(No Model.)

# J. E. BOHNER.

## LAMP BURNER.

No. 456,881. Patented July 28, 1891.

Fig. 1

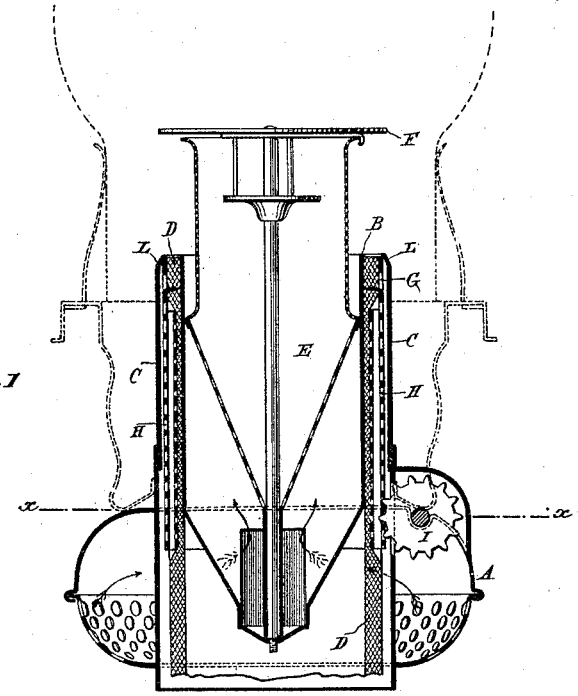



Fig. 2

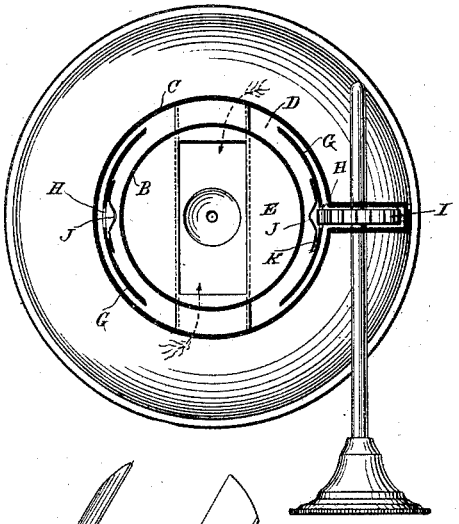
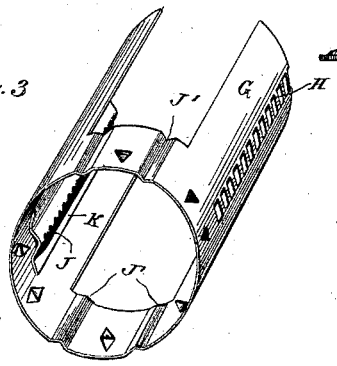



Fig. 3




Witnesses:
Raphael Netter
Robt. F. Gaylord

Inventor:
Joseph E. Bohner
by Allan M. Paige
Attorney.

# UNITED STATES PATENT OFFICE.

JOSEPH E. BOHNER, OF ANSONIA, CONNECTICUT, ASSIGNOR TO WALLACE & SONS, OF SAME PLACE.

## LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 456,881, dated July 28, 1891.

Application filed December 22, 1890. Serial No. 375,436. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH E. BOHNER, of Ansonia, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a specification, reference being had to the accompanying drawings.

The present invention relates to that class of lamp-burners in which a cylindrical wick-tube is used, the wick being tubular or surrounding such wick-tube, and there being a wick carrier or sleeve for raising and lowering the wick, which is operated from one side of the carrier.

The invention is particularly applicable to central-draft burners in which the wick-carrier is tubular in form and is elevated and lowered by a pinion meshing in a rack formed in or attached to the carrier. In such burners, it will be understood, the wick-surface in contact with the exterior surface of the inner wick-tube is of considerable extent, so much so that the wick could not be readily moved up or down on the inner tube if it were to fit the same closely. The necessary looseness of the wick on this wick-tube, however, also produces a corresponding freedom of the wick-carrier relative to and on the wick-tube, and where the wick-carrier is operated by its rack and pinion on one side or along one line of its vertical length there is a tendency of the carrier to tip or careen slightly to and from the wick-tube. This manifestly results in an unequal elevation or lowering of the burning edge of the wick, which produces an irregular flame. It is the purpose of my invention to overcome this difficulty and to provide a new and improved carrier for a tubular wick that may be moved parallel to the wick-tube, so that the upper end of the wick shall be evenly presented to the flame.

Heretofore it has been proposed to variously guide wick-carriers by means independent of or employed in conjunction with the wick-tube, particularly as shown in United States Patent No. 439,718, of November 4, 1890, granted to me. The particular object of the present invention, however, is to so construct or form the wick-carrier itself that its movement on the wick-tube will be uniform for all parts of the burning edge of the wick.

Accordingly my invention consists of a lamp-burner having a cylindrical wick-tube and wick-adjusting sleeve or carrier surrounding the same, which carrier is provided with one or more ribs or ridges running lengthwise of the sleeve and projecting inwardly from the inner surface of the same toward the wick-tube, the ridges of the ribs being perforated.

My invention further has for its object to prevent undue upward movement of the wick above the end of the wick-tube, as at the time of lighting the wick, when it is not unusual for the wick to be turned up so high that an excess of flame occurs which smokes and soils the chimney, and many times the wick-carrier rack is run off its pinion and out of adjustment thereto or otherwise rendered incapable of promptly lowering the wick.

This feature of invention consists in coning or turning radially inward the upper end of the outer cylindrical wick-tube, so that it projects into the path of the wick-carrier, and thereby prevents it moving upwardly beyond the ends of the inner and outer wick-tubes.

In the drawings, Figure 1 is a central sectional view of a lamp-burner embodying my improvement. Fig. 2 is a plan view of the same, the parts above the plane $x\,x$ being cut away. Fig. 3 is a detail perspective view of the wick-carrier or wick-adjusting sleeve.

Referring to the drawings in detail, A represents the exterior main body parts of the burner; B, the inner wick-tube; C, the outer wick-tube; D, the wick or wick-space between the tubes B and C; E, the central-draft passage; F, the flame-deflector; G, the wick-carrier; H, the rack thereon, and I the pinion for elevating and lowering the wick-carrier. These parts and their construction and relation to each other are in general the same as found in burners now well known to the art. Their specific features are as follows:

Upon the inner face of the wick-carrier G, and running lengthwise with it, are the ribs or ridges J. These ribs are produced by thin strips of metal K, bent into the desired form with a longitudinally-perforated angular ridge J and properly secured to the carrier; but these ribs may obviously be produced

in other ways and forms. Preferably there are two of these rib-strips extending the full length of the carrier, one being located over the pinion-rack H and the other being located diametrically opposite thereto. These ribs project from the inner face of the wick-carrier toward, but not quite to, the inner wick-tube, as best seen in Fig. 2. By these means, with the wick in place on the carrier and between the wick-tubes, the ribs on the carrier are embedded in the wick and closely press the same along two diametrically-opposite vertical lines firmly upon the inner tube. It will therefore be seen that the carrier has a firm bearing on opposite sides of the inner wick-tube, and hence that this sleeve when moved on the inner tube by the rack and pinion will have a direction parallel with such tube. This counteracts the tendency of the pinion to tip the carrier and insures the regular presentation of the burning edge of the wick to the flame, and by reason of the edge-like or angular form of the ribs there is no undesirable addition to the resistance of the wick on the inner tube. On the contrary, the wick moves more smoothly on the inner tube than in casse where it has been attempted to direct the carrier by guides confining or bracing it against the tipping action of the rack and pinion. The perforating of these ribs along their ridges prevents the corrugations choking the wick to any undesirable extent, so that it will not freely conduct the oil; also, the perforations make the ridges of the ribs to bear on the wick practically by a series or line of points, and therefore they not only hold the wick securely, but they may be adjusted more closely to the wick-tube than if they were not perforated, which close adjustment further insures against the tilting or irregular movement of the carrier on the wick-tube.

I have shown at J′ the common form of inwardly-projecting vertical ribs, which are produced by bending up the metal of the wick-carrier into plain corrugations. These ribs act to give such elasticity to the carrier as will compensate for the expansion and contraction of the same, due to the effects of the heat of the flame. It is to be noted that the strip K covers the rack of the carrier, which prevents the wick getting into the rack and in any way clogging the pinion; also that the strip holds the rack up to the pinion, so that their engagement is certain and their action easy and smooth.

L represents the upper inturned or coned end of the outer wick-tube. The upper edge of this wick inclines radially toward the inner tube a sufficient distance to stop the wick-carrier if raised up to it. This prevents the wick being raised too high for lighting or otherwise, as also the running of the carrier-rack off its operating-pinion. This inclined or shouldered end edge of this tube also stiffens the end of the tube and prevents it being distorted or warped under the action of the heat of the flame.

What is claimed as new is—

1. The combination, in a lamp-burner, of a wick-tube and a wick-carrier surrounding the same, which is provided with inwardly-projecting perforated ribs running lengthwise of the same, substantially as and for the purpose set forth.

2. The combination, in a lamp-burner, of a wick-tube and a wick-carrier surrounding the tube and provided with one or more ribs running lengthwise of the same and projecting from the inner surface of the carrier toward the wick-tube, the ridges of the ribs being perforated, substantially as and for the purpose set forth.

3. The combination, in a lamp-burner, of a wick-tube, a wick-carrier G, surrounding the same, and a strip K, secured to the inner face of the carrier over the rack H, with its rib J projecting toward the wick-sleeve, substantially as and for the purpose set forth.

4. In a lamp-burner, an inner wick-tube, a wick-carrier surrounding the same, and an outer wick-tube provided with an inturning upper edge L, projecting into the path of and for limiting the upward movement of the wick-carrier, substantially as and for the purpose set forth.

JOSEPH E. BOHNER.

Witnesses:
FRED. L. GAYLORD,
E. E. TRUMPLOUR.