

(No Model.)

2 Sheets—Sheet 1.

C. A. CHANDLER.
VISE.

No. 406,815.

Patented July 9, 1889.

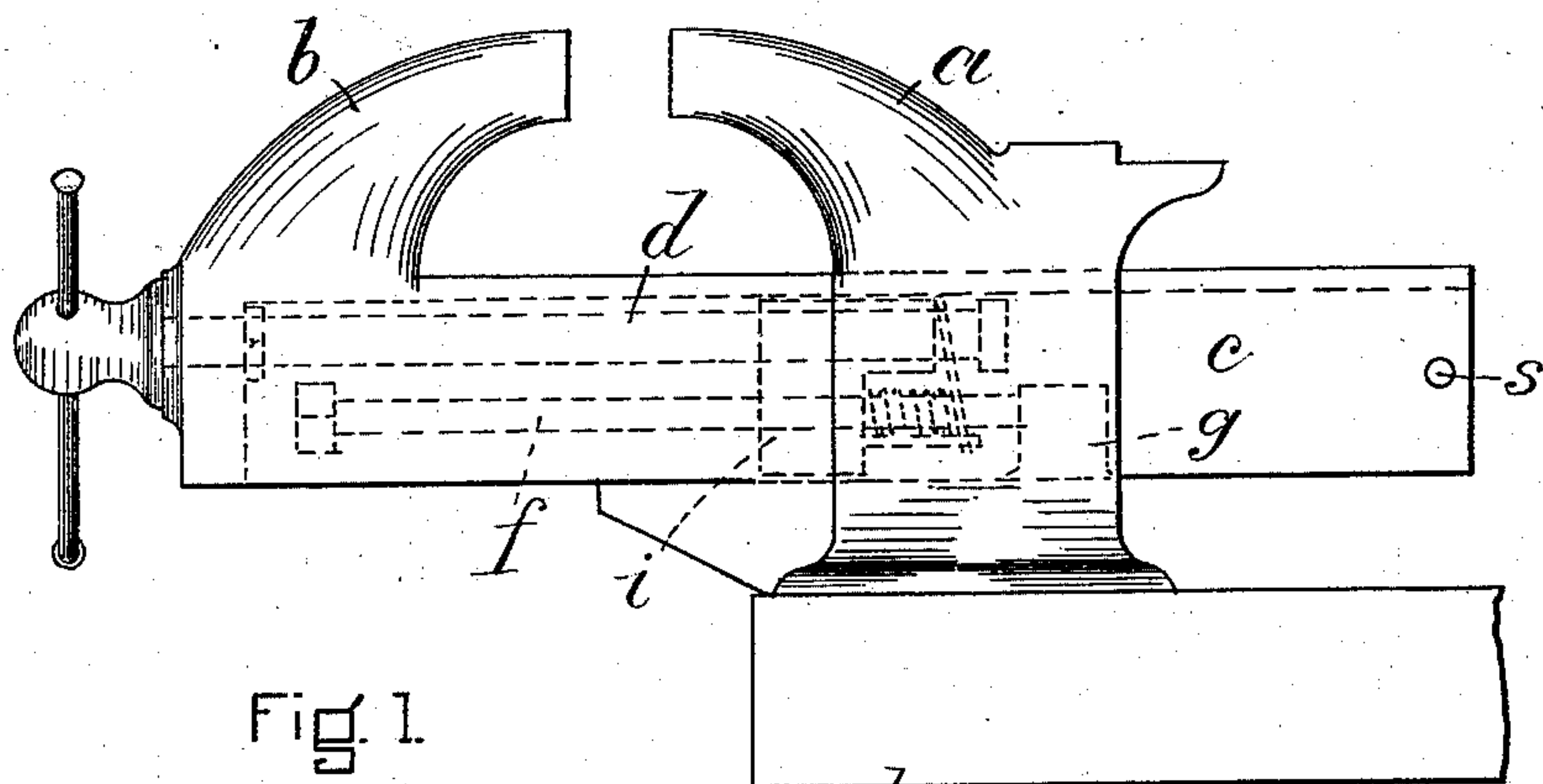


Fig. 1.

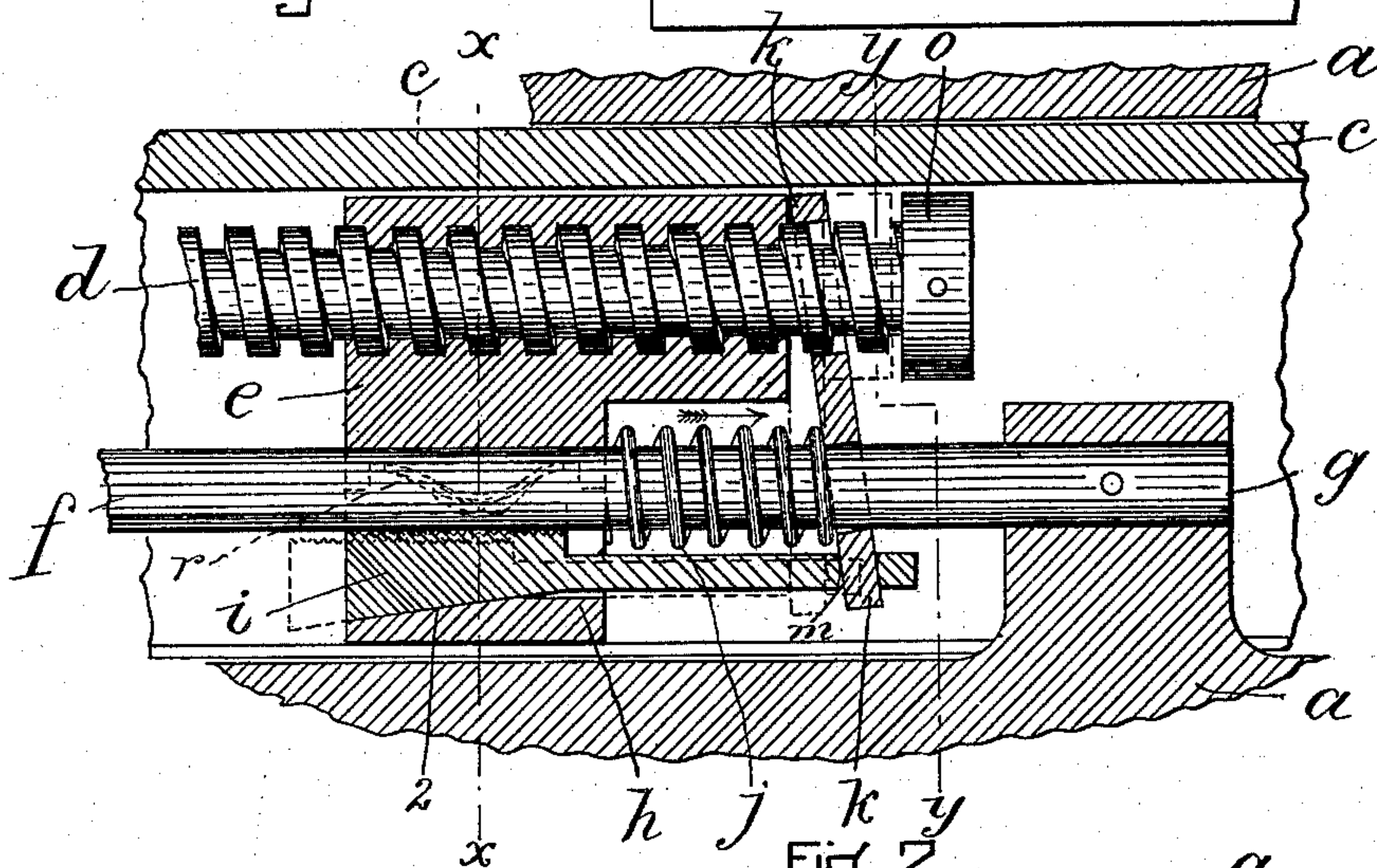


Fig. 2.

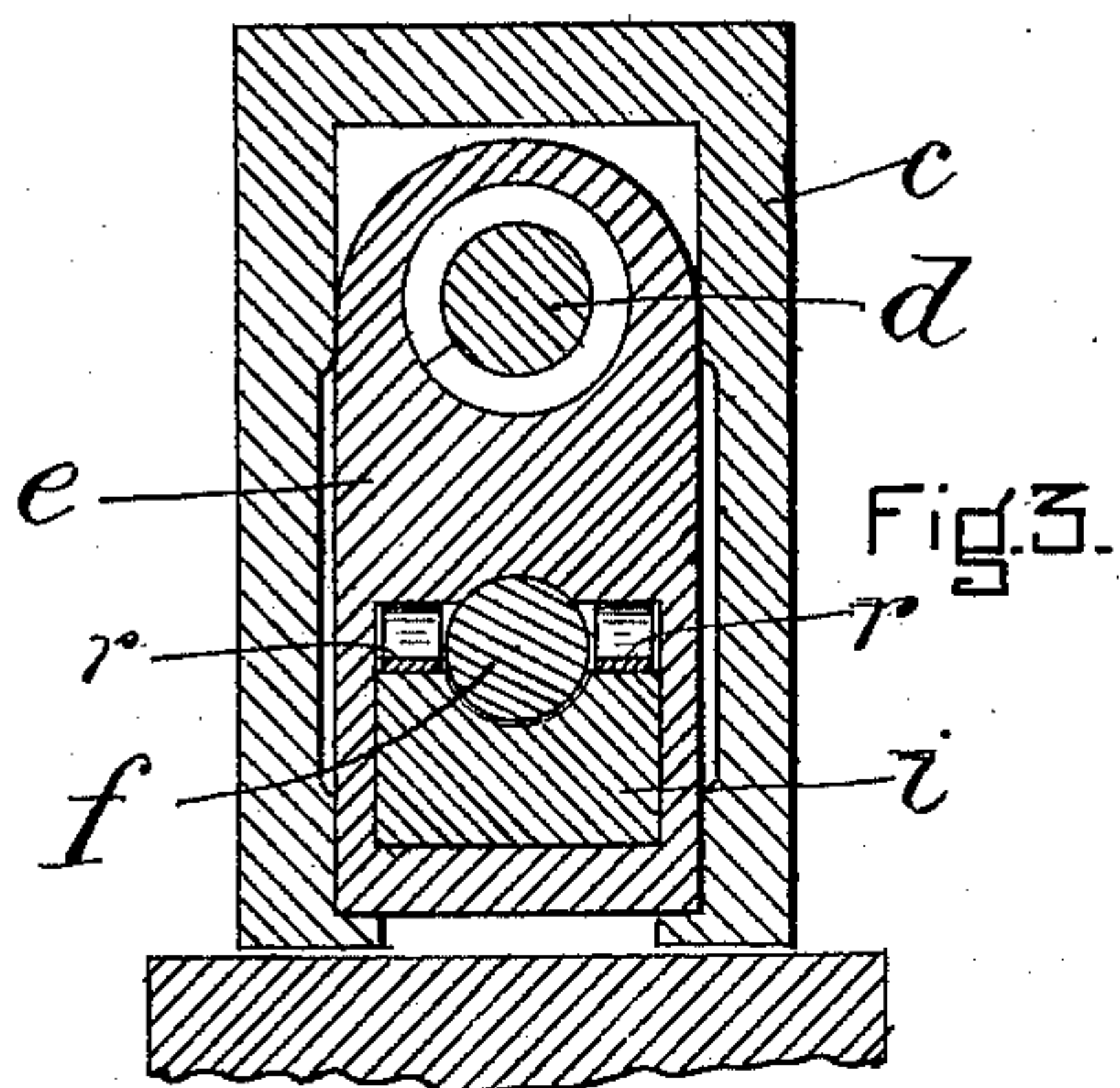


Fig. 3.

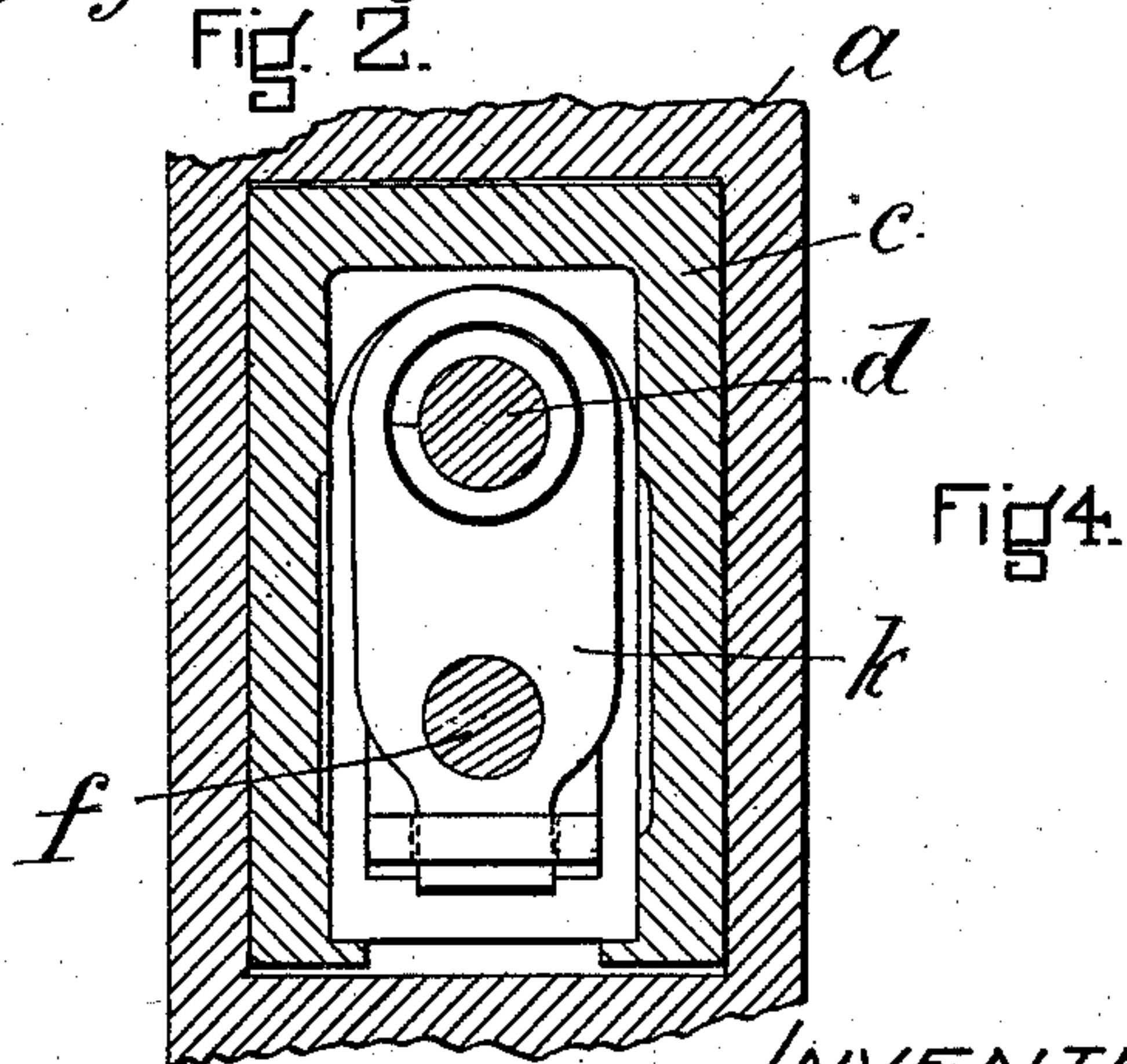


Fig. 4.

WITNESSES.

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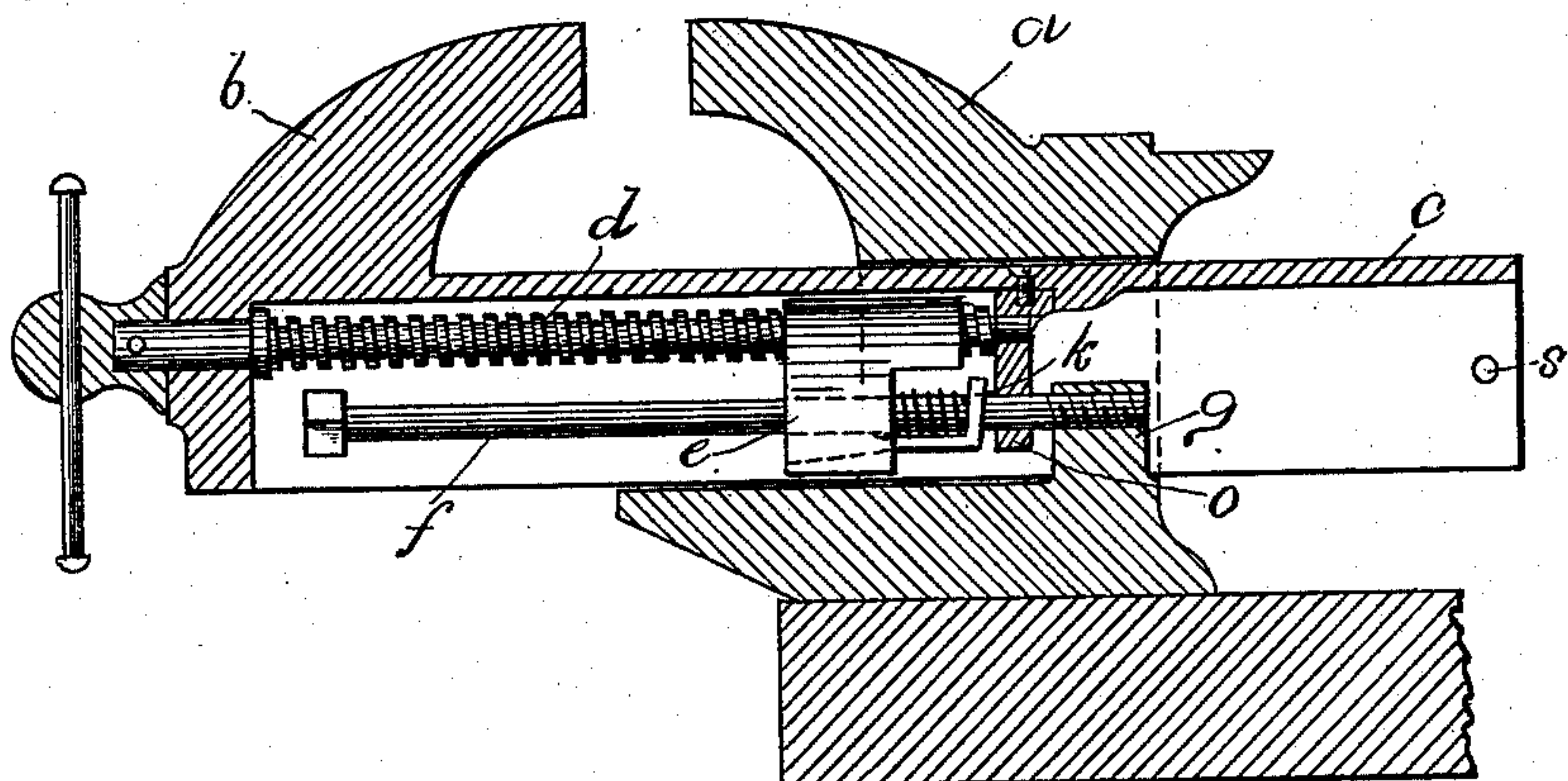


Fig. 5.

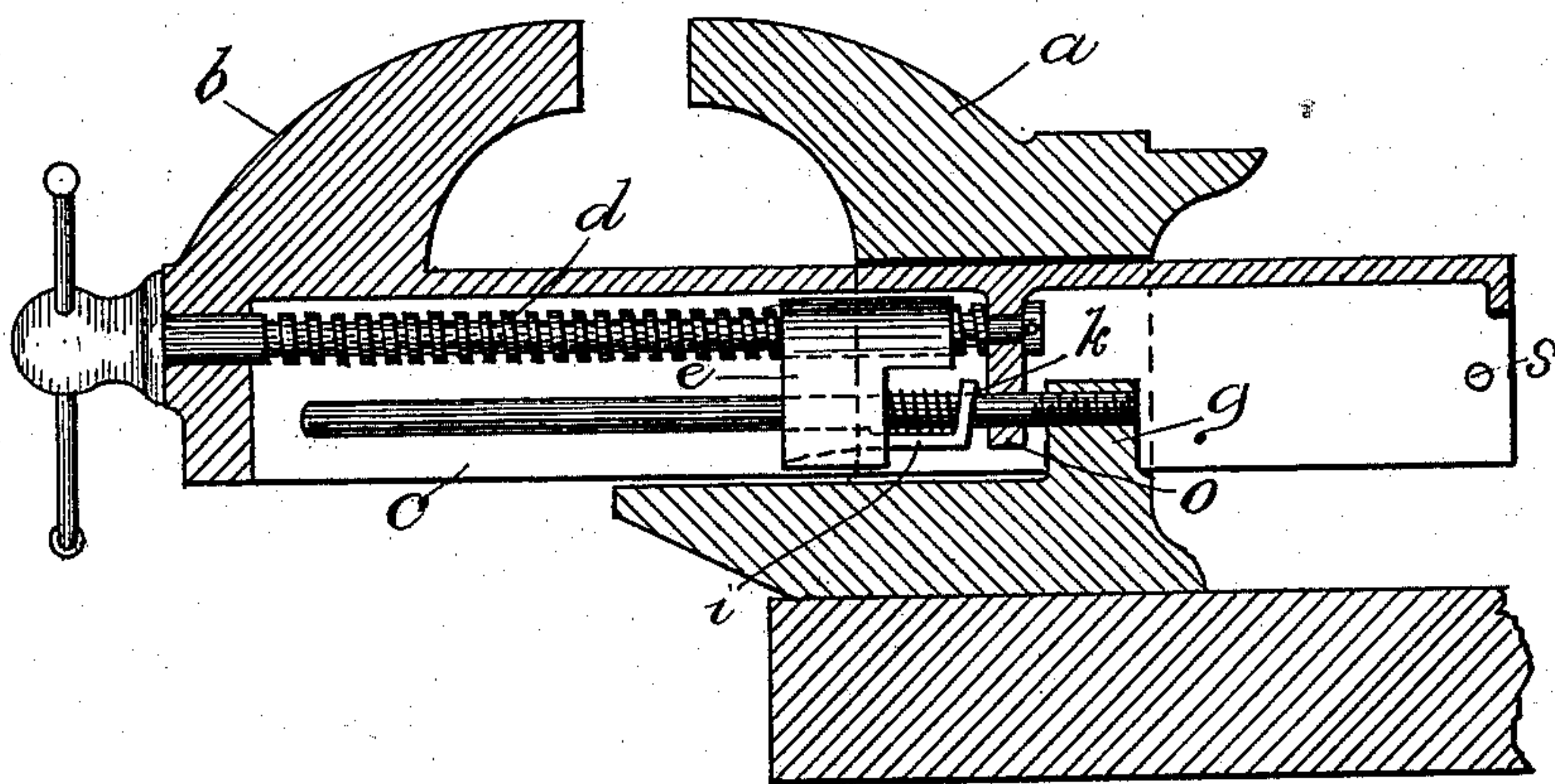


Fig. 6.

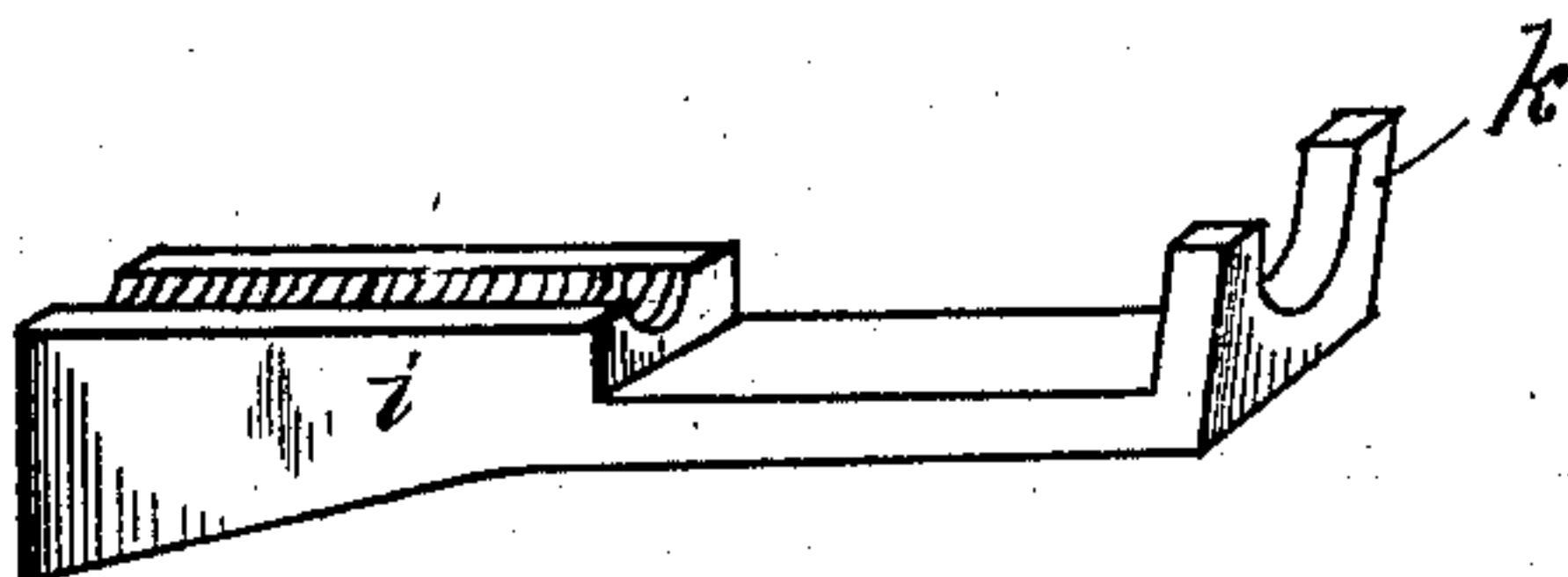


Fig. 7.

WITNESSES.

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UNITED STATES PATENT OFFICE.

CLARENCE A. CHANDLER, OF EAST BRIDGEWATER, MASSACHUSETTS.

VICE.

SPECIFICATION forming part of Letters Patent No. 406,815, dated July 9, 1889.

Application filed October 12, 1888. Serial No. 287,946. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE A. CHANDLER, of East Bridgewater, in the county of Plymouth and State of Massachusetts, have
5 invented certain new and useful Improvements in Vises, of which the following is a specification.

This invention relates to a vise the sliding jaw of which is rapidly adjustable—that is to
10 say, capable of being released, so that it can be freely moved toward and from the fixed jaw independently of the usual means whereby clamping-pressure is applied to and removed from said jaw.

15 The invention has for its object to provide improved means whereby the sliding jaw of a vise of this class may be readily made inoperative, so that it may be quickly adjusted and as readily made operative after adjustment; and to this end it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents
25 a side elevation of a vise embodying my invention. Fig. 2 represents a longitudinal section of a portion of the same. Fig. 3 represents a section on line *xx*, Fig. 2. Fig. 4 represents a section on line *yy*, Fig. 2. Figs. 5
30 and 6 represent longitudinal sections, showing certain differences in detail hereinafter described. Fig. 7 represents a perspective view of the gib shown in Figs. 5 and 6.

The same letters of reference indicate the
35 same parts in all the figures.

In the drawings, *a* represents the fixed jaw, and *b* the sliding jaw, the latter being formed on a hollow shank or slide *c*, which is fitted to move freely in a socket formed in the fixed
40 jaw.

d represents a screw-threaded rod, which is journaled at its ends in bearings in the shank or slide *c*, so that it is capable of rotating in said shank, but has no screw-connection
45 therewith, and therefore is not moved longitudinally independently of the shank when rotated.

The screw-threaded rod or screw *d* is operatively engaged with a nut *e* within the shank
50 *c*, said nut being moved longitudinally of the shank by the rotation of the screw *d*.

f represents a rod rigidly attached to an ear or lug *g*, affixed to the base of the fixed jaw, said lug projecting into the hollow interior of the sliding shank *c*. The fixed rod *f* 55 is substantially parallel with the screw *d* and passes through a cavity *h*, formed in the nut *e* at one side of the screw. Said cavity has an inclined side 2, Fig. 2, between which and the rod *f* is interposed a gib *i*, the outer or 60 lower side of which is inclined like the side 2 of the said cavity, while its opposite or inner side is provided with a longitudinal concavity, which fits the under side of the fixed rod *f*, and is preferably milled or roughened, so that 65 when the gib is pressed against said rod, as hereinafter described, the nut will be locked by the gib to the fixed rod and will therefore become fixed, so that the rotation of the screw *d* in the nut will move the sliding jaw as in 70 ordinary vises; but when the gib is loosened the nut will be free to slide loosely with the sliding jaw and the screw *d*, a rapid adjustment of the sliding jaw being thus permitted.

The gib *i* is normally held in locking contact with the rod *f* by a spring *j*, which is supported by the rod *f* and bears at one end against an arm *k*, which is either formed on the gib, as shown in Figs. 5, 6, and 7, or hung loosely on the screw *d* at its upper end and 80 inserted at its lower end in a slot *m* in said gib, as shown in Figs. 1, 2, and 4.

When the spring is free to press the arm *k* in the direction indicated by the arrow in Fig. 2, it so moves the gib on the inclined side 85 2 of the cavity in the nut *e* as to cause the milled surface of the gib to bear against the fixed rod *f* and thereby lock the nut *e* to said rod.

When it is desired to make the nut free to 90 move on the rod *f* outwardly, the sliding jaw is moved outwardly by the rotation of the screw in the locked nut until a stop *o*, moving with the sliding jaw, comes in contact with the arm *k*, and through the latter pushes 95 the gib back, so as to release it from the fixed rod *f*, as shown in dotted lines in Fig. 2. The nut is thus released, and the sliding jaw, screw, and nut are free to slide.

The separation of the gib from the fixed rod 100 is facilitated by springs *r r*, interposed between the gib and the upper side of the rod

and gib receiving cavity in the nut *e*, said springs acting to press the gib away from the fixed rod.

The stop *o* may be an arm attached to or
5 formed with the sliding shank *c* and arranged to serve as a bearing for the inner end of the screw *d*, as shown in Figs. 5 and 6, or it may be a collar rigidly attached to said screw, as shown in Figs. 1 and 2. In the latter case it
10 is preferable to connect the arm *k* loosely with the gib and permit it to tip or be inclined by the pressure of the spring against its lower end, as shown. I prefer, however, to make the arm *k* as a fixed part of the gib and to at-
15 tach the stop *o* rigidly to the sliding shank *c*, as shown in Figs. 5 and 6.

Although I have shown the vise-jaws formed as in machinists' vises, it is obvious that they may be of any other desired form.

20 I prefer to provide the shank *c* with one or more projections *s* between its rear or inner end and the fixed jaws to prevent said shank from being pulled out of the fixed jaw. Said projections may be the ends of a pin driven
25 through the shank. The arm *k*, when formed on the gib, is preferably inclined, so that only its upper end comes in contact with the stop *o*. As a result of this the contact of the stop with the upper end of said arm gives the gib
30 a downward tendency and quickly separates it from the rod *f* without the aid of the springs *r*.

I claim—

35 1. The combination of the fixed jaw, the sliding jaw having a shank fitted to slide in

the fixed jaw, a screw journaled in the shank of the sliding jaw, a nut within said shank engaged with said screw, a fixed rod arranged substantially parallel with the screw, a gib interposed between said rod and a part of the
40 nut and provided with a spring-supporting arm, a spring interposed between the nut and said arm, whereby the gib is normally engaged with the rod and nut, and a stop which moves with the sliding jaw, whereby the gib may be
45 displaced to release the nut from the fixed rod, as set forth.

2. The combination of the fixed jaw, the sliding jaw and its shank, the screw journaled in said shank, the loose nut-engaged
50 with the screw and provided with a cavity at one side thereof, the rod affixed to the fixed jaw and passing through said cavity, the gib located in said cavity at one side of the rod and provided with an arm *k*, the spring *j*, in-
55 terposed between the nut and said arm *k*, whereby the gib is normally held in engagement with the fixed rod, the stop *o*, moving with the sliding jaw, and a spring or springs
60 *r*, whereby the gib is separated from the fixed rod when displaced from its normal position, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 9th day of October, A.
65 D. 1888.

CLARENCE A. CHANDLER.

Witnesses:

C. F. BROWN,

A. D. HARRISON.