UNITED STATES PATENT OFFICE.

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LIQUID-TRANSFER APPARATUS.


Application filed February 14, 1903. Serial No. 143,338. (No model.)

To all whom it may concern:

Be it known that I, BERT READY, a citizen of the United States, residing at Hartington, in the county of Cedar and State of Nebraska, have invented certain new and useful Improvements in Liquid-Transfer Apparatus, of which the following is a specification.

My invention relates to means to facilitate the emptying of barrels, tanks, &c., without exposing the liquid transferred from a barrel to a storage-tank to the air, and consequently results in a saving of gases of oils lost by evaporation in transferring from the barrel to the storage-tank.

The object of my invention is to construct a cheap, simple, but effective device of this character; and with this and minor objects in view my invention consists of the parts and combination of parts which will be hereinafter more fully set forth.

In the drawings, Figure 1 is a side elevation of a tank to be emptied with my improvement attached thereto. Fig. 2 is a similar view with the tank inverted over a storage-tank with suitable connections between the two tanks. Fig. 3 is a transverse section of my invention.

In the drawings, 1 represents a suitable trestle or support, upon which is mounted a tank 2, said tank having the usual bung-hole.

3 is a storage-tank having an inlet-opening 4 and an air-outlet opening 5, which will be hereinafter more fully referred to.

6 is a casing reduced at one end, as at 7, said reduced end being provided with a screw-thread 8. The upper end of the casing 6 is provided with screw-threads 9, at the base of which is an annular flange 10 of a diameter greater than the casing 6, upon which is secured a rubber or other suitable gasket 11. Below the flange 10 is a rectangular extension 12, which provides a wrench-hold, whereby the casing 6 may be screwed into position.

13 is a stop-cock and its casing, in the inlet-opening of which is secured the reduced screw-threaded end 7 of the casing 6. In the outlet-opening of this cock-casing is secured, by means of screw-threads, a short piece of pipe 14, to the lower end of which is secured a tube 15, of suitable material, the other end of said tubing being adapted to be projected into the opening 4 of the storage-tank 3.

16 is a short piece of pipe of suitable dimensions screw-threaded from end to end and introduced into a screw-threaded opening formed through a boss 17 and one side wall of the casing 6, where an elbow 18 is secured upon the end thereof.

19 is a vertical tube or pipe, the lower end 20 of which is secured in the elbow 18 at substantially right angles to the pipe 16, the upper end of the tube 19 projecting a considerable distance above the end of the casing 6. To the outer end of the tube 16 is secured a 65 cock with its casing 20.

21 is a tube secured to the other side of the casing 20 and in line with the tube 16, so that it will be in communication with said tube when the cock is opened.

22 is a flexible tube secured to the outer end of the tube 21, the lower end of said tube 22 being secured to the end of the pipe 5 projecting from the storage-tank 3.

The use of the device is clearly illustrated in Figs. 1 and 2. The bung or other closure is removed from the tank and my improvement inserted through the closure-opening of the tank, the screw-threads 9 of the casing 6 meshing with the screw-threads in the bung or closure opening of the tank, and I provide a tight joint between the casing 6 and the barrel 2 by introducing a gasket 11, of suitable material, between the flange 10 and the face of the tank 2, the gasket being pressed and the joint made gas-tight by applying a wrench to the rectangular portion 12 of the casing 6. In this position the top of the air-tube 19 is in proximity to the bottom of the tank in its position in Fig. 1. The stop-cocks 90 and 13 are now tightly closed, and the tank is turned over, as in Fig. 2. The hose or tubing 15 is then connected to the short piece of pipe 14 and the intake-opening 4 of the tank, while the hose or tubing 28 is connected to the tube 21 and the tube 5 in the tank 3.

As soon as the parts are arranged as shown in Fig. 2 the stop-cock 13 is opened, whereupon the liquid will start to flow from the tank 2 into the storage-tank 3 by means of the casing 6, the short pipe 14, and the hose or tubing 15. At this time I also open the
stop-cock 30, whereby the air within the tank is free to flow up through the tube 5, the hose or tubing 22, the cock 20, tube 16, and tube 19 to the top of the tank 2, thereby overcoming the atmospheric pressure and very materially facilitating and expediting the emptying of the barrel or tank 2. By this construction I not only facilitate the emptying of barrels, tanks, etc., but at the same time I prevent an exposure of the liquid in transfer from the tank to the storage-tank and save materially by reason of the fact that there is no evaporation by contact with the air. In the transfer of oils this is a very material consideration, as it is a well-known fact that considerable of the gases are lost by evaporation upon exposing the oil to the air in transfer, and as this will be so obvious I will not further elaborate upon the same. Another important result of the use of my invention is that it is not necessary to provide the tank or barrel 2 with a vent-hole, as the pipe 19 and its connections provide sufficient vent.

Having thus described my invention, the following is what I claim as new therein:

1. In a device of the character described, the combination with the casing, a stop-cock secured to the lower end thereof, of a vent-tube connected to and passing through and beyond the end of said casing, and means connecting said casing and the vent-tube to a storage-tank, and means controlling the vent-tube independently of the stop-cock of the casing.

2. In a device of the character described, the combination with the casing, a stop-cock secured to the lower end of said casing, to control the flow of liquid through the casing, and a tube leading from said stop-cock; of a vent-tube disposed in said casing, one end of which extends beyond the upper end of said casing while its other end extends through the side and is disposed entirely outside said casing, an independent stop-cock connected to that portion of the vent-tube extending through the side of the main body, to control the vent-tube independently of the casing, and another tube connected to said stop-cock forming a continuation of the vent-tube.

3. In a device of the character described, the combination with the casing reduced at one end and provided with screw-threads and annular flange integral with the other end of said casing, a screw-threaded portion above said flange a wrench portion below said flange, a gasket secured to said flange, a stop-cock secured to the reduced end of said casing, a pipe leading from the lower end of said stop-cock and a flexible hose connected to said last-named pipe, of a tube secured in the side wall of said casing and projecting into the interior of said casing, an elbow secured upon the inner end of said tube, a tube connected to the other arm of said elbow, and extending beyond the end of the main casing, a stop-cock secured to said outer end, and another tube secured to the other end of the stop-cock, substantially as described.

4. In a device of the character described, the combination with the casing reduced at one end, and provided with screw-threads, an annular flange integral with the other end of said casing, a screw-threaded portion above said flange, a wrench portion below said flange, a gasket secured on said flange, a stop-cock secured to the reduced end of said casing, a pipe leading from the lower end of said stop-cock, a flexible hose secured to the lower end of said pipe, and a flexible hose secured to the last-named pipe, of a tube secured in the side wall of said casing and projecting into the interior of said casing, an elbow secured upon the inner end of said tube, a tube connected to the other arm of said elbow, and extending beyond the end of the casing, a stop-cock secured to the outer end of the tube passing through the side wall of the casing, a stop-cock secured to said outer end, another tube secured to the other end of the stop-cock, and a flexible hose secured to the outer end of this tube, substantially as described.

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

BERT READY.

Witnesses:

R. G. MASON,
H. J. MILLER.