

No. 623,756.

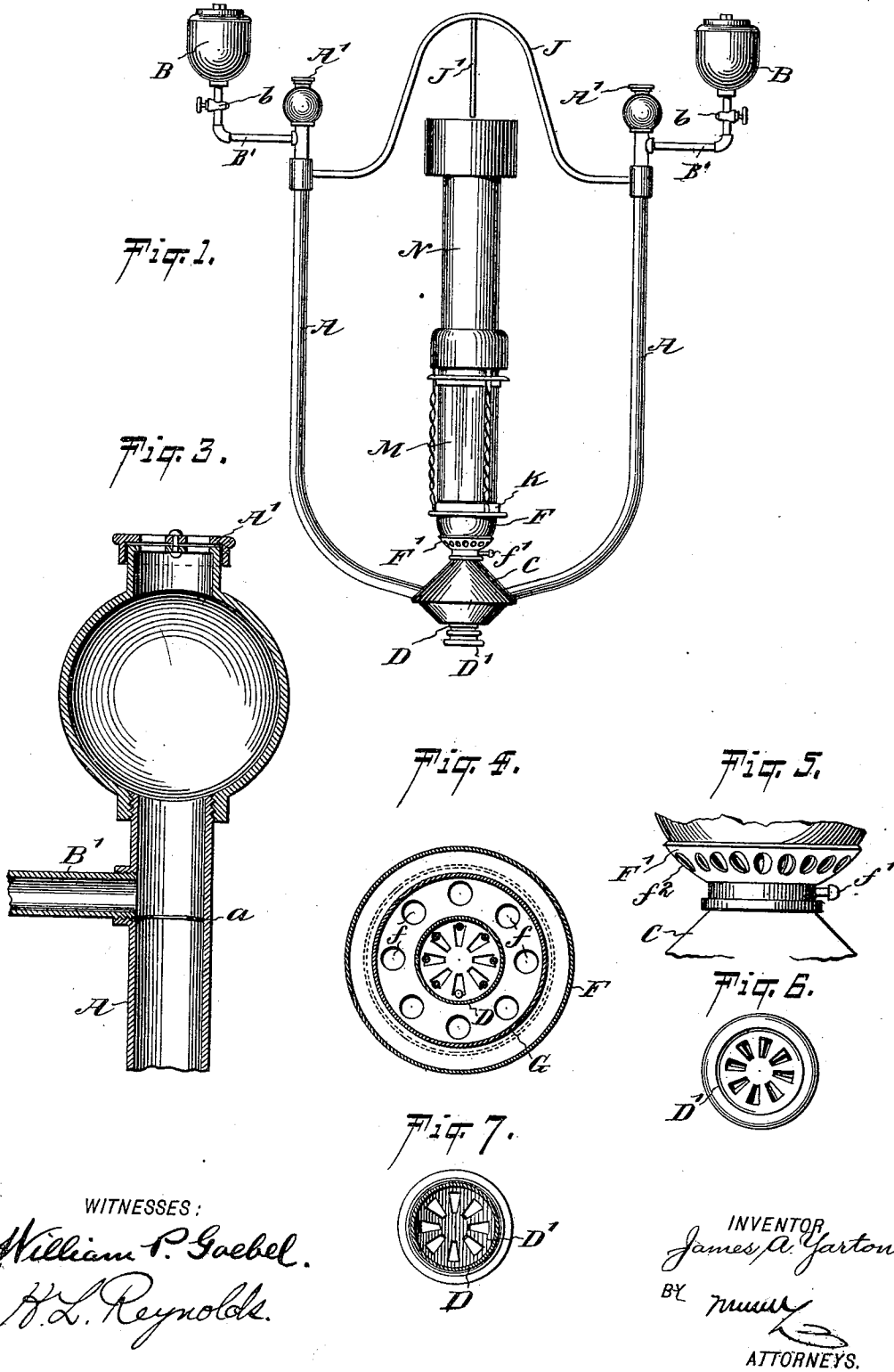
Patented Apr. 25, 1899.

J. A. YARTON.
GASOLENE LAMP.

(Application filed Sept. 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

William P. Gaebel.
H. L. Reynolds.

INVENTOR

James A. Yarton.
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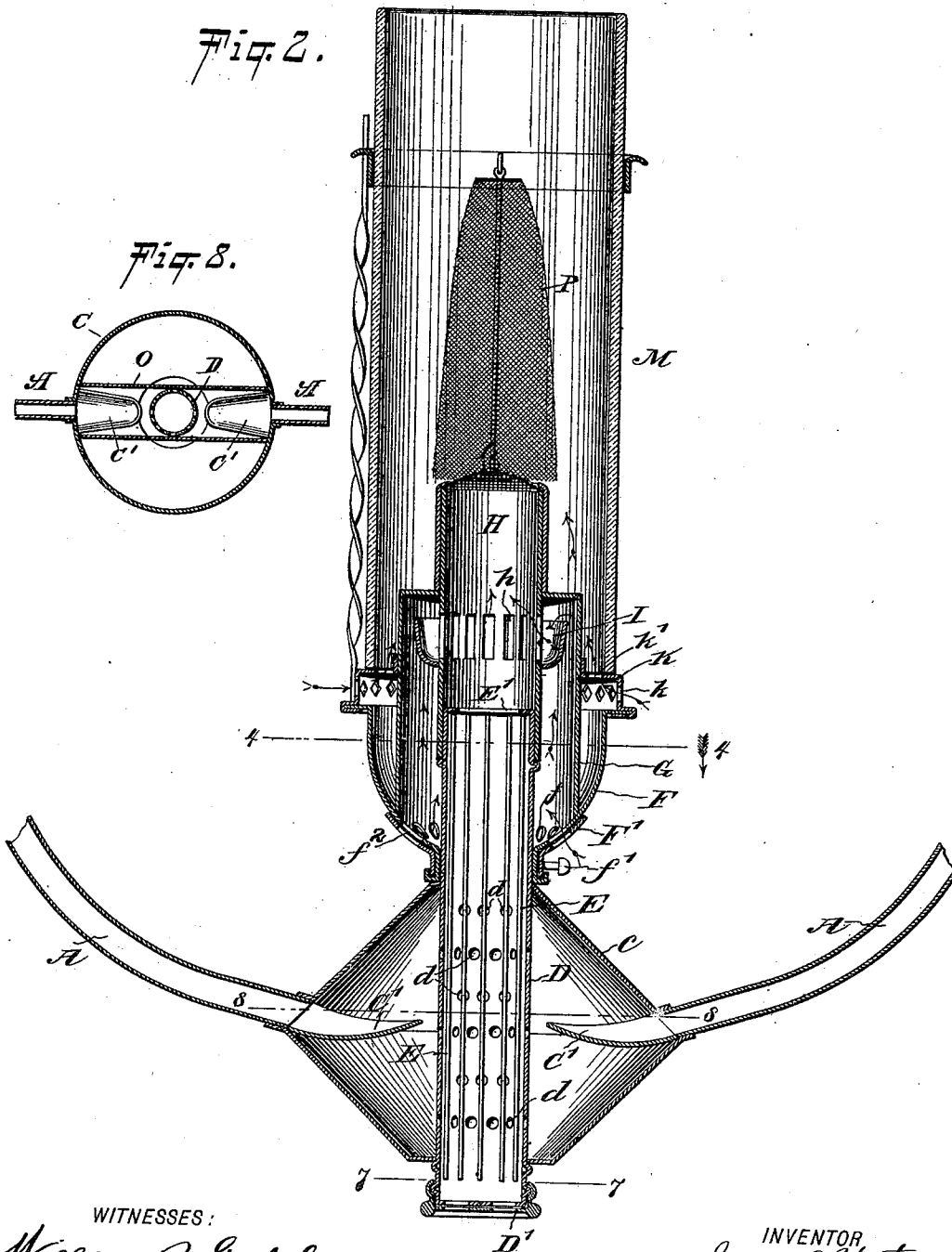
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2 Sheets—Sheet 2.

Fig. 2.

Fig. 8.



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UNITED STATES PATENT OFFICE.

JAMES A. YARTON, OF OMAHA, NEBRASKA, ASSIGNOR TO THE AUTOMATIC GAS LAMP COMPANY, OF SAME PLACE.

GASOLENE-LAMP.

SPECIFICATION forming part of Letters Patent No. 623,756, dated April 25, 1899.

Application filed September 7, 1898. Serial No. 690,393. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. YARTON, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Gasolene-Lamp, of which the following is a full, clear, and exact description.

My invention relates to an improvement in gasolene-lamps of that class using an incandescent mantle.

The invention comprises the novel features hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my lamp. Fig. 2 is a longitudinal section through the same. Fig. 3 is a longitudinal section through the upper end of the volatilizing-pipe. Fig. 4 is a sectional plan taken upon the line 4 4 of Fig. 2. Fig. 5 is a side elevation of the same, showing the adjustable ring for controlling the admission of air to the base of the burner. Fig. 6 is an inverted plan view of the draft-regulator at the bottom of the central draft-tube. Fig. 7 is a section taken upon the line 7 7 of Fig. 2, and Fig. 8 is a horizontal section taken through the gas-receiving chamber at the bottom of the lamp on the line 8 8 in Fig. 2.

As the lamp is shown in Fig. 1, it is provided with two gasolene-reservoirs and volatilizing-tubes. The lamp would, however, be the same in principle if one of these reservoirs and tubes were omitted. The lamp is suspended from a bar J, which connects the upper ends of the two volatilizing-tubes A, and the gasolene-reservoirs B are connected by pipes B' with the upper ends of the tubes A, said pipes being provided with valves b, by which the supply of gasolene is regulated. The upper ends of the tubes A extend a short distance above the gasolene-supply pipes and are provided with air-inlets controlled by a revolving cap A', said cap and the upper end of the tube being provided with holes, which may be placed in registry, or the cap may be turned so as to entirely close the opening, this construction being similar to that shown in Fig. 6.

Just beneath the connection of the gasolene-

supply tube B' to the volatilizing-tube A a ring a is placed within the tube A and connected to the inner surface thereof. The oil flowing into the tube A is caught by the ring a and retarded sufficiently to cause it to flow entirely about the tube A and to overflow the ring a, so as to entirely cover the inner surface of the tube. This ring causes a more even distribution of the oil about the tube than would be obtained by allowing the oil to flow into the tube without such a device.

When in use, the oil flowing down the tube A is spread into a very thin film and has a current of air passing over the same from the entrance at the cap A' to the burner of the lamp. This volatilizes the oil and produces a gas.

The lower ends of the tubes A enter the gas-chamber C, made in the form of a double cone, as indicated in Figs. 1 and 2. In case it is desired to retain the chamber C in circular form on account of appearance the interior of the chamber which receives the gas should be reduced in size by placing a partition O therein, which at its sides shall contact with the central draft-tube D, as indicated in Fig. 8, said tube passing centrally through the chamber C. This tube projects slightly at its lower end beyond the chamber C and is provided with a cap D', (shown in Figs. 6 and 7,) by which the admission of air may be regulated. That portion of the tube D which is within the chamber C is provided with a series of holes d, through which the gas enters the tube from the chamber C. Within the chamber C are also placed two deflecting-plates C', extending inwardly from the connection of the tubes A with the chamber and having a slight upward curve, which deflects the gas upward and into the central draft-tube D.

To the upper portion of the draft-tube D is attached the burner proper. This burner comprises a base F, which is, as herein shown, of a hemispherical shape, and near the lower part of this base and just outside of the tube D is a series of holes f'. Outside of the base F is a ring F', which fits closely against the outer surface of the base and is provided with a series of holes f², adapted to register with the holes f' in the base. This ring is

movable about the base, so that the size of the openings may be regulated and the draft controlled, and the ring may be secured in any desired position by means of the screw *f'*.

5 Within the burner-base is a cylindrical partition G, which at its lower end connects with the burner-base outside of the holes *f*, and at its upper end is drawn inward to a contact with the extension H of the central
10 draft-tube D. This extension consists of a separate tube which slips over the upper end of the tube D, and in the side walls of said extension-tube and beneath the upper end of the partition G is a series of holes *h*. Out-
15 side the tube H is a cup-shaped flange I, which is secured at one end to the tube just below the holes *a*, the upper edge of the flange being sufficiently larger than the tube H to allow the free access of air to the holes *h*.
20 Said flange is also smaller in diameter than the inside diameter of the partition G.

To the burner-base F is secured a ring K, which is angular in cross-section and is secured at its upper edge to the outer portion
25 of the cylindrical partition G. This ring has two sets of holes K and K' through it, the former opening outside the chimney M and the latter inside the chimney. This supplies
30 a draft outside of the burner and within the chimney, thus causing a protective current of air between the mantle and the chimney. The upper end of the extension H is covered by a gauze cap L, through which the gas
35 passes before ignition.

In operation the gasolene entering the volatilizing-tubes A flows downward upon the inner surface thereof and is volatilized by the air which is admitted at the upper ends
40 of the tubes, the gas entering the chamber C and thence passing into the central draft-tube D. An additional quantity of air may be admitted, if desired, by opening the draft-regulator D' at the lower end of the tube D. The gas passes upward through the tube D
45 and may be supplied with additional air through the openings *f* and *h*, if such is necessary. The gas then passes through the gauze L and is ignited.

The function of the cupped flange I is to
50 prevent the possibility of the gas passing outward through the holes *h* and into the chamber formed between the cylindrical partition G and the central tube D. In case any of the oil passes entirely down through the pipe A
55 and into the chamber C it will be gradually volatilized and pass upward through the tube D. The chamber C is of such construction that it will catch and hold any oil which may overflow into it. However, the deflecting-
60 plates C' are slightly cupped, so that they will catch and hold the oil until volatilized, unless it comes down in excessive quantities.

To insure a greater conduction of heat to the gas-chamber C, a series of wires E is
65 placed within the tube D. These wires, at their upper ends, are secured to a ring E', which rests upon the upper end of the tube

D, and this ring being at the upper ends of the wires and near the burner will become heated and will conduct the heat downward
70 into the gas-chamber C. The ring E' might, if desired, be secured to the upper end of the tube D or be separate therefrom and simply rest upon the upper end of the tube.

To give the lamp an increased draft, a
75 draft-flue or extension N of the chimney is provided. This consists of a cylinder which is suspended over the chimney and closely encircles its upper end.

The mantle P may be of any preferred con-
80 struction.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A gas-lamp, comprising a chamber hav-
85 ing a gas-supply pipe entering one side thereof, an upwardly-curved deflecting-plate in front of the opening of the pipe, a tube extending vertically through the chamber and having perforations through its sides within
90 the chamber, an adjustable draft device closing the lower outer end of the tube, and a burner attached to the upper end of the tube, substantially as described.

2. A gas-lamp, comprising a chamber hav-
95 ing a gas-supply pipe entering one side thereof, an upwardly-curved deflecting-plate in front of the opening of the pipe, a tube extending vertically through the chamber and having perforations through its sides within
100 the chamber, a series of wires suspended within the tube, and a burner attached to the upper end of the tube, substantially as described.

3. A gasolene-lamp, comprising a chamber
105 having a gas-supply pipe entering one side, an upwardly-curved deflecting-plate in front of the opening of the pipe, a tube extending vertically through the chamber and having perforations through its sides within the chamber, a ring supported at the upper end
110 of the tube, a series of wires suspended from the ring and within the tube, and a burner attached to the upper end of the tube, substantially as described.

4. A gas-burner, comprising a central tube
115 having air and gas admission openings therein, a gas-chamber surrounding the tube and including the gas-admission openings, a gas-supply pipe, a tubular extension fitting the upper end of the central tube, and having a
120 series of openings through its side, a cup-flange secured to the extension just below said openings and rising to near the top of the openings, a chamber surrounding said cup and having air-inlets at its bottom, and a gauze
125 cover for the top of said extension, substantially as described.

5. A gas-burner, comprising a central tube,
a base surrounding the tube and having air-
130 inlets in its lower portion, a ring mounted to turn on the base and having holes adapted to register with the air-inlets, and a cylindrical partition within the base and outside of the air-inlet openings, and connected at its upper

end with the central tube, said central tube having openings in its sides and inclosed by said partition, substantially as described.

5 6. A gas-burner, comprising a central tube, a base surrounding the tube and having air-inlets in its lower portion, a ring mounted to turn on the base and having holes adapted to register with the air-inlets, and a cylindrical partition within the base and outside of the
10 air-inlet openings, and connected at its upper end with the central tube, said central tube having openings in its sides and inclosed by said partition, and the base having a series

of inlets above or outside the said partitions, substantially as described.

15 7. A gasolene-lamp, having a volatilizing-tube leading downward from the supply, and a ring extending about the inner surface of the tube below the gasolene-inlet and forming a slight dam for the oil whereby its even
20 distribution is secured, substantially as described.

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Witnesses:

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