Feb. 24, 1942. E. RUSSO 2,274,259

LATCH LOCK

Filed Aug. 30, 1941

Fig. 1.

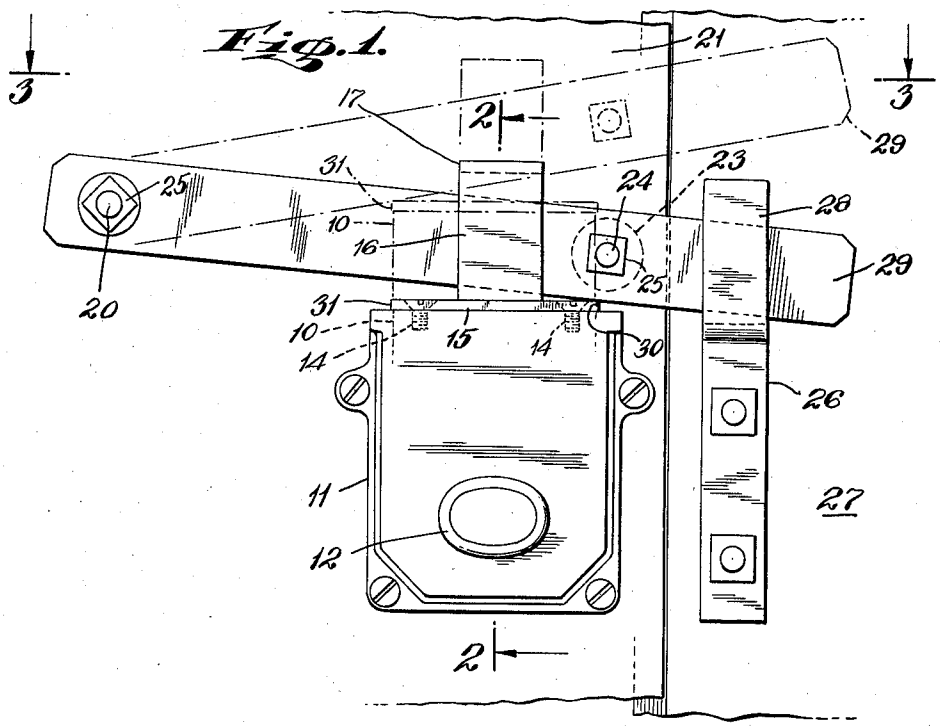


Fig. 2.

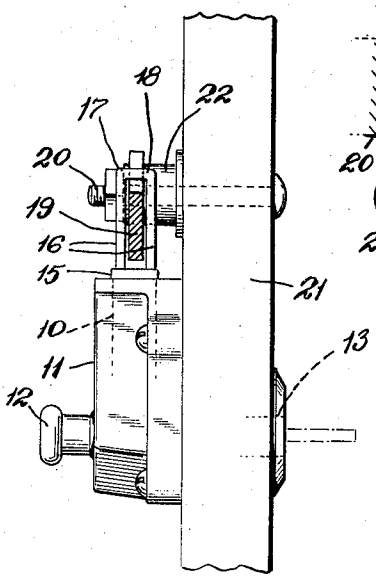
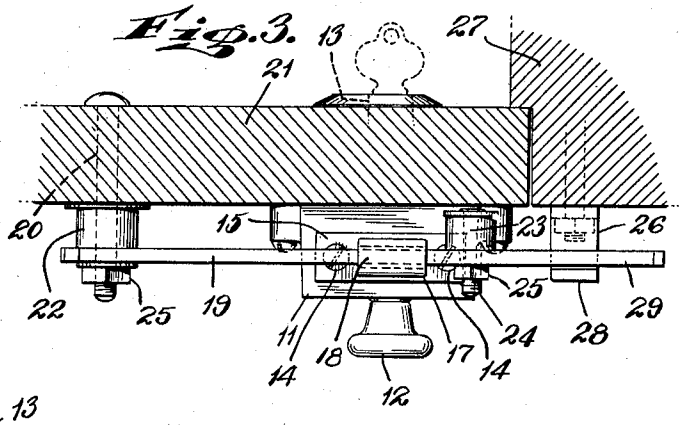


Fig. 3.



Eduardo Russo
INVENTOR

BY

ATTORNEY

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LATCH LOCK

Eduardo Russo, New York, N. Y.

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7 Claims. (Cl. 292—231)

This invention deals with a latch lock and the objects, advantages, and functional and structural features thereof will be more fully appreciated from a consideration of the following detailed specification viewed in the light of the accompanying drawing wherein:

Fig. 1 is an elevational view of the latch lock according to my invention.

Fig. 2 is a partly sectional view on the line 2—2 of Fig. 1, and

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

According to the invention a reciprocably guided bolt 10 is retained by a lock casing 11 fastened to a door and having rotatable knob 12 and rotatable key controlled means 13 for effecting the projection of the bolt into or out of the lock casing. This type of lock casing, bolt, and rotatable control means for effecting the projection or retraction of the bolt is well known in the art.

Secured by set screws 14 or the like to the reciprocably guided bolt 10 at the upper end thereof is a relatively elongated metal plate 15 having merged therewith the spaced legs 16 of the inverted metal U shaped socket 17 having the bridge portion 18.

The spaced legs 16 define a channel or opening for receiving and straddling the inclined latch bar 19 which is pivoted on the fulcrum threaded pin 20 attached to the swinging door 21.

Annual collar 22 mounted on pin 20 is utilized to appreciably space the pivoted end of the latch bar a desired distance away from the door.

A weighted collar 23 is mounted on the threaded pin 24 attached to pivoted latch bar near the lock casing 11.

Rotatable clamping means 25 are mounted on pins 20 and 24 to hold the latch bar against the collar 22 and the collar 23 to the latch bar.

A keeper 26 is secured to the jamb 27 of the door. The upper end 28 of the keeper is offset and is spaced from the door jamb to receive the free end 29 of the latch bar for interlocking therewith.

By the present arrangement it is apparent that if either of the rotatable means 12 or the rotatable key controlled cylinder 13 is operated the movably guided bolt 10 is projected out of the casing as indicated by the dash and dot lines in Fig. 1.

In a non-projected relation of the bolt, a portion of the latch bar adjacent the weighted collar 23 rests against end 30 of the plate 15 which normally abuts the upper end of the casing 11, being slightly longer than the width of the bolt.

As the bolt is withdrawn from the casing during rotation of knob 12 or the key controlled cylinder 13, end 30 of the fixed plate initially raises the latch bar until the dead centre of the latch is reached after which the opposite end 31 of the fixed plate 15 serves to raise the latch bar until the maximum projection of the bolt is arrived at in which instance the free end 29 of the latch bar is above the keeper or in other words unlocked whereby door 21 may be opened as is well understood. Stated in another way at the beginning of the elevation of the bolt the overhanging end 30 starts to raise the latch bar. Thereafter as the projection of the bolt continues succeeding portions of the rectilinear plate away from end 30 progressively come into play to progressively raise the latch bar until the end 31 is reached.

Of course where the door is closed and the pivoted latch bar is unlocked, the latter is alined above the keeper. The control means 12 or 13 may now be selectively rotated to restore the bolt within the lock casing. During this action, the latch bar although guided between the spaced legs 16 of the socket 17 has its upper free end 29 moving downwardly to automatically interlock with the keeper.

By the present arrangement a compact and simplified construction is provided for actuating a pivoted latch bar by the action of a rectilinearly guided bolt disposed adjacent thereto.

Various changes may be made in the details of construction and arrangement of parts without departing from the spirit of the invention or sacrificing any of the advantages thereof inherent therein.

I claim:

1. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of the door, the combination of, a casing, a movably guided bolt within said casing and extending in a direction transverse to said bar, a plate secured to said bolt, and an inverted channel shaped member secured to said plate for movably receiving said latch bar, the latter extending beyond the ends of said plate and having a free end removably interlocking with said keeper, said plate upon the projection of said bolt out of said casing contacting said latch bar to tiltably raise said latch bar to remove the latter from said keeper.

2. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of the door, the combination

of, a casing, a reciprocably guided bolt within said casing and disposed in a direction transverse to said bar, and an inverted channel shaped member carried by said bolt for movably receiving and straddling said latch bar, the latter appreciably extending beyond the sides of said bolt and having a free end removably interlocking with said keeper, said bolt having means extending laterally of said sides and disposed contiguous to and outside of said casing in the interlocked relation of said free end and keeper, said latch bar resting on one of said means extending laterally of said sides in the interlocked relation of said free end and keeper, and said bolt upon the projection thereof out of said casing tiltably raising said free end to remove the latter from said keeper.

3. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of the door, the combination of, a casing, a movably guided bolt within said casing, an elongated plate secured to and extending beyond the sides of said bolt, and an inverted U shaped member secured to said plate for movably receiving and straddling said latch bar, the latter appreciably extending beyond said sides and having a free end removably interlocking with said keeper and including an intermediate portion contacting said plate, said plate upon the projection of said bolt out of said casing tiltably raising said latch bar to remove the latter from said keeper.

4. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of the door, the combination of, a casing, a linearly guided bolt within said casing, a plate secured to said bolt and having ends extending beyond the sides of said bolt and normally abutting said casing, an inverted channel shaped member secured to said plate for movably receiving and straddling said latch bar, the latter extending beyond said sides and having a free end removably interlocking with said keeper, said latch bar being in superimposed relation with said plate and at least in part contacting the latter said plate upon the projection of said bolt out of said casing tiltably raising said latch bar to remove the latter from said keeper, means for spacing said latch bar away from said door, and weighted means carried by said latch bar substantially adjacent said free end.

5. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of said door, the combination of, a casing, a bolt movably guided by said casing, a plate outside of said casing and immovably secured to one face of said bolt, an inverted U-shaped member carried by said plate, said latch bar being straddled by said member and normally inclined to said plate and having an intermediate portion thereof resting against one end of said plate, said latch bar extending beyond the ends of said plate and having a free end removably interlocking with said keeper, said plate upon the projection of said bolt out of said casing abutting other intermediate portions of said latch bar to tiltably raise said free end from said keeper.

6. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of said door, the combination of, a casing, a bolt movably guided by said casing, projecting means greater in length than said bolt and outside of said casing and immovably carried by said bolt in contiguous relation therewith, an inverted U-shaped member carried by said projecting means, said latch bar being straddled by said member and normally inclined to said projecting means and having an intermediate portion thereof resting against one end of said projecting means, said latch bar extending beyond the ends of said projecting means longitudinally of the latter and having a free end removably interlocking with said keeper, said projecting means upon the projection of said bolt out of said casing abutting other intermediate portions of said latch bar to tiltably raise said free end from said keeper.

7. In a locking device wherein a pivoted latch bar is mounted on a door and a keeper is secured to the jamb of said door, the combination of, a casing, a bolt movably guided by said casing and having a rectilinear end face substantially flush with an end face of said casing in a completely retracted position of said bolt, a rectilinear plate outside of said casing and immovably secured to said rectilinear end face, an inverted U-shaped member carried by said plate, said latch bar being straddled by said member and normally inclined to said plate and having an intermediate portion thereof resting against one end of said plate, said latch bar extending beyond the ends of said plate longitudinally thereof and having a free end removably interlocking with said keeper, said plate upon the projection of said bolt out of said casing abutting other intermediate portions of said latch bar to tiltably raise said free end from said keeper.

EDUARDO RUSSO.