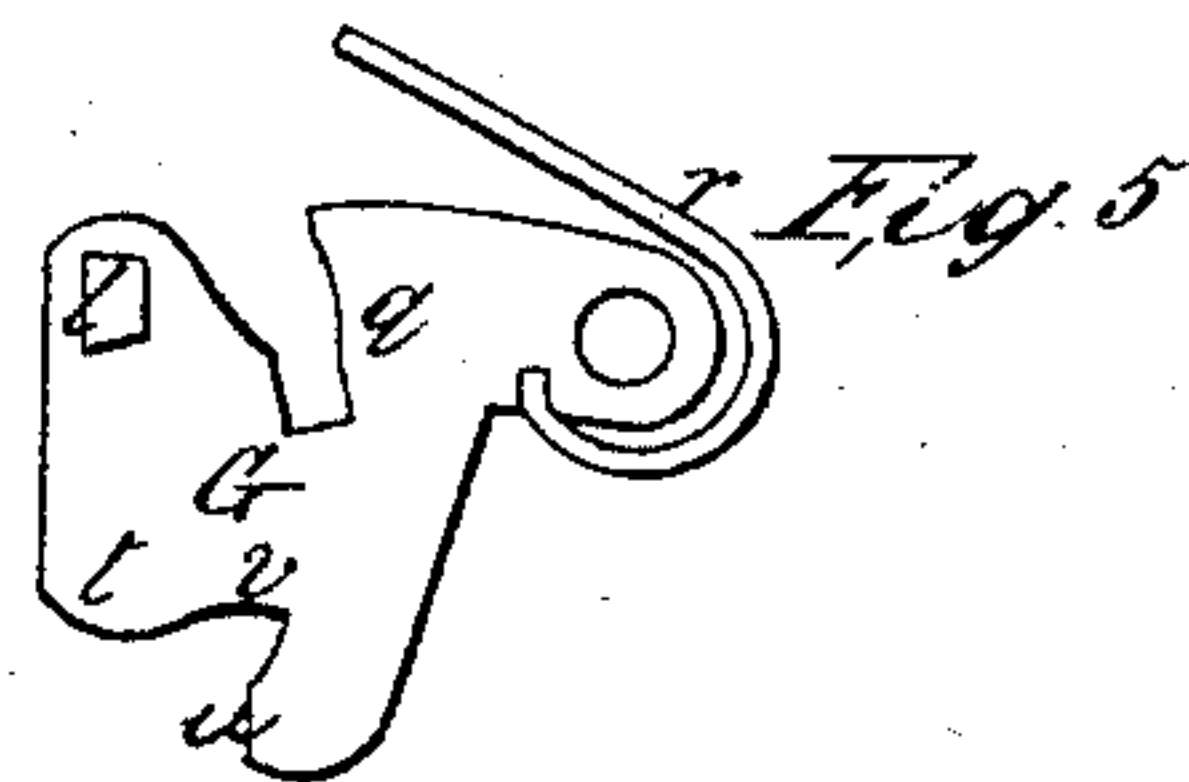
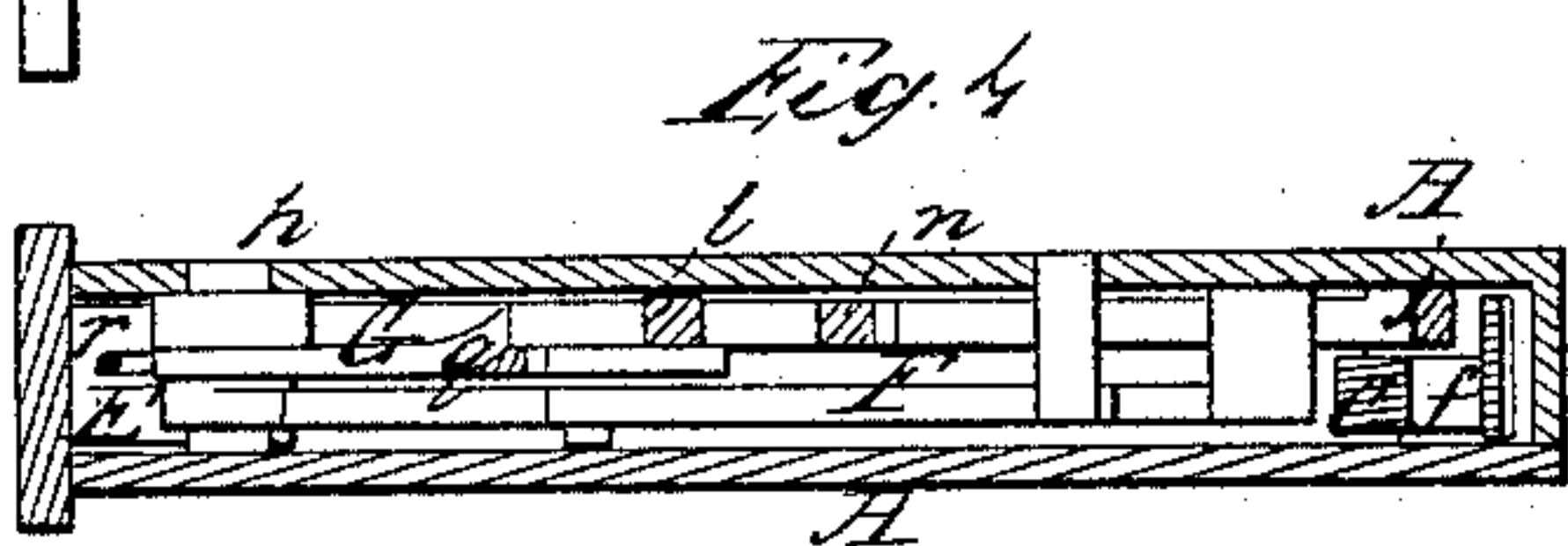
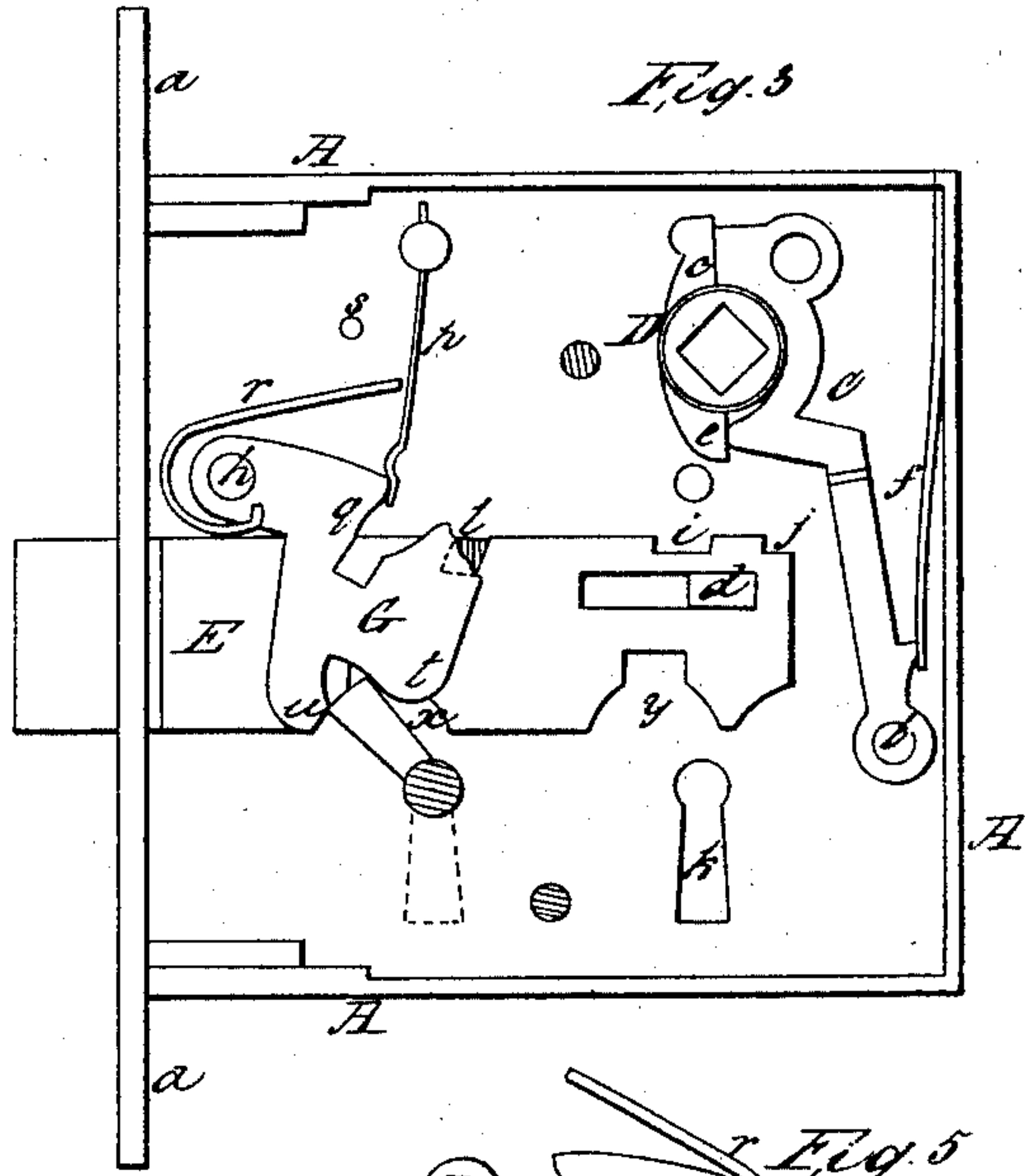
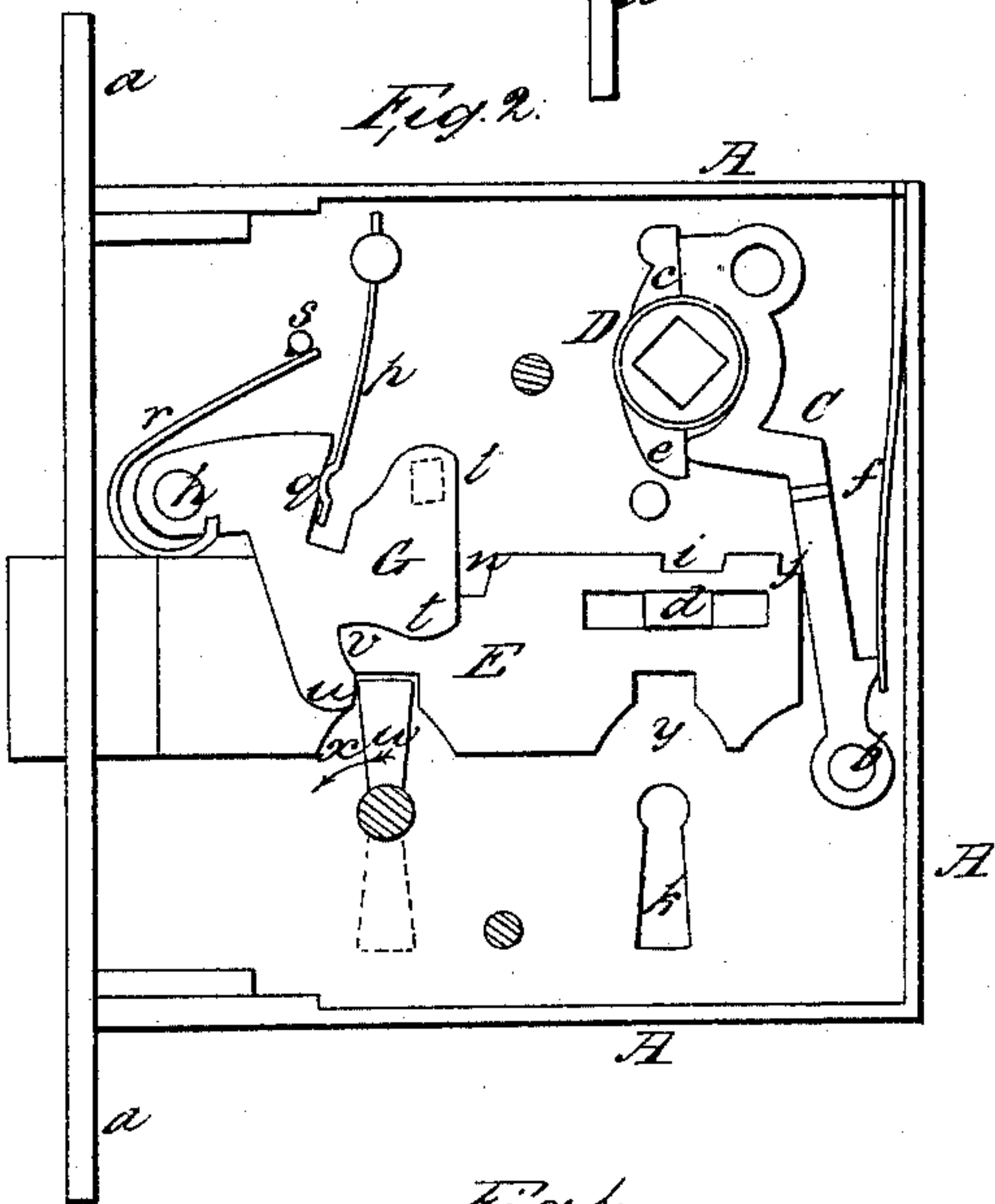
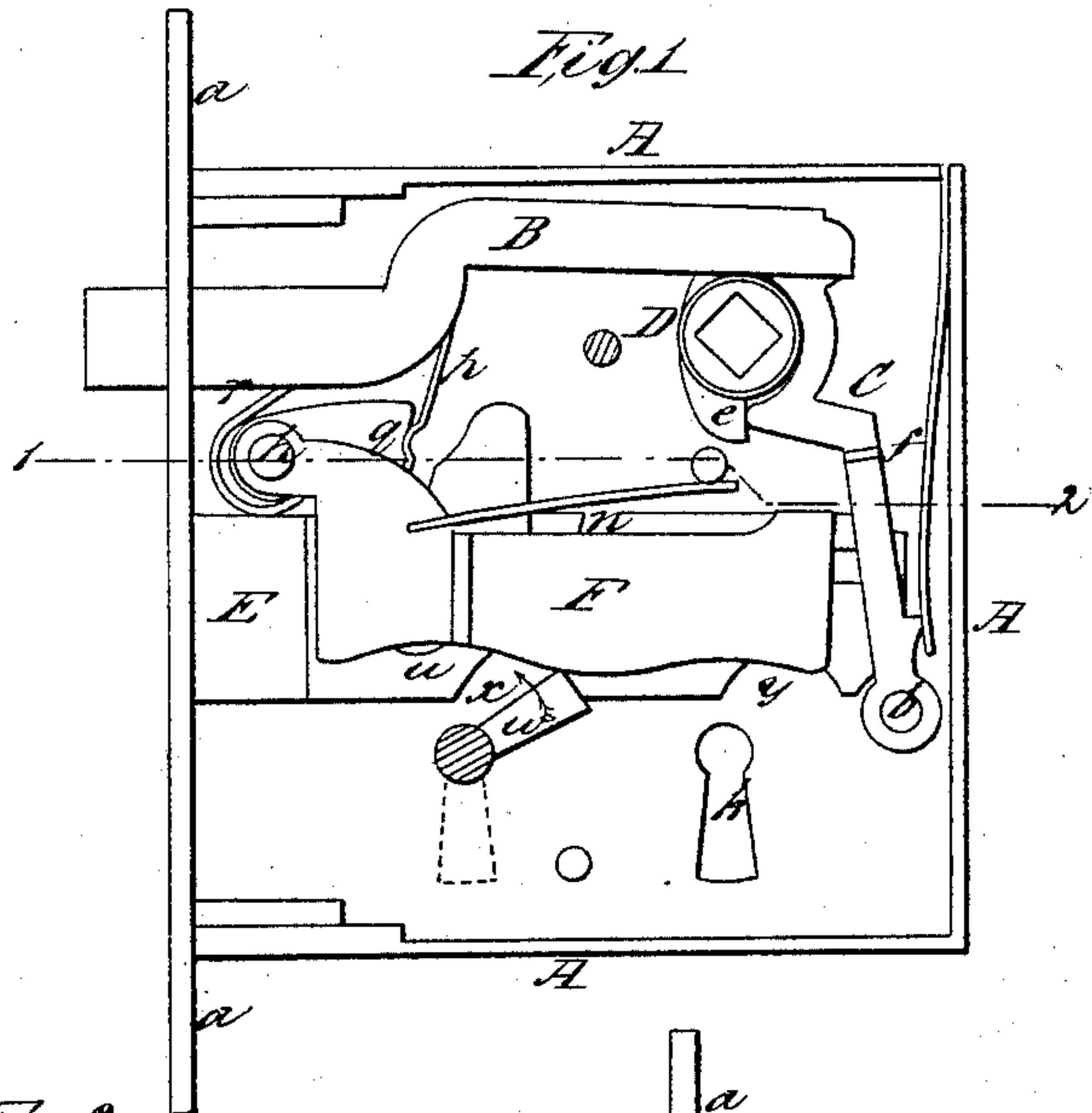


A. Rankin,

Lock.

N^o 28,406.

Patented May 22, 1860.



Witnesses

*Henry Howard
Horace See*

Inventor.

Andrew Rankin

UNITED STATES PATENT OFFICE.

ANDREW RANKIN, OF PHILADELPHIA, PENNSYLVANIA.

LOCK.

Specification of Letters Patent No. 28,406, dated May 22, 1860.

To all whom it may concern:

Be it known that I, ANDREW RANKIN, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Mortise-Locks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to an improvement in that class of mortise locks which have key holes on both sides so that the bolt may be operated both from the inside and outside of the door and my improvement consists in a supplementary tumbler having a spring, certain projections, and a shoulder, in combination with a spring and stop connected to the case of the lock the whole, with the bolt, being arranged for joint action in the manner described hereafter, thereby enabling the occupant of the room to lock himself in free from the intrusion of parties desirous of gaining access from the outside, and at the same time enabling the possessor of the key or master key to lock and unlock the door from the outside as long as it remains unlocked from the inside.

In order to enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification—Figure 1 is an interior view of a mortise lock having my improvement. Fig. 2 the same with some of the operating parts removed. Fig. 3 the same as Fig. 2 with the operating parts in a different position. Fig. 4 a sectional view on the line 1, 2 Fig. 1 and Fig. 5 a detached view of part of my improvement.

Similar letters refer to similar parts throughout the several views.

A is the case or body of the lock and *a a* its flanges by which it is secured to the edge of the door.

B is the bolt operated by the handle of the door, one end of this bolt sliding in a slot in the front end of the case and being jointed at its opposite end to an arm C which is hung to a pin *b* in the case, a hollow spindle D with its two projections *e e*, being arranged to operate the arm C and draw the bolt B in or allow it to move out

by the action of the spring *f* according to the direction in which the handles, connected to the hollow spindle, may be turned.

E is the retaining bolt of the lock sliding at one end in the front edge of the lock and at the opposite end in a projection *d* in the case. In front of this retaining bolt is the tumbler F having at one end a pin *h* and having at the opposite end a projection which fits into the recess *i* of the bolt when the latter is drawn in, and into a notch *j* when the bolt is moved out. In the under edge of the bolt are two recesses *x* and *y*, the former being arranged to receive the key inserted into the keyhole shown in red lines from the inside of the door, and the recess *y* for receiving the key inserted into a different key-hole *k* from the outside of the door.

The above described parts are similar in construction and operation to those of ordinary mortise locks and therefore require no further explanation.

To the pin *h* which carries one end of the usual tumbler F I hang a supplementary tumbler G, of the peculiar form illustrated, a projection *l* on this tumbler being adapted to fit a notch *n* in the upper edge of the bolt E. A spring *p* attached to the case of the lock bears against a shoulder *q* on this supplementary tumbler and tends to retain it in one of the positions which it is caused to assume. Another spring *r* is attached to the tumbler and during one of the movements of the latter bears against a pin *s* and tends to restore the tumbler to the position in which it is retained by the spring *p*. The lower edge of the supplementary tumbler is provided with two projections *t* and *u* which will be more particularly alluded to hereafter. Supposing this tumbler G to be in the position illustrated in Fig. 2, where it is held by the spring *p*, and supposing it to be necessary to lock and unlock the door from the outside. The key is inserted into the key-hole *k* and will act on either one side or the other of the recess *y* of the bolt, according to the direction in which the key may be turned and in which the bolt has to be moved. The movement of the bolt by means of a key inserted into the keyhole on the outside of the door does not disturb the position of the supplementary tumbler G, as the latter is effectually retained in a position with its projection *l* elevated above the notch *n* in the edge of the bolt, by the

spring *p*. When the key is applied from the inside of the door however the case is different.

As seen in Fig. 1 the bolt is drawn back the supplementary tumbler *G* in its elevated position and the key inserted into the lock from the inside of the door and partially turned. When the key has assumed the position seen in Fig. 2, the bolt has been projected partially outward and the key has been brought in contact with the projection *u* of the tumbler *G*. As the key is turned from this position in the direction of the arrow, the tumbler *G* will be turned down simultaneously with the outward movement of the bolt *E* so that by the time the latter has reached its destination the projection *l* of the tumbler has taken its place in the notch *n* of the bolt, in which position it is retained by the spring *p* which is so formed and so arranged in respect to the shoulder *g* of the tumbler that it acts equally well as a retainer, whether the tumbler be in the position shown in Fig. 2 or that shown in Fig. 3. The bolt is now so held that it cannot be moved back by a key inserted into the keyhole *k* from the outside of the door, the unlocking of which is solely under the control of the occupant of the apartment on the inside of the door. It will be observed that when the door is thus locked from the inside the projection *t* (Fig. 3) is directly opposite to the recess *x* of the bolt *E* so that when the key is turned back it bears against this projection, raises the supplementary tumbler *G* and elevates its projection *l* free from the notch *n* of the bolt leaving the latter at liberty to be moved back by the further turning of the key. Should the door be locked by a key inserted in the keyhole *k* from the outside of the door, the projection *u* of the supplementary tumbler will occupy a position directly over the recess *x* of the bolt and would consequently interfere with the action of the key when the door had to be unlocked from the inside, but for the rounded side of the said projection against which the key applied to unlock the door will bear

and raise the projection clear of the recess the supplementary tumbler being consequently raised above the position illustrated in Fig. 2. Immediately after the door has been unlocked from the inside it is necessary that the tumbler be restored to its former position. This is accomplished by the spring *r* which was just bearing against the stop *s* before the tumbler was raised above the position shown in Fig. 2, but which, now that the tumbler is released, forces the latter down to its original position as determined by the retaining spring *p*.

It will now be seen without further description that when the occupant of the room has locked himself in he is the only party who can control the bolt and is free from all intrusion from parties who might desire to gain access to the room from the outside. My invention therefore dispenses with the necessity of having a supplementary bolt and locking device with which locks of this class are generally furnished. It will also be seen that as long as the door remains unlocked from the inside, the chambermaid or other attendant whose duties call her to the room during the absence of the occupant can lock and unlock the door from the outside with the usual master key.

I do not claim broadly a check tumbler that acts when the door is locked from the inside and is turned out of the way while the lock is operated from the outside; but

I claim as my invention and desire to secure by Letters Patent—

The supplementary tumbler, its spring *r*, its projections *t* and *u* and shoulder *g* all of the form herein described, in combination with the spring *p* and stop *s* the whole with the bolt being arranged for joint action as and for the purpose herein set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

ANDREW RANKIN.

Witnesses:

HENRY HOWSON,
CHARLES D. FREEMAN.