May 15, 1956 E. O. LUNDE 2,745,362

CAR ROOF HATCH

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Fig. 1.

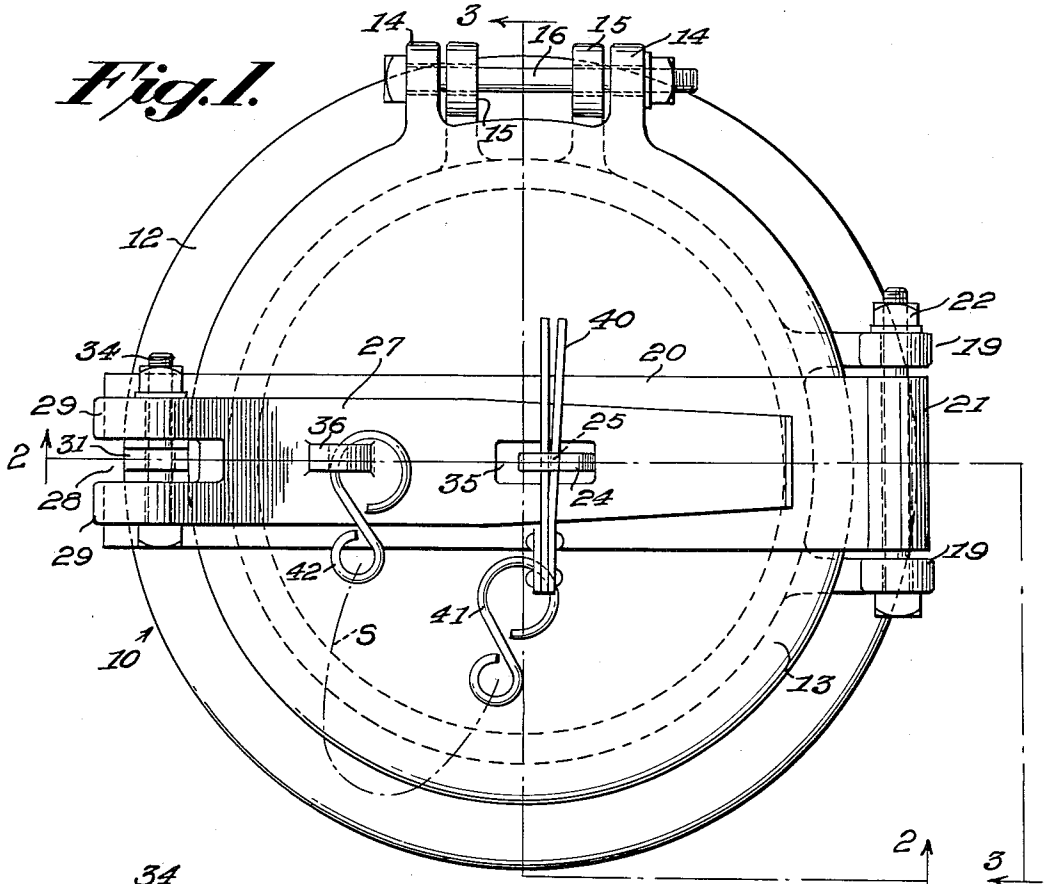

Fig. 2.

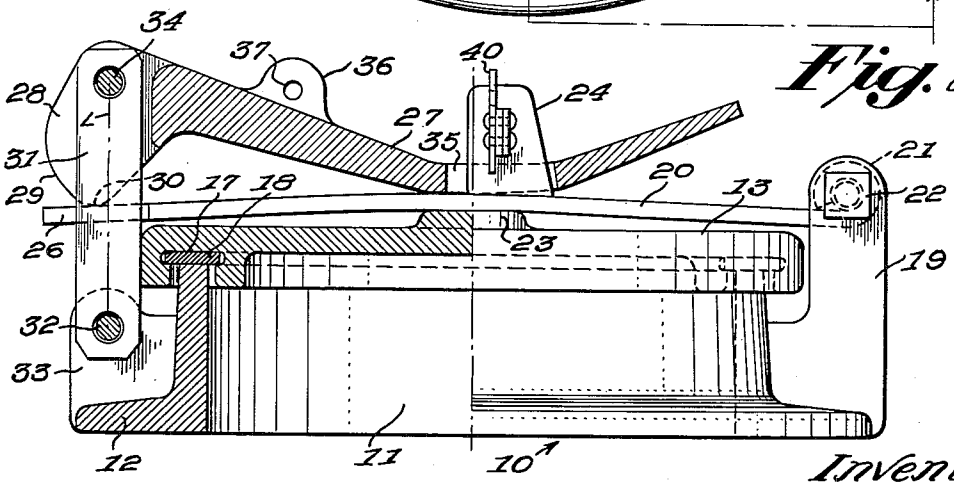

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Fig. 3.

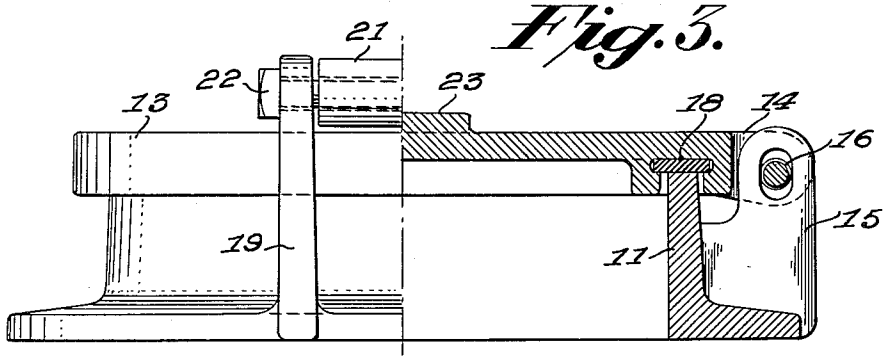


Fig. 4.

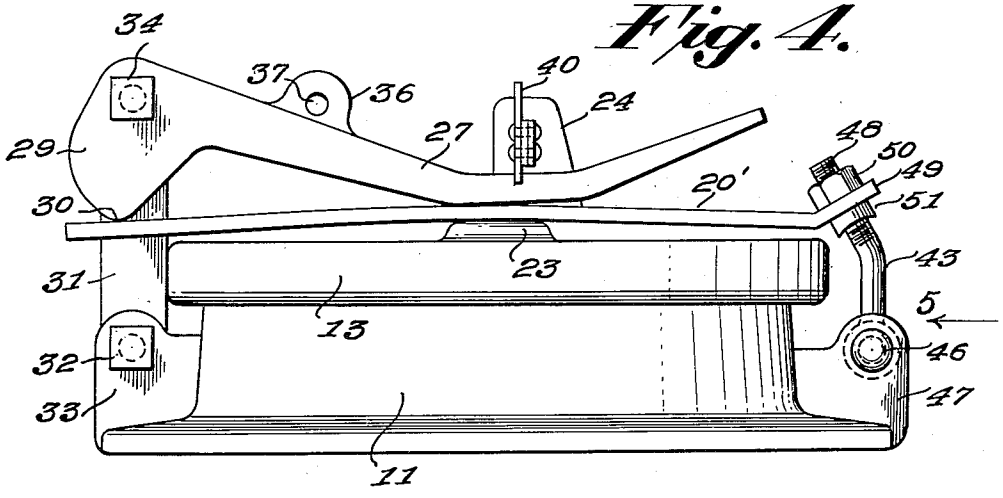
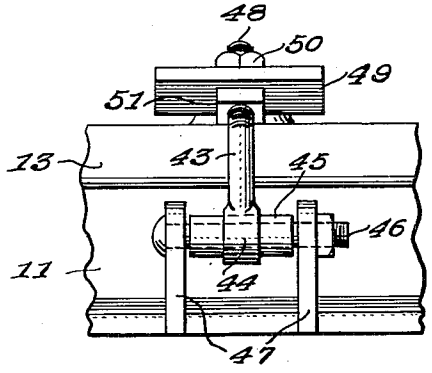


Fig. 5.



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United States Patent Office 2,745,362 Patented May 15, 1956

2,745,362

CAR ROOF HATCH

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Application May 19, 1952, Serial No. 288,719

4 Claims. (Cl. 105—377)

This invention relates to a car roof hatch.

The invention is more particularly concerned with improved manually operable mechanism for releasably retaining a hatch cover in closed position upon a cylindrical housing suitably secured in encircling relation to an opening therein.

The present invention relates to a car roof hatch of the general construction of that disclosed in my Patent No. 2,647,473 of August 4, 1953.

A primary object of the invention is to provide in operative association with a cylindrical hatch frame and a disk cover therefor, a lever operable yieldable means for urging the cover into tight closed position on the frame.

A further object of the invention is to provide auxiliary adjusting means in operative association with the yieldable means whereby the pressure exerted thereby on the cover may be varied.

Other objects and advantages of the invention will become apparent in the course of the following detailed description, taken in connection with the accompanying drawings, wherein—

Fig. 1 is a top plan view of a car roof hatch showing the adaptation of the present invention thereto in accordance with one structure embodiment thereof.

Fig. 2 is a view partially in elevation and partially in diametrical section, as observed in the planes of broken line 2—2 on Fig. 1.

Fig. 3 is a view partially in elevation and partially in diametrical section, as observed in the planes of broken line 3—3 on Fig. 1.

Fig. 4 is an elevational view of the hatch in general correspondence to Fig. 2 but depicting a modified embodiment of the invention.

Fig. 5 is a fragmental elevational view as observed in the direction of the arrow 5 to the right of Fig. 4.

Referring now in detail to the drawings, 10 designates a car roof hatch and which includes a cylindrical frame 11 having a base flange 12 for receiving suitable means for attachment of the frame to a car roof in encircling relation to an opening therein.

The upper end of the frame 11 is closable by a cover 13 which is provided with a pair of spaced apertured lugs 14 between which are received a pair of spaced ears 15 projecting upwardly from the frame 11 and which are apertured in axial alignment with the apertures in the lugs for reception of a pivot bolt 16.

The cover 13 is preferably provided with a downwardly opening circumferential channel 17 in which is received a suitable gasket 18 for tight bearing engagement with the upper free edge of frame 11 when the cover is in the closed position as shown.

The frame 11 is provided with a second pair of spaced apertured ears 19 which are on opposite sides of a diameter at right angles to a diameter intermediate the ears 15.

An elongated resilient cover hold-down strap 20 is provided at one end thereof with a sleeve 21 through

which as well as the apertures in ears 19 extends a pivot bolt 22.

The strap 20 extends diametrically across the top of cover 13 and at an intermediate point thereof bears on a boss 23 extending upwardly from the center of the cover 13 and the other end of the strap projects beyond the perimeter of the cover.

The strap 20 intermediate its ends is provided with an upwardly projecting flange 24 which is apertured as at 25 and the strap at its free end is bifurcated as at 26.

In the closing of the cover 13, the resilient strap 20 bears on the boss 23 intermediate its ends and the free end of the strap is forced downwardly.

For this purpose, a lever 27 is provided and which at one end thereof is bifurcated at 28 in conformity with the bifurcation 26 in the strap 20 and the lever on each side of the bifurcation 28 includes a cam head 29 having a strap engaging cam portion 30. A vertically disposed link 31 extends through the strap and lever bifurcations 26 and 28 respectively. The link at its lower end is pivotally connected by a bolt 32 extending through an aperture therein as well as through aligned apertures in a pair of ears 33 projecting from the frame 11.

The upper end of the link 31 is pivotally connected to the cam heads 29 by means of a bolt 34 traversing apertures therein. The lever 27 is provided with an opening 35 which receives the flange 24 and the lever is further provided with an upward extension 36 provided with an aperture 37.

In operation of the structure described and assuming the cover to be swung back into open position and with the strap 20 swung to the right in Fig. 2 and the lever 27 together with link 31 swung to the left, the cover 13 is swung to closed position, the strap 20 is then swung down with its intermediate portion resting on boss 23, the lever 27 is then swung upwardly and inwardly and then forced downwardly whereupon the cam portions 30 forcibly move the free end portion of the strap 20 downwardly with a resistant deformation of the strap as shown in Fig. 2.

At this point it is to be particularly noted that the points of engagement of cam portions 30 with the strap 20 are to the left of a line L joining the link pivots 32, 34 and which results in a yieldable retention of the lever in its cover closing position.

When the cover is closed as in Fig. 2 a key 40 may be extended through aperture 25 in flange 24 and a wire connecting means 41 may be extended through an aperture in the key and a like connecting member 42 may be extended through aperture 37 in the projection 36, after which a seal S of well known form may be operatively engaged with the connecting members.

A modified embodiment of the invention is illustrated in Figs. 4 and 5 and includes means whereby the tension in the hold-down strap 20 may be readily varied.

Such means preferably comprises an angular bolt 43 having a sleeve 44 at its lower end which in turn surrounds a bushing 45 which in turn receives a pivot bolt 46 extending through apertured ears 47 projecting from the frame 11.

The upper angular portion of the bolt is threaded as at 48 and which extends through an elongated aperture in an upwardly inclined end portion 49 of the strap 20 and an adjusting nut 50 engages the upper side of portion 49 and a lock nut 51 engages the lower side thereof.

With this modified structure, the amount of pressure on the cover boss 23 with the lever 27 in closed position may be readily varied.

While I have disclosed my invention in accordance with certain specific structural embodiments thereof, such are to be considered as illustrative only, and not restric-

tive, the scope of the invention being defined in the subjoined claims.

What I claim and desired to secure by U. S. Letters Patent is:

1. In a car roof hatch construction, a cylindrical frame, a cover having a pivotal connection with the frame, means for releasably holding the cover in closed position comprising an elongated resilient strap extending diametrically over the cover, the strap having one end thereof pivotally connected to the frame, an upward extension on the cover engageable by an intermediate portion of the strap, a link having one end thereof pivotally connected to the frame diametrically of the pivotal connection of the strap, and a lever having one end thereof pivotally connected to the other end of said link, said lever having cam means engageable with the strap adjacent its free end and the lever extending above and longitudinally of the strap in operative position and having a free operating end intermediate said strap pivotal connection and said upward extension.

2. The structure according to claim 1, wherein said strap is bifurcated at its free end, said lever including a head centrally bifurcated, said link projecting vertically through said bifurcations and having its opposite ends

pivotally connected to said frame and said head, said head having cam portions engageable with said strap outwardly of a line connecting the pivotal connections of said link.

3. The structure according to claim 1 wherein said lever is provided with an opening adjacent its free end, a flange projecting upwardly from said strap receivable in said opening, and locking means releasably engageable with said flange and said lever.

4. The structure according to claim 1 wherein the pivotal connection between said frame and said strap comprises a bolt member having one end thereof pivotally connected to the frame and the threaded end of the bolt member having an axially adjustable connection with the strap for varying the operating tension in the strap.

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