

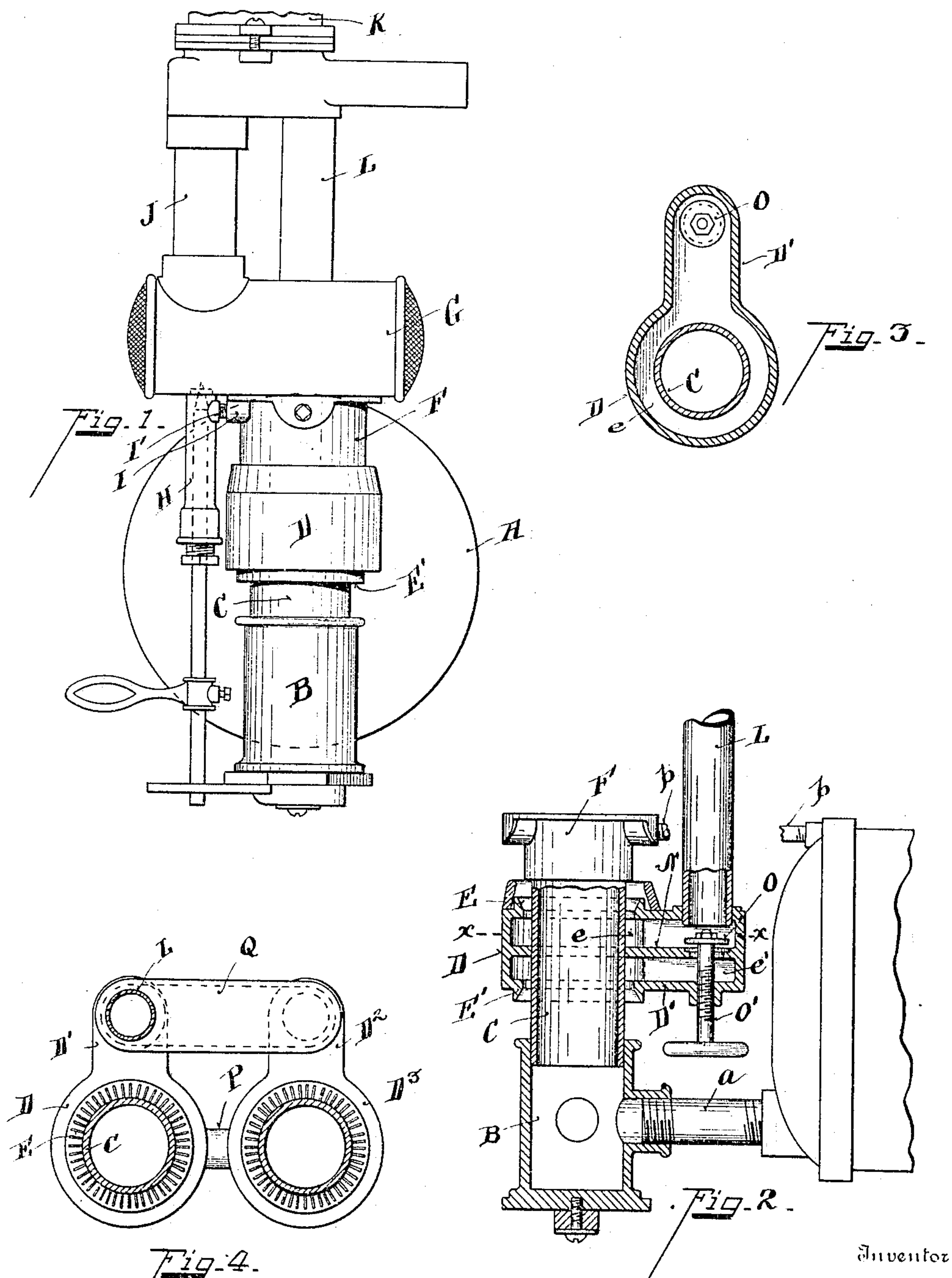
No. 766,122.

PATENTED JULY 26, 1904.

J. STUBBERS.  
VAPOR GENERATOR.

APPLICATION FILED MAR. 21, 1904.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH STUBBERS, OF COVINGTON, KENTUCKY, ASSIGNOR TO THE  
INCANDESCENT LIGHT & STOVE COMPANY, OF CINCINNATI, OHIO,  
A CORPORATION.

## VAPOR-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 766,122, dated July 26, 1904.

Application filed March 21, 1904. Serial No. 199,237. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH STUBBERS, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Vapor-Generators, of which the following is a specification.

My present invention consists of an improvement on the carbureter shown and described in Letters Patent No. 683,232, granted my assignee September 4, 1901.

The object of my invention is to provide means for controlling the generation of vapor through a large range by a regulating device so the same may be adapted to a large or small number of burners as the occasion requires.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improvement in position for use. Fig. 2 is a central vertical section of my duplex burner and controlling-valve. Fig. 3 is a section on line *xx*, Fig. 2. Fig. 4 is a top plan view of a modification, showing two generators, taken on the plane of the subflame-burners.

The general plan and arrangement of the present device is substantially the same as that shown in former patent, No. 683,232.

A represents a reservoir containing the gasoline or other liquid. It is maintained automatically under a given pressure by heat, as described in said patent.

B represents the base of the generator; C, the generator-cylinder; E E', the subflame-burners; F, the cap on the generating-cylinder.

*a* represents a pipe forming a connection between the reservoir and the base B.

*b* represents the circulating-pipe connecting the top of the reservoir with the top of the generating-cylinder for maintaining an equilibrium of circulation and pressure between the reservoir and generator.

G represents the air-receiving compartment.

H represents the needle-valve pipe; I, the outlet from the generator-cylinder; I', a pipe

connection between the generator and needle-valve pipe for admitting the vapor into the needle-valve chamber.

J represents the pipe by which the carbureted air and gas are taken off, first, to supply the service-pipe K, and, second, to supply the carbureted vapor to the return-pipe L for supporting the subflame.

The internal features of the generator-shell shown in the aforesaid patent are omitted, such as the wicking to aid the supply of gasoline when it is low in the reservoir, so that it may rise and be brought under the heat of the subflame, also for regulating the subflame or burner. (Not shown in the drawings, as such features may be variously modified.)

My present invention relates to an improvement in a vapor-chamber and the arrangement of the parts to support one or two subflame-burners, as the occasion requires. A generator has to be of greater capacity to supply vapor for twenty burners than is required for supplying a lesser number, say from five to ten. The present invention provides means for operating the same to its fullest capacity or to one-half of the capacity, and this change is made by the manipulation of a single valve.

D represents the shell of the subflame-chamber. It is preferably of the form shown in Figs. 2 and 3. The tail portion D' supports the carbureter vapor-pipe L. N represents a diaphragm separating said vapor-chamber into two compartments, one for supplying the subflame-burner E and the other supplying the lower subflame-burner E'.

O represents a valve mounted on the valve-stem O', which has a threaded connection with the lower head of the shell, the valve O controlling an enlarged opening for the admission of the carbureted vapor into the lower vapor-chamber *c*.

*c* represents the upper chamber.

When the valve is elevated above the diaphragm N, the vapor supplied by pipe L is passed freely into both chambers and both subflame-burners are in operation, and the generator cylinder or shell is heated to a correspondingly greater extent, and hence increased



amount of heat is given to the interior generator-shell for vaporizing the liquid therein. The parts shown in Fig. 2 are therefore in position for supplying air to the greatest number of burners. If now the valve O is retracted, so that it rests upon the diaphragm N, the supply of vapor to the subchamber  $e'$  is cut off and only the subflame-burner E will be in operation. When it is desired to cut the generator out of operation, the valve O is raised till it comes in contact with the mouth of pipe L and closes the same. Hence by the manipulation of a single valve the generator is controlled to a lower or to a full range of generation.

Sometimes it is desired to duplicate the system of generation. This is done as shown in Fig. 4, which shows two generators connected by a common supply-pipe P at the base, a single vapor-generator at the top, and a bypass Q leading from the pipe L to the tail  $D^2$  of the subflame-burner shell  $D^3$  of the second generator, the construction of the second generator being the same as the first already described, or it is obvious that said generators may supply a separate service-pipe and have its own individual return-pipe L.

Having described my invention, I claim—

1. In combination with a vapor-generator of two annular flame-burners around the generator, each being provided with a separate

supply-chamber, one above the other, a pipe for supplying vapor, and means for controlling the supply of vapor through said pipe to both chambers or for controlling the supply of vapor to one of said chambers, substantially as described.

2. In combination with a generator-shell, duplicate subflame-burners and two separate supply-chambers around the generator-shell, each chamber supplying its respective subburners, a pipe for supplying vapor, and means for controlling the supply of vapor through said pipe to both chambers or for controlling the supply of vapor to one of said chambers, substantially as described.

3. In combination with a cylindrical generator, a subflame-burner casing surrounding the same, a diaphragm provided with an orifice and dividing such casing into two compartments, each of said compartments being provided with burner-orifices, a vapor-supply pipe arranged to supply vapor to the casing, and a valve arranged to control the outlet of said pipe and also the orifice in said diaphragm, substantially as described.

In testimony whereof I have hereunto set my hand.

JOSEPH STUBBERS.

Witnesses:

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LEO O'DONNELL.