Oct. 6, 1925. 1,555,932

W. K. AUCHINCLOSS

TANK DOME CLOSURE

Filed Aug. 16, 1923

Fig. 1.

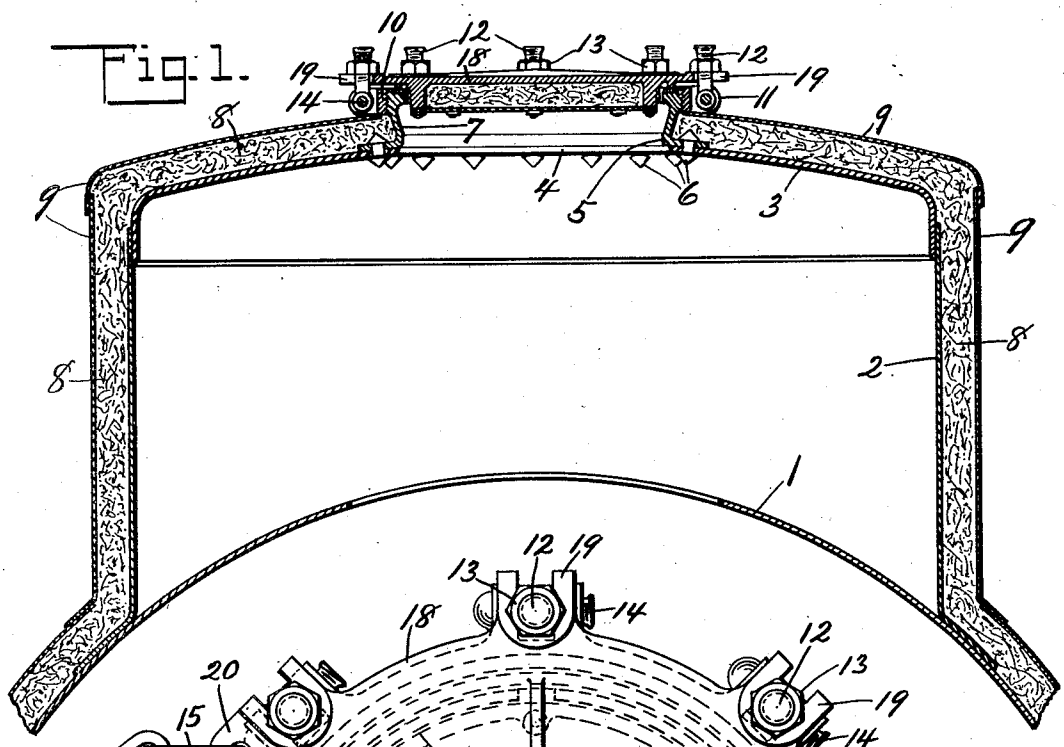


Fig. 2.

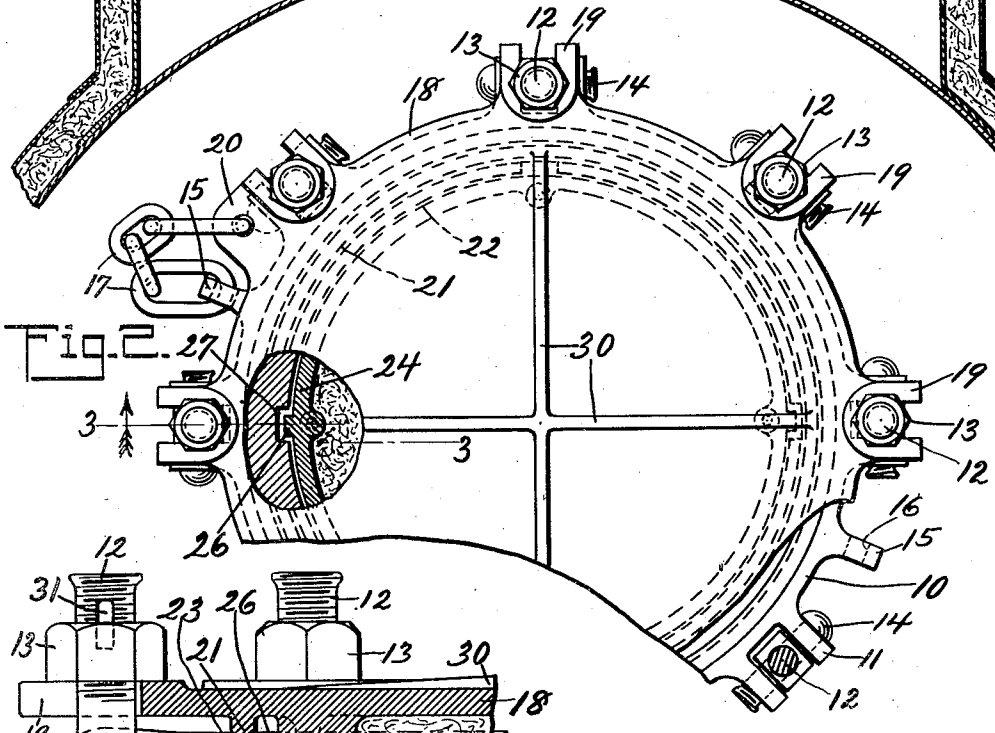
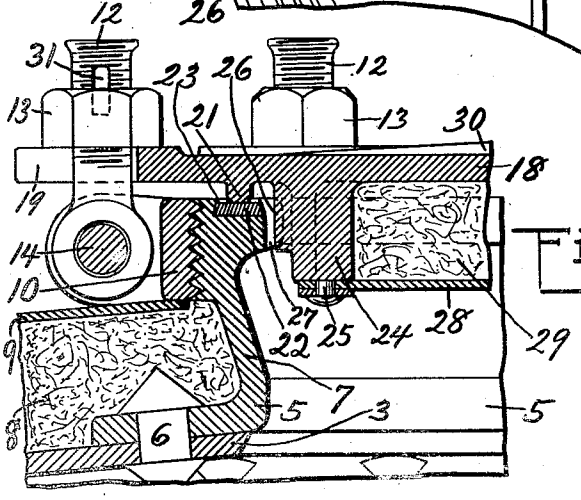


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM K. AUCHINCLOSS, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TANK-DOME CLOSURE.

Application filed August 16, 1923. Serial No. 657,749.

To all whom it may concern:

Be it known that I, WILLIAM K. AUCHINCLOSS, residing at New York, in the county and State of New York, and being a citizen of the United States, have invented certain new and useful Improvements in a Tank-Dome Closure, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Fig. 1 is a central vertical section of a car tank dome provided with a closure constructed in accordance with this invention;

Fig. 2 is a partial plan view of the dome closure shown in Fig. 1, parts being broken away to show other parts more clearly; and

Fig. 3 is a partial vertical section of the closure on a larger scale taken on the line 3—3 of Fig. 2.

It is an object of this invention to provide an improved closure for car tank domes and it is also an object of this invention to provide a closure of the type in which the cover securing means is threaded on the dome ring and which may not be opened without breaking the seal by rotating the cover and the cover securing means. It is also an object of this invention to provide an improved means for securing heat insulating material to the cover.

In the drawings the improved closure is shown applied to an insulated tank 1 having a dome sheet 2 secured thereto in any suitable manner as by rivets (not shown). To the dome sheet 2 there is secured by rivets (not shown) a dome head 3 provided with the usual manhole opening 4. Surrounding the manhole opening 4 is an angular dome ring 5 having one flange secured to the dome head 3 by the rivets 6 and having an upwardly projecting flange 7 which is thicker at its upper end and is outwardly threaded for a short distance from its upper end. The tank 1, dome sheet 2 and dome head 3 are protected by a layer of heat insulating material 8 which is covered by an outer sheathing 9.

Threaded on the dome ring 5 is an auxiliary ring or collar 10 having a plurality of equally spaced outwardly projecting slotted lugs 11 in which bolts 12 carrying nuts 13 are pivotally mounted by means of the pins 14. The collar 10 is also provided with a plurality of oppositely placed lugs 15 having openings 16 to receive links of a chain 17 which attaches a cover 18 to the collar 10.

The cover 18 has a plurality of equally spaced bifurcated lugs 19 which are positioned to receive the bolts 12 secured to the ring 10, and is provided, adjacent one of the lugs 19, with a projecting portion 20 having an opening to receive a link of the chain 17. The cover 18 is also provided with an annular projection 21 which engages with a packing 22 placed in a slot 23 formed in the upper end of the flange 7 of the dome ring 5. Projecting inwardly from the cover 18 is an annular projection 24 of slightly less diameter than the opening in the ring 5 and provided with a plurality of integrally formed rivet projections 25 equally spaced about its inner surface and a plurality of equally spaced outwardly projecting lugs 26 which engage in slots 27 formed in the upper end of the flange 7 of the ring 5. To the lower end of the annular projection 24 a plate 28 is secured by heading the rivets 25 and serves to hold in place the heat insulating material 29. To reinforce the cover there are provided the outwardly projecting reinforcing ribs 30.

The auxiliary ring or collar 10 is threaded on to the dome ring 5 after the insulation 8 and sheathing 9 are applied and engages with and serves to hold in place the sheathing 9 which surrounds the ring 5. After the cover 18 has been placed in position on the ring 5 with the annular projection 21 engaging with the packing 22 and the lugs 26 engaging in the slots 27, the cover 18 is secured in place by placing the bolts 12 in the lugs 19 and tightening the nuts 13. The seal (not shown) is then placed through an opening 31 in one of the bolts 12 to prevent loosening of the nuts and removal of the cover. With the cover bolted down, the engagement of the lugs 26 in slots 27 prevents rotation of the cover 18 and the collar 10 whereby the cover might be removed without breaking

the seal placed through the opening 31 and insures that any opening of the cover must be made by breaking the seal and releasing the bolts 12. While the improved closure has been shown as applied to an insulated tank, it is to be understood that it is not to be limited to use with such tanks but may be applied equally well to uninsulated tanks.

What is claimed is:

1. A tank dome closure comprising a dome ring secured to the dome head, a collar carried by said ring, a cover secured to said collar and means on said cover interlocking with said ring beneath a portion of the cover.

2. A tank dome closure comprising a dome ring secured to the dome head, a collar threaded on said ring, and a cover secured to said collar, portions of the cover and ring having interlocking engagement to lock said collar in place when the cover is closed, and said interlocking portions being covered when the cover is closed.

3. A tank dome closure comprising a dome ring secured to the dome head, a collar threaded on said ring, a cover on said collar, means securing said cover to said collar, said cover having interlocking engagement with the inner peripheral portion of the ring when closed and preventing rotation of said cover and collar with respect to said ring.

4. A tank dome closure comprising a dome ring secured to the dome head and having axially disposed seats in its inner peripheral face, a collar carried by said ring and a cover secured to said collar having projections entering the seats in said ring and preventing rotation of said collar and cover.

5. A tank dome closure comprising a slotted dome ring secured to the dome head, a collar threaded on said ring and a cover bolted to said collar and having projections entering the slots in said ring.

6. A tank dome closure comprising a slotted dome ring secured to the dome head, a cover carried by said ring, an annular projection on said cover extending into said ring and lugs on said annular projection engaging in the slots in said ring to prevent rotation of the cover with respect to the ring when shut.

7. A tank dome closure comprising a dome ring secured to the dome head, a collar threaded on said ring, a cover on said collar, bolts pivotally mounted on said collar for securing said cover to said collar and interlocking means on said ring and cover preventing rotation of said cover and collar with respect to said ring.

In witness whereof I have hereunto set my hand.

WILLIAM K. AUCHINCLOSS.