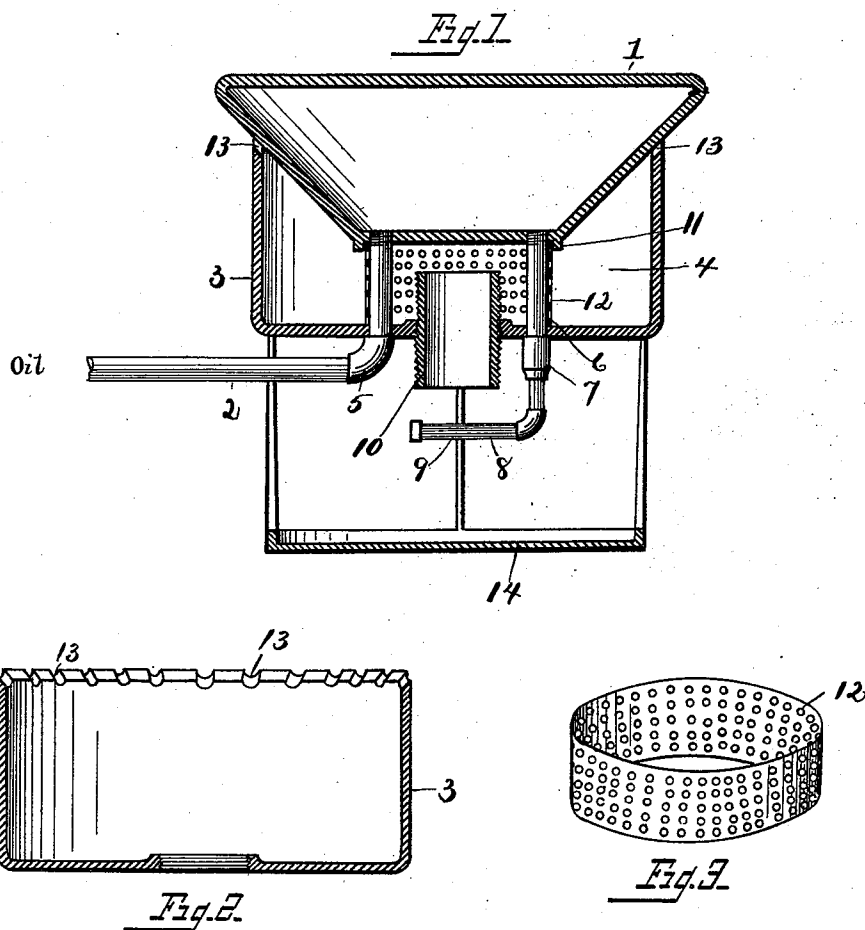


(No Model.)

J. L. ARNOLD.
HYDROCARBON BURNER.

No. 533,040.

Patented Jan. 29, 1895.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN L. ARNOLD, OF TOLEDO, OHIO.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 533,040, dated January 29, 1895.

Application filed January 17, 1894. Serial No. 497,168. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. ARNOLD, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to a hydro-carbon generator and burner, and has for its object to provide a burner in which the oil shall be generated and properly mixed with a sufficient amount of air to support combustion and burn as a gas in which all the products of combustion shall be utilized, thereby preventing the formation of carbon and smoke.

The invention consists in the parts as shown, described and claimed.

In the drawings: Figure 1 is a sectional elevation of the generator and burner as constructed in accordance with my invention. Fig. 2 is a sectional elevation of the mixing chamber. Fig. 3 is an elevation of the spreader which not only serves the purpose of thoroughly mixing the gas and air but to cause an even feed of gas.

1 designates the generator comprising a hollow casting into which is tapped the oil supply pipe 2. Below the generator is secured an annular flanged casting 3, forming a mixing chamber 4, the casting 3 being secured in place by the L coupling 5 upon the oil supply pipe, there being a gas pipe 6 tapped into the generator, having a reducer 7 below the same, which also serves to hold the casting and generator in an assembled position, the burner pipe 8 being tapped into the coupling 7 and extending below the casting to the center of the same, there being a diminutive orifice 9 in the pipe.

Casting 3 has a screw threaded opening in the bottom of the same into which is secured the mixer 10, which has a vertical adjustment as it is screwed up or down.

11 designates an annular lug upon the under side of the generator, there being a spreader 12 secured in the same and extending down against the bottom of the casting

3, said spreader comprising an annular sheet of metal having a plurality of openings therein. The upper edge of the casting 3 has a plurality of cut out portions 13, which when the generator and burner are assembled forms the exit for the gas, at which point the same is lighted and burns.

In operation, the oil being admitted into the generator, flows through the gas pipe through recess 9 into a pan 14 below the same, where it is ignited. The flame passing around the burner soon heats the generator to a point to gasify the oil as it flows therein, when it will issue through the recess 9 as a gas and will pass through mixer 10, drawing in the necessary air to support combustion, and into the chamber 4 through the spreader, which not only serves as a check for the gas and allows it to pass through the same evenly at each point around the periphery of the same, but serves to intimately commingle the gas and air, thereby providing for a perfect combustion of the same as it issues through recesses 13 and burns, the flame not only impinging upon the vaporizer to vaporize the oil, but serves for heating purposes.

What I claim is—

In a hydro-carbon generator and burner, a hollow vaporizer having inclined sides, with the widest point at the top, a mixing chamber beneath the same the walls of which are of less diameter than the generator, and having notches around the upper edge of the same, which, when adjacent to the generator form exit orifices from the mixing chamber, an oil supply and a gas pipe extending through the mixing chamber into the vaporizer, having couplings which serve to hold the generator and the casting comprising the mixing chamber in assembled position, an adjustable mixer secured to the mixing chamber and provided with a perforation and a foraminous diaphragm in the mixing chamber extending from the under side of the generator to the bottom of the mixing chamber.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

JOHN L. ARNOLD.

Witnesses:

CARROLL J. WEBSTER,
J. H. WESTFALL.