Oct. 6, 1964 R. J. OLANDER 3,151,898

CAR DOOR FASTENER LATCH PLATE

Filed Nov. 17, 1961 2 Sheets-Sheet 1

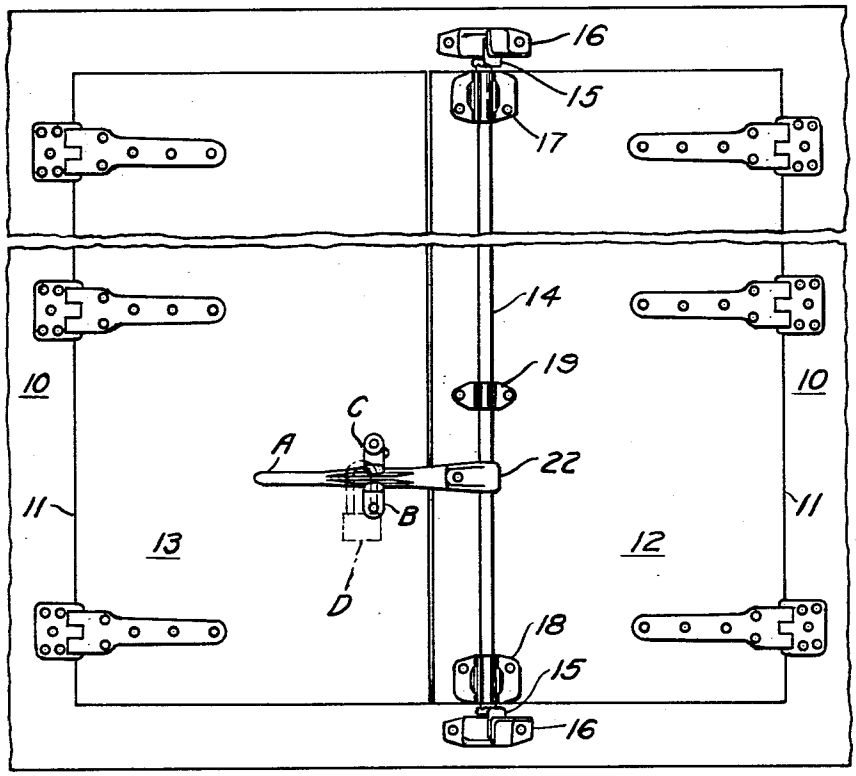



Fig. 1

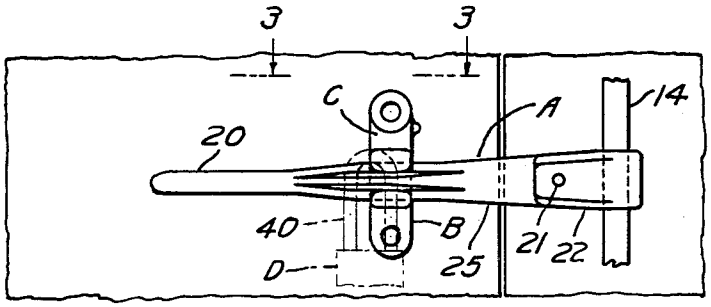



Fig. 2

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CAR DOOR FASTENER LATCH PLATE

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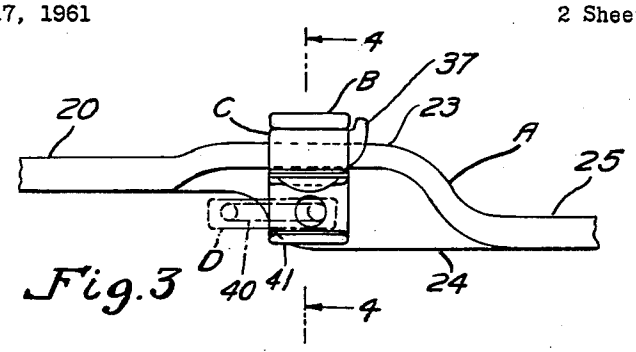



Fig. 3

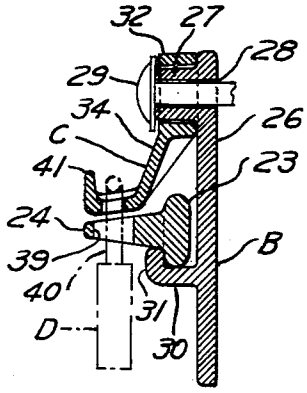



Fig. 4

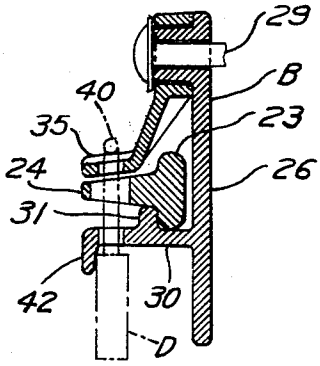



Fig. 5

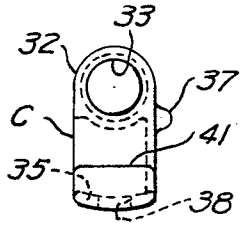



Fig. 6

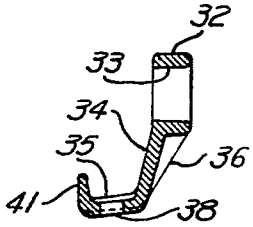



Fig. 7

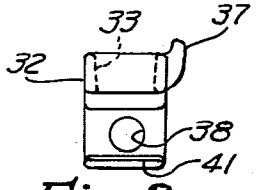



Fig. 8

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# CAR DOOR FASTENER LATCH PLATE

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5 Claims. (Cl. 292—1)

This invention relates generally to means for holding the swinging operating lever of a rotary bar door fastener and its associated padlock in position occupying a minimal space outwardly away from the plane of the door.

Efficient practices of shipping or transporting cargo containers nestled side-by-side within the hold of a ship or on a railroad car require that such containers have maximum interior volume and that they be capable of being handled without time-wasting special handling or stacking procedures. Container door fasteners of the type employing a rotary bar having crank arms at the ends thereof engageable with top and bottom keepers are highly desirable from the standpoint of the security that they afford to the contents of the container and the strength that they impart to relatively thin-walled containers.

It is accordingly an object of this invention to provide a door fastener of the rotary bar type having a swingable operating handle, latch means for such handle and a padlock for tamper-proof security, all of which elements being arranged to occupy a space outwardly of the plane of the door less than the outward projection of the rotary bar and its associated crank arms and keepers.

Another object of the invention is to provide in a door fastener of the lever actuated rotary bar type, simple and efficient means for latching the actuating lever against rotation in the door opening direction and having means maintaining a padlock parallel to the door, such padlock securing the operating lever to the latching means.

A more specific object of the invention is to provide in a rotary bar door fastener, an offset operating lever swingable about the axis of rotation of the bar to rotate the latter, means for latching the door in closed position, a latch plate on the door and a cooperating latch member pivoted on the latch plate for engagement with the operating lever, both the latch member and the lever having openings therethrough which, when aligned, receive the bail of a padlock, and means for maintaining the bail parallel to the plane of the door.

Other objects will, in part, be obvious and, in part, appear hereinafter.

For a more complete understanding of the nature and scope of this invention, reference can be had to the following detailed description, taken together with the accompanying drawings, in which:

FIGURE 1 is a broken elevational view of one of the side walls of a container provided with hinged doors, illustrating the invention;

FIGURE 2 is a view similar to FIGURE 1, on an enlarged scale, of the mechanism at the central portions of the hinged doors;

FIGURE 3 is a plan view on a still further enlarged scale taken along section line 3—3 of FIGURE 2;

FIGURE 4 is a vertical sectional view taken along section line 4—4 of FIGURE 3;

FIGURE 5 is a view similar to FIGURE 4, but showing an alternative or modified construction;

FIGURES 6, 7 and 8 are front, side (in section), and top views, respectively, of a latch member.

In the drawings, 10 indicates the side wall of a container provided with a door opening 11, closed by a pair of hinged doors 12 and 13. The door 12 is provided with a vertically disposed rotary operating bar 14, of known design, having keeper engaging crank members 15, 15 at opposite ends engageable with the usual slotted



keepers 16, 16 to force the door 12 open and closed. The bar 14 is supported for rotation by top, bottom and intermediate bearing brackets or guide members 17, 18 and 19 fixed to the outer side of the door 12.

The improvement according to this invention comprises broadly an offset operating lever A for rotating the bar 14, a latch plate B fixed to the door 13, a latch member C pivoted on the latch plate and a padlock D for tamper-proof securement of the operating lever A to the latch member C and latch plate B.

The lever A is in the form of an elongated bar pivotally connected at its inner end to the rotatable bar 14 and having a hand grip 20 at its outer end. The inner end of the lever A is pivoted on pin 21 to a bracket 22 secured, as by welding, to the bar 14 whereby lever A may swing in vertical planes. Inwardly of the hand grip 20 the lever A is of T-shaped cross section having a head portion 23 extending substantially parallel to the plane of the doors and an integral leg portion 24 extending outwardly away from the doors and at a right angle to the head portion 23. The T-shaped section merges at its inner end into a substantially rectangular portion 25 constituting the so-called inner end of lever A. This T-shaped section of the lever provides for the offset transition of the lever A from a position at the handle grip 20 closely spaced to the door to a position at the inner end 25 of the lever spaced further away from the door to thus provide the requisite clearance of bracket 22 and bar 14 and crank arms 15 necessary for rotation of the bar 14 to open and closed positions.

The latch plate B, as shown in FIGURE 1, is fixed to the outer side of door 13 and in alignment with the lever A in its horizontal operative position at right angles to the bar 14. The plate B consists of a flat base member 26 adapted to be fixed to the door and at its upper end is provided with a boss 27 having an opening 28 therethrough for the reception of a headed pin 29 which passes into or through the door 13 and serves to secure the plate B in position. Intermediate the boss 27 and the other or lower end of the base member 26 is an integral arm 30 which extends outwardly from the base member 26 and constitutes a ledge upon which the lever A may rest in door-locked position. The arm 30 includes an upstanding lip 31 which is spaced from the base member 26 a distance slightly greater than the thickness of the head portion 23 and which, together with the base member 26, thus forms an open-top pocket for retaining the lever A in its horizontal door-closed position.

The latch member C shown in FIGURES 1 through 4 and 6 through 8 includes a sleeve portion 32 which has an opening 33 and which pivotally embraces the boss 27 and is retained in such position by the headed pin 29. An intermediate section 34 of such latch member extends from the sleeve portion 32 diagonally outwardly and merges into a terminal portion 35 which is substantially parallel with and overlies the leg portion 24 of the lever A. A reinforcing gusset 36, as shown in FIGURE 7, may be provided, if desired, to rigidify and add strength to the intermediate section 34. Likewise, a rearwardly projecting stop 37 may be provided to limit rotational movement of the latch member C, such stop 37 abutting sections of the latch plate at the two extremes of pivotal movement of the latch member C as permitted by such stop 37.

The latch member C is provided with a vertically extending opening 38 through the terminal portion 35. A similar vertically extending opening 39 is provided in the leg portion 24 of the lever A. When openings 38 and 39 are in alignment with each other, as when lever A is in closed-door position with its head portion 23 seated in the pocket between lip 31 and base 26 and latch mem-

ber C is pivoted downwardly to have its terminal portion 35 adjacent to the leg portion 24, the bail 40 of a padlock D may be inserted therethrough and the padlock snapped shut to ensure that the contents of the container to which such door fastener is affixed will not be subject to tampering.

In FIGURE 4, the latch member is shown as provided with an upstanding lip 41 integral with terminal portion 35. Since padlock D with its bail 40 is pulled down by gravity, the lip 41 effectively prevents the padlock from swinging around, as during handling or movement of the container, to a position at right angles to that shown in the drawings. By use of a padlock with a bail only slightly longer in length than the over-all vertical spacing of the terminal portion 35 and leg 24, positive maintenance of the padlock in its position parallel to the plane of the doors will be assured.

FIGURE 5 illustrates a second embodiment of a latching arrangement wherein the arm 30 is prolonged outwardly to terminate in a depending lip 42 which by use of a suitable length bail on the padlock effects the same advantage of positively preventing swinging of the padlock out of a plane parallel with the door.

Thus, the foregoing description is illustrative of a rotary bar door fastener having an offset handle grip, latching means and a padlock whereby the padlock is positively prevented from swinging on its bail into a position where it would project as much as or beyond those elements of the door fastener, such as the slotted keepers, which of necessity must project to some degree outwardly beyond the plane of the doors. Such construction aids in the stacking of containers close to each other, particularly when they are being lowered on a cable into the hold of a ship to be nestled against previously positioned containers.

Since certain changes can be made in the foregoing construction and different embodiments of the invention can be made without departing from the spirit and scope of the invention, it is intended that all matter shown in the accompanying drawings and described hereinbefore shall be interpreted as illustrative and not in a limiting sense.

What is claimed as new is:

1. In a holding means for the operating handle lever of a rotary operating bar of a door fastener having the operating handle lever connected to said bar for effecting rotation of the same by swinging movement of said lever about the axis of rotation of said bar, the combination with a fixed latch member having an outstanding arm over which said lever is engageable; of a pivoted latch member journaled on said fixed latch member for rotation about an axis at right angles to said lever and to said operating bar; a vertically extending opening in said lever, a vertically extending opening in said pivoted latch member and aligned with said lever opening; a padlock having a bail extending through said openings; and means on one of said latch members for maintaining said padlock parallel to said fixed latch member.

2. In a holding means for the operating handle lever of a rotary operating bar of a door fastener having the operating handle lever pivotally connected to said bar for effecting rotation of the bar by swinging movement of said lever about the axis of rotation of said bar, the combination with a fixed plate-like latch member having an outstanding arm with an upstanding lip forming a pocket in which said lever is engageable; of a pivoted latch member journaled on said fixed latch member for rotation about an axis at right angles to said lever and to said operating bar; a vertically extending opening in said lever, a vertically extending opening in said pivoted latch member and aligned with said lever opening; a padlock having a bail extending through said openings; and means on one of said latch members for maintaining said padlock parallel to said fixed latch member.



3. In a holding means for the operating handle lever of a rotary operating bar of a door fastener having the operating handle lever pivotally connected to said bar for effecting rotation of such bar by swinging movement of said lever about the axis of rotation of the bar, the combination with a fixed latch plate; of a pivoted latch member journaled on said latch plate for rotation about an axis at right angles to said lever and to said operating bar; a vertically extending opening in said lever, a vertically extending opening in said latch member and aligned with said lever opening; a padlock having a bail extending through said openings; and an upstanding lip on said latch member outwardly of and adjacent to the opening in said latch member for maintaining said padlock parallel to said latch plate.

4. In a holding means for the operating handle lever of a rotary operating bar of a door fastener having the operating handle lever pivotally connected to said bar for effecting rotation of the same by swinging movement of said lever about the axis of rotation of said bar, the combination with a fixed latch plate having an outstanding arm over which said lever is engageable; of a pivoted latch member journaled on said latch plate for rotation about an axis at right angles to said lever and to said operating bar; a vertically extending opening in said lever, a vertically extending opening in said latch member and aligned with said lever opening, a vertical opening in said outstanding arm aligned with the opening in said lever; a padlock having a bail extending through said openings; and a depending lip outwardly of and adjacent to said opening in the outstanding arm for maintaining said padlock parallel to said latch plate.

5. In a holding means for the operating handle lever of a rotary operating bar of a door fastener having the operating handle lever connected to said bar for effecting rotation of the same by swinging movement of said lever about the axis of rotation of said bar, the combination with a fixed latch plate having an outstanding arm over which said lever is engageable; of a latch member having a sleeve portion journaled on said latch plate for rotation about an axis at right angles to said lever and to said rotary operating bar, an intermediate portion extending from said sleeve portion diagonally away therefrom and merging into a terminal portion which is substantially parallel to said lever, an opening in said terminal portion, an opening in said lever alignable with said terminal portion opening; a padlock having a bail extending through said aligned openings and an upstanding lip on said terminal portion maintaining said padlock parallel to said latch plate.

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