

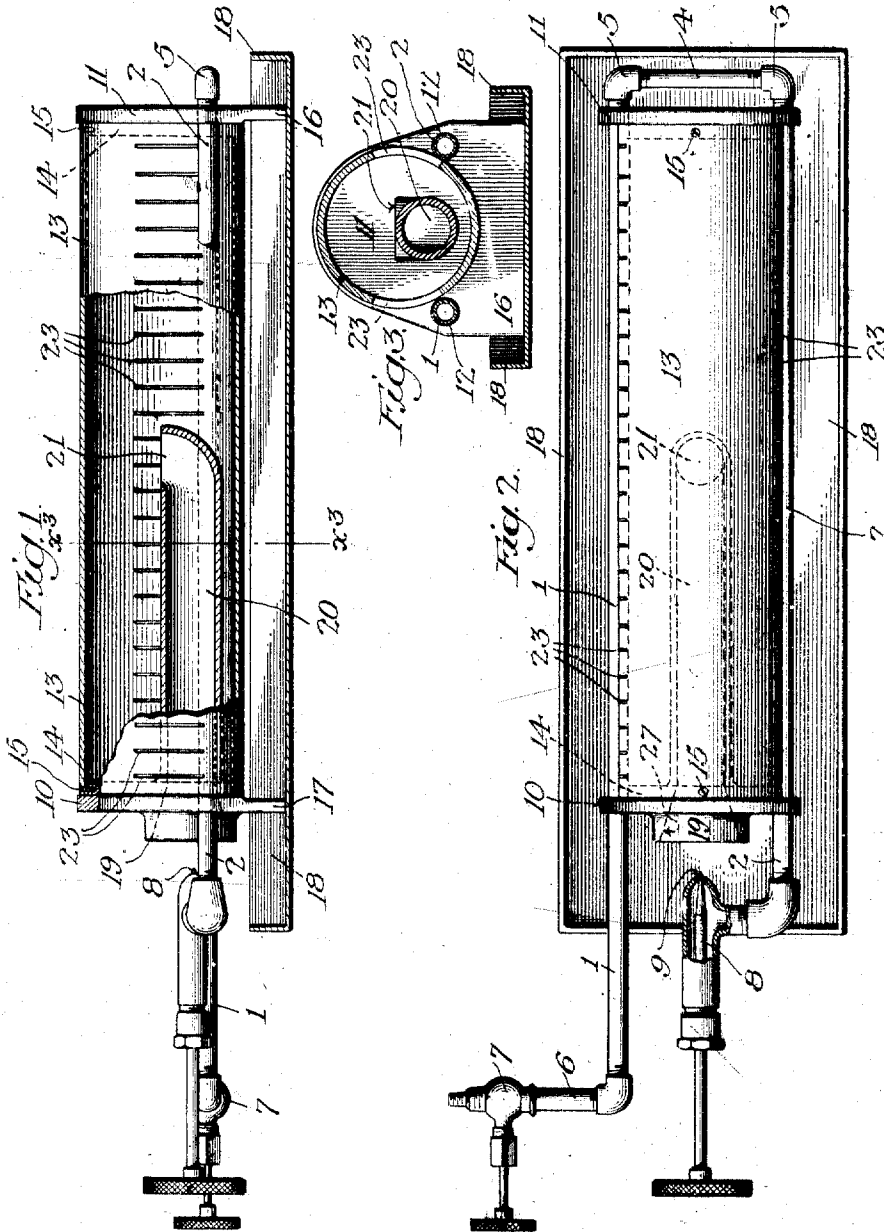
E. P. MAGOON.

OIL GAS GENERATOR AND BURNER.

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995,362.

Patented June 13, 1911.



Witnesses:
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Attest.

UNITED STATES PATENT OFFICE.

EZRA P. MAGOON, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO BLUE FLAME DISTILLATE BURNER COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

OIL-GAS GENERATOR AND BURNER.

995,362.

Specification of Letters Patent. Patented June 13, 1911.

Application filed October 19, 1909, Serial No. 523,521. Renewed November 14, 1910. Serial No. 592,349.

To all whom it may concern:

Be it known that I, EZRA P. MAGOON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Oil-Gas Generator and Burner, of which the following is a specification.

The invention relates to an apparatus for generating gas from hydro-carbon oils, mixing the gas with air and burning the mixture.

One of the objects of the invention is to produce an even flame throughout the whole length of the burner, the parts thereof being so arranged that the mixture of gas and air is directed into the burner chamber at a point above the burner slots.

Another object of the invention is to produce a self contained apparatus of the character described, so that the device may be shipped to the user in its completed condition ready for use.

Another object of the invention is to produce an apparatus of the character described which is economical of manufacture, simple in construction and efficient in operation.

Referring to the drawings. Figure 1 is a side elevation of the apparatus partly in section. Fig. 2 is a plan view of the apparatus. Fig. 3 is a cross sectional view on the line x^3-x^3 Fig. 1.

The apparatus comprises a burner chamber, a mixing chamber within the burner chamber and a gas generator which extends around three sides of the burner chamber and delivers the gas into the mouth of the mixing chamber. The gas generator consists of two horizontal tubular or pipe members 1, 2 connected by means of a cross pipe 4 and elbows 5 at the rear end of the burner chamber. The oil inlet pipe 6 is connected to the inlet end of the pipe 1 and is provided with a valve 7 for the regulation of the oil supply. The delivery end of the pipe 2 is provided with a needle valve 8 having an outlet 9 which is arranged at a point in front of the inlet opening of the mixing chamber. The gas generator is supported by means of the ends 10, 11 of the burner chamber which are provided with perforations 12 through which the pipes 1, 2 extend.

The burner chamber consists of a tubular body portion 13 shrunk on extensions 14 of the ends 10, 11 and securely fixed thereto by means of screws 15. The rear end 11 of the

burner chamber is a closed wall having a downwardly extending base or support 16. The forward end 10 of the burner chamber is similar in transverse outline to the rear end 2 and is also provided with a downward extension 17. The extensions 16, 17 act as a support for the complete apparatus and rest upon a firing pan 18. The end 10 of the burner chamber 13 is provided with a boss 19 extending forwardly therefrom and has a rearward tubular extension 20 forming a mixing chamber which projects rearwardly into the interior of the burner chamber 13, and is provided with a discharge outlet 21 in the top of the extension at the rear end thereof, the rear wall of the tubular extension 20 being closed and curving upwardly so as to direct the mixture against the top of the burner chamber. The forward or receiving end of the mixture chamber 20 terminates in a mouth or opening 27 in the boss 19 the inner walls of which converge rearwardly until they merge into the inner walls of the mixing chamber 20. The burner chamber is provided with a series of burner slots 23 in each side of the tubular member 13, arranged so that the lower edges of the slots are a slight distance below the top of the generator pipes 1, 2 insuring contact of the flame with the generator pipes and effecting the gasifying of the oil in the generator.

Gas from the generator is delivered into the mouth of the mixing chamber from the nozzle of the gas valve, drawing in with it air from around the opening or mouth of the mixing chamber thereby forming a mixture which is delivered through the discharge outlet 21 against the top of the burner chamber further mixing the air and gas, the outlet 21 being so arranged that the mixture is directed against the top of the burner chamber above the burner slots. This construction insures an even flame throughout the entire length of the burner.

The construction heretofore described of a burner chamber consisting of a tubular member and ends attached thereto economizes the manufacture as the tubular member may be manufactured in different lengths to meet the varying conditions under which a burner of this type is employed.

What I claim is:—

1. An oil-gas burner comprising a generator formed with two horizontal members, a

cross tube connecting said members at one end, an oil inlet connection at the other end of one of said members, an outlet connection at the corresponding end of the other of said members, a burner chamber extending longitudinally between said horizontal members independently thereof and having a series of outlet slots in each side thereof, the lower edges of said slots being below the top of the generator, and a mixing chamber, wholly within said burner chamber, having an inlet adjacent to said outlet connection and a discharge outlet at its inner end, the upper edges of said slots extending above said mixing chamber.

2. An oil-gas burner comprising a generator formed with two horizontal members, a cross tube connecting said members at one end, an oil inlet connection at the other end of one of said members, an outlet connection at the corresponding end of the other of said members, a burner chamber extending longitudinally between said horizontal members independently thereof and having a series of outlet slots in each side thereof, the lower edges of said slots being below the top of the generator, and a tubular member forming a mixing chamber extending longitudinally within said burner chamber, said mixing chamber having an inlet opening adjacent to said outlet connection of the generator, and having a discharge outlet in the top thereof at its inner end, the upper edges of said slots extending above the discharge outlet of said mixing chamber.

3. An oil burner comprising a generator formed with two horizontal members, a cross tube connecting said members at one end, an oil inlet connection at the other end of one of said members, an outlet connection at the corresponding end of the other of said members, a burner chamber, extending longitudinally between said horizontal members independently thereof, and having a series of outlet slots in each side thereof, the bottom of said slots being below the top of the two horizontal members of the generator, the upper edges of said slots being above said horizontal members of the generator, and a mixing chamber extending within said burner chamber and having an inlet opening adjacent to the outlet of the generator.

4. An oil burner comprising a generator formed with two horizontal members, a cross tube connecting said members at one end, an oil inlet connection at the other end of one of said members, an outlet connection at the corresponding end of the other of said members, a burner chamber, extending longitudinally between said horizontal

members, consisting of a tubular body with a series of vertical outlet openings in each side, end plates for said tubular body, the forward end plate being perforated and having a hollow extension projecting laterally into said tubular body forming a mixing chamber, the walls of said perforation converging rearwardly into said mixing chamber forming an air and gas inlet into said mixing chamber, said mixing chamber having a discharge outlet in the top thereof at its inner end.

5. An oil burner comprising a burner chamber formed of a tubular member having a series of vertical outlet slots in each side, front and rear end plates for said tubular member, each end plate having a downward extension forming a base therefor, the front end plate having a hollow extension forming a mixing chamber projecting inwardly wholly into said tubular member and having an outlet opening in the top thereof at its inner end, said front plate having a mouth with walls converging rearwardly into said mixing chamber, a generator supported by said end plates, an oil inlet connection for said generator and an outlet for said generator for delivering gas into the mouth of the mixing chamber.

6. An oil burner comprising a burner chamber formed of a tubular member having a series of outlet slots in each side, front and rear end plates for said tubular member, said end plates having an extension fitting in the respective ends of said tubular member, each end plate being provided with a downward extension forming a support therefor and having a perforation on each side of the tubular member, said front end plate having a hollow extension projecting into said burner chamber forming a mixing chamber provided with an outlet at its inner end in the top thereof, said front plate being provided with an inlet opening for said mixing chamber, a generator consisting of two horizontal tubular members passing through and supported by the perforations in the end plates, a cross tube connecting said members at one end, an oil inlet connection at the other end of one of said members, and an outlet connection at the corresponding end of the other of said members for delivering gas into the inlet opening of the mixing chamber.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 23rd day of September 1909.

EZRA P. MAGOON.

In presence of—

P. H. SHELTON,

FRANK L. A. GRAHAM.