

(No Model.)

C. BARTON.  
VAPOR BURNER.

No. 323,103.

Patented July 28, 1885.

fig. 1.

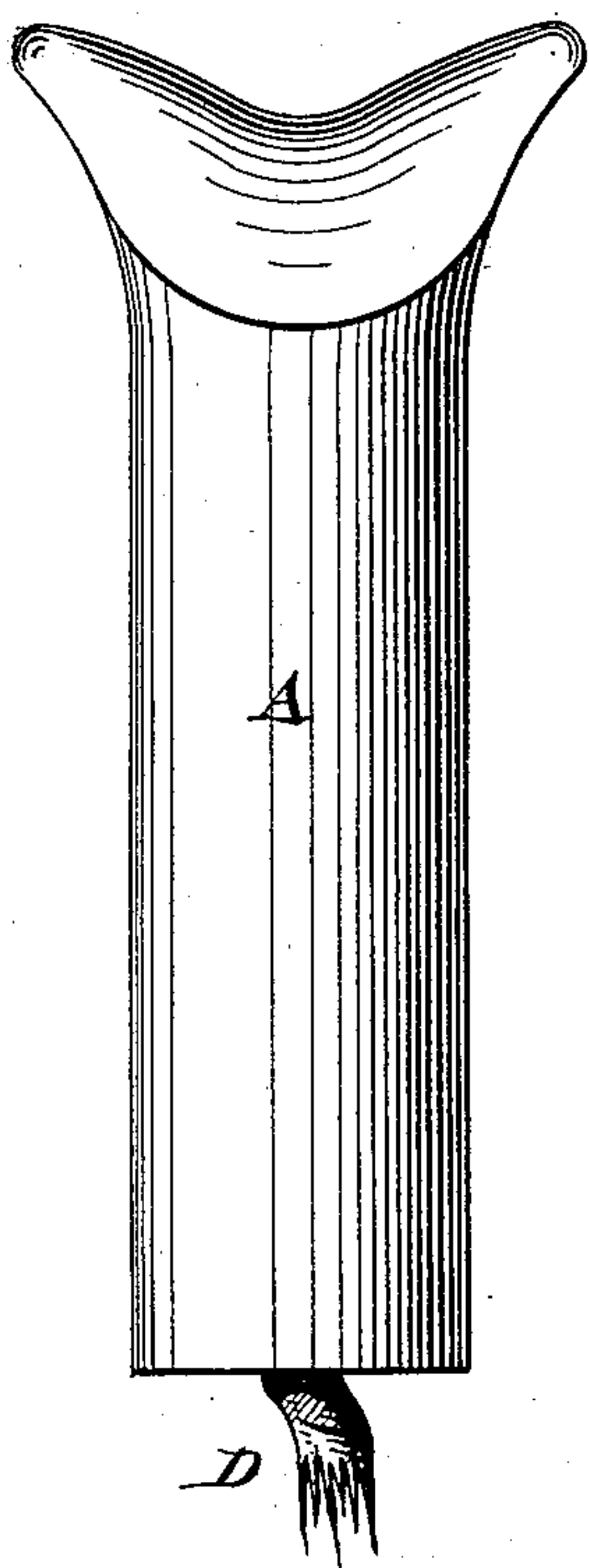


fig. 2.

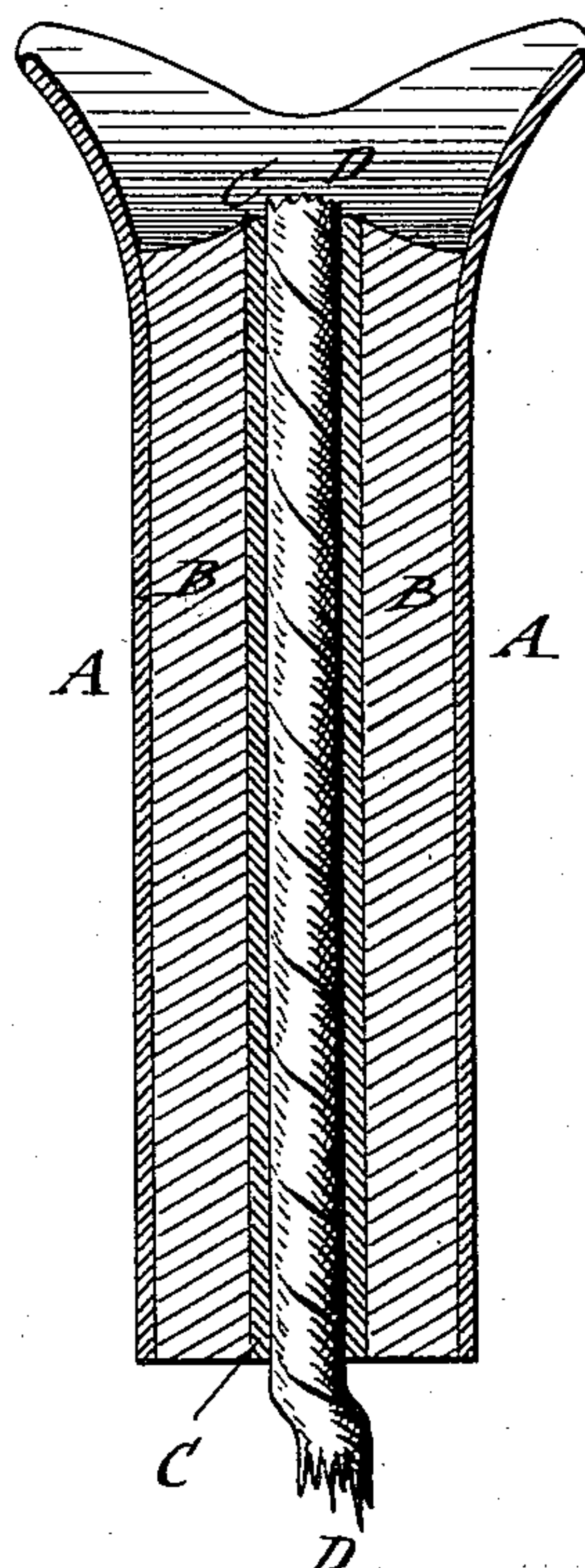


fig. 3.

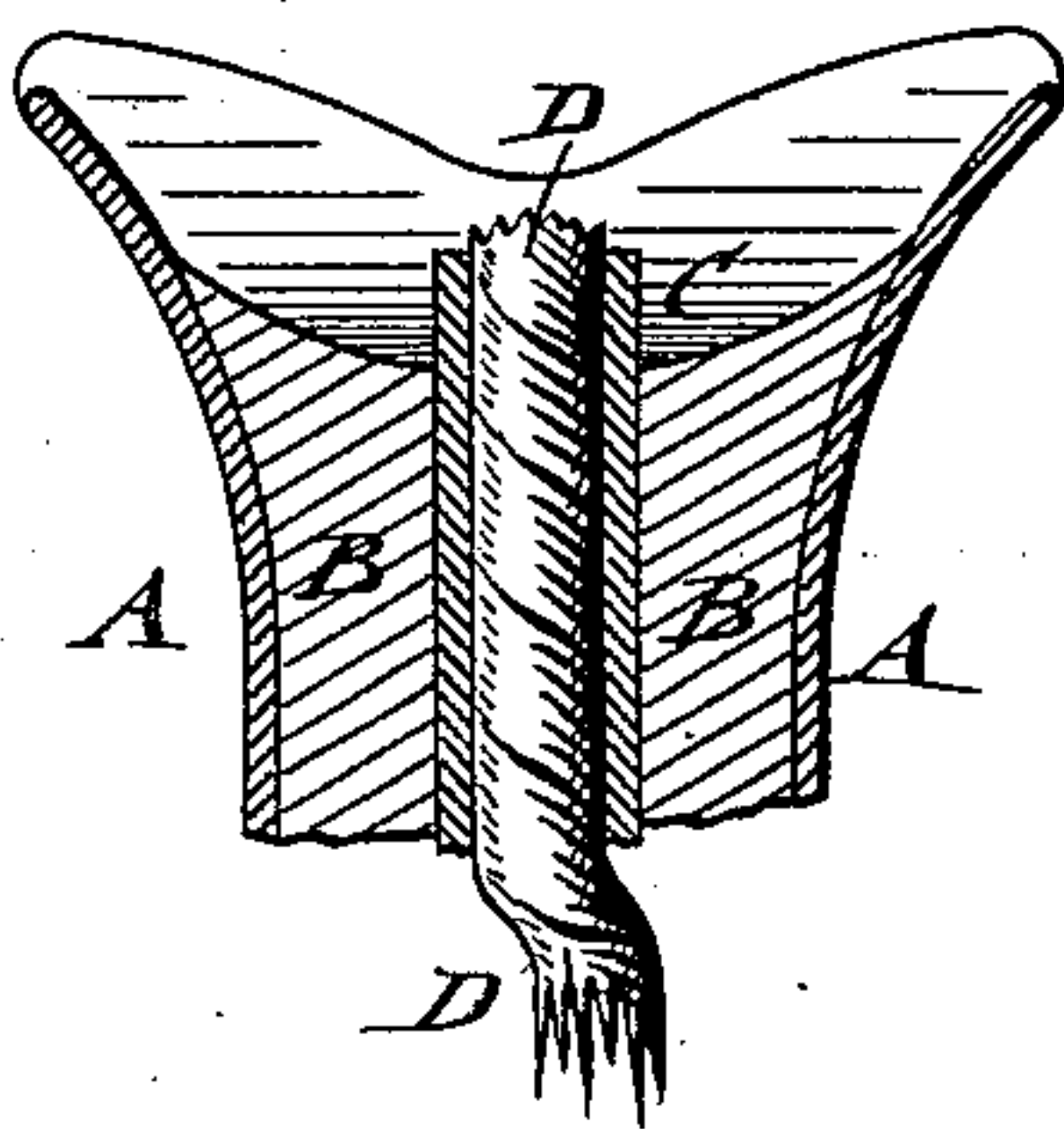
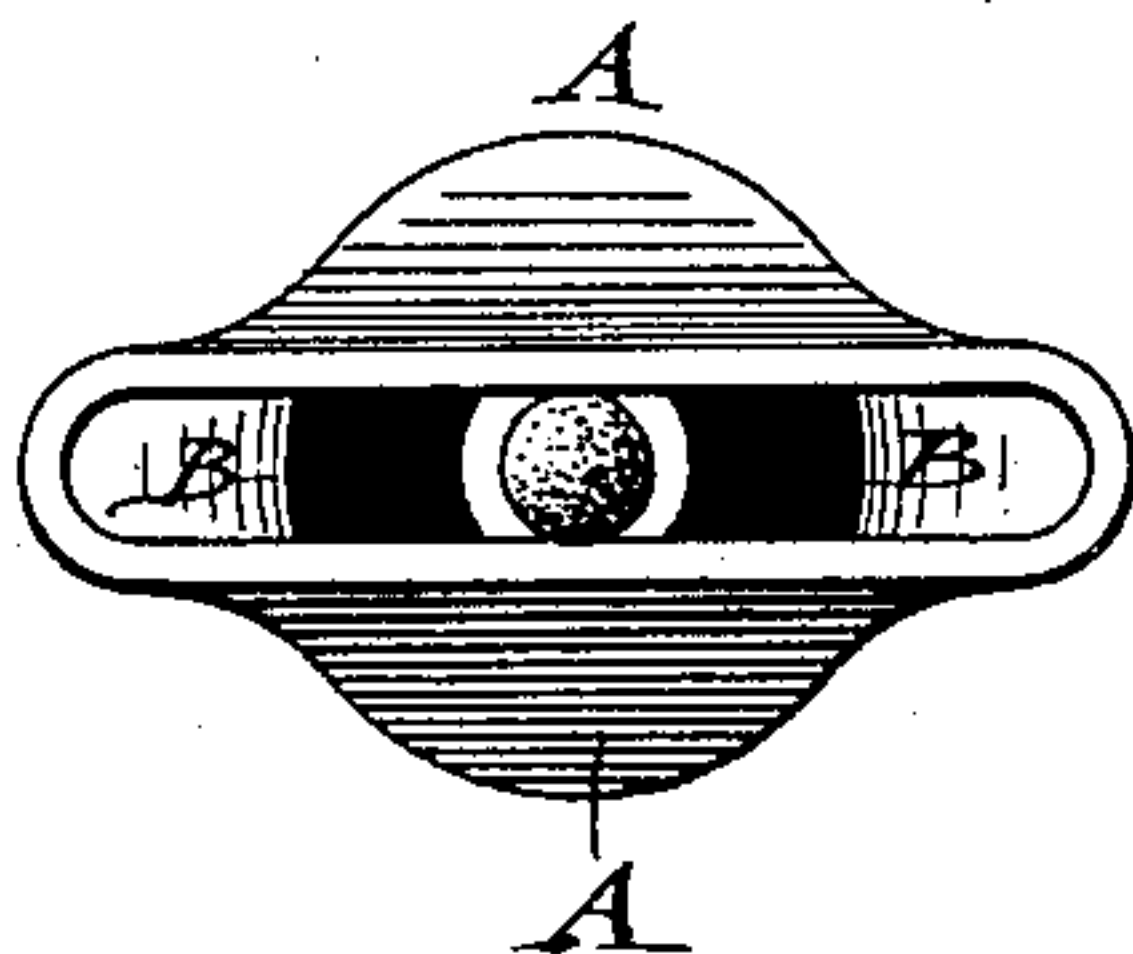


fig. 4.

WITNESSES:

*W. H. Rosenbaum.*  
*Chas. Ray*

INVENTOR

*Charles Barton*  
BY *Georg Raegen*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

CHARLES BARTON, OF BRANDON, COUNTY OF WARWICK, ASSIGNOR OF  
ONE-HALF TO ALEXANDER ROTHERHAM, OF COVENTRY, ENGLAND.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 323,103, dated July 28, 1885.

Application filed October 15, 1884. (No model.) Patented in England September 26, 1884, No. 12,822; in France October 3, 1884, No. 164,589; in Germany October 4, 1884, No. 31,820; in Belgium November 29, 1884, No. 67,048; in Italy December 5, 1884, No. 17,652; in Canada December 17, 1884, No. 20,741; in India January 30, 1885; in Spain February 20, 1885; in Tasmania February 21, 1885, No. 352/9; in Victoria February 16, 1885, No. 3,974, and in New South Wales May 4, 1885, No. 1,611.

*To all whom it may concern:*

Be it known that I, CHARLES BARTON, of Brandon, in the county of Warwick, England, gentleman, have invented certain new and useful Improvements in Hydrocarbon-Burners for Lamps or Stoves, (for which I have applied for Letters Patent in Great Britain, dated September 26, 1884, No. 12,822,) of which the following is a specification.

This invention relates to an improved vapor-burner by which the usual cotton wicks heretofore used are done away with, and the expense, trouble, and danger incident to the use of said wicks, also the trimming and renewing of the same are dispensed with.

My invention consists of a burner composed of an exterior tube, an interior wick-tube, and an intermediate layer or filling of carbon, charcoal, pumice-stone, plaster-of-paris, sand, or like lasting and porous substance, or cotton, sponge, or asbestos, or like suitable fibrous substance. The exterior tube is made of glass, porcelain, or like material, being a more or less bad conductor of heat, and not likely to become unduly heated so as to flash the oil. The upper end of the outer tube is flattened and dished, so as to form a suitable burner, that directs the vapors to form the shape of the flame. In the inner tube is arranged a wick that projects below the edge of the outer burner-tube, and serves to produce and ignite the oily vapors, which are obtained by heating the saturated intermediate filling of plaster-of-paris or other porous material.

In the accompanying drawings, Figure 1 represents a side elevation of my improved hydrocarbon-burner. Fig. 2 is a plan; Fig. 3, a vertical central section of the same, and Fig. 4 a vertical central section of the top of the burner, showing the details slightly varied.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a tube of glass, porcelain, or other vitreous or like bad heat-conducting material. At the inside of this tube is preferably placed one or more smaller tubes, C, of glass, porcelain, metal, or other suitable material, in which the wick D is

placed. The space between the outer tube, A, and the inner wick-tube, C, is filled with plaster-of-paris or other suitable porous material, B. By practical tests I have found that a plaster-of-paris filling has given excellent results.

The plaster-of-paris B may be so filled in that the inner tube, C, is fixed; or the tube may be simply slipped in or removed from the hole in the plaster-of-paris filling, as desired.

The filling of plaster-of-paris or other suitable porous material is exposed at its lower end to contact with the oil, which latter rises through said porous material by capillary attraction.

The wick D may also be placed directly into the porous filling without employing any wick-tube C; but it is preferable to use the inner wick-tube, as the ignition-wick can then be inserted and removed with greater facility when it is desired to do so.

The top of the tube A is dished and flattened, so as to form a small depression on each side of the inner tube, C, and above the porous material B. This leaves a space for the generation of the oily vapors caused by the small wick D when first lighted, so as to heat the flattened walls of the top of the tube A.

The height of the porous material and of the inner wick-tube, C, above the porous plaster or other material B may be varied as required. Fig. 4 shows the wick-tube raised above the porous filling, while in Fig. 3 it is shown nearly flush therewith.

In Fig. 4 the porous filling is molded so as to dish toward the wick, while in Fig. 3 it is molded so as to dish from the wick-tube toward the outer tube, A.

The wick is consumed very slowly when the burner is lighted. It burns down to the edge of the wick-tube, so as to heat the flattened walls of the outer tube, and also the top of the plaster or like porous material, so that the oil rising through the porous material is vaporized and burned as a gas, instead of being burned with a consuming wick, as heretofore. The burner is made long enough, so as to nearly reach the bottom of the reservoir or font and



secure the combustion of the oil or spirit therein.

Burners made according to my invention are safer, and do not smoke, as usual with cotton wicks. They also secure a more perfect combustion of the oil or spirit and insure a less consumption thereof, and consequently afford greater facilities for keeping lamps or stoves clean and in order. It is obvious that two or more of my burners may be combined, so as to form "duplex" or "multiplex" burners, as required by the lamp or stove.

The necessary connection or cap for connecting the burner with the reservoir is not shown in the drawings, as this depends on the style of the lamp or stove for which the burner is used.

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

1. A vapor-burner consisting of a tube provided with a porous packing, said packing being provided with a longitudinal opening and exposed to contact with the oil at its lower end, and a wick inserted in said opening, substantially as described.

2. A vapor-burner consisting of an inner and an outer tube, a porous packing between said tubes, exposed at its lower end, and a wick inserted in the inner tube, substantially as described.

3. A vapor-burner consisting of a tube provided with a porous packing, said packing being provided with a longitudinal opening and exposed to contact with the oil at its lower end, and a wick inserted in said opening, the upper end of said tube being extended above said packing, substantially as described.

4. A vapor-burner comprising an outer and an inner tube and a porous packing between said tubes, exposed at its lower end, the upper end of said outer tube being extended above said packing, substantially as described.

5. A vapor-burner comprising an outer and an inner tube and a porous packing between said tubes, exposed at its lower end, the upper end of said outer tube being extended above said packing and recessed at opposite sides, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES BARTON.

Witnesses:

E. GARDNER COLTON,  
*Fel. Inst. P. A.*

W. DAVIS.