THOMAS W. L. McGUIRE AND LUTHER HAMMICK, OF KANSAS CITY, MISSOURI.

CARBURETER.

To all whom it may concern:

Be it known that we, THOMAS W. L. McGUIRE and LUTHER HAMMICK, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

Our invention relates to improvements in carbureters; and our principal object is to provide a simple but efficient apparatus of this character for carbureting air with hydrocarbon oils for lighting, heating, and power purposes.

The carbureter is self-contained and may be employed to advantage in supplying hydrocarbon mixture to either portable or stationary engines, and it is so arranged that a perfect admixture of air and oil is insured before a charge escapes to the engine.

In order that the invention may be fully understood, reference will now be made to the accompanying drawing, in which:

Figure 1 represents a vertical longitudinal section of the carbureter. Fig. 2 is an irregular cross section of the same on line II of Fig. 1. Fig. 3 is a horizontal section on plane III-III of Fig. 1, of a valve for controlling the admission of air to the carbureter. Fig. 4 is an enlarged cross section on lines IV-IV of Fig. 1.

In carrying out the invention we employ a tank, which acts both as a supply-chamber and a mixing-chamber. Said tank is provided at one end with a removable head 2, so that access may be had to the interior thereof when desired.

3 designates a centrally-disposed longitudinal shaft journaled in bearings 4, secured to the interior of the tank heads. Shaft 3 is rotated at a low rate of speed by a set of gearing consisting of a large bevel gear wheel 5 secured to the shaft, a pinion 6 intermeshing with the bevel wheel 5 and fixed upon a shaft, and a sprocket-wheel 8 also fixed upon shaft 7 and adapted to be driven by a chain, not shown. Shaft 7 is journaled in a bearing 9 secured to the top of the tank.

10 designates a series of shallow drums removably secured to shaft 3 by set-screws 11. Each drum consists of a perforated disk 12 and two sheets of canvas, or other absorbent material 13, secured to the opposite sides thereof by two annular clamps 14.

15 designates an opening through which the tank is filled with oil. Said opening is normally closed by a cap 16 and is arranged at one side of the tank so the latter cannot be filled to the top thereof. This insures an air-space between the top of the tank and the upper surface of the oil for the air and the oil to mix in.

17 designates a gage whereby the depth of the oil in the tank may be readily ascertained. Said gage consists, preferably, of a glass tube secured to head 2 by a pair of oppositely-disposed guards 18.

19 designates a valve for controlling the flow of air into the tank. Said valve consists of a stationary casing 20 having perforations 21, a rotatable cap 22 provided with perforations 23, and a handle 24 through the instrumentality of which the cap may be turned in one direction to bring its perforations in coincidence with perforations 21, or turned in the opposite direction to partly or entirely close said perforations 21. The rotatory movement of cap 22 is limited by a pin-and-slot connection 25 with the casing.

26 designates an inlet-pipe communicating with valve 19 and provided with two branch-pipes 27 which communicate with ports 28 at the opposite ends of tank 1.

29 designates an outlet-pipe leading from a port 30, preferably, located in the top of the tank midway between ports 28.

31 designates two valve-controlled drain-pipes leading from the bottom of the tank near the opposite ends thereof.

When the carbureter is used in conjunction with a gas-engine, outlet-pipe 29 is connected to one end of the cylinder of said engine, so that each time the piston thereof makes a backward stroke it will draw air therein through valve 20, inlet-pipe 26, branch-pipes 27, tank 1, and outlet-pipe 29. In its passage through the tank and the drums therein, the air becomes thoroughly mixed with the oil which it assists in creating in its passage through the upper portion of the absorbent material 13, which is kept in a saturated condition by reason of the fact that the drums are constantly rotated and thus submerged in the oil while the engine is in operation. If the engine is a stationary one only one inlet-pipe to the tank is necessary, but if the engine be mounted upon an automobile to propel the same, it is preferable to employ the branch-
pipes 27 so that in case the tank becomes tipped from any cause and one of the ports 28 be sealed by the oil, the other inlet-port will remain open and thus permit the entrance of the air.

When the carbureter is mounted upon an automobile the engine thereof may be controlled through the instrumentality of valve 19, which is, preferably, arranged within convenient reach of the chauffeur so that he may regulate the admission of air to the carbureter and thereby control the charge of gas for the engine.

When the carbureter is used for lighting purposes it may receive its supply of air from a tank containing the same under pressure.

The richness of the gas may be increased or diminished by adding or subtracting the drums, it being understood that the quantity of oil carried upward into the air-space to be carbureted will be increased in proportion to the number of drums added to the shaft 3.

Dryness of the gas escaping from the carbureter is insured by reason of the fact that the outlet-pipe 29 leads upward from the top of the tank, this also insures economy in the consumption of oil as the latter cannot escape from the tank until reduced to a carbureted state by admixture with air.

Having thus described our invention, what we claim is:

1. A carbureter, comprising, in combination with a tank, a shaft centrally mounted in said tank, inlet and outlet pipes, means for regulating the air supply, and a series of drums mounted at spaced intervals on said shaft, said drums comprising perforated disks having peripheral flanges, and sheets of fibrous material stretched over said flanges on each side of said disks, said inlet pipe being externally branched to supply air at each end of said tank.

2. A carbureter, comprising, in combination with a tank, a shaft centrally mounted in said tank, inlet and outlet pipes, said inlet pipe being externally branched, means for regulating the air supply, and a series of drums mounted at spaced intervals on said shaft, said drums comprising perforated disks having peripheral flanges extending over each side, sheets of fibrous material stretched over each of said flanges, and means for fastening said sheets.

In testimony whereof we affix our signatures, in the presence of two witnesses.

THOMAS W. L. McGUIRE.
LUTHER HAMMICK.

Witnesses:

F. G. FISCHER,
M. COX.