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PRIVACY LATCH SET

Filed March 7, 1955 2 Sheets-Sheet 1

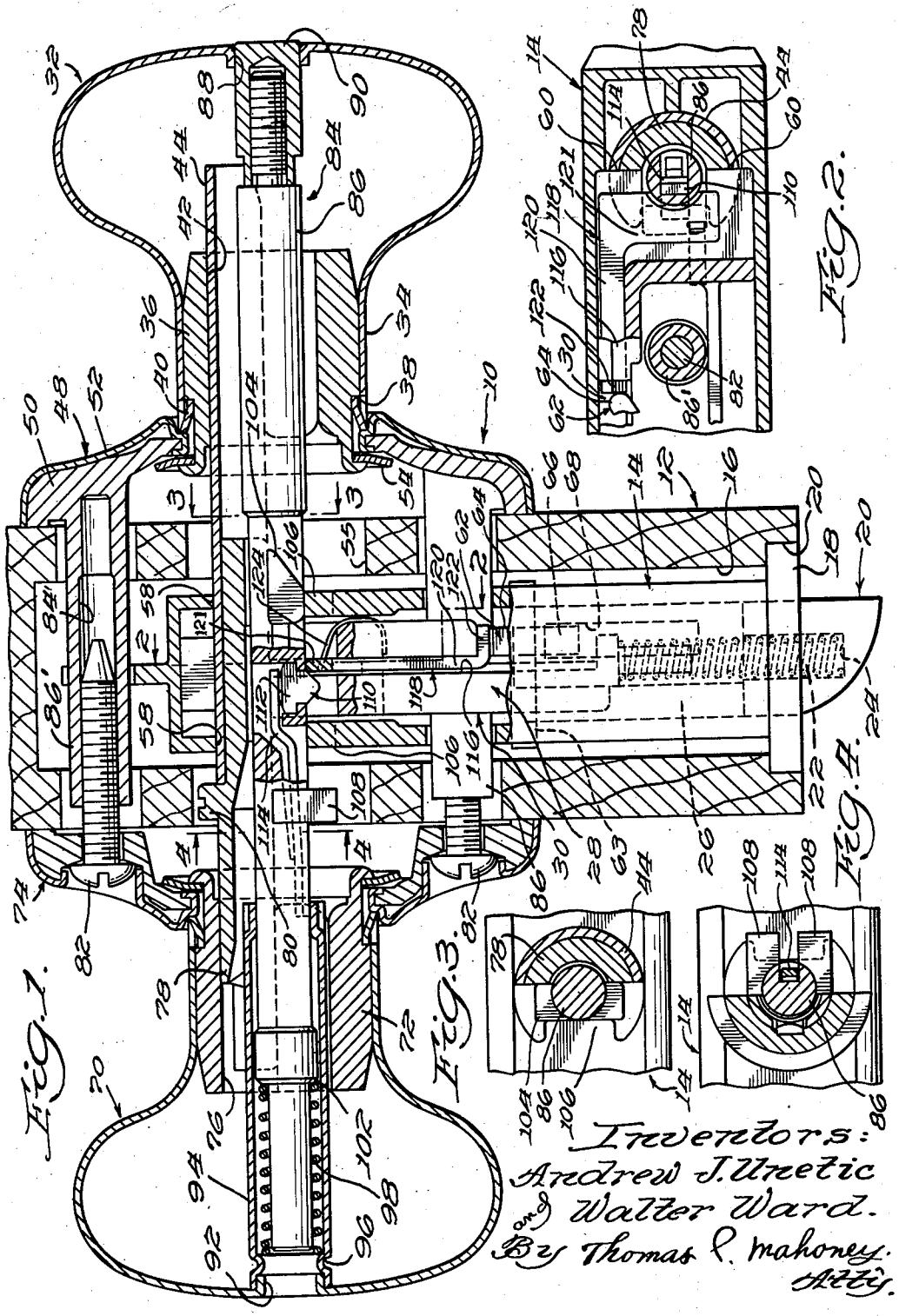


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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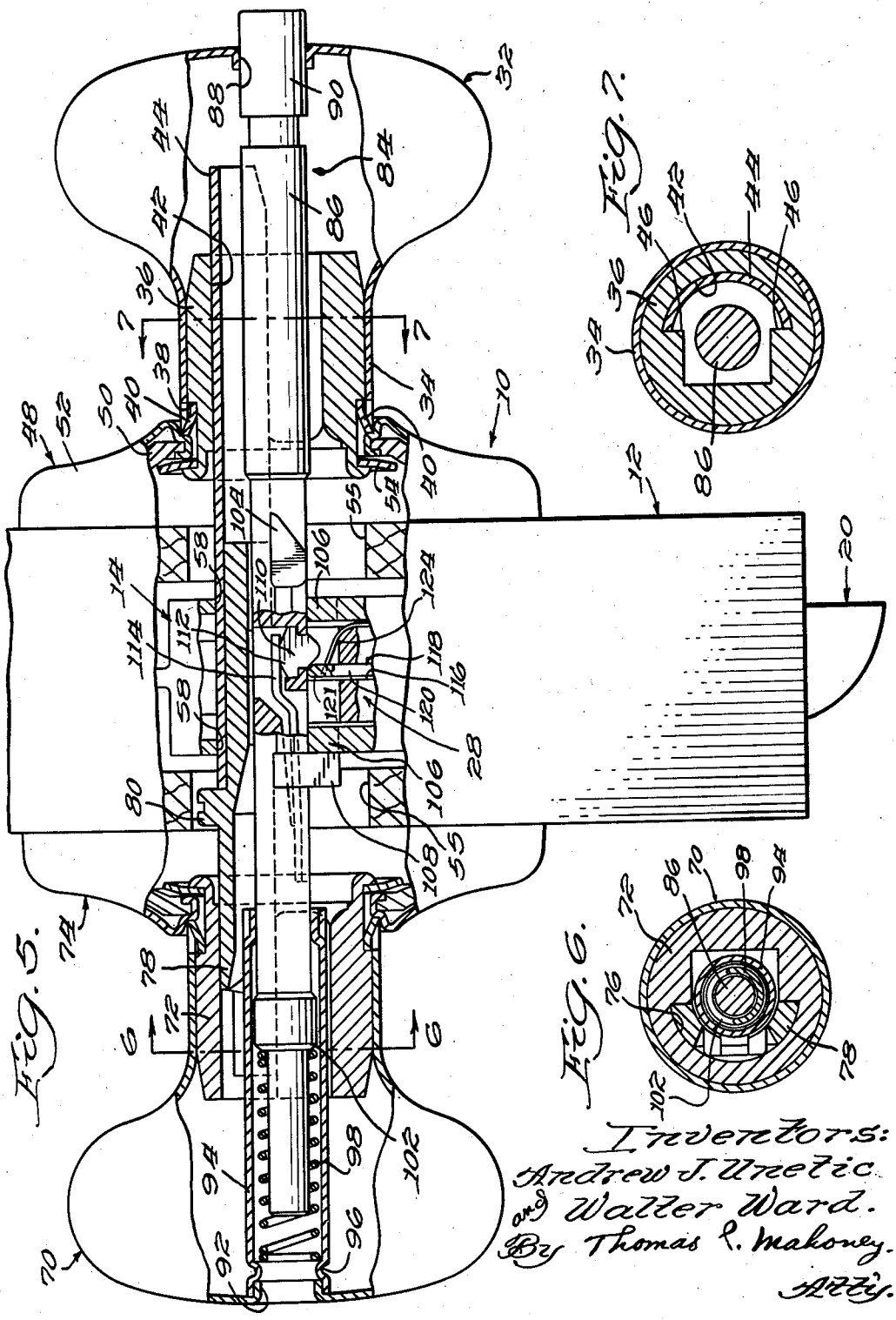


Fig. 5.

Fig. 7.

Fig. 6.

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PRIVACY LATCH SET

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6 Claims. (Cl. 292—169)

This invention relates to a privacy latch of the character generally utilized in bathrooms and bedrooms whereby the person in the bathroom or bedroom may lock the latch to prevent entry to the room from the outside. Such privacy latches do not have conventional lock means incorporated in the exterior knob or other portion thereof, but entry may be gained under emergency conditions by the utilization of an emergency release accessible from the exterior of the latch.

In some privacy latch sets, after the latch has been locked from the interior of the latch, if the person should leave the room before closing the door and should close the door after him, the door would be locked because no means is provided whereby the latch is unlocked when the bolt incorporated therein engages the strike of the door in which it is incorporated.

It is, therefore, an object of our invention to provide a privacy latch which includes both emergency release means for releasing the lock of the latch under emergency conditions and automatic release means for the lock energizable by the bolt engaging the strike with the latch in locked condition so that the possibility of an individual's inadvertently locking himself out of the room after the latch has been locked is avoided.

An additional object of our invention is the provision of a privacy latch of the aforementioned character wherein the means for energizing the privacy latch is constituted by a depressible button mounted in the inner knob of the latch, said latch also including means whereby, when the inner knob is rotated, the lock of the latch is automatically released to return the button to its first inoperative position in which it projects beyond the inner knob in which it is located.

An additional object of our invention is the provision of a privacy latch of the aforementioned character which includes a latch housing having abutment means provided thereupon and which also includes a longitudinally shiftable bar having a dogging means provided thereupon engageable with the abutment on the housing to prevent rotation of the outer spindle of the latch after the dogging of the latch to lock the same.

A further object of our invention is the provision of a privacy latch which includes a bolt and a retractor therefor, said retractor being operable by spindle means and said spindle means being dogged against operation by dogging means engageable therewith, the retractor having detent means incorporated therein to maintain the dogging means in dogging position to prevent operation of the spindle means. However, when the bolt of the latch engages a strike on a door jamb with the spindle means dogged against movement, the inward movement of the bolt in engaging the strike will cause the dogging means to be released to free the spindle means and to prevent inadvertent locking of the door in which the latch is incorporated.

Another object of our invention is the provision, in a latch of the aforementioned character, of retractor means including a retractor slide, said retractor slide incorporating a detent slide engageable with the dogging means of the latch to maintain said dogging means in dogging position, the detent slide being movable with respect to the retractor slide to release the dogging means when the bolt of the latch hits an associated strike with the latch in locked position.

Other objects and advantages of our invention will be apparent from the following specification and the accompanying drawings which are for the purpose of illustration only and in which:

Fig. 1 is a sectional view of a privacy latch incorporating the teachings of our invention;

Fig. 2 is a longitudinal sectional view taken on the broken line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken on the broken line 3—3 of Fig. 1;

Fig. 4 is a vertical sectional view taken on the broken line 4—4 of Fig. 1;

Fig. 5 is a sectional view similar to Fig. 1 but showing the dogging means of the latch in operative position;

Fig. 6 is a vertical sectional view taken on the broken line 6—6 of Fig. 5; and

Fig. 7 is a vertical sectional view taken on the broken line 7—7 of Fig. 5.

Referring to the drawings and particularly to Fig. 1 thereof, we show a privacy latch set 10 mounted in operative relationship with the edge of a door 12 and including an elongated, substantially tubular latch housing 14 located in a tubular bore 16 in the edge of the door.

The latch housing 14 is provided with a face plate 18 located in a shallow mortise 20 in the edge of the door 12 and has a reciprocable bolt 20 mounted therein for movement between extended and retracted positions. The bolt 20 is extended from the latch housing 14 by means of a compression spring 22, the forward end of which is received in a bore 24 in the bolt 20 and the rearward end of which is seated on a prong 26 provided on the forward end of a retractor slide 28 which constitutes a part of the retractor means 30 of the latch.

Mounted on the inner side of the door 12 is an inner knob 32, said knob having a hollow tubular shank 34 in which is located an insert 36 provided with an annular shoulder 38 for the reception of lances 40 punched in the tubular shank 34 to engage the shoulder 38 and cause the insert 36 and the shank 34 to rotate as a unit. The insert, as best shown in Figs. 1 and 7 of the drawings, is provided with a bore 42 for the reception of an inner half-round spindle 44, said spindle being held against rotation in said bore by the engagement of its opposite edges with shoulders 46 defining the opposite limits of said bore. Therefore, when the inner knob 32 is rotated, the insert 36 and the inner half-round spindle 44 mounted therein rotate concomitantly therewith.

The inner knob 32 is mounted for rotation in an escutcheon 48, said escutcheon consisting of an inner die-cast mount 50 and an outer rosette 52 overlying the mount 50. The inner knob 32 is retained in operative relationship with the escutcheon by means of a sheet metal washer 54 secured in the end of the insert 36. The escutcheon 48 is located in overlying relationship with a transverse opening 55 provided in the door 12 and communicating with the tubular bore 16 and the inner half-round spindle 44 extends through said opening and through openings 58 provided in the side walls of the latch housing 14. The inner half-round spindle thus has its inner extremity journaled in the openings 58 and its opposite longitudinal edges engaging the inner extremities of the retractor slide at 60, as best shown in Fig. 2 of the drawings.

Therefore, the rotation of the inner knob 32 in either direction will cause concomitant rotation of the inner

half-round spindle 44 and by virtue of the engagement of the opposite edges of said spindle with the inner extremities of the retractor slide 28 will cause the retractor slide to be moved in an outward direction against the bias of the compression spring 22. A retractor lever 62 is mounted on a pivot pin 63 for rotation by the retractor slide 28 and has one extremity 64 rotatable by said slide to cause concomitant rotation of the other extremity 66 thereof which is located in a slot 68 in the bolt 20 so that outward movement of the slide 28 will cause rotation of the other extremity 66 of the retractor lever 62 in an inward direction to retract the bolt 20 against the bias of the spring 22.

When the knob 32 is released, the spring 22 will simultaneously eject the bolt 20 from the latch housing 14 and return the retractor slide 28 and its associated retractor lever 62 together with the half-pound spindle 44 and the knob 32 to their original, inoperative positions.

An outer knob 70 is mounted upon an insert 72 for rotation in an escutcheon 74. The insert 72 is, as best shown in Figs. 1 and 6 of the drawings, provided with a bore 76 for the reception of the outer extremity of an outer half-round spindle 78, said spindle being formed, in the present instance, by die-casting and having its inner extremity disposed within and in overlapping relationship with the inner extremity of the inner half-round spindle 44, as best shown in Fig. 1 of the drawings. Rotation of the outer knob 70 will cause concomitant rotation of the outer half-round spindle 78 and simultaneous movement of the retractor slide 28 and the retractor lever 62, together with the bolt 20 associated therewith.

The outer half-round spindle 78 is, as best shown in Figs. 1 and 5 of the drawings, provided with a radially extending integral lug 80 against which the inner extremity of the inner half-round spindle 44 abuts to locate the inner extremities of the inner and outer half-round spindles 44 and 78 with respect to each other.

In order to secure the inner escutcheon 48 and the outer escutcheon 74 in operative relationship with each other, screws 82 are provided, as best shown in Fig. 1 of the drawings, for engagement with tapped bores 84' in integral sockets 86' provided on the mount 50 and extending inwardly therefrom. In this manner, the escutcheons are operatively related to the latch housing 14 and the inner and outer knobs 32 and 70 maintained in operative relationship therewith to maintain the inner and outer spindles 44 and 78 in predetermined relationship with the retractor slide 28.

Dogging means 84 is provided in the latch 10 and includes an elongated bar 86 extending through the bores in the inserts 36 and 72 and having its opposite ends terminating within the inner and outer knobs 32 and 70. The inner knob 32 is provided with a centrally located opening 88 through which extends an actuator button 90 and the outer knob 70 is provided with a similar centrally located opening 92, said opening having an elongated tubular guide 94 communicating therewith which provides a spring seat 96 adjacent said opening for a compression spring 98 whose opposite end is biased against the shoulder 102 on the elongated bar 86. Therefore, the compression spring 98 continuously biases the bar 86 in a left-hand direction, as best shown in Fig. 5 of the drawings, to project the actuating button 90 beyond the plane of the inner knob 32 through the opening 88.

The elongated bar 86 may be formed by any desired means and from any desired material, but in the present instance is fabricated by die-casting.

A dog 104 is formed on the bar 86 intermediate its ends and is engageable with an abutment 106 provided on the latch housing 14, as best shown in Figs. 1, 3, and 5 of the drawings. The normal tendency of the spring 98, as best shown in Fig. 5 of the drawings, is to shift the bar 86 to the right and to limit the extent of this movement there is provided an integral stop 108 which engages another abutment 106 identical with that previously described to limit the movement of the bar 86 by the spring 98. When so urged to the right, the dog 104 is, of course, located out of operative relationship with the abutment 106 on the housing 14 and the latch is in unlocked condition.

In order to maintain the dog 104 in operative relationship with the abutment 106 on the housing 14, as shown in Fig. 1 of the drawings, there is provided in the bar 86 a locating member 110, said locating member being constituted by a movable tongue 112 projected from a radial opening in the bar 86 by means of an elongated spring 114. In a manner to be described in greater detail below, the locating member 110 serves to maintain the bar 86 in the dogging position shown in Fig. 1 of the drawings wherein the dog 104 on said bar is juxtaposed to the abutment 106 on the side of the housing 14. When so located, as best shown in Fig. 3 of the drawings, the dog 104 is interposed between the opposite edges of the outer half-round spindle 78 to prevent rotation of said spindle by the outer knob 70 and thus prevent opening of the latch 10.

An elongated slot 116 is formed, as best shown in Figs. 1–2 and 5 of the drawings, in the retractor slide 28 and disposed in said slot for longitudinal movement with respect to said retractor slide is detent means 118. The detent means 118 includes an elongated auxiliary slide 120, said slide being provided, as best shown in Figs. 1–2 of the drawings, with a vertically oriented detent portion 121 engageable with the locating member 110 to maintain the elongated bar 86 in dogging position, as best shown in Fig. 1 of the drawings.

The outer extremity of the auxiliary slide 120 is provided with a right-angularly bent leg 122 which is interposed between the one extremity 64 of the retractor lever 62 and the adjacent surface of the retractor slide 28. Therefore, the spring force of the compression spring 22 will be imposed on the retractor lever 62 by the auxiliary slide 120 and thereby on the retractor slide 28 when the bolt 20 is in extended position. The spring force is exerted on the other extremity 66 of the retractor lever 62 through the medium of the slot 68 in the bolt 20 and the spring 22 thus serves to bias the one extremity 64 of the retractor lever 62 against the leg 122 of the auxiliary slide 120. Because of the action of the spring 22 in this manner, the auxiliary slide 120 is urged inwardly to the fullest extent to locate it and its inner detent portion 121 immediately adjacent the periphery of the elongated bar 86.

Therefore, when the actuating button 90 is depressed and the elongated bar 86 is carried to the left, as best shown in Fig. 1 of the drawings, the locating member 110 is momentarily depressed within the opening in the bar 86 since the spring 114 permits the locating member 110 to be depressed so that it can be carried beyond the inner extremity 121 of the detent means 118. Once the bar 86 is located in the dogging position in this manner, the dog 104 will be maintained in operative relationship with the abutment 106 on the side of the latch housing 14 despite the bias of the compression spring 98 until any one of three actions which will release the bar 86 takes place.

For instance, after the latch 10 has been locked in the above described manner to prevent rotation of the outer half-round spindle 78 by virtue of the interpositioning of the dog 104 between the opposite edges of said spindle and the abutment 106 on the housing 14, it is always possible for the occupant of the room to release the lock by merely rotating the inner knob 32 which carries the inner half-round spindle 44 into engagement with the inner extremities of the locking slide 28 at 60, despite the fact that the outer half-round spindle 72 can-

not be rotated. Of course, when the inner half-round spindle **44** is so rotated and the locking slide **28** moved outwardly in the latch housing **14**, the detent portion **121** is carried outwardly with the retractor slide **78** and the locating member **110** is freed therefrom to permit the spring **98** to return the bar **86** to the right, as best shown in Fig. 5 of the drawings, wherein the locating member **110** lies on the right-hand side of the detent means **118**.

In addition, if a child or other incapacitated person should be locked in a room and not have sufficient ability or knowledge to release the latch **10**, a nail, pin, or other elongated instrument can be inserted to engage the outer end of the elongated bar **86** to push the bar to the right, as viewed in the drawings, and cause the locating member **110** to ride over the detent portion **121** of the detent means **118** and thus release the dog **104** from juxtaposition to the abutment **106** on the latch housing **14** to permit the outer half-round spindle **72** to be rotated by the outer knob **70** to energize the retractor slide **28**, the retractor lever **62**, and the bolt **20** energizable thereby.

Furthermore, if an individual should leave a room with the latch locked by depressing the actuating button **90**, but not releasing the lock by the rotation of the inner knob **32**, when the bolt **20** hits the strike associated therewith, not shown, the bolt will move inwardly into the latch housing **14**. Inward movement of the bolt **20** will cause the rotation of the one extremity **64** of the retractor lever **62** in a direction away from the right-angularly bent leg **122** of the auxiliary slide **120**. When the retractor lever **62** releases the auxiliary slide **120** in this manner, a spring **124** engaged in the inner extremity of the auxiliary slide **120** will cause its outward movement in the slot **116** despite the fact that the retractor slide **28** itself is not moved and thus the locating member **110** will be released to permit the spring **98** to urge the bar **86** to the right and thus unlock the latch **10**.

After the bolt **20** is released from the strike and returns to the extended position, the one extremity **64** of the retractor lever **62** once again engages the leg **122** of the auxiliary slide **120** and returns its inner extremity into juxtaposition to the periphery of the elongated bar **86**.

We thus provide by our invention a privacy latch which is characterized by its simplicity of construction and operation and which provides for the automatic unlocking of the latch should it inadvertently be left in locked condition when the door is closed from the outside. Furthermore, the latch can also be opened, if an emergency should arise, from the exterior of the door and can, of course, be automatically unlocked by mere rotation of the inner knob after the locking of the latch.

We claim as our invention:

1. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said slide; and an auxiliary detent slide mounted in said retractor slide and having its outer end engageable by the other end of said lever to urge it inwardly in said retractor slide.

2. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said slide; an auxiliary detent slide mounted in said retractor slide and having its outer end engageable by the other end of said lever to urge it inwardly in said retractor slide; and an auxiliary spring interposed between said auxiliary and retractor slides to move said auxiliary slide outwardly in said retractor slide when said bolt is moved inwardly to release the pressure of said other end of said lever on said auxiliary slide.

3. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing; a dogging bar extending transversely of said retractor slide; a locating member mounted in said dogging bar; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said slide; and an auxiliary detent slide mounted in said retractor slide and having its outer end engageable by the other end of said lever to urge it inwardly in said retractor slide, the inner end of said auxiliary slide being engageable with said locating member to maintain said bar in a predetermined position.

4. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing; a dogging bar extending transversely of said retractor slide; a locating member mounted in said dogging bar; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said slide; an auxiliary detent slide mounted in said retractor slide and having its outer end engageable by the other end of said lever to urge it inwardly in said retractor slide, the inner end of said auxiliary slide being engageable with said locating member to maintain said bar in a predetermined position; and an auxiliary spring interposed between said auxiliary and retractor slides to move said auxiliary slide outwardly in said retractor slide when said bolt is moved inwardly to release the pressure of said other end of said lever on said auxiliary slide.

5. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing, said slide having an abutment thereupon; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said abutment; and an auxiliary detent slide mounted in said retractor slide and having its outer end disposed between said abutment and the other end of said lever to urge it inwardly in said retractor slide.

6. In a latch, the combination of: a housing; a latch bolt movable in said housing between extended and retracted positions; a retractor slide mounted in said housing, said slide having an abutment thereupon; a bolt spring interposed between said latch bolt and said retractor slide; a retractor lever having one end engageable with said bolt and its other end juxtaposed to said abutment; an auxiliary detent slide mounted in said retractor slide and having its outer end disposed between said abutment and the other end of said lever to urge it inwardly in said retractor slide; and an auxiliary spring interposed between said auxiliary and retractor slides to move said auxiliary slide outwardly in said retractor slide when said bolt is moved inwardly to release the pressure of said other end of said lever on said auxiliary slide.

References Cited in the file of this patent

UNITED STATES PATENTS

2,038,907	Schlage	Apr. 28, 1936
2,299,180	Schlage	Oct. 20, 1942
2,497,750	Wardwell	Feb. 14, 1950
2,662,386	Hillgren	Dec. 15, 1953
2,702,466	McConnell	Feb. 22, 1955
2,747,907	Golden et al.	May 29, 1956