J. DU ROSS.

GAS BURNER.

APPLICATION FILED MAY 22, 1908.

913,477. Patented Feb. 23, 1909.

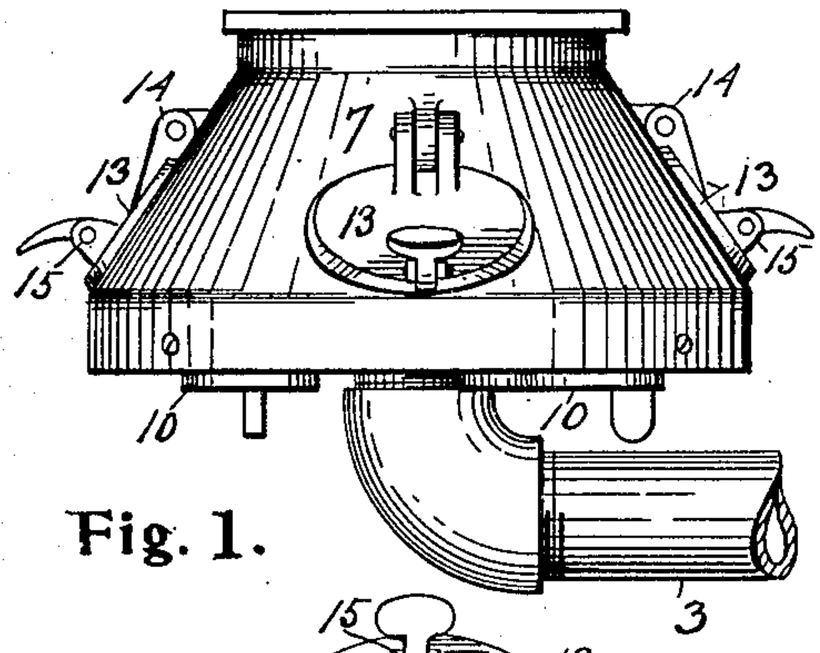

Fig. 1.

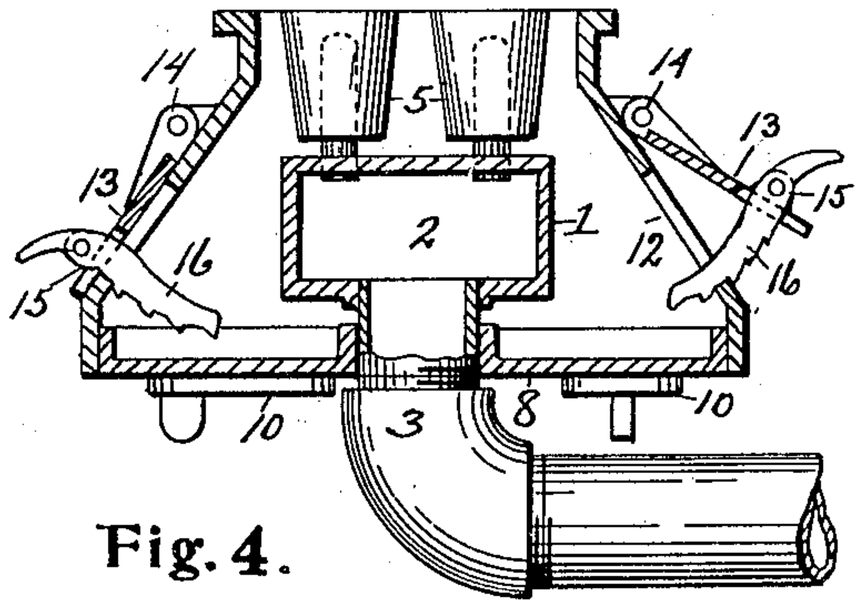

Fig. 4.

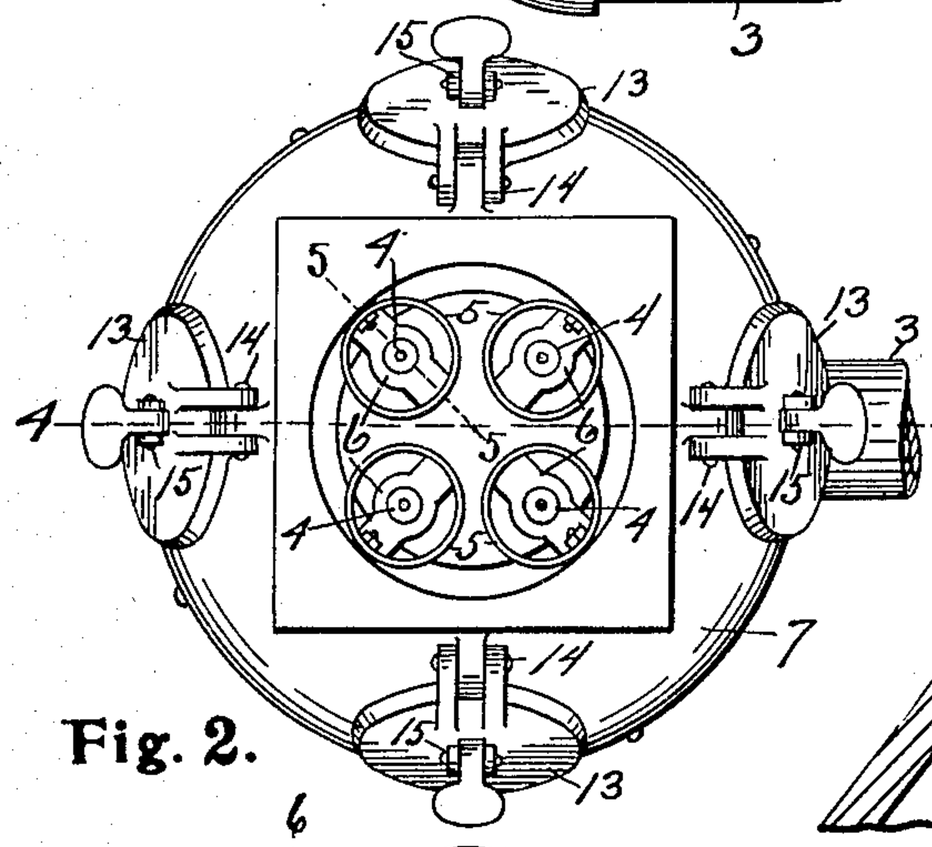

Fig. 2.

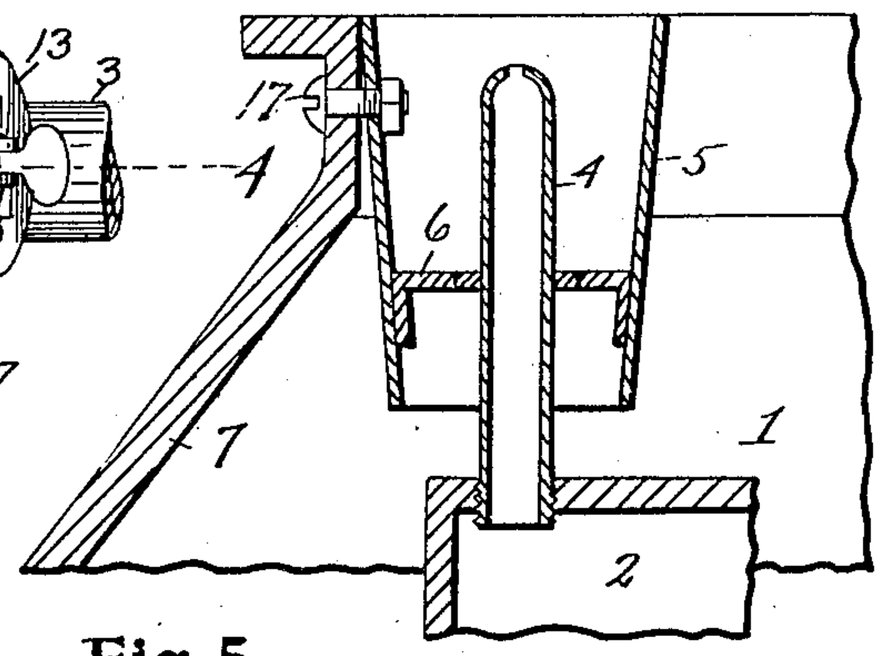

Fig. 5.

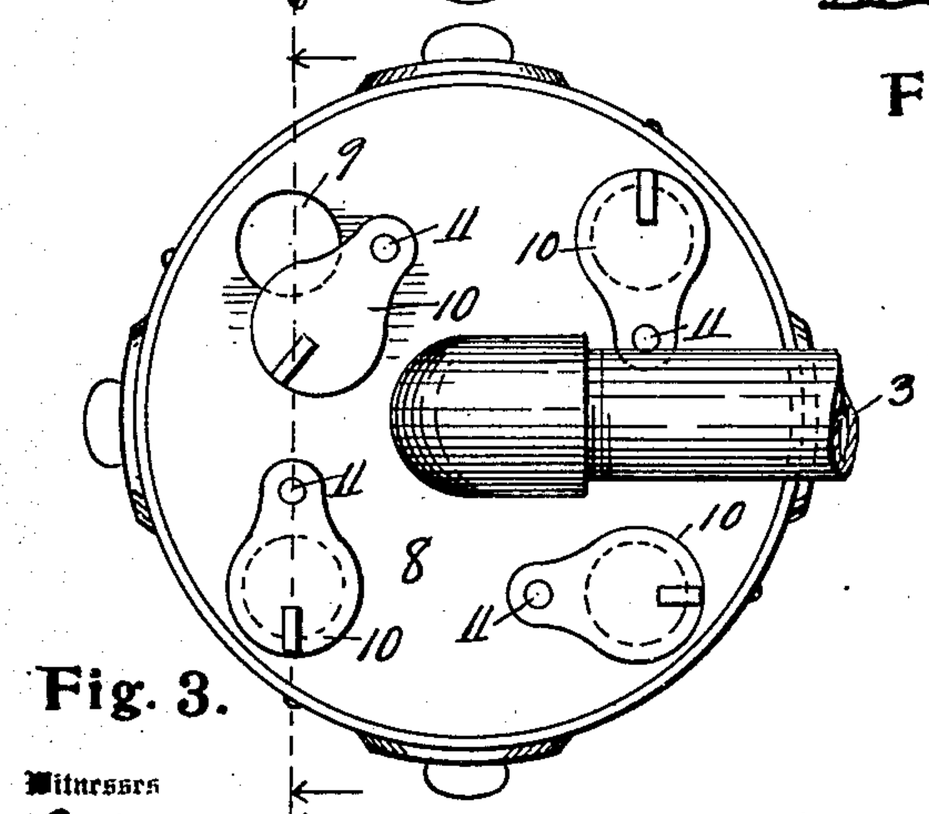

Fig. 3.

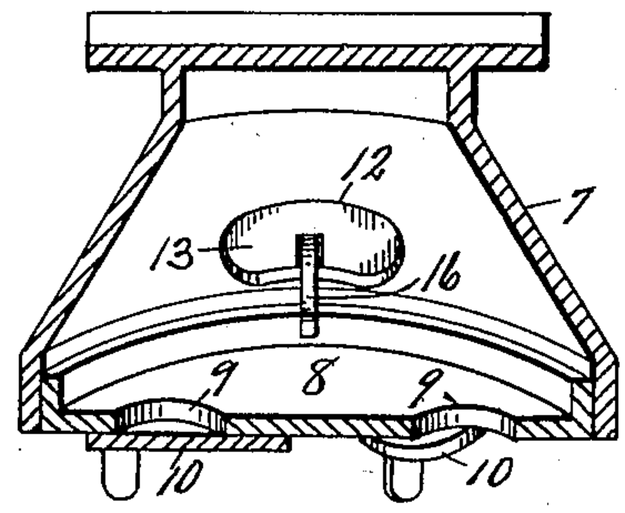

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES DU ROSS, OF DETROIT, MICHIGAN.

GAS-BURNER.

No. 913,477. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed May 22, 1908. Serial No. 434,228.

To all whom it may concern:

Be it known that I, JAMES DU ROSS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Gas-Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to hydrocarbon burners, especially designed for burning hydrocarbon gas, and consists in the construction and arrangement of parts hereinafter more fully set forth and pointed out particularly in the claims.

The general character of the burner is the same as that shown in my companion application, Serial No. 434,229.

The object of the invention is to provide simple and efficient means for burning hydrocarbon gas in a manner to effect perfect combustion and produce a high degree of heat, provision being made for regulating the passage of air to the burner and concentrating it around the burner flame in a manner best calculated to promote combustion.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation of a burner involving my invention. Fig. 2 is a plan view. Fig. 3 is an inverted plan. Fig. 4 is a transverse section on line 4—4 of Fig. 2. Fig. 5 is an enlarged fragmentary view in section through one of the flame tubes of the burner and the gas nipple therein, as on line 5—5 of Fig. 2. Fig. 6 is a fragmentary view in section as on line 6—6 of Fig. 3.

Referring to the characters of reference, 1 designates a closed receptacle forming therein a gas-receiving chamber 2 with which the gas supply pipe 3 communicates through the bottom of said receptacle, said pipe leading to any suitable source of gas supply, not shown. Mounted in and passing through the top of said receptacle so as to communicate with the gas-receiving chamber 2 are a number of nozzles 4 which project vertically and each of which is surrounded by a flaring flame tube 5. Crossing the interior of each flame tube is a bar or bridge 6 through which the nozzle passes and by means of which the flame tube is mounted upon said nozzle. The nozzles and flame tube are arranged in the form of a square and constitute the burner proper.

Embracing the burner is a conical hood 7 provided with a bottom 8 through which passes the gas supply pipe 3 and in which are formed a plurality of draft openings 9 adapted to be closed by the lids 10 pivotally mounted at 11 on the under face of the bottom 8. By a movement of said lids the area of the draft openings 9 may be varied to regulate the quantity of air passing to the burner through the bottom of said hood. Formed through the conical wall of the hood are additional draft openings 12 adapted to be closed by the doors 13 which are hinged at 14 to the outer wall of the hood. Passing through slots in the doors 13 and pivoted at 15 therein are the curved braces 16 having notches in their under edges adapted to engage the lower margin of the openings 12 to support the doors when open to any desired extent, enabling the quantity of air which passes through the openings to be regulated at will. The curved braces may be raised by pressure upon the outer end thereof to disengage the notches from the margins of the openings 12, when it is desired to close said doors.

The gas which supplies the nozzles 4 first enters the chamber 2 which is of such area as to keep the supply constant. When ignited, the gas burns from the nozzles within the flame tubes 4 through which the air is drawn to mix with the gas while the air which passes around said tubes is supplied to the flame which is directed therefrom, insuring perfect combustion of the gas and causing a strong flame of intense heat. The location of the draft openings 9 in the bottom and the draft openings 12 in the wall of the hood is such as to enable the supply of air to the burner to be perfectly controlled and regulated in accordance with the volume of gas being consumed, the flow of which is controlled by a suitable valve, not shown, in the supply pipe 3.

As an additional support to the flame tubes 5 they may be connected to the wall of the hood at the top by means of bolts, as shown at 17 in Fig. 5.

Having thus fully set forth my invention,

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

1. In a gas burner, the combination of a closed receptacle forming a gas-receiving chamber, a plurality of burner nozzles mounted upon said receptacle and communicating with said chamber, a flame tube mounted upon and surrounding each of said nozzles, and an inclosing hood with draft openings therethrough embracing the nozzles and flame tubes.

2. In a gas burner, the combination of a conical hood having a central opening at the top and having a bottom, the wall of said hood having draft openings therethrough, hinged doors for regulating the passage of air through said openings, a gas-receiving chamber within the hood, means for supplying gas thereto, a gas nozzle communicating with said chamber, and a flame tube supported upon said nozzle within the central opening of the hood in a manner to allow of an upward passage of air out of said central opening through and around said tube.

3. In a gas burner, the combination of a hood having a central opening at the top and provided with a bottom, the bottom and wall of the hood having draft openings therethrough, means for regulating the passage of air through said openings, a gas burner nozzle extending into the central opening in said hood, means for supplying gas to said nozzle, and a flame tube surrounding the nozzle through which and around which air is adapted to pass.

4. In a gas burner, the combination of a hood having a central opening at the top and provided with a bottom, the wall of the hood having draft openings therethrough, means for regulating the passage of air through said openings, a closed receptacle located within the hood and forming a gas receiving chamber, a gas burner nozzle mounted upon said receptacle and communicating with the chamber therein, means for supplying gas to said chamber, and a flame tube surrounding the nozzle through which and around which air is adapted to pass.

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

JAMES DU ROSS.

Witnesses:

E. S. WHEELER,

I. G. HOWLETT.