D. BORLAND.

KNOB SPINDLE FASTENER.

APPLICATION FILED NOV. 24, 1914.

1,192,269.

Patented July 25, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

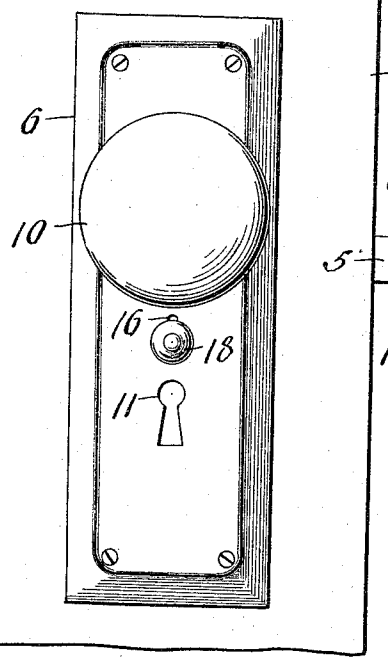


Fig. 2.

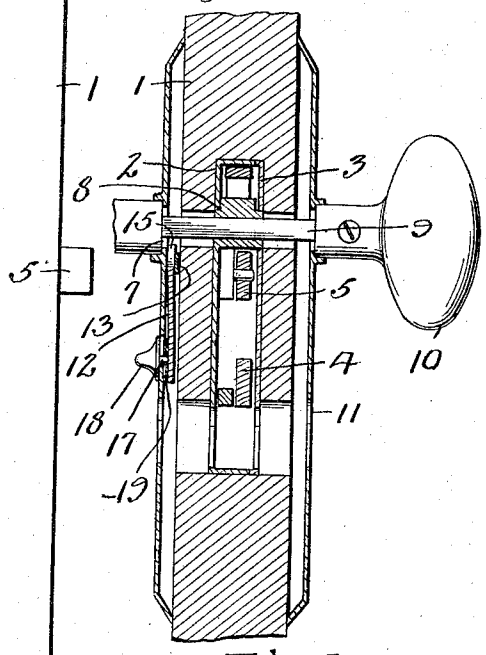


Fig. 4.

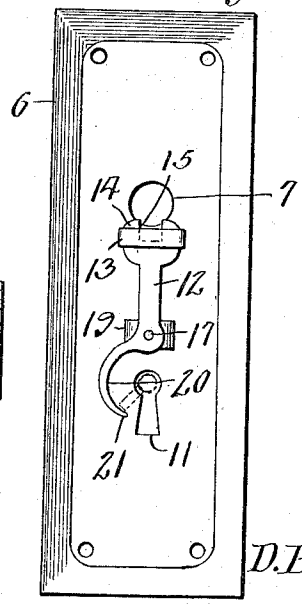
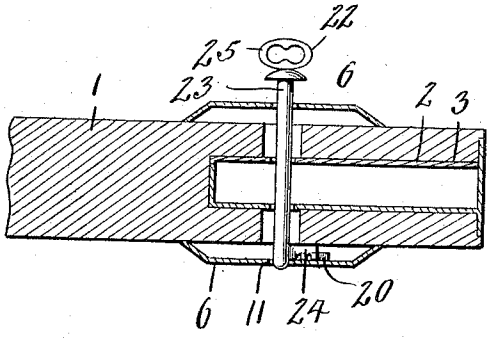


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

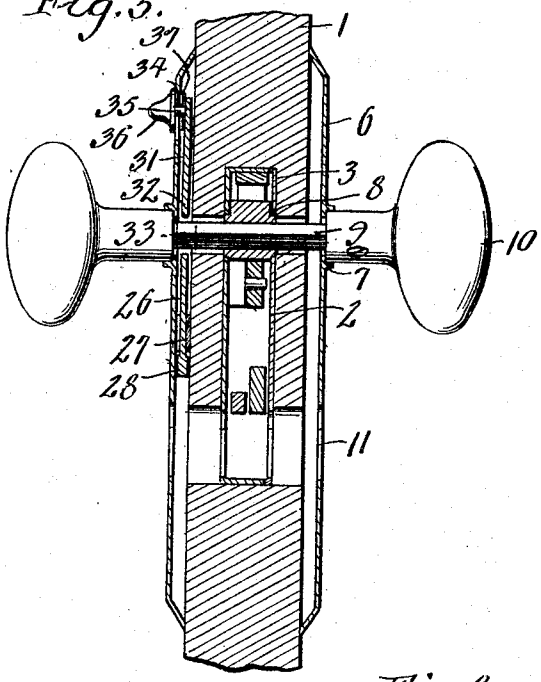


Fig. 6.

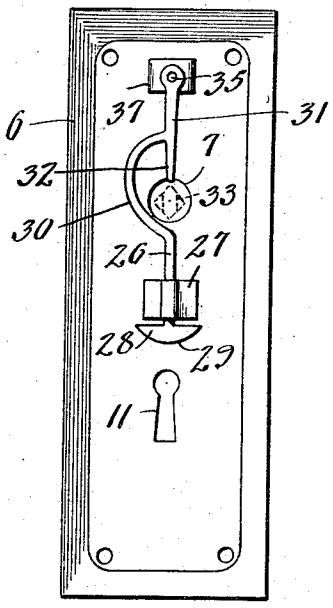


Fig. 8.

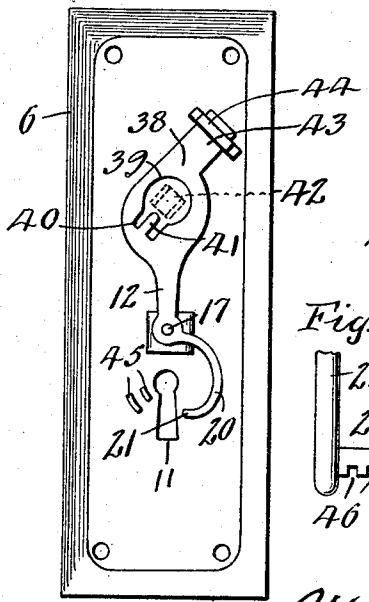


Fig. 7.

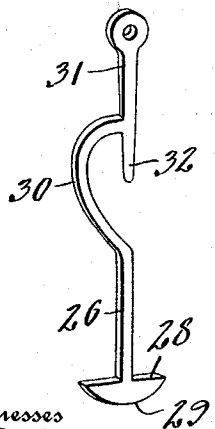


Fig. 9.

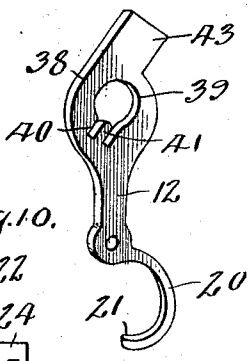


Fig. 10.

Witnesses

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UNITED STATES PATENT OFFICE.

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KNOB-SPINDLE FASTENER.

1,192,269. Specification of Letters Patent. Patented July 25, 1916.

Application filed November 24, 1914. Serial No. 873,782.

To all whom it may concern:

Be it known that I, DELOSS BORLAND, a citizen of the United States of America, residing at Charleston, in the county of Tallahatchie and State of Mississippi, have invented new and useful Improvements in Knob-Spindle Fasteners, of which the following is a specification.

This invention relates to improvements in combined locks and latches for doors and has particular application to means for holding the latching bolt against movement to retracted position under the action of the knob spindle.

In carrying out the present invention, it is my purpose to provide means whereby the knob spindle controlling the latching bolt of a combined lock and latch may be held against turning movement to actuate the latching bolt to retracted position from the outer side of the door and wherein the knob spindle of the latching bolt may be relieved of the influence of said means from the outer surface of the door through the agency of a key so that a person on the outer side of the door equipped with the key may open the door subsequent to the latching thereof.

It is also my purpose to improve and simplify the general construction of devices of the class described and to provide a device which may be readily applied to any type of door lock now in use.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claim.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of a door provided with a lock equipped with a device constructed in accordance with the present invention. Fig. 2 is a vertical sectional view therethrough. Fig. 3 is a horizontal sectional view through the same showing the key in position to release the knob spindle. Fig. 4 is a view in side elevation of the inner side of the escutcheon plate carrying the latching device for the knob spindle. Fig. 5 is a vertical sectional view showing a modified form of the invention. Fig. 6 is a view in elevation of the inner side of the escutcheon plate carrying the modified form of the invention. Fig. 7 is a perspective view of the device shown in Figs. 5 and 6 removed from the escutcheon plate. Fig. 8 is a view in elevation of the inner side of the escutcheon plate showing a further modified form of the invention. Fig. 9 is a perspective view of the device shown in Fig. 8 removed from the escutcheon plate. Fig. 10 is a fragmentary side elevation of the key.

Referring now to the drawings in detail, 1 designates a portion of the door at the forward edge thereof, such portion being formed with a mortise 2 opening onto the forward edge and seated within the mortise 2 is an appropriate form of combined lock and latch 3 embodying the usual locking bolt 4 capable of sliding movement to projected and retracted positions under the action of a key, and a latching bolt 5 adapted for sliding movement to projected and retracted positions, the outer ends of the bolts 4 and 5 being movable into openings formed in the door jamb, as usual.

Suitably fastened to the inner and outer surfaces of the door are escutcheon plates 6 respectively formed, adjacent to the upper ends thereof, with openings 7 alining with openings 8 in the casing of the lock 3 and passed through these alining openings and the operating device of the latching bolt is a knob spindle 9 having the inner and outer ends thereof provided with the usual knobs 10. Also formed in the escutcheon plates 6 below the openings 7 therein are key holes 11 alining with each other and with similar holes formed in the lock casing so that a key may be introduced in the lock to actuate the locking bolt 5.

In accordance with my present invention, the device for locking the knob spindle against turning movement is carried by the escutcheon plate on the inner side of the door and comprises a vertical bar 12 mounted within a guide strap 13 secured to the inner face of the escutcheon plate. This bar 12 is capable of vertical sliding movement along the inner face of the particular escutcheon plate and has the upper end thereof enlarged in cross dimension to provide a head 14 disposed adjacent to the spindle opening in the escutcheon plate and formed with a non-circular recess 15 corresponding in shape to that of the knob spindle and adapted to engage the latter when the bar is moved upwardly. Formed in the escutcheon plate adjacent to the lower end of the bar 12 is a vertical slot 16 and projecting through the slot 16 is a pin 17 having the in-

ner end thereof secured within an aperture in the bar and the outer end provided with a thumb piece 18, and surrounding the pin 17 between the bar 12 and the escutcheon plate is a leaf spring 19 acting to hold the bar in elevated and lowered position.

In practice, when it is desired to lock the knob spindle against rotation so that the latching bolt cannot be retracted from the outer side of the door, the pin 17 is moved upwardly within the slot 16 under the action of the thumb piece 18 and the recess 15 encircles the knob spindle and so holds the latter against rotation.

In order that the bar 12 may be moved downwardly from the outer side of the door so as to release the knob spindle, a finger 20 is connected to the lower end of the bar 12 and extends downwardly therefrom and has the lower extremity formed with an offset portion 21 disposed adjacent to the key hole in the escutcheon plate.

22 designates a key comprising a shank 23 of a length substantially equal to the thickness of the door and having a lug 24 formed on one end thereof extending laterally therefrom and the opposite end formed with a manipulating head 25. When the bar 12 is in elevated position, the offset 21 of the finger 20 is disposed adjacent to the upper end of the key hole slot in the escutcheon plate carrying the bar and when it is desired to lower the bar 12 under the action of the key 22, the shank 23 of the key is passed through the alining key holes so that the lug end of the key is disposed in proximity to the offset 21. The key shank is now rotated under the action of the head 25 and in the rotation of the shank the lug 24 engages the offset 21 and moves the latter downwardly, thereby withdrawing the head 14 from engagement with the knob spindle so that the latter may be rotated and the latching bolt retracted to open the door.

In the modified form of the invention illustrated in Figs. 5, 6 and 7, the device comprises a stem 26 mounted within a guide strap 27 secured to the inner face of the escutcheon plate on the inner side of the door below the spindle opening in said plate. This stem 26 is capable of vertical sliding movement relatively to the escutcheon plate and has the lower end thereof provided with a transversely extending head 28 having the lower surface thereof curved longitudinally as at 29 and adapted to move into proximity to the key hole in the escutcheon plate in the downward movement of the stem. The upper end of the stem 26 is curved as at 30 so as to extend around the spindle opening in the escutcheon plate and the extremity of the curved end portion terminates in vertical alinement with the straight portion of the stem, as clearly illustrated in Fig. 6 of the drawings. Formed on the upper extremity of the stem is a vertical bar 31 having the lower end thereof pointed as at 32 and adapted to enter an opening 33 in the knob spindle. Formed in the escutcheon plate immediately adjacent to the upper end of the bar 31 is a slot 34 and passed through the slot 34 is a pin 35 having the inner end thereof secured within a recess formed in the adjacent extremity of the bar 31 and the outer end provided with a thumb piece 36. A leaf spring 37 surrounds the pin 35 between the bar and the inner face of the escutcheon plate and acts to hold the bar in elevated and lowered position.

When it is desired to lock the latching bolt of the door lock against movement to retracted position under the action of the knob spindle, the pin 35 is forced downwardly within the slot 34 under the action of the thumb piece 36, thereby lowering the bar 31 and engaging the pointed end 32 thereof in the opening 33 in the knob spindle whereby the latter is locked against turning movement. In the downward movement of the bar 31 the stem 26 is similarly moved, thereby moving the head 25 into proximity to the key hole. To relieve the knob spindle of the influence of the bar 31 from the outer side of the door, the shank 23 of the key 22 is passed through the alining key holes in the outer escutcheon plate and the side walls of the lock casing and when the lug end of the key shank is adjacent to the head 28 on the stem 26, the key is rotated, thereby engaging the lug with the curved edge of the head and elevating the latter and the stem and bar.

In the modified form shown in Figs. 8 and 9 of the drawings, I have illustrated a construction somewhat similar to the preferred form of the invention, but in this instance, the upper end of the bar 12 is formed with an elongated head plate 38 disposed at an obtuse angle to the bar 12 and formed with a partially circular opening 39 through which the knob spindle 9 is passed, and a non-circular opening 40 contiguous to the opening 39 and disposed below the latter and opening thereinto. This non-circular opening 40 corresponds in shape to the cross sectional configuration of the knob spindle 9 and formed on the end wall of the opening 40 and extending into the latter is a pointed lug 41 adapted to enter an opening 42 formed in the adjacent portion of the knob spindle, when the bar 12 is moved upwardly. The upper portion of the head plate 38 is formed with an outwardly extending guide finger 43 disposed in a plane coincident with that of the head plate and slidably mounted within a guide strap 44 appropriately fastened to the adjacent portion of the escutcheon plate 6. In this form of the invention, when the bar 12 is elevated under the action of the thumb

piece 18 as previously described, the head plate 38 moves in a plane diagonally to the bar and the non-circular opening 40 surrounds the adjacent portion of the knob spindle, while the lug 41 enters the opening 42 in the knob spindle, thereby effectively latching the knob spindle against turning movement under the action of the knobs. On the other hand, when the direction of movement of the bar 12 is reversed, the plate 38 is moved in the opposite direction and the lug 31 withdrawn from the opening 42, while the opening 39 surrounds the knob spindle, thereby enabling the latter to be freely rotated.

If desired, lugs 45 may be secured to the inner surface of the escutcheon plate 6 adjacent to the key hole opening 11 in the path of movement of the lug 24 of the key 22 and the lug 24 of the key 22 formed with recesses 46 corresponding to the lugs 45 and adapted to receive the latter when the key is inserted in the key hole to relieve the knob spindle of the influence of the plate 38 from the outside of the door. By means of the lug 45, it will be seen that the latching device will respond only to the particular key, the lugs 45 preventing turning movement of keys other than those formed with recesses corresponding with such lugs.

From the foregoing description taken in connection with the accompanying drawings, the construction, mode of operation and manner of employing my invention will be readily apparent. It will be seen that I have provided a device whereby the knob spindles of door locks may be locked against turning movement so that the latching bolt may be held in projected position.

While I have herein shown and described certain preferred forms of my invention by way of illustration, I wish it to be understood that the invention is not limited to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claim without departing from the spirit of the invention.

I claim:

The combination with the knob spindle of a door latch, of a vertically movable bar adapted to engage said spindle to hold the latter against turning movement, a strap at one end of the bar for holding the latter in position and guiding the same in its movement, means at the other end of the bar for sliding the same to release and engage the knob spindle, and means formed on one end of said bar and having a curved edge adapted to receive a key whereby the bar may be actuated independently of said means.

In testimony whereof I affix my signature in presence of two witnesses.

DELOSS BORLAND.

Witnesses:

BOB PARKER,

B. G. SANDERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."