Feb. 10, 1948. G. NICOLIN ET AL 2,435,634

DOOR LOCK ATTACHMENT

Filed Oct. 23, 1946

Fig. 1.

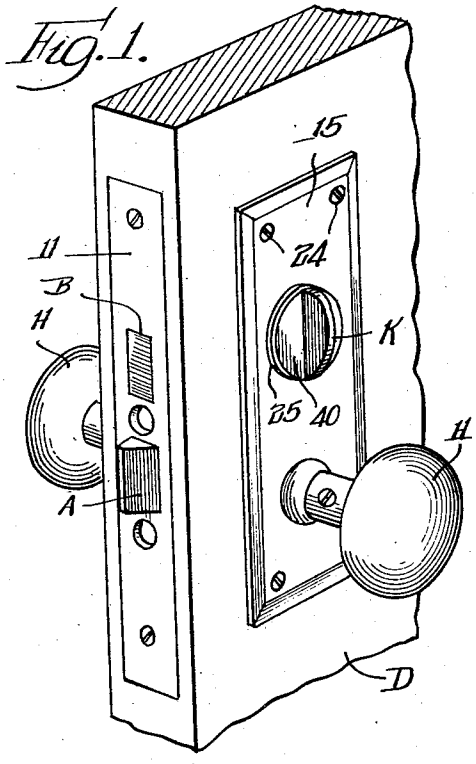


Fig. 2.

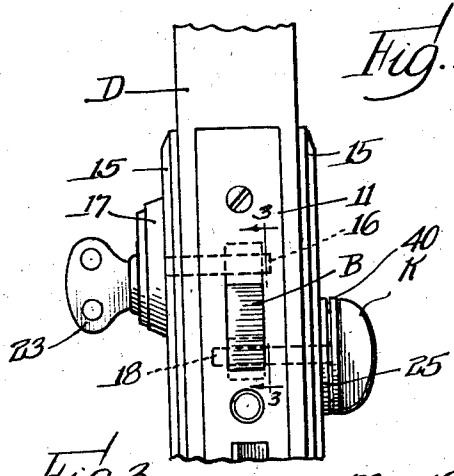


Fig. 3.

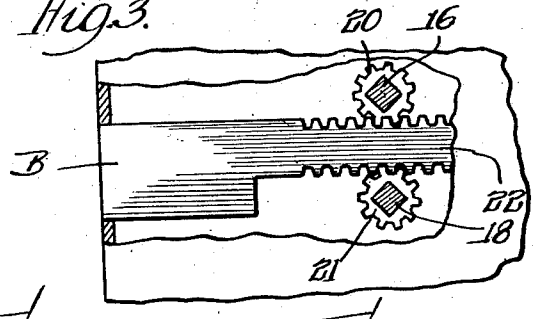


Fig. 4.

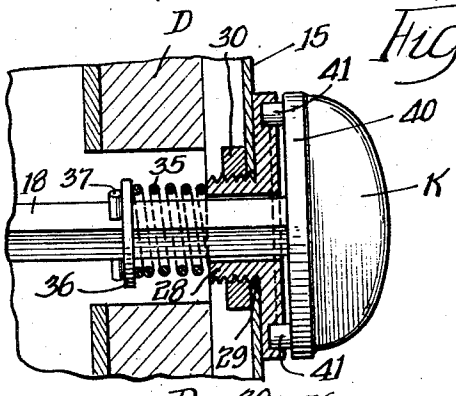


Fig. 5.

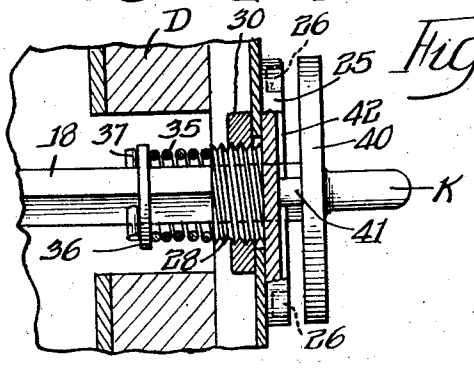


Fig. 6.

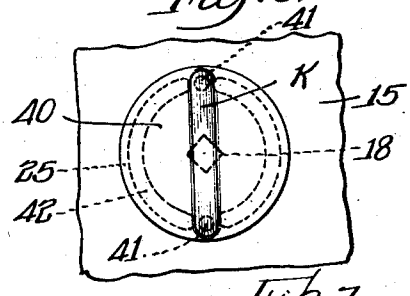
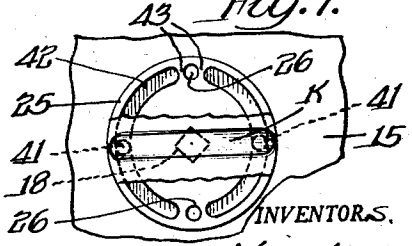


Fig. 7.



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DOOR LOCK ATTACHMENT

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4 Claims. (Cl. 70—129)

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This invention relates to a device which is attachable to a conventional door lock for the purpose of preventing, when desired, a normal operation of the deadlock in response to turning of the key therefor. It frequently happens that a householder will desire to lock himself in to the extent of preventing one who has the requisite door key from using it to gain entrance to the house. By proper manipulation of the present attachment between two predetermined positions, the deadlock may be locked against key operation or be freed for operation in response to rotation of the key, according as the householder may desire.

A device of this character may be produced at small expense and be installed with little effort, when made according to our invention. It is attachable to the escutcheon plate on the inner side of the door, and when secured thereto will be substantially concealed, yet conveniently positioned for operation.

A suggestive embodiment of our invention is set forth in the accompanying drawing, wherein:

Figure 1 is a fragmentary perspective view of a portion of a door adjacent its free edge, showing installed therein a conventional lock which is equipped with the attachment of our invention;

Fig. 2 is a fragmentary view in elevation looking toward the free edge of the door and lock mortised therein;

Fig. 3 is a detail in section, taken on line 3—3 of Fig. 2, showing one form of connection whereby the deadlock bolt may be operated by the spindles which are rotated, respectively, from a key on the outside of the door and a knob on the inside thereof;

Fig. 4 is a fragmentary detail, partly in section, of the deadlock spindle and associated parts in accordance with our invention, the spindle being shown in its in position;

Fig. 5 is a similar view in which the spindle is shown in its out position;

Fig. 6 is a view in elevation showing the deadlock operating knob in its locked position; and

Fig. 7, which is a similar view, shows the operating knob in its unlocked position.

We have shown in the drawing a door D which is mortised to receive a conventional lock having a latch bolt A operable by handles H at opposite ends of a spindle (not shown) which projects beyond opposite faces of the door. The lock also comprises a deadlock having a locking bolt B adapted to be projected outwardly from the face plate 11 that is recessed in the free edge of the door so as to be flush therewith. The latch bolt and locking bolts are adapted to be received within a keeper (not shown) which may be affixed to the door jamb in the usual way.

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In accordance with usual practice, escutcheon plates 15 are affixed to opposite sides of the door at points opposite the mortised recess therein where the lock is accommodated. These escutcheon plates conceal the opening through the door sides which are provided for reception of the spindles one of which carries the handles H, another designated as 16 being extended from the rotatable barrel of a key operated cylinder lock 17, and a third, 18, mounting at its outer end an operating knob K. The spindles 16 and 18, which are square in cross section, are adapted to fit within pinions 20 and 21, respectively, whereby to rotate them, each pinion being in mesh with a rack bar 22 that is extended from the locking bolt B. This bolt is accordingly adapted for operation in response to turning of (1) a key 23 in the lock 17 on the outside of the door, or of (2) the knob K on the inside thereof. Since the parts thus far described are all conventional, it is unnecessary to give further details concerning their operative relation as this is well understood in the art.

As shown herein, the escutcheon plate 15 on the inner door side is removably secured in place as by screws 24 so that it may be readily taken off to facilitate attachment of the parts now to be described. These include a disk 25 having an element which forms part of a torsion lock, here shown as a hole 26 (or holes) adjacent its periphery; extending from the disk a collar 28 which is received through an opening 29 in the escutcheon plate; and secured upon the projecting end of the collar, which is threaded, a nut 30 adapted to bear against the inner side of the escutcheon plate. With the nut tightened in place, the disk is also secured immovably to the escutcheon plate upon its outer side.

Surrounding the spindle 18 is a compression spring 35 confined in place between the collar-nut assembly and a washer 36 which abuts a pin 37 anchored to the spindle, the spring urging the spindle, together with the knob upon the outer end thereof, to an inward position as shown in Fig. 4. The knob comprises a base plate 40, preferably of a size and shape much the same as the disk 25 which it is adapted to abut. Carried by the knob base is an element forming a complementary part of the torsion lock, here shown as a pin (or pins) 41 projecting inwardly at a radial point which coincides with that of the hole (or

holes) 26 so as to enter freely therein when the knob is moved to the correct rotative position for this purpose. Formed in the face of the disk 25 is a shallow arcuate channel 42 having for its center the axis of the spindle 18, the channel being opposite the pin 41 so as to provide a way in which its acting end may track when the knob is turned to rotate its associated spindle. This channel stops short of the hole 26 so as to leave, in effect, a barrier wall 43 at that point. The pin 41 when tracking in the channel 42 will accordingly abut this wall where rotation of the spindle is halted unless the knob be pulled out, against the tension of the spring 35, a sufficient distance for the pin end to clear the barrier wall whereupon the pin will be free to enter the hole 26 and lock the spindle against rotation either by the key or the knob. The deadlock bolt B is then fully advanced to locking position. Only by first pulling out the knob again, to free the pin from the hole 26, may rotation be imparted to the spindle 18 for the purpose of retracting the locking bolt B. So long as the pin 41 remains in the hole 26, operation of the bolt B from the outside of the door, even by a person having the proper key, is prevented. But when the pin 41 is out of the hole and engaged within the channel 42, the knob is maintained in an out position (see Fig. 5) in which the deadlock is conditioned for key operation so that the bolt B may thereby be advanced to its locking position. When such an operation takes place, the knob is concurrently rotated to nearly the position of Fig. 4 where its pin 41 is moved to the end of the channel 42 adjacent the barrier wall 43. The bolt B during this operation will be advanced substantially to its limit, and so long as the pin 41 remains in the channel to sustain the spindle outwardly the deadlock will remain conditioned for key operation. It is only when the knob pin 41 is positioned in the hole 26 that the key is incapable of operating the deadlock.

The normal action of a deadlock may be easily and effectively modified by application of the present attachment thereto. Operation of the locking bolt from the door inside remains the same. But use of the regular authorized key may or may not continue possible, depending upon the knob adjustment upon the inner side of the door. It is this special objective which our invention has effectively accomplished by means which is inexpensive, facile of application, and simple in operation.

We claim:

1. A deadlock in which is comprised a rotatable operating spindle, an escutcheon plate having a hole through which the spindle is extended, a disk upon the outer face of the plate having a collar extended therethrough in surrounding relation to the spindle, a nut secured to the collar in engagement with the inner face of the plate and adapted to bear thereagainst with pressure to secure the disk immovably upon the outer face of the plate, a compression spring coiled around the spindle having one end engaging therewith and the other engaging the collar-nut assembly for exerting thereon a thrust force tending reactively to shift the spindle inwardly endwise of itself, a knob affixed non-rotatably to the spindle outer end having a base opposite the disk and adapted in opposite endwise positions of the spindle to produce engagement and disengagement between the base and disk, and a pin extended laterally from the base toward the disk adapted to enter a hole therein when the base is in a predetermined rotative position relative to the disk to lock the spindle against key-operation.

2. A deadlock in which is comprised a rotatable operating spindle, an escutcheon plate through which the spindle is extended, a disk surrounding the spindle and affixed immovably to the outer face of the plate, a knob carried non-rotatably at the outer end of the spindle and provided with a base which is disposed opposite the disk, means urging the spindle endwise in an inward direction whereby to advance the knob base toward the disk, and coacting means on the base and disk adapted to interengage when the base has advanced toward the disk whereby to lock the spindle against key-operation.

3. A deadlock in which is comprised a rotatable operating spindle, an escutcheon plate having a hole through which the spindle is extended, a disk upon the outer face of the plate having a collar extended therethrough in surrounding relation to the spindle; means interconnecting the collar and plate upon its inner side to secure the disk non-rotatably upon its outer face, spring means exerting an inward thrust upon the spindle tending to maintain the same in a predetermined endwise position, a knob affixed immovably to the outer end of the spindle and provided with a base which lies opposite the disk, and coacting means on the base and disk adapted to interengage when the spindle is advanced endwise inwardly whereby to lock the spindle against key-operation.

4. A deadlock in which is comprised a rotatable operating spindle, an escutcheon plate having a hole through which the spindle is extended, a disk upon the outer face of the plate having a collar extended therefrom through the hole thereof in surrounding relation to the spindle, means for securing the disk against rotation relative to the plate, an operating knob affixed immovably to the outer end of the spindle and provided with a base opposite the disk, coacting locking means on the base and disk adapted for interengagement when the base is disposed proximate to the disk, and spring means in operative connection with the spindle exerting thereon an endwise thrust force tending to advance the spindle inwardly whereby to lock the knob base with the disk and prevent key-operation of the spindle.

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