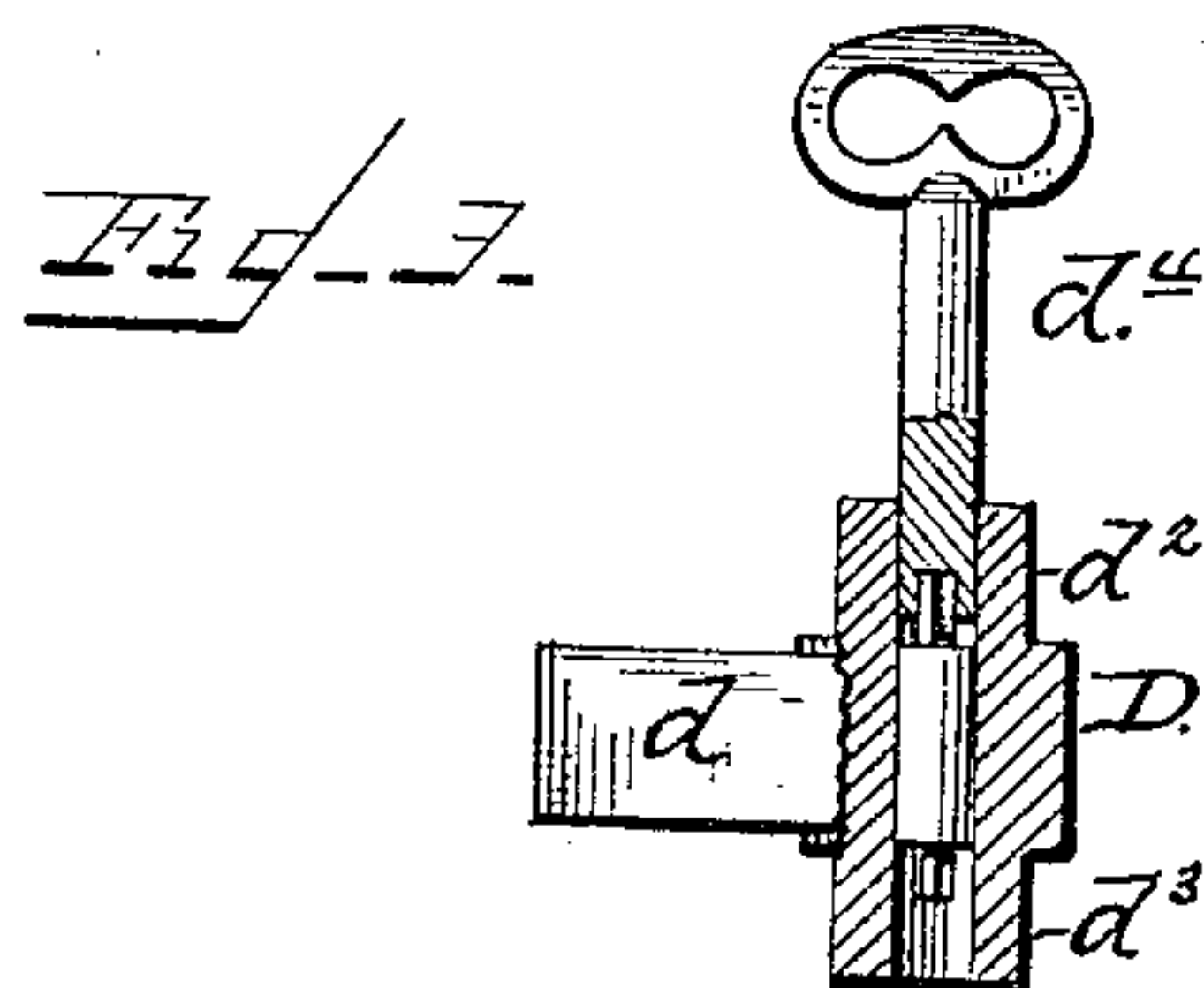
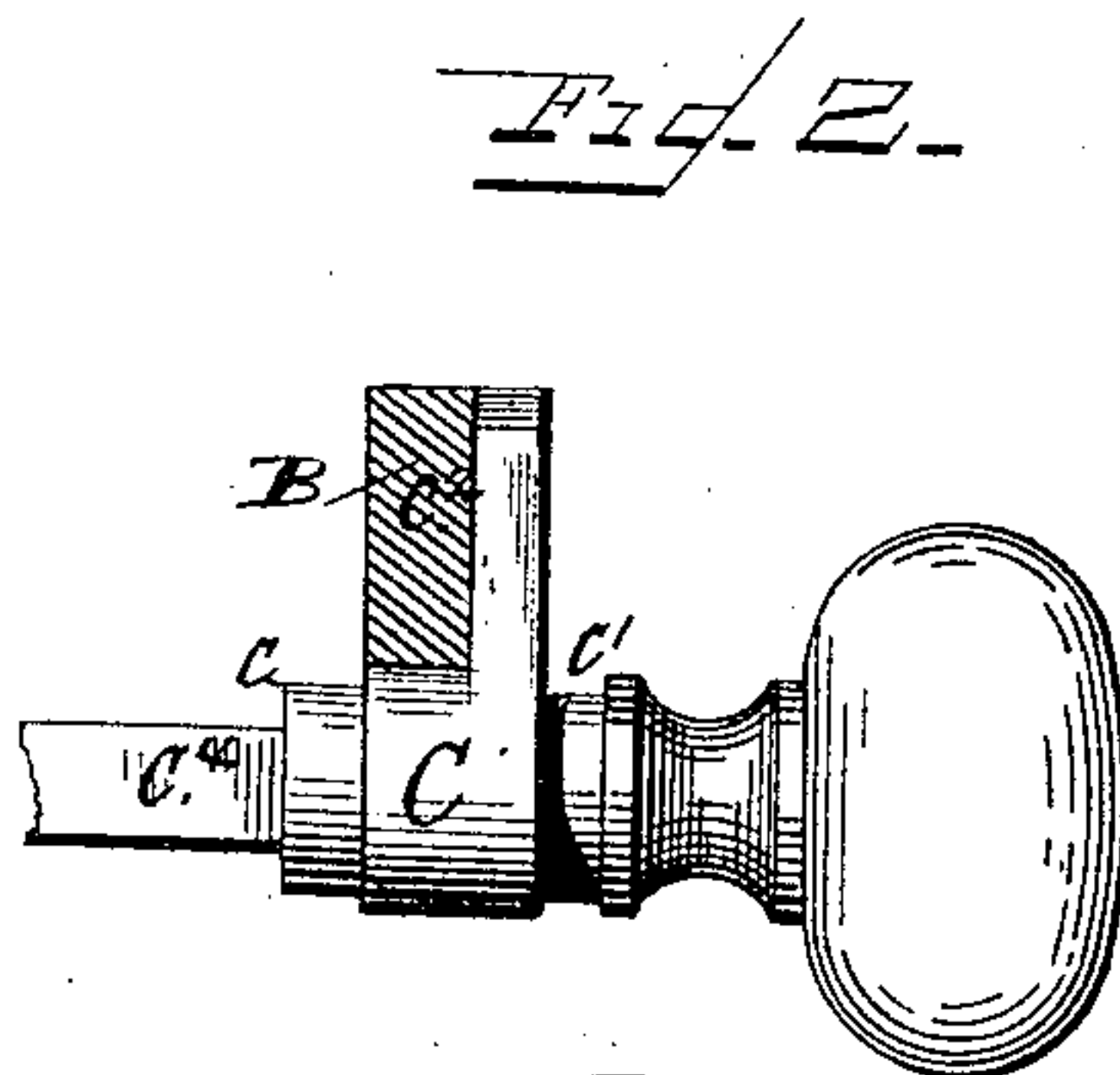
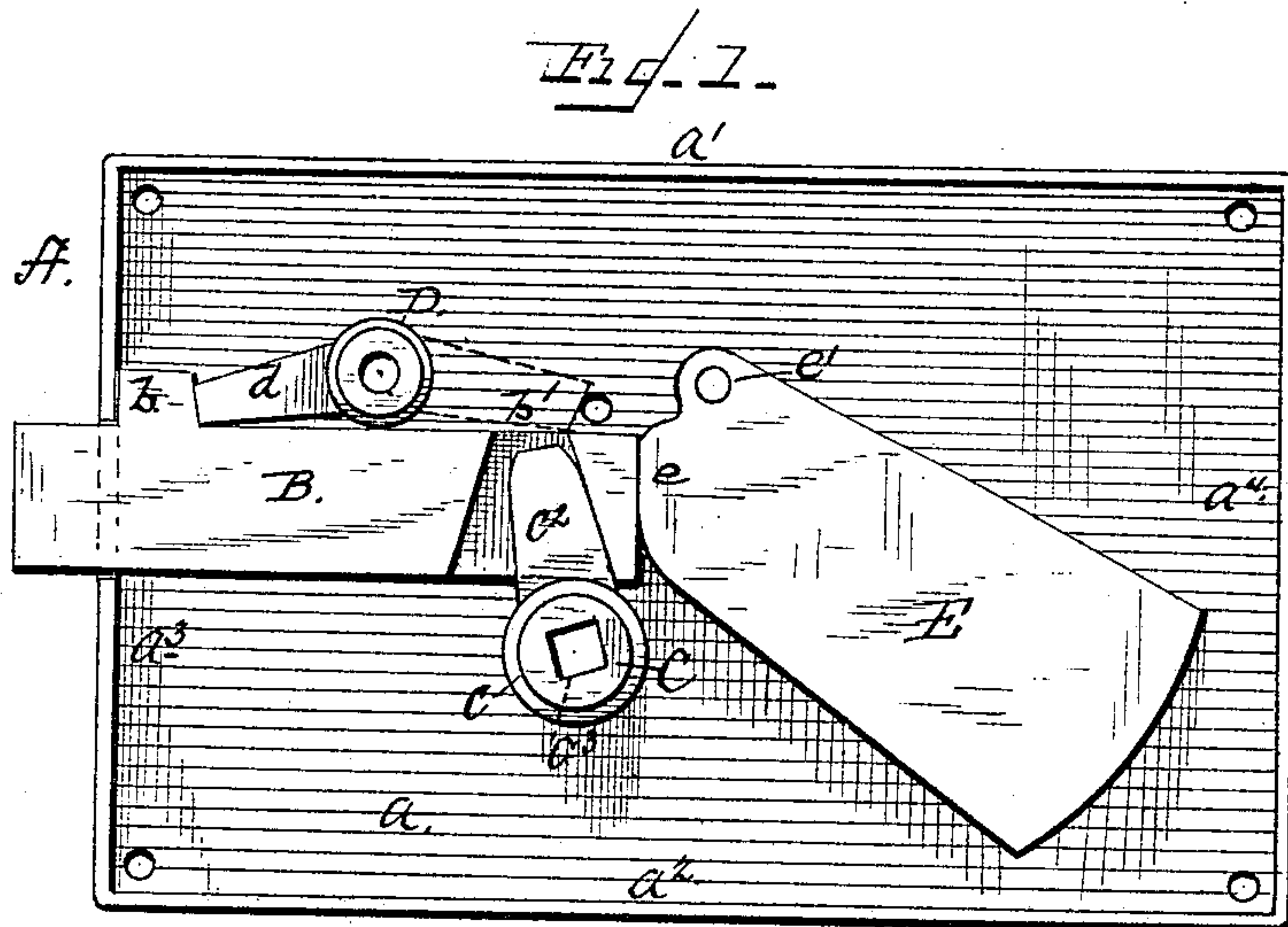


(No Model.)

S. EHRMAN.
COMBINED LATCH AND LOCK.

No. 328,393.

Patented Oct. 13, 1885.



WITNESSES
F. L. Orvand.
E. T. Pitchard

INVENTOR
Samuel Ehrman,
by A. G. Heylman,
Attorney.

UNITED STATES PATENT OFFICE.

SAMUEL EHRMAN, OF CONNELLSVILLE, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO HENRY C. HUSTON, OF SAME PLACE.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 323,393, dated October 13, 1885.

Application filed July 8, 1885. Serial No. 170,943. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL EHRMAN, a citizen of the United States of America, residing at Connellsville, in the county of Fayette, in the State of Pennsylvania, have invented a new and useful Combined Latch and Lock, of which the following is a specification.

My invention relates to improvements in door-locks of that class known as "latches and locks combined," wherein a movable body is latched or locked to an immovable body by means of a single bolt; and the object of my improvements is to simplify existing mechanical contrivances used to attain the purpose stated.

I have fully illustrated the means employed to effect the objects of my invention in the accompanying drawings, wherein Figure 1 is a side view of the lock with one of the face-plates removed and showing the complete internal mechanism, with the bolt shot forward and locked in that position. Fig. 2 is a side view of the knob with sleeve provided with lever fitted to its shank, and Fig. 3 is a side view of the tumbler having a key applied thereto.

The letter A designates the casing of the lock, comprised of the face-plate a and sides a^1 and end walls, a^2 a^3 , the end wall, a^3 , being slotted or chambered to admit the passage of the bolt, as usual. The casing is also provided with screw-holes arranged at the corners thereof, through which fastening-screws are passed by which the lock is secured to the door.

The letter B designates the bolt, which consists, preferably, of a straight flat bar having a chamfered end and fitted to the slot or chamber in the end wall of the case, and formed with a vertical projecting lug, b , on its upper edge, the purpose being to limit the projection of the bolt from the casing and to serve as a seat for the end of the tumbler to rest against when the bolt is shot out and locked in that position, substantially as seen in Fig. 1 of the drawings. In the rear portion of the bolt is formed a notch, b' , preferably extended across the outside of the side face of the bolt. This is designed to receive the lever or arm of the hub of the turning-knob. The bolt is arranged in the casing with its upper edge directly under the hub of the tumbler and the rear end resting on the hub of the knob-spindle, with the

slotted portion behind the arm thereof, and is thus held in position.

The letter C designates a hub having shoulders c c' , fitted to a round hole in each of the face-plates of the casing, and formed with a projecting lever or arm, c^2 , adapted to rest within the slot in the rear of the bolt. A square hole, c^3 , or of other angular shape, is formed in the hub, through which the knob-spindle c^4 is passed.

The letter D designates the tumbler, formed with a projecting arm or lever d , having shoulders d^2 d^3 , which are seated in holes in the face-plates and adapted to be turned in their seats. This device is the means to lock the bolt, and for the purpose of conveniently turning it is cored out in any desired shape, and has fitted to the core a key, as d^4 , the barrel of which is shaped to enter the aperture of the tumbler.

The letter E designates a weighted lever. This consists of a substantial piece of metal of sufficient weight to force or shove the bolt without the casing after it has been drawn back by turning the knob or by the action of other forces. This weighted lever, preferably formed with a cam-shape lump, e , on its front face to set against the end of the bolt, is suspended on a pivot, e' , so as to set or rest with the cam-shaped projection against the end of the bolt at all times, and thus act to force the bolt forward and in engagement with the catch.

The operation of the lock is apparent, but may be here stated as follows: The rear end of the bolt rests on the stem of the hub-sleeve, and the weighted lever presses against the end of the bolt and acts to press the bolt forward at all times. The bolt is operated by means of the knob in the opposite direction to the action of the weight, and by turning the knob so as to draw the bolt backward the weighted lever is lifted and the bolt is withdrawn from the catch, and the door may then be opened. The door may be closed by simple pressure, since the action of the incline on the end of the bolt against the catch will carry the bolt inward, and when past the catch the bolt will be shot out by the force of the weight. The bolt is fixed in a locked position by turning the tumbler so that its end shall set against the inner face of the vertical lug on the upper edge of the bolt. Under ordinary conditions

of use the tumbler is turned in the position indicated in dotted lines in Fig. 1 of the drawings.

It will be seen from the foregoing description, in connection with the drawings, that
5 every element of the lock has a positive action, all springs with their complications, defects, and liability of imperfect action being dispensed with, and a secure latch and lock
10 provided at the lowest possible cost without jeopardizing its efficiency.

I am aware that a lock has been made wherein a weight is pivoted in the casing and is lifted by a crank-lever pivoted in the lock, with one end connected to the bolt and the other arm
15 of the crank-lever adapted to engage with an arm of the tumbler; and, further, that a lock has been made with an inverted lever having an arm extended horizontally over and behind the bolt and resting on the tumbler, the weight
20 having its vertical arm set against the end of the bolt, and is raised by the action of the knob-spindle or key on the tumbler.

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

In combination, the casing, the bolt formed 25 with a vertical lug on its upper edge and a slot in its side face, and held in horizontal position by the hub of the tumbler and the hub of the knob-spindle, the knob and spindle provided with a hub, C, formed with an arm, c^2 , 30 arranged in the slot of the bolt, the weighted lever E, pivoted within the casing, with its front end to bear against the end face of the bolt, and the tumbler D, pivoted in the casing, with its hub on the upper edge of the bolt, and 35 provided with the arm adapted to set against the inner face of the lug on the bolt, substantially as described, and for the purpose set forth.

In testimony whereof I hereunto set my hand 40 in the presence of two attesting witnesses.

SAMUEL EHRMAN.

Attest:

I. K. TAGGART,
J. L. KENDALL.