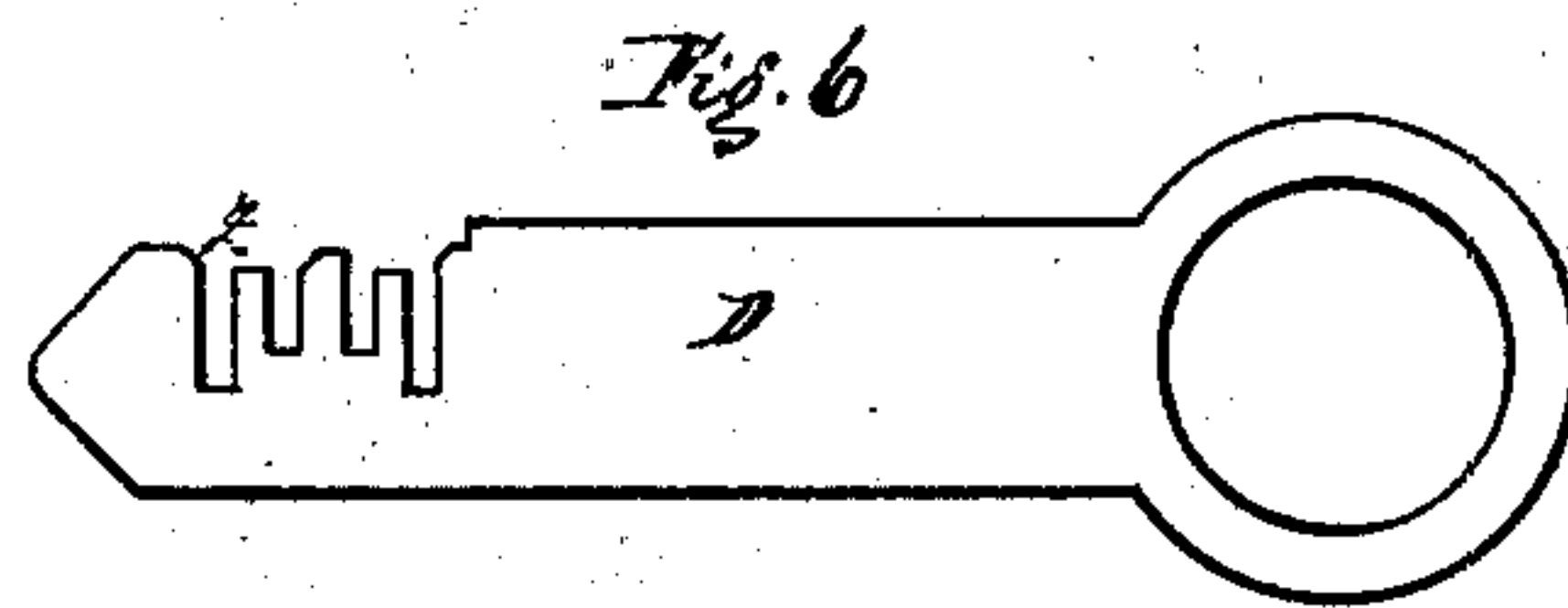
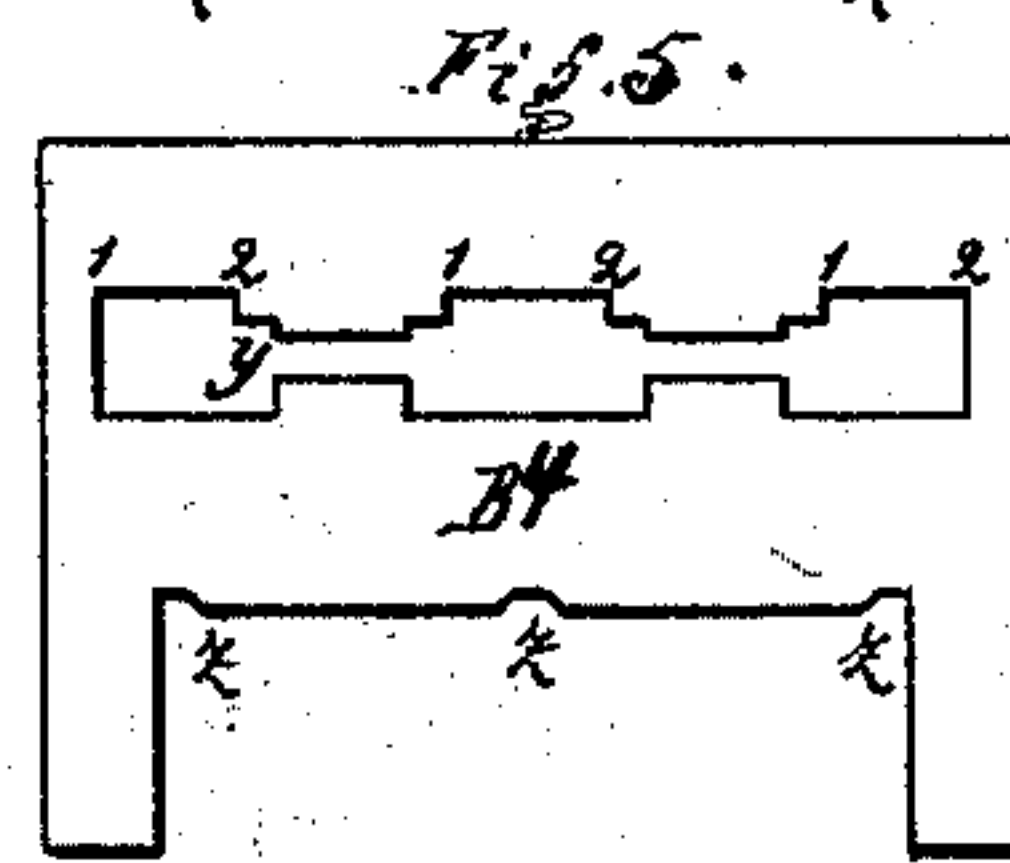
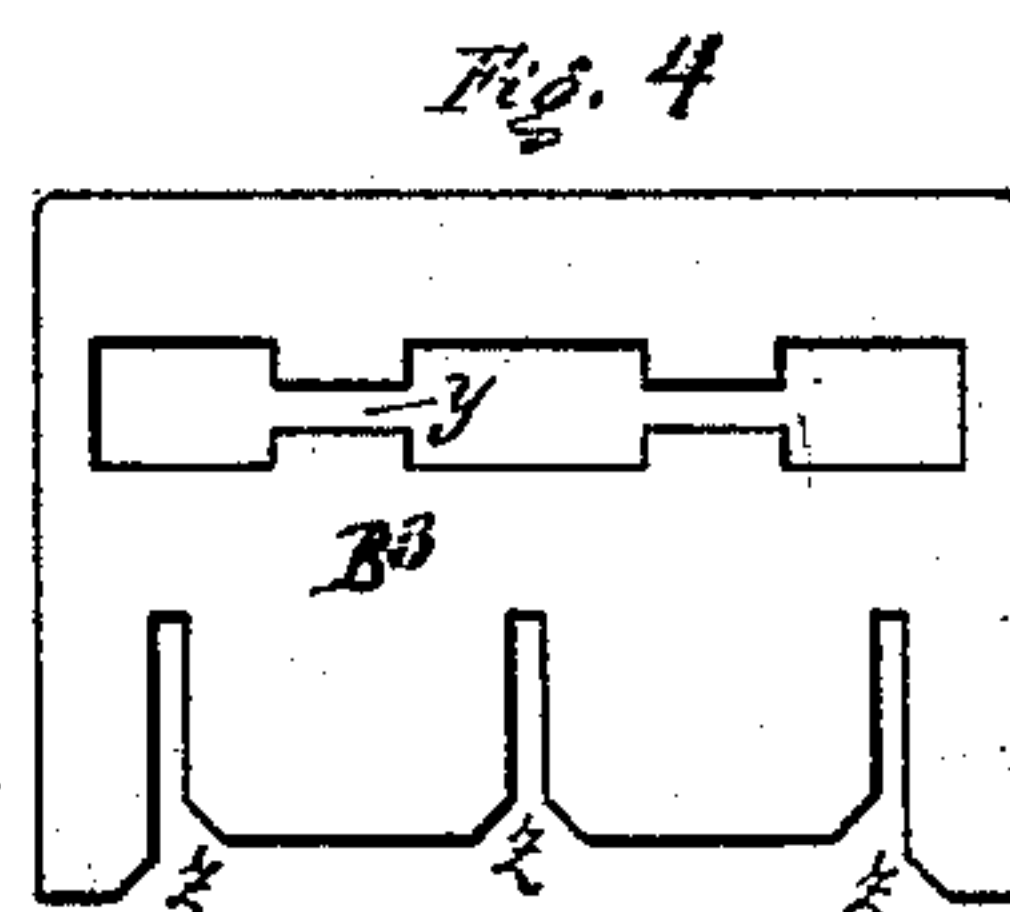
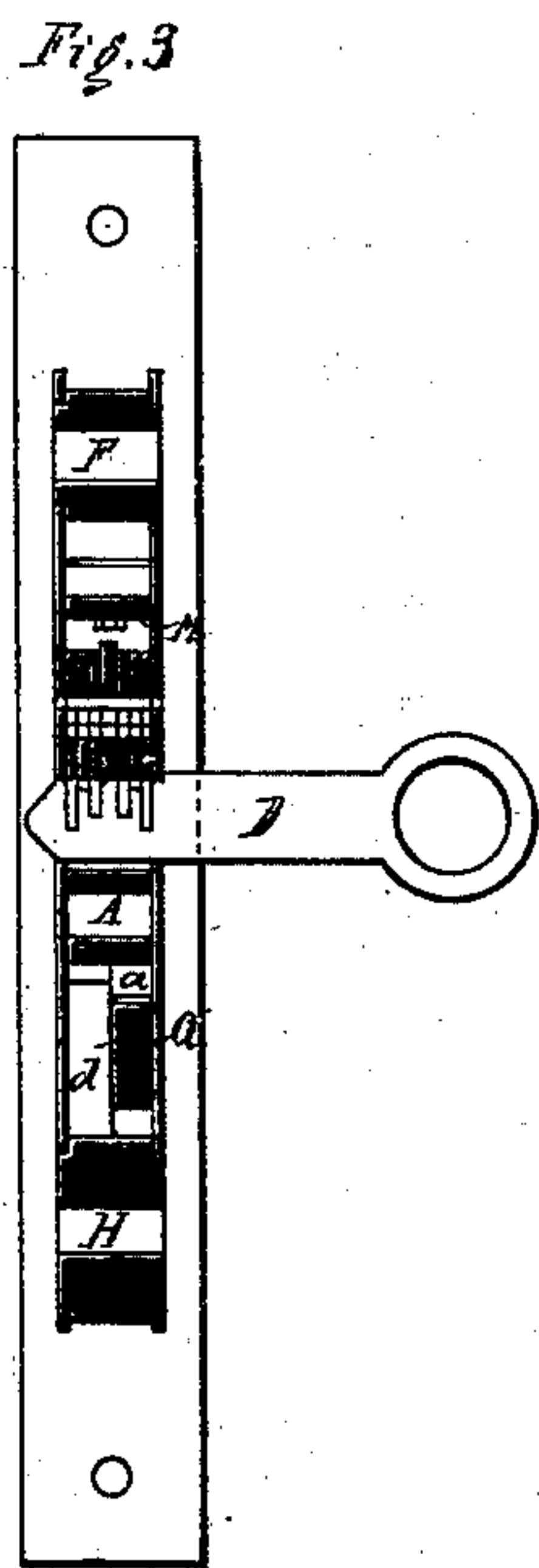
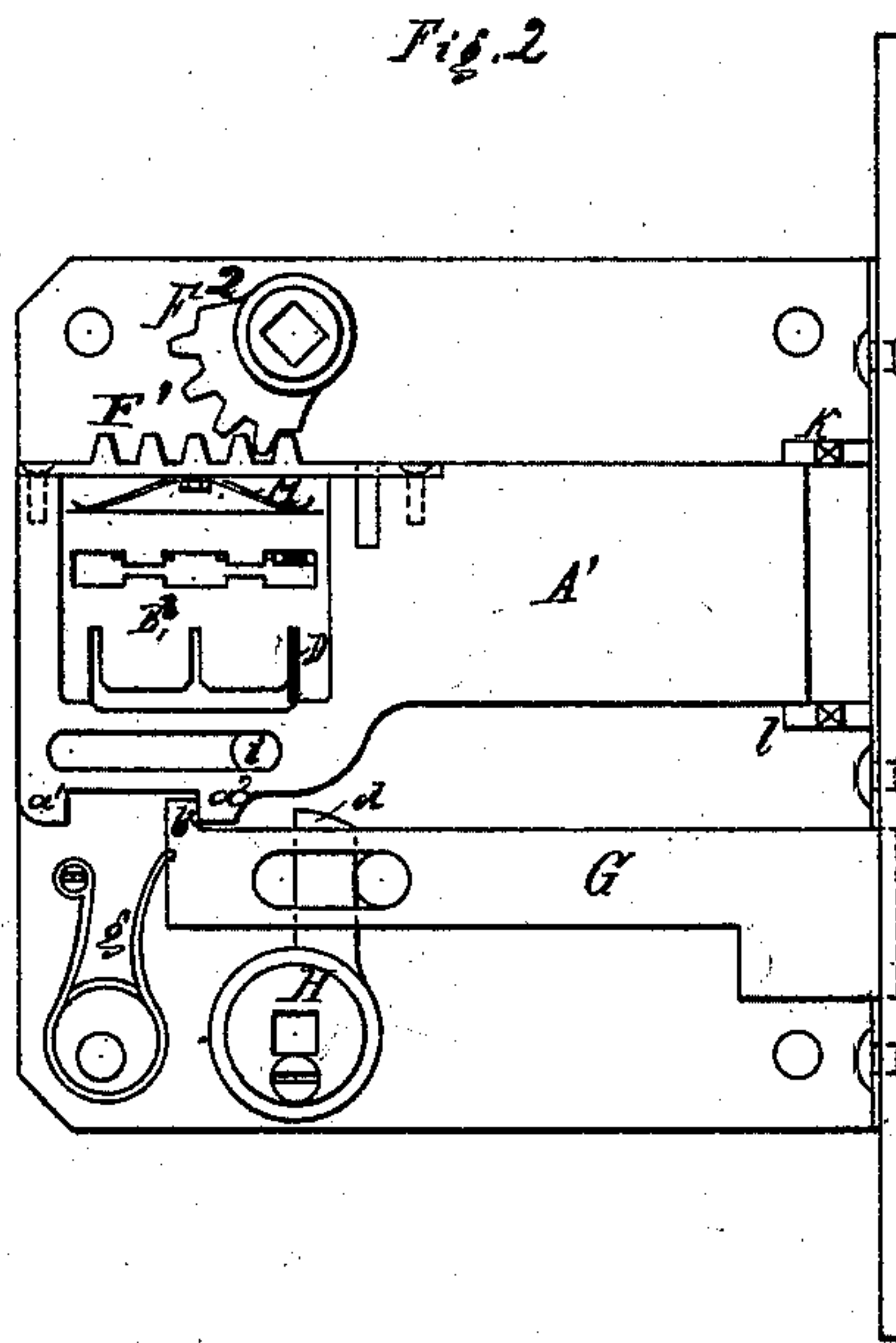
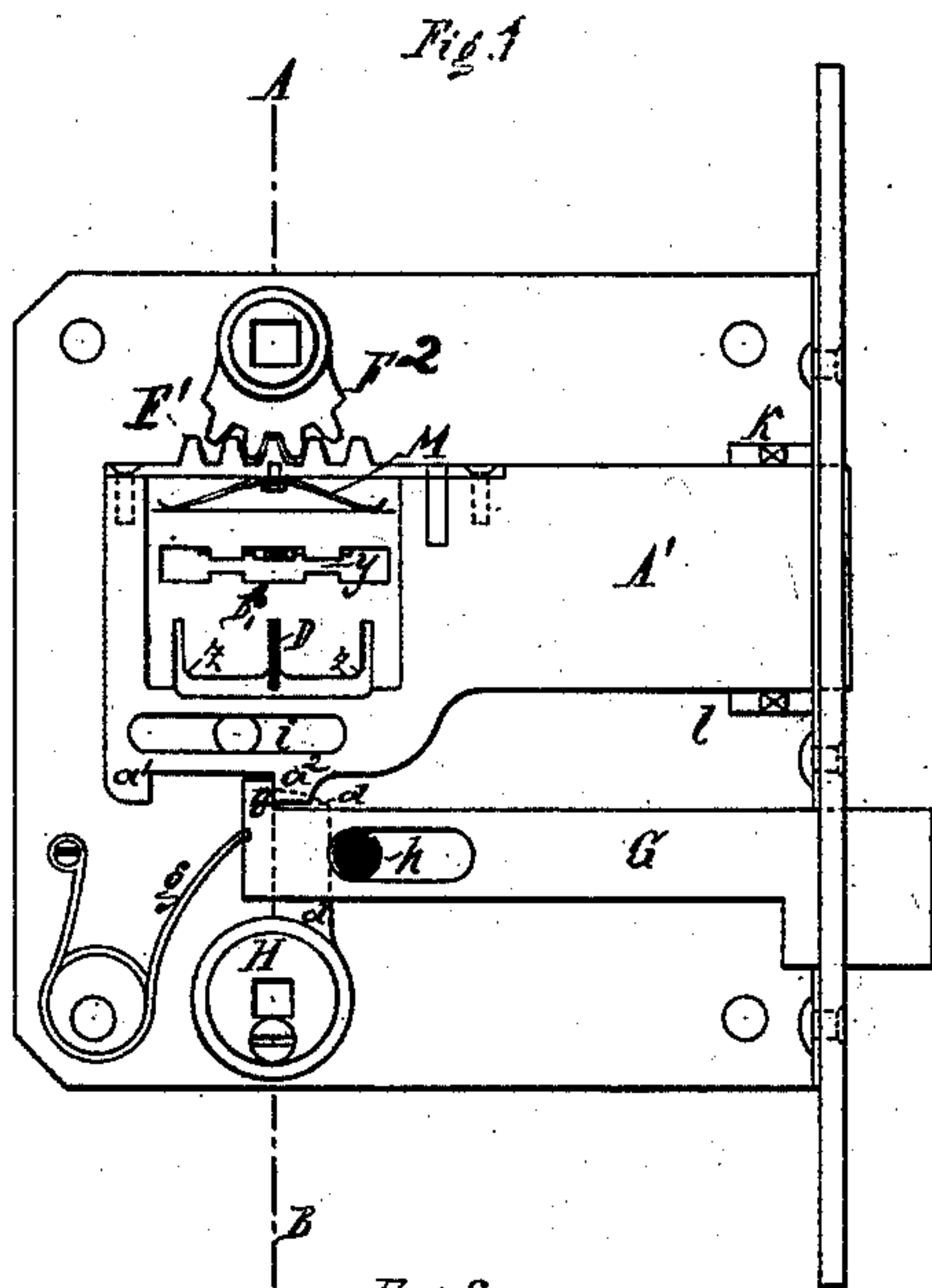


E. JUHL.
Lock.

No. 223,739.

Patented Jan. 20, 1880.



Witnesses
A. M. Tanner
A. Schücking

Inventor
Ernst Juhl
per A. Schücking & Co
Attorneys

UNITED STATES PATENT OFFICE.

ERNST JUHL, OF HAMBURG, GERMANY.

LOCK.

SPECIFICATION forming part of Letters Patent No. 223,739, dated January 20, 1880.

Application filed April 16, 1879.

To all whom it may concern:

Be it known that I, ERNST JUHL, of Hamburg, German Empire, have invented certain Improvements on Safety-Locks, of which the following is a specification.

The present invention consists in a door-lock which embraces in its construction a sliding bolt carrying tumblers moving at right angles thereto and having three resting-surfaces. By the insertion of a key into the lock-casing these tumblers are partially set, while they are entirely set by their action upon the key when the bolt is projected by a handle or means other than the key.

In the accompanying drawings, forming part of this specification, Figure 1 represents the lock with the locking-bolt in its middle position and the latch-bolt projected. Fig. 2 represents the same lock with the two bolts withdrawn into the lock-casing. Fig. 3 is a section taken through the line A B, Fig. 1. Figs. 4 and 5 show different forms of tumblers. Fig. 6 illustrates a flat key.

The bolt A' is apertured for the reception of the tumblers B³ B⁴, which, in the present instance, must be lifted to a slight degree before the bolt, together with its tumblers, can be moved back or forth. This lifting of the tumblers is effected by inserting the key D.

Each tumbler possesses three resting-points, so that the bolt can assume three positions, Fig. 7 exhibiting the same in its middle position.

The movement of the bolt is effected by the toothed segment F² engaging with a rack, F', on the bolt. When the locking-bolt is being drawn back into the casing the nose a² on said bolt will come in contact with the projection b² of the latch-bolt G and retract the latter. The latch-bolt can also be drawn back by the arm d of the hub H, and a spring, g, suitably located, and bearing against said bolt, tends to hold the same in a projected state.

The letter h represents a guide-pin for the latch-bolt, and i, k, and l are guides for the locking-bolt.

The peculiar form of the tumblers will be observed from Figs. 4 and 5. They are of two kinds, and part of the same are raised by the insertion of the key D, and others by the movement of the bolt.

When the key is symmetrical, so as to be insertible on both sides of the lock, then the tumblers must be arranged in a corresponding symmetrical manner.

In the lock shown in the present instance only the middle tumbler, B⁴, (shown in Fig. 5,) is raised by the insertible key, so that the stump on the lock-casing can slip out of the deep cut 1 2 of the tumbler.

It may be observed that the movement of the bolt is only prevented by this cut just mentioned.

After the tumbler B⁴ has been lifted the depth of the cut 1 2 the bolt can be moved, all the tumblers being lifted when this movement commences, so that the stump will be permitted to pass through the slot y, connecting the larger openings in the tumbler.

The lifting of the tumblers is effected by the inclined surfaces z on the lower edges of the tumblers, which glide through the nibs on the key-bit.

The split bow-spring M, applied to the bolt, serves to hold the tumblers in their normal position.

The bolt A' can be moved from the inside or outside of the door by the insertion of the key into the lock-casing. The operation of the latch-bolt is effected in a like manner; but the same can also be opened and closed from the inside of the door without using the key.

If the door is locked by the bolt A', the latch cannot be moved, the nose a' preventing any movement.

The arrangement of the openings in the tumblers for the stump on the lock-casing, likewise the arrangement of the tumblers, may be varied without departing from the spirit of the invention.

I claim as new and desire to secure by Letters Patent—

The combination of the bolt carrying tumblers moving at right angles thereto, and having three resting-surfaces, with a key acting, when inserted into the lock-casing, to partially set the tumblers, while they are entirely set by their action upon the key when the bolt is projected by a handle or means other than the key, as and for the purpose set forth.

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

ERNST JUHL.

Witnesses:

GERARD VON NAWROCKI,
BERTHOLD ROI.