

(No Model.)

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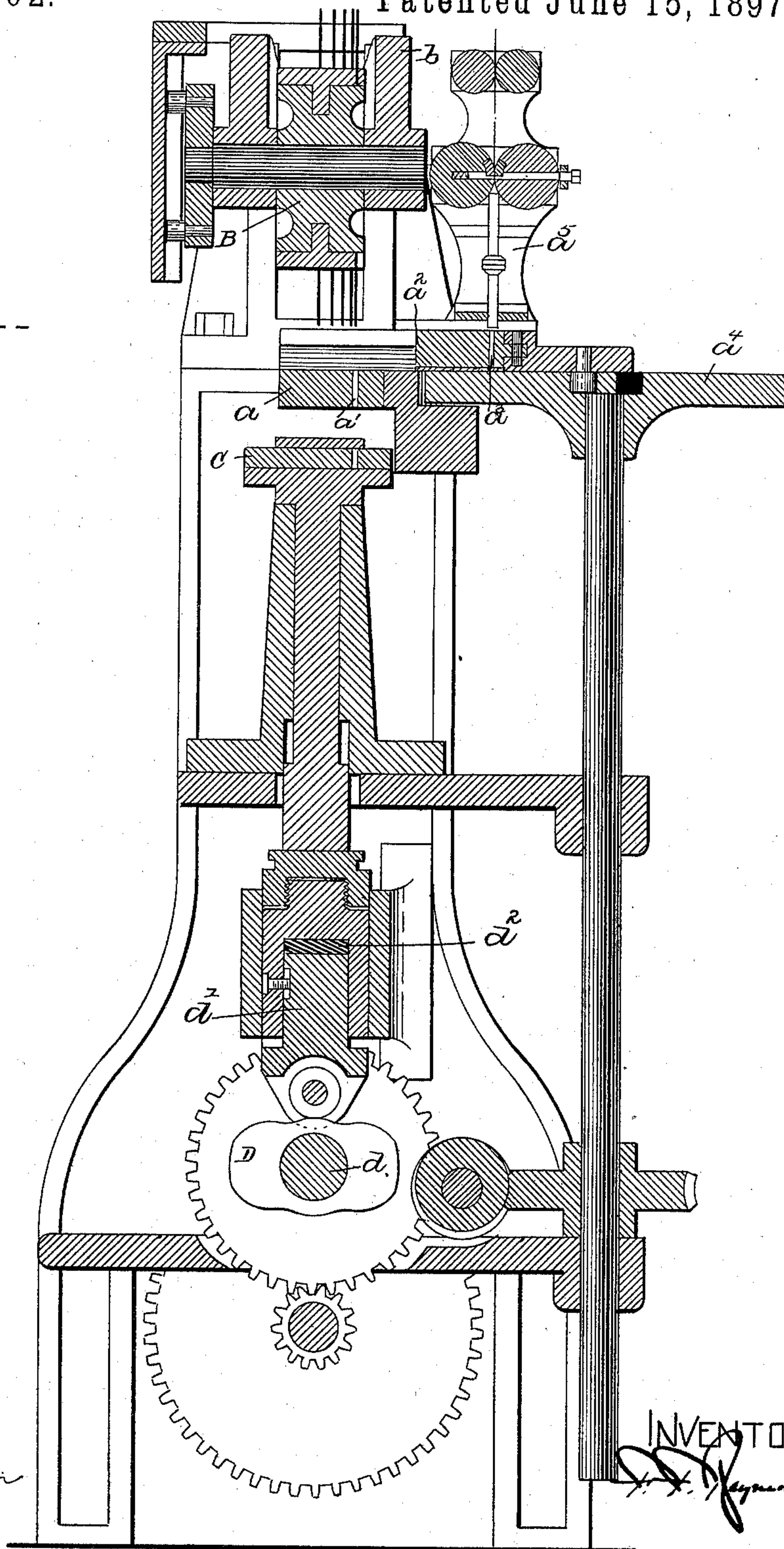
F. F. RAYMOND, 2d.

MACHINE FOR MANUFACTURING LOADED TOP LIFTS.

No. 584,602.

Patented June 15, 1897.

Fig-1-



WITNESSES.

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(No Model.)

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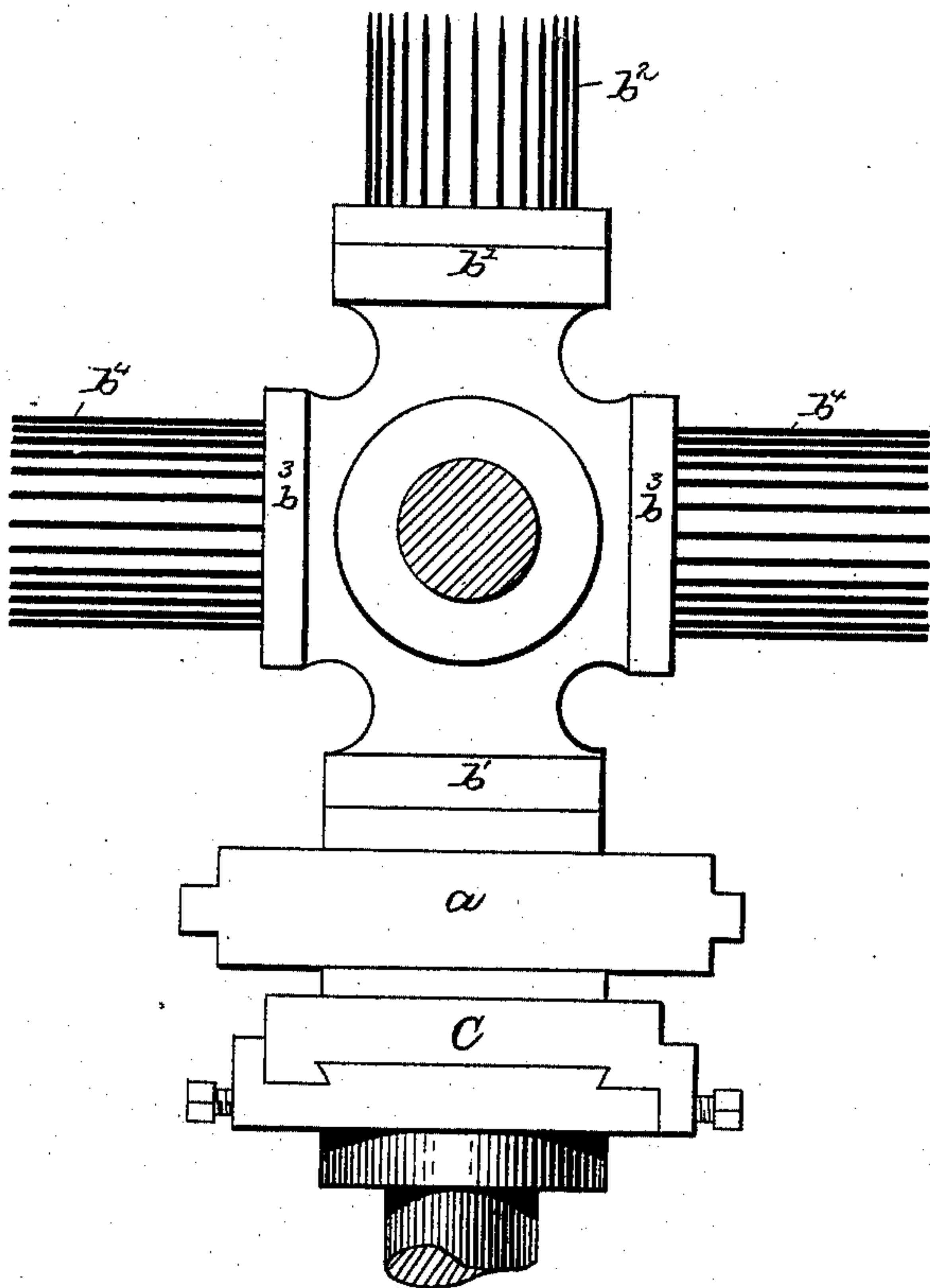


Fig. 2.

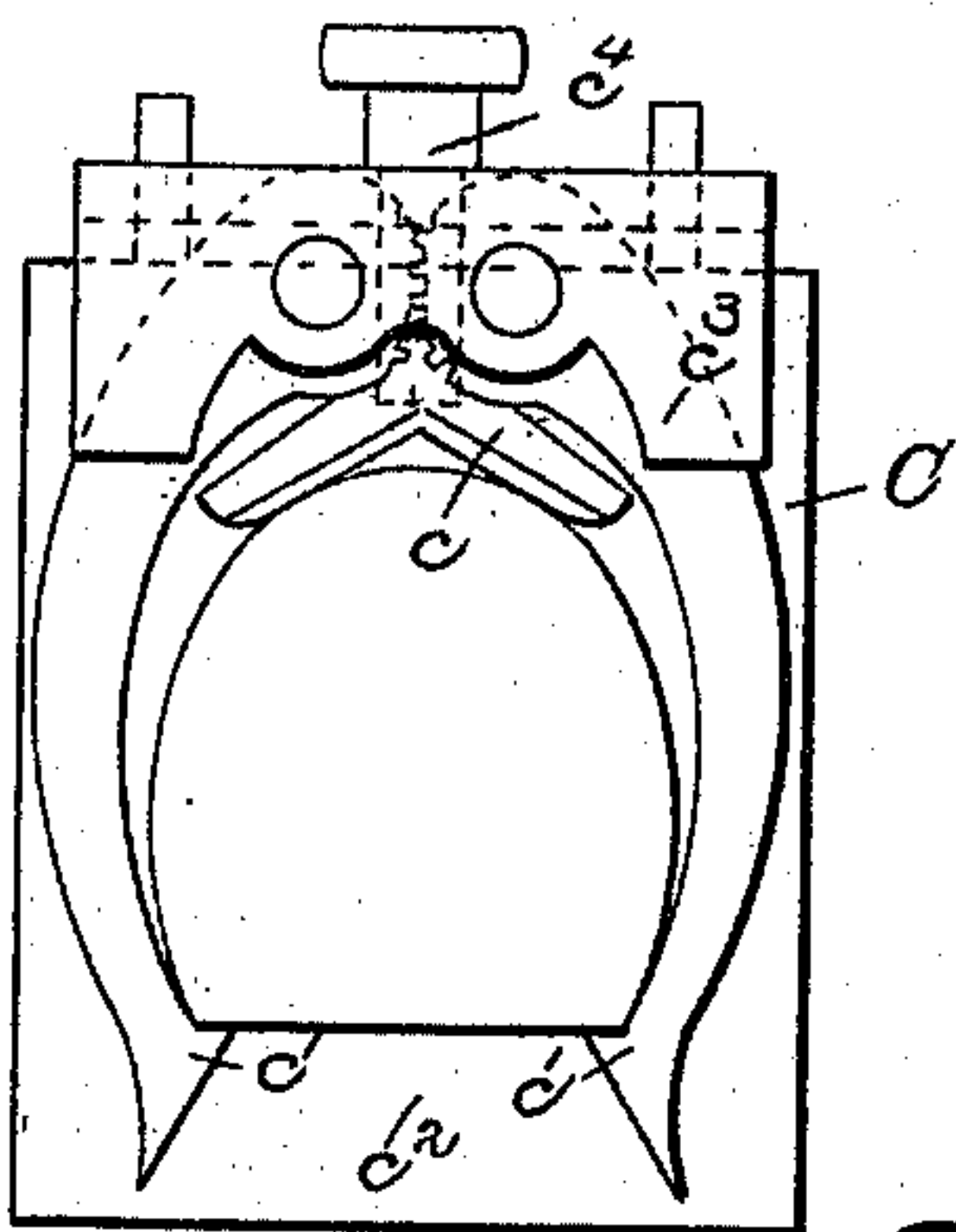


Fig. 3.

WITNESSES.

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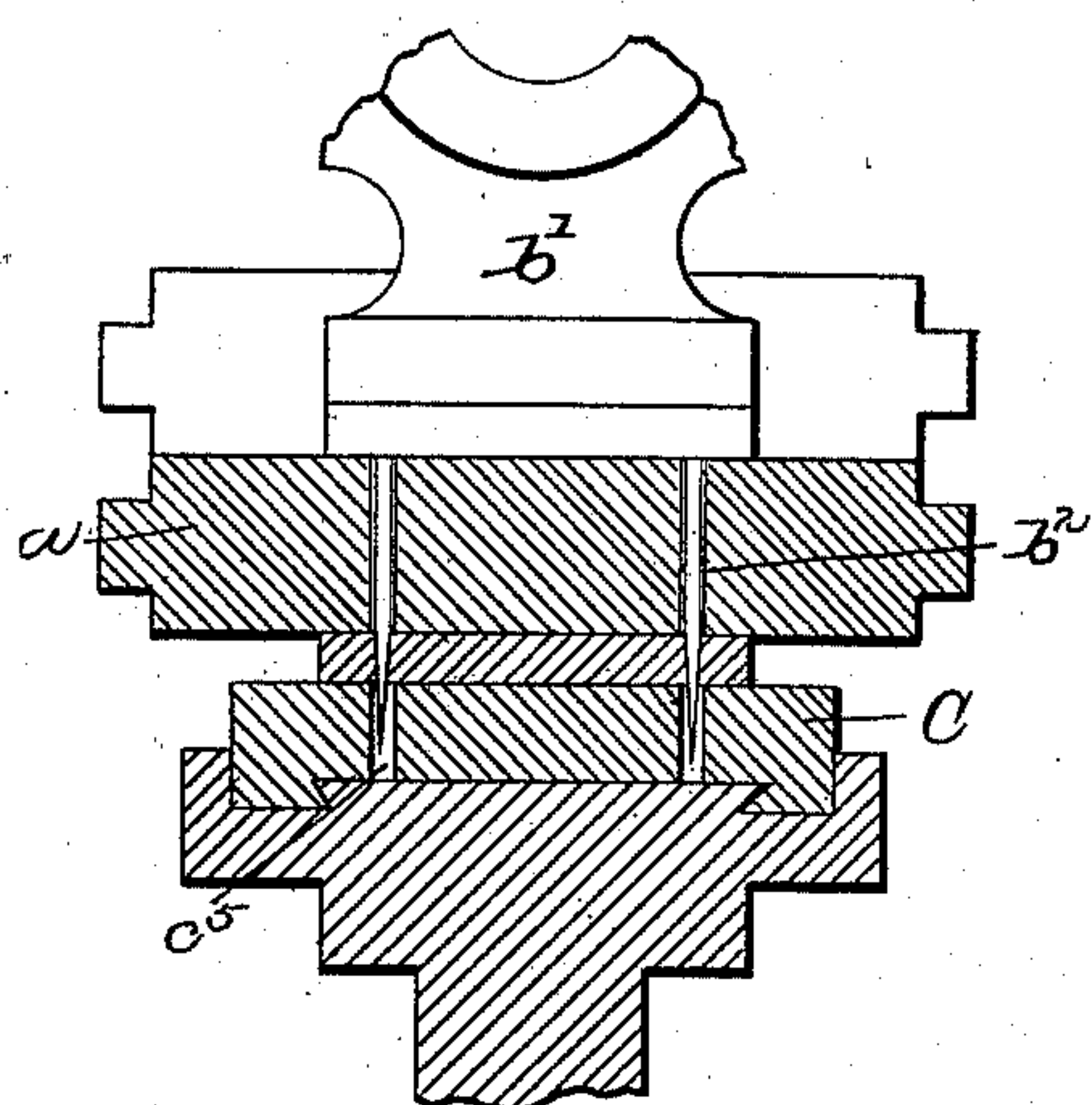


Fig. 4.

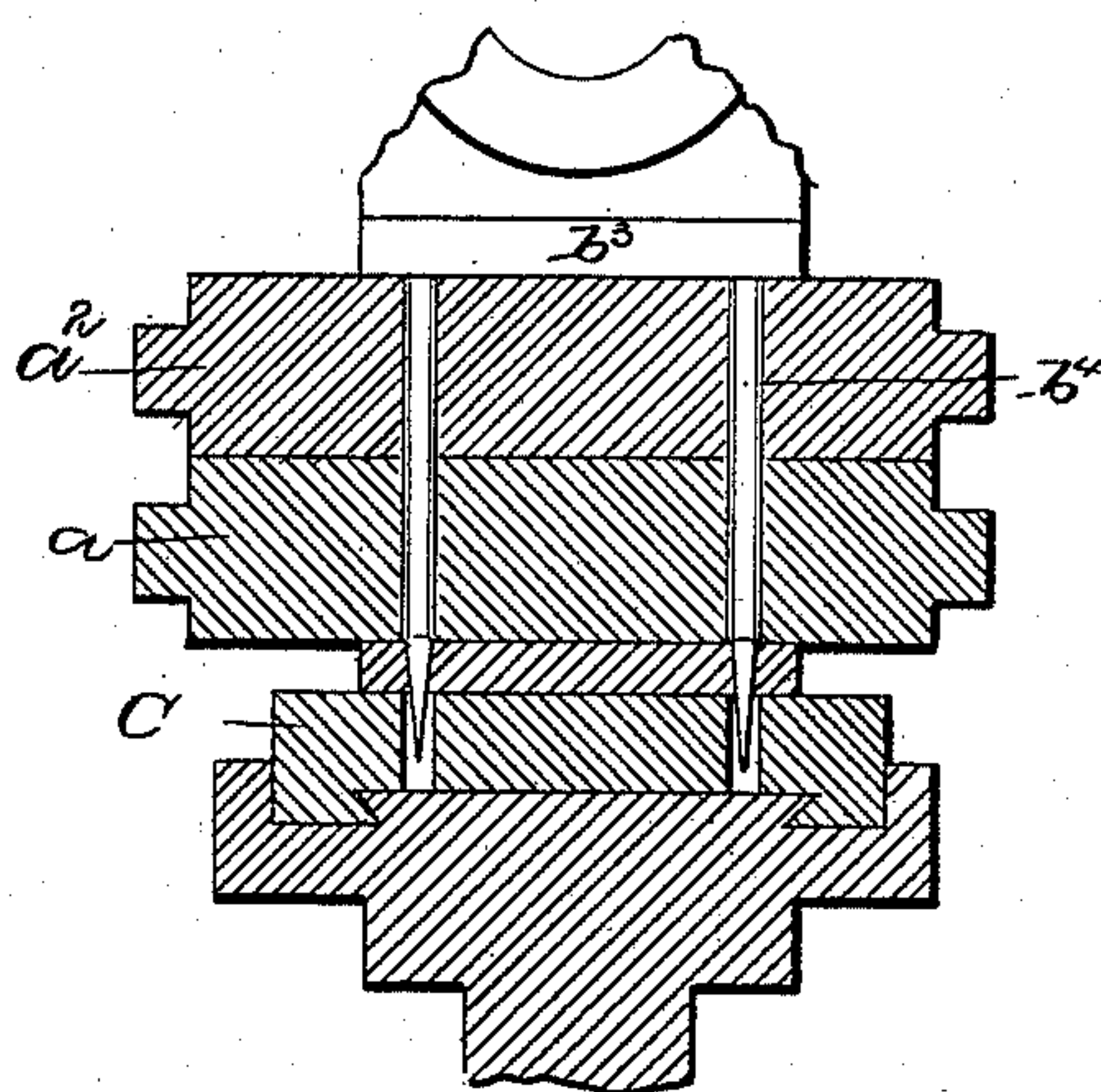


Fig. 5.

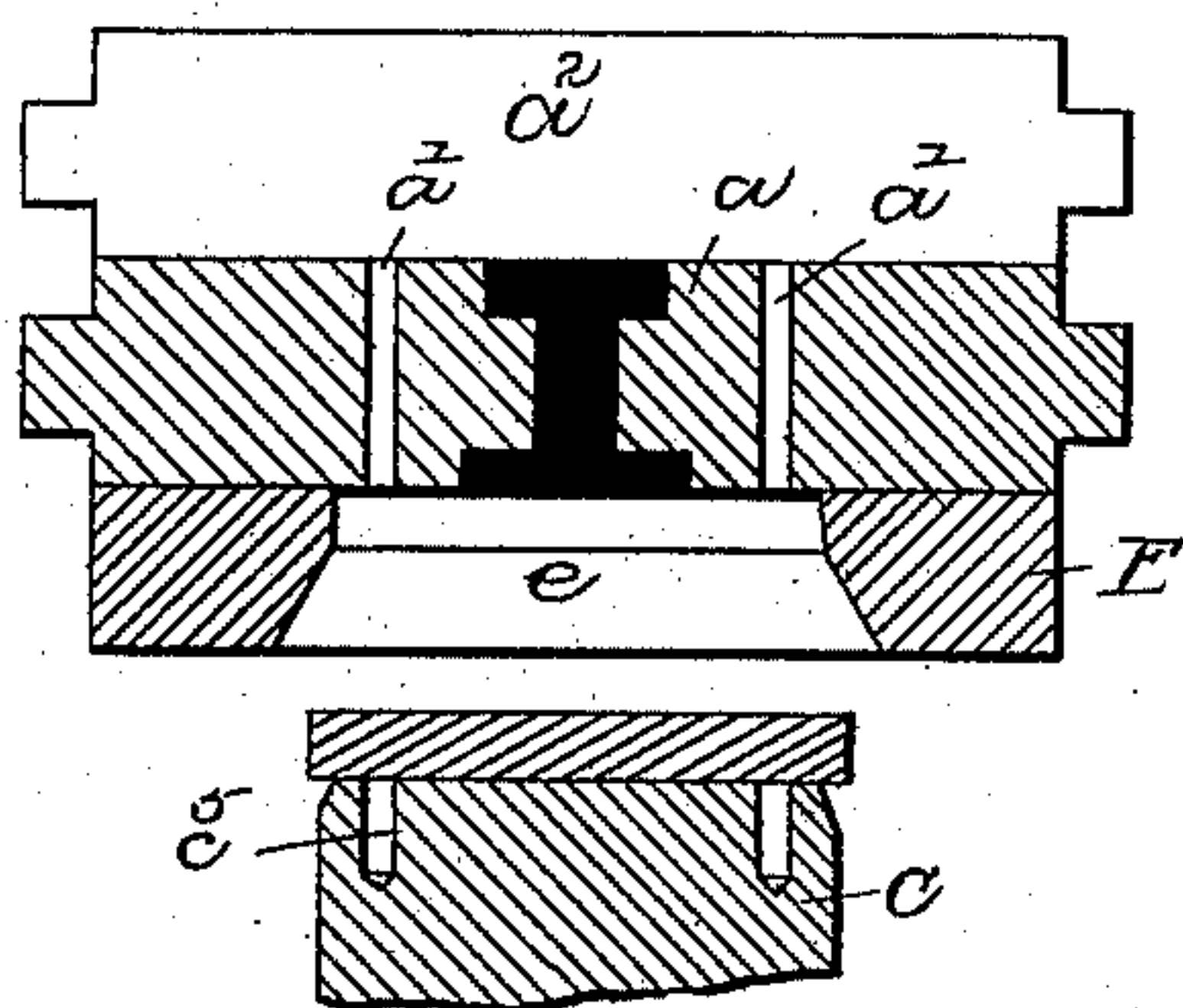


Fig. 6.

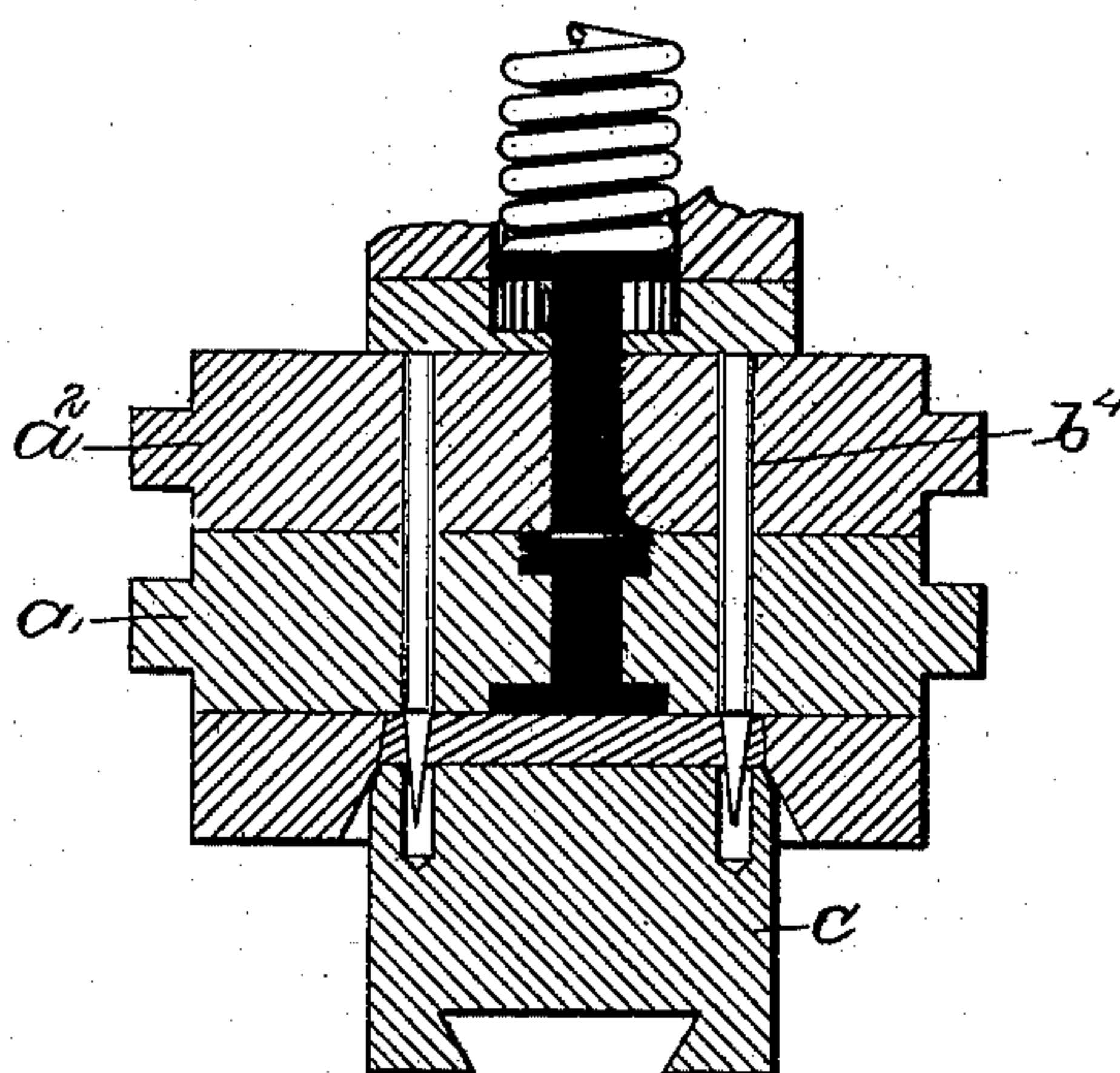


Fig. 7.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR MANUFACTURING LOADED TOP LIFTS.

SPECIFICATION forming part of Letters Patent No. 584,602, dated June 15, 1897.

Application filed December 17, 1889. Serial No. 334,106. (No model.)

*To all whom it may concern:*

Be it known that I, FREEBORN F. RAYMOND, 2d, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machines for Manufacturing Loaded Top Lifts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to mechanism for loading or compressing and loading top lifts. A loaded top lift is one provided with slugs or ornamental nails. It is desirable, in order that such a top lift may be used with the ordinary attaching-machines of the market, that the slugs or ornamental nails be driven into the top lift to bring their heads practically flush with its upper surface and their shanks to extend from the under surface of the lift. These slugs or nails must also be accurately placed in relation to each other and to the edge of the lift. To thus load the lift, I employ mechanism which embraces a templet through which the awls and drivers are driven, a slug or nail carrier or supplying device, reciprocating awls or drivers, a flat bed for supporting the lift, having lift centering and holding devices thereon, and deep holes extending from its supporting-surface upon a line with the holes of the templet.

In the drawings, Figure 1 is a view in vertical central section of a machine having the features of my invention. Fig. 2 is a detail view, in front elevation, representing the relation which the rotary head, templet, and top-lift support bear to each other. Fig. 3 is a view in plan of a top-lift bed or support and the top-lift-holding device carried thereby. Fig. 4 is a detail view in section and elevation to show the relation which the parts bear to each other upon the formation of holes in the top lift. Fig. 5 shows the relation which the parts bear to each other upon the driving of the nails or slugs into the top lift. Figs. 6 and 7 are detail views representing a modification to which reference is hereinafter made.

$a$  is the templet;  $a'$ , the holes therein through

which the awls and drivers are moved and the slugs fed.

$a^2$  is the nail-carrier. It has the holes  $a^3$ , which register with the holes  $a'$  of the templet. This nail-carrier is preferably automatically brought by the cam  $a^4$  into and out of position to convey slugs from a feeding device  $a^5$  automatically to the holes  $a'$ .

B is a rotary head. It is mounted upon the cross-head  $b$ , is automatically revolved, and has two sets or groups of operating devices adapted for successive use. This is to permit the rotary head to be made with four arms and thus have a comparatively easy turning movement. If it had less than four arms, the turning movement would not be so easy. Each group comprises an arm  $b'$ , having a gang of awls  $b^2$ , and an arm  $b^3$ , having the gang of drivers  $b^4$ .

In the drawings in question the templet  $a$  is represented as stationary.

C is the top-lift supporting and presenting plate. Upon it is mounted the top-lift-centering device comprising the yielding back gage  $c$  and the breast-gages  $c'$ , which are formed upon arms having movements toward and from each other. These breast-gages are also horizontally adjustable upon the face  $c^2$  of the plate C, being geared together at their rear ends and attached to a sliding plate  $c^3$ , which is horizontally adjustable by the adjusting-screw  $c^4$ . The top-lift plate C has the holes  $c^5$ , which are quite deep and which register with the holes  $a'$  of the templet. It is provided with a vertical movement in relation to the templet by means of the cam D upon the shaft  $d$  and the intermediate slide  $d'$ , having a cam-roll which rests upon the cam. There is interposed between sections of the slide a compression-spring of metal or rubber  $d^2$ .

In operation the top lift is placed upon the surface of the plate C and centered thereon by the gages  $c$   $c'$ . The machine is set in operation, the plate C, the surface of which is flat, is moved up by the cam acting through the pressure-head, and the top lift held forcibly against the under surface of the templet and centrally in relation to the holes  $a'$  therein. The awls are then reciprocated and



are moved through the holes  $a'$  into and through the top lift and into the holes  $c^5$  of the plate C, and are then withdrawn and automatically moved out of position. The slugs  
 5 are then fed by the nail-carrier to the holes  $a'$ , and the drivers descending through the holes of the carrier and templet, the top lift still being held forcibly against the under surface of the templet, drive the nails or slugs  
 10 through the holes  $a'$  and the pricked holes of the top lift, bringing the upper ends or heads of the slugs or nails practically flush with the top lift, while their shanks extend through the top lift and into the holes  $c^5$ . The drivers  
 15 are then withdrawn, the pressure-head drops, and the loaded top lift is removed.

In Fig. 6 I have represented, in addition to this loading mechanism, a top-lift-compressing die E, fastened to the under surface of  
 20 the templet, having the flaring mouth  $e$ , and which is of a size somewhat smaller than the top lift, whereby the top lift, instead of the plate C, is made of a shape to enter the die-cavity, and as the die centers the top lift the  
 25 top-lift-centering device above specified is not necessary in this construction.

The upward movement of the plate C moves the top lift into the die, and as the die-cavity is reduced or somewhat smaller than the size  
 30 of the lift and the pressure given the head C is very great the lift is very much consolidated, not only by pressure against both its upper and lower surfaces, but by the pressure of the die upon its side edge, and while  
 35 it is thus held confined the awls are driven through it into the holes  $c^5$  of the plate C and it is loaded with nails, as above specified, the result being a compressed loaded top lift.

Having thus fully described my invention,  
 40 I claim and desire to secure by Letters Patent of the United States—

1. In a top-lift-loading device, the plate C having the holes  $c^5$ , the top-lift-centering device for centering the top lift in relation to

said holes, and devices for forming holes in said top lift, and driving nails through said holes into the holes  $c^5$  of the plate, as and for the purposes described.

2. The top-lift-loading machine, in combination with a plate having holes through which awls and drivers are reciprocated, a top-lift-compressing die, and a top-lift-holding plate having holes  $c^5$ , substantially as described.

3. The combination in a top-lift-loading machine of a perforated plate having a flat surface, a pressure-plate having a flat surface for clamping the top lift against the first-named flat surface, nail-driving devices, and an automatic nail-feed for supplying nails to the perforations of the first-named plate, substantially as described.

4. The combination of a perforated plate having a flat surface, a pressure-plate having a flat surface to move and hold the top lift against the first-named flat surface, and a reciprocating head having a rotary head with two gangs or groups of nailing devices, each group comprising an arm having a gang of awls and an arm having a gang of drivers, the head being automatically rotated, substantially as described.

5. The combination, in a top-lift-loading machine, of a perforated plate having a flat surface against which the top lift is moved and held, a top-lift-pressure plate having a flat surface and carried upon the pressure-head, a cam for imparting movement to the pressure-head, a reciprocating cross-head having a rotary head, with two or more gangs or groups of nailing devices, a nail-carrier and its operating-cam to move the same from the nail-supplying devices to the nail-driving devices, substantially as described.

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In presence of—

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 A. P. PORTER.