

No. 762,568.

PATENTED JUNE 14, 1904.

L. WILSON.
GAS PRODUCER.

APPLICATION FILED JAN. 6, 1904.

NO MODEL.

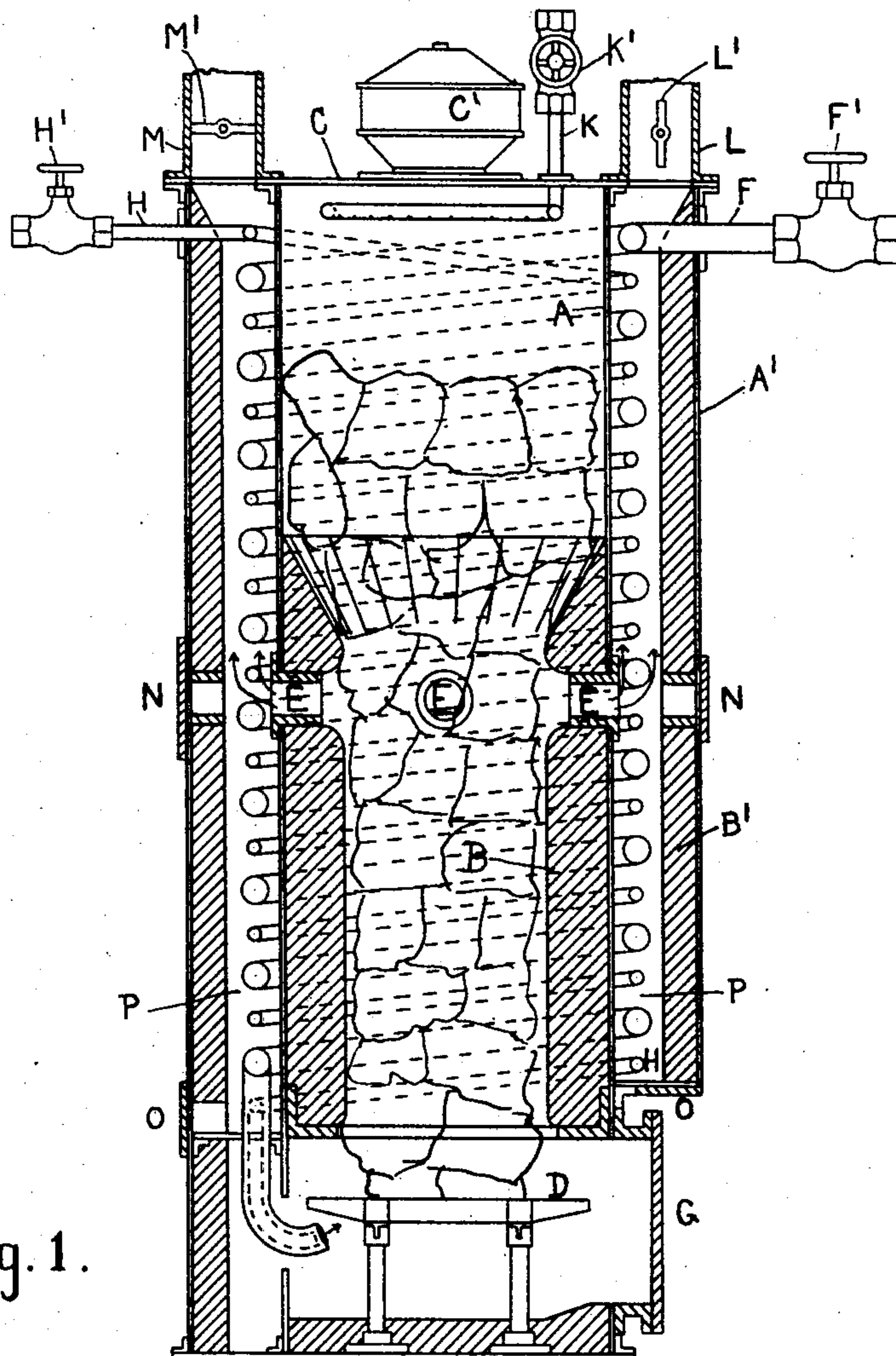


Fig. 1.

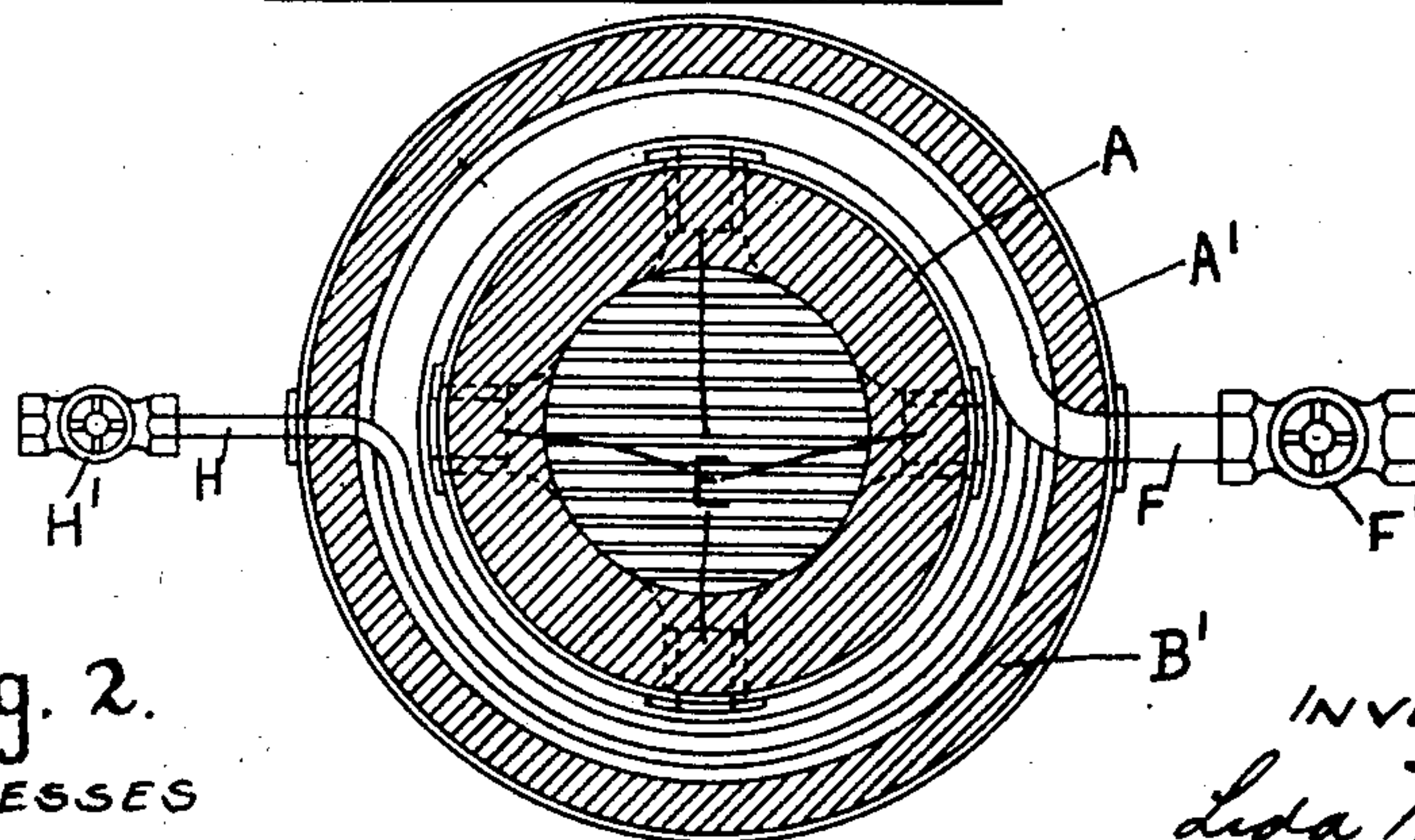


Fig. 2.

WITNESSES

Wm. Kuehne
John A. Perewé

INVENTOR

Lida Wilson

By Richard H. [Signature]

ATTORNEYS

UNITED STATES PATENT OFFICE.

LIDA WILSON, OF GLASGOW, SCOTLAND.

GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 762,568, dated June 14, 1904.

Application filed January 6, 1904. Serial No. 187,937. (No model.)

To all whom it may concern:

Be it known that I, LIDA WILSON, a citizen of the United States of America, whose present address is 55 West Regent street, Glasgow, Scotland, have invented a certain new and useful Improvement in Gas-Producers, of which the following is a specification.

This invention relates to gas-producers, and has for its object the production of gas of varying composition, illuminating and thermal power, at the will of the operator, and the utilization of the heat resulting from the consumption of fuel in order to produce the steam required and to superheat it and the air employed to produce the gas.

In the ordinary method of producing water-gas it is necessary to work alternately, at one stage taking off the gas for use, and when the fuel in the producer has become reduced in temperature by the steam "blowing up" the producer with air to promote combustion and revive the heat of the fuel, the gases produced at this stage being permitted to pass away to the atmosphere, thereby wasting fuel, losing gas, and causing intermittent production of gas for use. My improvements avoid this and permit constant production of gas suitable for use and ready control of its thermal and illuminating power during its production.

Figure 1 is a vertical section through my improved gas-producer. Fig. 2 is a plan of the same with top plate and hopper removed.

A is an inner casing, and A' is an outer casing, the former at its lower portion being lined with fire-brick or suitable heat refractory material B and the latter being lined with fire-brick or suitable heat refractory material B' throughout its length. The complete double casing is closed with a cover C, having a hopper C' for the admission or feed of fuel into the central chamber of the producer. D is a grate under the said central chamber, upon which grate the fire may be first lighted and to which access can be obtained through a door G, through which the ashes may be removed.

Between the outer casing A' and the inner casing A the air for supporting the combustion upon the grate D and in the body of fuel

within the central chamber is admitted at suitable pressure by a pipe F, entering near the top of the outer compartment and traversing through it in repeated turns until it is brought out from the said space between the casings to the under side of the grate D.

The steam, or water to produce the steam, which it is desired to pass through the incandescent fuel is introduced by the pipe H at suitable pressure, which pipe is arranged between the different turns of the pipe F or in other convenient manner within the space between the casings A and A'. The air, water, or steam may also be arranged to pass through one common pipe, the respective inlets thereto being duly controlled by separate valves. The contents of these pipes H and F, which are controlled by cocks or valves H' F', respectively, are so heated by radiation from the fuel in the central chamber of the producer and also by the gas issuing from the outlets E, leading therefrom that water supplied through the pipe H becomes dry steam or steam introduced therethrough, as well as the air introduced through the pipe F becomes highly superheated before admission to the fuel in the central chamber of the producer.

The gas passes off through the outlets E and the upper flues M and L, one of which conducts the gas away for use and the other is available for discharge of gases to the atmosphere when the fire is first lighted and when it is not desired to collect the gas produced. The pipes M and L are controlled by suitable valves M' L' for this purpose, and the outflow of gas may be assisted by suction applied in any convenient manner.

A pipe K, having a suitable control-valve K' and pierced with numerous holes, is introduced near the top of the central compartment of the producer, whereby liquid or gaseous hydrocarbons may be applied to the fuel in the producer, their vapors passing down through the fuel until they reach the aforesaid side outlets E, before reaching which point the great heat of the fuel in the central chamber converts the hydrocarbons into permanent gas.

By suitably adjusting the supply of the re-

spective quantities of fuel, air, water or steam, and hydrocarbon continuous working or production of gas for use may be maintained without intermittent blowing up, and the
5 quality of the resulting gas as to thermal and illuminating power may be controlled at the will of the operator. The quality of the gas may be ascertained by test-jets, as usual.

The outlet-apertures E, leading from the
10 central chamber of the producer to the surrounding compartment, have doors N in the outer casing for their inspection, cleaning, or access.

The dust carried over by the gas through
15 the outlets E tends to deposit as the gas rises, baffled by the pipes H and F, against which it impacts. The dust so deposited collects in the bottom of the space between the inner and outer casings, as at P, and doors O O are pro-
20 vided for its removal as it accumulates. Thus the gases after leaving this producer may be used without further purification; but, if desired, they may be cooled, washed, and filtered through scrubbers in the usual well-known
25 manner.

Having now described my invention, what I

claim, and desire to secure by Letters Patent, is—

In combination in a gas-producer, a central compartment for the combustion of fuel, a
30 heat refractory lining surrounding the lower part thereof, a surrounding compartment, provided with a heat refractory lining, and forming an intervening space between such lining and the casing of the central compart-
35 ment, a lateral exit for the gas from the said central compartment, intermediate of its height, communicating with said intervening space, a duplicate coil of pipes for the sup-
40 ply to the producer, of heated air, and of superheated water or steam arranged in said space surrounding the central compartment, and means connected to the top of the space between the compartments for taking off the
45 gases, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

LIDA WILSON.

Witnesses:

JOHN W. W. COLB,
ROBERT ARTHUR THOMSON.