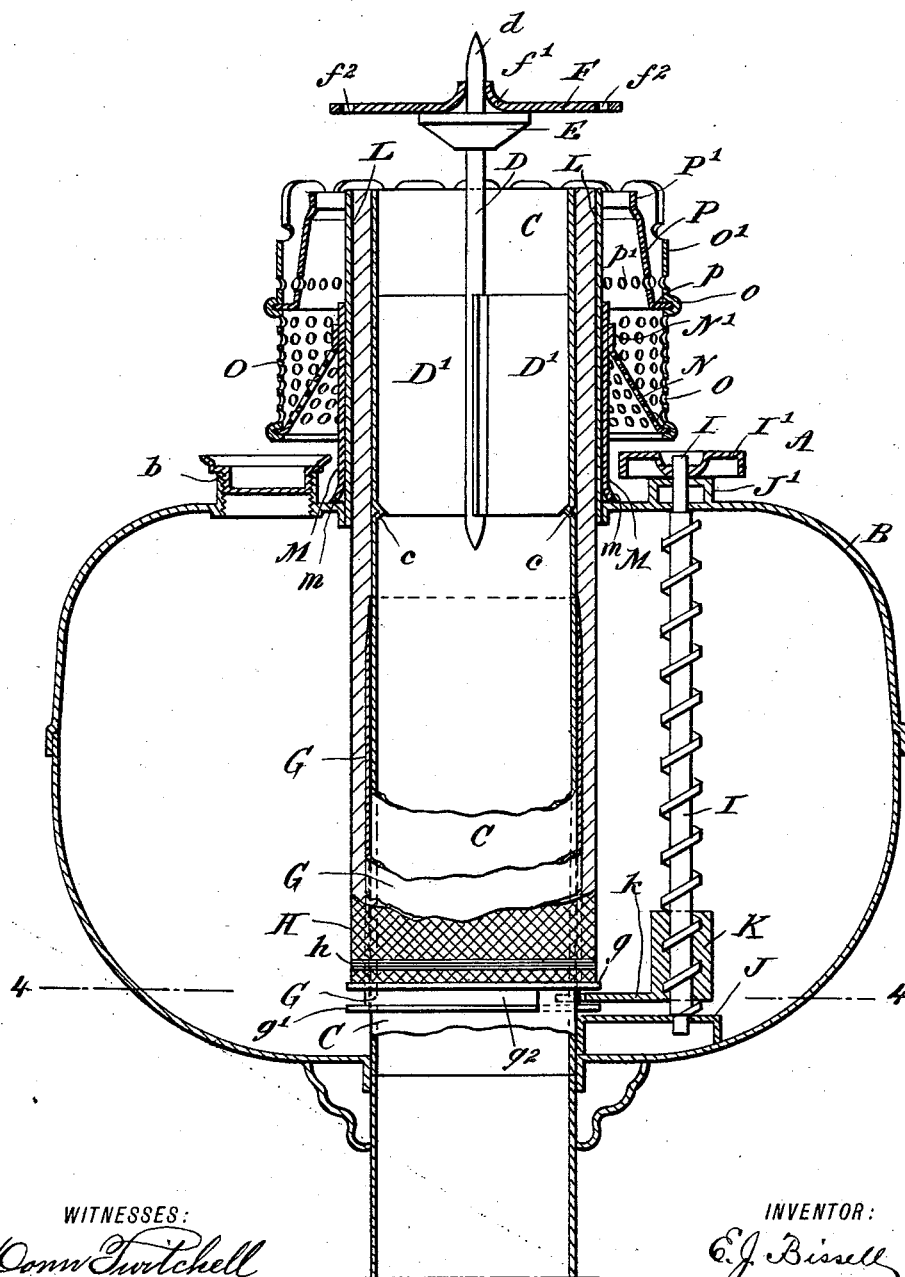


E. J. BISSELL.
LAMP.

No. 455,155.

Patented June 30, 1891.

Fig. 1.



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C. Sedgwick

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BY Munn & Co.
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

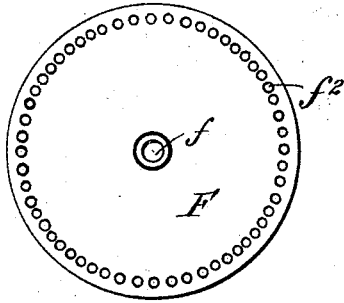


Fig. 3.

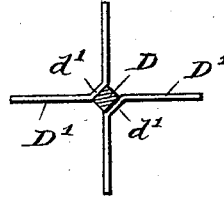
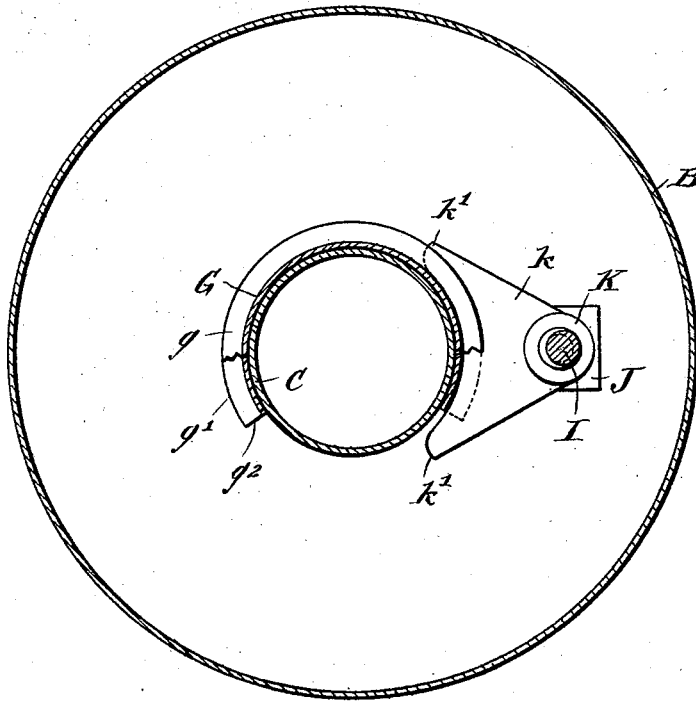


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDGAR J. BISSELL, OF BARTOLD, MISSOURI.

LAMP.

SPECIFICATION forming part of Letters Patent No. 455,155, dated June 30, 1891.

Application filed August 15, 1890. Serial No. 362,049. (No model.)

To all whom it may concern:

Be it known that I, EDGAR J. BISSELL, of Bartold, in the county of St. Louis and State of Missouri, have invented a new and Improved Lamp, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of lamps having a tube for providing a central air-draft; and the object of my invention is to produce a simple, compact, and durable lamp which will give a strong clear light and which will throw out but little heat in proportion to the size of the flame, and in which the outer and inner air-drafts are combined in such a manner as to produce a steady vertical flame.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken vertical section of the lamp embodying my invention. Fig. 2 is a plan of the flame-spreader. Fig. 3 is a horizontal section of the spindle for supporting the spreader and the wings for holding the spindle in position and regulating the central air-draft, and Fig. 4 is a broken horizontal section on the line 4 4 of Fig. 1.

The lamp-fount B is of the ordinary construction, and is provided with the usual opening *b*, through which oil is poured to fill the lamp, and with a vertical air-tube C, extending through it, the said air-tube being of any approved construction and being supplied with air in any of the usual ways. The above-mentioned parts form no part of my invention, except that the tube C has an annular rib *c* therein to support the spindle D and the wing D' attached thereto. The spindle D is held vertically in a central position in the upper portion of the tube C, so as to extend above the top of the tube, the ends *d* of the spindle being pointed, as shown. Extending radially from the spindle near the lower portion thereof are the wings D', the outer edges of the wings abutting with the inner surface of the tube C, and the lower portions of the wings resting upon the annular rib *c*, thus

supporting the wings and spindle in position. There are four wings D' shown in the drawings, but a greater or less number may be used, and the wings are attached to the spindle by being brazed or riveted; but they may be fastened in any convenient way. The wings are arranged in pairs, each pair being connected by a flattened portion *d'*, which is fastened to a flattened portion of the spindle D. A button or collar E is fixed to the spindle near the upper end thereof, so as to be a little above the top of the tube C, and fitting loosely upon the spindle and resting upon the upper surface of the collar is a disk F, which serves as a spreader to the flame, the said disk being somewhat larger than the tube C, and having a central perforation *f*, which receives the spindle D. The central portion of the spreader next the spindle is curved slightly upward, as at *f'*, so that when the spreader is dropped upon the upper end of the tube the inclined portion *f'* in connection with the conical point of the spindle will automatically center the spreader upon the spindle.

The spreader is provided near its outer edge with a row of perforations *f²*, which permit a portion of the air passing upward through the tube C to pass through the spreader, thus preventing the excessive flattening of the flame as it passes upward by the edge of the spreader. These perforations form an important feature of the spreader, and they are arranged near the edge, so that a portion of the air-draft will be diverted from around the spreader, and the flame will thus be permitted to assume a vertical position. By permitting a portion of the air to escape in this way the intensity of the heat is modified, while the flame is much more luminous than it would be without the perforations.

In the lower portion of the fount B is a tube G, which loosely encircles the tube C, so as to be vertically movable thereon, and at the bottom of the tube is a pair of parallel annular flanges *g* and *g'*, the lower flange *g'* being broken, as at *g²*, to permit the tube to be raised from contact with the elevating mechanism, as described below. A wick H of the usual construction fits closely upon the tube G, the said wick being long enough to extend above the top of the tube C. The wick is wound thereon by the thread or twine *h*, which

thus prevents the wick from fraying. It will thus be seen that when the tube G is raised or lowered the wick H will be correspondingly moved. A screw-shaft I is mounted vertically in the fount adjacent to the central tube and wick, the lower end of the shaft being pivoted in a support J and the upper end being pivoted in a support J' on the upper portion of the fount. The upper end of the shaft is also provided with a thumb-piece I', by means of which it may be turned.

A nut K is mounted on the screw-shaft I, the nut being internally screw-threaded to correspond with the thread of the screw-shaft, and the lower portion of the nut is provided with a laterally-extending flange *k*, which extends between the flanges *g* and *g'* of the tube G, so that by turning the screw-shaft the nut K will be moved vertically and the tube G and wick H thereon will be raised or lowered, as the case may be. The edge of the flange *k* next the tube G is concaved, so that the flange will fit nicely upon the tube, and the corners of the flange are rounded, as at *k'*, to enable the flange to readily enter between the flanges *g* and *g'*. The width of the flange *k* at its widest portion corresponds with the width of the break *g²* in the flange *g'*, so that when the flange and the break align the tube G may be raised from the tube C. This is only done when the tube is to be provided with a new wick. The tube G is also broken away at its lower end between the flanges *g* and *g'* and opposite the break *g²* in the lower flange, so that when the tube is dropped into place its lower edge will not engage the corners of the flange *k* and prevent it from being quickly adjusted. The upper portion of the tube C is encircled by a tube L, which is fixed to the upper part of the fount B, and the space between the tubes C and L is occupied by the wick H, the tubes thus serving as guides for the wick. The tube L is loosely encircled by a sleeve M, the lower portion of the sleeve being outwardly inclined, as shown at *m*, so that the sleeve may be readily placed upon the tube. A perforated cone-shaped shell N encircles the sleeve M, the upper portion of the cone having a collar N', which is fixed to the sleeve M, and the lower edge of the cone is united to a perforated band O, which extends vertically therefrom, the upper portion of which band is formed into the ordinary chimney-holder O'.

A deflector P is located between the chimney-holder O' and the tube L, the upper portion of the deflector being reduced in diameter, as shown at P'. The lower edge of the deflector, being bent outwardly, enters the groove *o* in the band O. The chimney may thus be held between the chimney-holder and the deflector. The deflector is also provided near the base with a row of perforations *p'* to permit of a free circulation of air. The perforations in the cone N and in the band O should admit all the air that will pass through the

space between the reduced end P' of the deflector and the tube L, and the draft through said space will thus counterbalance the central draft from the tube C, and as a result perfect combustion will be obtained with a clear bright vertical flame.

When the lamp is to be lighted, the sleeve M may be slipped from the tube L, thus carrying the connected parts with it and raising the spreader F from the spindle D, and when the said sleeve is replaced the spreader by reason of its inclined central portion will find its way upon the spindle D; or the chimney may be removed from the chimney-holder, if desired.

The wings D', which are attached to the spindle D, not only support the spindle and spreader F, but they cause the air to flow steadily through the tube and prevent it from eddying or swirling, and consequently the flame does not flicker.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a lamp having a central air-tube and an outer tube L, an annular wick-space being formed between said tubes, of a vertically-removable chimney-holder on the tube L and having a deflector P, a vertical central rod projecting above the air-tube and having a shoulder or projection near its upper end, and a vertically-removable single spreader-disk having a central aperture receiving said rod and an outer marginal series of apertures, said spreader-disk being of greater diameter than the tube L, whereby when the chimney-holder is removed it will also remove the spreader-disk, substantially as shown and described.

2. The combination, with a lamp having an annular wick chamber or space and a vertically-removable chimney-holder provided with an inward-inclined deflector P, of a central rod D, having a pointed upper end, a shoulder or support E, and a centrally-apertured spreader-disk having its aperture flared, as at *f'*, to readily receive the rod and provided with a marginal series of apertures above the wick-space, the spreader projecting at its margin into the upward path of the chimney-holder, whereby the spreader will be removed and returned by the chimney-holder, substantially as shown and described.

3. The combination, with a lamp having a central air-tube therein, of a vertically-movable tube mounted on the air-tube and carrying a wick, as shown, said tube having parallel flanges at its lower end, the lower flange being cut away, a screw-shaft mounted vertically in the lamp-fount, and a nut mounted on the screw-shaft and provided with a laterally-extending flange of a width to pass through the said cut-away portion and into the annular space between the flanges of the wick-tube, substantially as described.

4. The combination, with the vertically-

movable wick-tube having on its lower end parallel annular flanges, with the lower flange and a part of the tube broken away, as shown, of a screw-shaft mounted in the lamp-fount adjacent to the wick-tube, and a nut mounted on the screw-shaft and provided with a laterally-extending flange to engage the flanges of the wick-tube, said flange having its corners rounded, substantially as described.

EDGAR J. BISSELL.

Witnesses:

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J. E. GREFFET.