Dec. 1, 1925. 1,563,339

M. G. CHANDLER

CARBURETOR

Filed Oct. 14, 1922

Fig. 1.

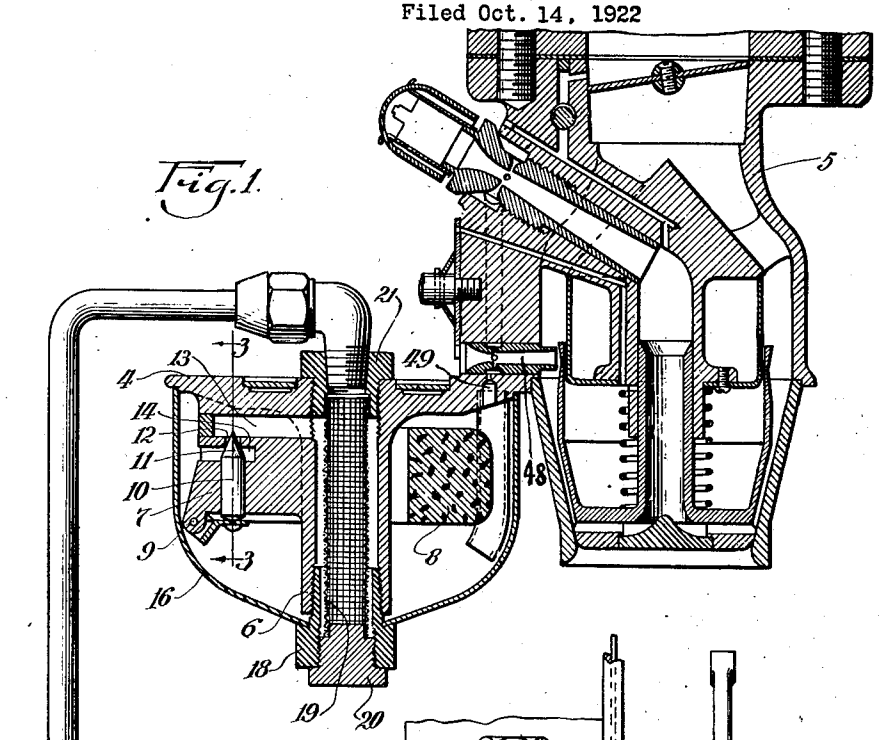


Fig. 2.

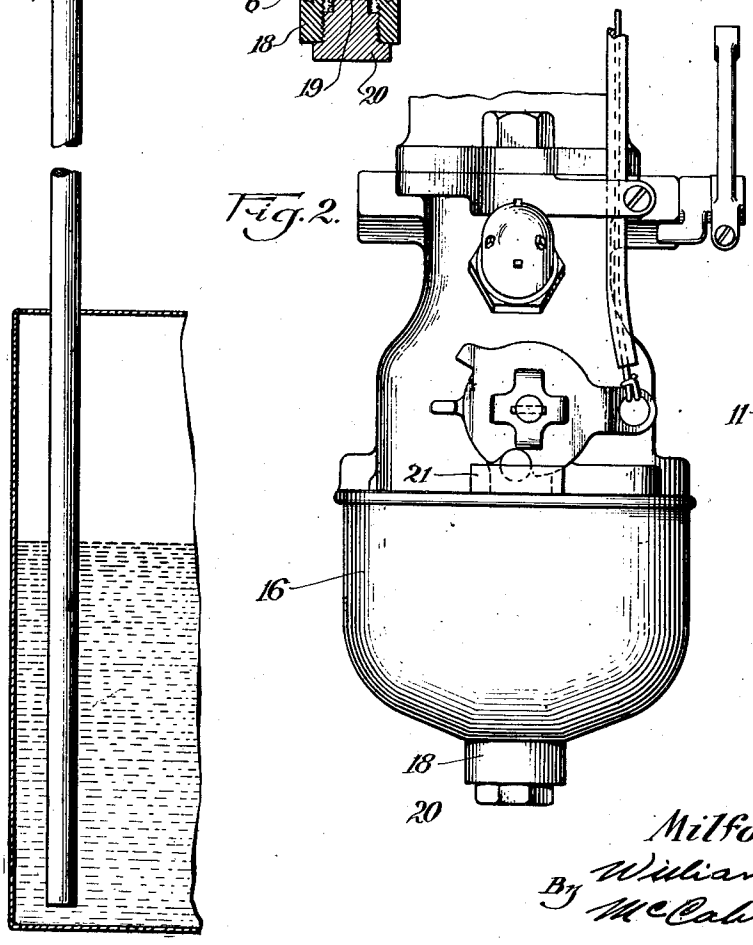
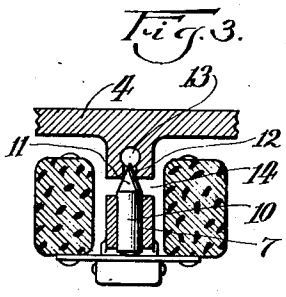


Fig. 3.



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UNITED STATES PATENT OFFICE.

MILFORD G. CHANDLER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CURTIS B. CAMP, TRUSTEE, OF OAK PARK, ILLINOIS

CARBURETOR.

Application filed October 14, 1922. Serial No. 594,523.

To all whom it may concern:

Be it known that I, MILFORD G. CHANDLER, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Carburetors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to carburetors of the type which have provision for rasing fuel from a low level supply tank to the level of the carburetor by suction obtained from the engine to which the carburetor is attached.

Certain features of my invention are applicable to carburetors of the type adapted to receive their fuel by gravity flow from a tank at a higher level. Other features are applicable only to carburetors of the type in which the suction available within the mixing chamber or the intake manifold is augmented for lifting fuel from a low level supply to the level of the carburetor.

The advantages to be gained by an augmented suction are fully set forth in my Patent No. 1,370,947, dated March 8, 1921, and such advantages, therefore, need not be restated here.

A feature of my invention, and one which is applicable to both gravity and vacuum fed carburetors, resides in the arrangement for delivering fuel to the float chamber through a centrally located tubular screen carried by a removable plug, the chamber for the screen or filter forming a column through the central part of the float chamber by means of which the bowl of the float chamber may be readily attached to the float chamber cover.

A further feature of my invention, and one which is applicable to both gravity and vacuum fed carburetors, resides in the construction of the fuel intake valve for admitting fuel into the float chamber. This feature of my invention provides sufficient wearing surface for the valve member to prevent its becoming wobbly on its seat and at the same time provides ample area for the discharge of fuel into the float chamber.

Still further features of my invention will be more fully pointed out in the following detailed description and the appended claims.

My invention is illustrated in the accompanying drawings, in which

Figure 1 is a section through the induction passage and the float chamber, the latter being shown connected with a low level source of fuel supply;

Figure 2 is an elevation; and

Figure 3 is a section through the float valve seat, taken on the line 3—3 of Figure 1.

In the preferred embodiment of my invention, the float chamber cover 4 is cast integrally with the main housing 5, thus providing a structure through which the various air and fuel passages may be conveniently formd. Depending from the float chamber cover is an integral tubular pillar or hollow column 6 carrying a lateral projection 7 to which the float 8 is pivoted at 9. A valve member 10 has a working fit within a cylindrical bore or guide opening through a part of the lateral member 7 and has a conical point 11 which forms a valve for closing the opening 12 leading from the transverse bore 13 which connects with the hollow portion of the stem 6 into the milled slot 14. The float chamber bowl 16 is clamped against the cover 4 by means of the member 18, which is threaded into the hollow portion of the lower end of the pillar 6. A tubular filter screen 19 is carried upon a threaded plug 20, which is screwed into the member 18, thus providing ready means for removing the screen for cleaning out sediment. Fuel delivery connection to the float chamber is made through a fitting 21 threaded into an opening in the cover 4.

The float chamber parts thus described operate in the usual manner to maintain a substantially constant fuel level in the float chamber, whether fuel is fed thereto by gravity or by suction. Valve 10, being cylindrical instead of triangular or slotted as is customary, presents a larger wearing surface to the guiding opening in the projection 7 than is obtained with the usual construction, thus preventing leakage due to cocking of the valve, which is a source of trouble in many carburetors.

The construction of the carbureting apparatus embodied in the carburetor body 5 has been described and claimed in my copending application Serial No. 736,258, filed September 6, 1924, this latter applica-

tion being divisional of the present application.

A vacuum Venturi tube 48 is fitted into an opening in the housing 5, so that its discharge end lies adjacent the outer surfaces of the valve member which controls the main air entrance to the carbureting chamber. As described in my copending application, this valve member is contoured so as to variably obstruct the discharge end of the Venturi tube 48 for different positions of the valve member controlling the main air entrance. The throat of the Venturi tube 48 is connected through a passage 49 with the upper part of the float chamber for the purpose of creating a suction in the float chamber for drawing fuel thereto from a low level source of supply. The opening at the throat of the vacuum Venturi tube 48 is preferably made very small, its only function being to admit sufficient air to create an augmented suction in the float chamber.

The flow of air through the Venturi tube 48 creates a suction upon the surface of the fuel in the float chamber. This suction being augmented by the Venturi tube 48 is about twice as great as that existing in the body of the carburetor at the opposite end of the Venturi tube 48. This suction is available for lifting fuel from the low level supply tank to the float chamber of the carburetor, but, as described in my copending application, this suction is of lesser degree than that prevailing at the nozzle openings, whereby the feed of fuel to the nozzle openings is always assured.

It will be understood that many features of the invention herein described are applicable to carburetors of the gravity feed type, though some of the features are applicable only to carburetors of the suction feed type. In order to convert this carburetor into one of the gravity feed type, it is necessary only that air be admitted to the float chamer to prevent the suction therein from rising to as high proportions as when the carburetor is used for suction delivery of fuel to the bowl.

While I have shown and described my invention with respect to certain details, it is to be understood that these may be modified in many respects without departing from the spirit or scope of my invention.

What I claim is:

1. In a carburetor, the combination with an induction passage of a float chamber comprising a bowl for supplying fuel to said induction passage, a hollow column extending downwardly from the cover of said float chamber, a member adapted to be attached to the bottom of the hollow column and having an abutment thereon for holding the bowl against the cover, a plug carried by said member, a tubular screen extending upwardly within the hollow column and carried by said plug, a valve control opening in communication with the hollow column outside the said screen, a valve for controlling said opening, a pivoted float for controlling said valve, and a fuel delivery connection through the said float chamber cover delivering inside the said tubular screen.

2. A float chamber for carburetors comprising a cover having a tubular pillar extending downwardly therefrom, a bowl, a member extending through a central opening in said bowl and attached to the lower end of said tubular pillar for holding the bowl against the cover, a tubular screen within the tubular pillar removable through said member, and a fuel delivery port through said float chamber cover delivering within the said tubular screen

3. A float chamber for carburetors and the like comprising a cover, a bowl, a column extending downwardly from said cover into said bowl, screw-threaded means associated with said bowl for connecting to the lower end of said column for connecting said bowl and said cover together, a fuel inlet passageway in said column opening through the top of said cover, a boss extending laterally from said column, a lateral fuel passageway in said boss communicating with said fuel inlet passageway, a fuel port opening from said lateral fuel passageway into said bowl, a fuel valve controlling said port, and a float pivotally supported on said boss for actuating said valve.

4. A float chamber for carburetors and the like comprising a cover, a bowl, a hollow column extending between the cover and the base of the bowl and attached to each for holding the bowl and cover together, a tubular screen within said hollow column, a fuel delivery port for delivering fuel within said screen and a float-controlled port between the hollow column and the interior of the float chamber bowl, and a float for controlling said port.

5. A float chamber for carburetors and the like comprising a cover, a bowl, a hollow column extending between the cover and the base of the bowl for attaching the bowl and cover together, means for delivering fuel into said hollow column, a port between the hollow column and the float chamber bowl, a guided valve member controlling said port, a lateral passageway located between the said port and the guide for said guided valve member for the discharge of fuel from said port into the float chamber, and a float controlling said guided valve member.

6. A float chamber for carburetors and the like comprising a cover, a bowl, a column extending downwardly from said

cover into said bowl, a fuel inlet passageway in said column opening through the top of said cover, a boss extending laterally from said column, a lateral fuel passageway in said boss communicating with said fuel inlet passageway, a fuel port opening from said lateral fuel passageway into said bowl, a fuel valve controlling said port, and a float pivotally supported on said boss for actuating said valve.

In witness whereof, I hereunto subscribe my name this 3rd day of October, 1922.

MILFORD G. CHANDLER.