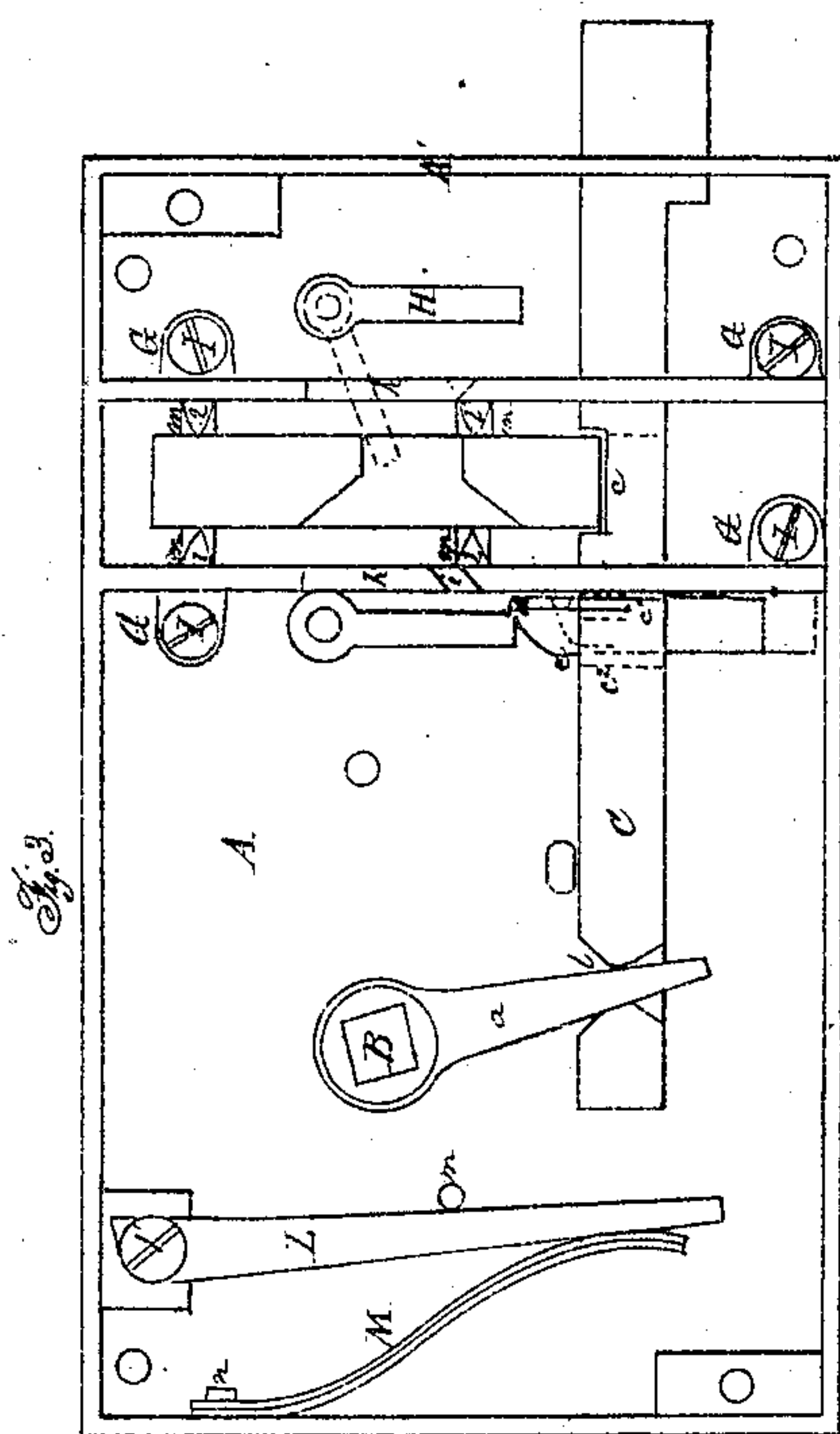
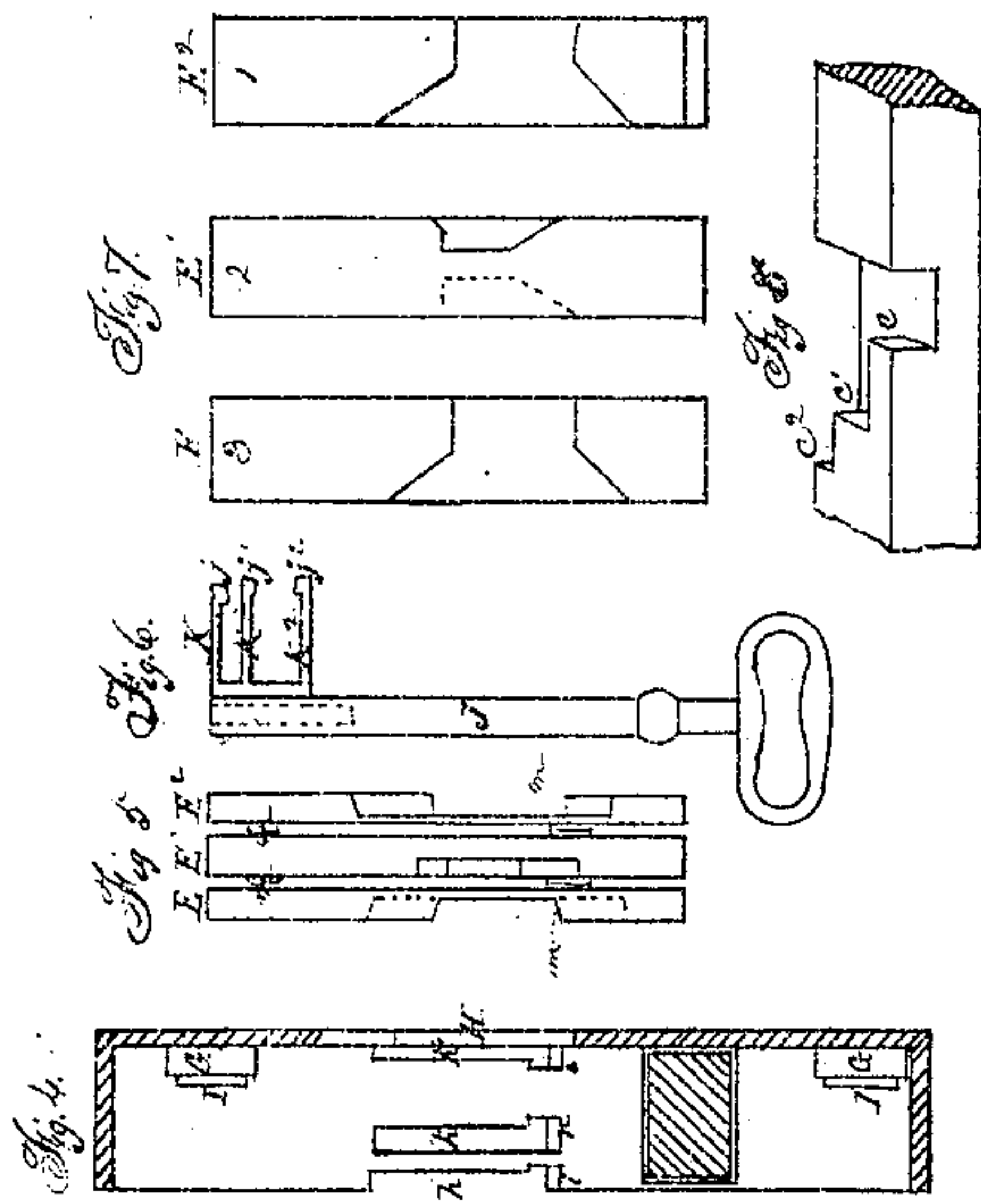
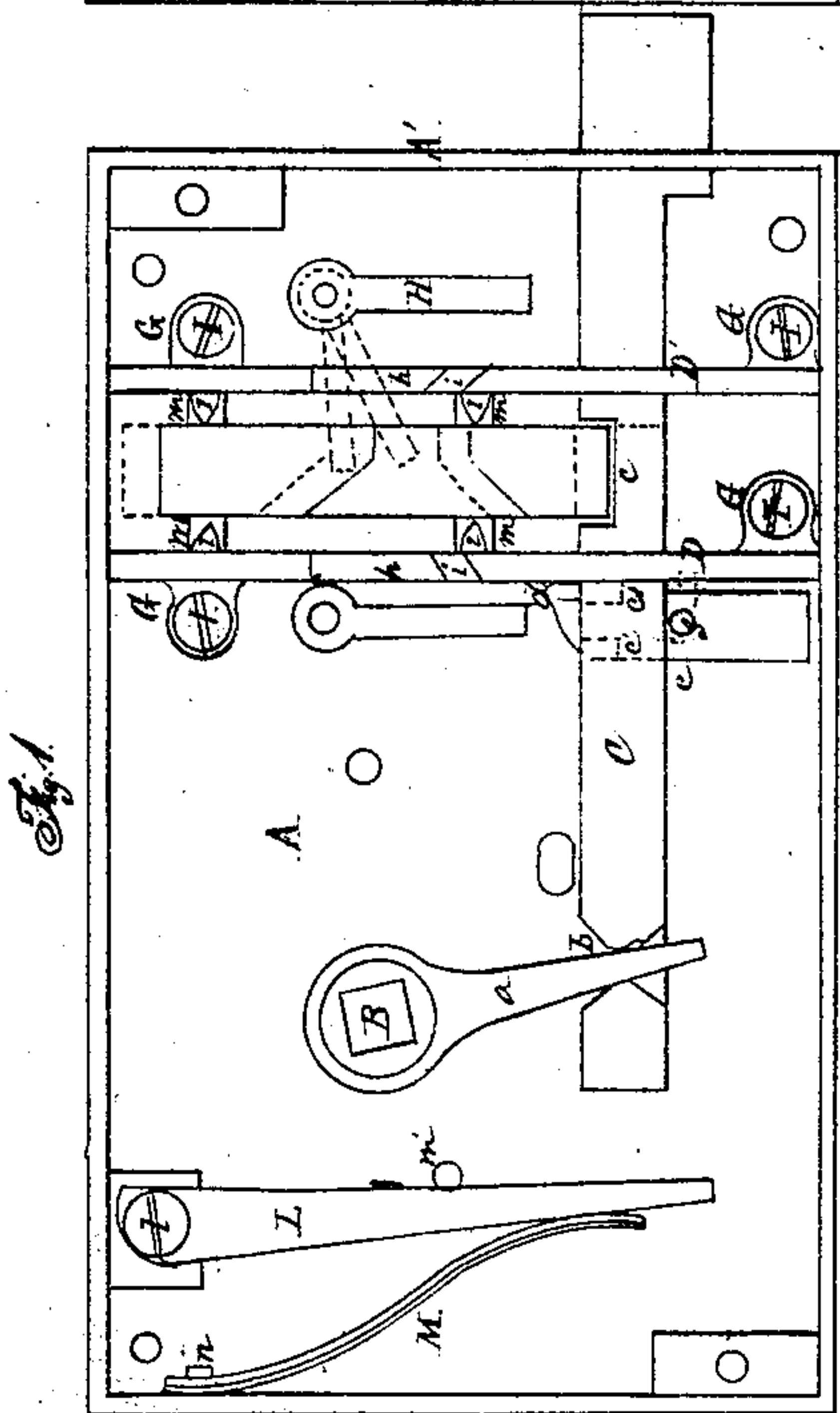
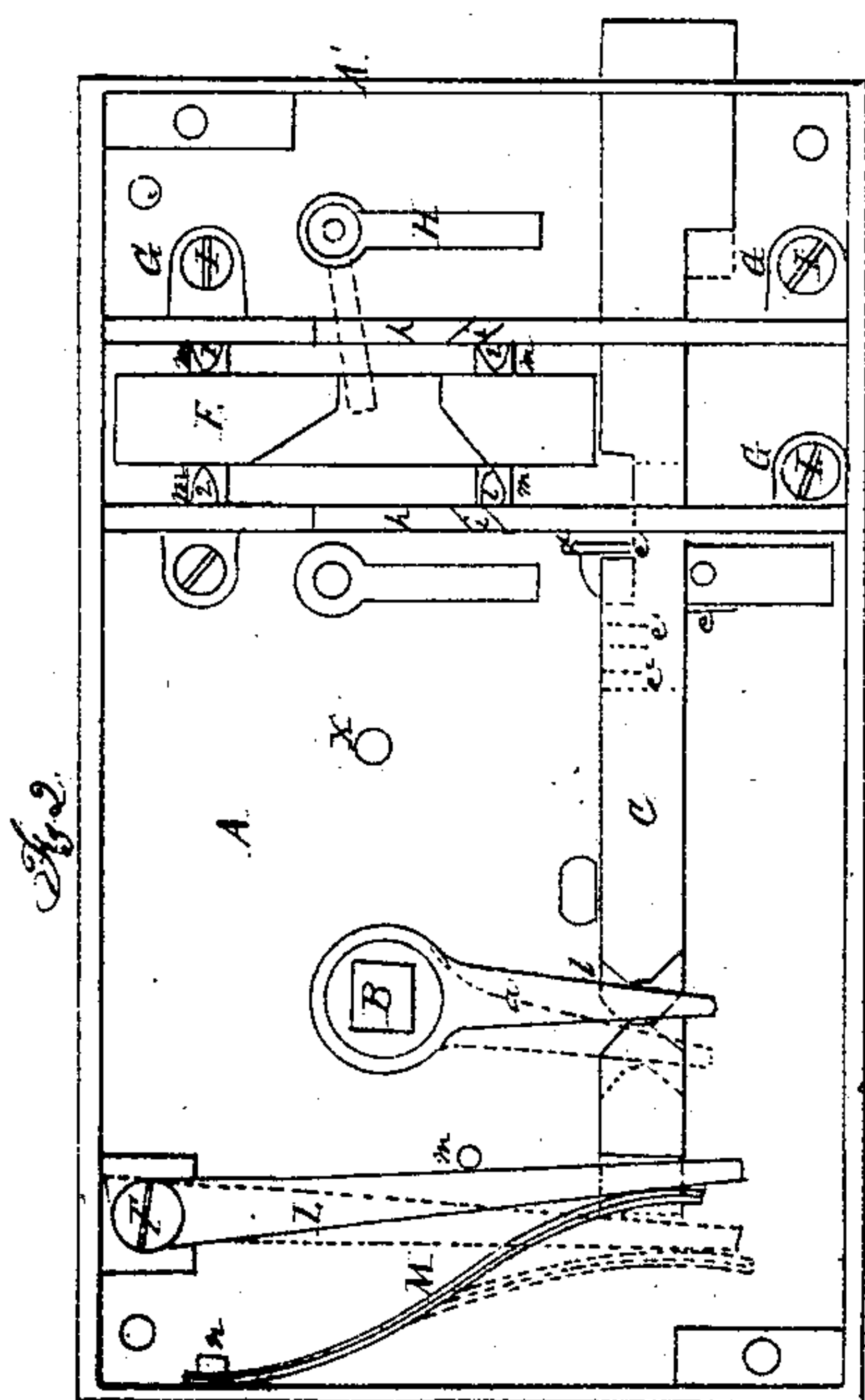


C. Brown.

Knob-Latch & Lock.

N^o 73498

Patented Jan. 21, 1868.



Witnesses
D. Curran
C. Davis

Inventor
Conrad Brown
By Alex. A. G. Mante
Attorney

United States Patent Office.

CONRAD BROWN, OF GOSHEN, NEW YORK.

Letters Patent No. 73,498, dated January 21, 1868.

IMPROVEMENT IN COMBINED KNOB-LATCH AND LOCK.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CONRAD BROWN, of Goshen, in the county of Orange, and State of New York, have made new and useful Improvements in Door-Locks; and I do hereby declare the following to be a full and correct description of the same, sufficient to enable others skilled in the art to which my invention appertains to understand and use the same, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 is a side elevation of my improved door-lock, with the outer plate removed, showing the same locked from the inside for the night.

Figure 2 shows a similar elevation, the device being set so that the bolt can be operated by the door-knob for the day.

Figure 3 shows a similar elevation, the device locked from the outside, so that the lock can be opened from the outside by the key alone.

Figure 4 is a side view of one of the upright pieces through which the key passes to lift the falling tumblers.

Figure 5 is an end view of the falling tumblers with the washers between them.

Figure 6 is a side elevation of the key, showing its peculiar form; and

Figure 7 is a detached view of the falling tumblers.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists in uprights, between which the falling tumblers play, and provided with peculiarly-shaped slots, through which the bits of a key, constructed especially for these slots, pass to lift the falling tumblers out of a notch in the door-bolt.

In the drawings, A represents the inner plate of a door-lock, and B the sleeve through which the shank of the knob passes, provided with a downwardly-projecting arm, *a*, fitting into a slot, *b*, on the door-bolt C, which passes through the lower part of the uprights D D', and through the side plate A'. The door-bolt C is provided with three notches, *c*, *c*¹, and *c*², the notch *c* serving to receive the falling tumblers, E E' E², while the notch *c*¹ receives the projecting part, *d*, of the catch, and the notch *c*² prevents the door-bolt C sliding out farther than shown in fig. 3, the part *e* of the catch bearing against the notch *c*². This catch slides vertically by means of a knob-screw, *f*, attached to it, and passing through a vertical slot in the plate A, and provided at the outside of the plate A with a small button or knob, forming a shoulder extending over the sides of the slot, and holding the catch against the plate. To counteract the tendency of the screw-knob to draw the catch towards the plate, the catch is provided on its inner end with a spring, *g*, which has a tendency to draw the catch towards the bolt, thus allowing the same to play freely up and down. The uprights D D' extend from the top to the bottom of the lock, and are fastened to the plate A by means of projections G and screws I. They are provided with vertical slots *h* *h*¹ *h*², and have slanting cross-slots *i* *i*¹ *i*² at their bottoms, into which the projections J J' J², on the bits K K' K² of the key J fit exactly, so that any key having the proper bits, but not having the projections on the same to fit exactly in the cross-slots in the uprights, could not pass through the slots *h* *h*¹ *h*², and consequently not lift the falling tumblers. In this case three falling tumblers, E E' E², are used. They slide vertically between projections *l* on the uprights D D', and are provided with sharp inner edges, over which fit notched washers *m*, two of which lie between each two falling tumblers, one above and one below. Each one of the bolts E E' E² is provided with notches, to allow the bits of the key to pass, and act on the shoulders formed by these notches. These notches have to be made in proportion to the size of the bits on the key, and it will be easily understood that any number of falling tumblers can be used. H is the key-hole in the inner plate A of the lock, and K a pin over which the hollow shank of the key J fits when used to open the door from outside, the key-hole on the outer plate of the lock being opposite the pin K on the plate A. L is a bar pivoted at *l'*, held against a pin, *m'*, by means of the spring M, which is pivoted at *n*.

In fig. 1, the device is shown locked for the night. The falling tumblers, E E' E², are down in the notch *c*, and the catch *d* is in the notch *c*¹, so that even if the key lifts the falling tumblers out of the notch *c*, the door-bolt cannot be drawn back by means of the door-knob, as the catch *d* can only be lifted out of the notch *c*¹ from the inside.

To set the device so that the bolt can be operated like any common door-bolt, by means of the door-knob,

the catch d is raised out of the notch c^1 , the falling tumblers raised by means of the key, and at the same time the door-knob turned a little to draw the door-bolt inwardly, sufficiently to allow the catch d to be slid down into the notch c , which will bring the rear end of the door-bolt directly against the bar L , without pushing the same back. In taking the key out, the falling tumblers will, by their own weight, drop on to the surface of the door-bolt C , which is prevented from sliding outwardly by the catch d bearing against the rear of the notch c . By now operating the door-knob, the door-bolt C may be drawn back the length of the slot e , which will bring the outer edge of the bolt flush with the side plate A' , and allow the door to be opened. On releasing the door-knob, the spring M , acting on the door-bolt C through the pivoted bar L , forces the same outward again, until the rear of the notch c bears against the catch d .

Fig. 2 illustrates the device when set for the above purpose.

To lock the door from the outside, the device is set as shown in fig. 3. To accomplish this it is only necessary to open the door, raise the catch d out of the notch c , close the door, and turn the door-knob slightly, pushing the door-bolt C outwardly, when, as soon as the falling tumblers are over the notch c , they will drop into the same, and lock the bolt C , so that the door can be opened only by means of raising the falling tumblers $E E^1 E^2$, which can be accomplished only by the key belonging to the lock, for a key possessing even the necessary bits, but not having the exact-sized projections, $J J^1 J^2$, on the same, could not pass through the slots $h h^1 h^2$, and consequently would not raise the falling tumblers or release the bolt C .

It is obvious that any number of falling tumblers may be used, and the uprights raised accordingly, and that the bits on the key may be provided with differently-shaped projections, the slots in the uprights being made to conform to them; also, that in place of the flat spring M , a round India-rubber or any other suitable spring may be used. Thus the one bolt C answers for the purpose of a door-bolt and that of a night-latch.

The key-holes on the inner and outer plates of the lock not being in line with each other, it will be impossible for persons outside the room to peep into the same through the key-holes.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The upright pieces $D D^1$, provided with vertical slots $h h^1 h^2$, and slanting cross-slots $i i^1 i^2$, substantially as and for the purposes specified.

2. The combination of the catch $d e$ with the notches $c c^1 c^2$ in the door-bolt C , substantially as and for the purposes described.

3. The combination of the falling tumblers $E E^1 E^2$, uprights $D D^1$, and key J , with the catch $d e$ and door-bolt C , provided with notches $c c^1 c^2$, for the purpose of changing the locking-device, substantially as described.

The above specification of my improvement in door-locks signed this sixteenth day of March, 1867.

CONRAD BROWN.

Witnesses:

ALEX. A. C. KLAUCKE,
CHAS. C. WILSON.