COVER FOR RECEPTACLES AND SUPPORT THEREFOR

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My invention more particularly relates to a cover which may readily be secured in closing position on the receptacle, on which it is mounted and released therefrom. While not limited thereto, my invention is particularly applicable to openings in the domes with which tank cars are usually provided.

My invention consists of certain novel parts and combinations of parts particularly pointed out in the claims.

The following is a description of a cover and support therefor, embodying my invention in the form at present preferred by me, but it will be understood that various modifications and changes may be made without departing from the spirit of my invention and without exceeding the scope of my claims.

My invention will best be understood by reference to the accompanying drawings, in which Figure 1 is an end view of a tank car and its dome, partially in section; Fig. 2 is a plan view of the dome ring of Fig. 1 and the parts mounted thereon, and Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2.

Like reference characters indicate like parts throughout the drawings.

Referring now to the drawings, 10 is the metal sheet of a tank car, in connection with which I have illustrated my invention, and which, in practice, is usually covered with heat insulating material. The tank car is provided with the usual dome, indicated generally at 11, and comprising the dome sheet 12, which may be covered with suitable heat insulating material 13. The top of the dome is provided with an opening 14, preferably oblong, as shown. A dome ring 15, the opening 15 of which is preferably somewhat smaller than the opening 14, is secured to the inner side of the dome sheet 12 as by rivets 16, said ring being provided with a downwardly extending annular flange 17, the edge of which forms a seat for the cover 19.

The said cover is preferably hinged as at 20, the cover being provided with a hinge lug or enlargement 21, provided with an enlarged opening 22, extending transversely of the cover, and adapted to receive a bolt 23 mounted in lugs 24 and 25 (Fig. 2) with which the ring 15 is provided. A projection 42 on cover 19 contacts with the stop 43 to prevent the cover from swinging too far inside the receptacle and contacting with the inside wall thereof. The cover 19 is provided with an annular seat 26, adapted to engage the edge 18 of the flange 17, a suitable gasket 27 preferably being interposed between the said seat and the said flange. The opening 22 in the hinge lug 21 is preferably elongated in one direction to permit the cover to seat evenly on the flange under all circumstances as will readily be understood. A fastening member 28, here shown as an eye-bolt, is attached to the outside of the cover 19, the eye 29 receiving a rivet 30, securely riveted in lugs 31 on the upper side of the cover, so that the fastening member 28 is hingedly attached to the cover. The outer end of the fastening member 28 is provided with a head, in the form of a nut received on the threaded end 32 of the member 28. The cover is also preferably provided with a lug 34, having an opening at 35 to which a chain may readily be attached for operating the cover.

Cooperating with the fastening device 28 is a member 36, adapted to be mounted on the dome outside of the cover and to bridge the opening 15, and preferably hingedly connected to the said dome ring. The dome ring is provided with an upwardly extending lug 37, provided with an opening 38, and adapted to receive a rivet 39, which also passes between the two branches of a yoke member 36, with which the end of the bridge member 36 is provided, as shown in Fig. 2, the rivet 39 preferably being provided with heads at 40 to prevent the same from being removed. The yoke member 36 is provided with an opening, indicated generally at 41, surrounded by a vertical flange member 410, and provided with an enlarged part at 411, which is sufficiently large to permit the bolt 28 and the nut 33 to pass freely therethrough, while another portion of said opening, indicated by dotted lines in Fig. 2 at 412, permits the member or bolt 28 to pass thereinto, but not the nut on the end thereof, so that when the member or bolt 28 passes into the contracted part at 412 of the opening, the nut 33 engages the walls around the opening and secures the cover in position.

Assuming the cover in closed position, as illustrated in Fig. 3, in order to open the same, it is only necessary to loosen the nut and move the headed end of the bolt to the
left, as viewed in Fig. 3, and to the position indicated by dotted lines, thereby bringing the nut on the bolt into registry with the enlarged portion 411 of the opening, and then by releasing the cover, the nut passes through the opening, permitting the cover to move around the hinge bolt 23 to open position. The bridge member 36 is then lifted about its hinge pivot 39 to the position indicated in Fig. 1, where free access through the dome opening may be had. It will be noted that this operation can be carried out without the removal of any parts, such as the nut on the bolt or the cover itself, in the manner that has previously been common, thereby avoiding the possibility of the parts being lost while the cover is in the open position. To close the cover, the operation is the reverse. The cover is raised, with the nut on the bolt in registry with the enlarged portion 41 of the opening, and when the cover is seated, the bolt is moved to the right as viewed in Fig. 3, thereby causing the nut to engage the portion of the bridge member 36 surrounding the contracted part of the opening. It will, of course, be apparent that the nut can readily be adjusted to compensate for wear between the parts.

I claim:

1. In combination, a receptacle provided with an opening, a cover for said opening removably mounted on the inner side of said receptacle, a member provided with a head removably connected to said cover, and a member adapted to bridge said opening on the outer side of said receptacle and provided with an opening through one portion of which the head of said member is free to pass and through another portion of which the member, but not the head, may pass.

2. In combination, a receptacle provided with an opening, a cover for said opening removably mounted on the inner side of said receptacle, a bolt threaded at its outer end and hingedly connected to said cover, a nut threaded on the end of said bolt, and a member adapted to bridge said opening outside of said receptacle and provided with an opening through one portion of which the head of said bolt may freely pass and through another portion of which the bolt, but not the nut, may pass.

3. In combination, a receptacle provided with an opening, a cover for said opening removably mounted on the inner side of said receptacle, a fastening device hingedly connected to said cover, and a member hingedly attached to the outside of said receptacle and adapted to bridge said opening to which said fastening device is adapted to be detachably connected, said cover and said member being mounted to swing in opposite directions from said opening, said member being provided with an opening longitudinally thereof whereby said fastening device can engage said member by a swinging motion.

4. In a tank provided with a dome having a top opening, a ring mounted at the top of the dome and provided with a downwardly extending flange, a cover hingedly connected to said ring and adapted to engage said flange in its raised position, said cover being provided with a headed fastening member, and a bridge member mounted on said ring and provided with an opening through one portion of which the head of said member is adapted to pass and through another portion of which the member but not the head may pass.

5. In a tank provided with a dome having a top opening, a ring mounted at the top of the dome and provided with a downwardly extending flange and provided with a lug, a cover hingedly connected to said lug and adapted to engage said flange in its raised position, said cover being provided with a headed fastening member, and a bridge member mounted on said ring and provided with an opening through one portion of which the head of said member is adapted to pass and through another portion of which the member but not the head may pass.

6. In a tank provided with a dome having a top opening, a ring mounted at the top of the dome and provided with a downwardly extending flange, a cover hingedly connected to said ring and adapted to engage said flange in its raised position, said cover being provided with a headed fastening member, and a bridge member hingedly connected to said ring and provided with an opening through one portion of which the head of said member is adapted to pass and through another portion of which the member but not the head may pass.

7. In combination, a receptacle provided with an opening, a cover for said opening hingedly connected to said receptacle on the inner side of said receptacle, a fastening device hingedly connected to said cover, and a member adapted to bridge said opening and hingedly connected to said receptacle on the outside of said receptacle, said member being provided with an opening longitudinally thereof whereby said fastening device can engage said member by a swinging motion.

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