

April 1, 1930.

A. E. GRANT

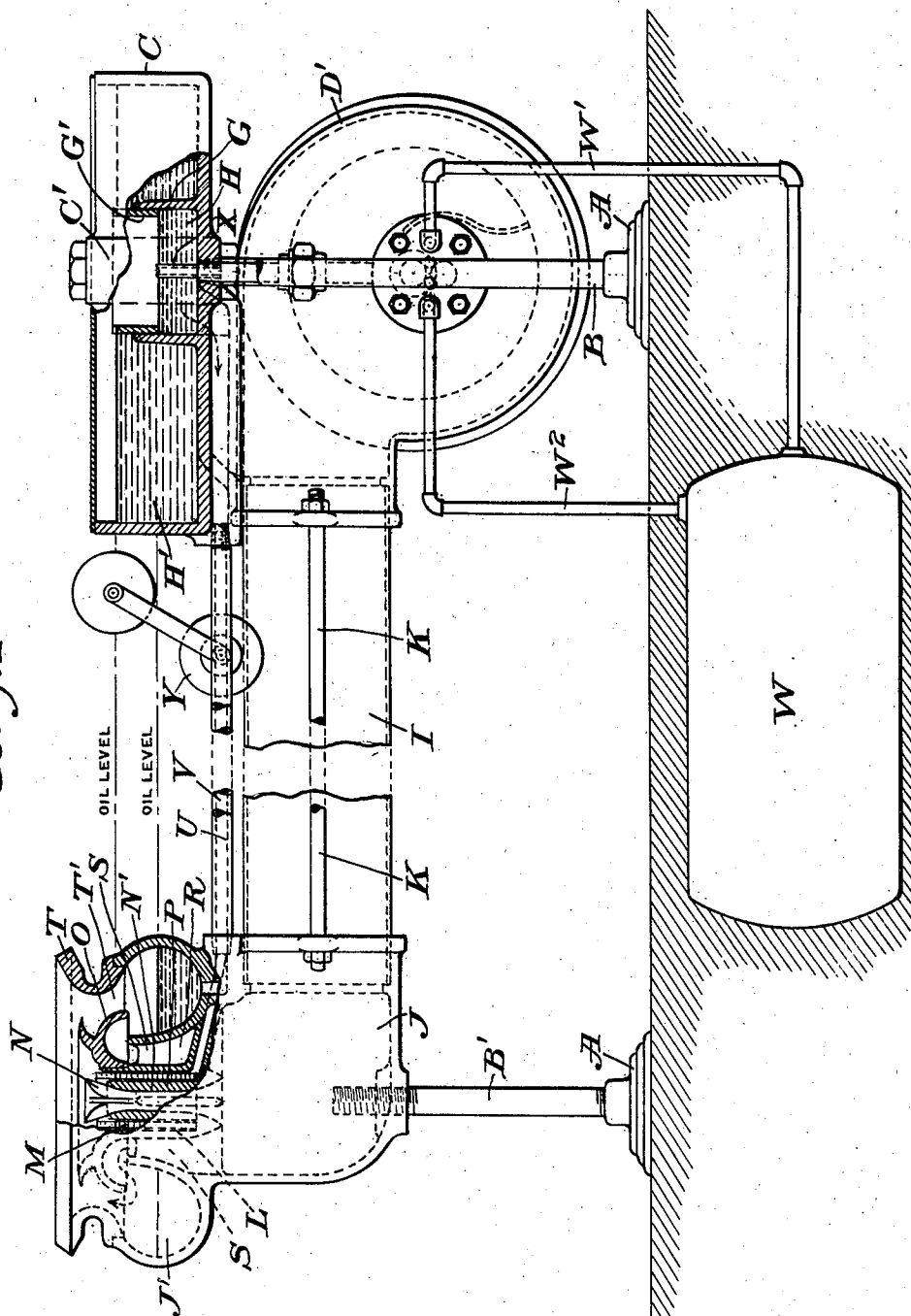
1,753,145

OIL FEEDING AND BURNING APPARATUS

Filed Feb. 11, 1928

2 Sheets-Sheet 1

Fig. 1



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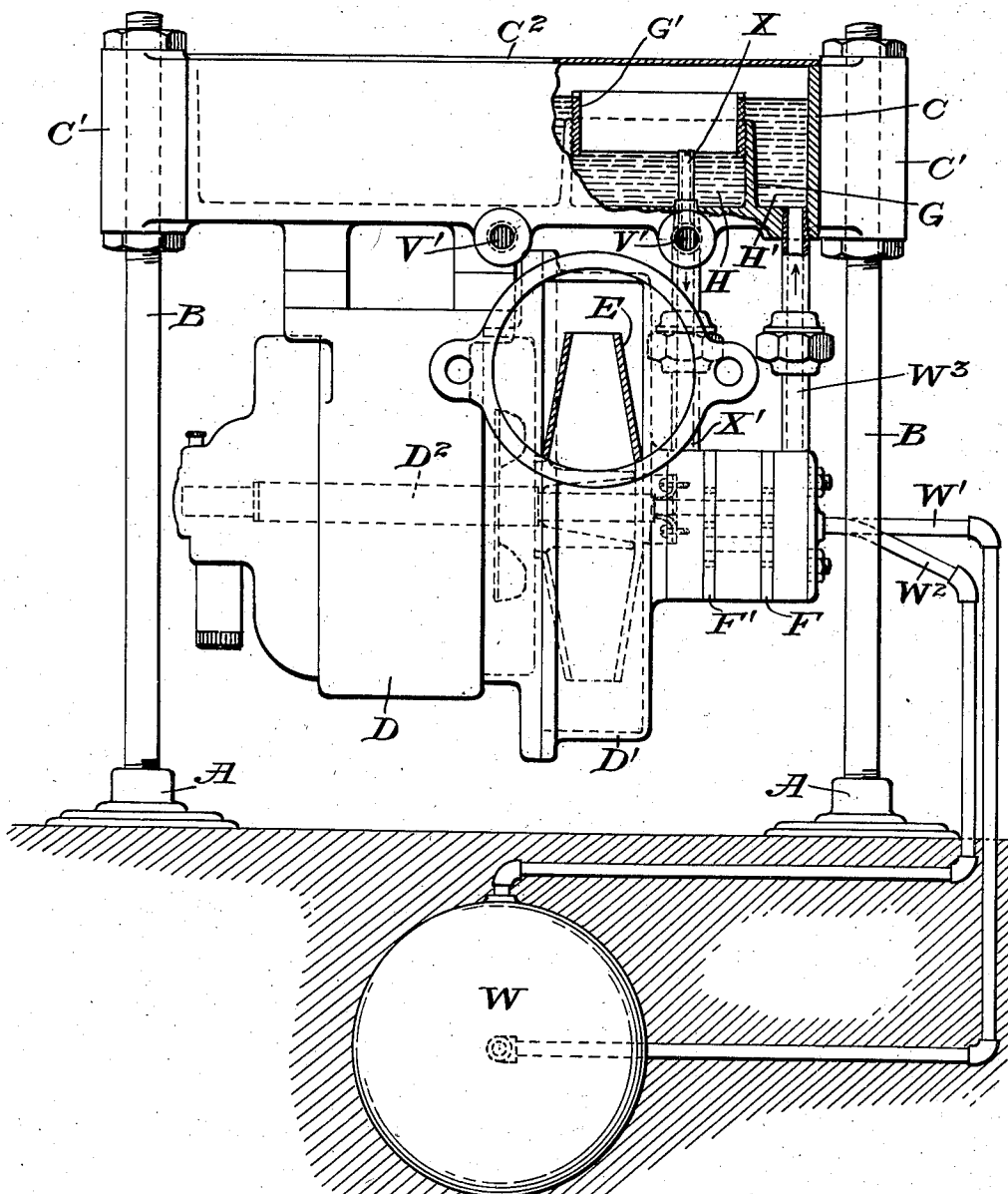
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Fig. 2



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OIL FEEDING AND BURNING APPARATUS

Application filed February 11, 1928. Serial No. 253,581.

My invention relates to generating and burning hydrocarbon gas, the object of my invention is to provide an improved device for this purpose that is simple in construction and may be made at a low cost.

Referring to the drawings which form a part of this specification:—

Fig. 1 is a longitudinal partly sectional view of a gas generator and burner embodying my invention.

Fig. 2 is a cross sectional view of the supply reservoirs for the large and small burners respectively, and discloses the general arrangement of the apparatus.

15 A A A respectively indicate flanges into which are screwed rods B, B and B¹ respectively. The upper ends of the rods B—B extend thru bosses C¹—C² respectively, cast integral with a tank C, adapted to hold oil, said tank being provided with the cover C².
20 Suspended from the bottom of the tank between the supporting rods B—B is an electric motor D, an air pump and blower E, and two oil pumps F and F¹ respectively, all of
25 which are mounted on shafts in common alignment as indicated by D² and shown in dotted lines in Figure 2. D¹ indicates the casing of the air pump. Formed integral with and extending upward from the bottom
30 of the tank, is a ring G, into which is screwed a collar G¹ in vertically adjustable relation thereto. The ring and collar provide a chamber for oil indicated by H in which the oil level is maintained at a lower
35 level than that maintained in the chamber H¹. I indicates a conduit for air, which is clamped between the flanged ends of the air pump casing and the burner casing J, by bolts K, located at each side thereof. The
40 casing J is provided with an annular chamber J¹ which holds oil to supply the large burner, and with a smaller annular chamber L, in which is located a cylindrical wick M, of porous refractory material freely removable therefrom after the central spreader
45 N is first removed. The spreader N rests in a central bore N¹ formed in the tubular portion P of the casing J, and is formed with vertically extending grooves in its sides thru
50 which air may pass from the conduit I and

lower part of the casing J to the upper end of the wick M to supply air to the small central burner comprising said wick. A central air deflecting collar O, shaped substantially as shown, is also supported by central tubular portion P, of the casing J, to deflect air
55 which passes from the lower side of the casing thru passages R, formed between web portions S, which connect the central tubular portion P with the inner wall of the chamber J¹. The top of the burner comprises a ring T, formed in a separate casting to permit of easy moulding of the casing J, and provides an annular passage T¹ for the gaseous fuel formed by the mixture of
60 air passing thru the chamber J¹ when mixed with the hydrocarbon gas generated by heating the oil in said chamber. A pipe U, leads from the chamber H to the chamber J¹ to supply the large burner with oil and a pipe V,
65 leads from the chamber H¹ to the chamber L to supply the small burner with oil. The outlet passage from the chamber H is indicated by V², and from the chamber H¹ by V¹, as illustrated in Figure 2. The oil is main-
70 tained at the proper levels in the respective burners by controlling the level of the oil at an equal corresponding height in the chambers H and H¹ respectively. This is accomplished by pumping oil from the main reservoir W thru pipes W¹ and W² by the gear
75 pump F which discharges into chamber H¹ by flowing over the top of the ring G¹ into chamber H in which the oil is maintained at a level equal to the height of the top of the return pipe X, thru which all surplus
80 oil not consumed by the burners is drawn by the pump F¹ and returned to the reservoir W thru pipes X¹ and W².
85

A plus valve Y controls the passage thru the pipe V and is operated by thermostatically controlled means (not shown) to automatically govern the amount of heat generated by the large burner. The size of the casing J, and burners supported therein, is such that it may be placed in the combustion space of a domestic furnace in proper position for use therein.

The operation is as follows:—

Assuming the pumps to be operating, air is 100

drawn thru one end of the motor casing to the blower and discharges therefrom thru the conduit I and casing J, a part passing thence thru the passages K to the under side of the ring O, and being deflected downwardly over the oil in the chamber J¹ and thence thru passage T¹ above which the gas generated is burned. Also, air is passing thru the passages in the sides of the spreader N and uniting with the gas generated at the upper end of the porous wick M. When too much heat is being generated, the main burner may be shut off by closing the valve Y, either manually or automatically, and the small burner allowed to continue to operate, and also serve to ignite the main burner when the oil is again admitted to the chamber J¹.

A manually operated valve is located in the pipe V to be closed at any time desired.

Having thus described my invention, I claim as new:—

1. A device of the character described comprising a motor, an air pump and two oil pumps driven thereby, a large burner and a small burner located adjacent thereto which serves to generate heat and also as a pilot light for the large burner, a chamber for oil in communication with the large burner and a chamber for oil in communication with the small burner; the level of the oil in said first chamber being maintained above that of the level in the second named chamber, one of said pumps acting to supply oil to both of said chambers and one acting to return the surplus oil from said chambers to the source of supply.

2. In combination, two independent burners each having a chamber for oil, one of which is of relatively small capacity and serves as a pilot light for the other burner, a wick of porous refractory material in one of said chambers, and means for maintaining oil at a level slightly below the top of said wick, and for maintaining a predetermined oil level in the chamber of the other burner, and air pump, and means for conducting air from said air pump to said burners.

3. A device of the character described comprising a supporting frame, a casing adapted to hold oil, a motor, an air pump and oil pumps suspended from said casing, an oil burner, a conduit for air leading from said air pump to said burner, conduits for oil leading from said pumps to the casing, conduits for oil leading from said casing to said burners, and means for maintaining oil in each of said burners at constant predetermined levels.

4. A device of the character described comprising means for holding oil, two independent burners located adjacent to each other and adapted to be operated simultaneously, a motor, an air pump and an oil pump operated by said motor, conduits for air and oil leading from said air and oil pumps respectively

to said burners, and means for maintaining oil in each of said burners at constant predetermined levels.

In testimony whereof I have affixed my signature.

ALBERT E. GRANT.