Feb. 13, 1945. W. R. SCHLAGE 2,369,494

DOOR KNOB FASTENER

Original Filed March 12, 1941

Fig. 1.

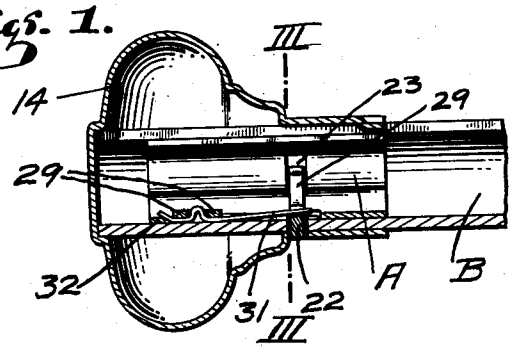


Fig. 3.

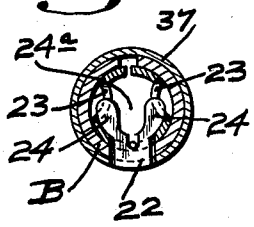


Fig. 2.

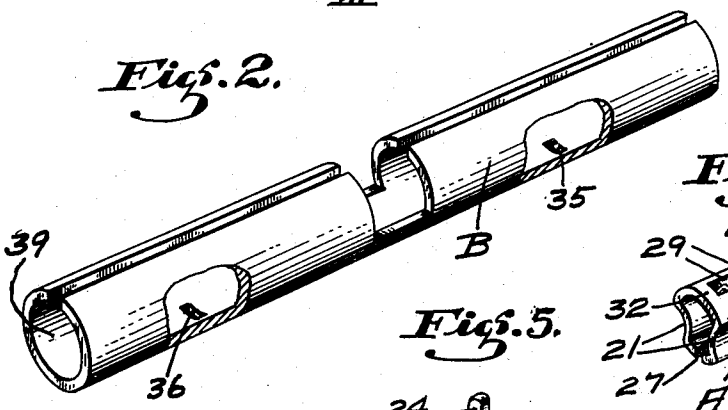


Fig. 6.

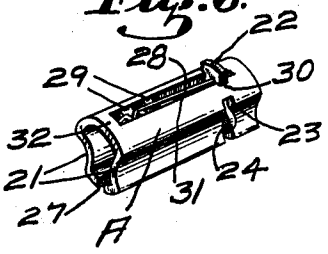


Fig. 5.

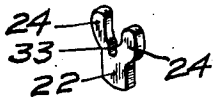


Fig. 4.

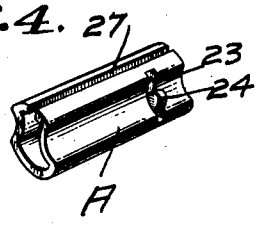
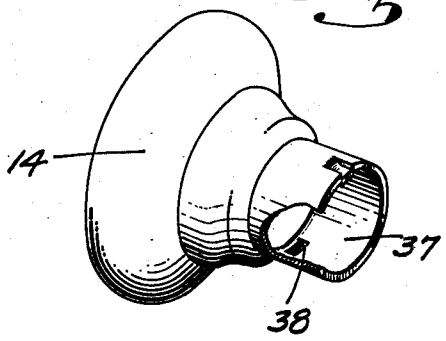


Fig. 7.



INVENTOR.
Walter R. Schlage.

BY
Thomas Castberg.
ATTORNEY.

Patented Feb. 13, 1945 2,369,494

UNITED STATES PATENT OFFICE

2,369,494

DOORKNOB FASTENER

Walter R. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, San Francisco, Calif., a corporation of California

Substituted for abandoned application Serial No. 382,876, March 12, 1941. This application October 6, 1943, Serial No. 505,259. In Canada February 10, 1943

1 Claim. (Cl. 292—352)

This invention relates to a door knob fastener, and especially to improvements in the type of knob fastener shown in my former Patents No. 1,621,174 and No. 2,062,765. The present application is a substitute for my former abandoned application entitled "Door knob fastener," filed March 12, 1941, Serial Number 382,876.

In the above mentioned patents a knob latch or fastener is shown in which the fastener is mounted directly in a hollow or tubular knob spindle. This is objectionable in certain instances, as a fastener in the form of a plate-shaped latch extends across the interior of the hollow spindle and forms an obstruction which prevents, or at least complicates, the operation of inserting certain mechanism. Also, the construction is costly, as the spindle is formed from fairly heavy metal, and as it must be cut, punched and formed to receive the fastener and the spring whereby it is actuated, it requires comparatively heavy and therefore costly dies to perform these operations.

The object of the present invention is to provide a unit containing a fastener and actuating mechanism which is insertable in the hollow spindle of a lock after other mechanism to be contained or housed therein has been placed and assembled; to provide a self-contained unit of the character described which is provided with a fastener and an actuating spring; and further, to provide a self-contained unit which may be cheaply manufactured from comparatively light sheet metal, and which is readily inserted and positioned within a hollow spindle.

The invention is shown by way of illustration in the accompanying drawing, in which

Fig. 1 is a longitudinal vertical section of one end of a hollow spindle, showing a knob applied thereto, and the insertable fastener unit whereby the knob is secured against removal;

Fig. 2 is a perspective view of a hollow spindle, said view being partially broken away;

Fig. 3 is a cross section on line III—III of Fig. 1;

Fig. 4 is a perspective view of the insertable housing containing the type of latch or fastener shown in Fig. 5;

Fig. 5 is a perspective view of the type of latch or fastener shown in Fig. 3;

Fig. 6 is a perspective view of the housing shown in Fig. 4, but showing it right side up, said view also showing the latch or fastener in position in the housing; and

Fig. 7 is a perspective view of a door knob.

The insertable fastener unit forming the subject matter of the present application is applicable only to hollow or tubular spindles and that type is accordingly illustrated in Figs. 1 and 2 of the drawing.

The insertable unit is best illustrated in Figs. 1 to 6 inclusive. It consists of a tubular elongated housing A substantially cylindrical in shape but having its opposite sides indented as shown at 21 to form a pair of opposed guides for a latch or fastener 22. That is, the opposite sides of the housing are slotted, as indicated at 23, and wings 24 formed on the latch project into said slots and thus are guided thereby. The housing is formed from thin sheet metal by punch and forming dies, and a longitudinal slot 27 is left after the forming operation has been completed. This slot provides a certain amount of resiliency, which permits ready insertion of the housing A into the end of the spindle B, and this resiliency also frictionally retains the housing within the spindle until it is permanently located.

The housing is also provided with a second longitudinally extending slot 28 having two crossbars 29 formed adjacent one end thereof to provide a spring supporting saddle (see Figs. 1 and 6). A cross-slot 30 is formed at the opposite end, and this forms a guide for the latch 22, and also permits it to project through and beyond the housing A. A spring wire 31 is held and supported at one end by the spring saddle or the crossbars 29 and a shoulder 32, while the other end of the spring engages a notch 33 in the latch, and thereby functions to maintain the latch in a projected position.

By referring to Fig. 2 it will be noted that a pair of cross-slots 35 and 36 are formed adjacent each end of the spindle B, and by referring to Figs. 1 and 7, it will be noted that the knob has a shank 37, and that the shank is cross-slotted as at 38 to form a keeper.

In actual practice the self-contained unit A is inserted in the end of the spindle indicated at 39, by pinching the sides sufficiently to substantially close the longitudinal slot 27. This reduces its exterior diameter sufficiently to permit it to be freely inserted and pushed inwardly through the hollow spindle, and when the latch 22 comes into register with the slot 36, it will be projected therethrough by the action of the spring 31. The knob 14 may then be applied and pushed inwardly on the spindle, and when the shank strikes the projecting latch 22, it is only necessary to depress the latch so that the shank can slip over; then by further pushing the knob inwardly on the spindle, the slot 38 will register with latch, and it will be further projected, or in other words will enter the

slot 38, and will thereby secure the knob against endwise removal.

The self-contained unit indicated at A is not only desirable because of the cheapness and ease with which it can be manufactured and inserted in a spindle, but it also provides a great advantage as it permits the insertion of other mechanism in the hollow spindle prior to the application of the knobs. For instance, by referring to the type of lock shown in my former Patents No. 1,971,580 and No. 2,215,109, it will be noted that in both cases there is considerable mechanism disposed within the hollow spindle. Such mechanism may be readily installed where the removable unit A is employed. Also, by referring to Fig. 3, it will be noted that considerable space is provided between the wings 24 of the latch, as indicated at 24a; hence, it is possible to insert additional mechanism in the spindle even though the unit A has been inserted and positioned within the spindle.

While certain features of my invention have been more or less specifically described for purposes of illustration, I nevertheless wish it understood that changes may be resorted to within the scope of the appended claims.

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

A knob securing device for hollow spindles, comprising an elongated tubular member insertable in one end of a spindle, said member being indented on opposite sides, a cross slot formed in the crown of the tubular member, a pair of vertically disposed slots formed in the indented sides of the tube in alignment with the cross slot, a latch plate having one end projecting through the cross slot in the crown of the tube, a pair of guide lugs on the opposite end projecting into the vertical slots, and a spring anchored at one end in the tubular member and extending longitudinally thereof and having its opposite end extending through the latch plate normally to urge said latch plate toward latching position.

WALTER R. SCHLAGE.