

March 19, 1940.

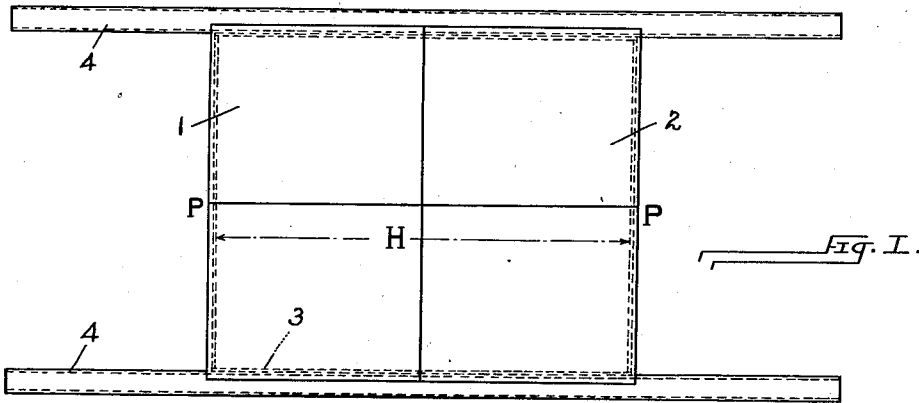
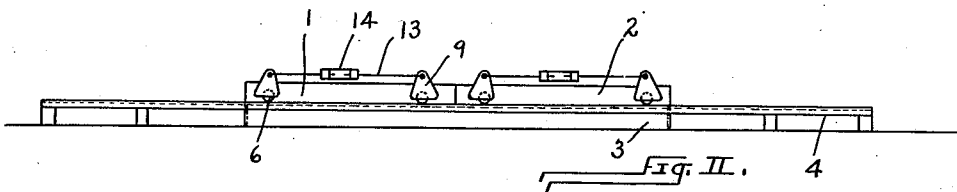
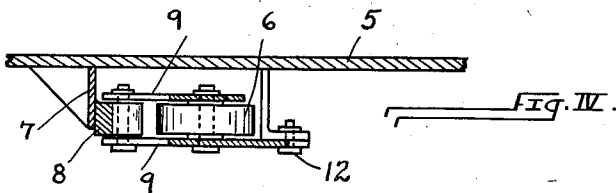
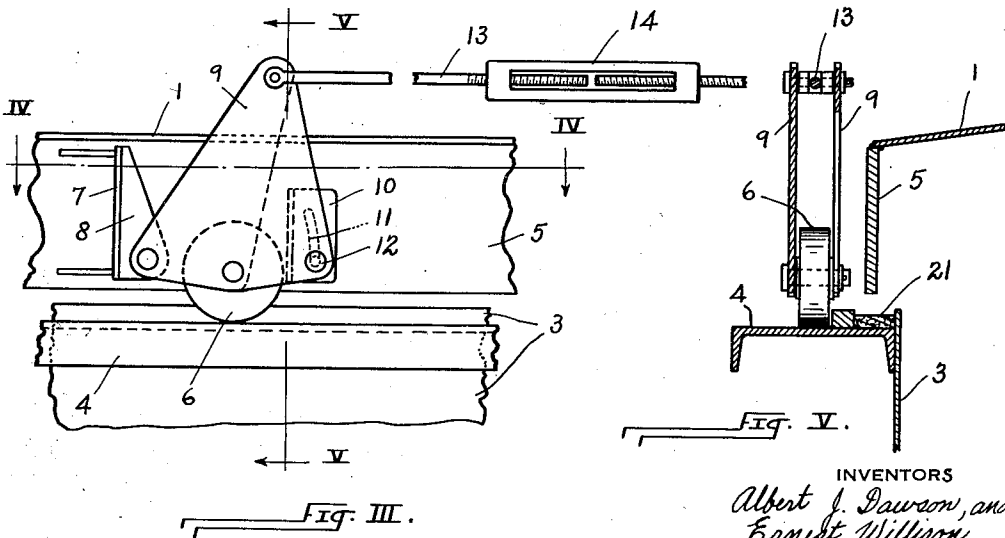
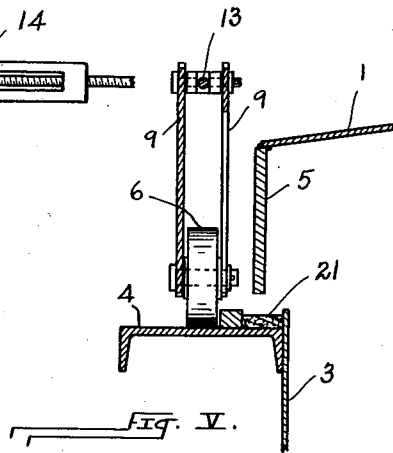
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2,194,012

HATCHWAY COVER

Filed Sept. 1, 1938

2 Sheets-Sheet 1



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HATCHWAY COVER

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2 Sheets-Sheet 2

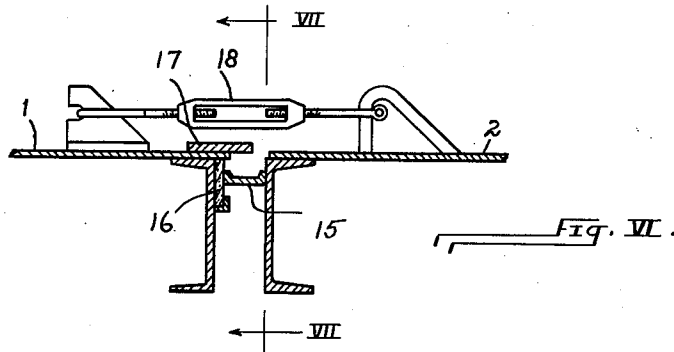


FIG. VI.

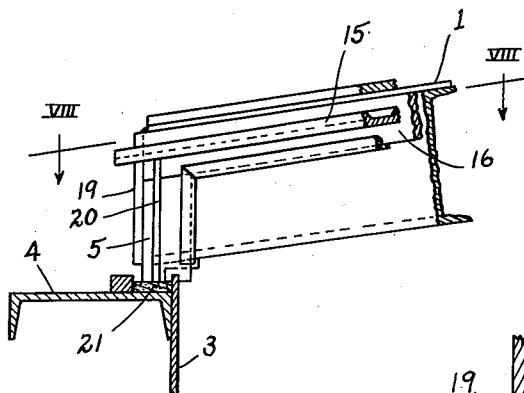


FIG. VII.

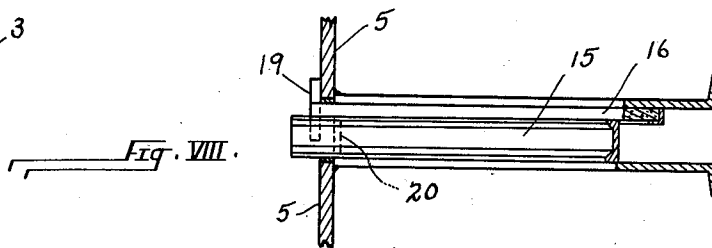


FIG. VIII.

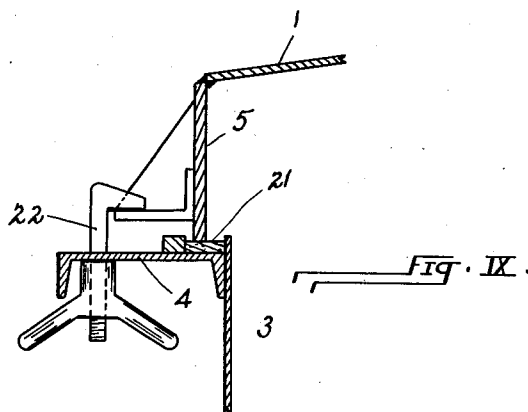


FIG. IX.

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UNITED STATES PATENT OFFICE

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HATCHWAY COVER

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1 Claim. (Cl. 114—202)

This invention relates to covers for hatchways such as are formed in the decks of ships, and the objects in view are simplicity of structure and facility of operation.

5 In the accompanying drawings Fig. I is a view in plan and Fig. II a view in side elevation of the hatchway cover of the invention in place, closing a hatchway. Fig. III is a fragmentary view to larger scale, showing in side elevation one
10 of the rollers extensibly borne by the hatchway cover, upon which the cover may at proper time and in appropriate manner be moved. Fig. IV is a view in horizontal section, on the plane indicated at IV—IV, Fig. III. Fig. V is a vertical
15 section, on the plane V—V, Fig. III. Fig. VI is a view in vertical and transverse section, illustrating the sealing of the seam of the meeting edges of two sections of the hatchway cover. Fig. VII is a view in section, on the plane indicated at
20 VII—VII, Fig. VI. Fig. VIII is a view in section, on the plane VIII—VIII, Fig. VII. Fig. IX is a view in vertical section through the margin of the seated cover.

Hatchway covers are, as a matter of convenience, commonly formed in sections that are severally handled, and in certain features this invention has specifically to do with sectional covers. The desiderata of a hatchway cover are, that it shall be at once susceptible to easy movement between open and closed positions and that
30 it shall be susceptible to the making of ready and weathertight union with the deck around the margin of the hatchway; and, if it be sectional, it is a further desideratum that the sections be susceptible to the making of ready and water-
35 tight union of section to section.

It is common to provide a cover or a cover section with extensible rollers, upon which, when the rollers are extended, it may readily be moved, the retraction of the rollers allowing the hatch-
40 way or the hatchway section to come to line engagement along its edges with the deck surface (commonly the surface of a kerb or combing at the margin of the hatchway). It is with a hatchway provided with such extensible rollers
45 that our invention has to do; and the first feature of the invention is found in improvement in this extensible roller equipment.

The cover in this case is a two-piece cover, consisting of two generally identical panels 1 and
50 2. Upon opposite parallel margins of the hatchway extend parallel combings that include kerb plates 3, and tracks in the form inverted channels 4 that are welded externally upon the kerb
55 plates, leaving the edges of the kerb plates stand-

ing above the horizontally extending surfaces of the inverted channels 4 (cf. Figs. I, II, V, and IX). The tracks extend, as appears in Figs. I and II, laterally beyond the hatch opening H (defined in the plan view by dotted lines) sufficient distances, that the two panels may be shifted to left and right along the tracks, from the position of complete closure, to a position in which the hatchway opening is completely un-
10 covered.

Each of the panels 1 and 2 consists of a plate that rises from opposite margins to a medial peak P—P, and of vertical flanges 5 extending along three sides, whose lower edges lie in a common horizontal plane. On the fourth side
15 the two panels meet, in a union presently to be described. The panels are equipped at opposite ends with rollers 6 upon which they run upon the tracks 4, 4.

The rollers 6 are mounted for rotation immediately in blocks that are pivotally mounted on the panels, and by such double mounting the desired extensibility of the rollers is provided. The specific structure may, conveniently, be that illustrated in Figs. III—V. A bracket 7 upon the
20 outer face of the flange 5 of the panel carries a pivot lug 8; in the lug 8 a pair of plates 9 (that together constitute the "block") is pivotally carried, and between the plates 9 the roller 6 is journaled. A plate 10 borne by the flange 5 is provided with an arc-shaped slot 11 that in the assembly is concentric with the pivotal centre upon which the plates 9, 9 are mounted; a pin
30 12 borne by plates 9, 9 extends through the slot, and the ends of the slot define the limits of pivotal swing of the "block."

Each of the panels 1 and 2 is equipped at its two ends with a pair of rollers 6, so mounted upon it. The two blocks 9 of the mountings that constitute such a pair are reversely and sym-
40 metrically shaped and positioned—that is to say, the block 9 as seen in Fig. III being pivoted on the left and provided on the right with the slot-and-pin control of range of swing, the companion block of the pair will be understood to be pivoted on the right, and provided on the left
45 with corresponding slot-and-pin control. The two blocks of such pair are united by a rod 13 pivoted to them at corresponding symmetrical points, remote from the centre of pivotal mounting. The rod includes a turn-buckle 14. As the
50 rod is by the turning of the buckle reduced in length, the block 9 as seen in Fig. III is turned clockwise, while the companion block is turned oppositely, and thus the rollers are extended, and
55

the cover panel is raised, to rest on the rollers; as the rod is lengthened the rollers are retracted, until the panel comes to rest by its edges on rails 4. The effect of the formation of the slots 11 of definite and limited length is that the two rollers of the pair are, with proper turning of the turn-buckle 14, fully extended or retracted. If one roller reaches the limit of its range in advance of the other it will remain at that limit and further turning of the turn-buckle will complete the movement of the roller that has been laggard.

Along their two opposed sides the panels 1 and 2 are provided with complementary seam-forming parts. Referring first to Fig. VI, one of the two panels (panel 2) carries along this side and just below the upper surface a drainage channel 15, and the other panel carries a gasket strip 16 upon which, when the panels come together in closure over the hatchway, the channel 15 abuts. The panel 1 that carries the gasket strip carries also an eaves plate 17 that at its edge overhangs the channel 15. A turn-buckle shackle union 18 secures the assembly. The drainage channel 15 extends at its ends beyond the limiting vertical flanges 5 of the panels. Adjacent the seam, one panel carries a re-enforcing bar 19, and the other a stop-plate 20. These two members, cut away above to allow the extent of channel 15 above and beyond them come to the overlapped relative positions indicated in Fig. VIII and are effective to prevent the driving in of rain.

Thus, as will be perceived, the two panels are provided, along their meeting edges, with outstanding flanges that come to overlapped position, and these flanges are so particularly shaped and arranged as to form a rain-proof union of the panels.

A gasket strip 21 extends around the outer edge of kerf plate 3 and rests upon the surface of channel 4, along its inner edge. Upon this gasket strip the panels 1 and 2 rest by their flanges 5, when the cover is in closed position. Dog-bolts 22 are provided, as is usual, to secure the closed hatch cover.

The alternate positions of the cover panels are indicated in Figs. V and IX. The lengthening and shortening of the rods 13 effects such a

swinging of the blocks 9 as to bring the panel to one or the other of these two positions.

In operation, the cover being closed (as shown in Fig. I) and resting by its edges on gasket strip 21 (as shown in Fig. IX), when the hatchway is to be opened, the dog-bolts 22 are first released, and the shackle 18. The turn-buckles 14 are turned, the rods 13 shortened, and the rollers 6 extended. By this extension of the rollers the cover is raised from the gasket strip and rests by its rollers 6 upon the tracks 4. The panels then are rolled apart to left and right, uncovering the hatchway. When the panels have thus been shifted, and stand on their rollers at the outer limits of their ranges of travel, the rods 13 may be lengthened, the rollers retracted, and the panels grounded firmly by their edges upon the tracks 4. When thereafter the hatchway is to be covered again, the panels are raised again upon their rollers, rolled to meeting, and secured together by shackle 18. The rollers than are withdrawn, with descent of the cover until it rests again on the gasket strip. Finally, the dog-bolts 22 are re-applied.

We claim as our invention:

In a unitary hatchway cover panel adapted at its edge to rest upon the deck through which the hatchway is formed and provided adjacent such edge with a pair of blocks pivoted to swing vertically upon said cover, two rollers journaled one in each of said blocks, the improvement herein described which consists in the opposite and symmetrical arrangement of the two roller-equipped blocks in their pivotal mounting, whereby the turning of the two blocks in opposite directions upon their pivots effects movement of the block-borne rollers in uniform direction of advance or retraction, means for turning said blocks, such means engaging both blocks and in operation tending to turn the two blocks simultaneously in opposite directions of pivotal turning, and means for limiting the range of pivotal turning of said blocks, whereby the turning means are effective to bring both of the two blocks to the limit of their ranges of turning.

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