M. C. & S. S. NILES.
Reversible-Latch.

No. 205,204. Patented June 25, 1878.

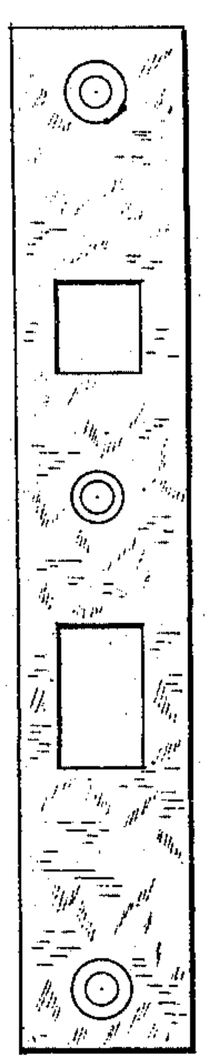

Fig 6

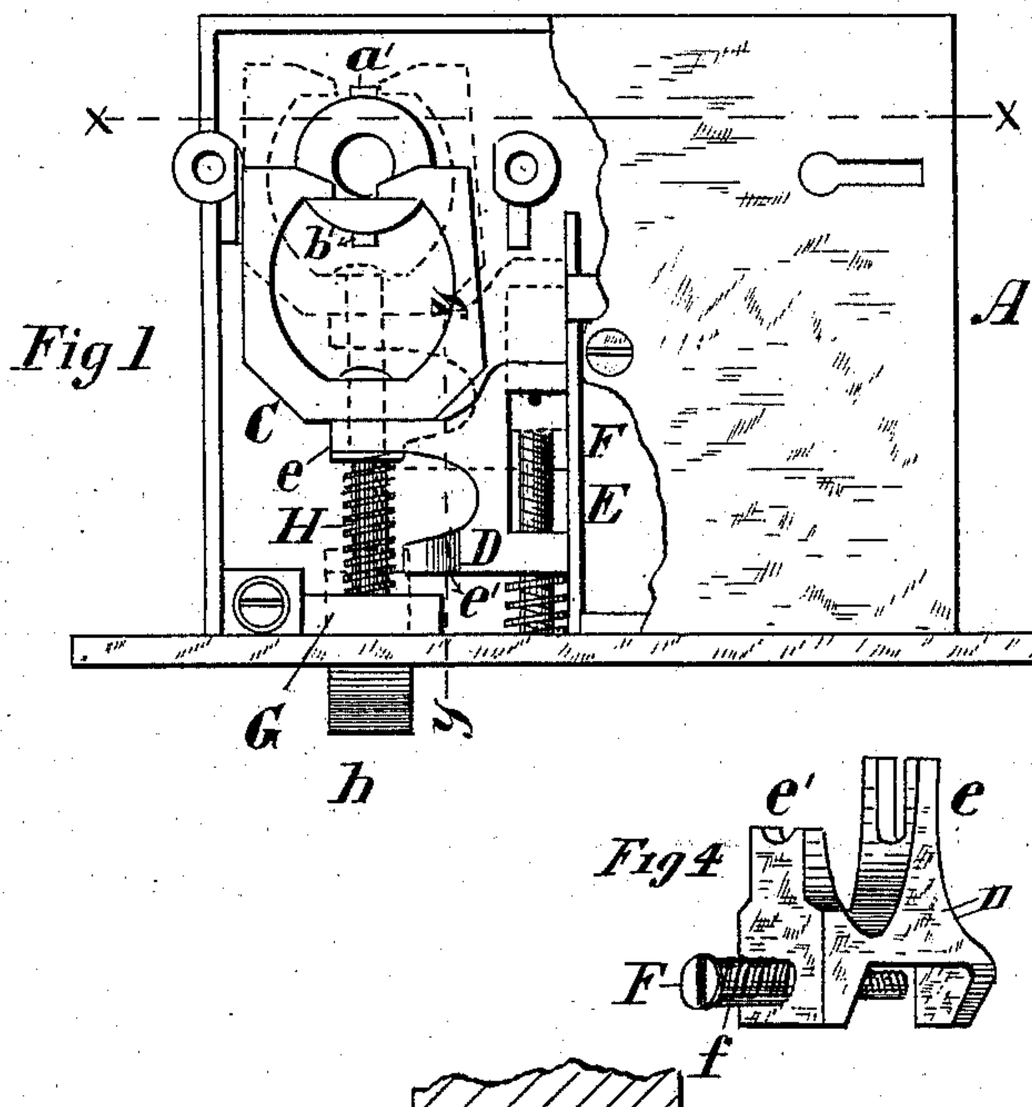

Fig 1

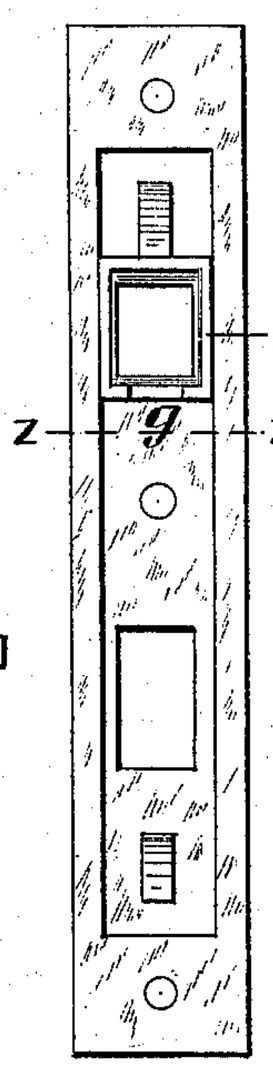

Fig 7

Fig 8

Fig 4

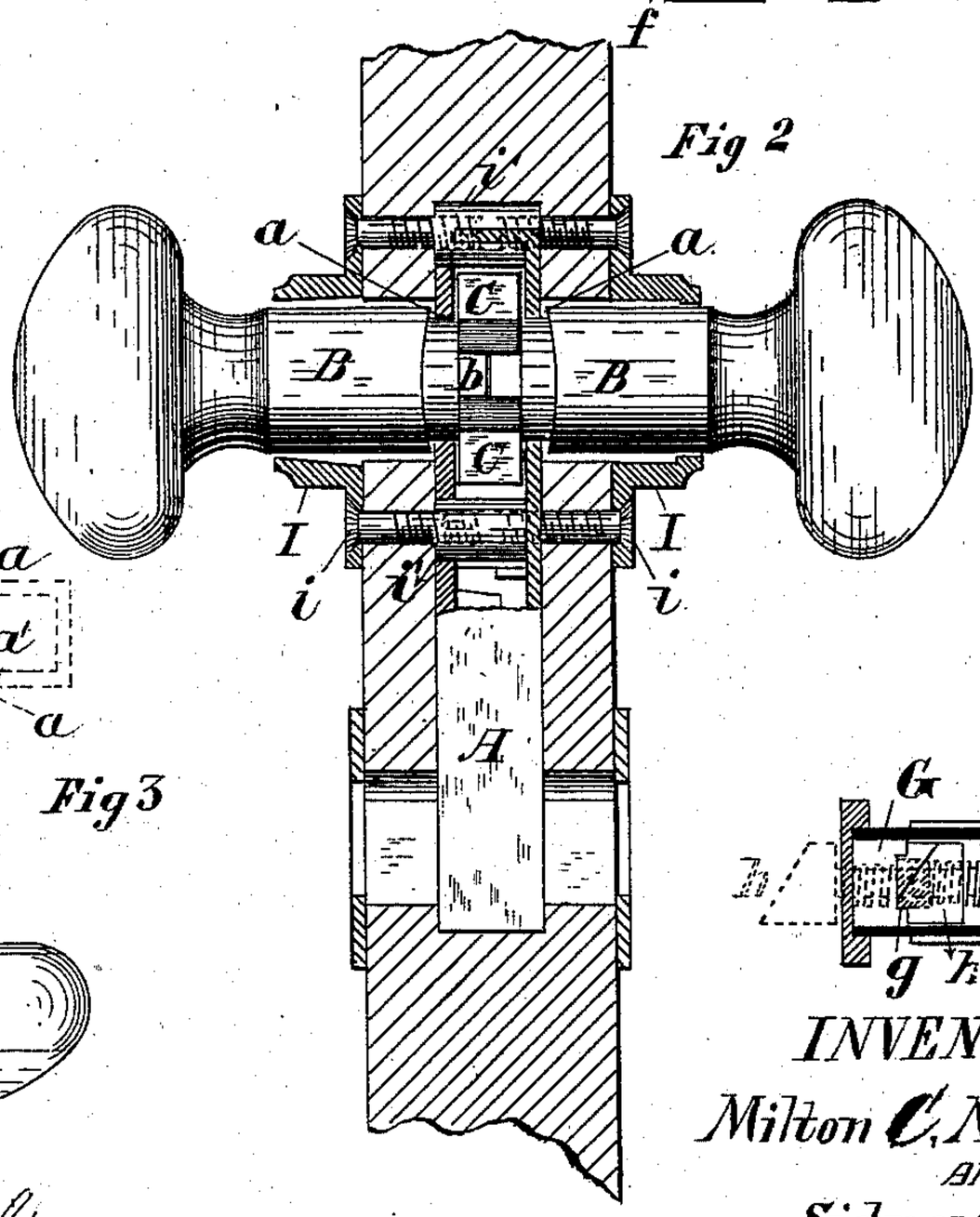

Fig 2

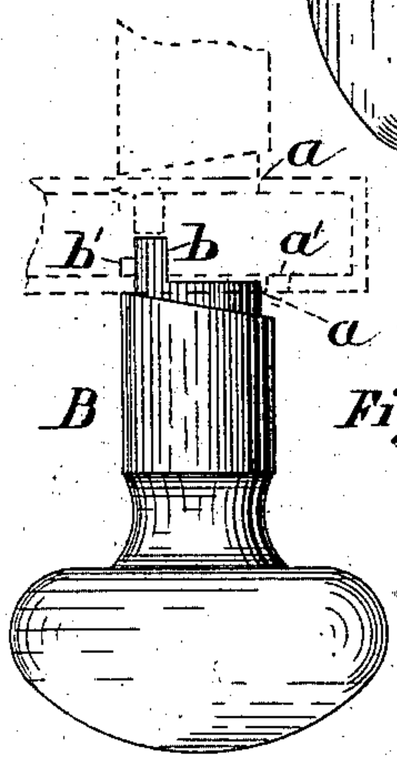

Fig 3

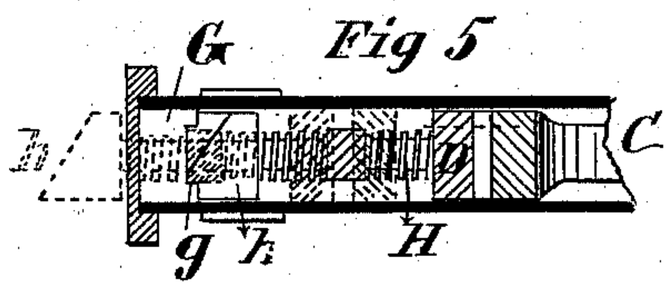

Fig 5

Witnesses
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UNITED STATES PATENT OFFICE.

MILTON C. NILES AND SIDNEY S. NILES, OF OAK PARK, ILLINOIS.

IMPROVEMENT IN REVERSIBLE LATCHES.

Specification forming part of Letters Patent No. **205,204**, dated June 25, 1878; application filed April 3, 1878.

To all whom it may concern:

Be it known that we, MILTON C. NILES and SIDNEY S. NILES, of Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in a Door Lock and Knob, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a lock with our improvements, a portion of the back-plate being broken away; Fig. 2, a vertical section through a door with the lock and knobs attached, taken on the line *x x*, Fig. 1; Fig. 3, a detail plan, showing the device for fastening the knobs in the lock-case; Fig. 4, a detached view of the slide for adjusting the bolt and talons; Fig. 5, a transverse section of the lock, taken on the line *y y*, Fig. 1; Fig. 6, a front view of the face-plate; Fig. 7, a rear view of the same; and Fig. 8, a transverse section taken on the line *z z*, Fig. 7.

Our invention consists in a device within the lock, operated through the face-plate by a screw extending outside of the case, for moving the bolt and talons back and forth within the case.

It also consists in a casing on the back side of the face-plate, having a notch in the lower side thereof, the casing keeping the bolt-head in place when the same is drawn back to allow the insertion of the knob-shank, and the notch allowing the bolt-head and slide, which also form a stop to limit the backward movement of the bolt, to be drawn forward for the purpose of reversing the bolt.

It also consists in the special means for attaching the knobs to the lock-case independently of each other.

It also consists in securing the roses to the door by means of screws passing through the roses and screwing into standards or seats inside the lock.

It also consists in various special devices and combinations of devices, all of which will be hereinafter pointed out in the claims.

In the drawings, A represents the lock-case, which is provided with the usual back-plate, in which and the opposite side of the case orifices *a* are provided for the reception of the knob-shanks, in the rear edge of which apertures a small notch, *a'*, is cut, as shown in Fig. 1 of the drawings.

The knob-shanks B are entirely independent of each other, being cut away slightly at their inner ends and provided with cam-projections *b*, on the outer face of which is a small lug, *b'*, fitted to slip through the notch *a'* in the plates of the case.

The knobs are attached to the case by inserting the cam end in the apertures *a*, with the cam turned to the rear, so that the lug *b'* will slip in through the notch *a'*, when the knob is turned round with the cam to the front, the lug thereon resting on the inside of the plate, as shown in Figs. 1 and 3 of the drawings, and thereby preventing the knob from being removed when the other parts are in position, as hereinafter explained.

The ends of the shanks are cut away on an incline, as shown in Fig. 3 of the drawings, so that the bearing upon the outside of the case will be at a single point only, by means of which construction the knob-shanks are prevented from being bound by the roses.

The bolt-talons C are substantially like those shown in patents heretofore granted to us, being adapted to be moved by the action of the cams on the knob-shanks when the latter are turned.

In order to permit the knob-shanks to be inserted in the casing, as above described, so that the cams will be in proper position within the talons, it is necessary to push back the latter, so that the bent ends will be behind the holes *a*, as shown in dotted lines in Fig. 1 of the drawings. This is accomplished by means of a slide, D, which is mounted on a way, E, inside of the lock-case below the bolt. The slide has projections *e e'*, extending upward between the talons and bolt-head, and the longer projection *e* is forked, so as to embrace the shank of the bolt next to the talons, as shown in Fig. 1 of the drawings, by means of which it is held in place. The other projection, *e'*, forms a stop, against which the head of the bolt strikes when it is drawn back, thereby limiting the throw of the latter whatever may be the position of the slide. The slide is provided with a threaded hole, in which a screw, F, works, which is inserted from the outside through the face-plate, so that the screw may be turned from the outside to set the slide back and forth.

A coil-spring, *f*, is placed around the screw,

between the face-plate and the slide, to prevent the play of the screw in the face-plate.

The range of the slide is such that the bolt-talons may be carried inward by means of the slide to the position shown in dotted lines of Fig. 1 of the drawings, for the purpose of inserting or detaching the knob-shanks, as shown above, and when this has been done the slide is adjusted forward, so as to bring the bolt into proper working position.

To prevent the bolt-head from dropping down inside of the case when the talons are withdrawn, as above described, a casing, G, is provided on the inside of the face-plate, projecting into the lock-case far enough to hold up the bolt when withdrawn to the utmost limit.

The bolt H is connected to the talons by a pivotal joint, so that it may be turned in any direction. By adjusting the slide sufficiently forward, the bolt-head *h* may be projected entirely outside of the face-plate, in which position the bolt may be turned on its pivot to change the lock from right to left hand, or vice versa, after which the bolt is drawn back to its proper position within the case by a corresponding adjustment of the slide.

To enable the slide to be removed sufficiently far to accomplish this result, a notch, *g*, is cut in the lower part of the casing G to receive the front projection *e'* of the slide. The knob-shanks must also be first detached.

The roses I are secured by means of screws *i*, which pass through the door on each side of the lock, and are screwed into seats *i'* in the lock-case, which seats extend through holes in the back-plate, thereby providing a greater length of screw-thread through the lock without increasing the thickness of the lock, and also providing a secure fastening between the two roses, and firmly holding all the devices in position.

The knob-shanks, by means of the roses and the talons acting on the cams of the knob-shanks, are held in position, so that they cannot be detached from the case unless the talons are drawn back by means of a slide, as above described.

Some of these improvements may be used independently of the others, so that it is not absolutely necessary that the lock and knobs should be constructed in all respects as herein set forth and shown.

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

1. The bolt-talons, in combination with a device arranged to be operated through the face-plate of the lock for adjusting the talons back and forth within the case, substantially as described.

2. The slide E, in combination with the adjusting-screw F and bolt-talons C, substantially as described.

3. The knob-shank B, in combination with the lock-case A, to the plates of which it is attached, and the bolt-talons C, adjusted in position by the movable slide D, substantially as described.

4. The lock-case A, provided with apertures *a*, having notches *a'*, in combination with the knob-shanks B, provided with the lugs *b'*, substantially as described.

5. The knob-shanks B, provided with lugs *b'*, in combination with the lock-case A, having apertures *a*, notched as described, and the adjustable bolt-talons C, substantially as described.

6. The casing G around the bolt-head on the inside of the face-plate, and provided with a notch, *g*, in its lower side, in combination with the slide D, provided with the projection *e'* and the bolt H, arranged and operating substantially as described.

7. The knob-shank B, having a bearing in the lock-case A, and provided with a cam, *b*, in combination with the talons C and a movable slide within the case, whereby the talons are adjusted in relation to the cam *b*, substantially as described.

8. The roses I, in combination with the lock-case A and screws *i*, passing through the door into the lock-case, substantially as described.

9. The knob-shank B, provided with a lug, *b'*, and a shoulder adjacent, as described, in combination with the lock-case A, substantially as and for the purpose set forth.

10. The face-plate, in combination with the slide D, the screw F, and the spring *f*, arranged around the screw between the slide and face-plate, whereby the screw is prevented from turning in the face-plate by accident, substantially as described.

11. The lock-case A, in combination with the knob-shanks B, provided with a lug, *b'*, for attaching to the case, and the roses I, whereby the parts are held from displacement, substantially as described.

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