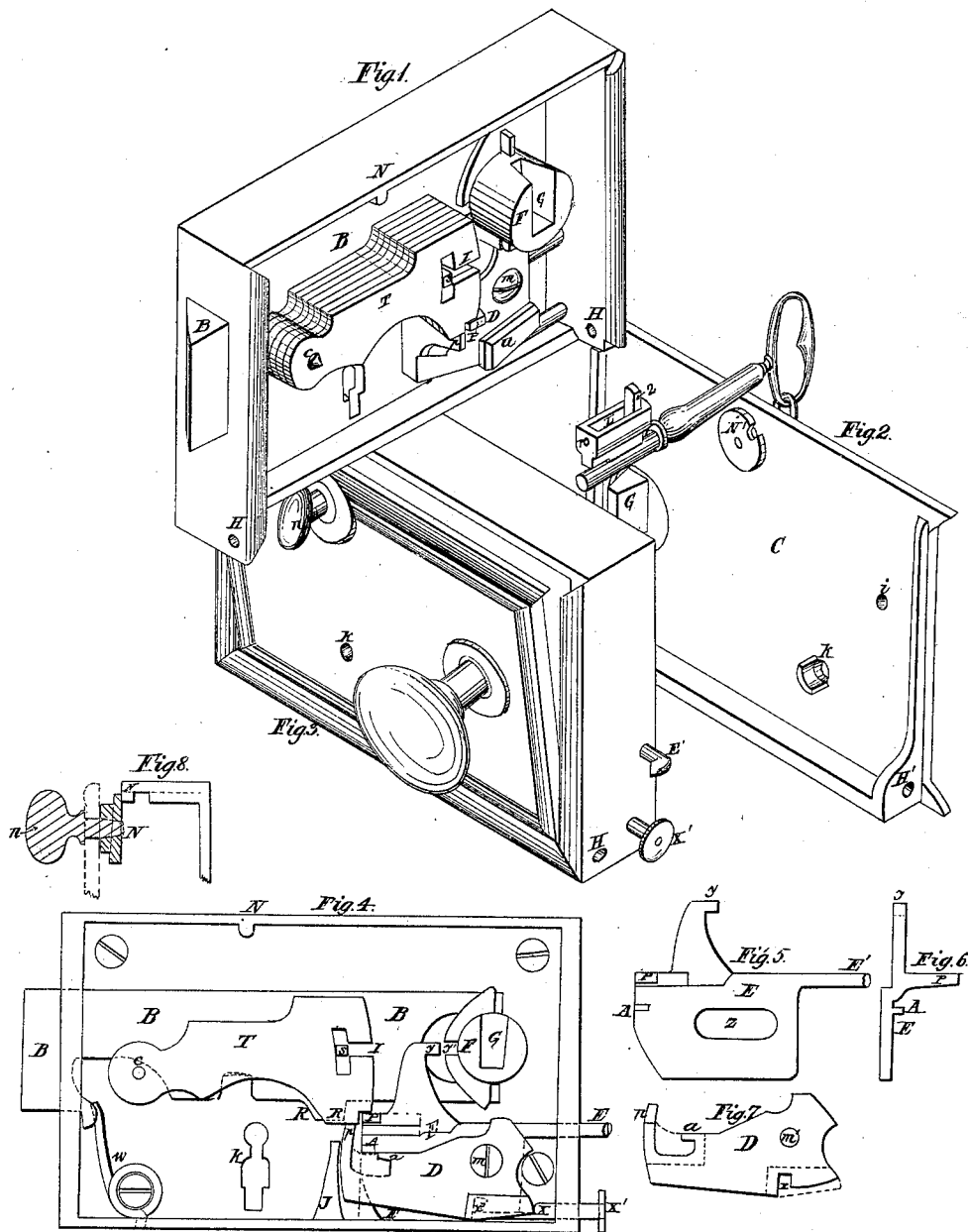


N. Edwards,

Latch.

N^o 81,990.

Patented Sep. 8, 1868.



Witnesses.

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NATHANIEL EDWARDS, OF NEWARK, OHIO.

Letters Patent No. 81,990, dated September 8, 1868.

IMPROVEMENT IN COMBINED LATCH AND LOCK.

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, NATHANIEL EDWARDS, of the city of Newark, in the county of Licking, and State of Ohio, have invented a new and improved Door-Lock; and I do hereby declare that the following is a full and exact description thereof, both of its construction and operation, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the lock with the cover removed.

Figure 2, the interior face of the cover.

Figure 3 represents, in perspective, a lock with the cover on, and partially opened.

Figure 4, a sectional view more particularly.

B represents the bolt; T, the tumblers; F is the common devices, with some modifications, hereafter described, for operating the bolt by the knobs as a latch. E E', a device for converting the lock from a permanent lock into a latch, and *vice versa*, as seen in Figures 4 and 5.

Figure 6 represents an end view of the plate E, which has a projection, P, to support the tumblers in the proper position for the stud S, attached to the bolt to pass through the slot I in the tumblers when working as a latch.

y is another small projection on the plate E, pointing backwards, and entering the notch y' in the device, for operating the bolt as a latch by the knobs, and serves to keep the same fixed, so that the bolt can no longer be worked by the knobs.

Z is a slot in plate E, so that it can be worked in or out by the stem E'.

D is a lever for lifting up the tumblers from the inside of the door without the aid of the key, so that the supporter P of the plate E can enter under them.

p, the lifter, is an arm on the end of the lever D, projecting laterally under the tumblers, (as seen in fig. 1,) the said lever being pivoted at m.

a is a projection on the lever D, which engages with its corresponding stud, A, on the plate E.

x is a notch cut out in the lever D to receive the hook x' (in fig. 4) on the rod X. When covered, as in fig. 1, it answers as a connecting-joint between the lever D and the thumb-knob X'.

J, fig. 4, is a short partition running up as high as the tumblers, protecting the lifters from being operated upon by false instruments.

w is the bolt-spring; k, the key-hole; G', a slightly-tapering projection to the knob-shank, on the inside of the face-plate, and enters the recess G in the device F, fig. 1, for operating the bolt.

H and H' are holes to receive a strong wire, to answer as a hinge to the face-plate.

N' is a button for fastening the face-plate when shut, being a circular button, having a flange on its rim, thicker on one side than the other, as seen in Figure 8, and a notch cut in the thinnest part of the flange, to let the stud N on the rim of the lock enter it, when a slight turn of the thumb-piece n will secure the face-plate shut until the notch is turned opposite the stud again, which makes it not liable to be accidentally unlocked.

The key is seen hanging across fig. 2, having a slot to receive the same number of bits as there are tumblers in the lock, one only being shown in the drawings.

The bits all vary in length, and are adapted to their corresponding tumblers, and numbered accordingly.

To operate the lock, first turn the thumb-piece n until the notch on the flange of the button N' is in the right position to disengage the stud N, when the face-plate will open out, as in fig. 3, and present the tumblers for inspection. They can be taken off the centre-pin c, so that the order can be changed to correspond with similar changes in the bits of the key. Slip the knob-locker y out of the aperture y', so as to let the ends of the tumblers rest on the supporter P, as seen in the drawing, then shut the face-plate, and secure it by the button. Now the two knobs are connected, G' having entered into G. Now, the tumblers T being lifted from the partition J, and resting on the arm P, the slots I in the tumblers are opposite the stump S, leaving the bolt free to be operated by the knobs, and then it is simply a latch.

To convert the same into a permanent lock, pull out the projecting hook E', (figs. 3 and 4,) when the projection *y* will enter the notch *y'*, locking the knobs, and the arm P being pulled back from under the tumblers, they will drop on the stud S, which the cross-slot holds secure, and the bolt cannot be operated upon by the knobs any more until the tumblers are again raised to the precise elevation shown in fig. 4. Now it is a permanent lock, and can be opened from the outside by the key.

In order to unlock the same from the inside, convert it into a latch, which can be worked by the knobs by pushing in the thumb-knob X' with the finger, when the lever D, Figure 7, turns on its centre-pin *m*, elevating the lifter *p*, which carries the tumblers, high enough for the arm P to enter under them. While pushing X' in with the finger, push the arm P under the tumblers, by pressing on the projecting rod E', then the stud S is disengaged from the cross-slot in the tumblers, and the projection *y* is disengaged from the notch *y'*, when the bolt can be operated upon by the knobs, and it works as a latch-bolt.

To convert it into a bolt, which cannot be operated upon by either key or knobs, and only be opened from the inside, press the thumb-knob X' in with the second finger, and while doing this, pull out rod E', when the lock is converted into a bolt. The stud A, fig. 5, has entered under the projection *a* on lever D, fig. 4, and prevents it from falling, as it would otherwise do. When the projection *a* is raised high enough for the stud A to pass under it, the lifter *p* raises the tumblers as high as the cross-slot will permit, and holds them in such a condition that the stud S cannot pass through the slot I, and thereby keeps the bolt secured, so that the key has no effect on the tumblers. In addition to this, there is a projection, R, on the bolt B, which serves to engage the lifter *p* when it is in this condition, but when the lifter *p* is not held up by the projection *a* and stud A, it will drop down, leaving room for the projection R to pass over it, and the tumblers to fall back on the arm P, making a latch.

I have endeavored to produce a cheap, useful, and substantial convertible combination-lock. It is in itself a night-bolt, a latch, and a changeable or adjustable permanent lock.

I claim—

1. The manner of connecting and disconnecting the two knobs, in connection with any opening face-plates of locks, by making an indenture, G', in connection with either one of the knobs, and a corresponding projection, G, in the other, substantially as above described.

2. The plate or tumbler-bearer E, in fig. 5, being a slotted plate, with a projection, P, turned out at one end to hold the tumblers in position, so that the bolt may work as latch, and with another projection, *y*, or indenture in such a position as to enter a corresponding indenture, *y'*, or projection in the spindle of the knobs, so as to engage with the same when the tumblers are dropped, when constructed substantially as herein shown and described.

3. The lever D, fig. 7, which has a lifter, *p*, for the joint purpose of raising the tumblers and bracing back the bolt, and in combination with the locking-projection *a*, and the stud A, and the projection R, or its equivalent on the bolt, for the purpose above specified, when made and arranged substantially as above shown and described.

4. The manner of converting the lock from a latch into a night-bolt, by raising the tumblers too high to be operated upon by the key, and bracing the bolt in the same operation, by elevating the lifter *p* of the lever D, by the assistance of *x'*, with its connections, and then locking the same in its elevated position, by causing the stud A to engage with the projection *a* by pulling out the tumbler-bearer, as above specified.

NATHANIEL EDWARDS.

Witnesses:

A. B. COFFMAN,
J. D. JONES.