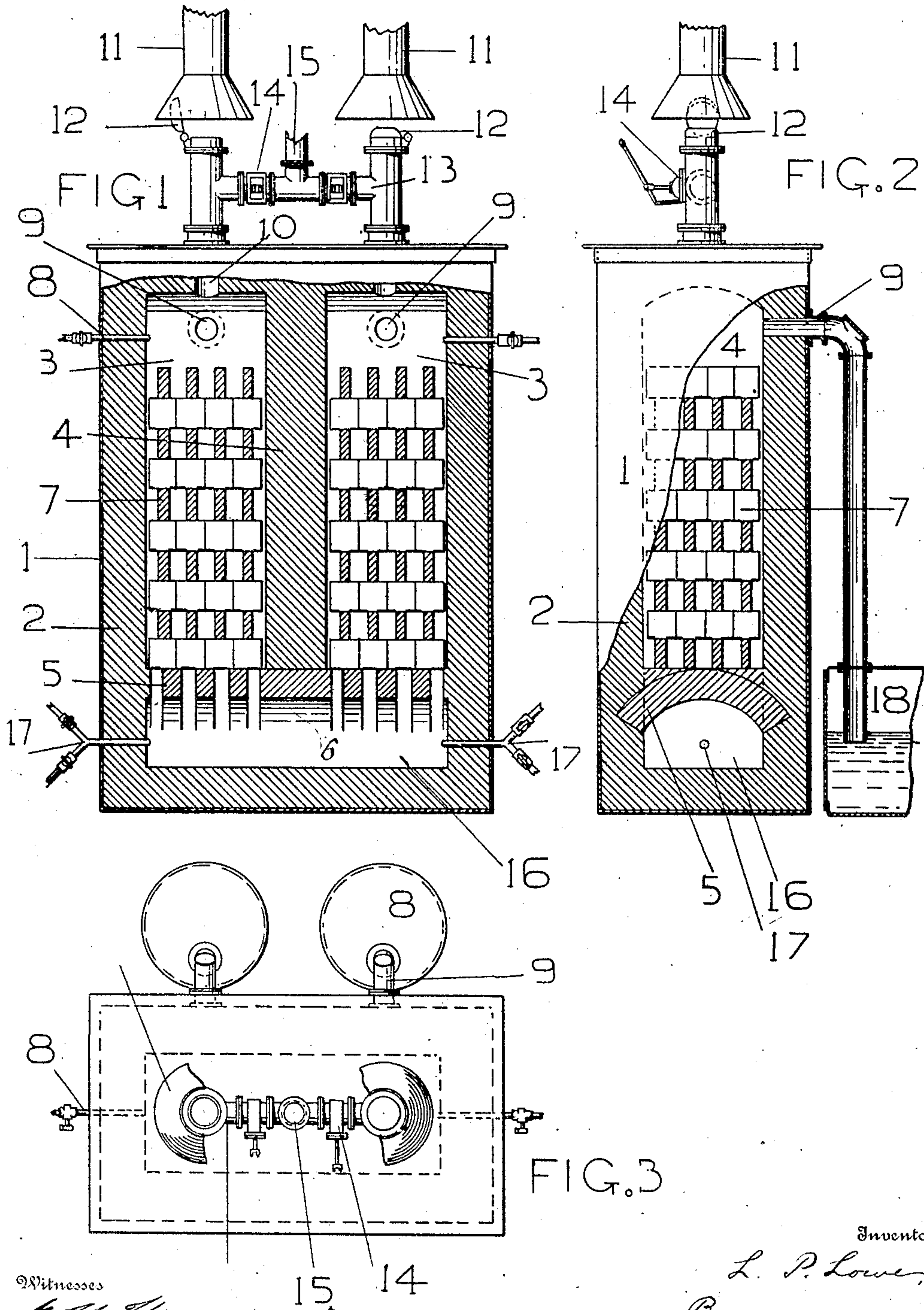


No. 869,582.

PATENTED OCT. 29, 1907.

L. P. LOWE.
GAS MAKING APPARATUS.
APPLICATION FILED MAR. 27, 1905. RENEWED SEPT. 3, 1907.



Witnesses

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UNITED STATES PATENT OFFICE.

LEON P. LOWE, OF SAN FRANCISCO, CALIFORNIA.

GAS-MAKING APPARATUS.

No. 869,582.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed March 27, 1905. Serial No. 252,225. Renewed September 3, 1907. Serial No. 391,150.

To all whom it may concern:

Be it known that I, LEON P. LOWE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Gas-Making Apparatus, of which the following is a specification.

This invention relates to an improved apparatus for generating gas from oil, the object of the invention being to provide an apparatus for this purpose which shall be compact and simple in construction, economical in operation, and which will avoid the deposit and accumulation of carbonaceous material.

In the accompanying drawing, Figure 1 is a broken side elevation of the apparatus; Fig. 2 is a broken end view thereof; Fig. 3 is a broken plan view.

Referring to the drawing, 1 represents a casing, lined with refractory material 2, and divided into two chambers 3 by a transverse wall 4 resting upon an arch 6. Upon other arches 5 at the bottom of the chambers and at the same level with the arch 6, is supported loosely piled refractory material 7. With the top of each chamber 3 there are connected a steam supply pipe 8, a gas outlet pipe 9, and a flue 10 leading to a stack 11 and controlled by a valve 12, said flues being also connected by branches 13, controlled by valves 14, to an air supply pipe 15, for furnishing an air blast to either chamber. Into a common combustion and generating chamber 16 beneath the arches 5 and 6 discharge two oil pipes 17, one beneath each of the chambers 3. The gas outlet pipes 9 lead into washers 18.

The method of operating the apparatus is as follows. The oil supply pipes 17 being opened, one of the flues 10 is closed at the top and the other opened, and an air blast is directed into the former flue, and is forced down through the corresponding chamber 3 to burn the oil injected into the combustion chamber, the products of combustion passing up through the other chamber 3, and highly heating refractory material therein, and then passing out by the stack. After a sufficient time, the direction of supply of air is reversed and the products of combustion are passed upwards through the first chamber, heating in turn the refractory material therein. The air thus supplied for combustion was highly heated by the refractory material before combustion, thus economizing in fuel and producing great heat. This operation is repeated in both directions alternately, until the two chambers are brought to a sufficiently high temperature for gas making.

Any adhering carbonaceous material which would otherwise be thrown off as smoke is burned off, thereby again economizing in fuel. The preliminary heating being now effected, the gas making stage of the process begins. Let it be supposed that, at the end of this preliminary heating, air was supplied to the chamber 3 on the right. The oil supply 17 on the left is now shut off, as is also the air supply 13 on the right, and in place thereof steam is introduced on the right and passes downwards through the chamber 3. It thereby becomes superheated and commingles with the oil vapor in the combustion and generating chamber, the two passing up through the highly heated piles of refractory material in the chamber 3 on the left, forming fixed gas, which escapes through the gas outlet pipe 9 into the washer 18. After this step has been continued for a sufficient time, the steam and oil pipes on the right are shut off, air is admitted from the pipe 15 through the chamber on the left, burning off any carbon clinging to the refractory material and the products of combustion pass up through the chamber 3 on the right, thereby highly heating the refractory material in said chamber. When it has been sufficiently heated, the air is shut off and steam is introduced in the place of air by the steam pipe on the left. This steam passing down through the refractory material becomes superheated, mixes with the oil in the generating chamber and the two together pass up through the highly heated refractory material in the chamber 3 on the right, forming fixed gas, which passes off by the pipe into the washer as before. This process can be continued indefinitely.

I claim:—

An apparatus for making gas, comprising a casing, a wall dividing the interior of the casing into two chambers, an arch on which said wall rests, arches below each chamber, loosely piled refractory material thereon, a steam pipe, a gas outlet pipe, a flue, and means for supplying an air blast all communicating directly with the top of each generating chamber, means for supplying oil to the interior of the casing beneath the said arches, and means for independently closing the steam pipe, the flue and the air blast at the top of either chamber, substantially as described.

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

L. P. LOWE.

Witnesses:

FRANCIS M. WRIGHT,
BESSIE GORFINKEL.