

(Model.)

E. SHAW.

WISE JAW.

No. 334,055.

Patented Jan. 12, 1886.

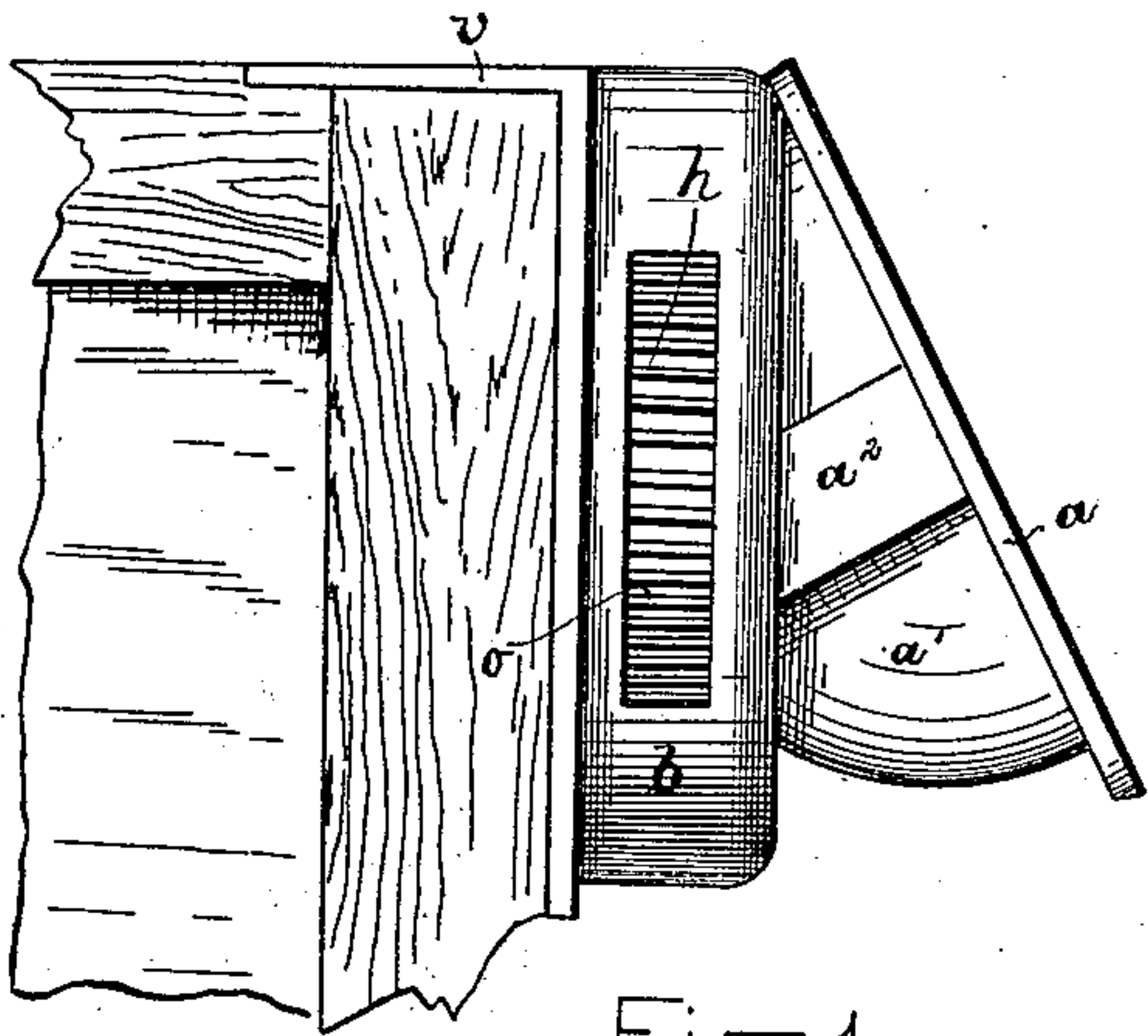


Fig. 1.

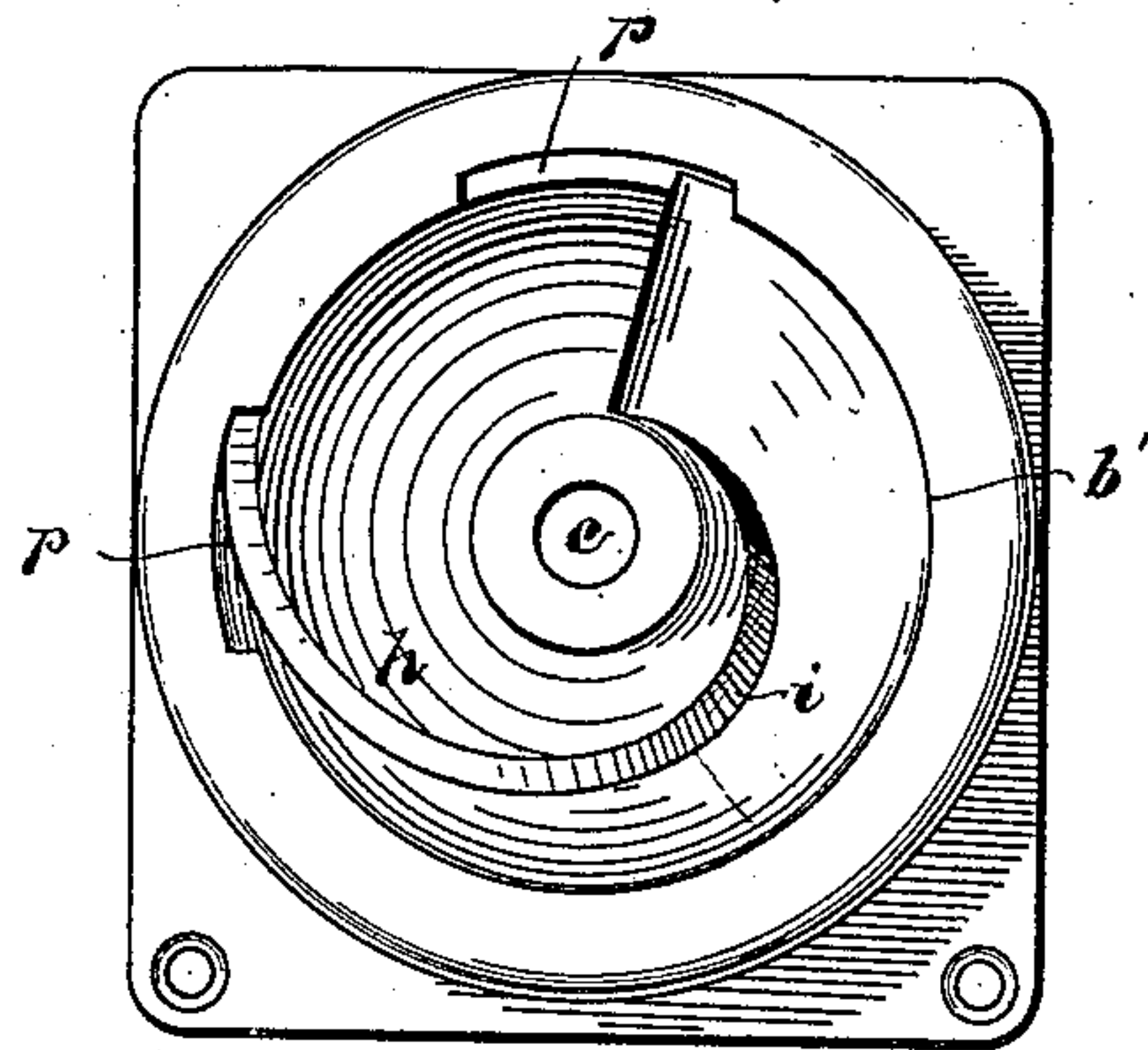


Fig. 2.

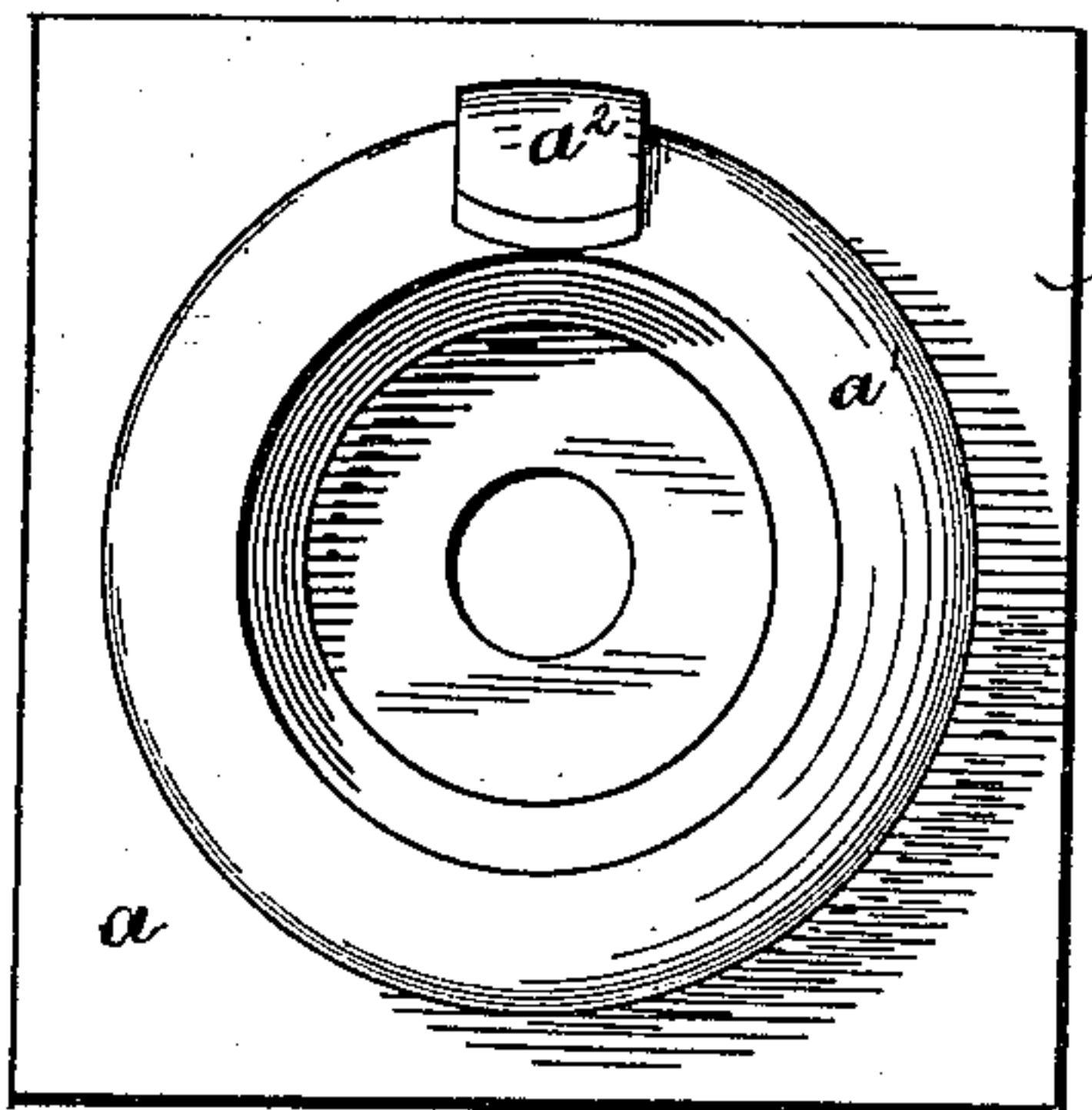


Fig. 3.

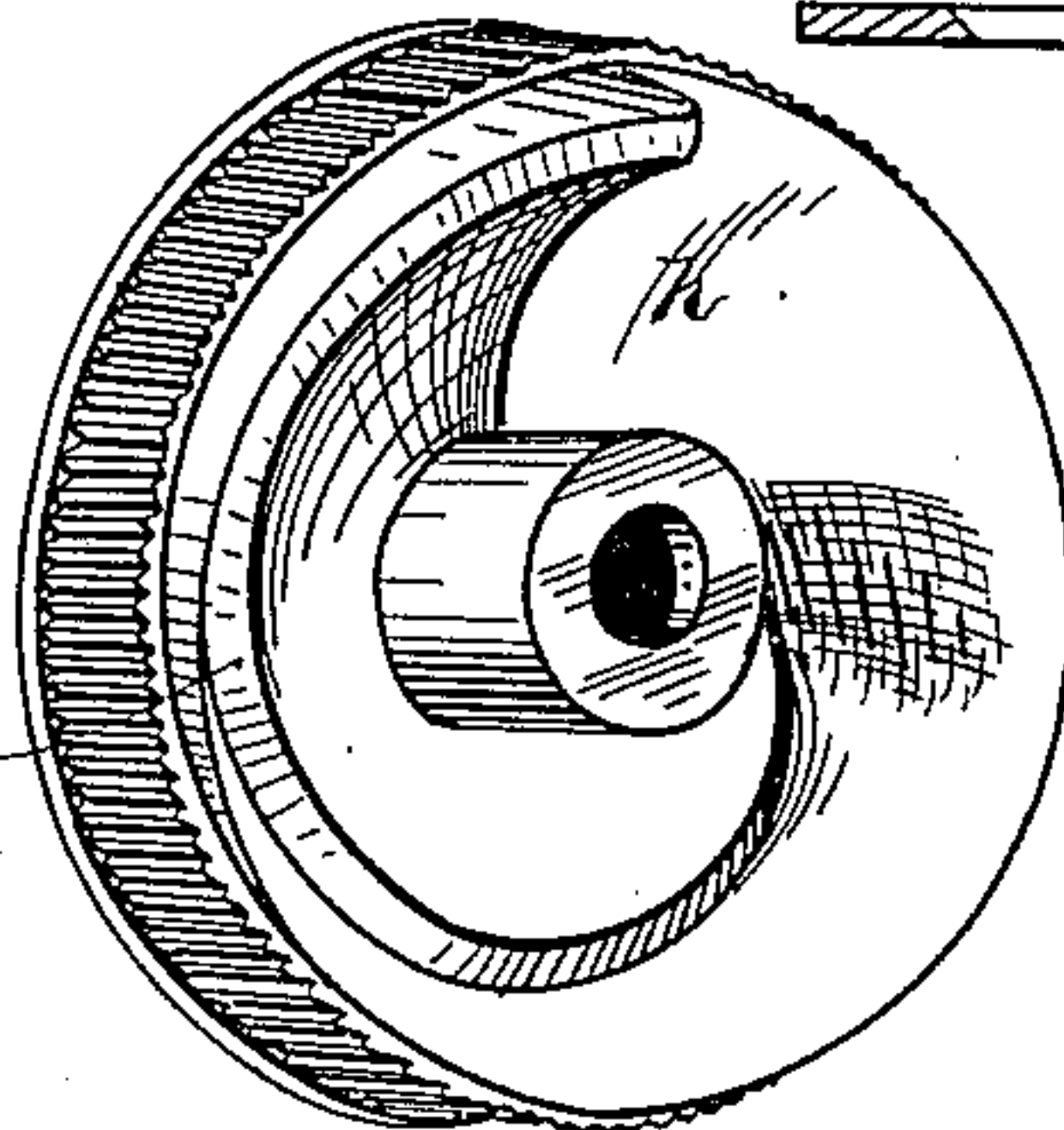


Fig. 6.

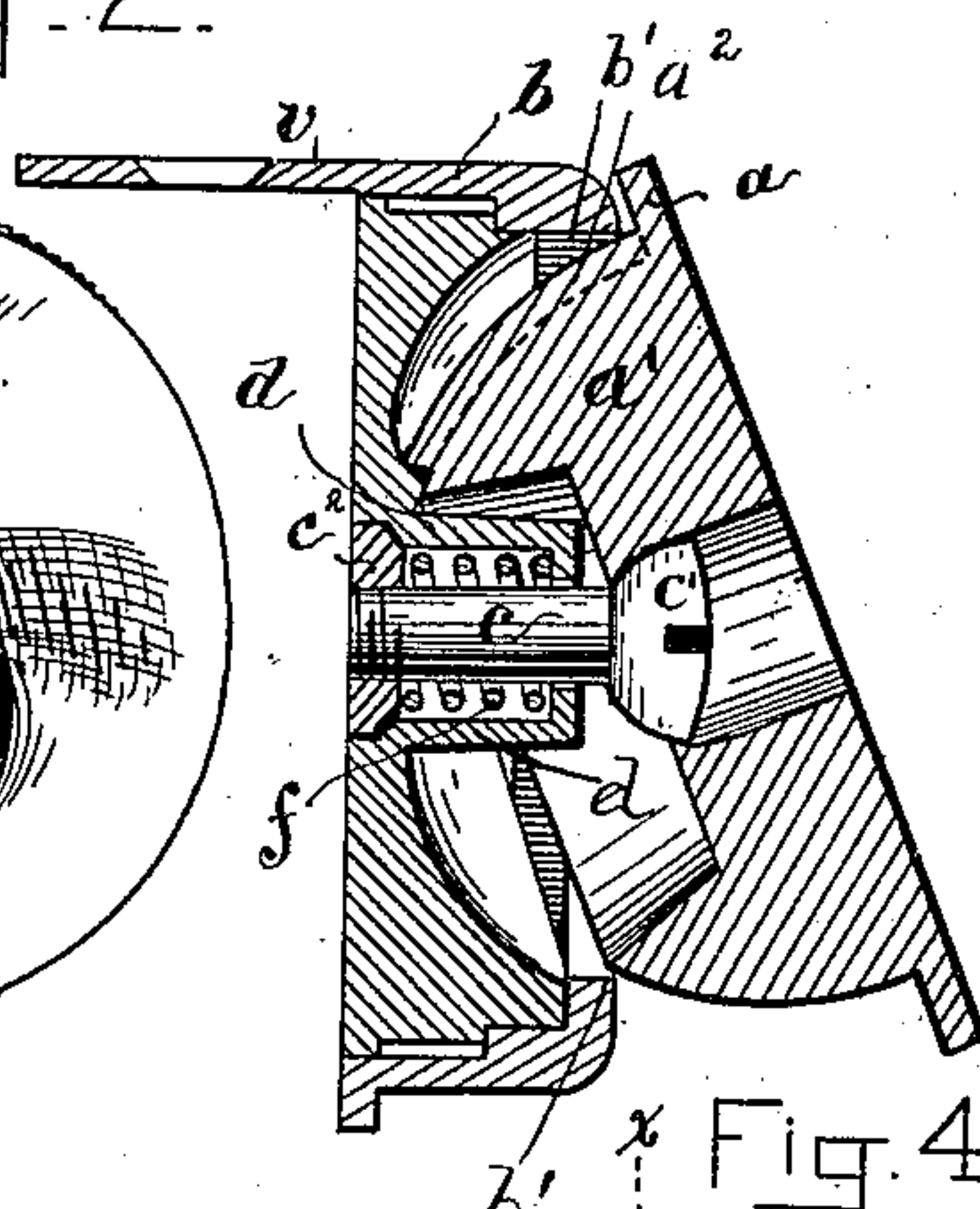


Fig. 4.

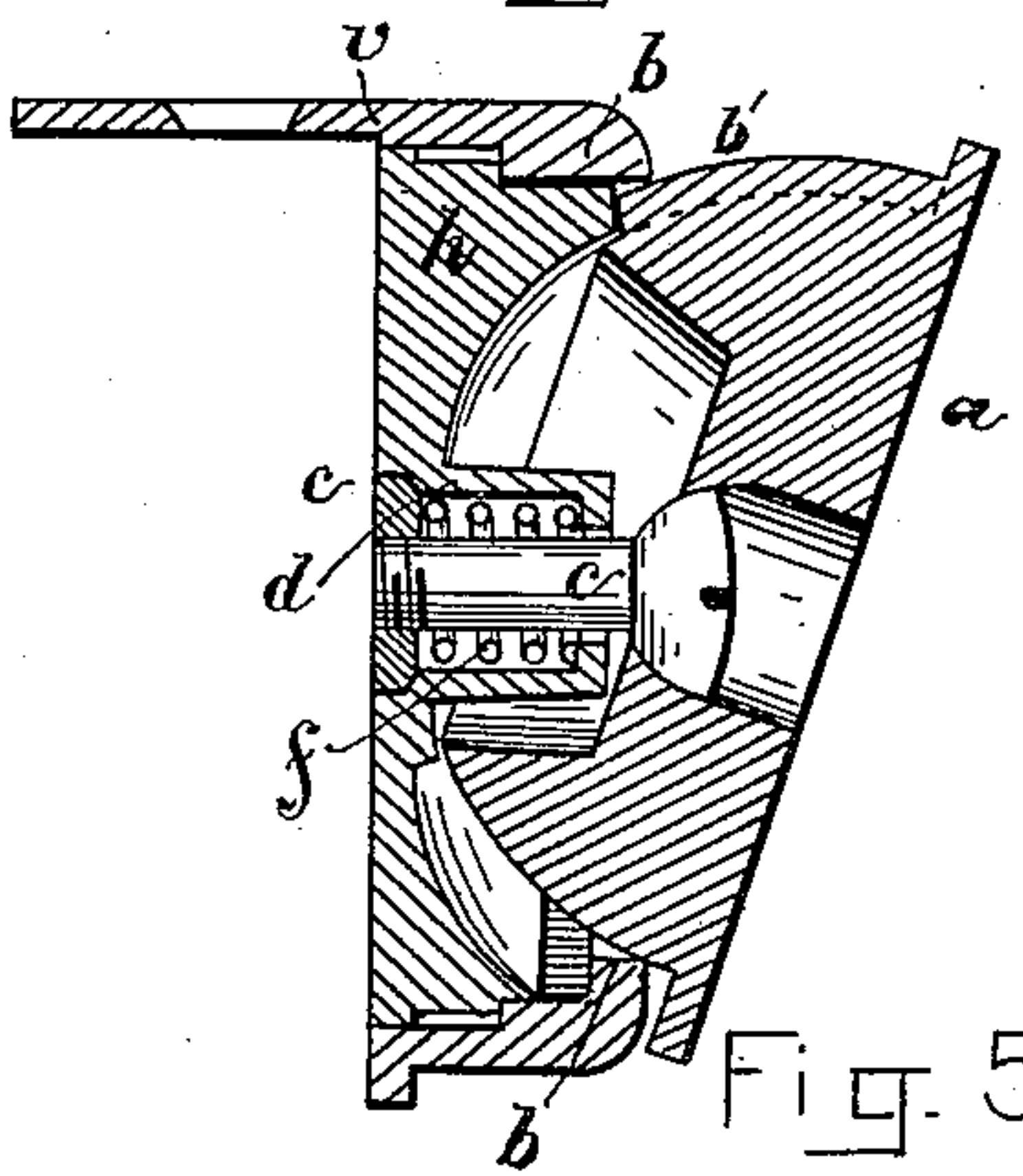


Fig. 5.

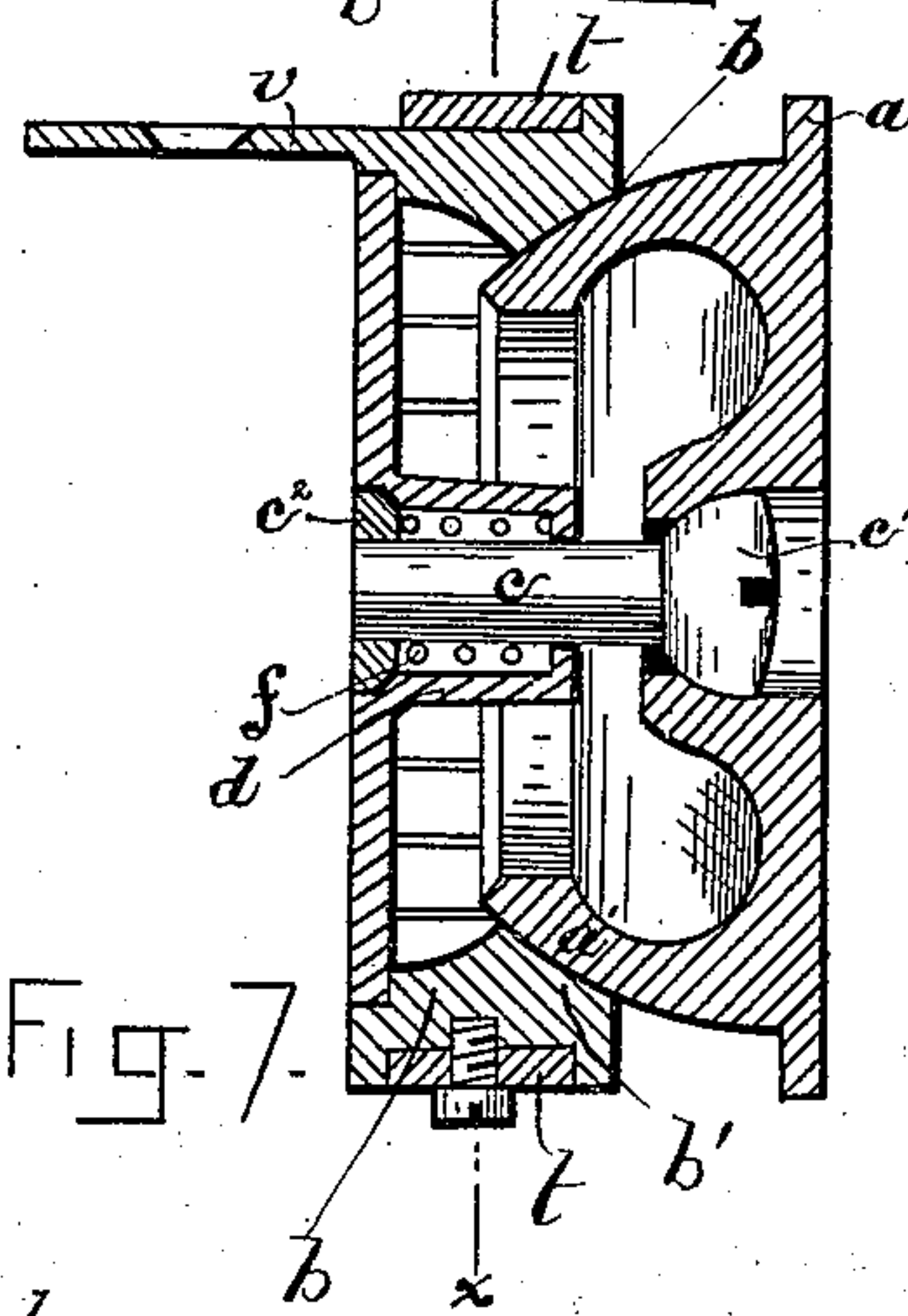


Fig. 7.

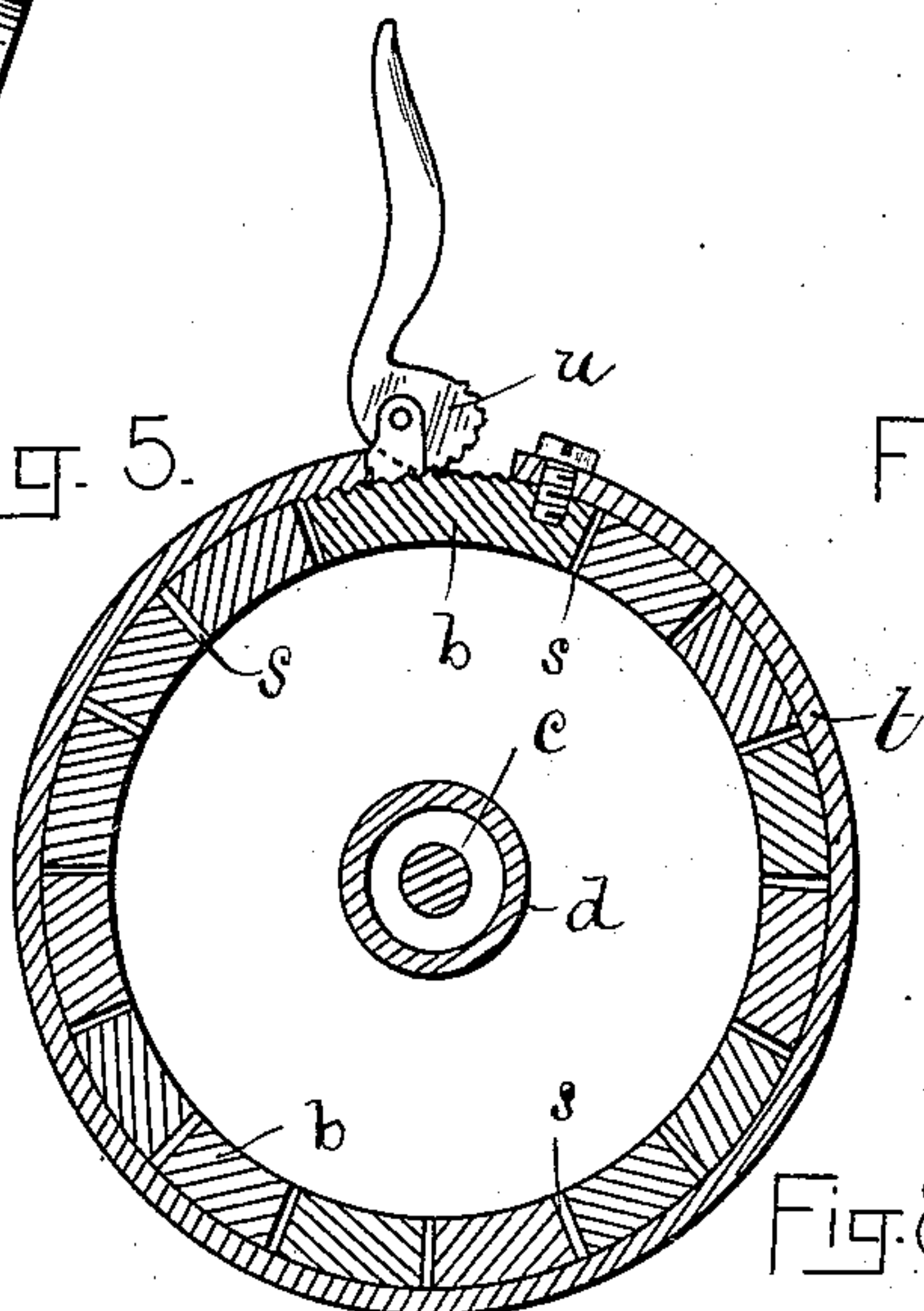


Fig. 8.

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# UNITED STATES PATENT OFFICE.

EDGAR SHAW, OF LYNN, MASSACHUSETTS.

## WISE-JAW.

SPECIFICATION forming part of Letters Patent No. 334,055, dated January 12, 1886.

Application filed May 23, 1885. Serial No. 166,450. (Model.)

*To all whom it may concern:*

Be it known that I, EDGAR SHAW, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful  
5 Improvements in Hand-Screws or Vise-Jaw Attachments, of which the following is a specification.

This invention has for its object to provide an improved adjustable surface or support for  
10 use in connection with vise-jaws, or whenever a supporting-surface capable of assuming various angles is desirable.

The invention consists in a plate or jaw having a convex boss or projection on its back, a  
15 recessed rest or socket for said boss or projection, a bolt connecting the plate and socket, (the form of the socket and bolt being such that the boss can turn in any direction therein, and thus permit the plate to assume any  
20 desired angle,) and adjustable devices whereby the plate may be supported or positively held at any of the angles to which it may be turned, as I will now proceed to describe.

Of the accompanying drawings, forming a  
25 part of this specification, Figure 1 represents a side elevation of my improved device. Fig. 2 represents a front view of the socket with the plate and its boss removed. Fig. 3 represents a rear view of the plate and its boss.  
30 Figs. 4 and 5 represent vertical sections of the entire device. Fig. 6 represents a perspective view of a part of the device. Fig. 7 represents a vertical section of a modification. Fig. 8 represents a section on line *x x*, Fig. 5.

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

In the drawings, *a* represents the jaw or plate, having upon its back a convex boss or  
40 protuberance, *a'*, which is a section of a sphere.

*b* represents the recessed socket for the boss *a'*, said socket being formed with an annular seat or bearing, *f'*, on which the boss rests, and is adapted to turn in any direction.

*c* represents a bolt which connects the socket *b* and jaw *a*, said bolt having a head, *c'*, which  
45 is contained in a recess in the outer side of the jaw *a*, and a nut, *c''*, contained in a recess, *d*, in a plate at the back of the socket *b*. A spring, *f*, interposed between said nut and the inner  
50 end of the recess *d* permits the bolt to move endwise, and holds the boss *a'* with a yielding pressure against its seat.

Within the socket *b* is a plate, *h*, which contains the recess *d*, and is adapted to rotate freely. The front side of the plate *h* is dish- 55 ed or concaved, and is provided with a spiral or volute rib, *i*, extending from its inner central portion to its margin, the concave form of the surface on which the rib is formed causing said rib to gradually recede from the back of 60 the plate *h*, or advance outwardly from the center of the plate to the bearing *b'*. The boss *a'* is provided with a raised portion or shoulder, *a''*, the inner end of which is adapted to bear on the rib *i*. It will be seen that when 65 the shoulder *a''* bears on the inner portion of the rib, as shown in Fig. 4, the jaw will necessarily be considerably inclined. By rotating the plate so as to cause the highest or outer portion of the rib to bear on the shoulder *a''*, the plate may be caused to assume 70 the angle shown in Fig. 5. The jaw may be supported at any intermediate angle by any intermediate adjustment of the plate, as will be readily seen. The capability of 75 both the jaw and plate to rotate on the connecting-bolt *c* enables the jaw to be supported at any inclination that may be desired. The support afforded by the spiral rib is of course at one side only of the connecting-bolt, and is 80 only utilized when the pressure upon the jaw is mainly at the same side of the center of the jaw as the supporting portion of the rib. The plate *h* may be rotated by any desired means. In Fig. 1 I have shown a slot, *o*, in the socket 85 *b*, through which the margin of the plate *h* may be reached by the operator's finger, or by any suitable device for the purpose of rotating the plate, said margin being preferably milled or roughened to facilitate the opera- 90 tion. Slots or enlargements *p p* are preferably cut in the seat, as shown in Fig. 2, each of which is formed to receive the shoulder or projection *a''* on the boss, the edges of said projection abutting against the ends of the slot in 95 which it is located and preventing the free rotation of the jaw without interfering with its movements to vary its inclination.

In Figs. 6 and 7 I have shown a modification of the means for supporting the jaw at 100 various angles. In this modification I dispense with the plate *h* and spiral rib *i*, and cut the wall of the socket at *s s s*, Fig. 8, so as to subdivide the bearing *b'* into a number of sec-



tions, and make it capable of being compressed against the boss  $a'$ . A band,  $t$ , is secured at one end to the outer surface of the socket, and passes nearly around the same, its free end  
5 having a serrated cam,  $u$ , which engages with a serrated portion of the outer surface of the socket  $b$ . By suitably turning said cam the band  $t$  may be caused to compress the sectional wall of the socket, thus causing the bearing  
10  $b'$  to bind upon the boss  $a'$ , and hold the latter by friction in any position to which it may be adjusted. The surfaces of the boss and bearing may be suitably roughened, to increase the holding-power of the compressed  
15 bearing.

The socket and jaw may be attached to a vise-jaw by any suitable means, preferably by a flange,  $b$ , formed on and projecting backwardly from the socket, so as to rest on the  
20 end of a vise-jaw, and screws passed through holes in said flange into the vise-jaw. The socket may, however, be a part of the vise-jaw.

I claim—

25 1. The jaw or plate having a convex boss on its rear side, combined with a socket having an annular bearing for said boss of a lesser

diameter than the boss at the largest portion of the latter, so that the boss may be tipped in any direction on said fixed bearing, a bolt  
30 connecting the jaw and socket, and devices, substantially as described, whereby the jaw may be held or supported at any angle to which it may be adjusted on the fixed annular bearing, as set forth. 35

2. The combination of the jaw or plate having the convex boss, the socket having the annular bearing, the connecting-bolt, and the rotary plate having the spiral or volute rib formed to support a shoulder on said boss, as set forth. 40

3. The jaw or plate having the convex boss with the shoulder or projection  $a^2$  thereon, combined with the socket having the annular bearing  $b'$ , and the slots  $pp$ , adapted to receive  
15 said shoulder, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 15th day of May, 1885.

EDGAR SHAW.

Witnesses:

C. F. BROWN,  
H. BROWN.