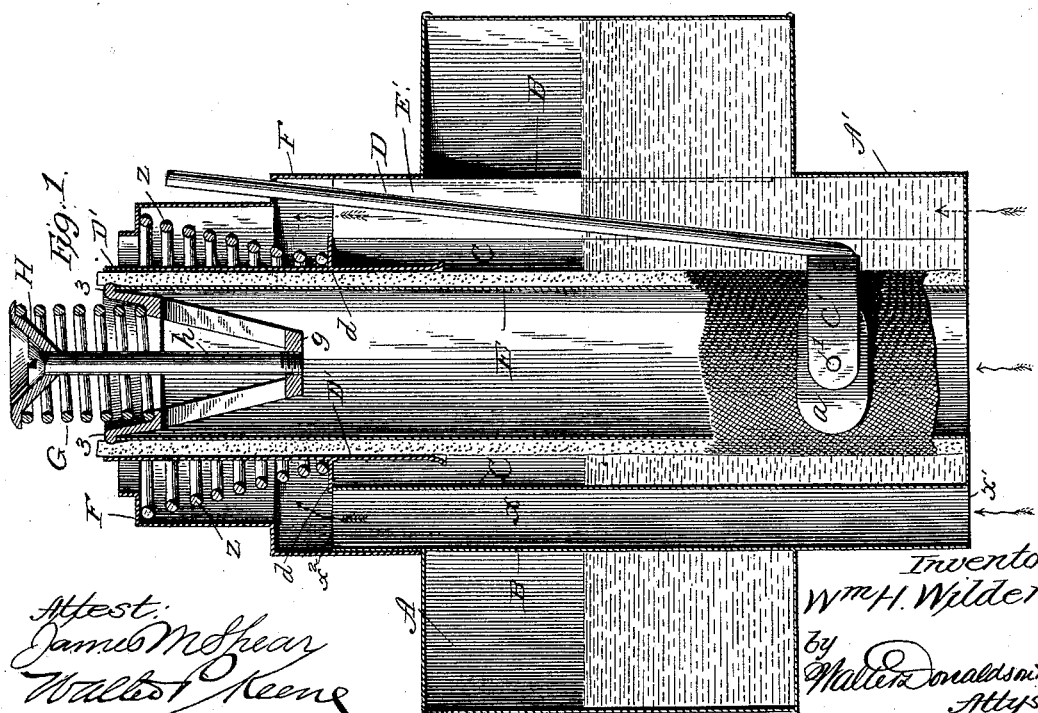
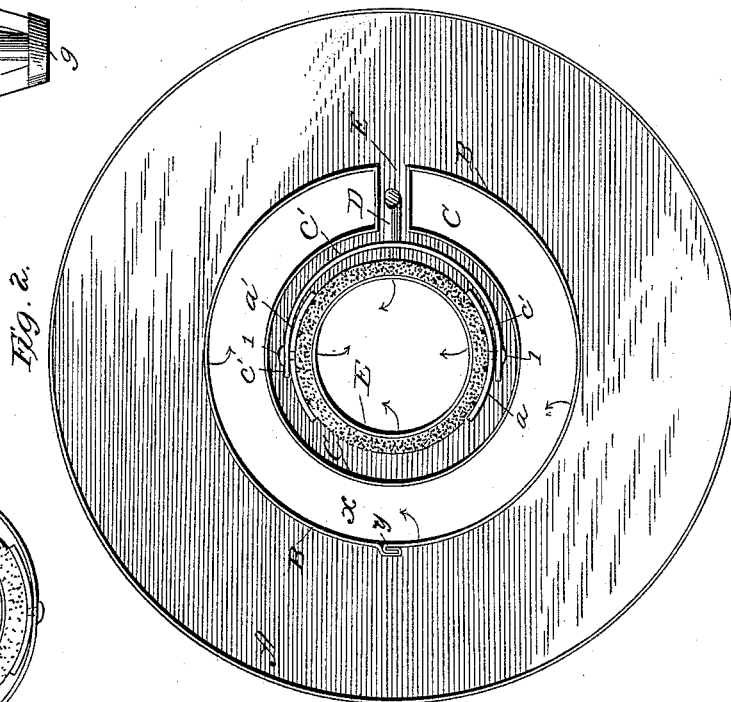
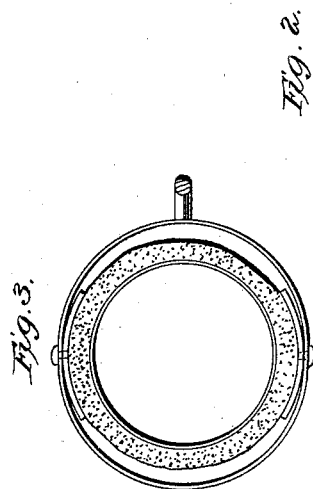
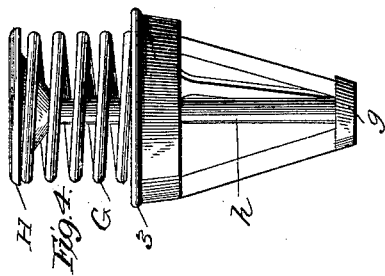


(No Model.)

W. H. WILDER.
LAMP.

No. 417,964.

Patented Dec. 24, 1889.



Attest:
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UNITED STATES PATENT OFFICE.

WILLIAM H. WILDER, OF GARDNER, MASSACHUSETTS.

LAMP.

SPECIFICATION forming part of Letters Patent No. 417,964, dated December 24, 1889.

Application filed June 17, 1889. Serial No. 314,563. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WILDER, a citizen of the United States of America, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention includes the general construction and arrangement of the lamp-body and contained parts with a view to providing a draft within and outside of the wick-tube, and also to permit the employment of a draw-bar pivotally connected to the wick-raising shoe, in order that the upper end of said bar may move radially outward as it is raised. It includes, also, an automatically laterally-adjustable outer wick-tube with means for holding the tube in position; further, in an air-divider for the outside draft and also one for the inside draft, combined with a deflecting-button.

In the accompanying drawings, Figure 1 is a central section on line xx of Fig. 2. Fig. 2 is a plan sectional view. Fig. 3 is a detail of a modification, and Fig. 4 a view of the inner air-distributor.

In the drawings the body of the lamp is shown at A and the burner portion at F, the latter being formed imperforate. The body has a lower portion A', of smaller diameter, which constitutes an oil-well, into which the wick projects. The inside wick-tube E extends centrally upward from the bottom in substantially the ordinary manner. The inside wall B is arranged concentric to the wick-tube and extends vertically in line with the walls of the imperforate burner F. Within the inside wall and concentric thereto is the wick-pit wall C, a space x being left between for the outside draft, said space communicating through the port x' at the bottom of the lamp with the outside air and with the burner through the port x'' , so that a vertical draft is thus afforded outside the wick tube and pit and within the body of the lamp to feed the flame with oxygen and keep the parts cool, besides separating the main body of oil from the comparatively small portion surrounding the wick within the wick-pit.

The wick-raising device consists of a radially-movable draw-bar D.

Instead of a wick-sleeve, shoes a a' are used, adapted to engage the wick on opposite sides, for which purpose they may be provided with spurs. These shoes are under spring-pressure from a spring-yoke C', the arms c' of which extend on each side of the wick and are pivotally connected to the shoes by the projecting studs l . The wick is thus engaged with a yielding or gripping pressure, and the shoes can be easily removed and applied to a new wick when desired. The draw-bar D extends from the yoke in an inclined position upwardly and outwardly, passing through the wall of the burner at the top. When pulled upon, the upper end of said bar will move laterally and radially outward, and thus clear the burner, shade, and upper parts, the pivoted connection at the bottom allowing this action.

In a lamp constructed for obtaining the two drafts above mentioned—that is, with the wick-pit wall and inner wall B—it is necessary to make a special provision or construct the parts in a certain way to permit the employment of the radially-movable draw-bar, and this I accomplish by providing a radial chamber E', extending vertically, in which the draw-bar may work. This chamber extends radially from the wick-pit wall outward, and preferably it communicates with the main reservoir of the lamp and constitutes a channel through which the oil may pass to the interior of the wick-pit, thus answering a twofold purpose. Though this construction constitutes a part of my invention, I do not wish to be limited thereto, as it is only necessary, in order to answer the requirements for the employment of the radially-movable draw-bar, that a vertical chamber be provided in the wick-pit adapted to allow the bar lateral play; or, as shown by dotted lines in Fig. 1, the outer mouth of this channel may be closed, leaving only a small port at the bottom for the passage of the oil, thus preventing the passage of gas from the wick-pit into the body of the lamp.

The walls of the draw-bar chamber or channel serve to connect and support the wick-pit wall to the inner wall B of the lamp, and also

the inner wick-tube. The inner wall of the lamp and the wick-pit wall are made of one piece of stock joined at the lock-seam *y*. The outer wick-tube *D'* is preferably slightly flaring at its lower end, and is provided with a supporting-flange *d*, which rests loosely upon the upper edge of the wick-pit wall, by which arrangement the said tube may move slightly from side to side. It thus accommodates itself automatically to any variations or defects in the thickness of the wick, and consequently insures the steady, easy, and accurate guidance of the wick, at the same time insuring a uniform pressure thereon, for, should the wick be thicker at one point in its side than at another, the tube, instead of being rigidly maintained perfectly concentric to the inner tube, will move sidewise toward the thicker part of the wick on account of the pressure arising therefrom, and thus provide a larger space for the thicker part of the wick to pass.

Within the burner is an air-distributor *z*, consisting of the upwardly-flaring coil, which, as shown, is utilized as means for keeping the outer wick-tube down, it bearing for this purpose upon the horizontal flange. The inclined side of the coil is best adapted to break up and distribute the vertical draft through the outer passage *x*.

The burner and the outer wick-tube are made separate and removable, and when it is desired to take out the wick-raiser they must be first removed.

The air-distributor *G* for the inner draft consists of a ring cast with a flange around its upper edge and a tapering spider-frame depending therefrom, the bars thereof being connected at their lower ends by the small flat portion *g*. The inner wick-tube is slightly lower than the outer, and upon its upper edge the cast ring and spider-frame are supported by the flange *3*. This device serves to support both the distributor and the air-deflector. The former preferably consists of a coil which rests upon an interior flange located below the upper edge of the ring; or, instead of a flange, the upper inner ends of the arms of the spider may afford a bearing. In either case, however, the bearing must be inclined, and thus correspond to the lower coil of wire, so that the sides of the distributor will be perfectly vertical. The inner sides of the ring are flared slightly from the bearing-flange for the coil, so that a slight space exists between said coil and the ring above the bearing, and by reason of this the air is free to pass directly to the end of the wick and the beginning of the flame instead of above it. The deflector, composed of the inverted flanged cone *II*, rests upon the distributor, and is held by the screw-post *h*, extending centrally upward from the spider-frame, said deflector also having a spiral seat for the coil. It will be noticed that the cast ring and spider-frame, while furnishing secure support, do not obstruct the free passage of air to any

part of the flame. Especially is this advantage due to the tapering form of said frame, which presents little surface at the bottom to intercept the draft. The screw-post has a curved head, which bears upon the interior of the conical socket. All the elements are so combined in this distributor as to constitute one device removable as a whole. The ring fitted within the tube keeps the same in perfect form, and by inserting it any defects will be remedied by pressing the same to its seat. The distributor may be adjusted by the screw-post, and the same action effects the necessary change in the position of the deflector. The screw-post is easily accessible at its upper end, and the adjustment may be effected without removing the device.

A material advantage arises from the use of the flanged ring at the upper end of the wick. It is desirable, of course, to have the wick loosely fitted between the wick-tubes for ease of movement, and also that the wick be closely surrounded at the top or burning-point. By the use of the flange both of these results are obtained, as the wick may fit loosely within the wick-tubes throughout their entire length and still be closely confined at the upper end by the flange of the ring, which is rounded and projects over the inner tube.

In Fig. 3 the yoke-connection between the draw-bar and shoes is shown as continued to form a ring.

I claim as my invention—

1. In combination with a double-draft lamp having outside lamp-body *A* and inner wall *B*, inner wick-tube and wick-pit shell *C*, having a radial vertical chamber, and a draw-bar for the wick, said draw-bar having lateral or radial as well as upward movement through the said vertical chamber and extending from the interior of the wick-pit outwardly through the lamp, substantially as described.

2. In combination, the outer body, the inner wall *B*, the wick-pit shell, the vertical connecting-walls between the wick-pit shell and the inner wall, and the radially-movable draw-bar between the walls, said walls forming an oil-conduit, the wall across the outer end of said conduit extending to near the bottom of the lamp, substantially as described.

3. In combination, the wick-tube and wick, the shoes on each side, a single draw-bar, and a spring-yoke connecting said draw-bar with the shoes, said yoke being pivoted to the shoes, substantially as described.

4. In combination with the round burner comprising the cylindrical inner wick-tube, the round outer wick-tube automatically adjustable laterally, substantially as described.

5. In combination, the round inner wick-tube, the laterally-movable round outer wick-tube having a supporting-flange resting loosely upon its support, whereby lateral movement of the tube is permitted, and means for holding the said wick-tube against upward movement, substantially as described.

6. In a lamp having a central and outside

draft, the wick-pit shell, the inner wick-tube, and the outer wick-tube, said laterally-movable outer tube being supported loosely by the wick-pit shell, to permit lateral movement, substantially as described.

7. In combination, the inner wick-tube, the laterally-movable outer wick-tube, and the outer air-distributor engaging said outer wick-tube for holding the same down, substantially as described.

8. In combination with a lamp having an outside draft, an outer tube having a flange, an outer air-distributor surrounding the wick-tube and resting upon the flange, the sides of said distributor inclining outwardly and upwardly from the lower end and diagonally across the outer air-space.

9. In combination, the inner and outer wick-tubes, the latter being laterally and automatically adjustable, and means for holding the outer wick-tube rigidly against vertical movement, substantially as described.

10. In combination, the coil, the support therefor, adapted to be seated within the inner tube, the vertical post extending upwardly from said support through the coil, and a deflector independent of the post, having a central opening and surrounding the vertical post with its under face bearing upon the coil, said post having an adjusting-head at its upper end bearing upon the deflector, substantially as described.

11. In combination, the air-distributor, as the coil, and the ring for supporting the same, the said ring having an interior bearing for

the distributor and outwardly-flaring inner sides above said bearing, substantially as described.

12. In combination, the air-distributor, the support therefor, consisting of the ring, the vertical post having a deflector at its upper end, and means for supporting the post centrally, consisting of the spider-frame extending downwardly from the air-distributor supporting-ring, substantially as described.

13. In combination, the air-distributor, the supporting-ring therefor, the central vertical post having a deflector at its upper end, and means for supporting said post, consisting of the spider-frame extending downwardly and tapering toward the central post, substantially as described.

14. In combination, the inner and outer wick-tubes, the wick fitted loosely between them, and the ring supported at the upper end of the said tubes and having a flange projecting into the space between them, substantially as described.

15. In combination, the central vertical post, with a deflector and a support for said post, consisting of the spider-frame depending from the upper part of the tube and tapering, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. WILDER.

Witnesses:

HERBERT D. BURNHAM,
HATTIE GATES.