

(No Model.)

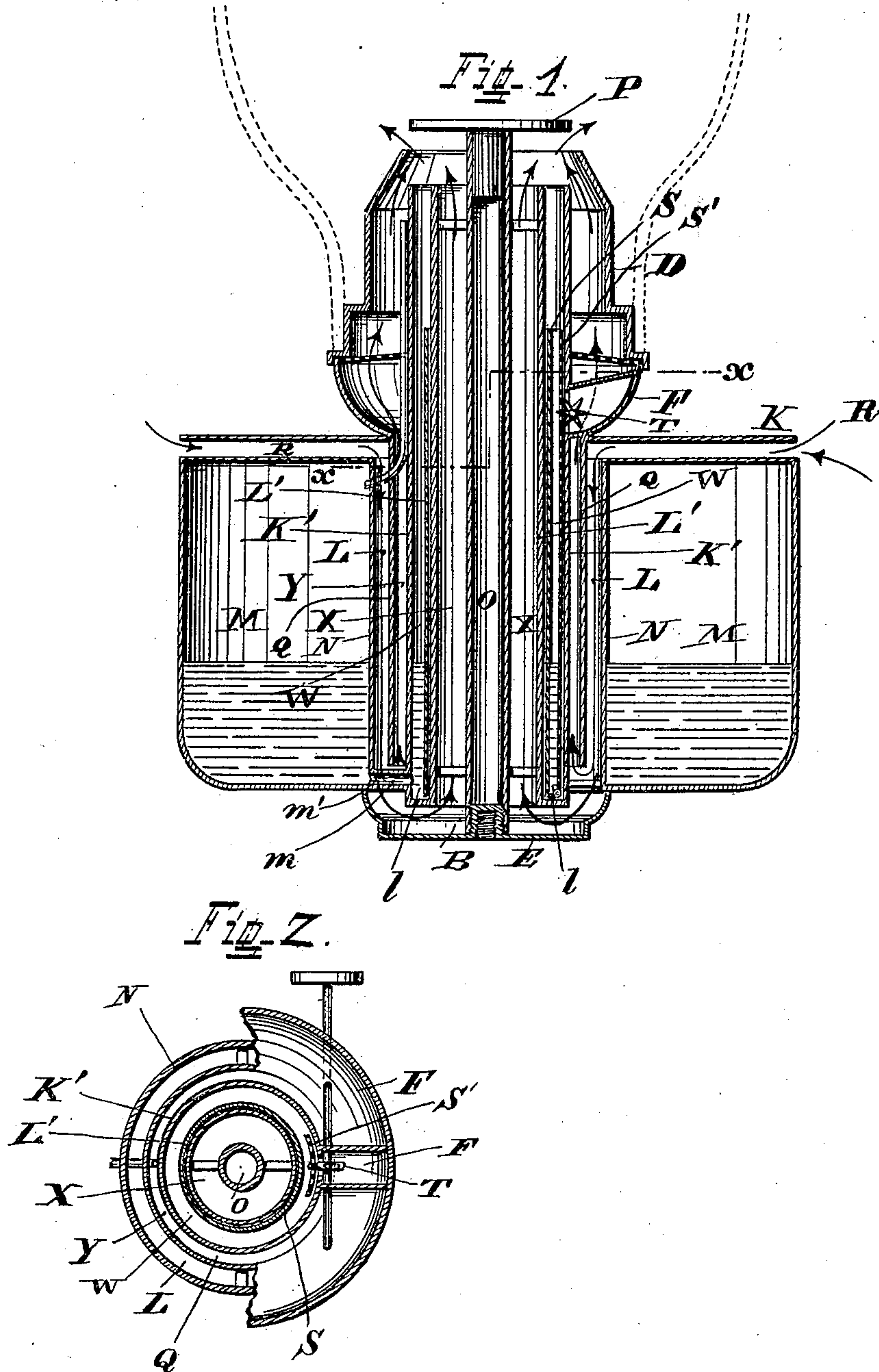
2 Sheets—Sheet 1.

F. A. LAVERCOMBE.

LAMP.

No. 356,480.

Patented Jan. 25, 1887.



Attest *John W. Stehli*  
*Chas. Hill*

by

*Inventor*  
*Frederick A. Lavercombe*  
by *Wm. Hubbell Fisher*  
Atty-

(No Model.)

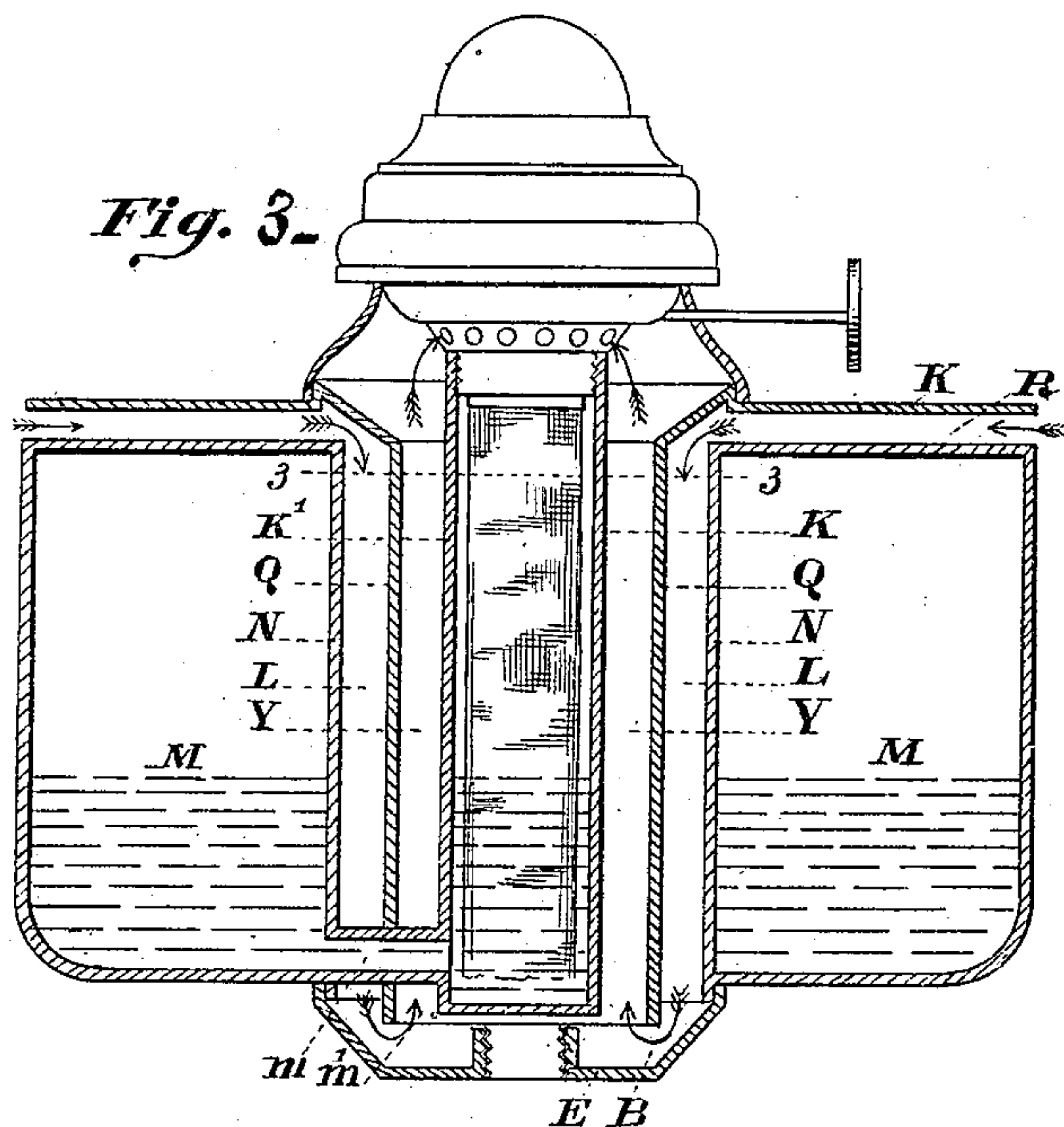
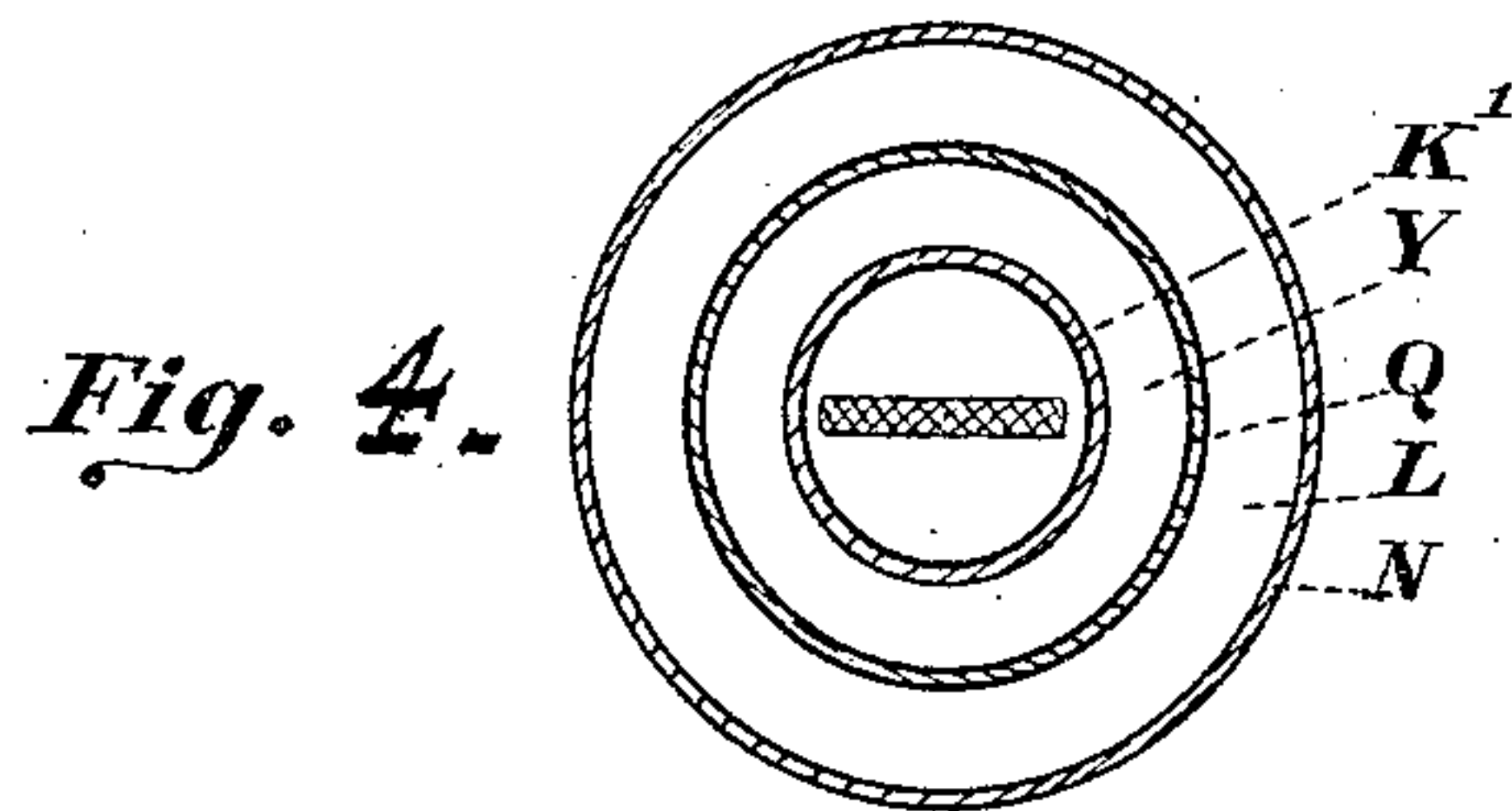
2 Sheets—Sheet 2.

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*Attest.*

*Em Harmon.*

*Geo W. Strehli.*

*Inventor.*

*Frederick A. Lavercombe*  
*per Wm. Hubbell Fisher.*

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# UNITED STATES PATENT OFFICE.

FREDERICK A. LAVERCOMBE, OF COVINGTON, KENTUCKY.

## LAMP.

SPECIFICATION forming part of Letters Patent No. 356,480, dated January 25, 1887.

Application filed September 24, 1885. Serial No. 177,982. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. LAVERCOMBE, a citizen of the United States, and a resident of the city of Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to lamps where the burner is located near to the body or reservoir containing the oil used as fuel for said lamp.

One of the principal objects of my invention is to keep the oil in the reservoir of such a lamp and also in the wick-tube comparatively cool, and thereby avoid the well-known dangers consequent upon the oil becoming unduly heated.

Another of the principal objects of my invention is to prevent the flame of the lamp from being affected by sudden drafts of air.

Another of the principal objects of my invention is, while obtaining the aforementioned advantage or advantages, to secure at the same time great economy of space and compactness of construction in the lamp.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, Figure 1 is a vertical central section of a lamp embodying the various features of my invention, the lower portion of lamp-chimney being shown in dotted lines. Fig. 2 is a section through the broken line X X of Fig. 1, the encircling lamp reservoir or font being removed. Fig. 3 is a vertical central section of a flat-wick lamp, showing the main features of my invention, the lamp-chimney being omitted and the upper portion of the burner being in elevation. Fig. 4 is a horizontal cross-section taken at the dotted line 3 3 of Fig. 3, the encircling reservoir or font being omitted and all above the section-line being removed, and the view being taken looking down on the section.

M is the reservoir or font of the lamp. In this font is a central depression or space large enough to receive the wick-tube, wick, and air-supply conduits, which will be hereinafter particularly specified. This space is closed at

bottom. The inner wall, N, of the font M prevents the oil of the font from reaching this central space, except as the oil may be admitted through conduits, hereinafter mentioned.

The main features of my invention are alike applicable to lamps having a tubular wick and to lamps having a flat wick. Lamps having a tubular wick are, I have found, preferred in use over those having a flat wick. I shall therefore proceed to first describe my invention in connection with a lamp having a tubular wick.

The annular wick-tube has the usual inner annular wall, L', and the usual outer annular wall, K', the wick being in the space W between said walls. The usual wick-carrier, S, is present in said tube, and is capable of being raised and lowered by any suitable means, a common means—viz., pinion T, turned by a shaft operated by a thumb wheel—being shown. This wick-tube K' L' extends down as far as or below the bottom of the font M, and is closed below the upper part of the oil-font, except where communication is established between it and the oil-font. Such communication is shown at conduit m'. The oil of the font freely passes through this conduit and rises in the wick-tube and saturates the wick. Outside of and surrounding the wick-tube are two annular spaces—viz., space Y and space L. Space Y is next to the wick-tube and space L is outside of space Y and is next to the wall N of the font M. The space Y is separated from the space L by the annular division or tube Q. The lower portions of these spaces Y and L are united in one, so that air passing down space L can pass into the lower part of space Y and pass up through the latter. One of the modes of accomplishing the latter object is shown, and consists in shortening the tube Q, so that its lower end does not reach down far enough to divide the space L from the space Y all the way down. The air-space Y is continued up the outside of the wick-tube to the top of the latter, and is continued upward, and the air passing up through same is carried or distributed to the flame by any suitable means. One of such means—viz., an inclosing-cone—is shown in the drawings.

Over the top of the font M is located a



shield or deflecting-top, K, and this shield or top K, in connection with the top of the font M, forms and constitutes a broad annular flat conduit, R, through which cold air for the supply of the burner enters, and thence passes into annular passage L. The cold air which passes down annular space L, and thence up the annular space Y to the burner, keeps the inner wall, N, of the font cool, and also keeps cool the oil in the font, which is adjacent to the said wall N, and which would otherwise become heated. The cool air in passing up between the tubular wall Q and the outer wick-tube wall, K'—viz., through the space Y—assists in keeping the wick-tube cool, and also in keeping cool the wall N of the font and the oil thereof, as it interposes a second layer of cold air between the wick-tube and the font. The incoming sheet of cold air passing in through the passage or conduit R, spreading over the top of the font, keeps the top of the font cool in spite of the heat-rays radiating from the burner toward the font.

The main features of my invention are now apparent. One of these features consists in the combination of an annular space within the font and next to the inner walls of the font and joined at the bottom to a vertical air-conduit, the cold air passing down through the said annular space, and thence up the vertical air-conduit. So far as this feature is concerned, the top K is dispensed with and the incoming cold air is admitted directly to the top of the annular passage L. The incoming air in rushing to the passage L will necessarily pass over the top of the font M and tend to cool the latter, but will not keep the same as cool as if the shield or top K and regularly-defined air conduit R were present. Another of these features of my invention is the combination of this conduit R and the vertical annular passage L, the latter being within and adjacent to the inner walls, N, of the font, the passage L connecting at the bottom with an inner upward-extending air-conduit, as mentioned.

It is evident that the lamp having a flat wick and shown in Fig. 6 embodies both these main features of my invention. There is present the shield or top K, conduit R over the top of the font, and annular passage L within and next to wall N, and inner vertical passage, Y, connected at bottom to the passage L. In many lamps, where the wick is tubular, it is common to use the interior space surrounded by the wick or by the inner portion of the wick-tube as a conduit for an upward current of air to feed the inside of the flame of the burner. Such is the case in the lamp shown in Fig. 1, and I have made provision for supplying the air to said central conduit, X, as follows: I have provided a space, B, below the end of the tubular wick and its tube or casing, and this space communicates with the annular conduit L and the central conduit, X.

As it is desirable that the bottom of the wick should be as low as the bottom of the font, a convenient mode of forming the bottom of the lower chamber, B, is by providing the depressed bottom E, located below the horizontal plane of the bottom of the font, as shown.

The parts of the lamp within the depression of the font are suitably supported. In Figs. 1 and 3 the wick-tube is supported by the brace *m* and the other tubes or dividing-partitions are in turn supported by the wick-tube.

The arrangement of the conduits L and Y afford an admirable guard against sudden exterior drafts of air affecting the flame, and the addition of conduit R forms an additional barrier against the too rapid influx of air into the lamp.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, in a lamp, of the font encircling the wick-tube and provided with air-conduit L next to and within the inner wall, N, of the font, and connected at bottom with a vertical air-conduit leading to the burner, and the broad shield or plate K over and in proximity to the top of the font, and conduit R between the shield and the top of the font and formed by said shield and top, and connected to the upper end of conduit L, substantially as and for the purpose specified.

2. The combination, in a lamp, of the annular font, wick-tube therein, annular division Q, dividing the space between the walls N of the font and the exterior of the wick-tube into the outer conduit, L, and the inner conduit, Y, united together at bottom, and shield K, extending over the font, forming with the top of the latter a fresh-air conduit, R, united to the top of conduit L, substantially as and for the purpose specified.

3. The combination, in a lamp, of the font having central depression, containing a tubular wick-tube having central air-draft, X, and annular division Q between the wall N of the font and the exterior of the wick-tube, and dividing the space between wall N and the wick-tube into exterior annular air-supply conduit, L, and interior conduit, Y, the air-conduit L being open at top to receive fresh air, and air-chamber B, connecting the conduits L, Y, and X together at bottom, substantially as and for the purpose specified.

4. The combination of the font having central depression, tubular wick-tube located therein, division Q between the wick-tube and wall N, and forming in connection therewith air-conduits L and Y, air-chamber B, connecting conduits L, Y, and X together at bottom, shield K, and conduit R on the top of the font, and connected to the upper end of conduit L, substantially as and for the purpose specified.

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Attest:

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