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LATCH FOR BULKHEAD DOORS

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Fig. 1.

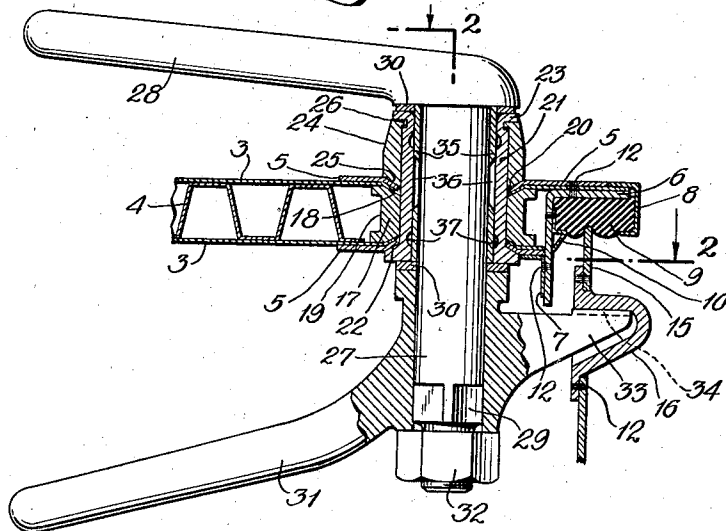
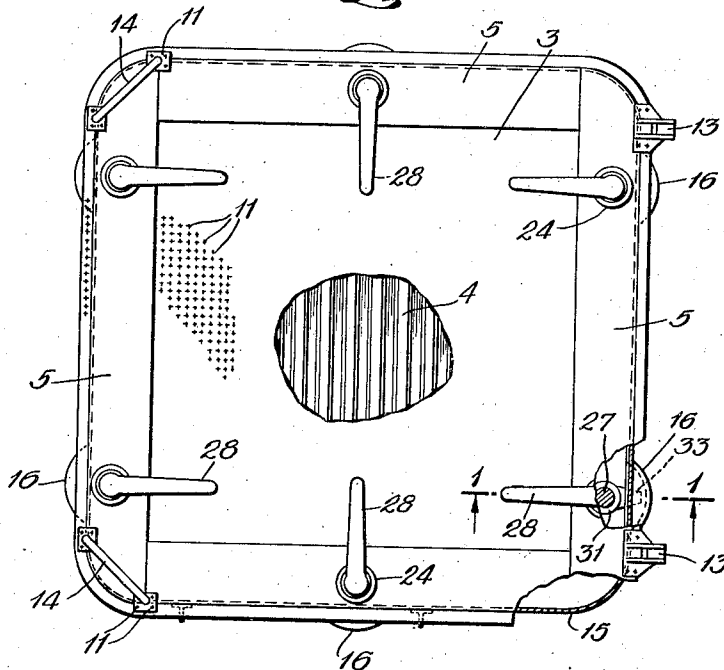


Fig. 2.



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LATCH FOR BULKHEAD DOORS

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Application January 22, 1936, Serial No. 60,211

8 Claims. (Cl. 114—117)

This invention relates to a latch for doors, and particularly for bulkhead doors or hatch covers.

The object of closure members of this type is to provide means to force a door or hatch cover into sealing contact with the frame or other member surrounding the door. Where closure members are attached to bulkhead doors by seam-welding there is a tendency to cause warping or distortion of the panels of the door. Where screw threads are used it is difficult to maintain a tight joint. It is necessary both to prevent distortion and insure a tight joint. Therefore, the object of this invention is to provide a closure member which may be applied to a door or hatch cover without use of welds or threads.

A further object of the invention is to provide a simple device which will withstand wear and hard usage, and which may be readily applied to doors made up of a plurality of spaced panels.

The invention consists of the construction, combination and arrangement of parts, as herein illustrated, described and claimed.

In the accompanying drawing, forming part hereof, is illustrated one form of embodiment of the invention, in which drawing similar reference characters designate corresponding parts, and in which the invention is shown as being applied to a hatch cover. Hatch covers are normally used in a horizontal plane and it will be obvious that the invention may be applied equally well to a door used in a vertical plane. It will also be clear that the closure member may be applied to the bulkhead or deck adjacent the door, instead of being applied to the door itself.

In the drawing, Figure 1 is an enlarged detail in vertical section, taken approximately on line 1—1 of Figure 2, looking in the direction indicated by the arrow; and,

Figure 2 is a plan view, partly broken away, and partly in section, on line 2—2 of Figure 1, looking downward.

Referring to the drawing, the door is made up of a plurality of panels 3 which are separated by a corrugated, re-enforcing spacing member 4. Adjacent the edges of the panels 3 are disposed re-inforcing strips 5. At the edges of the panels 3 the opening therebetween is closed up by a sealing angle 6. A re-inforcing angle 7 may be used to secure the angle member 6 to the lower panel 3. Secured at the edge of the upper panel 3 is a channel member 8 which holds in place a continuous gasket 9 with the aid of a gasket retainer 10. All of the members thus far described are formed into a homogeneous entirety by means of numerous spot-welds 11 or seam-welds 12.

The door or hatch cover is carried on hinges 13 and provided with handles 14 so that the door may be opened or closed. The gasket 9 which is continuous around the entire structure, is adapted to be forced against a flange 15 formed on the deck or on the bulkhead, in the case of a bulkhead door. The flange 15 is provided at intervals with recessed keeper plates 16 to receive the latch of the securing member hereinafter described.

All of the parts heretofore described are shown in the co-pending application of Joseph J. Maschuch and Alexis S. Gorshkoff, Serial No. 2,152, filed January 17, 1935, and form no part of the present invention.

The closure member is applied near the edges of the panels 3. The closure member is applied to the panels 3 and strips 5 before the application thereto of the sealing angle 6, and the parts carried thereby. In this way the spacer ring, hereinafter described, may be inserted between the panels 3 from the edge thereof. In order to apply the closure member a suitable hole is formed through the panels 3 and the re-inforcements 4 and 5. A spacer ring 17 having a chamfered inner edge 18 is disposed between the panels 3 in alignment with the opening provided for the closure member. The spacer ring 17 may be channeled as shown at 19 to reduce the weight, and the ring 17 may be temporarily held in position by a single spot-weld. The weld, however, is used merely to prevent movement of the ring 17 during assembly, and is not sufficient to cause any distortion of the panels 3. Any other suitable means may be substituted.

The work is now introduced into a press and the inner edges 20 of the panels 3, and the re-inforcing strips 5 are bent inwardly to lie against the chamfer 18 of the ring 17. This securely binds the ring 17 permanently in position. A sleeve 21 provided with a tapered flange 22 is passed through the ring 17 and the flange 22 abuts the inner edges 20 of the strips 5 which have been pressed, as above described. The upper end of the sleeve 21 is provided with a reduced neck 23 adapted to be distorted, as hereinafter described.

A retaining collar 24 provided with a beveled lower edge 25 is applied over the upper part of the sleeve 21. The collar 24 is provided on its upper edge with an inturned lip 26 adapted to lie against the reduced neck 23 of the sleeve 21. The work is again placed in a press and the neck 23 is turned outward over the upper edge of the collar 24. In this way the parts are permanently sealed together and a much stronger and more

lasting joint is provided than could be secured by screw-threads. At the same time, there is no distortion possible, since there is no welding and the ring 17 prevents any collapse of the panels 3.

A spindle 27 is rotatably disposed in the sleeve 21 and is provided with an operating handle 28 on one end and a squared end 29 on the opposite extremity. Suitable gaskets 30 may be applied around the spindle 27 adjacent the upper and lower ends of the sleeve 21. A lower handle 31 is disposed on the lower end of the spindle 27 and is held in position by a nut 32. The handle 31 has formed thereon a projecting latch 33 formed with an inclined face 34 adapted to ride against a correspondingly inclined face in the keeper plate 16. When either handle 28 or 31 is rotated to force the latch 33 into the keeper plate 16, the inclined face 34 will cause the gasket 9 to be forced against the flange 15 to form a liquid proof seal around the entire door or hatch cover.

Between the sleeve 21 and the spindle 27 may be disposed a bushing 35 provided with open spaces 36 into which may be introduced a semi-solid lubricant or a packing impregnated with a lubricant. Oil slots 37 may be formed on the inner face of the sleeve 21 to provide for lubrication. The oil slots 37 may be independent from one another, or may be a single slot formed as a spiral, the object of either form being to provide space for the retention of a lubricant.

Having thus fully described the invention, what is claimed as new, and desired to be secured by Letters Patent is:

1. A member to be applied to a door to maintain the door in closed position comprising a flanged sleeve having a distortable upper end inserted through the door, a retaining member surrounding the sleeve on the opposite side of the door, the distortable end of the sleeve being bent over the retaining member to secure both members in position, a spindle disposed through the sleeve, handles carried by the spindle and a latch formed on one handle.

2. A member to be applied to a door to maintain the door in closed position comprising a flanged sleeve having oil slots formed on its inner wall and having a distortable upper end inserted through the door, a retaining member surrounding the sleeve on the opposite side of the door, the distortable end of the sleeve being bent over the retaining member to secure both members in position, a spindle disposed through the sleeve, handles carried by the spindle and a latch formed on one handle.

3. A member to be applied to a door to maintain the door in closed position comprising a flanged sleeve having oil slots formed on its inner wall and having a distortable upper end inserted through the door, a retaining member surrounding the sleeve on the opposite side of the door, the distortable end of the sleeve being bent over the retaining member to secure both members in position, a spindle disposed through the sleeve, a bushing around the spindle in the sleeve, handles carried by the spindle and a latch formed on one handle.

4. A member to be applied to a door to maintain the door in closed position comprising a flanged sleeve having a distortable upper end inserted through the door, a retaining member surrounding the sleeve on the opposite side of the door, the distortable end of the sleeve being bent over the retaining member to secure both members in position, a spacer ring to space the retaining member from the lower part of the sleeve, a spindle disposed through the sleeve, handles carried by the spindle and a latch formed on one handle.

5. In combination with a door formed of a plurality of spaced panels, a latch member comprising a spacer ring disposed between the panels, a flanged sleeve disposed through the ring and the panels, a retaining collar disposed around the sleeve and secured in position by the upper end of the sleeve, a spindle disposed through the sleeve and formed with a handle on one end, a second handle carried by the other end of the spindle and formed with a projecting latch, and a keeper plate to receive the latch.

6. In combination with a door formed of a plurality of spaced panels, a latch member comprising a beveled spacer ring disposed between the panels, the edge of the panels adjacent the bevel of the ring being bent inwardly, a flanged sleeve disposed through the ring and the panels, a retaining collar disposed around the sleeve and secured in position by the upper end of the sleeve, a spindle disposed through the sleeve and formed with a handle on one end, a second handle carried by the other end of the spindle and formed with a projecting latch, and a keeper plate to receive the latch.

7. In combination with a door formed of a plurality of spaced panels, a latch member comprising a beveled spacer ring disposed between the panels, the edges of the panels adjacent the bevel of the ring being bent inwardly, a flanged sleeve disposed through the ring and the panels, a retaining collar disposed around the sleeve and secured in position by the upper end of the sleeve, a bushing in the sleeve, a spindle disposed through the bushing and formed with a handle on one end, a second handle carried by the other end of the spindle and formed with a projecting latch, and a keeper plate to receive the latch.

8. In combination with a door formed of a plurality of spaced panels, a latch member comprising a beveled spacer ring disposed between the panels, the edges of the panels adjacent the bevel of the ring being bent inwardly, a flanged sleeve disposed through the ring and the panels and formed with oil passages on the inner face thereof, a retaining collar disposed around the sleeve and secured in position by the upper end of the sleeve, a bushing formed with an oil slot in the sleeve, a spindle disposed through the bushing and formed with a handle on one end, a second handle carried by the other end of the spindle and formed with a projecting latch, and a keeper plate to receive the latch.

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