

(No Model.)

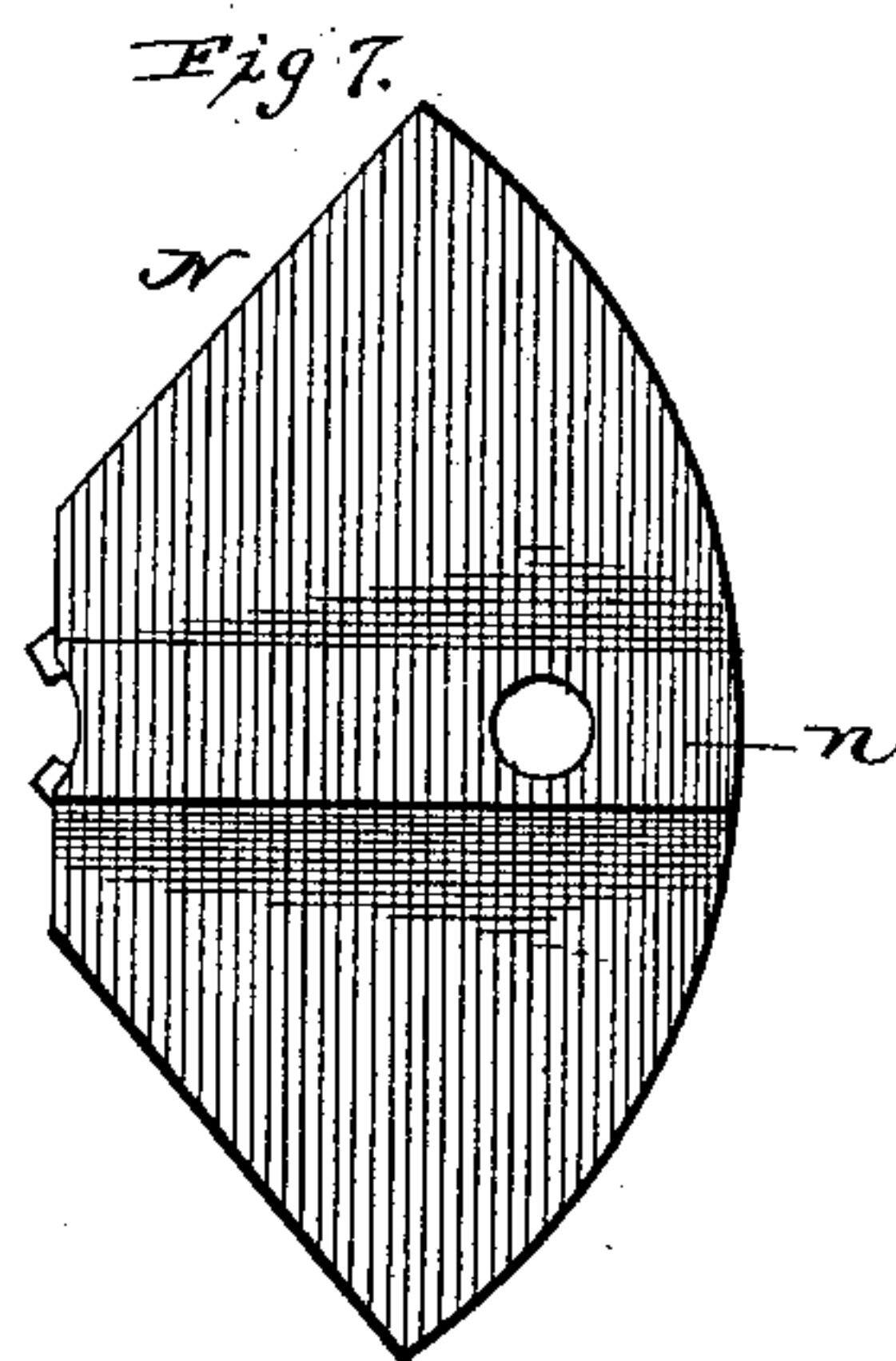
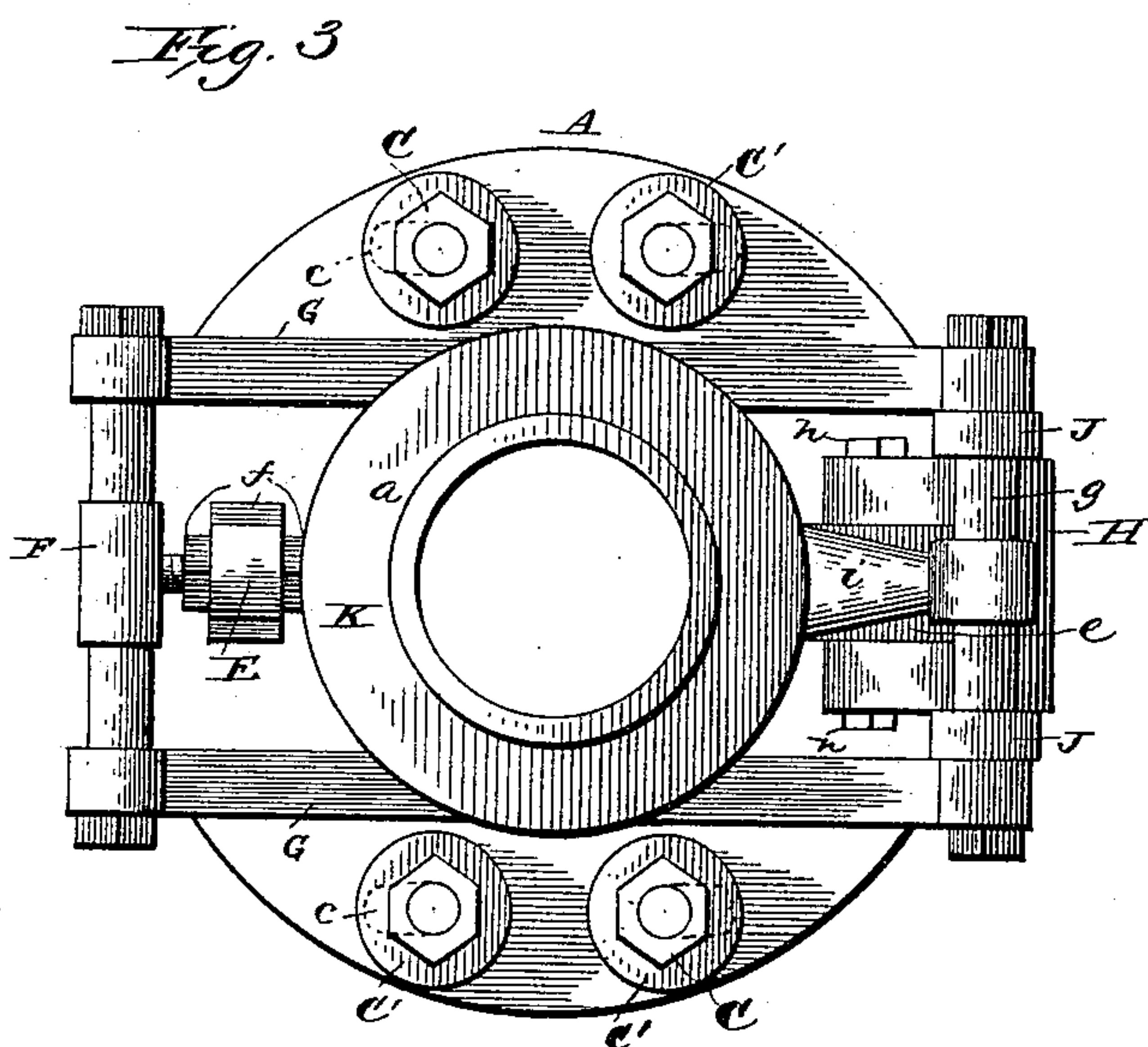
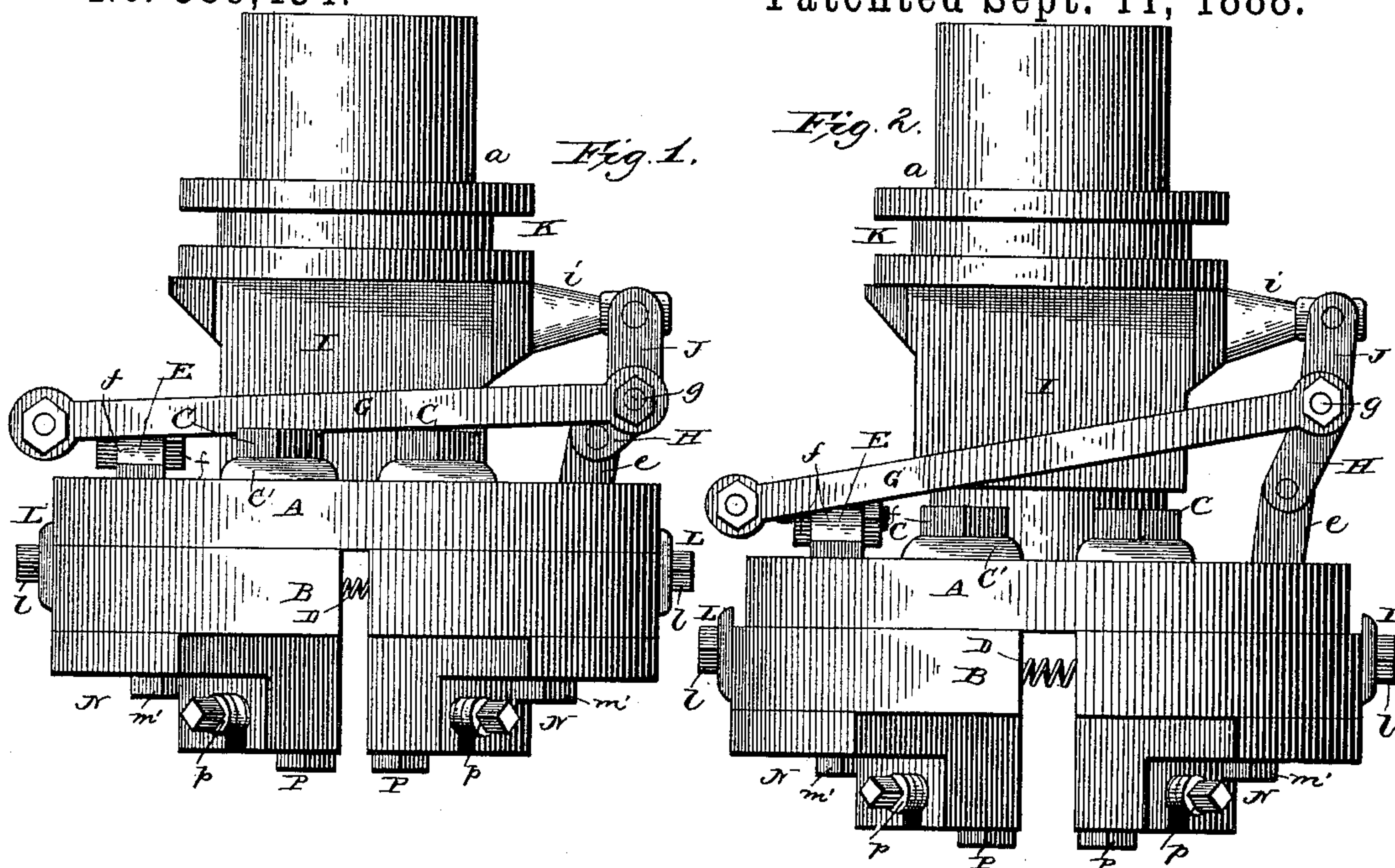
2 Sheets—Sheet 1.

J. A. BECHER.

SCREW CUTTING DIE HEAD.

No. 389,434.

Patented Sept. 11, 1888.



WITNESSES

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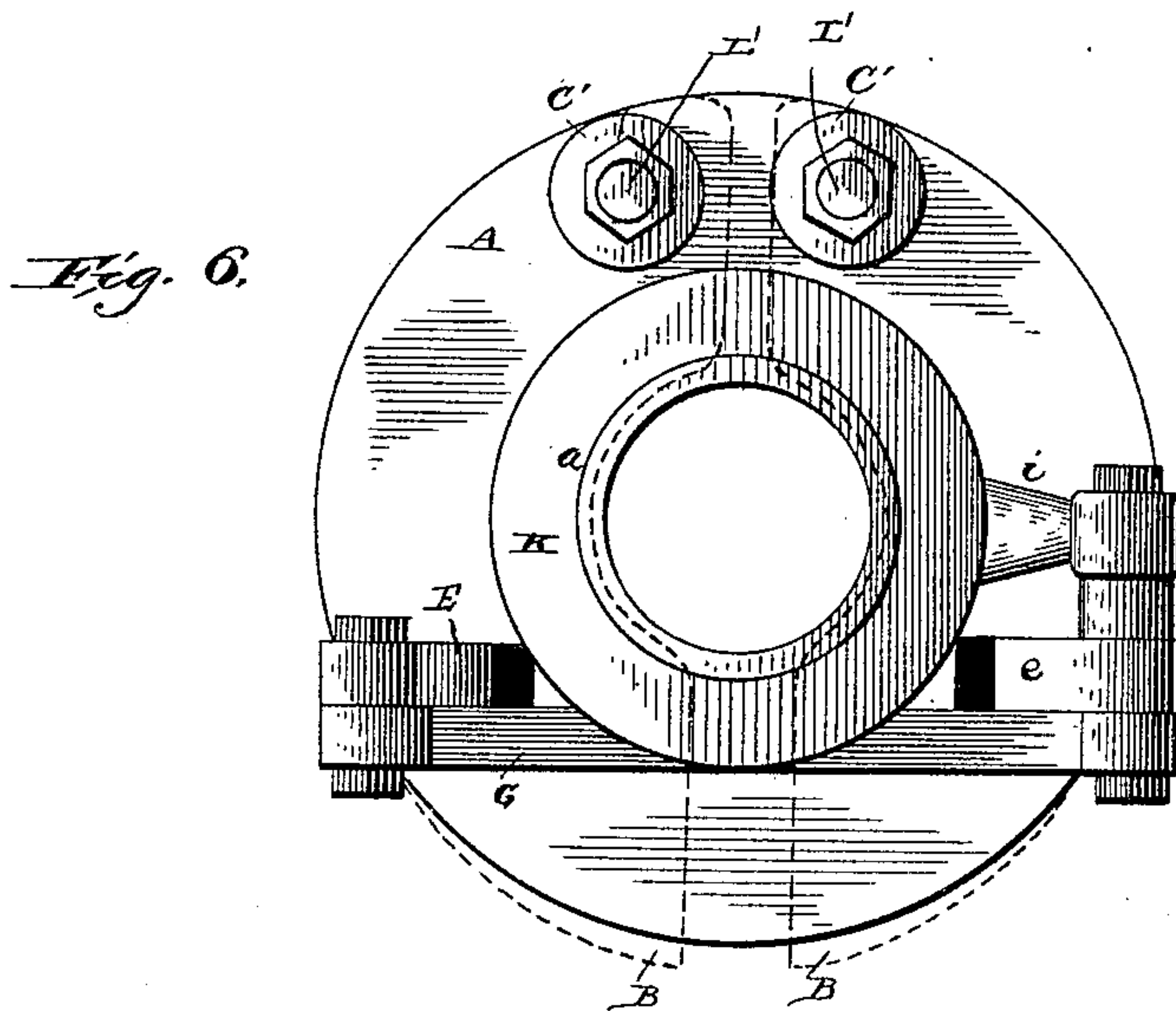
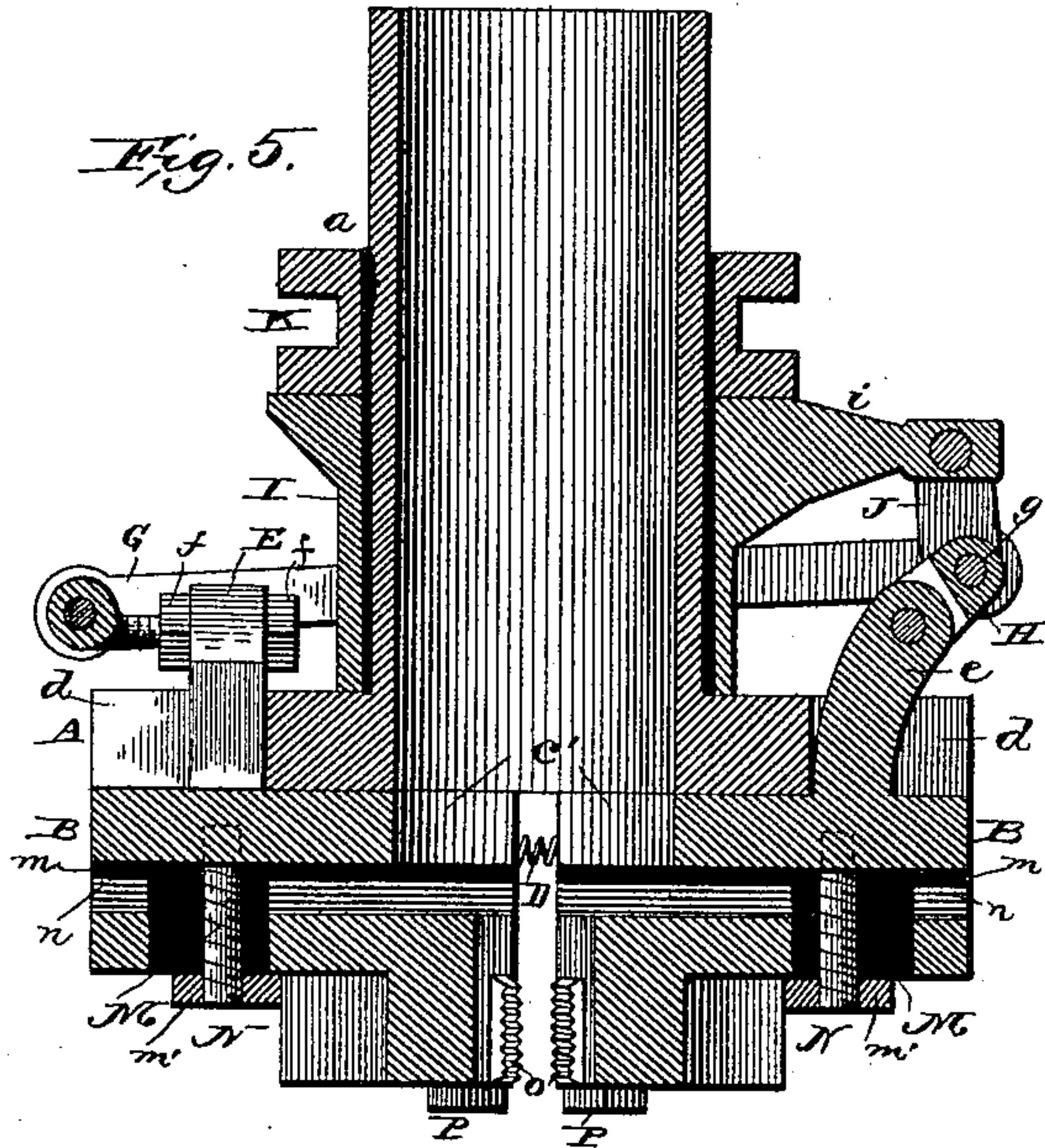
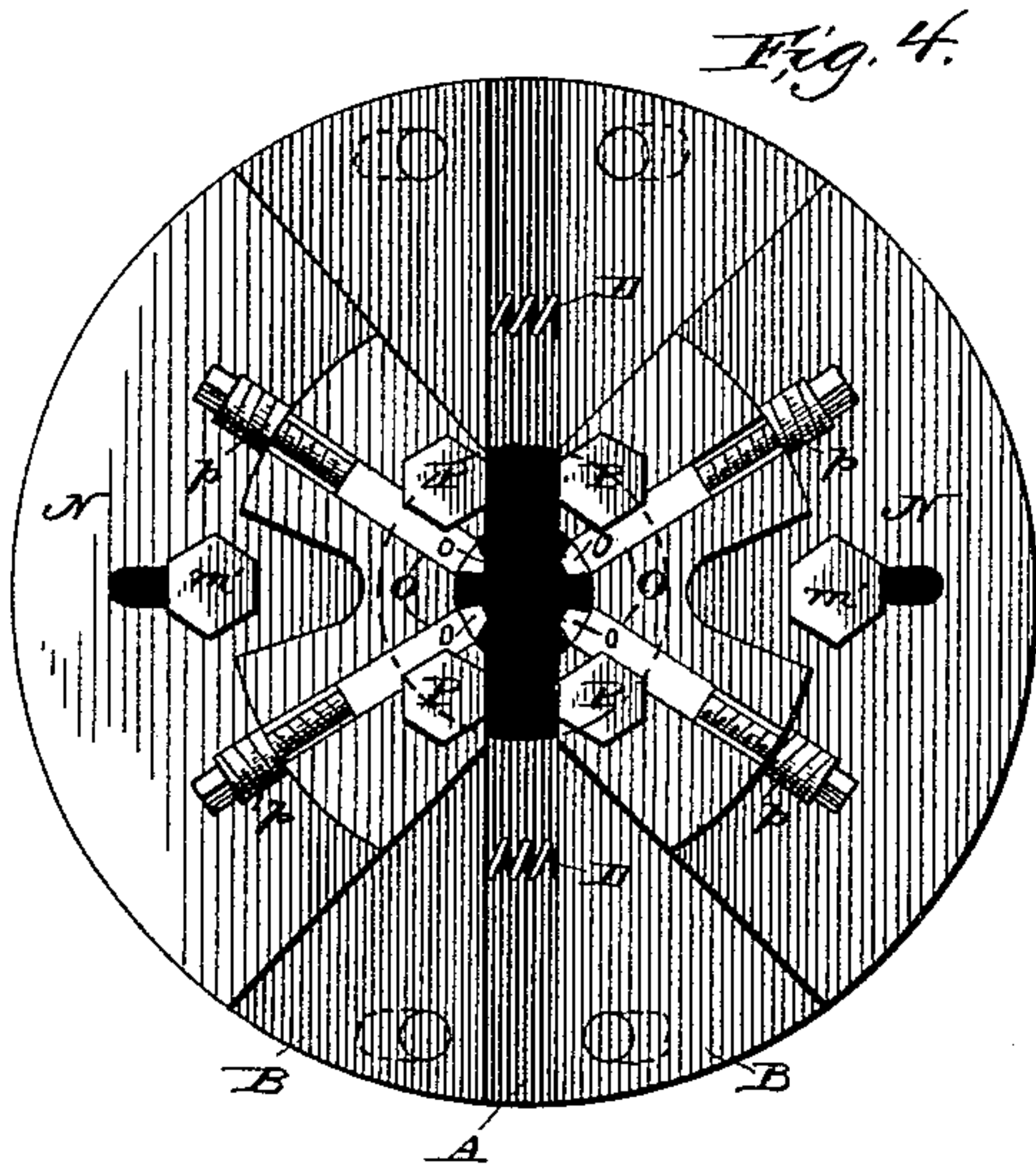
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UNITED STATES PATENT OFFICE.

JAMES A. BECHER, OF MISHAWAKA, INDIANA.

SCREW-CUTTING DIE-HEAD.

SPECIFICATION forming part of Letters Patent No. 389,434, dated September 11, 1888.

Application filed April 27, 1888. Serial No. 272,042. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. BECHER, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Bolt-Threading Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

Figure 1 is a side view of my revolving screw-thread-cutter head closed. Fig. 2 is a similar view of the same opened. Fig. 3 is a rear view. Fig. 4 is a front face view. Fig. 5 is a vertical cross-sectional view through Fig. 1. Fig. 6 is a rear view of a modification. Fig. 7 is a detail.

This invention is an improvement in screw-thread cutting machines; and its objects are to provide a revoluble screw-thread-cutting head for the same, which head is provided with removable cutter-bearing blocks having adjustable cutters, and, further, to provide means for approaching or separating the cutters without necessitating the stopping of the head, whereby the work can be withdrawn from the head without the delay of "backing" it therefrom. These objects are attained by the present invention, which consists in the novel arrangement and construction of parts herein-after described.

Referring to the drawings by letter, A designates a disk forming the base-plate of the head, having a central opening surrounded by a hollow cylindrical sleeve, *a*, by which the head may be secured to the hollow stub of a bolt-threading machine.

B B are oppositely-facing semi-cylindrical plates secured to disk A on the side opposite sleeve *a* by means of bolts C C, which pass through opposite slotted openings, *cc*, in plate A and serve to center plates B on disk A when closed, as shown in Fig. 1.

C' C' are washers interposed between the heads of bolts C and disk A. Plates B are provided with recesses *c' c'* in their adjoining edges corresponding to the opening in disk A.

D D are springs interposed between plates B B to force the latter apart.

E *e* are eye-studs secured, respectively, to

plates B and projecting through slotted openings *d d* in disk A at diametrically-opposite points thereof.

F is a T-coupling the screw-threaded shank of which is passed through stud E and adjustably secured thereto by means of setting and binding nuts *f*, as shown. To the ends of the head of this coupling are loosely connected the rear end of link-bars G G, which extend across disk A on opposite sides of sleeve *a*, and are loosely connected at their front ends to a rod, *g*, upon which is hung a bifurcated link, H, that embraces the head of stud *e* and is connected thereto by a bolt, *h*.

I is a hollow block placed on sleeve *a* and reduced on its sides, as shown, to accommodate link-bars G.

i is an eye-lug projecting from block I at the side adjoining lug *e* and above link H.

J J are links connecting lug *i* with rod *g*, as shown.

K is a grooved sheave rigidly secured to block I, which sheave is to be engaged by the bifurcated end of a lever (not shown) to shift block I on sleeve *a*.

It will be observed that the links H and J J form a toggle-connection between stud *e* and lug *i*, and that link-bars G are connected to the central joint of the toggle. Consequently when block I is forced toward plate A, as shown in Fig. 1, the link-connections force plates B B toward each other, and when the block is drawn away from the plates, as shown in Fig. 2, the links separate the plates B, the springs D D assisting in quickly separating said plates when the links are released. As plates B carry the cutters, it will be seen that they can be separated to permit the withdrawal of the rod or object being threaded while the head is revolving.

L L are stops adjustably secured to the periphery of plates B B by bolts *l l*, and which impinge against the periphery of plate A, regulating the closing of plates B B thereon. The outer face of each plate B is grooved at *m*, and M is a threaded stud projecting therefrom.

N N are similar opposite cutter-bearing blocks placed on plates B and having beads *n* engaging grooves *m*, and suitably perforated for the passage of studs M, which are engaged by nuts *m'* and secure the blocks in place.

Blocks N are slotted at O O on imaginary lines radiating from the axis of the head, and in these slots are placed the cutters *o o*, retained therein by headed bolts *p p* and adjustable
5 therein by means of screws P P, which engage suitable threaded recesses in the walls of the slots. By reason of these various adjustable parts of the head, threads of the same pitch can be cut on varying sizes of pipe, and different
10 cutters can be secured on the head.

As shown in Fig. 6, I pivot plates B by bolts at one end, dispensing with bolts L at the other end and passing studs E e through openings in
15 disk A to one side of the diametrical line thereof. By this arrangement the link-connections between said lugs are wholly to one side of block I, as shown, and one-half the bolts L, springs D, and links G and J can be dispensed with and the efficiency of the head unimpaired.
20 I prefer this first-described construction, however, as in it the head is more perfectly balanced and the movement of the cutters to and from the work is more equal.

Having described my invention, I claim—

25 1. The combination of the base-disk having a sleeve on its rear face and the adjustable cutter-bearing plates on the outer face of said disk, with the block playing on said sleeve, the studs projecting from said plates, and the link-connections between said studs and the block,
30 whereby the plates are adjustable from the block, substantially as and for the purpose described.

35 2. The combination of the disk, its sleeve, and the block and sheave moving freely on said sleeve, with the plates adjustably attached to said disk, the link-connections between said plates and the block, whereby the plates are actuated from the block, and the adjustable

cutters mounted on said plates, all as and for 40 the purpose described.

3. The combination of the slotted disk, its sleeve, and the movable block and sheave on said sleeve, with the opposite semi-cylindrical
45 cutter-bearing plates adjustably secured to said disk, the studs on said plates projecting through slots in the disk, and the toggle-joint and link-connections between said studs and the block, all constructed and arranged substantially in the manner and for the purpose 50 described.

4. The combination of the slotted disk with the cutter-bearing plates mounted thereon by bolts playing through the slots of the disk, the studs projecting centrally from said plates
55 through slots in the disk, and the link-connections between said studs, whereby the plates can be approached or separated, all constructed and arranged to operate substantially in the manner and for the purpose described. 60

5. The combination of the revoluble slotted disk, its sleeve, and the movable block and sheave thereon, with the movable plates secured to the disk by bolts passing through the slots therein, the studs of said plates projecting
65 through the disk, the link-connections between said studs and the block, and the removable cutter-bearing blocks on said plates, all constructed and arranged to operate substantially as and in the manner and for the 70 purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES A. BECHER.

Witnesses:

JAMES DUSHANE,
W. G. CRABILL.