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H. P. GLAZIER.

HYDROCARBON BURNER.

APPLICATION FILED NOV. 1, 1906.

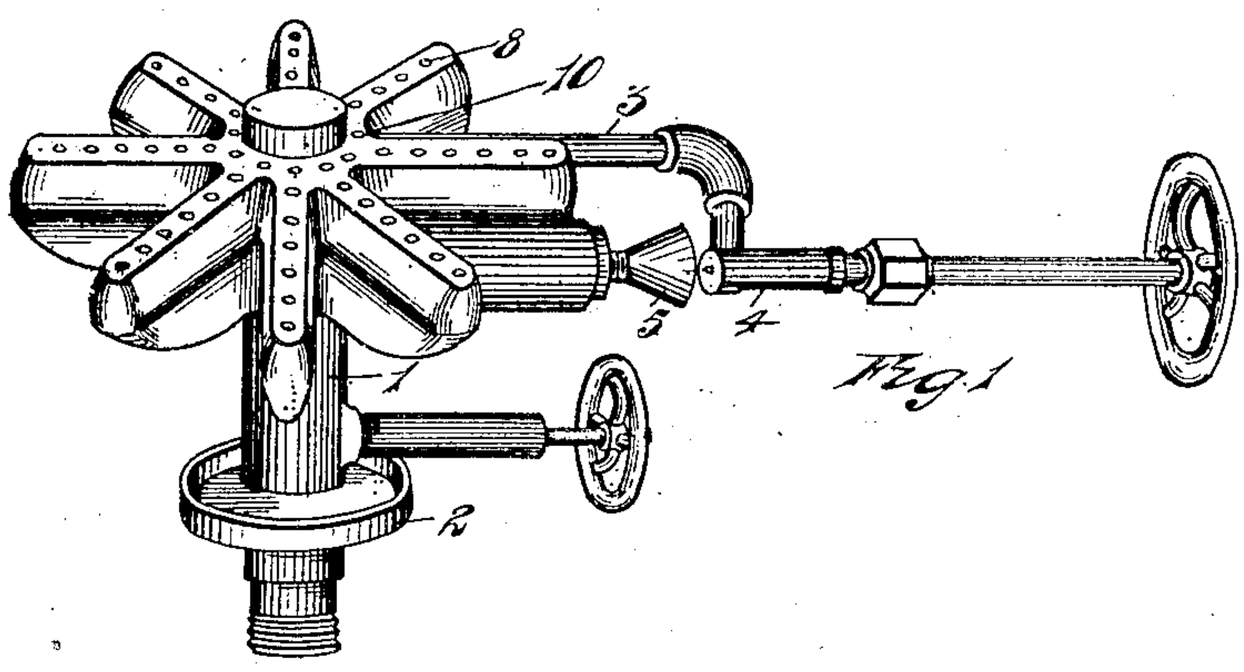

Fig. 1

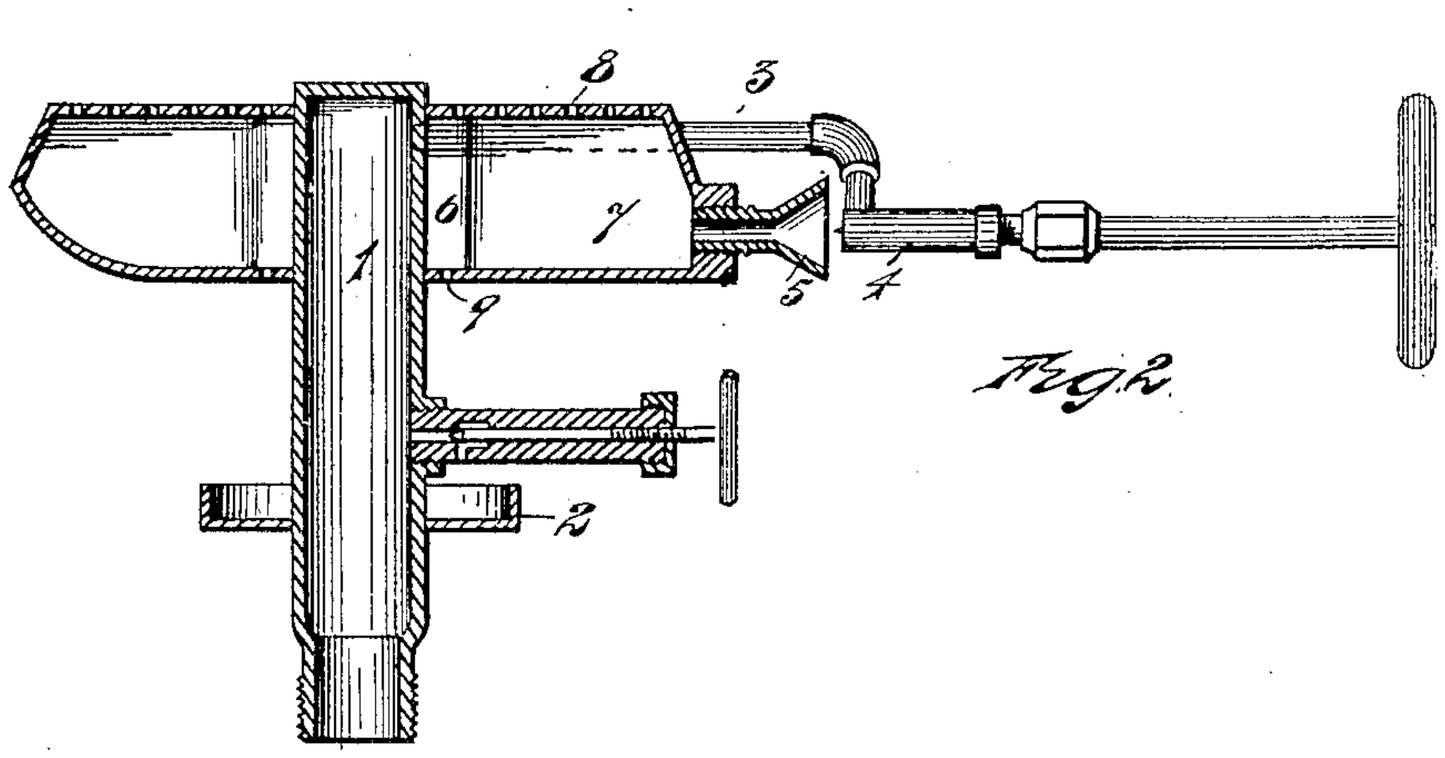

Fig. 2.

WITNESSES

C. E. Day.

L. C. Jennings

INVENTOR

Harold P. Glazier

By Parker & Burton.

Attorneys.

UNITED STATES PATENT OFFICE.

HAROLD P. GLAZIER, OF CHELSEA, MICHIGAN, ASSIGNOR TO GLAZIER STOVE COMPANY, OF CHELSEA, MICHIGAN.

HYDROCARBON-BURNER.

No. 871,992. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed November 1, 1906. Serial No. 341,527.

To all whom it may concern:

Be it known that I, HAROLD P. GLAZIER, a citizen of the United States, residing at Chelsea, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Hydrocarbon-Burners, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to hydro-carbon burners; it has for its object an improved burner that is especially adapted for the production of vapor from alcohol, the proper mingling of the vapor produced with air, and the burning of the mixture in a way to produce a heating or cooking flame.

The objects are attained by the means shown in the drawings; in which:—

Figure 1, is a perspective. Fig. 2, is a vertical section.

The fuel to be vaporized is admitted through a stand-pipe into a vertical retort 1, that terminates the stand-pipe. For primary or initial heating, a small quantity of the fluid is drawn from the retort and is allowed to flow into a cup 2, its flow being controlled by the small needle valve immediately thereabove where it is lighted and the heat produced by its combustion serves to produce the initial vaporization of some portion of the fluid in the retort 1. As the fluid in the retort is vaporized, the vapor accumulates at the extreme top of the chamber of the retort, whence it escapes through an outlet passage 3, past a regulating needle valve 4, and flows into the mouth 5 in a mixing chamber 6. The mixing chamber consists of a central chamber surrounding the retort from which branch or spread a number of extension chambers 7, each of which is a narrow vertical chamber provided with a row of holes 8, along its upper surface and having its walls arranged to converge from midway the vertical extent of the chamber toward the top, so that the surface across the extension chamber is narrow and there is thus provision made for a large supply of secondary air to the burning jets of gases at the orifices 8. The annular part of the chamber which immediately surrounds the retort is also provided with a circle of openings 10 closely adjacent to the walls of the retort which extend slightly above the general surface of the gas chamber. There is also provided around the walls of the retort and through the under wall of the gas chamber a circle of holes 9, through which jets of gas are directed downward against or in close proximity to the walls of the retort below the gas chamber, thus providing for highly heating the retort and producing a constant supply of vapor therein.

What I claim is:—

1. In combination with a vertically disposed central retort adapted to feed from beneath, a gas chamber extending completely about a portion of the side walls thereof near the top, and out of direct communication with the interior thereof, the top and bottom walls of said chamber each being perforated with a ring of burner holes, and there being radiating extensions communicating directly with the gas chamber and thereby with one another, the top wall of each of said extensions being perforated with burner holes, a discharge pipe leading from communication with the upper end of the retort to the outer air, a controlling valve for regulating the escape of vapor from the outer end thereof, and flaring inlet located adjacent to the discharge end of the discharge pipe, though spaced therefrom, communicating with said gas chamber and its extensions, substantially as described.

2. In a vapor generator and burner, in combination with a gas chamber having a vertically extending central aperture, and hollow radiating arms in direct communication with said chamber, the upper walls of both the chamber and the extensions and the lower wall of the chamber being perforated with burner holes, a vertical retort adapted to feed only from beneath, extending through said central aperture, though out of direct communication with the interior of the chamber, an escape pipe whereby the vapor generated in the retort may escape from the upper end thereof, a valve whereby the flow of vapor therethrough may be regulated, and an inlet pipe provided with a flaring mouth inserted through a side wall of said gas chamber adjacent to the discharge end of said escape pipe, though spaced therefrom, whereby the escaping vapor receives an admixture of atmospheric air previous to its reception into the gas chamber, substantially as described.

3. A vapor generator and burner, having in combination a vertically extending retort wherein the complete vaporization of liquid fuel is designed to take place, a single escape pipe leading from the upper portion thereof, a burner chamber provided with integral radiating extensions, extending with its central portion completely about a portion of said retort, the top walls of said chamber and its extensions and the bottom wall of said chamber being perforated with burner holes, those in the walls of the chamber being adapted to permit the impinging of jets of flame upon the walls of the retort to raise its temperature for vaporization, and an inlet member having a flaring mouth whereby communication may be had with the interior of the chamber and its extensions from without, adapted to receive an admixture of atmospheric air and the vapor emerging from said escape pipe, being spaced therefrom to permit such mingling of the air and vapor previous to its admission thereinto, substantially as described.

4. In combination with a vertically arranged central retort adapted to feed from beneath, a starting cup fixed thereto for the initial heating thereof, a valve whereby the flow of the oil from the retort into the cup may be controlled, a gas chamber provided with radiating arms engaging about the upper portion of said retort, though out of direct communication therewith, the upper walls of said chamber and extensions being perforated with burner holes, and the lower walls of said chamber being also perforated to allow the impinging of jets of flame upon the side walls of the retort for the heating thereof, an escape pipe whereby the vapor generated in the retort may flow therefrom, and a valve for regulating the flow of vapor therefrom toward an apertured portion of the walls of said chamber, the vapor being mixed with atmospheric air previous to its reception within the burner chamber, substantially as described.

In testimony whereof, I, sign this specification in the presence of two witnesses.

HAROLD P. GLAZIER.

Witnesses:

CHARLES F. BURTON,

MAY E. KOTT.