(No Model.) 2 Sheets—Sheet 1.

A. C. WEST.

LAMP.

No. 477,480. Patented June 21, 1892.

Fig. 5.

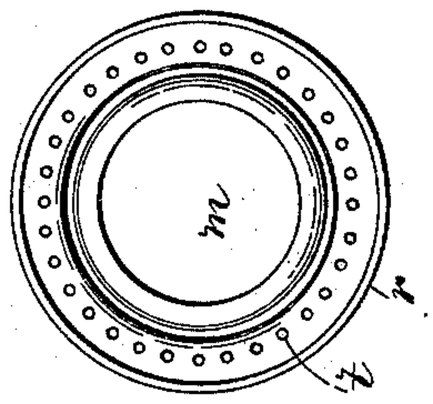

Fig. 3.

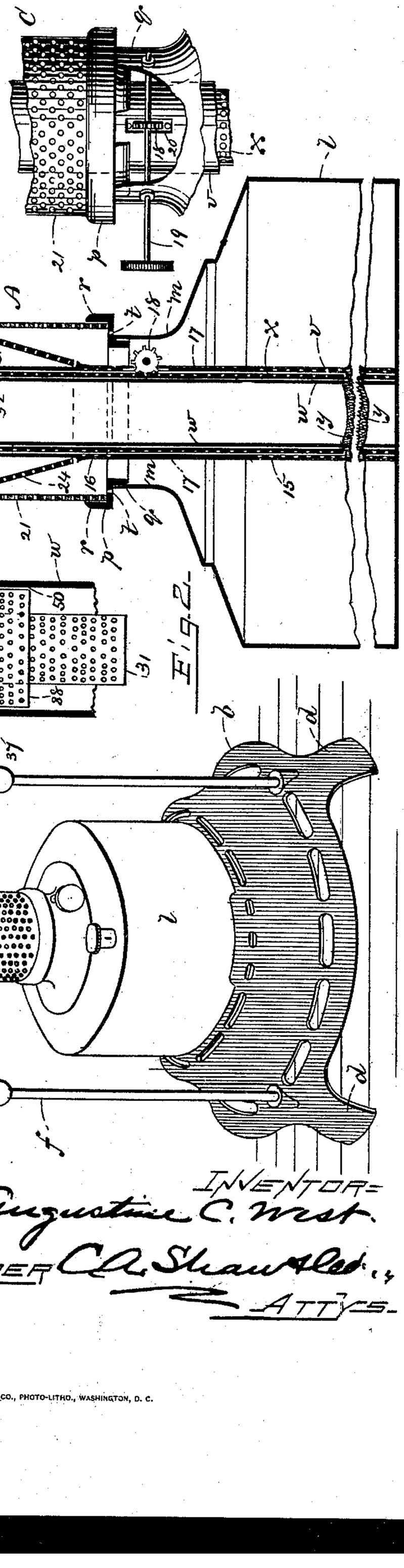

Fig. 6.

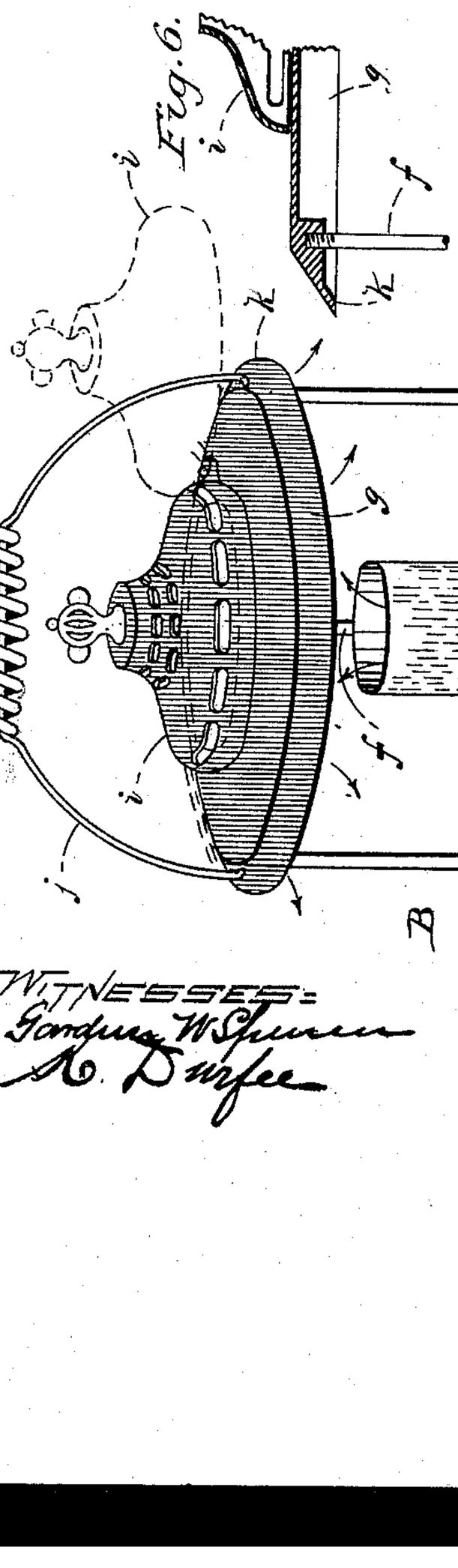

Fig. 4.

Fig. 2.

Fig. 1.

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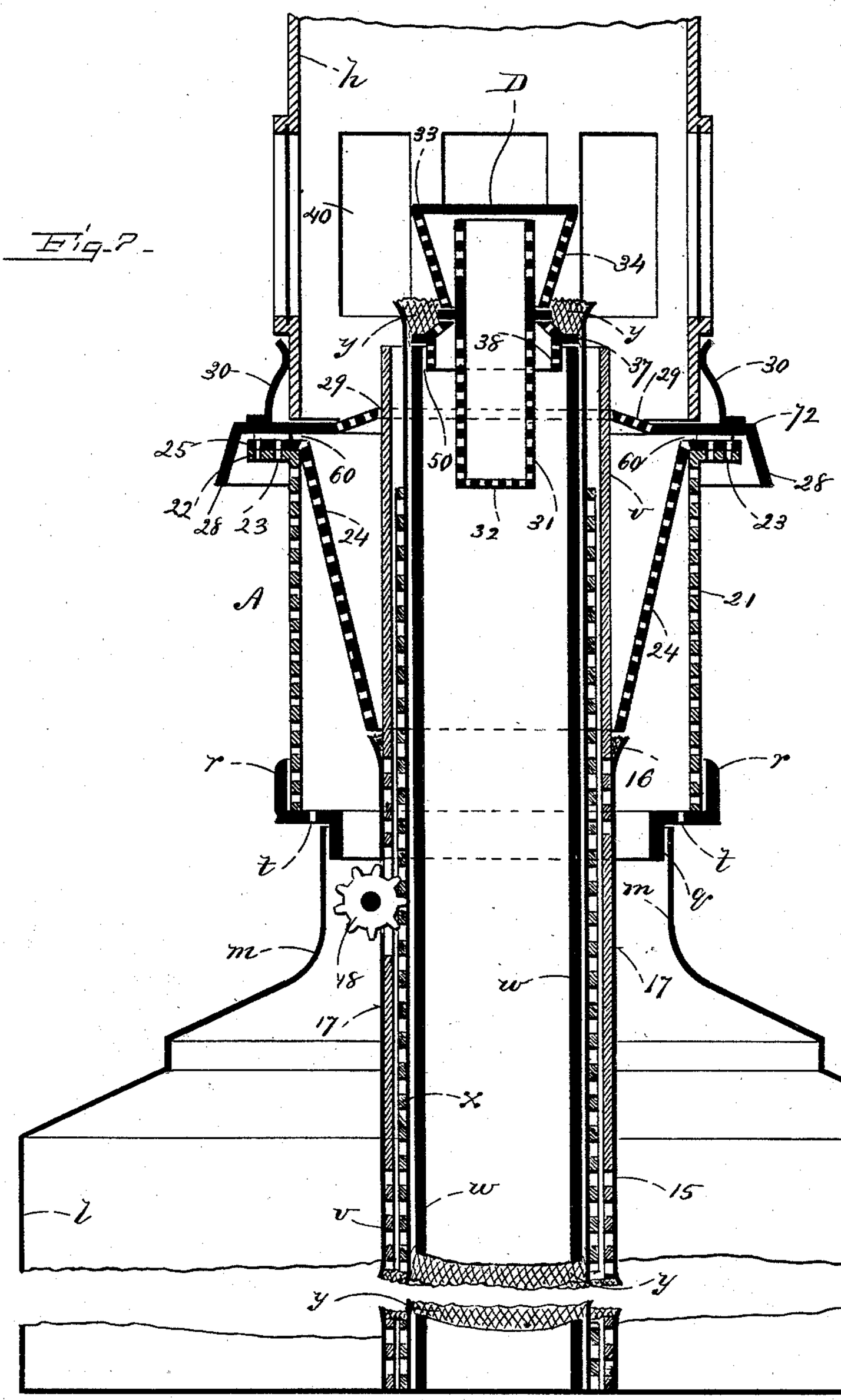
(No Model.) 2 Sheets—Sheet 2.

A. C. WEST.

LAMP

No. 477,480. Patented June 21, 1892.

Fig. 2.



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UNITED STATES PATENT OFFICE.

AUGUSTINE C. WEST, OF WAKEFIELD, MASSACHUSETTS.

LAMP.

SPECIFICATION forming part of Letters Patent No. 477,480, dated June 21, 1892.

Application filed February 3, 1891. Serial No. 379,987. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTINE C. WEST, of Wakefield, in the county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Lamps, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation showing my improved lamp in position on a heater-stand; Fig. 2, a vertical transverse section of the lamp; Fig. 3, a sectional elevation of the burner; Fig. 4, an elevation of the flame-spreader; Fig. 5, a top plan view of the burner-cup; and Fig. 6, a sectional elevation of a portion of the heater-top, illustrating details of construction. Fig. 7 is a vertical section, on an enlarged scale, through the center of the lamp.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to oil-burning lamps which are particularly adapted for use with heaters; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a burner which shall remain cool and prevent heating the body of the lamp, while increasing the volume of heat delivered to the heater.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the lamp considered as a whole, and B the heater. The heater comprises a case *b*, supported on legs *d* to allow the air to pass thereunder through the draft-tube of the lamp. The base is provided centrally with a socket to support said lamp. Vertical standards *f* are secured to the base, and a heater-hood *g* is secured to the top of said standards. The hood is provided centrally with an opening directly over the lamp-chimney *h* for receiving utensils. A pivoted lid *i* closes said opening. A bail *j* is hinged to the hood, whereby the heater may be transported. The edge of the hood is beveled or flares vertically downward at *k*, causing the heat from the lamp to be deflected in the direction of the arrows shown in Fig. 1.

The body *l* of the lamp may be of any suitable form. In the neck *m* thereof a burner-socket *p* is disposed, said socket having an annular flange *q* projecting into said neck and a vertical rim *r* for retaining the burner in position thereon. The horizontal portion of said socket is perforated at *t* outside the lamp-neck. The body is provided with a centrally-disposed vertical outer tube *v* and inner tube *w*, opening through the bottom of the lamp in the usual manner. The wick-raising tube *x* is fitted to slide vertically between said tubes, said wick-raising tube being perforated, as shown, and carrying the wick *y*. The outer tube *v* is also perforated at 15 and 16, and a feed-wick 17 incloses said outer tube, the purpose of said feed being to convey oil from the bottom of the lamp-body to the upper portion of the wick through the perforations 16. The wick-raising tube *x* is actuated by a ratchet-wheel 18, mounted on a spindle 19 in the lamp-neck and projecting through an opening 20 in the outer tube *v*, said wheel engaging the perforations of said wick-tube to raise and lower the wick.

The burner C comprises a cylindrical air-distributer 21, having its walls perforated and adapted to rest on the horizontal portion of the socket *p*, to which it is attached in any suitable manner, as by soldering, or it may be formed integral therewith. The upper end of said air-distributer has a horizontal outwardly-turned annular flange or lip 22, provided with vertical perforations 23. Another air-distributer 24, constructed in the shape of an inverted hollow truncated cone, is disposed within the air-distributer 21 and is supported by an annular perforated flange 25, which rests on the body-flange 22. The body of said conical distributer is perforated and its lower end closely encircles the outer tube *v*.

The chimney-holder 27 has downwardly-extending feet 60′, which rest on the distributer-flange, and also has a flaring hood 28, which projects downwardly over the body-flange 22, said holder being formed so that a space 60 is left between it and the distributer-flange and between said feet for the pas-

sage of air from the perforations 23. The horizontal body of the chimney-holder is perforated at 29 to admit air to the chimney from the distributer-chamber. Vertical spring-arms 30 on the holder secure the chimney in position.

The flame-spreader D comprises a central perforated cylinder 31, having a perforated bottom 32. A disk 33 closes the top of said cylinder, and from said disk downwardly-converging cone-shaped perforated walls 34 converge to a point 35, where they flare outward at 36 and are provided with an annular flange 37, adapted to rest on the top of the inner tube *w* and support said spreader. Below said flange at 38 the perforated walls are cylindrical for insertion within said tube, or it may encircle the top of said tube and the flange 37 be dispensed with. For heating purposes the chimney *h* is metallic, and is provided with glazed or transparent portions 40.

In the use of my improvement, the wick being lighted, its flame is distended laterally by the disk 33 of the spreader. Air from the bottom of the lamp through the inner tube *w* passes through the perforated cylinder 31, inclined portion 36, and converging walls 34 of the spreader to the inner side of the flame, with which it mingles, greatly increasing the heat therefrom. The peculiar construction of the spreader also serves to break up the current of air from the tube *w*, preventing the flame from flickering. The heat in the chimney causes a current of cold air to be drawn through the cylindrical distributer 21 of the burner, said current being broken by the conical distributer 24. Thence it passes so gradually through the perforated portion 29 of the chimney-holder that it reaches the flame on the outer side without causing it to flicker. An air-current is also set up through the flange-perforations 23, passing through the space 60 and chimney-holder into the chimney. By means of this air-space 60 and perforations in the flanges of the distributers to admit air to said space it is found that the burner is kept at all times at a very low temperature, although the chimney and holder may have attained a high degree of heat. This construction enables the burner to be readily manipulated at all times and prevents it communicating heat to the body of the lamp. The chimney-holder projecting inward to the tube *v* prevents char or coke of the wick from falling into the burner. If desired, the perforated portion 29 of the chimney-holder may be constructed of a separable ring and supported on the chimney-holder. The cylindrical distributer 24 may be omitted, if desired, and the holder rest on the flange 22, the perforated portion of the holder serving to distribute the air; but I prefer to employ said distributer, as its use helps to cool the burner and renders the flame more steady for illuminating purposes. The disk 33 may also be perforated to add to the heat of the flame. The cylindrical portion 38 of said spreader is constructed so that it does not engage the walls of the tube *w*, a space 50 being left for air passage. The perforations *t* in the burner-socket admitting air also serve to cool these parts.

Having thus explained my invention, what I claim is—

1. In a central-draft lamp, a body, in combination with a perforated burner-socket in the mouth thereof, a cylindrical distributer disposed thereon and attached thereto and provided with an annular perforated lip, and a chimney-holder adapted to rest on said lip and form an outwardly-projecting air-space, substantially as and for the purpose set forth.

2. In a lamp provided with a central draft-tube, a flame-spreader comprising a perforated cylindrical body, a disk on the top thereof, and downwardly-converging perforated walls on said disk encircling said body, said walls flaring at their lower ends and provided with a supporting-flange within said draft-tube and leaving a space between, substantially as described.

3. In a central-draft lamp, the combination, with the draft-tube, of the flame-spreader D, comprising the perforated body 31, disk 33, perforated converging walls 34, flaring portion 36, flange 37, and cylindrical perforated extension 38 somewhat larger than said body and standing within said tube, with a space between, substantially as described.

4. In a lamp of the character described, an inner draft-tube secured in the lamp-body, in combination with an outer inclosing tube perforated at points near its bottom and above the oil-level, with an imperforate portion between said points, a feed-wick inclosing said outer tube and connecting said perforated portion, and a wick-tube fitted to slide between said draft-tubes, substantially as described.

5. In a central-draft lamp, a chimney-holder provided with a perforated central portion encircling the draft-tube and a downwardly-flaring imperforate annular rim, in combination with a cylindrical distributer which said rim overlaps, substantially as described.

6. In a burner for central-draft lamps, the cylindrical perforated distributer 21, provided with the annular perforated flange 22, in combination with the inwardly-inclining distributer 24 within said cylindrical distributer, having the annular perforated flange 25 resting on that of the cylindrical distributer, substantially as and for the purpose set forth.

7. In a lamp of the character described, a burner-body having an outwardly-projecting perforated flange, in combination with a chimney-holder disposed thereon and forming an air-space between it and said flange, substantially as and for the purpose set forth.

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