Jan. 3, 1939. J. M. OLDHAM 2,142,456

COACH LOCK

Filed June 14, 1937 2 Sheets-Sheet 1

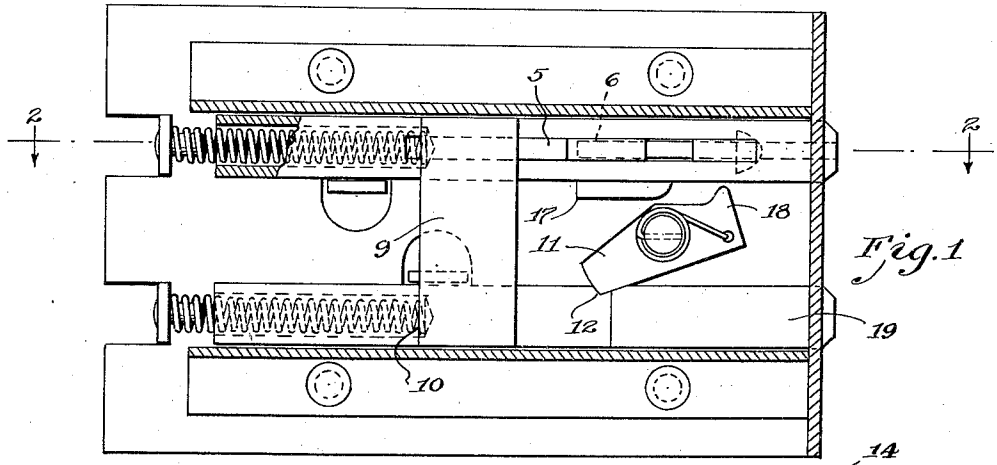


Fig. 1

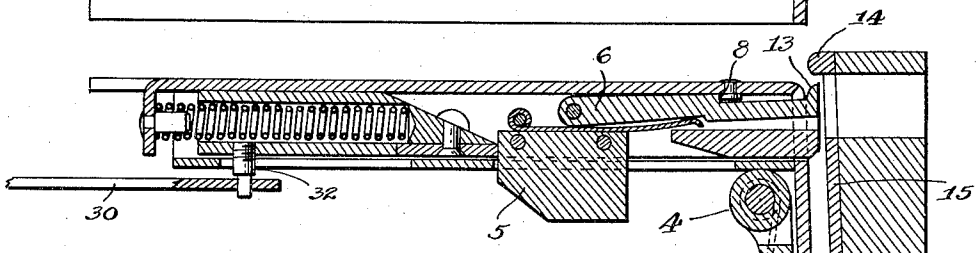
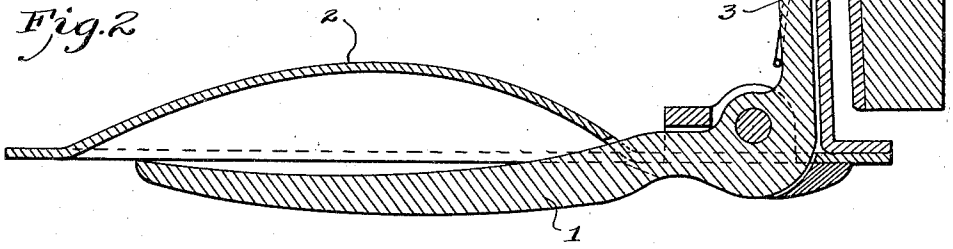


Fig. 2



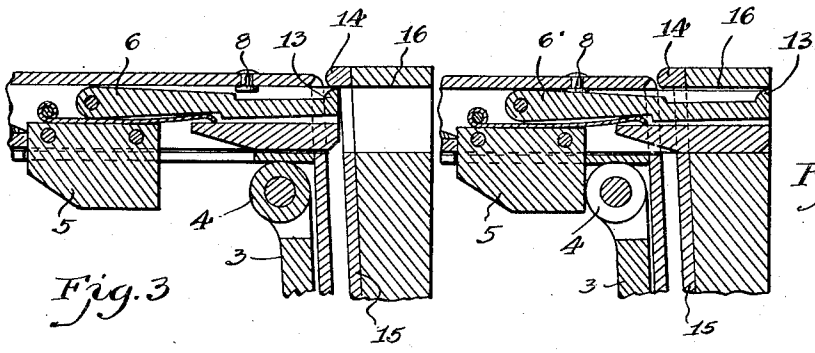


Fig. 3

Fig. 4

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COACH LOCK

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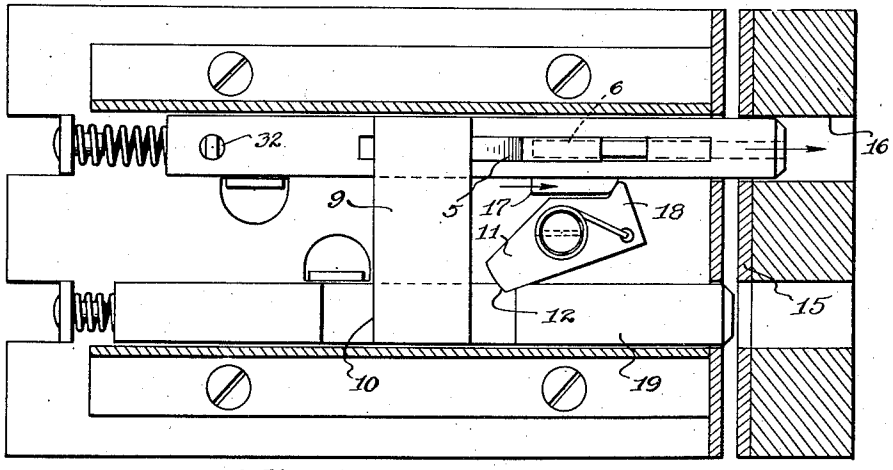

Fig. 5

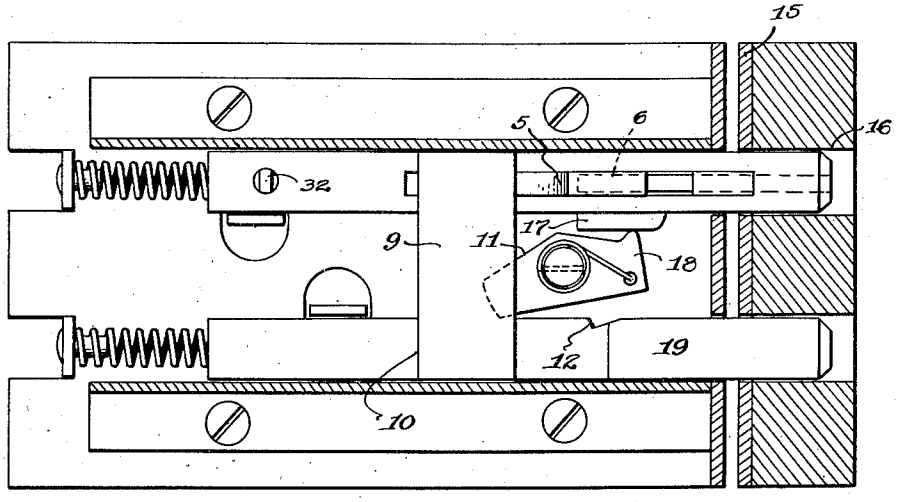

Fig. 6

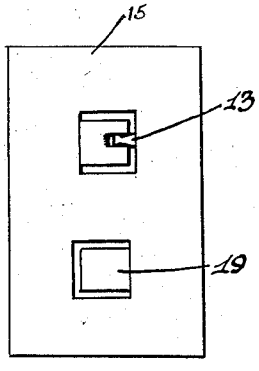

Fig. 7

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UNITED STATES PATENT OFFICE

2,142,456

COACH LOCK

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Application June 14, 1937, Serial No. 148,028

3 Claims. (Cl. 292—335)

This invention relates to coach locks. The ordinary coach door requires considerable effort to close it by reason of the necessary camming of the lock bolt back as the beveled head travels over the striker plate—in fact, so much effort that it is ordinarily necessary to slam the door in order to close it.

It is the object of the present invention to provide a coach lock in which this camming action is entirely eliminated. The latch bolt, when retracted to open the door, is temporarily held in this retracted position by a dog or trigger. Hence, the latch bolt does not strike the keeper plate at all but the end of the trigger strikes a stop on the keeper plate and trips the trigger or dog when the latch bolt registers with the keeper plate socket. Whereupon, the latch bolt is shot into the keeper plate socket by the release of the bolt.

In order to insure reliability of the lock, two latch bolts are provided. The first latch bolt operates as above described. When this is shot into its keeper opening, a cam on this latch bolt trips another trigger which holds under restraint a second latch bolt which is then allowed to shoot into the keeper opening.

In the drawings:

Fig. 1 is an elevation partly in section showing the inside of the coach lock.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary smaller section showing the first latch bolt just after it is tripped.

Fig. 4 is a fragmentary similar section showing the same after the first latch bolt is shot into the keeper socket.

Fig. 5 is a view similar to Fig. 1, showing how the first latch bolt trips the trigger of the second latch bolt.

Fig. 6 is a sectional view showing how the second latch bolt is shot into its socket.

Fig. 7 is a view of the keeper plate showing how one bolt bears against the outside of one keeper opening and the other bolt against the inside of the other keeper opening to prevent rattling.

The handle 1 is preferably substantially a flush type of handle which may be grasped by reason of the depression 2 in the panel of the door. This handle has a bell crank arm 3 and roller 4 arranged to contact the roll back abutment 5 to retract the upper latch bolt.

When this bolt is retracted, the trigger or dog 6 engages beyond the rivet or stop 8 and this holds the first bolt retracted. The leg 9 of the first or upper bolt strikes the retracting abutment 10 of the lower or second bolt and pulls that second bolt back with the first bolt. The trigger 11 snaps in behind the abutment 12 on the second bolt and holds this retracted.

When the door is closed, there is no wiping of the striker plate at all. The projecting nose 13 on the end of the trigger 6 engages the trip member on the keeper plate 15 (shown in Fig. 3) when the first bolt registers with its keeper socket 16. This releases the trigger from behind the rivet 8 and the bolt shoots into the keeper socket 16 (shown in Fig. 4). Cam 17 on the first bolt strikes the nose of the second trigger 18 and tilts this out of engagement with abutment 12 and this permits the second bolt 19 to shoot into its keeper socket (shown in Fig. 6).

I am aware that it is not broadly new to provide a coach lock in which the latch bolt is held retracted by means of a trigger which is tripped at the appropriate moment to enter its keeper socket but, so far as I am aware, no one has heretofore designed a bolt of this kind which is simple, efficient and reliable in operation. One way I obtain this simplicity is by mounting the trip directly on the bolt and having its nose projected at the head of the bolt head. This also achieves sureness and dependability of operation. Safety and reliability is secured by the simple arrangement that I have designed to provide a double locking effect by means of a double bolt action.

30 is a strap connected with the inside operating handle (not shown). This strap also connects with stud 32 on the end of the bolt.

I claim:

1. In a coach lock adapted to be associated with a keeper having sockets therein, a casing, a pair of bolts independently movable in said casing, means for projecting each of said bolts from the casing, means for retracting the said two bolts and triggers for holding both said bolts in retracted position, means to trip the trigger of one bolt when it registers with its socket and the movement of said bolt arranged to trip the other trigger which restrains the other bolt and allow it to move into its bolt socket.

2. In a coach lock adapted to be associated with a keeper having sockets therein, a casing, a pair of independently guided reciprocating latch bolts, springs for projecting the said latch bolts, separate triggers associated with each latch bolt, a connection between the said latch bolts so that retraction of one latch bolt retracts the other latch bolt, means to trip one of the triggers to permit the latch bolt to shoot into its socket, a portion of said first mentioned reciprocating latch bolt striking the trigger controlling the other

latch bolt to release the same and permit the other reciprocating latch bolt to shoot into its socket.

3. In a coach lock adapted to be associated with a keeper having sockets therein, the combination of a latch casing, a pair of reciprocating latch bolts therein, a leg secured to one latch bolt and adapted to abut against the other latch bolt to retract the same when the first mentioned latch bolt is retracted, a trigger carried by the first mentioned latch bolt, a trigger pivoted on the latch casing for holding the other latch bolt when retracted but having a nose in the path of a portion of the first mentioned latch bolt, means to trip the trigger of one latch bolt whereby this allows it to shoot into its socket and whereby this trips the second trigger and the second latch bolt is permitted to shoot into its socket.

JOHN M. OLDHAM.