Sept. 6, 1932. V. WILLOUGHBY 1,876,188

DOME HEAD ARRANGEMENT FOR CAR TANKS

Filed April 11, 1931

Fig. 1.

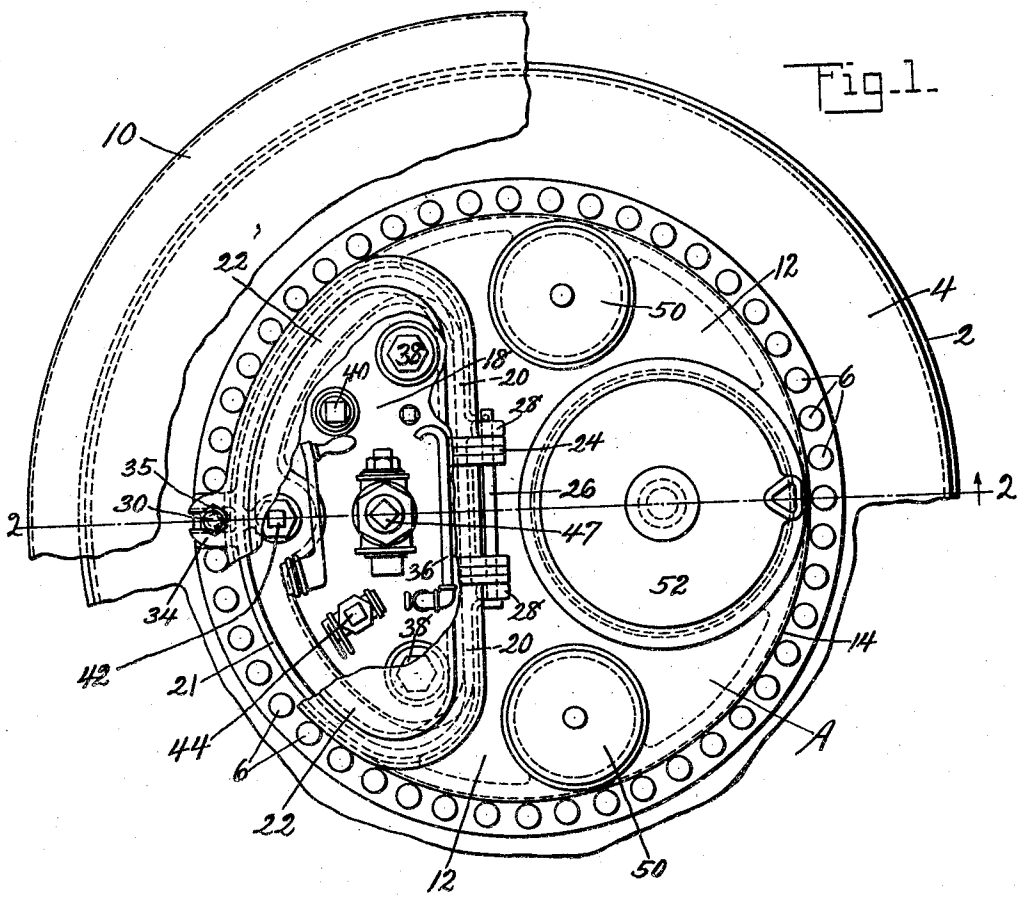
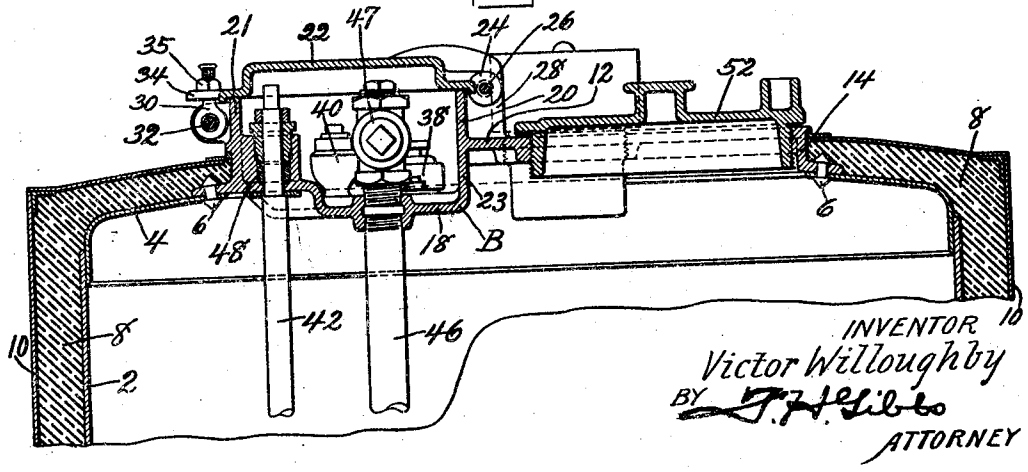


Fig. 2.



INVENTOR
Victor Willoughby
BY
ATTORNEY

Patented Sept. 6, 1932 1,876,188

UNITED STATES PATENT OFFICE

VICTOR WILLOUGHBY, OF RIDGEWOOD, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY

DOME HEAD ARRANGEMENT FOR CAR TANKS

Application filed April 11, 1931. Serial No. 529,396.

This invention relates generally to tanks or containers and has particular reference to the domes of car tanks.

One object of this invention is the provision of a new and improved dome head casting.

Another object of this invention is the provision of a casting for the dome heads of tanks which comprises a combined dome ring and support for tank fittings.

Still another object of this invention is the provision of a casting for dome heads adapted to support tank fittings in such a manner that they may be concealed and retained in a position such as to prevent unauthorized tampering.

A further object of this invention is the rovision of a dome head and a casting forming a part thereof and including a combined dome ring and support for tank fittings within a box-like construction formed as a part of said casting.

A still further object of this invention is the provision of a new and improved casting for dome heads of car tanks which includes a dome ring and a web, a portion of the latter having a box-like construction formed integral therewith and provided with a removable cover for normally concealing tank fittings supported therein; the web, exteriorly of the box-like construction, being provided with a man-hole opening normally closed with a man-hole cover.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawing in which

Figure 1 is a partial top plan view of a tank dome showing the present invention applied thereto, and

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

The drawing shows the upper portion of a tank dome or other container, the dome comprising a dome sheet 2 and a dome head 4 having an opening therein adjacent which the dome head casting A of the present invention is secured by suitable fasteners such as rivets 6. The dome illustrated is insulated at 8 and is provided with a sheathing 10, but obviously the insulated construction is merely by way of example.

The casting A is a unit and serves as a combined dome ring and support for tank fittings, as will more clearly appear hereinafter, and comprises a web 12 having a vertical marginal flange 14 extending both above and below the horizontal plane of the web and defining a dome ring; the dome ring portion 14 being provided with an attaching flange at its lower edge seated on the dome head 4 and secured thereto by the before mentioned fasteners 6.

Formed with the web 12 is an integral box construction indicated generally at B and comprising the bottom plate 18 and side walls 20, portions of the latter being defined by extensions of the flange 14, as shown at 21, while other portions extend vertically above and below the web 12, as shown at 23, and merge with the extensions 21, as shown clearly in Fig. 1.

The box B is closed by a cover 22 which is normally seated on the upper edge of the walls 20 and which is provided with extending hinge lugs 24 engaged by a hinge pin 26 supported in fixed lugs 28 formed with the walls 20. The cover 22 is secured in position by means of a bolt 30 pivoted to the wall 20 at the extensions 21, as shown at 32, and engaging between spaced ears 34 projecting from the cover; the bolt being provided with a securing nut 35 adapted to bear against the ears 34, as clearly shown in the drawing. While the drawing shows the cover 22 as being secured in position by means of a bolt, it is obvious that a suitable locking means for the cover may be provided whereby to prevent opening of the cover 22 by an unauthorized person.

The bottom plate 18 serves as a support for certain of the tank fittings such as those which should be concealed against the action of the weather. In the present instance they are shown as a sampler 36, peep sights 38, relief valve 40, valve rod 42, air vent 44 and siphon or filling and discharge pipe 46, the latter having a valve 47 retained in position by the bottom plate 18, as clearly shown in Fig. 2. The valve rod 42 extends through

a stuffing box 48 and the remainder of the fittings just described are connected to the bottom plate in any suitable or desired manner in order to provide leak-proof joints.

It is not the intention to provide a dome head casting of complete box-like construction and the box B shown in the drawing comprises only a portion of said casting, as clearly shown. In some instances safety valves have been secured to the dome heads outside of the dome ring. This requires punching the dome heads, as will be obvious, and in the case of an insulated tank the positioning of such safety valves requires the extension thereof through the sheathing and insulation thereby providing for potential leaks due to the joints formed by such positioning of the safety valves. Inasmuch as the box B occupies only a portion of the dome head casting A it is possible to support safety valves by said casting, and as clearly shown in the drawing, the web 12 of the casting serves to support the safety valves indicated at 50. The web 12 is also provided with a threaded man-hole opening which is normally closed by a man-hole cover 52 adapted to be removed when desired.

From the above description it is believed that the construction of the present invention will be fully apparent to those skilled in the art. The device of the present invention comprises a casting which includes a combined dome ring and supporting means for tank fittings including such fittings as should be concealed and other fittings which it is unnecessary to conceal. The device of the present invention eliminates the use of the usual dome cover which is removably secured to the dome ring and the device also provides for the positioning and support of all tank fittings, thus eliminating the necessity of extending any fittings through the dome head, the insulation or the sheathing.

The drawing shows one embodiment of this invention, but it is to be understood they are for illustrative purposes only and various changes in the form and proportions of the device may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In a tank dome having a head provided with an opening, means closing said opening comprising a dome head casting including a ring member and web formed as an integral structure, said web having an open box-like portion formed in a part thereof, a removable closure element for the box-like portion, said web further having a man-hole opening spaced from the box-like portion and a man-hole cover normally closing said opening.

2. In a tank dome having a head provided with an opening, means closing said opening comprising a dome ring member and web formed as a unit, said web having an open box-like portion for supporting tank fittings, a closure for the box-like portion, said web further having a man-hole opening formed therein adjacent the box-like portion, and a man-hole cover normally closing said opening.

3. A dome head casting comprising a ring member and web formed as an integral structure, said web having a portion thereof formed to define an open box-like construction the bottom plate of which is arranged in a plane lower than the plane of the web and being adapted to support tank fittings, a cover hingedly connected to the box-like construction, said web having a man-hole opening arranged adjacent the box-like construction exteriorly thereof, and a man-hole cover normally closing the man-hole opening.

4. A dome head casting for attachment to a tank dome head, comprising a ring member and a web formed as a unitary structure, a portion of the web being depressed and having vertical walls adjacent the depression to define an open-box for receiving tank fittings, said web having a man-hole opening and a closure therefor arranged exteriorly of the box.

5. In combination with a tank dome, a dome head casting comprising a ring member and a web formed as a unitary structure, the web having an open box formed therewith, a portion of the ring member defining a part of said box, a closure for the box, said web further having a man-hole opening adjacent the box arranged exteriorly thereof, a man-hole cover normally closing said opening, and tank fittings supported by the web outside of the box.

6. In combination, a tank dome comprising a head provided with an opening, and a dome head casting secured to the head and closing said opening, said casting including a web portion having a portion only thereof formed into box form with a bottom plate and vertical side walls, a cover for said box, tank fittings supported by the bottom plate, said web also having a man-hole opening formed therein outside of the box and a removable closure for said man-hole opening.

7. In combination, a tank dome comprising a head provided with an opening, and a dome head casting secured to the head and closing said opening, said casting including a web portion having a portion only thereof formed into a box with a bottom plate and vertical side walls, a portion of said side walls defining a portion of the marginal edge of said web, tank fittings supported by the bottom plate, a closure hingedly connected to the vertical walls and normally concealing the tank fittings supported by said bottom plate, said web having a man-hole opening formed therein outside of the box, a man-hole cover

normally closing said man-hole opening and external tank fittings supported by the web outside of the box.

8. In combination, a tank dome comprising a head provided with an opening, and a dome head casting secured to the head and closing said opening, said casting including a unitary ring member and web, the latter having a portion only thereof formed into an open box with a bottom plate and vertical side walls merging with the ring member, tank fittings supported by the bottom plate, a closure element hinged to the side walls for normally concealing the tank fittings supported therein, and external tank fittings supported by the web outside of the box.

9. A dome head casting having a web bounded by a vertical marginal flange with lateral attaching flange, the said marginal flange developing into a wall which continues inwardly transversely of the web, a bottom wall merging with the transverse wall to form a chamber for fittings, a cover for the chamber, a manhole cover removably located in the web beyond said chamber, and a relief valve on the web.

In witness whereof I have hereunto set my hand.

VICTOR WILLOUGHBY.