

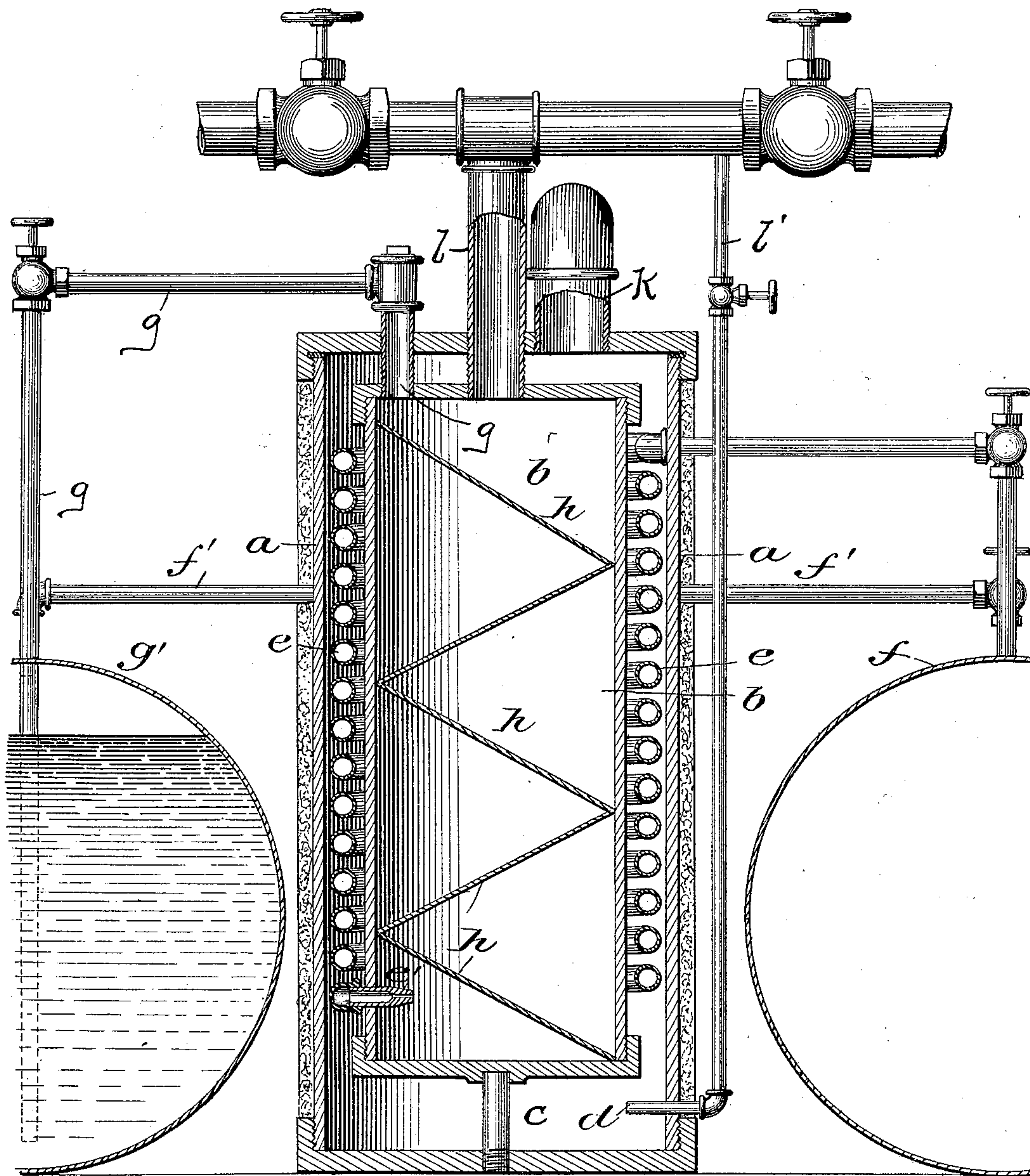
No. 606,998.

Patented July 5, 1898.

J. A. McGOWAN.
CARBURETER.

(Application filed Jan. 13, 1898.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN A. MCGOWAN, OF MAYWOOD, ILLINOIS, ASSIGNOR OF THREE-EIGHTHS
TO WILLIAM R. ARMSTRONG, OF CHICAGO, ILLINOIS.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 606,998, dated July 5, 1898.

Application filed January 13, 1898. Serial No. 666,586. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MCGOWAN, a citizen of the United States, residing at Maywood, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Carbureters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to a carbureter, my object being to provide an improved apparatus for readily and efficiently manufacturing gas from any of the hydrocarbon oils, as naphtha, gasolene, benzene, and the like.

I provide a furnace in the bottom of which is provided a combustion-chamber and above which is placed the generating-chamber. The oil is admitted at the upper end of the generator and falls upon a series of plates arranged obliquely end to end and in reverse order from top to bottom of the generating-chamber. Coils for superheated steam or air surround the generating-chamber in the space between the same and the walls of the furnace, whereby they are subjected to the heat from the combustion-chamber, and the superheated air or steam is admitted to the lower end of the generating-chamber, rising and carrying the generated gas out of the chamber through a pipe or duct connected with the top thereof. The walls of the generating-chamber, as well as the oblique plates therein, become highly heated, and the oil as it drops into the chamber and flows down the heating-surfaces thereof is converted into a gas by the high heat and is carried from the chamber by the superheated air or steam. A portion of the generated gas is led through a branch pipe to a gas-burner for supplying gas to the combustion-chamber. The oil may be admitted to the generating-chamber by gravity or by air-pressure.

I have illustrated my invention in the accompanying drawing, in which the generator is shown in section.

Like letters refer to like parts in the drawing.

Within the furnace *a* is provided a generating-chamber *b*, beneath which is the com-

bustion-chamber *c*, heated by the gas-burner *d*. Surrounding the chamber *b* are coiled pipes *e*, through which air is passed from the tank *f*, the air being heated and passing into the lower end of generating-chamber *b* through nozzle *e'*. The pipes *e*, instead of being connected with an air-tank, may be connected with a steam-generator. The oil-inlet pipe *g* opens into the chamber *b* at the upper end, being connected with oil-tank *g'*, supplied with air under pressure through pipe *f'* to force the oil into chamber *b*. Within chamber *b* are arranged the oblique plates *h h*, placed end to end in reverse order. These plates may be made from a single piece of metal bent at intervals to form the several oblique members. A flue *k* extends from the upper end of the furnace, and a gas-exit *l* extends from the upper end of chamber *b* and extends to the gas-mains or other place where the gas is to be utilized. A branch pipe *l'* extends from pipe *l* into the burner *d*.

In operation the burner *d* heats the lower end of the chamber *c*, and the heat passing upward heats the walls of the chamber and the superheating-pipes *e*. The oil dropping into the top of the generating-chamber strikes the oblique plates and flows along the same, being spread over the surfaces to thereby completely subject the same to heat and convert the oil into gas. The oil flows down the upper face of the first oblique plate, along the under side of the second plate, and so on, being thus completely subjected to the heat and the draft of superheated air or steam. The superheated air or steam entering by nozzle *e'* carries the gas out through duct *l* and part thereof passes by branch pipe *l'* to burner *d* to feed the flame in the combustion-chamber.

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

The combination with an outer shell or casing, of an inner shell, an annular space being formed between the same, a series of coiled pipes situated in said annular space and opening into said inner shell, a space being provided beneath the bottom of said inner shell to constitute a combustion-chamber, an oil-inlet at the top of said inner shell, a series

of oil-distributing plates within said inner shell, a gas-outlet leading from the upper end of said inner shell, and a branch pipe leading therefrom to a nozzle for directing a flame of
5 gas into said combustion-chamber, substantially as described.

In witness whereof I have hereunto sub-

scribed my name in the presence of two witnesses.

JOHN A. MCGOWAN.

Witnesses:

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