No. 814,142.

PATENTED MAR. 6, 1906.

J. G. A. KITCHEN.

INCANDESCENT GAS LAMP.

APPLICATION FILED DEC 6, 1904

2 SHEETS—SHEET 1.

Fig. 1.

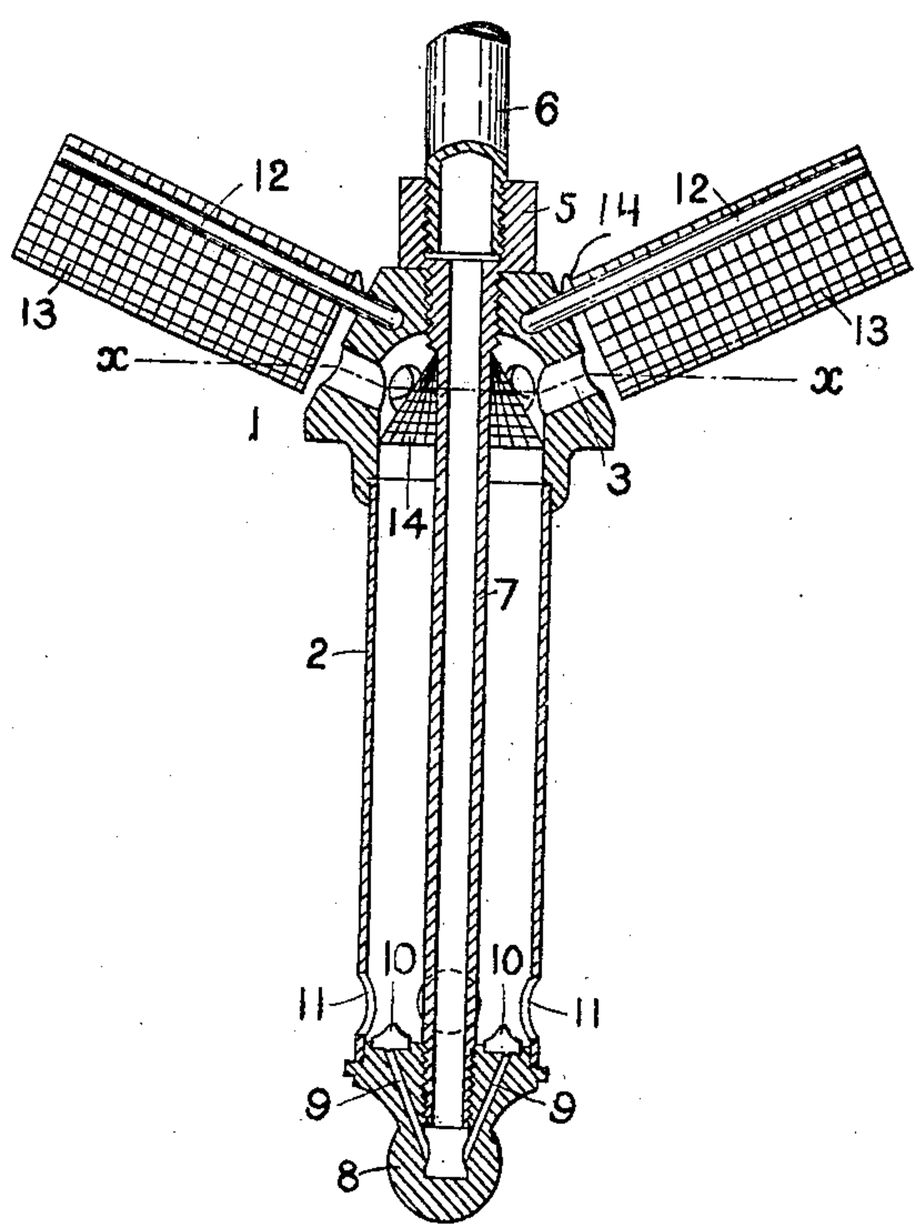
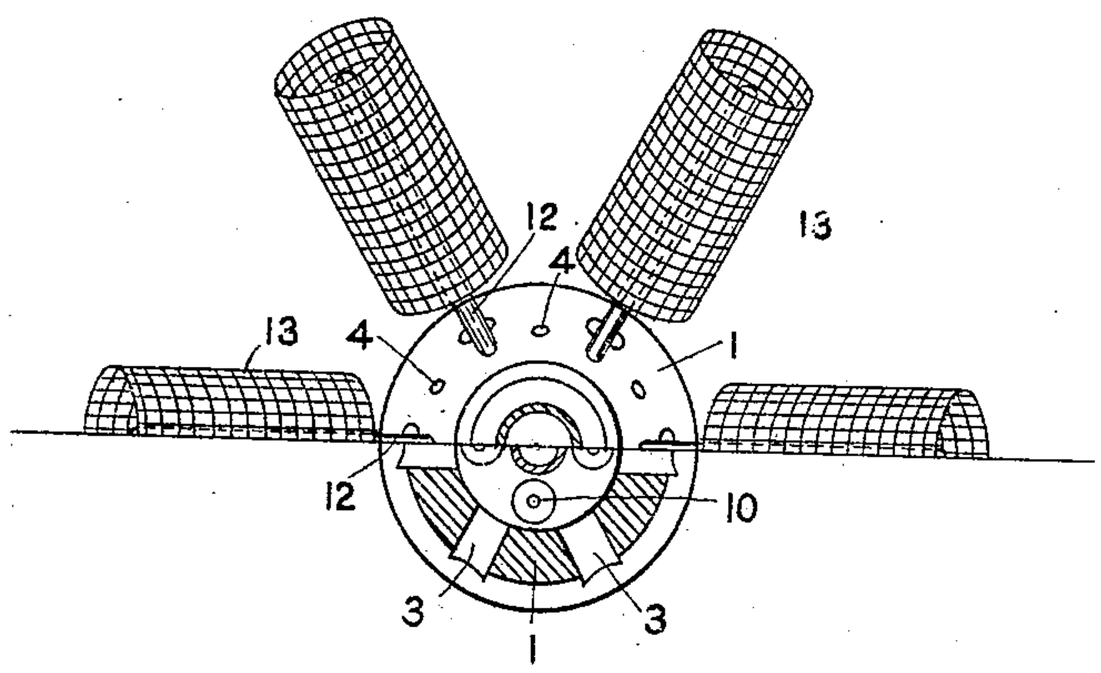


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

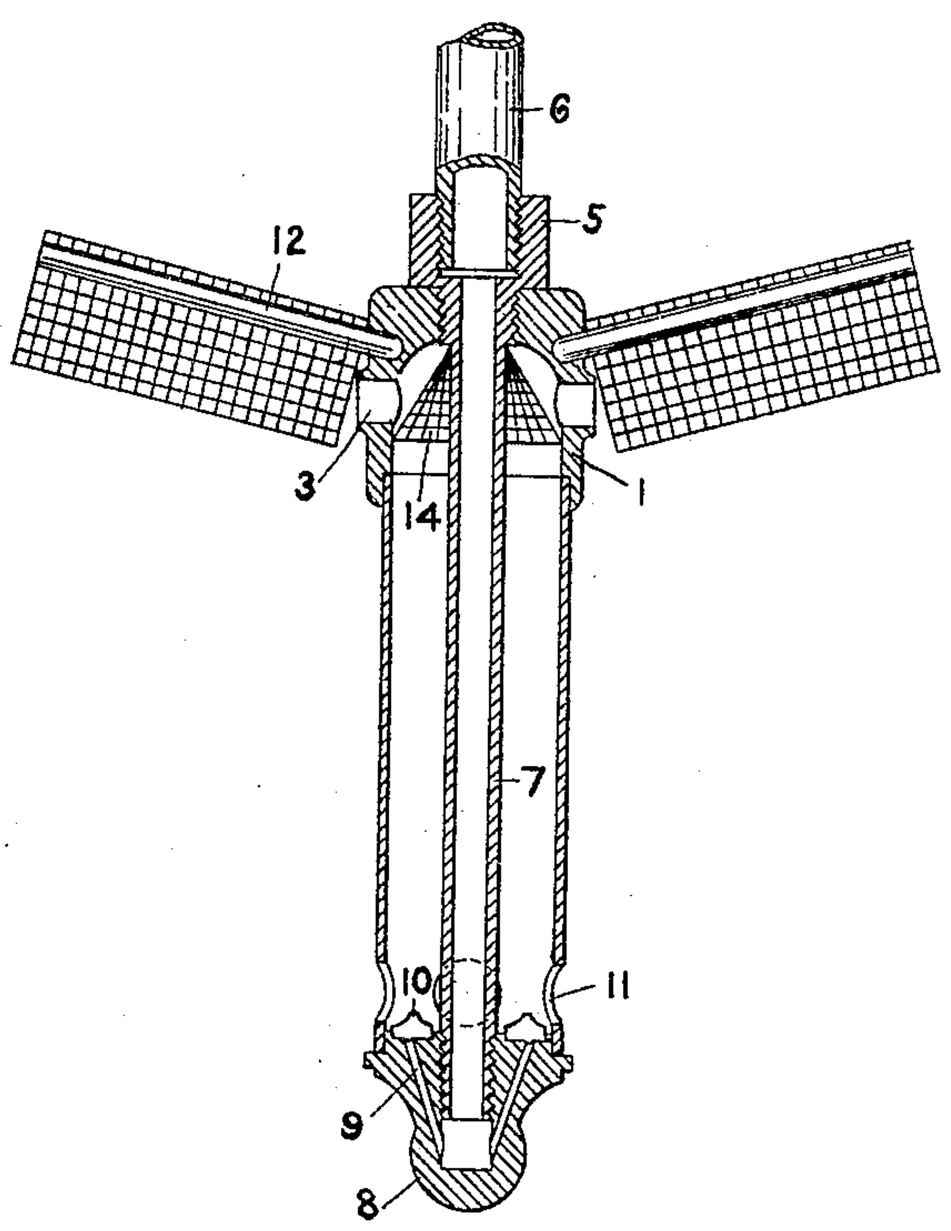


Fig. 4.

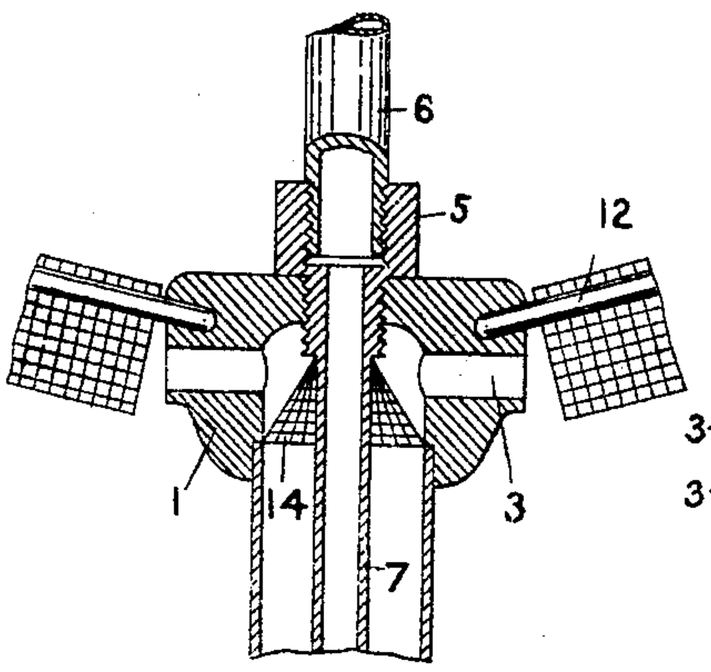


Fig. 5.

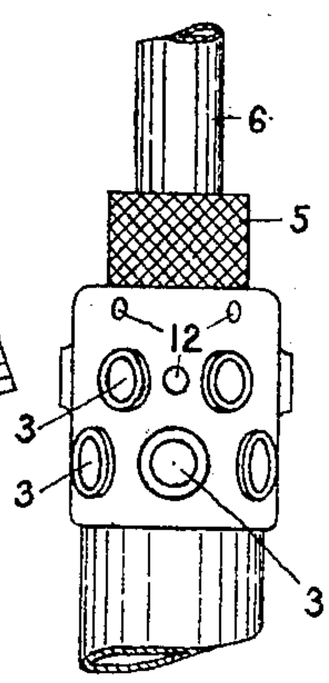
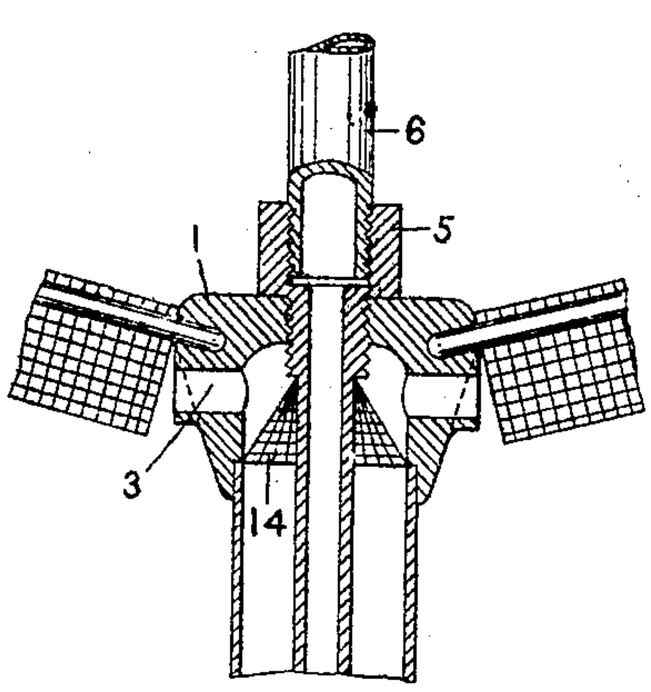


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN GEORGE AULSEBROOK KITCHEN, OF LANCASTER, ENGLAND.

INCANDESCENT GAS-LAMP.

No. 814,142. Specification of Letters Patent. Patented March 6, 1906.

Application filed December 6, 1904. Serial No. 235,751.

To all whom it may concern:

Be it known that I, JOHN GEORGE AULSEBROOK KITCHEN, a subject of the King of Great Britain and Ireland, and a resident of Lancaster, in the county of Lancaster, England, have invented certain new and useful Improvements in Incandescent Gas-Lamps, of which the following is a specification.

This invention relates to gas-lamps having atmospheric gas-burners for heating to incandescence illuminating-mantles of the Welsbach type; and it consists in an improved construction of lamp adapted for pedestal, bracket, or pendant fittings, having for the chief object to obtain an increased illuminating effect and to cast no shadow.

The drawings appended hereunto represent several forms of gas-lamps constructed in accordance with my invention.

Figure 1 shows a vertical section of one form of construction, and Fig. 2 in the upper half a top view and in the lower half a section along line *x x*. Figs. 3 to 6 show modified constructions.

The burner of the improved lamp is made with a central hollow mixing-chamber having the air-inlets and the gas nozzle or nozzles at the base thereof and several radial openings forming burner-nozzles at the top. Six such nozzles are shown; but there may be more or less than six. In the burner represented on the drawings the mixing-chamber consists of an upper nozzle part 1, made of metal, steatite, or refractory material, and a lower part 2, formed by a metal tube. The part 1 is shown conical on the outside and has six nozzle-openings 3 bored rectangularly to the outside cone, so that their center lines are inclined toward the center of the burner. Where the nozzles are far apart, the ignition of one gas-jet does not cause the jets issuing from the adjacent nozzles to become ignited. In such cases small holes 4 may be drilled through the wall of part 1, through which small auxiliary jets will issue, which carry the ignition from one nozzle 3 to the next for the purpose of igniting the circle of gas-jets issuing from the nozzle 3 from one of them. The nozzle part 1 is screwed upon a socket 5, which in its turn is screwed upon the depending end 6 of the gas-supply pipe forming part of a pendant or bracket. The socket 5 is formed with a tubular extension 7, which is preferably screw-threaded at its lower end. Upon this end a cap 8 is fixed, preferably by being screwed upon the thread of the tube 7, so that it can be easily taken off. The cap 8 is formed with a flanged disk entering into the tubular part 2 and is perforated with several small holes 9, extending from the upper surface of the disk to below the tube 7. The upper end of these perforations 9 is enlarged and fitted with pin-hole nozzles 10, from which the gas descending in the tube 7 will issue into the mixing-chamber. The tube 2 is provided with air-inlet holes 11, preferably a hole opposite each nozzle 10, and is clamped by means of the cap 8 between it and the nozzle part 1, into which it preferably fits, as shown. The arrangement described allows the cap 8 to be easily taken off for the purpose of cleaning the gas-nozzles 10 without disturbing the upper part of the burner.

Immediately above each gas jet or nozzle a carrier 12 is arranged for supporting the incandescent mantles 13. The carriers or rods 12 are made, as usual, of refractory material and in the form of lamp shown on Fig. 1 inserted into holes in the nozzle part 1, so as to be parallel to the direction of the gas-jets issuing from the nozzles 3 and so that the mixed gas-flame passes through the interior of the mantles 13. The mantles are preferably circular or oval in cross-section and rest on the carriers over their entire length and are kept away from the nozzle part by projections 14 on the rods 12 or equivalent means, so that air has access to the flame.

The nozzle part 1 need not be conical, as shown by Fig. 1, but may be as shown by Fig. 3, and the nozzles 3 may be horizontal, as shown, while the carrier-rods 12 are inclined to the horizontal, so that the gas-jets impinge upon the bottom of the mantles, or the part 1 may be globular, as shown by Fig. 4, or conically inverted, as shown by Fig. 6. With these arrangements of the carrier-rods and the part 1 the configuration of this part causes the inclined mantles to leave a space for the entry of air into their interior between their interior ends and the nozzle part without any collars or projections on the carrier-rods being required.

Instead of one row of nozzles there may be two such rows, one above the other, as shown on Fig. 5. As shown in this figure, the nozzles of the upper one lie over the spaces between the nozzles of the lower row.

I claim—

1. In an incandescent gas-lamp the combination of a gas-supply pipe, a gas-chamber

having several outlet-nozzles in communication with said pipe, a mixing-chamber above said outlets provided at the bottom end with air-inlet openings and near the upper end with several burner-nozzles inclined upward and radiating from the center line of said mixing-chamber, a carrier-rod above each of said burner-nozzles supported so as to be parallel to their center lines, and incandescent mantles on said rods.

2. In an incandescent gas-lamp several radiating incandescent mantles each supported over its entire length by a rod of refractory material passing longitudinally through the mantle.

3. In an incandescent gas-lamp the combination of carrier-rods inclined to and radiating from the center line of said lamp, incandescent mantles supported on their inner side by said rods, a mixing-chamber and burner-nozzles issuing from the same adapted to direct the flame through said mantles.

4. In an incandescent gas-lamp the combination of a gas-supply pipe, a gas-chamber having several outlet-nozzles in communication with said pipe, a mixing-chamber above said outlets, air-inlet openings in said mixing-chamber near the bottom thereof, burner-nozzles radiating from the center line of said mixing-chamber, a carrier-rod above each of said burner-nozzles, and an incandescent mantle supported on its inner side by each of said carriers.

5. In an incandescent gas-lamp the combination of a descending gas-supply pipe, a pipe-socket screwed thereto having a downward tubular extension, a mixing-chamber screwed upon said socket, said mixing-chamber being provided with several burner-nozzles radiating in an upwardly-inclined direction from the center line thereof and with air-inlets near the bottom, a cap screwed upon the end of said tubular extension adapted to close the bottom of the mixing-chamber, perforations extending from the top of said cap inside the mixing-chamber to below said tubular extension, gas-nozzles fitted to the top of said perforations, radiating carrier-rods above said burner-nozzles, small intermediate gas-outlets between said burner-nozzles, and incandescent mantles supported on said rods.

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

JOHN GEORGE AULSEBROOK KITCHEN.

Witnesses:

JAMES RITCHIE,

JOHN BLACKBURN.