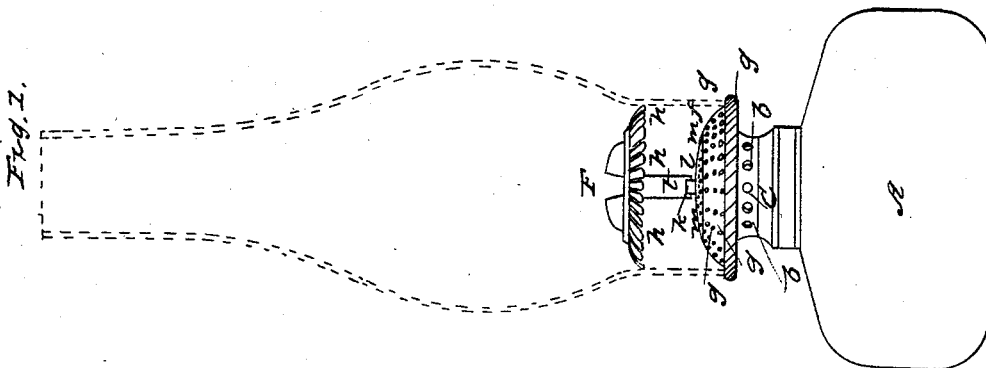
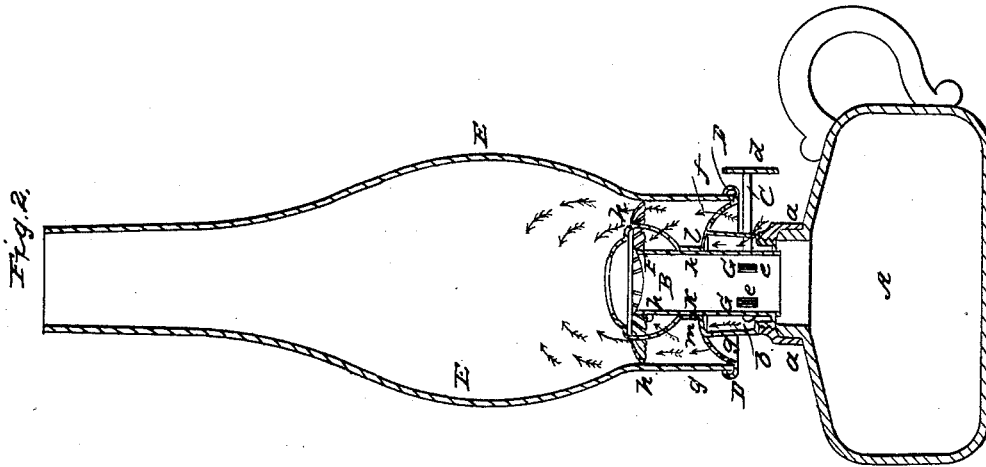
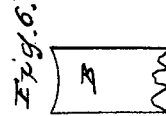
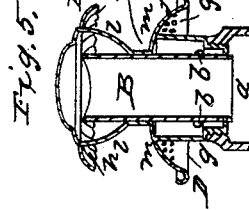
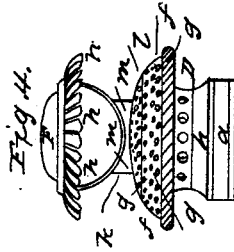
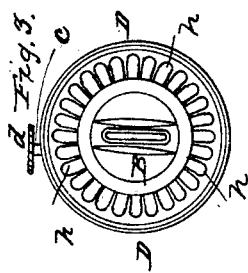


M. H. COLLINS.

Lamp.

No. 49,984.

Patented Sept. 19, 1865.



Witnesses:  
*C. P. Holife*  
*Frederick Carter*

Inventor:  
*Michael Collins*

# UNITED STATES PATENT OFFICE.

MICHAEL H. COLLINS, OF CHELSEA, MASSACHUSETTS.

## IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. 49,984, dated September 19, 1865.

*To all whom it may concern:*

Be it known that I, MICHAEL HENRY COLLINS, a resident of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Improved Lamp; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, and Fig. 2 a transverse section, of the said lamp. Fig. 3 is a top view, and Fig. 4 a side elevation, and Fig. 5 a transverse section, of its cone or deflector and the supporter thereof. Fig. 6 is a side view of the upper part of the wick-tube, and shows the cone arc form thereof.

The main purposes of my invention, or the principal part thereof, are not only to keep the glass chimney of the lamp, or, in other words, the lower part of such chimney, in a cool condition, so that a person by taking hold of such part with his hand can readily remove the chimney from the rest of the lamp, but to support the chimney without the use of a spring-catch and devices such as are ordinarily used.

In the drawings, A denotes the lamp body or reservoir for holding the kerosene-oil or fluid used for combustion. B is the wick-tube, which passes up through, is supported by, and fastened to a cup, C, which is screwed into the cap *a* of the lamp-body. The sides of the cup, where they rise above the screw by which the cup is connected with the cap *a*, are perforated or provided with air-inlets *b b b*. A shaft, *c*, goes through the cup, and not only carries a milled button, *d*, on its outer end, but has two spur-wheels, *e e*, which enter the wick-tube and the wick and serve to either elevate or depress the latter.

An air-induction annular plate or chimney-rest, D, formed as shown in the drawings, encompasses and extends from the top of the cup C, the outer edge of the said rest being turned up, so as to form a channel for the reception of the foot of the glass chimney E. Furthermore, the part *f* of the chimney-rest, which is within the chimney, is bell-shaped or curved, and foraminous or provided with a series of air-inlets, *g g*, so arranged as to cause air, when the lamp may be in use, to rush through them and against the inner surface of the lower portion *i* of the chimney preparatory to such air being carried into and through the umbellifer-

ous cone or deflector F, which surrounds the upper part of the wick-tube, and is arranged above the cup C, and so as to extend out, or nearly out, to the chimney, in manner as shown in the drawings.

The umbelliferous cone or deflector has a series of air passages or slits, *h h h*, arranged in it from or near to its edge, and besides such cone or air-deflector is supported by means of curved arms *tt*, extending upward from a short tube, *k*, which is attached to and encompassed by a circular disk or plate, *l*, that constitutes a cap or top to the cup C, the said plate *l* being perforated with air-holes, as shown at *m*. The tube *k* encompasses and fits upon the wick-tube, and serves to give support to the deflector, which also, in turn, aids in supporting the chimney or prevents it from falling from the rest D.

The lower part of the chimney, or that portion *i* which extends from the deflector to the chimney-rest D, is constructed tubular and cylindrical. Above this part the chimney bulges out, and finally is contracted to its top in manner as shown in the drawings. Besides making the cone or deflector F with radial slits *h h*, extending inward from its periphery, as shown in Figs. 3 and 4, each of the parts between each two slits is curved downward, as shown in Figs. 2, 4, and 5, and should be made elastic or as a spring, so as to be capable of being sprung downward. This enables the deflector to fit closely to a chimney or to adjust itself thereto. It is difficult to form or make two glass chimneys exactly alike, for there will be small diametric as well as other differences, and therefore it becomes desirable to have the metallic deflector F so constructed that it will readily adapt itself to or fit to different chimneys of the kind shown by Fig. 1 of the drawings, for unless there be a close fit of such deflector to the interior surface of any such chimney used on it the chimney will not be properly supported by it. To obtain this support of the chimney, as well as for other purposes, I make the deflector with the peripheral springs and with the slits or air-passages between them.

From the above it will be seen that while the lamp is in operation the air for the flame of the wick will enter the lamp by the orifices *b b* and *g g*. The portions of air which may pass through the orifices *b b* will enter the cup C, and by

impinging against that part of the wick-tube which is within the said cup will abstract from it much if not all the heat which may be conducted from the flame by the wick-tube, and, consequently, by reason of this abstraction of heat the lower part of the wick-tube will be maintained at a very low temperature and often quite cool. After having performed the office of abstracting heat from the wick-tube, the currents of air which may flow into the cup C will rise and flow out of the cup, or, in other words, will escape therefrom through the holes *m m* of its cap or cover *l*, and from thence will pass into the cone or air-deflector F and to the flame at the top of the wick. Furthermore, in consequence of the bell-shaped form of the chimney-rest, the current of air which may flow through the holes *g g* of such chimney-rest will be caused to impinge against the inner surface of the cylindrical part *i* of the chimney, in which case these aerial currents will abstract heat therefrom, and keep the chimney or the part *i* thereof in a cool state or at such a low temperature as to enable it at any time to be seized between the thumb and forefinger of a person's hand without burning it when it may be desirable to lift the chimney off its

rest. The aerial currents, after having thus impinged against the chimney, will flow upward, portions of them going into the deflector and other portions going through its orifices *h*, and from thence to that part of the flame which may project above the deflector.

Having thus described my improved lamp, as made with the cone or deflector separate from the chimney and having the latter extending around and projecting below the said cone and resting on a perforated support, D, I claim—

The improved lamp as not only constructed with its cone or deflector F and its chimney-rest D and chimney arranged with respect to each other, as described, but as having the said deflector provided with peripheral springs, or the same and the slits *h h*, and the said rest D made concavo-convex, and provided with an annular groove or lip at bottom for supporting the chimney, the whole being substantially as described and represented.

M. H. COLLINS.

Witnesses:

R. H. EDDY,

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