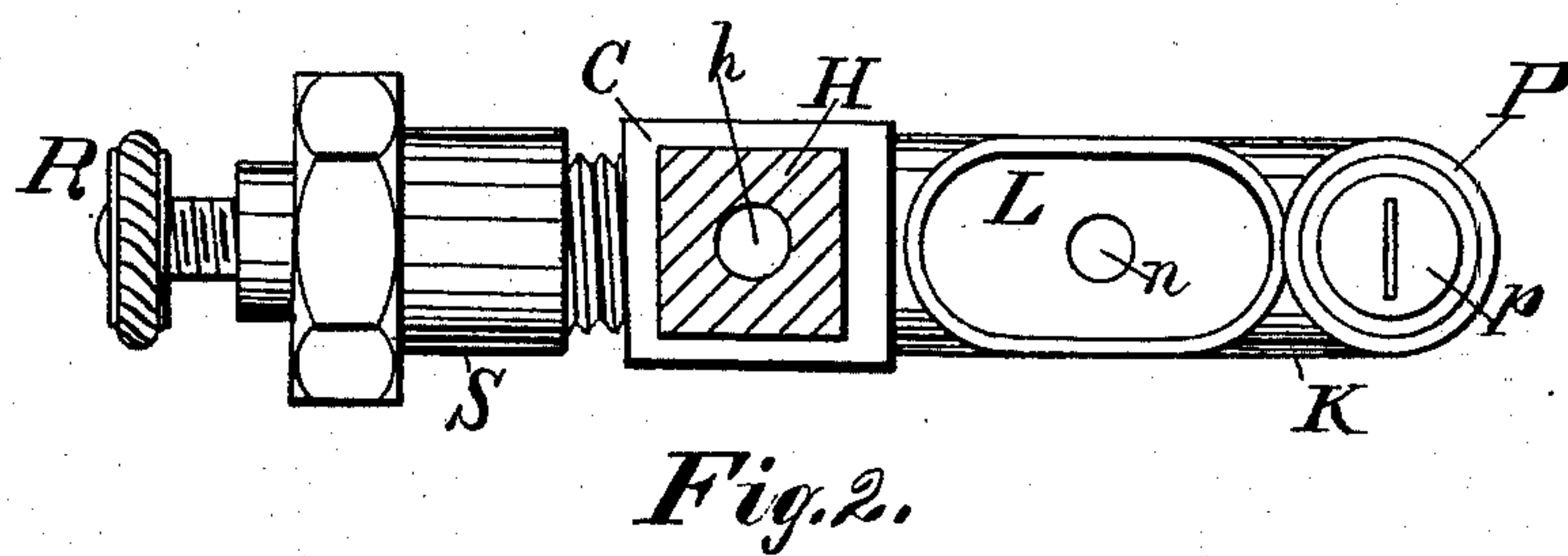
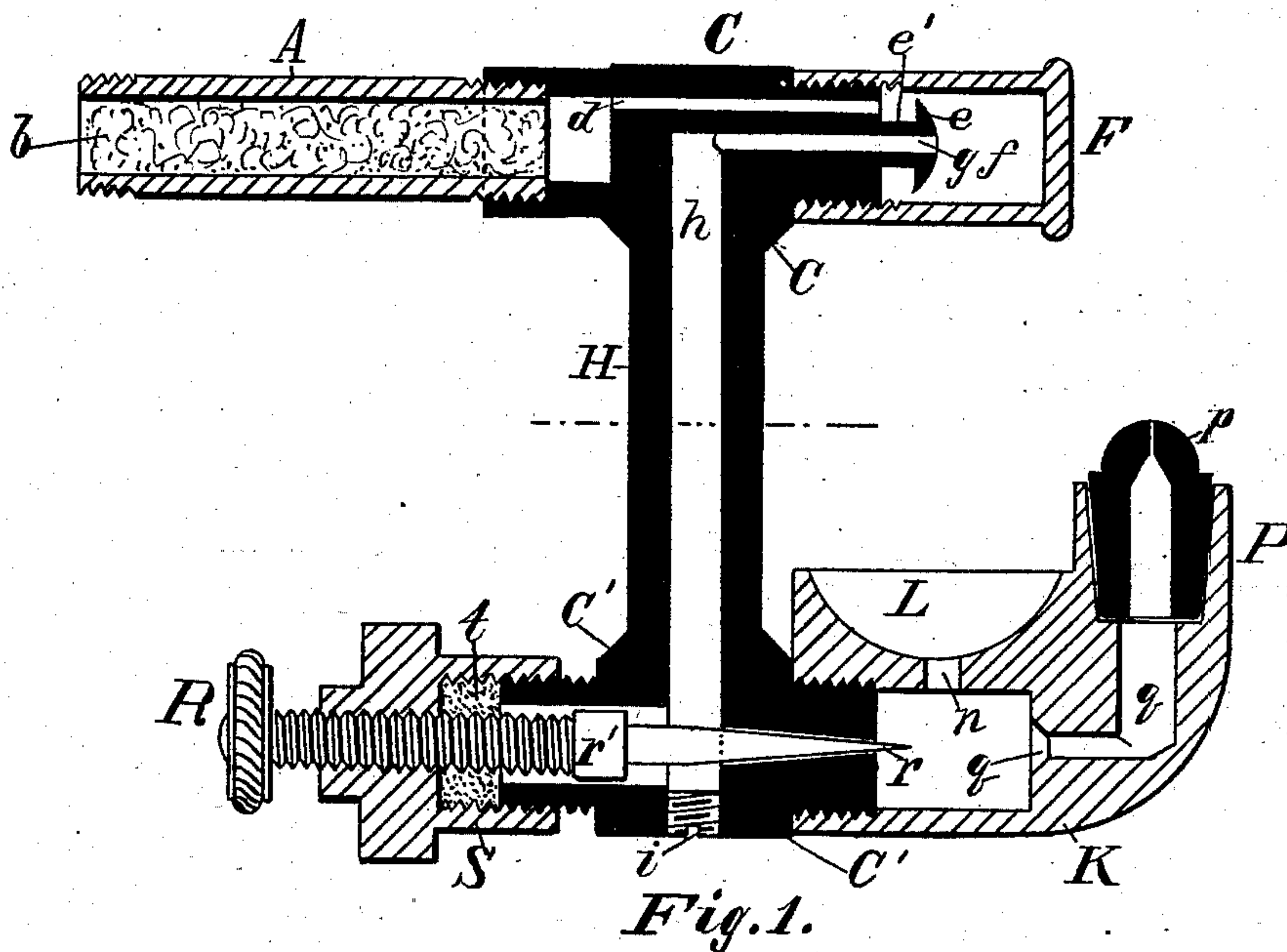


(No Model.)

R. F. DANFORTH.  
Vapor Burner.

No. 237,965.

Patented Feb. 22, 1881.



Witnesses:

Geo. A. Boyden  
A. C. Eades

Inventor:

Roderick F. Danforth  
By his Atty  
Chas B. Mann

# UNITED STATES PATENT OFFICE.

RODERICK F. DANFORTH, OF BALTIMORE, MARYLAND.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 237,965, dated February 22, 1881.

Application filed June 10, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, RODERICK F. DANFORTH, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Vapor-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in vapor-burners for illuminating purposes.

A burner embodying my improvements will first be described, and those parts or combinations which constitute the invention will then be designated in the claims.

In the drawings hereto annexed, Figure 1 is a vertical section of the burner. Fig. 2 is a plan view of the lower part of the burner.

The letter A designates the supply-tube, packed with suitable material *b*. This tube enters the rear of the upper part, C, of the burner, from which a small oil-passage, *d*, leads to the front. Upon the front side of the top part, C, a disk or hood, *e*, is secured by a shank, *e'*. A heating-cap, F, screws onto the said front side so as to inclose the disk or hood and form in front of and about the hood a vaporizing-chamber, *f*. A vapor-passage, *g*, is bored through the disk or hood and its shank, and through the front end of the top part, connecting with the vertical passage *h*, which is bored from the lower end, O', the entry of the bore being stopped by the screw-plug *i*. Upon the front side of the lower end is attached the burner-tip holder and the receptacle for the entry of the oil to get up the heat.

The letter L denotes an oval-shaped shallow saucer or receptacle, which rests on the upper side of the neck K, in front of the valve, having in its bottom an opening, *n*, through which the oil may rise and fill the saucer when it is desired, at starting, to heat the chamber *f*, which latter is directly above the saucer.

The socket or holder P for the burner-tip

*p* is adapted to receive the tapered end of the tip, which is simply set into the socket without fastening of any kind to retain it. The tip is slotted in the usual manner of gas-burners, the design being that the position of the tip in the socket shall be such that the slot will extend in a direction crosswise of the heater-cap. A vapor-passage, *q*, leads from the valve to the socket or burner-tip.

The needle-valve *r* closes communication from the passage *h* to *q*, and this needle has a shank, on which is an enlargement or shoulder, *r'*, back of the passage *h*.

A stuffing-box, S, is screwed onto the rear side of the lower end, O', and the extremity of the screw-threaded valve-shank is provided with a suitable knurled button or knob, R, which is attached to the shank after the box is supplied with its asbestos packing *t*, the screw part of the shank, it will be understood, being first passed through the packing and end of the box S. When the knob R is turned in a direction to withdraw the needle from its seat the shoulder *r'* on the shank will press against the packing and restore it to a compact position and make it fit about the shank tight.

The oil which flows through the passage *d* discharges against the disk, which is but a short distance from the orifice of the passage, and thence passes around and below the shank, which secures the disk, and then into the vaporizing-chamber in front of the disk. The outlet or passage *g* for the vapor, it will be noticed, is isolated from the surrounding sides of the chamber. This arrangement of the disk is found to serve admirably to secure the thorough vaporization of the oil in the chamber.

I prefer to make the vertical shank H, through which the passage *h* is bored, with four sides—that is, square in cross-section—as seen in Fig. 2, as when the greater amount of metal required by such construction becomes hot the liability of the vapor to condense is obviated.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of an oil-passage, *d*, leading from the supply-tube to the vaporiz-



ing-chamber *f*, a hood or disk, *e*, secured in the chamber in front of the orifice of the oil-passage, and isolated from the surrounding sides of the vaporizing-chamber, and a vapor-  
5 passage, *g*, leading from the chamber to the passage to the burner, as set forth.

2. In a vapor-burner, the neck *K*, having the burner-tip holder *P*, and the oil saucer or receptacle *L* resting on the upper side of the

neck, and having an opening, *n*, in the bottom 10 of said receptacle, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RODERICK F. DANFORTH.

Witnesses:

JNO. T. MADDOX,  
CHAS. B. MANN.