J. A. MAUCK.

CARBURETING DEVICE.

APPLICATION FILED OCT. 29, 1917.

1,288,640. Patented Dec. 24, 1918.

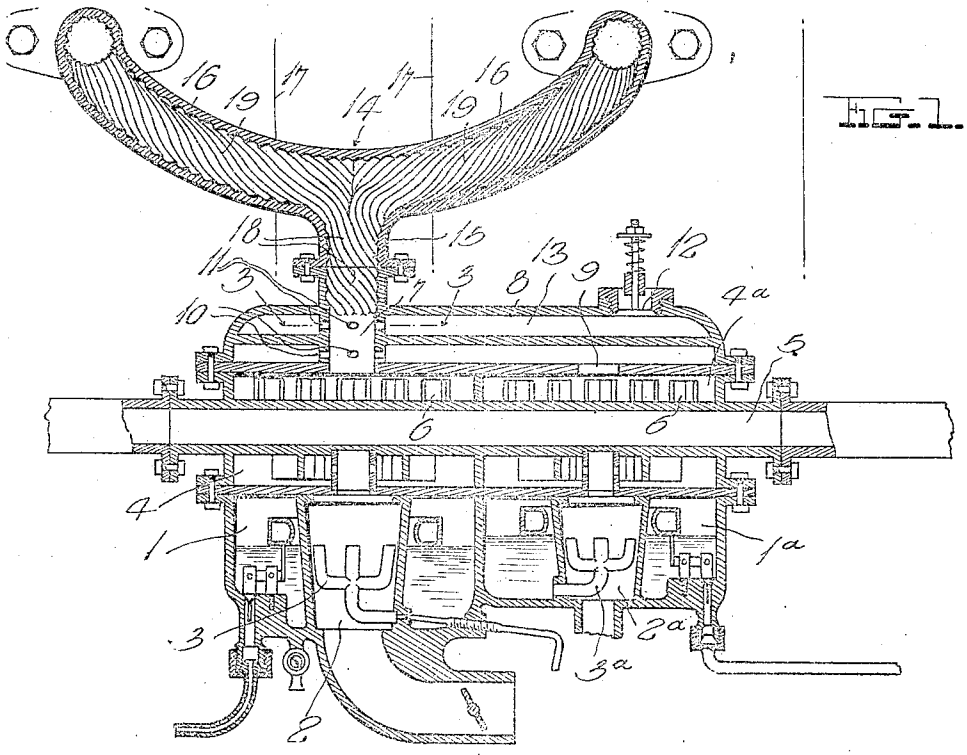


FIG. 1.

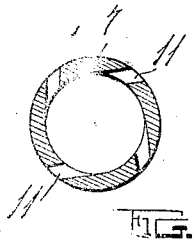


FIG. 3.

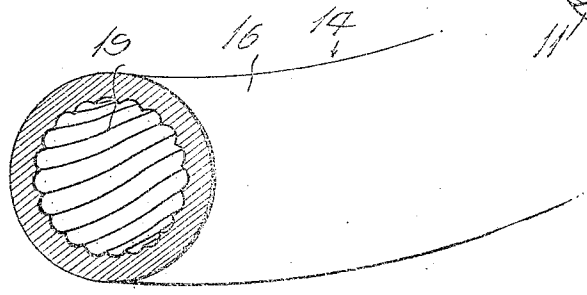


FIG. 2.

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UNITED STATES PATENT OFFICE.

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CARBURETING DEVICE.

1,288,640. Specification of Letters Patent. Patented Dec. 24, 1918.

Application filed October 29, 1917. Serial No. 199,417.

To all whom it may concern:

Be it known that I, JOHN A. MAUCK, a citizen of the United States, residing at Princeton, in the county of Gibson and State of Indiana, have invented certain new and useful Improvements in Carbureting Devices; and I do 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.

My invention relates to improvements in carbureters of the type having means for supplying a heated fuel vapor and a heated water vapor to a common outlet, see for instance my co-pending U. S. application Serial No. 190561, filed on or about September 10, 1917.

It has been found that if any of the fuel vapor comes in contact with the wall of the intake manifold, as the mixture of fuel and water vapor passed to the engine, said fuel vapor becomes more or less condensed, so that the mixture does not produce maximum efficiency. It is therefore the object of my invention to overcome this difficulty by providing the interior of the manifold with rifling which whirls the two vapors around rapidly, throwing the heavier water vapor outwardly by centrifugal force so that it forms a protecting film between the manifold and the oil vapor, thus preventing contact of the latter with the manifold, so that condensation thereof is reduced to the minimum.

With the foregoing general objects in view, the invention resides in the novel features of construction and unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which form a part of this specification and in which:—

Figure 1 is a vertical section of the improved carbureter;

Fig. 2 is a sectional perspective of a portion of the intake manifold; and

Fig. 3 is a detail horizontal section on the plane indicated by the line 3—3 of Fig. 1.

In the drawings above briefly described, the numerals 1 and 1^a designate respectively a fuel bowl and a water bowl, said bowls having air passages 2 and 2^a respectively, formed therethrough and provided with fuel and water spray nozzles 3 and 3^a. Above the bowls 1 and 1^a respectively, a pair of heating chambers 4 and 4^a are provided, an exhaust pipe 5 being passed through said chambers for heating the same, this pipe being so arranged that the fuel vapor drawn through the passage 2, and the water vapor from the passage 2^a, must pass around said pipe, between the baffles 6 thereof, thus insuring that the vapor shall be highly heated.

An outlet nipple 7 rises from the heating chamber 4, said nipple extending upwardly through a dome 8 into which the chamber 4^a discharges, at 9, said nipple having perforations 10 for admitting the water vapor from the dome 8. Other perforations 11 are formed in the nipple 7 to admit an auxiliary quantity of air admitted by the valve 12 into an air passage 13 of the dome 8, all of the perforations 10 and 11 being tangentially disposed as shown in Fig. 3, so that the incoming water vapor and air will be whirled around, to insure thorough mixing.

An intake manifold 14 leads from the outlet nipple 7 and consists of a vertical shank 15 and a pair of branches 16, said branches leading to the engine cylinders 17 in the usual manner. The interior of the shank 15 and the adjacent portion of the nipple 7 are internally rifled as indicated at 18, this rifling being branched and continuing at 19 throughout the length of both branches 16, the rifling of one branch being opposed to that of the other as shown. In place of the specific rifling shown, the manifold could well be corrugated in any other preferred manner.

In operation, fuel vapor is heated in the chamber 4 and supplied to the outlet nipple 7, whereas water vapor is heated in chamber 4^a and enters this nipple by way of the dome 8 and the perforations 10, in the lower end of the nipple. The fuel and water vapors are then drawn through the manifold to the engine cylinders in the usual manner. During travel through the manifold, the mixed vapors are rapidly whirled by the rifling 18 and 19 and due to the fact that the water vapor is heavier than the fuel vapor, said water vapor will be thrown outwardly by centrifugal force, so that a thin film is formed between the fuel vapor and the manifold. This prevents contact of the fuel vapor with said manifold and thus insures that after being once vaporized in the heater 4, the fuel shall not condense before it reaches the engine cylinders. I

am aware that intake manifolds have heretofore been provided with an internal helix or the like for insuring proper breaking up of the explosive mixture, but in so far as I am advised, I am the originator of a manifold of the type set forth and its combination with a carbureter supplying both fuel and water vapors, the action of the manifold in this relation being totally different from that referred to.

Since probably the best results are obtained from the several specific details shown and described, these details are preferably employed, but I wish it understood that within the scope of the invention as claimed, numerous minor changes may well be made.

I claim:

In a carbureting means, the combination of a passage and means for supplying a volatile vapor to one end thereof, the wall of said passage having circumferentially spaced openings, means for supplying water vapor to said openings, an intake manifold leading from said passage, and internal helical corrugations in said passage and manifold leading from said openings to the outlet end of said manifold to whirl the mixture of vapors and form a film of the heavier water vapor upon the manifold, thus preventing contact of the fuel vapor with said manifold and avoiding condensation of fuel thereon.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses:

JOHN A. MAUCK.

Witnesses:

JOHN W. BRADY,

EVA CORYELL.