No. 626,339. Patented June 6, 1899.

B. PHELPS.

LOCK.

(Application filed Mar. 8, 1898.)

(No Model.)

FIG. 1.

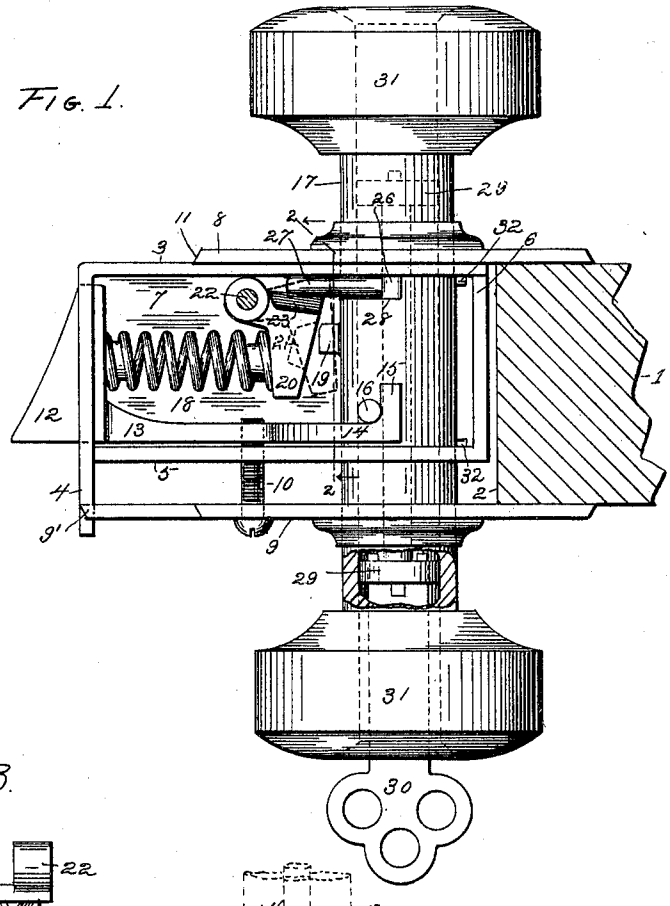
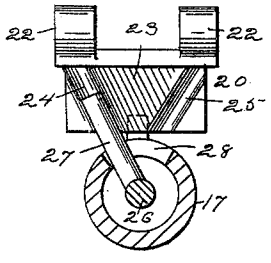


FIG. 3.



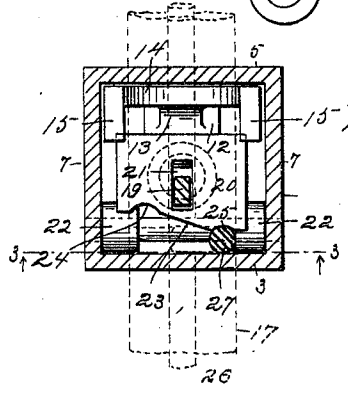


FIG. 2.

WITNESSES

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LOCK.

SPECIFICATION forming part of Letters Patent No. 626,339, dated June 6, 1899.

Application filed March 8, 1898. Serial No. 673,279. (No model.)

To all whom it may concern:

Be it known that I, BYRON PHELPS, a citizen of the United States of America, and a resident of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to new and useful improvements in the construction of locks; and it consists in the matters hereinafter described, and pointed out in the appended claims.

The objects of my invention are to provide mechanism whereby a simple and effective lock is provided, which is compact in form, adjustable to various thicknesses of doors, and which may be locked and unlocked from either side of the door by a key passed through the knob.

A further object of my invention is to provide a construction in which the same spring which actuates the latch-bolt also actuates means for locking the knob-spindle against rotation when a key is operated through the knob.

The several features of my invention will be hereinafter fully described with reference to the accompanying drawings, in which—

Figure 1 is a plan view illustrating my improved lock in position upon the edge of a door, showing the upper wall or plate of the lock-case as removed to disclose the arrangement of the working parts. Fig. 2 is a transverse sectional view of the same, taken on line 2 2 of Fig. 1. Fig. 3 is a detail sectional view taken on line 3 3 of Fig. 2 and shows the means for locking the knob-spindle in its engaging position.

Like characters of reference indicate like parts of the structure throughout the several views of the drawings.

Referring more particularly to said drawings, the numeral 1 designates the edge of a door provided with an edge notch 2 for the reception of the lock. The lock-frame comprises a suitable notch-plate, as 3, a face-plate, as 4, and frame-plates, as 5 and 6, and top and bottom plates 7. A side plate, as 8, for engagement with one face of the door is affixed to the notch-plate 3, and an adjustable side plate, as 9, is arranged to engage with the opposite face of the door and is held in adjusted position by a screw, as 10, entering the lock-frame plate 5, as shown in Fig. 1. If desired, the side plate 8 may be made integral with the notch-plate 3. An offset is provided, as at 11, by extending the lock-frame past the edge of the side plate 8 a distance corresponding to the overlapping of the door upon the door-jamb. As shown in Fig. 1, the face-plate 4 is extended past the lock-frame and engages between ears 9′ on a projection from the edge of the adjustable side plate 9, so as to obviate the necessity of sinking said plate 9 into the door, said projection serving to cover the side of the edge notch opposite to the notch-plate 3. The particular form of lock-frame and adjustable side plates, however, forms no part of my present invention, the same being the subject of a prior application for a patent filed by me on March 10, 1897, Serial No. 626,841.

A latch-bolt, as 12, is mounted for reciprocation in the lock-frame and extends through an aperture in the face-plate 4 in a familiar and well-known manner, said latch-bolt being provided with a shank, as 13. Said shank is shown in the drawings as formed integral with said bolt 12 and said bolt arranged in slidable engagement with the lock-frame, the shank terminating in a yoke 14, which embraces the knob-spindle 17 and is provided with lateral arms or projections 15 for engagement with projections, as 16, on said knob-spindle. A spring, as 18, serves to normally press the latch-bolt outward into position for engagement with the strike upon the door-jamb.

As illustrated in the drawings, the knob-spindle 17 is made tubular and is provided with a lug, as 19, for engagement with a detent, as 20, having a notch or recess, as 21, to receive said lug. The detent 20 is movably supported in any desired manner in the lock-frame, as by pivot 22, and is adapted for movement upon said support in an obvious manner, the spring 18 being seated at one end upon said detent, so as to normally press the same toward the knob-spindle.

The detent 20 is conveniently provided with an oblique surface, as 23, terminating at its high and low sides in depressions, as 24 and

25, respectively, and a locking-spindle, as 26, is rotatably mounted in the knob-spindle and is provided with an arm, as 27, arranged to extend outward through an aperture or slot, as 28, formed transversely in the side of the hollow knob-spindle and to extend between the oblique face 23 of the detent 20 and one plate of the lock-frame and to be adjusted so as to engage with either one of the depressions 24 and 25.

The locking-spindle is preferably provided at or adjacent to its opposite ends with enlarged bearings, as 29, to engage with the knob-spindle and center the locking-spindle therein, and said enlarged ends of the locking-spindle are formed in any desired or convenient manner to engage with a key, as 30, the knobs being apertured in any desired manner for the insertion of said key therein.

The mechanism is shown in Figs. 1 and 2 in its unlocked position, in which the knob-spindle is free for operation from either side of the door to retract the latch, the detent 20 being held out of engagement with the lug 19 on the knob-spindle by the projecting arm 27. It will, however, be observed that when the detent is not thus held away from the knob-spindle the spring 18 will press said detent into position to engage with said lug and thereby lock the knob-spindle and the knobs from rotation.

It follows from the described construction of the locking-spindle, the knob-spindle, and the pivoted detent that the knob-spindle may be readily locked against rotation or freed, as desired, by a partial rotation of the locking-spindle, so as to cause the arm 27 to engage with the detent and permit the same to come into engagement or hold it out of engagement with the lug on the knob-spindle.

Both knobs 31 are of course apertured for the insertion of a key, so that the door may be locked or unlocked from either side of the door when desired.

When the parts are in the relative positions shown in Figs. 1 and 2, the detent will be held out or away from the knob-spindle, the arm 27 engaging with the depression 25 and the pressure of the spring 18 serving to hold the detent against said arm with sufficient force to prevent accidental disengagement of the arm from the said detent, so as to require the use of a key to adjust the arm and the detent into position to lock the spindle. Similarly when locked the arm 27 will engage with the depression 24 and the spring will press the detent against said arm with sufficient force to prevent rotation of the locking-spindle and said arm without the use of a key. It will thus be seen that the latch-bolt serves to secure the door in its latched or locked condition, thereby obviating the necessity of employing separate latching and locking bolts.

Any convenient means may be provided for preventing longitudinal movement of the knob-spindle—as, for instance, projections, as 32, on said spindle to engage with the frame-plates.

While I have shown the latch-bolt and the shank and yoke as made integral, yet it is obvious that said bolt may be pivoted to the lock-frame and the shank on the yoke pivoted to the latch-bolt in an obvious manner to produce the same operation of the bolt as before described.

My improved form of lock is exceedingly simple in its construction, is very strong and durable, and is compact and satisfactory in operation and not likely to get out of order.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination, a latch-bolt, a hollow spindle, means connected with the same to operate said bolt, a movable locking-detent outside of said spindle and adapted when moved to one position to prevent the retraction of said bolt, and movable means within said spindle adapted to connect with said detent and move the same.

2. In combination, a latch-bolt, a hollow spindle, means connected with the same to operate said bolt, a movable locking-detent outside of said spindle and not rotatable therewith but adapted when moved to one position to lock said bolt-operating means, and movable means within said spindle adapted to connect with said detent and move the same.

3. A lock, comprising a suitable frame, a latch-bolt, a tubular knob-spindle for actuating said bolt, a detent located outside of said spindle and adapted to engage therewith to lock the same from rotation, and a second spindle rotatably engaged within the knob-spindle and carrying means for adjusting said detent, substantially as described.

4. A lock, comprising a suitable frame, a latch-bolt mounted for reciprocation therein, a tubular knob-spindle for actuating said bolt, a detent for engagement with said knob-spindle to lock the same from rotation, a second spindle rotatably mounted within the knob-spindle and adapted for engagement with a key, the knob-spindle being provided with a transverse slot, and the interior spindle provided with an arm extending through said slot and adjustably engaging with said detent, substantially as described.

5. A lock comprising a suitable frame, a latch-bolt mounted for reciprocation therein, a knob-spindle for actuating said bolt, a detent for engagement with said knob-spindle to lock the same from rotation, an interior locking-spindle rotatably mounted within the knob-spindle and carrying means for adjusting said detent, and a spring interposed between said bolt and detent and serving to normally press said bolt outward and said detent toward the knob-spindle, substantially as described.

6. In a lock, the combination with a latch-bolt and a tubular knob-spindle for actuating

said bolt, of a spring-pressed detent for engaging with said knob-spindle to lock the same from rotation and provided with an oblique face, and a locking-spindle rotatable within the knob-spindle and carrying means for engaging said oblique face to adjust said detent and adapted for operation by a key inserted into the knob-spindle, substantially as described.

7. In a lock, the combination with a suitable lock-frame a latch-bolt and a tubular, transversely-slotted knob-spindle, provided with a projecting lug, of a spring-pressed detent provided with an oblique face and with a notch or depression to engage with said lug, and an interior locking-spindle, rotatable within the knob-spindle and provided with an arm extending through the slot in said knob-spindle and adjustably engaging with the oblique face of the detent, substantially as described.

8. In a lock, the combination with a lock-frame, a latch-bolt and a tubular, transversely-slotted knob-spindle for actuating said bolt and provided with a projecting lug, of a detent provided with a notch or depression for engagement with said lug on the knob-spindle and with an oblique face terminating in depressions at its high and low sides, a locking-spindle rotatable within said knob-spindle and provided with an arm extending through said slot and adjustably engaging with the oblique face of the detent, and an actuating-spring interposed between the bolt and the detent, substantially as described.

9. In a lock the combination with a latch-bolt and hollowed knob-spindle for actuating said bolt, of a spring-pressed detent adapted to engage said knob-spindle to lock the same from rotation and provided with a cam-face and a locking-spindle movable within the knob-spindle and carrying means for engaging said cam-face to adjust said detent and adapted to be engaged by a supplemental device outside of said spindle to move the same.

Signed by me, at Seattle, Washington, this 28th day of February, 1898.

BYRON PHELPS.

Witnesses:
H. B. SLAUSON,
J. W. LANGLEY.