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C. R. GALLAGHER

LIQUID SEALED DECK FOR TANKS

Filed Nov. 24. 1922

Fig. 1.

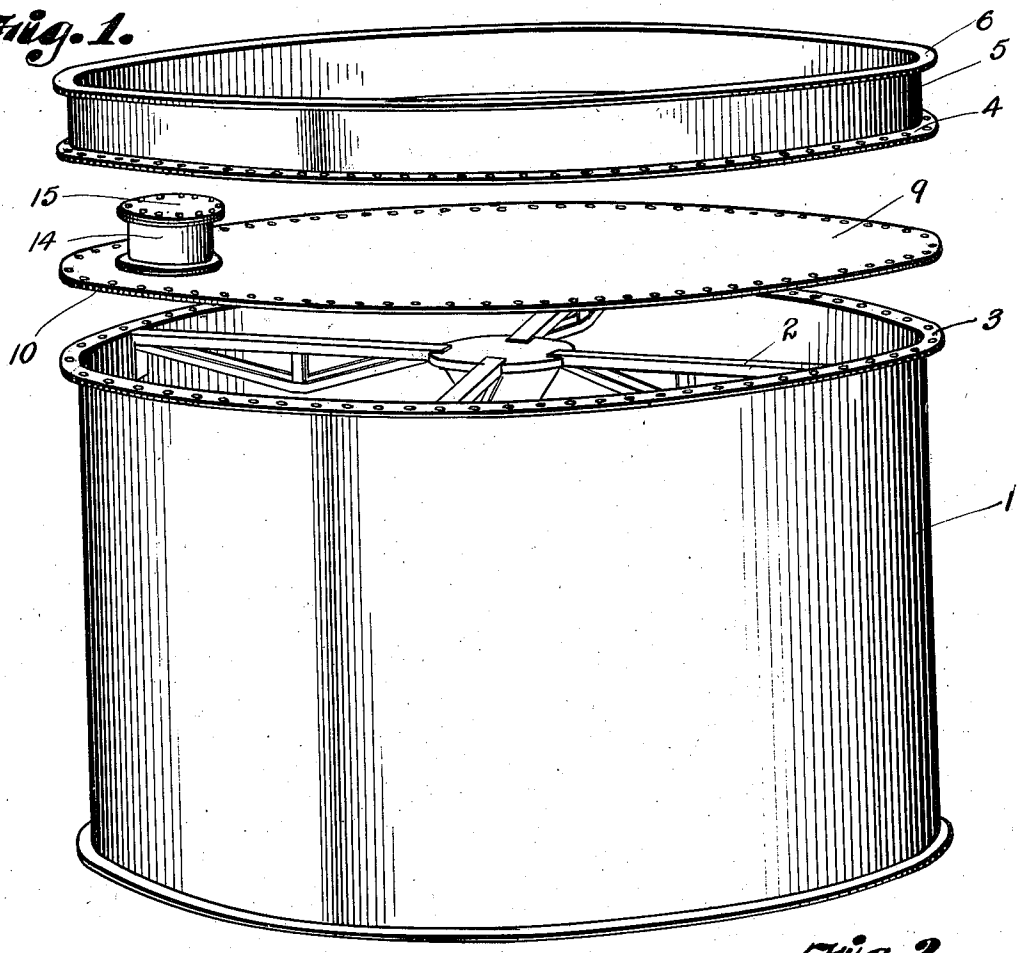
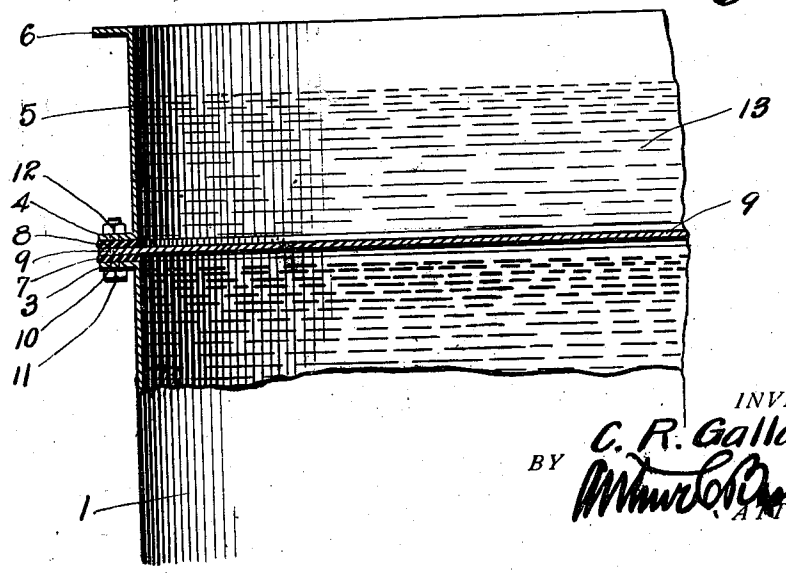


Fig. 2.



INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

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LIQUID-SEALED DECK FOR TANKS.

Application filed November 24, 1922. Serial No. 603,113.

To all whom it may concern:

Be it known that I, CHARLES R. GALLAGHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Liquid-Sealed Decks for Tanks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a tank and a water sealed deck therefor.

Oil tanks contain a considerable amount of volatile materials which vaporize under the action of heat generated by the sun rays and this highly volatile content, which is really the valuable content of the oil, is frequently lost unless the roof of the tank is insulated. This is so well appreciated that, prior to my invention, the tops of tanks have been insulated by various means, for example, by water at a sufficient depth to prevent the action of the sun rays on the oil.

The super-structure above the top of the tank proper is called a deck and it is the purpose of my invention to provide a combined tank and water sealed deck which can be easily constructed, which will be efficient when installed, and which will not leak due to expansion and contraction incident to varying weather conditions.

In the drawings,

Fig. 1 is a disassociated, perspective view of the deck wall or rim, the combined floor sheet and tank roof and the tank wall, and

Fig. 2 is a fragmentary, sectional view through the tank and deck.

Referring now to the drawings by numerals of reference:

1 designates the tank wall, which is shown as a vertical cylinder. The tank wall may be provided with a bottom of appropriate construction and as is usual, the tank will be reinforced by appropriate reinforcing 2.

The upper edge of the tank wall 1 is provided with an outstanding horizontal, peripheral flange 3 to correspond with the lower flange 4 of a channel-shaped deck wall 5, the deck wall 5 being also provided with an outstanding flange 6 to afford rigidity to the wall.

The channel 5 is in the form of a ring and it is of sufficient height to provide the necessary depth for the water which constitutes the protective insulation for the oil within the tank 1.

Between the flanges 3 and 4 are packing rings or gaskets 7 and 8 and between these is located the combined floor sheet and roof 9, which consists of a sheet of metal of a diameter sufficient to overlap the wall of the tank and the wall of the deck ring 5. The extreme overlapping edge 10 of the sheet 9 is clamped between the packing rings or gaskets 7 and 8 by fastening devices consisting of bolts 11, having on their ends nuts 12. The sheet 9 serves the dual purpose in that it consitutes a roof for the tank and a deck floor for the deck.

The deck can contain a body of water or other insulating liquid 13, and access can be had to the tank through a manhole 14, provided with the usual cover 15.

The construction as embodied in my invention is simple to construct and as the vertical wall is not pierced for rivets, it is not weakened. The top sheet 9 will rest upon the tank as an ordinary top would and by providing the flanged ring for the deck, the ring and the sheet 9 and the flange 3 and the gaskets can all be bolted together by a single set of bolts, the deck being sufficiently packed to prevent leakage and since the sheet 9 extends over the upper edge of the wall 1, there will be no liability of water leaking into the tank. Therefore, it will be apparent that the device is simple in construction, that it will be inexpensive to manufacture, and that it can be readily assembled.

What I claim and desire to secure by Letters-Patent is:

1. A combined tank and deck comprising a tank wall, a deck ring, a sheet co-extensive with the cross sectional area of the deck ring and the cross sectional area of the tank, and means for fastening the tank, the sheet and the deck ring together.

2. A combined tank and deck comprising a tank wall, a deck-ring, a sheet co-extensive with the cross sectional area of the deck ring and the cross sectional area of

the tank, and a single set of fastening elements for connecting the tank, the sheet and the deck ring together.

3. A combined tank and deck comprising a tank wall, a deck ring, a sheet co-extensive with the cross sectional area of the deck ring and the cross sectional area of the tank, means for fastening the tank, the sheet and the deck ring together, and packing gaskets between the ring and the sheet and between the sheet and the tank.

4. A combined tank and deck comprising a tank wall having at its upper edge a peripheral, laterally projecting, outstanding flange, a deck ring having at its lower edge a laterally projecting, outstanding flange substantially co-extensive with the flange on the tank, a combined floor sheet and top interposed between the two flanges to serve both as a cover for the tank and a floor for the deck, and means for fastening the flanges and the sheet in co-operative relation.

In testimony whereof I affix my signature.

CHARLES R. GALLAGHER.