

A. F. WHITING.

Improvement in Door Locks.

No. 123,531.

Patented Feb. 6, 1872.

Fig. 1.

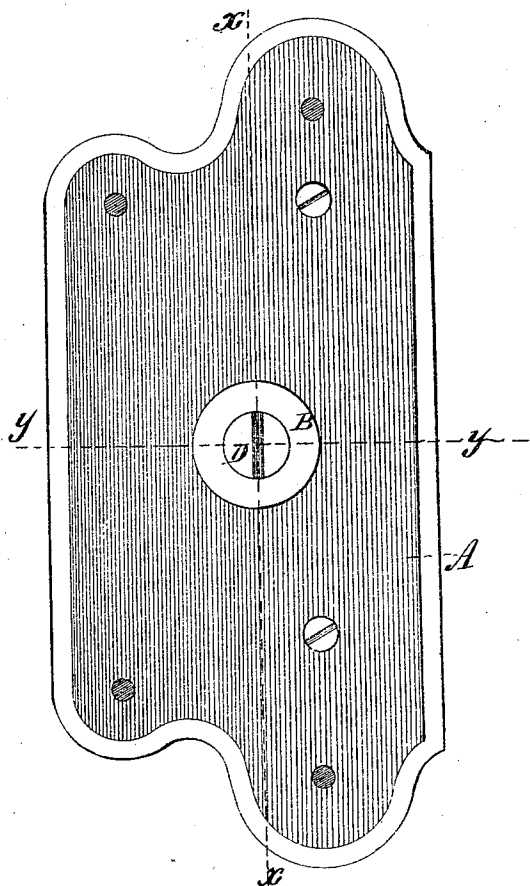


Fig. 2.

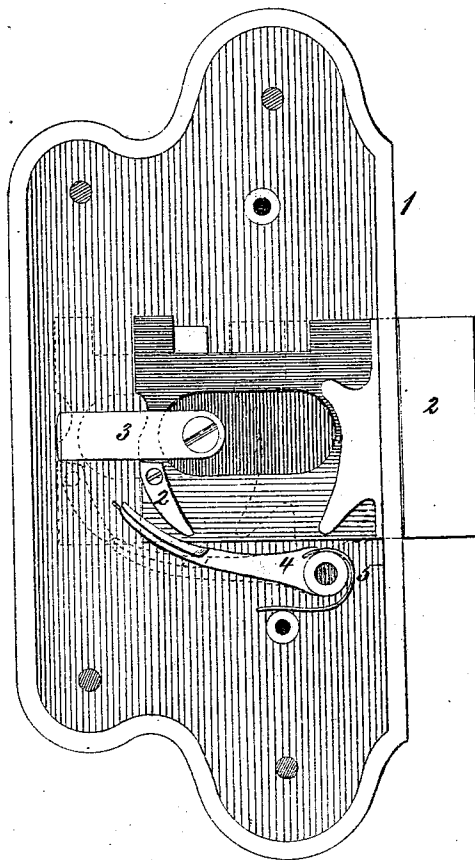
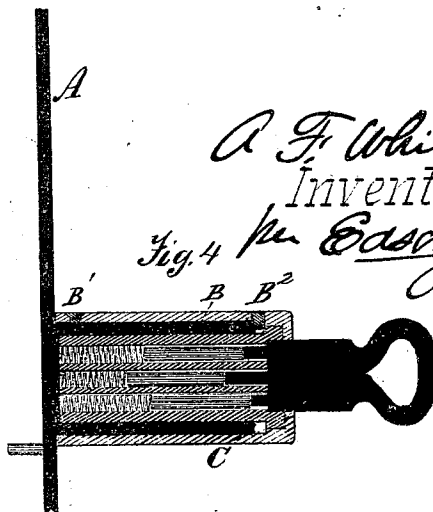
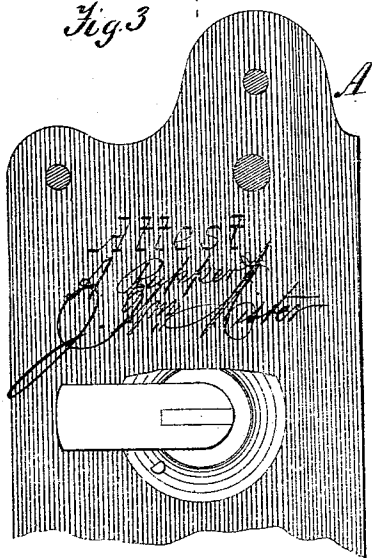


Fig. 3.



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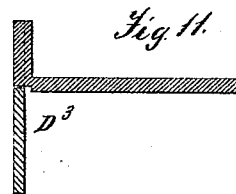
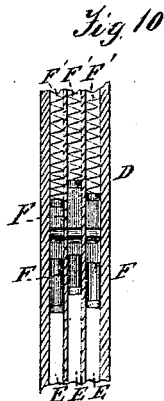
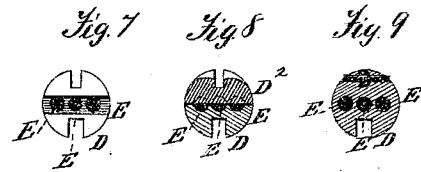
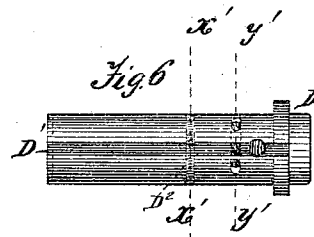
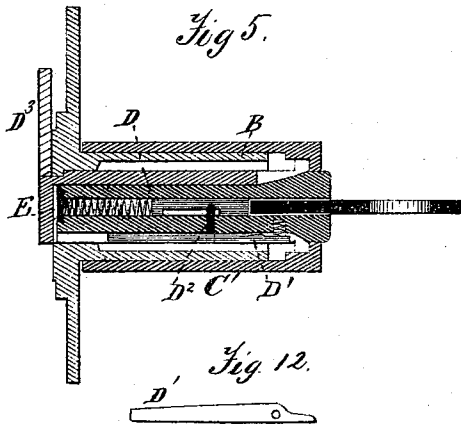
Fig. 4 by Eason Bird
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UNITED STATES PATENT OFFICE.

ANDREW F. WHITING, OF BATH, MAINE.

IMPROVEMENT IN DOOR-LOCKS.

Specification forming part of Letters Patent No. 123,531, dated February 6, 1872.

To all whom it may concern:

Be it known that I, ANDREW F. WHITING, of Bath, in the county of Sagadahoc, State of Maine, have invented a new and useful Improvement in Door-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Figure 1 is an elevation of the inner surface of my lock, showing the extension projection and the aperture for the insertion of the key. Fig. 2 is a similar view with the inner plate of the lock removed, and exhibiting a lock the bolt of which may be moved by any desired form of knob, and to which my improvement may be added. Fig. 3 is an inside view of the inner plate of the lock, showing the bolt-moving arm, which is attached to and operated by the tube which is moved by its key. Fig. 4 is a vertical section on line *x x* of Fig. 2, showing the parts which constitute the present invention. Fig. 5 is a section on line *y y* of Fig. 1, showing the key inserted and one of the sliding bolts drawn back, so as to allow the catch to fall into a groove formed in its surface, in which position it is when unlocked. Fig. 6 is an elevation of the follower or locking device, showing the pivoted locking lever in its surface and the sliding catch which enters the sliding bolts. Fig. 7 is a transverse section on line *x' x'* of Fig. 6, showing the sliding catch as in the slots in the bolts, which are located in recesses formed in the follower. Fig. 8 is a section on line *y' y'* of Fig. 6, showing the apertures in the part shown in Fig. 6 for the reception of the sliding bolts. Fig. 9 is an end view of the follower or locking device shown in Fig. 6. Fig. 10 is a plan view, showing the interior construction of the follower or locking device and the arrangement of the sliding bolts and the springs which move them. Fig. 11 is an elevation of the arm which moves the main bolt of the lock and a projection upon it which enters a slot in the follower from which it derives its motion; and Fig. 12 is an elevation of the locking-lever, which is pivoted to the follower or locking device.

Corresponding figures and letters refer to corresponding parts in the several figures.

This invention relates to that class of locks which are constructed with reference to their

being applied to doors of varying thicknesses; and it consists in the construction, combination, and arrangement of some of the parts, as will be more fully explained hereinafter.

In constructing locks of this character I take any suitably-flanged outer lock-plate, 1, which has a slot formed in one of its flanges for the locking-bolt to slide in, such bolts bearing and sliding upon the outer plate, and having formed in it a slot for the passage of the spindle which carries the knob by which it is turned, and upon one of its ends a projection or thickened portion, against which the arm 3 strikes in moving it by the use of the knob upon the inside of the door. A swinging dog, 4, and spring, 5, are provided for holding the bolt 2 in its locked position.

The arrangements of the parts above referred to are clearly shown in the drawing, but as they form no part of my present invention, except in so far as their combination with the novel parts thereof is concerned, they need not be more particularly described here.

In applying my improvement to such a lock as is here described, or to any other the parts of which are adapted to receive it, I use a plate, A, which forms the inner plate of the lock, it being screwed or otherwise secured to the flanged plate 1, and having secured to its outer surface a tube, B, which is open at both of its ends, the aperture through it extending through the plate to which it is attached. Upon the outer surface of this tube a series of small indentations are made, extending in a line from its inner end outward therefrom, being adapted to receive the end of a set-screw, B¹, for a purpose soon to be explained. Passing over the tube B there is another tube, C, the interior diameter of which is such as to cause it to fit snugly on the outer surface of the tube B, and I allow it to move thereon. This tube C is open at its inner end, and it also has an aperture in its outer end of sufficient diameter to permit of the passage of the outer end of the follower, and of the key through it. Through this tube, and near its inner end, the set-screw B¹ is passed, its inner end entering the depression formed in the tube B, the object being to provide for the elongation of the parts in order to allow of their being applied to doors of different thicknesses. It also has formed in a por-

tion of its surface, near its outer end, a slot at a right angle to its length, as shown at B², into which a segmental plate of metal is inserted in order that said plate may rest upon the inner surface of a collar or flange upon the follower, and thus carry or draw it out with the tube when preparing it for a door which is thicker than the length of the tube. The follower or locking device D consists of a plug of metal, the outer diameter of which is such as to cause it to fit snugly in the tube B, its outer surface, near its outer end, being supplied with a collar, as shown in Fig. 6, while that portion which is outside of said collar has a slot cut across it for the reception of the key, as shown in Fig. 5. In one portion of the outer surface of this follower there is formed a groove in the direction of its length, in which a lever, D¹, is pivoted. At the pivotal point of this lever, near its outer end and under its reduced portion, there is a small spiral spring placed, a hole being drilled in the follower for its reception. Just inside of the pivotal point of this lever there is cut in the follower a slot, at a right angle to the one in which the lever D¹ is pivoted, it being for the reception of the plate D², which passes down into the follower and rests upon the sliding bolts or pins, as shown in Fig. 7. Upon the side or portion of the follower which is opposite to the pivoted lever D¹ there is formed a slot, which is for the reception of a projection on the arm D³, which moves the locking-bolt 2. From the inner end of this follower there is drilled a series of holes, E, which holes extend through to the slot in its outer end, so that when the key is inserted it may be pressed upon the sliding pins which are placed therein. Within the holes E are placed sliding pins F, a portion of the surface of which are flattened, as shown in Fig. 10. Within the flattened portions of these pins V-shaped slots are cut, which are for the purpose of receiving the edges of the plate D². Outside of these pins springs F¹ are placed, which are held within the follower by means of a plate of metal, which is dovetailed into the edge of the follower. The arrangements of the parts composing this follower is such that when in the position above described it may be slipped into the tube B; the pivoted lever D¹ will enter a slot formed in the interior of such tube, there being another slot opposite it which the same lever can enter. When it is turned around the arm D³ has its projecting bar placed in the tube B and the follower is inserted, the arm D³ being upon the inside of the plate A, as shown in

Fig. 5. When it becomes necessary to lock the door the key is inserted, and, in consequence of the different lengths of the wards upon its ends, the pins F are pushed back until the slots in their flattened surface are brought in line, when the plate D² falls into them, and the lever D¹ falls into its slot, when, by turning the key, the arm D³ will be caused to turn, and the locking-bolt 2 will be thrown outward and the door locked. While this is being done the follower D will have been rotated until the lever D¹ is opposite the other slot in the tube B, when, by withdrawing the key, the spring under the outer end of the lever D¹ will throw its opposite end into the slot, and thus the locking operation is completed, and this effect will be produced whether the follower is set for a thick or thin door.

It will be seen that when the parts that compose the follower are in an unlocked position the arm D³ will not be in contact with the shoulder or bolt 2, and that then it may be locked by the turning of the knob upon the inside of the door, if desired; and further that this lock will be found a difficult one for burglars to pick, on account of the fact that all of the notches or slots in the pins F must be brought into a line before the plate D² can pass into the follower D far enough to permit the lever D¹ to pass out of the slot in the tube B, so that the follower can be turned, and as the beveled sides of the slot are of such an angle that a person attempting to move the pins by means of a wire will not feel their contact with the plate D², it follows that no guide will be furnished for the setting of the pins so that the plate can fall into the notches.

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

1. The follower D, provided with the lever D¹, sliding plate D², sliding pins F, and springs F¹, the parts being constructed and arranged substantially as and for the purpose set forth.
2. The arrangement of the follower D, tubes B and C, and the segmental plate in the outer end of tube C, whereby the parts may be adjusted to doors of different thicknesses, substantially as set forth.

In testimony whereof I have hereunto signed my name this 21st day of October, A. D. 1871, in presence of two subscribing witnesses.

ANDREW F. WHITING.

Witnesses:

J. WILLIAM MISTER,
JOS. R. EDSON.