

1,329,074.

Fig. 1

Technical drawing of a mechanical device, likely a pump or valve, showing a cross-section and a side view. The cross-section (top) shows a central shaft (2) passing through a housing (1) with various components labeled 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12. The side view (bottom) shows the shaft (2) extending into a fluid medium (13) with a piston (14) and a valve (15). The drawing is labeled 'Fig. 1' at the top.



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UNITED STATES PATENT OFFICE.

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RESERVE DEVICE FOR FUEL-TANKS.

1,329,074.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN FEHAN, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Reserve Devices for Fuel-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.

My invention relates to fuel tanks for automobile motors and other internal combustion engines, and has reference more particularly to improvements in devices which give warning when the fuel in the tank is low and which hold a quantity of fuel in reserve for use in reaching a filling station. Devices of this general class have heretofore been provided, but their construction is such as to allow water and other impurities to settle to the bottom of the tank, leaving in reserve only a very poor grade of fuel. In extremely cold weather, this fuel is apt to freeze and in addition to this disadvantage it is of little use for running the motor after the main supply is exhausted. If the fuel is at all times drawn off from the bottom of the tank, water and fuel of low gravity will not accumulate, and carbureted with the good fuel, the impurities do not produce poor results.

It is the object of my invention to provide a simply constructed and inexpensive, yet a reliable device of the class above mentioned which will overcome the difficulties heretofore encountered, by at all times drawing off the fuel from the bottom of the tank, holding in reserve a quantity of fuel equal in quality to that previously consumed.

With the foregoing in view, the invention resides in the novel construction and arrangement of parts hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawing.

Figure 1 is a vertical section of my invention.

Fig. 2 is a sectional view on the plane of line 2—2 of Fig. 1.

In the drawing above briefly described, the numeral 1 designates a fuel tank and in this tank I provide a fuel discharge chamber 2 having an inlet 2^a located in close proximity to the bottom of the tank. From the

chamber 2, at a point spaced above the tank bottom, I provide an outlet 3 which is used during the ordinary running of the motor, leaving in reserve, however, a quantity of fuel for use in reaching a filling station, after the supply has been substantially exhausted from the tank 1. I provide another fuel outlet 4 from a point in close relation with the bottom of the tank 1 and by suitable valve means I may connect the gas line to the carbureter with either of the outlets 3 or 4.

By providing the chamber 2 and locating the main outlet 3 therein, it is insured that this outlet shall not carry off only the fuel of high gravity from the upper portion of this tank, this being due to the fact that all fuel must enter said chamber from the bottom of the tank before being discharged through said outlet. Any impurities in the fuel are thus drawn off and carbureted, together with the fuel of higher grade, instead of collecting in the bottom of the tank as occurs with devices now in use. When the supply has been exhausted to such an extent as to prevent passage of the fuel through the outlet 3, the motor will of course come to a standstill. The outlet 4 is, however, then placed in communication with the carbureter and the reserve supply in the tank is used to reach a filling station, and this reserve fuel will be of a quality equal to that before consumed. To relieve the suction of the engine piston when the fuel level lowers beyond the outlet 3, I preferably provide an air inlet 5 into the chamber 2.

The parts above described may of course be embodied in any preferred forms, but I have found that the most practical construction is that illustrated in the drawings, in which the chamber 2 is formed by a tube extending into the tank 1 through a collar 6 on its top; in which the outlets 3 and 4 are formed by smaller tubes located in said chamber forming tube; and in which said smaller tubes depend from a valve casing 7 having a single outlet 8 to the fuel line of the carbureter, a single rotary valve 9 being provided for placing either of the outlets 3 or 4 in communication with the outlet 8. This valve is provided with a suitable handle 10 and a spring pressed lock 11 may be employed for holding said valve in either of its open positions or in a closed position in which neither of the outlets 3 and 4 are al-

lowed to communicate with the outlet 8. The valve casing 7 is shown secured on the collar 6 by a ring nut and the tube forming the chamber 2 may well be bent laterally at its upper end as seen at 12 and clamped between said casing and collar. The inlet 2^a of the chamber 2 is formed by the open lower end of the tube and is preferably screened at 13.

10 For varying the amount of fuel held in reserve, in the tank 1, I prefer to employ a tube extension 14 adjustable along the outlet tube 3 and held in adjusted position by a screw or the like 15. Since excellent results have been obtained from the construction shown, it may well be followed, but I wish it understood that within the scope of the invention as claimed, numerous changes may well be made.

20 I claim:

1. The combination with a fuel tank, of a fuel discharge chamber in said tank having a fuel inlet at a point in close proximity to the tank bottom, a fuel outlet from said chamber at a point above said fuel inlet and another fuel outlet from the bottom of the tank; together with valve means for controlling said outlets.

2. A structure as specified in claim 1, to-

gether with a vent for admitting air into said chamber. 30

3. The combination with a fuel tank, of a fuel discharge chamber in said tank, having a fuel inlet at a point in close proximity to the tank bottom, a fuel outlet tube disposed vertically in said chamber and having a vertically adjusted lower end for location at any required point above the tank bottom, and another fuel outlet from the bottom of the tank; together with valve means for controlling said outlets. 40

4. A fuel reserve device for fuel tanks, comprising a valve casing having an outlet, a tube depending from and out of direct communication with said valve casing, said tube being adapted to extend to a point adjacent the bottom of the fuel tank and having an open lower end forming a fuel inlet, relatively long and short fuel outlet tubes in said first mentioned tube, and a valve for placing either of said fuel outlet tubes in communication with said casing. 50

5. A structure as specified in claim 4, together with an air inlet into the upper end of said first named tube. 55

In testimony whereof I have hereunto set my hand.

JOHN FEHAN.