

(Model.)

F. PEARCE & J. JONES.

LOCK FOR ALARM BOXES.

No. 360,906.

Patented Apr. 12, 1887.

Fig. 1.

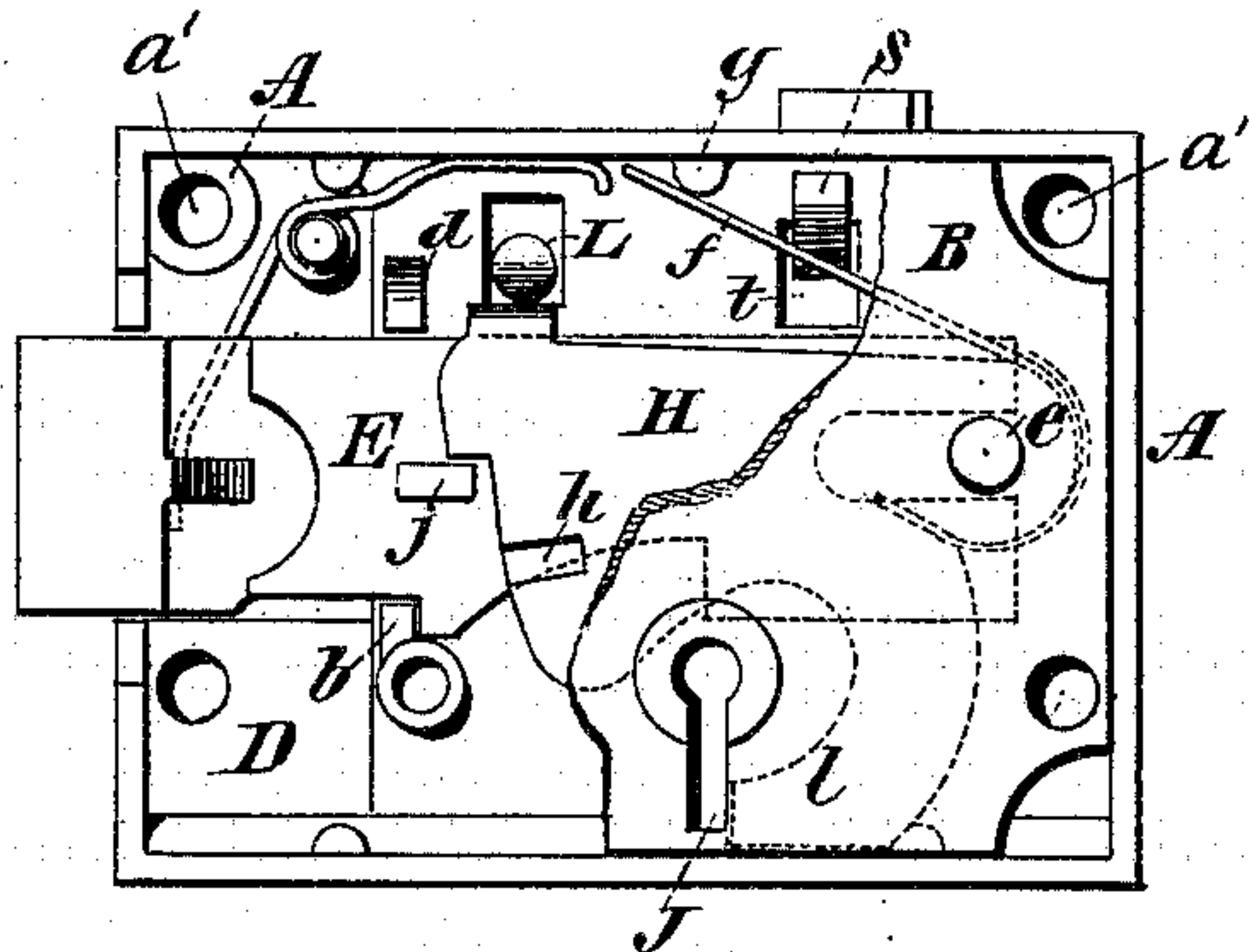


Fig. 2.

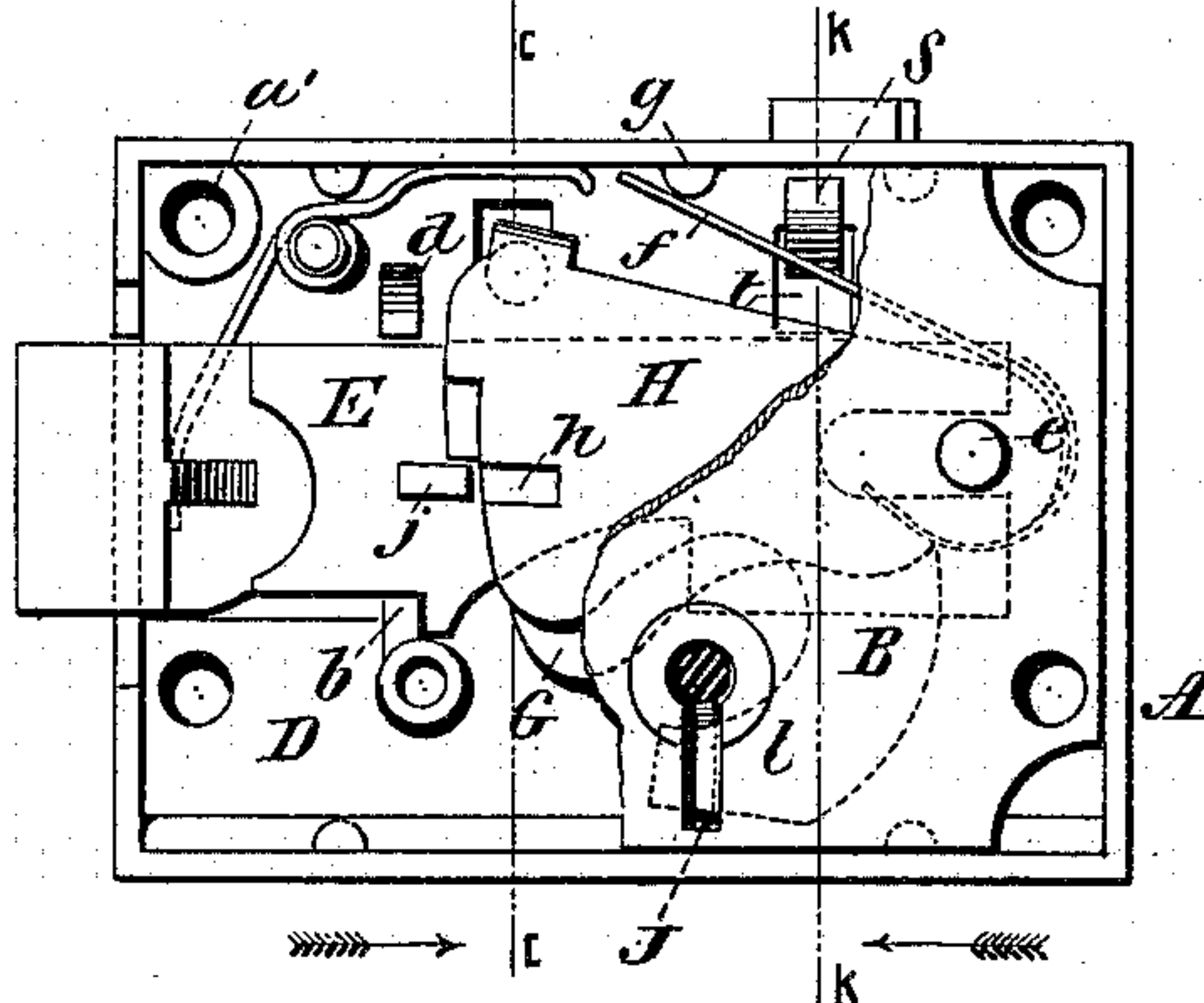


Fig. 3.

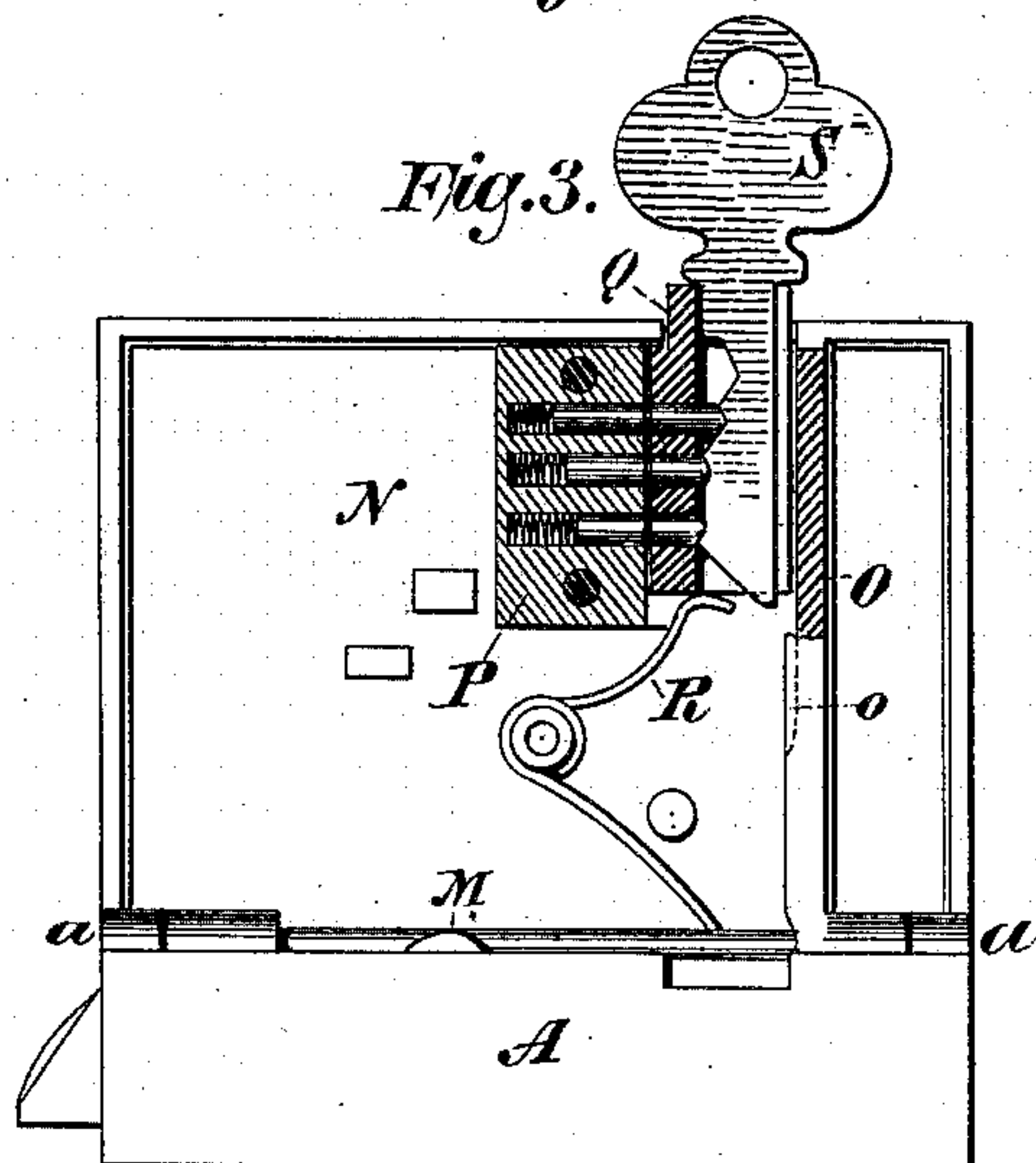


Fig. 4.

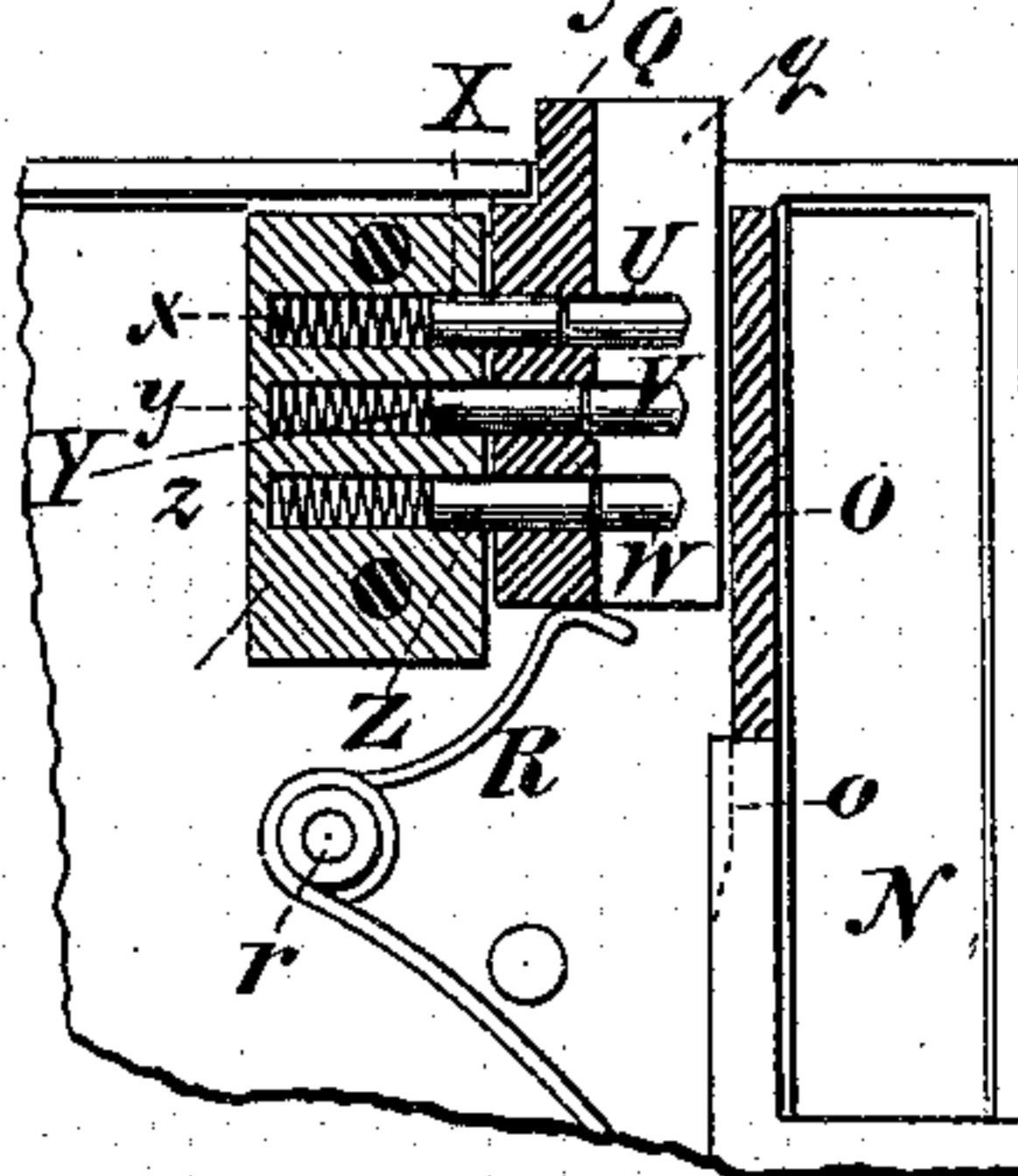


Fig. 8.



Fig. 7.

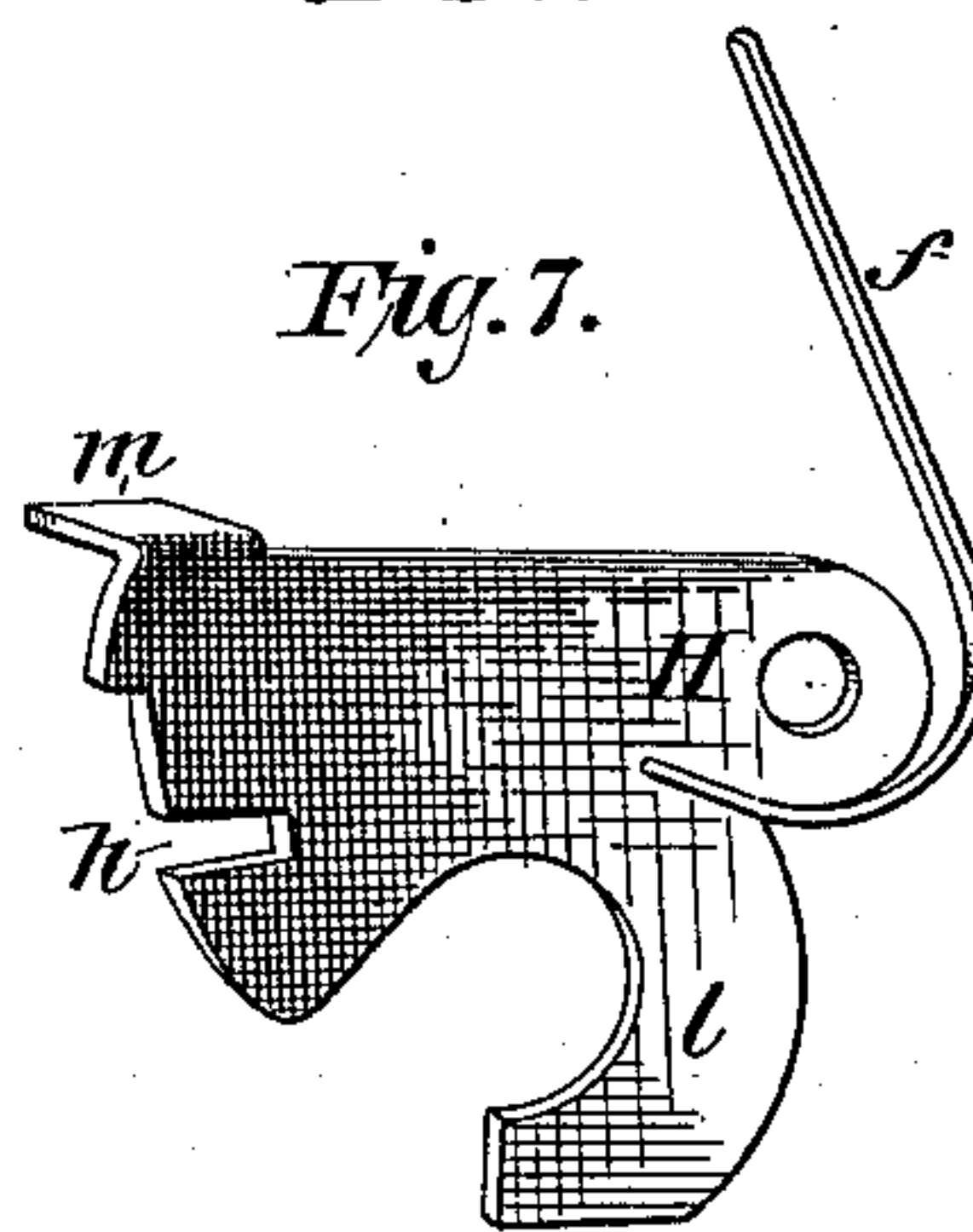


Fig. 5.

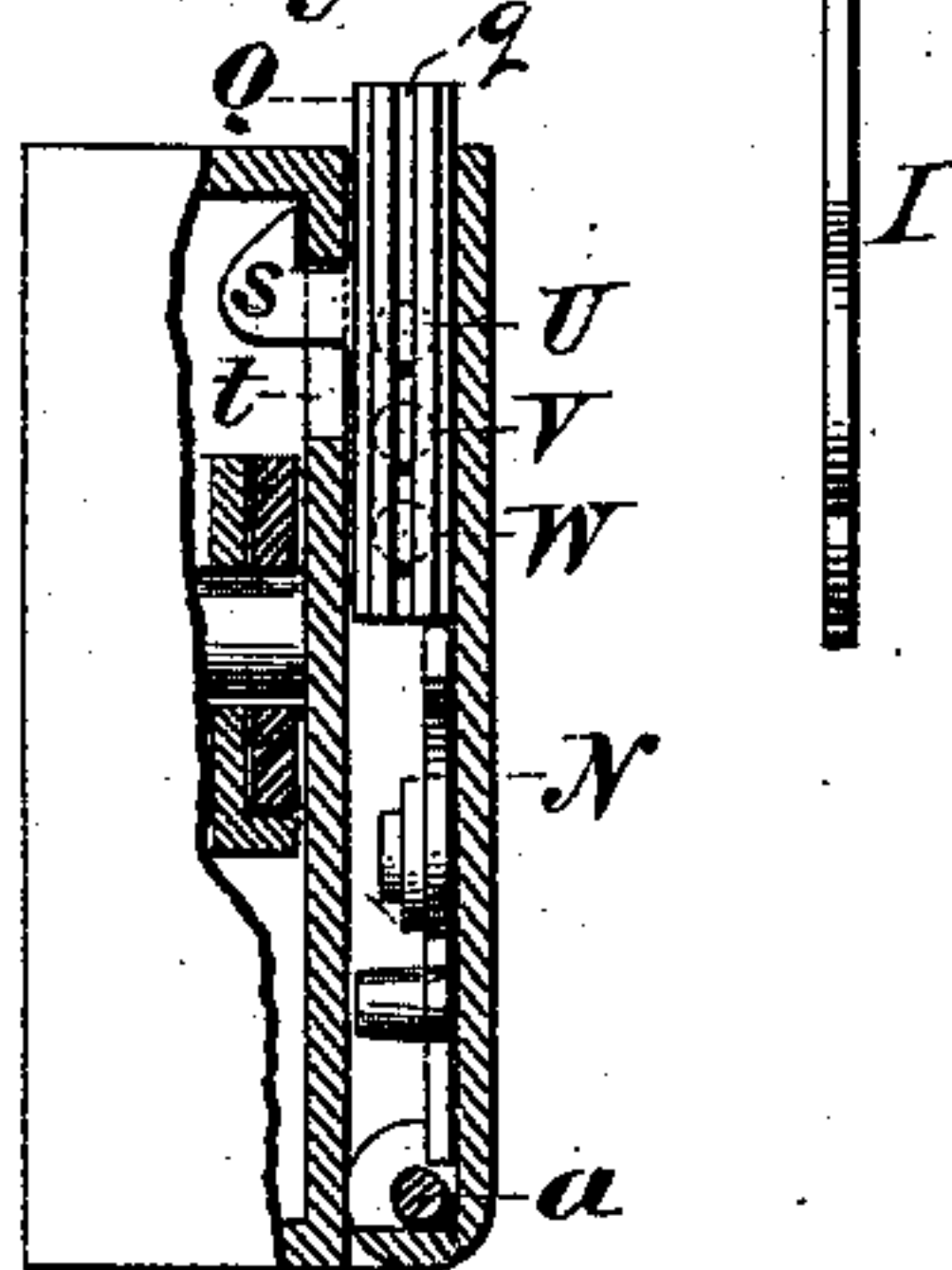
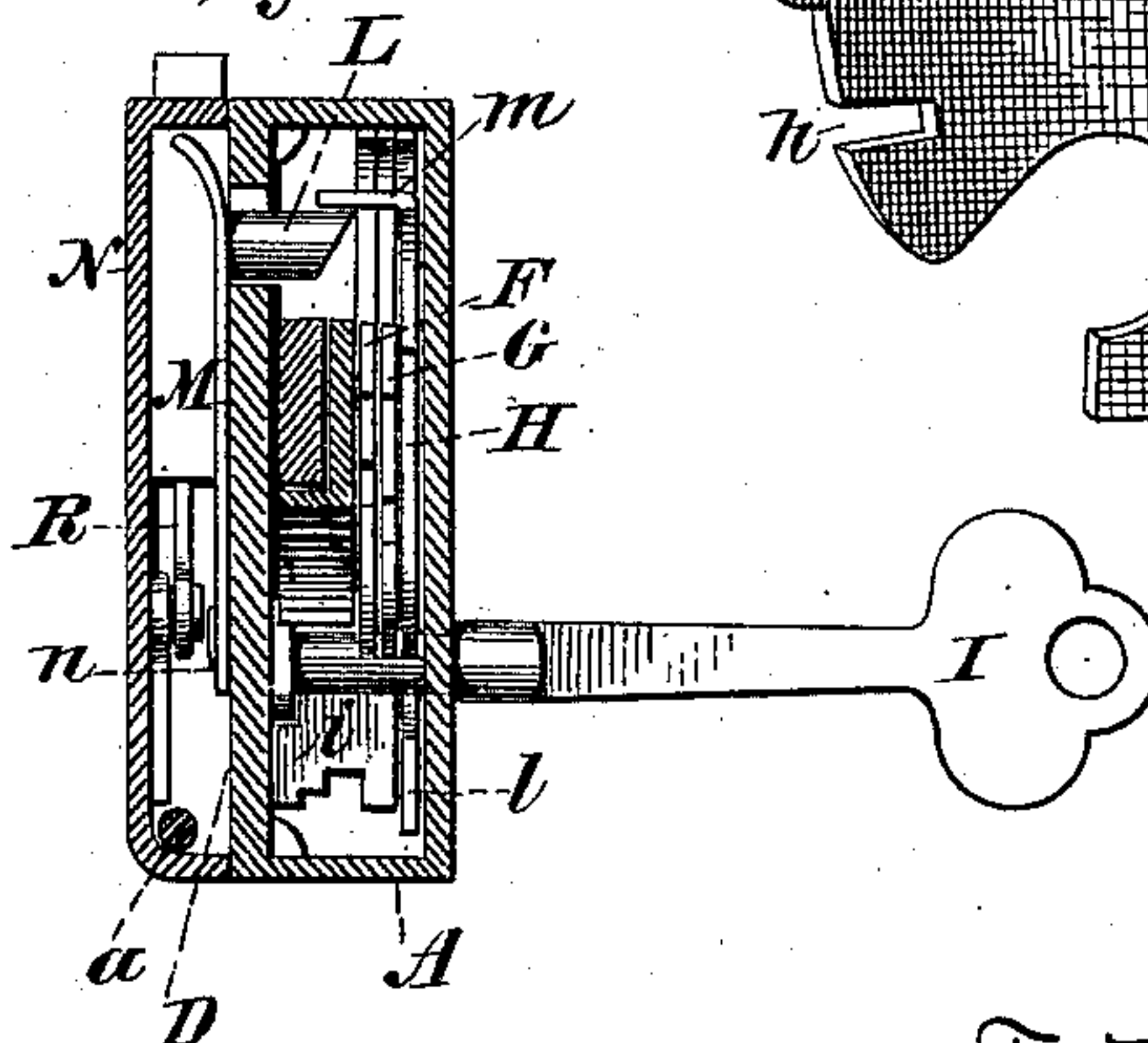


Fig. 6.



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LOCK FOR ALARM-BOXES.

SPECIFICATION forming part of Letters Patent No. 360,906, dated April 12, 1887.

Application filed December 14, 1886. Serial No. 221,518. (Model.)

To all whom it may concern:

Be it known that we, FREDERICK PEARCE and JAMES JONES, residents, respectively, of New York city, New York county, New York, and Brooklyn, Kings county, New York, have jointly invented an Improvement in Locks for Alarm-Boxes, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings.

Our invention relates to trap-locks for alarm-boxes; and it has for its object to simplify the construction of these locks and make the trapping of the key more secure, as will be more fully hereinafter set forth.

In the accompanying drawings, Figure 1 is a view of the face of the lock, which is secured to the door, a portion of the face-plate being broken away to show the interior mechanism. Fig. 2 is a similar view showing the position of the parts when the key is trapped. Fig. 3 is a view, partly in section, of the hinged rear plate of the lock, showing the mechanism for opening said plate. Fig. 4 is a similar view showing another position of the same parts. Fig. 5 is a vertical section on the line *k k*, Fig. 2. Fig. 6 is a vertical section on the line *c c*, Fig. 2. Fig. 7 is a perspective view of the tumbler which traps the key. Fig. 8 is a view of the key which operates the catch device on the rear plate.

A is the lock-case, which is provided with a face-plate, B, secured to it by screws on one face, and a back-plate, D, which plate may be cast with the case A. Sliding between guides *b d* is an ordinary bolt, E. Pivoted on the stud *e*, attached to case A, are a number of tumblers, F, G, and H, each forced downward by a spring, *f*, bearing against a lug, *g*, on the upper side of the case A. Each tumbler has a notch, *h*, which, when the tumbler is raised to a proper height by the corresponding surface in the notched heel *i* of the key I, allows the lug *j* on the bolt E to enter the several notches *h*. The outer tumbler, H, has a heel, *l*, which, when the tumbler is raised by the key from the position shown in Fig. 1 to that shown in Fig. 2, cants upward and passes over the lower part of the key-hole J, preventing the heel *i* of the key I from being drawn out. Thus the key is trapped in the case. In order to hold this tumbler H in the elevated position to which it has been raised by the key, it is

provided with a projection, *m*, (see Fig. 7,) which projection during the upward movement of the tumbler engages the beveled surface of a dog, L, carried on a spring, M. This spring is secured at *n* to the back of the plate D. The beveled dog L projects from said spring M through a hole in the plate D, as in Fig. 6. The ascending projection *m* on the tumbler H forces said spring M and dog L backward until the projection is above the dog, as in Figs. 2 and 6, when the dog, meeting with no further resistance, is again forced inward by the spring M, getting under the projection *m*, and thus prevents the tumbler H from returning to its original position and from releasing the key.

When the key is to be released, the spring M is drawn back, and the dog L, releasing the projection *m*, the tumbler H is returned by the spring *f* to its normal position, whereby the key-hole J is uncovered, so that the key may be withdrawn. The spring M may be attached to a cover, N, hereinafter described, in which case the tumbler H will be released by the opening of the cover.

To prevent access to the spring M, except by the persons having proper authority to release the key I when trapped, the rear of the lock-case A is covered by a plate or cover, N, hinged to the case A at *a*. This plate or cover also serves to inclose and prevent access to the heads of the screws which pass through the openings *a'* in the case A and secure the lock to the door.

On the inner face of the plate or cover N is a rib, O, having a groove, *o*, in its inner edge. A block, P, having a groove in its edge is also secured to the plate N by screws or otherwise, and in the way, formed by this block P and the rib O, slides a block, Q, forced upward by a spring, R, that is attached to a stud, *r*, on the hinged rear plate, N. The block Q has a longitudinal slot, *q*, for the key S, Figs. 3, 4, and 5, and a forwardly-projecting catch, *s*, secured to its outer face, which catch passes through an opening, *t*, in the rear face, D, of the case A, and engages the upper edge of said opening when the plate or cover N is closed, as in Fig. 5.

In the edge of the block Q, next to the block P, are several holes, in which are cylinders or slides U, V, and W of varying lengths, and

registering with these holes are similar holes in the block P, in which are the cylinders or slides X, Y, and Z of varying lengths, the latter cylinders or slides being forced outward by coiled springs $x y z$, located in the block P behind the cylinders or slides X Y Z. The lengths of the cylinders U V W X Y Z are such that when the indented key S is inserted in the slot q the cylinders U V W will be forced toward the edge of the block Q until their ends are in line with the surface of the said edge, as shown in Fig. 3, so that the block Q may be forced downward to release the catch s from its engagement with the case A. Now the plate or cover N can be opened.

As soon as the key S is withdrawn from the block Q, the springs $x y z$ force the cylinders X Y Z outward, and with them the cylinders U V W, until the cylinders X Y Z enter partly into the block Q, as in Fig. 4, preventing any movement of the block Q up or down. It is therefore apparent that to either open or close the hinged plate or cover N the key S must be inserted. The cylinders U V W and X Y Z are not necessarily cylindrical, but may be of any cross-section.

As the key S is always in the possession of a controlling officer and keys I in the hands of other persons, it is insured that the key I cannot be released when once it has raised and caused to be caught the tumbler H until the person having the key S opens the hinged rear plate, N.

The mechanism herein described has sundry advantages over that shown in our Patent No. 280,506, most important of which is the omission of the lower case, B, which is shown in said former patent, for holding the trapping-tumbler.

Having now described our invention, what we claim is—

1. In a trap-lock, the trapping-tumbler H, hung on the same stud e which holds the other tumbler or tumblers, and provided with a heel, l , which, when the tumbler H is raised, covers a portion of the key-hole, and means, substantially as described, for holding the tumbler in

the raised position, in combination with bolt E, adapted to be moved forward and backward by the key while the key is trapped, substantially as described.

2. In a trap-lock, the trapping-tumbler H, having a heel, l , which, when the tumbler is raised by the key, covers a portion of the key-hole, combined with the spring-dog L, for holding said tumbler in a raised position, said spring-dog projecting through a hole in the back-plate D of the lock, substantially as described.

3. In a trap-lock, the combination of a lock-case and a tumbler within said lock-case for trapping the key, with the hinged cover N, secured to the lock-case, with a separate lock for locking said hinged cover N, and with the dog L, inclosed by said cover, said dog being adapted to operate in conjunction with the key-trapping tumbler, substantially as described.

4. In a trap-lock, the combination of the case A, a tumbler, H, pivoted within said case, said tumbler having a projection, m , and heel l , and a dog, L, carried by a spring and extending through a hole in the back of the lock-case, with the hinged cover N, for preventing access to said spring and dog, said hinged cover having means for locking it to the case A, substantially as described.

5. The door N, sliding block Q, having locking-catch s thereon, and the spring R, in combination with the transverse locking-cylinders U X and fixed abutment P, substantially as herein shown and described.

6. The combination of the lock A and its bolt E with the key I, key-trapping tumbler H, tumbler-holding dog L, hinged door N, for concealing said dog L, and secondary lock Q U X, for locking said door N to the case A, and key S, for unlocking the same, as specified.

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