Nov. 27, 1923. 1,475,404

A. T. NEWMAN

CARBURETOR

Filed Oct. 31, 1919

Fig. I.

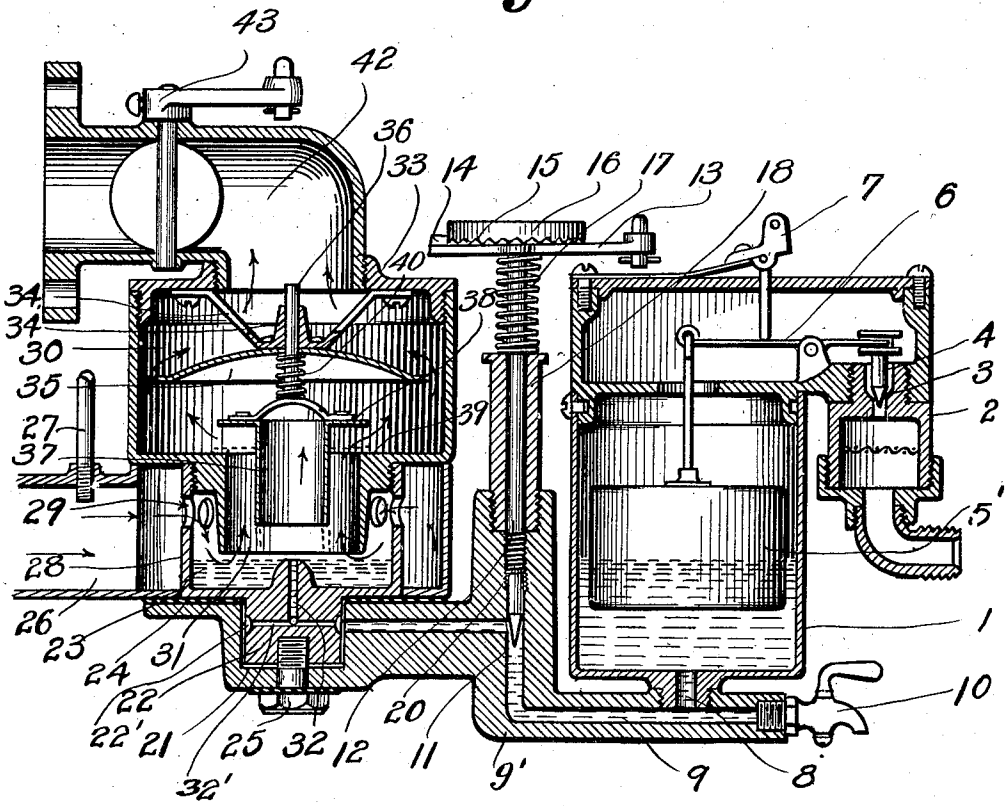
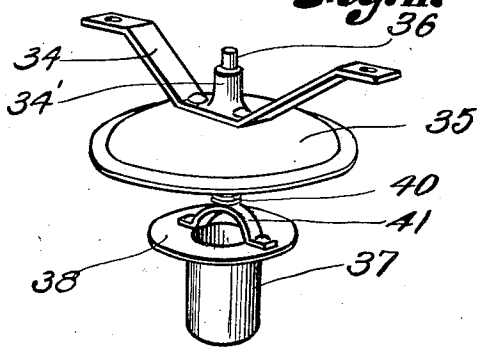


Fig. II.



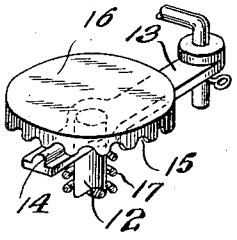


Fig. III.

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UNITED STATES PATENT OFFICE.

ALBERT T. NEWMAN, OF EMPORIA, KANSAS, ASSIGNOR OF ONE-HALF TO J. A. RANKIN, OF EMPORIA, KANSAS.

CARBURETOR.

Application filed October 31, 1919. Serial No. 334,797.

To all whom it may concern:

Be it known that I, ALBERT T. NEWMAN, a citizen of the United States, residing at Emporia, in the county of Lyon and State of Kansas, have invented certain new and useful Improvements in Carburetors; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to carburetors and the primary object thereof is to provide means for effecting a thorough inter-commingling of the constituent parts of the explosive mixture and to do this in an inexpensive and efficient manner.

It is also the purpose of my invention to provide means whereby water may be admitted to the carburetor to co-mingle with the air and hydrocarbon fluid preparatory to passing into the manifold of the engine.

Another object of the invention is to provide means whereby the float chamber may be swung about the axis of the mixture chamber so that it may clear certain existing parts on the motor vehicle.

Other objects and advantages of the invention will be referred to hereinafter, it being understood that changes in form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings,

Fig. I is a longitudinal, sectional view through a carburetor constructed in accordance with my invention,

Fig. II is perspective view of the deflector and auxiliary air valve, immediately thereafter, and

Fig. III is a detail view of the means for operating the needle valve.

Referring now to the drawings, by numerals of reference:

1 designates a hydrocarbon reservoir having an offset inlet 2 adapted to be connected to any suitable source of supply, the inlet 2 being provided with a valve seat 3 upon which a valve 4 is adapted to be seated and unseated through the medium of the float 5 and the lever connection 6. 7 is an agitator or "tickler" to manually unseat the valve for priming, as is well understood.

The float chamber or reservoir 1 has a discharge port 8 communicating with a conduit 9 in the casting 9′ in which there is a drain valve 10, and said conduit is adapted to be closed intermediate its ends, as at 11, by a needle valve 12 adapted to be operated by a lever 13 having a tooth 14 to engage the serrations 15 in the head 16, the lever being normally pressed into engagement by the spring 17, one end of which bears against the lever and the other end of which bears against the sleeve 18 carried by casting 9′, the valve having engagement with the casting, as at 20. The casting is provided with a seat or recess 21 to receive a ported projection 22 extending from the bottom of the casing which forms the primary mixing chamber. The primary mixing chamber is seated upon the casting 9′ and packed by a suitable packing 24, the connection being established by a machine screw 25, projecting through the bottom of the casting and into the projection 22.

There is an air inlet passage 26 with which a water pipe 27 communicates, and the vertical wall 28 surrounding the primary mixing chamber is provided with a plurality of openings 29. The wall 28 supports a casing having therein a secondary mixing chamber 30 having a depending flange 31 projecting below the openings 29 so that the air will be deflected toward the oil entering through the port 32. The secondary mixing chamber is shown as provided with a top 33 and said top supports a bracket or bridge 34, carrying a circular or disk-like concavo-convex deflector 35. The hub 34′ of the bracket 34 serves as a bearing for the longitudinally movable stem or rod 36, on which is a tubular member 37 provided with a peripheral flange, comprising a valve 38, adapted to be seated upon the floor 39 of the chamber 30 through the medium of the spring 40, one end of which bears against the under side of the deflector 35 and the other of which bears against the bracket 41, as clearly shown in Fig. II. The valve is adapted to be unseated by the suction of the engine, the suction being created in the pipe 42, which is adapted to be connected to the manifold and which communicates with the discharge opening

of the secondary mixing chamber. The pipe 42 is provided with the usual throttle 43, which may be operated in the usual manner.

From the foregoing, it will be apparent that the hydrocarbon oil may enter the chamber 1 and pass into the chamber 23 in the usual way. The intake stroke of the piston will create suction in pipe 42, lifting the valve member 37 off its seat and drawing air through the openings 29, and water from 27, and cause it to co-mingle with the oil in a complete mixture so that the air will become thoroughly impregnated with the oil and water, or if water is not used, with the oil alone.

The valve 38 deflects the mixture toward the wall of the secondary mixing chamber 30 and it will be further agitated or caused to become mixed through the medium of the deflector 35 so that by the time it reaches the manifold the mixture will be complete. The projection 21 is provided with ports at right angles one to the other, which extend entirely through the same so if it becomes necessary to swing the supply chamber 1 at right angles to the port 26, this can be readily accomplished by loosening the nut 25. It will be observed that the ports 32′ are radial ports and that there is a groove 22′ communicating therewith so communication can be established between the conduit 9 and the port 32 irrespective of the angle of adjustment of the casting 9′ about the axis of the projection 22 because the groove 22′ extends entirely around 22. Any well known means may be provided for supplying water through the pipe 27; for example, such as is shown in the patent to Corser, No. 1,120,602. The pipe 16 of the Corser patent may be substituted for the present pipe 27.

What I claim and desire to secure by Letters Patent is:

1. In a carburetor, a casing constituting a primary mixing chamber and a secondary mixing chamber, the secondary mixing chamber having a depending tubular flange in the floor thereof to provide a constricted inlet passageway and a discharge opening in the top thereof, the primary mixing chamber surrounding the flange, the floor of the primary mixing chamber being spaced from the lower end of the flange, the walls of the primary mixing chamber being provided with openings, an air inlet passageway surrounding the walls of the primary mixing chamber and adapted to communicate therewith and with the space confined by the tubular flange, a fuel supply nozzle in the floor of the primary mixing chamber, an upwardly movable disk valve for controlling the inlet passageway for the secondary mixing chamber, and a depending tube carried by the disk valve in alignment with the fuel inlet in the bottom of the primary mixing chamber.

2. In a carburetor, a casing constituting a primary mixing chamber and a secondary mixing chamber, the secondary mixing chamber having a depending tubular flange in the floor thereof to provide a constricted inlet passageway and a discharge opening in the top thereof, the primary mixing chamber surrounding the flange, the floor of the primary mixing chamber being spaced from the lower end of the flange, the walls of the primary mixing chamber being provided with openings, an air inlet passageway surrounding the walls of the primary mixing chamber and adapted to communicate therewith and with the space confined by the tubular flange, a fuel supply nozzle in the floor of the primary mixing chamber, an upwardly movable disk valve for controlling the inlet passageway for the secondary mixing chamber, a depending tube carried by the disk valve in alignment with the fuel inlet in the bottom of the primary mixing chamber, and means for maintaining the liquid level in the primary mixing chamber below the tubular flange depending from the floor of the secondary mixing chamber.

3. In a carburetor, a casing constituting a primary mixing chamber and a secondary mixing chamber, the secondary mixing chamber having a depending tubular flange in the floor thereof to provide a constricted inlet passageway and a discharge opening in the top thereof, the primary mixing chamber surrounding the flange, the floor of the primary mixing chamber being spaced from the lower end of the flange, the walls of the primary mixing chamber being provided with openings, an air inlet passageway surrounding the walls of the primary mixing chamber and adapted to communicate therewith and with the space confined by the tubular flange, a fuel supply nozzle in the floor of the primary mixing chamber, an upwardly movable disk valve for controlling the inlet passageway for the secondary mixing chamber, a depending tube carried by the disk valve in alignment with the fuel inlet in the bottom of the primary mixing chamber, and a concavo-convex deflector rigidly supported between the top and bottom of the secondary mixing chamber, the outer edge of which is spaced from the wall of the secondary mixing chamber, the diameter of the deflector being greater than the diameter of the valve.

In testimony whereof I affix my signature.

ALBERT T. NEWMAN.