

H. FAIRBANKS.  
Vapor Burner.

No. 17,622.

Patented June 23, 1857.

Fig. 1

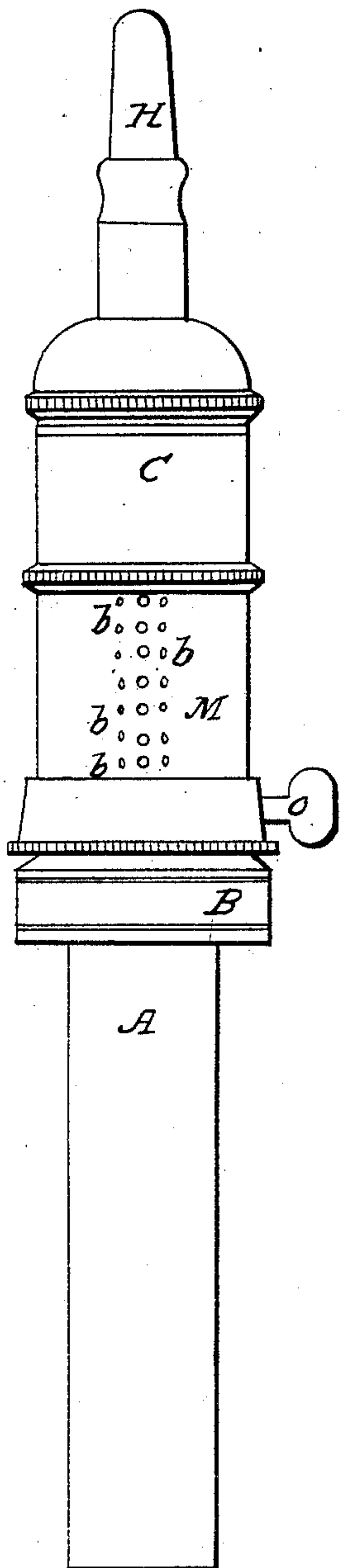


Fig. 2

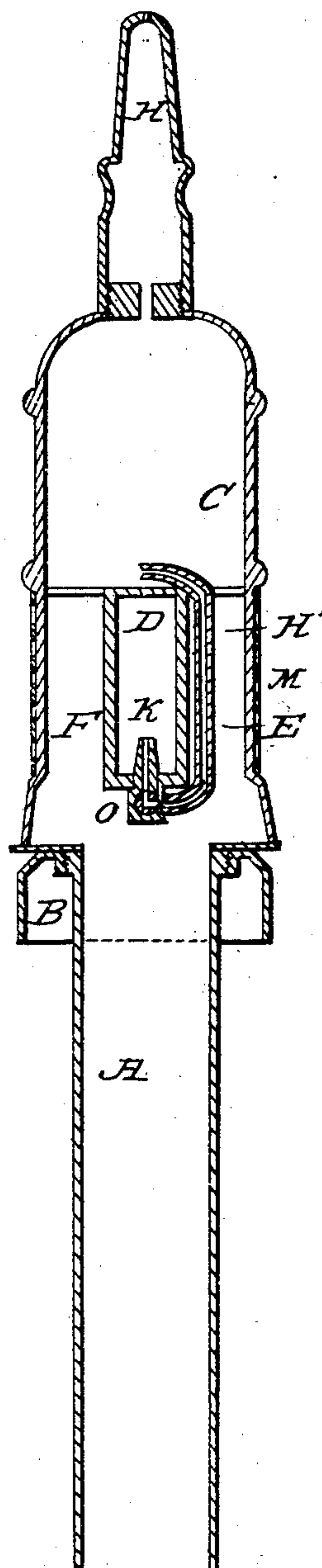


Fig. 3

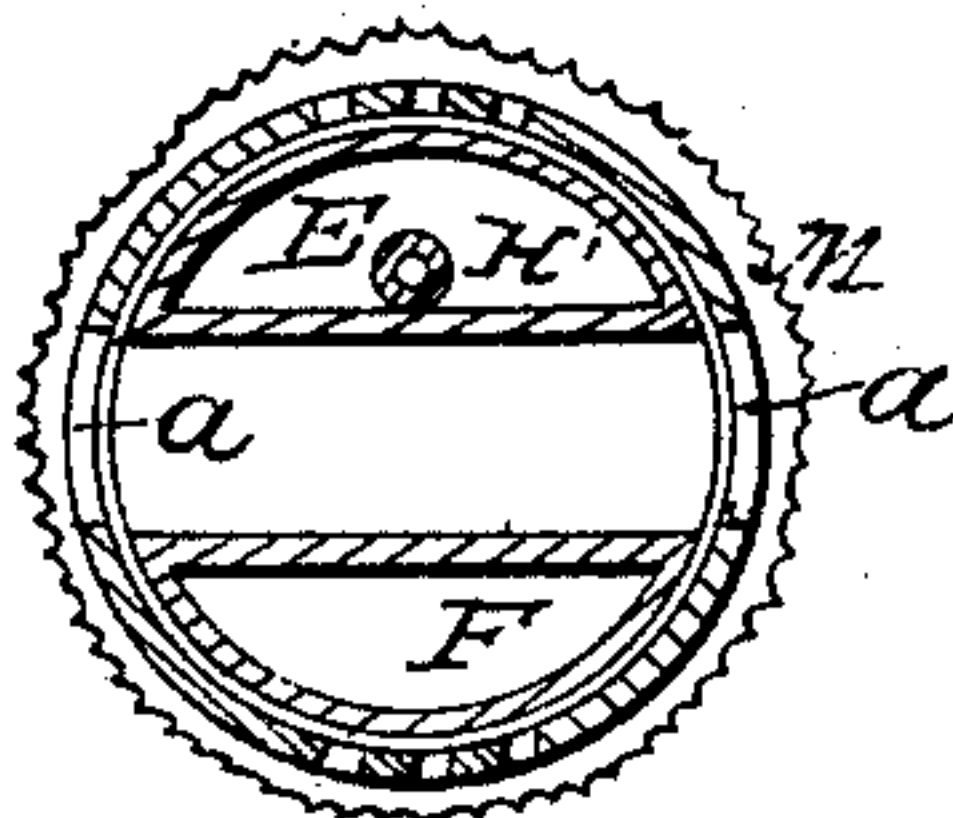
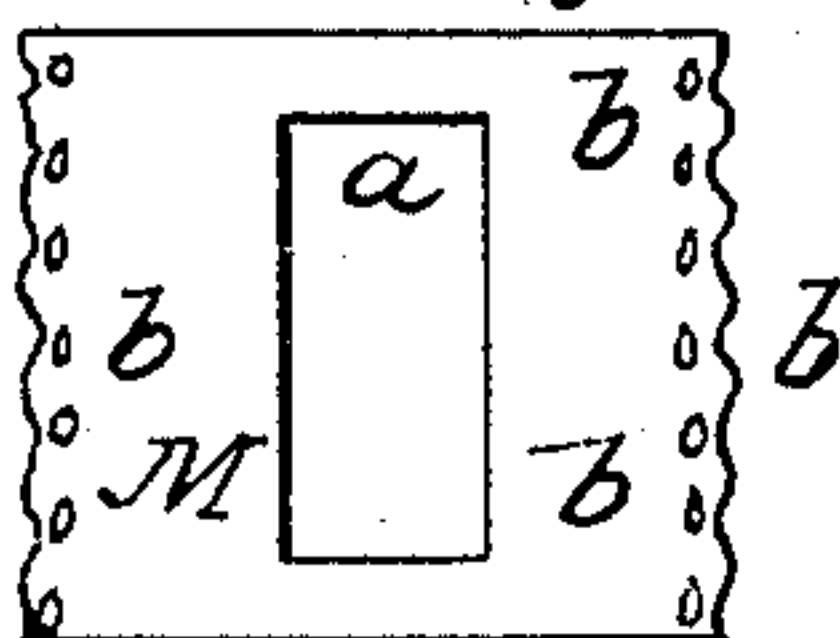


Fig. 4



# UNITED STATES PATENT OFFICE.

HORATIO FAIRBANKS, OF SOUTH BROOKFIELD, MASSACHUSETTS.

## VAPOR-BURNER.

Specification of Letters Patent No. 17,622, dated June 23, 1857.

*To all whom it may concern:*

Be it known that I, HORATIO FAIRBANKS, of South Brookfield, in the county of Worcester and State of Massachusetts, have  
5 invented an Improved Volatile-Hydrocarbon-Vapor Burner; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—  
10 Figure 1, is a front elevation of said burner. Fig. 2, a longitudinal section of it. Fig. 3, a transverse section taken through the secondary jet recess and its closing slide.

This burner as exhibited in the drawings  
15 is prepared for being applied to a lamp fountain or reservoir for containing a hydrocarbon liquid such as camphene or ordinary burning fluid, A being the wick tube, while B is the cap or collar to go upon and surround the neck of the lamp. The body of  
20 the burner is formed with a vapor chamber C, a recess or space D, below said vapor chamber and two passages or tubes E, F, forming the boundaries of two opposite  
25 sides of said recess and made to open at their upper ends into the vapor chamber and at their lower ends into the wick tube, the same being so that a wick from the wick tube may be passed upward through one of said  
30 openings or passages and into the vapor chamber, and across its bottom and thence down the other passage and into the wick tube. From this it will be seen that the wick is suspended on that part of the bottom  
35 of the vapor chamber which is directly above the chamber or recess D, and also that the wick in passing down through the passages E, F, rests against those surfaces of them which are next adjacent to the recess D.

40 A gas jet H, is fixed on the upper part of the vapor chamber, so that vapor may pass from the latter out of the discharging orifice of said jet. Furthermore, a pipe H', extends out of the vapor chamber and down  
45 through one of the passages E, F, and to a small burner or gas jet K, arranged in the recess D, and provided with a stop cock o, as seen in the drawings. The said recess and body of the burner are surrounded by a  
50 tubular closing slide M, so applied to said body as to be concentric therewith, and turn freely thereon. This slide is furnished with rectangular openings a, a, of a width corresponding with each of those of the recess D.

It also has a series of lesser openings formed  
55 through it as shown at b, in Figs. 3 and 4, the latter being a side view of the closing slide. By laying hold of the closing slide and turning it around, we may close the  
60 openings of the recess D, to such extent as occasion may require in order to admit air to the flame of the jet of said recess, as well as to confine the heat of said flame within  
65 the recess so as to enable it to operate to the best advantage, and with as little loss as possible on the sides and top of the recess.

When my burner is in use, its secondary  
gas jet is inflamed and receives vapor from  
the vapor chamber, the heat of the flame of  
said gas jet by operating against the inner  
70 surfaces of its recess causes vapor to be generated very fast from the fluid in the wick. This vapor as it issues from the main  
gas jet may be inflamed so as to give forth a  
brilliant light. By extending the secondary  
75 jet pipe from the vapor chamber in manner as set forth, we are enabled to obtain vapor for said jet pipe to better advantage than  
would be the case were the jet pipe to enter  
the reservoir of the lamp. 80

Now I do not claim a burner formed with  
a vapor reservoir and one or more secondary  
jets or jet pipes for the purpose of vaporizing  
the liquid of the wick so that the vapors so  
produced from said liquid may be burned as  
85 they may issue from a gas burner or jet pipe leading out of the upper part of the vapor chamber.

What I do claim is—

My improved hydrocarbon vapor burner, 90  
as constructed with a secondary burner K, pipe H' recess D, formed as described, and a closing slide M, arranged to rotate on the body of the burner concentrically therewith,  
and constructed so as to be capable of 95  
either entirely or partially closing the recess D, so that air may be excluded more or less from the same and heat be confined therein substantially in manner and for the purpose  
as specified when the said recess is provided 100  
with a secondary jet or burner to operate therein as explained.

In testimony whereof I have hereunto set  
my signature.

HORATIO FAIRBANKS.

Witnesses:

R. H. EDDY,  
F. P. HALE, Jr.