

*J. Wild - Machine for Making Metal Boxes.*

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FIG. 1.

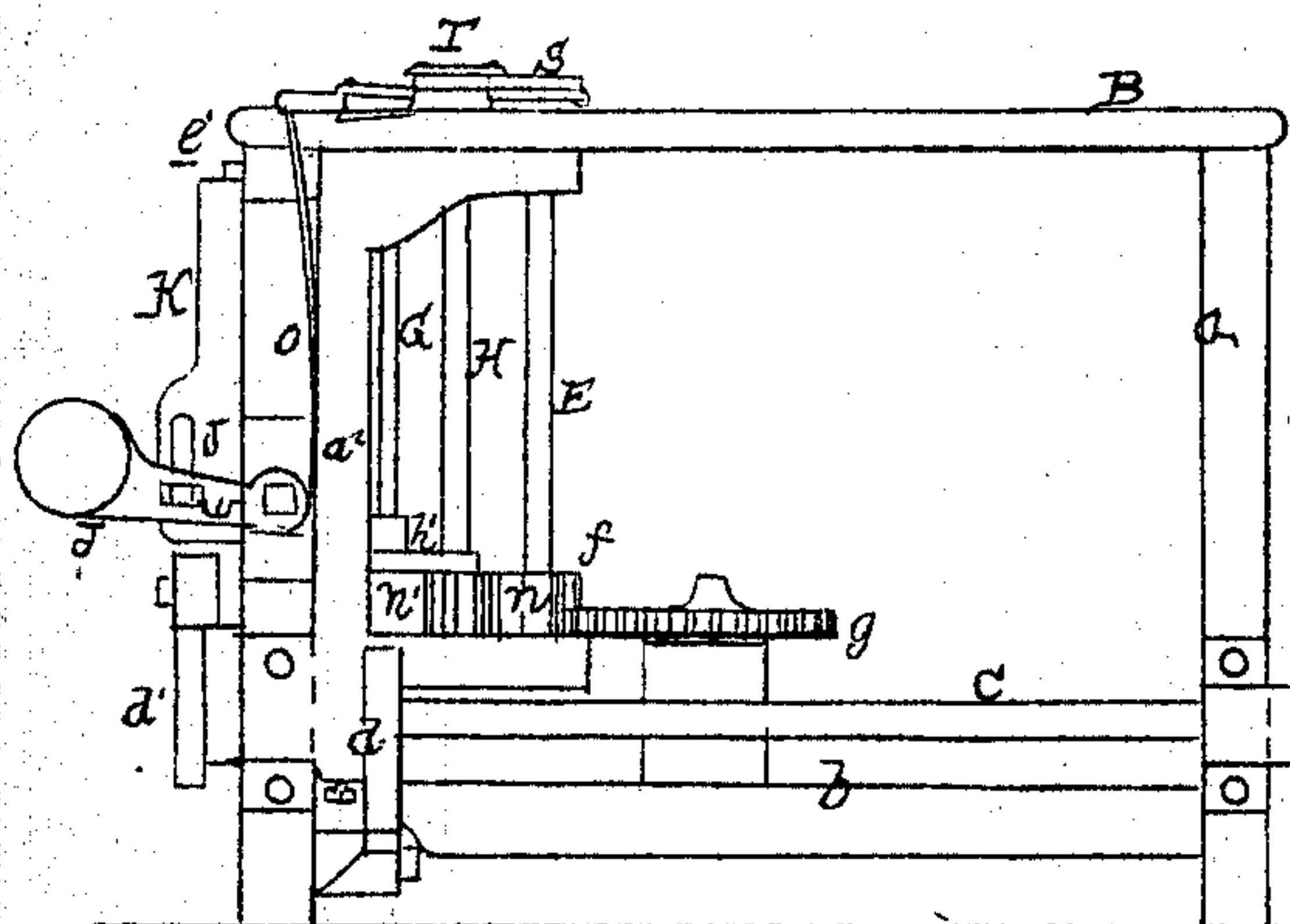


FIG. 2.

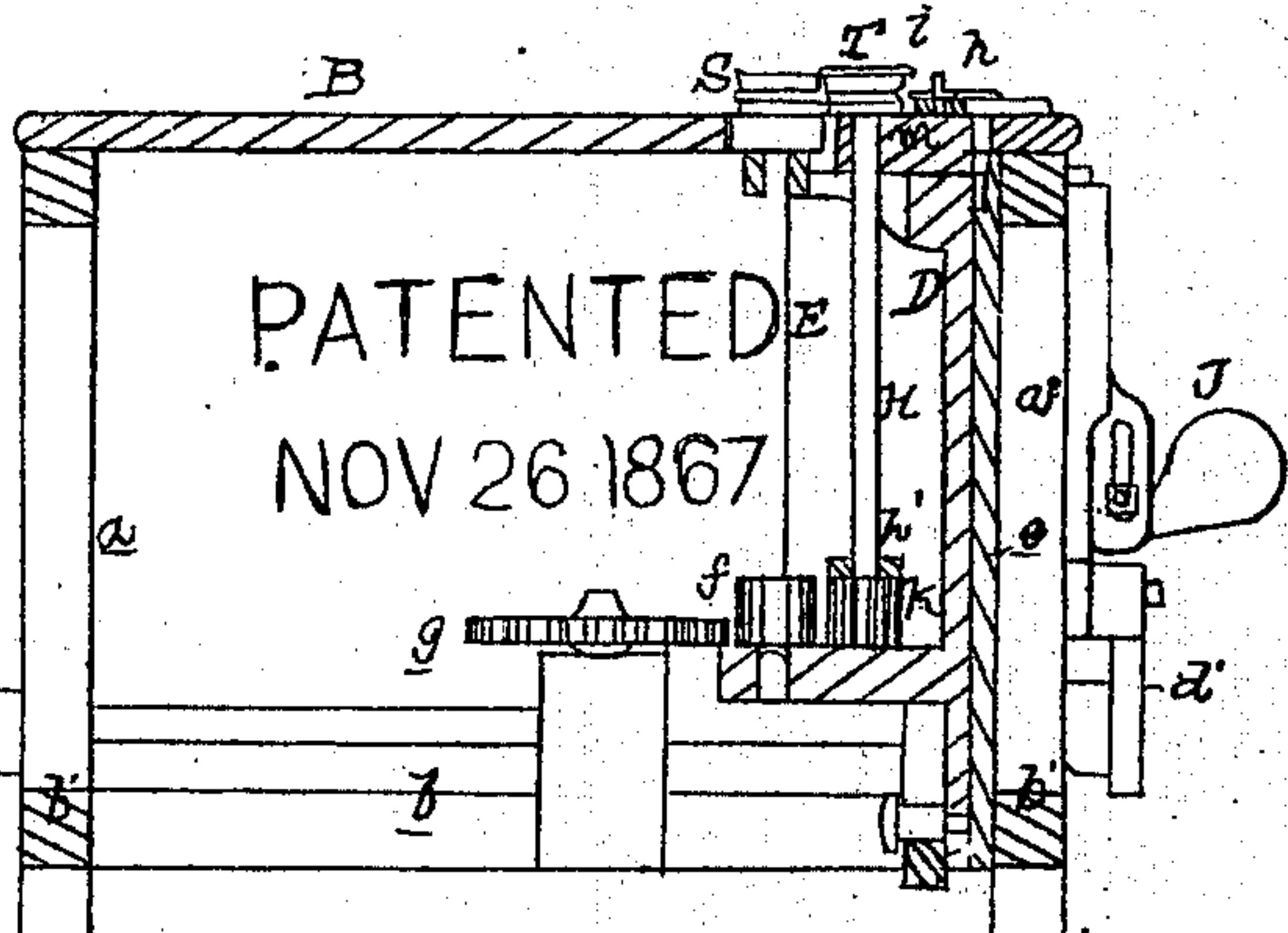


FIG. 4.

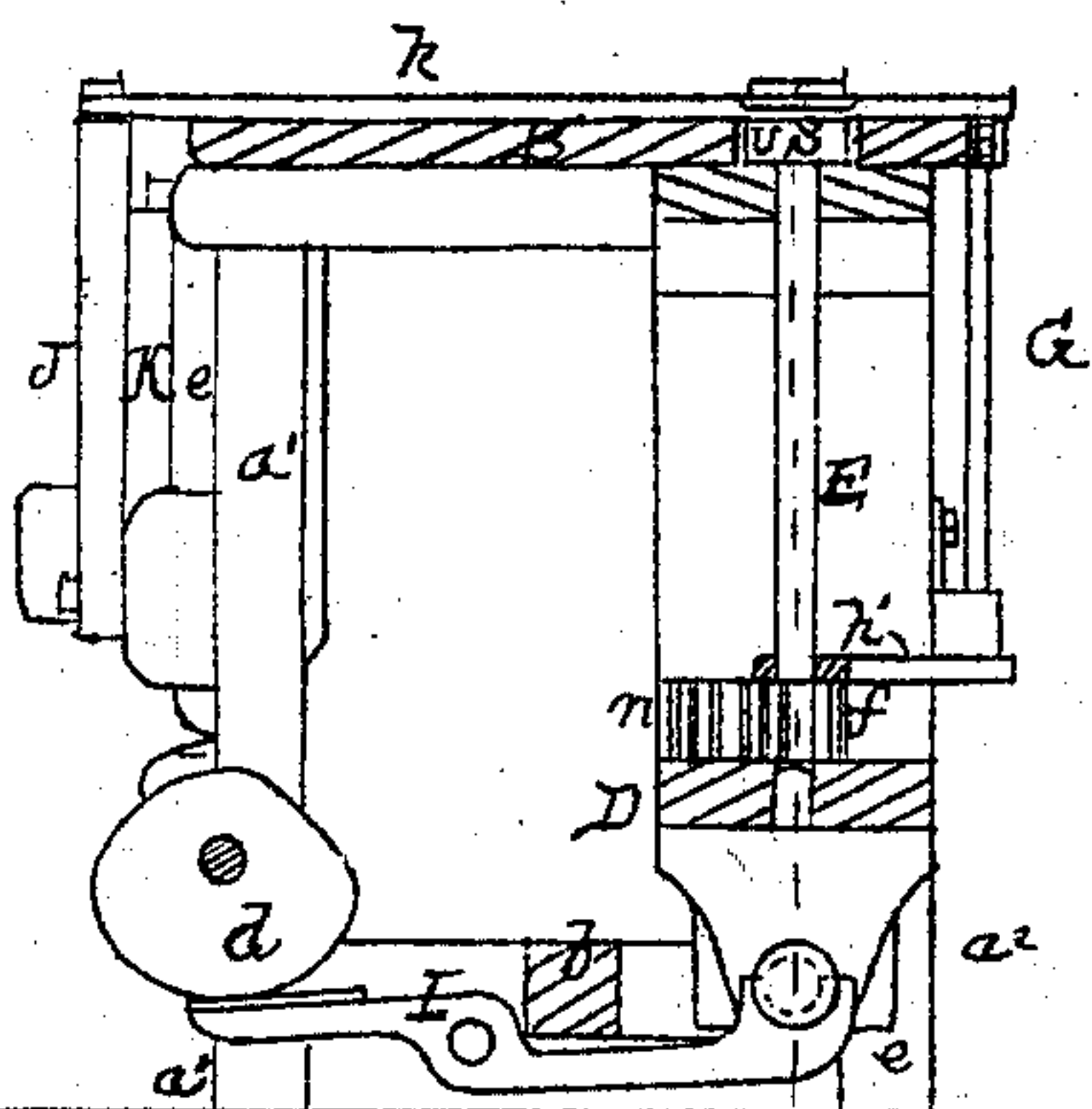


FIG. 3.

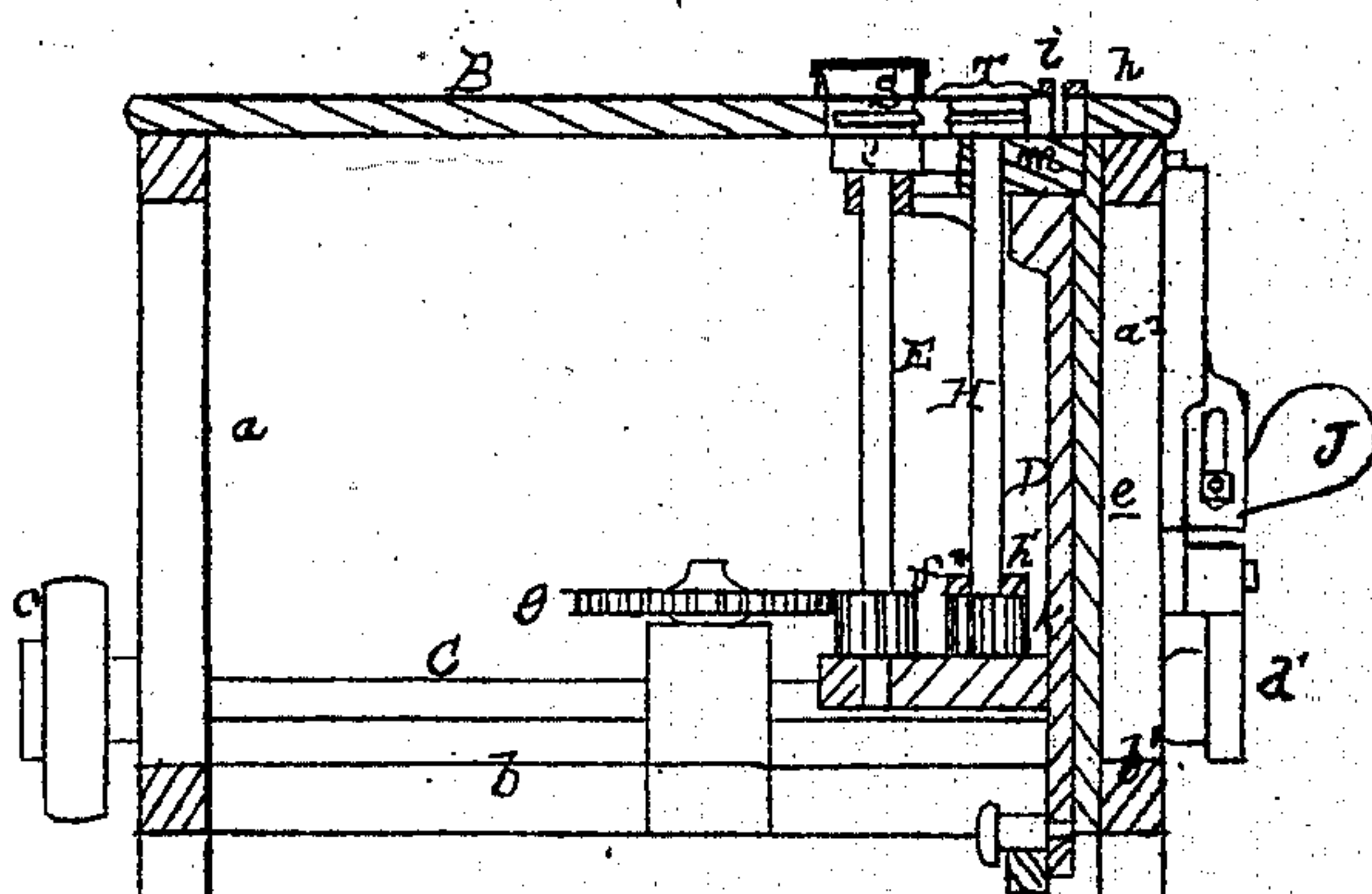


FIG. 5.

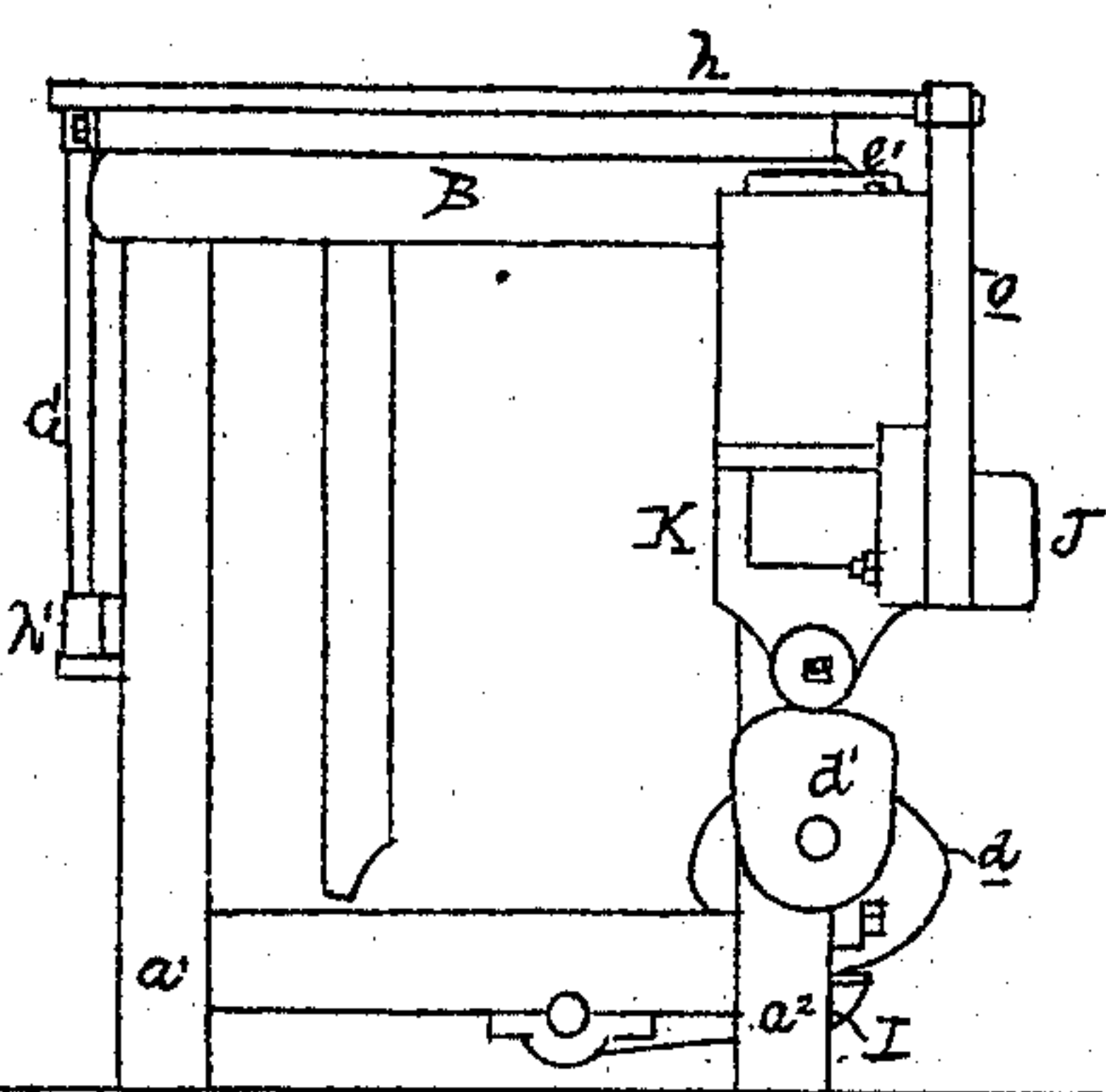


FIG. 6.

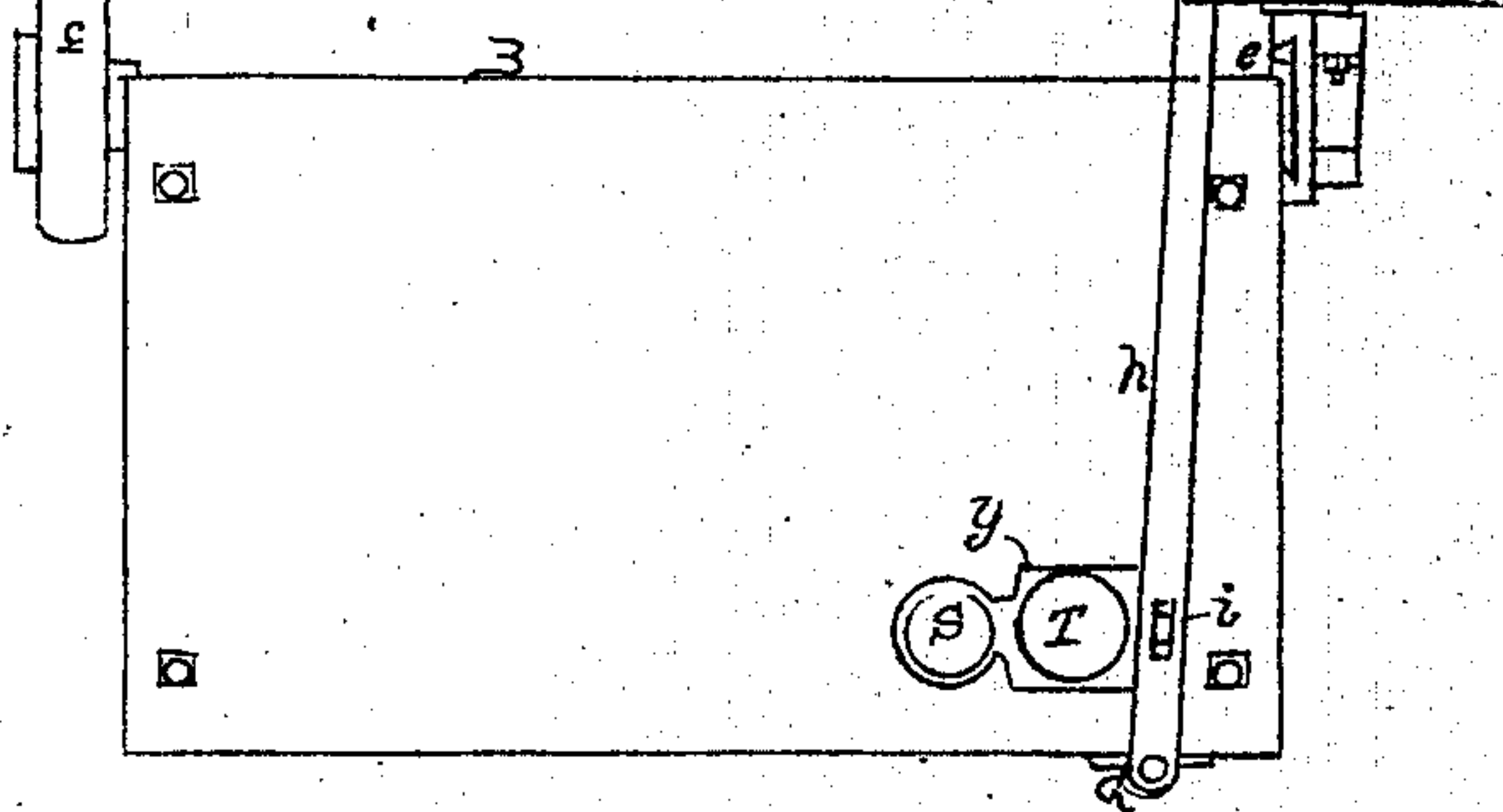


FIG. 8.

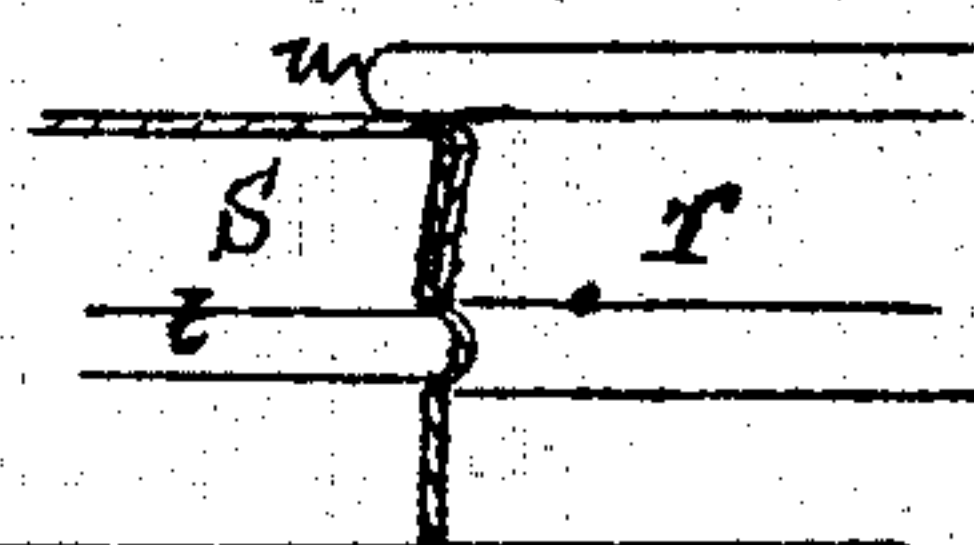
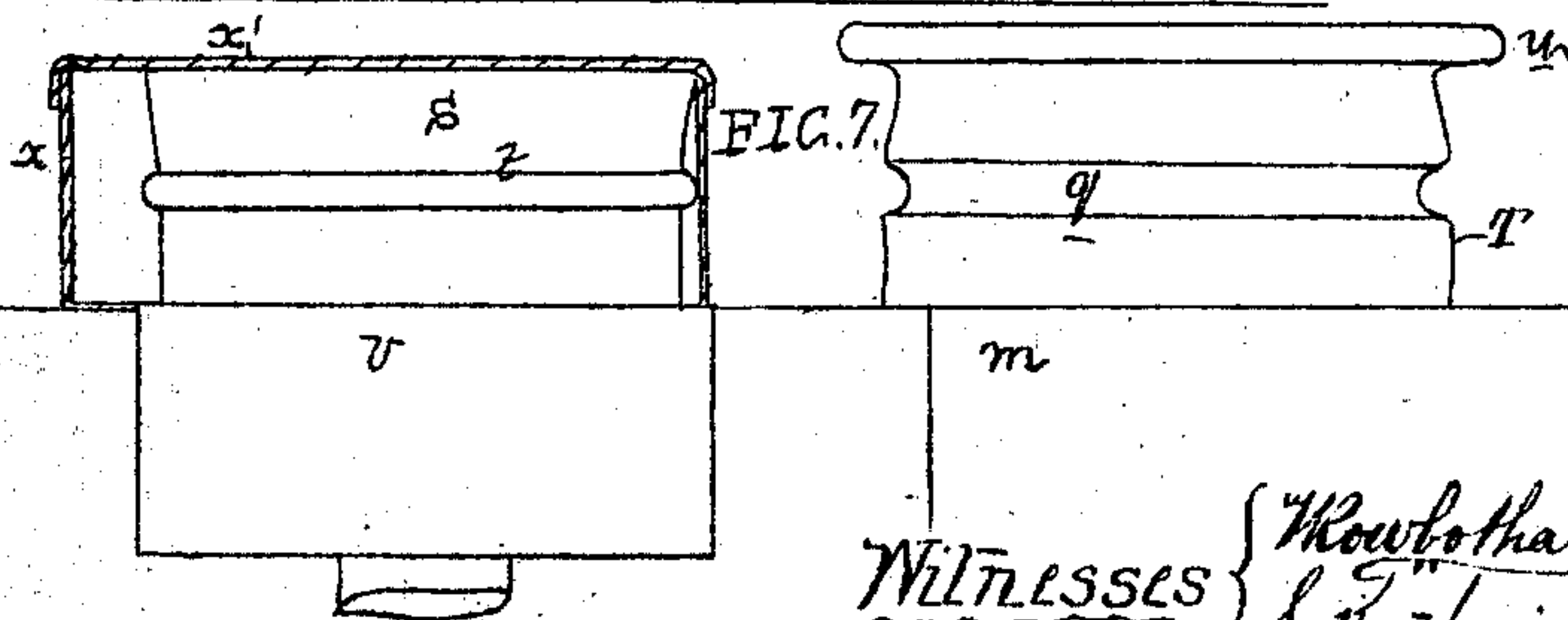


FIG. 7.



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# United States Patent Office.

JACOB WILD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO J. S. MASON & CO., OF SAME PLACE.

*Letters Patent No. 71,351, dated November 26, 1867.*

## IMPROVEMENT IN MACHINE FOR MAKING METAL BOXES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JACOB WILD, (assignor to J. S. Mason & Co.,) of Philadelphia, Pennsylvania, have invented a Machine for Making Metal Boxes; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of certain mechanism, fully described hereafter, by which the bottoms and sides of blacking and other metal boxes may be rapidly and firmly secured together, and have the desired shape imparted to them.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a side elevation of my machine for making metal boxes.

Figures 2 and 3, sectional elevations, showing the parts in different positions.

Figure 4, a sectional elevation on the line 1 2, fig. 1.

Figure 5 an end elevation.

Figure 6 a plan view; and

Figures 7 and 8, enlarged views of parts of the machine, showing the said parts in different positions.

The frame of the machine consists of standards  $a a^1 a^2$ , top plate B, and cross-pieces  $b b'$ , and in bearings near the lower ends of the standards  $a a^2$  turns a horizontal shaft, C, on which are two cams,  $d d'$ , and a driving-pulley,  $e$ . On a guide,  $e$ , secured to the inner side of the standard  $a^1$ , fig. 2, slides a frame, D, in which turns a vertical shaft, E, a pinion,  $f$ , at the lower end of this shaft, gearing into a cog-wheel,  $g$ , turning on a pin secured to a bracket on the cross-piece  $b$ . In the top, B, above the frame D, is an opening,  $y$ , fig. 6, and to bearings on the frame, is adapted a rock-shaft, G, to which are secured horizontal arms  $h h'$ , a vertical shaft, H, turning and sliding near its lower end in the lower arm  $h'$ , and turning near its upper end in a bearing,  $m$ , which is arranged to slide horizontally in an opening in the frame D, and a pin,  $i$ , projecting from the bearing  $m$  into a slot in the arm  $h$ . At the lower end of the shaft H is a pinion,  $K'$ , to which motion is communicated from the pinion  $f$  through the medium of pinions  $n n'$ , fig. 1, turning on pins on the frame D, the pinion  $f$  being of such a width that it will not be elevated out of gear with the cog-wheel  $g$  when the frame D is raised or lowered. To a disk,  $v$ , at the upper end of the shaft E, is secured a forming-roller, S, on which is an annular rib,  $t$ , fig. 7, the roller, above the rib, being inclined and adapted to the bevelled part of a roller, T, which is secured to the shaft H, and in which is an annular groove,  $q$ , coinciding with the rib  $t$ . At the upper edge of the roller T is a flange,  $u$ , for a purpose described hereafter. A lever, I, which is hung to one of the cross-pieces  $b$ , fig. 4, is jointed at one end to the lower end of the frame D, the other end projecting beneath the cam  $d$ , and on the cam  $d'$  bears a friction-roller at the lower part of a slide, K, fig. 5, which moves on a guide at the side of the standard  $a^2$ . A pin,  $w$ , on the slide K, fig. 1, projects into a slot in the weighted arm of a bell-crank lever, J, hung to the standard  $a^2$ , the other arm,  $o$ , of the lever, which is flexible, being connected to the arm  $h$  of the rock-shaft G.

A rotary motion, imparted in any suitable manner to the cog-wheel  $g$ , is transmitted to the shaft E H and to their rollers S T. As the shaft C, revolves the frame D is alternately raised and lowered by the action of the cam  $d$  on the lever I, while, as the slide K is elevated and depressed by the action of the cam  $d'$ , the lever J and shaft G are so operated that the shaft H is carried alternately from and toward the shaft E. While the frame D is depressed, and the roller S is below the plate B, a metal ring,  $x$ , and a flanged disk,  $x'$ , (which are to be secured together and formed into a metal box,) are placed upon the plate B, in the position shown in red lines, fig. 3, so that when the frame D rises, the roller S will be introduced into the ring  $x$  until the lower edge of the latter rests on the shoulder formed by the projecting edge of the disk  $v$ , as shown in fig. 7. The roller T will now approach the roller S, and bearing against the flange of the disk  $x'$  and against the ring  $x$ , fig. 8, will cause the same to revolve rapidly, the flange  $u$  preventing the disk  $x'$  from rising, and as the rollers are brought closer together a rib will be formed at the centre of the ring  $x$ , the upper edge of the latter will be bent slightly outward, while the flange of the disk  $x'$  will be turned inward on to the flanged portion of the ring



to which the disk is thus firmly secured. Owing to the flexibility of the arm *o* of the lever K, the pressure upon the ring and disk will be a yielding one, so that the roller T may move back slightly when seams or joints in the metal pass between the rollers. After the disk and ring have been secured together the frame D descends, withdrawing the roller S from the newly-formed box, which rests upon the top B of the frame, and may be removed to make way for another disk or ring, which is operated on as before.

It will be seen that the shafts and their rollers are maintained perfectly parallel to each other during the whole of the above-described operations. There can, therefore, be no tendency of the disk and ring to separate while being operated on, as would be the case if the rollers revolved at an angle to each other.

I claim as my invention, and desire to secure by Letters Patent—

1. The forming-disks S and T, arranged parallel to each other, caused to revolve in contrary directions, and to move from and towards each other, by the aid of the mechanism herein described, or any equivalent to the same, for the purpose specified.

2. The plate B, on which the unformed box is deposited, in combination with the said forming-disks and the appliances herein described, or their equivalents, for imparting an intermittent vertical reciprocating movement to the disks.

3. The elastic arm *o*, in combination with the cam *d'*, and the mechanism herein described, or its equivalent, for transmitting the motion of the said arm to the shaft H and its forming-disk T.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB WILD.

Witnesses:

CHARLES E. FOSTER,  
W. J. R. DELANY.