Feb. 20, 1923. 1,446,085

M. FALK

DEAD BOLT NIGHT LATCH

Filed Dec. 3, 1921

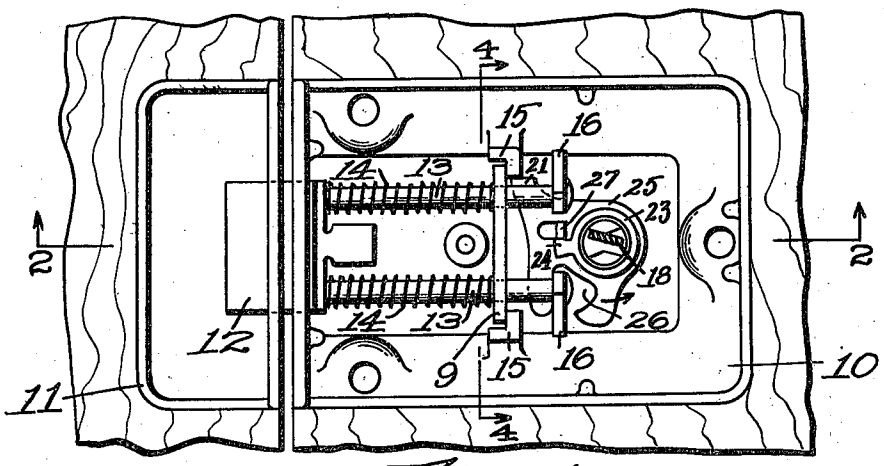


Fig. 1.

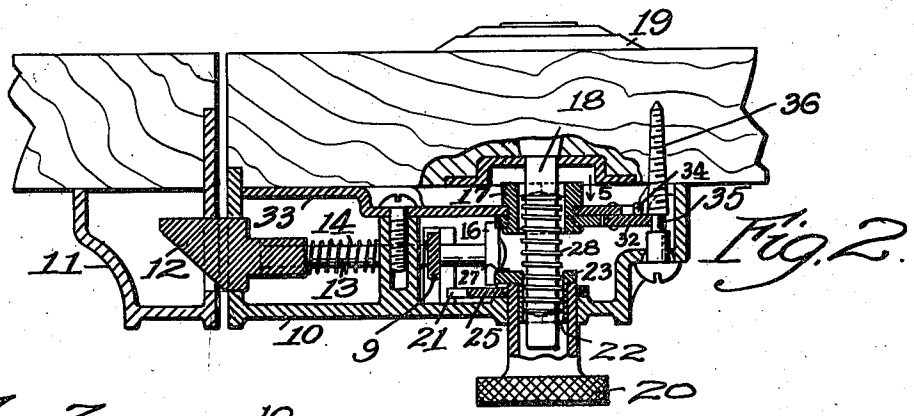
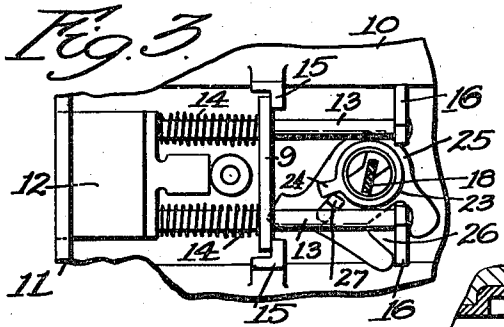


Fig. 2.

Fig. 3



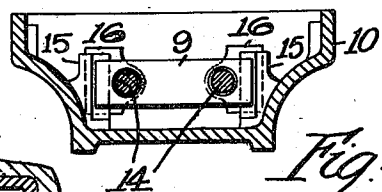


Fig. 4.

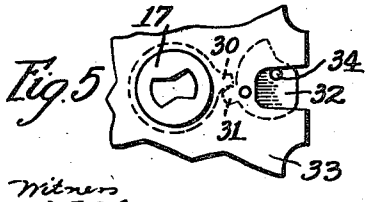


Fig. 5

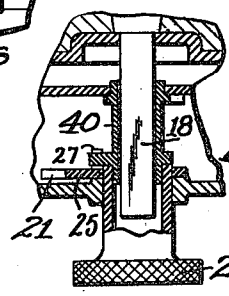


Fig 6

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UNITED STATES PATENT OFFICE.

MORRIS FALK, OF LEOMINSTER, MASSACHUSETTS.

DEAD-BOLT NIGHT LATCH.

Application filed December 3, 1921. Serial No. 519,742.

To all whom it may concern:

Be it known that I, MORRIS FALK, a citizen of the United States, residing at Leominster, in the county of Worcester and State of Massachusetts, have invented a new and useful Dead-Bolt Night Latch, of which the following is a specification.

This invention relates to a lock of the night latch type.

The principal objects of the invention are to provide means whereby the latch can be positively locked against being turned by the usual knob or by the exertion of force on the inclined side of the latch, and this action can be provided for merely by turning the key itself from the outside; to provide means whereby the lock casing can be locked to one of the attaching screws, by means of the lock, to prevent detachment of the casing, and to provide this in a simple form that can be applied to ordinary night latches without redesigning them.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a plan of a night latch constructed in accordance with this invention with part of the cylinder only in section;

Fig. 2 is a sectional view of the same on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view similar to a portion of Fig. 1, but showing the parts in a different position;

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

Fig. 5 is a plan of the back plate of the casing, and

Fig. 6 is a sectional view through the center of the knob and lock showing a modification.

The invention is shown as applied to a night latch of the type involving a casing 10 and a housing 11 for the spring bolt 12. This bolt 12 is mounted on two rods 13 which reciprocate with it. On these bars are springs 14 which press against the bolt 12 at one end and against a cross plate 9 held against the stationary lugs 15 at the other end, which has guide openings through which the rods pass. On the ends of these rods 13 are two plates 16 as shown, although a single plate can be used connected across in some cases.

The form of latch shown in the first four figures comprises an oscillatable member 17 which is operated by a bar 18 extending into a wide slot therein from the cylinder pin tumbler lock 19 into which the key is adapted to be placed from the outside for manipulating the lock. This slot is widened at both ends to permit the bar 18 to turn slightly at the end of its oscillation without turning the member 17. On the inside of the door is a knob 20 which has rigidly fixed on it an inner plate 25 provided with an eccentric projection 21 and rotates on the axis of the lock 19. This projection 21 is adapted to engage the stationary cross piece at one end of the path of oscillation of the knob to limit its motion in one direction. The plate on which the projection 21 is located also has another projection provided with a slot 26 adapted to receive the plate or plates 16 and positively move the latch against the action of the springs into the position shown in Fig. 3 and also in the other direction.

Rotatable with the bar 18 but supported by the knob is a member 22 on the inside of the casing 10 having a wide slot for the bar 18 and extending through the plate 25. On the inner side of the plate 25 this rotatable member 22 is provided with a disc 23 having an arm 24 projecting therefrom radially. This, being fixed with respect to the bar 18, will turn with it and with the key. When the operator is about to withdraw the key from the lock he can turn it as far around as possible in the rearward direction to the position shown in Fig. 1. There the arm 24 comes against a projection 27 extending from the flat side of the plate 25. Now, the key being withdrawn leaving the lock locked, the bar 18 cannot turn as is well understood in this art. Therefore the projecting arm 24 and plate 25 cannot turn and any tampering with the bolt 12 will fail to move it backwardly in opposition to these parts. But when the key is introduced and turned all the way round in the opposite direction to retract the bolt 12 the bar 18 is left in horizontal position and the key can be withdrawn. The plate 25 is left free to turn and the bolt 12 can be drawn back from without or by the knob and the arm 24 is left in the position shown in Fig. 3 as there will then be no resistance to this action. To withdraw the key it is turned back to horizontal position without turning the members 17 and 23 and the bolt 12 is left free to be moved out by its springs.

The two members 17 and 22 are shown as separate, each having an enlarged or wide

central slot for the bar 18 to provide a little lost motion and as separated by a spring 28. They can, however, be made in one piece if desired, as shown in Fig. 6.

In this way a very simple means is provided for locking the bolt positively without manipulating any other part than the key and without the use of any slidable or rotatable member that might possibly be jogged out of position by shaking the door or the like, and furthermore, being manipulated by the key, it is independent of any action from the other side. It will be seen that when the key is in the lock, the bolt 12 can be moved freely by the knob 20, but when the arm 24 is turned back into the position shown in Fig. 1 and the key withdrawn the operation of the knob 20 cannot be effective to withdraw the bolt.

In order to prevent an intruder reaching in and removing the screws that hold the latch casing, after breaking the glass, I provide an additional locking means. On the member 17 is a radial projection 30 in position to engage a projection 31 on a swinging latch 32. This latch is pivoted to the back 33 of the casing and has a limit stop pin 34. The edge of the latch is swung around, whenever the lock is locked, into a position to engage in a circumferential slot 35 in a screw 36 which holds the end of the lock casing most remote from the latch 12. This prevents the unscrewing or withdrawal of the screw.

In the form shown in Fig. 6 the two members 17 and 22 are formed in one piece constituting a cylinder 40. Otherwise the action and construction are the same.

Although I have illustrated and described only two forms of the invention, I am aware of the fact that other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, or especially to the details of the well known night latch illustrated herein, except as expressed in the claims.

What I do claim is:—

1. In a latch having a spring pressed bolt, the combination with hand operated means for retracting the bolt in opposition to the springs, and a lock comprising a cylinder for receiving a key and a bar thereon adapted to be governed by the key and locked by it on the withdrawal of the key, said hand operated means having means oscillatably mounted thereon for preventing the retraction of said bolt when the key is turned all the way around backwardly and withdrawn.

2. In a night latch, the combination with a spring pressed bolt and a cylinder pin tumbler lock having a bar, of a member concentric with the cylinder adapted to be oscillated by the bar, said member having a projection, and a plate oscillatable about the center of said member and having means for engaging said projection to prevent the turning of said plate when the projection is held in its way, said plate having means for positively moving the bolt in both directions.

3. In a night latch, the combination with a spring pressed bolt and a cylinder pin tumbler lock having a bar, of a member concentric with the cylinder adapted to be oscillated by the bar, said member having a projection, a plate oscillatable about the center of said member and having means for engaging said projection to prevent the turning of said plate when the projection is held in its way, said plate having means for positively moving the bolt in both directions, and a knob concentric with said cylinder to which knob the plate is fixedly connected.

4. In a night latch, the combination with a spring pressed bolt and a cylinder pin tumbler lock having a bar, of a member concentric with the cylinder adapted to be oscillated by the bar, said member having a projection, and a plate oscillatable about the center of said member and having means for engaging said projection to prevent the turning of said plate when the projection is held in its way, said plate having means for positively moving the bolt in both directions, comprising a slot for connection with the bolt, said plate having a projection for engaging the side of the casing to limit the amplitude of the oscillation of the plate.

5. In a latch having a spring pressed bolt, the combination with hand operated means for retracting the bolt in opposition to the springs, and a lock comprising a cylinder for receiving a key and a bar thereon adapted to be governed by the key and locked by it on the withdrawal of the key, said knob having means oscillatably mounted thereon for preventing the retraction of said bolt when the key is turned all the way around backwardly and withdrawn, a screw for fastening the rear end of the casing of the latch, said screw having a lateral slot, and means operated by said cylinder lock for engaging in said slot and preventing the withdrawal of the screw.

6. In a dead bolt night latch, the combination with the latch casing and a lock therefor, of a screw for securing the casing to a door, said screw having a notch through one side, an oscillatable plate in position to swing into said notch to lock the screw, and means operated by the lock for turning said plate to locking position when the lock is locked.

7. In a night latch, the combination with a casing, of a key cylinder lock outside the

casing having a bar projecting therefrom into the casing, a disc mounted to rotate with the bar and having a slot for the bar, said slot being widened at both ends to permit a small amount of lost motion, and having an arm, a plate oscillatably mounted and having a projection in position to be engaged by said arm, a spring-pressed bolt, and means connected with said bolt for engagement with the said plate to prevent the bolt being withdrawn when the arm is in position for engaging said projection and the key is reversed and withdrawn.

8. In a night latch, the combination with a spring pressed bolt and the bar of a lock, of a member adapted to be oscillated by the bar, said member having a projection, and a plate oscillatable about the center of said member and having means for engaging said projection to prevent the turning of said plate when the projection is held in its way, said plate having means for positively moving the bolt in both directions, comprising a slot for connection with the bolt, said plate having a projection for engaging the side of the casing to limit the amplitude of the oscillation of the plate.

9. In a night latch, the combination with a bolt, of a member adapted to be oscillated by the bar of a lock, said member having a projection, a plate oscillatable about the center of said member and having means for engaging said projection to prevent the turning of said plate when the projection is held in its way, said plate having means for positively moving the bolt in both directions, and a knob to which the plate is fixedly connected.

10. In a night latch the combination with a bolt and springs for moving it out, of a hand-operated knob, a plate centered thereon and oscillatable thereby and having a projection, of a locking bar adapted to be operated by a key and locked by it on the withdrawal of the key, a member adapted to be oscillated by said locking bar and having means for operating the said projection to prevent the turning of said plate when the key is withdrawn after the bolt is projected, said plate having means for positively moving the bolt in both directions.

In testimony whereof I have hereunto affixed my signature.

MORRIS FALK.