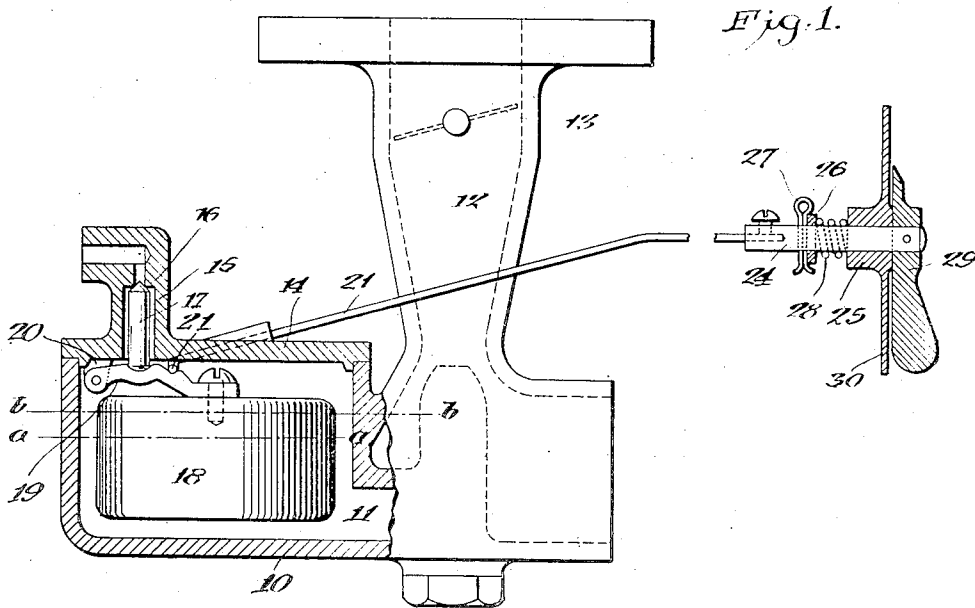
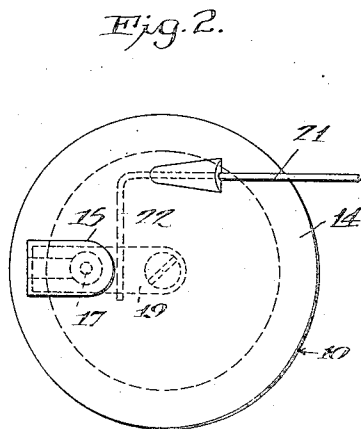
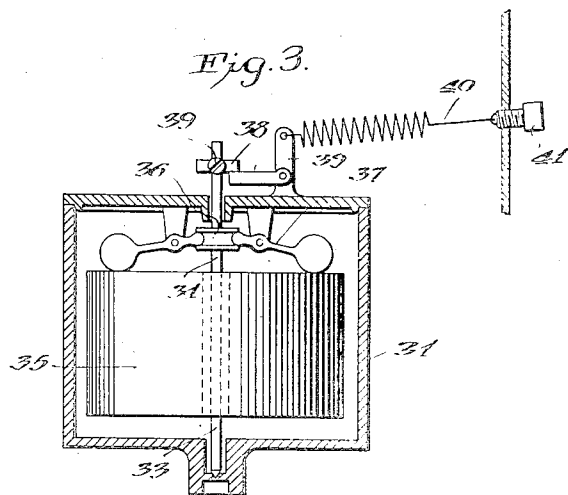


C. V. ELLIOTT.
CARBURETER.
APPLICATION FILED MAY 13, 1919.

1,336,288.

Patented Apr. 6, 1920.



WITNESSES
Geo. A. Schumacher
R. L. Gollwitzer

C. V. Elliott, INVENTOR.

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

CLARENCE V. ELLIOTT, OF BATON ROUGE, LOUISIANA.

CARBURETER.

1,336,288.

Specification of Letters Patent.

Patented Apr. 6, 1920.

Application filed May 13, 1919. Serial No. 296,889.

To all whom it may concern:

Be it known that I, CLARENCE V. ELLIOTT, a citizen of the United States, and a resident of Baton Rouge, in the parish of East Baton Rouge and State of Louisiana, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters, and particularly to means for controlling the feed of fuel to the carbureter.

It is oftentimes desirable, particularly in the carbureters of tractors, that the height of the fuel level be increased when the tractor is traveling on an incline. This is of course true of automobiles, though not to the same extent. Carbureters were provided with means for pulling or pushing down the float so as to hold the inlet valve open when the float would ordinarily close it. These devices were open to the objection however that they were positive in their action, and held the inlet valve open without regard to the rise of fuel in the bowl of the carbureter. The valve was held open so long as pressure was maintained on it,—and either the bowl overflowed with a consequent flooding of the engine, or else the device was entirely out of operation.

With these facts in mind, the general object of my invention is to provide manually controlled means whereby the inlet valve of a carbureter may be depressed but, additionally, to provide means causing the automatic closing of the valve before the carbureter can overflow.

A further object is to provide means whereby a yielding pressure may be exerted on the float to yieldingly hold the float down below its normal point of buoyancy, but which—when the liquid has risen to a predetermined point will permit the float to rise and close the inlet valve.

A further object is to provide means for yieldingly resisting the upward movement of the float, which means shall be of such character that the degree of such resistance may be delicately regulated and controlled, and which further is of such character that it may be kept in operation for any length of time required, and instantly thrown out of operation.

Other objects will appear in the following description.

In the accompanying drawings:—

Figure 1 is a side elevation of an ordinary type of carbureter, partly in section, and showing one form of my invention applied thereto.

Fig. 2 is a top plan view of the carbureter bowl, shown in Fig. 1.

Fig. 3 is a vertical section of a carbureter bowl, showing another embodiment of my invention.

In Fig. 1 10 designates the float bowl of the carbureter, having an outlet 11 to the usual mixing chamber or duct 12 passage through which is controlled by the throttle valve 13. The cap 14 of the bowl has an inlet duct 15 formed to provide a valve seat 16. A valve 17 operates in the duct and co-acts with seat 16. This valve is held to its seat by a float 18 shown as having an arm 19 pivoted to the ear 20, the arm having a socket within which rests the lower end of valve 17. The parts above described are such as may be ordinarily found in standard carbureters.

To carry out the objects of my invention, I provide a torsion spring in the form of a light resilient rod or wire 21 which extends down through an inclined passage in cap 14 and is angularly bent at 22, and has its extremity resting or adapted to rest in a slight depression formed in arm 19. At its opposite end, the rod or wire 21, is provided with a suitable handle of any form whereby the rod may be axially rotated. I have shown the member 21 as engaged in the end of a shank 24, passing through a bearing 25, on a dial 30, carried for instance by the dashboard or other suitable element of the vehicle. The shank 24 carries a washer 26 bearing against a cotter pin 27 and urged against the pin by a spring 28, in turn bearing against the bearing 25. Thus there is sufficient resistance to rotation of the shank 24 as to hold the shank in any position to which it may be adjusted by the handle 29 on the shank. The pointer on the handle co-acts with the dial 30 to indicate the pressure exerted on the float 18.

The operation of this form of my invention is as follows:—*a—**a* indicates the normal level of fuel in the bowl 10. If the level falls below this the float descends opening the valve and allowing the inlet of fuel until the float again rises to its normal

position. The wire or rod 21 is of such diameter as to act as a torsion spring capable of a considerable amount of distortion without a corresponding increase of force being exerted by arm 22. By giving a small amount of rotation to the wire 21 the arm 22 will move downward, depressing the float 18 slightly, and therefore allowing more fuel to run into the bowl. The fuel as it rises higher in the bowl 10 exerts a constantly increasing force on the float, until eventually this upward force on the float is sufficient to overcome the torsional resistance of the rod or wire 21, and the float rises and closes the valve. This super-normal level is indicated by the line $b-b$ in Fig. 1. So long as the wire 21 is held turned to this degree the new or super-normal level will be maintained. The greater the twist given to the wire the greater will be the resistance to the rise of the float and the higher the fuel will rise in the bowl.

The wire 21 is of small diameter and of relatively considerable length usually two or more feet, and, as before stated acts as a spring and it must not be very stiff—as if it were a very slight rotation of 29, would exert so much pressure on the float, that the increased fuel pressure would not be sufficient to overcome the force of the spring and close the valve 17.

In Fig. 3, I show another embodiment of my invention wherein 31 denotes the carbureter bowl, and 32 the inlet port controlled by a valve 33, carried by a stem 34. Surrounding the stem 34 and movable vertically thereon is a float 35. The stem 34 carries a grooved collar, 36 with which engage the inner ends of weighted levers 37. The bowl 31 has the usual outlet to the mixing chamber.

Mounted on stem 33 is a collar 38 held by a set screw 39, and engaging therewith is one arm of a bell-crank lever 39. From the other arm extends a pull connection 40—which has in its length a contractile spring 41. The wire forming connection 40, extends to a suitable handle 41. The handle 40 may be either turned to increase the tension of spring 41, or it might be shifted longitudinally to thereby increase the tension. When the spring 41 has its tension increased it will urge the horizontal arm of the lever 39 upward, thus any upward movement of the float will be resisted by the spring, through the levers 37. Thus a twist or rotative movement of handle 41 will act to raise the arm of lever 39 against collar 38 and raise the valve from its seat which the float resists.

With only a slight turn (or pull) of handle 41 there will only be a slight tendency to lift the valve and consequently only a slight increase in the fuel level. By a greater movement causing a correspondingly

increased tension on the spring 41, the fuel level will be raised a correspondingly greater amount.

In both of the constructions illustrated, the float will overcome the pressure of the spring and the valve will close before the bowl overflows and by these devices force may be applied by means of a highly elastic member to the float or to the valve controlled by the float, in such manner as to open or tend to open the valve and allow more fuel to run into the float chamber. This increased quantity of fuel in the bowl exerts increased force to close the valve against the force of the spring resisting such closure. The result is that when the force resisting closing of the valve is overcome, the valve will close and when equilibrium is established the fuel will stand at a higher level in the bowl than before the resistance was applied or increased.

While I have illustrated only two forms of my invention, these are purely illustrative and it is obvious that many changes might be made in the construction shown and that the principle of the invention might be embodied in many different forms without departing therefrom.

I claim:

1. A receptacle having an inlet, a float controlled valve controlling passage through the inlet, and mechanical means adjustably automatically yieldingly resisting the closing of the valve under the action of the float.
2. A receptacle having an inlet, a float controlled valve controlling passage through the inlet, and mechanical means, shiftable into or out of operation, and when in operation automatically yieldingly resisting the closing of the valve under the action of the float.
3. A receptacle having an inlet, a float controlled valve controlling passage through the inlet, and mechanical means, shiftable into or out of operation, and when in operation automatically yieldingly resisting the closing of the valve under the action of the float, said means being adjustable to increase or decrease the degree of resistance.
4. A receptacle having an inlet, a valve coacting therewith, a float operatively engaging the valve to close it when the float is raised beyond a predetermined height, means manually shiftable into or out of operative engagement with the float for automatically resiliently resisting the upward movement of the same, and means for varying said resistance.
5. In a carbureter, a float controlling inlet thereto and manually controlled means automatically resiliently resisting the upward movement of the float, said manually controlled means including means for varying said resistance.
6. In a carbureter, a float controlling inlet

thereto, a resilient element, manually shift-
able into position to automatically resiliently
resist the upward movement of the float, and
means for adjustably increasing or decreas-
5 ing the resilient resistance of the element.

7. A carbureter having a bowl and inlet
thereto a valve controlling the inlet, a float
therein operatively engaging the valve to
close it upon a predetermined elevation of
10 the float and manually adjustable means for
variably automatically resiliently resisting
the upward movement of the float.

8. A carbureter having a bowl and inlet
thereto, a valve controlling the inlet, a float
15 therein operatively engaging the valve to
close it upon a predetermined elevation of
the float and manually adjustable means for
variably resisting the upward movement of
the float, including a torsion spring and
20 means for increasing or decreasing the tor-
sion of the spring.

9. A carbureter having a bowl and inlet
thereto a valve controlling the inlet, a float
therein operatively engaging the valve to
close it upon a predetermined elevation of 25
the float, and manually adjustable means for
variably resisting the upward movement of
the float, including a torsion spring oper-
atively engaged at one end with the valve
and means whereby the other end of the 30
spring may be rotated to adjust the torsional
resistance of the spring.

10. A carbureter having a bowl, an inner
valve therefor, a float operatively engaged
with the valve to close it upon the arrival of 35
the float at a normal predetermined eleva-
tion, and manually adjustable means for
variably automatically resiliently resisting
movement of the float to control the height
to which liquid shall rise in the bowl before 40
the valve closes.

CLARENCE V. ELLIOTT.