

(No Model.)

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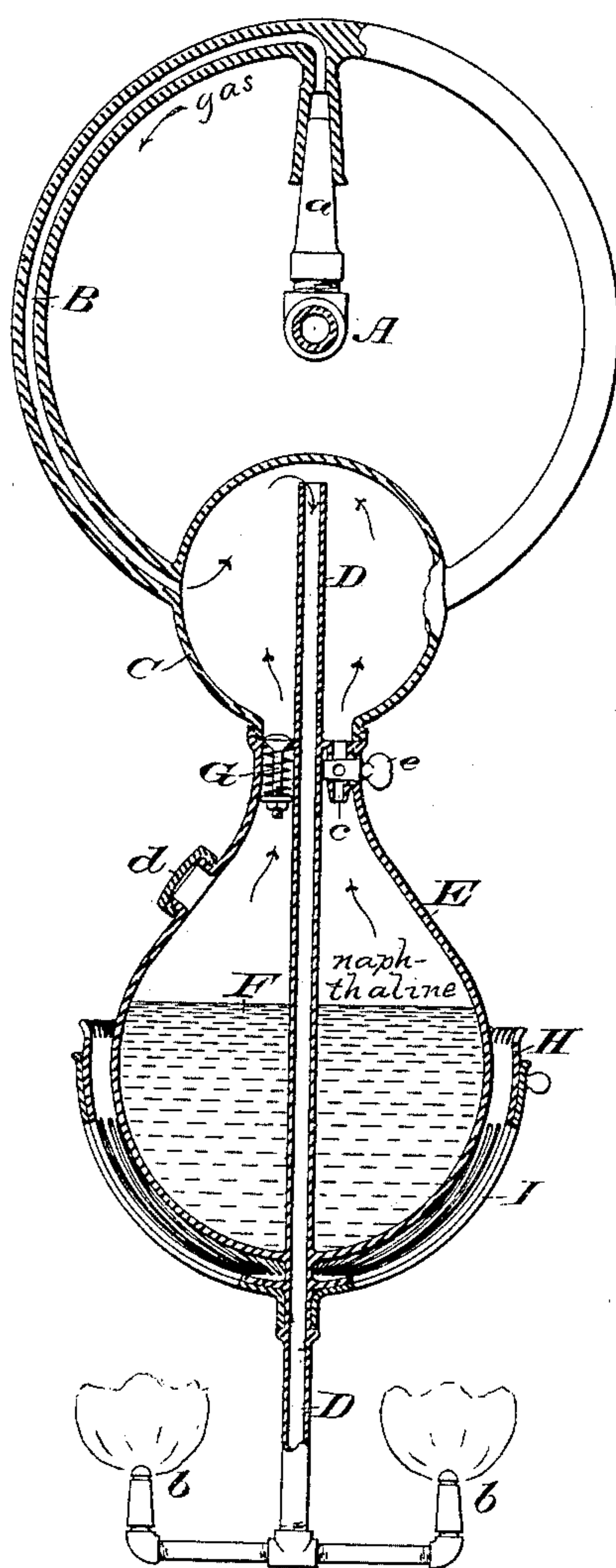
N. FINCK.

DEVICE FOR ENRICHING GAS SUPPLIED TO BURNERS.

No. 324,992.

Patented Aug. 25, 1885.

Fig. 1.



WITNESSES:

Geo H. Fraser

E. B. Bolton

INVENTOR.

Nicholas Lind
By his Attorneys,

Burke, Fraser & Connors

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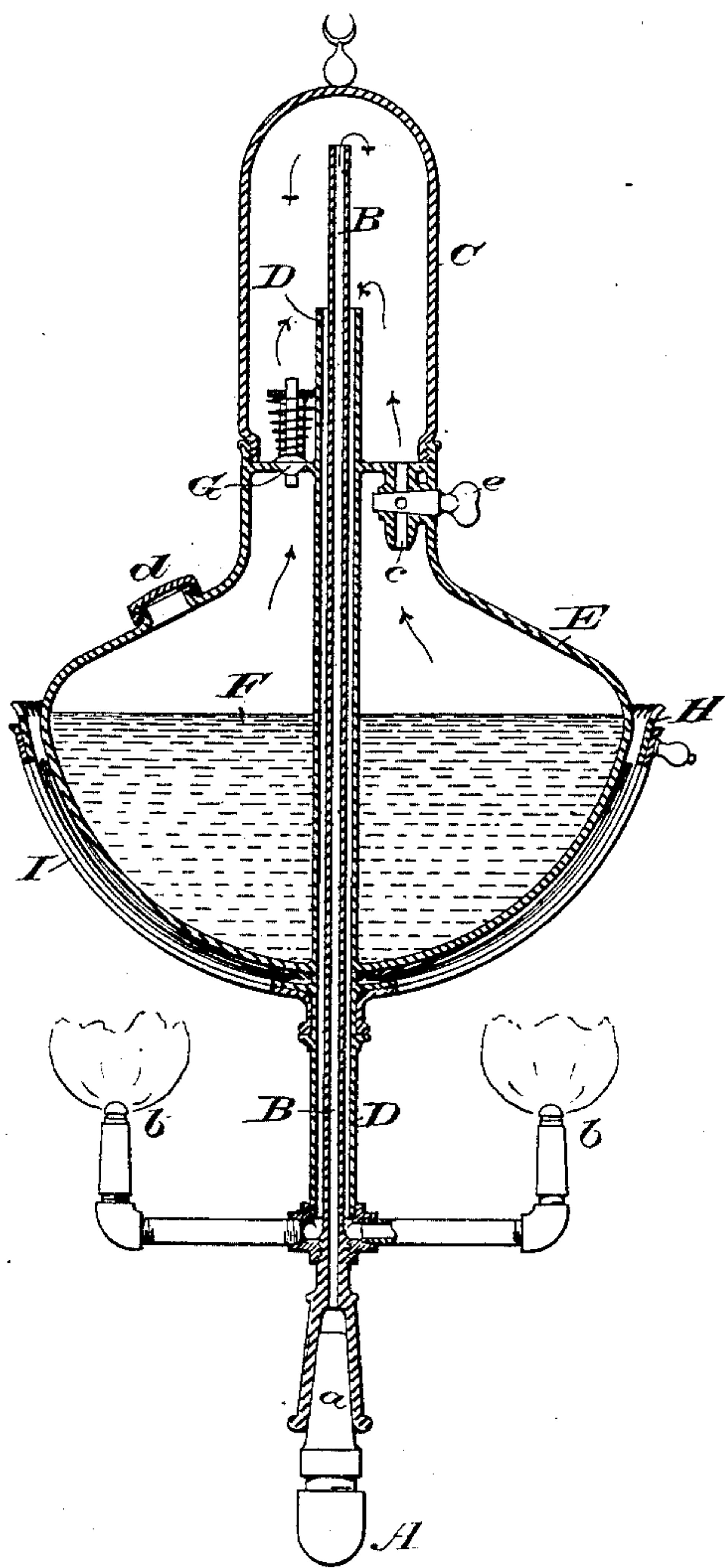
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Fig. 2.



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Geo. H. Fraser.

E. B. Bolton

INVENTOR:

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UNITED STATES PATENT OFFICE.

NICHOLAS FINCK, OF ELIZABETH, NEW JERSEY.

DEVICE FOR ENRICHING GAS SUPPLIED TO BURNERS.

SPECIFICATION forming part of Letters Patent No. 324,992, dated August 25, 1885.

Application filed June 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS FINCK, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain Improvements in Devices for Enriching Gas Supplied to Burners, of which the following is a specification.

My invention relates to that class of devices for enriching or carbureting ordinary illuminating-gas wherein the apparatus is small and is mounted directly on the gas-bracket and wherein the illuminating-jets are employed to volatilize the hydrocarbon employed.

In all devices of this character, so far as I am aware, the chamber in which the vapor and gas mix is a part of the chamber which contains the hydrocarbon and in which the vapors are generated. As the amount of vapor brought into contact with the gas cannot be easily controlled and regulated, the result is that the gas is apt to be overcharged with carbon and the jet caused to smoke. To avoid this I construct the hydrocarbon-chamber distinct from the mixing-chamber and connect the two by a rather small or narrow passage, preferably controlled by a cock. This forms one feature of my invention.

Another feature consists in supplying the apparatus or device with a safety-valve arranged in the partition between the two chambers, whereby, if the pressure in the hydrocarbon-chamber should, from overheating or any cause, become too great, owing to the closure or choking of the vapor-passage, this valve will lift and allow the vapors to expand into the mixing-chamber and the gas-conduit.

Another feature of my invention consists in the means for mounting the apparatus on the gas-bracket.

These novel features of my invention will be hereinafter particularly described, and carefully defined in the claims.

In the drawings which serve to illustrate my invention, Figure 1 is a vertical mid-section of the apparatus, shown as adapted to be suspended from a gas-bracket; and Fig. 2 is a similar view showing it as adapted to be mounted on a gas-bracket.

Referring first to Fig. 1, A represents a gas-bracket pipe or any gas-supply pipe, and *a* a nipple thereon.

B is a ring-like suspension-pipe, one side only of which may or need be tubular to form a gas-passage. This pipe has a socket to receive the nipple *a*.

C is the mixing-chamber, into which the gas-pipe B enters, as shown. This chamber may be of any shape.

D is the pipe which leads the enriched gas from the mixing-chamber to the illuminating and heating jets *b*. This pipe is arranged axially in the chambers.

E is the hydrocarbon-chamber, which may be of any desired form, and F represents the hydrocarbon contained therein. I prefer to employ naphthaline as the most convenient form of hydrocarbon, it being a solid and capable of being inserted in the form of fragments at an opening, *d*, in the side of chamber E.

In the partition which separates the mixing-chamber C from the chamber E is a rather narrow passage, *c*, which is shown as controlled by a cock, *e*. The hydrocarbon vapors generated in E by the heat from burners *b* pass in regulated quantities to the mixing-chamber C, where they mix with and enrich the gas, which then passes to the jets or burners through D, as described.

G is a spring safety-valve arranged in the partition between chambers C and E and opening into the former. If the pressure in chamber E becomes too great, owing to the closure or partial closure of *c*, or from its being unable to pass off rapidly enough through *c*, the valve G will lift and permit the vapors to expand into C, and if necessary to back into the gas-pipe B.

By means of the cock *e* the amount of vapor admitted to C can be regulated from time to time, or once for all, to suit the circumstances. If too much be admitted, the jets will smoke; if too little, the maximum economy will not be attained.

In large carbureting apparatuses which are designed to carburet the gas in a gas-main and regulate the pressure also, and which are characterized by the use of special heating jets or furnaces to volatilize the hydrocarbon, it has been proposed to employ automatically-operated valves to supply the vaporized hydrocarbon to the mixing-chamber. These I do not employ, as in my apparatus the supply de-

pendes on the character of the light and must be controlled by the hand guided by the judgment.

In order to protect the vaporizing-chamber E against the direct fierce heat of the jets, and to regulate the heat also, I provide a cup-like shield, H, slotted like a register-plate and arranged to house the lower part of the chamber E, and exterior to this I arrange a like shield, I, which is arranged to rotate. These shields are mounted on pipe D, and perform the usual functions of the shields of this general character commonly arranged between the jets and the chamber to be heated.

Fig. 2 represents the same construction as that first described, except that the gas-pipe B passes down through the pipe D, and is provided with a socket at its lower end to receive the nipple *a*.

It is immaterial, so far as my invention is concerned, in what manner the gas-pipes B and D enter or connect with the mixing-chamber. They need not pass through chamber E; but I prefer that construction.

Having thus described my invention, I claim—

1. A device for enriching gas, wherein a safety-valve is arranged in the partition which separates the hydrocarbon-chamber from the mixing-chamber and opening into the latter, substantially as and for the purposes set forth.

2. In a device for enriching gas, the combination of the hydrocarbon-chamber, the mixing-chamber connected with the hydrocarbon-chamber only by a narrow passage controlled by a cock, the said cock, the gas pipes and jets, and a safety-valve arranged in the partition between the two chambers, substantially as and for the purposes set forth.

3. The combination of the chambers C and

E, separated by a partition and connected only by a narrow passage for the vapors, the safety-valve G, arranged as shown, the axial gas-pipe D, arranged in the axis of the chambers, as shown, and provided with a jet or jets, *b*, and the ring-like gas-pipe B, provided with a socket to take over the nipple *a*, substantially as set forth.

4. In a device for enriching gas, wherein the illuminating-jets are employed to effect the volatilization of the hydrocarbon, the combination of the chamber E, the mixing-chamber C, arranged on chamber E and connected therewith by a contracted or narrow passage, the pipe D, arranged axially in said chambers C and E and depending below chamber E, the burner or burners *b*, arranged to serve the double purpose of illumination and heating, and the pipe B, arranged to supply gas to the mixing-chamber, all substantially as and for the purposes set forth.

5. The combination, in a device for enriching gas, of the ring-like pipe B, provided with a socket to take over the nipple *a* of a gas bracket or pipe, the mixing-chamber C, connected to pipe B, the chamber E, arranged below chamber C and connected therewith only by a narrow or contracted passage for the vapors, the axially-arranged pipe D, extending from chamber C through the bottom of chamber E, and the illuminating jet or jets *b* on the lower pendent end of pipe D, all substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NICHOLAS FINCK.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.