No. 647,745. Patented Apr. 17, 1900.

E. D. ELDRIDGE & K. M. SMITH.

LAMP.

(Application filed July 31, 1899.)

(No Model.)

Fig. 1.

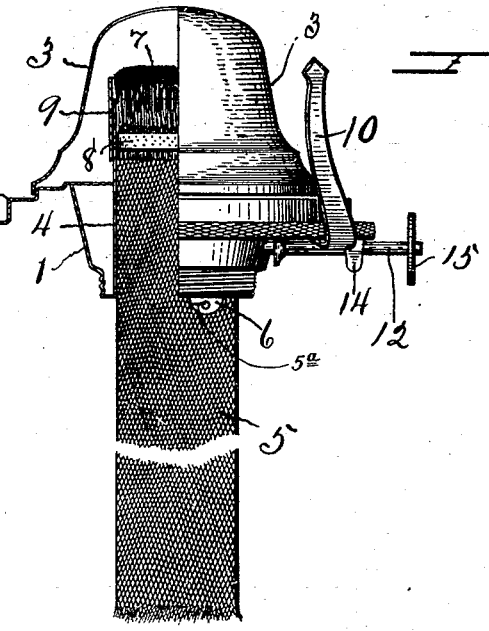


Fig. 4.

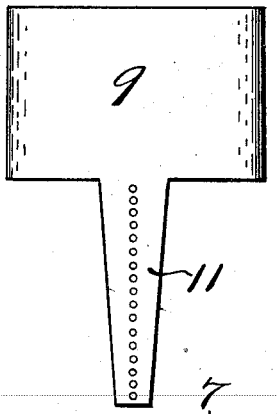


Fig. 3.

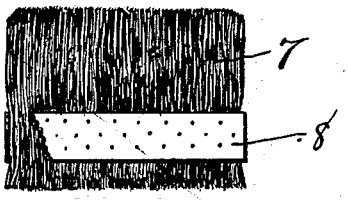
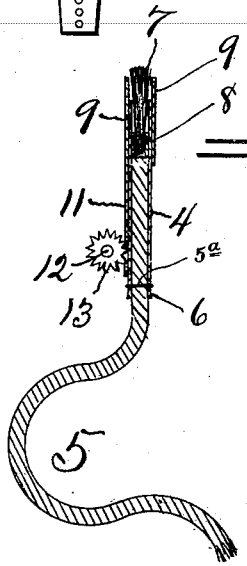


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD D. ELDRIDGE AND KIAH M. SMITH, OF STOCKTON, CALIFORNIA.

LAMP.

SPECIFICATION forming part of Letters Patent No. 647,745, dated April 17, 1900.

Application filed July 31, 1899. Serial No. 725,576. (No model.)

To all whom it may concern:

Be it known that we, EDWARD D. ELDRIDGE and KIAH M. SMITH, citizens of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Lamps; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to certain new and useful improvements in lamps, and more particularly to that portion devoted to the production of the light; and our object is to furnish a lamp which will be more durable and cheap, non-explosive, and which will produce a more perfect and uniform light as adjusted. This we accomplish by the use of a burner of common external appearance having a wick-tube, one or more wicks tightly inserted in the lower portion of said tube and extending downwardly without the burner, a burning-tip of suitable material inserted in the top of said wick-tube, and a sleeve inserted over the top of the wick-tube, and such other devices and combination of devices as will more fully appear in the following specification and be particularly pointed out in the claim hereunto annexed, reference being had to the accompanying drawings for a better understanding hereof, in which—

Figure 1 is a side elevation of our improved burner, partly in section. Fig. 2 is a sectional view of the wick-tube, wick, burning-tip, sleeve, and its controlling mechanism detached from the remainder of the burner. Fig. 3 is a detached enlarged view of the burning-tip, showing the preferred manner of securing it in shape. Fig. 4 is a detail view of the sleeve removed from the wick-tube and showing the perforations for the engagement of the cog or spur wheel.

Similar figures of reference indicate corresponding parts in the several views.

1 represents the bottom or portion of a lamp-burner which is inserted in the opening of the bowl of a lamp. (Not shown.)

2 represents the perforated base mounted on the bottom 1, on which base 2 the slotted cap 3 is attached in the usual way. To the base are attached the usual chimney-retainers 10 at suitable points on the periphery thereof.

A wick-tube 4, of sheet metal and the usual shape and relative size, is rigidly inserted vertically in the casing 1 2. One or more wicks 5 of ordinary construction have their ends tightly inserted in the said wick-tube 4, occupying about one-half of the lower portion of the same. The free ends of said wicks 5 are adapted to communicate with the oil in the lamp, as in ordinary cases, said wick being permanently held in position in wick-tube 4 by threads or wires 5^a, inserted in lugs 6, which are attached to the lower end of the said wick-tube 4.

A burning-tip composed of a non-combustible material 7, preferably asbestos, held in union by a sheet-metal band 8, surrounding the same near the base thereof and having indentations therein which impinge upon and maintain the fibrous material more tightly in position, is removably inserted in the top end of the wick-tube 4, the lower end of said tip 7 being in engagement with the top end of the permanently-secured wick 5 and the upper end protruding a suitable distance above the top end of the wick-tube 4, sufficient to permit the same to be ignited when saturated with kerosene.

A flame-regulating sleeve 9 of similar shape in cross-section to the wick-tube 4 loosely surrounds the top end of said wick-tube 4 and has a downwardly-extending perforated arm 11 attached to one side thereof.

A rotating shaft 12 is suitably journaled in the bottom 1 at one side of the wick-tube 4 and is provided with a spur or cog wheel 13, which is rigidly attached to the same at or near the center of the burner, said wheel 13 being adapted to engage with the arm 11 by reason of the perforations therein aforesaid. The shaft 12 has a stop or lug 14 rigidly attached at a suitable point thereon for the purpose, as will be shown. A thumb-wheel 15 is attached to the outer end of the shaft 12 for the manipulation of the sleeve by means of the wheel 13 and shaft 12.

The mode of operating our improved lamp is as follows: The wick 5, which may be composed of one or more wicks, such as are in com-

mon use, is tightly inserted in the lower end of the tube 4 and occupies about three-fourths of the length of said tube 4, to which it is permanently connected. The tip 7, having the band 8 to hold it in shape, is then inserted in the top of said tube 4 and pressed downwardly until the lower end thereof engages with the top end of the wick 5. The tip 7 is constructed to that length, so that while in engagement with the top of the wick 5 the top end will be slightly above the top end of the tube 4. The sleeve 11, having been placed in position over the tube 4 and in engagement with the wheel 13, may be raised or lowered at will by the operator by means of the wheel 15 and shaft 12. The upward movement of the sleeve 11 is limited by the stop 14 engaging with the base 2 of the burner. By raising the sleeve 11 the flame is diminished, and vice versa.

When the tip 7 8 becomes crumbled or otherwise impaired, it may be replaced by another without in any way disturbing the permanently-secured wick 5. The burner is placed on a lamp-bowl and supplied with a chimney in the usual manner.

The advantages of our invention are that the wick 5 being drawn tightly in the tube 4 no gas is generated from the oil that is not consumed immediately, and consequently there is no perceptible odor caused by the burning process of our lamp, that by the use of a burning-tip 7, composed of non-combustible material, such as asbestos, which we preferably use, little or no expense is required for keeping the burner in order, and that by the use of the sleeve 11 and tip 7 a more uniform and brilliant light is produced, the flame remaining as regulated by reason of the density and compactness of the wick 5, thereby supplying oil enough only for the consumption of the flame. It will also be observed that the tip 7, which is the only part of the burner subject to deterioration, may be readily removed and replaced with a new tip without disturbing any other part of the burner.

We are well aware that the combination of a wick-tube, a short tube arranged within the wick-tube, a common wick extending up into and permanently connected by sewing to the short tube, and a filling of asbestos in the short tube above the common wick is old, as shown in the patent of one Larchar, No. 39,153, of July 7, 1863. We are also aware that it is old, as shown in the patent to Burklin, No. 602,391, of April 12, 1898, to surround the contiguous end portions of a common wick and a non-combustible tip with a metallic band, which permanently connects the same together. We therefore make no claim to the constructions mentioned; but

What we claim, and desire to secure by Letters Patent, is—

In a lamp, the combination of a burner having a wick-tube, a wick occupying and permanently secured in the lower portion of the wick-tube, the burner-tip comprising a body of non-combustible material and a metallic band surrounding the body; the said tip being arranged in the upper portion of the tube so that its lower end contacts with the upper end of the wick and being removable as a whole from the tube, independent of the wick, and a sleeve loosely surrounding and adjustable on the wick-tube, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD D. ELDRIDGE.
KIAH M. SMITH.

Witnesses:
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JOSHUA B. WEBSTER.