

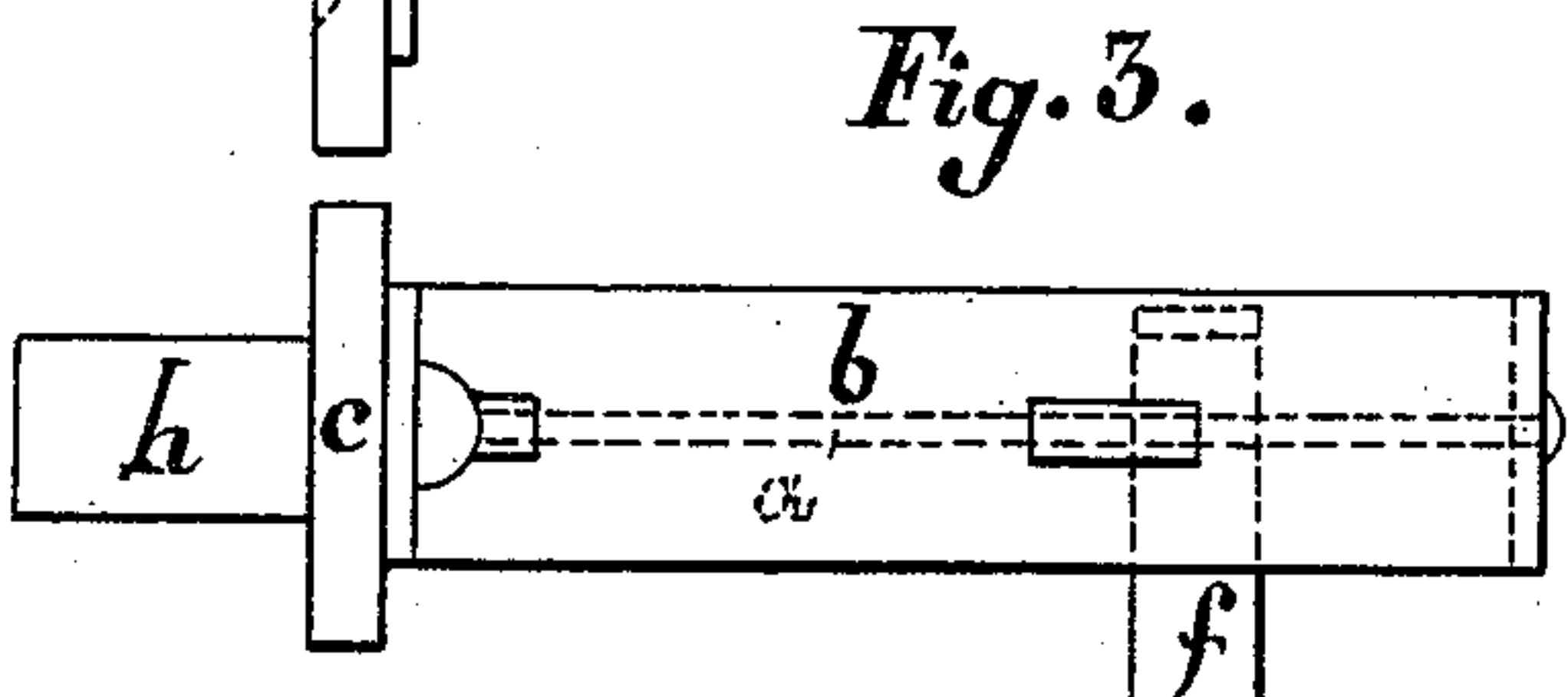
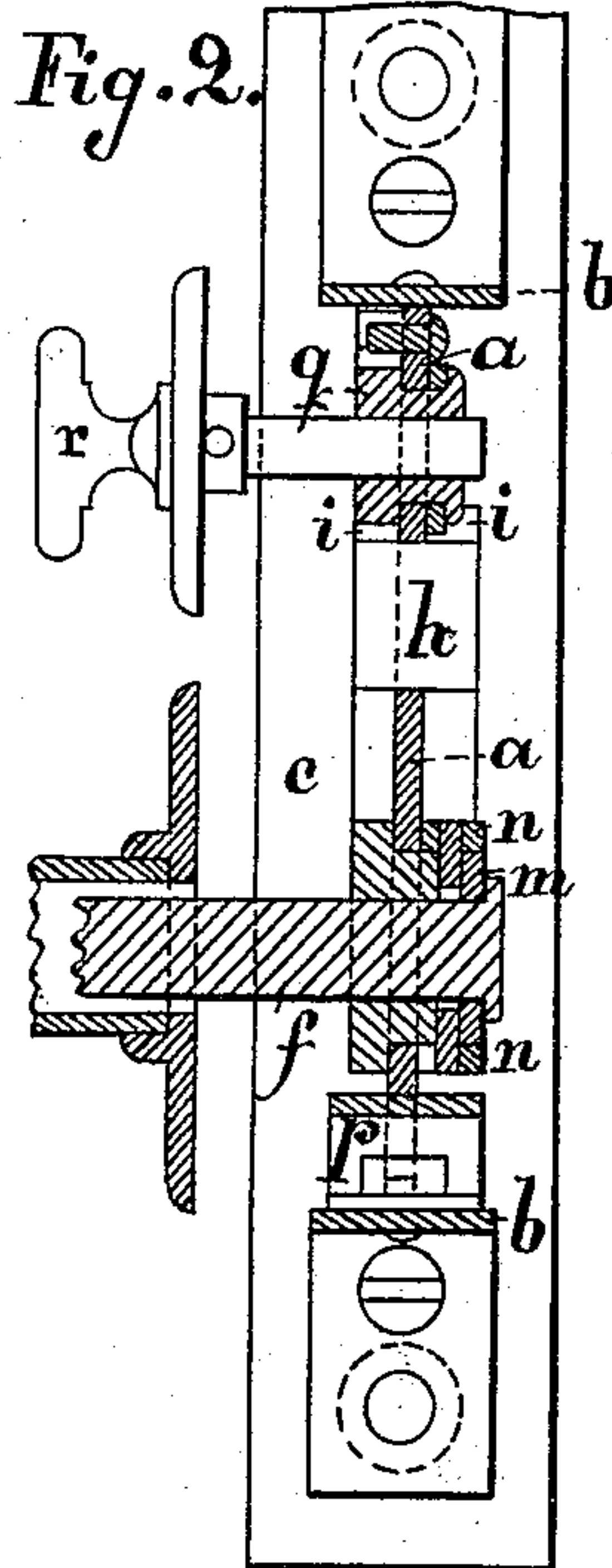
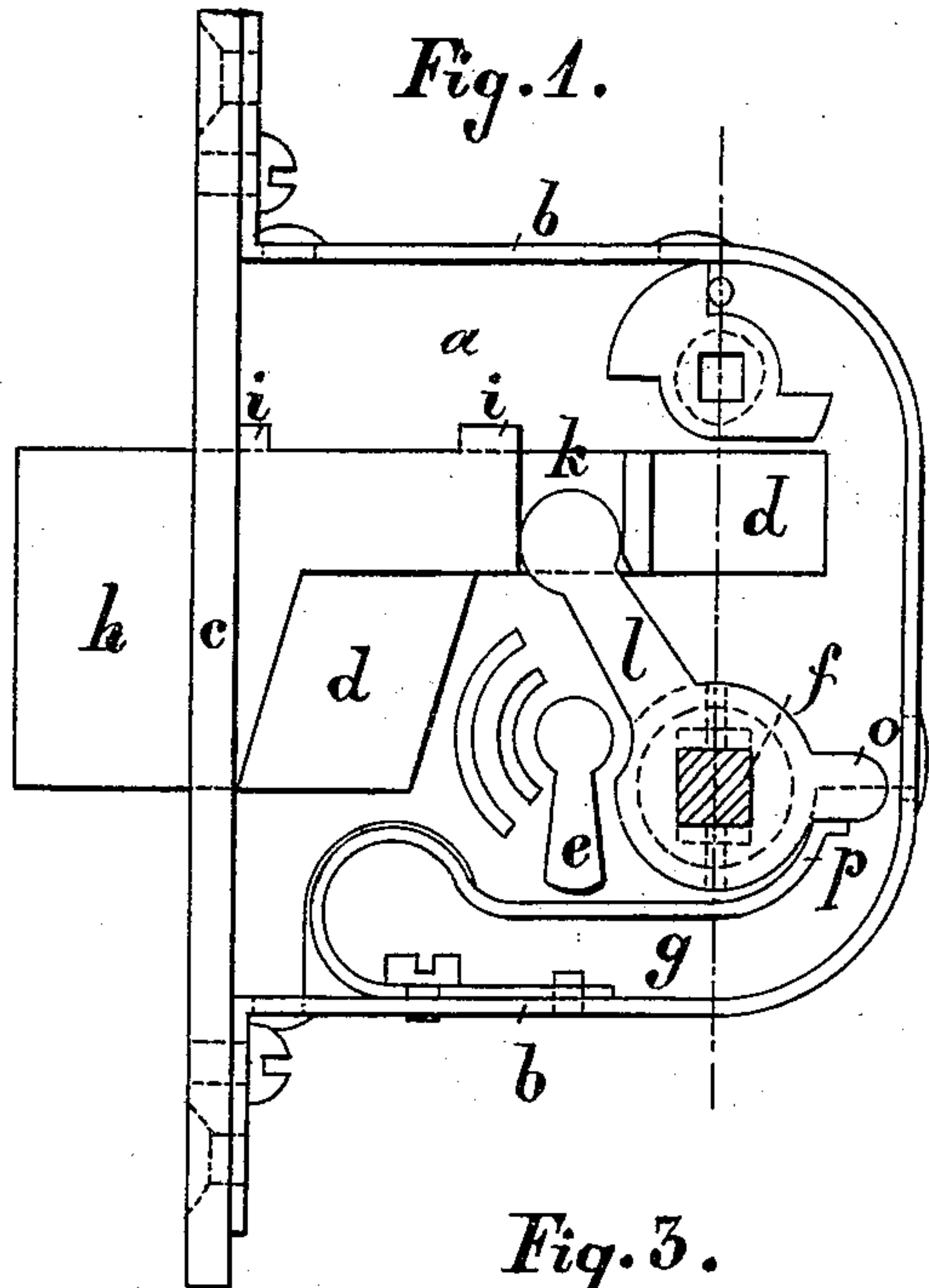
(Model.)

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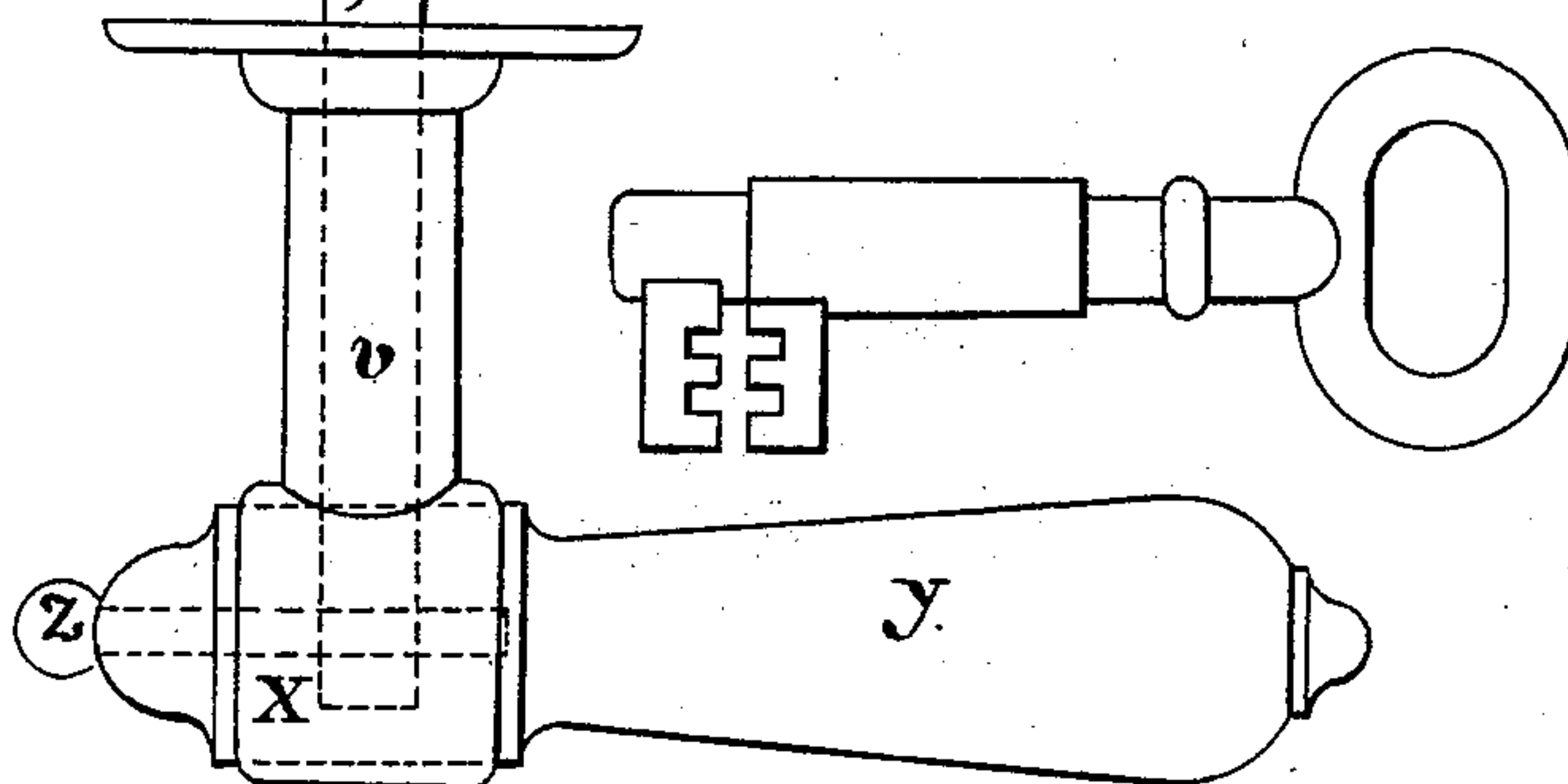
O. B. HAGLUND.  
LOCK.

No. 407,479.

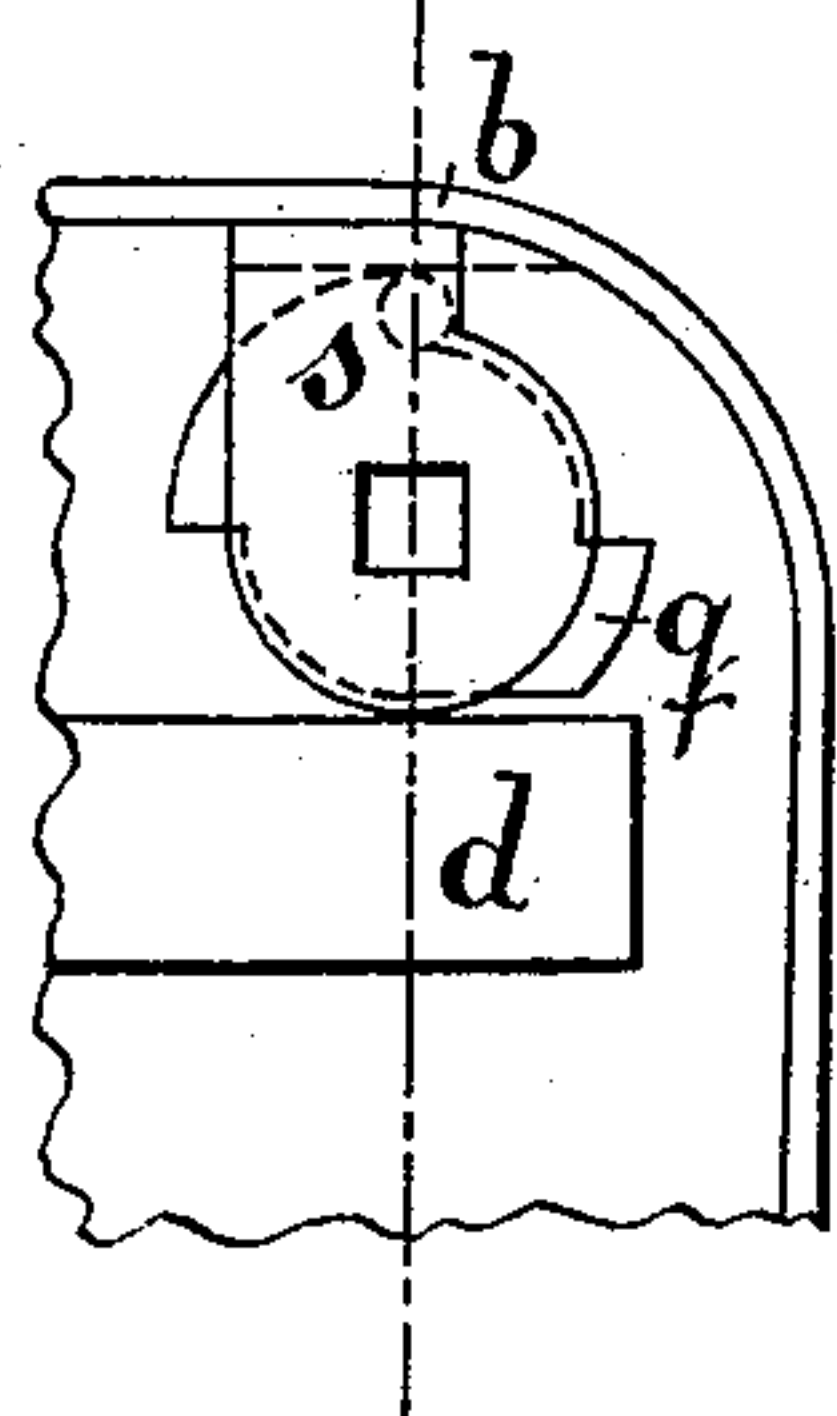
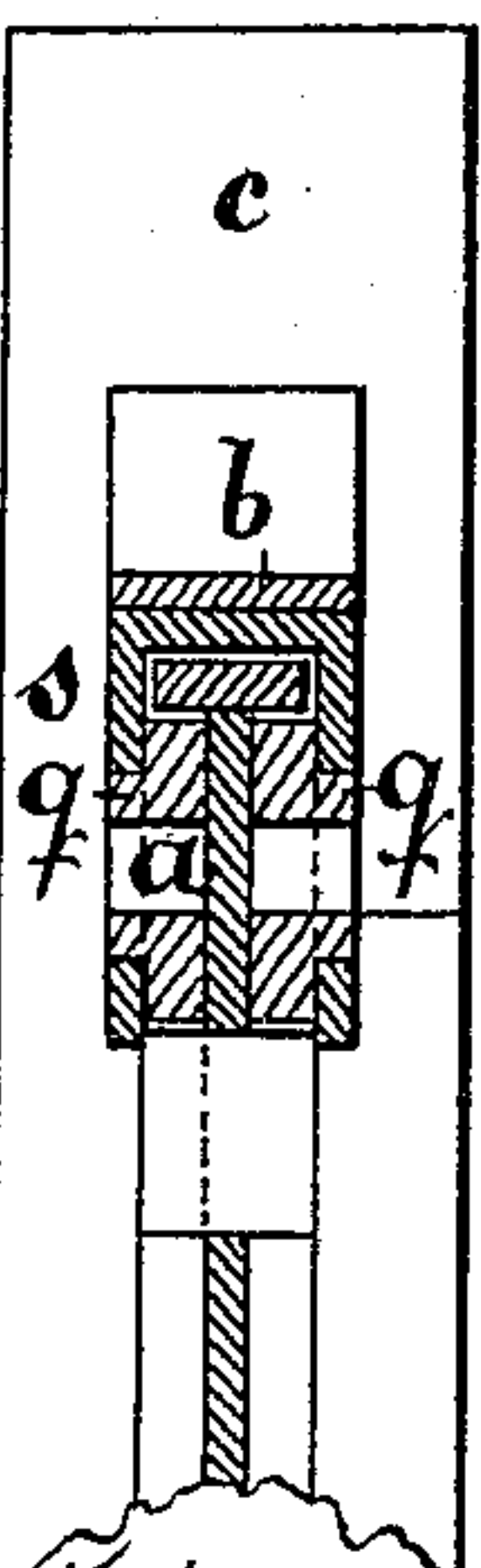
Patented July 23, 1889.



*Fig. 4.*



*Fig. 6.*



*Fig. 5.*

Attest:  
Walter Horton  
Notary Public.

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Oscar B. Haglund  
by John J. Haested & Son  
his Attys.

(Model.)

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Fig. 7.

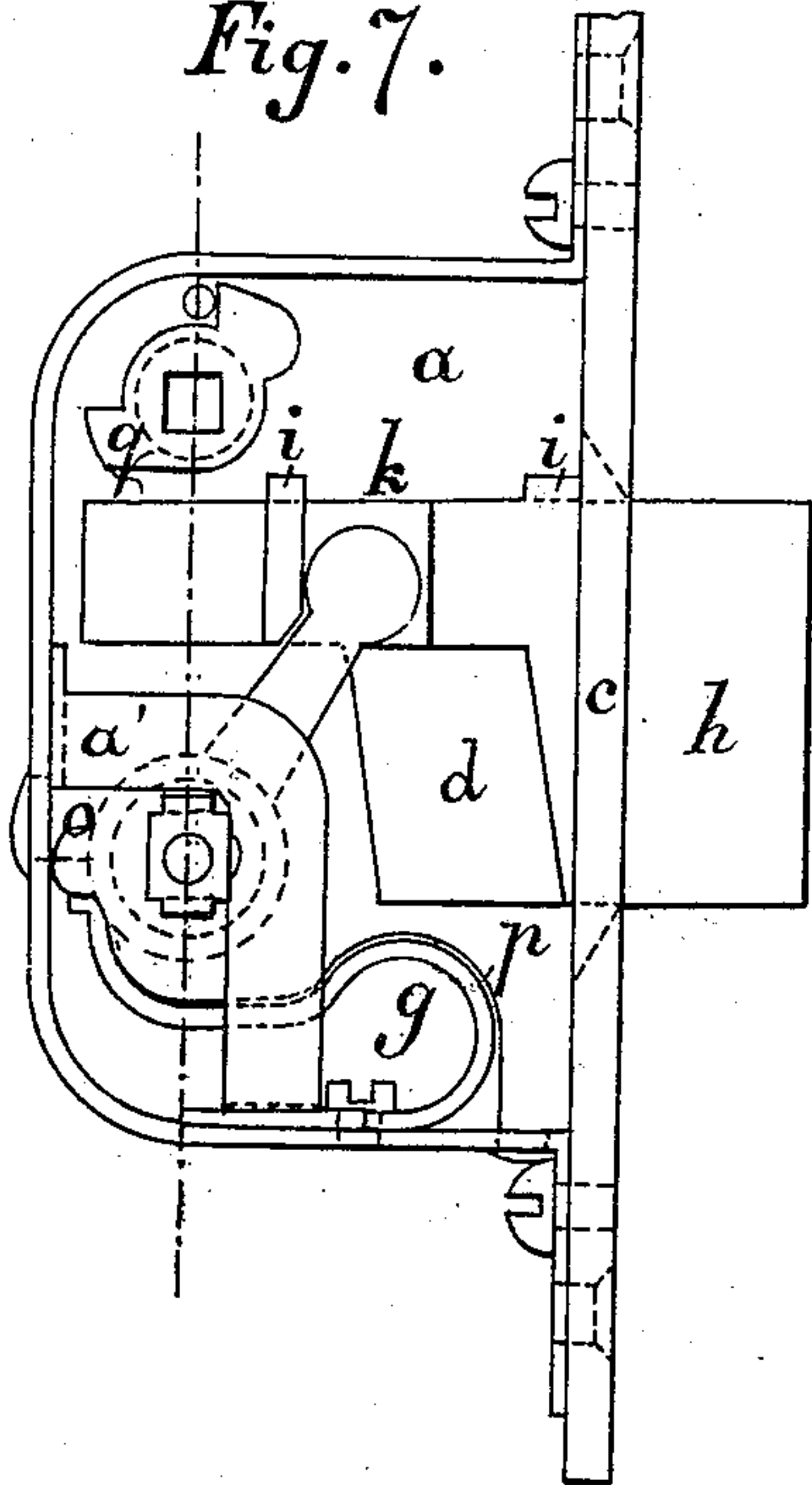


Fig. 8.

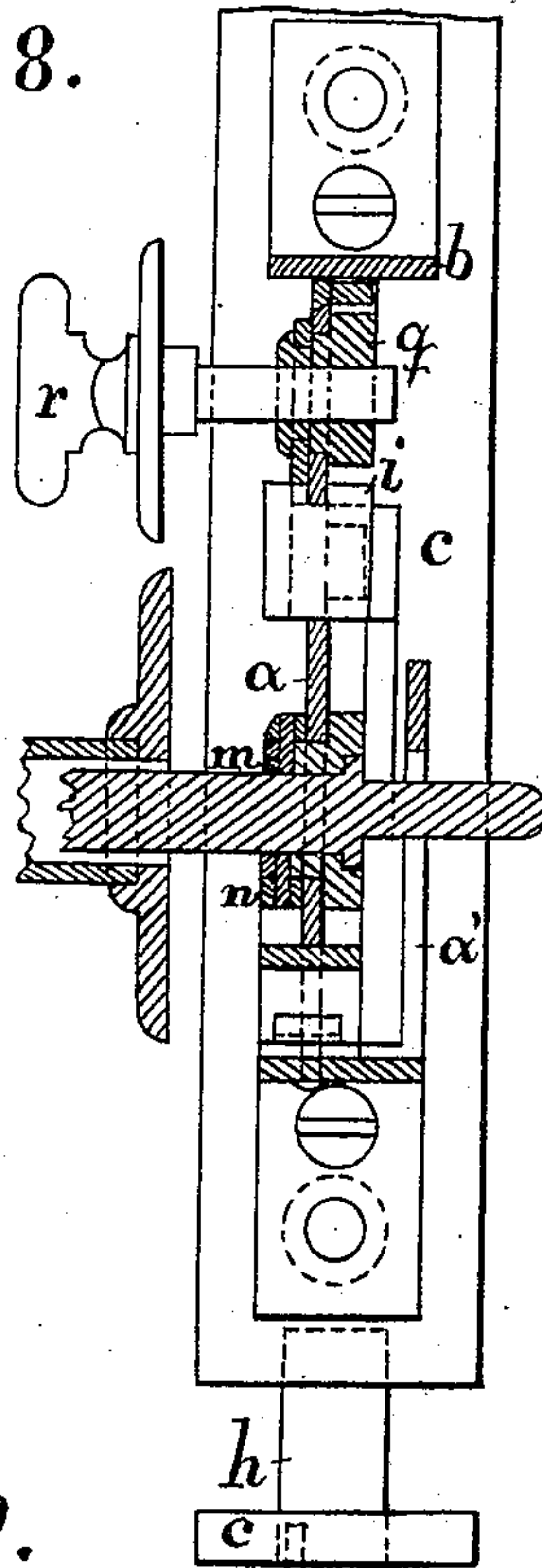


Fig. 10.

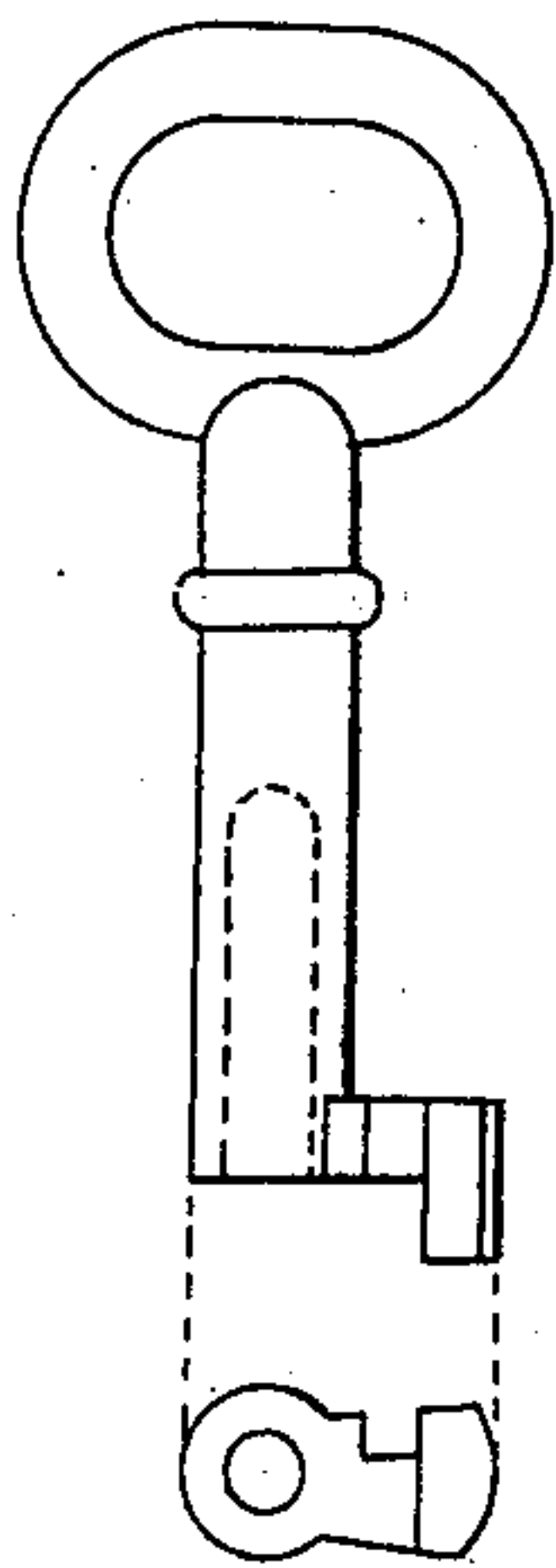
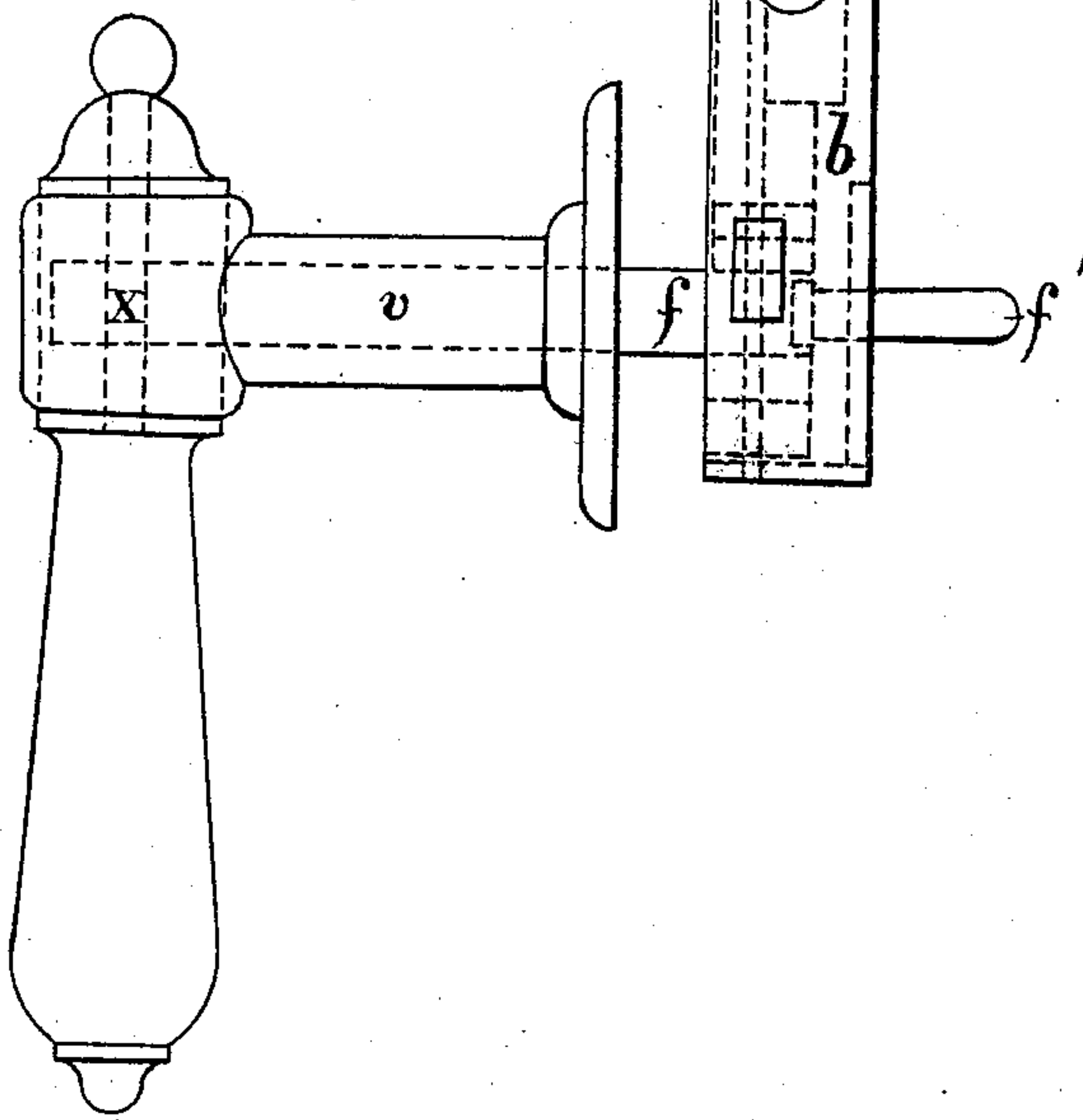


Fig. 9.



Witnesses:  
*Frederick Norton*  
*Alvin Belt*

Inventor  
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by *John J. Halsted* for  
his Attys.

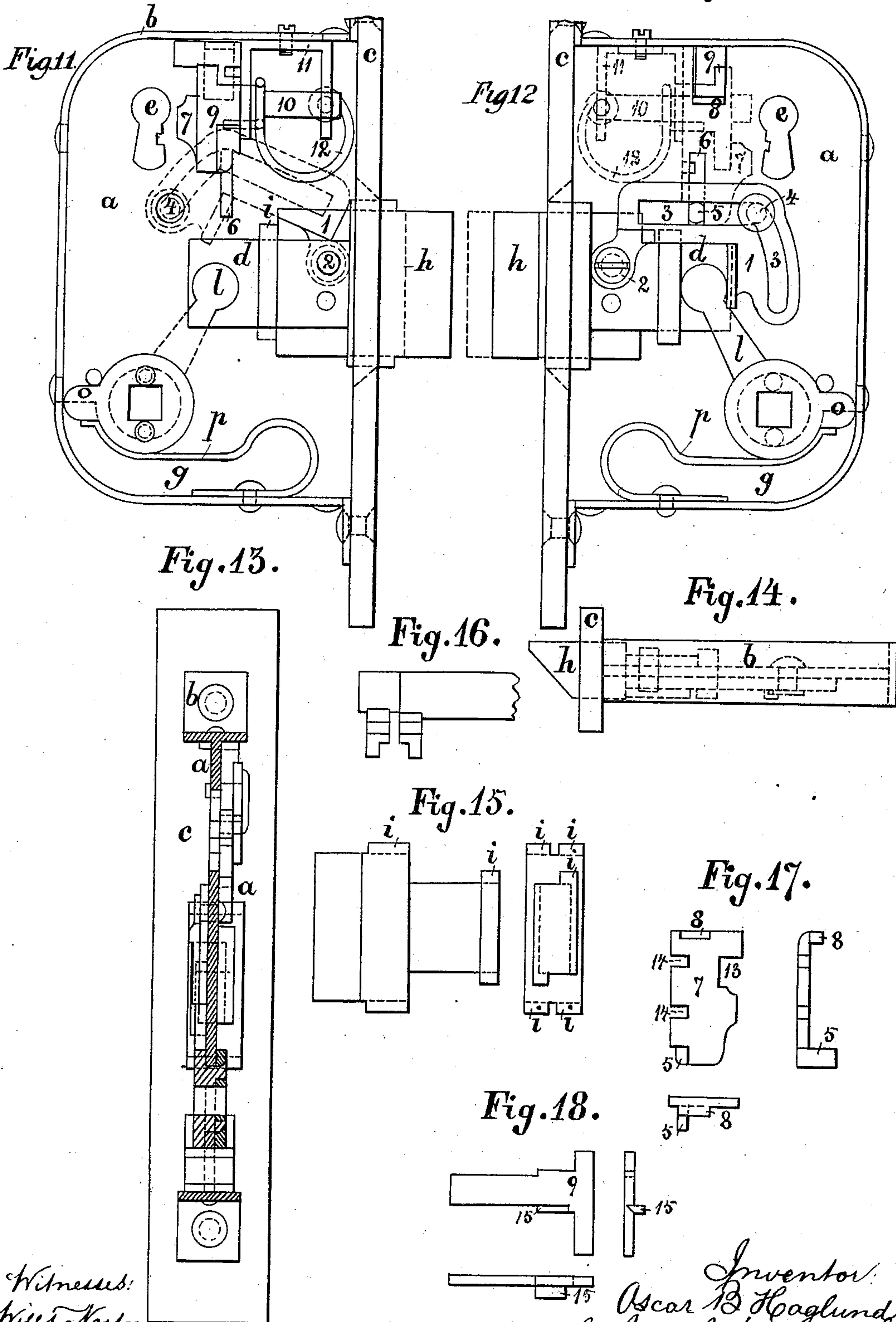
(Model.)

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O. B. HAGLUND.  
LOCK.

No. 407,479.

Patented July 23, 1889.



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# UNITED STATES PATENT OFFICE.

OSCAR BAPTIST HAGLUND, OF NYKÖPING, SÖDERMANNLAND, SWEDEN.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 407,479, dated July 23, 1889.

Application filed June 16, 1888. Serial No. 277,390. (Model.) Patented in Sweden October 31, 1887, No. 1,330.

*To all whom it may concern:*

Be it known that I, OSCAR BAPTIST HAGLUND, a subject of the King of Sweden, and a resident of Nyköping, province of Södermannland, Sweden, have invented Improvements in the Construction of Mortise-Locks, (for which I have obtained a Swedish patent, No. 1,330, dated October 31, 1887,) of which the following is a specification.

10 This invention refers to some improvements in the construction of mortise-locks, which make these locks more durable, cheaper, and thinner than those used at present.

15 In the annexed drawings, Figures 1, 2, and 3 show such a lock in elevation, longitudinal section, and plan, respectively. Fig. 4 represents a key suitable for it. Figs. 5 and 6 show an elevation and section of a modified arrangement for bolting the lock from both sides. 20 Figs. 7, 8, and 9 are an elevation, longitudinal section, and plan, respectively, of another modified arrangement of the lock. Fig. 10 is a plan view of the key belonging to it. Figs. 11, 12, 13, and 14 show another modification of the lock, seen from different sides, in longitudinal section and plan. Fig. 15 shows the bolt from different sides; Fig. 16, a part of the key which belongs to this lock; and Figs. 17 and 18 are some details.

30 The lock-case is composed of a bottom plate *a*, secured to the middle or central line of a plate-strip *b*, which is bent round its free edges and is of a width equal to the thickness of the lock, and the ends of which, bent at right angles, are screwed on the face-plate *c*. This 35 bottom plate is provided with the following openings, viz: an opening *d*, shaped like the bolt, a key-hole *e*, an opening for the shaft *f* of the handle, and an opening *g* for the spring *p*, which operates on the lever. The bolt *h* is movable in the opening *d* and guided by the face-plate *c* and by the borders of the bottom plate *a*, which surround the opening *d*. The flaps or projections *i* are placed on the upper 45 (or both upper and under) side of the bolt on each side of the bottom plate *a* to prevent its sliding sidewise.

50 In the tail of the bolt there is on the one side a notch or niche *k*, the bottom of which lies in the same plane as the bottom plate *a*. In this niche rests the free and rounded head of the lever *l*, which is fitted upon the handle-

shaft *f* on the same side of the bottom plate *a* as the niche *k*. The foot of the lever which surrounds the handle-shaft *f* is fitted with a 55 collar *m*, passing through the opening in the bottom plate *a*, and, surrounding the shaft *f* on the other side of the same plate, this collar *m* is surrounded by a hoop *n*, fastened by pins, thus forming in the foot of the lever a 60 sort of groove. The back part of the lever-foot and the corresponding part of the hoop *n* carry a toe *a*, operated by the free end of the spring *p*, bent to a quarter of a circle. The other end of this spring, bent nearly in three- 65 quarters of a circle, is fastened at the plate-strip *b*. In this manner the spring acting upon the lever, and not, as hitherto used, against the bolt, its play will be very limited, the friction lessened, and the movement of 70 the bolt easy and smooth during the whole of the way. The lever thus acted upon by the handle also can be operated by the key, Fig. 4, introduced in the adjoining key-hole *e*. The bit of the key is split in two parts by a 75 slit corresponding to the thickness of the bottom plate *a*. This key is introduced so far that each half of the bit is placed at each side of the bottom plate. The lock also can be fitted with a handle at each side, and then the 80 key-hole is omitted.

The bolt *h* can be barred by a night-bolt *q*, placed in the upper part of the lock-box and fitted on the pin of a little turn-button *r*. This bolt can turn in an opening in the bot- 85 tom plate *a* in the same manner as the lever-foot turns in its opening. By turning the button *r* the bolt *q* will be put behind the back part of the advanced main bolt, and thus prevent its moving backward. As shown in 90 Fig. 6, such a night-bolt *q* can also be placed at each side of the bottom plate *a*, each of them reposing in a branch of a bow or yoke *s*, fastened to the plate-strip *b* and traversing the bottom plate *a*, so that each branch is 95 placed at each side of this plate; hence the lock can be bolted from both sides of the door.

The handle of the lock can be composed of a tube *v* put on the shaft *f* and joining another short tube *x*, in which the wooden han- 100 dle *y* is introduced. This handle is joined with the end of the shaft *f* by a forelock or pin *z*, which is put into the shaft *f* from the fore part of the handle. (See Figs. 3 and 9.)



The handle and its shaft are secured in their position by a plate or escutcheon having a hole for the shaft and a niche for the fore part of the tube *v*.

5 The modification of this lock shown in Figs. 7 and 9 differs from the above construction in that the bottom plate *a* is fastened not quite centrally of the plate-strip *b*, but a little nearer one of its edges, and that the shaft 10 *f* passes entirely through the lock, so that its other projecting end *f'* forms a pin for applying thereto a key. The key is secured in its position by this pin and also by a piece of 15 plate *a'* bent at right angle and serving as a ward, the ends of which are fastened to the above-mentioned plate-strip *b*.

The modification of this lock shown in Figs. 11, 12, and 13 is destined for main gates and two-leaved doors, and differs from the construction shown in Figs. 1, 2, and 3 in this— 20 namely, that there is a special mechanism for locking the main bolt, so that it can be maintained in the advanced position by turning the key, but in this position is perfectly independent of the lever, which, as well as the 25 handles, nevertheless can be moved quite as if the lock were opened.

This mechanism consists of a tumbler 1, the one end of which can turn around a pivot 2, 30 applied at one side of the main bolt *h*. This tumbler has a central longitudinal partly curved slot-hole 3, embracing a little tap 4, fitted on the bottom plate *a* and guiding the movement of the tumbler. In this slot also 35 enters a flap 5, piercing through a slit 6 in the bottom plate *a*. This flap projects from a slide-bar 7, made of a small piece of plate, Fig. 17, and sliding vertically on the other side of the bottom plate, respectively, to the 40 tumbler 1. The upper part of this slide-bar is guided by another flap 8, piercing another slit in the bottom plate. In one of the side borders of this slide-bar there is a notch 13 for the key-bit, and in the other border two 45 cuts 14, in one of which (respectively to the position of the bar) enters a toe 15, projecting from a tumbler 9, placed outside the bar 7. Near this bar is the key-hole *e*. The tumbler 9 is made of a small plate and fitted with a 50 little toe 15, Fig. 18, projecting toward the slide-bar 7. The tail 10 of the tumbler 9 lodges in a cramp 11, fastened on the plate-strip *b*, and is pushed forward in the direction of the key-hole by a spring 12, adapted 55 to the cramp.

When the lock is not locked, the tumbler 1 occupies the position shown in Fig. 12. The upper part of the lever *l* then rests between the back of the main bolt and the 60 tumbler 1, so that the bolt is forced to participate in the to-and-fro movement of the lever. During this movement the tumbler 1 is guided by the tap 4, projecting in the slot-hole 3. By turning the key the slide-bar 7 is 65 raised, and its flap 5 raises the tumbler 1, turning round the pivot 2 until the lowest

point of the slot-hole 3 pushes against the tap 4. Then the tumbler stops in the position shown in Fig. 11. In this position the lever cannot act upon the bolt; but nevertheless it 70 can be moved by acting upon the door-handles. When the key is turned backward, the bar 7 is lowered again, and the flap 5 carries the tumbler 1 back to its former position. Thereby, upon turning the door-handles, the 75 lever can put back the tumbler and also the main bolt *h*, to which it is joined by the pivot 2.

What I claim as improvements in the construction of mortise-locks is as follows: 80

1. The lock-case composed of a bottom plate *a*, combined with and fastened on a face-plate *c*, and with its borders edged with a plate-strip *b*, projecting on both sides of the bottom plate, substantially as shown and 85 described.

2. In combination, the bottom plate *a*, having an opening *d* therein, a main bolt *h*, movable in such opening, and the projecting lugs *i*, serving to guide said bolt and embracing 90 the bottom plate, substantially as shown and described.

3. In combination with the slide-bolt *h*, having the side niche *k*, the bottom plate *a*, the two-armed lever *l*, its spring *g*, applied 95 directly to its toe part or short arm *o*, as described, said bottom plate *a* having also a key-hole *e* close to such lever, all substantially as shown and described.

4. In combination with the lock-case having a central plate *a*, the shaft *f* of the door-handle extended through the lock-case and formed with an extension *f'*, such extension constituting on the opposite side of the lock-case a pin for putting on the key at that side, 105 substantially as shown and described.

5. In combination with the bottom plate *a* and with the bolt *h*, a turn-bolt *q*, located at the back part of the bolt and above the same, and a staple *s*, spanning the bottom plate, the 110 pin of the turn-bolt reposing in the corresponding branches of such staple, substantially as shown and described.

6. In combination with the bolt *h* and at one side thereof a tumbler 1, pivoted at 2, 115 the lever *l*, acting on said tumbler when in its lowest position, this tumbler having a longitudinal slot-hole 3 with a curved branch, the side bar 7, having a projecting flap 5, embraced by such curved branch, such slide-bar 120 being arranged to be raised or lowered by the key and thereby raising or lowering the tumbler and preventing the action of the lever on the bolt, substantially as shown and described. 125

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR BAPTIST HAGLUND.

Witnesses:

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N. K. NORDIN.