

(No. Model.)

E. B. REQUA.
GAS BURNER.

No. 266,888.

Patented Oct. 31, 1882.

Fig. 1.

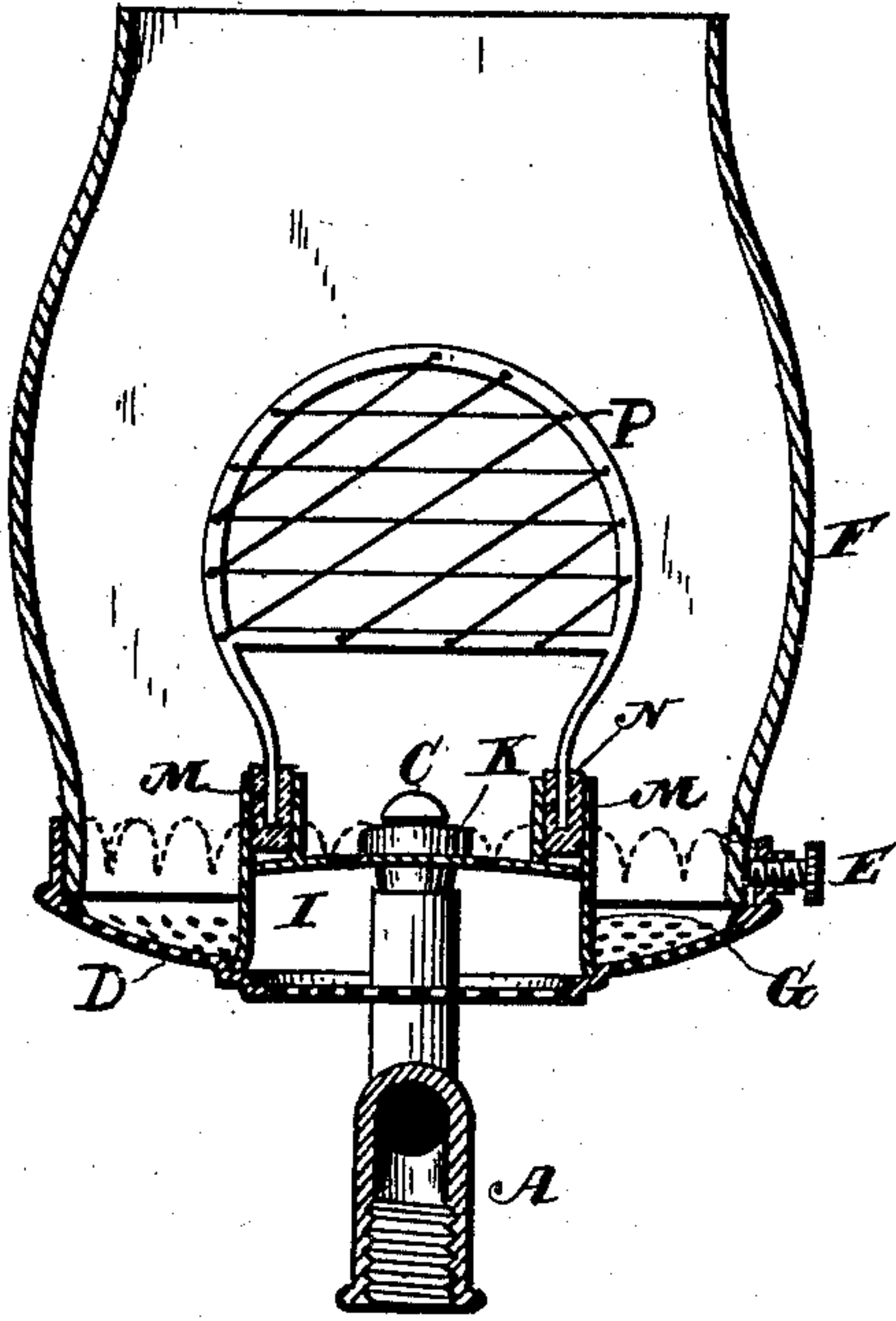


Fig. 2.

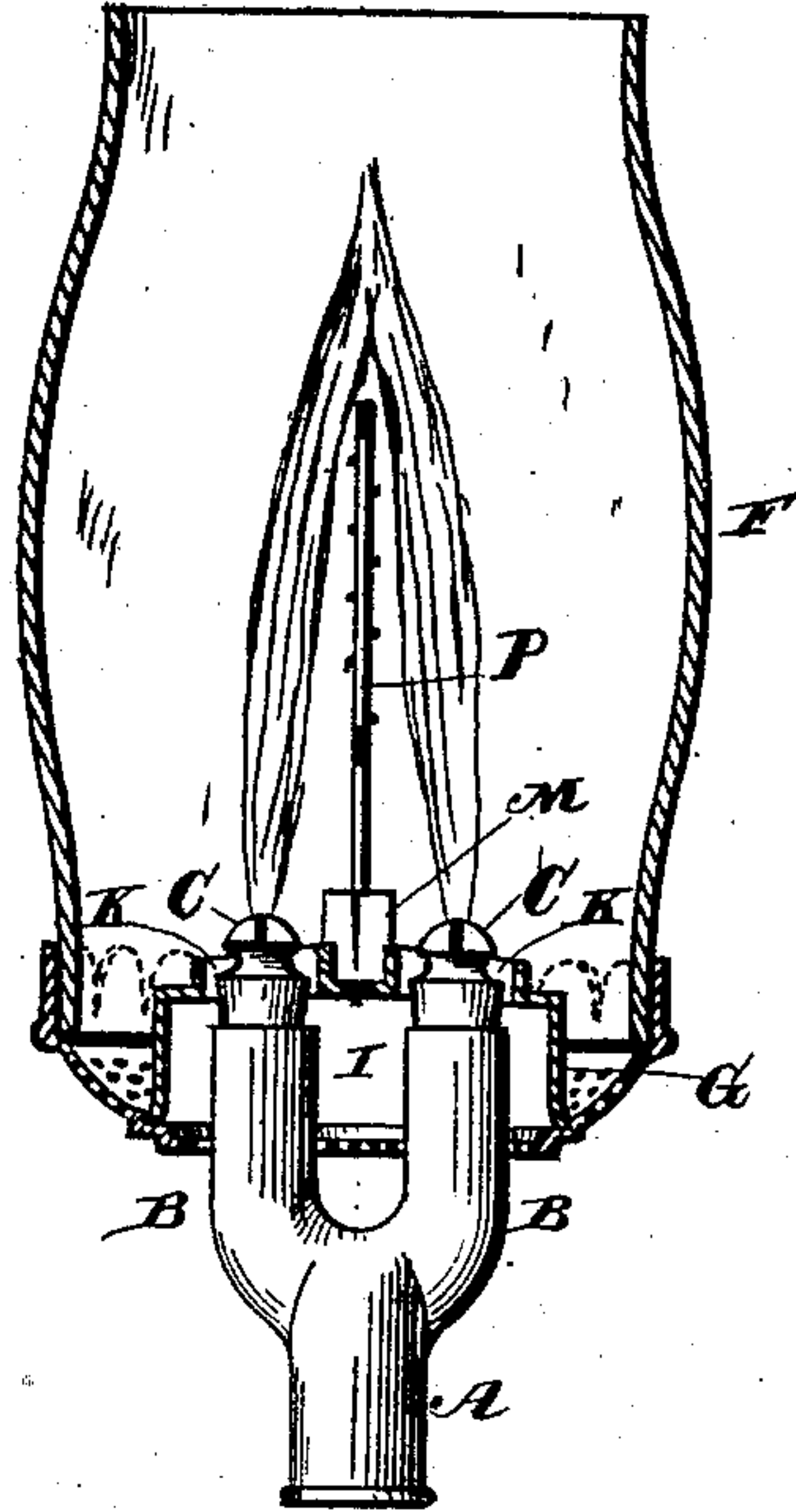


Fig. 3.

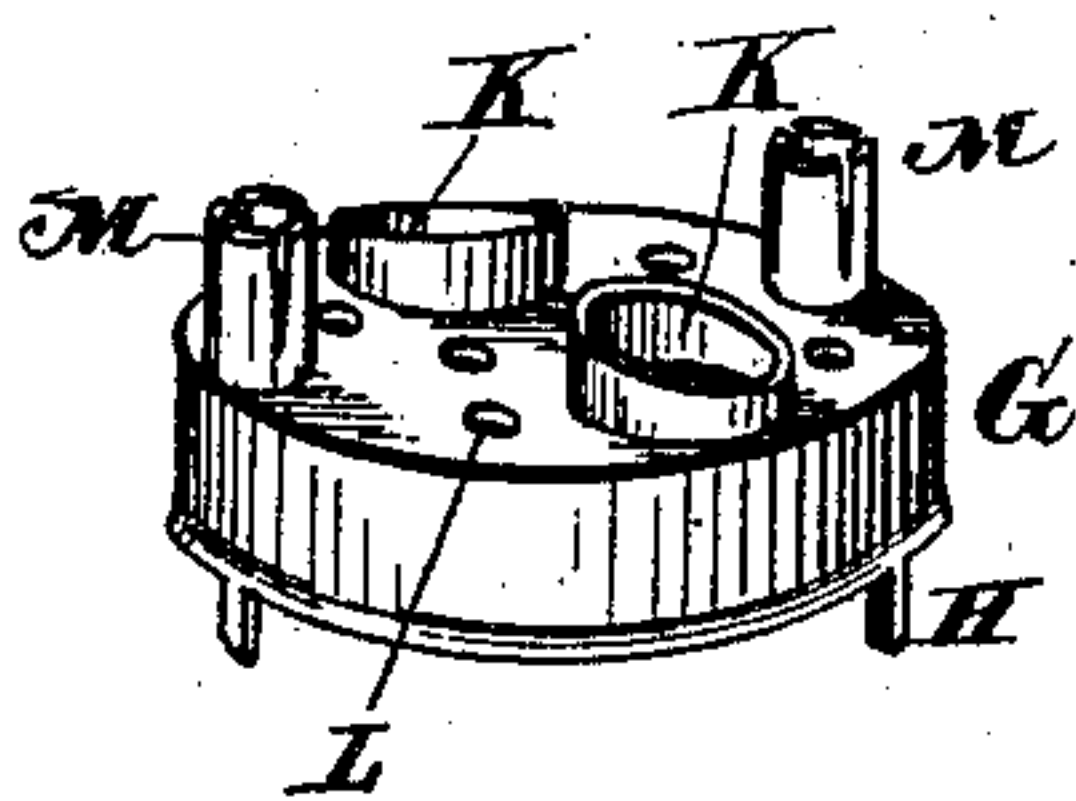


Fig. 4.

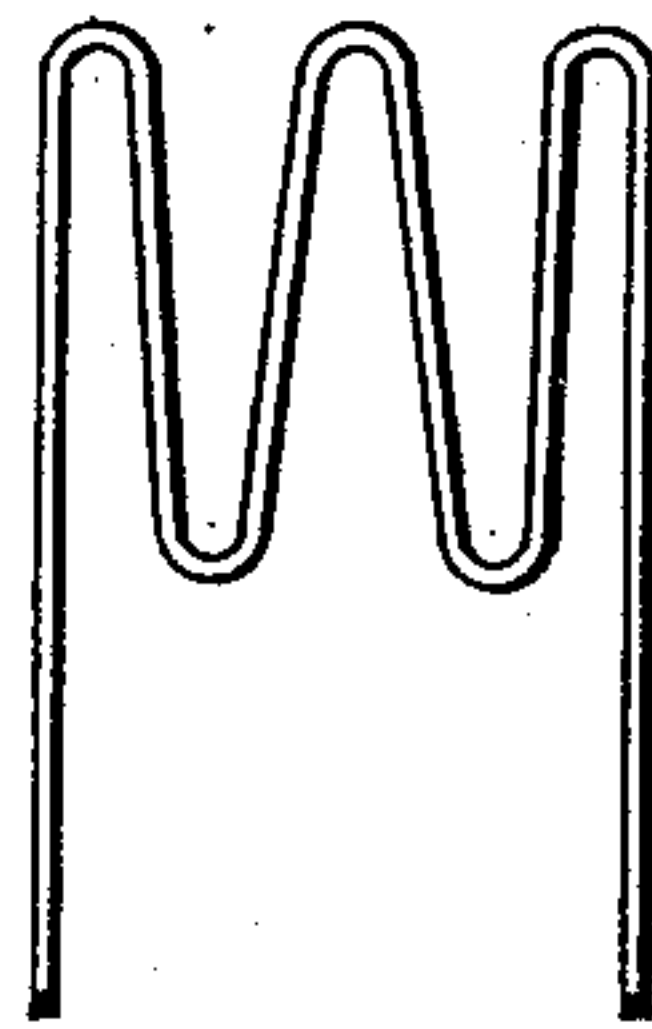
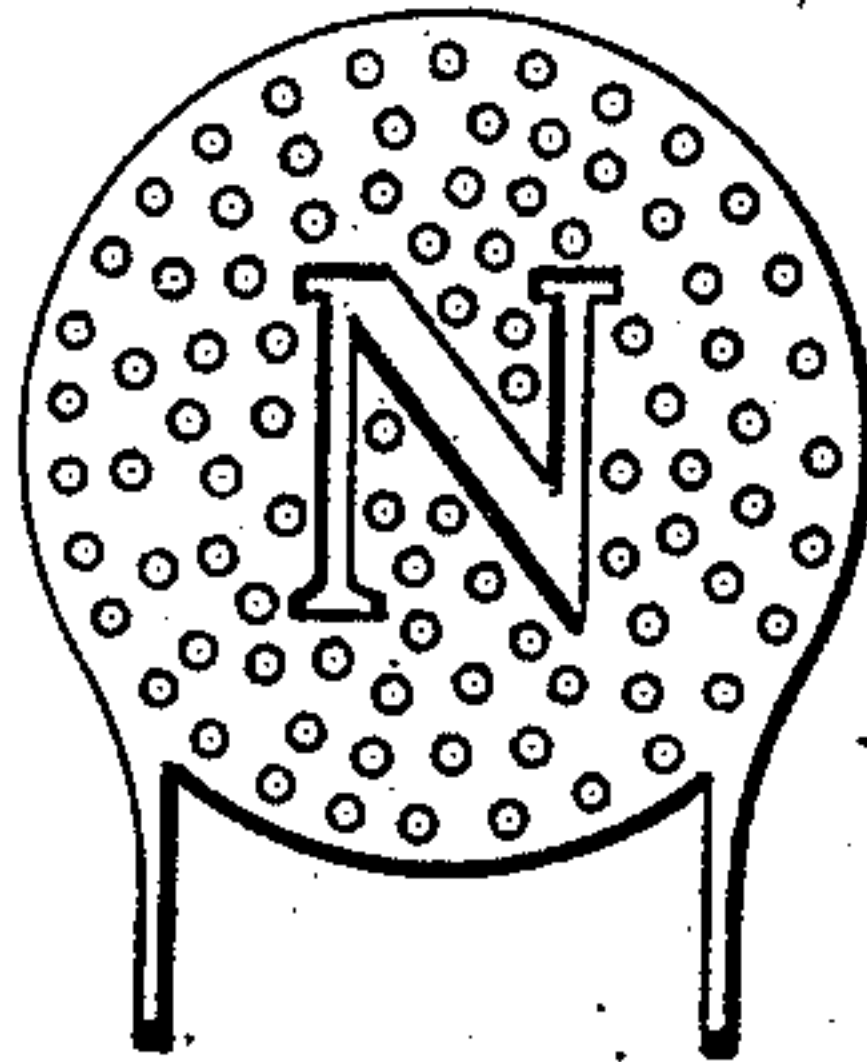


Fig. 5.



Witnesses.

Robert Everett.
J. A. Rutherford.

Inventor.

Elias B. Requa.

By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

ELIAS B. REQUA, OF JERSEY CITY, NEW JERSEY.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 266,888, dated October 31, 1882.

Application filed September 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, ELIAS B. REQUA, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

This invention relates to that class of burners for gas in which a surface of platinum is presented to the flame, so that when the platinum becomes heated and incandescent it will emit light, and thereby add to the brilliancy of the flame.

The object of my invention is to so arrange a plate, frame, or other structure of platinum that both of its sides shall be exposed to the direct action of heat from a flame and of the flame itself, whereby the platinum will be more efficiently heated and maintained at a higher degree of heat, and its entire surface kept clean and free from the deposition of carbon; also, to provide a single piece or structure of platinum for two or more flames, which shall impinge on opposite sides of the platinum, whereby, while an extended surface of platinum is presented to the flame, a minimum quantity only of the metal is employed, thereby simplifying and reducing the cost of the multiple burner, and also, by reason of the said extended surface of platinum thus presented to the flame, causing the latter to spread out and give more light; also, to provide for certain upwardly-induced currents of air which shall impinge upon and mingle with the flame in such manner that the latter will be increased, spread out, and prevented from thickening or doubling at its edges, and a clear, steady light obtained. The construction and organization of the platinum and the several parts of the multiple burner for attaining said objects are illustrated in the annexed drawings, in which—

Figure 1 is a section taken on a vertical central plane through my improved multiple burner. Fig. 2 is a vertical section taken on a plane at right angles to Fig. 1. Fig. 3 is a perspective view of a shell or drum employed in connection with the said burner, both for supporting the holders for the platinum and for providing certain passages for the upwardly-induced currents of air. Fig. 4 rep-

resents a platinum frame differing somewhat in form from that shown in Figs. 1 and 2, and Fig. 5 shows still another form of platinum frame or plate.

In said drawings, A indicates the lower tubular portion of the multiple burner, which is screwed upon or forms a part of the main supply-pipe. This tubular part A is provided with two or more burners, B, consisting of upwardly-extending curved branches, in which ordinary burner-tips, C, are inserted.

D indicates a concavo-convex perforated base or supporting-plate, which is secured to the burner B, suitable apertures being formed in the base-plate, through which the burners pass and in which they are snugly fitted. If desired, these parts may be soldered or brazed together or otherwise suitably connected. The perforated base-plate is flanged at its rim, and is provided with a thumb-screw, E, which passes through said flange for the purpose of holding the globe or chimney F.

G indicates a jacket or drum, which is secured centrally upon the base-plate by means of tongues H, formed with the jacket, and adapted to be passed through holes in the base-plate and bent against the under side of the latter. It will be obvious, however, that the jacket may be secured in a variety of ways—as, for example, it could be soldered to the base-plate.

The upper ends of the burners B are inclosed within a chamber, I, which is formed by the side and top plates of said jacket and by the perforated base-plate, which preferably constitutes the bottom of the chamber. The burner-tips pass up through openings in the top plate of the jacket and extend somewhat above short sleeves K, which are fitted to the top plate about its said openings. These sleeves are made larger than the tips, so that an annular air-passage is formed around each tip, and hence air entering chamber I through its perforated bottom will pass upward to the flame through the said passages at the top of the jacket. As the air thus passes out from the chamber to the flame it might, in a measure, tend to produce a vacuum in the chamber, and hence the top plate of the jacket is provided with a suitable number of perforations, L, for the inflow of air, whereby a vacuum will

be prevented, a steady air-supply secured, and hence a resultant steadiness or non-flickering of the flame assured.

Upon the top of the jacket are located and suitably secured tubes M, which constitute holders for blocks N, of glass or other non-conductors of heat. These blocks receive and hold the lower ends or supports of a frame, P, or other structure of platinum, which is arranged in a vertical plane taken between the burners. The tubes M are preferably formed with longitudinal splits, so that they will act as springs for pressing against and holding the glass or other equivalent blocks or beds for the frame-supports.

The frame P (shown in Figs. 1 and 2) is made of platinum and in the form of an arch or bow, and provided with a gauze or lattice-work of platinum wires; or it may be composed of a single platinum wire formed with reverse bends, as in Fig. 4; or, in lieu of either, it may consist of a plate perforated or not, as desired, and, as illustrated in Fig. 5, provided with suitable legs or supports. This plate can, if desired, have appropriate letters or designs affixed thereto or formed with it.

It will be seen that the construction and arrangement of the tubes M is such that the platinum is disposed between the burner-tips and in a plane parallel with the planes in which the flames issue from the tips, whereby the greatest possible surface of the platinum is exposed to the flames, which will, shortly after leaving the tips, bend inwardly and impinge on the platinum, which will obviously cause the flame to spread.

By supplying air directly and freely to the base of the flames and inclosing the body of the burner within the chamber I, through which the air passes and is heated on its way to the flame, steady upward currents will be insured and the light produced will be exceedingly brilliant, white, and steady. The accumulation of carbon upon the platinum is also prevented by reason of its complete exposure to the heat and action of the flame. The platinum is rendered highly incandescent and largely increases and enhances the quality of the light produced.

Having thus described my invention, what I claim is—

1. The combination, substantially as hereinbefore described, with two pipes branching from a common source of gas-supply and provided at their upper ends with independent gas-burning tips, of a platinum structure fixed in a vertical plane taken between the tips, whereby the independent flames from the gas-burners will act on the opposite sides of the platinum structure.

2. The combination, substantially as hereinbefore described, with two pipes branching from a common source of gas-supply and provided at their upper ends with gas-burning

tips, a chamber inclosing the upper portions of the burners and provided with a perforated bottom wall, and a top wall having openings through which the burners project, and a platinum structure arranged in a vertical plane taken between the burners, and supported at its base by suitable means on the top wall of the chamber, said members being organized and arranged for operation as set forth.

3. The combination, substantially as hereinbefore described, with two gas-burners connected with a single gas-supply pipe, a chamber inclosing the upper portions of the burners, provided with a perforated bottom plate, and a top plate having openings through which the burners project, means for supporting a chimney, and an upright platinum structure interposed between the two burners and supported by the top plate of the chamber, whereby the independent flames from the burner-tips act on opposite sides of the platinum structure, said members being organized and arranged for operation as set forth.

4. The combination, with a multiple gas-burner, of a platinum structure located in a plane taken vertically between the burners, and having its supports fitted in blocks which are non-conductors of heat, and which are received in holders upon a cap which incloses the upper end of the burners, substantially as described.

5. The combination, with a multiple burner, of the jacket inclosing the upper ends of the burners, and having short tubular passages rising from the top plate for the burner-tips, which extend above the upper ends of the sleeves forming said passages, the top and the bottom plates of the chamber within the jacket being provided with perforations for the inflow of air, substantially as described.

6. The combination, with a multiple burner having its upper ends inclosed by a chamber which is provided with air-inlets at the top and bottom, and also with short passages leading upwardly from its top and receiving the burner-tips which extend above said passages, of the perforated base-plate to which the jacket forming the above-specified chamber is secured, substantially as described.

7. The combination, with a multiple burner, of the chamber inclosing the upper ends of the burners, and provided with upper and lower air-inlets, and with passages leading from its top to the burner-tips, and the perforated base-plate, to which the jacket forming said chamber is secured, adapted to constitute a support for a chimney, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELIAS B. REQUA.

Witnesses:

JAMES L. NORRIS,
J. A. RUTHERFORD.