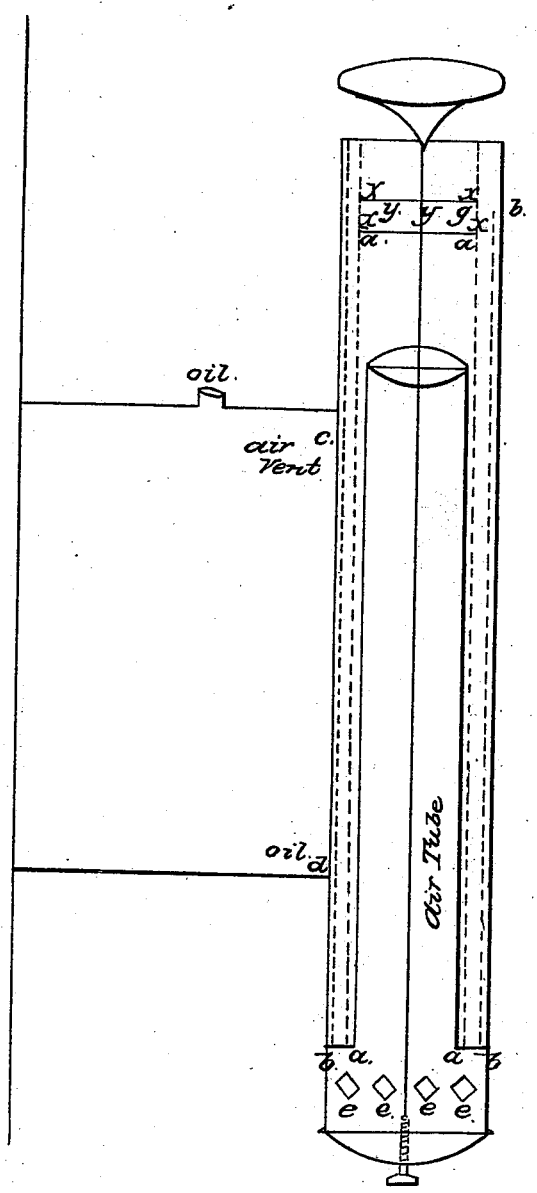
J. MACLEAN.

Lamp.

No. 4,326. Patented Dec. 26, 1845.



UNITED STATES PATENT OFFICE.

JAMES MACLEAN, OF PHILADELPHIA COUNTY, PENNSYLVANIA.

WICK-TUBE FOR CAMPHENE-LAMPS.

Specification of Letters Patent No. 4,326, dated December 26, 1845.

To all whom it may concern:

Be it known that I, JAMES MACLEAN, of the county of Philadelphia and State of Pennsylvania, have invented a new and improved mode of constructing burners and accompanying tubes of lamps used to burn camphene-oil or other volatile substances be the shape or construction of such lamps what it may.

The nature of my invention consists in so constructing and applying the tubes and the burners of the lamps adapted or used for burning camphene or other volatile substances as to obviate in a great measure if not entirely the unpleasant effluvia and noxious fumes occasioned in the use of these lamps constructed in the ordinary mode. The metallic tubes in the latter between which the wick is raised and lowered become heated by the flame of the lamp and thereby cause an unnecessary evaporation of portions of the liquid. This heat moreover dries the wick, occasions upon it a deposit of resinous matter, impairs its capillary powers, gums at the flame, and thereby greatly diminishes the utility of the lamps in question.

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

Instead of the metallic tubes commonly made use of which contain the wick, or between which the wick rests and is raised or lowered I use two tubes of wood, horn, china or any other substance which is a nonconductor of heat. Thus in the annexed drawing which represents a section of the column or tube of a lamp, *a a a a* and *b b b b* are the two tubes of nonconducting material: the wick is put upon the inner tube *a a a a*, and thus rests, and rises or lowers between *a a a a* and *b b b b*.

c is the air vent to the wick.

d is the passage through which the camphene or other combustible liquid passes from the fountain to the wick, running through the perforation *d* in the outside metallic tube or column and the tube *b b b b* and thus reaching the wick.

The nonconducting tube *a a a a* is at the top fastened upon a metallic ring *x x x x* with pins as at *y y y* or otherwise at the option of the mechanic be such mode of fastening what it may.

At *e e e e* are holes for supplying the current of air inside of the flame through the column in which the wick is contained as in ordinary lamps for camphene &c.

The tubes *a a a a* and *b b b b* are for greater clearness drawn in red ink in the annexed drawing or section.

By this contrivance the oil or camphene is insulated or separated from the metallic substance of the lamp, instead of being connected therewith as is usually the case; and as no heated body extends down from the flame into or in communication with the fluid the heating of the fluid with its consequent evaporation and other ill effects is avoided.

At the top of the nonconducting tubes is a cap or portion of or adaptation to each of the said tubes or a continuation or prolongation of them made of tin or other metal about a half inch in length which prevents the communication of fire to the nonconducting tube and is at the same time less likely to be injured by the combustion for which the lamp is intended.

What I claim as my invention and desire to secure by Letters Patent is—

The use or substitution of tubes made of a material which is a nonconductor of heat instead of the ordinary metallic tube, between which the wick works up and down— and also the protection of the nonconducting tubes by the cap or prolongation in metal. I do not claim any particular form of lamp but simply the application of tubes of a nonconducting material and the protection of such tubes from the effects of the flame of the lamp. The tubes in question may be applied to lamps of every shape and construction and my claim is intended to cover such application.

JAMES MACLEAN.

Witnesses:

CONSTANT GUILLOUX,

T. A. GUILLOUX.