2 Sheets--Sheet 1.

# H. G. MOEHRING.

## Lamp-Burner.

No. 163,508. Patented May 18, 1875.

*Fig. 1*

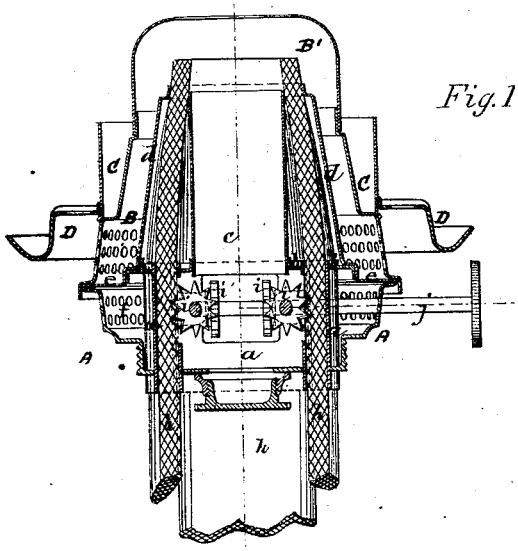
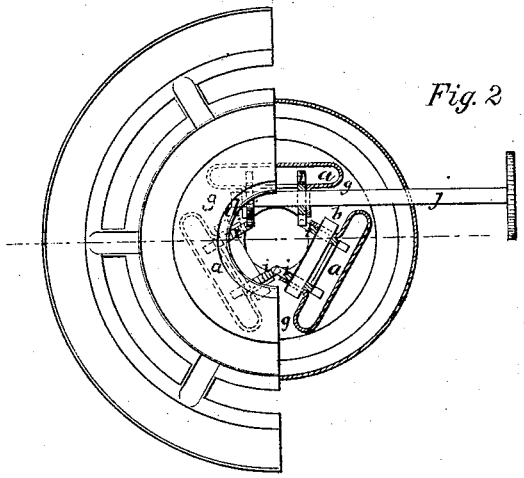



*Fig. 2*

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by attys Pollok & Bailey

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

# H. G. MOEHRING.

## Lamp-Burner.

No. 163,508. Patented May 18, 1875.

*Fig. 3*

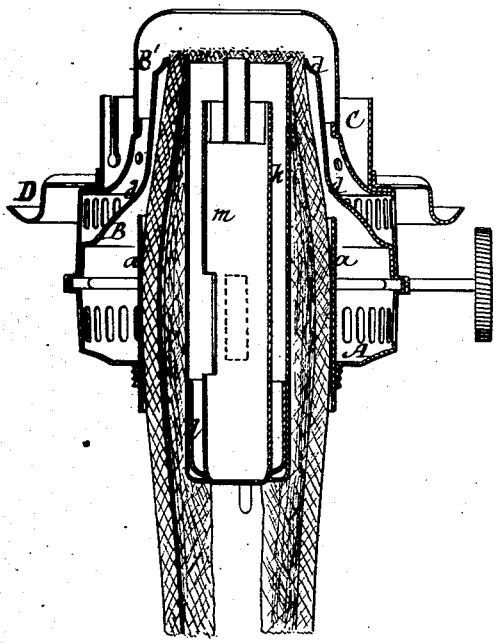



*Fig. 4.*

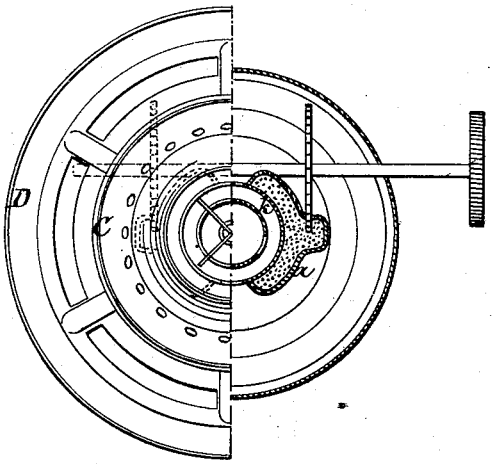



*Fig. 5.*

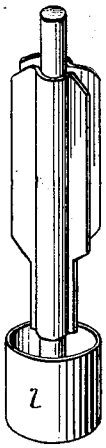
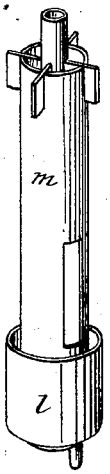



*Fig. 6.*

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# UNITED STATES PATENT OFFICE.

HERMAN G. MOEHRING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO RUFUS S. MERRILL, WILLIAM B. MERRILL, AND JOSHUA MERRILL, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. **163,508**, dated May 18, 1875; application filed May 1, 1875.

*To all whom it may concern:*

Be it known that I, HERMAN G. MOEHRING, of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a specification:

This invention is directed to Argand lamp-burners, and more particularly to that class of such burners in which two or more independent wicks are assembled together in the form of an annular wick.

In making my improved burner I combine with the central draft tube or flue two or more independent wick-tubes, each carrying its own wick, and an external wick-assembling shell, which extends above the wick-tubes, surrounds the central draft-flue, and, in conjunction with the latter, forms an annular chamber, in which the wicks from the independent wick-tubes are received and assembled in the shape of an annular wick. This arrangement simplifies and cheapens the burner, and facilitates its manufacture.

I have further improved the structure of lamp-burners, and particularly Argand lamp-burners, by forming the burner with a filling-orifice extending therethrough from top to bottom, this orifice in the Argand lamp-burner being formed by the central draft-flue, which thus serves the double purpose of supplying the draft to the center of the flame, and of affording a passage, through which the lamp may be filled without removing the burner. With the draft-flue thus arranged I combine a plug or stopper removable through the upper end of the flue, and this plug or stopper may be formed of or provided with a cup or receptacle for catching refuse that may drop into the center flue.

I have also improved the center draft-regulating devices by the arrangement, within the center flue, of a concentric draft-regulating tube formed with openings for the reception and upward passage of a portion of the air admitted to the draft-flue.

The manner in which my said improvements are or may be carried into effect will be understood by reference to the accompanying drawing, in which—

Figure 1 is a vertical central section of a lamp-burner embodying my invention. Fig. 2 is a plan of the same, partly in horizontal section. Fig. 3 is a vertical central section of a modified form of burner with two wicks. Fig. 4 is a plan of the same, partly in horizontal section.

In Figs. 1 and 2 the burner has the ordinary screw-threaded base A, the body B, and removable cone B′. C is the chimney-gallery, and D the shade rest or ring. This burner has three short flat wick-tubes *a*, which are secured to and pass through the bottom of the base A, and are fast at their tops to a horizontal diaphragm or annular plate, *b*, above which their upper open ends project. The inner edge of the diaphragm encircles, and is fast to, the center draft flue or tube *c*, while its outer edge is secured to the external wick assembling shell *d*, preferably of conical form, as shown, whose lower end has a horizontal flange, *e*, fast to the walls of the body B, and constituting, in conjunction with the diaphragm *b*, a partition or dividing plate, which separates the air entering the walls of the burner through perforations *f* into two currents, the one passing above and to the exterior of the flame, the other passing below and entering the central draft-flue through passages *g*, which intervene between the wick-tubes *a*. The upper contracted end of the wick-assembling shell reaches as high as, or a little above the top of, the center draft-tube.

The flat wicks *h* in the wick-tubes are moved simultaneously and together by any suitable feed arrangement, consisting in this instance of pinions or toothed wheels *i*, two for each tube, each set being mounted on a shaft turning in bearings on the wick-tube. The several sets are disposed in triangular form, as shown in Fig. 2, so that one of the pinions of one set will be in gear with the adjoining pinion of the next set. The shaft of one of the sets is prolonged, as at *j*, to project outside of the burner, and is provided with the usual milled head. By rotating this shaft the several sets of wick-raisers will all be moved in unison, to effect a corresponding movement of all the wicks. The several wicks issuing from the in-

dependent wick-tubes are received in the annular chamber formed by the central draft-tube and the external shell *d*, and in that chamber, as they pass upward, they are gradually assembled together around the central draft-flue in the shape of an annular wick.

A modified form of burner is shown in Figs. 3 and 4. In this burner there are but two wick-tubes, *a*, which are assembled around a central draft-flue, *k*, that extends through the base A of the burner. The body B, removable cone B′, chimney-gallery C, and shade rest or ring D are of ordinary or suitable construction. The diaphragm *b*, used in the other burner, is here dispensed with, and the flanged base of the wick-assembling shell *d* constitutes the dividing-plate that separates the air-currents. The passages for the air to the central flue are formed in the sides of said flue between the two wick-tubes.

The wick-tubes and wick-raising devices of this burner are, as shown, of a peculiar construction. This construction, however, I shall not here describe, inasmuch as it is not necessary for my present purposes, and, further, because I have made this feature the subject of separate application for Letters Patent of even date herewith.

The central draft-flue *k* of this burner is open at the bottom, and communicates with the interior of the lamp. This feature enables me to fill the lamp without removing the burner, the tube *k* serving at once as a center draft-flue and as a passage through which oil may be poured into the lamp. The lower end of the tube is closed by a removable plug or stopper, *l*, which is put in place and removed through the upper end of the draft-flue, and is provided for this purpose with a central stem or handle of about the length of the flue. I prefer to make this stem or handle serve at the same time as the means of regulating the center draft. To this end I can mount upon it radial blades or wings, which serve, when the stem is within the flue, as vertical partition-plates to break up and equalize and steady the air-currents. Such device is shown detached in Fig. 5; but I prefer to use as the stem a tube, *m*, (see Fig. 6, which represents this device detached,) which, when in position in the burner, is within and concentric with the draft-tube *k*. This draft-regulating tube *m* is perforated at a point about on a level with the lateral air-passages in the draft-flue; but said perforations, preferably, are not in line with said passages, to the end that the current of air entering the flue must change direction before any portion of it can enter the inner tube. A convenient means of assuring this position of the tube *m* is a pin on the bottom of the stopper *l*, that registers with a properly-located groove or socket in the base of the draft-flue. Under this arrangement not only is the air-current steadied and equalized, but there is produced a noticeable improvement in the appearance of the flame, whose upper end has not the ragged uneven edge that appears in the flame of ordinary Argand burners, where only the partition-plates are used.

The air-admission openings in the tube are very requisite, inasmuch as without them the tube might as well be a solid cylinder, whose effect would be simply to diminish, by just so much as the area occupied by it, the amount of air that could be delivered within a given time to the flame. Under the latter conditions it would serve to impair the quality of the flame rather than improve it.

I would remark, that so far as this feature of my improvement is concerned, the tube need not form part of the plugging device. It can be applied to any Argand burner, and may be a fixture or removable, as desired.

I prefer to form the plug or stopper in cup shape, as shown in Figs. 3, 5, and 6, so that it may serve to catch whatever refuse may happen to drop into the central tube.

With the inner draft-regulating tube *m* I can, if desired, combine vertical partition-plates, as shown in Figs. 3 and 6.

Having now described my improvements, what I claim, and desire to secure by Letters Patent, is—

1. In an Argand lamp-burner, the combination, with two or more independent wick-tubes, of a central draft-tube and an external wick-assembling shell, which, with the central draft-tube, forms an annular chamber to receive the wicks from the independent tubes, and assemble them in the form of an annular wick, substantially as set forth.

2. In an Argand lamp-burner, the combination of the following instrumentalities, namely: two or more independent wick-tubes, a central draft flue or tube, a wick-assembling shell, which extends above the wick-tubes, surrounds the central draft-tube, receives the wicks from said independent tubes, and assembles them around the central draft-tube in the shape of an annular wick, one or more lateral air-passages, located between the wick-tubes, and leading to the central draft flue or tube, substantially as shown and described.

3. A lamp-burner formed with a filling orifice or passage extending through it from top to bottom, substantially as shown and set forth.

4. In an Argand lamp-burner, a central draft flue or tube, which communicates with the oil-reservoir of the lamp, and constitutes a passage through which the lamp may be filled, substantially as set forth.

5. In an Argand lamp-burner, the combination, with a central draft flue or tube formed to communicate with the lamp-reservoir, as described, of a plug or stopper within the tube, closing the said channel of communication, and removable through the upper end of the tube, substantially as shown and set forth.

6. In combination with the central draft flue or tube of an Argand burner, an inner draft-regulating tube concentric with the cen-

tral draft-flue, and formed with an opening or openings for reception of a portion of the air admitted to the said draft-flue, substantially as set forth.

7. In combination with the central draft-flue, the inner concentric draft-regulating tube and one or more transverse vertical plates or partitions, substantially as shown and described.

8. In combination with the central draft flue or tube, the removable plug or stopper, formed with a stem, by which it may be lifted out from the flue, and a cup or receptacle for catching refuse that may drop from the wick into the draft-flue, as set forth.

In testimony whereof I have hereunto signed my name this 22d day of April, A. D. 1875.

H. G. MOEHRING.

Witnesses:
E. H. BAILEY,
S. J. DEHANEY.