

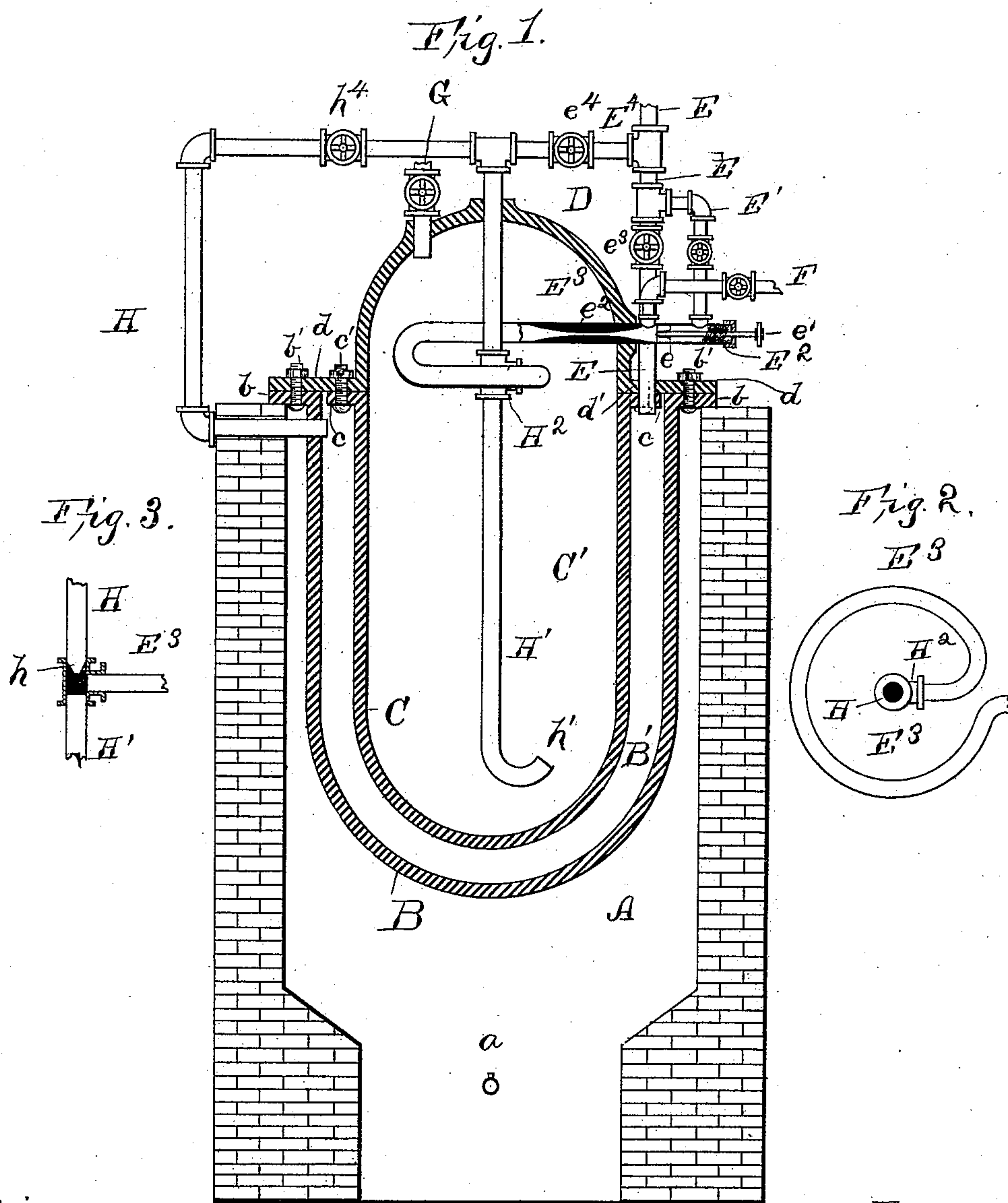
(No Model.)

G. W. GOGIN & G. JONES.

GAS APPARATUS.

No. 336,912.

Patented Mar. 2, 1886.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE W. GOGIN, OF BOSTON, MASSACHUSETTS, AND GOMER JONES, OF WASHINGTON, D. C.; SAID JONES ASSIGNOR TO SAID GOGIN.

GAS APPARATUS.

SPECIFICATION forming part of Letters Patent No. 336,912, dated March 2, 1886.

Application filed June 17, 1885. Serial No. 169,009. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. GOGIN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, and GOMER JONES, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Gas-Generators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to that class of gas-generators in which the gas is generated by means of steam, which atomizes and vaporizes the oil at one operation.

The invention consists of constructions and combinations, all as will hereinafter be set forth in the specification and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents our improved construction, the furnace and jackets being in section, the vapor-pipe partly in section, and the pipe-connections in elevation; Fig. 2, a plan showing the form of the vapor-pipe, and Fig. 3 a detail showing the T-connection in section and the pipes in elevation.

A represents the furnace, B the outer jacket, C the inner retort or pot, and D the dome. The furnace may be of any construction provided with the ordinary means for producing combustion; but in the device shown a gas-supplier, *a*, is placed below the generator. As no claim will be made on this construction, a detailed description or illustration of the parts is unnecessary. The construction of the jacket B and the retort or pot C is also immaterial, the form shown, however, being preferred. These parts are respectively provided with the flanges *b* and *c*, to which the flange of the dome D is attached by bolts *b'* and *c'*. The flange *b* rests upon the walls of the furnace A and supports the generator in the manner shown, or it may be supported in any other suitable manner.

E represents a steam-pipe connected with any suitable steam-supplying source, and preferably passes through a superheater before

reaching the generator. This pipe is provided with a branch pipe, *E'*, leading to a chamber, *E²*, provided with a valve-seat, *e*, and a needle-valve, *e'*, which regulates the supply of steam to the vapor-pipe *E³*, which is coiled in the chamber *C'*, for a purpose hereinafter explained. The oil-pipe *F* is connected with the vapor-pipe *E³* immediately in front of the opening in the valve-seat *e*, so that the steam passing through said opening will impinge upon the descending column of oil, which is atomized and forced through the opening in the reduced portion *e²* of the vapor-pipe and into that part of the vapor-pipe which is coiled in the chamber *C'*, and vaporized by the hot gases passing to the outlet *G* in the dome, and by coiling the pipe the action of these gases upon the vapor is increased. The main pipe *E* is passed through the flange *d* of the cover D at the point *d'* (which is at one side of the point over which the atomizer is placed) and into the steam-chamber *B'*, where the temperature of the steam is maintained or increased by the fire in furnace A. The steam passes out of the chamber *B'* by means of the pipe *H*, which enters the wall of the jacket B immediately below the flange *b*, so that the hottest steam will always be drawn out first. This pipe *H* is passed through the dome into the chamber or retort *C'* and connected by a T-connection with a pipe, *H'*, which terminates near the bottom of said chamber. The end *h'* is curled, as shown, to deflect the gases issuing from the pipe *H'* against the wall of the chamber *C'*, which causes the gases to expand and thoroughly mix. The T-connection *H²*, which has three ways, connects the pipe *H* by its reduced end *h*, the pipe *H'*, placed immediately under pipe *H*, and the vapor-pipe *E³*, which enters at right angles to and between the other pipes, *H* and *H'*, so that the vapor passing through pipe *E³* will be impinged upon and thinned by the current of steam passing through the reduced end of pipe *H* and deflected into pipe *H'*, which conveys it to the chamber *C'*, where the combined gas and steam is partially fixed and expanded by the hot wall of the jacket C.

If desired, the steam, instead of passing to chamber *B'*, may be passed directly to pipe *H*

by means of pipe E⁴. To accomplish this cocks e³ and h⁴ should be closed and the cock e⁴ opened.

The operation of the apparatus is as follows:
 5 Steam is passed through the chambers B' and C' until all the parts have become thoroughly heated and the cold air expelled from all the pipe-connections. The steam is now turned
 10 into chamber E² and the needle-valve moved sufficiently from its seat to permit the steam to pass into the vapor-pipe E³. At the same time the oil is turned on and allowed to flow in a small stream to the vapor-pipe. The im-
 15 pact of the steam passing through the opening in the valve-seat atomizes the oil and projects it through the reduced opening in the vapor-pipe E³ within the chamber C', the heat from which prevents a reduction of temperature at the moment of vaporization of the oil. The
 20 vapor enters the T H², where it is crossed by the descending current of steam in pipe H. This current deflects the vapor into pipe H', and also reduces or thins the vapor, so that when it passes into chamber C', where the
 25 steam and vapor are thoroughly commingled and expanded, the vapor will have the proper density for a fuel-gas before it is conveyed to the burner by the pipe G.

What we claim as new is—

30 1. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe connected to said atomizer and within the mixing-chamber, and a steam-conveyer pipe connected with the vapor-pipe, substantially
 35 as described.

2. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe connected to said atomizer and inclosed in said chamber, and a steam-conveyer pipe ex-
 40 tending to near the bottom of the chamber and

connected with the vapor-pipe, substantially as described.

3. In a gas generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe coiled within said chamber and connected with 45 the atomizer, and a steam-conveyer pipe joined to the vapor-pipe, substantially as described, for reducing the density of the vapor made by the atomizer.

4. In a gas-generator, the combination of a 50 mixing-chamber, an atomizer, a vapor-pipe within said chamber and connected with the atomizer, and a steam-chamber inclosing the mixing-chamber and having inlet and outlet pipes, said outlet-pipe passing into the mix- 55 ing-chamber and connected to the vapor-pipe, substantially as described.

5. In a gas-generator, the combination of a mixing chamber, an atomizer, a vapor-pipe, a steam-chamber, a steam-conveyer pipe hav- 60 ing suitable cocks and leading from the steam-chamber, and a steam-supply pipe having branches provided with suitable cocks and connected with the steam-chamber and the steam-conveyer pipe, substantially as de- 65 scribed, so that the steam may be passed either into the steam-chamber and then to the steam-conveyer pipe or directly into the steam-conveyer pipe, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEO. W. GOGIN.
 GOMER JONES.

Witnesses for Gogin:

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