

(No Model.)

L. J. ATWOOD & F. W. TOBEY.

LAMP BURNER.

No. 419,747.

Patented Jan. 21, 1890.

Fig. 3.

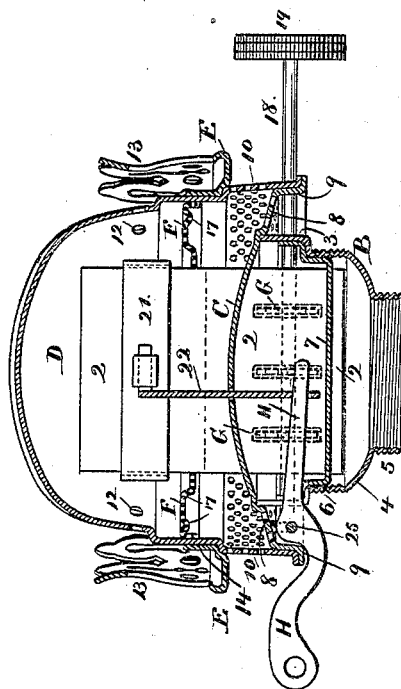


Fig. 2.

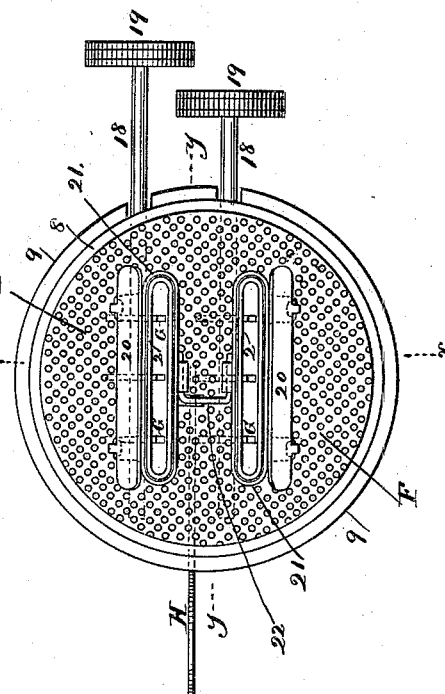


Fig. 1.

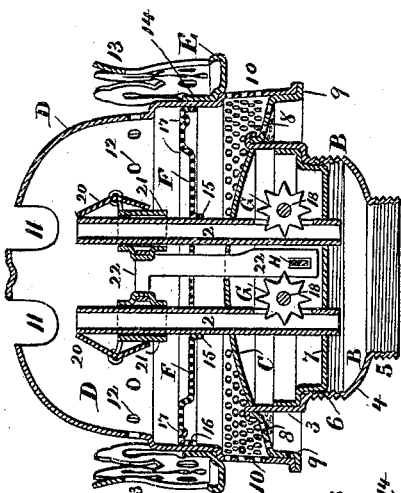
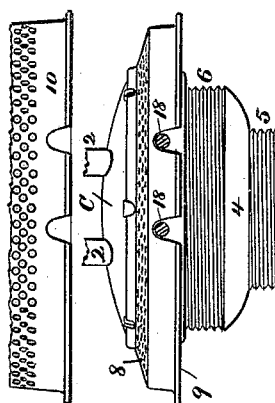


Fig. 4.

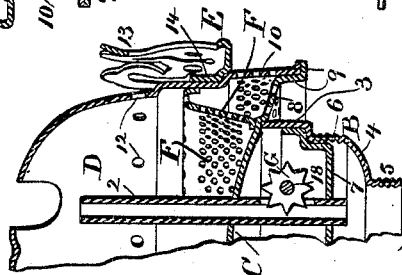


Witnesses

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Fig. 5.



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# UNITED STATES PATENT OFFICE.

LEWIS J. ATWOOD AND FREDERICK W. TOBEY, OF WATERBURY, CONNECTICUT, ASSIGNORS TO THE PLUME & ATWOOD MANUFACTURING COMPANY, OF SAME PLACE.

## LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 419,747, dated January 21, 1890.

Application filed July 5, 1889. Serial No. 316,570. (No model.)

*To all whom it may concern:*

Be it known that we, LEWIS J. ATWOOD and FREDERICK W. TOBEY, of Waterbury, in the county of New Haven and State of Connecticut, have invented an Improvement in Lamp-Burners, of which the following is a specification.

Our present improvements are adapted to large lamp-burners, especially those having two flat wicks for producing intense and large flames. The burner is rendered very compact by our improvements, and it is not liable to heat or to be injured in use.

In the drawings, Figure 1 is a vertical section at the line *xx* of Fig. 2. Fig. 2 is a plan view with the chimney-holder removed. Fig. 3 is a section of the burner at the line *yy* of Fig. 2. Fig. 4 is a detached view with the wick-raiser shafts in section, and Fig. 5 is a partial section of a modification.

The wick-tubes 2 2 are of any desired size, according to the wick made use of. The base B of the burner is a metal shell that is cylindrical at 3, and drawn in conically at 4, and provided with a screw at 5 for securing the burner to the collar on the reservoir, and where the burner is also adapted to a large-sized screw-collar on the lamp-reservoir there is to be a screw-thread at 6 around the base or shell B.

At C is a cap or cover to the shell B, usually known as the "ratchet-cap," with large sizes of wick-tube, and especially where two wick-tubes are applied in one burner the screw portion 5 is usually large enough for the wick or wicks to pass through freely in a partially-folded condition, but not large enough for the wick-tube to pass into such screw portion 5. We therefore insert in the shell B a diaphragm 7, perforated at the proper place or places for the wick tube or tubes to pass into the same and be secured in place by such diaphragm 7 and the ratchet-cap C, and it is preferable to turn up the edges of this diaphragm to fit the interior of the cylindrical portion 3 of the shell B, and the parts can be made tight and strong, and heat is not conducted down to the reservoir as rapidly as it

is when the tubes pass into the cylindrical screw 5.

Around the shell B, and preferably as an extension of the ratchet-cap, is the annular air-distributor 8, with a hanging ledge 9 for the surrounding cylindrical air-distributor 10, which is continued upwardly and forms the dome or deflector D, with the flame-slots 11 above the respective wicks, and there are air-holes at 12 around the base of the deflector D. The chimney holder or rest E surrounds the base of the deflector D, and above the holes of the air-distributor 10, and this chimney-rest has a row of springs 13 for holding the chimney, and an inner flange 14, that serves to connect the chimney-rest to the deflector, the flange 14 fitting tightly as the chimney-rest is pressed down to place around the deflector, and it is preferable to have a shoulder or offset in the cylindrical part of the deflector-base for the chimney-holder to rest upon, and solder or projections may be used for holding the chimney-rest firmly upon the deflector. Within the deflector D is a secondary air-distributor F, which in Fig. 1 is shown as slotted for the passage of the wick-tubes, the perforated sheet metal being turned down to form flanges 15, at the sides of the wick-tube, for rendering the attachment more reliable, especially when solder is applied to the flanges 15 and wick-tube. In Fig. 5 this secondary air-distributor is represented as conical with its lower edges fastened to the ratchet-cap.

The edges of the elevated air-distributor are turned down to form the rim 16, that sets tightly around within the movable deflector D, and the annular corrugations 17 stiffen the elevated air-distributor.

The wick-raising wheels G are within the shell B, and act through slots in the wick-tube, and the shafts 18 pass out and terminate with thumb-wheels 19. The shafts 18 pass through notches in the hanging ledge 9, and the lower edge of the air-distributor 10 is also notched for these shafts 18. The object of doing this is twofold. It insures the movable chimney-holder and deflector being

restored to the proper place for the slots 11 to come over the wick-tubes, and when the burner is grasped for screwing or unscrewing the same upon the reservoir there is no risk of bending or injuring the shafts 18, or of the chimney-holder rotating on the other parts of the burner, because the shafts 18 prevent the chimney-holder moving without the base or shell, and the hanging ledge 9 supports the shafts 18 adjacent to the notched air-distributor 10.

The air passing up to the flame is effectually regulated, because the currents of air passing in horizontally through the holes of the cylindrical air-distributor 10 are met by the ascending currents of air through the distributor 8, and they mutually check each other and prevent the flame flickering, and this is further promoted by the secondary air-distributor F, and should any gases be generated in the lamp the fine perforations in the distributor F, when in the form shown in Figs. 1 and 3, prevent flame passing to the reservoir.

Extinguishing-lids 20 are hinged to the sliding sleeves 21, that surround the wick-tubes 2, and these are connected to the lifter 22, that passes through the elevated air-distributor F and the ratchet-cap C, and there is a lever H, that is made use of for raising the sleeves to allow the lids to drop and extinguish the flame, or the sleeves are moved downwardly for taking the lids off the wicks.

In burners of the present character the lever H could not be applied at the side of the burner, as has been usual, and allow for removing the chimney-holder and deflector. I therefore enter this lever H below the air-distributors through a slot in the shell B and pivot the lever at 25 on the under side of the air-distributor 8, the end of the lever projecting sufficiently to allow it to be moved freely in operating upon extinguishers.

We claim as our invention—

1. The combination, with the burner base or shell B, having the screw 5 for the reservoir and the wick-tube 2, of the separate diaphragm 7 within the base, through which the wick-tube passes, and the ratchet-cap forming the top of the shell, substantially as set forth.

2. The burner-shell B, having the screw 5, the wick-tube, the ratchet-cap, and an air-distributor 8, and hanging ledge 9 around the

shell, in combination with the cylindrical air-distributor 10, deflector D, and chimney-rest E, connected together and removable from the air-distributor 8, substantially as set forth.

3. The burner-shell B and the stationary air-distributor 8 around the same, and the hanging ledge 9 around such air-distributor, in combination with the removable cylindrical air-distributor 10, resting on such ledge, the deflector D, rising above the air-distributor and slotted for the frame, the chimney-rest E, surrounding the deflector and projecting beyond the air-distributor 10, and the secondary air-distributor F within the deflector, substantially as set forth.

4. The combination, with the burner-shell, wick-tube, wick-raising wheel, and shaft, of an air-distributor around the burner-shell notched for the shaft of the wick-raiser, and a removable air-distributor and deflector, also notched for the wick-raiser shaft, substantially as set forth.

5. The combination, with the burner-shell having two screws 5 and 6 thereon, the wick-tube, and the ratchet-cap, of an air-distributor around the shell having a hanging ledge, the wick-raiser and shaft, the latter passing through the hanging ledge, the removable air-distributor 10, notched for such shaft, the deflector, the chimney-holder surrounding and projecting outside the base of the deflector, and the secondary air-distributor within the deflector, substantially as set forth.

6. The combination, with a nearly horizontal air-distributor and hanging ledge around the burner-shell, of a removable cylindrical air-distributor rising from the edge of the nearly horizontal air-distributor, a dome or deflector connected to the cylindrical air-distributor, and a secondary air-distributor connected to the wick-tube and having an edge which is within the lower part of the deflector, so that the currents of air passing in horizontally and vertically commingle and then pass vertically through the secondary air-distributor, substantially as set forth.

Signed by us this 29th day of June, 1889.

LEWIS J. ATWOOD.  
FRED. W. TOBEY.

Witnesses:

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