Nov. 28, 1939. H. C. BLODGETT 2,181,313

LOCK

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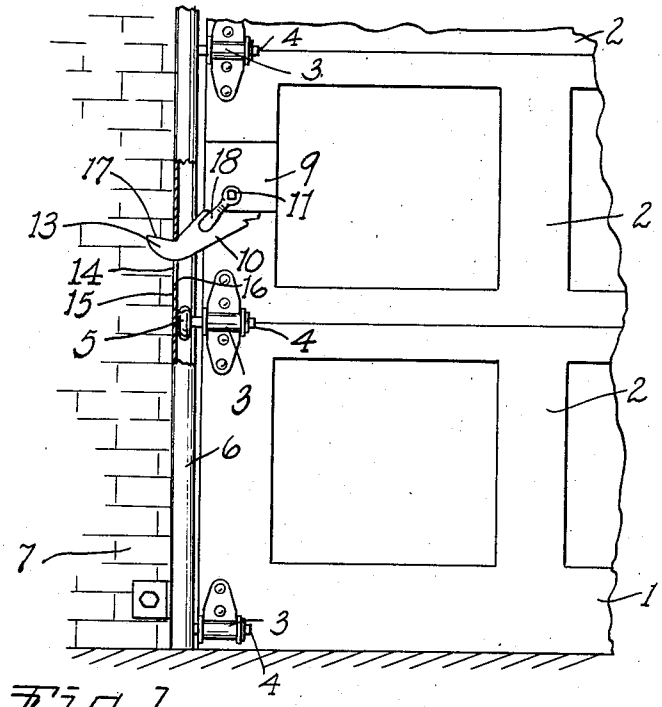


Fig. 1.

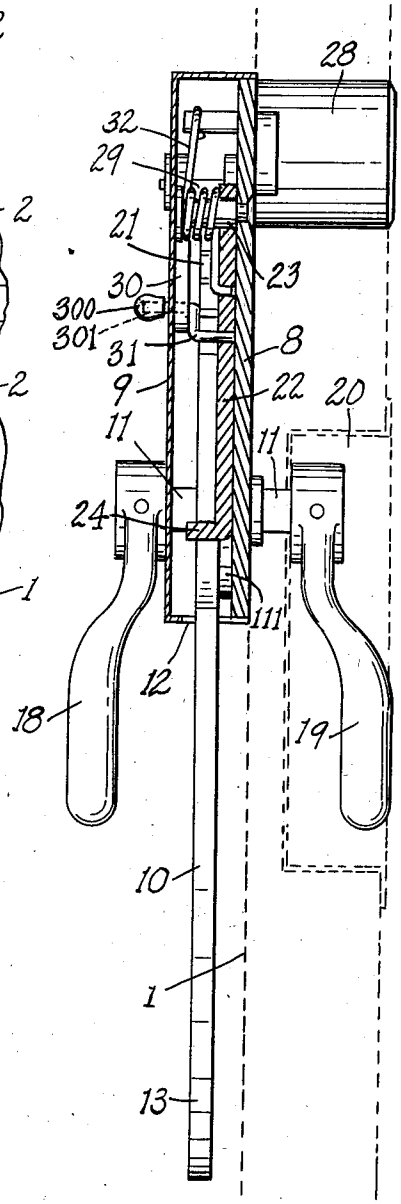


Fig. 3.

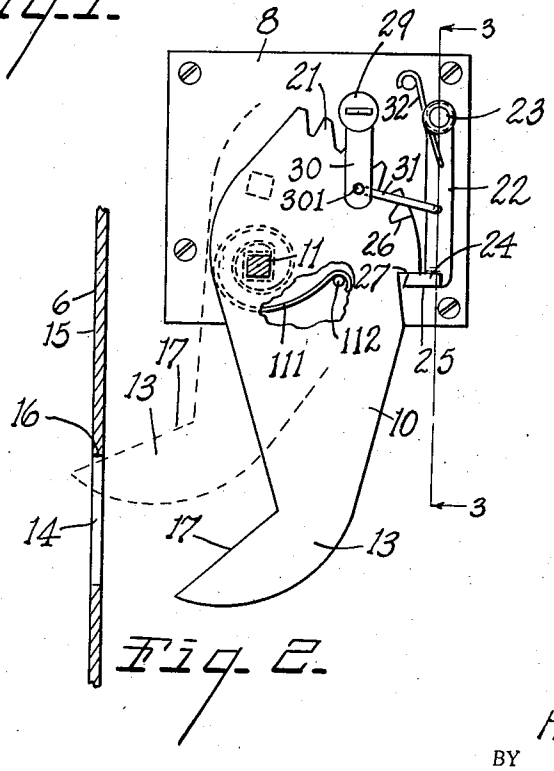


Fig. 2.

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LOCK

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4 Claims. (Cl. 70—150)

This invention relates to locking means for upwardly or vertically opening doors such as garage doors. In such doors the locking means is frequently rendered ineffective by obstructions such as ice and snow which prevent the complete closing of the door, and these obstructions are frequently very difficult to remove.

The main objects of this invention are:

First, to provide a lock for upwardly acting doors which is effective to lock the door even when it is incompletely closed.

Second, to provide a lock of this character which can be readily applied to a door and is effective as a lock without great accuracy in its mounting or application to the door.

Third, to provide a lock having the above advantages which is comparatively simple in structure and is not likely to get out of repair or become inoperative.

Objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure embodying the features of the invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary inside elevation of a door embodying the features of my invention, partially in vertical section, with the lock in engaged or locking position.

Fig. 2 is an enlarged fragmentary view partially in section with the bolt shown in retracted position by full lines and in actuated position by dotted lines, the actuated position illustrating, as compared with Fig. 1, substantial extremes of locking engagement.

Fig. 3 is an enlarged fragmentary view partially in section on line 3—3 of Fig. 2, the door being indicated by dotted lines.

In the embodiment of my invention illustrated, the door designated generally by the numeral 1 is made up of a plurality of panels 2 having hinge connections 3, the pintles 4 being provided with rollers 5 which engage the channel track 6. The track is secured to the wall 7 at the side of the door opening. Doors of this type are old in the art.

My improved means for locking the door permit its locking even when the door is incompletely closed. Accumulations of dirt, ice, and snow frequently prevent complete closing of the doors, such as garage doors, and render it impossible to lock the doors with the means commonly employed until the obstruction is removed, and this is frequently difficult or in any event requires time and effort.

The embodiment of my invention illustrated comprises a casing consisting of the back plate 8 and the housing 9 for enclosing the operative parts. This is suitably mounted on the door 1, the means for mounting not being illustrated. The bolt 10 is provided with a spindle 11 by means of which it is pivotally mounted on the casing, the bolt being mounted to depend from the casing, swinging in an opening 12 provided therefor in the bottom of the housing member 9.

The bolt has a laterally projecting keeper engaging portion 13 adapted to swing through the slot 14 provided therefor in the web 15 of the channel track, the upper end 16 of this slot constituting a keeper which is engaged by the keeper engaging face 17 of the bolt. In Fig. 1, the engaging portion of the bolt is illustrated when the door is completely closed. In Fig. 2, the engaging portion is illustrated with the door incompletely closed, and it will be appreciated that in different positions of approximate closure the face 17 will engage the keeper at different points along the face.

The bolt is provided with handles 18 and 19, the handle 19 being set into a recess 20 provided therefor in the outer face of the door. The bolt has a series of ratchet teeth 21 adapted to be engaged by the pawl or detent 22 which is pivoted at 23 and is provided with a ratchet engaging portion 24 having a flat face 25 adapted to engage the coacting flat faces 26 for holding the bolt in locked position. The bolt also has a ratchet tooth 27 which is faced in the opposite direction from that of the series of teeth 21 so that when the detent portion 24 is engaged therewith the bolt is positively held in its retracted or open position as shown in Fig. 2. Spring 111 bearing at one end against a pin 112 on plate 8 and at its other end being secured to the bolt spindle 11 serves to retract the bolt from locking to open position when the detent face 25 is released from ratchet faces 26.

Key actuated means are provided for releasing the bolt from detent 22 and unlocking the door, the said means comprising a conventional lock 28 and a rotatable member 29 controlled thereby. This member 29 is provided with an arm 30 which is connected by the link 31 to the detent so that the detent may be swung out of engagement with the bolt against the tension of the spring 32 which is arranged to urge the detent into engaging position. The link is offset to connect the same to arm 30 and the offset portion designated 301 is

extended through housing 9 and provided with a knob 300 whereby the arm 30 and link 31 may be manipulated from the inner side of the door to release the detent.

In locking the door, the bolt is released by means of the key. By manipulating one of the handles, the operator swings the bolt into locking engagement with the keeper, the detent ratcheting along the ratchet teeth according to the position of the bolt. After the door is completely closed, the bolt assumes the position shown in Fig. 1, but if the door is not completely closed it assumes a position with the bolt in engagement with the keeper at some intermediate point of the bolt face 17.

To release the door, the key is operated to retract the detent 24 and the bolt is swung out of engagement by the spring 111.

The above described locking mechanism, it will be observed, is in the form of a simple, compact, self-contained unit which may be readily and quickly applied to a door while on the job, it being necessary only to attach housing 9 and plate 8 to the door in proper registry with the keeper opening 14. This effects a great saving in erection cost.

I have illustrated and described a practical embodiment of my invention. I have not attempted to illustrate or describe certain modifications and adaptations which I contemplate, as it is believed this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination with a keeper, of a lock casing, a bolt pivotally mounted in the casing to depend therefrom and provided with a laterally projecting keeper engaging portion, said bolt being provided with a series of ratchet teeth and with an individual ratchet tooth substantially spaced from the series of ratchet teeth, a bolt detent pivoted within the casing to coact with said series of ratchet teeth or with said individual ratchet tooth and acting when engaged with said individual ratchet tooth to hold the bolt in retracted position and coacting with said series of teeth to hold said bolt into the keeper in a plurality of locking positions, and key actuated means for releasing said detent.

2. The combination with a keeper, a lock casing, a bolt pivotally mounted in the casing to depend therefrom and provided with a laterally projecting keeper engaging portion, said bolt being provided with a plurality of ratchet teeth, a bolt detent pivoted within the casing to coact with said ratchet teeth for holding said bolt into the keeper in a plurality of locking positions, a rotatable key actuated member provided with an arm, and a link connecting said arm to said detent for disengaging the detent from said bolt, the bolt pivot being provided with a handle at each side of the door.

3. In a lock for vertically opening doors, the combination with a fixed member adjacent the path of travel of the door having an opening therein one end of which constitutes a keeper, of a bolt pivoted to the door and swingable into and out of engagement with said member and keeper, said bolt being provided with a handle for manual manipulation and having a keeper engaging portion of substantial length adapted to engage at one point or another with said keeper to lock the door, a spring actuated detent coacting with said bolt to hold said portion against the keeper in a plurality of keeper engaging positions when the door is incompletely closed and also adapted to hold the bolt in retracted position, and a key actuated means for releasing said detent.

4. In a lock for vertically opening doors, the combination with a fixed member adjacent the path of travel of the door having an opening therein one end of which constitutes a keeper, of a bolt pivoted to the door and swingable into and out of engagement with said member and keeper, said bolt being provided with a handle for manual manipulation, and having a keeper engaging portion of substantial length adapted to engage at one point or another with said keeper to lock the door, a spring actuated detent coacting with said bolt to hold said portion against the keeper in a plurality of keeper engaging positions, and a key actuated means for releasing said detent.

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