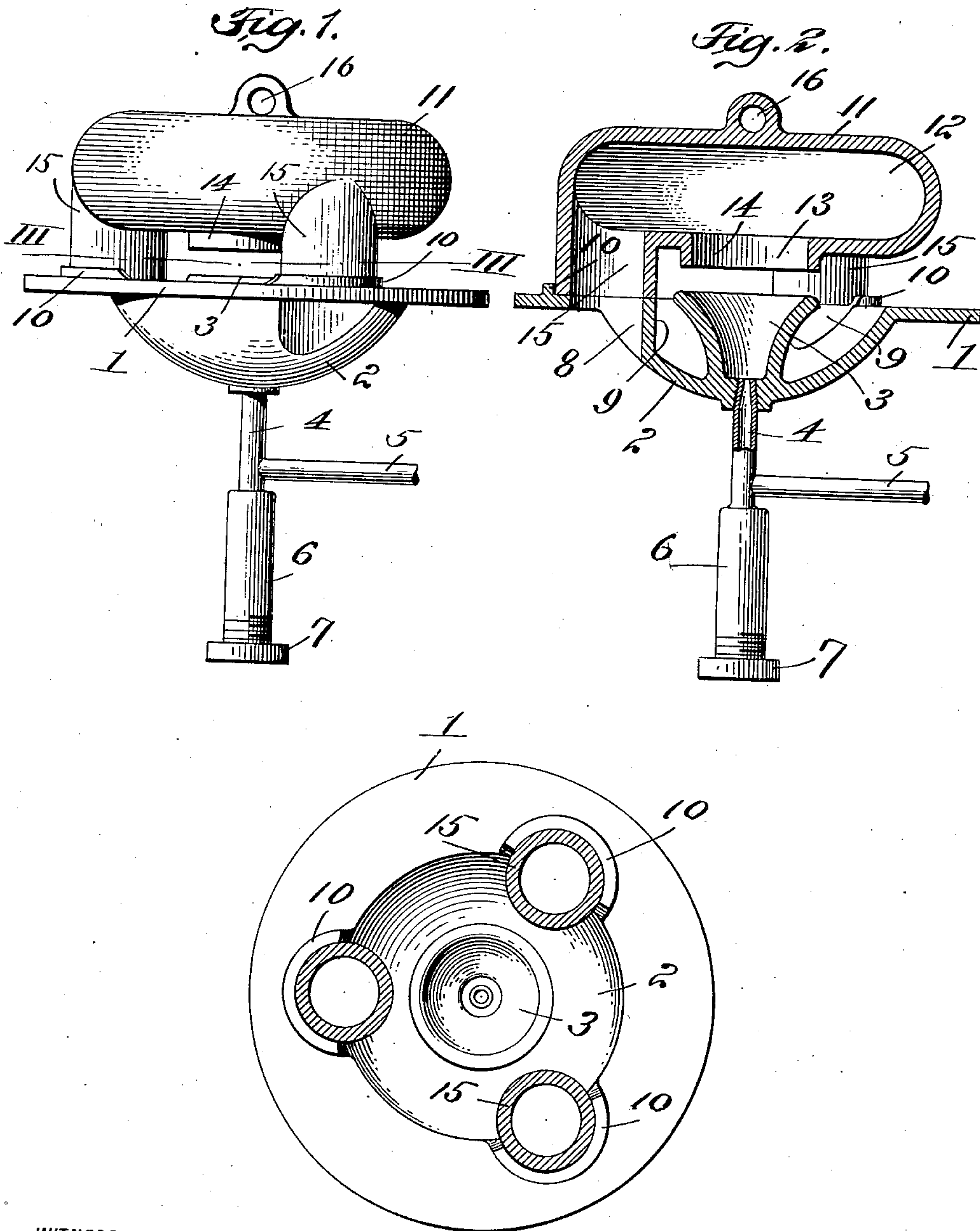


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HYDROCARBON GAS GENERATOR.  
APPLICATION FILED OCT. 22, 1908.

935,294.

Patented Sept. 28, 1909.



WITNESSES  
*Julius K. Smith*  
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Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## HYDROCARBON-GAS GENERATOR.

935,294.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed October 22, 1908. Serial No. 458,962.

### *To all whom it may concern:*

Be it known that I, EGBERT B. BROWN, a citizen of the United States, residing in the city of Los Angeles, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Hydrocarbon-Gas Generators, of which the following is a specification, reference being had therein to the accompanying drawing, in which—

Figure 1 is a side elevation of the generator; Fig. 2 a longitudinal vertical sectional view thereof; and Fig. 3 a horizontal sectional view on the line III—III of Fig. 1.

This invention relates to a new, useful and economical means for producing hydrocarbon gas from oil and burning the same, one of the main objects of the invention being to produce an apparatus by which oil or crude distillate may be converted into a gas and mixed in the apparatus with the necessary quantity of air for burning.

Another object of the invention is to provide means whereby the air will be superheated in the apparatus and commingled with the vapor from the heated oil.

Another object of the invention is to provide means whereby the heated air will be delivered downwardly at the center of the flame.

Other equally important objects of the invention will appear hereinafter.

Referring to the various parts by numerals, 1 designates the base of the generator which may be supported in any suitable manner. This base is formed with a central depressed supplemental fuel well or receptacle 2. In the center of this well is a central upwardly extending fuel receptacle or cup 3. This cup is considerably smaller in diameter than the well 2 and is of inverted bell-shape, its upper edge being slightly above the upper surface of the base 1, as shown clearly in Figs. 1 and 2. Opening into the bottom of the fuel cup 3 is the fuel supply pipe 4, whereby the liquid fuel, preferably a liquid hydro-carbon, will flow upwardly into the cup and upon overflowing the upper edge of said cup will be caught in the overflow well 2. Connected to the fuel supply pipe 4 is a delivery pipe 5. Below the delivery pipe, the pipe 4 is provided with a vertical sediment receptacle 6, the lower end of which is closed by a detachable screw cap 7. The purpose of this is to per-

mit the heavier particles carried by the oil to drop into the sediment receptacle from which they may be readily removed by taking off the cap 7.

The base 1 of the generator is formed with three apertures 8, spaced equal distances apart around the fuel well. Around each opening, within the well 2, is formed an upstanding flange 9 which extends to the upper surface of the base 1. Extending partly around said openings and projecting upwardly from the upper surface of the base 1 are retaining flanges 10, said flanges serving to retain the air heating and delivery device in position on the base, as will be hereinafter more fully described. It will, of course, be understood that I may form any desired number of inlets 8 in the base.

Supported above the base 1 is the air heating and delivery drum 11 which consists of a circular chamber 12 formed with a central opening 13 in its bottom wall directly over the fuel cup 3. Surrounding this opening is a downwardly extending flange 14 which terminates a short distance above the fuel cup, as shown clearly in Fig. 2. To support the air heating drum and to provide air inlets therefor the said drum is formed with downwardly extending hollow legs or pipes 15, whose lower ends register with the openings in the base, the flanges 10 holding said legs in register with said openings. The legs 15 are of such length that the lower edge of the flange 14 is held at the required distance above the upper edge of the fuel receptacle. The air heating chamber 12 is closed except for the entrance thereto through the legs 15 and the outlet therefrom through the opening 13. A perforated lug 16 is connected to the upper surface of the air heating chamber to facilitate in lifting said chamber from the base of the generator.

From the foregoing it will readily be seen that the flame from the fuel will envelop the air chamber superheating the air therein and drawing it downward just above the fuel cup. The fuel cup will be intensely heated and the oil therein will be vaporized and drawn outwardly and around the air drum. The air and vapor will therefore be thoroughly commingled and will pass to the flame heated to a very high temperature. The amount of air fed to the generator will be self-regulating and dependent upon the heat of the burning gas.



Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A hydro-carbon gas generator and burner comprising a base formed with a central depressed supplemental fuel receptacle, an inverted bell-shaped fuel receptacle in the center of said well, a supply pipe connected to the lower end of said bell-shaped fuel receptacle, an air heating drum supported above the base and provided at its under side with an air outlet directly over the bell-shaped fuel receptacle, and a series of inlet pipes connected to the air drum, the lower ends of said pipes resting on the base, said base being formed with a series of openings in register with the lower ends of said inlet pipes.

2. A hydrocarbon gas generator and burner comprising a base formed with a central depressed supplemental fuel receptacle, a main fuel receptacle in the center of said supplemental receptacle a supply pipe connected to the lower end of said main fuel receptacle, an air heating drum supported above the base and provided at its under side with an air outlet directly over the main fuel receptacle, and a series of inlet pipes connected to the air drum, the lower ends of said pipes resting on the base, said base being formed with a series of openings in register with the lower ends of said inlet pipes.

3. A hydrocarbon gas generator and burner comprising a base formed with a central depressed supplemental fuel receptacle,

a main fuel receptacle in the center of said supplemental receptacle, a supply pipe connected to the lower end of said main fuel receptacle, an air heating drum supported above the base and provided at its under side with an air outlet directly over the main fuel receptacle, a series of inlet pipes connected to the air drum, the lower ends of said pipes resting on the base, said base being formed with a series of openings in register with the lower ends of said inlet, a fuel supply pipe connected to the bottom of the main fuel receptacle, and a depending sediment cup connected to the supply pipe directly below the main fuel receptacle.

4. A hydrocarbon gas generator and burner comprising a base formed with a central fuel receptacle below the upper surface of said base, a series of air inlet openings formed in said base around said fuel receptacle, an air drum formed with a series of inlet pipes adapted to register with the inlet openings in the base, said pipes supporting the air drum above the base, said drum being formed with an air outlet in its under side directly over the fuel receptacle of the base, said air outlet terminating above the fuel receptacle of the base.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 9th day of October 1908.

EGBERT B. BROWN.

Witnesses:

GEORGE H. CLARK,  
A. M. HAWKINS.