No. 614,417. Patented Nov. 15, 1898.

F. R. BLOUNT.

HYDROCARBON BURNING APPARATUS OR LAMP.

(Application filed Nov. 12, 1897. Renewed Oct. 18, 1898.)

(No Model.)

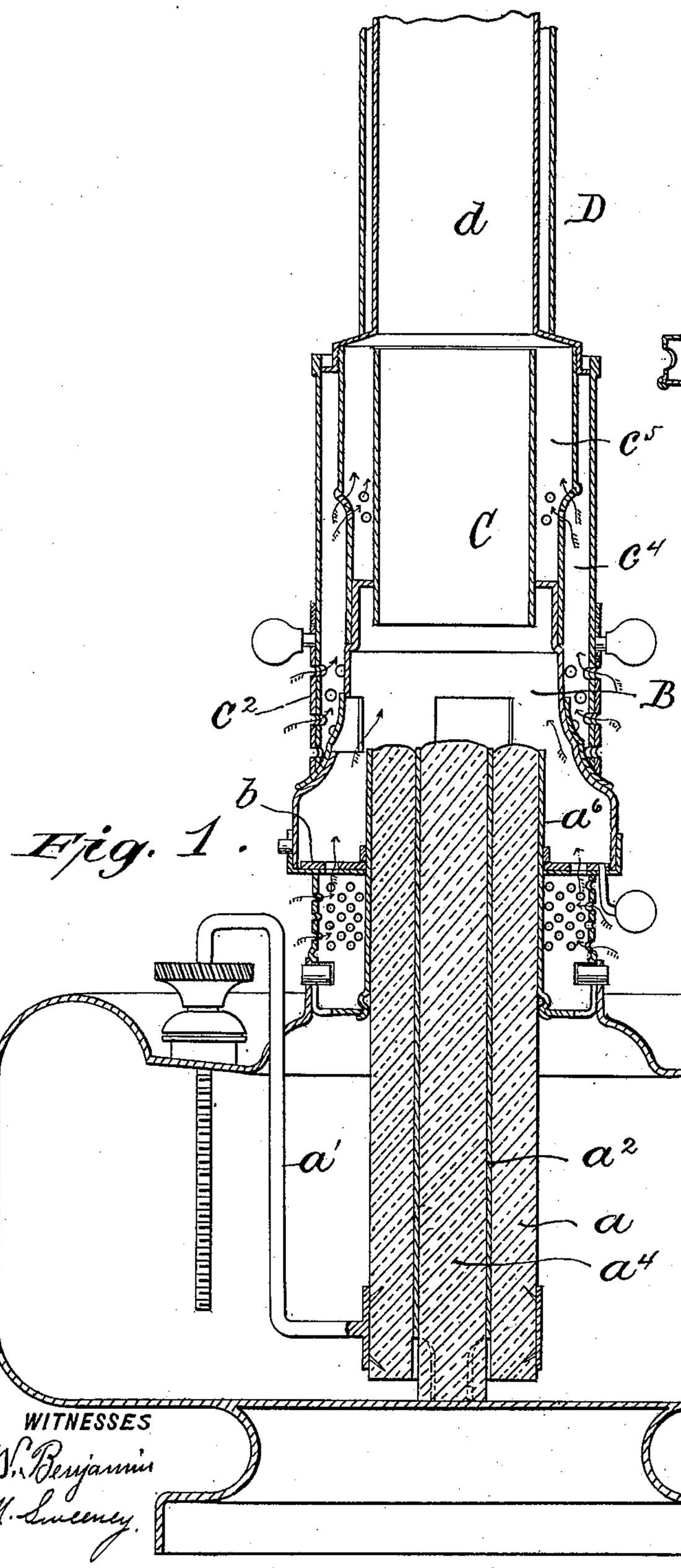

Fig. 1.

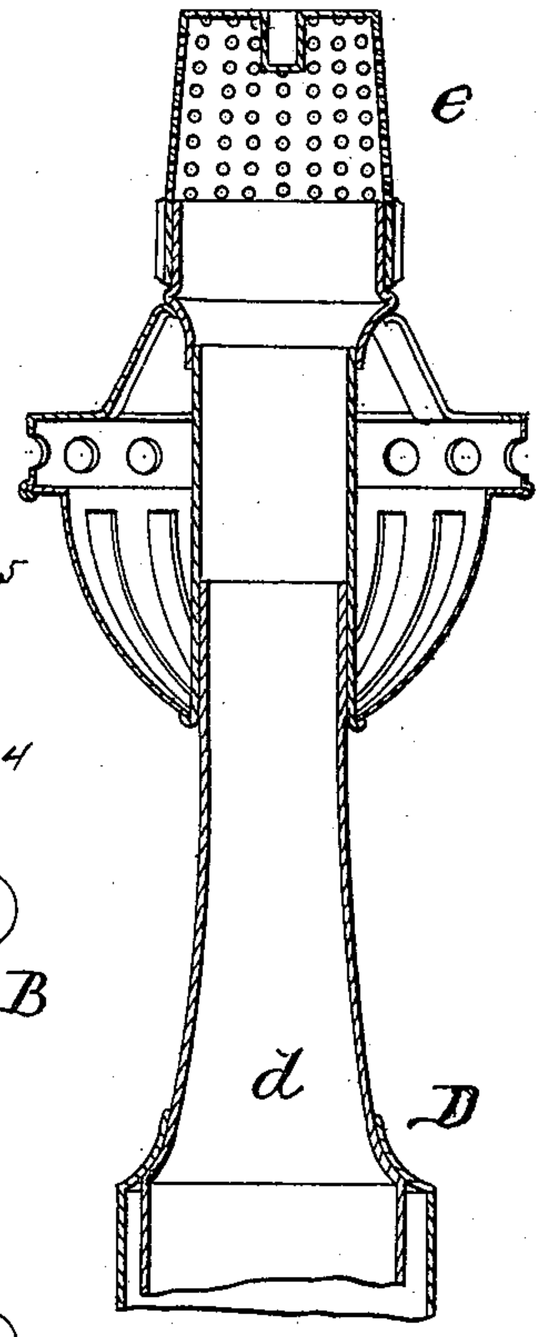

Fig. 2.

WITNESSES

C. W. Benjamin

C. M. Sweeney.

INVENTOR:

Fred'k R. Blount,

BY Henry Calvert,

ATTORNEY.

UNITED STATES PATENT OFFICE.

FREDERICK R. BLOUNT, OF NEW YORK, N. Y.

HYDROCARBON-BURNING APPARATUS OR LAMP.

SPECIFICATION forming part of Letters Patent No. 614,417, dated November 15, 1898.

Application filed November 12, 1897. Renewed October 18, 1898. Serial No. 693,919. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK R. BLOUNT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Hydrocarbon-Burning Apparatus or Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of hydrocarbon lamps or heaters by means of which a smokeless flame is produced from a liquid or molten hydrocarbon through the instrumentality of a primary burner or generator, which vaporizes the hydrocarbon, and a secondary burner removed from the primary burner, the vapor generated at the primary burner being mixed with air and conveyed to the secondary burner, where it is converted into a smokeless "blue" flame of high temperature.

The lamp embodying my present invention is or may be in its general construction substantially the same as the lamp shown by my application, Serial No. 658,317, filed simultaneously herewith; but instead of having a single annular wick, as does the lamp shown by my said application, my present lamp is provided with two wicks, one of which is annular and encircles the other, the central wick serving as an oil-feeder, while the outer wick serves as an oil-feeder and as the burning-wick, or the wick on which the flame of the primary burner is concentrated. This is due to the fact that in a lamp of the class referred to, where the flame of the primary burner is properly smothered, so that just heat enough will be produced to generate the vapor to be consumed at the primary burner, but not heat enough to cause any considerable combustion of said vapor, the generating-flame, even if a single solid wick be employed, is confined to a narrow circle at the outer part of the wick, while gas or vapor only is produced from the inner part of the wick by the heat of the said circle of flame. Thus the outer part only of the wick, where a solid wick is employed, or the outer wick where two wicks, one surrounding the other, are employed, will be consumed to any appreciable extent, the inner part of the single solid wick or the inner wick being unconsumed and serving, as stated, as a capillary conductor to feed the oil to the primary burner.

In the accompanying drawings, Figure 1 is a sectional view of a lamp embodying my invention, with the upper or secondary burner and the upper part of the tube forming the mixing-chamber broken away; and Fig. 2 is a vertical section of the upper part of the tube forming the mixing-chamber and of the upper or secondary burner.

A denotes the oil-reservoir of a lamp, from the bottom of which is supported a tube a^2, encircled by an annular wick a, the top portion of which is interposed between said tube and the wick-tube a^6, said wick being preferably provided with a screw-actuated raising and lowering device or wire a', operated by a thumb nut or screw in a well-known manner. Within the tube a^2 is a solid wick a^4, which is to serve as an oil-feeder. These wicks with their wick-tubes extend into the combustion-chamber B and constitute the primary burner of the lamp. Above the said combustion-chamber is a flue C, and above said flue is a mixing-chamber d, formed by the tube D, said tube being preferably contracted at its top and being surmounted by the secondary burner e, which consists, preferably, of a truncated foraminous cone or thimble. The combustion-chamber is provided at its bottom with a regulating and extinguishing shutter b, which may be so placed as to close the air-inlets to the said chamber more or less to secure a proper smothering effect in order to generate the carbon-laden gas at the primary burner with little or no consumption of the same or may serve as an extinguisher by entirely closing said inlets. My lamp is also provided with a second shutter c^2, by which the admission of air to the mixing-chamber d through the outer air-chamber c^4 and the inner air-chamber c^5 may be regulated.

In the use of my improved lamp when the primary burner is lighted and the shutter b is turned to properly smother the flame thereof a dense vapor heavily laden with carbon is generated at the said primary burner and passes upward from the combustion-chamber and through the flue C above said chamber to the mixing-chamber d, where it is mingled with air entering through the air-chambers c^4 and

c^5, the mingled air and vapor then passing upward to the secondary burner *e*, where, being lighted, it is converted into a smokeless blue flame of high temperature, which may be utilized for any desired purpose, but which in the form of my invention herein shown is intended to be used for heating an incandescing mantle for illuminating purposes.

I do not claim certain features of my improved lamp herein shown and also shown in my application, Serial No. 658,317, and which are therein claimed; but

What I claim, and desire to secure by Letters Patent, is—

1. In a heating or lighting apparatus, the combination with a primary or vapor-producing burner or generator comprising two closely adjacent wicks the inner one of which is solid and the outer one of which is annular and surrounds the said solid wick, of a combustion-chamber into which said wicks extend, a secondary burner removed from the said primary burner, and a mixing-chamber above the said combustion-chamber and in which mixing-chamber the vapor generated at said primary burner is mingled with air on its way to said secondary burner.

2. In a heating or lighting apparatus, the combination with a primary or vapor-producing burner or generator comprising two closely adjacent wicks the inner one of which is solid and the outer one of which is annular and surrounds the said solid wick, of a combustion-chamber into which said wicks extend, and a secondary burner removed from the said primary burner, and a mixing-chamber above the said combustion-chamber and in which mixing-chamber the vapor generated at said primary burner is mingled with air on its way to said secondary burner, said secondary burner comprising a truncated foraminous cone.

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

FREDERICK R. BLOUNT.

Witnesses:

HENRY CALVER,

M. L. SLATER.