

No. 771,356.

PATENTED OCT. 4, 1904.

L. P. DEXTER.

GAS BURNER.

APPLICATION FILED JUNE 16, 1904.

NO MODEL.

Fig. 1.

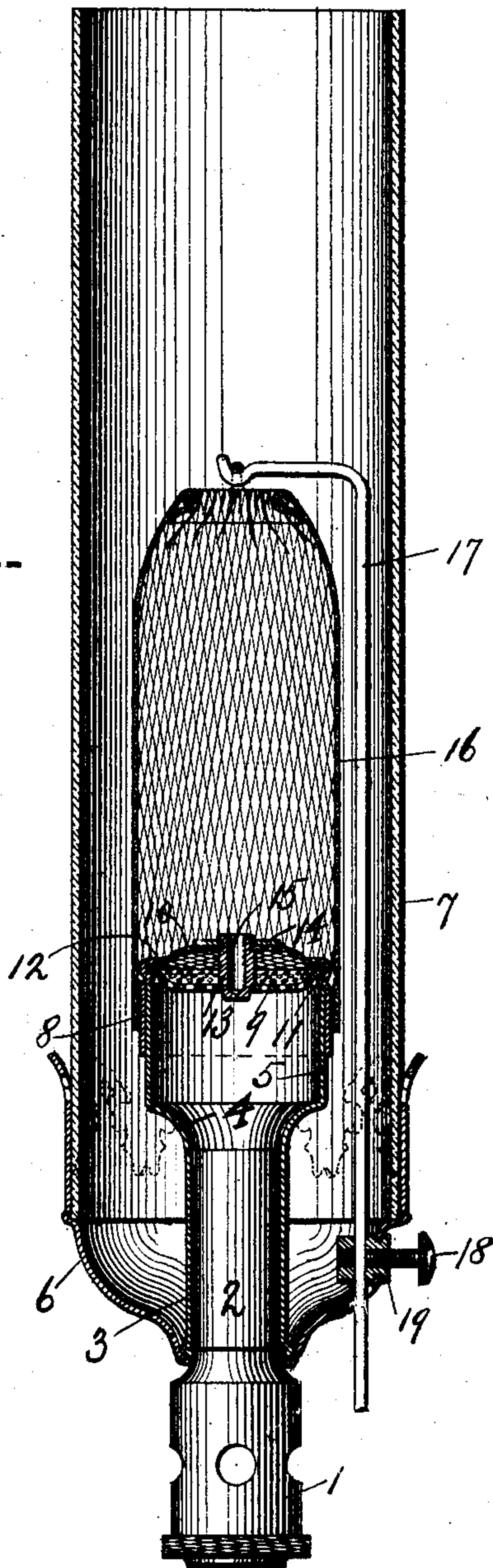


Fig. 2.

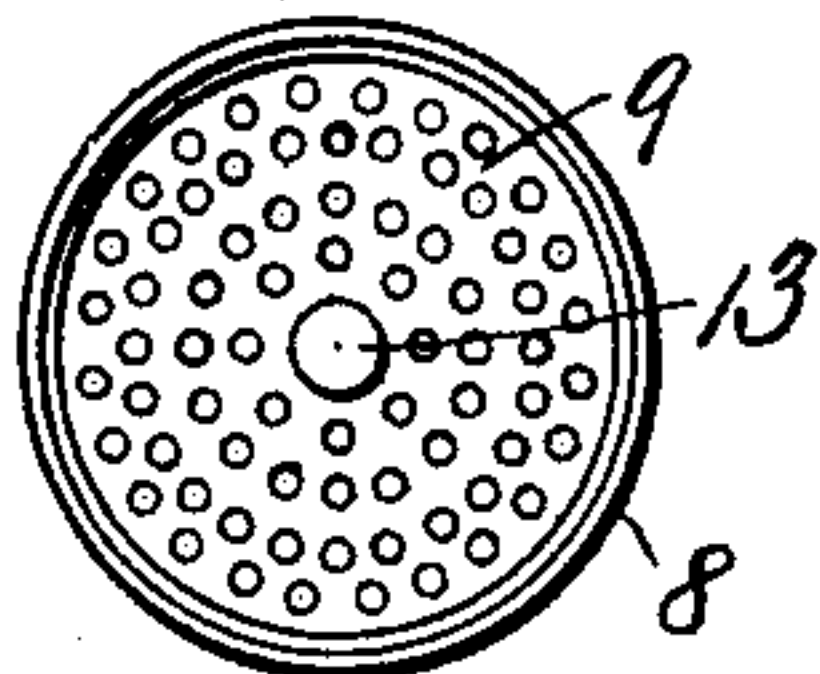
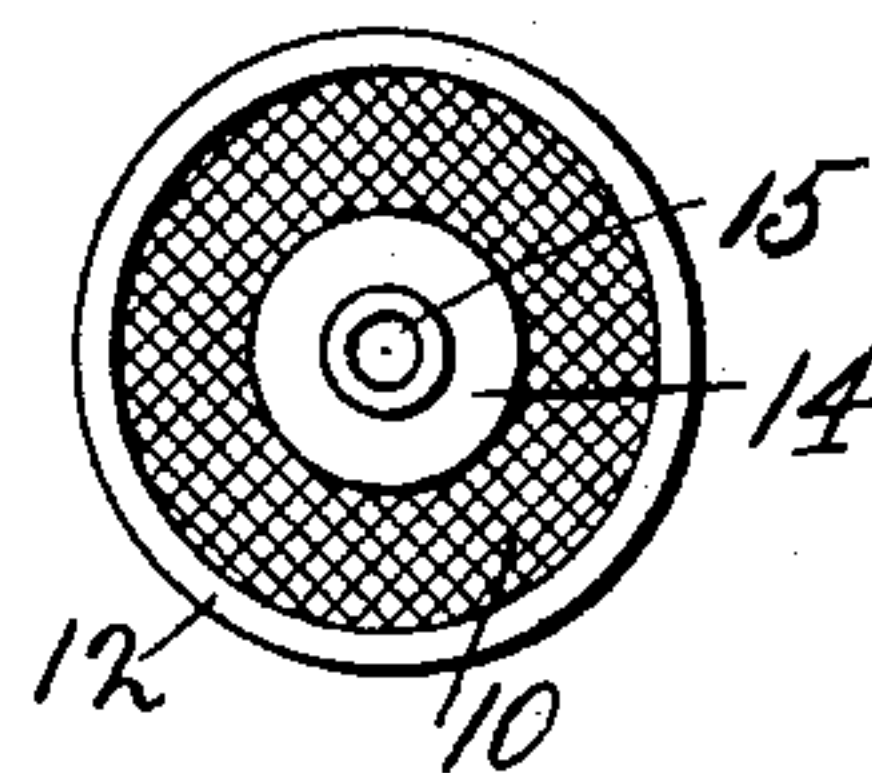


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LEWIS P. DEXTER, OF NEW YORK, N. Y.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 771,356, dated October 4, 1904.

Application filed June 16, 1904. Serial No. 212,816. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS P. DEXTER, a citizen of the United States, residing at 1820 Seventh avenue, borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

The present invention relates to gas-burners of the type in which a mixture of air and gas is burned with the production of a non-luminous flame and a mantle coated with suitable incandescing material is supported above the burner in such position that the flame from the burner will impinge upon the mantle and cause it to become incandescent.

The invention has special reference to the cover or top of the burner-tube, which is removable from the burner-tube and is provided with two or more spaced perforated septa, between which an air and gas mixing chamber is formed.

The principal object of the invention is to provide a cover or top for the burner-tube which may be readily replaced when it becomes no longer serviceable and which is so constructed that more effective mixing of the air and gas is obtained than in the burners heretofore employed.

A further object of the invention is to provide a top or cover for the burner-tube of novel construction which is both cheaper and more durable than the types of covers previously employed.

Other minor objects of the invention will appear as the same is hereinafter disclosed, and the scope of the invention will be clearly defined in the appended claim.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which corresponding parts are designated by similar characters of reference in the several views; but it is to be understood that changes in the structural details may be made without departing from the spirit of the invention or of sacrificing its advantages.

In the drawings, Figure 1 is a view, chiefly in vertical median section, through a burner constructed in accord with the present invention and showing a mantle supported by a rod extending upward at one side of the burner.

Fig. 2 is a bottom plan view of the top or cover of the burner-tube, and Fig. 3 is a top plan view of the top or cover.

Referring to the drawings, 1 designates the air-tube of the burner, which is provided near the bottom with the usual openings for the admission of air and which has an upper portion 2, which is reduced in diameter and is fitted into the burner-tube 3, which is supported upon the air-tube 1. The burner-tube 3 is expanded near the top, as shown at 4, to form a cylindrical enlargement 5, and at the bottom the burner-tube 3 has attached thereto a chimney-support 6 of the usual or any preferred structure. A chimney 7 is shown in position upon the support 6.

The top or cover of the burner-tube consists of a tubular member 8, preferably of sheet metal, and two perforated septa, which are permanently secured at the upper end of the tubular member. The tubular member 8 is of such diameter that it fits snugly upon the cylindrical enlargement 5 at the upper end of the burner-tube, and the two perforated septa are preferably a plate 9, of sheet metal, having a plurality of small apertures punched therein, and a piece of wire-gauze 10 of suitable mesh. The plate 9 rests upon a shoulder formed within the tubular member 8 of the top or cover by a circumferential bead 11 near the upper end of the said tubular member, and the piece of wire-gauze 10 is held in position by upsetting or crimping the upper margin of the tubular member 8, as shown at 12. The marginal portion of the plate 9 and piece of wire-gauze 10 are in contact, as shown in the drawings; but the middle portion of the plate 9 is depressed and the middle portion of the gauze is raised to form between the two an air and gas mixing chamber. The middle portions of both the gauze and the perforated plate are substantially horizontal, and the mixing-chamber formed between them is of substantially the same depth throughout, thus insuring a very uniform mixture of the air and gas.

The perforated plate and the wire-gauze are held at a fixed distance apart by means of a hollow socket member 13, which is reduced in external diameter at its lower end, as shown.



and is fitted into a central opening in the plate 9. Near its upper end the socket member 13 is formed with an external shoulder, upon which the piece of wire-gauze 10 rests, the upper end of the socket member extending through a central opening in the wire-gauze and being flared outwardly to engage and secure in position a small washer 14, which rests upon the upper surface of the wire-gauze. The socket member 13 is formed with the central cavity 15 to receive a magnesium rod or a mantle-support when it is desired to use it for either purpose.

In the form of the invention illustrated the mantle 16, which may be of any ordinary type, is suspended from a mantle-supporting rod 17, which is adjustably held by a clamping-screw 18, fitted in a threaded socket 19, which is provided for that purpose in the chimney-support 6 of the burner.

From the foregoing description it will be readily seen that the top or cover of the burner-tube is readily removable therefrom when it is desired to replace it, and inasmuch as the wire-gauze 10, which forms the upper perforated septum of the cover, is ordinarily destroyed before the other parts of the burner become injured from use this removability of the top or cover permits a worn-out and useless cover to be replaced whenever necessary by a new one, and hence makes it possible to prolong the life of the burner indefinitely.

While I have shown the two perforated septa as consisting of a plate of sheet metal and a piece of wire-gauze, and it is to be understood that these are the preferred forms of the perforated septa, I may make use of two perforated plates or two pieces of wire-gauze instead of the construction shown.

Special attention is directed to the way in which the perforated septa of the top or cover of the burner are secured in the tubular member. By bringing the marginal portions of the perforated septa into contact, as shown, I

am enabled to secure both septa between an internal bead and the crimped or overturned upper margin of the tubular member, and by drawing the lower septum downward and the upper septum upward a mixing-chamber of suitable dimensions is formed.

The socket member 13, which is supported upon the perforated plate 9 and which affords partial support for the wire-gauze 10, serves to keep the two perforated septa at the proper distance apart and prevents alteration of the dimensions of the mixing-chamber from distortion of the septa through the action of the heat thereon when the burner is in use. Moreover, the socket member and the washer 14, secured in position upon the top of the wire-gauze by the flared upper end of the socket member, afford protection to the central part of the gauze and increase its durability.

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

In a gas-burner, the combination with a burner-tube of a top or cover therefor comprising a tubular member provided with an overturned or crimped edge at its upper end and having an internal circumferential bead slightly below said overturned or crimped edge, two perforated septa having their margins secured in contact between said bead and said overturned or crimped edge at the upper end of the tubular member and having their central portions spaced apart and disposed substantially horizontal to form a mixing-chamber, and a spacing member having a socket therein centrally secured between said perforated septa for holding the central portions of said septa at a fixed distance apart.

In witness whereof I have hereunto set my hand this 13th day of June, 1904.

LEWIS P. DEXTER.

Witnesses:

H. RICHARD WÖBSE,  
JAMES MCGUFFOG.