A. F. PRAHM.

LANTERN BURNER.

APPLICATION FILED JUNE 29, 1908.

931,342. Patented Aug. 17, 1909.

Fig. I.

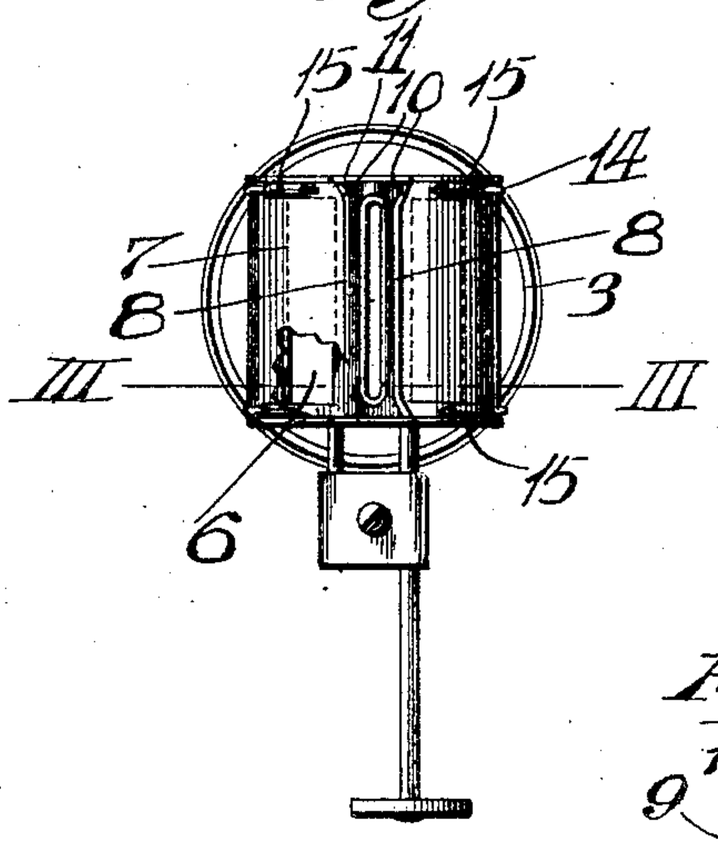


Fig. II.

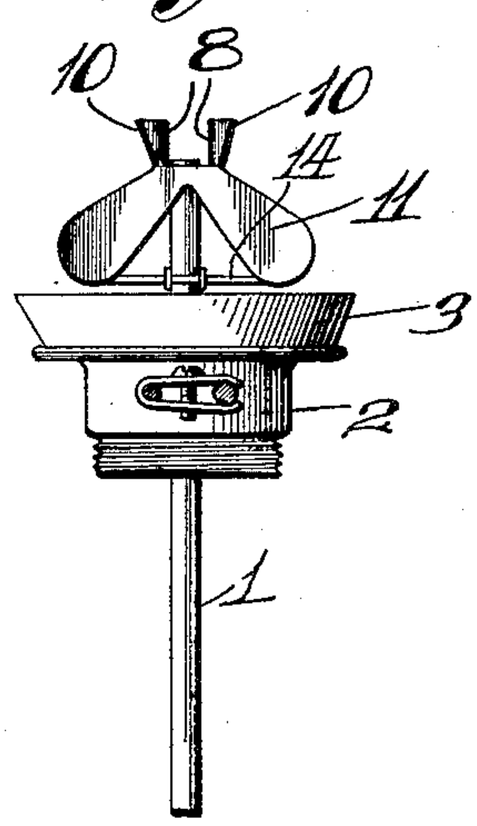


Fig. III.

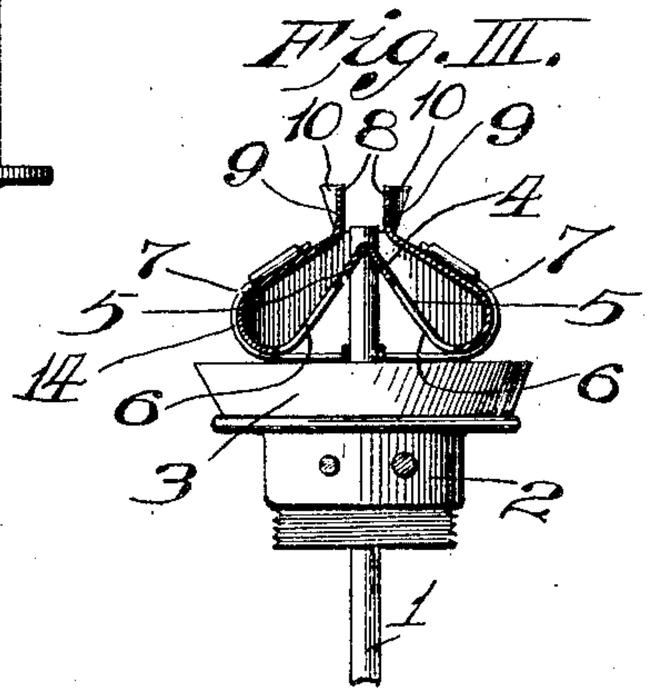


Fig. IV.

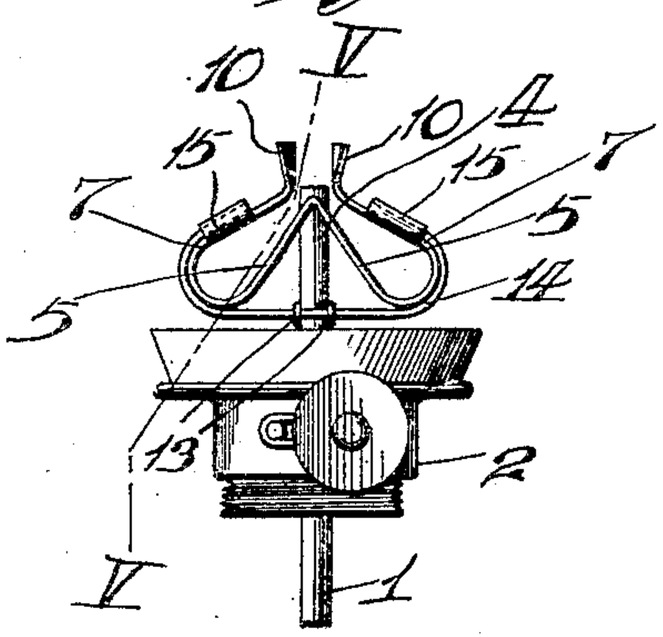
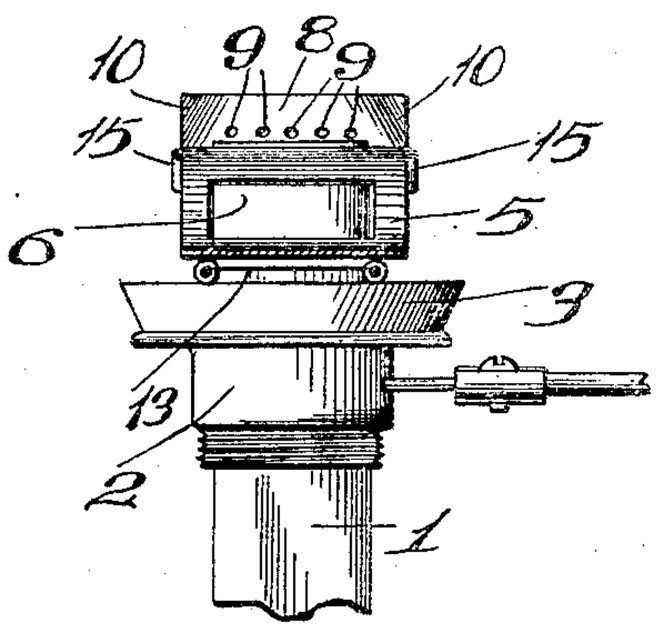


Fig. V



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UNITED STATES PATENT OFFICE.

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LANTERN-BURNER.

No. 931,342. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed June 29, 1908. Serial No. 440,879.

To all whom it may concern:

Be it known that I, ADOLPH F. PRAHM, a citizen of the United States of America, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Lantern-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a lantern burner for use in coal-oil burning lanterns and it has for its object the production of a burner for use in the kind of lanterns mentioned, from which a steady flame can be secured and a burner that so protects the flame as to prevent extinguishment thereof in the swinging of the lantern for the purpose of giving signals, as for instance those commonly given in the use of hand carried railroad lanterns.

Figure I is a top or plan view of my improved burner partly broken away. Fig. II is a side elevation of the burner partly in section. Fig. III is a vertical cross section taken on line III—III, Fig. I the body being shown in elevation. Fig. IV is a side elevation of a modified form of burner. Fig. V is a view of the burner shown in Fig. IV partly in elevation and partly in vertical section taken on line V—V, Fig. IV.

In the accompanying drawings: 1 designates a wick tube and 2 the body of my burner in which the wick tube is fitted. The body 2 is provided at its upper end with an outwardly flaring annular rim 3 that serves to deflect upwardly moving air currents away from the upper end of the wick tube which extends above the body of the burner. The wick tube has secured to its upper end an air controlling housing through which air is delivered to the wick and flame burning therefrom in the use of the burner in a manner to supply the necessary oxygen to the flame without there being any liability of the delivery of a current of air to the flame of sufficient strength to extinguish such flame. The air controlling housing carried by the wick tube embodies the following elements.

4 is a wing plate receiving and attached at its center to the wick tube near its upper end and provided with downwardly extending and spreading inner wings 5 containing slots or air passageways 6 and also with outer upwardly extending and converging imperforate wings 7 separated from the inner wings to provide air ducts for the ascent of air at each side of the wick tube after it has passed through the slots or air passage-ways 6. The outer wings 7 extend upwardly to points adjacent to the top of the wick tube and they are sufficiently spaced apart from the wick tube at such points to provide for the access of the ascending currents of air to the wick that protrudes above the wick tube during the use of the burner. The outer wings 7 are provided at their upper ends with vertical guards 8 located at the sides of the wick tube and projecting upwardly beyond the top of said wick tube. The guards 8 serve to create the necessary combustion and to prevent the passage of strong currents of air immediately across the top of the wick tube and the upper end of the wick to obviate the likelihood of a flame being extinguished by such currents of air. To provide for the feeding of air to the flame at the location of the guards, I produce therein perforations 9, see Fig. III, through which the necessary air may pass gradually to mix with the air that ascends in the air passages between the inner and outer housing wings 5 and 7 after gaining access thereto through the slots or air passageways 6 in said inner wings. At the ends of the guards 8 are out-turned lips 10 that extend from the side edges of the wick tube and by their presence serve to strengthen a flame burning from a wick in the wick tube, inasmuch as when they become heated they cause such flame to be drawn outwardly to the lips.

The air controlling housing of my burner is preferably closed at its ends by end plates 11, thereby rendering it necessary that all air supplied through the housing by upward passage therein must enter the housing through the slots or passageways 6 at the bottom of the housing. The end plates just mentioned may, however, be omitted with the result of producing a modified form of burner illustrated in Figs. IV and V which correspond in other particulars to the burner I have herein previously described.

For the purpose of holding the air controlling housing of my burner rigidly to the wick tube of the burner and to brace the parts thereof, I apply to the wick tube a stay or brace frame that is secured to the air controlling housing. This frame comprises a pair of wires 13 located at the sides

of the wick tube and having eyes at their ends which receive stay wires 14. These stay wires and the wires 13 are connected to the wick tube by solder or other suitable means and the stay wires extend outwardly from the wick tube and then upwardly around the outer wings 7 of the air controlling housing to which wings they are secured by seating them in sockets 15 carried by the wings. The outer and upper ends of the stay wires are preferably permanently and rigidly attached to the sockets just mentioned by applying solder to the wires and sockets.

I claim:—

1. In a lantern burner, the combination with a wick tube, of a wing plate formed in one piece and associated with said wick tube and comprising downwardly spreading inner wings and upwardly converging outer wings located at the sides of the tube and separated to provide air ducts between them, the inner wings being provided with openings through which air may ascend into said air ducts and the outer wings having their upper ends in proximity to the upper end of the wick tube and adjacent to the sides of the wick tube, substantially as set forth.

2. In a lantern burner, the combination with a wick tube, of a wing plate associated with said wick tube and comprising downwardly spreading inner wings and upwardly converging outer wings located at the sides of the tube and separated to provide air ducts between them, the inner wings being provided with openings through which air may ascend into said air ducts and the outer wings extending into proximity to but separated from the upper end of the wick tube and projecting above said wick tube, substantially as set forth.

3. In a lantern burner, the combination with a wick tube, of a wing plate associated with said wick tube and comprising downwardly spreading inner wings and upwardly converging outer wings located at the sides of the tube and separated to provide air ducts between them, the inner wings being provided with openings through which air may ascend into said air ducts, and the outer wings extending into proximity but separated from the upper end of the wick tube projecting above said wick tube and terminating at their upper ends in guards located above the wick tube, substantially as set forth.

4. In a lantern burner, the combination with a wick tube, of a wing plate associated with said wick tube and comprising downwardly spreading inner wings and upwardly converging outer wings located at the sides of the tube and separated to provide air ducts between them, the inner wings being provided with openings through which air may ascend into said ducts and the outer wings extending into proximity but separated from the upper end of the wick tube, projecting above said wick tube, and terminating at their upper ends in vertical guards extending above the wick tube and provided at their ends with outturned lips, substantially as set forth.

5. In a lantern burner, the combination with a burner body and wick tube, of a wing plate associated with said wick tube and comprising inner and outer wings located at the sides of said wick tube and separated to provide air ducts between them leading to the upper end of the wick tube the inner wings being provided with openings for the entrance of air into said ducts, an annular deflector projecting upwardly from said burner body beneath said wing plate, and a brace frame connecting said wing plate to said wick tube, substantially as set forth.

6. In a lantern burner, the combination with a burner body and wick tube, of a wing plate associated with said wick tube and comprising inner and outer wings located at the sides of said wick tube and separated to provide air ducts between them leading to the upper end of the wick tube, the inner wings being provided with openings for the entrance of air into said ducts, an annular deflector projecting upwardly from said burner body beneath said wing plate, and a brace frame connecting said wing plate to said wick tube and comprising stay wires attached to said outer wings and wires attached to said wick tube and to which said stay wires are connected, substantially as set forth.

ADOLPH F. PRAHM.

In presence of—
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HOWARD G. COOK.