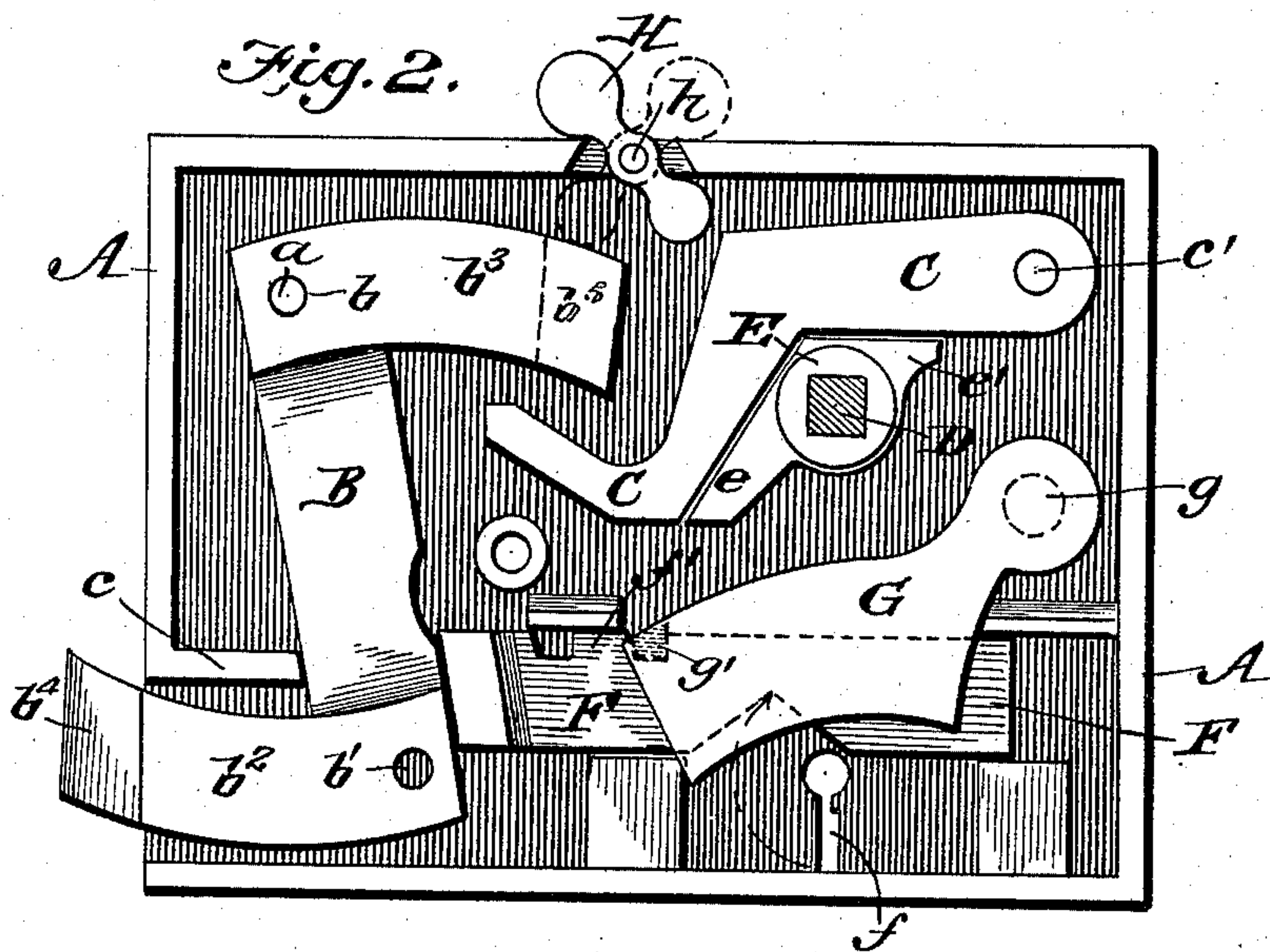
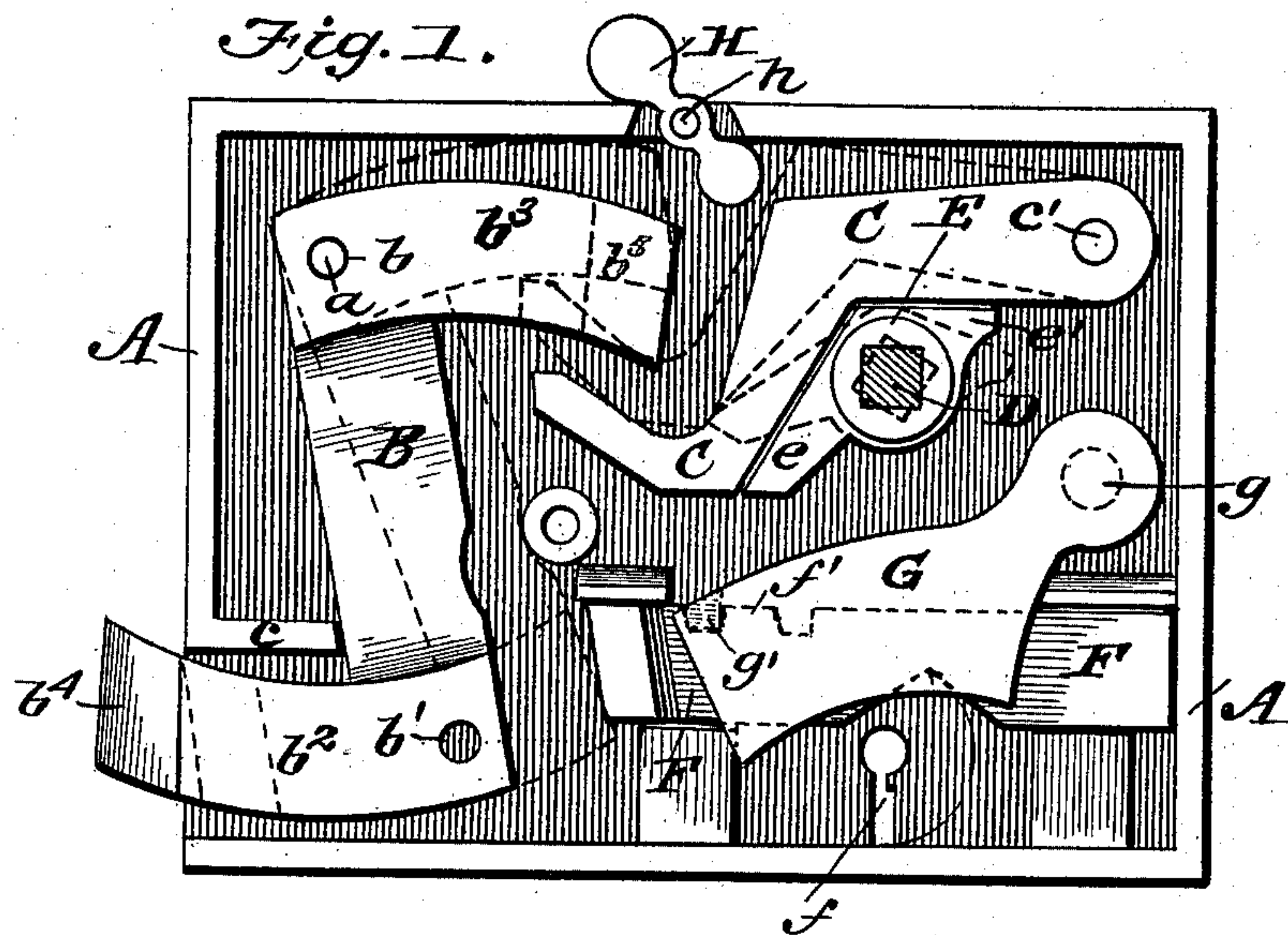


(No Model.)

R. H. HEARN.
LOCK.

No. 603,951.

Patented May 10, 1898.



WITNESSES:

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ROBERT H. HEARN, OF DYER, TENNESSEE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 603,951, dated May 10, 1898.

Application filed June 3, 1897. Renewed April 7, 1898. Serial No. 676,831. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. HEARN, of Dyer, in the county of Gibson and State of Tennessee, have invented a new and useful Improvement in Locks, of which the following is a specification.

The object of my invention is to provide a simple and effective knob-lock for doors in which the bolt shall be operated by the knob-shaft or be locked by a key, so that it cannot be operated by the knob-shaft, and in which the bolt shall yield freely and sensitively in closing the door without having any opposition in the form of springs.

To these ends it consists in the peculiar construction and arrangement of the parts of the same, which I will now proceed to more fully describe with reference to the drawings, in which—

Figure 1 is an inside view of the lock with its side plate removed, showing the main bolt in its protruded or fastening position and indicating in dotted lines its withdrawal by the knob-shaft. Fig. 2 is a view similar to Fig. 1, but showing the main bolt locked by the supplemental key-bolt, so that it cannot be withdrawn by the action of the knob-shaft.

In the drawings, A represents the frame-plate, and B is the main bolt. Said main bolt is made somewhat in the form of the letter Z and is reversible for right and left doors—that is to say, it consists of a straight middle portion having a pivot-hole b and b' at its opposite ends, either one of which may be hung upon the pivot-pin a , formed on or rigidly attached to the plate A. The locking ends $b^2 b^3$ of this bolt are curved, the end b^2 being curved about the pivot-hole b as a center, and the end b^3 being curved about the pivot-hole b' as a center, each locking end being curved about the pivot-hole at the opposite end as a center and the two locking ends $b^2 b^3$ being beveled at $b^4 b^5$ upon opposite sides. The purpose of this is to make the bolt interchangeable for right and left doors. Thus when one pivot-hole of the bolt is hung upon the pin a the lower locking end of the bolt will have its bevel-face on one side, and when the other pivot-hole is hung upon the pin a and the bolt is reversed the bevel-face of the locking end of the bolt will have its bevel-face upon the opposite side. This double-end construction

not only permits the reversal of the bolt, but the end of the bolt which is uppermost supplies the weight and leverage whereby the lower end is protruded from the case without the use of springs and whereby also the knob-shaft is made to act upon the bolt, which I will now explain.

When the bolt is hung from its upper pivot-hole, the locking ends, projecting equally upon each side of the middle portion, will cause the middle portion to have a tendency to hang vertically; but it cannot ever attain this vertical position on account of the stop-flange c , which limits the amount of protrusion of the lower end of the bolt from the case, so that when the lower end of the bolt is forced into the case (in the act of closing the door) by coming in contact with the keeper on the door-jamb the upper end of the bolt is raised, and as soon as the lower end of the bolt is in the keeper the weight of the upper end of the bolt throws the lower end out to its locked position. To unlock this bolt or withdraw its lower end from the keeper, a lift-arm C is pivoted above the position of the knob-shaft at c' and its other end lies beneath the upper end of the bolt. The knob-shaft D has on its squared body a sleeve E with tappet-lugs $e e'$, which lie beneath the lift-arm C and raise it, lifting the upper end of the bolt and withdrawing its lower end no matter which way the knob-shaft may be turned. The act of unlocking the bolt by the knob-shaft is clearly shown in dotted lines in Fig. 1. It is desirable at times, however, to have the main bolt locked, so that it cannot be withdrawn by the knob-shaft. For this purpose I provide a supplemental bolt F, sliding in guides in the lower part of the case parallel with its bottom edge and just above a keyhole f . This supplemental bolt is arranged to be operated by a key and has a tumbler G, which is pivoted at g and provided with a lug g' , which is arranged to be lifted over a lug f' on the key-bolt by the action of the key in the well-known way with tumbler-locks. When this supplemental bolt is thrown by its key against the lower end of the main bolt, as in Fig. 2, and the supplemental bolt is locked by its tumbler, it will be seen that the main bolt cannot be withdrawn by the knob-shaft until the main bolt has been released by the sup-

plemental bolt, which can only be effected through the agency of the night-key.

As an additional means for locking the bolt I provide a tilting-lever or thumb-piece H in the top edge of the lock-frame, fulcrumed upon a center-pin *h* in the edge of the lock-frame. When this is in one position, it does not interfere with the rise of the upper end of the main bolt, but when this is thrown into the other position, as indicated in dotted lines, it acts as a stop or abutment that prevents the rising of the upper end of the bolt and the withdrawal of the lower end, and when this thumb-piece H is in its locked position it is not possible to open the door either through the knob-shaft or the key.

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

1. A lock having a locking-bolt composed of a straight middle portion with a pivot-hole at each end, and offsetting curved locking ends at opposite ends and on opposite sides of the straight portion, each being described about the pivot-hole of the opposite end and having bevel-faces upon opposite sides substantially as and for the purpose described.

2. A lock having a locking-bolt composed of a straight middle portion with a pivot-hole at each end, and offsetting curved locking

ends at opposite ends and on opposite sides of its straight portion, each being described about the pivot-hole of the opposite end and having bevel-faces upon opposite sides, a lift-bar pivoted at one end to the case and having its other end resting beneath the upper end of the main bolt, and a knob-shaft and sleeve with tappets lying beneath and acting upon the lift-bar substantially as and for the purpose described.

3. A lock having a locking-bolt composed of a straight middle portion with a pivot-hole at each end and offsetting curved locking ends at opposite ends and on opposite sides of its straight portion, each being described about the pivot-hole of the opposite end and having bevel-faces upon opposite sides, a lift-bar pivoted at one end to the case and having its other end resting beneath the upper end of the main bolt, a knob-shaft and sleeve with tappets arranged beneath and acting upon the lift-bar, and a supplemental key-bolt with tumbler arranged to be projected against the inner side of the lower end of the main bolt to lock it substantially as and for the purpose described.

ROBERT H. HEARN.

Witnesses:

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