Oct. 27, 1936. J. E. CASSE 2,058,414

LOCKING MECHANISM

Filed Dec. 19, 1934

Fig. 1.

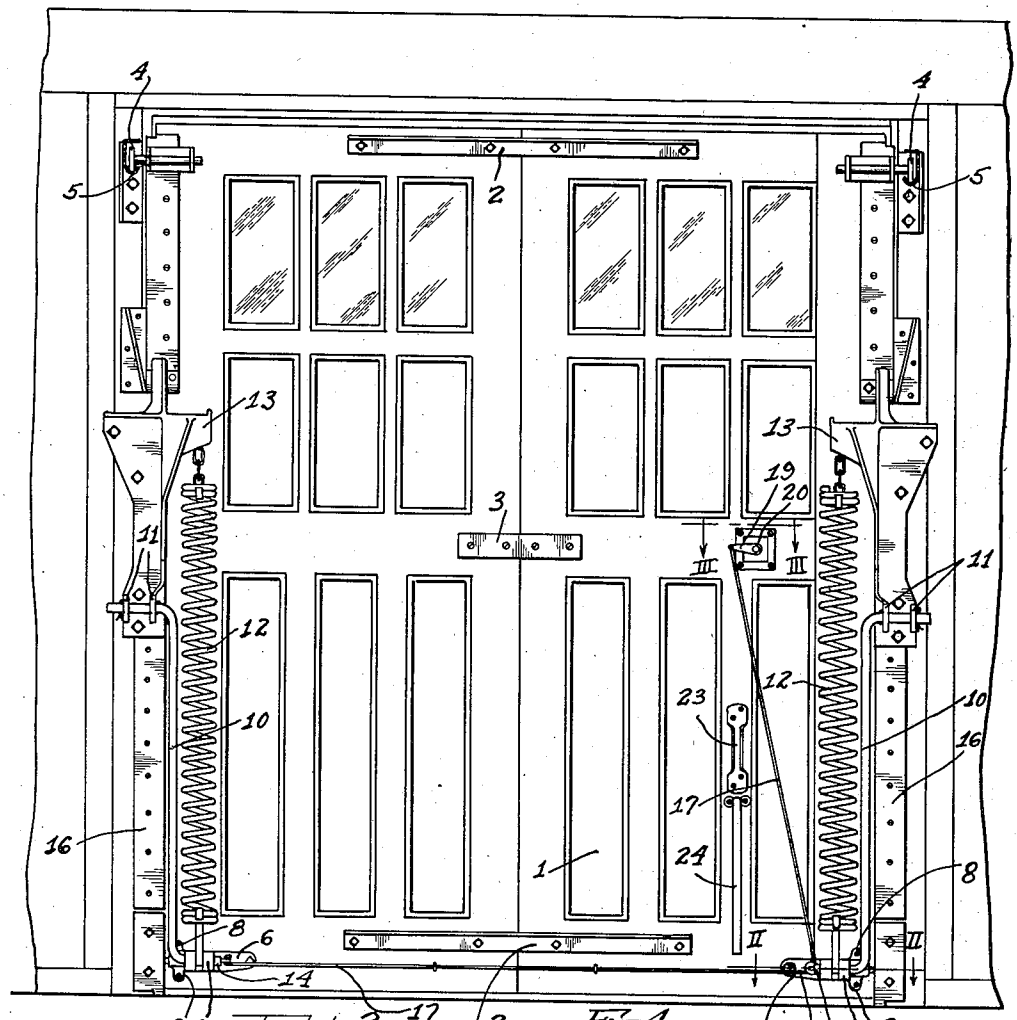


Fig. 2.

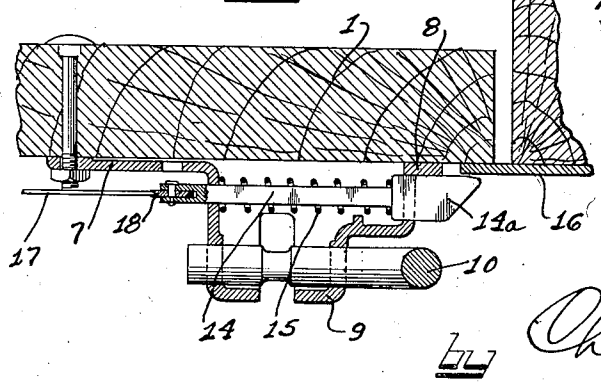


Fig. 4

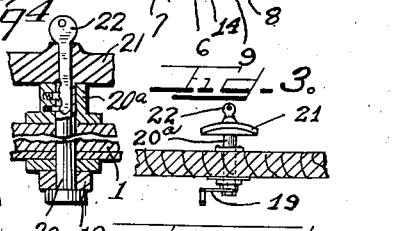


Fig. 3.

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Patented Oct. 27, 1936

2,058,414

UNITED STATES PATENT OFFICE

2,058,414

LOCKING MECHANISM

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Application December 19, 1934, Serial No. 758,189

9 Claims. (Cl. 70—14)

This invention relates to latching mechanism primarily designed for latching and locking one piece overhead garage doors in their closed or lowered positions, but susceptible of other uses.

It is an object of this invention to provide a latching and locking mechanism that will securely lock such doors in their closed position upon both sides and of such a character that an unauthorized person will find it practically impossible to unlatch the door for opening the same.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawing which illustrates a preferred form of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is an interior elevational view of a garage door showing the adjacent parts of a garage.

Figure 2 is an enlarged fragmentary sectional view taken upon the line II—II of Figure 1 looking in the direction of the arrows.

Figure 3 is a fragmentary sectional view taken upon the line III—III of Figure 1.

Figure 4 is an enlarged fragmentary sectional view taken through the lock.

In the illustrated embodiment of this invention, there is shown a garage door 1 which may consist of a single member or two parts rigidly connected together by metal strips 2 and 3 for effecting a one piece or unitary structure which is adapted to be lifted to overhead position in a manner well known in the art. To this end, it might be mentioned that rollers 4 are secured upon the upper side edges of the door for engaging overhead tracks 5 mounted in the garage.

Adjacent the bottom of the door and adjacent each side edge thereof there is a bracket or casting 6 shown in cross section in Figure 2. Each bracket has attaching flanges 7 and 8 and an intermediate outwardly directed hollow portion 9. The pivotal anchor rods 10 for the door have right angled lower terminals journalled in the outer portions of the brackets 6. It might be mentioned that the upper ends of the rods 10 have right angled bearing portions journalled in bearings 11 upon the inner side of the door frame. Springs 12 which are under tension and which are anchored to brackets 13 upon the door frame are connected to the journal portions of the rods 10 in the brackets 6. As the lower portion of the door is swung outwardly during the operation of opening the door, the springs 12 will of course assist in elevating the door to overhead position and the anchor rods 10 will act as pivotal tying elements with respect to the garage and properly guide the door in its movement to overhead position.

The invention herein concerns itself with means for locking or latching the lower portion of such a garage door as above described against outward movement. To this end, a latch bolt 14 is slidably mounted in each bracket 6. Each latch bolt has an enlarged head 14*a* forming a shoulder against which a coil spring 15 bears that surrounds the shank of the bolt within the hollow portion of the bracket. The springs 15 bear against the opposite interior sides of the brackets and are normally effective for projecting the heads of the bolts beyond the brackets for overlapping stops or weather strips 16 upon the lower part of the door frame when the said springs are released from compression as will later appear. It will be noted that each stop strip 16 extends a short distance into the door opening and forms a stop for the door.

A cable 17 is anchored to the inner end of one bolt and extends across the door and around a sheave or pulley 18 rotatably mounted in the inner end of the other latch bolt. From the sheave 18, the cable 17 extends upwardly and is connected to a crank arm 19 secured to an operating shaft 20 which extends through the door and is provided with an operating knob 21 upon the outside of the door. A key 22 is insertable through the knob for unlocking the shaft 20 for rotation.

With reference to Figure 4, it will be observed that the outer end of the shaft or rod 20 has the knob 21 secured or welded thereto. A tumbler containing member 20*a* is positioned between the knob and door and secured to the latter. This tumbler containing member carries the usual spring pressed tumblers for automatically engaging appropriate recesses in the rod 20. The rod 20 and knob 21 have suitable registering slots for key 22. It will be obvious that when the key is inserted, it will retract the tumblers and allow the knob and rod 20 to be turned. When the key is removed, the plungers will automatically lock the rod 20 when the parts are in locking position.

When the knob 21 is turned to elevate the crank 19 a sufficient pull will be imparted to the cable to retract the two latch bolts for allowing the door to be opened. When the crank 19 is turned upwardly to dead center, it will hold the bolts in retracted position so that the operator

can grasp a suitable handle upon the lower portion of the door for swinging the same outwardly. The handle upon the exterior of the door is not shown, but the same may be similar to the handle 23 upon the interior side of the door. A strip 24 may be attached to the interior side of the door for lowering the door from its overhead position. As soon as the door is closed the crank 19 may be turned in the proper direction to move the same from dead center and allow the springs 15 to project the bolts to locking position. The crank may then be locked in such position.

From the foregoing, it will be apparent that a novel latching mechanism has been provided for a one piece garage door that renders it extremely difficult for an unauthorized person to operate for unlatching the door.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I do not therefore purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. In a garage having a door way and an overhead swingable door mounted in said door way and stops upon the lower portion of said garage extending into said door way, latch bolts mounted upon the lower portion of said door for engaging behind said stops when said door is closed, a cable attached to one bolt, a sheave upon the other bolt around which said cable is trained, means for operating said cable for retracting said bolts and means connecting said cable to said door and operative for retaining said bolts in retracted position.

2. Mechanism for latching an overhead swingable garage door comprising a pair of slidable latch bolts upon the lower portion of the door, yielding means for normally projecting said bolts in one direction, a cable anchored to one bolt, and movably connected to the other bolt, a crank arm attached to said door to which the free end of said cable is attached, means for operating said crank arm for operating said cable for retracting said bolts and means for locking said crank arm against rotation.

3. Mechanism for latching an overhead swingable garage door in its closed position comprising a pair of slide bolts, yielding means for projecting the same for latching said door in its closed position, a cable anchored at one end to one bolt and movably connected to the other bolt, a crank arm connected to the free end of said cable and movable to dead center for operating said cable for retracting said bolts and means for locking said crank arm in a predetermined position.

4. In a structure of the class described comprising a door swingable to overhead position, a pair of slide bolts upon the inner side of the door for latching the same in closed position, yielding means for normally projecting said bolts, a cable anchored to one bolt, a sheave upon the other bolt over which said cable is trained and key controlled means upon the exterior of said door for operating said cable for retracting said bolts.

5. Mechanism for latching an overhead swingable garage door in its closed position comprising a pair of substantially alined slide bolts mounted upon the lower interior portion of the door, yielding means for automatically projecting said bolts into locking positions, a cable anchored at one end to one bolt and having a relatively movable connection with the other bolt, and key controlled means exterior of the door and extending therethrough and connected to the free end of said cable for operating the same for retracting said bolts.

6. In latching mechanism for a garage door, a pair of substantially alined slide bolts on said door, yielding means for normally projecting the same, a cable anchored to one bolt and attached to the other bolt for relative movement thereof and key controlled means for actuating said cable.

7. In latching mechanism for a garage door, a pair of substantially alined slide bolts upon the bottom of the door, yielding means associated with each bolt for normally projecting the same, a cable anchored to one bolt, a sheave upon the other bolt over which said cable is trained, and key controlled means for actuating said cable for retracting said bolts.

8. In locking mechanism for a garage door, a pair of slide bolts mounted upon the bottom of the door, a cable anchored to one slide bolt, a sheave upon the other bolt over which said cable is trained, a locking mechanism upon said door including an arm to which said cable is attached and key controlled means for rotating said arm to dead center for operating said cable for retracting said bolts.

9. Mechanism for latching an overhead swingable door, comprising a pair of latch bolts upon the lower portion of the door, yielding means for normally projecting said bolts, a cable connected to one bolt and movably connected to the other bolt, a rotatable member upon said door in which the free end of said cable is attached, said member being rotatable for retracting said bolts and retaining the same in retracted position and being rotatable in an opposite direction for releasing said bolts, and means for cooperating with said rotatable member for locking the same when said bolts are released.

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