J. W. BROWN.

NEBULIZER FOR HYDROCARBON ENGINES.

APPLICATION FILED JAN. 13, 1919.

1,315,758. Patented Sept. 9, 1919.

Fig. 1.

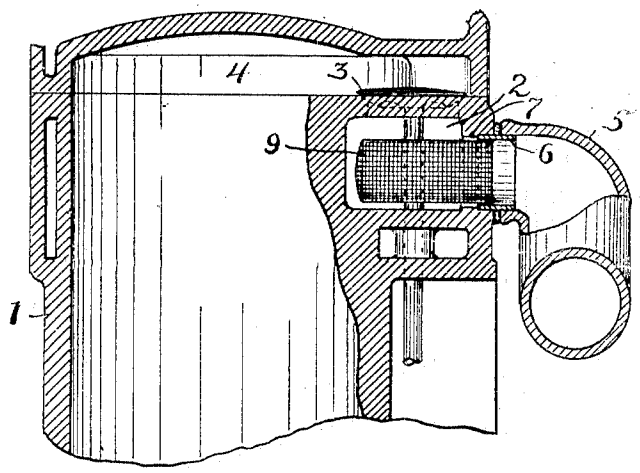
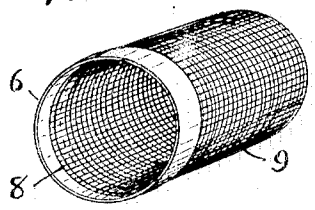


Fig. 2.



John W. Brown INVENTOR

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UNITED STATES PATENT OFFICE.

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NEBULIZER FOR HYDROCARBON-ENGINES.

1,315,758. Specification of Letters Patent. Patented Sept. 9, 1919.

Application filed January 13, 1919. Serial No. 270,975.

To all whom it may concern:

Be it known that I, JOHN W. BROWN, a citizen of the United States of America, and resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Nebulizers for Hydrocarbon-Engines, of which the following is a specification.

This invention relates to improvements in nebulizers for hydro-carbon engines, and the object thereof is to afford a device that may be introduced into the pathway of vaporized liquid fuel immediately prior to its admission into the combustion chamber of the engine and which will cause any condensations of the liquid fuel that may form in the passage-way, to enter the combustion chamber in a more or less nebulized state and mixed with the fuel gas drawn into the engine. It has been found that in operating hydro-carbon engines especially at the commencement of operation when the engine cylinder is at a low temperature, difficulty is experienced in effecting the intended explosions, this condition being due to unevenness of the mixture of air and fuel vapor that is drawn into the engine and which forms the explosive charge. In such cases even when the explosion of the charge is effected, combustion is incomplete and the force of the explosion ineffective, and frequently the parts within the explosion chamber become fouled with the products of incomplete combustion. The object of the invention, therefore, is to eliminate the foregoing difficulty by causing a more thorough and even mixture of combustible material at the point of its entry into the combustion chamber.

The object of the invention is accomplished by the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section showing the combustion chamber of a gas engine, and showing also an admission chamber with the present invention introduced therein and the valve for controlling the admission of gas into the explosion chamber; and

Fig. 2 is a perspective view of the device.

Similar characters of reference indicate corresponding parts in both views, and referring now to the same:—

The engine may be of any well known type which generally has one or more cylinders 1 and corresponding intake gas chambers 2, there being an inlet valve 3 for the admission of gas from the intake chamber into the explosion chamber 4.

A supply pipe 5 is connected with the cylinder for the admission of the explosive mixture into the intake chamber 2, this being the ordinary supply pipe or manifold generally employed and secured in the customary manner.

The invention is comprised of a gland 6 which consists of a sleeve adapted to fit partially into the opening 7 that leads into the intake chamber 2 and partially into the mouth of the supply-pipe 5 and to be held in place thereby when the supply pipe is secured in position. Within one end of the gland is secured the marginal edge 8 of the open end of a cup-shaped screen 9 so as to be supported by the gland within the intake chamber 2. The screen is composed of closely woven fine wire, or wire gauze, the meshes of which are sufficiently open to admit the passage of condensed liquid fuel together with the air as it is drawn through the intake chamber into the combustion chamber.

In the operation of the invention, when the engine is started, any condensed fuel matter that may form in the supply-pipe and screen-cup will become nebulized and mixed with the air or gas that is drawn through the supply-pipe and into the combustion chamber with the result that the admixture is both more readily ignited and the resulting explosion more violent and effective in driving the engine.

What I claim is:—

1. In combination with a hydro-carbon engine cylinder having a valve controlled inlet to its combustion chamber and a fuel supply pipe in communication with the inlet, a gland supported in the inlet opening, and a gauze cup extending into the inlet

with the edge of its open end secured to the gland to be supported thereby.

2. In combination with a hydro-carbon engine cylinder having an inlet fuel chamber, there being an opening leading into the chamber and a supply-pipe communicating with the chamber through said opening, a gland fitting within the opening, and a screen extending into the chamber and secured to the gland to be supported thereby.

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

JOHN W. BROWN.

Witnesses:
W. G. BURN,
MATILDA METTLER.