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L. C. BIGBIE

FUEL VAPORIZER ATTACHMENT

Filed Nov. 14, 1921

FIG. 1.

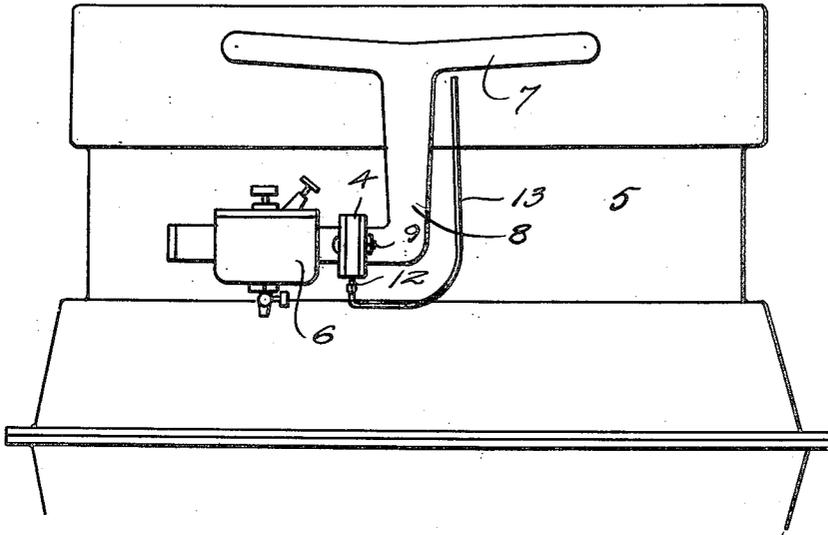


FIG. 2.

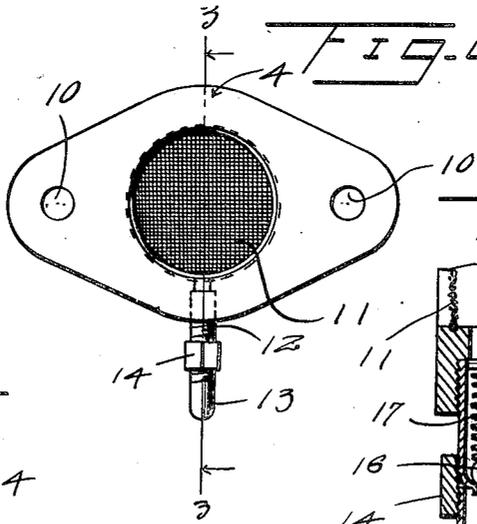


FIG. 4.

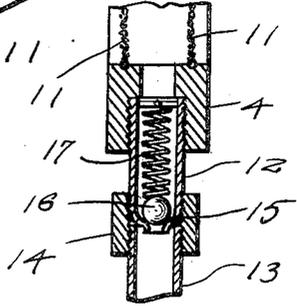
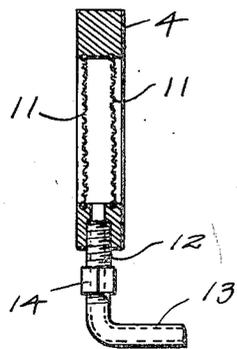


FIG. 3.



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UNITED STATES PATENT OFFICE.

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FUEL-VAPORIZER ATTACHMENT.

Application filed November 14, 1921. Serial No. 515,130.

To all whom it may concern:

Be it known that I, LOUIS C. BIGBIE, a citizen of the United States, residing at Cuthbert, in the county of Randolph and State of Georgia, have invented certain new and useful Improvements in Fuel-Vaporizer Attachments; and I do hereby 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.

This invention relates to a fuel vaporizer attachment for internal combustion engines and is of the type insertible in the fuel line between the carbureter and intake manifold.

A particular object is to provide a screen or gauze means to atomize or vaporize the fuel simultaneously with admixture of air therewith to insure more nearly perfect combustion to thereby attain the many known advantages resulting from an increase in the degree of combustion such as greater power and reduction of the formation of the carbon in the cylinders.

Additional objects and advantages will become apparent from a consideration of the description hereinafter following taken in connection with accompanying drawings illustrating one practical embodiment and wherein:—

Figure 1 is a fragmentary side elevation of an internal combustion engine and the fuel line thereof, illustrating my improvement in place;

Figure 2 is a plan view of my improvement detached;

Figure 3 is a cross sectional view on line 3—3 of Figure 2, and

Figure 4 is an enlarged sectional detail showing more clearly the valve in the air intake pipe.

Like reference characters designate like or similar parts throughout said views.

In reducing the invention to practice, the form illustrated may consist of a gasket 4 which is to be taken as conventional and of any suitable construction. This gasket is interposed in the fuel line of the internal combustion engine conventionally shown at 5. The specific gasket illustrated is disposed intermediate the carbureter 6 and intake manifold 7 as at the joint between the carbureter 6 and a pipe 8 leading from the manifold 7 and by means of the usual fastening bolts 9 at such location which pass through openings 10 in the gasket 4.

Centrally of one gasket, a plurality of spaced screens preferably of metallic or wire gauze 11 are provided so that fuel passing from the carbureter to the manifold will necessarily pass through the screens 11, which are of relatively fine mesh, in order to be atomized or thoroughly vaporized by passage through said screens.

To increase the degree of vaporization as said fuel passes through the screens 11, an air intake pipe 12 is secured in the gasket 4 and communicates with the space intermediate said screen 11. From the air intake pipe 12, an air intake pipe 13 in continuation thereof is secured thereto and has its intake end disposed at any suitable location, for instance, adjacent the manifold 7 in order that air drawn in through the pipes 13 and 12 will be heated. Of course when preferred, cold or normal temperature air may be admitted through the pipes 13 and 12, in which event the intake end of pipe 13 may be disposed accordingly.

In operation, as the fuel passes through the screen 11 it is atomized or vaporized thereby. The suction caused by operation of the engine draws air through the pipes 13 and 12 intermediate the screens 11 which thoroughly admixes with the fuel as it is atomized or vaporized by the screens, resulting in maximum vaporization of the fuel 4 and as it enters the engine cylinders and is ignited.

It is to be understood that I have shown merely one embodiment whereby the invention may be practiced in view of which fact changes may be resorted to within the spirit and scope.

The pipes 12 and 13 are connected by means of a nut 14. The lower end of the pipe 12 is constricted to form a seat 15 for the reception of a ball valve 16. An expansible helical spring 17 exerts a pressure upon the valve 16 to hold the same seated. The spring 17 is confined within the pipe 12. In practice, after the engine has attained a predetermined speed, the suction created in the pipe 12 unseats the valve 16 and permits air to be drawn into the pipe 13 and mix with the gas passing through the gasket 4, whereby a saving of fuel results and particles of fuel are broken up and atomized.

What is claimed is:—

An auxiliary air inlet for the intake mani-

fold of an internal combustion engine, the same comprising a short nipple threaded in-
to place and having communication with
the interior of the manifold, said nipple
5 having its outer end constricted to form a
valve seat, a ball valve normally resting on
said seat, a coil spring within said nipple
and bearing on said ball to normally hold
it on its seat, a relatively long pipe secured
10 to said nipple and turnable relative thereto
so as to enable it to have its free end dis-
posed in different positions relative to the
nipple, and said ball valve adapted to be
raised off its seat by atmospheric pressure in
said pipe to admit an auxiliary supply of 15
air to the engine charge when the engine
has reached a predetermined speed.
In testimony whereof I affix my signature
in presence of two witnesses.

LOUIS C. BIGBIE.

Witnesses:

A. R. WARD,
H. L. HILL.