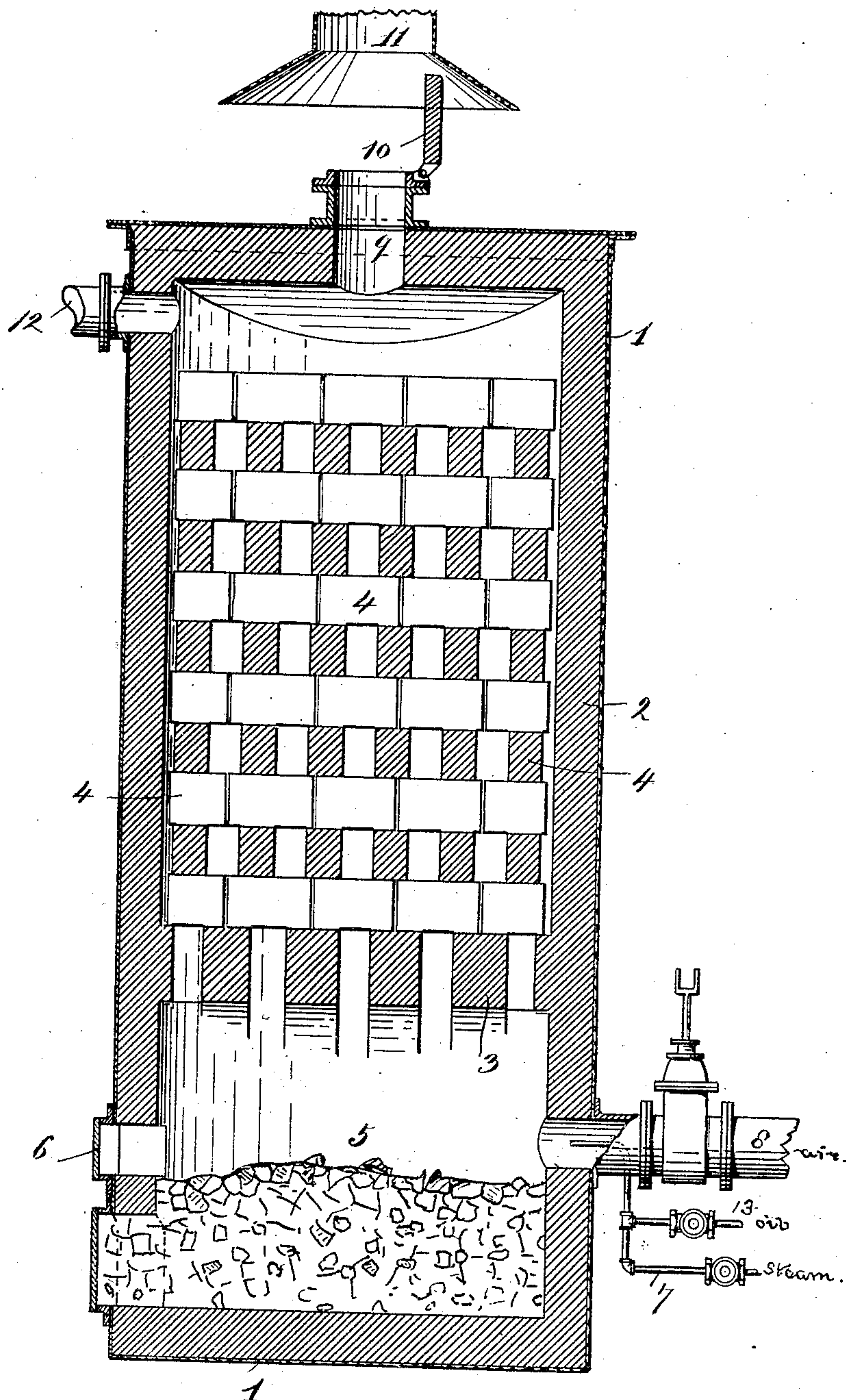


No. 839,939.

PATENTED JAN. 1, 1907.

L. P. LOWE.
APPARATUS FOR MAKING GAS AND COKING.

APPLICATION FILED MAY 3, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

LEON P. LOWE, OF SAN FRANCISCO, CALIFORNIA.

APPARATUS FOR MAKING GAS AND COKING.

No. 839,939.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed May 3, 1904. Serial No. 206,246.

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 Apparatus for Making Gas and Coking, of which the following is a specification.

This invention relates to an improved apparatus for coking, and is especially valuable for utilizing for this purpose the tarry residues from gas-making. Heretofore these residues have been used for feeding furnaces.

The object of my invention is to provide a more economical apparatus utilizing the same.

In my improved apparatus I separate said tarry residues into hydrocarbon gases and coke, and I therefore not only utilize the heat of combustion of the hydrocarbon gases for any desired purpose, as for heating refractory material for gas-making or otherwise or use said hydrocarbon gases directly as commercial gas, but in addition I obtain a valuable commercial product—namely, coke.

In said drawing the figure is a vertical section of a gas-generating apparatus.

Referring to the drawing, 1 represents a casing lined with refractory material 2. Upon arches 3 are supported loose piles of refractory material 4. The lower portion of said casing below said arches forms a combined coking and combustion chamber 5, into which bituminous coal or the tarry and other carbonaceous residues from gas-making may be fed through the door 6.

7 is a steam-supply pipe; 13, an oil-supply pipe, and 8 an air-supply pipe for burning oil at the burner 14 above said coal or tarry residues in said coking-chamber.

9 is a flue closed by a valve 10, leading to the stack 11.

12 is a pipe for conducting off the gas generated in the casing.

15 is a door which is opened to remove the coke.

The operation is as follows: Coal or tarry residues having been fed into the coking-chamber, oil is admitted to the oil-burner 14 and air is supplied for combustion of said oil. The flames and hot gases arising from the combustion of the oil pass through the arches 3 and highly heat the same. The residues in the coking-chamber are thus coked by the radiant heat from the arches 3 of said chamber and also by the combustion of the oil and

of the gases arising during the heating of said residues, as in the beehive process of making gas from bituminous coal, sufficient air being supplied for the combustion of said gas. The products of combustion of the oil and gases after highly heating said arches 3 pass through the piles of refractory material 4, highly heating the same and then escaping by the flue 9 and stack 11. The air is now shut off, the valve 10 is closed, and steam and oil are passed by the pipes 7 and 13 through the highly-heated refractory material, making gas therefrom in the usual manner. At the same time the gas which continues to be distilled from the coal or tarry residues is added to the gas thus formed and with said gas is conducted by the pipe 12 to the washers and scrubbers in the usual manner.

By this apparatus the tarry residues are utilized more economically than heretofore, as their heat values assist in gas-making, and coke is obtained as a product of the process. However, the apparatus may also be used as a means of coking from coal.

I claim—

An apparatus of the character described, comprising a casing having therein an open roof and unobstructed from said roof to the bottom to form a coking and combustion chamber, and loosely-piled refractory material upon said roof, a discharge-door at the bottom of said coking-chamber to remove coke therefrom, a feed-door at a higher level than the discharge-door for feeding coal or tarry residues into said coking-chamber, an oil-burner discharging directly into said coking-chamber not lower than the level of the feed-door, a flue at the other end of the apparatus through which pass the products of combustion after passing through the open roof and loosely-piled refractory material to heat the same, means for shutting off the air-supply to said oil-burner, means for supplying oil and steam and passing them through the loosely-piled refractory material to generate gas, and an independent conduit for leading off the gas so formed, 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.