

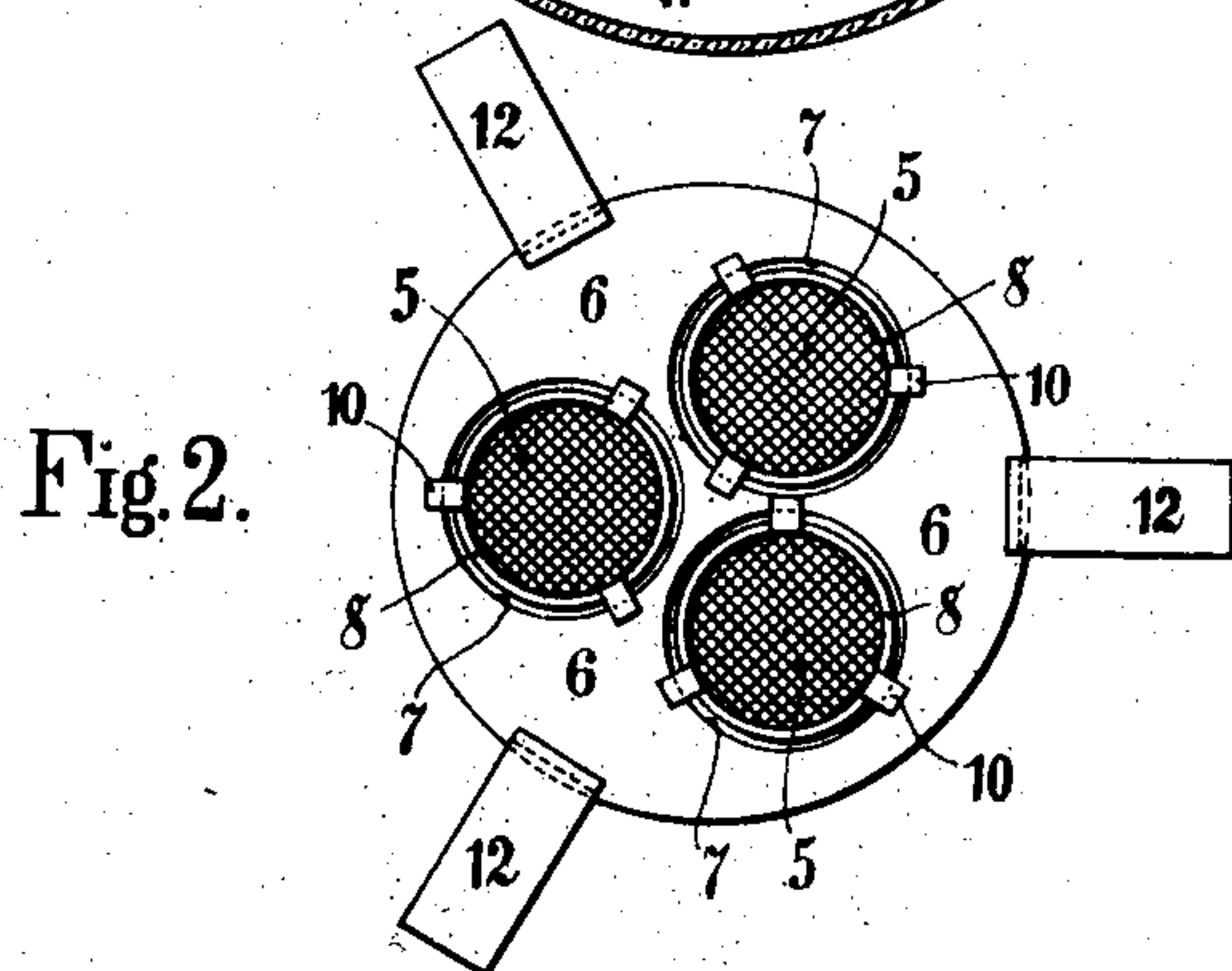
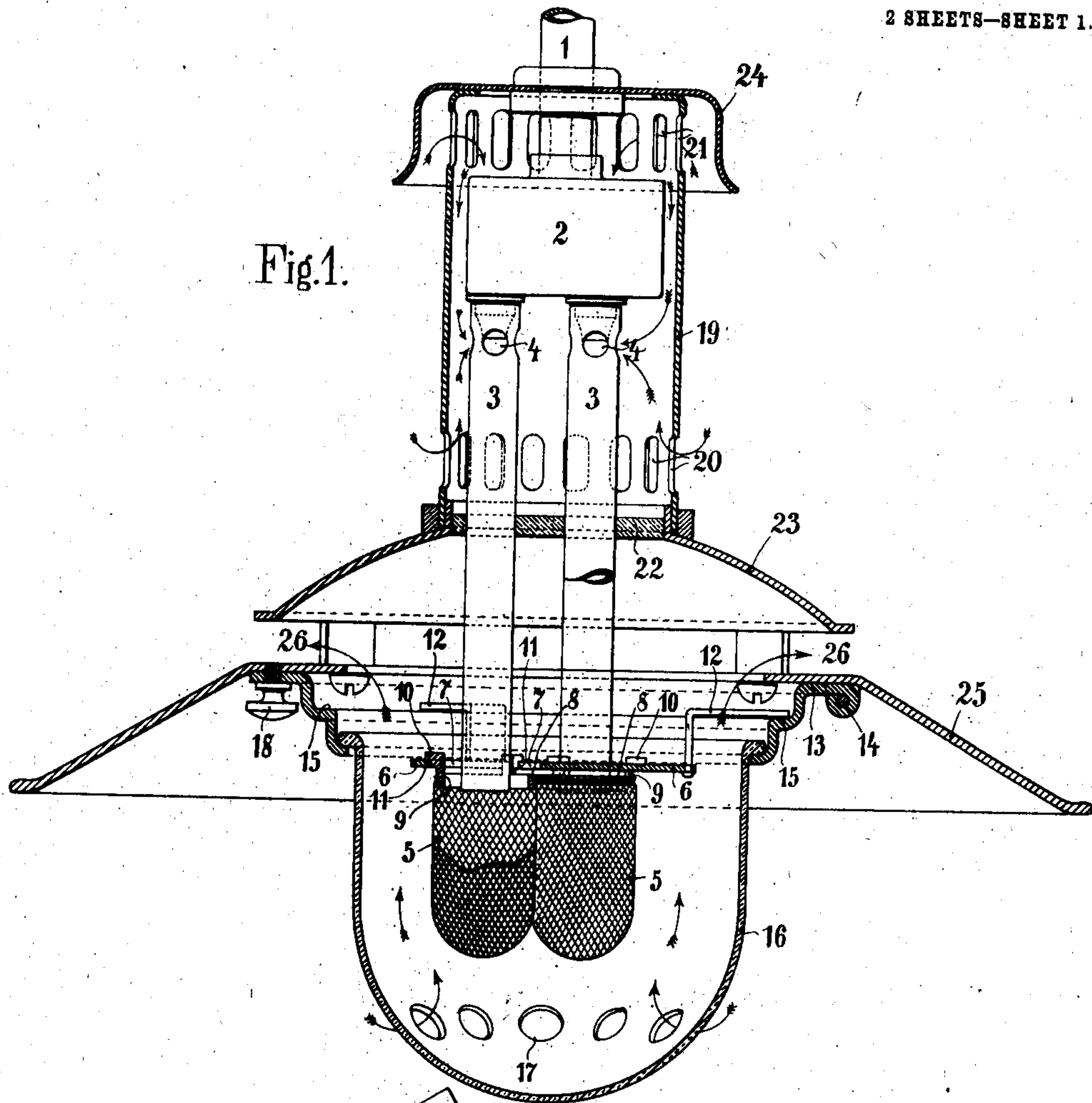
No. 835,053.

PATENTED NOV. 6, 1906.

J. BRAUNSTEIN.
GAS LAMP.

APPLICATION FILED AUG. 1, 1904.

2 SHEETS—SHEET 1.



WITNESSES:
S. L. Moody
Olin A. Foster

JACQUES BRAUNSTEIN
Inventor
By Dickerson, Brown, Raegner & Binney
Attys

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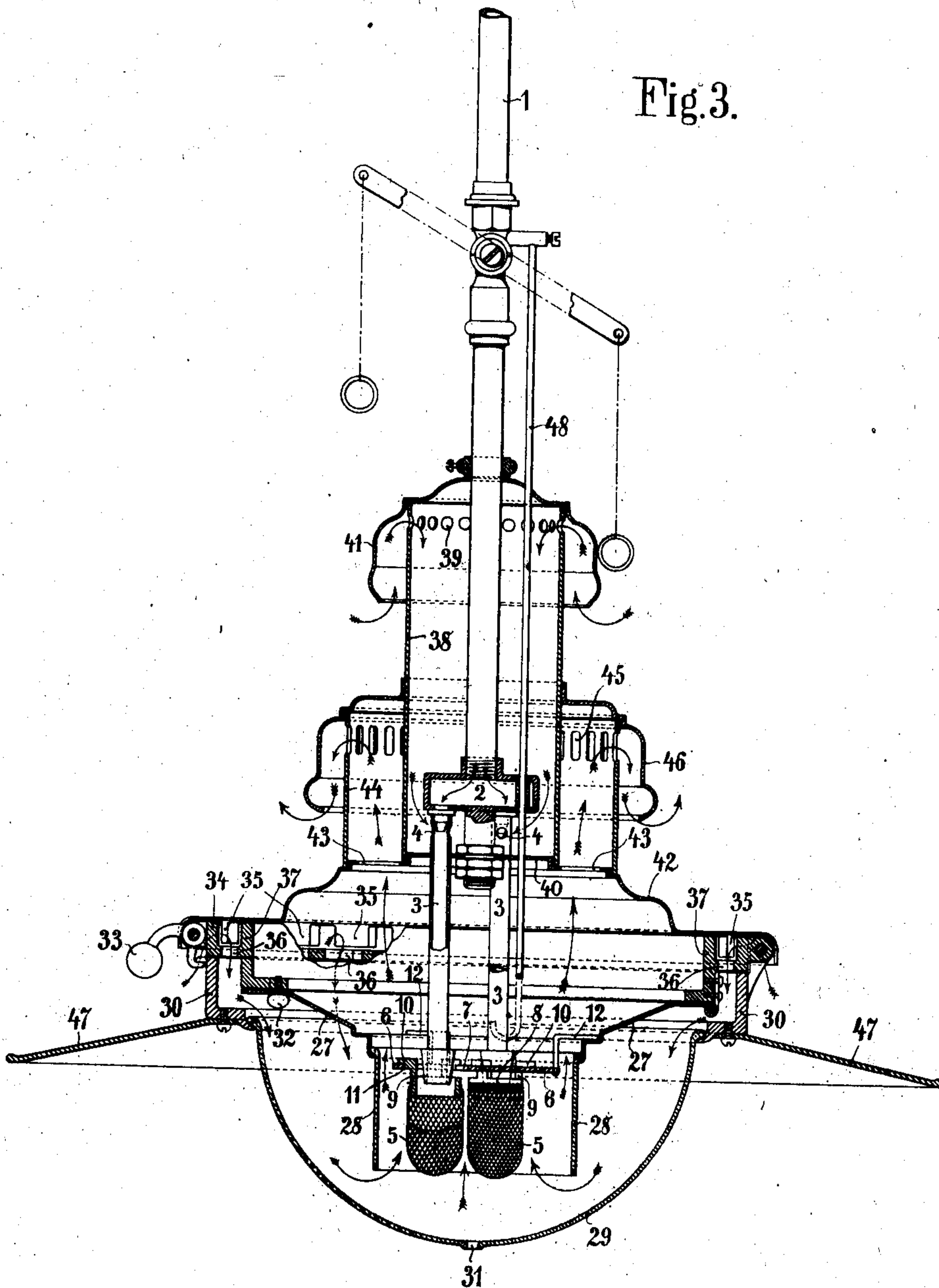
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2 SHEETS—SHEET 2.

Fig. 3.



WITNESSES:

S. R. Moody
Chas. A. Foster

Inventor:
JACQUES BRAUNSTEIN

By *Dickinson, Brown, Raegener & Bimney*
Attys

UNITED STATES PATENT OFFICE.

JACQUES BRAUNSTEIN, OF BERLIN, GERMANY.

GAS-LAMP.

No. 835,053.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed August 1, 1904. Serial No. 218,998.

To all whom it may concern:

Be it known that I, JACQUES BRAUNSTEIN, engineer, a citizen of Roumania, residing at 9 Wasserthorstrasse, Berlin, Germany, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a specification.

This invention relates to gas-lamps, and more particularly to lamps for inverted incandescent gas-light.

The invention substantially consists in the providing of means which facilitate the inserting of the incandescent mantles in the lamp.

Moreover, the invention consists in certain novel features by which a considerably greater lighting power than heretofore is obtained with the same gas-supply.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of one form of the lamp which is preferably used to light rooms in the interior of houses. Fig. 2 is a plan of the plate which bears the mantles. Fig. 3 is a vertical central section of a modified form of the lamp substantially adapted for use in open air.

1 is a supply-pipe for the gas which leads to a gas-chamber 2.

3 designates mixing-tubes which are fed with gas from the gas-chamber 2 and are provided with holes 4 for the admission of air.

5 designates incandescent mantles which are so positioned that same take up the mixture of gas and air leaving the mixing-tubes 3.

6 is a plate which is provided with holes 7, adapted to receive the mixing-tubes 3.

8 designates carrying-rings for the incandescent mantles. Each ring is provided with lugs 9, having horizontally-projecting parts 10, adapted to rest on the edge of the holes 7 of plate 6. The horizontally-projecting parts 10 are provided each with a step 11 for a purpose which will become clear later on.

12 designates angular pieces fixed to plate 6 and adapted to be held by a supporting member, so as to secure the position of carrier-plate 6 and incandescent mantles 5 in relation to the mixing-tubes 3.

The above-named parts are identical in both modifications of the lamp represented

on the drawings. For this reason the same reference-numerals are used for designating the said parts in all the figures.

Now referring more particularly to Fig. 1, 13 is an annular rosette, which is connected with the lamp by a hinge 14 and which has a horizontal annular part 15, forming a support for the above-mentioned rectangular pieces 12. 16 is a glass shade provided with holes 17 and mounted to the hinged rosette 13. 18 is a screw securing the annular rosette 13 and glass shade 16 in operative position, as shown in the drawings. 19 is a cylinder provided with two rows of openings 20 21. 22 is a cross-wall forming a cover for said cylinder 19 and so positioned that it crosses the mixing-tubes 3 between their open ends and the air-inlets 4. The cross-wall 22 forms a deflector for the hot gases and is provided with a curved extension part 23. 24 is a hood which surrounds the upper end of the cylinder 19. 25 is a reflector which is fixed to the deflector 23 in a distance therefrom, leaving a free space 26 for the escapement of the gases.

The operation of the lamp is as follows: Atmospheric air enters through slits 20 and 21 and cools the parts above the deflecting cross-wall 22. This air is drawn into the mixing-tubes 3 through holes 4 and forms, together with the gas, the combustible mixture for heating the mantles 5 to incandescence. The hot gases of combustion and the air entering through openings 17 into the glass shade are checked by the deflector 22 23 and flow into the atmosphere through the free space 26 between deflector 23 and reflector 25.

If it is intended to provide the lamp with new mantles, the rosette 13 with glass shade 16 is turned on pivot 14, so as to give free access to the top opening of the rosette 13. Now an angular piece 12 is grasped, and thus the plate 6, with the incandescent mantles 5 and carrying-rings 8, taken out of the lamp. On grasping one of the horizontal projections 10, supported by plate 6, the corresponding incandescent mantle can be pulled through the corresponding hole of plate 6 and a new mantle fixed to a ring 8 with lugs 9, and horizontal projections 10 may be inserted downwardly through the said hole from the top side of plate 6 until the horizontal projections 10 are caught on the plate. The holes 7 in plate 6 must have sufficient diameter to allow the mantles to be freely inserted

through same without damage. The steps 11 act to secure the right position of the mantles with relation to the mixing-tubes irrespective the diameter of the holes 7 in plate 6. Then the angular pieces 12, fixed to plate 6, are again put on the annular support 15 of the rosette 13 and the glass-shade-carrying rosette turned round the pivot 14 and brought to operative position shown in Fig. 1, where it is fixed by screw 18.

In Fig. 3 I have shown another modification of the lamp especially adapted for use in open air. The feeding-pipe, gas-chamber, mixing-tubes, air-inlets, incandescent mantles, carrier-plate for same, openings in said carrier-plate, supporting-rings for the mantles, lugs on said supporting-rings, horizontal projections and steps on same, and angular pieces fixed to the mantle-carrying plate are designated by numerals 1-12, respectively, as in the modification shown in Fig. 1.

The mantle-carrying plate 6, with angular pieces 12, is supported in this modification by a hinged support 27, carrying a short transparent cylinder 28, inclosing the incandescent mantles. Also in this modification a glass shade is provided (designated 29) and mounted to a pivotable rosette 30. In this instance the glass shade only contains a small hole 31, adapted to carry off water which may accumulate in the interior of the glass shade 29. Fastening devices 32 and 33 are provided to secure the hinged parts 27 and 29, respectively, in their operative position, which is shown on the drawings. 34 is an angular ring having cuts 35 in its cylindrical wall and cuts 36 in its horizontal circle. This angular ring 34 is fixed with its horizontal circle to a cylindrical wall 37, which is concentric to the cylindrical part of the rosette 30 and forms an annular chamber with said part.

38 is a cylinder inclosing part of the supply-pipe and of the mixing-tubes. 39 designates holes in the wall of said cylinder. 40 is a cross-plate forming a cover or bottom of cylinder 38, and 41 is a hood for the cylinder 38. 42 is an extension of the deflecting cross-wall 40, said extension part being provided with openings 43. 44 is a short cylinder inclosing the lower part of cylinder 38 and being provided with openings 45. 46 is a hood for the last-named cylinder 44, inclosing and in contact with the cylinder 38. 47 is a reflector connected with pivotable rosette 30. 48 is a gas-conduit supplying gas to a permanently-lighting burner for lighting the lamp.

The operation of the modification of the lamp represented in Fig. 3 is as follows: Gas is supplied by supply-pipe 1 through gas-chamber 2 to the mixing-tubes 3. Air is drawn into the mixing-tubes through holes 4. The gas leaving the mixing-tubes 3 is burned within the incandescent mantles and heats

same to incandescence. The air drawn into the mixing-tubes through openings 4 is taken out of the interior of cylinder 38, which is supplied with fresh air through the openings 39 in said cylinder, said fresh air following the course indicated by the arrows shown in the drawings. The air passing from openings 39 to openings 4 of the mixing-tubes cools the supply-pipe 1, together with gas-chamber 2, and the ends of the mixing-tubes connected to said gas-chamber.

The products of combustion rise wherever they find a free passage and escape through openings 43 in the extension 42 of the deflecting cross-wall 39 and enter into the annular chamber between the two cylinders 38 44. From this chamber the gases escape through openings 45 in cylinder 44 and are directed downwardly by the hood 46 before they pass out to the atmosphere.

Fresh air enters into the hollow of shade 29 through the cuts 35 in the annular ring 34 and is turned downward through wall 37, so as to flow through the cuts 36 into the annular chamber between the cylindrical part of the rosette 30 and the cylindrical wall 37. This fresh air then follows the direction of the arrows shown in Fig. 3 of the drawings and meets the incandescent mantles 5 from their outer side.

The tortuous way which is prescribed as well to the fresh air before same meets the incandescent mantles from the outer side and to the gases of combustion mixed with the air passing through the lamp prevents any blast to enter the lamp which would result in unequal lighting power. Moreover, the intimate contact of the fresh air with the incandescent mantles, which is obtained by the cylinder 28, increases the lighting power of the mantles.

The inserting of the incandescent mantles is effected in the same manner as previously described.

This invention is not limited to the special forms of construction which are described and shown in the drawings. Especially, instead of three mixing-tubes any other number, and even only one single mixing-tube, may be used. Furthermore, it is not necessary that all the elements of construction are used together in the lamp. On the contrary, some of the elements—*e. g.*, the incandescent-mantle-carrying plate or the cooling-chamber, consisting of a cylinder with a cover or bottom forming deflecting-plate—may be used without other elements of construction shown in the drawings and described in the above specification.

What I claim is—

1. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, a plate provided with holes for receiving the ends of the several mixing-tubes, said plate being supported independently of

said tubes and carrier-rings for incandescent mantles supported on said plate in line with said holes and said mixing-tubes.

2. In a gas-lamp, a supply-pipe, a gas-chamber connected to said supply-pipe, mixing-tubes, one or more, connected to said gas-chamber, a plate provided with holes for receiving the ends of the several mixing-tubes, and carrier-rings for incandescent mantles supported on said plate in line with said holes and said mixing-tubes.

3. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, a carrier-plate provided with holes adapted to receive the ends of the several mixing-tubes for supporting incandescent mantles in line with said holes and said mixing-tubes, and shade-carrying means pivotally connected with the lamp, said shade-carrying means forming a support for said plate.

4. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for carrying incandescent mantles in line with said mixing-tubes, and a cooling-chamber having a wall through which said mixing-tubes pass, said cooling-chamber inclosing the air-inlet ends of said mixing-tubes and having openings to the atmosphere.

5. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for carrying incandescent mantles in line with said mixing-tubes, a cylinder inclosing said supply-pipe and the upper ends of said mixing-tubes and a deflecting-wall forming one end of said cylinder through which said mixing-tubes pass.

6. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for carrying incandescent mantles in line with said mixing-tubes, a cooling-chamber having a wall through which said mixing-tubes pass, said cooling-chamber inclosing the air-inlet ends of said mixing-tubes and having openings to the atmosphere and an annular extension adjacent the lower end of the wall of said cooling-chamber, and a rosette for carrying the glass shade pivotally connected with said extension and spaced away therefrom.

7. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for supporting incandescent mantles in line with said mixing-tubes, a deflecting-wall through which the lower ends of said mixing-tubes pass, a shade-carrying rosette supported from said deflecting-wall, means providing tortuous ways leading from the atmosphere to the interior of the glass shade, a cylinder secured to said deflecting-wall and inclosing the air-inlet ends of the said mixing-tubes, a second cylinder inclosing said first-named cylinder and connected to said

deflector and having air-outlets adjacent its upper end, said deflector being provided with openings forming a communication between the interior of said shade and the annular space between said cylinders, substantially for the purpose described.

8. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for supporting incandescent mantles in line with said mixing-tubes, a deflector-wall through which the lower ends of said mixing-tubes pass, a rosette supported from said deflector, a glass shade carried by said rosette, means providing tortuous ways leading from the atmosphere to the interior of said glass shade, a transparent cylinder inclosing the mantles and located within said shade, a cylinder secured to said deflecting-wall and inclosing the air-inlet ends of the said mixing-tubes, a second cylinder inclosing said first-named cylinder and connected to said deflector and having air-outlets adjacent its upper end, said deflector being provided with openings forming a communication between the interior of said shade and the annular space between said cylinders, substantially for the purpose described.

9. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for supporting incandescent mantles in line with the ends of said mixing-tubes, a deflector-wall through which the lower ends of said mixing-tubes pass, a rosette supported from said deflector-wall, a glass shade supported by said rosette, means providing tortuous ways leading from the atmosphere to the interior of said glass shade, a transparent cylinder in said glass shade adapted to inclose the incandescent mantles, a pivoted carrier for supporting said transparent cylinder, a cylinder secured to said deflecting-wall and inclosing the air-inlet ends of the said mixing-tubes, a second cylinder inclosing said first-named cylinder and connected to said deflector and having air-outlets adjacent its upper end, said deflector being provided with openings forming a communication between the interior of said shade and the annular space between said cylinders, substantially for the purpose described.

10. In a gas-lamp, a supply-pipe, mixing-tubes, one or more, connected with said supply-pipe, means for supporting incandescent mantles in line with the lower ends of said mixing-tubes, a deflector-wall through which the lower ends of said mixing-tubes pass, a rosette pivotally supported from said deflector, a glass shade supported by said rosette, means providing tortuous ways leading from the atmosphere to the interior of said glass shade, a transparent cylinder in said glass shade adapted to inclose the incandescent mantles, a pivoted carrier for supporting said transparent cylinder, a carrier-plate for sup-

porting the incandescent mantles and provided with holes adapted to receive the lower ends of said mixing-tubes, the pivoted carrier for the transparent cylinder being provided
5 with means for supporting said mantle-carrying plate, a cylinder secured to said deflecting-wall and inclosing the air-inlet ends of the said mixing-tubes, a second cylinder inclosing said first-named cylinder and connected
10 to said deflector and having air-outlets adjacent its upper end, said deflector being provided with openings forming a communication between the interior of said shade and the annular space between said cylinders,
15 substantially for the purpose described.

11. A gas-lamp having a plate formed with a plurality of openings, and a mantle-

supporting member removably fitted into each opening of said plate.

12. The combination with a gas-lamp having a mixing-tube, of a plate having an opening of larger diameter than the mixing-tube, and a removable mantle-supporting member supported by said plate fitted into said opening and surrounding the end of the mixing-
25 tube.

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

JACQUES BRAUNSTEIN.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.