

Sept. 18, 1956

A. T. TASCH ET AL

2,763,503

DOOR LOCK

Filed July 12, 1954

2 Sheets-Sheet 1

FIG.-1

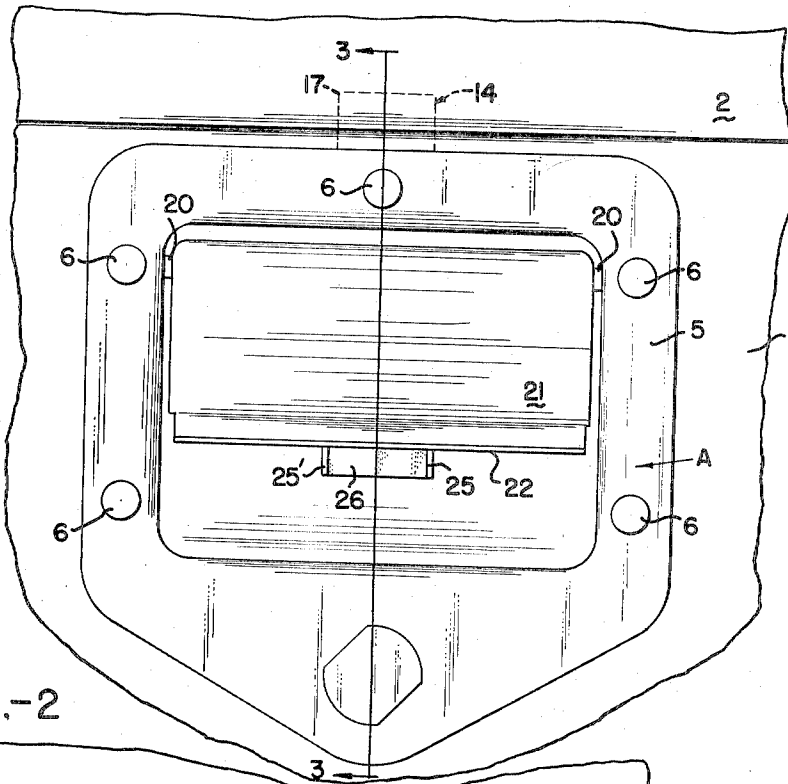
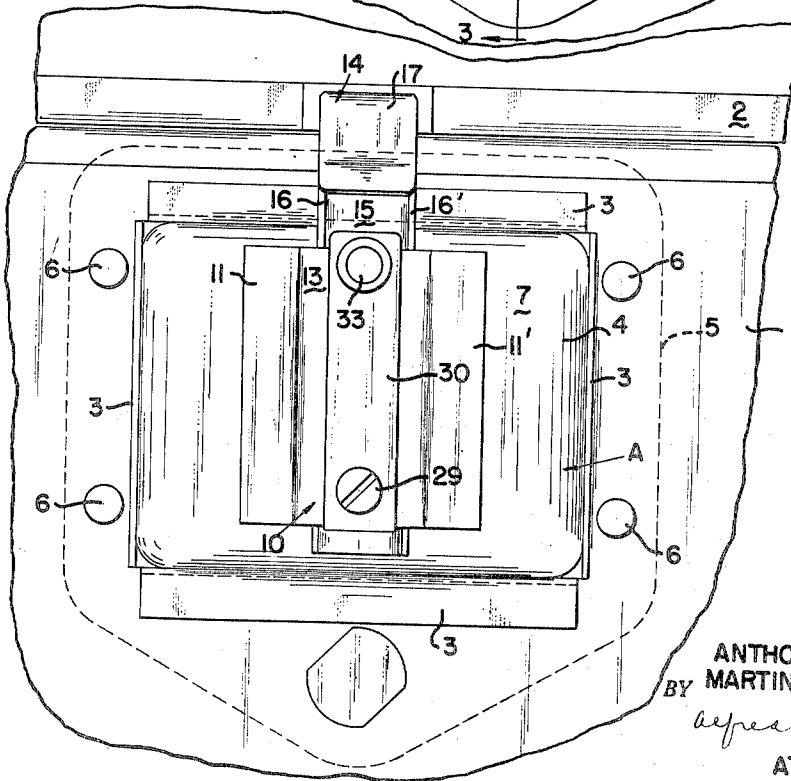


FIG.-2



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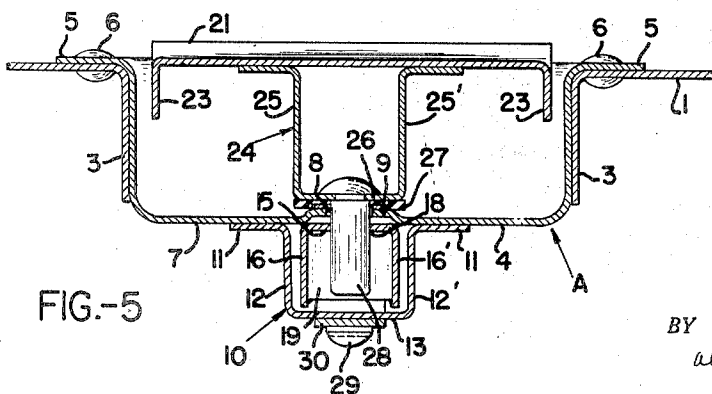
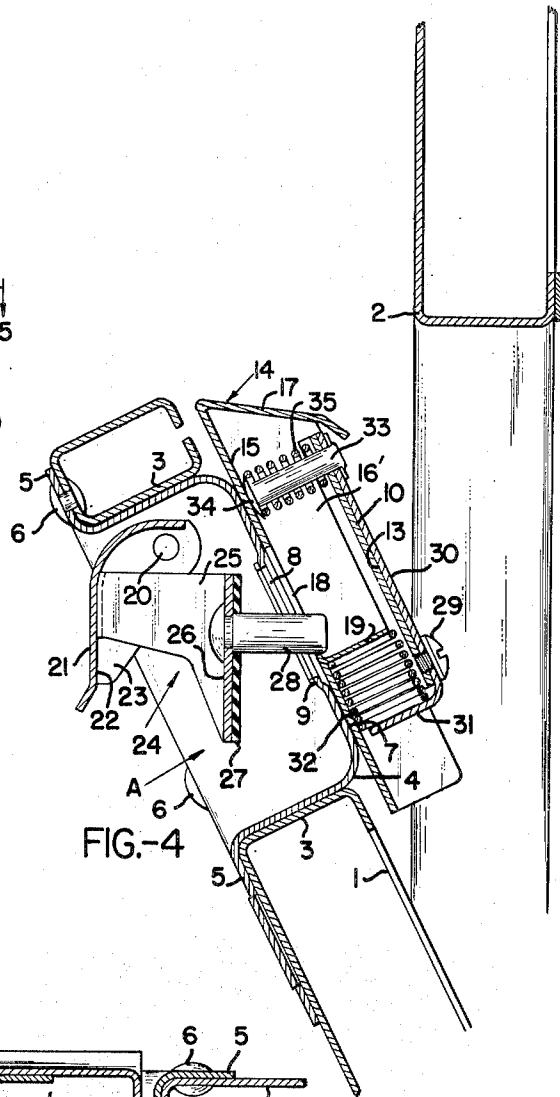
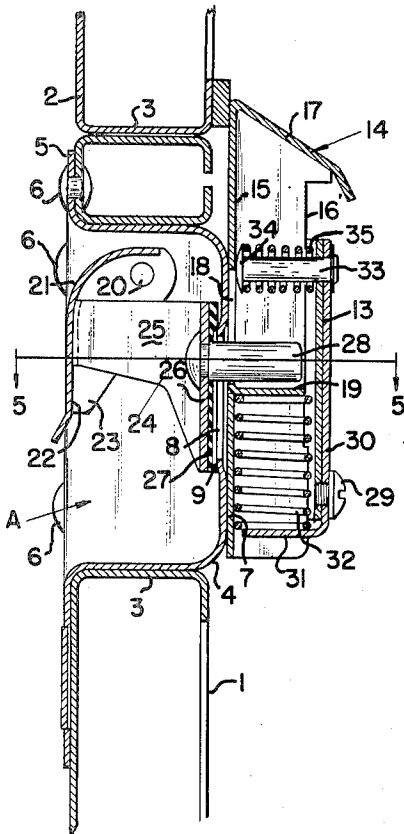
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1

2,763,503

DOOR LOCK

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4 Claims. (Cl. 292—173)

This invention relates in general to certain new and useful improvements in door locks and, more particularly, to a lock adapted for use on vehicular body doors, such as truck doors and the like.

It is the primary object of the present invention to provide a door lock of the type stated which is simple and economical in construction and which can be readily installed on all types of sheet metal doors with a minimum of labor cost.

It is another object of the present invention to provide a door lock of the type stated which is relatively waterproof.

It is a further object of the present invention to provide a door lock of the type stated which is easy to manipulate and is relatively shockproof and rattleproof.

With the above and other objects in view, our invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the drawings—

Figures 1 and 2 are fragmentary front and rear elevational views, respectively, of a door having a door lock constructed in accordance with and embodying the present invention;

Figure 3 is a fragmentary vertical sectional view taken along line 3—3 of Figure 1;

Figure 4 is a fragmentary sectional view similar to Figure 3, showing the door and lock structure in unlocked and outwardly swung position; and

Figure 5 is a fragmentary sectional view taken along line 5—5 of Figure 3.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, 1 designates a conventional door hingedly mounted for closure-wise disposition against a jamb 2. Preferably, though not necessarily, the door 1 and jamb 2 are fabricated of sheet metal and have not been illustrated in detail inasmuch as these elements may be of any conventional design and do not specifically constitute the present invention. For present purposes, it is merely sufficient to point out that the door 1 is provided with a suitably flanged rectangular aperture 3 for receiving the door lock A, which comprises a stamped rectangular cup 4 having a continuous flat peripheral flange 5. It is, of course, obvious that the aperture 3 is of such size and shape as to accommodate the cup 4 and the flange 5 is tightly secured to the door 1 by means of rivets 6. The cup 4 is provided with a flat back wall 7 having an oblong or somewhat elliptical central slot 8, the margins of which are struck up in the formation of an outwardly raised rim 9.

Spot-welded or otherwise rigidly secured to the rear face of the back wall 7 is a U-shaped channel 10 integrally including outwardly turned attachment flanges 11, 11', legs 12, 12', and a flat bight 13. The channel 10 is centered with respect to the vertical center line of the slot 8 and has open ends respectively above and below the slot 8 to provide a slide for accommodating a vertically

2

shiftable bolt 14, which is preferably formed from sheet metal and integrally includes a central section 15, side flanges 16, 16', and an angularly bent top section or striker-face 17. The central section 15 is provided with an elongated central slot 18 aligned with the slot 8 and an inwardly struck ear 19, which is tack-welded at its rear margins to the flanges 16, 16', in order to lend rigidity and strength to the structure.

Rigidly mounted in, and projecting inwardly from, the opposite side walls of the cup 4 are axially aligned hinge pins 20 for rockably supporting a handle 21, which integrally includes an arcuate grip-section 22 and lateral flanges 23. Welded or otherwise rigidly secured to the inner face of the grip-section 22 is a U-shaped actuator link 24 integrally including legs 25, 25', and a flat relatively wide bight 26 extending across the slot 8 and being provided on its inwardly presented face with a rubber gasket 27 adapted for sealing engagement with the rim 9 when the door lock A is in closed or locked position. Rigidly mounted in the bight 26 is an actuator pin 28 which projects rearwardly through the slots 8, 18, for operative engagement against the lower margin of the slot 18 and the ear 19.

Secured upon the back face of the bight 13 of the channel 10 by means of a screw 29 is a plate 30 having an inwardly bent tongue 31 located in underlying relation to the ear 19 and interposed between the tongue 31 and ear 19 is a compression spring 32 for normally biasing the bolt 14 upwardly to the position shown in Figure 3. Shiftable mounted in the upper end of the bight 13 of the channel 10 and the plate 30 is a pressure pin 33 having a rounded head 34 bearing slidably against the inner face of the bolt 14 and biased by a compression spring 35 disposed encirclingly thereabout.

When the door lock A is properly mounted in the door 1, the bolt 14 will engage the jamb 2, as shown in Figure 3, and will hold the door 1 securely in place. The spring 35 and pressure pin 33 will introduce a limited degree of resiliency which will compensate for wear and vibratory stresses, so that the door 1 will always remain tight. In order to release the door lock A and open the door 1, the grip-section 22 of the handle 21 is manually swung upwardly, causing the actuator pin to swing downwardly and thereby shifting the bolt 14 downwardly against the bias of the spring 32 until the upper end of the bolt 14 is fully retracted and the door 1 is free to swing open. As soon as the grip-section 22 of the handle 21 is released, the bolt 14 returns to initial position, so that the door 1 may again become locked as it is returned to closed position.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the door lock may be made and substituted for those herein shown and described without departing from the nature and principle of our invention.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A door lock comprising a cup-like element adapted to fit into and extend through a door with its open end presented outwardly with respect to one face of the door, said cup-like element having a back wall approximately aligned with the other face of the door and being provided with an aperture, a slide-forming element rigidly secured upon the back wall in overlying relation to the aperture and projecting inwardly from said other face of the door, a bolt shiftable mounted in the slide-forming element and having an abutment located across said aperture, a pivot pin disposed in outwardly spaced relation to the bolt with its longitudinal axis perpendicular to the path of movement of the bolt and in a plane parallel thereto, a handle rockably mounted in the cup-like element for rotation about the pivot pin, said handle having a

3

flat hand-grip portion disposed in radially offset relation to the pivot pin, a flat member attached to the hand-grip portion in radially outwardly spaced relation to the pivot pin and in inwardly spaced relation to the hand-grip portion, said flat member being provided, upon its inwardly presented face, with a gasket of such size and relative position as to extend sealingly across the aperture when the bolt is in locked position, and an actuating element operatively connected to the flat member and projecting through the gasket and aperture for engagement against the abutment on the bolt, whereby the bolt is retracted into the slide-forming element responsive to rocking movement of the handle, said actuating element being so located that the bolt, when in locked position, tightly engages the actuating element and thereby applies inward force to the flat member to hold the gasket in seal-forming position across the aperture.

2. A door lock comprising a cup-like element adapted to fit into and extend through a door with its open end presented outwardly with respect to one face of the door, said cup-like element having a back wall approximately aligned with the other face of the door and being provided with an aperture, said aperture being provided with an outwardly projecting continuous peripheral flange, a slide-forming element rigidly secured upon the back wall in overlying relation to the aperture and projecting inwardly from said other face of the door, a bolt shiftably mounted in the slide-forming element and having an abutment located across said aperture, a pivot pin disposed in outwardly spaced relation to the bolt with its longitudinal axis perpendicular to the path of movement of the bolt and in a plane parallel thereto, a handle rockably mounted in the cup-like element for rotation about the pivot pin, said handle having a flat hand-grip portion disposed in radially offset relation to the pivot pin, a flat member attached to the hand-grip portion in radially outwardly spaced relation to the pivot pin and in inwardly spaced relation to the hand-grip portion, said flat member being provided, upon its inwardly presented face, with a gasket of such size and relative position as to extend sealingly across the peripheral flange of the aperture when the bolt is in locked position, an actuating element operatively connected to the flat member and projecting through said gasket, said actuating element furthermore projecting through the aperture for engagement against the abutment on the bolt, whereby the bolt is retracted into the slide-forming element responsive to rocking movement of the handle, said actuating element being so located that the bolt, when in locked position, tightly engages the actuating element and thereby applies inward force to the flat member to hold the gasket in seal-forming position across the peripheral flange of the aperture, and spring means for normally urging the bolt into locking position.

3. A door lock comprising a cup-like element adapted to fit into and extend through a door with its open end presented outwardly with respect to one face of the door, said cup-like element having a back wall approximately aligned with the other face of the door and being provided with an aperture, a slide-forming element rigidly secured upon the back wall in overlying relation to the aperture and projecting inwardly from said other face of the door,

4

a bolt shiftably mounted in the slide-forming element and having an abutment located across said aperture, a handle rockably mounted in the cup-like element, said handle being provided on its inner face with a flat cross-bar having a resilient gasket upon its inwardly presented face for closure-forming seated engagement across the aperture when the handle is in locking position, an actuating element operatively connected to the cross-bar and projecting through said gasket, said actuating element furthermore projecting through the aperture for engagement against the abutment on the bolt, whereby the bolt is retracted into the slide-forming element responsive to rocking movement of the handle, said actuating element being so located that the bolt, when in locked position, tightly engages the actuating element and thereby applies inward force to the flat member to hold the gasket in seal-forming position, and spring means for normally urging the bolt into locking position.

4. A door lock comprising a cup-like element adapted to fit into and extend through a door with its open end presented outwardly with respect to one face of the door, said cup-like element having a back wall approximately aligned with the other face of the door and being provided with an aperture, a slide-forming element rigidly secured upon the back wall in overlying relation to the aperture and projecting inwardly from said other face of the door, a bolt shiftably mounted in the slide-forming element and having an abutment located across said aperture, a pivot pin disposed in outwardly spaced relation to the bolt with its longitudinal axis perpendicular to the path of movement of the bolt and in plane parallel thereto, a handle rockably mounted in the cup-like element for rotation about the pivot pin, said handle having a flat hand-grip portion disposed in radially offset relation to the pivot pin, a U-shaped member including spaced legs connected by a flat relatively wide plate-like bight, said legs being attached to the hand-grip portion and positioning said bight in radially outwardly spaced relation to the pivot pin and in inwardly spaced relation to the hand-grip portion, said bight being provided, upon its inwardly presented face, with a gasket of such size and relative position as to extend sealingly along the aperture when the bolt is in locked position, and an actuating element operatively connected to the bight and projecting through the gasket and aperture for engagement against the abutment on the bolt, whereby the bolt is retracted into the slide-forming element responsive to rocking movement of the handle, said actuating element being so located that the bolt, when in locked position, tightly engages the actuating element and thereby applies inward force to the bight to hold the gasket in seal-forming position across the aperture.

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