No. 626,338. Patented June 6, 1899.

B. PHELPS.

LOCK.

(Application filed Mar. 8, 1898.)

(No Model.)

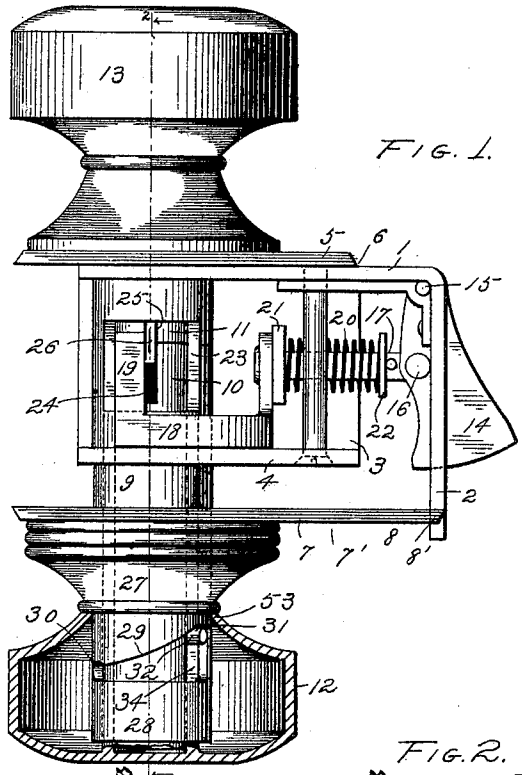


FIG. 1.

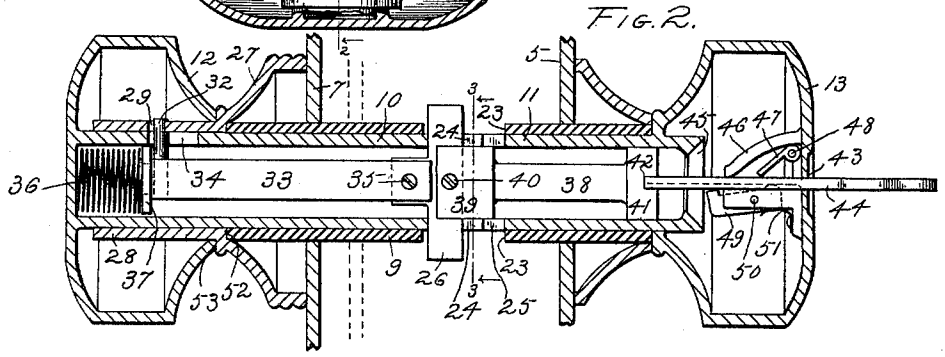


FIG. 2.

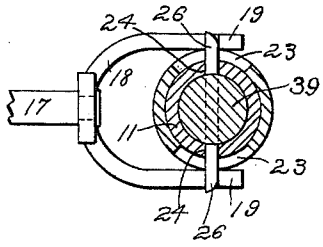


FIG. 3.

WITNESSES

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LOCK.

SPECIFICATION forming part of Letters Patent No. 626,338, dated June 6, 1899.

Application filed March 8, 1898. Serial No. 673,278. (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 object of my said invention is to provide a simple and compact form of lock adjustable to doors of various thicknesses and means whereby the lock mechanism may be adjusted at will, so as to be readily operated by either the knob upon the inside or the outside of the door or adjusted so as to be operated only by the knob upon the inside of the door, the knob upon the outside of the door being in the latter case freely revoluble without effect upon the latch-bolt.

To this end I construct my improved lock in substantially the form illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a lock embodying my invention and illustrates one of the knobs as broken open to disclose the arrangement of the mechanism for disengaging the mechanism from the knob-spindle that communicates with the outside of the door. Fig. 2 is a longitudinal sectional view of the knob-spindle, the bearings thereof, and the knobs, taken on line 2 2 of Fig. 1. Fig. 3 is detail transverse sectional view taken on line 3 3 of Fig. 2, the leaf or roll-back having been moved out of engagement with the outside spindle, and illustrates the arrangement of the yoke and its connection with the knob-spindle.

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

Referring more particularly to said drawings, the numeral 1 designates the notch-plate, and 2 the face-plate, of a main frame constructed to fit into a notch cut in the edge of a door. An interior frame is formed from plates 3 and 4, respectively, which are secured in any desired manner to the plate 1. A side plate 5 is affixed to the notch-plate 1 or made integral therewith, if desired, and is so arranged as to form an offset 6, corresponding in width to the overlapping of the door upon the door-jamb. A plate 7 is adjustable to or from the plate 4 of the lock-frame and is arranged to engage with the side of the door opposite to the plate 5 and has a projection 8 arranged to cover the side of the edge notch opposite to the notch-plate 1, said extension being provided with ears 8′, between which the face-plate 2 adjustably extends.

A tubular spindle-bearing 9 extends through the lock-frame and provides a bearing for spindle members, as 10 and 11, arranged to extend, respectively, from the lock-frame to the inside and the outside of the door to which the lock is applied, and knobs 12 and 13 are secured to the respective spindle members in any suitable way. In the present embodiment one spindle is attached to the inner side of the head of the hollow knob and the other spindle is attached to the extension from the outside of the knob.

A latch-bolt is mounted in any suitable or desired manner in the lock-frame, as by the pivotal connection 15, and is connected, as at 16, to a shank 17 upon a bolt-actuating yoke 18, which yoke is bifurcated, so as to embrace the spindle-bearing, and provided with lateral arms, as 19, to engage with the retracting devices carried by the spindle. A spring 20 is conveniently placed around the shank 17 and at one end bears against a post 21 upon the lock-frame and at the other end bears against a disk or projection 22, secured to the shank 17, said spring serving to normally press the latch-bolt outward.

The tubular spindle-bearing 9 is slotted upon opposite sides, as at 23, and the abutting ends of the spindle members 10 and 11 are provided with longitudinal slots 24 and 25, respectively, for engagement with bolt-actuating means, in this embodiment a slidable leaf or roll-back 26, said leaf being arranged to extend considerably past the outside of the spindle-bearing, and the slot 23 in said bearing being made of sufficient width to permit of a degree of movement of the ends of said wing corresponding to the rotary movement of the spindle in actuating the bolt, the ends

of the leaf 26 serving to engage with the arms 19 on the yoke 18 in lieu of the usual cam and to communicate longitudinal reciprocation thereto by rotation of the knob-spindle.

Upon the end of the spindle-bearing which comes upon the inside of the door is provided a rotatable cam-disk, as 27, conveniently provided with a tubular projection 28, arranged to extend into the knob 12, as shown in Figs. 1 and 2, and said tubular projection is provided with a transverse slot having a cam-face 29, terminating at its high and low sides in depressions 30 and 31, respectively. A pin or adjusting-arm 32 is secured to a locking-spindle member 33, mounted within the tubular spindle member 10 and extends outward through a longitudinal slot 34 therein and into engagement with the cam-slot 29. The interior locking-spindle member 33 is connected at one end, as at 35, with the slidable leaf 26, and a spring 36 is arranged to bear against the other end of said interior spindle and serves to press the same with the slidable leaf outward when not held retracted by the cam 29, the end of said spindle member being provided with an enlarged bearing 37 to engage the tubular knob-spindle and center it therein in an obvious manner. A second locking-spindle member 38 is located within the knob-spindle member 11 and is conveniently provided with an enlarged bearing, as 39, to engage therewith at one end and is connected, as at 40, with the slidable leaf 26, being provided at its other end with another enlarged bearing, as 41, suitably notched or otherwise shaped, as at 42, for engagement with a key.

The knob 13 is suitably apertured, as at 43, for the insertion of a key 44 to engage with the locking-spindle member 38, as in Fig. 2, and the outer end of the knob-spindle member 11 is suitably shaped, as at 45, to permit of the ready insertion of said key. A depending guard, as 46, is conveniently arranged above the key-aperture 43 upon the inside of the knob 13, and keyhole-plate 47 is pivoted within the knob, as at 48, and arranged to normally cover the key hole or aperture from the inside. A suitable ward, as 49, is pivoted, as at 50, to a support within the knob and is conveniently held up at one end by a spring 51 in such a manner as to be actuated by the insertion of the end of a foreign key and obstruct the entrance of the same into the knob.

As shown in the drawings, the cam-disk 27 is concaved next to the lock-frame and has a bearing, as at 52, upon the end of the knob-spindle bearing 9, and is further provided with an annular shoulder, as 53, to form a bearing for an extension from the outside of the knob 12, which extension bears against this shoulder 53, holding the finger-piece against, in this embodiment, the end of the spindle-bearing.

The operation of my improved lock is as follows: Assuming, first, that the parts are in the relative positions shown in Fig. 1 of the drawings, in which the mechanism is in condition for operation by the knob upon either side of the door, and that it is desired to lock the mechanism against operation from the outside, the operator simply rotates the cam-disk 27, so as to move the cam-face 29 past the pin 32, and thereby adjust said pin longitudinally in the slot 34 in the knob-spindle member 10, a distance corresponding to the incline of said cam, this operation serving to retract the locking-spindle member 33 and thereby withdraw the slidable leaf 26 out of engagement with the slots 25 in the inner end of the knob-spindle member 11. This operation will obviously free the knob-spindle member 11 and knob 13 for rotation without effect upon the bolt-actuating mechanism, in which condition the mechanism will be securely locked against operation by the knob upon the outside of the door without the use of a key, although in condition for operation by the knob upon the inside of the door. If it is desired to enter by means of a key, the same may be inserted through the knob 13 and knob-spindle member 11 and into engagement with the locking-spindle member 38, when by a rotation of the key or the key and the knob 13 the spindle member 38 will be given a partial rotation and the leaf 26 thereby rotated to retract the bolt, the spindle members 33 and 10 also rotating at the same time. When the key is withdrawn, the mechanism will still remain locked against operation by the outer knob. If, now, it is desired to set the mechanism for operation by either knob, the operator partially rotates the cam-disk 27 in a direction opposite from that previously described, so as to permit the spring 36 to press the spindle members 33 and 38 outward and again bring the slidable leaf 26 into operative engagement with the slots 25 in the spindle member 11, when the mechanism will again be in condition for operation by either knob.

It will be observed by reference to Fig. 1 of the drawings that the transverse slot in the cam sleeve or projection 28 is made of generally triangular contour, with its outer marginal edge parallel with a plane of rotation of the knob.

By means of the finger-piece and cam-face thereon the leaf 26 may be moved into engagement with the end of the outer spindle, regardless of the particular position of the outer knob and spindle member 11, and if the slots 25 in the end of the latter should not be at the time of adjustment of the cam in line with the slidable leaf 26 the pin 32 will not be moved in the slot 34 in the spindle member 10, but will rest against or adjacent to the outer margin of the cam-slot until such time as the outer knob is partially rotated, when the spring 36 will, as soon as the slots 25 come into line with the leaf 26, project the locking-spindle outward and carry said leaf into engagement with said slots, thereby engaging the mechanism with the outer knob.

It will thus be seen that by the foregoing construction I am enabled to provide a very simple, compact, and strong form of lock which may be readily adjusted so as to disconnect one knob and the corresponding spindle member from engagement with the bolt-retracting mechanism and to readily reëngage said parts when desired, while by the use of a suitable key the mechanism may be operated from the outside while the outer knob is disconnected from the bolt-retracting mechanism.

My improved lock, while being simple, strong, durable, and compact, contains no intricate or complicated parts liable to get out of order and is at all times positive and certain in its operation, forming a very satisfactory fastening for doors.

Some of the parts herein shown are broadly claimed in my previous application, Serial No. 698,371, renewed December 5, 1898.

It will be obvious that many changes may be made in the construction herein disclosed without departing from the spirit of my invention.

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

1. In a lock in combination, latch mechanism embracing a latch bolt or head, a plurality of rotatable spindles, bolt-actuating means adapted to be operated thereby to move said bolt, mechanism to release one of said spindles from operative relation to said bolt-actuating means and allow it to idly move, but not the other of said spindles, said mechanism extending transversely through and outside of said second spindle inward from the end thereof.

2. A lock comprising a latch-bolt, a spindle adapted to actuate said bolt and consisting of two independent members, a device to normally lock said members together, and means carried by one spindle member for moving said device relatively to said spindle and thereby preventing the opposite spindle member from operating said bolt or for locking both spindle members together.

3. A lock comprising a latch-bolt, a spindle carrying means extending outside said spindle laterally of the axis of the same and adapted to actuate said bolt, said spindle consisting of a plurality of independent members, one of said members being chambered, a device, carried by said chambered spindle member and adjustable from its side of the lock, connected with said bolt-actuating means to move the same and lock both spindle members together or to free the opposite spindle member from operative relation to said bolt.

4. A lock comprising a latch-bolt, a spindle consisting of a plurality of independent members, a roll-back to actuate said bolt normally connected with both said members, and means carried by one of said members adapted to move said roll-back out of operative engagement with the other member.

5. In a lock in combination latch mechanism, spindles extending thereto, a roll-back connected to one of said spindles and extending outside thereof transversely of the axis of the same to operate said latch mechanism, said roll-back being movable so as to disconnect the same from said spindle, a device extending outside of said mechanism on the same side of said lock as the opposite spindle and adapted to move said roll-back and thereby release said first spindle from operative connection with said latch mechanism.

6. In a device of the character described in combination, latch mechanism, spindle members extending therefrom adapted to operate the same, a hollow knob carried by one of said spindle members, means carried by said spindle adapted to prevent the other spindle from operating the said locking mechanism and having a projection into said hollow knob, a movable finger-piece between said hollow knob and locking mechanism and having a projection extending outward longitudinally of said spindle and inclosed by said hollow knob and carrying a part within said hollow knob to engage said projection to operate the same.

7. In combination, latch mechanism, a knob-spindle carrying a hollowed knob, movable means within said spindle having an extension into said hollowed knob, a rotatable finger-piece carried outside of said spindle between said knob and latch mechanism and having an outward projection into and inclosed by said hollowed knob, said projection carrying a cam-face adapted to contact with and move said extension.

8. In combination, a hollow spindle-bearing, a spindle therein carrying a hollowed knob, a rotatable finger-piece having a projection into said hollowed knob, said finger-piece held against said bearing by an extension from the outside of said knob.

9. In combination a hollow spindle-bearing, a spindle therein carrying a hollowed knob, a rotatable finger-piece, said finger-piece held against said bearing by an extension from the outside of said knob.

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

BYRON PHELPS.

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