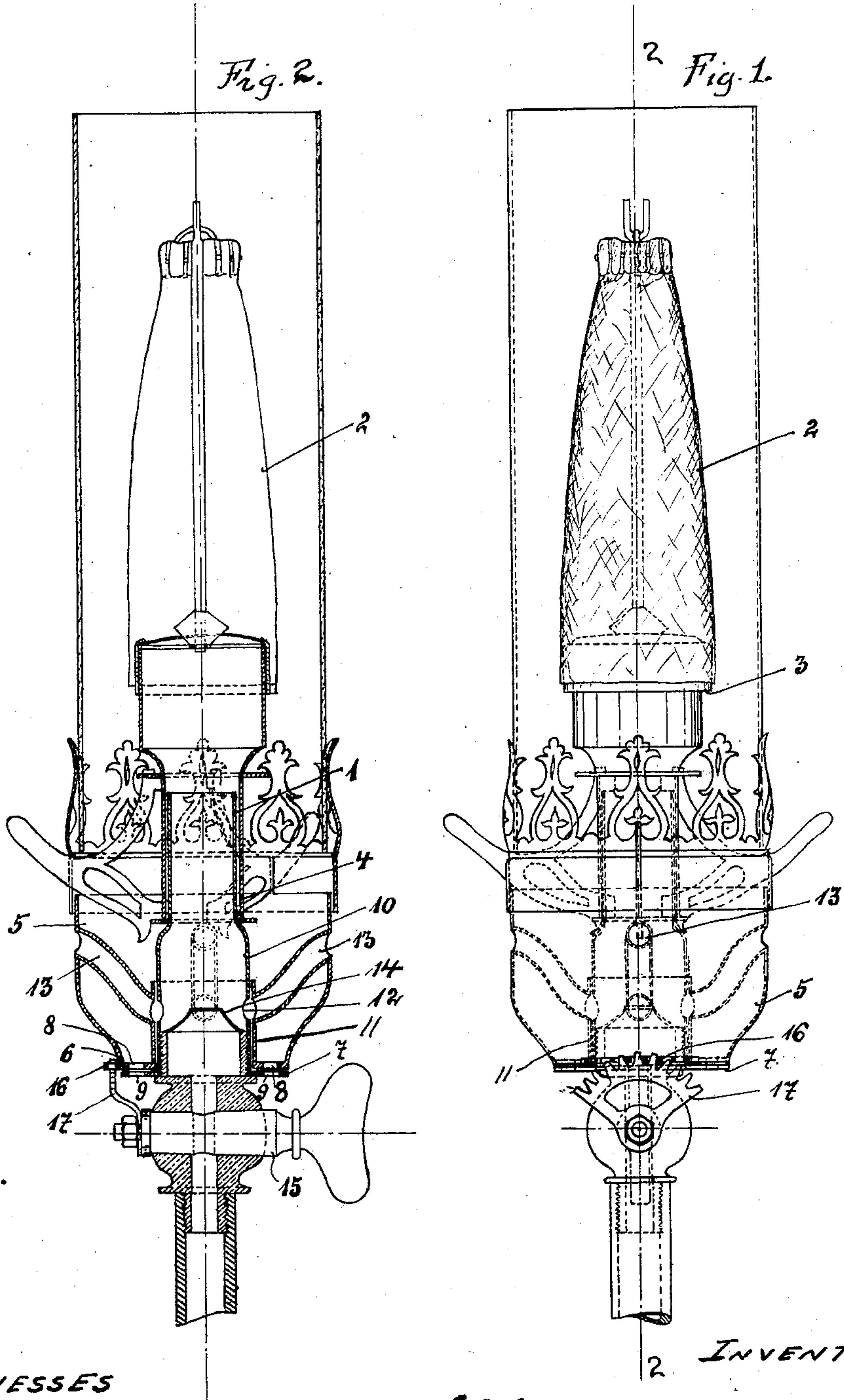


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PATENTED JULY 30, 1907.

E. H. O. WERWATH.
INCANDESCENT GAS LAMP BURNER.
APPLICATION FILED MAR. 31, 1906.



WITNESSES

W. P. Burke
W. J. Donovan

INVENTOR
Erich Hans Oswald Werwath
BY *Richard G. [Signature]*
ATTY'S.

UNITED STATES PATENT OFFICE.

ERICH HANS OSWALD WERWATH, OF LINDEN, GERMANY.

INCANDESCENT-GAS-LAMP BURNER.

No. 861,337.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed March 31, 1906. Serial No. 309,171.

To all whom it may concern:

Be it known that I, ERICH HANS OSWALD WERWATH, a subject of the Emperor of Germany, and a resident of Stephanus street 1, Linden, near Hanover, Germany, have invented a new and useful Improved Incandescent-Gas-Lamp Burner, of which the following is the specification.

In the incandescent gas lamp burners as generally used the lighting power of the incandescent mantle is mostly greatly reduced, if there is not the full gas pressure or if the gas cock is not turned on full. The reason for such reduction of the lighting power lies in the fact, that the flame is blown away from the incandescent mantle towards the inside of the latter by the current of air entering freely at the lower opening of the chimney as soon as the pressure of the gas mixture inside the incandescent mantle is reduced owing to the reduced supply of gas.

It has been proposed to limit the amount of air supplied outside and to regulate the same by means of a slide. Hereby however a depression in the lower part of the chimney varying on the one hand according to the position of the slide on the other hand according to the amount of gas burned, is created, which will have a considerable effect on the amount of mixture air entering through the lower openings in the burner tube. This amount of mixture air again is of considerable influence on the size of the flame, while it is necessary for obtaining a good lighting power to keep the size or at least the diameter of the flame constant and of such a size that the hottest combustion zone will be inside the meshes of the mantle.

By employing the rotary slides for the openings of the Bunsen tube, used sometimes for regulating the amount of mixture air, the required balancing of the inside and the outside supply of air can be obtained by throttling the outside air by means of a slide for any existing gas pressure and various openings of the gas cock, however this will require in each single instance tedious systematic trials, so that this method would waste too much time if practically employed and could not be carried out by an unskilled person. According to the present invention this can be avoided by connecting the air slide for the outside air with the slide for the openings in the Bunsen tube either rigidly or by other means, so that simultaneously with the openings admitting the outside air, the openings in the Bunsen tube are regulated in such a manner, that the required equilibrium between the amount of air drawn in both outside as inside of the mantle or the Bunsen tube respectively is preserved independently of the fluctuations of the suction. Hereby it is easily arranged, that to each position of the gas cock a certain position of the mutual regulating slide for the two air passages of the burner corresponds, so that on turning the gas cock this air slide is simulta-

neously suitably adjusted by means of suitably provided connecting gear.

In the accompanying drawings Figure 1 is a side view of such an incandescent gas burner, Fig. 2 a section through Fig. 1 along 2—2.

The Bunsen tube 1 of the Bunsen burner has at its upper end the burner head 3 projecting into the interior of the mantle 2, the said head fitting with its tube shaped stem 4 on the Bunsen tube 1. The lower extended part of the burner tube 1 is surrounded by a casing extended upwards 5, and closed below by means of a flat annular disk 6, resting on a slide ring 7, fitted to the Bunsen tube 1. Both the slide ring 7 and the annular disk 6 attached to the casing 5 have perforations 8 and 9 respectively of suitable size, so that on turning the casing 5 on ring 7 the air entering into the interior of the former and proceeding thence to the flame can be regulated as if by a slide.

Into the lower part of the casing 5 a cylindrical slide 11 is fitted, closely encircling the extended part 10 of the Bunsen tube, the said cylindrical slide being rigidly connected with the body of the casing 5. This cylindrical slide has perforations similar and opposite to the usual perforations 12 in the Bunsen tube and from these perforations straight or bent tubes 13 extend through the inside of the casing 5 to the outside wall of the latter, communicating here with the outside air. These tubes 13 which supply air to the openings 12 in the Bunsen tube, allow of regulating the supply of air to the Bunsen tube together with the supply of air to the flame from outside by turning the casing.

As the amount of air to be supplied inside and outside is in a given proportion to the gas mixture supplied through the ordinary nozzle 14 into the burner tube, said gas mixture being given by the respective position of the gas cock, the casing 5 can also be arranged in such a manner, that it is positively adjusted by the turning of the cock 15. In the design shown in the drawing a toothed segment 17 attached to the cock is provided for this purpose, the said segment meshing with another toothed segment 16 provided on the casing 5. The slide regulating the outside air can also be arranged above the entrances of the air into the burner tube, more or less close under the lower opening of the burner gallery or the chimney respectively. In this case the outside casing 5 can have perforations, and the air tubes passing through said casing can be omitted. Lastly also instead of combining the slides for the air passages in one rotating part, any other mechanical device can be employed by means of which the two air passages are opened or closed respectively at one time in a given proportion. The proper proportion of the openings required for each position must of course be correctly determined in manufacturing the apparatus by giving the openings in the slides a suitable size, or

if both slides are moved dependently of each other by means of intermediate gearing, by suitably dimensioning such intermediate gearing.

Having now described my invention what I claim
5 and desire to secure by Letters Patent of the United States is:

1. In combination with the burner tube of a gas lamp having a perforated lower portion, a rotary casing surrounding the tube, and having a perforated bottom, a perforated plate on the tube upon which the casing rests, said
10 casing having a cylindrical portion closely surrounding the lower perforated portion of the tube and having openings therein and tubes 13 passing through the casing and communicating with said openings.

15 2. In combination with the burner tube of a gas lamp

having a perforated lower portion, a rotary casing surrounding the tube, and having a perforated bottom, a perforated plate on the tube upon which the casing rests, said casing having a cylindrical portion closely surrounding the lower perforated portion of the tube and having openings
20 therein, tubes 13 passing through the casing and communicating with said openings, a cock for controlling the flow of gas, a segment thereon and a segment on the casing engaging with the first mentioned segment.

In testimony whereof I have signed my name to this
25 specification in the presence of the two subscribing witnesses.

ERICH HANS OSWALD WERWATH.

Witnesses:

ANNA DIPPEL,
HERMINE GÖDECKE.