

(No Model.)

A. E. VEON.  
VAPOR LAMP.

No. 596,765.

Patented Jan. 4, 1898.

Fig. 1

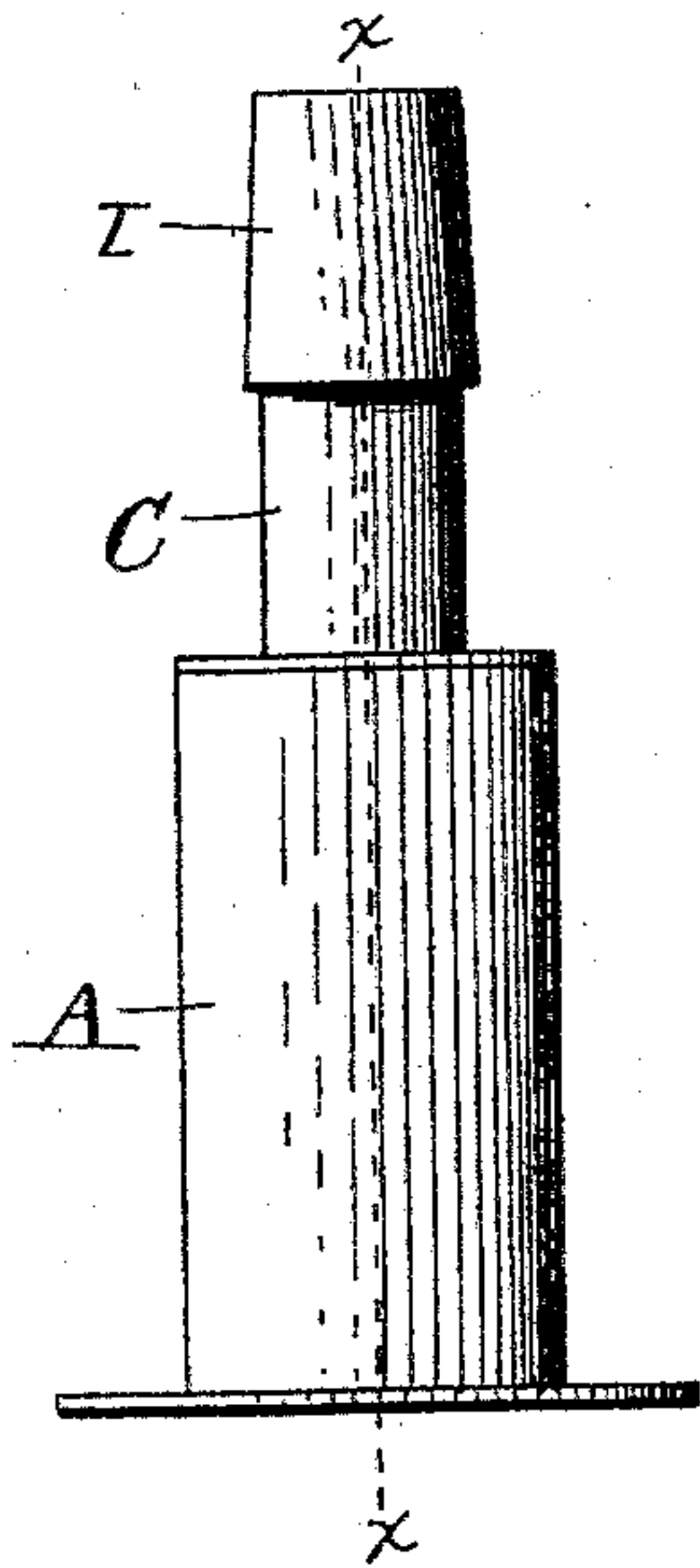


Fig. 2.

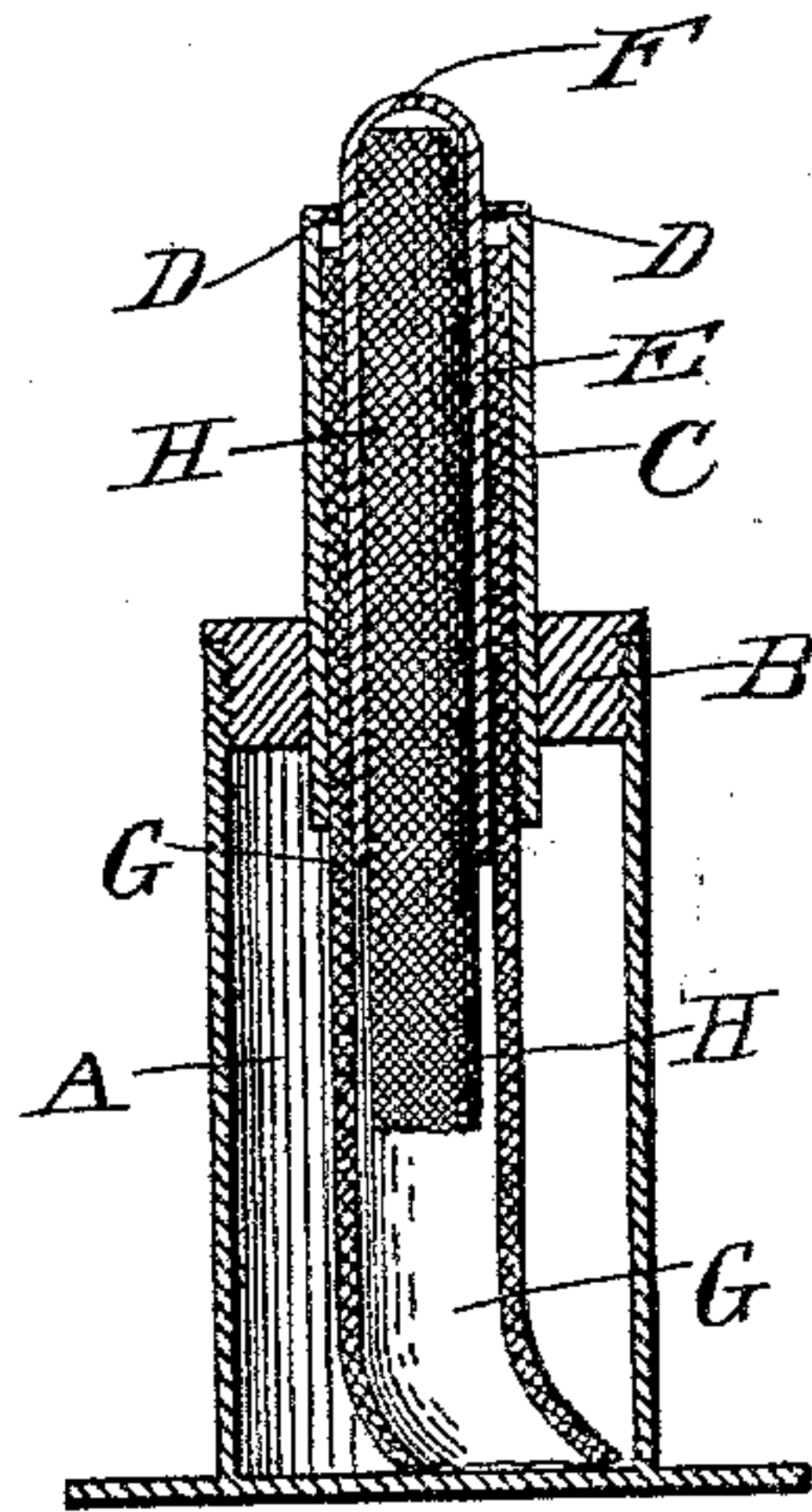


Fig. 3.

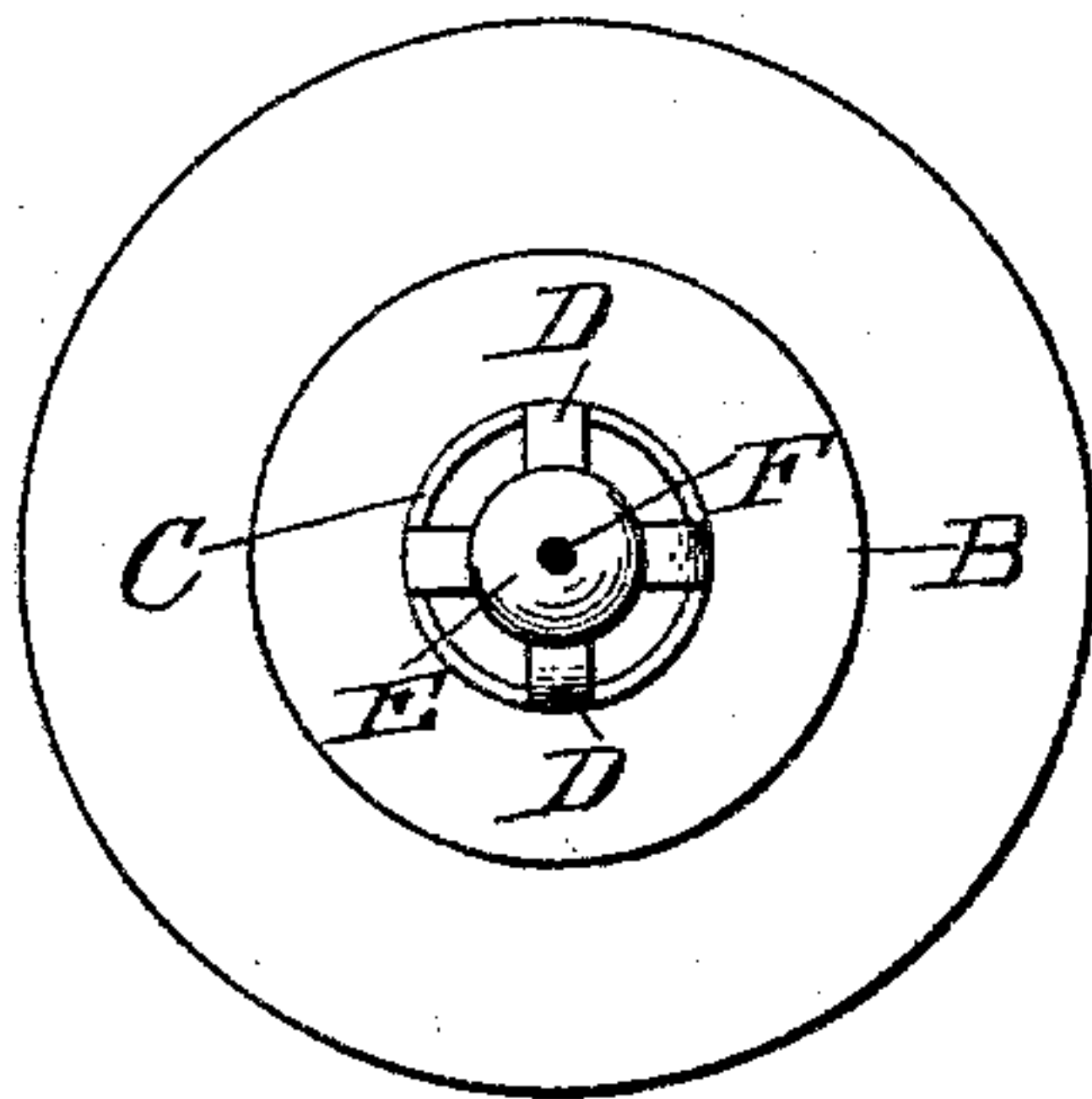
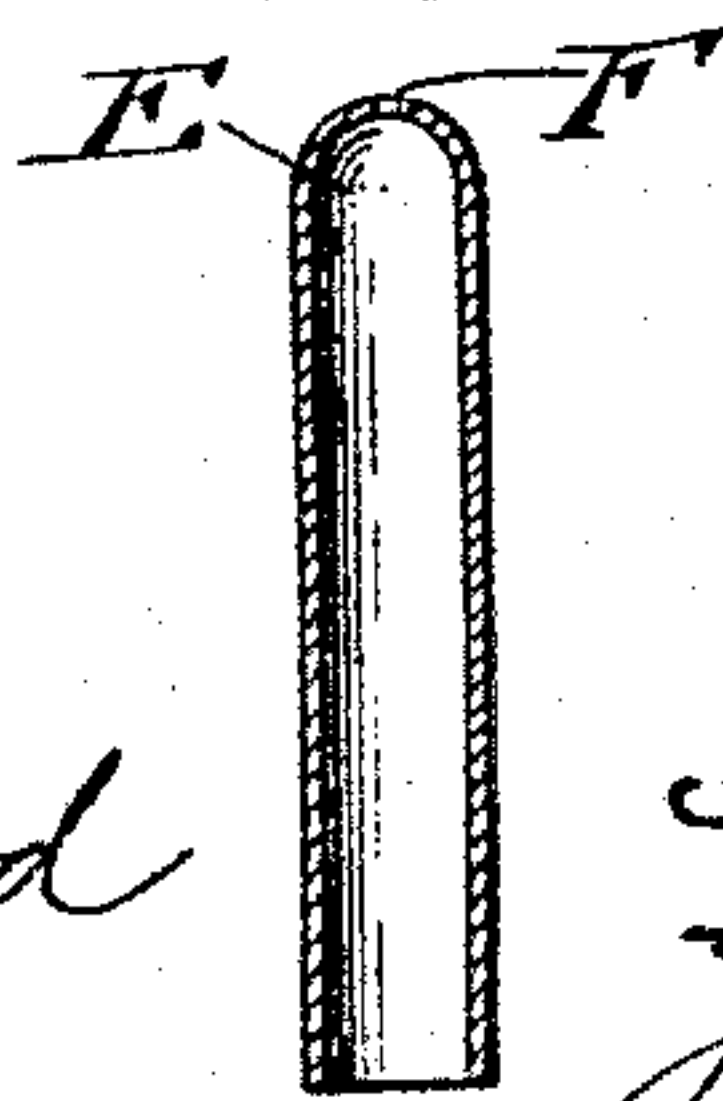


Fig. 4.



Witnesses

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O. B. Lester

Inventor

Andrew E. Veon  
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Attorney

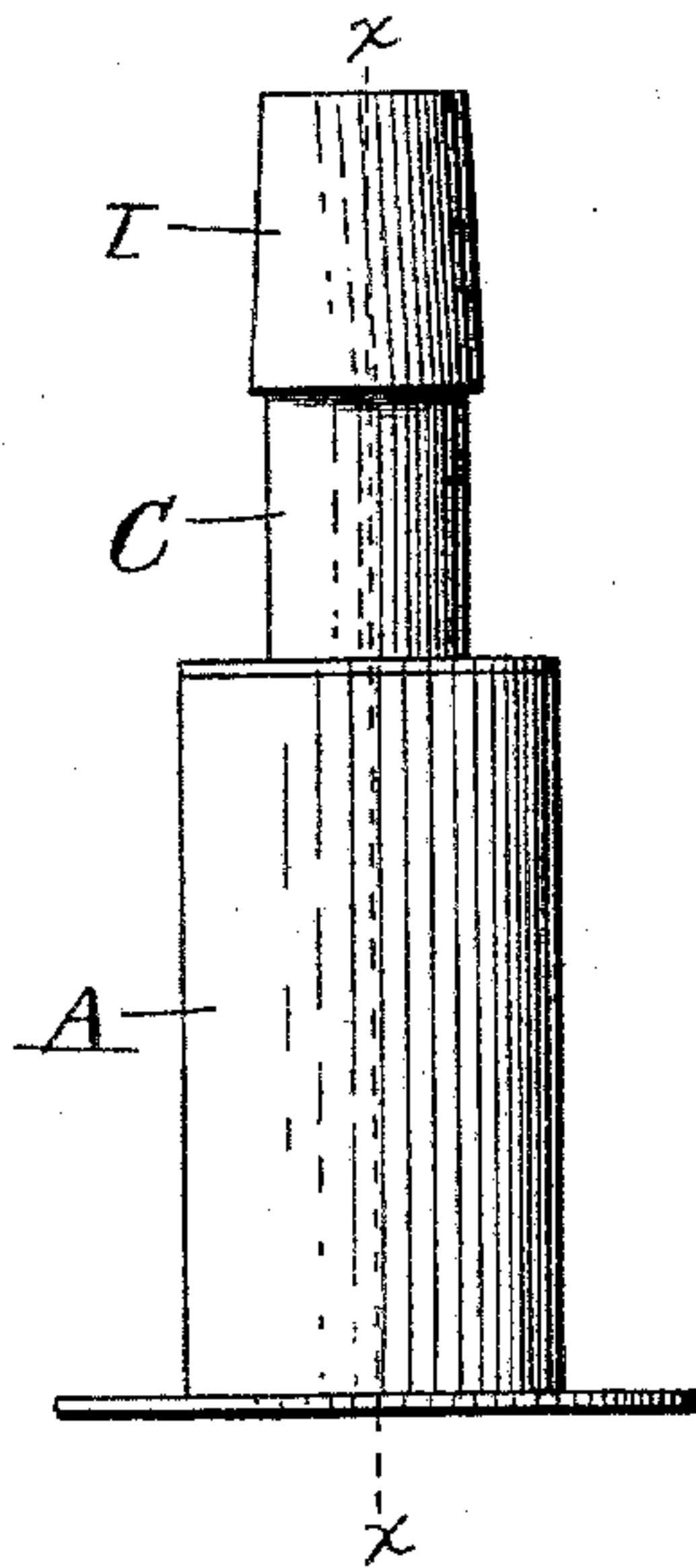
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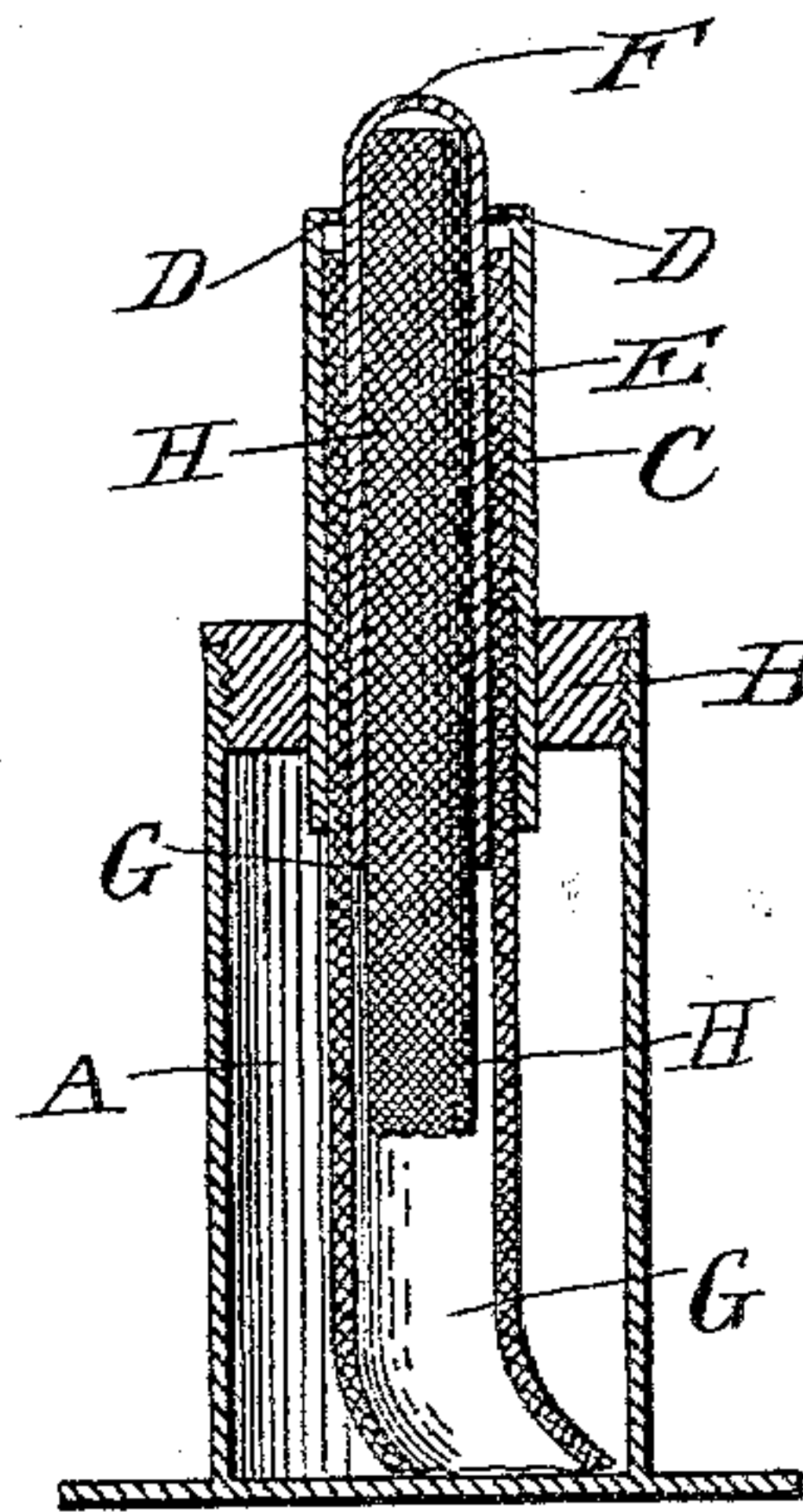
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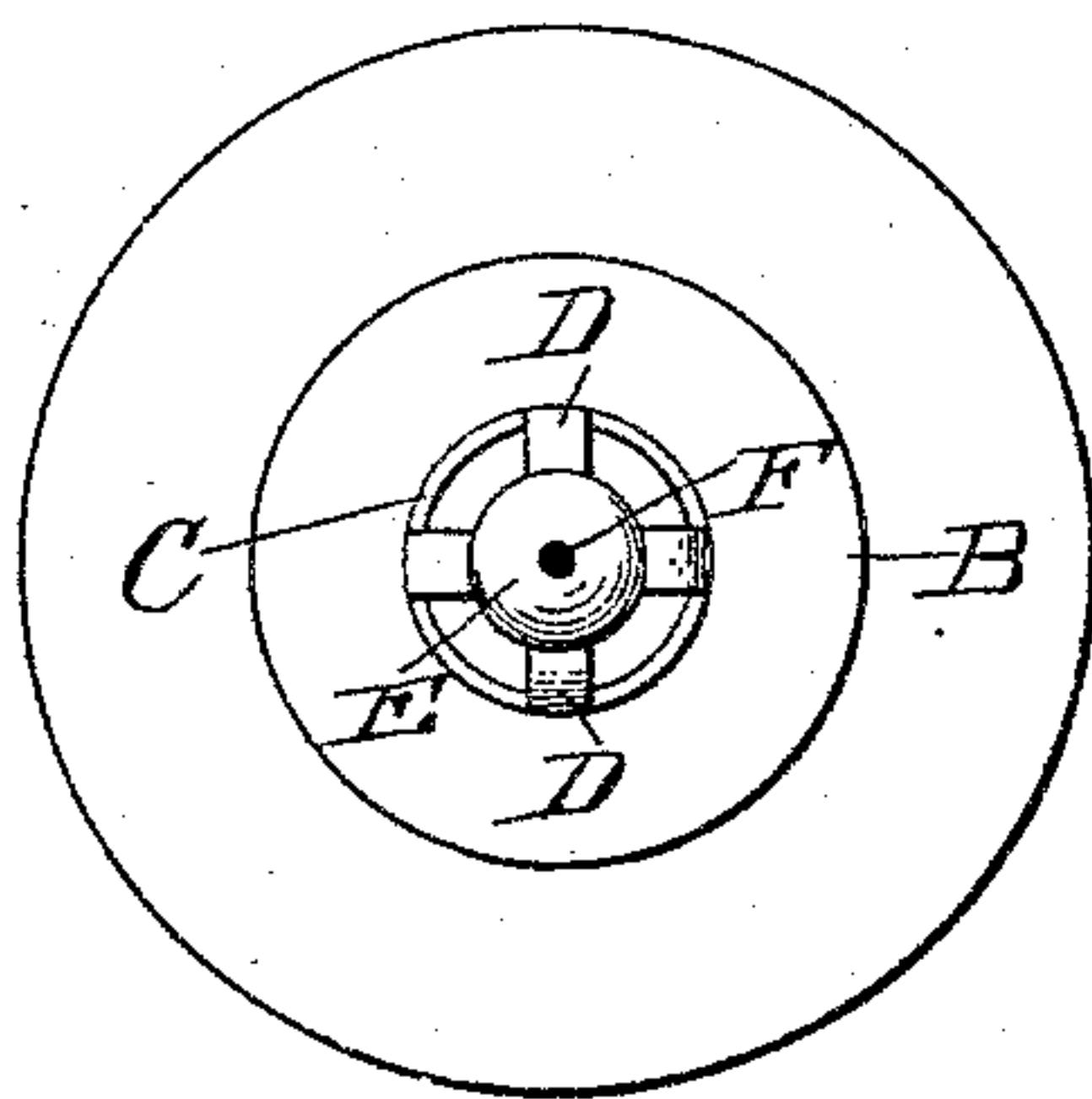
*Fig. 1*



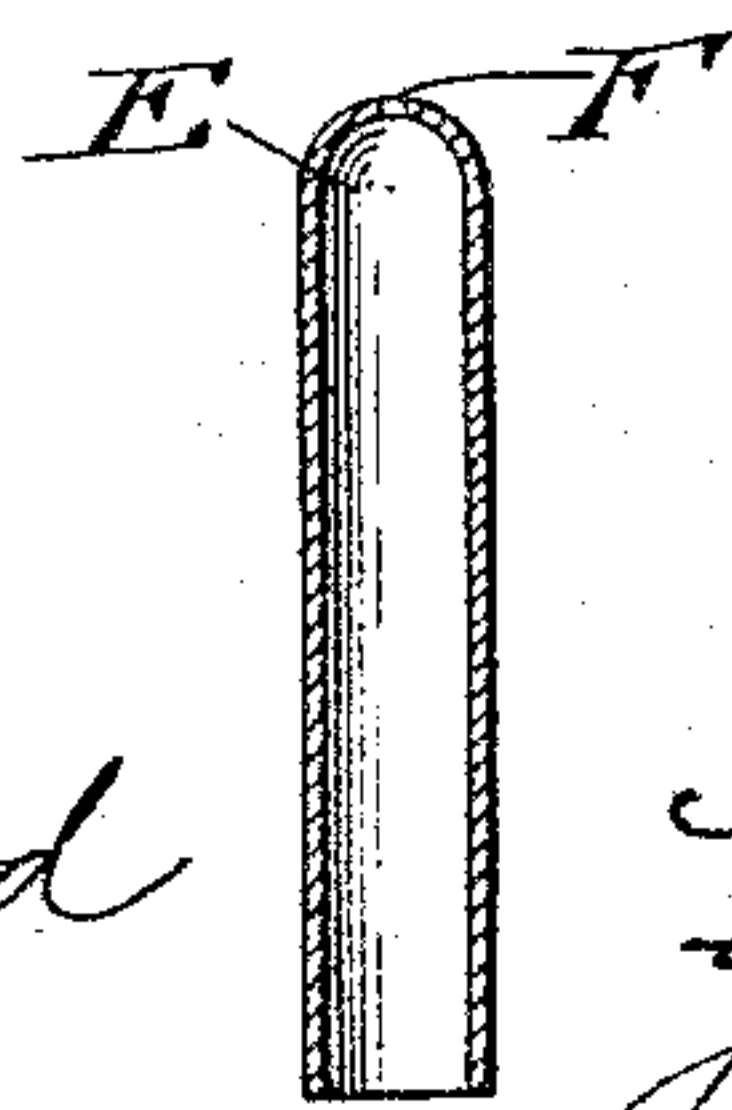
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

ANDREW E. VEON, OF BRAINERD, MINNESOTA, ASSIGNOR OF ONE-HALF TO  
EDWARD W. LYNCH, OF CROW WING COUNTY, MINNESOTA.

## VAPOR-LAMP.

SPECIFICATION forming part of Letters Patent No. 596,765, dated January 4, 1898.

Application filed May 1, 1896. Serial No. 589,897. (No model.)

### *To all whom it may concern:*

Be it known that I, ANDREW E. VEON, a citizen of the United States, residing at Brainerd, in the county of Crow Wing and State of Minnesota, have invented certain new and useful Improvements in Vapor-Lamps, of which the following is a specification.

My invention relates to lamps, and more particularly to lamps for heating purposes and in which a light hydrocarbon is used and vaporized by the heat of the lamp, and has for one of its objects to provide a lamp which will produce an intense heat and at the same time will be entirely free from any liability to explode.

Another object of my invention is to provide a lamp that may be readily and safely carried in a trunk or traveling bag or outfit without being broken and without spilling or wasting the hydrocarbon with which it may be filled.

Another object of my invention is to provide a lamp which will not consume the wick or wicks used therein and which will require no further attention than keeping it supplied with the material burned therein and lighting and extinguishing it.

Still another object of my invention is to provide a lamp which will concentrate or focus the flames and heat produced thereby and maintain the same at substantially an unvarying height.

These objects I accomplish in the manner and by the means hereinafter more fully described in detail, reference being made to the accompanying drawings, in which similar letters of reference indicate corresponding parts in all the figures of the drawings, in which—

Figure 1 is a side elevation of my improved lamp. Fig. 2 is a vertical sectional view of same on the line  $x x$  of Fig. 1, with the cap I removed. Fig. 3 is a top plan view on an enlarged scale. Fig. 4 is a central sectional view of tube E.

In carrying out my invention I provide a reservoir A, preferably of cylindrical form and made of brass or any suitable material and having fixed in its upper end by means of screw-threads a cap B. Centrally fixed in the cap B by any suitable means is a tube C, connecting with the interior of the reservoir

A and rising vertically from the cap therein. The tube C is of the same diameter throughout its length and is open at each of its ends. The top of the tube is provided with a number of inwardly-projecting points D, formed on the upper end of the tube C by recessing the end of the tube at regular intervals and to the same depth and bending the projecting points or ends produced thereby in the direction of the center of the tube C. Centrally mounted in tube C is a second tube E, supported therein by the projecting points D. This tube E is entirely open at its lower end, but has its upper end formed with a cap like the end of a closed thimble and is provided with a small orifice F in the center of the cap. This central tube E is of the same diameter from its lower end to where its sides begin to contract to form the closed or thimble-capped end thereof. Tube C has fitted to its inner circumference a wick G, which extends down in the reservoir. The tube E is also provided with a wick H, extending into the reservoir. After the wick is inserted in the tube C the second tube E is pushed through the tube C until it projects a slight distance beyond the upper end thereof, it being held securely therein by the contact of the wick in tube C against its outer circumference and the inwardly-projecting points D, formed in the end of the tube C. The wick G in the outer tube C is not carried to the extreme top thereof, but rests at a point where the flame of the burning fluid does not reach it nor char it. The wick in the inner tube E is not burned, and neither of the wicks G and H will need renewing if they are properly adjusted in their respective tubes. When the reservoir A is supplied with a suitable hydrocarbon and the wicks and tubes properly adjusted therein, the application of a light to the end of the tube C will produce a flame which in turn vaporizes the fluid within the upper end of the tube E and forces a jet of vapor through the orifice F in the end of the tube and which is in turn ignited. The heat surrounding the tube E, produced by the flame at the top of the outer tube C, will cause the flame of the vapor issuing from the orifice in the tube E to be projected vertically to a distance of several inches. The height of the flame pro-



duced at the end of tube E depends upon the distance that this tube projects above tube C. Increasing the height of tube E increases the length of the flame arising therefrom. 5 This jet of burning vapor forms the central part of the flame produced by the lamp and lifts the flame arising from the outer tube and carries it upward, the result being a steadier and more intense flame than is possible 10 with a single-wick tube.

The hydrocarbon which I prefer to use in my improved lamp is alcohol; but it makes no material difference whether the alcohol used is made from wood or grain so far as 15 concerns the quantity of heat produced, it being, however, more economical to use wood-alcohol.

A cap I is provided for covering the ends of both of the tubes to prevent the escape of 20 the fluid therefrom.

I am aware that it is not new to construct a vapor generator and burner having a central tube mounted in a wick-tube for generating the vapor, the central tube having a 25 hollow cylinder mounted on its top and projecting around its sides to a distance therefrom, the cylinder having apertures in its circumference from which the vapor is projected horizontally, and I am also aware that 30 it is not new to surround a central tube thus constructed with a series of tubes the flames from which are directed against the lower end of the cylinder. Such constructions instead of concentrating all of the flames and 35 the heat produced by the lamp at a point above the end of the central tube and rendering it possible to utilize both the heat and flame thereof, as is the result in my construction, radiates both heat and flame from a 40 common center and renders such a lamp useless for the purposes of my invention.

The essential feature of my invention consists in using the flame from a wick-tube surrounding a tube provided with a wick rising 45 near its upper end, said end being closed with a cap having a vent or orifice therein to permit the escape of a jet of vapor, said vapor-tube adjustably supported within the wick-tube with its top a distance above the 50 wick-tube whereby the flame and heat of the vapor and the flame and heat from the wick-tube are united and concentrated and the united flames supported at a uniform height, the height depending on the height the vapor-tube rises above the outer tube. This feature utilizes in a concentrated form the heat 55 of the hydrocarbon-flame and of the vapor-flame. This construction not only utilizes

the vapor-flame to draw the hydrocarbon-flame to itself, but also draws or sucks the 60 oxygen of the air into the flame, whereas in the usual construction the air is forced or driven away from the center from which the flames are radiated.

I have shown and described a cylindrical 65 reservoir, but it is obvious that the shape and dimensions of the reservoir may vary without departing from the principles of my invention. The direction in which the tubes project from the reservoir may also vary, and 70 curved tubes may be used instead of straight ones.

Having thus described my invention, what I claim as new, and desire to secure by Letters 75 Patent, is—

1. A vapor and hydrocarbon burner consisting of a wick-tube, open at its upper end, carrying a wick and connected with a hydrocarbon-reservoir, a capped tube adjustably 30 supported in said wick-tube, and a vent in the middle of said cap, substantially as shown and described.

2. In a vapor and hydrocarbon burner for uniting and concentrating the heat and flame 35 of a hydrocarbon with the heat and flame of a jet of vapor produced thereby, the combination with a wick-tube open at its upper end and connected at its lower end with a hydrocarbon-reservoir, of a tube having its upper 40 end closed with a cap, and having a vapor-vent in the center of the top of said cap said tube being adjustably supported within said wick-tube with its capped end rising above 45 said wick-tube whereby the flame of the hydrocarbon and the flame of the jet of vapor produced thereby are united and the hydrocarbon-flame supported by the vapor-flame, 50 substantially as shown and described.

3. A lamp consisting of a reservoir A, a cap B secured to said reservoir, a tube C secured 55 in said cap and carrying a wick G, said tube provided with inwardly-turned projections D, at its upper end, a second tube E, capped at its upper end and provided with an orifice F in the top of said cap, said tube carrying 60 a wick H, and concentrically supported within the first tube between the projecting points therein, substantially as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses. 65

ANDREW E. VEON.

Witnesses:

D. D. SMITH,  
H. J. DAVIS.