Dec. 15, 1936. D. FIRTH 2,064,156

CARBURETOR FLOAT STABILIZER

Filed Feb. 10, 1933

FIG. 1.

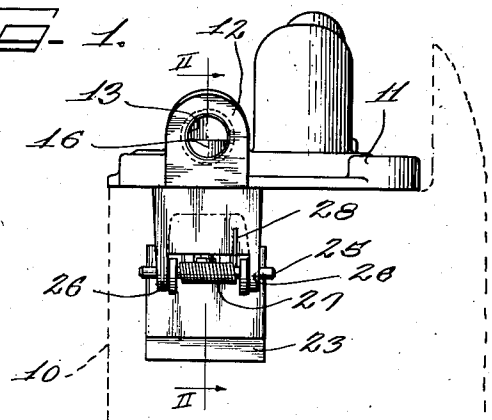
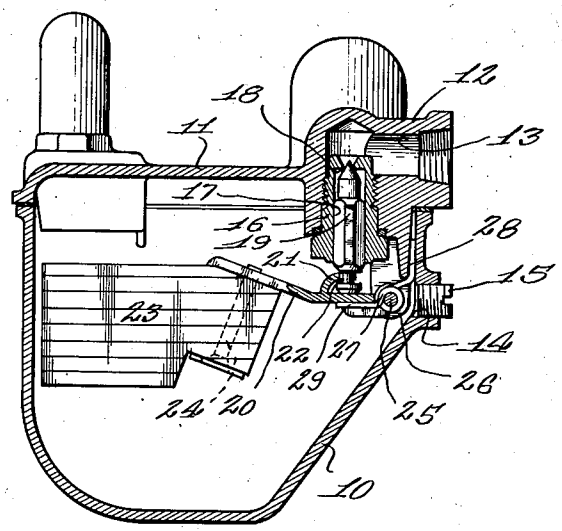


FIG. 2.



Inventor

DAVID FIRTH.

by- Charles W. Hills Attys.

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CARBURETOR FLOAT STABILIZER

David Firth, Flint, Mich., assignor to Marvel Carbureter Company, Flint, Mich., a corporation of Illinois

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1 Claim. (Cl. 137—68)

This invention relates to an improved float valve construction for carburetor fuel chambers as used with internal combustion engines.

It is an object of this invention to provide a carburetor float stabilizer to prevent or dampen unnecessary float movements and thus prevent flooding of the carburetor due to an undesired rise in fuel level due to engine vibrations or movements such as are exaggerated in engines mounted with the so-called floating or elastic mountings wherein the engine is permitted to make transverse or oscillatory movements in response to torque reactions. The stabilizer of this invention has the advantages of greatly lessened cost and increased effectiveness compared to the use of baffles or a larger and more buoyant float, as well as an effective increase in the stability of the float in its valve closing position, thus resisting opening movement thereof due to shocks or engine movements.

It is another object of this invention to provide an improved and compact float chamber especially adapted for use with carburetors subject to vibration and engine movements, the reduced size of the float and chamber reducing the effect on the fuel level of varying angularity in the carburetor position as when climbing or descending a grade or driving on the side of a highly crowned road.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

This invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is an end view of a float bowl cover carrying a float valve embodying the features of this invention, the bowl outline being shown in dotted lines.

Figure 2 is a section, with parts in elevation, taken on the line II—II of Figure 1.

As shown:

Since the float stabilizer of this invention can be utilized with any apparatus requiring a constant level liquid supply, it has not been considered necessary to show the float bowl associated with any specific type of mechanism, such as a carburetor, especially since carburetors vary widely in construction; and it is obviously immaterial what type of carburetor is chosen.

In the illustrated structure a float bowl 10 of any convenient form is provided with a cover 11 which may conveniently embody a passaged boss 12 forming a liquid inlet passage 13 to which a liquid supply line is connected. The bowl 10 may conveniently be provided with means to determine the liquid level therein, such as a tapped opening 14 closed by a plug 15, the removal of which permits inspection of the liquid level maintained in the bowl by the float valve mechanism to be described.

A sleeve 16 is threaded into the vertical part of the inlet passage 13 and is so formed as to provide a valve guide portion 17 with a valve seat 18 at its inner end, a float operated valve 19 reciprocating in the sleeve and having flattened facets to permit passage of liquid. The lower end of the valve 19 rests on a float lever 20 which is provided with a fork 21 engaging a groove 22 in the valve to pull it down should it stick in the closed position.

The float lever 20 carries at its free end a float 23 which will be suitably chosen with reference to the properties and specific gravity of the liquid to be handled. For gasoline or the like the float may be conveniently made of laminated cork as shown, in which case it may be attached to the lever by a screw 24. The other end of the lever 20 is hinged by means of a pin 25 in bosses or ears 26 depending from the cover 11.

Mounted on the pin 25 is a torsion spring 27 one end 28 of which may conveniently be anchored between the bowl and cover, and the other end 29 of which engages the under side of the float lever, so that it assists in raising the float to cut off the inflow of liquid. It will be noted that the exact form and location of the spring is immaterial, as its function is to assist in raising the float and is so designed as to have insufficient power to lift the float without the assistance of the liquid in the bowl.

In use the spring 27 is so balanced that it assists the float to rise more readily and has the effect of adding to the buoyance of the float. It also conteracts the inertia of the float in the valve closing movement while adding to the inertia thereof in the opening movement. Thus the spring serves as a damper out of step with the natural vibratory period of the float mechanism and, in the case of carburetors, prevents dancing of the float from engine or vehicle movements, which dancing has the effect of raising the fuel level in the bowl above that at which the valve is normally closed. It is well-known that raising the fuel level in carburetor float bowls changes the fuel metering and may result in flooding of the engine due to fuel overflow.

It will thus be seen that I have invented an improved stabilizer for the float mechanism of constant level liquid supply systems subjected to external vibration or movements, such as the float bowls of carburetors, and that my invention can be economically manufactured at great saving over other means for de-sensitizing the float mechanism to external impulses.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise that necessitated by the prior art.

I claim as my invention:

A float valve mechanism comprising a liquid receptacle, a cover for the receptacle providing an inlet passage, valve means controlling the passage, ears depending from the cover, a float, a lever projecting from the float, a pin by means of which said float lever is fulcrumed on said ears, said lever engaging said valve means to actuate the same in accordance with the height of the liquid in the receptacle, and a torsion spring coiled about said pin having one end engaging said lever to urge the same toward valve closing position and having the other end anchored between said receptacle and said cover.

DAVID FIRTH.