

(No Model.)

J. W. LUFKIN.
BUTTON HOLE CUTTER.

No. 307,127.

Patented Oct. 28, 1884.

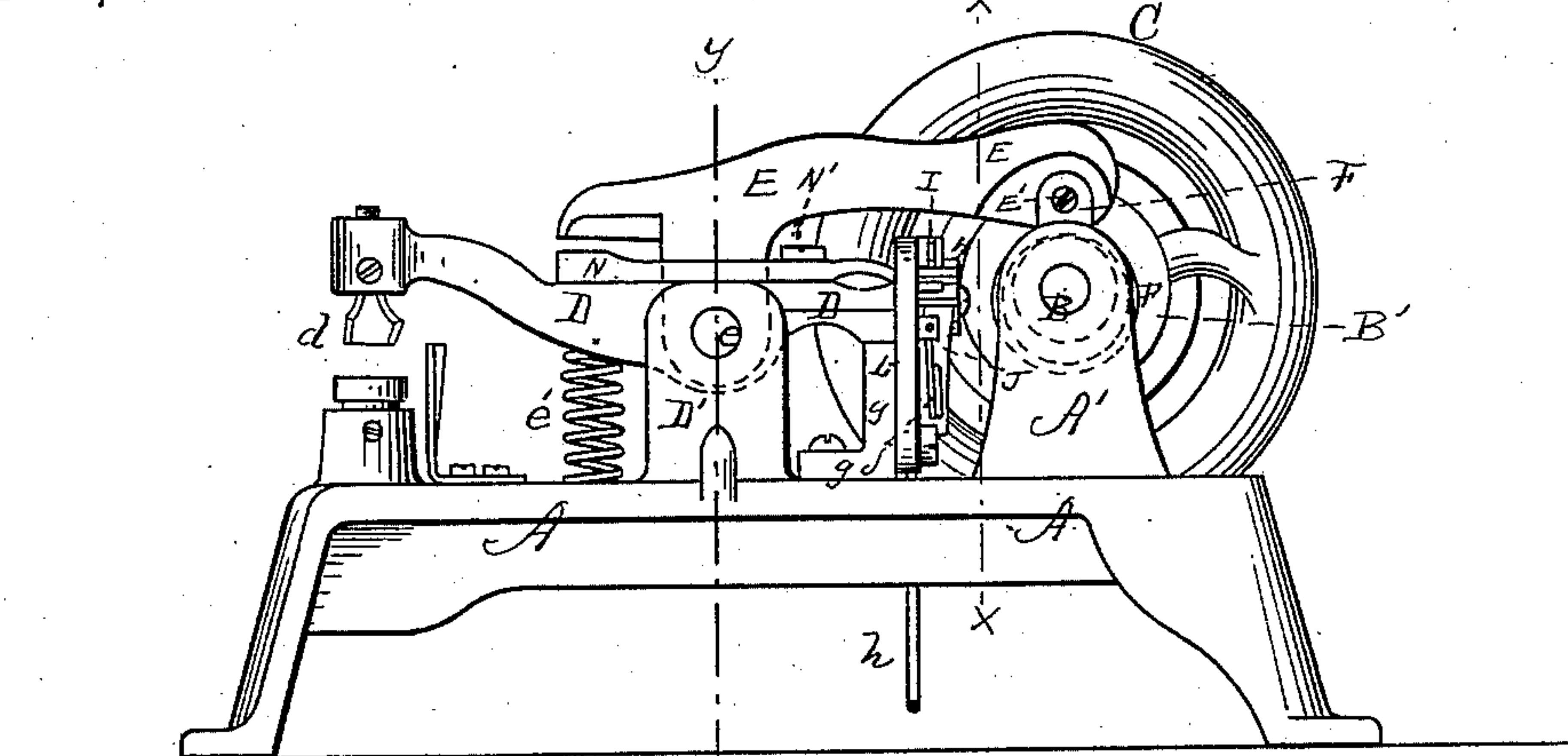


Fig-1-

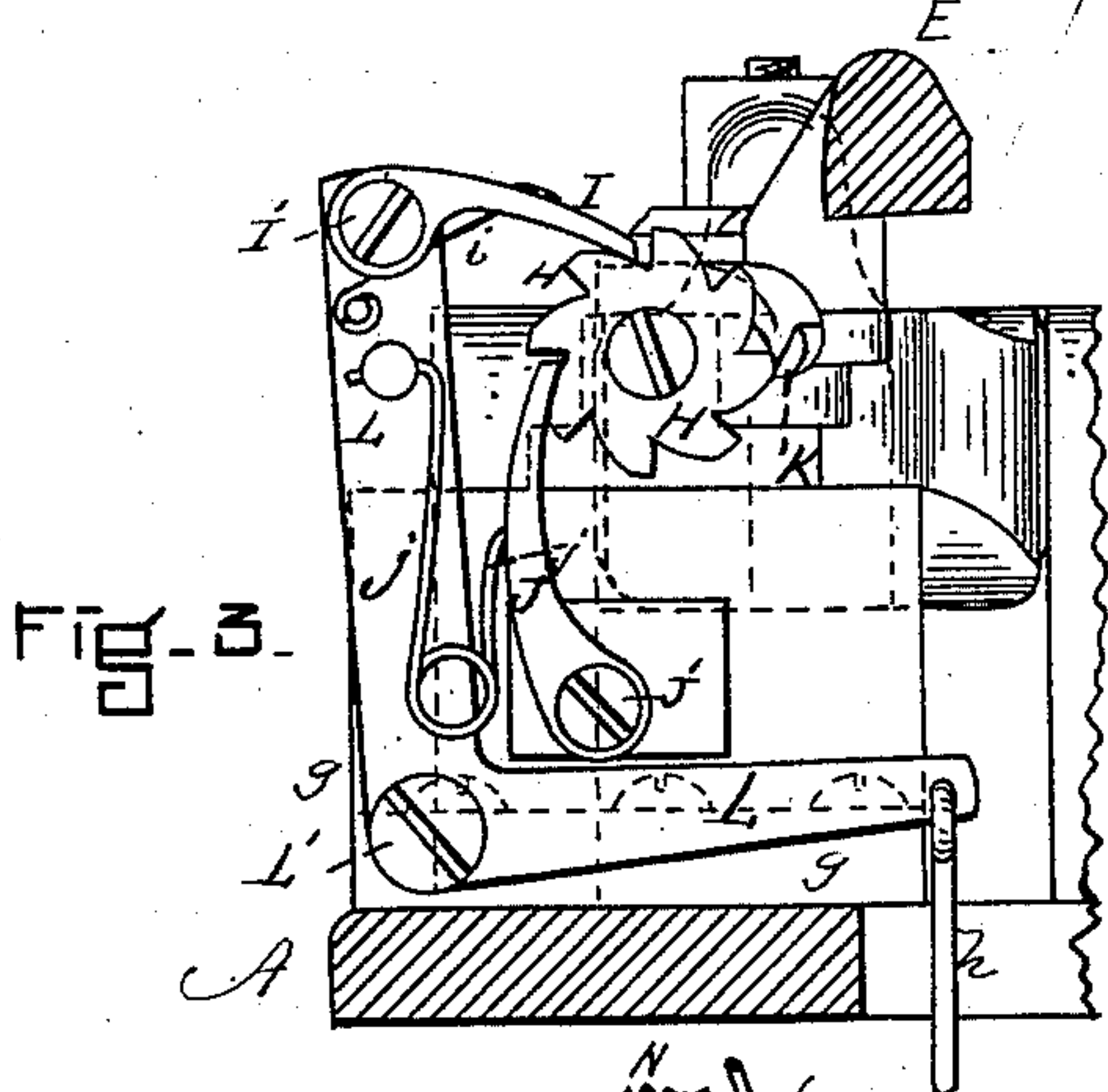


Fig-3-

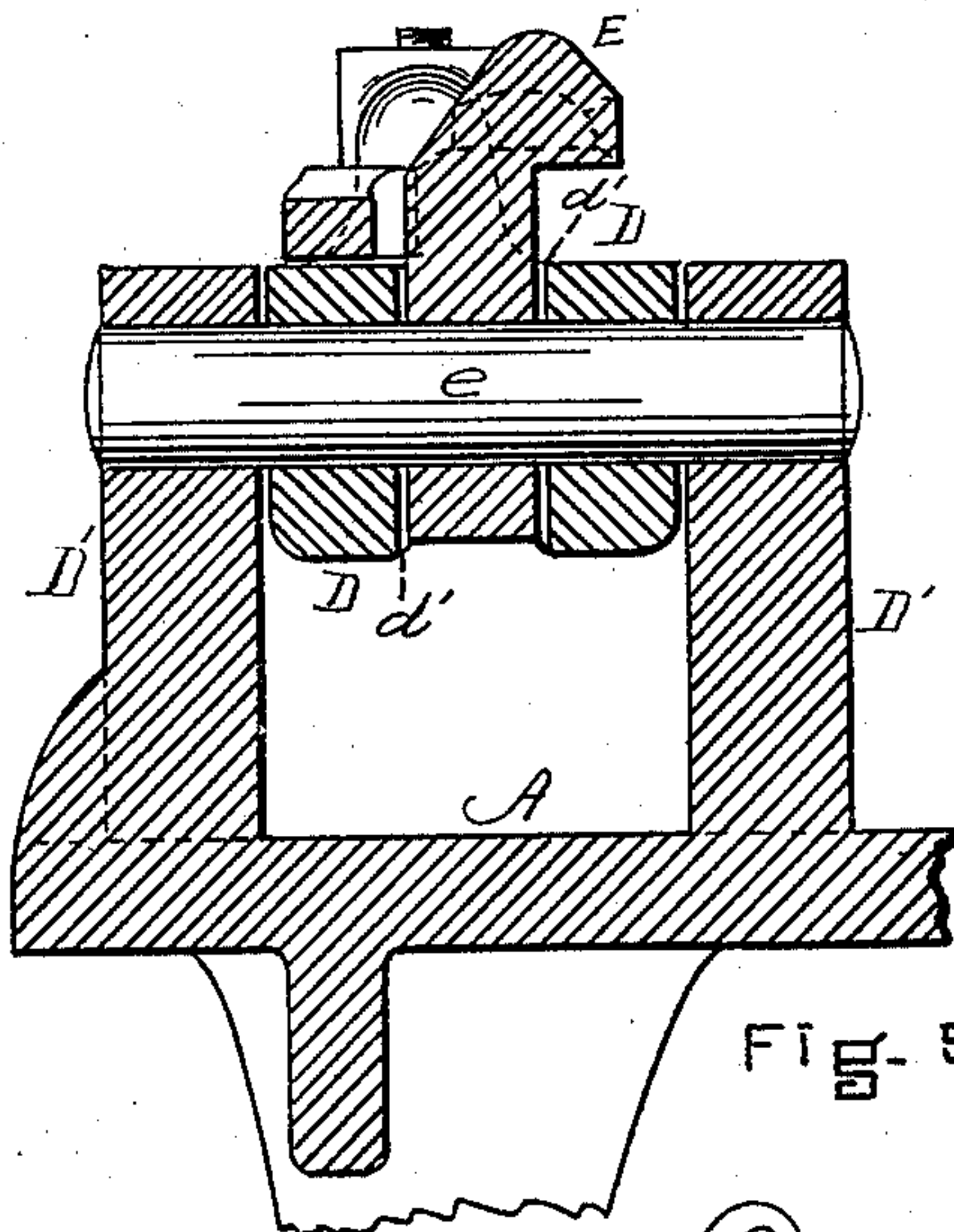


Fig-5-

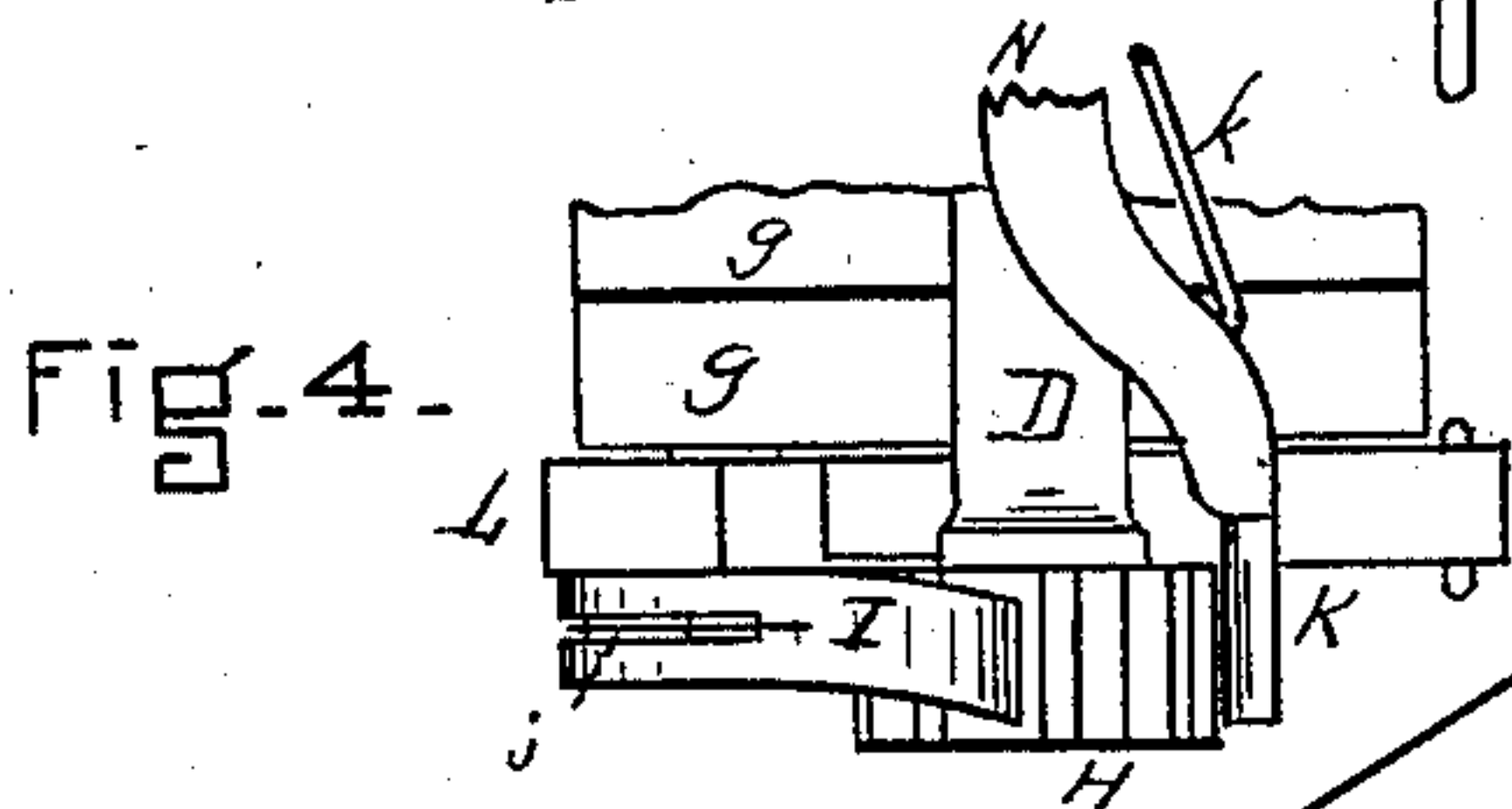


Fig-4-

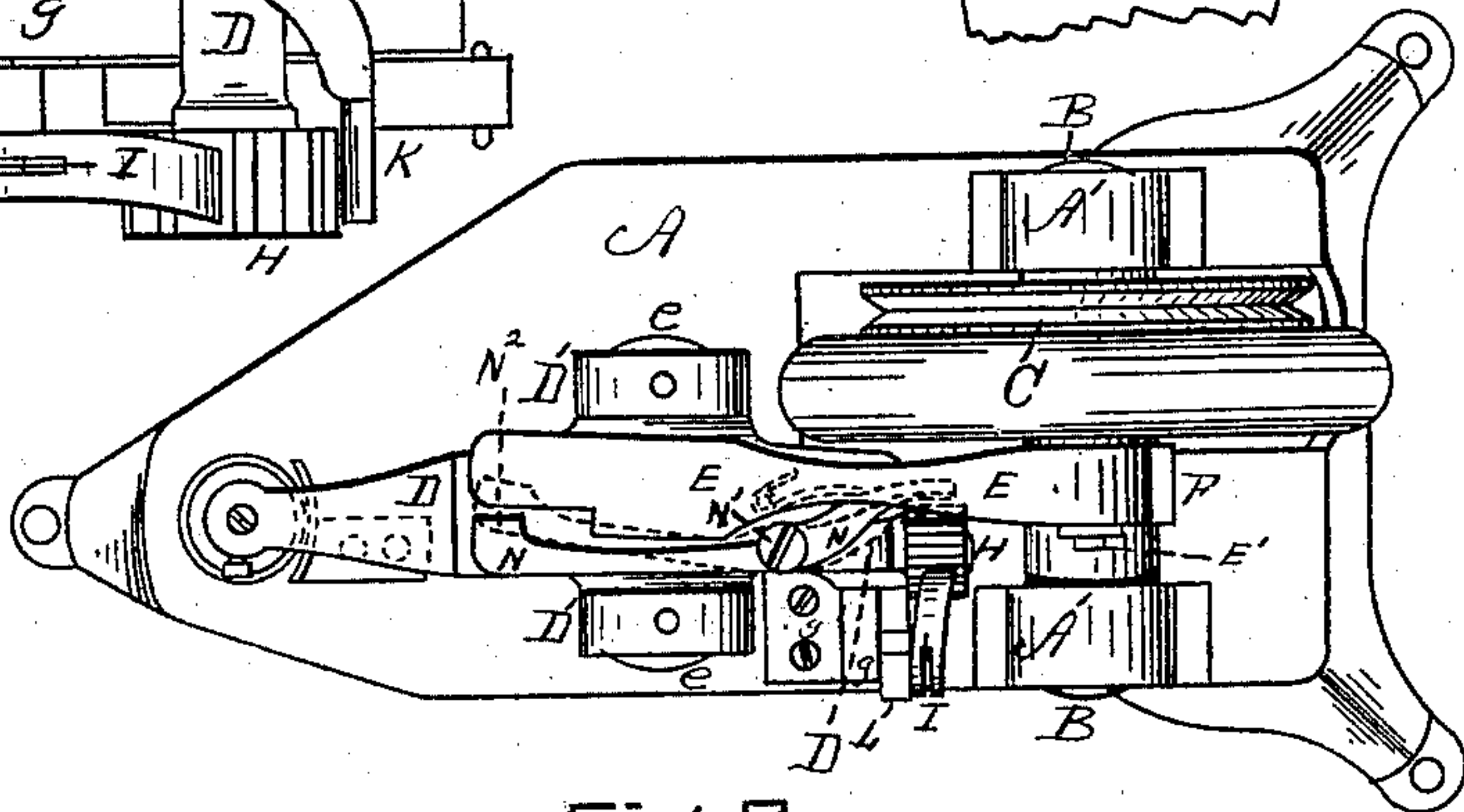


Fig-2-

WITNESSES.

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JOHN W. LUFKIN, OF CHELSEA, MASSACHUSETTS.

BUTTON-HOLE CUTTER.

SPECIFICATION forming part of Letters Patent No. 307,127, dated October 28, 1884.

Application filed July 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LUFKIN, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Button-Hole Cutters, of which the following is a specification.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a button-hole cutter embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged transverse vertical section on line *x*, Fig. 1. Fig. 4 is an enlarged plan view of a portion of the mechanism shown in Fig. 3. Fig. 5 is an enlarged transverse vertical section on line *y*, Fig. 1.

A is the bed of the machine provided with standards A', supporting the main shaft B, to which is rigidly secured the driving-wheel C. D is a lever carrying at its front end the usual cutter or knife *d*, pivoted at *e* to the standards D', held normally in the position shown in Fig. 1 by the spring *e'*, and provided next its pivotal point with an opening, *d'*. By means of this opening or slot the lever E is centrally placed loosely on the same pivot *e*, its rear end being provided with the strap or collar F, swinging at E' from said lever, and embracing the eccentric B', making a part of the main shaft B, the effect being, when power is applied to the driving-wheel C, to cause the lever E to rock on the pivot *e*.

Loosely secured to the rear end of the lever D is the ratchet-wheel H, which is engaged at different times by three pawls, I, J, and K, held up to their work by their respective springs, *i j k*. The pawl I is pivoted at I' to the elbow-lever L, pivoted at L' to the upright *g*, (which also constitutes a seat for the rear end of the lever D,) said elbow-lever L being connected by a rod or wire, *h*, with a suitable treadle. The pawl J is pivoted at J' to the upright *g*. The pawl K extends from and forms a part of the rear end of the lever N, pivoted at N' to the lever D, and adapted to be moved horizontally and carry the step N², extending at right angles therefrom under and away from the front end of the lever E. As long as power is applied to the wheel C the lever E is constantly rocking; but without affecting the lever D until, by pressure

upon a treadle, the rod *h* pulls on the bell-crank lever L and drawing the upper end toward the ratchet-wheel H causes the pawl I to push on one of the teeth of the ratchet-wheel, moving the latter until the pawl K, which was lying on the top of a tooth, drops between that and the next tooth. This brings the step N² at the opposite end of the lever N, of which the said pawl K is a part beneath the front end of the lever E, and hence between it and the lever D. When the rocking-lever E drops at its front end, it necessarily pushes down the step N² of the lever N, and also the front end of the lever D and cuts the button-hole. During this last process the rear end of the lever N is of course raised, and with it the ratchet-wheel, causing the pawl J to slip over a tooth into the next lower depression. As the front ends of the levers E N D lift again, the pawl J presses against the descending ratchet-wheel, turning it until the pawl I drops between the teeth, and the pawl K mounts a tooth drawing the step N² away from the lever E, and all are again in the position shown in Fig. 3, and will not operate until the elbow-lever is again pulled upon by the rod *h*, connecting with a treadle.

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

1. The combination of the lever E and the eccentric B' and collar F, the pivot *e* in the standards D', the lever D, provided with the cutter *d* and the slot *d'*, whereby both said levers bear on the same pivot, and the step N² on the lever N, adapted to be pushed between said levers E D, substantially as and for the purpose set forth.

2. The lever N, pivoted to the lever D, and provided with the step N² and pawl K, in combination with said lever D and ratchet-wheel H, substantially as and for the purpose described.

3. The combination of the pawl I, bell-crank lever L, pawl J, upright *g*, and pawl K on the lever N, with the ratchet-wheel H, and lever D, substantially as and for the purpose set forth.

4. The lever D, provided with the cutter *d* and slot *d'*, the ratchet-wheel H, the lever E

and the eccentric B' and collar F, said levers being pivoted at *e* to the standards D', in combination with the lever N, provided with the step N² and pawl K, the upright *g*, bell-crank lever L, and pawls I J, substantially as and for the purpose described.

5 5. The combination of the lever E, lever N, provided with the step N², lever D, spring *e'*, and frame, substantially as and for the purpose described.

10 6. The lever or cutter-bar D, pivoted at *e* to the frame, and provided with a loose ratchet-wheel, H, at its rear end, and adapted to be engaged by suitable pawls, substantially as
15 and for the purpose set forth.

7. The pawl J, spring *j*, and ratchet-wheel H, combined with the elbow-lever L, and upright *g*, substantially as and for the purpose described.

8. The combination of the spring *e'*, lever D, 20 pivoted at *e* to the frame, loose ratchet-wheel H, and upright *g*, forming a seat for said lever, substantially as and for the purpose set forth.

JOHN W. LUFKIN.

Witnesses:

HENRY W. WILLIAMS,
ARTHUR W. LUGRIN.