

No. 815,976.

PATENTED MAR. 27, 1906.

B. PHELPS.
LOCK AND LATCH MECHANISM.

APPLICATION FILED FEB. 16, 1904.

2 SHEETS—SHEET 1.

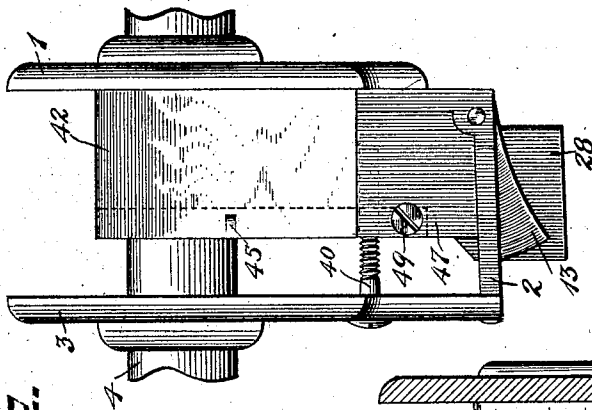


Fig. 2.

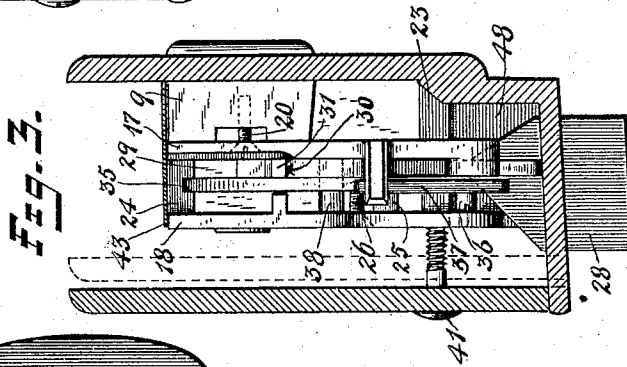


Fig. 3.

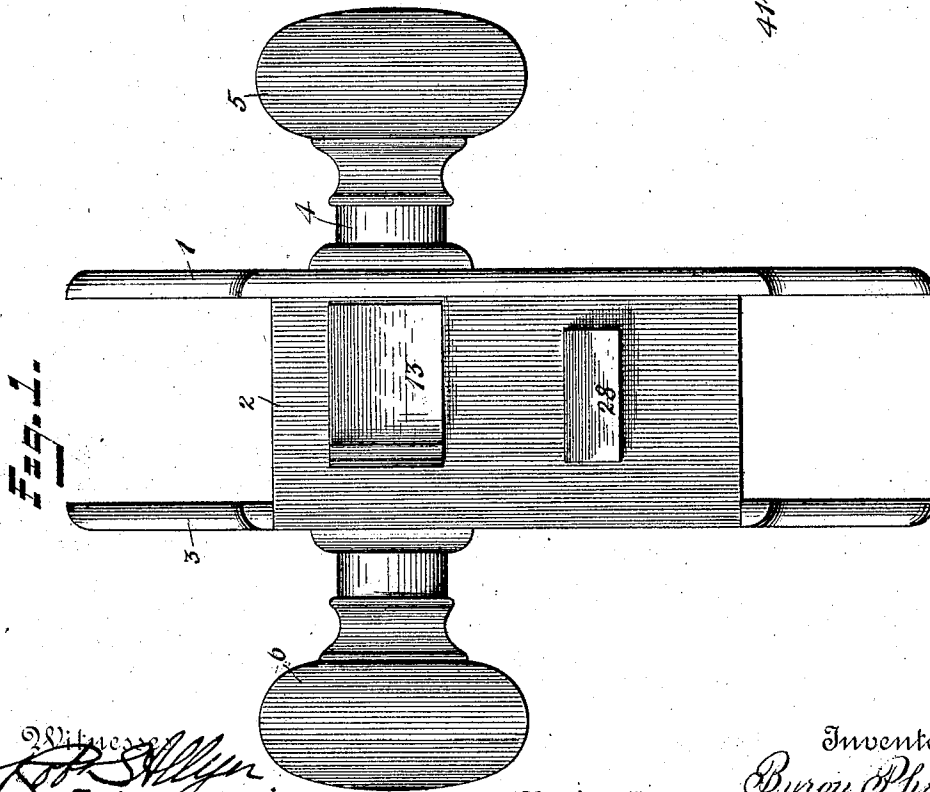


Fig. 1.

Witnesses
Geo. V. Rasmussen

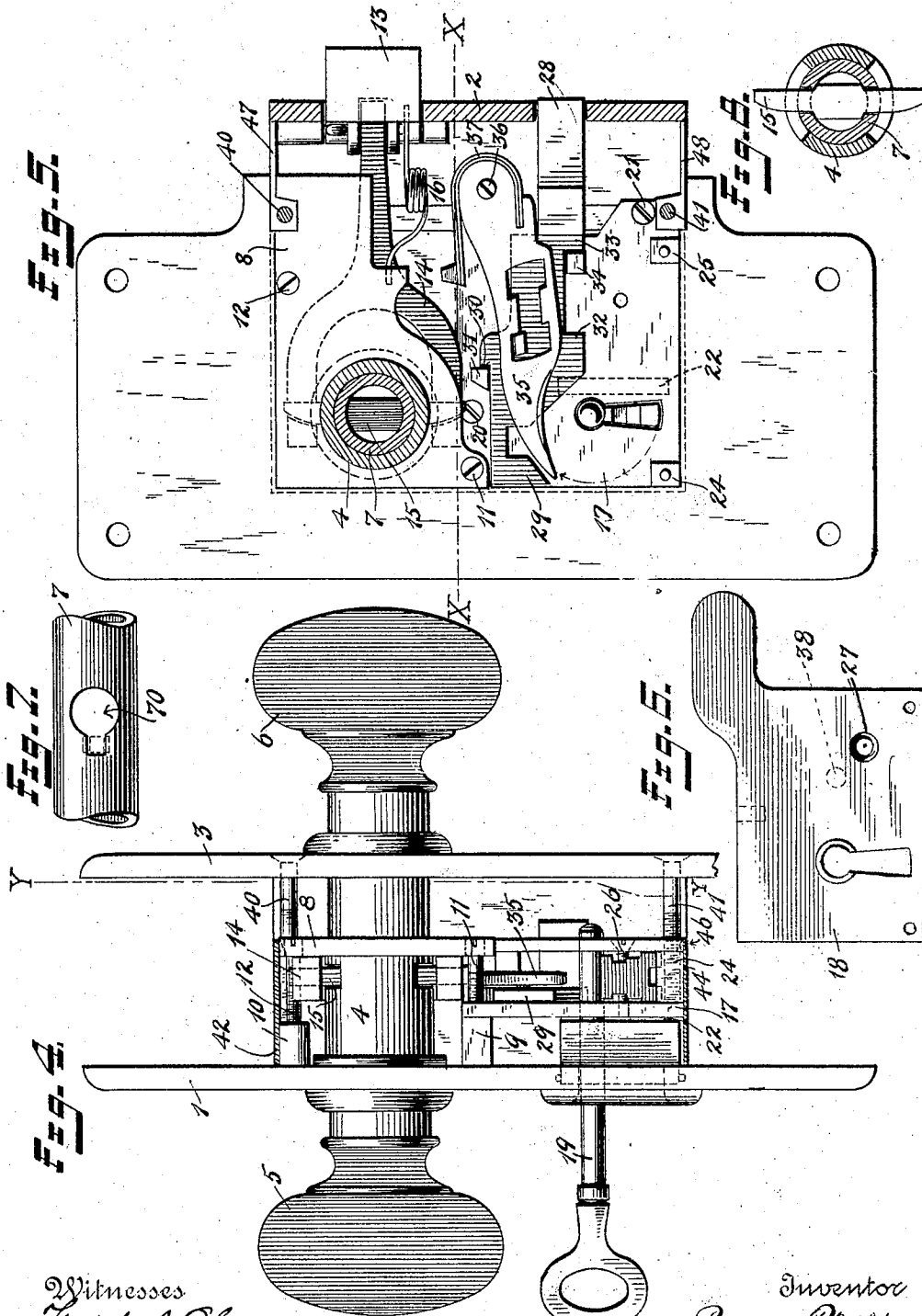
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By his Attorneys
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

BYRON PHELPS, OF SEATTLE, WASHINGTON.

LOCK AND LATCH MECHANISM.

No. 815,976.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed February 16, 1904. Serial No. 193,833.

To all whom it may concern:

Be it known that I, BYRON PHELPS, a citizen of the United States, residing at Seattle, King county, Washington, have invented certain new and useful Improvements in Lock and Latch Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks and latches, and particularly to a construction which embodies key-operated lock mechanism and knob-operated latch mechanism all assembled in a complete structure.

The object of the invention is to provide a substantial and reliable lock and latch mechanism complete in a single structure which may be supplied to a door without disassembling and which may be adjusted to suit doors of different thicknesses.

The invention consists of a frame adapted to be clamped or screwed to a door and to extend around the edge thereof, a knob-actuated latch mechanism mounted in and supported by said frame, a key-operated lock mechanism supported by said frame, and in the details of construction by means of which such a unitary structure is assembled and operated in a practical manner. This will be more clearly seen on inspection of the accompanying two sheets of drawings, in which—

Figure 1 is a front elevation of mechanism embodying the improvements of my invention. Fig. 2 is a plan view with the knobs broken away. Fig. 3 is a horizontal section on the plane of the line X X, Fig. 5, and plan of my invention with all the parts of the latch mechanism removed. Fig. 4 is a rear elevation of a lock and latch mechanism embodying the improvements of my invention, part of one side plate being broken away. Fig. 5 is a vertical cross-section on the plane of the line Y Y, Fig. 4, of the mechanism with the inner lock-plate of the lock mechanism removed. Fig. 6 is a view of the inner lock-plate of the lock mechanism. Fig. 7 is a detail view of the knob-spindle, showing the provision for inserting and supporting the roll-back. Fig. 8 is a cross-section of the knob-spindle and tubular support, showing the roll-back in position.

1 is the outer side plate.

2 is the face-plate, extended across the edge of the door and in this instance formed integrally with the outer side plate.

3 is the inner side plate.

4 is a tubular support carried by the outer side plate 1.

5 is the outer knob.

6 is the inner knob, and 7 is the tubular knob-spindle supported within the tubular bearing 4.

8 is the inner plate of the latch mechanism, which has a bearing against a small shoulder on the tube 4.

9 and 10 are studs projecting from the inner face of the outer side plate.

11 and 12 are screws by means of which the inner latch-plate 8 is secured in place.

13 is a pivoted latch.

14 is the latch-slide, having arms engaged by the roll-back 15.

16 is an enlarged opening in the spindle to facilitate assembling the roll-back.

17 is a spring which connects the inner latch-plate with the latch to throw the latch outward into its normal operating position. The latch is operated by rotating either knob in either direction.

18 is the inner lock-plate. Each of these plates, as well as the outer and inner side plates of the frame, is provided with keyhole-openings of the proper size and position for the introduction and operation of a suitable key—for instance, key 19, as shown in Fig. 4. The outer lock-plate 17 is secured to the outer side plate 1 by means of the screws 20 and 21, the lock-plate resting upon the studs 9, 22, and 23. The inner lock-plate 18 is supported by the studs 24 and 25, which are secured to the outer lock-plate 17 and have pins projecting into recesses in the inner plate.

26 is a screw passing through the inner lock-plate 18 for securing it to the outer lock-plate. 27 indicates the hole in the back lock-plate through which this screw 26 passes. The locking-bolt 28 is broadest across the face of the lock, as shown particularly in Fig. 1, so that the bolt is capable of resisting very considerable pressure when in operation without being subject to bending or injury.

29 is the bolt-bar, having the shoulder 30, adapted to coact with the stop 31, and the shoulders 32 and 33, adapted to coact with the stop 34.

35 is the tumbler, pivoted at 36 to the outer lock-plate 17 and having a spring 37 for holding it in its locking position. This tumbler is operated by the key 19. The inner lock-

plate 18 rests against the top of the screw 36, so as to hold the parts securely in place. The inner plate also has a stud 38, which rests against the outer lock-plate.

5 40 and 41 are screws for fastening the inner side plate of the lock to the other parts of the frame. By means of these screws the mechanism may be adjusted to accommodate doors of different thicknesses.

10 42, 43, and 44 are the top, back, and bottom of a cover for these parts of the lock and latch mechanism, respectively, to keep out the dust and otherwise protect the parts. This cover is formed of metal and fits closely, 15 and is provided with projections 45 and 46 to fit in recesses in the inner lock and latch plates respectively, so that it may be readily removed.

20 47 and 48 are flanges carried by the face-plate 2, which complete the box-like inclosing structure.

49 is a screw holding the inner latch-plate to the top flange.

25 The construction of the mechanism in the manner which has been herein shown and described has the advantage of economy of construction and simplicity and reliability of operation. Further, it will be noted that when the mechanism is removed from the door the 30 inner side plate may be removed, when the parts will be readily accessible for the purposes of adjustment, alteration, or repair, as the case may be.

35 The inner plate of the lock mechanism might be made integral with the inner plate of the latch mechanism; but I have found that the construction herein shown is the more advantageous, inasmuch as the two parts of each mechanism may in this manner 40 be more readily got at without disturbing the adjustments of the other parts.

What I claim is—

1. In a lock and latch mechanism, a frame 45 comprising an outer side plate, a face-plate secured thereto, an inner side plate adjustable relatively to the outer side plate, a latch-bolt, knobs, knob-actuated means for operating said latch-bolt, a locking-bolt independent of said latch-bolt, separate inner and 50 outer lock-plates secured in said frame, a tumbler coacting with said locking-bolt, said inner and outer lock-plates having keyhole-

openings for access to said tumbler independent of said knobs.

2. A lock and latch mechanism comprising 55 inner and outer side plates, a face-plate, an outer lock-plate removably secured to the outer side plate, an inner lock-plate removably mounted, a bolt having a bar operating between said plates, a tumbler coacting with 60 said bar, said inner and outer lock-plates having keyholes for access to said tumbler.

3. A lock and latch mechanism comprising inner and outer side plates, a face-plate, a tubular bearing supported in said side plates, 65 a knob-shank mounted therein, latch mechanism, operative connection between said latch mechanism and said knob-spindle, a removable inner plate for said latch mechanism, an inner lock-plate, an outer lock-plate, 70 removable means for securing said lock-plates to the outer side plate, and a locking-bolt with operating mechanism mounted between said lock-plates independent of said latch mechanism. 75

4. In a lock and latch mechanism, a frame adapted to extend around the edge of a door, a latch-bolt, means for operating the same, an independent locking-bolt, key-operated 80 means for operating said locking-bolt, inner lock and latch plates and a removable cover for the top, back and bottom of said operating mechanism inside said frame.

5. In a lock and latch mechanism, the combination of inner and outer side plates, 85 a face-plate rigidly carried by one side plate, a pivoted latch-bolt extensible through an opening in the face-plate, knobs projecting from said side plates, operative means of connection between said knobs and said latch- 90 bolt, a longitudinally-movable locking-bolt extensible through said face-plate, means for guiding said locking-bolt, a tumbler for said locking-bolt for holding it in its extended or retracted position, one of said side plates 95 having a keyhole-opening for access to said tumbler.

Signed at New York this 15th day of February, 1904.

BYRON PHELPS.

Witnesses:

R. C. MITCHELL,
L. VREELAND.