

July 14, 1925.

W. F. FOWLER

1,545,649

VAPORIZER

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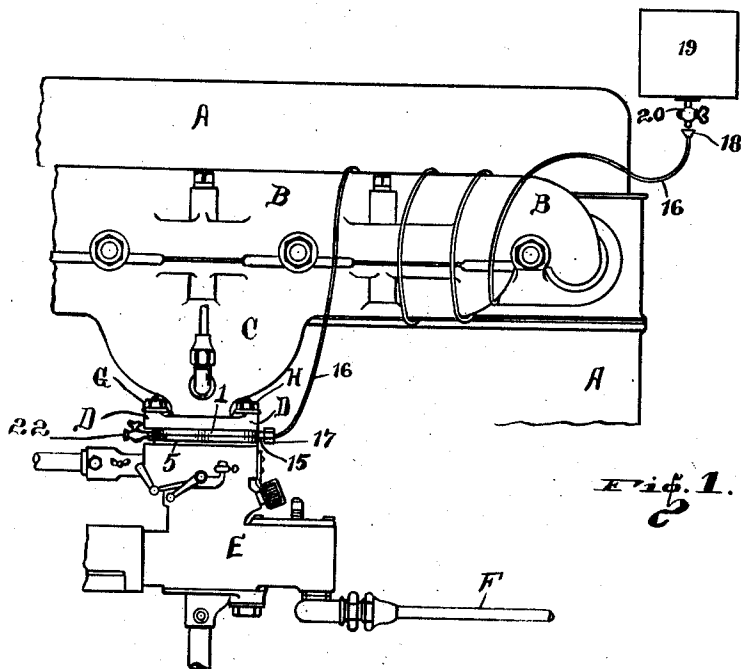


Fig. 1.

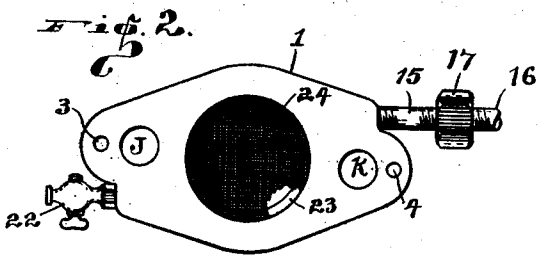
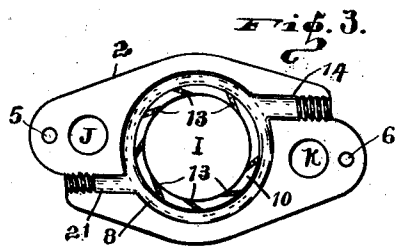
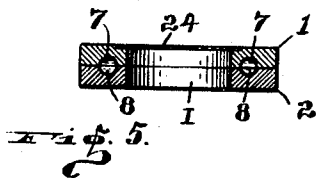
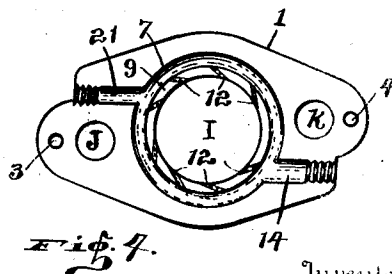


Fig. 7.

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UNITED STATES PATENT OFFICE.

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VAPORIZER.

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To all whom it may concern:

Be it known that I, WILLIAM F. FOWLER, a citizen of the United States, residing in Cambridge City, in the county of Wayne, State of Indiana, have invented a new and useful Vaporizer for Internal-Combustion Motors, of which the following is a full, clear, and comprehensive specification and exposition, the same being such as will enable others to make and use the same.

It has long been realized that in gasoline motor operation that a great amount of the latent energy is not utilized, but it passes off with the exhaust and therefore is lost. The primal object of this invention is, therefore, to utilize a maximum of such power for actual work, thereby enabling one to obtain a maximum of work from a minimum amount of fuel employed. Other minor objects and particular advantages of my invention will suggest themselves in the course of the following description, and that which is new will be pointed out in the claims.

The preferred means for carrying out the principles of my invention in a practical, efficient, and scientific manner is shown in the accompanying drawings, in which—Figure 1 is a side elevation of a portion of an automobile motor, showing my invention installed in connection therewith. Figure 2 is a plan view of the body or main portion of my construction. Figure 3 is an inside-face view of one of the plates of the body of the device. Figure 4 is an inner face view of the other one of the plates of the body of the device. And Figure 5 is a cross section of the body, as taken through both of said plates in their assembled position. Similar indices denote like parts throughout the several views.

In order that the construction, the operation, and the several advantages of my invention may be more fully understood and appreciated I will now take up a detailed description thereof, in which I will set forth the same as comprehensively as I may.

In the drawings letter A denotes the body of a gas motor. B denotes the exhaust manifold. C denotes the intake manifold, which terminates in a flange D at its intake. E denotes the carburetor, having the gasoline line F leading thereinto. The upper portion of the carburetor is attached to the flange D by means of the bolts G and H. All of said parts are old, and they are

merely shown in order to make clear the application of my invention in connection therewith.

The main portion of my invention comprises the two plates 1 and 2, which are substantially identical with each other, and their contour is substantially the same and corresponds with the flange D and the outlet (top) of the carburetor which normally contacts with the face of said flange when my invention is not installed. Formed centrally through the plates 1 and 2 is a round aperture I, which is of the same size as the aperture leading from the carburetor and that leading into the manifold at the center of the flange D, all of which register with each other. Also bolt apertures J and K are formed through each of the plates 1 and 2, which register with the respective bolts G and H, which bolts are adapted to fit therein.

In order to properly aline the plates 1 and 2, with relation to each other, I provide the two dowels 3 and 4, which project at right angles from the face of the plate 1, in which they are secured, extending through and flush with the top or outer face of the plate 1, as shown in Fig. 2. Said dowels are adapted to fit in the respective apertures 5 and 6 which are formed through the plate 2.

Formed in the contact faces of the plates 1 and 2, outward from the aperture I, and concentric therewith, are the respective half-round channels 7 and 8, each forming a circle, laterally, whereby when the two plates are in contact with each other they together form a channel which is round in cross section, extending around the aperture I and spaced therefrom. The abutments 9 and 10 formed between the aperture I and said channels provide the two parts of the partition which separate the aperture I from said channels, as when the two plates are contacted with each other as shown in Figs. 1 and 5.

Formed diagonally of and in the face of the abutment 9 are a plurality of very small grooves 12, in this instance eight in number. Likewise formed diagonally and in the face of the abutment 10 are a plurality of very small grooves 13, in this instance eight in number. Said grooves 12 and 13 connect the channel (7-8) with the aperture I spirally, all being on the same angle but not extending directly across the abutments.

It is to be understood that when the plates 1 and 2 are contacted, as in Figs. 1 and 5, each one of the grooves 12 comes midway of two of the grooves 13, the converse of course being the same, by which I provide sixteen ducts connecting the channel 7—8 with the central aperture I which leads into the intake manifold.

Numeral 14 denotes an intake port, formed parallel with said plates, being formed half in each of the contact faces of said plates, and connecting the channel 7—8 with the outside when the plates are in contact with each other. The outer portion of the port 14 is interiorly threaded to receive the nipple 15 which is threaded thereinto. Numeral 16 denotes a conduit or pipe whose lower end is connected to the outside end of said nipple by the coupling 17, from which it extends upwardly and is given several convolutions around the manifold B, and finally ends in the funnel terminal 18.

Numeral 19 denotes a tank for containing water, the same having a drain cock 20 in its bottom which, when open, will drain the water from the tank into said funnel.

Numeral 21 denotes a cold-air port, formed parallel with said plates, and on the same plane as the port 14. The port 21 is formed half in each of the contact faces of said plates, and it connects the channels 7—8 with the outside. The outer portion of the port 21 is threaded to receive the pet-cock 22, as shown.

Formed in the upper face of the plate 1 there is a shallow seat 23 formed around the aperture I, concentric therewith, in which is placed a fine screen disc 24.

In order to install the invention one has only to remove the bolts G and H. Then pry the upper end of the carburetor and the flange D apart, and then insert the plates 1 and 2, assembled as in Fig. 5, between said parts, after which said bolts should be replaced and made tight, which will clamp the plates together between said parts, as shown in Fig. 1. The pet-cock 22 and the nipple 15 are then run into place, after which the pipe 16 is connected up as shown, and the device will then be ready for operation.

Operation.—The cocks 20 and 22 are first closed, the tank 19 being then filled with water. The motor may now be started in the usual manner. The suction of the motor will draw the fuel from the carburetor as usual, it will also draw outside air through the pipe 16, which air will enter the channel 7—8 and be delivered into the aperture I in a spiral whorl, by reason of the angular arrangement of said grooves 12 and 13, which of course will mix the fuel gas passing up from the carburetor, the suction carrying the fuel upward into contact with the screen, which the fuel will strike at angles or diagonally, which of course will tend to still

further break up the gas and thoroughly mix the air therewith, whereby when the fuel leaves the screen it will be delivered to the several cylinders of the motor in a perfectly gasified condition. As soon as desired, after the motor is started, the cock 20 may be opened, such as to allow a constant drip of water into the funnel 18. The released water will of course gravitate downward and by reason of the suction of the motor, will finally reach the chamber 7—8. But by reason of the convolutions of the pipe 16 being in contact with the hot manifold B, it is evident that the water will reach the chamber 7—8 in the form of steam or vapor. This steam will of course be drawn into the aperture I in the same manner, and will operate the same way, as previously stated with relation to the air.

When the motor is quite hot, or in very warm weather, or if for any other reason it may be thought advisable, the pet cock 22 may be opened, which of course will admit additional air to channel 7—8 and therefore to the fuel, in the same manner as the air admitted through the pipe 16. The air admitted through the pipe 16 being considered as the main air current, while that through the pet-cock 22 being the auxiliary air current.

It is to be understood that in place of the convolutions in the pipe 16, a hot-box heater may be secured on the manifold B, to answer the same purposes, and the end portions of said pipe may be connected therinto.

In practice the plates 1 and 2 may be permanently sealed together to form them into an integral unit, or they may be simply shel-lacked together.

Having now fully shown and described my invention, what I claim and desire to secure by Letters Patent of the United States, is—

1. A vaporizer comprising a pair of plates identical with each other and corresponding with the shape of the upper end of a carburetor and the lower end of a manifold between which the united plates are secured, there being a channel formed between said plates concentric with the central aperture through the plates with grooves leading from said channel into said aperture, an inlet pipe leading from outside into said channel, a tank, means for forming water leaving the tank into steam and conveying it through said pipe into said channel in the plates.

2. A device of the nature set forth comprising a body having a large central aperture therethrough, means for securing said body between a carburetor and an intake manifold of a motor, there being a channel formed in said body extending around said central aperture and spaced therefrom and a plurality of ducts leading diagonally from

said channel into said central aperture, a port leading into said channel to admit humidified air and forming a main air current, a second port leading into said channel from outside for the admission of auxiliary air into said channel, and means for providing humidified air for the first mentioned port.

3. A construction for the purpose set forth, comprising a body formed by two plates which are substantially identical with each other and corresponding in contour with the usual contacting faces of a carburetor and a manifold between which said body is located and clamped therebetween by the usual bolts which connect the carburetor and the manifold, there being an aperture formed through said body corresponding in size and registering with the fuel aperture

leading from the carburetor to the manifold, a channel formed in the contacting faces of said plates being equally spaced between said plates spaced from and concentric with said aperture through the body, there also being a plurality of fine grooves formed in the contact faces of said plates which grooves are disposed diagonally and lead from said channel into the central aperture, each one of the grooves in the face of one plate being located midway of two grooves in the other plate, a screen located between the upper plate and the intake manifold, dowels for aligning said plates with each other, and means for admitting air into said channel from the outer edge of said body.

WILLIAM F. FOWLER.