C. R. CARPENTER.

VAPORIZER.

APPLICATION FILED MAY 17, 1913.

1,098,476. Patented June 2, 1914.

Fig. 1

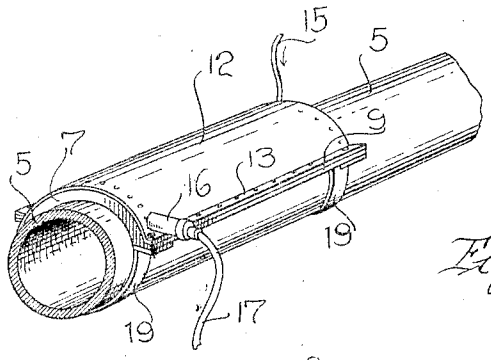


Fig. 2

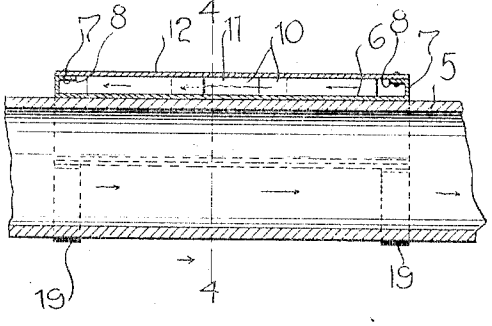


Fig. 3

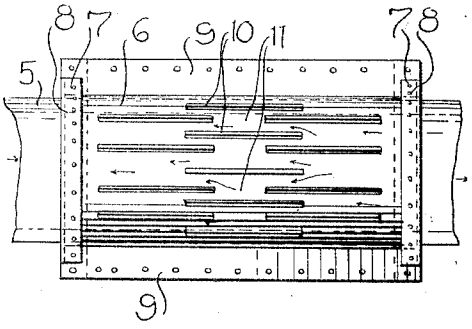
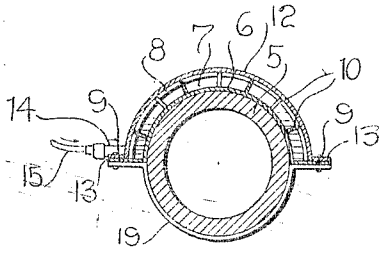


Fig. 4



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VAPORIZER.

1,098,476. Specification of Letters Patent. Patented June 2, 1914.

Application filed May 17, 1913. Serial No. 768,382.

To all whom it may concern:

Be it known that I, CLARENCE R. CARPENTER, a citizen of the United States, residing at Red Cloud, in the county of Webster and State of Nebraska, have invented certain new and useful Improvements in Vaporizers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in vaporizers and has for its primary object to provide a simple and inexpensive attachment designed for application to the exhaust pipe of an engine for vaporizing liquid fuels such as kerosene and converting the same into an explosive gas.

The invention has for another and more specific object, the provision of a vaporizer of the above type including a semi-cylindrical chamber having arranged therein a plurality of longitudinally extending ribs or blades to break up the liquid fuel which is admitted to the chamber and is heated by the heat from the exhaust pipe during its passage through said chamber whereby the fuel is vaporized.

A further object of the invention is to provide a vaporizer which is highly efficient in operation and may be easily and quickly attached to the exhaust pipe of an engine whereby the heat units, which would otherwise be wasted are utilized in the vaporization of the fuel.

With the above and other objects in view, this invention consists in the novel features of construction and the combination of parts to be hereinafter more fully described, pointed out in the claim and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a section of the exhaust pipe of an engine showing my improved vaporizer applied thereto; Fig. 2 is a longitudinal section; Fig. 3 is a plan view, the top plate of the vaporizer being removed; and Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Referring in detail to the drawing, 5 designates the exhaust pipe of an engine which, as illustrated is of cylindrical form, though it will be understood that the present invention is applicable to pipes of various shapes in cross section.

My improved vaporizer embodies a body plate 6 which is semi-cylindrical in form, as shown and each of its ends is flanged, as indicated at 7, the edges of said flanges being inwardly turned, as shown at 8. The body plate 6 is also provided upon each of its longitudinal edges with an outwardly extending flange 9. Upon the convex face of the plate 6, a plurality of longitudinally extending ribs or blades 10 are formed. These blades are arranged in parallel relation and the ends of adjacent blades transversely of the plate 6 overlap each other, as clearly shown in Fig. 3. The spaces 11 between the opposed ends of the longitudinal alined blades or ribs 10 are thus disposed out of registering relation so that the kerosene or other fuel striking against the ribs or blades is deflected and caused to travel transversely as well as longitudinally of the vaporizer. A cover or top plate 12 also of semi-cylindrical form is adapted to be arranged upon the inwardly projecting edges 8 of the flanges 7 and screwed or otherwise secured thereto. This top plate is also provided upon its longitudinal edges with flanges 13 to be bolted or riveted to the flanges 9 of the body plate 6. It will thus be seen that an elongated chamber of semi-circular form in cross section is formed between the plates 6 and 12 in which the ribs or blades 10 are located. The top plate 12 is provided at one of its ends with an inlet port 14 to which a pipe 15 extending from a supply tank is connected. At its other end the plate 12 is provided with an outlet port 16 to which a pipe 17 extending to the mixing chamber of the engine is connected. The bands or fastening yokes 19 extend beneath the exhaust pipe 5 and at their ends are securely fixed to the flanges 9 of the vaporizer body to securely hold the vaporizer in place.

From the foregoing it is believed that the construction and operation of my invention will be clearly understood.

The invention is particularly designed for vaporizing kerosene and converting the same into gas for use in the propulsion of automobiles and similar vehicles. The engine may be first started by the use of gasolene, but after the exhaust pipe has become heated the gasolene supply is cut off and kerosene supplied to the carbureter. The kerosene

supplied is first admitted to the chamber of my improved vaporizer which is arranged upon the exhaust pipe. When the kerosene enters the chamber of the vaporizer which is finely divided or comminuted by the longitudinal ribs or blades 10 which have become highly heated from the exhaust pipe, this heat vaporizes the kerosene and converts the same into a gas. This gas is conducted by means of the pipe 17 connected to the outlet of the vaporizer to the mixing chamber where it is properly mixed with air before admission to the explosion chamber of the engine.

As kerosene is comparatively inexpensive, the cost of operating automobiles and similar vehicles will be materially reduced by means of my invention. As I utilize the exhaust heat from the engine which has heretofore been wasted, it will be obvious that no additional expense will accrue to the use of my improved vaporizer beyond that incurred in its installation.

The invention consists of the few parts which are all of simple form and may be produced at small manufacturing cost.

While I have above described the preferred construction and arrangement of the several elements, it will be understood that the invention is susceptible of considerable modification without departing from the essential features or sacrificing any of the advantages thereof.

What I claim is:—

The herein described vaporizer comprising in combination with the exhaust pipe of an engine; a body plate of semicircular form in cross section adapted for close engagement upon the periphery of said pipe and having laterally projecting flanges on its longitudinal edges and outwardly projecting flanges on its end edges, the edges of said latter flanges being extended inwardly toward each other in parallel concentric relation to the body plate, a plurality of baffle blades integrally formed upon the periphery of said body plate, a top plate arranged upon the lateral flanges of the body plate and the inturned edges of said end flanges and secured thereto, said top plate being provided with an inlet port at one end and an outlet port at its opposite end, and semicircular bands embracing the exhaust pipe and secured at their extremities to the ends of the longitudinal flanges upon the body plate.

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

CLARENCE R. CARPENTER.

Witnesses:

E. S. GARBER,

GEO. W. HUTCHISON.