Sept. 8, 1953

N. A. WELCH

LATCH SPINDLE LOCK

Filed Aug. 22, 1950

2,651,193

Fig. 1.

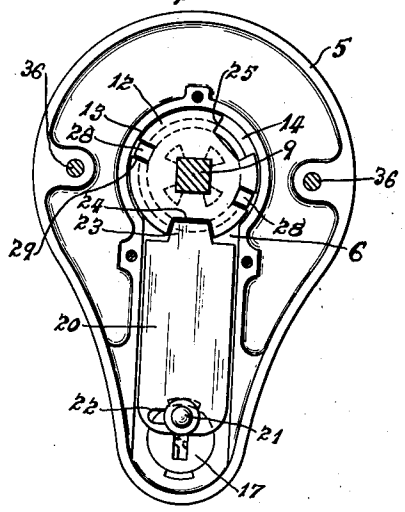


Fig. 2.

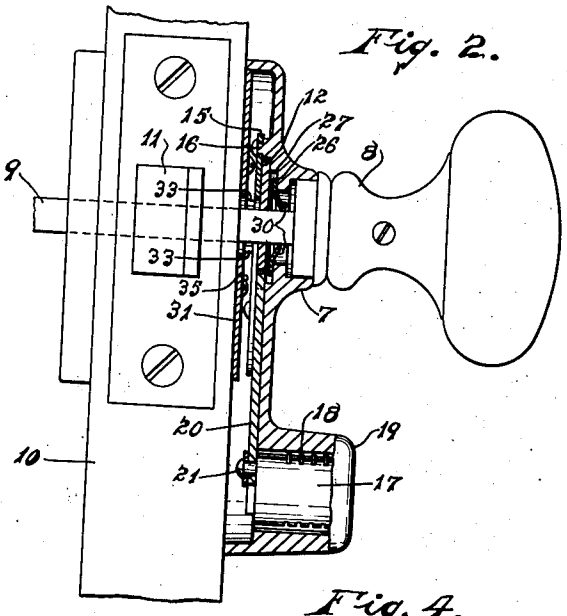


Fig. 3.

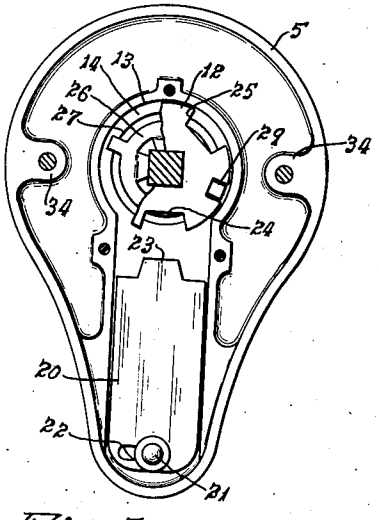


Fig. 4.

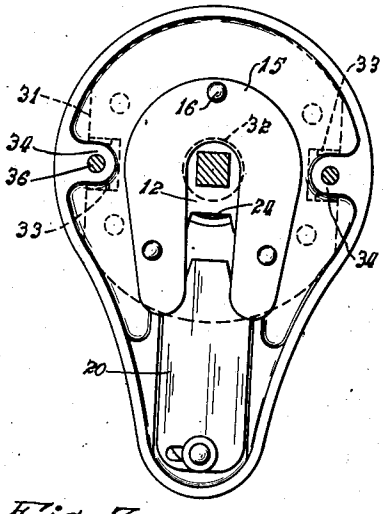


Fig. 5.

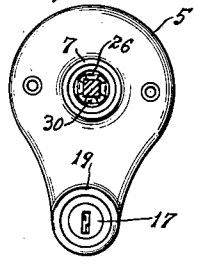


Fig. 6.

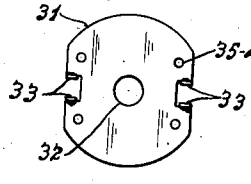
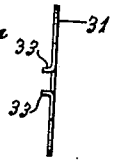


Fig. 7.



INVENTOR.
NICHOLAS A. WELCH

BY

Louis V. Lucia

ATTORNEY

Patented Sept. 8, 1953

2,651,193

UNITED STATES PATENT OFFICE

2,651,193

LATCH SPINDLE LOCK

Nicholas A. Welch, West Hartford, Conn., assignor to The American Hardware Corporation, New Britain, Conn., a corporation of Connecticut

Application August 22, 1950, Serial No. 180,718

8 Claims. (Cl. 70—211)

1

This invention relates to a latch spindle lock and more particularly to a device for locking the spindles of door locks and the like against rotation.

It is an object of this invention to provide a locking device which may be readily attached to a conventional door latch for converting it into a lock.

It is a further object of this invention to provide a device which may be attached to a conventional door latch without requiring special tools or changes in its construction or the latch.

It is a still further object of the invention to provide such a device with means for preventing unauthorized persons from removing it from the latch to which it is attached, when in locked position.

Further objects and advantages of this invention will be more clearly understood from the following description and the accompanying drawing in which:

Fig. 1 is a rear view of my improved latch spindle lock showing the same in locked position and with the latch spindle in section and the rear cover plate removed.

Fig. 2 is a sectional side view of said lock showing the same attached to a conventional door latch.

Fig. 3 is a view similar to Fig. 1 but showing the lock in unlocked position.

Fig. 4 is a similar view showing the rear cover plate attached to the lock and the holding plate in dotted lines.

Fig. 5 is a front view of the said lock on a reduced scale.

Fig. 6 is a front view of the holding plate on a reduced scale.

Fig. 7 is a side view thereof.

In the embodiment illustrated in the drawings, my improved lock comprises a supporting plate or housing 5 having a recess 6 in the rear surface thereof containing the parts of the lock mechanism as will be hereinafter described.

The said housing is provided, upon the front surface thereof, with a boss 7 having an aperture extending therethrough to receive a portion of the knob 8 and a knob spindle 9 which projects through the door 10 and operates a latch 11 which, as shown, is of conventional form.

My improved lock includes a locking disk 12 having a hole conforming to a cross-sectional shape of the spindle 9 to thereby receive said spindle and secure the locking plate thereto against rotation. This locking plate is contained within a recess 13 and rotates between a shoulder

2

14 in said recess and a cover plate 15 which is secured to the housing 5 by suitable means, such as the studs 16, which are preferably formed integral with the housing 5 and extend through holes in the cover plate 15 and are headed over said cover plate to securely attach it thereto.

A key plug 17, of conventional form and having the usual key operated tumblers 18, is rotatably mounted in a boss 19 upon the front face of the housing 5 and operates a locking bolt 20 by means of a crank stud 21 which extends from the said key plug 17 through a slot 22 in the locking bolt. The said locking bolt is provided with a prong 23 which fits into the notch 24 in the locking disk to lock the spindle 9 against rotation and thereby prevent operation of the latch 11.

In addition to the notch 24, which is used to receive the prong 23 of the locking bolt when the knob spindle is normally disposed with its flat sides parallel to the vertical and horizontal axes of the lock respectively, the locking disk is also provided with a notch 25 to receive the said prong 23 when the knob spindle is normally disposed with its corners on the said axes.

To prevent the lock from being removed from the door, I provide a uni-directional locking washer 26 which is mounted within a recess 27 and is positioned against the bottom of said recess by means of prongs 28—28 which extend angularly from the said washer, through notches 29—29 in the locking disk 12, and engage the cover plate 15. The said locking washer 26 is constructed of a suitable spring material and has outwardly slanting fingers 30 each with a substantially sharp edge at the end thereof which engages with a side of the spindle 9 so as to permit the lock to be slipped over the spindle 9 in the direction towards the door, but to grasp the said spindle and prevent removal of the lock by movement thereof over the spindle in an outwardly direction.

It will be noted that the said fingers 30 are normally tensioned into engagement with the spindle so that they will bite into the material thereof when an attempt is made to pull the lock over the spindle in the direction away from the surface of the door. The said spindle, however, may be withdrawn from the lock by first removing the knob on the inside of the door and then drawing the spindle through the lock in an outward direction.

My invention also provides a holding plate 31 which fits within the housing 5 and has an opening 32 therein to receive the spindle 9 and op-

posed bosses or lips 33—33 on each side thereof which extend inwardly into the said housing to receive therebetween bosses 34—34 on the housing 5. The said holding plate is secured to the door by means of screws 35 which extend through holes 35a in the plate to thereby prevent rotation of the lock and plate relatively to the door.

When it is desired to attach my improved lock to a conventional latch, the knob at the outside of the door is first removed from the spindle. The holding plate 31 is then passed over the projecting end of the spindle and secured to the door by means of the screws 35. The housing 5 with the lock mechanism therein is then passed over the said end of the spindle so that the spindle will project through the locking washer 26 and is engaged thereby. The said lock is then secured to the door by means of screws 36 which extend through the housing and the knob 8 is replaced upon the spindle 9.

When it is desired to lock the latch, the proper key is inserted into the plug 17 and the said plug is rotated to operate the locking bolt. The said locking bolt will thus be moved into the position illustrated in Fig. 1 wherein the prong 23 extends into the notch 24 in the locking plate 12 and the spindle 9 is thereby locked against rotation so that the latch can not be operated. When it is desired to unlock the latch, the plug 17 is merely rotated in the opposite direction to disengage the bolt from the locking plate 12 and thereby permit rotation of the spindle 9 for the normal operation of the latch.

It will be noted that should the screws 36 be removed and an attempt be made, when the lock is in locked position, to rotate the housing 5 so as to in turn rotate the spindle 9, such rotation of the housing will be prevented by engagement of the bosses 33—33 on the holding plate 31 with the bosses 34—34 on the housing. Also, should an attempt be made to pull the lock off the spindle 9 from the outside of the door such an operation will be prevented by the locking washer 26 since the prongs 30 of said washer will prevent movement of the housing in an outward direction relatively to the spindle.

It will further be noted that the lock may be removed from the door only by first detaching the inside knob from the spindle 9 and then pulling the said spindle outwardly out of the lock or removing the spindle with the latch after detaching the lock from the door by removing the screws 36.

It will be understood from the above description that my invention provides a portable lock which may be readily attached to a door having a conventional latch therein by simply removing the outer doorknob, securing the lock in position upon the door and then replacing the knob. All of this may be done without requiring any special tools other than a screw driver.

I claim:

1. A latch spindle lock comprising a housing, a lock mechanism in said housing including a locking member adapted to be secured to a latch operating spindle, a locking bolt in said housing engageable with said locking member, means for moving said locking bolt into locked and unlocked positions for permitting or preventing rotational movement of said spindle, means for securing said bolt in locked position and uni-directional locking means secured in said housing permitting movement of the lock relative to the knob spindle in one direction and preventing such movement in the opposite direction.

2. A latch spindle lock comprising a housing having a lock mechanism mounted therein; said mechanism including a locking disk rotatably supported in said housing and adapted to nonrotatably receive the operating spindle of a latch, a cover plate retaining said locking disk in position within said housing, a locking bolt engageable with said locking disk to prevent rotation thereof and thereby lock said spindle against rotation, key operated means for moving said bolt, and means retained in said housing by said cover plate for locking said housing against movement relatively to said spindle in one direction and permitting said movement in the opposite direction.

3. For a door latch operated by means of a rotatable spindle, a lock comprising a housing, a locking disk rotatably supported in said housing and having an opening therethrough adapted to receive the said spindle and prevent rotation of said disk thereon, a locking bolt engageable with said disk for preventing rotation of said spindle for the operation of said latch, key operated means for moving said locking bolt into locking engagement with said disk, and a locking member rotatably supported in said housing and having angularly disposed fingers engageable with said spindle for preventing movement of the housing relatively to the spindle in one direction and permitting such movement in the opposite direction; said disk, bolt and locking member being retained within said housing by a cover plate that is secured thereto.

4. For a door latch including an operating spindle, a lock comprising a supporting housing having a lock mechanism mounted therein, said housing having an opening therethrough to receive the said spindle with a recess surrounding said opening, and a uni-directional locking member rotatably retained within said recess by said lock mechanism and having prongs projecting forwardly into said opening and normally engageable therein with the said spindle to prevent detachment of the lock from the door by movement of the lock in an outward direction relatively to the spindle.

5. For a latch mounted to a door and having an operating spindle, a lock comprising a housing, a locking member rotatably supported in said housing and secured to said spindle, a locking bolt slidable in said housing and engageable with said locking member, key operated mechanism for moving said locking bolt into locked and unlocked positions, a holding plate secured to the door, means on said housing detachably engaging said holding plate to prevent rotation of the lock for rotating the spindle, and means preventing removal of the lock from the spindle to thereby render the said holding plate inaccessible from the outside of the door.

6. For a door latch having a spindle for the operation thereof, a lock comprising a housing, a locking member rotatably supported in said housing and fitting over said spindle in non-rotational engagement therewith, a locking bolt slidable in said housing relatively to said locking member, key operated means for moving said locking bolt into and out of locking engagement with said member, a cover plate secured to said housing for retaining said locking member and locking bolt within said housing, a holding plate secured to the door, cooperating means in said holding plate and housing for preventing rotation of the lock, and means securing said lock on the spindle against relative movement in a di-

rection away from the door to thereby prevent removal of the lock from the spindle.

7. For a door latch having an operating spindle, a lock adapted to be attached to said spindle and secured to the door for locking the spindle against rotation and thereby preventing operation of the latch, the said lock comprising a housing adapted to be secured to the surface of the door and having an opening therein through which the said spindle extends, a recess surrounding said opening, a uni-directional locking member rotatable in said recess and engaging said spindle to prevent unauthorized removal of the lock by movement thereof relatively to the spindle in a direction away from the door, a locking disk positioned co-axially with and overlying said uni-directional locking member and having an opening to receive the spindle and secure the disk against rotation thereon, a locking bolt slidable in said housing and engageable with said locking disk, a locking notch in said disk to receive the locking bolt when the spindle is normally in one position relatively to the axis of said bolt, and a separate notch for receiving the bolt when the spindle is normally in a different position relatively thereto, a cover plate secured to said housing and overlying the said locking disk and bolt, a holding plate adapted to be secured to the door, abutments on said holding plate and engageable with abutments on the housing for preventing rotation of the housing for rotating the spindle to cause unauthorized operation of the latch; the said locking

member preventing detachment of the lock from the spindle in a direction away from the door and thereby rendering said holding plate inaccessible from the outside of the door.

8. For a door latch having an operating spindle, a lock comprising a housing, a locking disk rotatably supported in said housing and secured to the spindle, a locking bolt slidable in said housing and engageable with said locking disk; said locking disk having a first notch therein to receive said locking bolt when the spindle is normally in one position relatively to said bolt and a second notch to receive the bolt when the spindle is normally in another position relatively thereto, a key operated mechanism for moving said locking bolt into locked and unlocked positions, a locking member in said housing for preventing movement of the housing relatively to the spindle in one direction, a cover plate secured to said housing for retaining the said locking member, locking disk and bolt therein, and means for securing said housing to a door in proper position relatively to the spindle.

NICHOLAS A. WELCH.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,233,078	Hagstrom	Feb. 25, 1941
2,316,493	Swarens et al.	Apr. 13, 1943
2,329,232	VanVoorhees	Sept. 14, 1943
2,454,754	Netschert	Nov. 23, 1948