

UNITED STATES PATENT OFFICE.

OZRO H. HINDS, OF LE MARS, IOWA.

CARBURETER.

No. 826,936.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OZRO H. HINDS, a citizen of the United States, and a resident of Le Mars, in the county of Plymouth and State of Iowa, have invented certain new and useful improvements in Carbureters, of which the following is a specification.

My invention is an improvement in gas-machines or carbureters wherein atmospheric air is utilized to take up the vapors of hydrocarbon liquids—such, for instance, as gasolene; and the invention has for an object to provide means whereby the amount of gasolene taken up in the air to enrich the gas may be varied without varying the volume or pressure of the air; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section of a machine embodying my invention, and Fig. 2 is a cross-section thereof on about line 2 2 of Fig. 1.

In the construction shown I employ a suitable casing or tank A, an air-inlet pipe B for conducting air under pressure to the tank, a gas offtake-pipe C, a feed-pipe D for supplying gasolene, and a gage E for indicating the height of the gasolene in the tank. The gasolene-feed pipe D may be provided with a valve F, whose stem has a pointer G registering along a dial H in order that the valve may be adjusted to vary the feed of the gasolene to accord with the operation of the machine, so the gasolene may be supplied in proportion to the amount consumed in the manufacture of the gas. The air-pipe B extends down to a point near the surface level of the gasolene, where by means of couplings it communicates with a series of branches I I', which extend laterally above the surface of the gasolene, are provided near their outer ends with depending nozzles i, which dip down into the gasolene, and are also provided above the gasolene with discharge-openings at I², controlled by valves I³, whose stems I⁴ extend upwardly through and out of the tank, so they may be operated at will to open or close the valves I³. The valves of the several branch pipes, it will be noticed, may be opened and closed independently, so that the air supplied to the said branch pipes may be caused to discharge through the gasolene or may be discharged above the gasolene, as desired. This independence of the valves for the several branch pipes is important, as it permits me to

vary the amount of air forced through the gasolene without in any way varying the volume or the pressure of the air supplied to the machine, and so enables me to enrich the gas made in the machine to any desired extent within the limits of the machine.

The couplings, as shown, comprise cross-couplings J and J'; but manifestly the particular form of the couplings may be varied without departing from the principles of my invention. I prefer in practice to employ a pipe or other upright J², extending from the bottom of the tank to the cross-coupling J in order to support the same and the main pipe B when the parts are applied as shown in Fig. 1 of the drawings.

In the construction shown I employ six branch pipes; but manifestly the number of these may be varied without departing from the principles of my invention.

In operation, air being supplied at a uniform pressure and volume through the pipe B by any suitable form of air-compressor, the valves I³ may be closed when it is desired to produce a gas of the highest carbon quality. In such case the air from the several branch pipes will be forced through their nozzles, will be discharged into the gasolene, will agitate the same, and thus cause the air to take up the greatest proportion of gasolene. This may be varied by opening one or any suitable number of valves I³, thus reducing the number of air-nozzles discharging into the gasolene, so that by a simple manipulation of the valves a high or low carbon gas or a gas of any intermediate quality may be procured without any variation in the volume or pressure of the air. The gas may be taken from the tank through the pipe C and conducted to the point of use, or, if desired, the machines may be used in batteries of two connected together and one feeding to the next in order to secure a better quality of gas.

Above the gasolene and between the same and the gas-offtake C, I provide diaphragms K, preferably two in number and one above the other and perforated at intervals with quarter-inch holes, through which the gas may escape. These diaphragms K are important, as in practice the gas will rise full of gasolene bubbles, and such bubbles striking the diaphragms will be broken, permitting the fixed gas to escape through the openings in the diaphragms, and the gasolene being finely divided on the under sides of the diaphragms will be taken up by the gas, which will pass

into the upper chamber of the machine in the condition of a practically fixed gas, as will be understood by those skilled in the art.

5 It will be understood that the valve F may be set according to the number of nozzles discharging into the gasolene, so the supply of gasolene to the tank may thus be varied to accord with the amount consumed in the man-

10 The apparatus, as shown, is simple, is found in use efficient in the making of gas of any desired richness with the same volume and pressure of air, so that with the same machine I am able to make a gas with from one
15 to six gallons of gasolene to the thousand feet according to the use for which the gas is designed, as will be understood by those skilled in the art.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 20

The combination of the tank, an air-supply pipe, a coupling J on said pipe, couplings J' connected with the coupling J, branch pipes leading from the couplings J' and provided 25 with devices for discharging air into a body of gasolene and also with air-discharge openings or outlets independent of those which discharge to the gasolene, and valves controlling said independent air-discharge open- 30 ings of the several branch pipes, substantially as set forth.

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Witnesses:

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