(No Model.) 2 Sheets—Sheet 1.

L. J. ATWOOD & H. H. ASHENDEN.

DRUM FOR LAMPS.

No. 545,401. Patented Aug. 27, 1895.

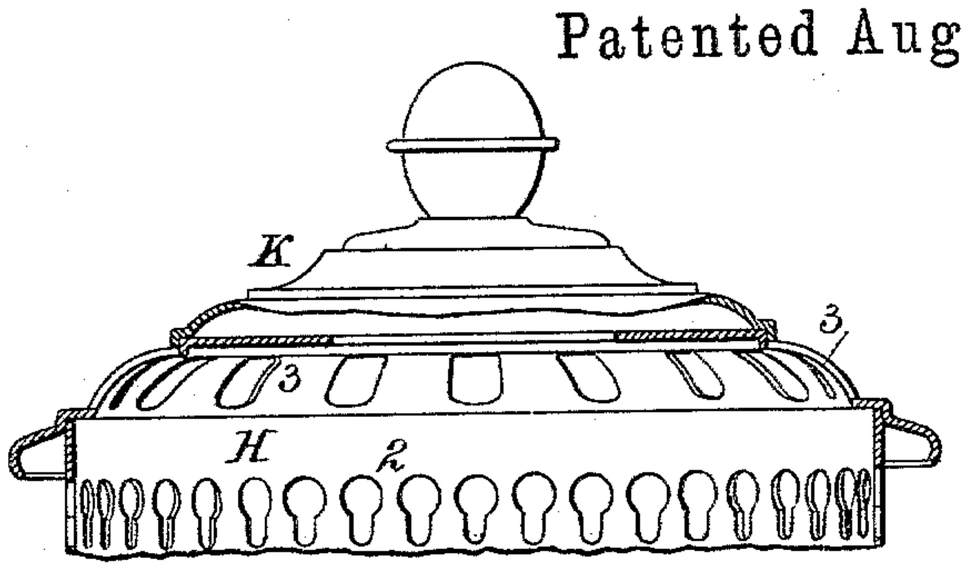
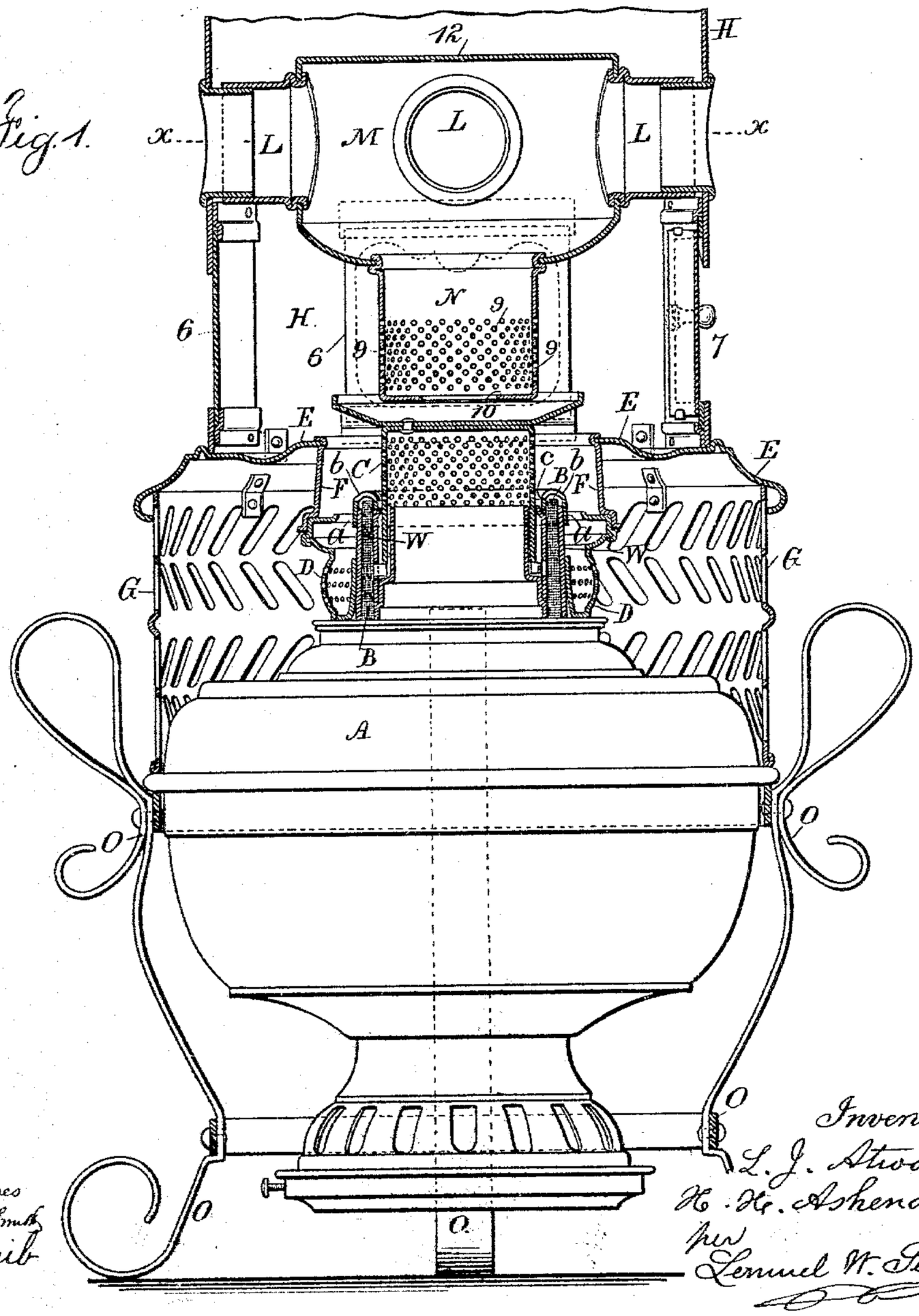


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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DRUM FOR LAMPS.

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Fig. 3.

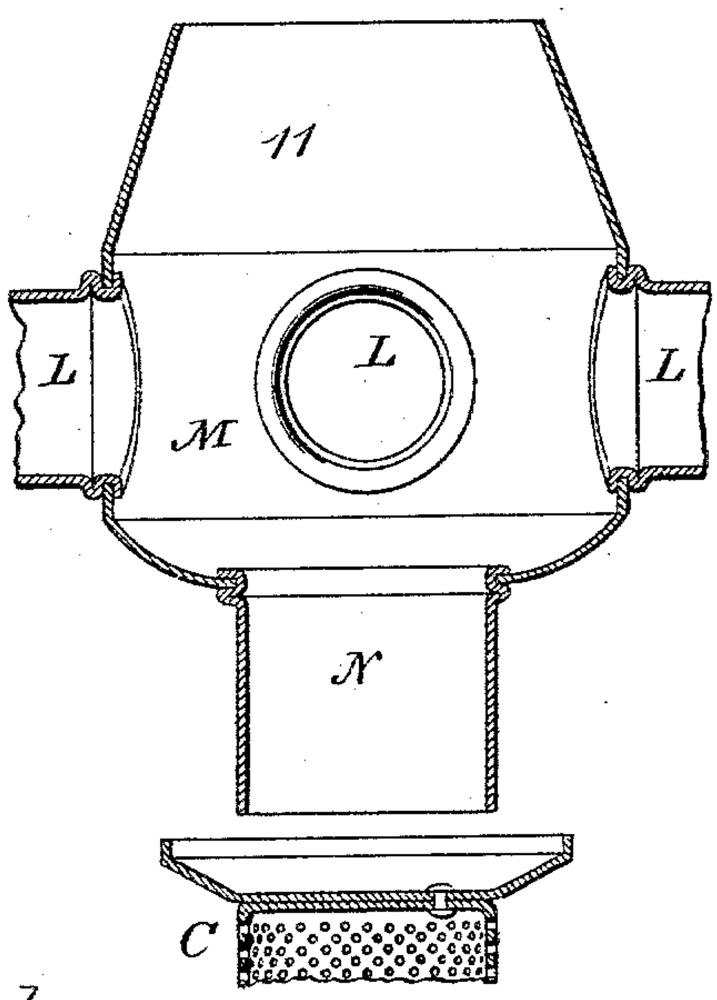


Fig. 4

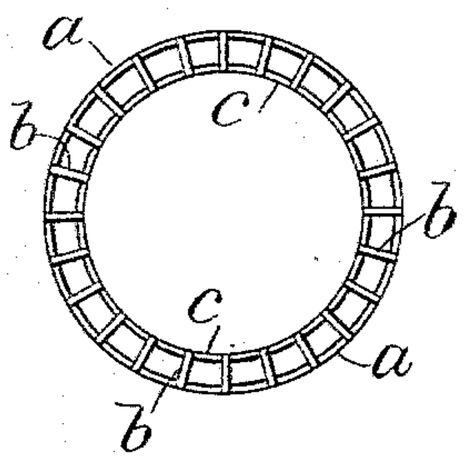
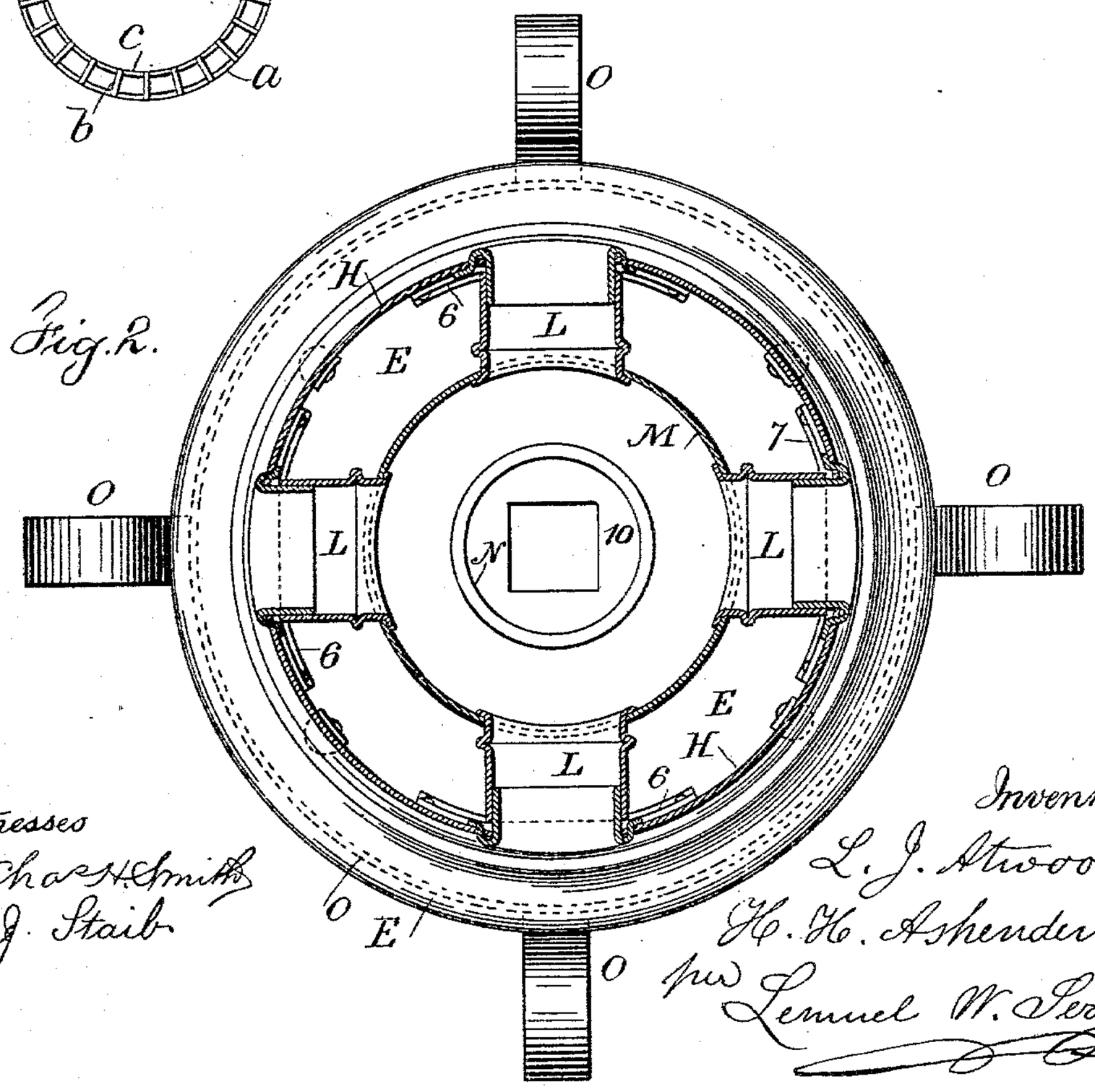


Fig. 2.



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UNITED STATES PATENT OFFICE.

LEWIS J. ATWOOD AND HENRY H. ASHENDEN, OF WATERBURY, CONNECTICUT, ASSIGNORS TO THE PLUME & ATWOOD MANUFACTURING COMPANY, OF SAME PLACE.

DRUM FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 545,401, dated August 27, 1895.

Application filed October 1, 1894. Serial No. 524,579. (No model.)

To all whom it may concern:

Be it known that we, LEWIS J. ATWOOD and HENRY H. ASHENDEN, citizens of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented an Improvement in Drums for Lamps, of which the following is a specification.

Lamps for coal-oil have heretofore been made with a large cylindrical wick and considerable heat is given off in burning such lamps, and in some instances a heating-drum has been applied above the Argand lamp in which the atmosphere is caused to circulate with rapidity, so as to become heated and warm up the apartment in which such lamp is being burned.

The object of the present invention is to simplify the construction of the heating-drum to adapt the same to being placed upon or removed from the lamp, so that the lamp can be used with an ordinary chimney, if desired, and the drum itself is entirely above the burner portion of the lamp and supported in such a manner as to prevent the heat passing down to the fountain either by conduction or radiation.

In the drawings, Figure 1 is a vertical section of the drum and of the upper part of the lamp-burner, the reservoir and supporting-stand being shown in elevation. Fig. 2 is a plan view at the line *x x*. Fig. 3 is a section representing a modification of the internal drum. Fig. 4 is a plan of the guard detached.

The reservoir A is of any desired size and character, and the cylindrical wick B surrounds the central air-tube of the Argand burner as usual, and there is a deflector C, formed of a perforated cylinder with a flame spreader or cap at the upper end, as usual in lamps of this character, and the air-distributer D surrounds the wick-tube W and regulates the admission of air to the outside of the flame at the base, and the upper part of the air-distributer forms a chimney-rest of the ordinary character. The lamp itself is supported by a frame O, formed of upper and lower bands connected together by suitable bars or supports of a more or less ornamental character, as represented, so that the upper band receives and supports the central rib or bead around the reservoir and holds the same and the movable drum resting thereon. The heating-cylinder H is preferably of sheet-iron having perforations at 2 near the upper end thereof, and openings to which mica is applied, as at 6, to form windows around the lower part of the drum, and one of these windows is fitted to slide, as at 7, so as to give access to the flame for lighting or extinguishing the same. The septum E is in the form of a ring having a pendent flange F at its inner edge, which flange surrounds and preferably rests upon the upper portion or chimney-rest above the air-distributer D, so as to make a close connection between the drum or heating-cylinder and the burner at this place, and the open-work cylinder G is connected with the septum E near the outer portion thereof and extends down to and rests upon the reservoir at the central rib thereof, so that the parts are firmly supported; but the perforated cylinder, the septum, and the heating cylinder can all be lifted off the lamp with facility, and the perforated cylinder G allows air to pass freely into the lamp and prevents heat being conducted or radiated down to the lamp-reservoir. When the lamp is lighted the flame passes up into the heating-cylinder H and the products of combustion pass out at the perforated top 3 of the heating-cylinder and through the perforations 2 near the top part of such cylinder, but in order to make the heat of the lamp available in elevating the temperature of a large volume of air we provide an internal drum M with lateral tubes L opening at their inner ends through the drum M and at their outer ends through the heating-cylinder H, and a large volume of air can pass freely through the lateral tubes L into the internal drum M, and from thence into the heating drum or cylinder H, and commingling with the products of combustion pass from the upper portion of such cylinder H.

Sometimes we provide an open truncated cone 11, forming an upper end to the drum M, but usually such internal drum M has a closed head 12, and under all circumstances it is advantageous to employ a hanging deflector N with an open lower end and opening at its

upper end into the drum M, so that the air which passes in through the lateral tubes L descends through the hanging deflector N to the flame for promoting a perfect combustion, and the large volume of air drawn in by the ascending heated gases is disseminated in the apartment or room and rapidly raises the temperature of the same throughout the whole room with great uniformity.

We find it advantageous to perforate the hanging deflector N, as seen at 9, and the lower end of the hanging deflector N may be partially closed, as at 10, or entirely open, as shown in Fig. 3. In either instance the lower end of the hanging deflector N is sufficiently near the top of the deflector C to insure the proper action of the incoming air upon the flame.

It is usually advantageous to make the perforated top 3 of the heating-cylinder H flat in the middle portion thereof to receive a kettle or other article to be heated, and we provide a removable cover or ornament K which can be placed upon the top of the heating-cylinder when such cylinder is only employed for warming the air in the apartment.

The septum and heating-cylinder being entirely above the lamp-burner lessens the risk of heat passing down to the oil-reservoir, and the septum and pendent flange perform the three-fold duty of closing the bottom end of the heating-drum, so that the air can only pass into the flame, of supporting the heating drum or cylinder itself and any article that may be placed upon it, and of a base to rest upon the open-work cylinder that receives its support from the lamp-reservoir and its frame.

In lamps adapted to heaters the wick is sometimes turned up too high and the flame smokes more or less, and not being as easily noticed as in an ordinary lamp the smoke fills the room with a disagreeable odor. To avoid this we combine with the wick-tube a guard having numerous cross-bars over the wick to prevent the wick being raised above such guard, and hence to limit the surface of the wick that is exposed and prevent too large a flame or smoke. The tube *a* is shown as closely surrounding the wick-tube W with bars *b* that cross the wick and are connected by an inner ring *c* at the upper part of the air-tube. Hence the wick cannot be raised above these cross-bars *b*, and any carbonaceous matters that may protrude are wiped off in trimming the lamp.

We claim as our invention—

1. The combination with a lamp reservoir and the Argand wick and central air tube, of an openwork cylinder surrounding and resting upon the reservoir, a septum resting upon the openwork cylinder and having an annular pendent flange upon its inner edge, an air distributer around the burner and adjacent to the lower edge of the pendent flange, a heating cylinder resting upon the septum and having an openwork upper end for the escape of heated air and the products of combustion and an internal drum having lateral inlet tubes for air and an opening in the drum adjacent to the flame of the lamp, substantially as set forth.

2. The combination with a lamp having an Argand wick and central air tube and a deflector at the upper end of the air tube, of an openwork cylinder resting upon the lamp reservoir, a septum upon the openwork cylinder having an annular pendent flange at its inner edge surrounding the flame, a heating cylinder resting upon the septum, an internal drum over the flame and lateral tubes extending from the internal drum and opening through the heating cylinder and a hanging deflector through which air passes from the internal drum to the flame, substantially as set forth.

3. The combination with a lamp having an Argand wick and central air tube and a deflector over the air tube, of a heating cylinder, a support for the same, a septum closing the lower end of the heating cylinder, and having an annular hanging flange around the flame, a drum within the heating cylinder and over the flame and having lateral tubes extending through the heating cylinder for the admission of air and a hanging perforated deflector through which air passes to the interior of the flame, substantially as set forth.

4. The combination with an Argand burner and the heating drum, of a wick guard having an outer and an inner ring and bars across the upper end of the wick and extending from one ring to the other to limit the surface of wick exposed and the size of the flame within the heating drum and prevent smoke or odors, substantially as specified.

5. The combination with an Argand lamp having an air distributer and deflector, of an openwork cylinder above and resting upon the lamp, a septum extending from the air distributer to the openwork cylinder, a heating cylinder resting upon and connected with the septum and having a perforated upper end for the escape of heated air and the products of combustion, an opening and slide near the lower end of the heating cylinder to give access to the flame, and an internal drum and lateral tubes opening into the drum, and a hanging deflector for admitting air from the internal drum to the flame, substantially as set forth.

Signed by us this 21st day of September, 1894.

L. J. ATWOOD.
H. H. ASHENDEN.

Witnesses:
J. H. HURLBUT,
J. L. SCOTT.