C. E. WHITE.

CARBURETER.

APPLICATION FILED APR. 1, 1915.

1,173,469.

Patented Feb. 29, 1916.

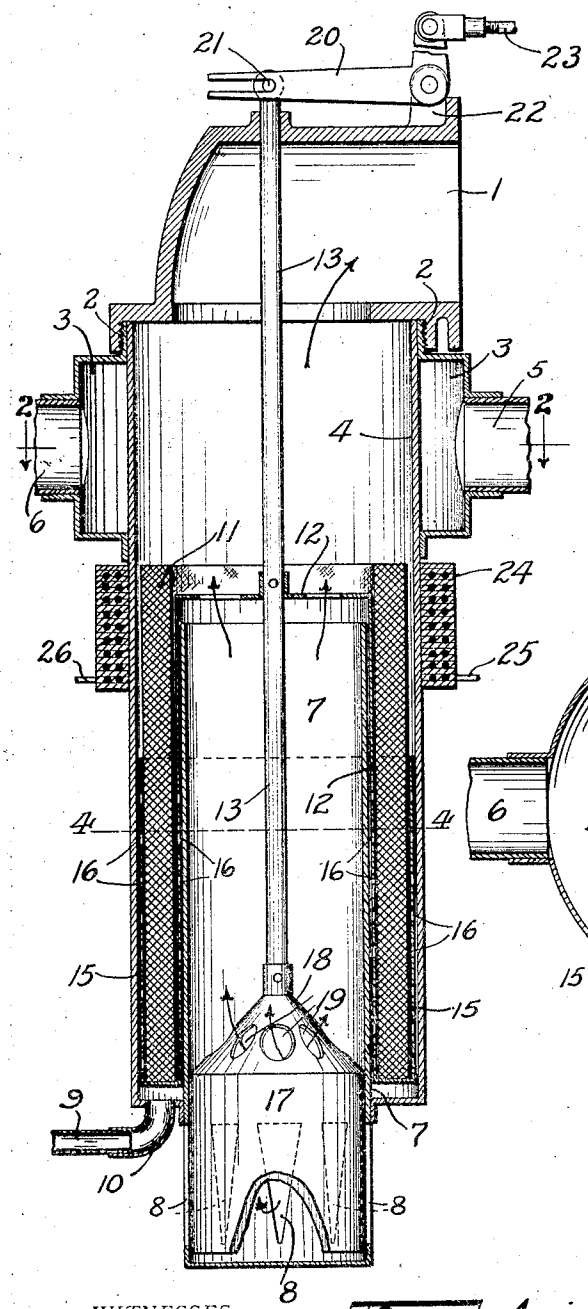


Fig. 1.

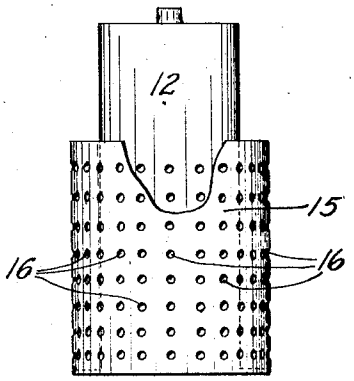


Fig. 3.

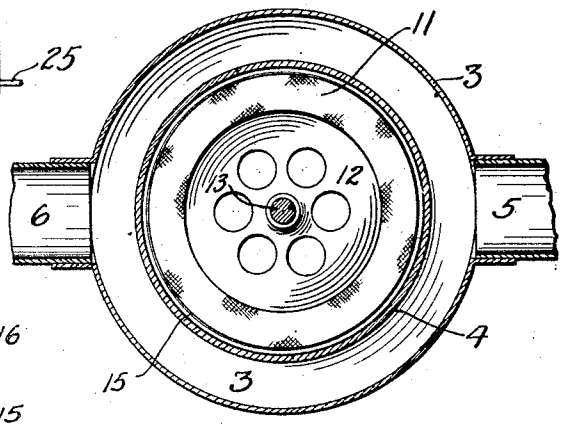


Fig. 2.

WITNESSES:

A. H. Kephart

INVENTOR.

CHARLES E. WHITE.

BY

Carlos P. Griffin

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES E. WHITE, OF SAN FRANCISCO, CALIFORNIA.

CARBURETER.

1,173,469. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed April 1, 1915. Serial No. 18,491.

To all whom it may concern:

Be it known that I, CHARLES E. WHITE, a citizen of the United States, residing at San Francisco, in the county of San Francisco, State of California, have invented a new and useful Carbureter, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a vaporizer for oil and its object is to produce a device which is capable of supplying an explosive vapor to internal combustion engines from heavier oils than are usually used for that purpose, heat being used to increase the vaporization of the oil.

Another object of the invention is to provide a carbureter wherein almost any liquid hydro-carbons may be successfully employed as fuel for internal combustion engines, such as kerosene oil, different gravities of distillate (heavier than gasolene), tallow or lard oil, or crude petroleum oils free from asphaltum.

Another object of the invention is to provide a carbureter wherein the proper amount of oil vapors are generated by the exhaust heat of the engine and a suitable amount of air admitted by the inspiration of the engine to obtain a proper combustible mixture, from the fact that the oil vapor and air are controlled from one lever movement simultaneously.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the drawing in which the same reference numeral is applied to the same portion throughout, but I am aware that there may be many modifications thereof.

Figure 1 is a vertical sectional view through the complete vaporizer, Fig. 2 is a horizontal sectional view on the line 2—2, Fig. 1, and Fig. 3 is a side elevation of the wick holder.

The numeral 1 represents a flanged fitting which is capable of being secured on the inlet pipe of the explosion engine, said fitting being provided with a downwardly extending boss 2 threaded to receive a circular member 3 which forms a chamber surrounding a tube 4. The chamber 3 has a pipe 5 connected therewith on one side and a pipe 6 on the other side, which pipes are suitably connected with the exhaust pipe of the engine. The oil receptacle is formed of the cylindrical tube 4 which is forced into the chamber 3 and a tube 7 extending thereinto through a closure on the lower end of said oil receptacle. The tube 7 is opened at the top and closed at the bottom and is provided with a plurality of triangular openings 8 in its side adjacent the bottom.

The tube 7 is smaller in diameter than the tube 4 and forms therewith the oil and wick chamber. Connected with the bottom of the tube 4 is a pipe 9 carrying an elbow 10 to be connected therewith for the supply of the oil. In the space between the pipe 7 and wall of the tube 4, a cylindrical wick 11 is placed. This wick 11 is carried by a cylindrical metal shell 12 supported from a valve rod 13 and it is provided with an outer shell 15 so that the wick will not stick against the wall of the tube 4 when it is being moved up and down. The oil is suitably regulated to stand about the level of the dotted line 4—4 by any improved means not a part of this invention.

The shell 12 forming the wick support is provided with a large number of perforations as indicated at 16 to allow the oil to have access to the wick and with top perforations to allow the air to pass therethrough. Slidable within the tube 7 is a cylindrical valve 17 for covering and uncovering the openings 8, said valve having a conical top 18 provided with a plurality of openings 19. The valve 17 is supported on the lower end of the rod 13 and the upper end of said rod is connected with a suitable bell crank lever 20 by means of the pin 21 working in a slot in said bell crank lever. The bell crank lever is supported at its corner on a lug 22 on the casting 1 and a suitable rod 23 enables the operator to shift the position of the valve and wick as may become necessary to cause more or less oil vaporization and to increase or diminish the air supply to insure a perfect combustible mixture. Surrounding the tube 4 just below the chamber 3 is an electrical heating element 24, the current being delivered thereto by means of the inlet wires 25 and 26.

The operation of the device is as follows: When the engine is about to be started current is turned into the electrical heater 24, whereupon the wick and oil carried thereby will be heated to such an extent as to vaporize the oil, whereupon the engine may be

supplied with the explosive mixture by opening the valve 17 by the operation of the rod 23. As soon as the engine has started the heat from the exhaust gases will heat the tube 4 and as the valve 17 is opened the wick will lift a supply of oil into contact with the hot part of the tube 4 and thereby supply the necessary vapor to drive the engine, at which time the current may be turned off the heater 24.

An advantage of the foregoing construction lies in the fact that the air valve supplies very accurately the amount of air necessary to the proper combustion of the oil lifted by the wick into contact with the hot surface of the oil tube.

Another advantage of the foregoing construction lies in the fact that the exhaust heat from the engine is utilized for vaporizing oil heavier than gasolene and the simple adjustment of the application of the oil to the heated surface, together with the adjustment of the proper amount of air with the vapors to secure a highly combustible mixture, as the oil vapors are given off and the admission of air being adjusted at the same time by one lever, eliminating the needle valve and numerous levers and valves.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is as follows, modifications within the scope of the claims being expressly reserved:

1. In a carbureter, the combination of a heating chamber, a receptacle located below and providing a passage to a wall of said heating chamber, a wick movably mounted within said receptacle and adapted to convey oil into direct contact with the outer surface of a wall of said heating chamber, means for supplying air to the oil vapors, as generated, by said heating chamber, to obtain a highly explosive mixture, means for continually heating said chamber, and means to supply oil to the wick.

2. In a carbureter, the combination of a tube, heating means surrounding a portion of said tube, an annular wick movably mounted within said tube and adapted to convey oil into direct contact with the heated portion of said tube, and means to supply oil to said wick.

3. In a carbureter, the combination of a tube, heating means surrounding a portion of said tube, an annular wick movably mounted within said tube and adapted to convey oil into direct contact with the heated portion of said tube, said wick forming a cylindrical passage, means for supplying oil to said wick, an inner tube forming with the first named tube, an oil receptacle and provided with air inlets at its lower end, whereby air is supplied to said passage, and a valve regulating the supply of said air.

4. A carbureter comprising a cylindrical receptacle, a chamber surrounding the cylindrical receptacle at the upper end thereof, means for heating said chamber, a wick movably mounted within the cylindrical receptacle for bringing oil in direct contact with said chamber, a cylindrical air supply tube extending within said cylindrical receptacle, and having openings therein at its lower end, below the oil chamber, a valve in the cylindrical air supply tube and a rod connecting the valve with a carrier by which the valve may be opened and the wick raised simultaneously.

In testimony whereof I have hereunto set my hand this 27 day of March A. D. 1915, in the presence of the two subscribed witnesses.

CHARLES E. WHITE.

Witnesses:
C. P. GRIFFIN,
L. H. ANDERSON.