

April 8, 1930.

O. LARSEN

1,753,522

SPRAYING DEVICE

Filed July 10, 1926

Fig. 1.

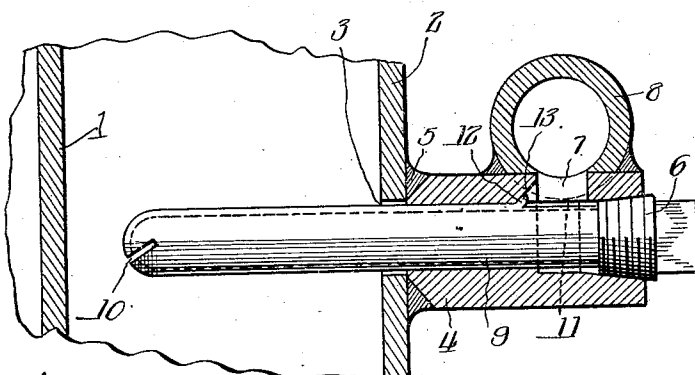


Fig. 2.

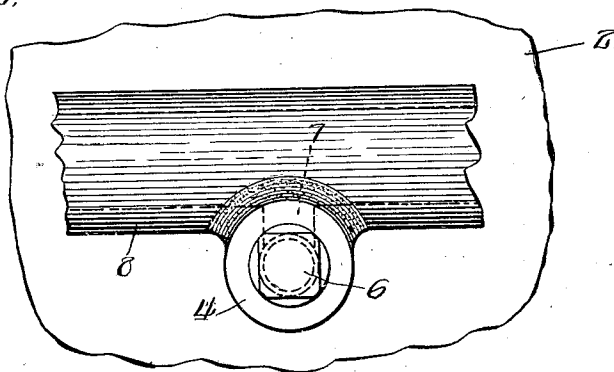


Fig. 3.

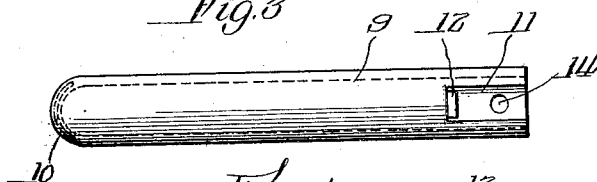
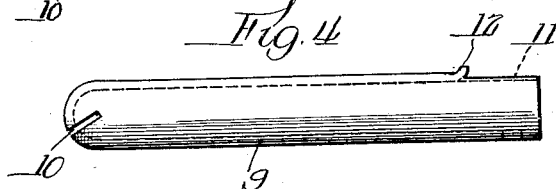


Fig. 4.



Inventor
Olaf Larsen

By Hewitt S. Dixon atty

UNITED STATES PATENT OFFICE

OLAF LARSEN, OF FORT ATKINSON, WISCONSIN, ASSIGNOR TO THE CREAMERY PACKAGE MFG. COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

SPRAYING DEVICE

Application filed July 10, 1926. Serial No. 121,534.

The invention relates more particularly to the construction of spraying devices adapted for use in double-walled heating and cooling tanks wherein the heating or cooling medium is sprayed within the space between the walls.

In tanks of this description it is common practice to arrange a supply pipe for the heating or cooling medium about the wall of the tank, and to connect therewith, at spaced intervals, short nipples extending through the outer wall of the tank for the purpose of spraying the heating or cooling medium against the inner wall of the tank within the space between the two walls. In such construction the spraying nipples often become clogged by corrosion or otherwise, thereby greatly impairing the efficiency of the spray jets, if not entirely stopping the flow of the medium therefrom.

It is the principal object of this invention to provide an improved construction wherein the spraying nipples are accessible for cleaning and repair, and may be readily removed and replaced. A further advantage resides in the provision for accurately positioning the nipple when replaced, to assure maximum effect of the spray.

Other objects and advantages will be apparent in the following description of a preferred embodiment of the invention which I have selected for illustration in the accompanying drawings. It will be understood, however, that various changes in form, construction and arrangement may be made by those skilled in the art without departing from the scope and spirit of the invention as expressed in the appended claims.

Referring to the drawings, Fig. 1 is a sectional view of the device shown in attachment to a tank. Fig. 2 is an elevation of the same. Figs. 3 and 4 are detailed views of the removable spray nipple.

The reference numeral 1 indicates the inner wall of a double-walled tank, the outer wall being spaced therefrom and indicated at 2.

The outer wall 2 is provided at intervals with openings through which the spray nipples extend, as shown at 3 in Fig. 1. A short tube 4, positioned with its bore in register with the opening 3, is securely attached to the outer surface of the outer wall 2, preferably by being welded thereto as indicated at 5. The inner diameter of the outer end of the tube 4 is somewhat enlarged, and is screw-threaded to receive a closure plug 6. A lateral opening 7 is provided in the wall of the tube 4 through which communication is had for the flow of heating or cooling fluid from a supply pipe 8, secured to the tube 4 preferably by being recessed to receive the side of the tube in cross relation thereto, and with an opening in the pipe communicating with the tube opening 7, the walls of the tube and pipe being preferably welded in fixed attachment. The supply pipe 8 preferably extends about the outer wall 2 to supply fluid to a suitable number of similar tubes spaced about the tank.

A spray nipple 9 is removably positioned in the tube 4, the inner end of the nipple extending inwardly of the end of the tube and through the opening in the wall 2 into adjacent relation with the inner wall 1, the inner end of the nipple 9 being closed except for a transverse slot 10 formed at its inner end, the slot being arranged in angular relation to the longitudinal axis of the nipple so that a fan shaped spray will be discharged therefrom to strike the inner wall at an angle which will deflect the heating or cooling medium over the surface of the inner wall with a minimum of splash therefrom.

The outer end of the nipple 9 preferably extends into abutment with the closure plug 6, and is provided with a lateral opening 11 positioned in register with the opening 7 in the tube 4 through which the medium is supplied to the spray nipple. To retain the nipple in position with its opening in register with the supply opening and with its

inner end suitably spaced from the inner wall, there is provided a lug 12, protruding radially from the nipple and engaging, when the latter is in position within the tube, a shoulder 13 formed by a suitable recess cut in the inner wall of the tube 4. This provision prevents endwise or rotative movement of the nipple when in position, and assures the correct location of the nipple when replaced after cleaning.

When it is desired to clean out the spray passages the closure plug 6 may be removed and the spray nipple 9 withdrawn from its supporting tube. To facilitate the withdrawal of the nipple, a hole 14 is provided near the outer end of the nipple into which a hook may be inserted to draw out the nipple.

I claim as my invention:

1. A device of the class described, comprising a tube adapted to receive a spray nipple and having a lateral opening for the entry of fluid thereinto, a spray nipple removably positioned in said tube and extending outwardly from one end thereof, said nipple having an opening therein communicating with the opening in said tube said tube having a longitudinal recess formed in its inner wall terminating inwardly in a shoulder, a lug on said nipple shaped to snugly engage said shoulder within said recess and determine the longitudinal and circumferential position of said nipple, and a removable end closure for said tube effecting the retention of said nipple.

2. A device of the class described, comprising a tube adapted to receive a spray nipple and having an opening for the entry of fluid thereinto, a spray nipple removably positioned in said tube and extending outwardly from one end thereof, said nipple having an opening therein communicating with the opening in said tube and having its outwardly extending end closed except for a transverse slot positioned in angular relation to the longitudinal axis of said nipple, said tube and said nipple having inter-engaging portions determining the longitudinal position of said nipple with respect to said tube and preventing rotative movement thereof, and a removable end closure for said tube effecting the retention of said nipple.

3. A device of the class described adapted to be applied to a tank having spaced inner and outer walls and having an opening in said outer wall, comprising a tube adapted to be secured to said outer wall with its bore in register with said opening and adapted to receive a spray nipple, said tube having a lateral opening for the entry of fluid thereinto, a spray nipple removably positioned in said tube and extending outwardly therefrom for entry through said opening in the outer wall of said tank into adjacent relation to the inner wall of said tank, said nipple having an opening communicating with the

opening in said tube and having its inner end adapted to spray fluid upon said inner wall, means for removably securing said nipple against rotative and inward longitudinal movement in said tube with its end a predetermined distance from said inner wall, and a removable end closure for said tube effecting the outward retention of said nipple.

In witness whereof I have hereunto attached my signature.

OLAF LARSEN.