W. H. RACEY.

Vapor Burner.

No. 30,546.

Patented Oct. 30, 1860.

Fig. 1.

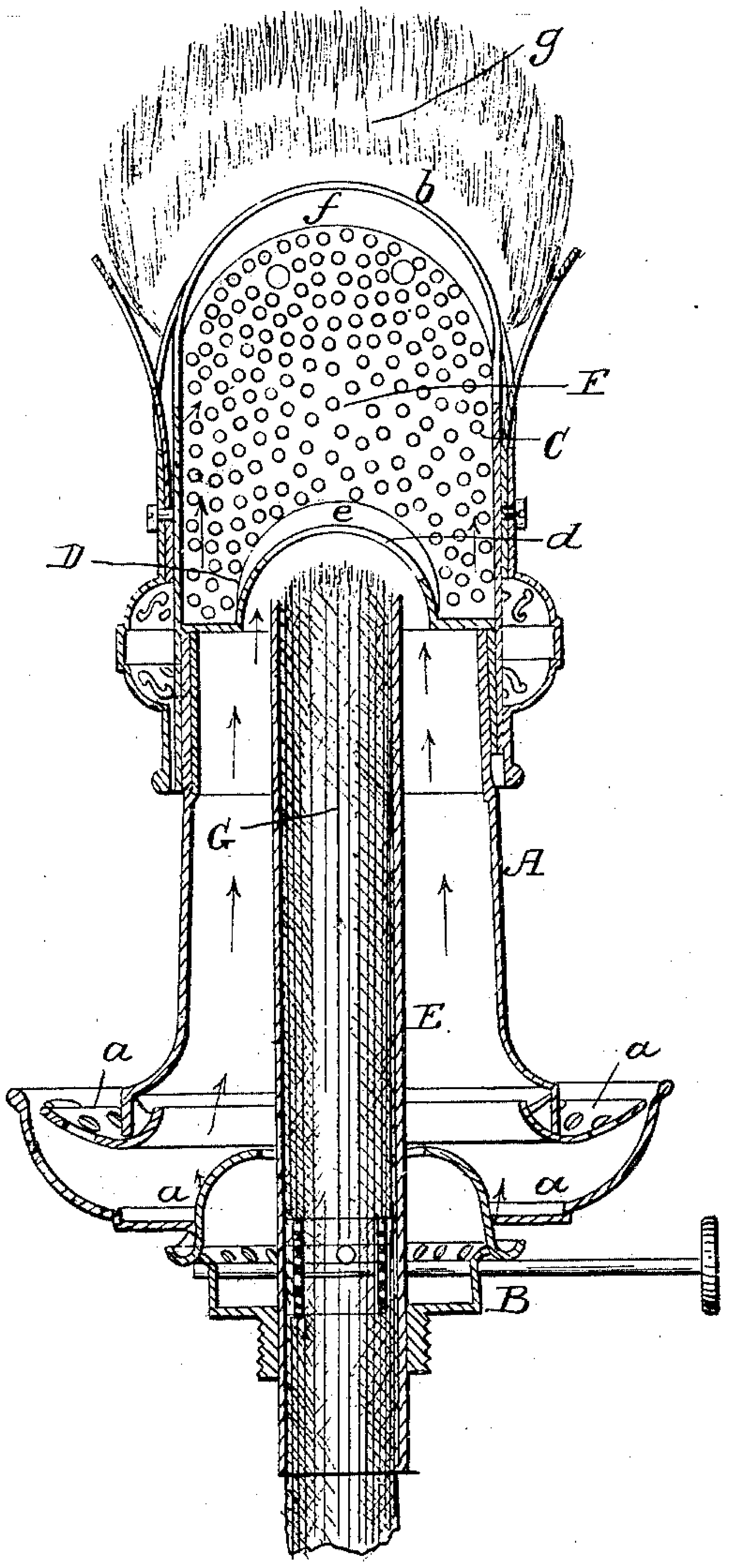
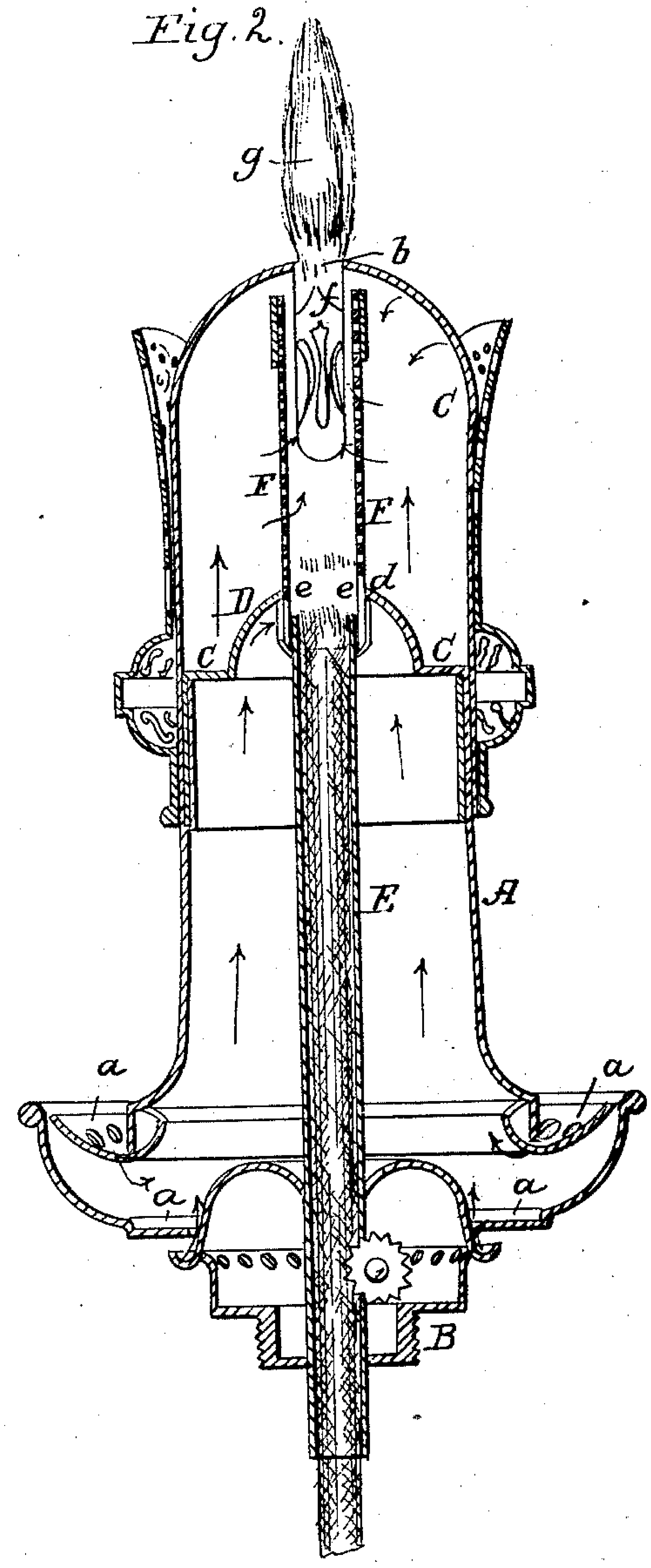


Fig. 2.



Witnesses:

M. M. Livingston.

J. W. Coombs

Inventor:

William H. Racey

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. RACEY, OF ST. AUGUSTINE, FLORIDA.

LAMP.

Specification of Letters Patent No. 30,546, dated October 30, 1860.

To all whom it may concern:

Be it known that I, W. H. RACEY, of St. Augustine, in the county of St. Johns and State of Florida, have invented a new and useful Improvement in Lamps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 2, are vertical central sections of my invention the two planes of section crossing each other at right angles.

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

This invention relates to an improvement in that class of lamps which are designed for burning with or without a chimney coal oil and other substances rich in carbon.

The invention consists in the employment or use of perforated plates placed within the cone or cap and in such relation therewith as to control the action of the air upon the flame within the said cap or cone and render the lower part of the flame merely a gas generator the gaseous vapor passing up between the plates and uniting with the oxygen within and at the apex of the cone and burning with a bright illuminating flame. The perforated plates also serve as heat retainers to warm the air as it comes in contact with the flame, and they also serve to render the flame very persistent, and also to prevent by approximation of surfaces any light combustion within said cone or deflector.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe.

A represents a metal cylinder or tube which is attached to the cap B, of a lamp and provided with holes or openings *a*, at its lower end. On the upper part of the tube A, a cap or deflector C, is placed, the upper end of which is slotted as shown at *b*.

D, is an inner deflector which is secured within the cap C, by arms *c*. This inner deflector D, may be of the usual dome-form slotted at its apex as shown at *d*.

E, is the wick tube which is secured in the cap B, and extends up within the tube A, and into the lower part of the cone C, terminating below the deflector D.

F, F, are perforated plates which are attached to the inner deflector D, and extend upward within the cap or deflector C, toward its apex. The plates F, may be equal in width to the cap C, at their lower parts, and the upper ends of the plates may be curved or rounded to correspond with the form of the apex of the cap C.

At the bases of the perforated plates F, F, between them and the inner deflector D, there are openings *e*.

The operation is as follows, when the wick G within the tube E, is lighted the combustion at the top of the wick is quite imperfect as the air or draft in A, is obstructed in coming in contact with the flame by the plates F, F, and deflector D, and a blue flame is developed which decomposes the oil or burning material which ascends the wick. The gaseous vapor ascends between the plates F, F, and as air is brought in contact with it, through the perforations of the plates, and at the spaces between the top of the cap C, and the perforated plates F, F, a bluish flame at certain stages of the operation is again developed as shown at *f*, and as the vapor passes through the slot *b*, of the cap C, and comes in contact with the external air a brilliant illuminating flame *g*, is produced.

The plates F, F, besides restricting and controlling the supply of air to the flame or gaseous vapor within the cap C, also serve to heat the air within said cap so that it cannot cool the gaseous vapor, and said plates also serve to render the illuminating flame persistent, that is to say, not susceptible of being extinguished by the movement of the lamp. The cap or deflector C, and the inner deflector D, perform their usual function; to wit, turning the air on the flame, etc. See arrows.

I do not claim the cylinder or tube A nor the inner deflector D, nor the cap C, for they have been previously used; but

I do claim as new and desire to secure by Letters Patent—

The employment or use of the perforated plates F, F, placed in relation with the cap C, wick tube E, and inner deflector D, to operate as and for the purpose set forth.

WILLIAM H. RACEY.

Witnesses:

M. M. LIVINGSTON,

L. W. BENDRE.