Dec. 22, 1953 K. J. AHNELL 2,663,268

HATCHWAY CLOSURE

Filed Dec. 30, 1952

Fig. 1.

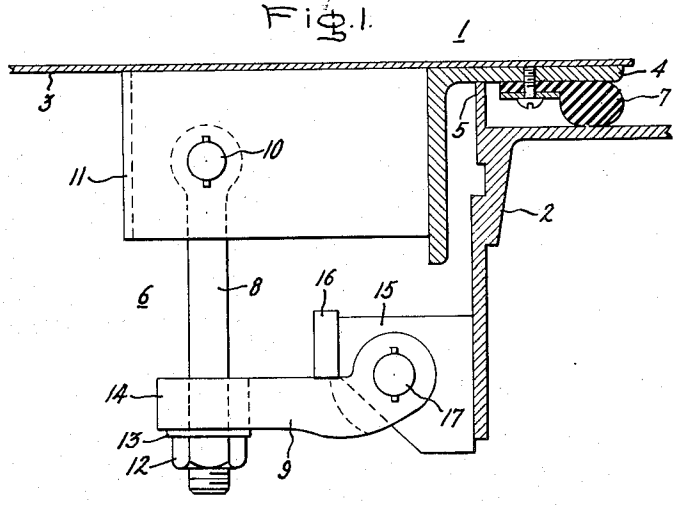
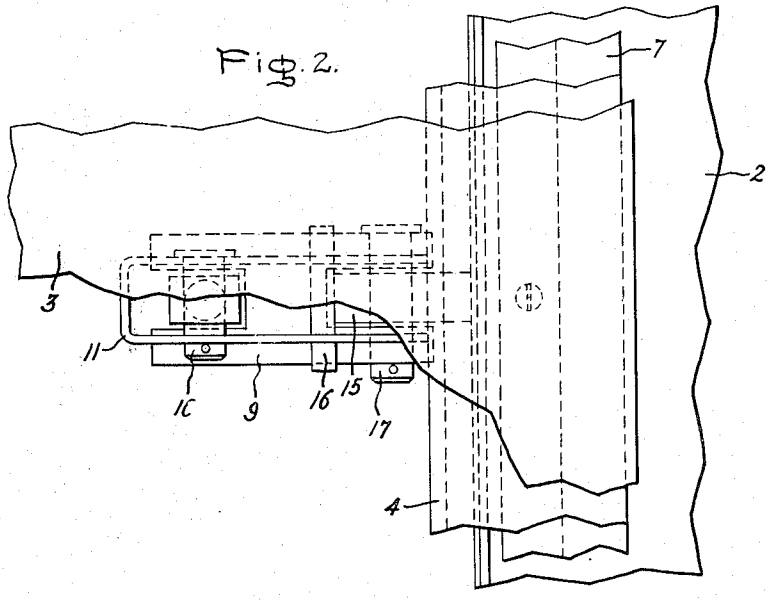


Fig. 2.



Inventor:
Karl J. Ahnell,

by Claude H. Mott
His Attorney.

Patented Dec. 22, 1953 2,663,268

UNITED STATES PATENT OFFICE

2,663,268

HATCHWAY CLOSURE

Karl J. Ahnell, Erie, Pa., assignor to General Electric Company, a corporation of New York

Application December 30, 1952, Serial No. 328,752

4 Claims. (Cl. 105—456)

1

My invention relates to hatchway closures and more particularly to hatchway closures for locomotive cab structures.

In the past, the hatch covers of a locomotive cab have usually been held in place by bolts which extend through the cover into the superstructure of the locomotive. With such a construction it has been difficult to secure a seal between a cover and its hatchway structure which would prevent the entrance of water into the locomotive cab. Furthermore, in such an arrangement it has been necessary to employ a large number of bolts for holding a cover in place and it has consequently been time consuming to install or remove it.

It is an object of my invention to provide a hatchway closure in which the hatch cover is secured in place over the hatchway by one or more separable clamps which are located within the hatchway and act upon an inside wall of the cover and the side wall area of the hatchway structure and in which that part of the clamping means which is attached to the side wall structure of the hatchway assumes a retracted position when not employed for clamping the cover in place.

It is also an object of my invention to provide a hatchway closure in which the hatch cover is held in place by clamping means located wholly within the hatchway and acting on the cover to hold it in engagement with a rain guard extending along the peripheral edges of the hatchway structure in order to limit the deformation of a sealing gasket located between the hatchway structure and the hatch cover externally of this rain guard.

Further objects of my invention will become apparent from a consideration of the embodiment thereof illustrated in the accompanying drawing.

In this drawing Fig. 1 is a partial side sectional view of the clamping and sealing structure of a hatchway structure and a cover therefor in accordance with my invention, and

Fig. 2 is a plan view of the arrangement shown in Fig. 1 with parts thereof broken away in order to show the relative arrangement of parts.

In the embodiment of my invention illustrated in the accompanying drawing, a hatch cover is held against a rain guard forming part of a hatchway structure, and in sealing engagement with a gasket located exterior to the rain guard, by a clamp fastener comprising separable members one of which is hinged to the inside of the cover and the other of which is hinged to a bracket attached to a wall of the hatchway structure and provided with an abutment against which said other member of the clamp reacts

2

when the members of the clamp cooperate to hold the cover in place. The rain guard acts as a stop to limit the compression of the sealing gasket which may be attached either to the cover or to the hatchway structure. The pivotal support of one of the members of the clamp on the side wall structure of the hatchway permits it to swing out of position and provide desired clearance in the hatchway. By locating the clamp wholly within the hatchway, it is possible to provide a hatch cover which is imperforate and consequently in combination with the gasket seal between the cover and the hatchway structure provides a closure which effectively prohibits entrance of water into the hatchway and thus into the locomotive cab structure of which the hatchway and its closure forms a part.

In the arrangement illustrated in the drawing a hatch cover 1 is shown in its closed position over a hatchway in a structure 2 such as a locomotive cab. This cover comprises a sheet of metal 3 having an edge reinforcement provided by an angle structure 4 to which the plate 3 is suitably attached as by welding. The angle structure 4 of the hatch cover engages an outwardly directed flange 5 of the hatchway structure 2 against which it is held by a clamp type fastener 6. This outwardly directed flange 5 of the hatchway structure constitutes a rain guard which will prevent water flowing over the outer area of the structure from running into the hatchway. A deformable gasket 7 made of suitable material, such as rubber or the like, is attached to the angle structure 4 of the hatch cover and provides a water tight seal between the hatchway structure and the hatchway cover. It is to be noted that this gasket can be deformed only a predetermined amount by the clamping pressure applied between the hatch cover and the hatchway structure by reason of the engagement of flange 5 of this structure with the hatch cover. In the arrangement illustrated gasket 7 has been mounted on the angle structure 4 of the cover exterior of the portion of the angle structure engaged by rain guard 5.

The clamp type fastener 6 comprises a pair of separable members 8 and 9 which are respectively supported for swinging movement into and out of engagement with one another about pivot pins 10 and 17. In the arrangement illustrated clamping member 8 is an eye bolt having its eye portion supported on pivot pin 10 which in turn is supported by openings in the opposite arms of a U-shaped member 11 having its edge portions attached to plate 3 and angle structure

4 of the hatch door in any suitable manner, for example, by welding. The other end of the eye bolt 8 is threaded for engagement with a nut 12 which acts through a washer 13 against the slotted end portion 14 of clamping member 9 when these members 8 and 9 are brought into clamping engagement with one another by positioning the parts as illustrated in the drawing and tightening the clamping nut 12.

Clamping member 9 is a clevis having its inner end supported for swinging movement about pivot pin 17 which extends through and is supported by a bracket 15 mounted on the side wall area of the hatchway structure 2 in any suitable manner, for example, by welding. This bracket 15 is provided at its outer end with an abutment 16 against which the body portion of clevis 9 abuts when the parts of the clamp are assembled in clamping position. It is to be noted that a suitable clearance is provided between the lugs at the inner end of the clevis to permit the clevis to swing downwardly and toward the side wall of the hatchway structure when the members of the clamp are disengaged for removal of the hatch cover. Consequently this part of the clamp is at most a minor obstruction in the hatchway in which it is located.

When assembling the hatch cover for closure of the hatchway, it is lifted into place and clamping member 8 is swung out of the way so that clamping member 9 can be positioned against stop 16 of bracket 15. Then clamping member 8 is swung back into the position illustrated in the drawing so as to engage the slotted end of clamping member 9. Downward pull is exerted on hatch cover 1 by tightening nut 12 which is threaded on the end of clamping member 8 and acts through washer 13 against the slotted end portion 14 of clamping member 9 which reacts against abutment 16 and pin 17 of the bracket 15. This clamping action compresses seal 7 until cover 1 rests solidly on the rain guard 5 of the hatchway structure 2 to provide the desired water tight seal between these parts. When removing hatch cover 1, nut 12 on clamping part 8 is backed off enough to permit swinging parts 8 and 9 out of engagement with one another.

Although only a single specific embodiment of my invention has been above described in detail, it will be appreciated that various modifications in the form, number and arrangement of parts may be made without departing from the teachings of my invention and I therefore aim in the appended claims to cover all such changes and modifications that fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In combination, a hatch cover, a structure having a hatchway therein, a bracket mounted on a wall of said hatchway structure and having an abutment at its outer end, and means for holding said hatch cover in place over said hatchway in said structure, said means including a clamp type fastener having a pair of separable members one of which is pivoted at one end to an inside surface of said hatch cover for swinging movement toward and away from said wall of said hatchway structure, and the other of which is pivoted at one end to said bracket for swinging movement into engagement with said abutment when said pair of separable members of said fastener are brought into clamping engagement with one another.

2. In combination, a hatch cover, a hatchway structure having an outwardly directed flange against which a rim portion of said cover may abut when closing the hatchway in said structure, a gasket for sealing the closure between said hatchway structure and said hatch cover to one of which it is attached for engagement with the other adjacent said hatchway flange, a bracket mounted on a wall of said hatchway structure and having an abutment at its outer end, and means for holding said hatch cover in place over said hatchway in said structure, said means including a clamp type fastener having a pair of separable members one of which is pivoted at one end to an inside surface of said hatch cover for swinging movement toward and away from said wall of said hatchway structure, and the other of which is pivoted at one end to said bracket for swinging movement into engagement with said abutment when said pair of separable members of said fastener are brought into clamping engagement with one another.

3. A hatch cover, a hatchway structure, and releasable clamping means for fastening said hatch cover in place over the hatchway in said structure, said means comprising a bolt having a threaded portion at one end and having its other end pivoted to an inside surface of said hatch cover for swinging movement toward and away from a wall of said hatchway structure, a nut making a threaded engagement with the threaded end portion of said bolt, a bracket mounted on said wall of said hatchway structure and having an abutment at its outer end, and a clevis pivoted at one end to said bracket for swinging movement into engagement with said abutment thereon when its other end, which is slotted for the reception of the threaded end of said bolt, makes an abutting engagement with said nut when said nut is tightened on said bolt.

4. A hatch cover, a hatchway structure having an outwardly directed flange against which a rim portion of said cover may abut when closing the hatchway in said structure, a gasket for sealing the closure between said hatchway structure and said hatch cover to one of which it is attached for engagement with the other exterior of said hatchway flange, and releasable clamping means for fastening said hatch cover in place over said hatchway in said structure, said means comprising a bolt having a threaded portion at one end and having its other end pivoted to an inside surface of said hatch cover for swinging movement toward and away from a wall of said hatchway structure, a nut making a threaded engagement with the threaded end portion of said bolt, a bracket mounted on said wall of said hatchway structure and having an abutment at its outer end, and a clevis pivoted at one end to said bracket for swinging movement into engagement with said abutment thereon when its other end, which is slotted for the reception of the threaded end of said bolt, makes an abutting engagement with said nut when said nut is tightened on said bolt.

KARL J. AHNELL.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
870,540	Bredel	Nov. 12, 1907
2,128,305	Lambert	Aug. 30, 1938
2,134,314	O'Donnell	Oct. 25, 1938