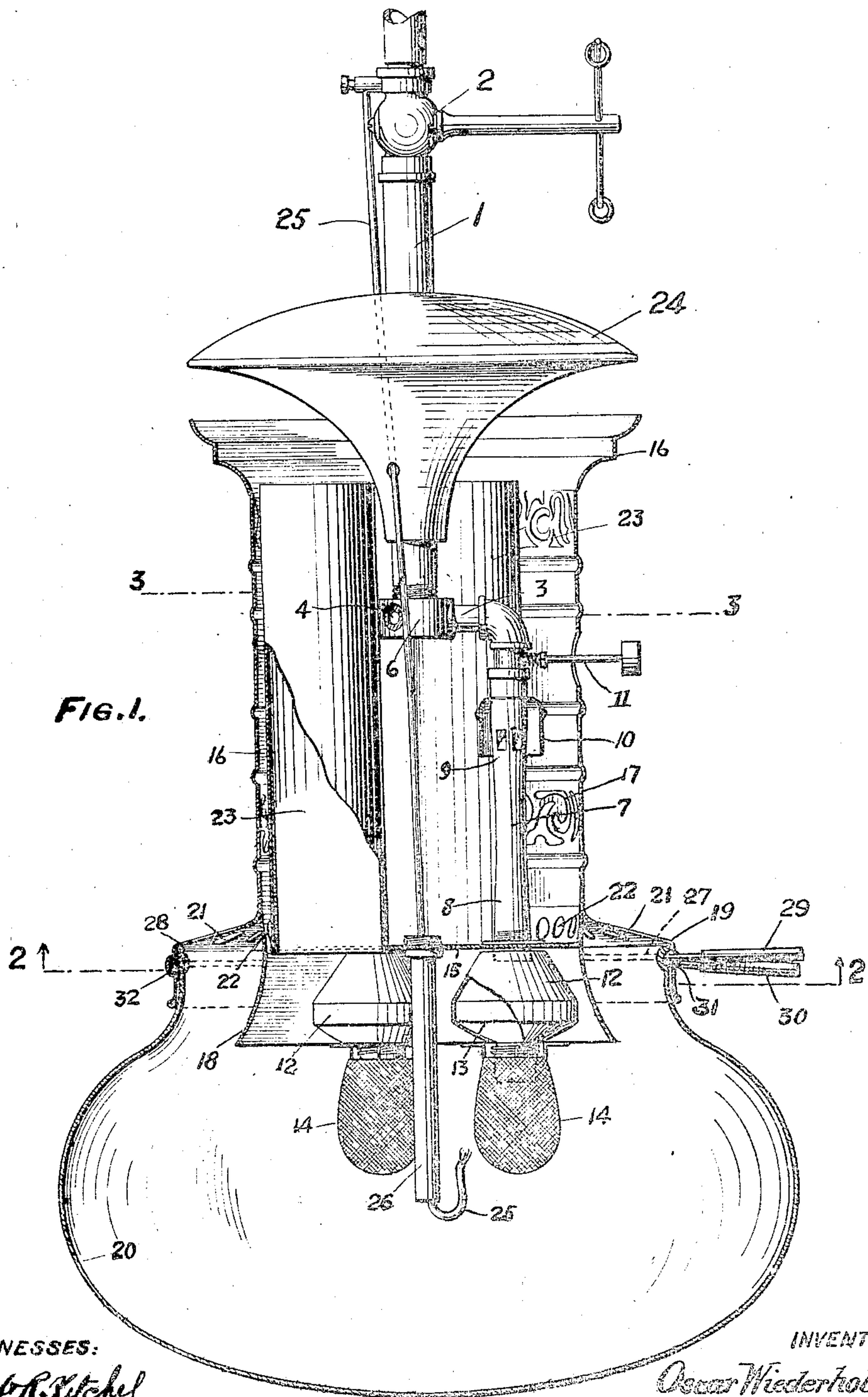


O. WIEDERHOLD.
INCANDESCENT GAS LAMP.
APPLICATION FILED MAR. 30, 1909.

936,501.

Patented Oct. 12, 1909.
2 SHEETS—SHEET 1.



WITNESSES:

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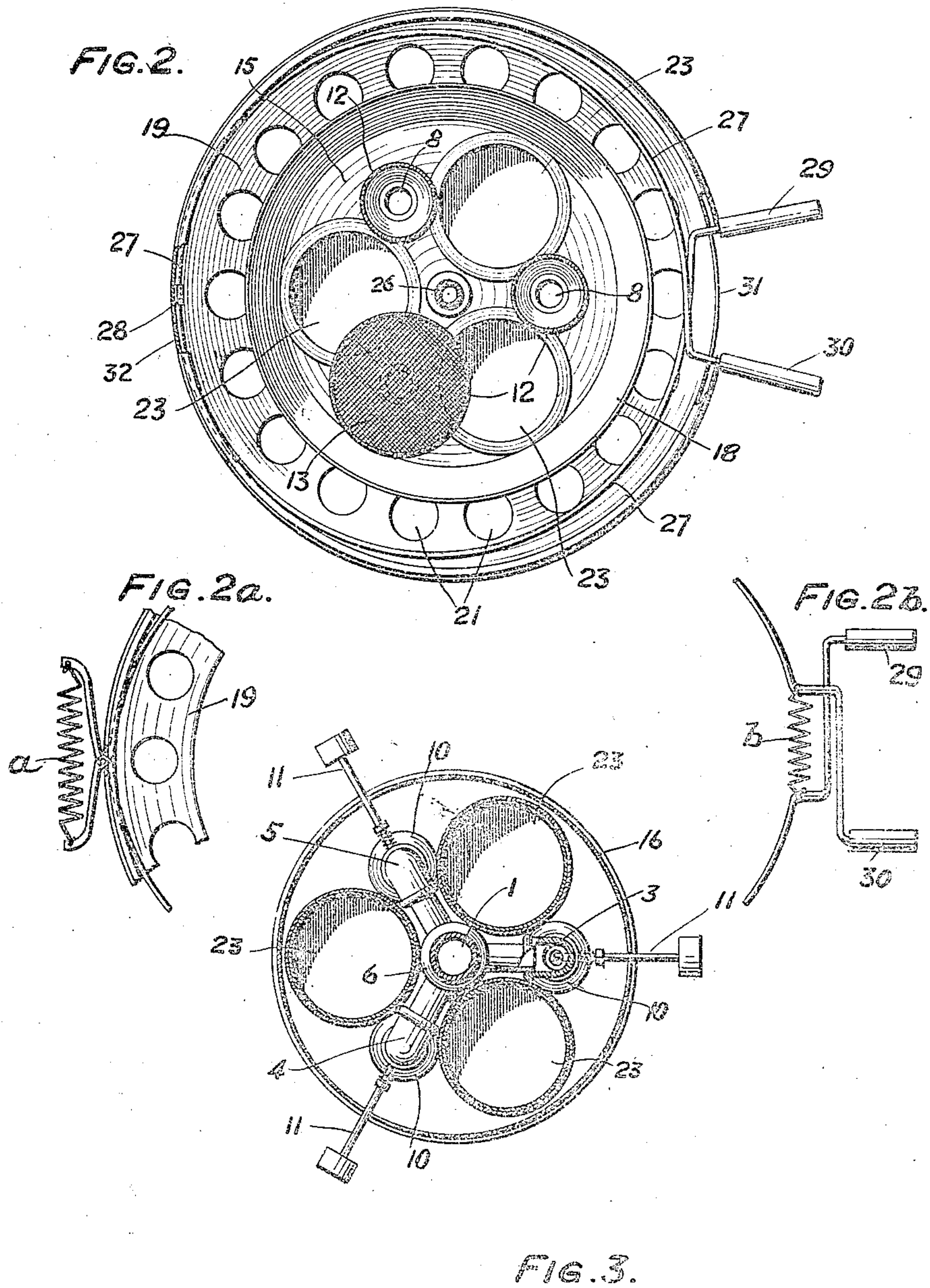
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OSCAR WIEDERHOLD, OF JERSEY CITY, NEW JERSEY.

INCANDESCENT GAS-LAMP.

936,501.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 30, 1909. Serial No. 423,300.

To all whom it may concern:

Be it known that I, OSCAR WIEDERHOLD, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Incandescent Gas-Lamps, of which the following is a specification.

Objects of the present invention are to provide an attractive, comparatively inexpensive, efficient and reliable incandescent gas lamp of the so-called inverted arc variety to supply both air and gas to the mixing chamber in a comparatively cool state; to improve the operation of the Bunsen tube; to provide for conveniently and reliably attaching and detaching the shade or globe; to provide a smokeless and efficient pilot light, and to effect an efficient distribution of the air.

The invention will be claimed at the end hereof, but will first be described in connection with the embodiment of it chosen for illustration in the accompanying drawings, in which—

Figure 1, is a view partly in elevation and partly in section of an incandescent gas lamp embodying features of the invention. Fig. 2, is a sectional view taken on the line 2—2 of Fig. 1, looking upward, and Figs. 2^a and 2^b, are similar views showing modifications of the spring split globe holding ring, and Fig. 3, is a sectional view taken on the line 3—3 of Fig. 1.

In the drawings 1, is the gas supply pipe provided with a valve 2 and arranged to depend from a suitable gas connection. At its lower end this gas pipe 1 is provided with branches of which the number is not material, three designated 3, 4, and 5, are shown in the drawings. In the arrangement chosen for illustration these branches depend from a union 6, applied to the end of the pipe 1. From these branches depend Bunsen tubes and mixing chambers provided with inverted mantles. A description of one of these Bunsen tubes will suffice, as they are all alike.

The center part 7 of the Bunsen tube is cylindrical and each of its end portions 8 and 9 flares outwardly. By way of further description it may be said that the diameter at the ends of the Bunsen tube is about half again the diameter of the intermediate part, or in other words, the diameter of the part 7 is about two-thirds of the diameter of the largest portion. The described form of Bun-

sen tube provides an excellent mixture of gas and air, is productive of better results and keeps the mixture relatively uniform. Furthermore this form is noiseless in operation and prevents smoking on changes of gas pressure. The part 9 of the Bunsen tube is provided with air inlets which may be protected by a shield 10.

11, is a gas valve, the stem of which is accessible from the exterior of the lamp.

12, is a mixing chamber shown as fitted with a gauze 13 from which depends an inverted mantle 14.

15, is a horizontal partition arranged at the ends of the Bunsen tube, and in the present instance secured thereto by means of the mixing chambers 12.

16, is a cylindrical casing or shell supported by the partition 15, and, shown as provided with perforations 17 and flanged at its top as well as at its bottom, as is shown at 18.

19, is a flange applied to the lower position of the casing or shell 16 and adapted to receive the neck of the globe 20. This flange 19 is also provided with air inlets 21, which communicate with air inlets 22, formed in the shell or casing 16 above the partition 15.

Extending upward and through the partition 15 are draft flues 23, which are advantageously covered on the outside with asbestos or other material which is a non-conductor of heat.

Above the top of the shell 16 is arranged a cone 24 through which the pipe 1 passes and which is spaced above the top rim of the casing so as to provide an ample outlet.

25, is a pilot tube which extends from a point above the valve 2, down through the cone 24 and through the partition 15 to an appropriate position in proximity with the mantles.

26, is a tube or pipe depending from the partition 15 and within which the pilot tube is arranged. Through the pipe 26, air rises and cools the tube 25.

27, is a generally circular spring as of wire, arranged within the flange 19 and secured thereto at or near its center portion as by means of a clip 28, Fig. 2. The ends of this spring are bent outwardly or radially to constitute handles 29 and 30, which may, if desired, be covered with a material which is not a good conductor of heat. These handles work in a slot or opening 31, formed in the flange 19. Normally the ends of this wire or spring overlap each other, the ex-

tent of the overlap being, if desired, limited by the ends of the slot or opening 31. When the handles 29 and 30 are drawn together, the spring assumes a substantially true circular form and occupies the hollow of a bead 32, formed on the flange 19. Normally this spring encircles and engages the neck of the globe 20 and by its resilience holds the same to place on the lamp. Should the neck of the shade or globe contract, as by reason of temperature changes, the spring accommodates such expansion or contraction and thus avoids breakage. By pinching the handles 29 and 30 together, the spring is expanded as has been described and thus releases the globe or shade.

The described parts constituting a shade or globe-holder are classified under lighting fixtures and therefore are not claimed here, but are made the subject-matter of a divisional application serially numbered.

Air entering the inlets 21 divides, a part enters the globe 20, feeds the lights and with the products of combustion passes up through the draft tubes 23 and escapes between the cone 24 and the top of the casing 16. The other part of the air passes through the opening 22 above the partition 15 and ascends through the casing around the outside of the draft tubes, Bunsen tubes and gas pipe, escaping between the cone 24 and the casing 16. In addition to this, air, of course, passes through the openings 17 in the casing or shell. It has been said that the hot products of combustion pass up through the draft tubes and they are delivered onto the cone 24, and with a supply of air pass out through the casing 16. The result of this is that the gas pipes and Bunsen tubes, as well as the pilot light tube 25, are kept cool. By keeping these parts cool, combustion is improved and excellent results attained. The pilot light tube 25 protects the lower part of the pilot light from becoming heated, so that the pilot light tube is relatively cool and its flame therefore not smoky. Of course, the mixing chambers 12, are exposed to heat, which is desirable, whereas the gas and air connections to these are kept as cool as possible, which are conditions adapted to bring about the best heating and therefore the best illuminating results. The hollow cone 24 and the described means for introducing and passing air through the casing 16, prevent the top of the lamp from becoming unduly heated.

What I claim is:

1. In a gas lamp of the type recited the combination of a gas pipe having branches provided with depending Bunsen tubes, a casing encircling said parts and having a partition through which the ends of the Bunsen tubes extend and having above said partition air inlets a free passage being formed from said air inlets through the cas-

ing to the top of the lamp, draft tubes arranged between the Bunsen tubes and extending through the partition and upward into the casing, and a cone encircling the gas pipe and extending beneath the tops of the tubes, substantially as described.

2. In a lamp of the type recited the combination of a casing having at its base a partition and having immediately above said partition air inlets, a free passage being formed from said air inlets through the entire length of the casing to the top of the lamp through which passage there is afforded a draft of air, Bunsen tubes arranged above said partition and disposed through out their lengths in the draft of air entering through said inlets, and draft tubes for conveying hot products and keeping them away from the Bunsen tubes, substantially as described.

3. In a gas lamp of the type recited the combination of a casing having adjacent its lower end a partition above which it is provided with air inlets, Bunsen tubes above said partition, a flange applied to said casing and provided with air inlets, and a globe applied to the last mentioned flange, the construction and arrangement being such that air entering the last mentioned air inlets divides, part going to the globe and part to the casing, substantially as described.

4. In a lamp of the type recited a Bunsen tube having its intermediate portion cylindrical and having both of its end portions outwardly flaring and the smallest diameter of the flaring portions being the same as the diameter of the cylindrical portion, substantially as described.

5. In a gas lamp of the type recited the combination of a casing, a partition in the casing, a burner extending below the partition, a pilot light tube depending from the partition, and a protection tube encircling the depending portion of the pilot tube and extending below the burner outlet and opening through the partition to provide a draft of air around the pilot tube for cooling it, substantially as described.

6. A gas lamp comprising a valved depending gas pipe having valved branches provided with depending Bunsen tubes, a casing inclosing said parts and provided near its bottom with a horizontal partition through which the Bunsen tubes open and provided above said partition with air inlets, draft tubes extending through said partition and up into the casing, a cone through which the gas pipe passes and which extends below the tops of said draft tubes, a handle accessible from the exterior of the casing for operating the valves in said branches, mixing chambers and inverted mantles applied to the Bunsen tubes below the partition, a globe, a globe holding flange applied to the base of the partition and provided with air

inlets through which air enters and divides, part going to the casing above the partition and part to the globe, a pilot tube extending from above the valve in the gas pipe through the cone and casing and partition into proximity with the mantles, and a protection tube depending through the partition and encircling the lower end of the pilot tube, substantially as described.

10 : 7. In a gas lamp a Bunsen tube having its intermediate portion cylindrical and having

both of its end portions outwardly flaring, the end portions being identical and having their smallest diameter the same as the diameter of the cylindrical portion, substantially as described. 15

In testimony whereof I have hereunto signed my name.

OSCAR WIEDERHOLD.

In the presence of—

MABELLE COLLINS,

C. E. GILLILAND.