To all whom it may concern:

Be it known that I, August W. H. Helberg, citizen of the United States, residing at Gardnerville, in the county of Douglas and State of Nevada, have invented new and useful Improvements in Reserve-Supply Tanks, of which the following is a specification.

The primary object of the invention is the provision of an emergency device for liquid supply tanks so that a portion of the liquid may be reserved for emergency use and drawn from in the event of the regular supply's becoming exhausted.

The above and other objects will appear and be better understood from the following description taken in connection with the accompanying drawings in which:

Figure 1 is a detail vertical longitudinal section taken through a liquid supply tank and showing one embodiment of my invention in vertical section and applied thereto; Fig. 2 is a detail longitudinal sectional view of the device with the emergency port open; Fig. 3 is a longitudinal sectional view of a modified form of device.

The device is intended for use with any liquid reservoir, wherein it is desired to maintain a reserve or emergency supply, for purpose of illustration, however, I have shown one embodiment applied to the fuel supply tank for an internal combustion motor. This fuel supply tank 5, has an outlet pipe 6 leading to the carbureter (not shown).

As shown, in Figs. 1 and 2, the emergency device includes two casings a and b, the latter of which also serves as a valve for the casing a. The casing or nipple a has a lower end portion 7 extending through the bottom of the tank 5 and connected to the pipe 6 in any suitable manner such as that shown. The said casing a has a flange 8 which is secured in any suitable manner to the bottom of the tank 5. A valve seat 9 is formed in the casing 7 and an inlet port 10 extends through the wall of the casing a at a point above the flange 8. The lower end portion of the casing or outer hollow valve stem b is adjusably secured as by screw threads 11 in the upper or inner end portion of the casing a. The said lower end portion terminates in a substantially cone-shaped end 12 adapted to be snugly received by the seat 9, and when said end 12 is seated on 9, direct communication between port 10 and passage 28 is thereby cut off. The passage 28, as shown, leads through the lower end portion 7 of casing a, into pipe 6. When 12 is seated on 9, aligned passages 27 and 28 register to form a continuous passage. The upper end portion of the casing b extends through a guide arranged in an opening in the upper side of the tank 5. The openings in the top and bottom of the tank may be substantially vertically aligned, as shown. The guide includes a flanged bushing 13, the horizontal portion 15 of which bears on the upper side of the tank 5, the outer surface of the bushing being screw-threaded and engaging with an interiorly threaded nut 14. Suitable packing 15 is arranged between the flange 16 of the nut 14 and upper end of the bushing 13. With this construction it will be seen that the liquid will be prevented from escaping between the bushing and casing b while the latter may be moved vertically.

An inner valve stem 17 having a needle plug at its lower end is arranged within the outer hollow valve stem or casing b and is longitudinally movable therein, its lower end cooperating with a seat 18 and being adapted when bearing on the seat to close the passage 27 of the casing b which communicates with the tank through an inlet port 19 extending through the casing wall and located above the seat 18 and first-named inlet port 10. The upper end of the casing b has threaded or otherwise secured thereto a counter-bored nut 20, the inner surface of the counter-bore being screw-threaded and engaging with the threads on a clamping nut 21. The clamping nut 21 is formed on its lower face with a depression 22 and surrounding the upper end portion 15 of the needle valve 17 is suitable packing material 23 which is compressed by the nut 21 so as to insure a tight fit and prevent the liquid's escaping around the needle valve 17. The needle valve 17 has a screw-threaded portion 24 which engages with a screw-threaded portion 25 on the inner surface of the casing b. The needle valve is turned by means of a head 26. By turning the nut 20 in one direction the casing b is lowered until the lower end thereof bears on the seat 9 and cuts off communication between port 10 and passage 28. The needle valve may be likewise turned by means of the head 26 until the passage 21 is closed. When the needle valve is turned so as to open the passage 21, and assuming 12 to be seated on 9, the
fluid will flow from the tank through the passage 25 of the casing 6 and also through the passage 26 of the casing 5, and into the pipe 6. When the level of the liquid in the tank falls below the port 16 it will, of course, be manifest that the motor will cease to operate, whereupon the operator may by turning the nut 20, raise the casing 6 so as to open the passage 33 of the casing 6 thus permitting the liquid to flow through ports 10 into passage 25 and thence into the pipe 6.

In the embodiment of the invention illustrated in Figs. 3, casings a and b' correspond, respectively, to a and b of Figs. 1 and 2, and may be secured together by screw threads 93. Emergency outlets 31 and 32 in the walls of casing a lead from the tank through passage 30 in the lower end of the casing as before, while the edges of the upper end of S3 are closed to receive the correspondingly shaped end of casing b', through which extends passage 35' normally in communication with the tank interior through regular supply ports 36. The edges of the upper end of passage 35' are formed to receive the coned end 39 of needle valve 33, whereby communication between ports 35 and passage 39 may be cut off. The arrangement 83 for described is very similar to that in Figs. 1 and 2. The upper part of the stem of valve 33 is threaded at 34 to engage in internal threads 35 on casing b'. Flange 38 on casing b' serves as an abutment for spring 39 engaging the under side of united head 40 secured to the stem of 33. Flange 38 also serves as means for turning casing b', and the spring tends to prevent accidental rotation between valve stem 33 and outer valve stem or casing b'. Although I have shown and described various forms of my device it is to be understood that I am not to be limited to the structure shown and described, since various changes may be made within the scope of the claims without departing from the spirit of the invention.

What I claim as new is:

1. The combination, with a fuel tank having airtight openings therein, of a nipple mounted in one of said openings and having an orifice therein contiguous to the bottom of said tank, an outer hollow valve stem mounted in the other opening in said tank, and engaging said nipple to normally close the communication between the latter and the interior of the tank, said outer hollow valve stem being provided with an orifice communicating with the interior of the tank, an inner valve stem mounted in the other opening in said tank, and an outer hollow valve stem mounted in the other opening in said tank and connected to said nipple and adapted to normally engage the valve seat thereby for closing communication between the interior of said tank and said nipple, said outer valve stem being provided intermediate the ends 75 thereof with a valve seat and an orifice contiguous to said seat and communicating with the interior of the tank, and an inner valve stem adapted to engage the seat in the outer stem for closing communication between the interior of the tank and said nipple.

2. The combination, with a fuel tank having airtight openings therein, of a nipple having a valve seat and an orifice in communication with the interior of said tank, an outer hollow valve stem mounted in the other opening in said tank and connected to said nipple, and an inner valve stem mounted in the other opening in said tank and engaging said nipple to normally close with said nipple, said outer valve stem being provided intermediate the ends thereof with a valve seat and an orifice contiguous to said seat and communicating with the interior of the tank, and an inner valve stem adapted to engage the seat in the outer stem for closing communication between the interior of the tank and said nipple.

3. A valve for fuel tanks including a member formed with a discharge port, a lateral opening leading thereto and a valve seat intermediate said port and opening, a hollow stem operable in said member and cooperating with the valve seat, said stem being formed above the member with a lateral opening and formed below said opening with a valve seat, and a rod operable in the stem to cooperate with the valve seat therein to control the stem opening.

4. A valve for fuel tanks including a member formed with a discharge port, a lateral opening leading thereto and a valve seat intermediate said port and opening, a hollow stem operable in said member and cooperating with the valve seat, said stem being formed above the member with a lateral opening and formed below said opening with a valve seat, and a rod operable in the stem to cooperate with the valve seat therein to control the stem opening, and means arranged to effect relative movement between said rod and said hollow stem.

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

WITNESS:

August W. H. Helberg.

 Witnesses:

Dwight J. Phillips.

E. M. Steinberg.