73831 Oliver E. Pillard PATENTED

JAN 28 1868

Improvement in Locks.

Fig. 1.

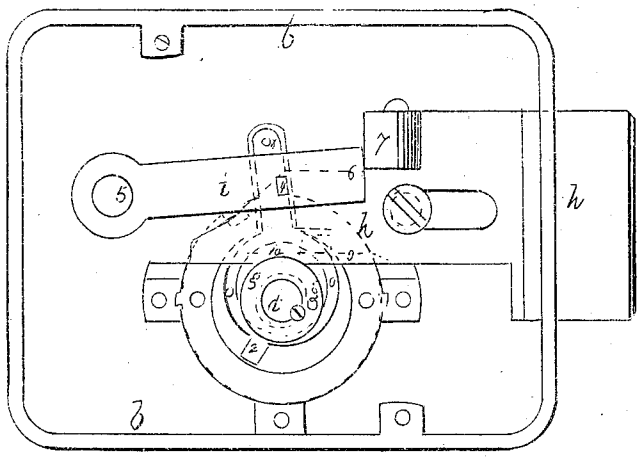


Fig. 2.

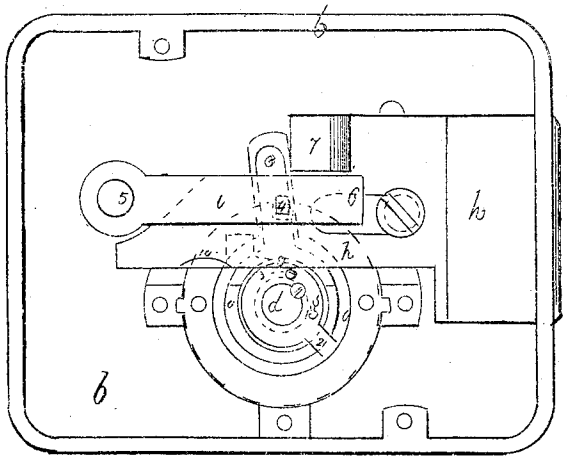
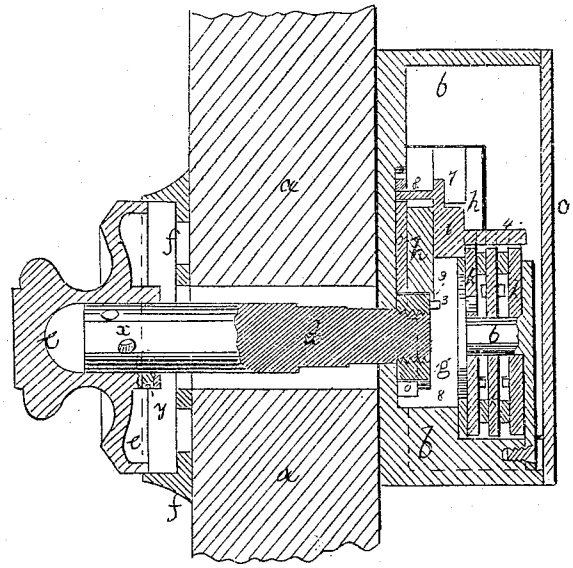


Fig. 3.



Witnesses:

Chas. H. Smith

Geo. D. Masser

Inventor:

Oliver E. Pillard

United States Patent Office.

OLIVER E. PILLARD, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO FREDERIC H. NORTH, OF THE SAME PLACE.

Letters Patent No. 73,831, *dated January* 28, 1868.

IMPROVEMENT IN PERMUTATION-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, OLIVER E. PILLARD, of New Britain, in the county of Hartford, and State of Connecticut, have invented, made, and applied to use a certain new and useful Improvement in Locks; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is an elevation of the lock, the cap-plate being removed and the bolt projected.

Figure 2 is a similar view, with the bolt retracted, the circular tumblers in these two figures being removed, and their position shown by red lines; and

Figure 3 is a vertical section through the spindle of the lock.

Similar marks of reference denote the same parts.

My invention applies to that class of locks in which a series of circular tumblers are used, that are set successively by the action of a knob and spindle, that, when turned to certain index-points, allow the bolt to be retracted.

The object of my invention is not to provide for setting the tumblers and for moving the bolts by the rotation of the same spindle and knob, but to cut off communication between the knob and tumblers when the bolt is retracted, thereby preventing the tumblers becoming misplaced, and to cut off any action of the spindle on the bolt, when projected, until the whole of the tumblers are properly placed; thereby it is impossible to avail of any movement given to the bolt in finding out the positions in which the tumblers have to be placed previous to opening the lock, because the bolt and the tumblers cannot be simultaneously acted upon.

The nature of my said invention consists in a ring, suspended from the dog, which is so positioned that the hub of the spindle can be drawn into said ring when the dog drops, thereby preventing the spindle being drawn back to act on the bolt until the position of the tumblers has been determined, to allow the dog to drop, and when the bolt has been retracted, a plate thereon coming at the edge of the spindle-hub prevents the hub being pushed into contact with the tumblers until the bolt is again projected. I also provide a spiral range of holes around the spindle, whereby the knob may be placed at whatever point is required to accommodate the thickness of the door.

In the drawing, *a* represents the door, and *b* the lock-case; *c*, the cap, as usual. *d* is the spindle; *e*, the knob, with the circular base to the knob, with index-marks. *f* is the circular flanged base, into which the base of the knob *e* enters. The spindle *d* has a hub, *g*, on its inner end, from which projects an arm, 2, to act upon the talon of the bolt *h*; and said hub *g* has also a pin, 3, to act upon the circular tumblers *k k*, upon the stud *l*, to set them so that their notches will receive the arm 4 of the dog *i*. These tumblers, and their mode of setting, being of the usual character, do not require further description. The dog *i* is upon a fulcrum-pin, 5, and the end, 6, of said dog *i*, is an arc of a circle from said pin 5, and takes against the stud 7 on the bolt *h*. When said bolt is projected, the arc of a circle on said end of the dog prevents any variation in the amount of end play to the bolt, if said dog is in a more or less elevated position. From the dog *i*, a pin, 8, projects, that suspends the ring *o*, that has a hole in it just large enough for the hub *g* to pass into it, and this can only be done when the ring is lowered to the proper position by the dog *i* dropping, as in fig. 2. A plate or projecting lip is formed upon the lower edge of the bolt-shank at 9, and this is notched (at 10) at a point opposite to the hub, when the bolt is projected, as seen in fig. 1.

When the parts are in the positions shown in figs. 2 and 3, the bolt may be projected or retracted. When retracted, the lip or plate 9 prevents the spindle being pushed in to act on the tumblers; but when the bolt is projected, the notch at 10 allows the spindle to be pushed in to act on the tumblers. The turning of the first tumbler (by an inclined side of its notch) raises the dog *i*, with the ring, and said ring *o* prevents the spindle being drawn back, for its arm 2 to act on the bolt *h*, until the tumblers are all properly placed for their notches to allow the dog *i* to fall, and lower the ring *o*.

I make the spindle *d* with a spiral row of holes, as seen at *x*, to receive the screw-pin *y*, that passes through the sleeve of the knob *e*, so that the distance between the knob and lock-case can be varied, as necessary, for fitting different thicknesses of doors.

The same operation of stopping the end-motion of the shaft by the ring *o* may be effected with only a section of a ring, or by a blocking-piece lifted by the dog, to prevent the spindle or shaft being drawn back into contact with the bolt until the dog drops.

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

1. The ring or blocking-piece *o*, suspended from the dog *i*, in combination with the hub *g* and arm 2 on the spindle *d*, as and for the purposes set forth.

2. The plate or lip 9, in combination with the hub *g*, ring *o*, and bolt *h*, as and for the purposes set forth.

3. The combination of the ring *o*, dog *i*, bolt *h*, hub *g*, lip 9, and circular tumblers *k k*, as and for the purposes set forth.

4. The combination of the bolt *h* and hub *g* with the plate or flange 9, that is notched, to allow the hub *g* to be moved, to connect with the tumblers when the bolt is projected, but prevents the tumblers being acted on when the bolt is retracted, substantially as set forth.

In witness whereof, I have hereunto set my signature, this 13th day of July, 1867.

OLIVER E. PILLARD.

Witnesses:

CHAS. H. SMITH,

GEO. D. WALKER.