June 21, 1932. W. C. DEVEREAUX 1,864,342

DOOR LOCK HANDLE ANCHORING MEANS

Filed April 7, 1930

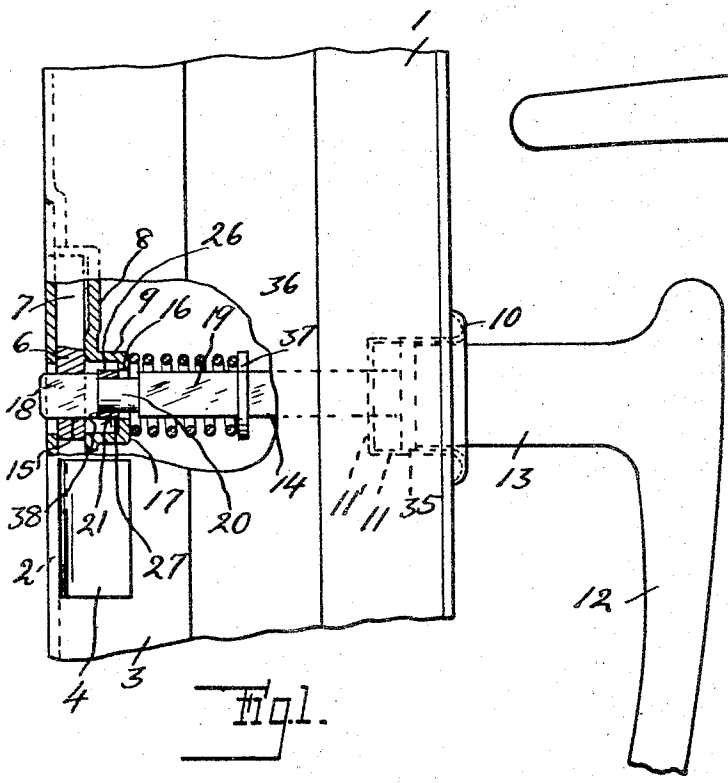


Fig. 1.

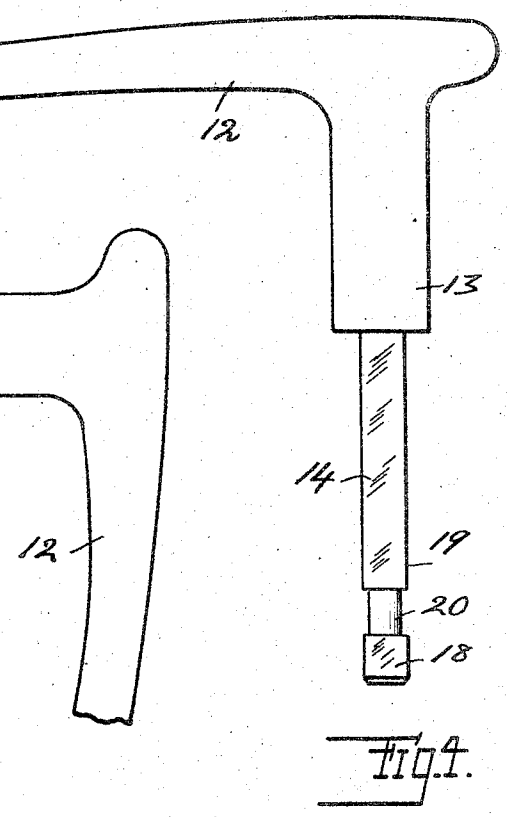


Fig. 4.

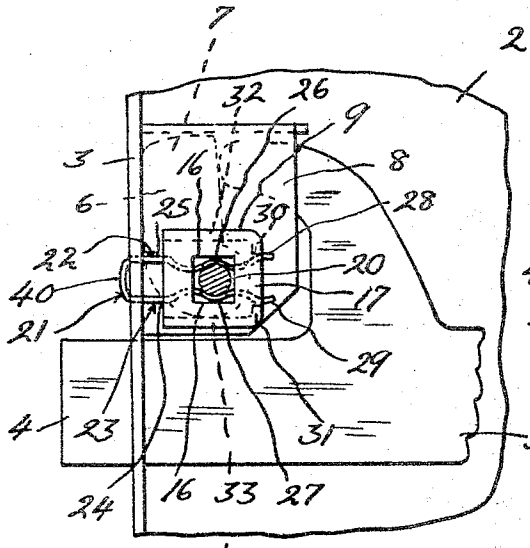


Fig. 2.

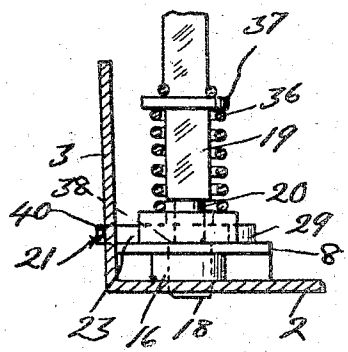


Fig. 3.

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UNITED STATES PATENT OFFICE

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DOOR LOCK HANDLE ANCHORING MEANS

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This invention relates generally to latch structures, particularly to the handle assemblies thereof, and consists of certain novel features of construction, combinations and arrangements of parts, that will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Figure 1 is a fragmentary edge elevation of a door with a latch structure embodying my invention applied thereto;

Figure 2 is a fragmentary side elevation of the structure illustrated in Figure 1;

Figure 3 is a top plan view of a portion of the structure illustrated in Figure 2;

Figure 4 is a detail view of the handle, shank and stem.

Referring now to the drawing, 1 is a door; 2 is a latch case plate secured to the inner side of the door and having a lateral flange 3 at its forward edge secured to the free edge of the door; 4 is a latch bolt extending through an opening in the flange 3 for engagement with a suitable keeper (not shown), and having a shank 5 slidably mounted on the case plate; 6 is a roll back journaled in the case plate and having an arm 7 engageable with the shank 5 to retract the bolt; 8 is a cover plate or housing for the roll back secured to the case plate 2 and flange 3 and having an inwardly offset channel portion 9; 10 is an escutcheon upon the outer side of the door and having a cup-shaped portion 11 within the door; and 12 is an operating handle having a shank 13 received within the cup-shaped portion 11 of the escutcheon, and having a stem 14 received in aligned square openings 15 and 16 respectively in the roll back 6 and in the base 17 of the offset portion 9 of the plate. As shown, the stem 14 has longitudinally spaced portions 18 and 19 respectively of square cross section and a reduced intermediate portion 20 of cylindrical formation. The square portion 18 is received within a square opening 15 in the roll back while a cylindrical portion 20 is received within the opening 16 in the base 17 of the offset portion.

In the present instance the square portion 18 of the stem 14 is detachably held in the roll back by a leaf spring 21 of substantially U configuration. As shown, the arms 22 and 23 respectively of this spring have substantially parallel portions 24 and 25, opposed arcuate portions 26 and 27, and flaring end portions 28 and 29 respectively. As shown in Figure 2, the straight portions 24 and 25 are received in suitable openings in the flange 3; the arcuate portions 26 and 27 are received between the plate 8 and base 17 of the offset portion and grip opposite sides of the reduced cylindrical portion 20 of the stem; and the flared end portions 28 and 29 engage inturned flanges 30 and 31 respectively at the inner ends of the channel sides 32 and 33 of the offset portion 9. Preferably the distance between the inturned flanges 30 and 31 and the construction and arrangement of the flared end portions 28 and 29 are such that the spring 21 and arms 24 and 25 are under tension at all times. This is important as the tension of the spring is controlled at this point and is such that the spring is held in proper assembled position and is prevented from rattling.

Preferably the handle shank 13 terminates short of the inner end 11′ of the cup-shaped portion 11 of the escutcheon and the length of the cylindrical portion 20 is greater than the width of the spring arms 22 and 23 respectively so that the shank 13 and stem 14 may be adjusted longitudinally in the cup-shaped portion 11 and roll back 6 respectively to compensate for doors of various thicknesses, and may be held in such adjusted positions by the spring 21.

A washer 35 of fibrous material having a diameter slightly larger than the diameter of the shank 13 is secured upon the stem 14 at the inner end of the shank for engagement with the cup-shaped portion 11 of the escutcheon. As shown in Figure 1, this washer fits snugly within the cup-shaped portion of the escutcheon and centers the handle shank 13 relative to said cup-shaped portion.

A coil spring 36 is sleeved upon the stem 14 between the base 16 of the offset portion and a washer 37 on the stem to hold the shoulder 38 at the inner end of the cylindrical portion 20 of the stem against the inner edges of the arcuate portions 26 and 27 of the spring

arms so that the stem is under tension when the parts are assembled.

Thus with this construction the spring 21 may be quickly inserted through the flange 3 into engagement with the cylindrical portion 20 and flanges 30 and 31 to hold the square portion 18 of the stem in the opening 15 in the roll back, or the spring 21 may be readily withdrawn from the case plate by merely inserting a tool (not shown) between the flange 3 and base 40 of the spring and pulling the latter outwardly.

What I claim as my invention is:

1. In a latch structure, a case plate having a lateral flange, a bolt retracting member carried by the case plate, a housing for the bolt retracting member also carried by the case plate, an operating member for the bolt retracting member having a portion within the bolt retracting member and having a reduced portion within the housing, and a spring extending through the lateral flange having spaced arm portions within the housing gripping the reduced portion of the operating member and having other portions engaging portions of the housing and maintaining the spring under tension.

2. In a latch structure, a rollback, a housing therefor, a stem extending transversely of the rollback, and means holding the stem in operative relation with the rollback including a spring having spaced portions gripping said stem and held under tension by a wall of the housing aforesaid.

3. In a latch structure, a case plate having a lateral flange, a stem substantially parallel to the flange, a rollback detachably receiving the stem, a cover for the rollback, and means preventing withdrawal of the stem from the rollback including a substantially U-shaped spring having the arms of the U extending through the flange, gripping the stem and held under tension by the cover plate.

In testimony whereof I affix my signature.

WILLIAM C. DEVEREAUX.