R. M. POTTER & W. W. THOMAS.

Gas-Lighting Apparatus.

No. 160,228. Patented Feb. 23, 1875.

Fig. 1.

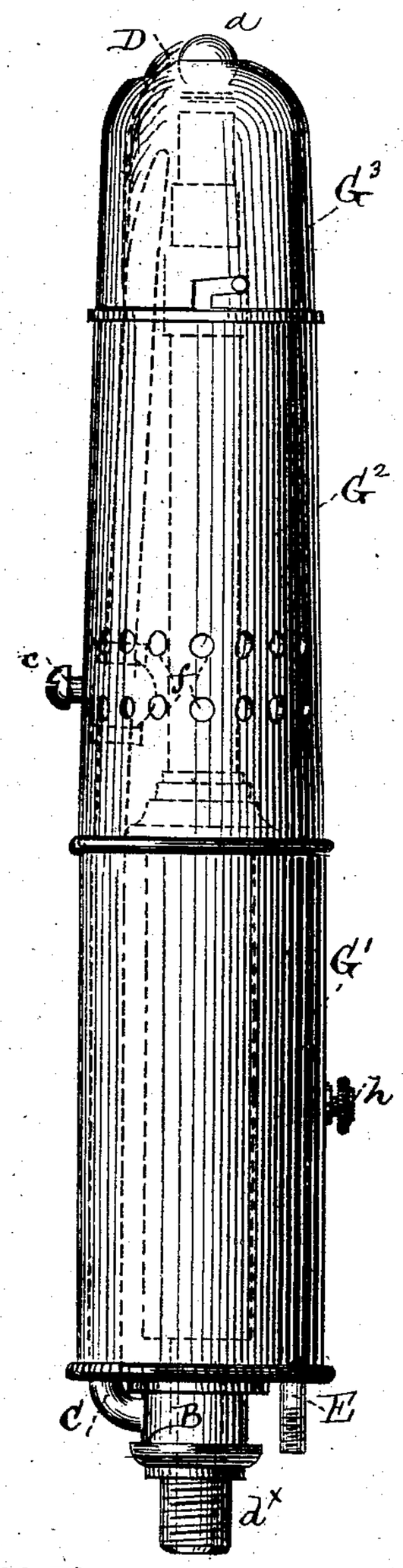
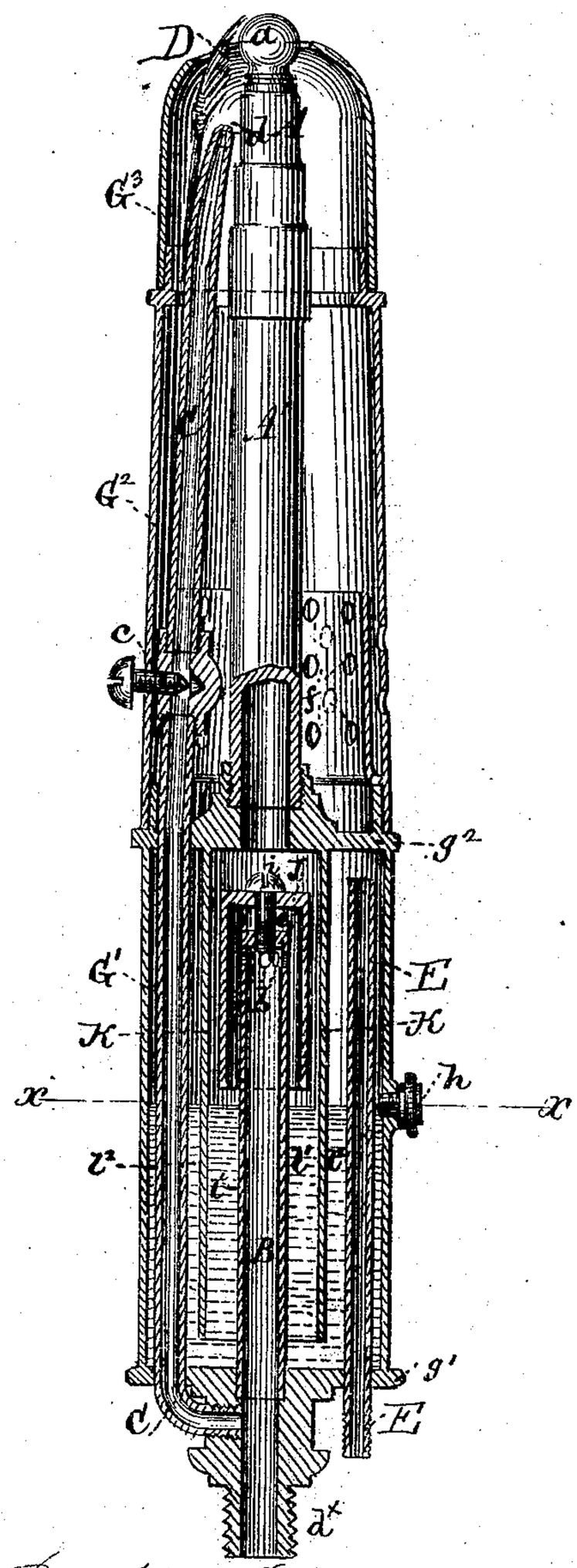


Fig. 2.



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UNITED STATES PATENT OFFICE.

ROBERT M. POTTER AND WILLIAM W. THOMAS, OF JERSEY CITY, N. J.

IMPROVEMENT IN GAS-LIGHTING APPARATUS.

Specification forming part of L tters Patent No. **160,228**, dated February 23, 1875; application filed February 2, 1875.

To all whom it may concern:

Be it known that we, ROBERT M. POTTER and WILLIAM W. THOMAS, both of Jersey City, in the county of Hudson and State of New Jersey, have invented certain Improvements in Gas-Lighting Apparatus; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification.

The object of this invention is to provide for the lighting up and putting out of all the gas-lights in a city, town, or district, or in any building or place by manipulation at the gas-works, or at one central or other convenient station.

In carrying out the invention we use, as has been frequently done, in connection with each illuminating-burner and its pipe, a separate jet-burner of very small size, which is supplied by a separate branch pipe, and which is always kept lighted for the purpose of igniting the gas from the illuminating-burner whenever it is let on.

The invention consists in novel means whereby the gas is let onto and shut off from the illuminating-burners through the action of the pressure of air supplied by a system of pipes which are provided for the purpose, corresponding with the system of main and service pipes for the gas, such pressure being controlled by manipulation at the gas-works or other central or convenient station.

In the accompanying drawing, Figure 1 is a side elevation of a gas-burner constructed in accordance with our invention. Fig. 2 is a central vertical longitudinal section of the same.

A represents the illuminating-burner attached, by a pipe, A′, to the top of a box or case, G^1, provided at its bottom with a hollow or tubular neck, $d^\times$, for attaching it to the service or gas-supply pipe. B is a pipe connected with the bottom of the case G^1 and neck $d^\times$ for the reception of the gas which is to be conveyed to the burner A for illumination, said pipe extending from the neck $d^\times$ upward into the case G^1 nearly to the top g^2 thereof. The upper end *e* of the pipe B is closed, and in the sides near said closed end, are perforations *b*. To said closed upper end *e* a cap or inverted cup, J, is attached by means of a screw, *i*. From the top g^2 a curtain, K, extends downward to within a short distance of the bottom g^1, by which means two annular chambers, l^1 l^2, are formed inside the case G^1, the inner chamber, l^1, lying between the pipe B and the curtain, and the outer one, l^2, lying between the curtain and the sides of the case. E is a pipe connecting with a system of air-pipes which lead from the gas-works or other central or convenient station, in a similar manner to the main and service pipes. This pipe E passes through the bottom g^1 and extends upward nearly to the top of the case G^1, between the curtain K and the sides of the case. C is a small pipe leading from the neck $d^\times$ below the bottom g^1 of the case C′ and below the pipe B, and extending upward to within a short distance of the tip *a* of the burner, and having its upper end constructed to form a very small jet-burner, *d*. The pipe C is provided with a valve, *c*, whereby the supply of gas may be regulated, or may be entirely shut off, if desired. The pipe A′ and the upper portion of the pipe C are surrounded by a casing, G^2, in which are perforations *f* for the admission of air. At the upper end of the casing G^2 is a rounded or truncated cap, G^3, surrounding the jet-burner *d* and lower portion of the illuminating-burner A, the tip A of the latter protruding through an opening in the cap. Near the upper end of the pipe C is attached a platinum-wire brush, D, for the purpose of being heated by the flame from the burner A and by the jet from *d*, and assisting in the ignition of the gas at the burner A from the jet-burner *d*, and also serving to reignite said jet in the event of its being accidentally blown out. The case G^1 is supplied with any suitable liquid through an orifice provided with a screw-plug or cap, *h*. The liquid may be a mixture of water and glycerine, because such a mixture forms a non-freezing substance. The liquid extends up to within a short distance of the lower edge of the cap J, as indicated by the line *x x* in Fig. 2. By means of the screw *i* the cap J may be raised or lowered for the purpose of regulating the distance between its lower edge and the surface of the liquid.

The gas reaches the burner A from the pipe B by passing through the perforations *b*, then downward under the cap J and upward out-

side of said cap and through the pipe A′. The air-pipes with which the pipe E is connected are provided, at the gas-works or other convenient station, with an apparatus for applying pressure to the air. When such pressure is applied the liquid in the case G^1 is forced downward in the chamber l^2 and upward in the chamber l^1, rising in said chamber until it is above the lower edge of the cap J, shutting off the gas and preventing its flow from the cap to the burner, and thus extinguishing the light. When the gas is to be relighted the pressure is withdrawn, so as to allow the liquid to regain its equilibrium and the gas to flow to the burner, where it is ignited by the jet-burner *d*, which remains constantly burning, as the pipe C is not affected by the application and withdrawal of the air-pressure.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the burner A and gas-pipe B, of the cap or inverted cup J, curtain K, and air-pipe E, substantially as and for the purpose shown and described.

2. The platinum-brush D, in combination with the burner A and pipe C, substantially as shown and described, for the purpose specified.

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Witnesses:

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