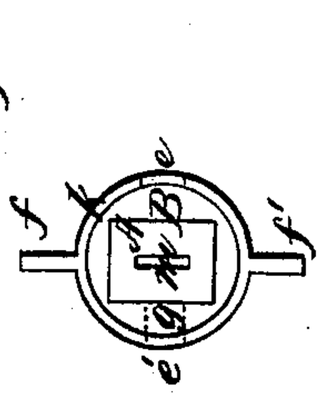
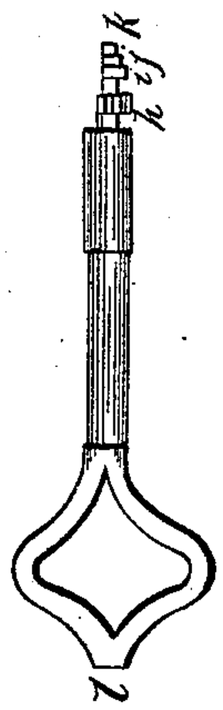
H. D. Richardson,

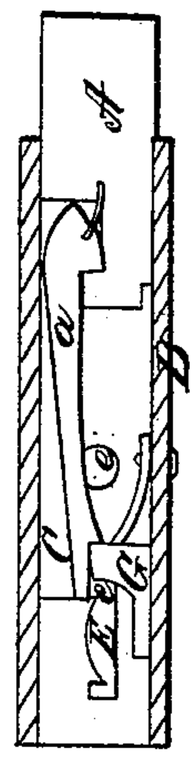
Lock.

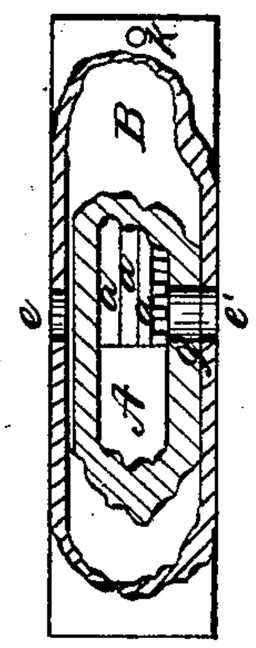
No. 64,568. Patented May 7, 1867.

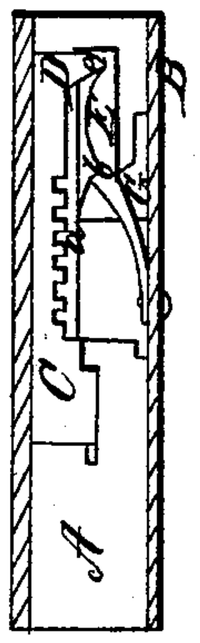
Fig. 2











Witnesses
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Letters Patent No. 64,568, *dated May* 7, 1867; *antedated April* 24, 1867.

IMPROVEMENT IN LOCKS.

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, H. D. RICHARDSON, of Florence, Northampton, Hampshire county, Commonwealth of Massachusetts, have invented a new and useful Improvement in Locks; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon. In the drawings—

Figure 1 is a broken section of my lock with a partial plan view.

Figure 2, an end view; and

Figures 3 and 4 different sections of the same.

Figure 5 being the key to the same.

This invention consists of a cylindrical lock arranged in such a manner that it can be turned around, bringing the key-hole to either side of the door, leaving no entrance to the lock on the other.

In construction I form my lock of an outside cylindrical case having flanges upon it, so that it can be set firmly in the door, and upon each side having a circular key-hole. Within this outside case, constructed so that it can be partially revolved in it, I place a second cylinder having only one key-hole in it, which can be made to correspond with either of the key-holes in the outside case by turning the inside case half way round in its socket. This revolution can be effected conveniently by means of a small socket in the end of the bolt into which the reverse end of the key fits. Within this inside case are the works of the lock, consisting of the bolt and various other supplementary parts. The apartment in which these work are arranged is rectangular, the bolt fitting closely into it and reaching, when shut, about one-third of its length. Attached to the inside end of the bolt by suitable means is a rack having a row of teeth upon it, and a head on the end farthest from the bolt. This rack is next to the key-hole, and its head works in notches upon a spring fastened to the opposite side of the chamber. Between the notches in this spring is a curved surface against which the head of the rack-plate presses and slides, when the bolt is being worked backward or forward in unlocking or locking, resting in either notch as the bolt is left in one position or the other. By the side of the rack, of about the same length and following nearly the same direction, are several other bars, also attached to the bolt. These have springs at the place of attachment, which give them a tendency to press across to the other side of the chamber. They are however, prevented from doing so by a guide attached to the opposite side, against the edge of which the bars press. The bars have shoulders near the unattached ends, which fit up against the side of the guide-block when the bolt is out, so that in order to force the bolt back again these bars must be all pressed in until their shoulders can pass the edge of the guide-block. They thus serve in the place of ordinary tumblers, for, being made of various sizes and thicknesses, the key has to have corresponding wards in order to fit them and press them down. The key has a pinion upon that part which comes across the rack, so that turning it works the rack-plate backward or forward, and with it the bolt to which it is attached, the notches in the spring securing it in either position it may be left.

In the drawings, A is the bolt working in the inside cylinder B, having the rack C and tumblers *a a a* attached to it. D, the head of the rack-plate, works in the notches *b* and *c* in the spring E. In fig. 4 it is seen that the shoulders of the tumblers *a a a* rest against the side of the guide-block G when the bolt is forced out, and that in order to force it back again the tumblers have to be first pressed in so as to allow their shoulders to pass the edge of the guide-block. The outside cylinder K has two key-holes *e e'* and flanges *f f'*, while the inside case has only one key-hole *g*. The key, fig. 5, has the pinion *h* and wards *i j k*, and at its reverse end at *l* is formed so as to fit into the socket *m* in the end of the bolt A, as is shown in fig. 2.

In operation, the outside case K is fixed firmly in the door, the flanges *f f'* keeping it from turning, and key-holes being cut through the door to match the holes *e e'* in the case. Arranged thus, the inside cylinder can be turned in the socket, so formed by means already described, bringing the key-hole *g* to correspond with either of those in the outside case, leaving no entrance to the lock on the other. The key being put into the key-hole the pin on fits in the rack inside, and when the key is turned, the rack-plate is moved, working the bolt; if unlocking the wards upon the key press down the tumblers in the first motion, leaving the bolt free to move.

The chief advantages of this lock are that it can be turned inside, leaving no possible way by which it

could be picked or opened from the outside. Besides the convenience of construction by which it can easily be adjusted to any door, it combines all the advantages of the security of a bolt with the convenience of a lock, the method of turning it being perfectly easily accomplished by the use of the key and socket. On the opposite side of the inside cylinder from the key-hole is placed a disk of hardened metal, with a small socket or pin, as the case may be, for the key to work in or on.

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

1. A lock constructed and arranged substantially as described, so that the key-hole can be brought to either side of the door, leaving no entrance to the lock on the other.

2. The arrangement of the two cylinders B and K with the key-holes *e e'* and *g*, in the manner and for the purpose substantially as described.

3. The combination of cylinders B and K, rack C, pinion *h*, spring E, one or more tumblers *a a a*, and bolt A, in the manner and for the purpose substantially as set forth.

4. A lock constructed and arranged substantially as described, so that the key-hole can be brought to either side of the door, leaving no entrance to the lock on the other.

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Witnesses:

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