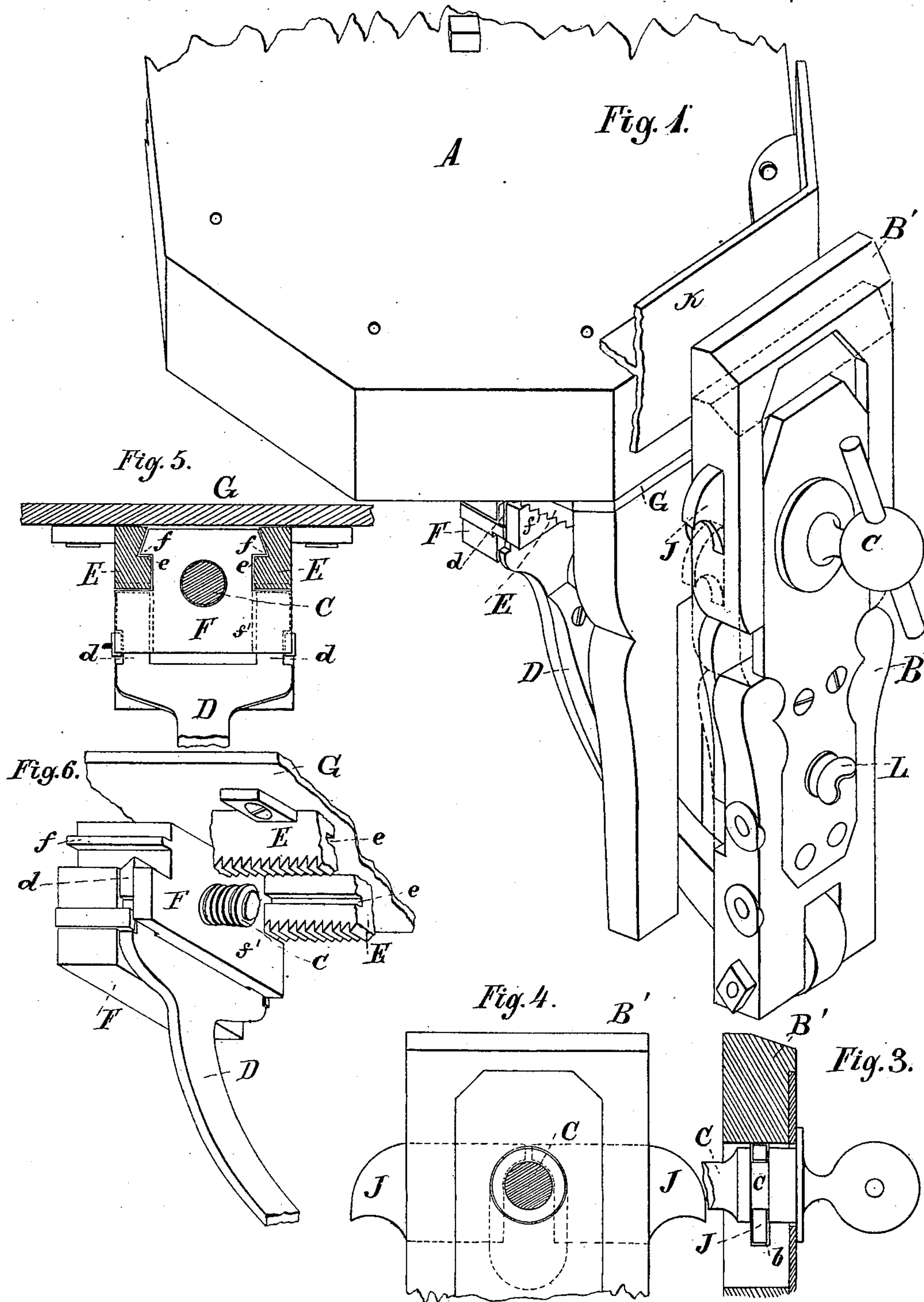


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WISE.

No. 266,474.

Patented Oct. 24, 1882.



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(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

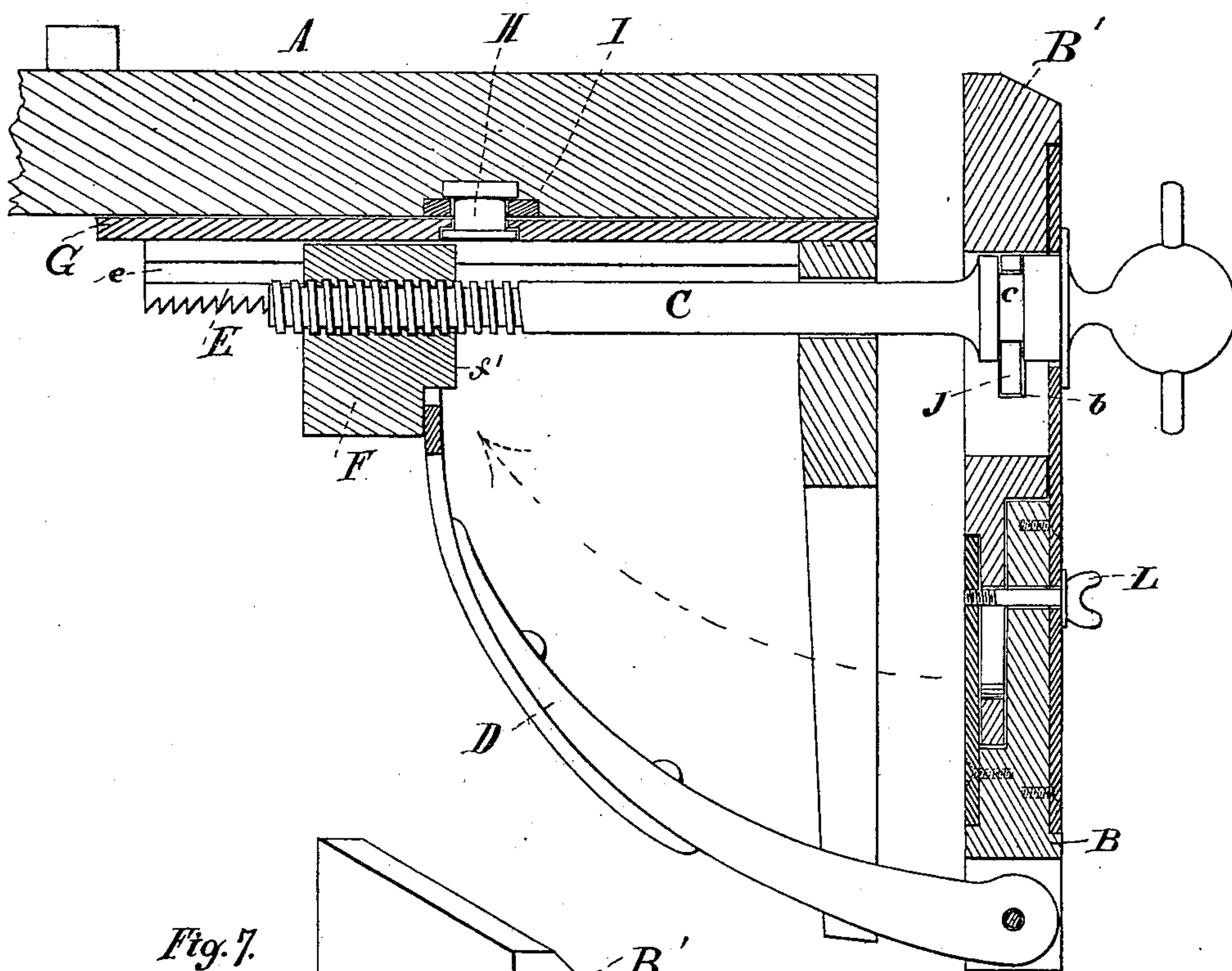


Fig. 7.

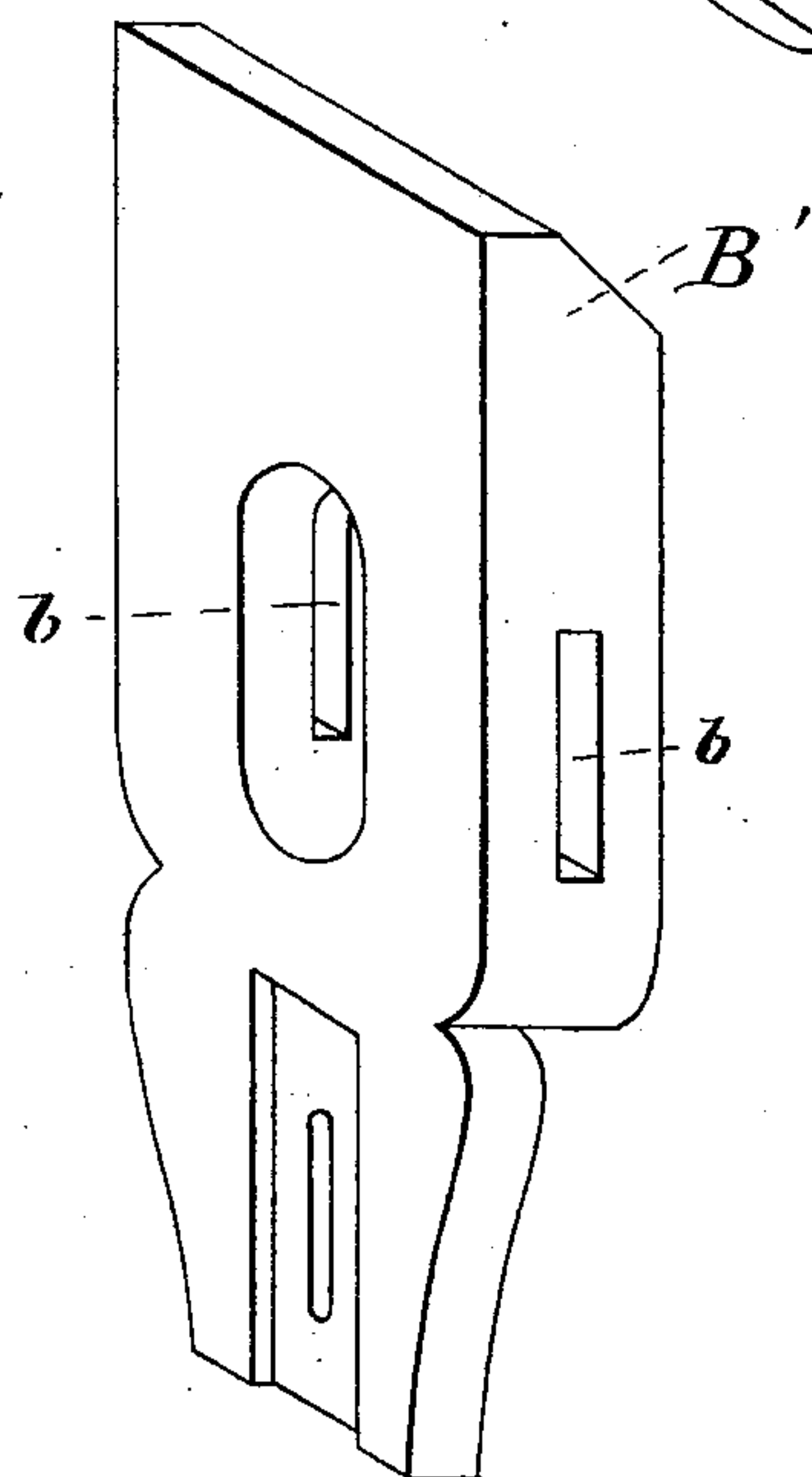


Fig. 16.

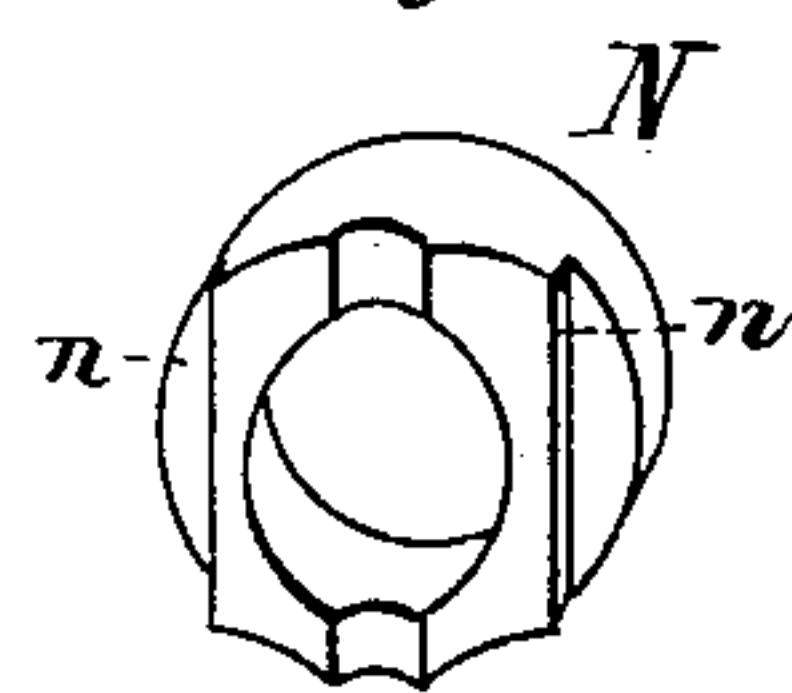
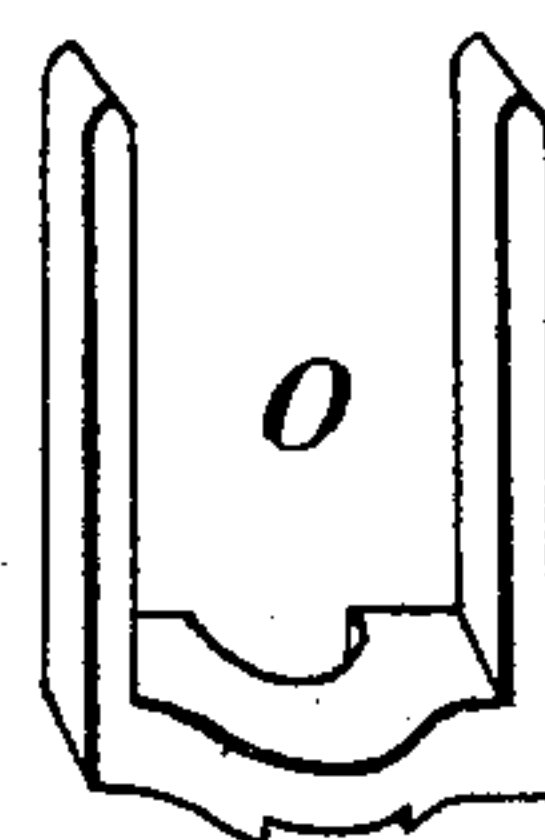


Fig. 17.



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Fig. 8.

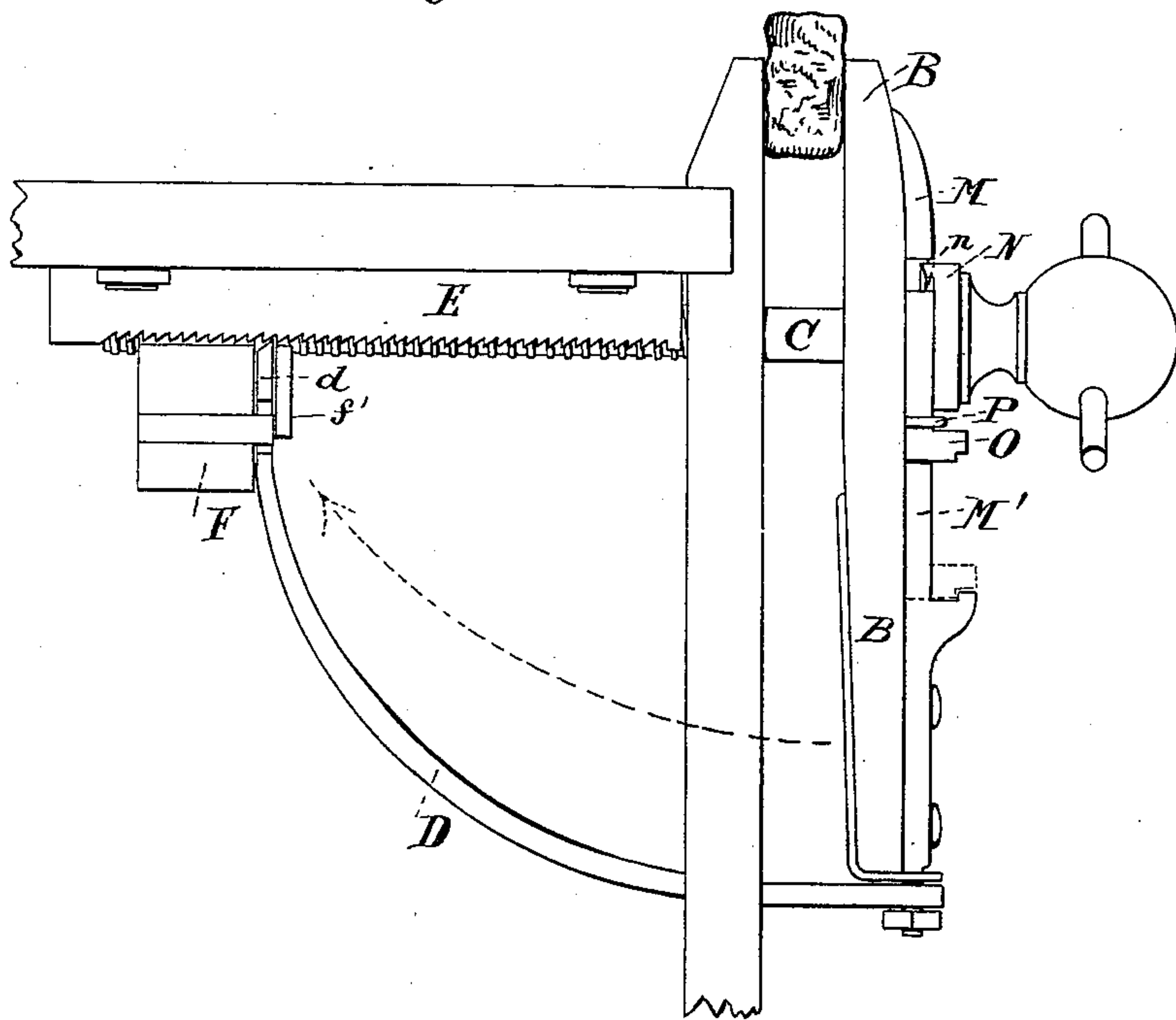


Fig. 9.

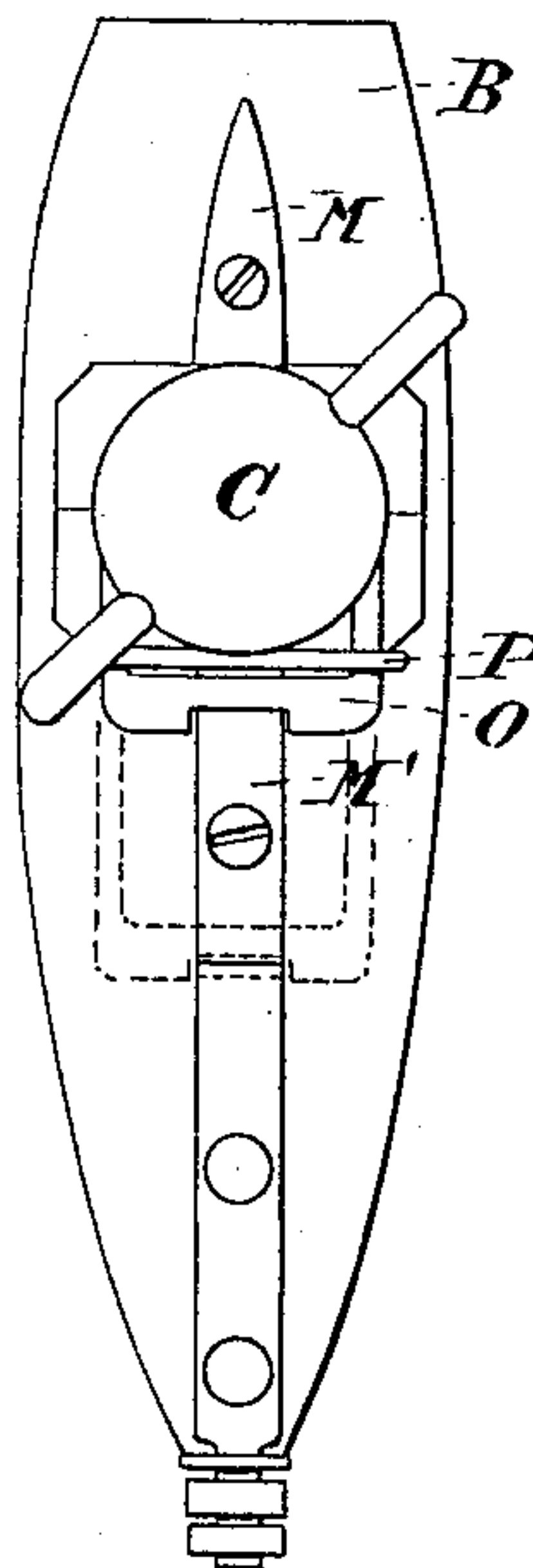


Fig. 10.

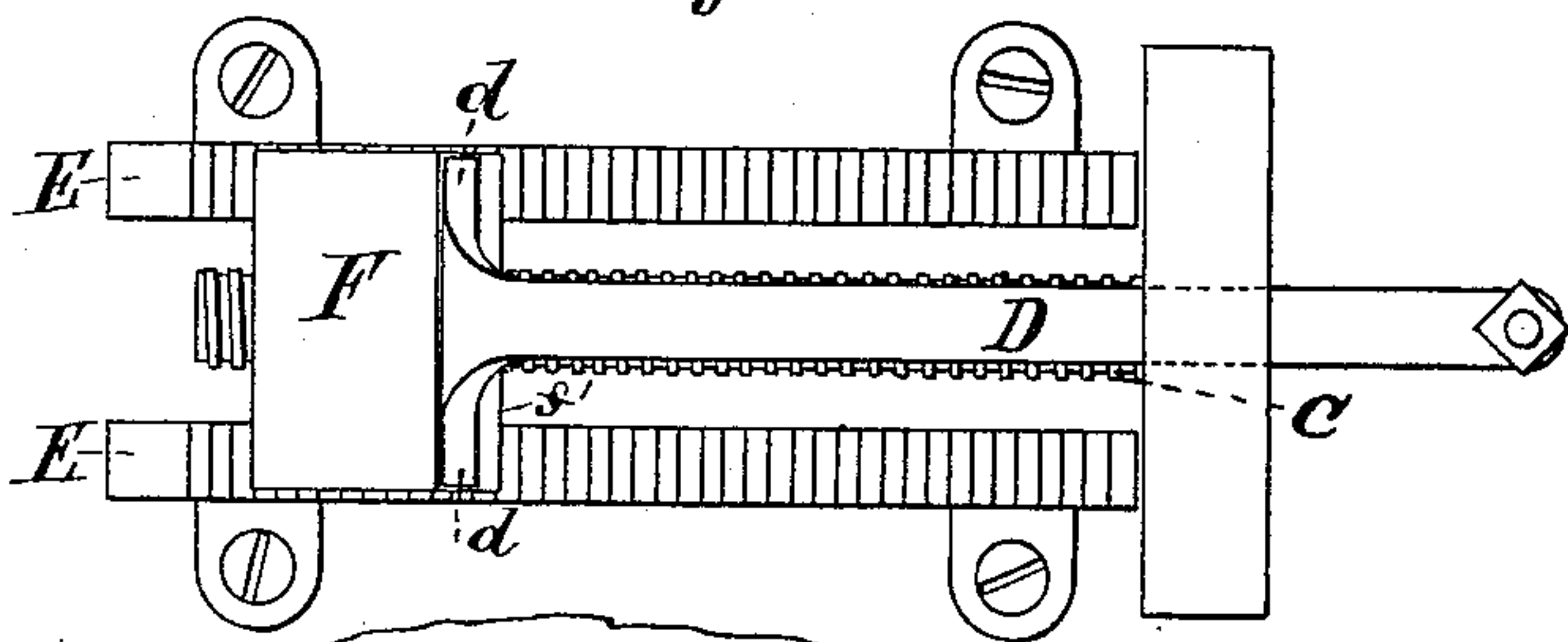


Fig. 11.

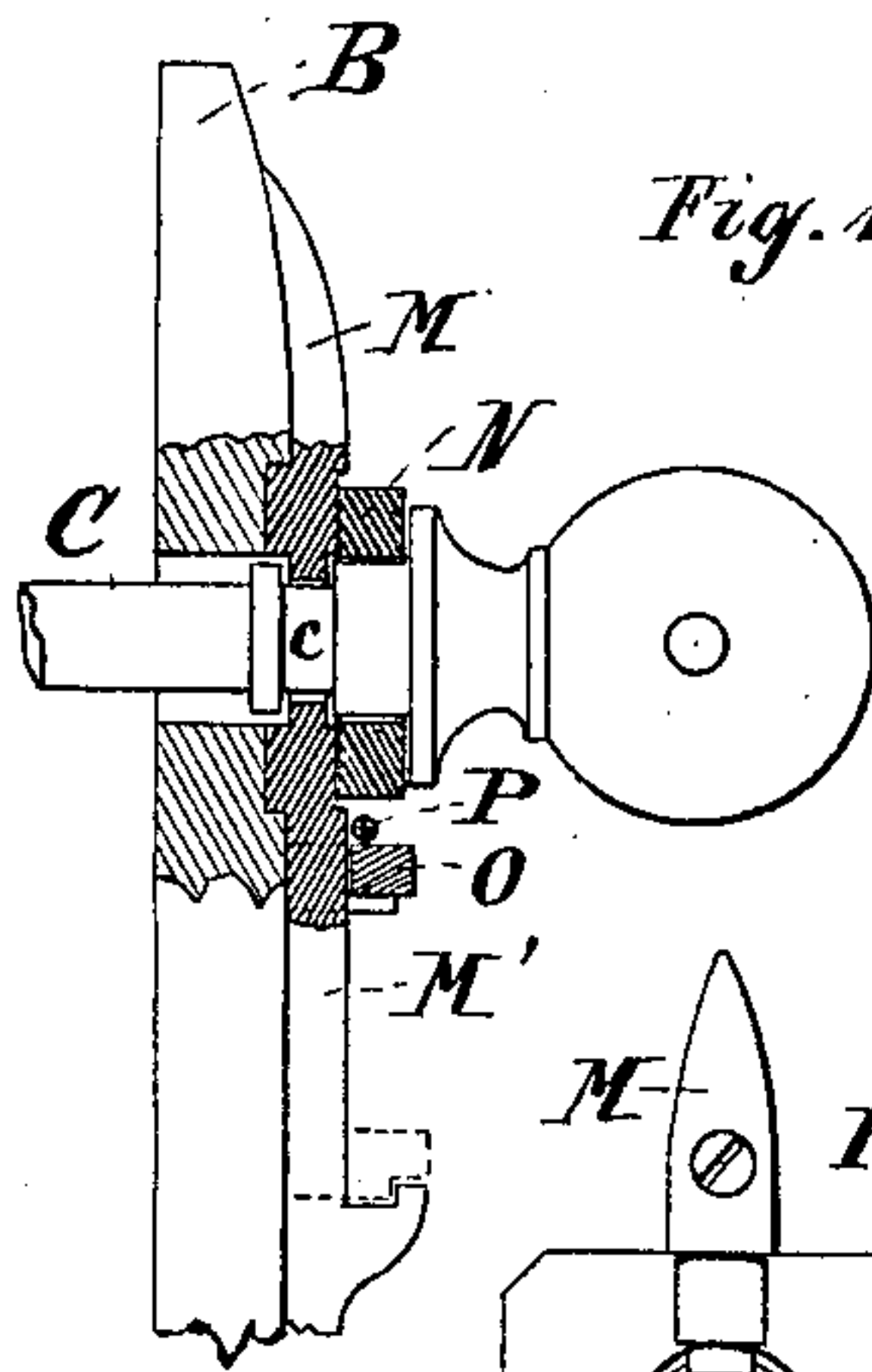


Fig. 13.

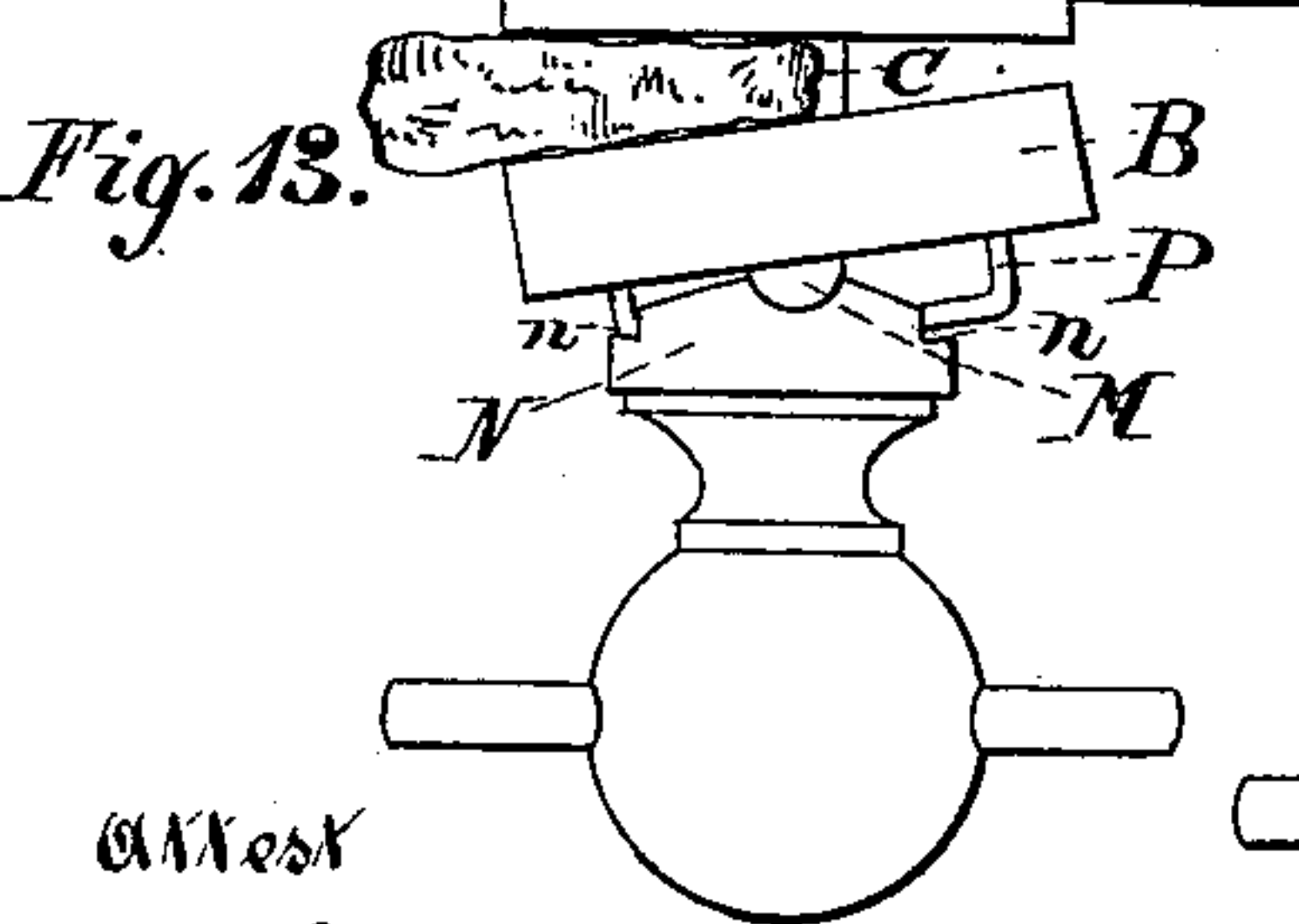


Fig. 12.

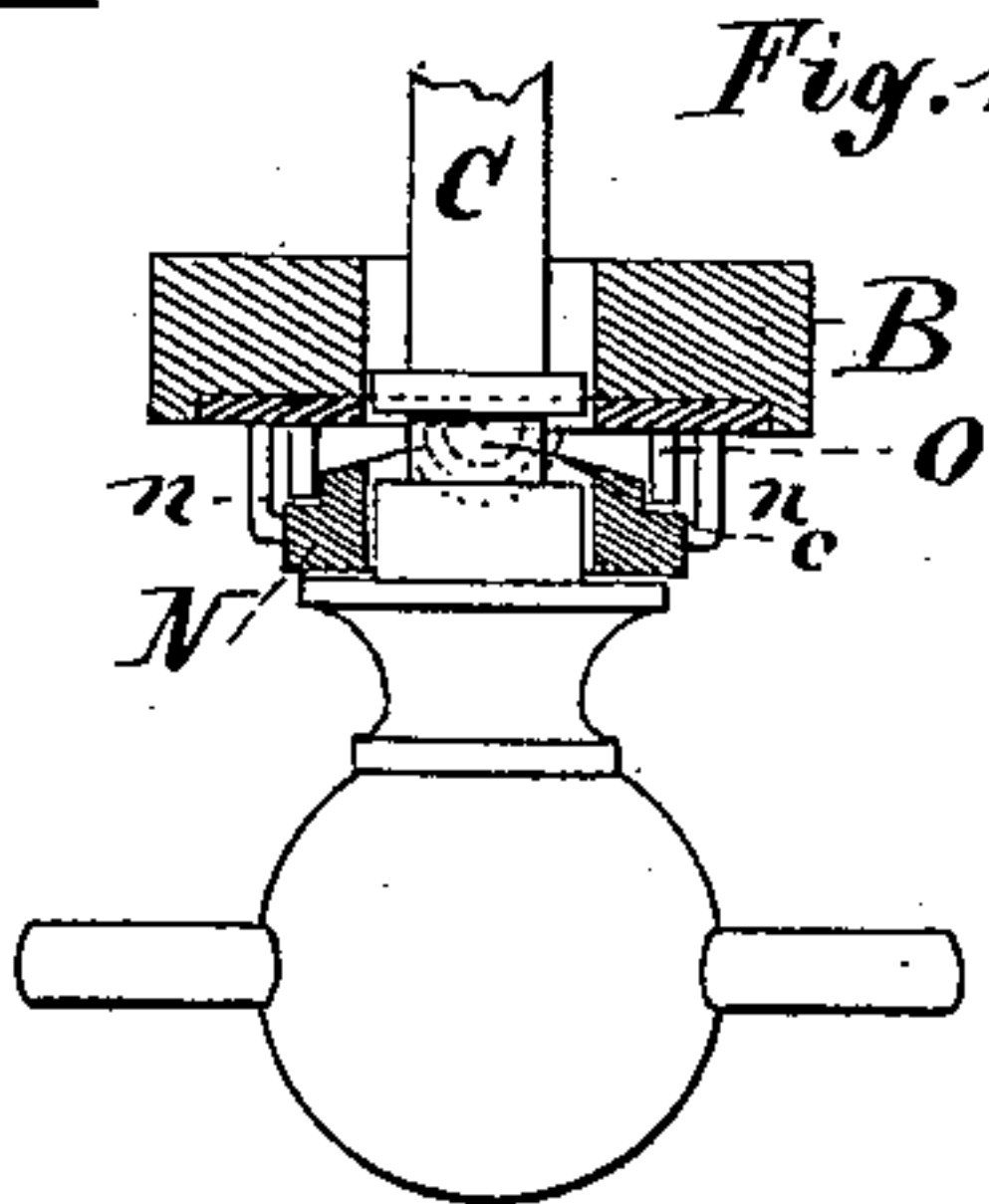


Fig. 14.

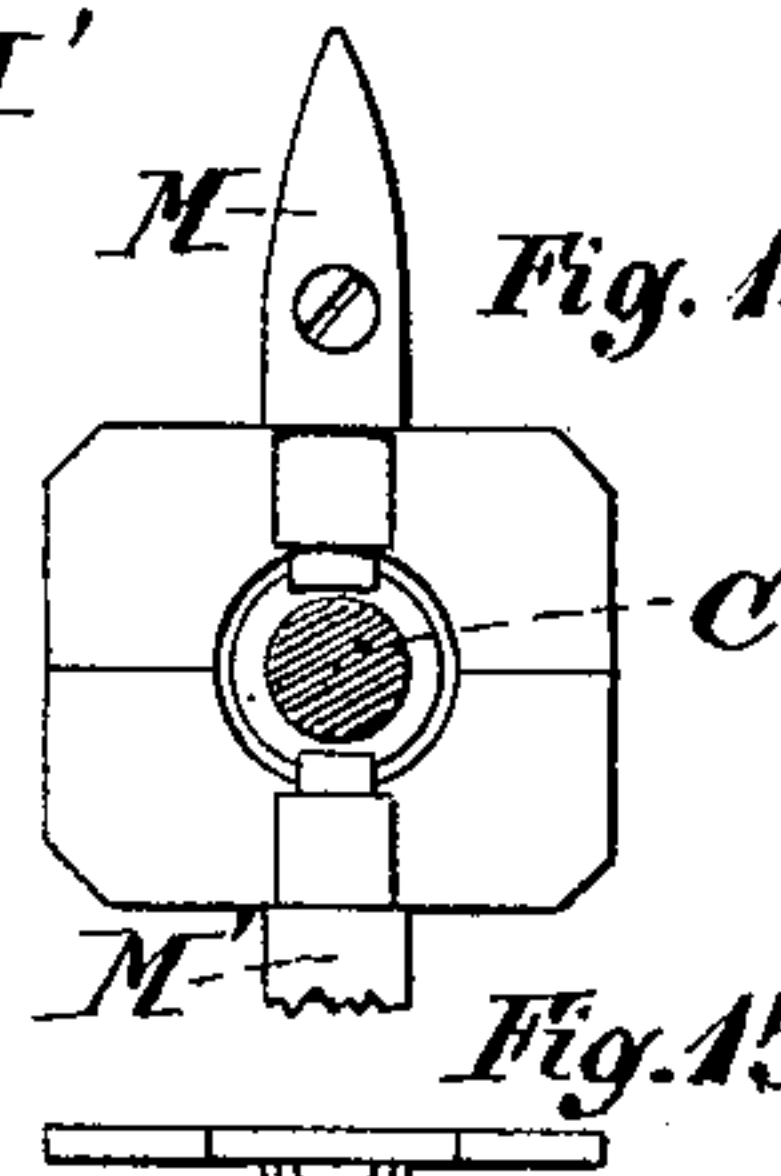


Fig. 15.



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MARVIN T. HENSON, OF PRATT, OHIO, ASSIGNOR OF ONE-HALF TO CHESTER G. BARTHOLOMEW, OF UNION CITY, INDIANA.

WISE.

SPECIFICATION forming part of Letters Patent No. 266,474, dated October 24, 1882.

Application filed July 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, MARVIN T. HENSON, of Pratt, Shelby county, Ohio, have invented a new and useful Improvement in Vises, of which the following is a specification.

My invention relates to improvements in the class of mechanics' vises illustrated in the subject-matter of Patent No. 196,578, granted to myself and Martin Osborn, October 30, 1877, in which the construction gives ability to move the jaw quickly and easily out or in, to suit the dimensions of the work, without waiting for the tedious action of the screw, which is employed only for actually gripping and releasing of the work.

In the accompanying drawings, Figure 1 is a perspective view representing one form of my vise in position upon the bench. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section of the upper portion of the jaw in the plane of the clamping-screw. Fig. 4 is a front view of the same, the head of the screw being omitted. Fig. 5 shows the bearing-plate, racks, and clamping-screw in transverse section, and the nut and pawl in elevation. Fig. 6 is a perspective view of the same parts. Fig. 7 is a rear perspective view of my adjustable jaw detached. Fig. 8 is a side elevation, and Fig. 9 a front elevation, of another form of my improvement. Fig. 10 is an under side view of my device, the bench being omitted. Fig. 11 is a vertical section in the plane of the clamping-screw. Fig. 12 is a horizontal section, and Fig. 13 is a top view, of the same, adapted for parallel and tapered work, respectively. Fig. 14 is a front view, and Fig. 15 is a top view, of the confining-yoke of the clamping-screw and strap-bearing of jaw. Fig. 16 shows my washer detached. Fig. 17 shows the adjustable plug.

The following parts and members may be substantially the same as those of the Patent No. 196,578 aforesaid—namely, bench A, jaw B, clamping-screw C, and pawl D, with its forked extremity *d d*. The racks E E have in my present improvement square shoulders *e* for support of the nut F, with shoulders *f*, of corresponding presentation. This nut F has a guard, *f'*, upon the front face to steady the movement of the fork. As in said patent, the

gravity of the pawls keeps them constantly out of contact with the racks, except when there is an object confined in the upper parts of the jaws, and the clamping-screw is tightened. (See Fig. 8.) Such action converting the object thus gripped into a fulcrum operates to virtually shorten the upper side of the triangle formed by the clamp-screw, the jaw, and the pawl, and forcing the pawl-points *d d* into the rack, causes them to be retained thereby, and enables them in turn to discharge the duty of an abutment against which the full power of the clamping-screw can be exerted. When the work is to be liberated a short reverse rotation of the screw releases the pawl-points from the racks, after which the jaw may be readily drawn in or out to any desired extent.

In my present improvement the racks E E, instead of being attached directly to the under side of the bench, are preferably bolted to a bearing-plate, G, which itself is secured by a single strong pivot-bolt, H, (which I call the "king-bolt,") and washer I to the under side of the bench. This mode of attachment permits the jaw to be adapted or to adapt itself to a tapered or other irregular object, and also enables it to be shifted from one to another of several sides of a polygonal bench, such as shown in Fig. 1.

Backward rotation of the clamping-screw is made effective for releasing the jaw-pressure upon the work through the instrumentality of plates J, which occupy mortises *b* in the jaw. Partial withdrawal of these plates and the unscrewing of the clamping-screw permits removal of the latter for oiling or other purpose.

For work which requires the gripping action to take place above the bench-level, a "false jaw," K, is secured to the bench-top, and the jaw proper, B', is made capable of being shifted upward in the jaw B, as shown in Fig. 1. A screw, L, enables the jaw proper to be retained to any desired altitude.

When the apparatus is bolted direct to the bench, without the intervention of a bearing-plate and pivot-bolt, I make the jaw self-adaptable to irregular objects by means as follows: Instead of the confining-plates J, I sometimes employ two half-round straps, M M', attached

in alignment to the jaw B, and which, occupying neck *c* of the clamping-screw, in like manner to the plates J, compel the jaw to open and close with each backward and forward rotation of the clamping-screw; but instead of holding the movable jaw B to parallelism with the fixed jaw the convex surface of the straps permits the jaw to adapt itself to the taper or other irregular contour of the work.

A washer, N, of the form represented, is preferably interposed between the head of the clamping-screw and the convex surface of the strap. This washer has rabbets *n* for the interposition between it and the jaw of a forked plug, O, which enables the operator to at any moment suspend the self-adjustable functions of the jaw B by compelling it to preserve parallelism with the fixed jaw. This is effected by pushing the plug O to the position indicated in Figs. 8, 9, 11, and 12, where it is held by friction simply. When, on the contrary, it is desired that the jaw shall be self-adjustable to

the work, the plug O is drawn down to the position indicated by dotted lines in Figs. 8, 9, and 11.

A strap or keeper, P, holds the plug O in place, while permitting its vertical adjustment in the manner indicated.

I claim as new and of my invention—

1. The combination of jaw B, screw C, pawl D, racks E E, having shoulders *ee*, nut F, having shoulders *ff* and guard-plate *f'*, bearing-plate G, king-bolt H, and washer I, substantially as set forth.

2. In combination with jaw B and screw C, the half-round strap-bearings M M', rabbeted washer N *n*, forked plug O, and keeper P, substantially as and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

MARVIN T. HENSON.

Attest:

GEO. H. KNIGHT,
JAS. R. FORAKER.