

J. ADAIR.

Lamp.

No. 45,805.

Patented Jan. 10, 1865.

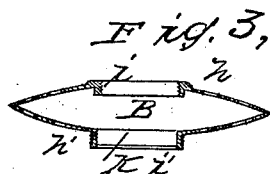
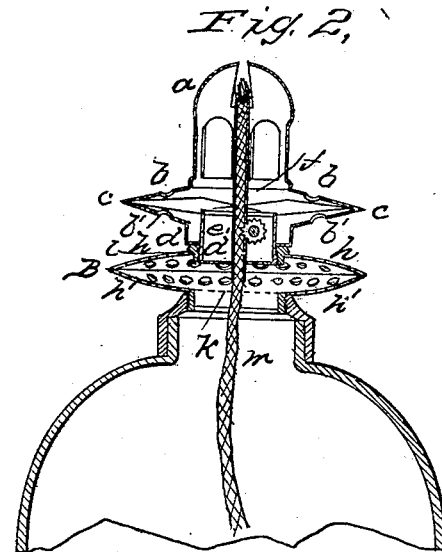
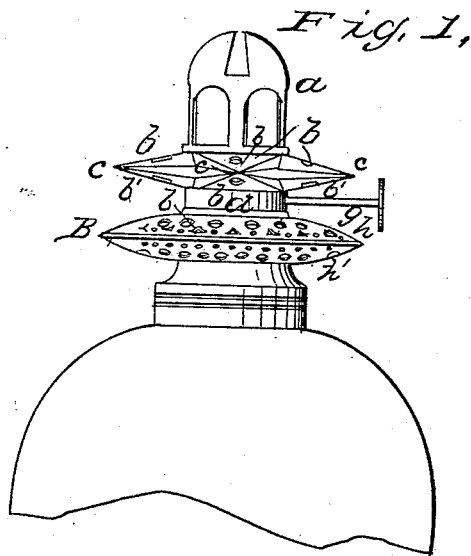


Fig. 5,

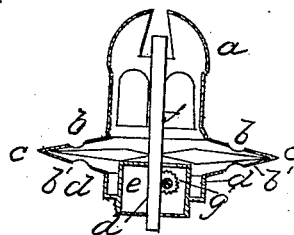
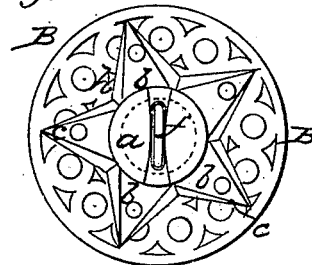


Fig. 4,



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UNITED STATES PATENT OFFICE.

JAMES ADAIR, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. 45,805, dated January 10, 1865.

To all whom it may concern:

Be it known that I, JAMES ADAIR, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the upper portion of a lamp in which the cone and wick-tube are insulated from the neck of the lamp. Fig. 2 is a diametrical section through Fig. 1. Fig. 3 is a vertical section through the cooler or insulator for the entire burner. Fig. 4 is a top view of Figs. 1 and 2. Fig. 5 shows a mode of insulating the cone from the wick-tube.

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

The object of my invention is chiefly to insulate the burners of lamps in a more perfect and practical manner than hitherto and to prevent, as far as possible, the rapid volatilization of the oil in the lamps in consequence of the intense heat which is necessary to support combustion.

My invention also has for its object the construction of insulators or coolers for the burners of lamps in such manner as to serve also as a means by which the heated burners can be safely grasped with the hand and removed from the lamp or applied thereto, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, *a* represents the hood or slotted "cone" of a burner, which may be constructed in the usual or any other suitable manner, with perforations or openings through its sides as occasion may require. The base of the cone *a* is secured to or has formed on it a star or other shaped concavo-convex flange, *b*. This flange *b* may be formed on the cone in the operation of stamping the latter into shape. Corresponding to the flange *b* is a flange, *b'*, which may be formed on or attached to the screw-cup *d* in any convenient manner, and which is connected, either directly or indirectly, at its circumferential edges or points *c c c* to the corresponding edges of the flange *b*, as shown clearly in Figs. 1, 2,

and 5. The screw-cup *d* has a male screw thread cut on its reduced neck *d'*, by which the burner can be secured to the cap of a lamp. Within the burner thus formed is a box, *e*, through which the vertical wick-tube *f* passes, and to the upper and lower ends of which this tube is secured, as clearly shown in the sectional views, Figs. 2 and 5. The spindle *g* of the spur-wheels *g'*, for raising and lowering the wick, passes transversely through the cup *d* and box *e*, and the mode of adjusting the wick is common to lamp burners of the present construction.

By the interposition of the hollow double-convex box or "cooler" between the cone *a* and the cup *d* or lower portion of the burner, the heat of the cone will be conducted from its base outward by the open cooling-flange *b* and dissipated before reaching the base of the burner. This result might be effected by using a straight tube having the same amount of cooling-surface as that of the flattened cooler which I have described, but it is evident that such a burner would be very unsightly on account of its length, and also that the oil in the lamp would be very imperfectly conducted up to the point for its combustion.

By my disk-coolers the air can pass directly up through them outside of as well as inside of the burner, and such coolers can be made to effect a perfect dissipation of the heat of the cones before it reaches the base of the burner without elevating the cone but very slightly.

In the case of a star-formed cooler the air can enter it at all sides, both vertically and horizontally, or by making the coolers of a circular, skeleton, or ribbed form the same result will be produced.

If desirable, some suitable non-conducting medium may be interposed between the contiguous edges of the two plates *b* and *b'*, but when these plates are properly perforated or opened this will not be necessary, as they will always be found to be sufficiently cool to be safely grasped by the hand.

In Figs. 1 and 2, I have represented a burner applied to a lamp wherein not only the cone *a* but the wick-tube is insulated and the heat prevented from being conducted to the lamp-cap or body of the lamp. In this case the wick-tube *f* and a portion of the wick at its lower end are exposed to cool currents of air

entering through a second cooler, B, which may be constructed in all respects like the cooler for the cone *a*, which is arranged above it. This cooler B represented in the drawings may be perforated or not, as circumstances require, and it may be constructed of two portions, *h h'*, having a central opening through each one. The portions *h h'* are dished and united together at their edges in any suitable manner to form the hollow figure represented in Figs. 2, 3, and 4. The opening through the center of plate or portion *h* is surrounded by a female screw, *i*, for receiving the male screw on the neck *d'* of the burner, Fig. 5, and the opening through the portion *h'* has a screw-cup, *k*, secured to its surrounding edges, which cup is screwed within the cap of the lamp, as shown in Fig. 2. The slotted opening *i** through the bottom of the cup *k* allows the wick *m* to pass down into the body of the lamp. The wick-tube *f* extends below the bottom of the burner of Fig. 5 only a short distance; hence it will be seen by reference to Fig. 5 that a portion of the wick *m* within the cooler B is exposed to the currents of air which circulate through this cooler, and consequently the heat of the wick-tube will not be conducted into the body of the lamp through this channel.

By constructing the cooling-disks B with the male and female screw-threads, as described, a number of them can be brought together and applied to a lamp, the burner being screwed to the uppermost one of the series.

These flattened or skeleton disk-coolers should be made of sufficient strength to serve

as a brace or guard, by means of which the burner can be applied or removed from the lamp by grasping them in the hand, which can be done in all cases, whether the lamp be burning or not, without danger of burning the hand.

The coolers can be made of different materials, and so as to present a highly ornamental appearance, and glass or other ornamental pendants can be attached to their outer edges.

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

1. The construction of the screw *k i*, with a flattened, spheroidal, or lozenge shaped chamber, B, about it, substantially in the manner and for the purpose described.

2. Making the spheroidal chamber of open work or perforated plates, substantially in the manner and for the purpose described.

3. Constructing the spheroidal or lozenge-shaped chamber of the cone *a*, with a screw, *d'*, box *e*, wick-tube, and wick-adjuster, substantially in the manner and for the purpose described.

4. The combination of two or more spheroidal or flattened chambers, substantially in the manner described.

5. The combination of my specified insulator with a lamp, substantially in the manner and for the purpose described.

JAMES ADAIR.

Witnesses:

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