

H. L. BROWNBAC.
CARBURETER.
APPLICATION FILED DEC. 13, 1910.

1,025,782.

Patented May 7, 1912.

Fig. 1.

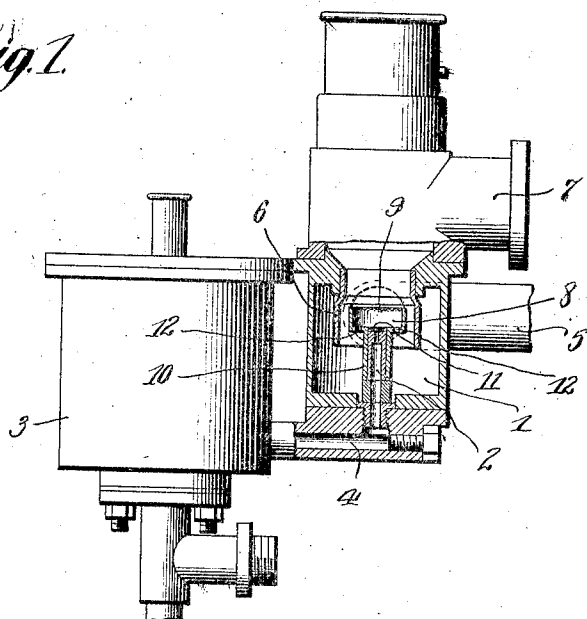


Fig. 2.

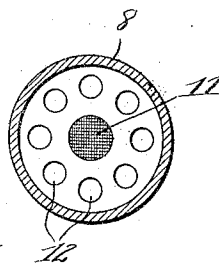
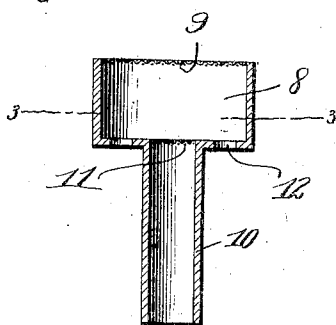


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

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CARBURETER.

1,025,782.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed December 13, 1910. Serial No. 597,131.

To all whom it may concern:

Be it known that I, HENRY L. BROWNBAC, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters for explosive engines, and has to do more especially with improvements in the nozzle thereof.

The invention has for one of its objects to provide a simple and effective spray nozzle attachment for carbureters of internal combustion engines whereby a better mixture can be obtained than with an ordinary nozzle and consequently a greater efficiency of the engine with a given consumption of fuel, the attachment being in the form of a vaporizer which insures a dry mixture or gas so that the usual troubles attending the presence of raw fuel in the cylinders, or the loading up of the intake pipes, will be prevented.

Another object of the invention is the provision of a novel arrangement of gauze diaphragms through which the fuel passes so as to be effectively broken up and incorporated with the air drawn through the carbureter.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention, Figure 1 is a sectional view of a portion of the carbureter showing the improved nozzle. Fig. 2 is an enlarged vertical section of the nozzle or vaporizing device. Fig. 3 is a horizontal section on line 3—3 of Fig. 2.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, 1 designates the mixing chamber of an ordinary carbureter, in which is located a nozzle 2 that is supplied from the inlet or float chamber 3 through a passage 4, air being admitted to the chamber 1 through an intake pipe 5. The air is drawn upwardly around the nozzle through an annular chamber formed by

a Venturi tube 6, and from this chamber the air passes to the engine through the outlet 7. On the nozzle is arranged a preliminary mixing cup or chamber 8 which has a gauze diaphragm 9 extending across the top. The cup or chamber practically fills the Venturi tube 6 so as to leave only a small passage between the same and cup for a purpose to be hereinafter described. Connected with the bottom of the cup at the center thereof is a tube 10 into which the nozzle 2 extends, the said tube fitting on the nozzle. At the top of this tube is a fine gauze diaphragm 11 through which the raw fuel first passes as it is sucked out of the nozzle when the engine is turned over. The bottom of the cup around the nozzle has apertures 12 through which air enters to mix with the fuel that is broken up by the diaphragm 11.

In the operation of the device the raw fuel is sucked through the tube 2 and through the diaphragm 11 which breaks the fuel up into small globules which are picked up by the air entering through the apertures or inlets 12 and properly vaporized. This mixture, as it exists in the chamber 8, is approximately of the same quality as the mixture which is ordinarily considered properly carbureted and fit for engine use, and is substantially the same as that fed to engines by the carbureters now in use. This mixture, by the use of this attachment or type of spray nozzle, is further treated a second and a third time, at which the improperly carbureted mixture which is in the chamber 8 passes through the gauze diaphragm 11 into the Venturi tube and from there to the outlet 7 which is of course understood to be connected with the inlet header or manifold on the engine. In passing through the diaphragm 9 under pressure of the air through the apertures 12, the fuel is broken up into such fine particles that it readily mingles with the air in the form of a gas and being acted on a third time by the air passing around the nozzle through the Venturi tube is converted into a highly inflammable gas and is not fed to the engine in the form of a mixture of separated air and fuel particles. It is of course well understood that the Venturi tube in every carbureter is inserted for the purpose of reducing the air pressure and increasing its velocity. The attenuated space between the chamber 8 and the Venturi tube further in-

creases the velocity of the air and causes the gas emanating from the gauze 5 to be properly whirled and commingled therewith, thus producing the proper type of gas for use in the engine. It has been found in actual practice that by simply removing the ordinary spray nozzle on the carbureter and substituting applicant's spray nozzle that twice the distance at approximately the same speed can be covered on half as much fuel and, not only has this been actually demonstrated but it has also been found out that in carrying out this test the engine pick up half again as quick as when the throttle is open.

While I have described the device which I now consider the best embodiment of my invention, I wish it understood that the showing made herein is merely illustrative and that changes may be made when desired without departing from the spirit of the invention as defined by the appended claims.

The device is adapted for use on many of the carbureters now in actual use, such as the Packard, Stromberg, Franklin or Schedler carbureters and it is to be understood that the device may be changed to operate in connection with other carbureters without departing in any sense of the word from the invention as contemplated.

Claims.

1 A spray nozzle attachment for carbu-

reters comprising a cup member, an oil feed tube connected to the cup member, a fuel breaker bridged across said tube, and a second fuel breaker bridged across said cup member, said cup member having inlet ports cooperating with the feed tube.

2. A unitary spray nozzle attachment for carbureters comprising a cup member, a gauze across one end of the cup member, a tube secured to the opposite end of the cup member, a gauze across the end of the tube which is connected with the cup member, and a plurality of inlet ports surrounding the gauze and extending through the bottom of the cup member.

3. In combination, a carbureter having a Venturi tube and a spray nozzle comprising a cup member having a diameter slightly less than the internal diameter of the Venturi tube, gauzes across the ends of the cup member, said cup member having air inlet openings arranged around one of the gauzes, and a feed tube connected to the cup and adapted to be connected for communication with the fuel tube of the carbureter.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY LOWE BROWNBACK.

Witnesses:

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ELMINA S. TYSON.