

No. 697,244.

Patented Apr. 8, 1902.

G. J. GLOSSOP.

TOOL FOR MAKING, MENDING, AND SHARPENING ROCK DRILLS.

(Application filed Sept. 3, 1901.)

(No Model.)

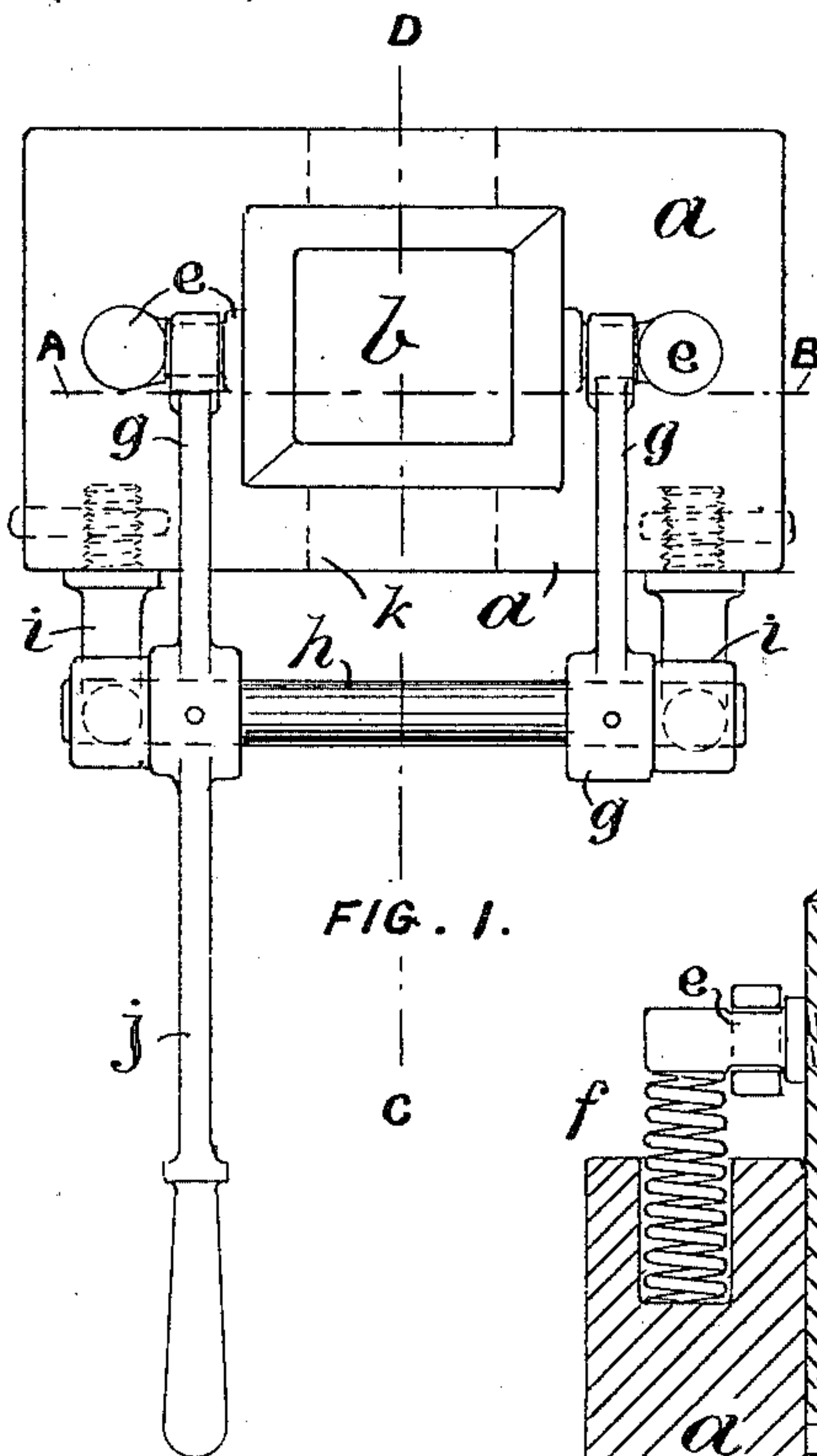


FIG. 1.

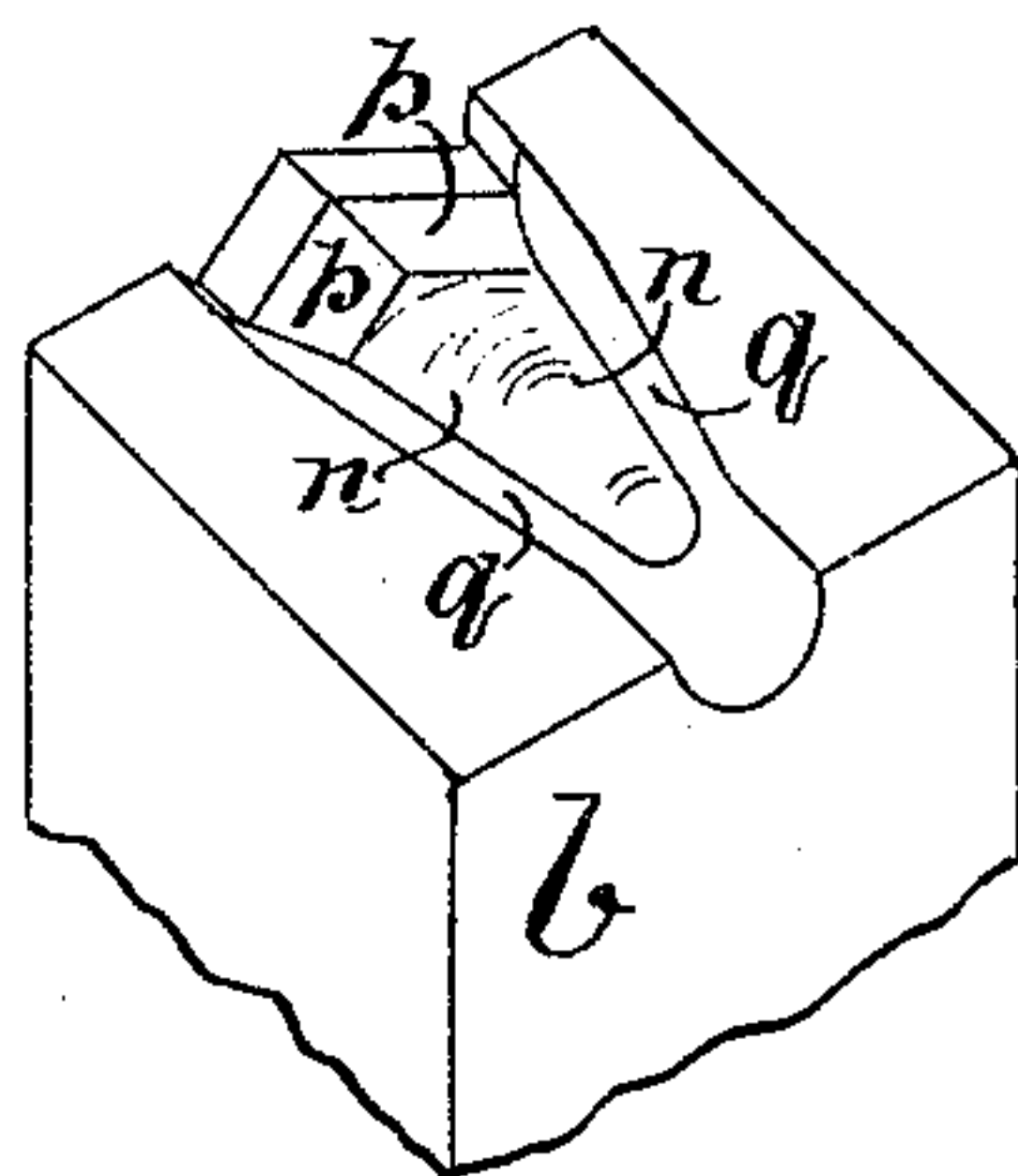


FIG. 5.

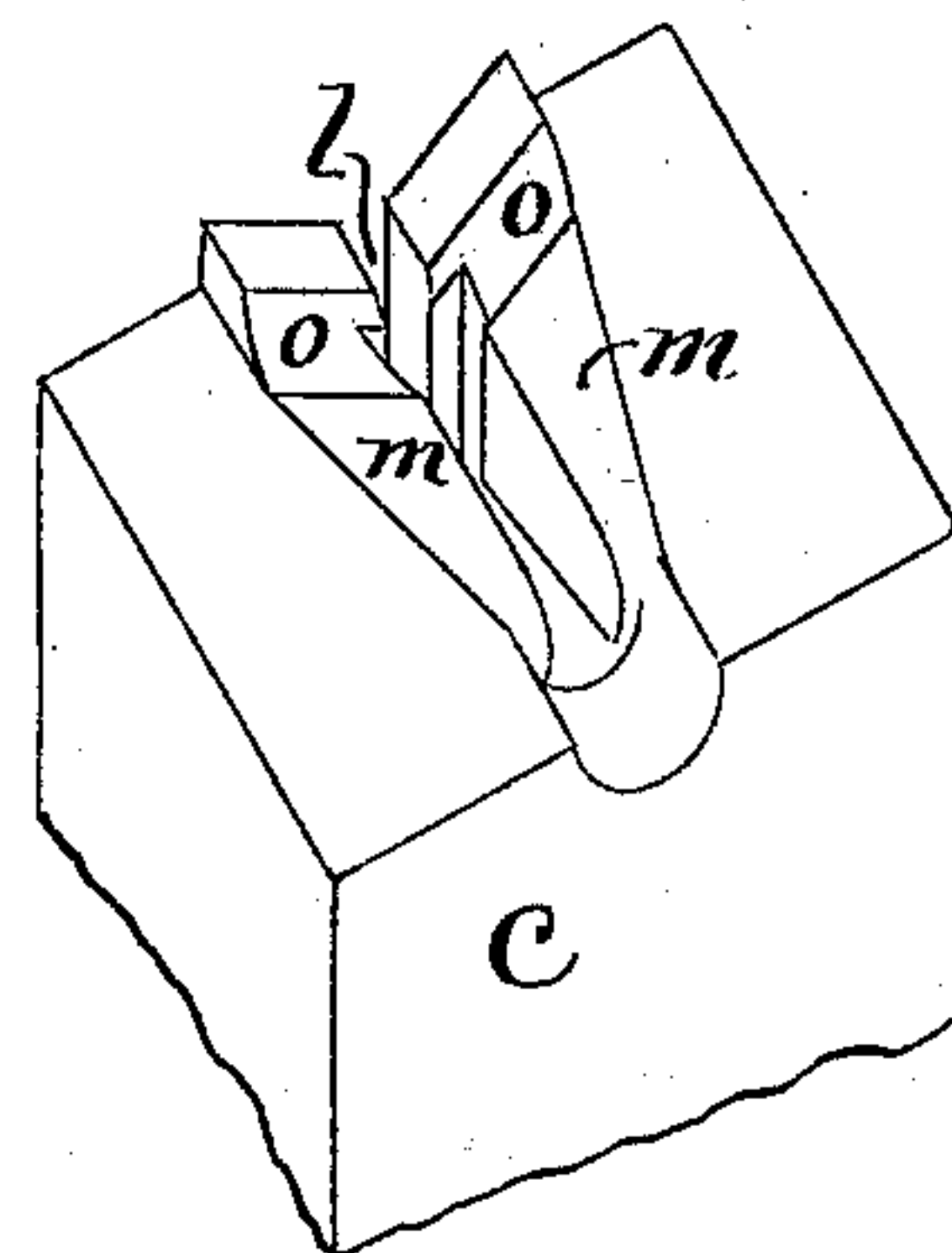


FIG. 6.

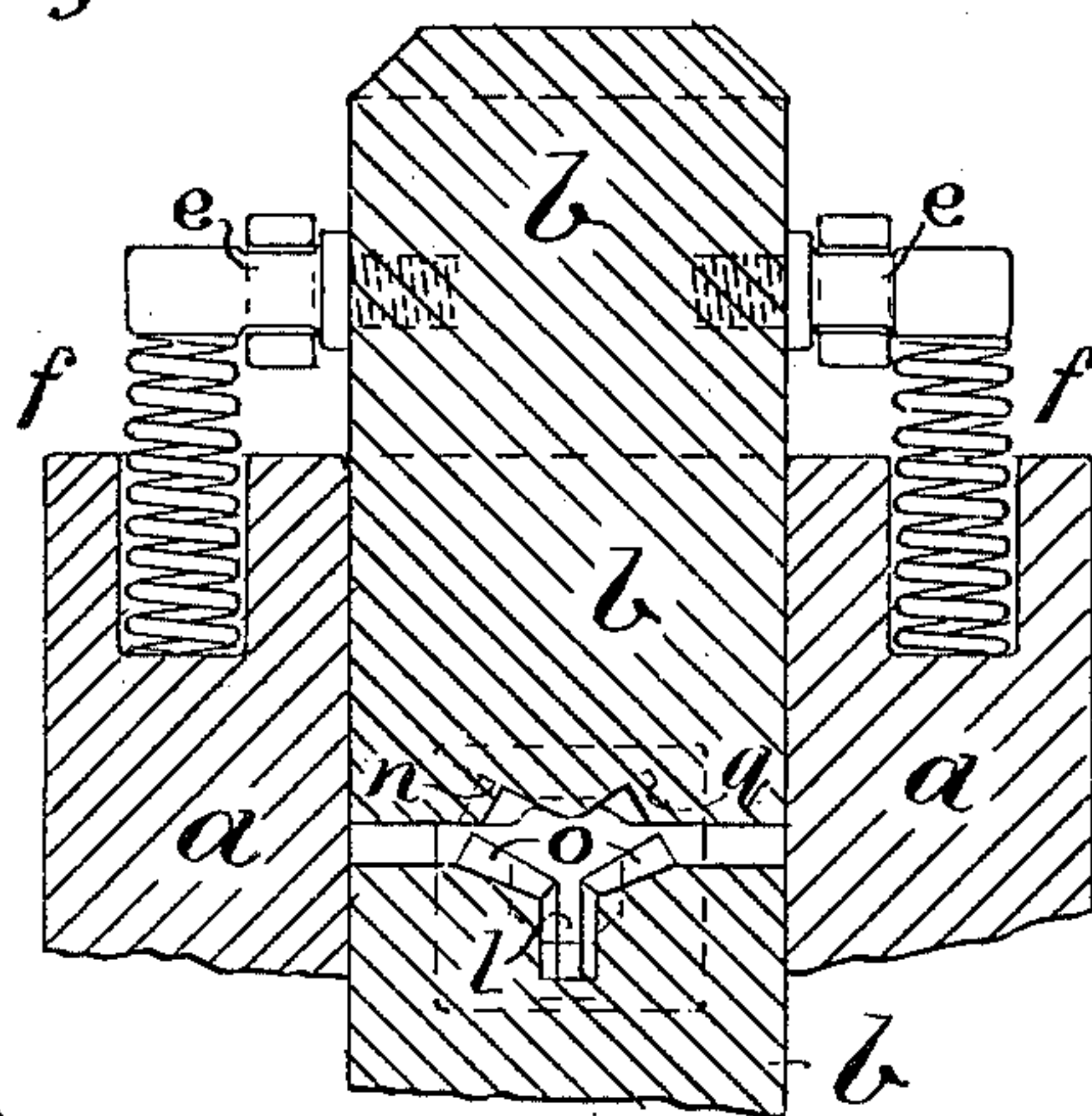


FIG. 2.

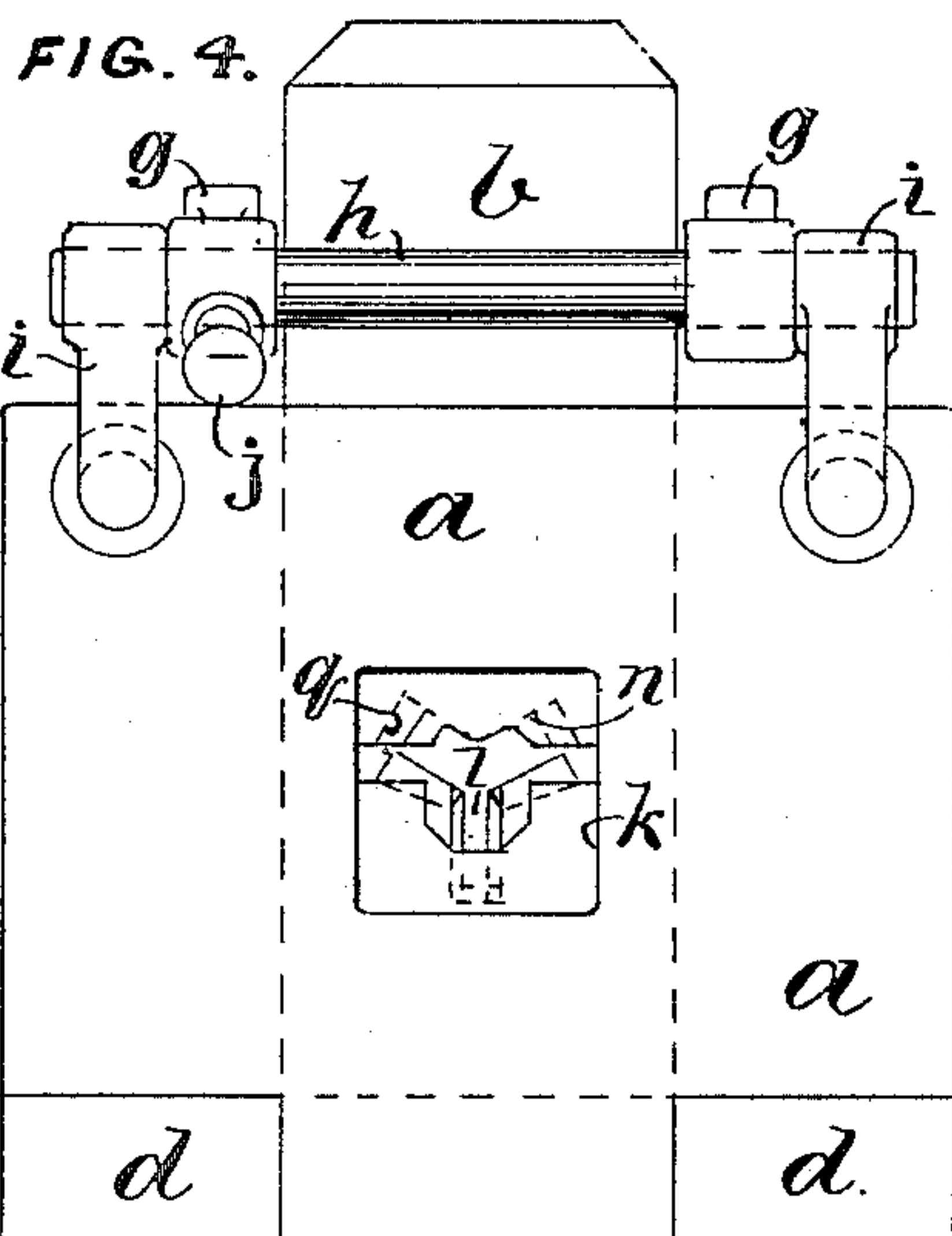


FIG. 4.

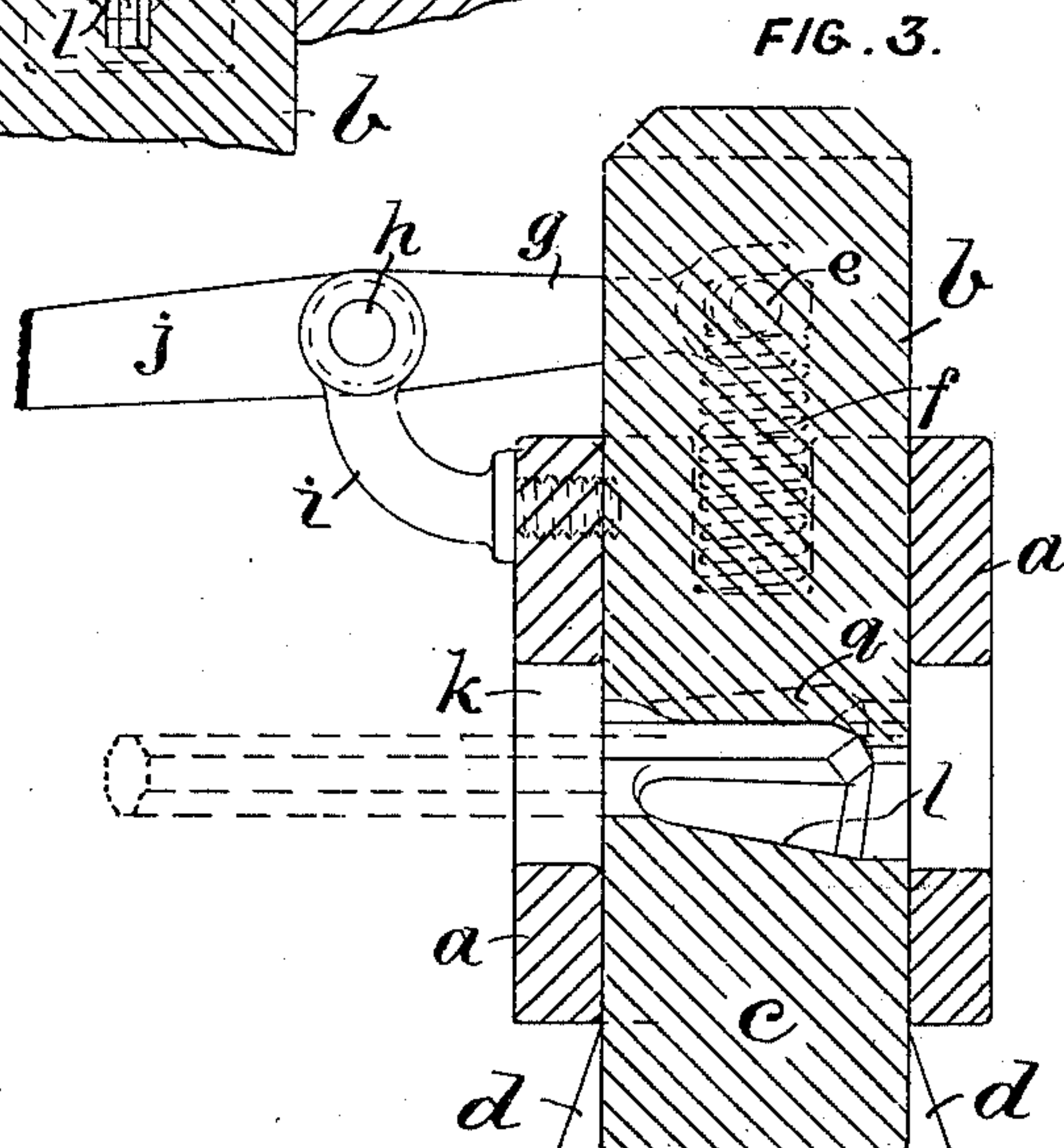


FIG. 3.

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# UNITED STATES PATENT OFFICE.

GILBERT JOHN GLOSSOP, OF LEEDS, ENGLAND.

## TOOL FOR MAKING, MENDING, AND SHARPENING ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 697,244, dated April 8, 1902.

Application filed September 8, 1901. Serial No. 74,090. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT JOHN GLOSSOP, a subject of the King of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented a certain new and useful Improvement in Tools for Making, Mending, and Sharpening Three-Winged Rock-Drills, of which the following is a specification.

The object of this invention is to be able to make, mend, and sharpen three-winged rock-drills which have the wings tapered both radially from the outside toward the center and longitudinally from the root or base of the chisel edges toward the shaft of the drill-bar by means of unskilled labor; and this object I effect by means of a holder with top and bottom dies of special form, which can be acted upon by a heavy hand or power hammer or any convenient form of power or mechanical pressing-machine. Such holder, with its cooperating top and bottom dies, is illustrated in the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a vertical section on line A B of Fig. 1, and Fig. 3 a cross-section on line C D of Fig. 1. Fig. 4 is a front elevation; and Figs. 5 and 6 are perspective views of the working faces of the cooperating top and bottom dies, respectively.

In all the figures the same reference-letter refers to the same or corresponding part.

*a* is the holder or block, conveniently rectangular in shape, with a vertical hole correspondingly rectangular in shape through it for the purpose of receiving the cooperating top and bottom dies *b* and *c*. When intended to be placed under a power-hammer, the lower end of the block *a*, over the parts lettered *d*, is formed dovetailed in shape to fit a corresponding groove in the anvil of the hammer.

The upper die *b* is provided with side pins or studs *e*, which rest upon springs *f*, the latter resting in cylindrical socket-holes formed for them in the top of the block or holder *a*. The upper die *b* is thus normally supported at a very slight distance above the bottom die *c* and springs back from the same after each blow, both with the object of obtaining a better finish of the drill and to enable the drill-bar to be moved slightly backward and forward during the operations.

*g g* indicate a pair of levers with forked ends and hinged on the cross-shaft *h*, which latter is carried by short brackets *i*, fitted into the front of the holder or block *a*. The forked ends of the levers *g g* embrace the pins or studs *e e*. One of the levers *g* is provided with a handle *j* or may be connected to a foot-lever, by means of either of which the top die *b* can be lifted so far above the bottom die *c* as to enable the drill-bar to be either withdrawn or lifted up out of the bottom die, so that it can be rotated and reinserted with the wings, respectively, in a fresh position—that is, rotated through an angle of one hundred and twenty degrees. The front of the holder or block *a* is provided with an opening *k* to allow the drill-bar to be inserted between the two dies.

In Fig. 6, which shows the working side of the bottom die, *l* is a vertical recess, which is formed with parallel sides, but inclined bottom, as clearly shown in Figs. 3 and 6. *m m* are taper inclined sides for forming the flat taper under sides of the two wings, the upper flat taper sides of which are being formed simultaneously by the inclined faces *n*, Fig. 5, of the top die. *o o* indicate the tapered inclined raised faces of the bottom die for forming the under chisel sides of the two wings, the upper chisel sides of which are being formed simultaneously by the highly-inclined faces *p p* of the top die, Fig. 5. *q q* are slightly-curved inclined and tapered faces for forming the outer edge of the two wings for the time being acted upon by the top and bottom dies.

During the operations of making, mending, and sharpening the wings the handle *j* is depressed and the drill-bar raised and rotated repeatedly, so as to bring the wing which has last been in the vertical recess *l* under the action of both dies. The object of making the vertical recess with parallel sides is to enable the wing to be raised or withdrawn from it. Also the object of dividing the top from the bottom die along opposite corner edges of the wings and making the faces *m* and *n* to taper longitudinally in the opposite direction to the beveled edges *o* and *p* is that the blow of the hammer is prevented from forcing the chisel edges of the drill away from the chisel-forming faces *o* and *p*, whereas when



the blow for forming these edges is directed longitudinally, as at present usual, the effect is generally to upset or thicken the wings of the bar back from the chisel-points instead of forming these, especially as the latter cool more rapidly than the middle portion of the wings, which in my invention are simultaneously under the compressive action of the blow.

10 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tool for making mending and sharpening three-winged rock-drills the combination of a holder or block *a* having a vertical opening through it and an opening *k* through the front side, a bottom die *c* having a vertical recess *l* with parallel sides and inclined bottom chisel-forming faces *o* and taper-side-forming faces *m* inclined in the opposite longitudinal direction to the incline of the faces *o* and a top die *b* having chisel-forming faces *p* taper-side-forming faces *n* inclined in the opposite longitudinal direction to the incline of the faces *p* and edge-forming surfaces *q*, the cooperating dies *b* and *c* fitting freely in the said vertical opening all substantially as and for the purposes herein set forth and illustrated.

2. In a tool for making mending and sharpening rock-drills the combination of a block *a* with vertical and side openings, cooperating top and bottom dies *b* and *c* fitting freely in said vertical opening, side pins or studs *e* attached to the top die, springs *f*, and hinged forked-ended levers *g g* all substantially as and for the purpose or purposes set forth and illustrated.

3. In a tool for making mending and sharpening three-winged rock-drills the combination on the working faces of bottom and top cooperating dies *c* and *b* of a vertical recess *l* having parallel sides and inclined bottom, chisel-forming faces *o* taper-side-forming faces *m* inclined in the opposite direction longitudinally to the incline of the faces *o* in the bottom die, and chisel-forming faces *p*, taper-side-forming faces *n* inclined in the opposite direction longitudinally to the incline of the faces *p* and edge-forming faces *q* in the top die respectively all substantially as and for the purpose or reasons set forth and illustrated in the accompanying drawings.

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Witnesses:

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