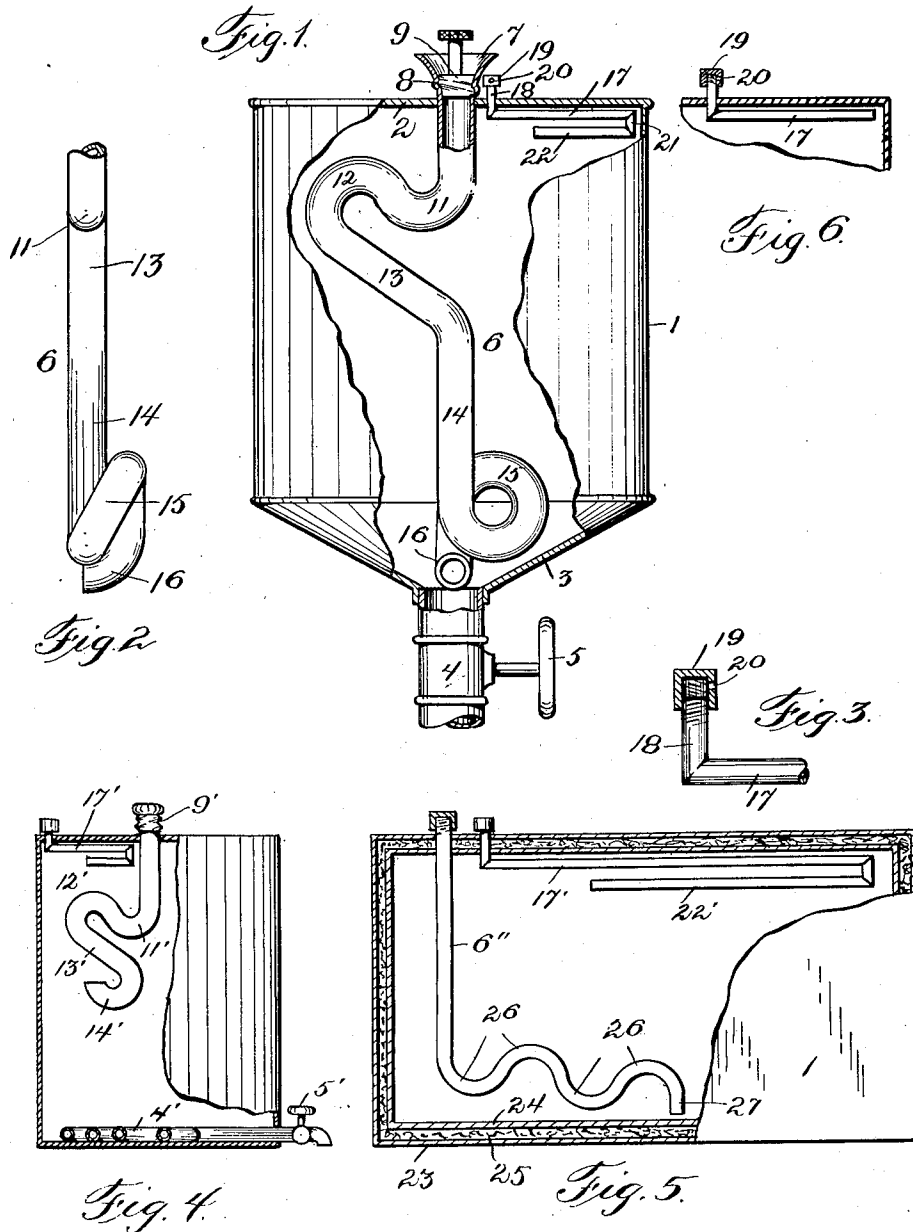


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F. W. REIBER.
NON-EXPLOSIVE OIL TANK.
APPLICATION FILED OCT. 17, 1907.



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UNITED STATES PATENT OFFICE.

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NON-EXPLOSIVE OIL-TANK.

No. 888,739.

Specification of Letters Patent.

Patented May 26, 1908.

Application filed October 17, 1907. Serial No. 397,945.

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM REIBER, a citizen of the United States, residing at Sugar Grove, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Non-Explosive Oil-Tanks, of which the following is a specification.

This invention relates to certain new and useful improvements in non-explosive oil tanks of which the following is a full, clear and exact description.

The primary object of this invention is to provide an oil tank with a filling tube which is bent in such a manner as to form a trap or traps for a portion of the oil, thus shutting off the outside air and consequently rendering combustion or explosion impossible due to the absence of oxygen to support the same.

Reference will be had to the accompanying drawing forming a part of this specification and wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is an elevation of a stove tank being partly broken away to illustrate the filling and vent tubes, Fig. 2 is a side elevation of the lower portion of the filling tube, Fig. 3 is a detail view of the vent cap for the air or vent tube, Fig. 4 is an elevation of an oil storage tank partly broken away to illustrate the filling and vent tubes, Fig. 5 is a similar view of an automobile tank, and Fig. 6 is a fragmentary view of a modified form of vent tube.

Reference numeral 1 designates the tank, such as is employed on gasoline and other oil stoves and may be of the stationary or swinging type, 2 the top and 3 the funnel-shaped bottom thereof, to which latter is connected the usual pipe 4 and regulating valve 5. Arranged centrally within the tank is a vertically disposed filling tube 6 which penetrates the tank top and the projecting portion being flared to form a funnel 7. This funnel-shaped upper end is formed with threaded portion 8 into which is screwed the threaded stopper 9, the latter being equipped with a suitable grip portion as 10 whereby the same may be operated.

The upper portion of the filling tube is bent to form a semi-circular trap portion 11 and is then bent reversely to form a return loop 12 which communicates with the main vertical branch portion 14 through inclined portion

13. The main portion 14 of the filling tube at its lower end is bent into a single coil 15 disposed at one side of the main branch 14 and preferably on the opposite side from portions 11, 12 and 13 mentioned. The terminal end of the said coil 15 which is disposed behind the said main portion 14 of the filling tube is then slightly bent as at 16 in Fig. 2, to form a discharge end. This discharge end is disposed at the base of the funnel-shaped tank bottom 3 adjacent the upper end of the said pipe 4 or in other words, at the extreme lowest point in the tank whereby the said discharge end 16 will be submerged as long as the tank contains oil.

Arranged within the tank close up to and parallel with the tank top 2 is an air or vent tube 17, one end 18 of which penetrates the tank top and terminates at a point close up to the funnel-shaped end 7 of the filling tube and upon this end is threaded a cap 19 as illustrated in detail in Fig. 3. A vent hole 20 is formed in this cap for the passage of air, such passage being permitted by partial unscrewing of the cap to bring the opening 20 above the top of the pipe 18, or upon entire removal of the cap. The vent tube within the tank is preferably doubled upon itself to form branches 21 and 22. However, the vent tube may terminate in a single tube 17' with its inner open end close up to the side wall of the tank as illustrated in Fig. 6.

In the modifications illustrated in Figs. 4 and 5, the basic principle is the same but the construction of the pouring or filling tube, in each case, is somewhat different. In Fig. 4, the filling tube is formed with the bends 11' and 12' and inclined portions 13' as in Fig. 1, but instead of terminating in the vertical portion and coil 14 and 15 respectively of the said Fig. 1, it terminates in a downwardly bent loop or trap portion with its free open end projecting upwardly. In the bottom of this storage tank is provided a coil 4' having a faucet or other suitably controlled outlet 5' whereby any quantity of oil may be drawn from the tank. It will be observed that air can only enter the tank through vent pipe 17' of the same construction as that in Fig. 1, inasmuch as the trap portions 11' and 14' of the filling tube and the submerged coil 4' being filled at all times with oil prevent passage of air through either the filling or discharge tubes.

In the form of tank illustrated in Fig. 5, 110

designed particularly for automobiles, the tank is preferably formed with double walls 23 and 24 with an intermediate filling of asbestos or other fire-proof packing 25. The filling tube 6" in this case extends vertically within the tank to a point near the bottom of the tank where it extends in a right-angular direction along the bottom of the tank and being of convolute form, each volute 26 thereof being slightly lower than the preceding corresponding one. This tube terminates in a downwardly extending open end portion 27 close up to the tank bottom whereby the oil will be discharged at the lowest portion of the tank. As in the other forms, the oil or a portion thereof is at all times contained in the bent portions of the filling tube to prevent passage of air there-through. The vent tube in this case is of the same construction as in the preferred form.

In operation, the vent tube cap is turned to permit passage of air through the vent tube, and the cap or stopper of the filling tube being removed, the oil is poured into the upper end of the filling tube and is fed therethrough to the bottom portion of the tank. After all of the oil has been drawn from the tank there is always a certain quantity thereof contained in the bent or trap portions of the filling tube. It will thus be evident that whether the tank is entirely or partially full of oil, it is impossible for air to pass through the filling tube and consequently no flame could find its way into the

tank as there would be no oxygen to support combustion.

Having fully described the invention, what is claimed as new and useful and desired to be secured by Letters Patent, is:

1. In a non-explosive oil tank, a vertically and centrally disposed filling tube within the tank, the upper end of said tube being flared to form a funnel-member and being provided with screw threads, a threaded closure therefor, said tube being provided with laterally disposed bent portions forming liquid-seal traps on opposite sides of the tube, and a vent tube arranged within the tank and parallel with the top thereof and having a portion projecting through the tank top beneath said funnel-member.

2. In a non-explosive oil tank, a vertically and centrally disposed filling tube within the tank, the upper end of said tube being flared to form a funnel-member and being provided with screw threads, a threaded closure therefor, said tube being provided with laterally disposed bent portions forming liquid seal traps, one of said bent portions being in the form of a coil terminating in a discharge end located in the lowest portion of the tank.

In testimony whereof I affix my signature, in presence of two witnesses.

FREDERICK WILLIAM REIBER.

Witnesses:

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CHARLES A. CARR.