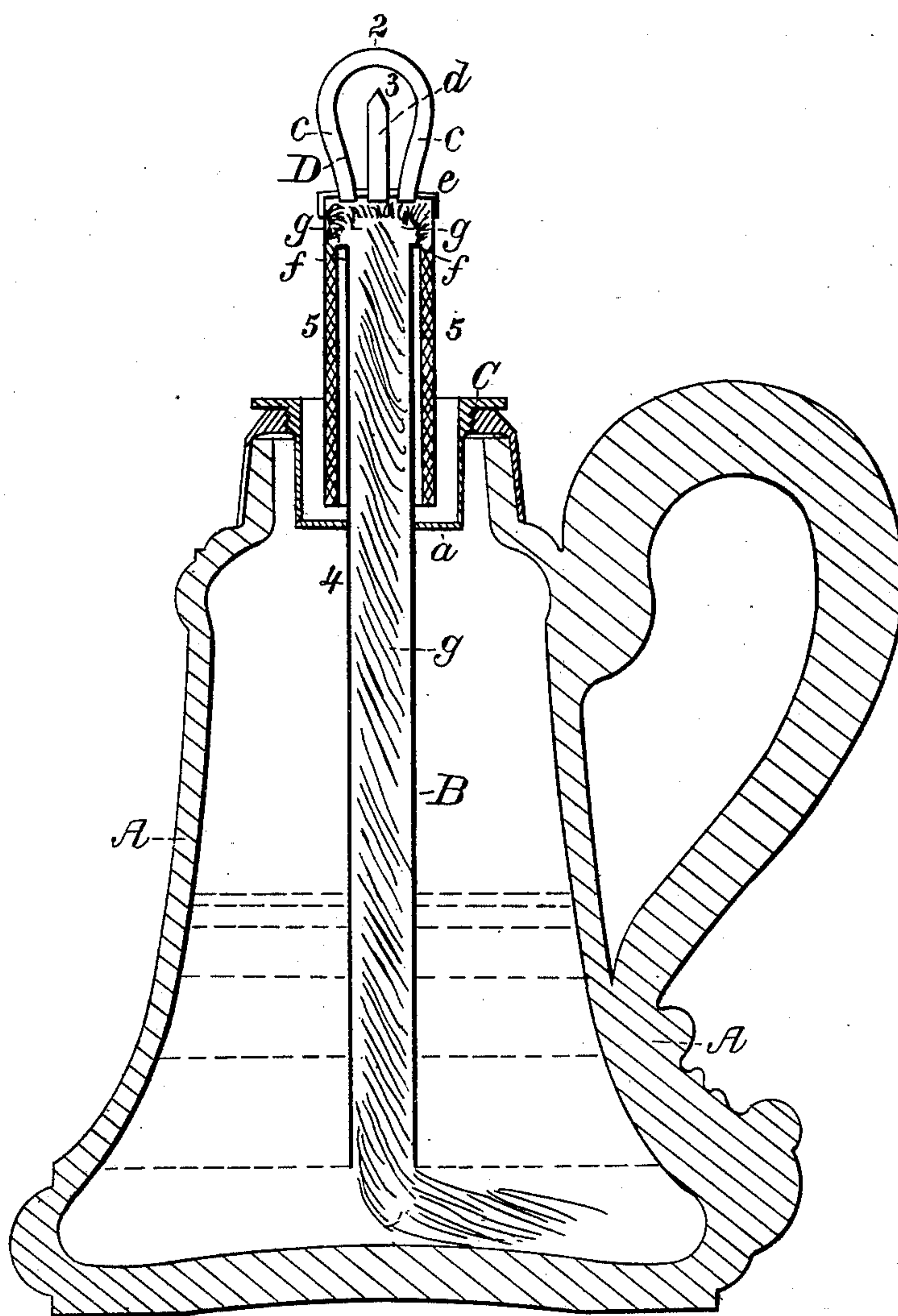


D. H. CHAMBERLAIN.

### Vapor Burner.

No. 18,719.

Patented Nov. 24, 1857.



# UNITED STATES PATENT OFFICE.

D. H. CHAMBERLAIN, OF WEST ROXBURY, MASSACHUSETTS, ASSIGNOR TO HIMSELF,  
AND JOHN BORROWSALE, OF BOSTON, MASSACHUSETTS.

## VAPOR-BURNING LAMP.

Specification of Letters Patent No. 18,719, dated November 24, 1857.

*To all whom it may concern:*

Be it known that I, DEXTER H. CHAMBERLAIN, of West Roxbury, in the county of Norfolk and State of Massachusetts, have  
5 invented certain new and useful Improvements in Vapor-Burning Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which is shown a vertical section  
10 through a lamp with my improvements attached.

That class of lamps in which the vapor to be burned is generated by heat communicated from the burner to the fluid which is  
15 raised by a wick from the body of the lamp, have been liable to the objection that the tube, which contained the wick and which must necessarily be heated by the burner,  
20 communicated its heat to the fluid in the lamp and thus caused it to vaporize, endangering those who used such lamps by their liability to explode, particularly when the cap was removed to fill the lamp. Another  
25 objection has been found to exist in the fact that the upper part of the wick or that which came next to the burner was soon charred or burned by the great heat from the burner. These difficulties I have overcome by my improved construction and arrangement of wick tube; by which the heat  
30 from the burner is not communicated to the lower part of the tube which enters the lamp or to the screw cap which closes the top of the lamp, and the part of the wick next to  
35 the burner is not reduced to charcoal.

That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

A, is the lamp, B, the wick tube, the construction of which will be presently explained; C, the metal cap which closes the top of the lamp, and to which the tube B is  
45 attached at *a*; D, the burner, in this case formed of a bent hollow tube *c*, with a slit cut through it at 2 forming a bat wing flame, and of a straight tube *d*, with a simple jet at its extremity at 3. These tubes of the  
50 burner rise from a cap *e*, which fits on the top of the tube B, (it may be attached by a screw.) The wick tube is formed as shown in the drawings, of a central, or main portion 4, which is secured to the cap C, at *a*,

and extends down into the lamp nearly to 55 the bottom of it, and of an auxiliary casing or chamber 5, which surrounds the part 4 and extends from the top of it down nearly to the cap C, at *a*. This chamber 5 is filled with wick (a few strands being coiled in it) 60 up to the point *f* where it is joined to the part 4. The main wick *g* is drawn through the part 4 in the ordinary manner and projects a little over the upper end of it so as to come in contact with the filling in the 65 chamber 5. The cap *e* of the burner is in contact only with the outer surface of the chamber 5. Thus before the heat from the burner can be communicated to the part 4 of the wick tube, it must follow the outer 70 casing of the chamber 5 down to where the bottom of it approaches the cap C, then be conducted up the inner casing of this chamber to *f*, where it is joined to the part 4. This I find in practice it does not do, as the 75 main part of the tube is not heated (after burning 12 hours) sufficiently to even warm the cap C, or to raise the temperature of the fluid within the lamp a single degree.

The filling in the chamber 5 is kept moist 80 by absorbing the fluid from the wick *g*; this causes a greater amount of moisture to be kept up at the upper end of the wick which in a great measure prevents it from charring, while the outer casing of the chamber 85 5 is moderately heated from the burner D, and gives a large amount of evaporating surface where the filling comes in contact with it, from which the vapor is generated, instead of the small amount immediately beneath the cap *e*. If it is required (for convenience of construction) to bring the burner down nearer to the top of the lamp, the chamber 5 may be doubled or made to return in one or more folds, the cap *e* being 95 connected with the outside casing of the outer chamber.

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

The auxiliary chamber or casing 5, in combination with the tube 4 constructed and arranged in the manner and for the purpose substantially as herein set forth.

D. H. CHAMBERLAIN.

Witnesses:

THOS. R. ROACH,  
THOS. L. GLOVER.