H. A. MILLER.

CARBURETER.

APPLICATION FILED NOV. 16, 1909.

962,649.

Patented June 28, 1910

Fig. 1

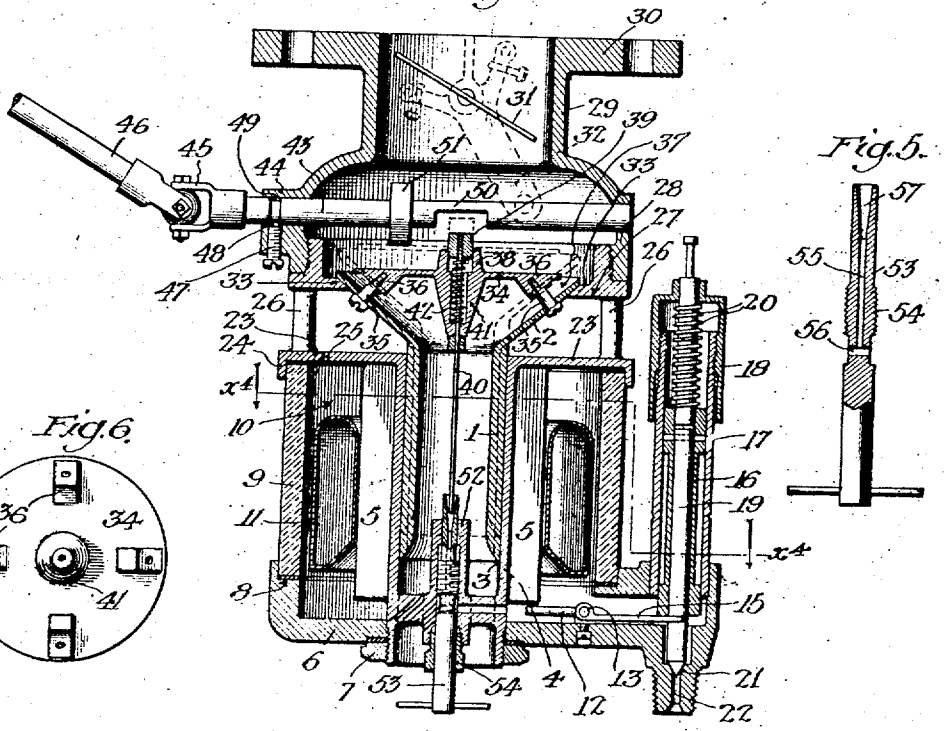


Fig. 5.

Fig. 6.

Fig. 2.

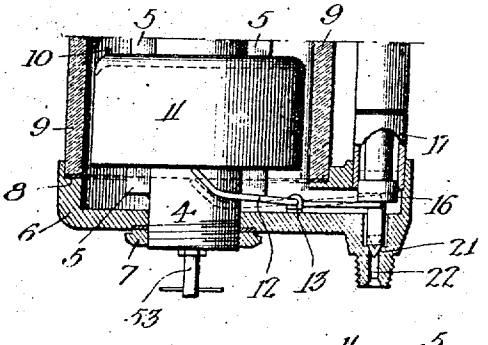


Fig. 3.

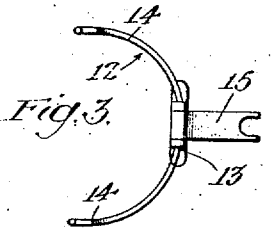
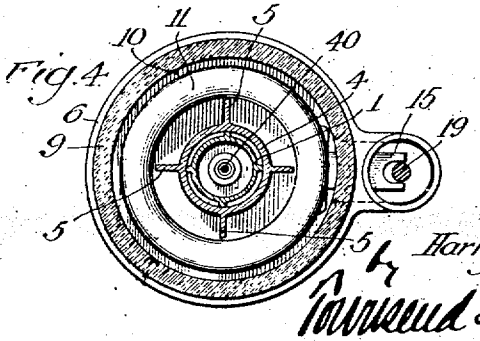


Fig. 4.



Witnesses:

Lute S. Miller.

Geo. J. Huting.

Inventor:

Harry A. Miller.

Townsend & Townsend

attys.

UNITED STATES PATENT OFFICE.

HARRY A. MILLER, OF LOS ANGELES, CALIFORNIA.

CARBURETER.

962,649. Specification of Letters Patent. Patented June 28, 1910.

Application filed November 16, 1909. Serial No. 528,399.

To all whom it may concern:

Be it known that I, HARRY A. MILLER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Carbureter, of which the following is a specification.

This invention relates to carbureters and one of the main objects of the invention is to provide for securing a better mixture of the auxiliary air with the mixture of regular air and vapor, by employing a deflector or spreader.

A further object is to provide an extra adjustment for securing a greater amount of gasolene at high speeds, which adjustment is capable of operation while the car is running. This extra adjustment may be operated from the seat of the car and the adjustment does not interfere with the low speed adjustments.

Further objects relate to details of construction and operation which will be brought out in the following description.

Referring to the drawings: Figure 1 is a vertical, longitudinal section through the carbureter. Fig. 2 is a sectional view, partly in elevation, of the lower portion of the carbureter. Fig. 3 is a plan view of the float lever. Fig. 4 is a section on line x^4—x^4 in Fig. 1. Fig. 5 is a side elevation, partly in section, of the adjustable nozzle. Fig. 6 is a bottom view in detail of the spreader.

1 designates a tubular suction chamber which has a cone 2 at its upper end, the lower end of the tube 1 being tapered to a thin edge at 3 and the tube being closely fitted within a cylindrical casing 4. Extending longitudinally on the casing 4 are four flanges 5. A base 6 is screwed to the lower end of the casing 4 and is retained by a lock nut 7. The base 6 is formed with a shoulder 8 which receives the lower edge of a glass tube 9 which forms the outer wall of an annular float chamber 10 within which is a float 11, the latter being guided by the four flanges 5. A float valve lever 12 is pivoted at 13 and its forks 14 lie under the float 11 as shown in Fig. 2, while its notched arm 15 engages under a shouldered sleeve 16 which is slidable in a tubular guide 17. The upper end of the guide 17 is closed by a cap 18 which is screwed thereto. Secured in the sleeve 16 is a valve 19, the upper end of which extends through the cap 18 and a coil spring 20 within the cap 18 serves to normally press the valve 19 against its seat 21 through which gasolene is admitted from an inlet passage 22 to the interior of the base 6 and thence to float chamber 10. A reduction or increase in the level of gasolene within the chamber 10 lowers or raises the float 11 and raises or lowers the valve 19, thereby automatically maintaining a substantially constant level in the chamber 10 in a manner well known in the art.

The upper end of the casing 4 has a cap 23 with a downturned flange 24 which confines the upper edge of the glass tube 9 and the cap 23 is provided with a vent 25. Legs 26 project up from the cap 23 and support a ring 27 to which is screwed a bell-shaped mixing chamber 28 having a neck 29 with a flange 30. 31 is a throttle valve pivoted within the neck 29 and adapted to be operated by an arm 32 indicated in dotted lines.

The ring 27 has an inwardly projecting flange 33 which forms a seat for the cone 2 when the latter is lowered. A spreader 34 is supported at the mouth of the funnel 2 by screws 35 which engage lugs 36 formed on the spreader 34, so that as the tube 1 rises the spreader 34 rises with it and the size of the annular space 37 around the rim of the spreader 34 is always constant. Projecting above the spreader 34 is a hollow boss 38, which slidably receives a head 39 on a valve rod 40. The valve rod 40 extends down from the head 39 through a post 41 on the underside of the spreader 34 and the post 41 is recessed to receive a coil spring 42 which serves to normally elevate the valve rod 40. A shaft 43 is mounted to rotate in a bearing 44 formed in the bell 28 and is connected by a universal joint 45 with an operating rod 46 which may extend to the seat of the automobile, not shown, or to any other convenient position. A screw 47 and leather shoe 48 acting in a groove 49 exert sufficient friction on the shaft 43 to prevent it from turning accidentally. The inner end of the shaft 43 is provided with an eccentric 50, the angular position of which determines the limit of upward movement of the valve rod 40. A flange 51 on shaft 43 acts as a stop against which the spreader 34 may strike within the upward movement thereof.

In the lower end of the casing 4 is a post 52 which is internally threaded to receive a nozzle 53, the latter being shown in detail

in Fig. 5, and consisting of an intermediate externally threaded portion 54 and having a central gasolene passage 55 which connects with a cross passage 56 which conducts gasolene from either side of the nozzle to the central passage 55, the mouth of the latter being tapered as at 57 and the valve rod 40 projecting into the tapered mouth 57. The lower end of the nozzle 53 projects down through the carbureter and stuffing box 54, as clearly shown in Fig. 1, and the nozzle 53 may be unscrewed from the post 52 and entirely removed from the carbureter without requiring access to the interior of the carbureter, or without taking the carbureter apart.

In operation, during the suction stroke of the engine the suction generated within the mixing chamber 28 acts through the annular space 37 to suck gasolene up from the nozzle 57 through the suction chamber 1 and out through the annular space 37 into the bell 28, which, when the engine is running at high speeds, is sufficient to lift the cone 2 from its seat against flange 33, thus permitting air to flow into the bell 28 between the cone 2 and flange 33 when the cone is lifted as indicated in dotted lines in Fig. 1, and the air thus admitted mixes with the gasolene vapor which has been drawn into the mixing chamber 28 and passes thence through the neck 29 into the engine. As the spreader 34 lifts during the suction stroke, the valve rod 40 is also lifted to open the mouth of the nozzle 53. By turning rod 46 to move the eccentric 50 lower, it will prevent the head 39 from rising to its highest point when the spreader 34 moves up, thereby restricting the amount of gasolene which is allowed to pass out through the mouth of the nozzle. Obviously the speed may be increased by turning the eccentric 50, so that the head 39 and rod 40 can rise to a higher point. This adjustment is provided for high speeds, that is, speeds greater than about twenty-five miles an hour. For speeds lower than that, the adjustment is secured by screwing the nozzle 53 up or down as at the low speeds the suction is not sufficient to lift the rod 40 out of the nozzle.

One of the best features of this invention is the removability of the nozzle 53 without taking the carbureter apart which makes it possible to supply the carbureter with a set of differently formed nozzles, which are designed for four or six cylinder motors, the nozzle for the six cylinder motor having a larger gasolene passage.

What I claim is:

1. In a carbureter, a nozzle, means for supplying gasolene thereto, a rod slidable above the nozzle with its lower end extending into the mouth thereof, a shaft extending into the carbureter, an eccentric on the shaft adapted to limit the upward stroke of the rod, a spreader surrounding the rod, and a flange on the shaft forming a stop to limit the upward movement of the spreader.

2. In a carbureter, an annular float chamber, a mixing chamber above the float chamber, an inverted cone with a slidable support therefor enabling a vertical movement of the cone, a spreader in the mouth of the cone leaving an annular space at the edge of the cone, said cone normally closing the lower part of the mixing chamber and lifted by suction within the mixing chamber, and a nozzle directed toward the cone.

3. In a carbureter, an annular float chamber, a mixing chamber above the float chamber, an inverted cone with a slidable support therefor enabling a vertical movement of the cone, said cone normally closing the lower part of the mixing chamber and lifted by suction within the mixing chamber, said slidable support being hollow, a nozzle directed into the lower part of said support, and a rod supported by the cone and extending to the mouth of the nozzle.

4. In a carbureter, an annular float chamber, a mixing chamber above the float chamber, an inverted cone with a slidable support therefor enabling a vertical movement of the cone, said cone normally closing the lower part of the mixing chamber and lifted by suction within the mixing chamber, said slidable support being hollow, a nozzle directed into the lower part of said support, a spreader carried by the cone forming an annular space between the cone and rim of the spreader, and a rod yieldingly supported by the spreader and extending into the mouth of the nozzle.

5. In a carbureter, an annular float chamber, a mixing chamber above the float chamber, an inverted cone with a slidable support therefor enabling a vertical movement of the cone, said cone normally closing the lower part of the mixing chamber and lifted by suction within the mixing chamber, said slidable support being hollow, a nozzle directed into the lower part of said support, a spreader carried by the cone forming an annular space between the cone and rim of the spreader, a rod yieldingly supported by the spreader and extending into the mouth of the nozzle, a shaft extending into the mixing chamber above the spreader, and an eccentric lug on the shaft to limit the upward movement of the rod.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 2d day of October 1909.

HARRY A. MILLER.

In presence of—
G. T. Hackly,
Frank L. A. Graham.