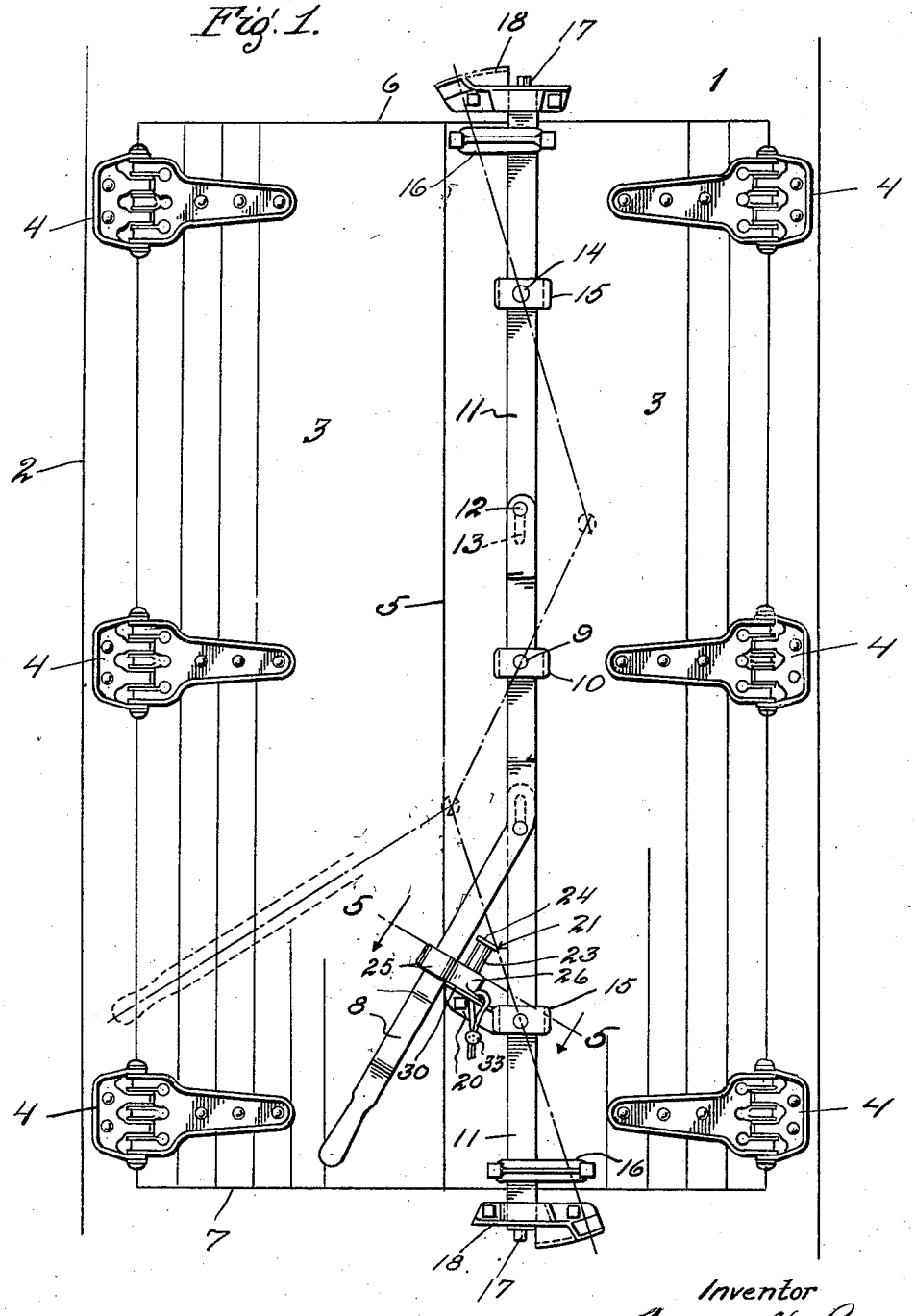
June 4, 1929. T. H. SYMINGTON 1,716,332

CAR DOOR LOCKING DEVICE

Filed Feb. 25, 1926 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

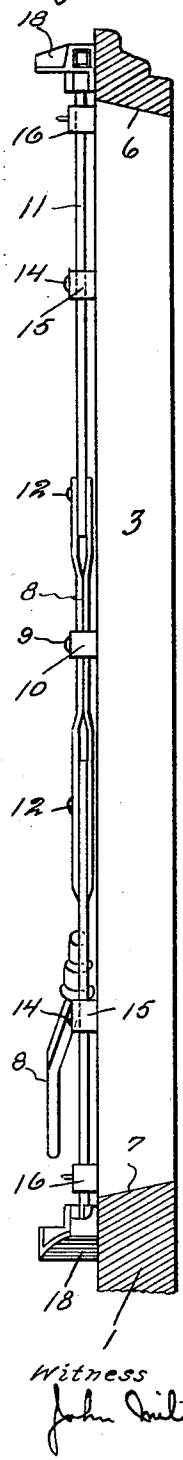
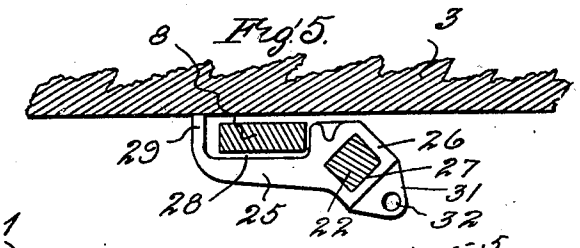


Fig. 5.



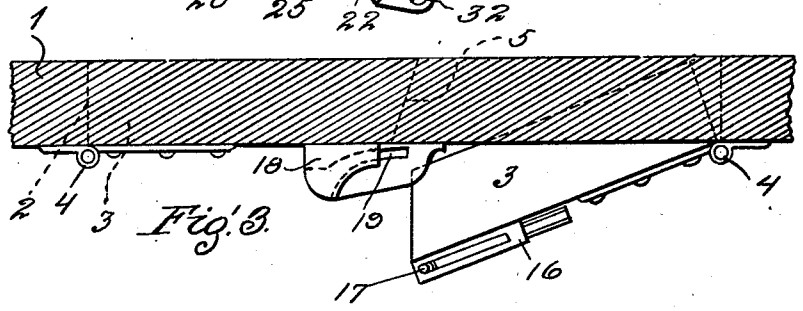
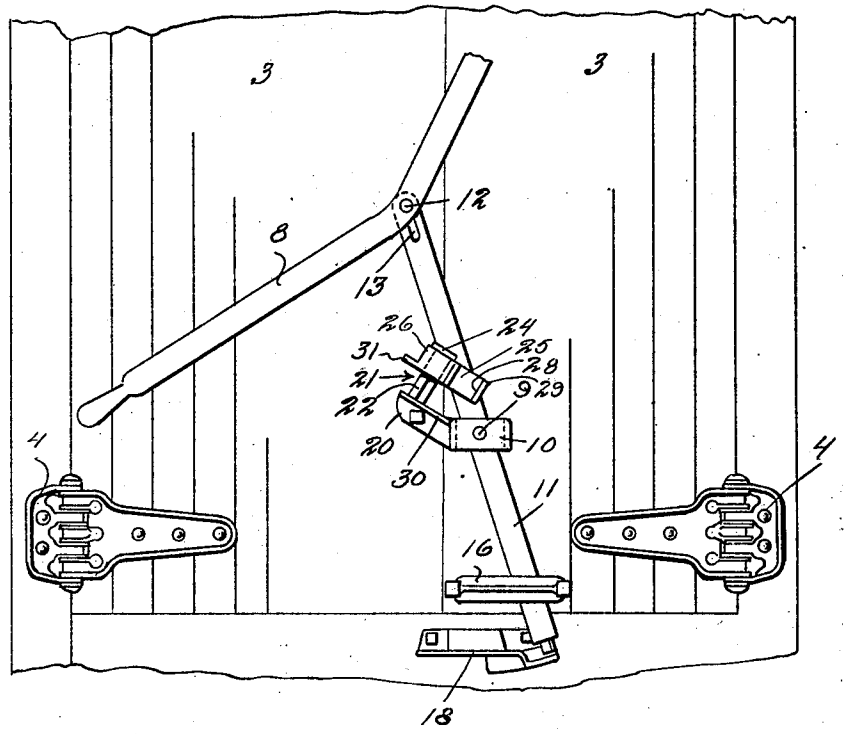


Fig. 3.

Fig. 4.



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Patented June 4, 1929. 1,716,332

UNITED STATES PATENT OFFICE.

THOMAS H. SYMINGTON, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO T. H. SYMINGTON AND SON, INC., OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

CAR-DOOR-LOCKING DEVICE.

Application filed February 25, 1926. Serial No. 90,661.

The invention relates to securing devices for doors such, for instance, as those provided in connection with refrigerator cars.

The object of the invention, generally stated, is to provide a door securing mechanism embodying pivotally connected and mounted bolts coacting with keepers secured adjacent the door opening, together with an operating lever for the bolts, the lever having coacting therewith releasable means for maintaining it against movement when in securing position.

The object of the invention, more specifically stated, is to provide fastening or holding means for the lever embodying supporting means carried by one of the bolts and a retaining element mounted thereon and movable selectively into or out of holding relation to the movable lever.

A further object is to provide securing means of this character in which the retaining element for the lever is capable of pivotal movement with respect thereto to effect release thereof, the pivotal movement being ordinarily prevented by a special mounting for the retaining element.

Another object is to provide holding and securing means of the character specified which may have a seal applied to prevent tampering or to disclose that tampering has been attempted.

Another object is to provide holding or securing means for use in this combination and capable of being constructed as a complete unit adapted to be attached to already existing lever and bar devices for holding a door closed.

An additional object is the provision of a structure or device of this character which will be simple and inexpensive to manufacture and install, easy to operate, positive in action and also efficient and durable in service.

To the attainment of the foregoing and other objects and advantages the invention preferably consists in the detailed construction and the arrangement and combination of parts to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings in which:

Figure 1 is an elevation of a door equipped with lever and bar fastening means, the view showing the invention in applied position and operating to hold the lever against movement,

Figure 2 is a vertical section taken along the meeting line of the doors, this view disclosing a side elevation of the securing means,

Figure 3 is a plan view showing one door in partly open position,

Figure 4 is a fragmentary elevation showing the retaining member moved into lever releasing position,

Figure 5 is a detail section taken on the line 5—5 of Figure 1.

Referring to the drawings in detail, the numeral 1 designates a portion of a car such, for instance, as one of the refrigerator type, the car side having an opening 2 normally closed by a pair of doors 3 mounted as by means of hinges 4 and having inclined coacting meeting edges 5 in addition to inclined upper and lower edges 6 and 7. The construction of the door and its frame may be conventional. In doors of this type it is highly desirable to apply pressure to the outside for the purpose of forcing them tightly into place and preventing leakage or passage of air.

In the present instance the means for accomplishing this is shown as comprising a lever 8, preferably of angular or offset shape pivoted as at 9 within a bracket structure 10 mounted on one of the doors, the pivot point of the lever being intermediate its ends. Bolts 11 are also provided, these bolts being pivotally and slidably connected with the lever 8 at opposite sides of its pivot as by means of pivot elements 12 carried by the lever and passing through slots 13 in the bolts. The bolts are pivoted intermediate their ends as at 14 within brackets 15 and the swinging movement is limited by means of elongated slotted stop brackets 16 located near the upper and lower ends or edges of the door upon which the entire lever and bolt mechanism is mounted. The bolts are of such length as to project beyond the top and bottom of the door structure and their upper and lower extremities are preferably formed with cylindrical extensions 17 coacting with retaining means such as the keepers 18 mounted on the car above and below the opening 2 therein. The keepers are shown as having cam slots 19 therein for the reception of the

cylindrical ends 17 of the bolts, the entrances to the slots being flared as indicated. Movement of the securing mechanism to open or closed position is effected by swinging the lever 8 from the locking position shown by full lines in Figure 1 to the releasing position illustrated by dotted lines in the same figure, pivotal movement of the parts occurring at the points 9, 12 and 14. The above described parts do not constitute my invention but are shown for the sake of clearness in explaining the construction, mounting and operation of my lever retaining means which constitutes the subject matter of the present application.

When the lever 8 has been swung to force the bolts 11 into cooperative relation to the keepers 18, it is necessary that some means be provided for holding the lever against accidental movement. To accomplish this I provide a bracket device 20 which may be secured either upon the door, or to the bolt 11 adjacent the lever 8 or which may conceivably form an integral part of or be attached to the lower bracket member 15, the exact mode and place of mounting being a very minor detail. This bracket is represented as including or carrying an extension 21 arranged substantially parallel to the position occupied by the lever when the lever is in door securing position. That portion of the extension nearest the bracket 20 is angular in cross section as shown at 22 while the free end portion 23 is cylindrical and provided with a flange 24 of greater diameter.

Supported by the bracket and coacting with the lever 8 to hold the latter against movement is a retaining member 25 of any preferred detailed construction having a hub portion 26 formed with a rectangular socket or opening 27 adapted to fit conformingly upon the angular portion 22 of the bracket extension. At its end away from the hub, the member 25 is recessed at 28 or formed in a substantial U-shape so as to receive and fit over the lever, the free end being preferably formed with an extension 29 which will engage against the face of the other door and thereby prevent any possibility of the lever slipping out and moving into releasing position.

The bracket 20 may also have an outstanding plate portion 30 and the member 25 is preferably formed with an ear 31, both of these elements being apertured as at 32 for the accommodation of a seal 33 such as is customarily used in connection with railway car doors.

In Figure 1 the parts are all shown in secured position, it being noted, however, that the broken lines indicate the position assumed by the lever and the bolts when the doors are opened. In this figure it will be observed that the member 25 is in embracing relation to the lever, pivotal movement into releasing position being prevented owing to the fact that the square socket or opening in the hub portion is engaged upon the angular portion 22 of the bracket extension.

When it is desired to open the doors, the seal 33 must first be removed or broken and the member 25 slid upwardly along the bracket extension 21 until the socket or opening 27 in the hub portion slides onto the cylindrical portion 23. Upon reaching this position, the member 25 may be swung outwardly and backwardly away from and out of engagement with the lever 8, thus freeing the latter and permitting it to be swung into the dotted line position for withdrawing the bolts 14 from the keepers 18 so that the doors may be opened. If the doors are reclosed, the lever is of course returned to its securing position, the member 25 swung into engagement therewith, subsequent to which the member is slid down onto the angular portion of the hub extension.

Lever retaining means constructed and arranged in this manner will be very easy to install and operate and a proper holding action of the lever will be insured, accidental movement thereof and possible opening of the doors, with resultant loss of car lading or injury thereto being avoided.

While I have shown and described the preferred embodiment of the invention, it should be understood that the disclosure is merely illustrative as the right is reserved to use the device in other capacities or in connection with doors of any character, if such an expedient is necessary, and to make changes in the details of construction, arrangement and mounting, provided all such variations and modifications constitute no departure from the spirit of the invention or the scope of the claims hereunto appended.

Having thus described the invention, I claim:

1. In combination with door fastening means including relatively movable pivoted members, a support mounted at the pivot of one member, a retainer movably mounted on said support and engageable upon another of the relatively movable members, and means for holding said retaining element immovable.

2. In combination with door securing means including pivoted bolt elements and an operating lever movably mounted with respect thereto and operatively connected therewith, holding means for the lever comprising a support mounted at the pivot of one bolt element and a retaining element carried by said support for engagement with the lever to prevent movement thereof, said retaining element being normally immovable and being shiftable to permit release from the lever.

3. In combination with a door securing mechanism including an operating lever, bolt elements connected therewith and brackets

within which the bolt elements are pivoted, holding means for the lever comprising a support mounted on one bracket and a retaining element slidably and normally non-rotatably mounted on the support and engaging the lever for preventing movement thereof, said retaining element being shiftable to permit rotation thereof out of engagement with the lever.

4. In combination with a door securing mechanism including a swingably mounted control lever and bolt elements connected therewith and mounted in brackets, locking means for the lever comprising a support extending from one bracket and a retaining element mounted thereon, the support having means engaging the retaining element and normally holding the same against rotary movement, the retaining element being slidable out of engagement with the last named means to effect rotation out of engagement with the lever.

5. In combination with door securing means including brackets, bolt devices pivoted in said brackets and an operating lever connected with the bolt devices for moving the same into or out of operative position, holding means for the lever comprising a support carried by one of said brackets and a retaining element carried thereby, the support and the lever having portions coacting to hold the retaining element against swinging movement while permitting sliding movement, and said support having a portion engageable by the retaining element in its slid position to permit swinging thereof out of engagement with the lever.

6. In a door securing mechanism including stationary supporting brackets, bolts pivoted at the brackets, keepers for the bolts and an operating lever operatively connected with the bolts, holding means for the lever comprising a supporting arm formed on one bracket having an angular portion and a trunnion portion, and a retaining element slidably and non-rotatably engaged upon said angular portion, the retaining element normally engaging the lever in partially embracing relation thereto, the retaining element being movable onto said trunnion portion to be capable of swinging out of engagement with the lever.

7. In combination with a door securing mechanism including rigid brackets, bolts pivoted to said brackets and an operating lever, holding means for the lever comprising a support formed upon and extending angularly from one bracket and a retaining element slidably and normally non-rotatably mounted on the support and engaging the lever for preventing movement thereof, said retaining element being shiftable to permit rotation thereof out of engagement with the lever, the supporting member and the retaining element having engaging portions apertured for the reception of a seal.

8. In combination with door fastening means including relatively movable members and an operating lever, a support mounted on one member, a retaining element carried by said support for engagement with the lever to prevent movement thereof, said retaining element being normally immovable and being shiftable to permit release from the lever.

In testimony whereof I affix my signature.

THOMAS H. SYMINGTON.