

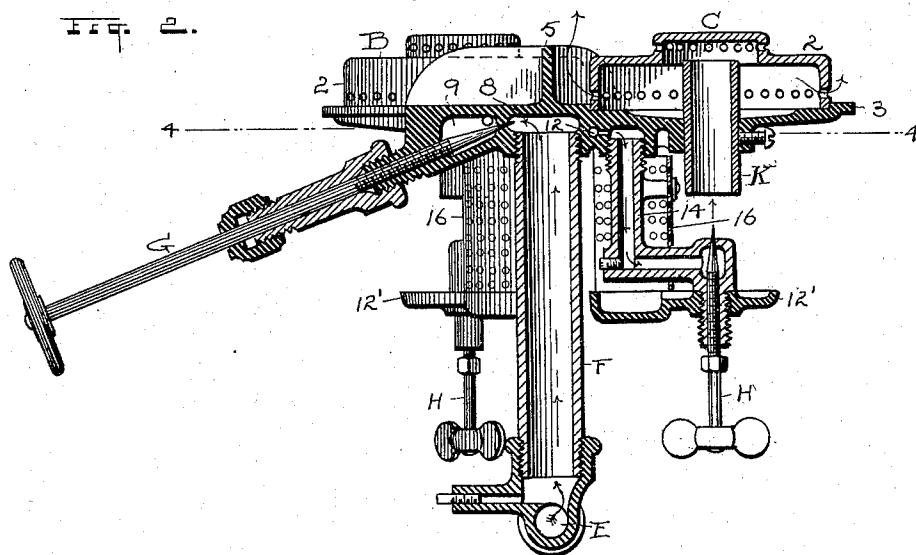
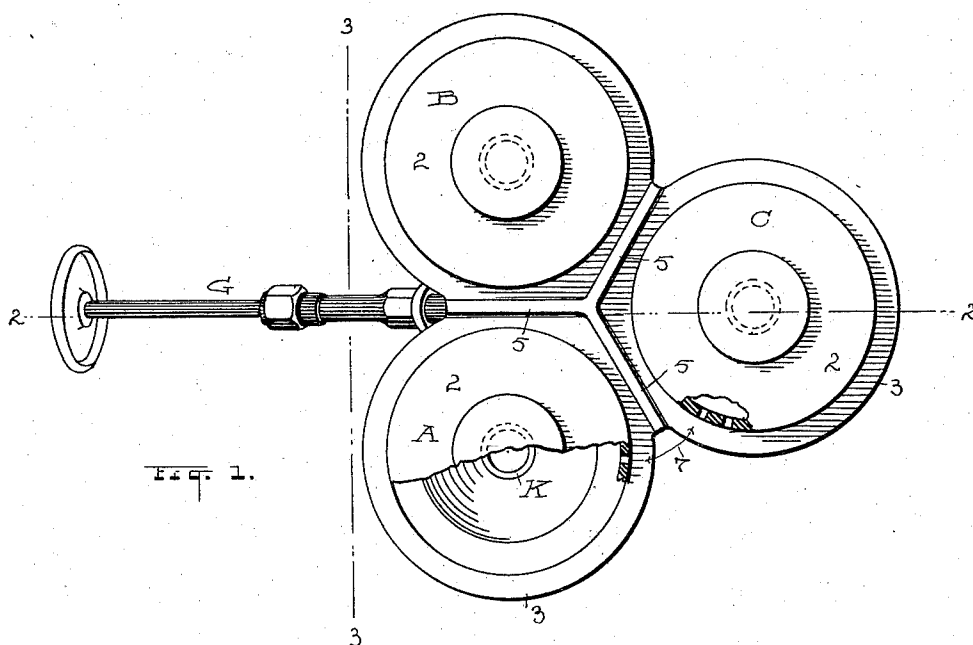
(No Model.)

2 Sheets—Sheet 1.

H. RUPPEL.
HYDROCARBON VAPOR BURNER.

No. 567,659.

Patented Sept. 15, 1896.



ATTEST

Dr. B. Moore
H. E. Myndel

INVENTOR.

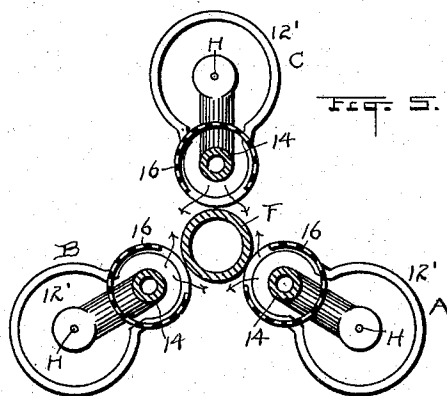
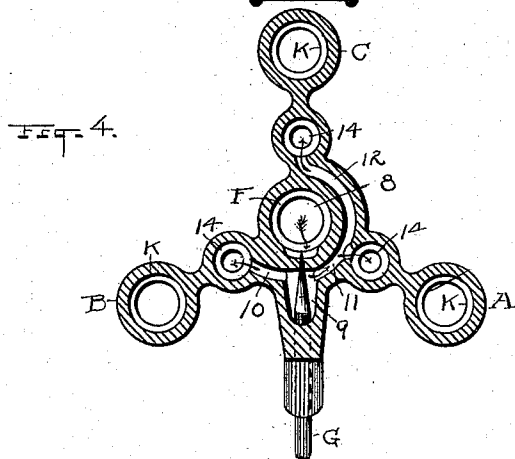
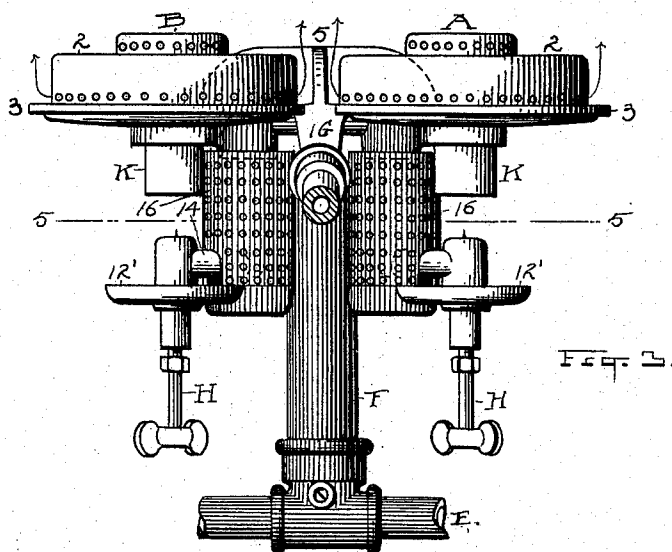
Henry, Ruppel

By *H. J. Fisher* ATTORNEY

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UNITED STATES PATENT OFFICE.

HENRY RUPPEL, OF CLEVELAND, OHIO.

HYDROCARBON-VAPOR BURNER.

SPECIFICATION forming part of Letters Patent No. 567,659, dated September 15, 1896.

Application filed May 9, 1886. Serial No. 590,956. (No model.)

To all whom it may concern:

Be it known that I, HENRY RUPPEL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-Vapor Burners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to hydrocarbon-vapor burners; and the invention consists in a triplex burner constructed and operating substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved burner. Fig. 2 is a vertical sectional elevation on line 2 2, Fig. 1. Fig. 3 is a plan elevation thereof on line 3 3, Fig. 1. Fig. 4 is a horizontal sectional view on line 4 4, Fig. 2; and Fig. 5 is a horizontal sectional view on line 5 5, Fig. 3.

The burner mechanism shown in the several figures is adapted to be used with and comprises three distinctly separate burners A, B, and C, which are alike in all their features and points of construction, and are made up of corresponding parts throughout, and have like connections with the said burner mechanism, and may be used together or separately, as may be desired. However, in a sense, they constitute together a single burner, inasmuch as they are intended for a single opening or hole, and one, two, or three of the said burners can be used at a time, according as more or less heat is wanted. These several burners have each a cap 2 set upon a common base 3, and these caps are separated from one another by the division walls or vanes 5, as seen clearly in Fig. 1, which separate one burner from the other upon the said base. The burner-caps 2 are perforated about their sides, so that the adjacent perforations impinge their flame or jet against said walls 5 and the flame is diverted in an upward direction, as indicated by arrows in Fig. 2. However, one burner may be lighted from another, in some instances over these vanes, but always at the outer end thereof, as seen by arrows 7 in Fig. 1. The oil approaches the burner through supply-pipe E

from any suitable source of supply, and passes up thence through vertical pipe F to the generating space or chamber at the extremity of said pipe F in the base 3. The vanes or walls 5, being exposed to the flame as they are, of course become intensely hot and convey the heat to the said base over and about the said generating-chamber therein, which serves to vaporize the oil as rapidly as the burners require. A main valve G has its needle-point entering this generating-chamber 8 and serves to control the flow of vapor to the several burners. When the said valve is opened, the vapor passes into the distributing-chamber 9, Fig. 4, whence it goes by channels 10, 11, and 12 to the three several burners. At the lower extremity of each of these channels, respectively, as clearly seen in Figs. 2 and 3, there is a secondary needle-valve H, one for each of the three several burners and independent of each other, so as to be turned on or off individually, as the work requires. A mixing-tube K is provided for each burner, and operates in the usual way to convey vapor and air to the burner in a mixed state. In any case, therefore, in using the burner the primary valve G will be opened, and then one or more of the secondary valves are opened, according as one or more is to be used. These secondary valves are each provided with its own drip-cup 12', and in starting the burner a single drip-cup or three several drip-cups may be used. If a single one be used, it will take somewhat longer time to get the burner into a generating condition, and if all three be used for initial lighting the work will be very quickly accomplished. In such case all three of the secondary valves H will be opened to get oil into the drip-pans 12', but are closed when sufficient oil is obtained. Initial heating being effected, primary valve G is opened, and then all or one or more of the secondary valves are opened, according to the volume of heat wanted. Each of the passages or ducts 10, 11, and 12, before it reaches the needle-valve H, drops to a lower plane through a pipe connection 14 and has an elbow, from whence it extends outward at right angles to the jet of the needle-valve H. The lighting cup or pan 12' is beneath this elbow, and about the said elbow is a protector consisting, usually, of perforated metal

or suitable gauze or its equivalent, forming a flue and guard 16, through which the flame is conducted upward against the base of the burner and is protected from drafts and winds that may blow about the burner. Referring to Fig. 5, it will be seen that these guards or protectors 16 are open part way at their rear next to the upright tube F, so that when oil is turned on in two or three of the burners for initial lighting they may all be lighted from, say, the front burner after a light has been applied to the initial pan 12' of said burner.

Three or more burners may be used with the foregoing construction, as other burners may be placed in the spaces where these corner with each other.

What I claim as new, and desire to secure by Letters Patent, is—

1. The construction described consisting of three several burners and a single base common to all said burners, vanes forming walls separating said burners on the top of said base and integral therewith, a primary valve controlling the flow of vapor to said several burners, and an individual valve for each burner, substantially as described.

2. The construction described comprising the base and the burners thereon, the oil-supply pipe F central in said base and discharging into the generating-space therein, a main valve for said chamber and ducts leading from said valve to said several burn-

ers, said ducts provided with elbow-pipes 14 disposed about the supply-pipe F, a valve for each of said elbow-pipes and a drip-pan beneath the same, and a perforated shield over each of said drip-pans and about the upright pipe 14, said shields being contiguous to said supply-pipe, whereby the perforated shields permit the vapor arising from one drip-cup to be lighted by the flame arising from another cup, substantially as described.

3. The base and the several burners located thereon, and vertical vanes integral with said base separating said burners, said vanes having such length as to permit the lighting of one burner from another beyond the ends of the vanes, substantially as described.

4. The horizontal base and the burners thereon, in combination with the oil-supply pipe F and the ducts leading therefrom and the vertical pipes 14 opening into said ducts, the drip-cups and the perforated shields about pipes 14 open contiguous to the said pipe F, whereby the vapor arising from one drip-cup is readily lighted by the flame from another cup, substantially as described.

Witness my hand to the foregoing specification this 20th day of March, 1896.

HENRY RUPPEL.

Witnesses:

H. T. FISHER,
H. E. MUDRA.