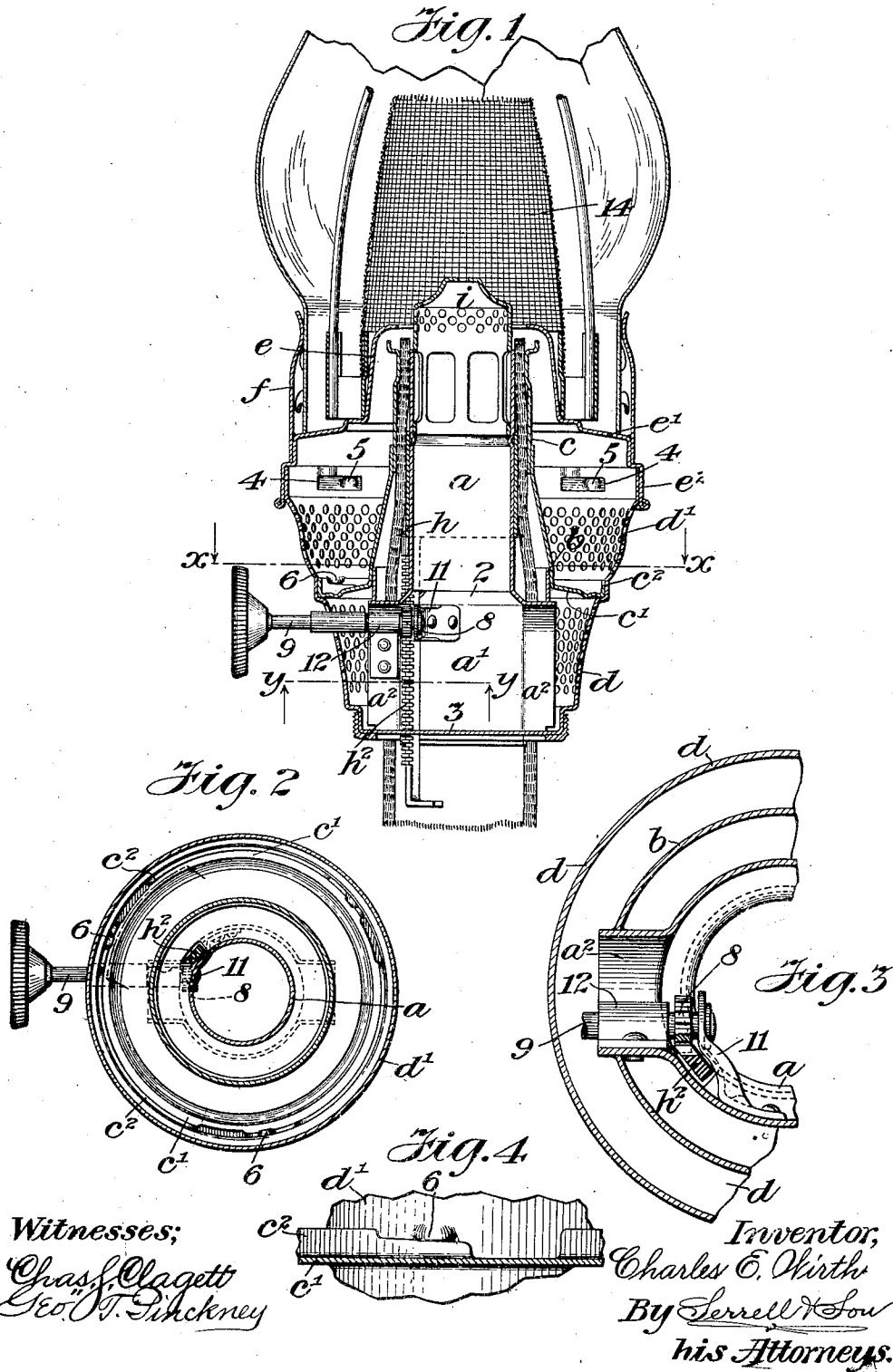


C. E. WIRTH.
LAMP BURNER.

APPLICATION FILED APR. 15, 1912.

1,044,961.

Patented Nov. 19, 1912.



UNITED STATES PATENT OFFICE.

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LAMP-BURNER.

1,044,961.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed April 15, 1912. Serial No. 690,730.

To all whom it may concern:

Be it known that I, CHARLES E. WIRTH, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Lamp-Burners, of which the following is a specification.

My invention relates to burners for kerosene oil lamps, and particularly to such lamps as employ a mantle to be made incandescent by a blue flame of the lamp.

In lamps of this character, the construction, the manner of holding the outer air tube in place, and the number of soldered joints, particularly at the lower air inlets, have prevented such lamps being wholly satisfactory, either mechanically or commercially, and the object of my invention is to overcome these difficulties.

In carrying out my invention, I construct the inner wick tube in one piece and offset the lower part from the upper part by a shoulder, which when perforated, becomes a guide for the rack of the wick raiser. I form the arches for the air inlets at opposite sides of the lower portion of the inner wick tube in one, or integrally with said wick tube, consequently the places of union of the arches with the outer wick tube are the only soldered joints, namely, two instead of four, as heretofore. This construction also provides a most suitable and secure foundation for connection of the pinion and shaft thereof for raising and lowering the wick raiser and wick. The line of these parts is parallel to a radial line instead of on a radial line, and the teeth of the rack are cut to accommodate the change, consequently the inlet for the air through one arch is less obstructed and less choked than in similar burners heretofore employed. The upper part of the outer wick tube is removable. It is provided with a base and a flanged periphery to the base setting snugly within a shouldered portion formed between the lower and upper air distributors, which are in one piece, and the parts are provided with engaging means, all of which is hereinafter more particularly set forth.

In the drawing, Figure 1 is a vertical section showing, complete, a lamp burner of my invention with a mantle and part of a chimney in position. Fig. 2 is a sectional

plan at about the broken line $x x$ of Fig. 1, and Fig. 3 is an inverted sectional plan about the broken line $y y$ of Fig. 1, and Fig. 4 is a detail hereinafter described.

Similar letters and numerals of reference indicate the same parts in all the figures.

The inner wick tube comprises the upper portion a and the lower portion a^1 , between which is formed a shoulder 2. These parts are integral and at the lower end the inner wick tube is closed off by a bottom plate 3, which is preferably an integral part of the air distributors. The outer wick tube comprises the lower tube part b and the removable upper part c . This upper part is formed integrally with the flanged base c^1 , and an up-turned flanged periphery c^2 .

d represents the lower air distributor, and d' the upper air distributor. These are formed in one, and the bottom plate 3 formed therewith is cut through for the lower ends of the inner and outer wick tubes to provide spaces for the wicks. Their union is imperforate with a substantially vertical shouldered wall within which is received the flanged periphery c^2 of the outer wick tube, the lower part of which comes to a seat at the shoulder prepared between the air distributor portions d and d' .

e is the conical deflector having a flanged base e^1 and skirt e^2 , and f represents the chimney holder secured to the upper part of this skirt, so that to all intents and purposes, this conical deflector, its flanged base and skirt, and the chimney holder are in the finished lamp burner substantially integral, as the chimney holder is secured to the other parts, as is usual in these burners.

I provide a bayonet slot 4 in the upper portion of the air distributor d' and a projection or pin 5 on the skirt of the chimney holder, whereby when the deflector and chimney holder, with the skirt thereof, are placed down over the upper air distributor, the parts may be firmly connected by the projection 5 entering and being held in the slot 4. I further provide a projection 6 formed in the union between the upper air distributor and the lower air distributor, and notch the flanged periphery c^2 of the base of the outer wick tube, cutting away at the same time, a portion of the flanged base c^1 to pass the projection 6, hence when the outer wick tube is passed down to its seat at the union of the parts of the air

distributers, the cut-away portion passes over the projections 6, when the outer wick tube comes to its seat, and the same may then be turned so as to bring these projections upon the inclines of the notches to hold the outer wick tube firmly in position, as particularly shown in Fig. 4.

A represents a wick raiser surrounding the inner air tube, and provided with teeth or fingers at the lower edge to engage the wick k so as to raise and lower the same.

A^2 is a flame spreader of usual construction.

A^2 represents the rack of the wick raiser. It passes through an aperture made in the shoulder 2 of the inner wick tube and also passes down through the larger portion of the inner wick tube and through a hole in the bottom plate 3. I further provide a pinion 8 on a shaft 9 at the outer end of which is a finger disk for turning the shaft and the pinion.

11 represents a bracket for the end of the shaft outside of the pinion, and 12 a bearing or sleeve for the shaft 9, secured by rivets to an upright surface of the arched portions of the inner wick tube at the lower end, provided for the inlet of air through the lower air distributor d into the inner portion of the inner wick tube. These arched air inlets a' are arranged opposite to one another and the parallel side walls and upper arched portion are formed integral with the inner wick tube, stamped or pressed out therefrom, and in opposite directions. These walls are of sufficient dimension to pass through openings made in the lower tube part b of the outer wick tube and at these places, soldered joints are formed so as to securely connect the lower part of the outer wick tube and the inner wick tube, and the lower part of the outer wick tube is provided with the usual annulus screw-thread, by which the burner is attached to the oil font of the lamp. The bottom plate 3 forms the bottom of these arched air inlets a' , and through these arched air inlets the said bottom plate is integral and imperforate, as shown in Fig. 1.

It will be noticed particularly from Figs. 2 and 3 of the drawing, that the shaft 9 is not placed radially in the burner, but is parallel to a radial line and parallel to the walls of the air inlets, and as the rack bar A^2 must be more or less tangential to the circumference of the inner wick tube, it has been found necessary and advantageous to cut the teeth of the rack at an obtuse angle to the plane of the bar A^2 so that the teeth come into the right relation to the teeth of the pinion 8, in order that it may, when rotated by the shaft 9, properly raise and lower the rack bar A^2 .

The connection hereinbefore described of the outer wick tube and the body of the burner, that is, at the union of the two air

distributers, always brings the outer wick tube in axial position and also concentric position. The construction of the walls of the lower part of the inner air tube, to provide the walls in the air inlets, constitutes an advantageous construction over constructions heretofore employed and assists materially the labor of putting the burden together and makes necessary only two soldered joints instead of four, and these two come at the outer surfaces where they are most accessible.

The mantle 14 is supported by an annulus setting down upon the conical deflector, and the upper end of the outer air tube c is preferably made with a horizontal and vertical annulus wall more particularly shown and claimed in an application for Letter's Patent filed by me of even date herewith.

Further in regard to the rack bar A^2 , it will be noticed from Figs. 2 and 3 that the plane of the bar is tangential to the circumference of the upper part of the inner wick tube, and that the teeth cut in one edge of said bar are formed at an inclination which brings the ends and bases of the teeth parallel with the teeth of the pinion 8 and with the shaft 9, for the most perfect working of the rack bar and pinion.

I claim as my invention:

1. In a lamp burner, the combination with the outer wick tube provided with opposite openings, of an inner wick tube composed of upper and lower parts of varying diameters with a circumferential shoulder at the intersection, and projecting walls and arches extending from the inner wick tube and from the lower edge of the shoulder and forming air inlets disposed oppositely and formed integrally therewith and passing through the openings in the outer wick tube and slightly beyond and adapted for solder connection with the outer wick tube at the openings.

2. In a lamp burner, the combination with the outer wick tube, of an inner wick tube composed of upper and lower parts of varying dimensions with a shoulder at the intersection and said shoulder perforated, a wick raiser and the rack of the wick raiser passing through said perforation, and means for raising and lowering the wick.

3. In a lamp burner, the combination with the outer wick tube provided with an opening, of the inner wick tube and projecting walls and arch forming an air inlet disposed and formed integrally therewith, and adapted for solder connection with the outer wick tube at the opening, a pinion shaft occupying a position parallel to a radial line through the said air inlet, a bearing therefor secured to a side wall of said air inlet, a pinion on said shaft, and a rack engaged thereby.

4. In a lamp burner, the combination with the outer wick tube provided with an opening, of the inner wick tube and projecting walls and arch forming an air inlet disposed and formed integrally therewith, and adapted for solder connection with the outer wick tube at the opening, a pinion shaft occupying a position parallel to a radial line through the said air inlet, a bearing therefor secured to a side wall of said air inlet, a pinion on said shaft, a rack engaged thereby, and a bracket for the end of the pinion shaft within the lower portion of the inner air tube and secured thereto and the shoulder between the parts of the inner air tube perforated for said rack.

5. In a lamp burner, an inner air tube comprising an upper portion and a lower portion of different dimensions, a shoulder integrally connecting and extending between the lower end of the upper part and the upper end of the lower part and said shoulder perforated, a wick raiser surrounding the upper part of the inner wick tube and a rack bar connected therewith and passing down through the aperture in the shoulder, a pinion and pinion shaft, the latter located parallel to a radial line, bearings for the shaft and pinion, and the teeth of the rack bar cut in a plane at an obtuse angle to the plane of the rack bar, whereby the rack is readily engaged by the pinion and operated.

6. In a lamp burner, the combination with an outer wick tube provided with opposite openings, of an inner wick tube and projecting walls and arches forming air

inlets disposed oppositely and formed integrally with the inner wick tube, and adapted to pass through the openings in the outer wick tube and to be soldered thereto, an upper and a lower air distributor formed in one, and a bottom plate also formed in one therewith and perforated for the intersection of the outer and inner wick tubes, but imperforate so as to form bases or bottom plates to the air inlet arches.

7. In a lamp burner, the combination with an inner wick tube, of an outer wick tube formed of a lower and an upper portion, and the upper portion provided with a base extending out therefrom, and a flanged periphery, upper and lower air distributors formed in one with an imperforate part between the upper and lower portions provided with a shoulder, forming a seat for the flanged periphery of the upper portion of the wick tube.

8. In a lamp burner, a wick raiser shaft and pinion, with the shaft placed parallel to a radial line from the center of the burner, and a rack bar occupying a plane tangential to the circumference of the inner wick tube and with the teeth thereof formed in one edge at an inclination to the plane of the bar, which brings the ends and bases of the teeth into parallelism with said shaft and pinion teeth.

Signed by me this 11 day of April 1912.

CHAS. E. WIRTH.

Witnesses:

J. L. SCOTT,

L. W. ANDERSEN.