J. H. MORRISON.

LAMP BURNER.

APPLICATION FILED NOV. 23, 1908.

Patented Sept. 21, 1909.

934,453.

Fig. 1.

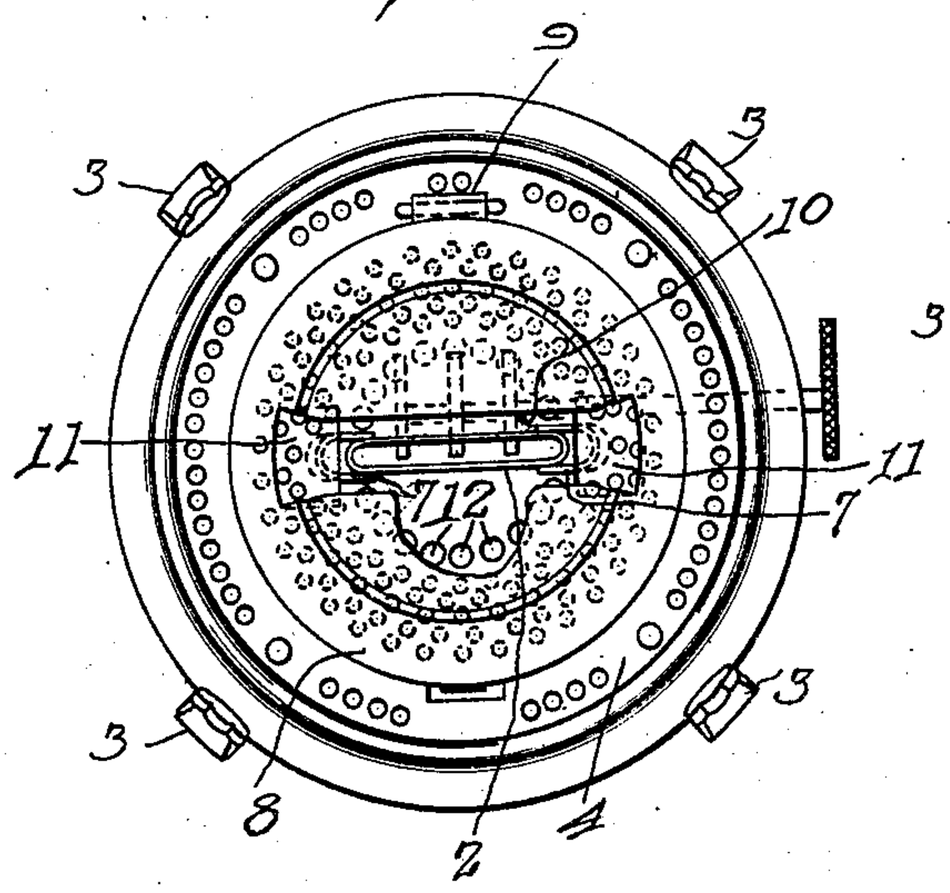


Fig. 2.

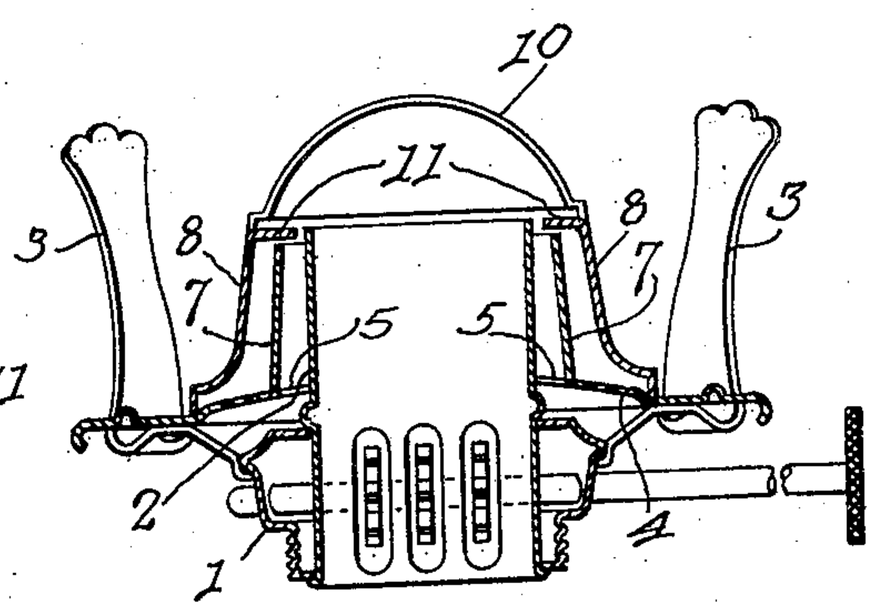


Fig. 3.

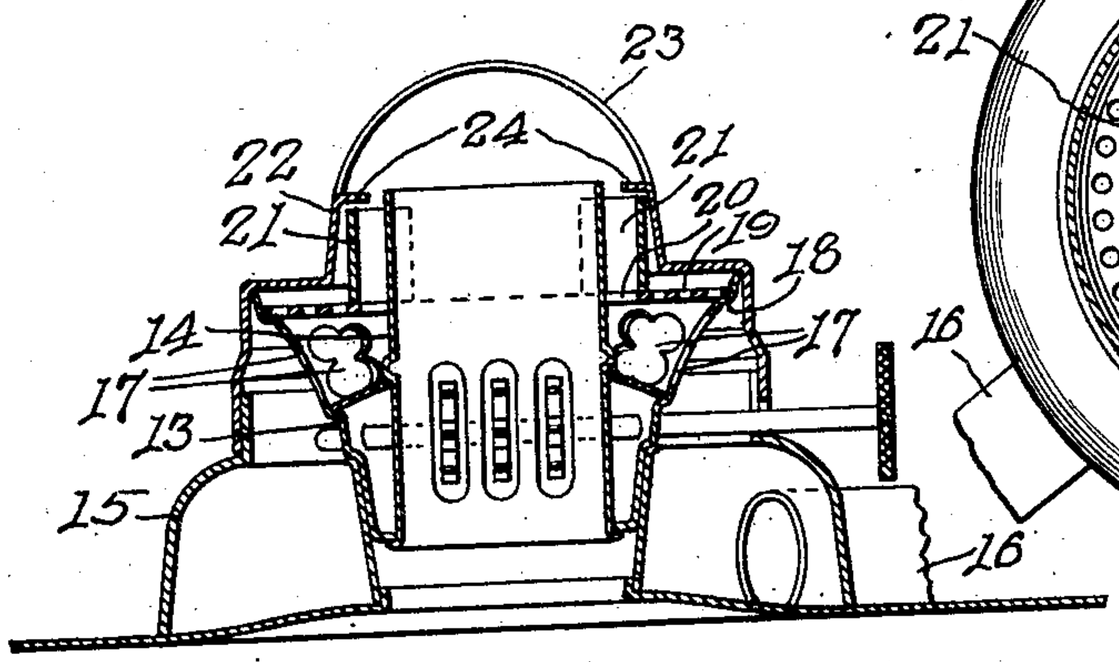


Fig. 4.

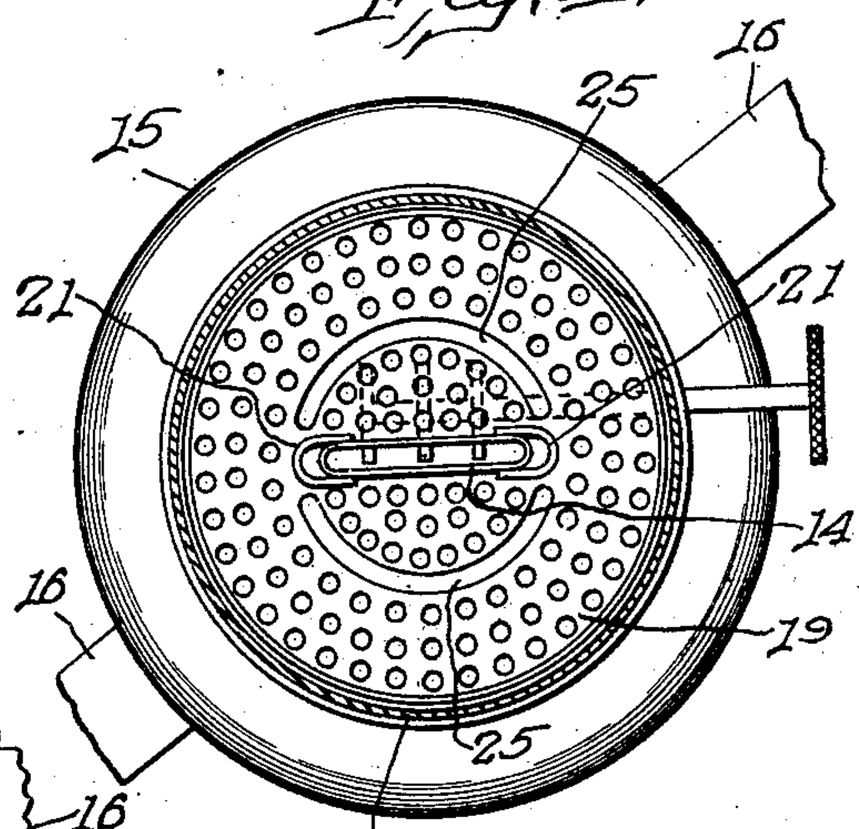
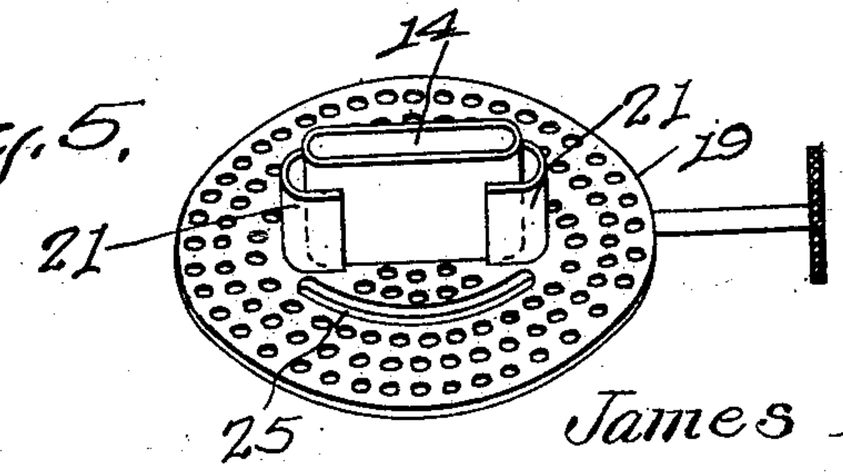


Fig. 5.



Witnesses

G. Howard Walmsley

Edward L. Reed.

Inventor

James H. Morrison,

By H. A. Toulmin,

Attorney.

UNITED STATES PATENT OFFICE.

JAMES H. MORRISON, OF DAYTON, OHIO.

LAMP-BURNER.

934,453. Specification of Letters Patent. **Patented Sept. 21, 1909.**

Application filed November 23, 1908. Serial No. 464,102.

To all whom it may concern:

Be it known that I, JAMES H. MORRISON, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to burners for lamps, lanterns and the like, and the object of the invention is to provide a burner of this character which will have substantially complete combustion and in which the flame will be materially enlarged.

To this end, it is a further object of the invention to provide a burner with means for conducting a current of air toward and away from the base of the flame, in this manner furnishing the necessary air for complete combustion and drawing the flame out at the ends to enlarge the same; also to provide means for preventing the hood of the burner from sweating or becoming overheated; and to provide the burner with a removable perforated plate, by the removal of which the burner can be readily cleaned.

With these objects in view my invention consists in certain novel features and in certain combinations and arrangements of parts hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a lamp burner embodying my invention; Fig. 2 is a vertical, sectional view of the burner shown in Fig. 1; Fig. 3 is a vertical, sectional view of a lantern burner embodying a slightly modified form of the invention; Fig. 4 is a top plan view of the burner shown in Fig. 3 with the hood removed; and Fig. 5 is a perspective view of the removable perforated plate.

In these drawings I have illustrated the preferred form of my invention, and, in Figs. 1 and 2, I have shown the same as applied to a lamp burner of ordinary construction. As here shown the lamp burner comprises a body portion 1 provided with the usual wick tube 2. Secured to the body portion of the burner and extending outwardly therefrom and thence upwardly are the ordinary chimney supporting fingers 3, above which is supported a perforated plate 4 which is preferably of greater diameter than the base of the chimney and serves as a support therefor. This perforated plate 4 is provided with an elongated slot 5 adapted to receive the wick tube 2 and of a length somewhat greater than the length of said wick tube, whereby, when the wick tube is arranged centrally thereof, the opposite ends of the slot 5 will form air passages at the opposite edges of the wick tube. These air passages are provided with upwardly extending conduits 7 which terminate a short distance below the upper edge of the wick tube. These conduits may be of any suitable construction, but I prefer to form the same in substantially the manner shown and described in the patent granted to me August 7, 1906, and numbered 827,812, which, in brief, consists in forming the conduits of a sheet of metal bent into substantially U-shape and securing the same to the perforated plate 4 about the edges of the air passages. The edges of the U-shaped plate extend on the opposite sides of the wick tube and some distance beyond the ends thereof, and, inasmuch as the diameter of the conduit is substantially equal to the width of the wick tube, the U-shaped plate, together with the edge wall of the wick tube, will form a closed passage or conduit for the air. These conduits are preferably arranged with their outer walls slightly inclined toward the end walls of the wick tube, thus causing the conduits to taper toward the upper ends thereof and to direct the air slightly toward the upper end of the wick tube. A hood 8 is hinged to the perforated plate 4 in the usual manner, as shown at 9, and extends over the wick tube and its air conduits. This hood is provided in its upper portion with the usual flame slot 10. Suitable means are carried by this hood at a point near, and preferably above the tops of the conduits 7, for directing the air, which passes from said conduits, toward the top of the wick tube and the base of the flame, whence it passes outwardly through the flame slot. This means preferably comprises lips 11 extending inwardly from the hood 8 near the opposite ends of the flame slot 10 and having their inner ends located slightly above the conduits and extending inwardly slightly beyond the outer walls thereof so that the inner ends of the lips will lie partly in the path of the air escaping from the upper ends of the conduits 7. The air coming in contact with the lips 11 is directed inwardly, as stated, toward the top of the wick tube and

the base of the flame, thus affording an abundant supply of air for the flame, and thence escapes outwardly through the flame slot 10, and, in so doing, tends to draw the ends of the flame toward the sides of the hood, thus materially increasing the width of the flame. Suitable means are also provided to prevent the hood 8 from sweating or from becoming overheated. This means preferably consists of enlarged openings formed in the perforated plate 4 and adapted to admit an increased volume of air into the interior of the hood, thus preventing the inner walls of the hood from sweating and also preventing those walls from becoming overheated. In the present instance, I have shown a series of enlarged openings 12 arranged on each side of the wick tube 2.

In Figs. 3, 4 and 5 of the drawings I have illustrated a slightly modified form of the invention embodied in a lantern burner. As here shown, the body portion of the burner 13 which carries the usual wick tube 14 is supported within a housing 15 which forms an air chamber and is connected with the tubular frame members 16 which supply the same with air. The upper portion of the body portion of the burner flares outwardly, as shown, and is provided with suitable openings or perforations 17 to admit air to the interior thereof. This outwardly flared portion of the burner is provided near its upper edge with an annular shoulder 18 adapted to support the perforated plate 19 and permit the removal thereof. This plate is provided with an elongated slot 20 adapted to receive the wick tube 14. This slot is of greater length than the length of the wick tube and forms air passages at the opposite ends thereof, as described in connection with the lamp burner. These passages are provided with upwardly extending conduits 21 which are similar in construction and arrangement to the conduits 7 shown in Figs. 1 and 2, with the exception that the outer walls of the conduits 21 extend substantially parallel with the edge walls of the wick tube 14 instead of being arranged at an angle thereto, as are the outer walls of the conduits 7. A hood 22 is supported by the housing 15 and incloses the upper portion of the burner proper and the wick tube. This hood is provided with the usual flame slot 23 and has extending inwardly therefrom, near the ends of said slot, lips 24 which are preferably formed in the same manner in which the lips 11 of Figs. 1 and 2 are formed and are supported in substantially the same relation to the conduits 21 as are the lips 11 to the conduits 7 and the effect thereof is similar to the effect of those lips. The removable perforated plate 19 which carries the conduits 21 is provided with openings for preventing the sweating or overheating of the hood. These openings in this form of the device preferably comprise two segmental slots 25, arranged one on each side of the wick tube, as shown. These segmental openings not only serve to admit the additional volume of air to prevent sweating or overheating of the hood, but also facilitate the removal of the perforated plate, thereby enabling that portion of the burner lying beneath said plate to be readily cleaned.

The operation of the device will be readily understood from the foregoing description and it will be apparent that I have provided a burner which may be adapted to a lamp or lantern burner and which will supply the flame with air currents which are so directed as to afford substantially complete combustion and to materially enlarge the flame; also that the burner is provided with openings adapted to admit into the hood a volume of air which will effectually prevent the sweating or overheating of that hood; and further, that the perforated plate in one form of the burner is removable, and that the additional openings formed therein are so arranged as to enable the plate to be readily removed from the burner, thereby greatly facilitating the cleaning of the burner.

It will also be understood that, not only may the features in one form of the device be readily utilized in the other form, but that the several elements or features of construction of either form of the device are subject to modification without departing from the principle of the invention. I, therefore, wish it to be understood that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. In a burner, the combination, with a wick tube, and a hood having a flame slot therein, of separate air conduits arranged at the opposite edges of said wick tube, and means carried by said hood and arranged near the upper ends of said air conduits for directing the air from said conduits inwardly toward the base of the flame, whereby the air is caused to travel upwardly and inwardly, and thence outwardly through the flame slot.

2. In a burner, the combination, with a wick tube, and a hood having a flame slot therein, of separate air conduits arranged at the opposite edges of said wick tube, and lips supported within said hood and extending partially into the path of the air current escaping from said conduits, thereby tending to direct said current toward the upper end of said wick tube.

3. In a burner, the combination, with a

wick tube, and a hood having a flame slot, of separate air conduits arranged at the opposite edges of said wick tube, and lips carried by said hood and extending inwardly to a point above and beyond the end walls of said conduits.

4. In a burner, the combination, with a wick tube, and a hood having a flame slot, of separate air conduits arranged at the opposite edges of said wick tube, and lips carried by said hood near the ends of said flame slot and extending inwardly to a point above said conduits and terminating at a point slightly within the walls of said conduits.

5. In a burner, the combination, with a wick tube, and a hood having a flame slot, of air conduits arranged at the opposite edges of said wick tube, and lips struck from said hood at the ends of said flame slot and extending inwardly in a plane slightly above the upper ends of said conduits and terminating at a point within the end walls of said conduits.

6. In a burner, the combination, with a body having an outwardly flared portion, and an annular shoulder near the upper end of said outwardly flared portion, of a perforated plate loosely supported on said shoulder, a wick-tube extending upwardly through said plate, and means for removing said perforated plate comprising slots formed therein on opposite sides of said wick-tube.

7. In a burner, the combination, with a body portion, a wick tube carried thereby, a hood, a perforated plate removably mounted on said body portion and having an elongated slot to receive said wick tube, air conduits supported by said perforated plate at the opposite edges of said wick tube and extending upwardly, of lips carried by said hood and extending inwardly above said conduits.

8. In a burner, the combination, with a body having an outwardly flared upper portion, a wick tube carried thereby, a hood, an inwardly extending shoulder carried by the outwardly flared portion of said body, a perforated plate removably mounted on said shoulder, and having an elongated slot adapted to receive said wick tube, said slot being of greater length than the width of said wick tube, conduits extending upwardly from the ends of said slot terminating near the top of said wick tube, of lips carried by said hood and extending inwardly above said conduits and terminating at a point within the end walls thereof.

In testimony whereof, I affix my signature in presence of two witnesses.

JAMES H. MORRISON.

Witnesses:
J. FRED ANDERSON,
HARRIET L. HAMMAKER.