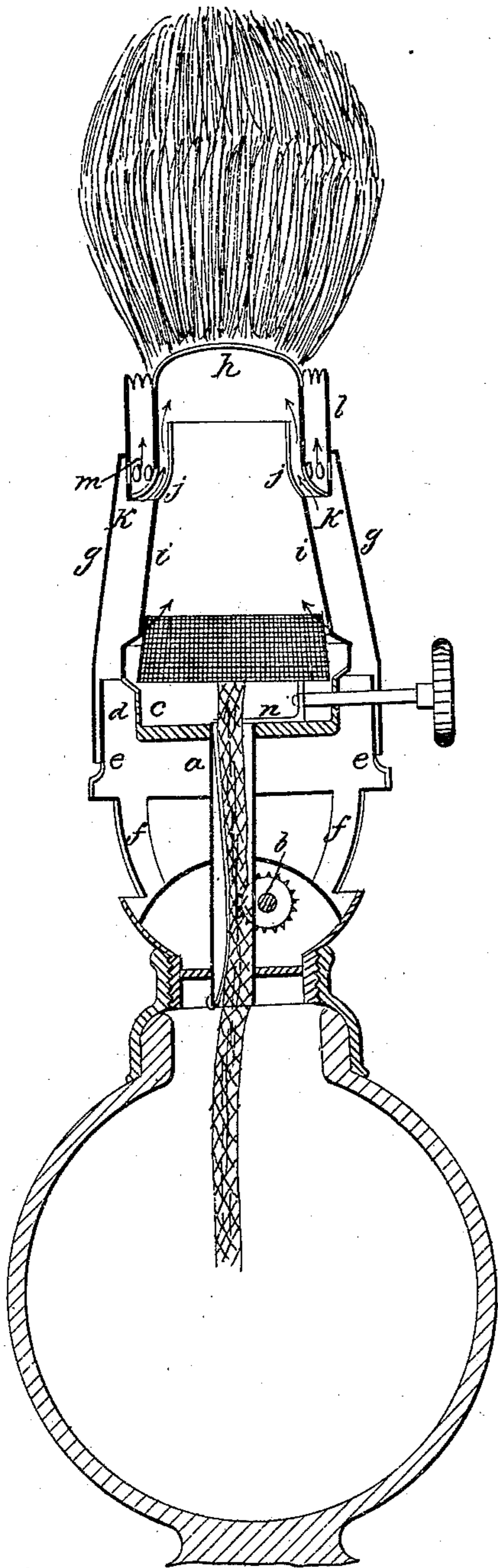


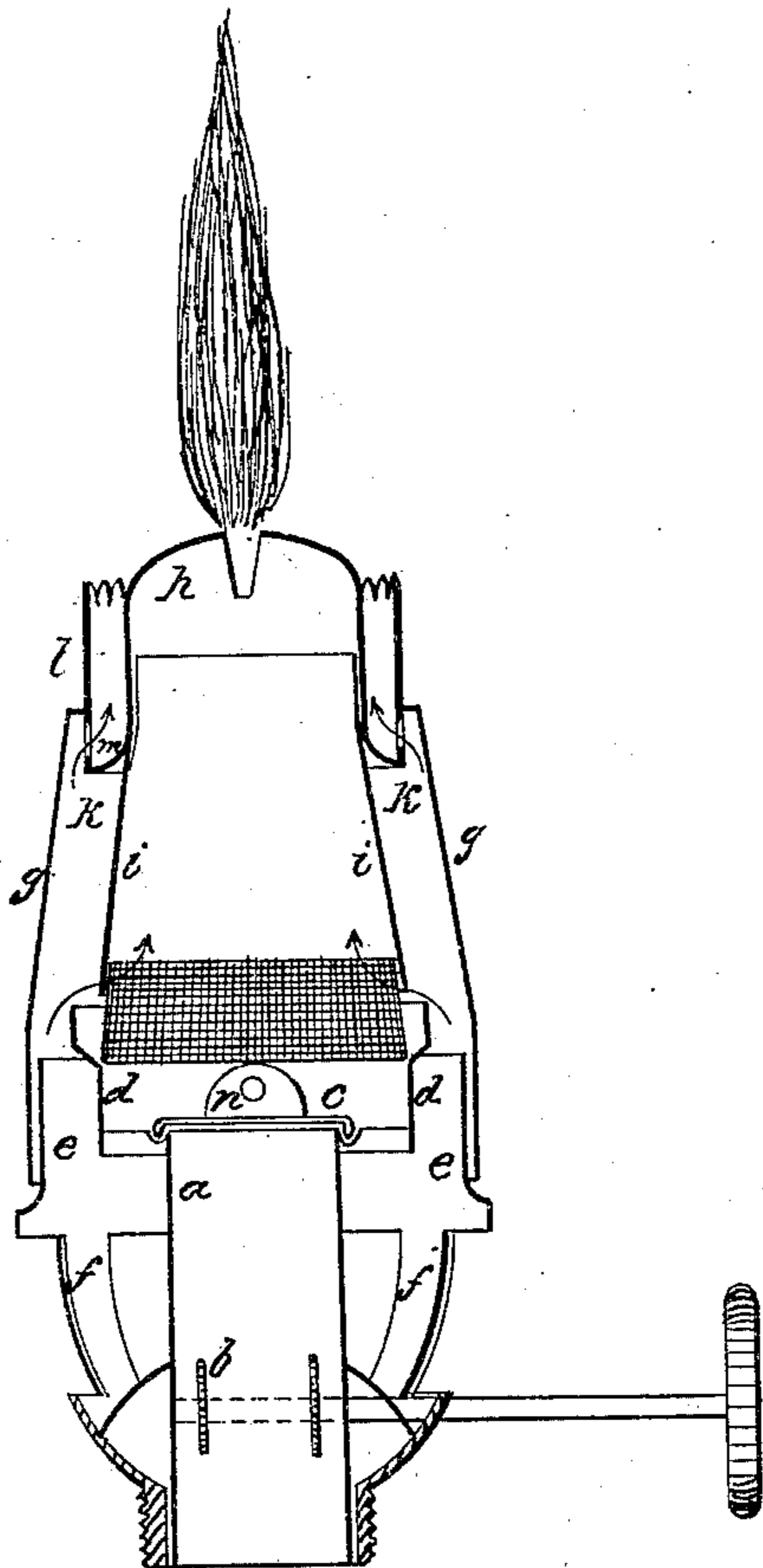
C. C. COE.
Lamp Burner.

No. 32,808.

Patented July 9, 1861.



John Clark
Joseph Pulley



Inventor:
C. C. Coe.

UNITED STATES PATENT OFFICE.

CARLOS C. COE, OF ROME, NEW YORK, ASSIGNOR TO HIMSELF AND GEO. S. COTTMAN, OF ROME, NEW YORK.

VAPOR-LAMP.

Specification of Letters Patent No. 32,808, dated July 9, 1861.

To all whom it may concern:

Be it known that I, CARLOS C. COE, of Rome, Oneida county, in the State of New York, have invented certain new and useful
5 Improvements in Lamps; and I do hereby declare that the following is a full and correct description thereof, reference being had to the annexed drawings, making a part of this specification, and to the letters
10 of reference thereon.

My said improvements are especially adapted to the burning of hydrocarbon oils such as are now generally burned in the Dietez and other chimney lamps.

15 The drawings illustrate my invention Figures No. 1 and No. 2 being opposite cut sections of a burner to be screwed into any suitable fountain and to be used without a glass chimney.

20 Letter, *a*, represents a wick tube provided with the usual friction wheel for elevating and depressing the wick, *b*, but which is inclosed as shown to prevent the escape of gas. The upper end of the wick tube terminates in a cup or pan *c*, having sides, *d*, to
25 prevent the overflow of oil brought up on the wick and for other purposes hereinafter explained.

Letter, *e*, represents an outer casing concentric with the sides, *d*, of the wick cup and supported by the arms, *f*. Letter *g*, represents also an outer casing of conical form made to fit over the case, *e*. This outer case terminates in the burner, *h*, in
35 which is a slot for the issue of the gas to supply the illuminating flame.

Letter, *i*, represents an inner cylinder or casing fitted at the lower end to the inner surface of the sides of or casing fitted to the
40 cup. It is pervious at the lower end or the part next to the cup and extends up into the burner being fitted to it except at points opposite the middle of the slot say at, *j*, when it is sprung a little forming a groove or
45 passage between itself and the side of the burner for the admission of air to the inside of the burner from the annular passage, *k*, between the outer and inner cylinders, *g*, and, *i*.

50 Letter *l*, represents a fender surrounding the burner for the purpose of preventing accidental currents of air from unduly affecting the illuminating flame and also to protect and direct a current of air which
55 induced by the heated surface of the cup

and inner cylinder passes upward between the inner and outer casing and issues into the space between the sides of the burner and the fender through the holes, *m*.

The inner case or cylinder, the burner 60 and the conical outer cylinder and fender are attached to each other at the base of the burner or cup and the whole is removable for the purpose of getting at the wick to light it. 65

Letter, *n*, is a sliding valve for the purpose of conveniently removing crust from the wick, and operating as a damper when pushed over the end of the wick tube thus preventing the escape of vapors from the 70 lamp when extinguished.

Letter, *o*, is a spring in wick tube having a crook just opposite the friction wheel for the purpose of making the wick feeding apparatus self adjusting to different sizes of 75 wicks.

The operation of the lamp is as follows: The wick being lighted is elevated so that the top is about on a line with the top of the sides of the cup or pan, *c*, the sides of the 80 wick are unprotected by a wick tube within the cup and therefore oil brought up from the fountain on the wick flows from it into the cup and becomes ignited, making a hot fire, and raises the temperature of the cup 85 gradually to a point sufficient to vaporize the oil, when the flames retreat from the lower part of the cup and are confined to the upper edge of the cup, surrounding the wick with an annular flame. Comparatively 90 small amount of air is admitted through the pervious lower part of the inner cylinder being only sufficient to support such a degree of combustion as necessary to generate sufficient heat to eliminate the mixture of 95 hydrocarbon gases produced by the operation in sufficient quantity to supply the burner to which they ascend. The heat radiated from the gas generating cup and the continuing casing induces a rapid current of air which passes upward between 100 the inner and outer casing and issues into the annular space or passage between the fender and outside of the burner and passing upward in this form prevents the gases 105 issuing from the burner from escaping into the surrounding air by inclosing them in an annular current of atmospheric air which supplies oxygen to the illuminating flame. A small quantity of atmospheric air is ad- 110

mitted to the inside of the burner for the purpose of mixing a portion of atmospheric air with the gases generated before issuing from the burner.

5 My said invention consists first in generating gases to supply the illuminating flame by means of the heated surfaces of the gas generating cup to which oil is conveyed by the wick. Second in combining said gas
10 generating cup with the pervious cylinder, burner and outer casing or cylinder substantially as described for the purpose of producing an illuminating flame. Third in combining with the wick tube and cup the
15 sliding snuffer valve substantially as described. Fourth in combining with the feeding wheel of the wick tube a spring in the wick tube crooked opposite the feed wheel for the purpose of making the wick
20 feeding apparatus self adjusting.

Now it will be evident that in construction the precise form of the construction herein described may be varied without varying essentially the mode of generating the
25 gas for the purpose of supplying the illuminating flame.

By the use of the generating cup as described for vaporizing by its heated surfaces oil supplied to those surfaces constantly in a
30 minutely divided form by the capillary at-

traction of the wick aided by the heat I obtain a very great capacity for generating gas to supply an illuminating flame much greater than in any other manner with which I am acquainted.

The generating cup should be sustained at sufficient elevation above the fountain to prevent the heat from unduly affecting it as to volatilize the oil or cause changes to take place in it.

What I claim as my invention and improvement in lamps is as follows viz:

1. In combination with the pervious cylinder and wick tube the gas generating pan or cup substantially as described and substantially for the purposes hereinbefore set forth.

2. Combining with the gas generating pan the pervious cylinder, burner, outer casing fender and passage ways, substantially as described and substantially for the purposes hereinbefore set forth.

3. Combining with the wick tube and cup the valve *n* substantially and for the purpose as described.

C. C. COE.

Witnesses:

JOHN CLARK,
WM. LEE.