Dec. 18, 1934. R. M. LAMB 1,985,176

MULTIPLE BOLT LOCK

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Fig. 1.

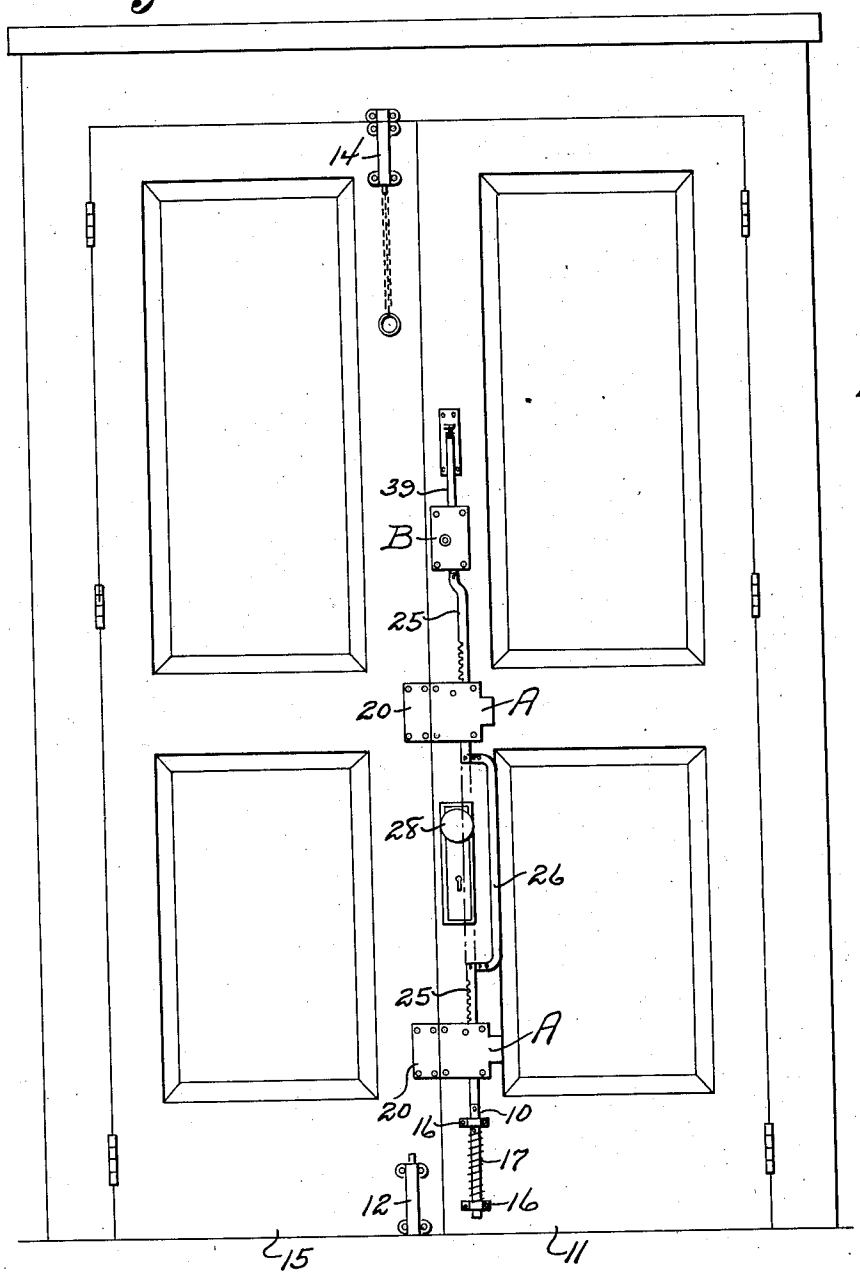
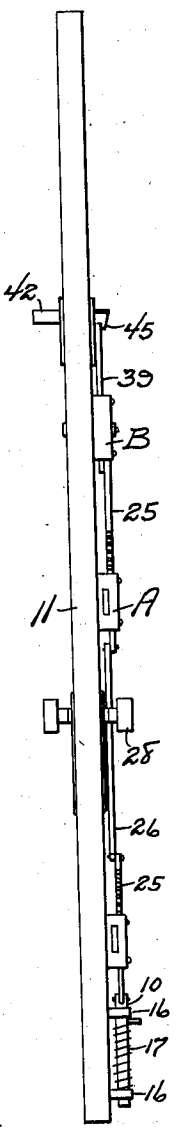


Fig. 2.



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Fig. 3.

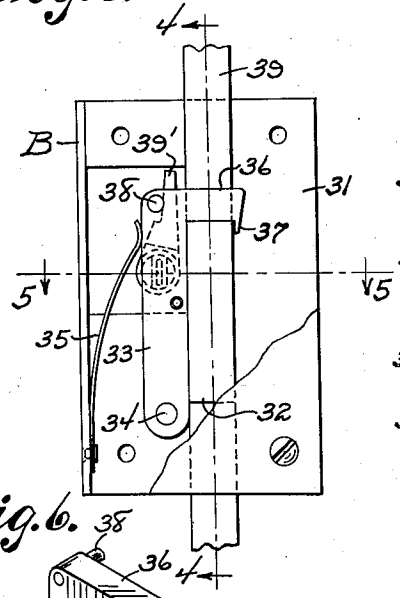


Fig. 4.

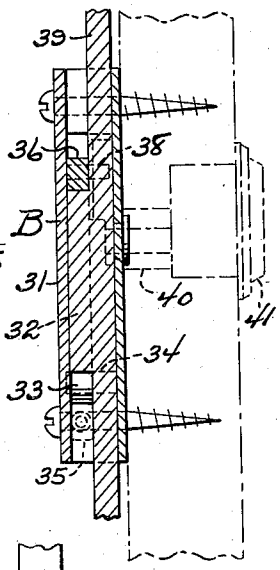


Fig. 5.

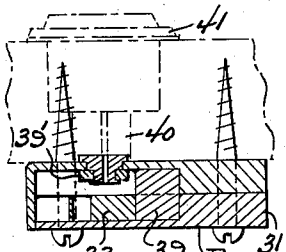


Fig. 7.

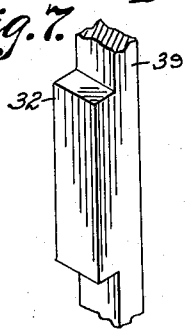


Fig. 6.

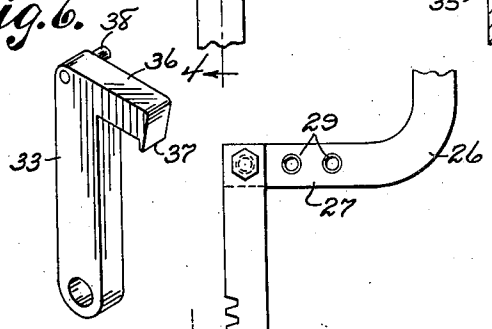


Fig. 10.

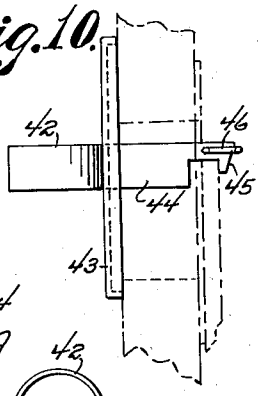


Fig. 8.

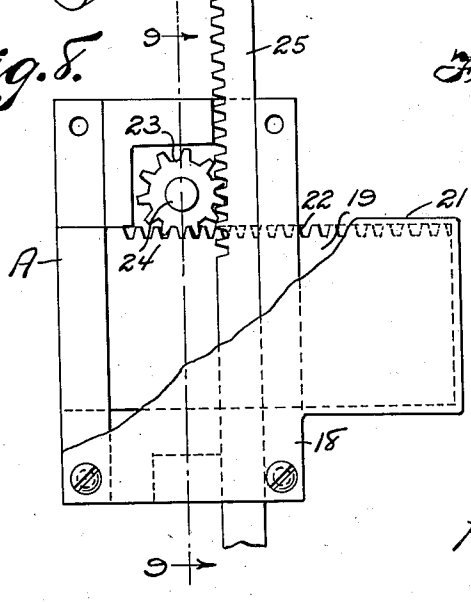
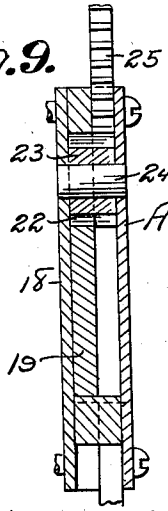


Fig. 9.



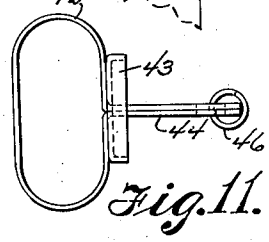


Fig. 11.

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Patented Dec. 18, 1934

1,985,176

UNITED STATES PATENT OFFICE

1,985,176

MULTIPLE BOLT LOCK

Robert M. Lamb, Jacksonville, Fla.

Application October 30, 1933, Serial No. 695,891

2 Claims. (Cl. 70—74)

The object of the invention is to provide a lock construction for application to doors or other kind of swinging closures whereby they may be secured in locked position at a plurality of points; to provide a lock construction in which a single lock may be employed to lock all of the bolting members; and to provide a multiple bolt lock which is of simple form, susceptible of comparatively cheap manufacture and of a character making its installation possible without the necessity of skill on the part of the person making the installation.

With this object in view, the invention consists in a construction and combination of parts of which a preferred embodiment is illustrated in the accompanying drawings but to which embodiment the invention is not to be restricted. Continued use in practice may dictate certain changes or alterations and the right is claimed to make any which fall within the scope of the annexed claims.

In the drawings:

Figure 1 is a front elevational view showing the invention applied to the use of double doors.

Figure 2 is an edge elevational view of that door to which the lock is applied.

Figure 3 is an elevational view, partly broken away, of the lock member comprised in the invention.

Figures 4 and 5 are sectional views on the planes indicated by the lines 4—4 and 5—5 respectively of Figure 3.

Figure 6 is a perspective view of the locking pawl or dog.

Figure 7 is a perspective view of the section of the drive bar showing the shouldered portion with which the locking dog engages.

Figure 8 is an elevational view, partly broken away, of one of the bolt casings and its attendant rack bar and bolt.

Figure 9 is a sectional view on the plane indicated by the line 9—9 of Figure 8.

Figure 10 is a side elevational view of the hand grip for imparting movement to the drive bar, the door and upper end of the drive bar being indicated in broken lines.

Figure 11 is a top plan view of the hand grip.

The invention comprises a plurality of bolt mechanisms A operatively connected for synchronous actuation and controlled by a lock element B, one of the bolt mechanisms being operatively connected with a bolt member 10 designed to enter a socket in the floor to retain the door 11 in closed position at its lower edge, in the same manner that the bolt mechanisms 12 and 14 function to secure the door 15 in closed position. The bolt member 10 is mounted in guides 16 and is surrounded by a spring 17 which tends normally to elevate it.

Each of the bolt members A comprises a case 18 of the general form of a rim lock and provided with a horizontally disposed bolt 19 movable into and out of its attendant keeper 20, the bolt in retracted position passing into a lateral housing 21 with which the casing 18 is formed. The bolt 19 on its upper edge is provided with a series of rack teeth 22 in mesh with which is a pinion 23, the pinion being mounted on a shaft 24 journalled in opposite side walls of the housing 18 and the pinion being of a face width sufficient to span both the edge of the bolt 19 and the rack bar 25, the rack bar being also mounted in the casing 18 but slidable therethrough in a direction at right angles to the bolt 19. Obviously, if downward movement be imparted to the rack 25, the bolt, by reason of the pinion connection between it and the rack bar, will be projected into its keeper 20. Elevating the rack bar 25 will effect the reverse of this operation. The rack bar 25 at its lower end is coupled to the upper end of the bolt 10. The bolt members A and their attendant keepers 20 are secured at selected points on the two doors (or if the invention be used on a single door, the keepers are secured to corresponding points on the frame) and the two rack bars 25 of the two or of additional bolt members if they be used, are coupled together by coupling bars, such as that indicated at 26, which has its extremities turned laterally, as indicated at 27, so that it may be offset from the rack bars to clear the knob 28 of the door. The turned ends 27 may be provided with a plurality of eyes or holes 29 for selective use in coupling to the rack bars, so as to vary the degree of offset.

The upper or topmost rack bar 25 is coupled at its upper end to the lower end of a push bar 39 which is slidably mounted in a case 31 secured to the door and which is provided with a shouldered portion 32 interior of the case, the shouldered portion being in the region of the locking pawl 33 which is pivotally mounted at 34 in the casing 31 and which is yieldingly impelled toward the drive bar by a leaf spring 35. The locking pawl is in the form of an inverted L whose shorter leg 36, in a latched position, overlies the top of the shouldered portion 32. The lower edge of the leg 36 is provided with a lip 37 which engages over the shoulder 32 at the remote side, so that the locking pawl may not be released except when the drive bar is depressed a suffi-

cient distance for the shoulder 32 to clear the lip 37.

The locking pawl or dog 33 is provided, at the juncture of its legs, with a laterally projecting pin 38 in the path of movement of a ward 39' connected with the barrel 40 of a cylinder lock 41 which is mounted in the door, the barrel being rotatable through the medium of a key inserted in the lock.

A sliding hand grip 42 is mounted in the door and is formed with a case member 43 lying against the outer face of the door, the shank 44 of the grip extending through a vertical slot in the door to have its hook nose 45 engaged with the upper end of the drive bar, a ring 46 inserted through the shank preventing withdrawal of the grip through its slotted mounting in the door.

If the locking pawl 33 be swung laterally away from the drive bar, the spring 17 will function to elevate the rack bars 25 and the drive bar, thus retracting the bolts 19 and releasing the bolt 10. The door then is free to be opened, insofar as the multiple bolt lock is concerned. Under such conditions, the free end of the leg 36 will bear laterally against the side of the shouldered portion 37. When it is desired to move the device to locking position, a downward pull on the hand grip 42 will result in depressing the drive bar and with it the rack bar, thus projecting the bolts 19 into their keepers 20. When the upper end of the shouldered portion 32 passes below the plane of the lip 37, the spring 35 will swing the pawl over the shoulder and thus the several bolts will be locked in projecting positions and release of the pressure on the hand grip will raise the rack bars and the drive bar a slight distance upward, so that the shouldered portion engages behind the lip 37, when the pawl may not be retracted even by the key, unless a downward pressure be first applied to the hand grip to lower the shoulder to a point where the lip 37 will clear it.

The invention having been described, what is claimed as new and useful is:

1. A multiple bolt lock comprising spaced bolt mechanisms of which each comprises a case and a bolt slidably mounted therein, bars slidably mounted in each case at an angle to the bolt thereof, coupling means between the bars, the bars being operatively connected with the bolts to project and retract them upon longitudinal movement being imparted to the bars, a lock mechanism, a drive bar slidably mounted in the lock mechanism and operatively connected with one of the first said bars, and a hand grip having a shank for sliding movement in a slot of a door, the shank having a hook nose bearing on the upper end of the drive bar.

2. A multiple bolt lock comprising spaced bolt mechanisms of which each comprises a case and a bolt slidably mounted therein, bars slidably mounted in each case at an angle to the bolt thereof, coupling means between the bars, the bars being operatively connected with the bolts to project and retract them upon longitudinal movement being imparted to the bars, a latch mechannism, a drive bar slidably mounted in the latch mechanism and operatively connected with one of the first said bars, and a hand grip operatively connected with the drive bar, the latch mechanism comprising an L-shaped pawl, a casing in which said pawl is pivotally mounted, a spring impelling the pawl toward the drive bar, the drive bar having a shouldered portion and the pawl a lateral leg engageable over said shouldered portion, and a key actuated member for moving the pawl in a direction away from the drive bar.

ROBERT M. LAMB.