

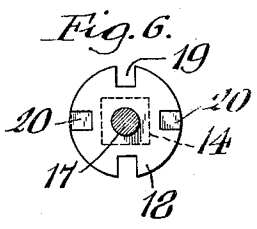
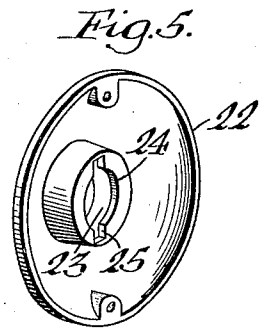
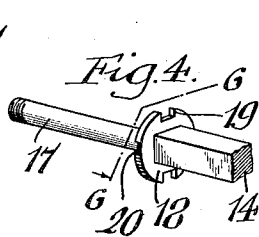
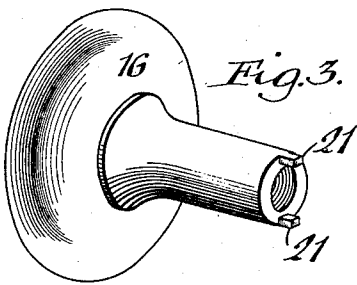
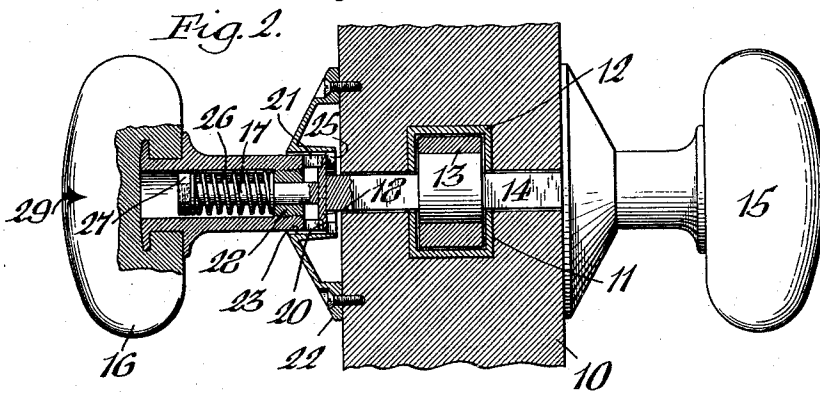
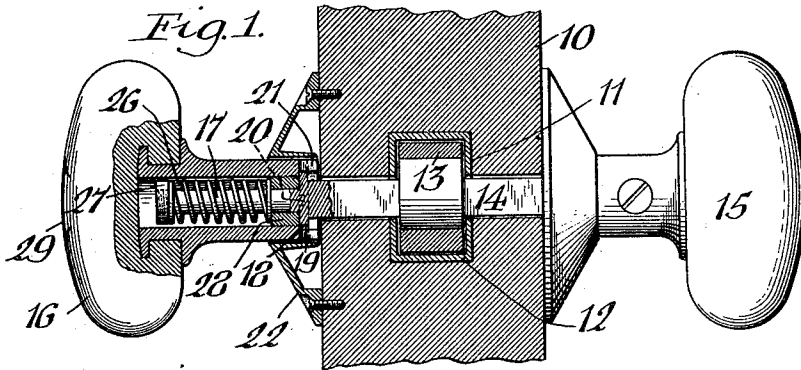
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DOORLATCH

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UNITED STATES PATENT OFFICE

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DOORLATCH

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This invention relates to certain new and useful improvements in door latches.

Its chief object is the provision of means controlled by the door-knob for maintaining the latch-bolt in its projected position, whereby the door may be locked through the medium of the knob-actuated latch-bolt without the use of keys or other separate locking mechanism.

Another object of the invention is to provide a knob-actuated latch of this character, which is simple, compact and inexpensive in construction, which is reliable, and positive in operation, and which may be readily applied to existing doors.

In the accompanying drawings:—

Figure 1 is a cross section of a door showing my improved latch-control mechanism applied thereto, the parts being in position to hold the latch-bolt in its projected position. Figure 2 is a view similar to Figure 1, but showing the parts of the mechanism in their released position to permit movement of the latch-bolt. Figures 3, 4 and 5 are perspective views of the door-knob, the latch-bolt actuating spindle (fragmentary), and the face-plate for the door. Figure 6 is an enlarged cross section taken substantially in the plane of line 6—6, Figure 4.

Similar characters of reference indicate corresponding parts throughout the several views.

This improved latch has been designed primarily for interior doors of homes, screen doors and the like, where it is desired to latch the same from the inside of the room and thus prevent others from gaining entrance thereto. To this end, my device is controlled by and is a self-contained part of the door-knob, the latch-bolt being free for actuation when the knob is in one position and locked in its projected or thrown position when the knob is in another position.

Referring now to the drawings, 10 indicates a swinging door having a mortise 11 therein containing the casing 12 of an ordinary bolt-type of door-latch, the bolt being indicated at 13 and actuated by the customary spindle or shaft 14 through the medium of one or the other of the door-knobs 15, 16 ap-

plied to opposite ends of the spindle. The latch-bolt shown is of the spring-pressed type which permits the door to close and latch automatically and is dependent on the turning of the knob to effect its opening. The knob 15 is fixed on the outer end of the spindle, while the knob 16 is movably mounted on its inner end to be coupled therewith to actuate the bolt-spindle or to assume a locked position for preventing turning of the spindle to unlatch the bolt.

The inner end of the spindle 14 terminates beyond the corresponding side of the door in a round portion 17 and at the junction of the latter with the remaining square portion of said spindle is a collar 18 having a pair of diametrically-disposed radial notches 19 and a pair of radial recesses or grooves 20 arranged at substantially right angles to the notches and comparatively shallow. These recesses are formed in that face thereof opposite the door-knob 16, which has a pair of outwardly-facing lugs or teeth 21 for interlocking engagement with either set of notches or recesses. Secured to the inner side of the door about the spindle 14 is a face-plate 22 containing a socket 23 for receiving the inner shank portion of the door-knob 16, as seen in Figures 1 and 2, said socket terminating in an inwardly-directed annular flange 24 having a pair of diametrically disposed notches 25. When the bolt 13 is in its projected or latched position, the notches 19 of the spindle-collar 18 are disposed opposite or in line with the companion notches 25 in the face-plate.

The door-knob 16 is mounted on the round portion 17 of the spindle to turn thereon and move lengthwise thereof, and a spring 26 applied to such spindle-portion and interposed between a nut 27 on the latter and a collar 28 threaded into the shank of the knob serves to constantly urge the knob toward the door to bring its teeth 21 into register with either the notches 19 or recesses 20 in the collar 18.

In Figure 2 is shown the position of the parts when the latch-bolt 13 is free to function as a customary knob-actuated latch. In such position, the knob 16 is in its rearward

position on the spindle 14 with its teeth 21 engaging the shallow recesses 20 in the collar 18, thereby interlocking the knob with the spindle, so that as the knob is turned the bolt will be accordingly projected or retracted, as with the ordinary type of door-latch. When it is desired to latch the door from the inside and prevent entrance to the room from the outside, the spindle 14 is locked against turning, when the bolt is projected, by turning the knob 16 a quarter of a turn. This releases the knob-teeth 21 from the recesses 20 and brings them into register with the notches 19 in the spindle-collar 18, whereupon the spring 26 forces the knob toward the door to bring the knob-teeth into engagement with the alining notches 25 in the face-plate. Thus, the spindle is positively held against turning and door is firmly locked. When the occupant of the room desires to open the door, he pulls on the knob 16 to release its teeth from engagement with the pairs of notches 19, 25 and gives it a quarter of a turn to bring said teeth into engagement with the recesses 20.

If desired, the knob 16 may have an arrow 29 or other suitable indicator to serve as a tell-tale for predetermining its position. In the drawings, the vertical position of the arrow indicates that the bolt 13 is locked in its projected position, while the horizontal position thereof indicates the released position.

I claim as my invention:—

1. A door latch, comprising a bolt-actuating spindle having knobs thereon, one of said knobs being movable relatively to said spindle and having a locking element thereon, and complementary locking means applied to the spindle and to the door, said knob locking element being engageable with one of said locking means in one position of the knob and with both of said locking means in its other position.

2. A door latch, comprising a bolt-actuating spindle having knobs thereon, one of said knobs being movable relatively to said spindle, a collar on the spindle having radial notches therein, a face-plate adapted for attachment to the door and through which said spindle passes, said plate having a notch therein, and a locking tooth on said movable knob arranged to interlock in one position with one of said collar-notches and in another position with the other of said collar-notches and said face-plate notch.

3. A door latch, comprising a bolt-actuating spindle having knobs thereon, one of said knobs being movable relatively to said spindle, a collar on the spindle having radial notches therein, a face-plate adapted for attachment to the door and through which said spindle passes, said plate having a notch therein, a locking tooth on said movable knob arranged to interlock in one position with one

of said collar-notches and in another position with the other of said collar-notches and said face-plate notch, and means for yieldingly urging said movable knob in a direction to bring its tooth into engagement with said notches, respectively.

4. A door latch, comprising a bolt-actuating spindle having knobs at its ends and a collar intermediate its ends, one of said knobs being movable relatively to the spindle and having a pair of teeth projecting therefrom in opposing relation to the spindle-collar, the latter having a pair of radial peripheral notches and a pair of radial recesses in its inner face for receiving said teeth, and a face-plate adapted for attachment to the door and through which said spindle is adapted to extend, said face-plate having a pair of radial notches therein and with which the spindle-collar notches are adapted to register in one position of the spindle, the knob-teeth being engageable with the collar-recesses in one position of the movable knob and with the collar-notches and face-plate notches in the other position thereof.

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