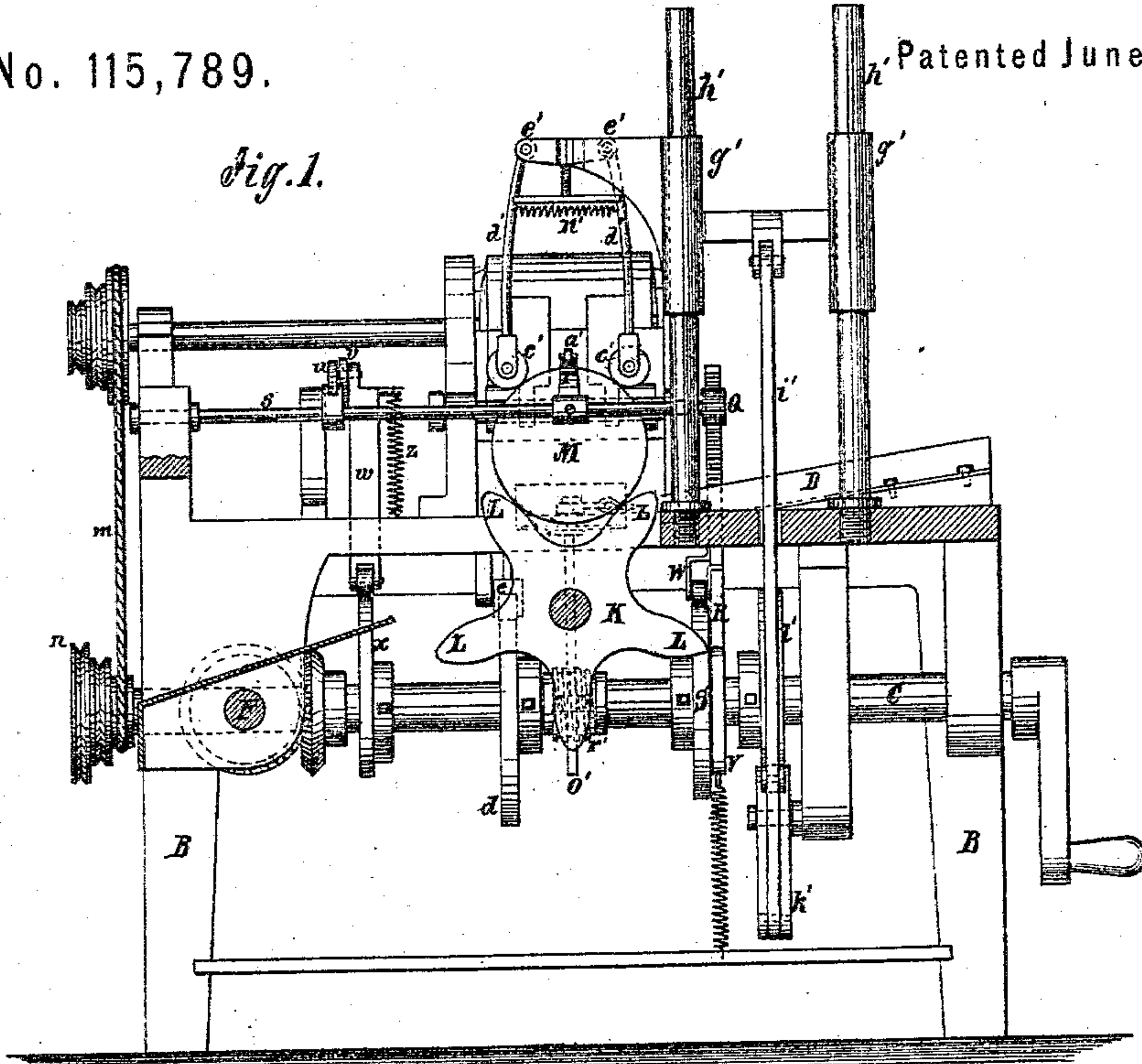
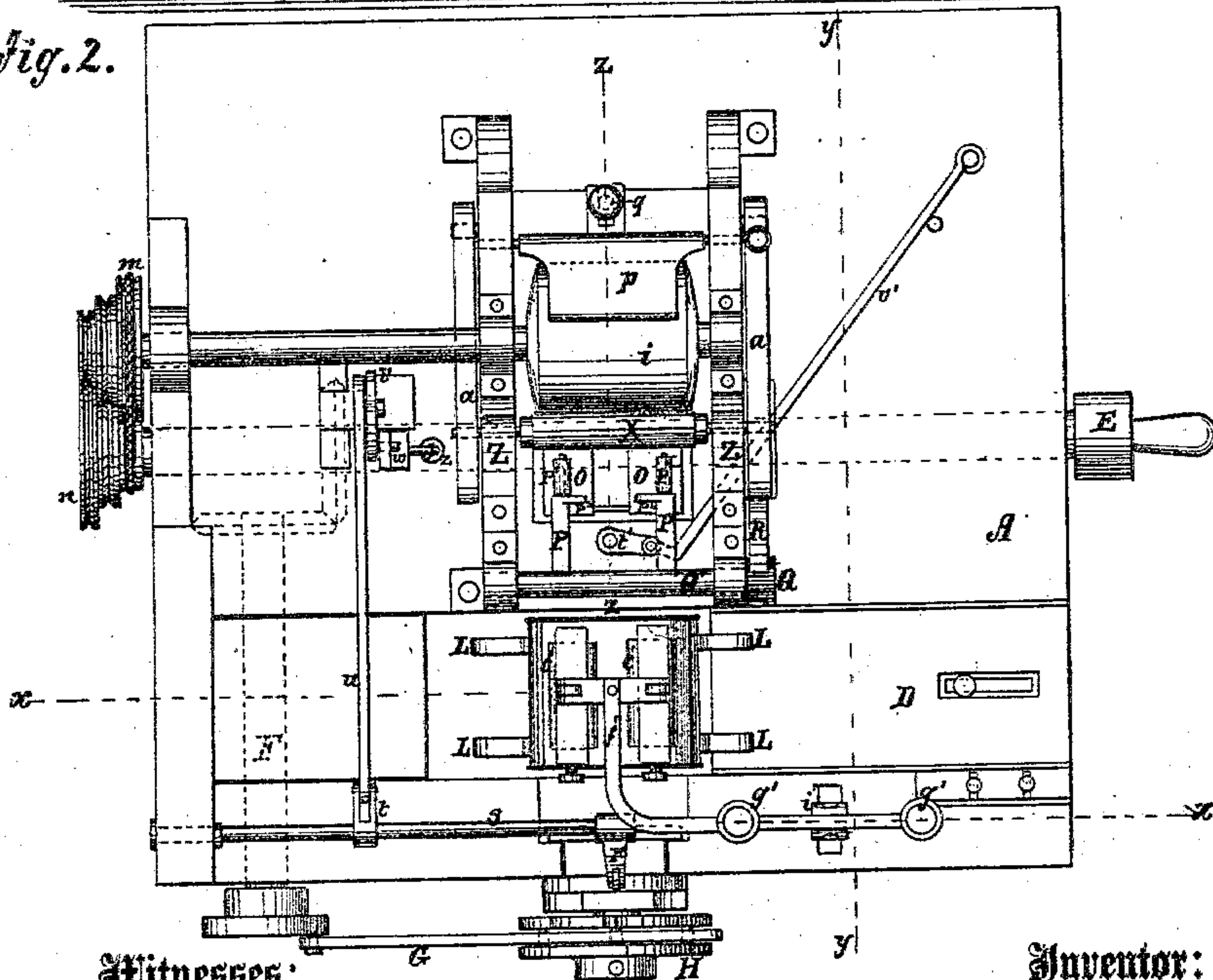


Fig. 2.



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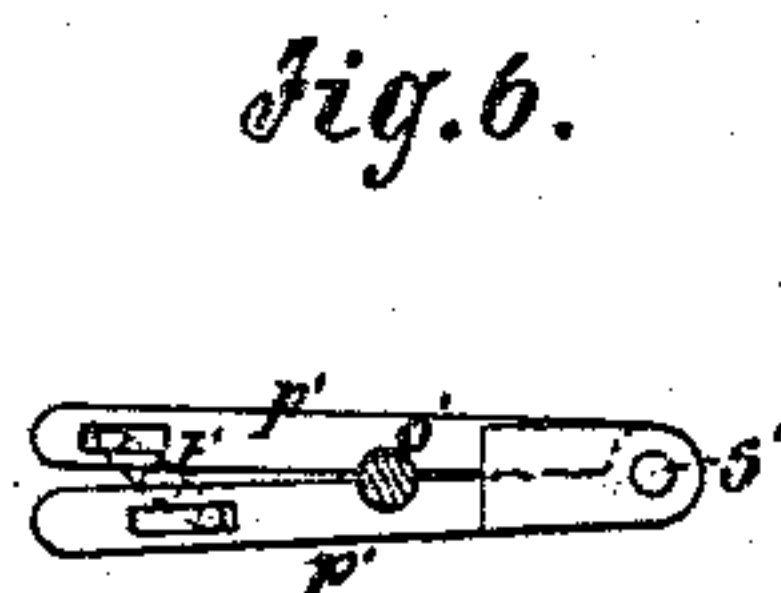
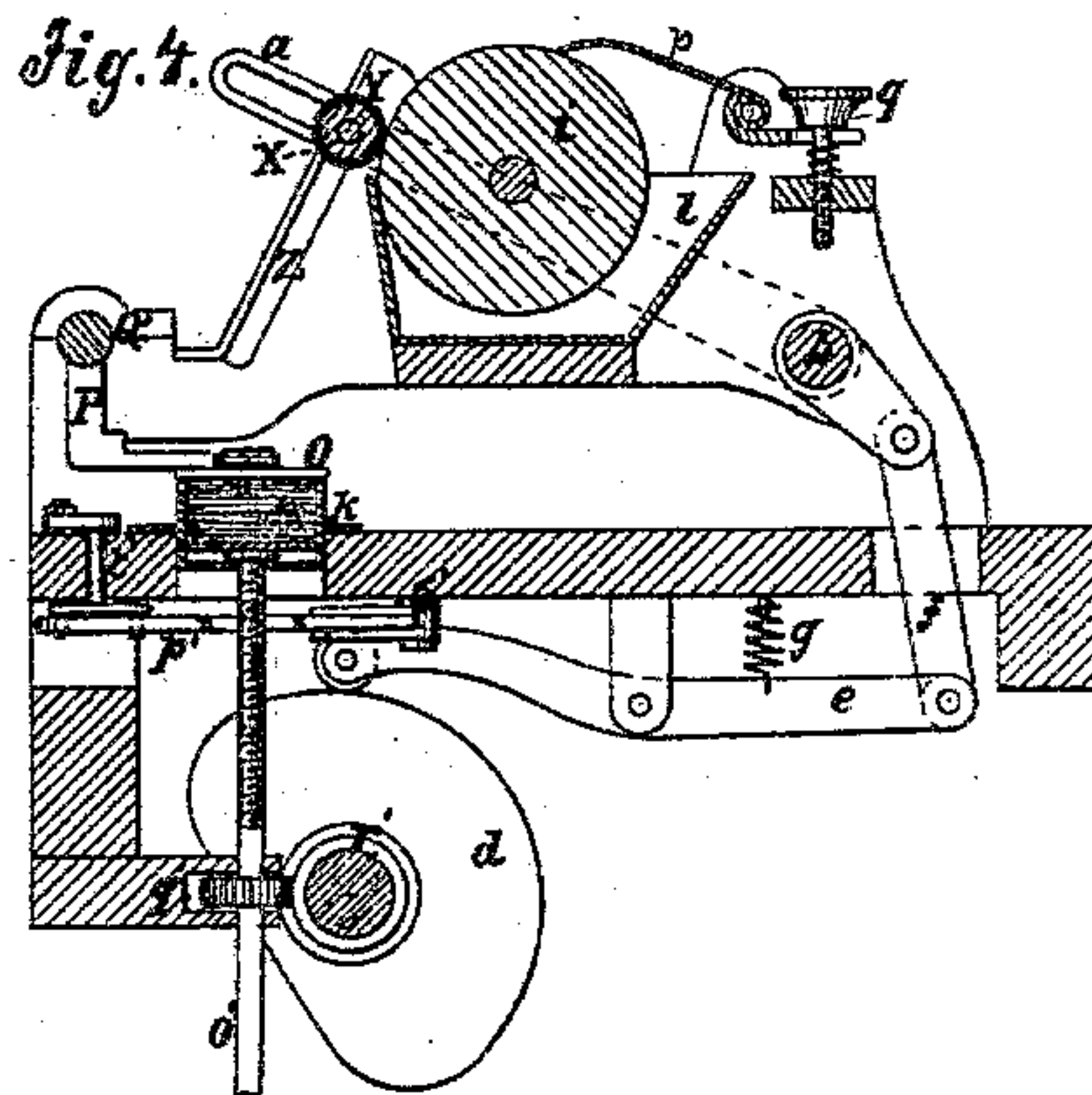
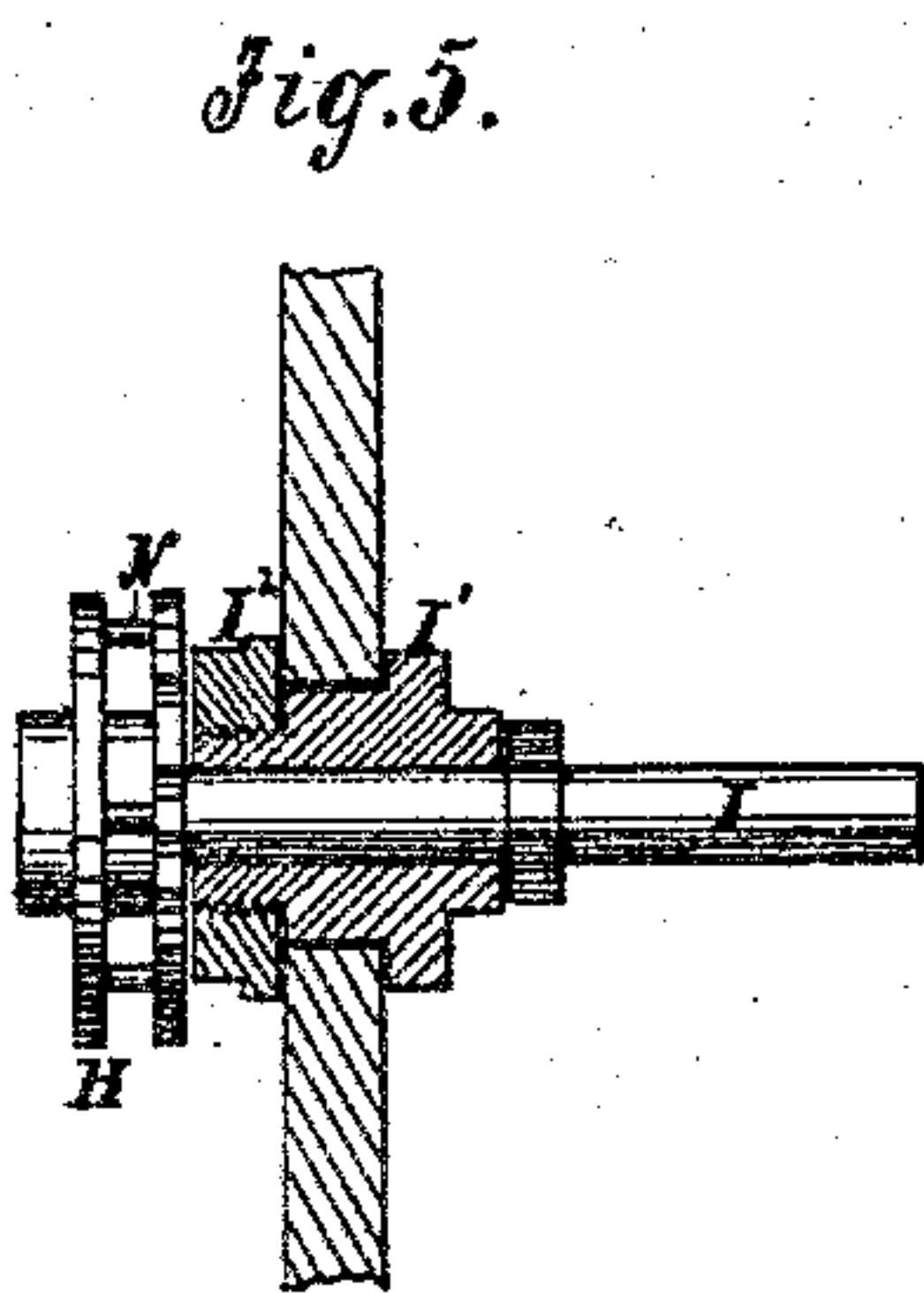
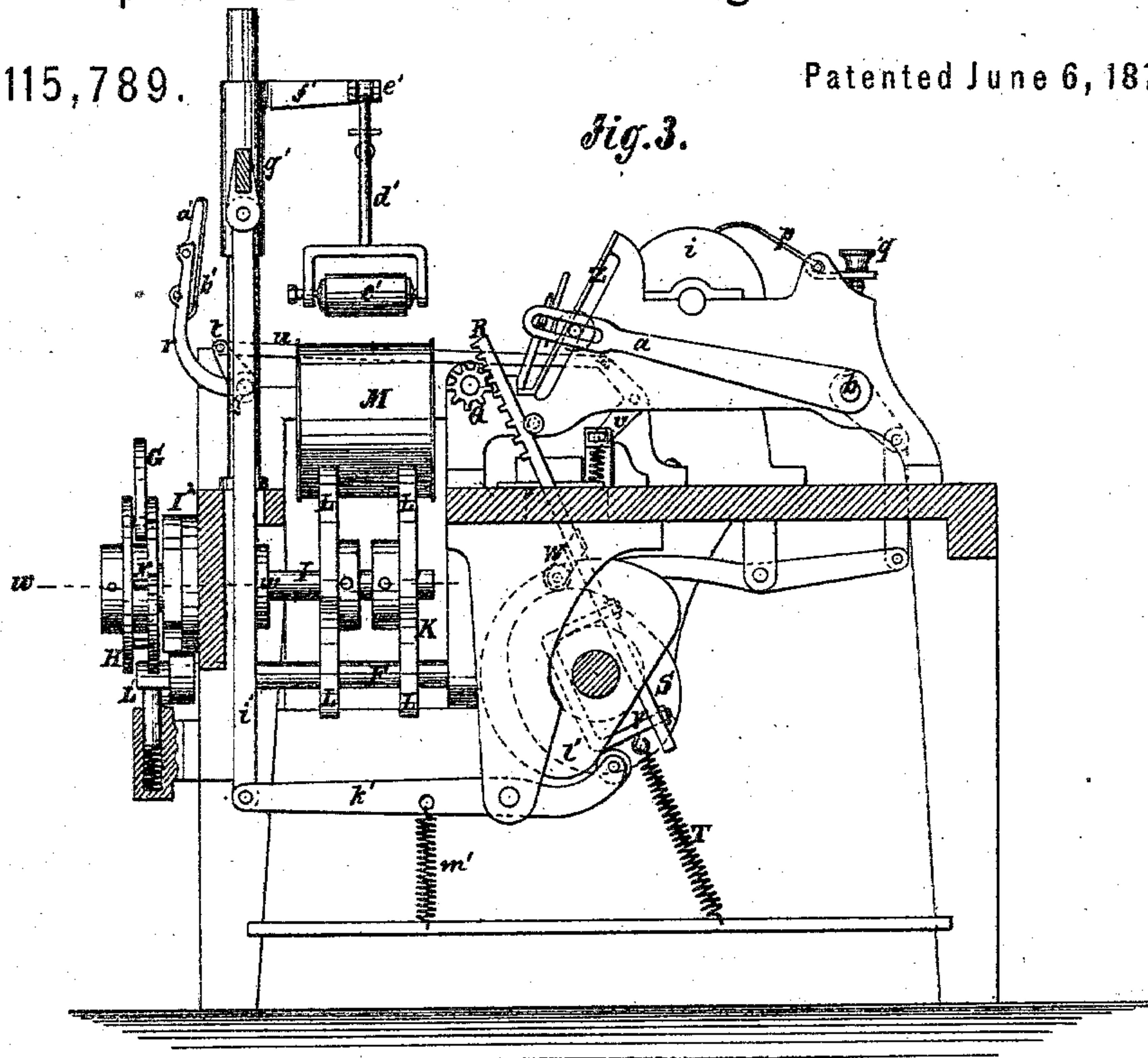
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# UNITED STATES PATENT OFFICE.

EDWARD TYRRELL, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN MACHINES FOR LABELING ROUND BOXES.

Specification forming part of Letters Patent No. 115,789, dated June 6, 1871.

*To all whom it may concern:*

Be it known that I, EDWARD TYRRELL, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Labeling-Machine; 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 drawing forming part of this specification.

My invention relates to machinery for pasting labels upon boxes, and consists in the devices hereinafter fully described and subsequently pointed out in the claim.

Figure 1 is a sectional elevation of my improved machine taken on the line *x x* of Fig. 2. Fig. 2 is a plan view. Fig. 3 is a section on the line *y y* of Fig. 2. Fig. 4 is a section on the line *z z*. Fig. 5 is a section on the line *w w* of Fig. 3; and Fig. 6 is a detail view of a part of the apparatus for feeding the labels to the pasting and presenting apparatus.

Similar letters of reference indicate corresponding parts.

A is a table of any suitable kind, supported on legs B, constituting a frame, whereon the operative parts are mounted, and the descending chute D, into which the boxes are placed for rolling along the carrier. This chute is attached adjustably for shifting, as may be required by the shifting of the carrier. C is the main driving-shaft, suspended below the table, and having a driving-wheel or crank, E, applied to one end. Near the other end it gears with the shaft F, placed at right angles to it. This shaft works a pulling-pawl, G, which, acting upon the wheel H, turns the carrier-shaft I intermittingly. K represents a pair of star-shaped plates mounted on said shaft so as to revolve in front of the lower end of the chute D and take therefrom, between each of the points L, a box, M, from the chute, carrying it to a position above the shaft, and hold it there during the cessation of the movement, while the label is applied; then, by the next movement, discharge the box, take another one from the spout, and carry it to the said position to be labeled. L' is a spring-stop for engaging in notches in the periphery of wheel H to hold it in the right position. These carriers have as many points L and spaces between for taking and holding the boxes as the

carrier is to have movements and stops in one revolution, and the wheel H has as many pins N for the pawl G to engage as there are spaces and points in the plates K of the carrier. The shaft I is mounted in a vertically-adjustable box, I, for the purpose of adjusting it higher or lower for properly holding boxes of different sizes. The box is clamped against the frame by nut I<sup>2</sup> to hold it in position. The pasting and presenting apparatus consists of a pair of plates, O, each attached by an arm, P, to a horizontal rock-shaft, O', suitably arranged in front of the inner end of the box when in the position to be labeled, and perpendicular to it, and gearing by a pinion, Q, with a toothed rack-bar, R, extending downward to the shaft C, on which is a cam, S, for lifting it, said cam acting on a toe, W, having a friction-roller in it, and said bar has a spring, T, for pulling it back. It is guided by a yoke, V, working on the shaft, but it may be guided in any suitable way. The plates are pivoted to the ends of the arms P, as indicated at P<sup>1</sup>, for allowing them to be laterally self-adjusting when falling on the labels; also for allowing them to tilt, to facilitate the releasing of the labels; and they have springs P<sup>2</sup>, for throwing them back after the label has been taken off. These pasting-plates are drawn down upon a composition pasting-roller, X, having a covering of elastic India rubber, Y, which is applied for making it more elastic than the composition would be alone; which roller, passing through the inclined slotted guides *z*, one at each end, and mounted in the slotted ends of arms *a* of a rock-shaft, *b*, which is worked by the cam *d*, lever *e*, link *f*, and spring *g*, is forced down the said inclined guides by the spring *g*, when the high part of cam *d* passes beyond the lever *e*, which takes place immediately after the label has been presented to the box; and as soon as this takes place the cam S allows spring T to draw the bar R down, which turns rock-shaft O' quickly in the direction to swing plates O over against the pasting-roller X. As soon as this is accomplished the cam *d* throws lever *e* up again, thereby raising the pasting-roller X, so that the plates escape from it and fall flat upon the uppermost label of a pack, *h*, contained in the feeding-box *k*, slowly rising up through the table; and the said roller X comes in con-



tact with the pasting-cylinder *i*, working in the trough *l* containing the paste, said cylinder being worked by a belt, *m*, working over a pulley, *n*, on the driving-shaft *c*. Said pasting-cylinder is provided with the scraper *p* for limiting the amount carried over to the roller *x*, and the scraper is adjusted by a temper-screw, *q*. As soon as the plates *O* have fallen upon the label they are raised again by the cam *s* acting on the toe *W*, and carried over and suspended just above the box in the carrier, carrying the label which adheres to them, being on the sides which are uppermost, in this position. The clamping-arm *r* now comes down above the label between the plates *O*, and presses it upon the top of the box, holding it there while the ends adhering to the plates are disengaged by the returning of the said plates, caused by the spring *g*. It is at this time that the plates are tilted on their pivots against the springs for the release of the labels, as above stated. This clamping-arm *r* is mounted on the rock-shafts, which is worked by the crank *t*, connecting-rod *u*, bell-crank *v*, lifter *w*, cam *x*; spring *z* being moved down upon the label by the cam, and raised up again by the spring, when the high part of the cam passes beyond the lifter; but it is held down upon the label until the smoothing-rollers, which will be presently described, come into action. This clamping-arm has a finger, *a'*, pivoted to the end for adjusting to the surface of the box at the time it acts on the label so as to bear alike all the way across it; and the finger is provided with a cushion of elastic substance, *b'*, to prevent striking a hard blow and macerating or cutting the paper. The smoothing apparatus consists of the small rollers *c'*, suspended over the box *M*, side by side, parallel with it, by rods *d'*, hinged at *e'* to the arm *f'*, projecting from the slides *g'*, working vertically on the vertical rods *h'*, and operated by the rod *i'*, lever *k'*, cam *l'*, and spring *m'*, being raised by the cam and depressed by the spring.

The rods *d'* are connected by a spring, *n'*, which causes them to press snugly against the box as they are brought down upon it and the label held there by the clamp, one roller coming in contact with the label on each side of the clamp and close to it, and then rolling down each way, spreading and smoothing the label thereon, and pressing it so as to cause the paste to adhere to the box. This operation takes place when the pasting and presenting plates are taking another label, the said rollers coming down immediately after the said plates have gone back out of the way. As soon as the said rollers have performed their work they rise out of the way, and the carrier is set in motion by the pawl *G* and moved one stage, discharging the labeled box

and bringing another into the position for labeling just in time to receive the label from the plates *O* and clamp *r*.

These operations follow in quick succession, accomplishing the work rapidly and efficiently. The feeding-box containing the labels is slowly lifted by the screw working in the divided nut *p'*, and turned by the wheel *q'* and worm *r'*, the latter being on the shaft *C*. The divided nut is employed to be opened and arrest the feed from time to time, which is geared slightly faster than is required for being continuous in order to simplify the regulation of it, which may be done by hand, occasionally, as the pile diminishes.

For so opening the two parts of the nut and closing them again, they are hinged at one end, as shown at *s'*, are connected to the T-headed crank-shaft *t'*, and the latter to a handle, *w'*, lying on the table, which, being moved one way, will close the nut upon the screw and cause it to be raised, and being moved the other way will disengage it and let the lifting of the rod stop. The box is prevented from falling back by friction, or by any other means.

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

1. The clamping-arm *r*, having pivoted finger *a'* on the end thereof, for the purpose specified.
2. The two rolls *c' c'* and spring *n'*, when attached to the vertically-reciprocating frame by hinged rods *d' d'*, and arranged immediately over the box-carrier, as and for the purpose specified.
3. The smoothing-rolls *c' c'*, held toward each other by yielding pressure, combined with a clamp, *r a'*, which holds the box centrally until the said rolls straddle it, in the manner specified.
4. The rod *v'* and T-headed crank-shaft *t'*, arranged as described, to open and close the divided nut, as set forth.
5. Pasting-plates *O*, having lateral play against a yielding support on their respective arms, for the purpose specified.
6. The box-carrier and label-pasting and carrying-plates *O O*, combined to operate together in the manner specified.
7. The label-pasting and carrying plates and clamps *r*, combined to operate together in the manner specified.
8. The intermittently-moved box-carrier, label-pasting and carrying plates, clamp, and smoothers, combined to operate together in the manner specified.

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Witnesses:

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