

CARBURETER.

Patented July 14, 1914.

1,103,789.



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To all whom it may concern:

Be it known that I, FRED J. MACEY, a citizen of the United States, and a resident of San Diego, in the county of San Diego and State of California, have invented a new and Improved Carbureter, of which the following is a full, clear, and exact description.

My invention has for its object to provide a carbureter with a body having an air intake tube, there being a set of valve seats in the air intake tube, below the normal level of the gasolene, and another set of valve seats above the normal level of the gasolene, so that with a valve member provided it is possible to close the first valve seats when the second valve seats are opened, and to close the second valve seats as the first valve seats are opened, for regulating the richness of the combustible mixture supplied by the carbureter. The valve member may be operated to open wider the valve seats above the gasolene and to partially close the valve seats below the gasolene level, to reduce the richness of the combustible mixture supplied by the carbureter, or, if desired, the valve member may be operated to open wider the valve seats below the gasolene level, to partially close, or close altogether, the valve seats above the gasolene, so that a richer combustible mixture may be supplied.

Still other objects of the invention will appear in the following complete specification, in which the preferred form of the invention is disclosed.

In the drawings similar characters of reference indicate corresponding parts in all the views, in which—

Figure 1 is a vertical section of the invention; Fig. 2 is a sectional view on the line 2—2 of Fig. 1; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

In a carbureter it is not only important that means be provided for regulating the richness of the combustible mixture supplied by the carbureter, but it is also important that the combustible mixture flow freely to the carbureter at all times, so that

with a given suction the same quantity of combustible mixture will flow without reference to the adjustment of the carbureter to regulate the richness of the mixture. My carbureter is peculiarly well adapted to satisfy this need, for when the valve seats in the air intake tube below the level of the gasolene are partially closed, the valve seats above the level of the gasolene are open, so that the combined area of the open portions of the valve seats is the same at all times, and the air flowing in through the intake tube will be constant at a given suction.

By referring to the drawings it will be seen that a body 5 is provided having a chamber 6 and a projection 7, having a float feed chamber 8, the bottom of the float feed chamber 8 being in communication with the chamber 6 by means of a communication means 9. Disposed in the float feed chamber 8 there is a float 10, which is secured to the arm 11 of the lever 12, the other arm 13 of this lever 12 being connected with a member 14 of the valve 15, provided for cooperating with the valve seat 16 for closing the gasolene or hydro-carbon inlet 17. There is a plug hole 18 in the projection 7, above the valve seat 16, the plug opening 18 being threaded for receiving the thread 19 on the plug 20 provided for closing this opening. Not only is there a communicating means 9 between the bottom of the float feed chamber 8 and the bottom of the chamber 6, but there is also a second communicating means 21 between the float feed chamber 8 and the chamber 6, this second communicating means 21 being disposed at the top of the float feed chamber 8, and above the normal position of the float 10. This second communicating means 21 is provided for equalizing the pressure in the float feed chamber 8, and the chamber 6 in the body to make certain that the level of the gasolene or hydro-carbon in the chamber 6 will remain substantially the same as the hydro-carbon in the float feed chamber 8. The top of the float feed chamber 8 is inclosed by a cap 22, through an opening 23 in which a bolt 24 extends, the bolt having a head 25 resting on the top of the cap 22, this bolt 24 extend-

ing through an opening in the float 10, and down to the bottom of the float feed chamber 8, where its lower threaded terminal 26 meshes with a thread 27 in the projection 5 7 having the said float feed chamber 8.

The top of the body 5 is closed by a cap 28, having an outlet 29, commanded by a valve 30, this cap 28 also having an opening 31, in which is secured the upper end 10 33 of the tube 32, the tube 32 extending down to a position close to the bottom of the chamber 6 and having a head 34 at its bottom. This tube 32 has two sets of openings, the openings 35 being disposed above the normal level 36 of the hydro-carbon in the opening 6 in the body 5 and the other openings 37 being disposed below this normal level 36 of the hydro-carbon. These openings 35 and 37 serve as valve seats, 20 and it will be understood that when the valve seats 35 are closed, and the valve seats 37 are open, and air is permitted to flow through these valve seats 37 to the hydro-carbon, it will serve to volatilize the 25 hydro-carbon and the mixture will flow upward and out through the outlet 29. In this way all the air passing downward within the tube 32 will pass through the hydro-carbon before it passes out of the carbureter body, and a very rich combustible mixture 30 will be supplied by the carbureter. When a less rich combustible mixture is desired, the valve seats 37 may be partially closed, and the valve seats 35 may be partially 35 opened, so that air will mix with the combustible mixture formed by the passage of the air from the valve seats 37 through the hydro-carbon as the combustible mixture flows from the hydro-carbon in the chamber 40 6 to the outlet 29. As a valve means for opening and closing these valve seats 35 and 37, I provide a tube 38, disposed in the tube 32, the tube 38 also being provided with a head 39 at its bottom, disposed adjacent the head 34 of the tube 32. The tube 45 38 has openings 40, which are adapted to register with the openings 35, and additional openings 41 which are adapted to register with the openings 37, but these 50 openings 40 and 41 are so disposed relatively to the valve openings forming the valve seats 35 and 37, that as the tube 38 is rotated relatively to the tube 32, the valve seats 37 will be opened as the valve seats 55 35 are being closed, and with the reversed rotation of the tube 38 the valve seats 35 will be opened as the valve seats 37 are being closed. This construction is provided so that in the operation of the carbureter the 60 combined areas of the uncovered portions of the valve seats 35 and 37 will be substantially the same.

Disposed around the tube 32 there are a plurality of perforated plates 42, which ex-

tend down toward their peripheries 43, 65 which are in engagement with the sides of the chamber 6 of the body 5. These perforated plates 42 are disposed around the tube 32, between the valve seats 35 and the valve seats 37. There is an additional set 70 of perforated plates 44 which are disposed around the tube 32 above the valve seats 35. The cap 28 has a projection 45 extending inwardly below the outlet 29, this projection 45 serving as a baffle plate, to insure 75 the more even upward flow of the combustible mixture in the chamber 6 in the body. To the top of the tube 38 is secured a cap 46 having inlet openings 48 at its side, a lever 47 being secured to this cap 46 by 80 which the cap 46 and the tube 38 may be rotated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a carbureter, a body having a chamber adapted to contain a hydrocarbon, an air inlet at one end of the chamber, an outlet for the chamber, a tube disposed vertically in the chamber connected at one end with 90 the inlet and closed at its other end, there being a valve opening in the tube above the normal level of the hydrocarbon, and another valve opening in the tube below the normal level of the hydrocarbon in the 95 chamber, a rotatable tube disposed within the first tube and having an opening for registering with the first opening in the first tube and a second opening for registering with the second opening in the first tube for 100 uncovering one of the openings in the first tube when the other opening in the first tube is closed by the rotation of the second tube, means for rotating one of the tubes rela- 105 tively to the other, and means for maintaining hydrocarbon in the chamber at the normal level.

2. In a carbureter, a body having a chamber adapted to contain a hydrocarbon, an air inlet at the top of the chamber, an out- 110 let for the chamber, a tube disposed vertically in the chamber connected at the top with the inlet and closed at its lower end adjacent the bottom of the chamber, there being a valve opening in the tube above the 115 normal level of the hydrocarbon and another valve opening in the tube below the normal level of the hydrocarbon in the chamber, a tube disposed within the first tube and having an opening above the nor- 120 mal level of the hydrocarbon for registering with the first opening in the first tube and a second opening below the normal level of the hydrocarbon for registering with the 125 second opening in the first tube for uncovering one of the openings in the first tube when the other opening in the first tube is closed by the rotation of the second tube,

means for rotating one of the tubes relatively to the other, means for maintaining the hydrocarbon in the chamber at the normal level, and horizontally perforated plates spaced apart and disposed in the chamber and provided with openings, through which the tubes extend.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRED J. MACEY.

Witnesses:

N. H. BUTTON,
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