

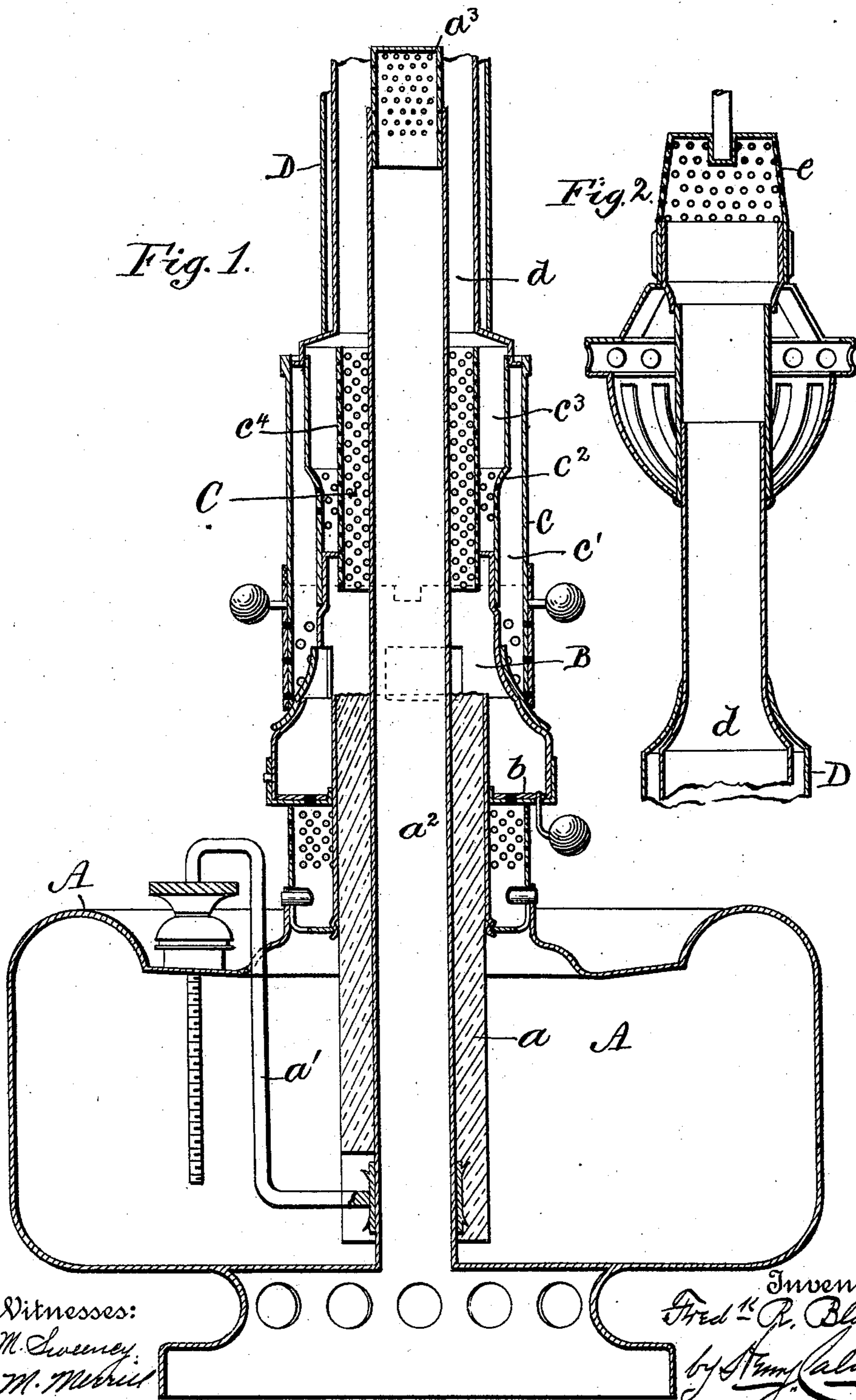
No. 614,081.

Patented Nov. 15, 1898.

F. R. BLOUNT.
HYDROCARBON BURNING APPARATUS OR LAMP.

(Application filed Feb. 9, 1898.)

(No Model.)



Witnesses:
C. M. Sweeney,
M. M. Merrill

Inventor:
Fred^l. R. Blount,
by *Samuel Albert*,
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. 614,081, dated November 15, 1898.

Application filed February 9, 1898. Serial No. 669,674. (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.

10 This invention relates to that class of hydrocarbon lamps or heaters by means of which a smokeless flame of high temperature 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 or separated from the said primary burner by means of an extended flue or mixing-chamber, in which the vapor generated at the primary burner is thoroughly mingled with air on its way to the secondary burner, so that the mixture will burn with a smokeless blue flame of high temperature.

25 The present invention relates to certain improvements in the form of lamp shown and described in my application, Serial No. 658,317, filed November 12, 1897. In the lamp shown by my said application I employ a flue between the combustion-chamber of the primary burner and the mixing-chamber, in which the vapor is mingled with air on its way to the secondary burner, said flue being formed by a tube having an imperforate outer wall and said flue surrounding the central air-tube passing into the said mixing-chamber. I have discovered, however, that instead of using a flue with an imperforate wall much better results are secured by providing the wall of this flue with openings, or, in other words, by using a foraminous wall for the flue and through the openings of which more or less air can enter, thereby practically extending the mixing-chamber farther downward toward the combustion-chamber. By the use of this flue with a foraminous or perforated outer wall I am enabled to more thoroughly mingle the vapor generated at the primary burner with air, so that a steadier and better flame is produced when the mixture is consumed at the secondary burner, and thus when this secondary burner is employed for

heating an incandescent mantle a better and steadier light is produced.

In the accompanying drawings, Figure 1 is a section of a central-draft lamp embodying my present invention, and Fig. 2 is a sectional view of the upper part of the mixing-chamber with the secondary burner surmounted thereon.

A denotes the oil-reservoir of the lamp, into which extends the wick *a* of the primary burner, and which wick will in practice preferably be provided with a screw-actuated raising and lowering device *a'*.

B is the combustion-chamber, into which the top of the wick *a* extends, the said combustion-chamber being provided at its bottom with a shutter *b*, which will be turned to admit air through perforations in the bottom wall of said chamber when the lamp is first lighted, but which may be turned so as to partly or wholly close said openings subsequently in order to get a proper smothering effect in the said combustion-chamber, so that there will be just flame enough at the primary burner to vaporize the oil or other hydrocarbon with little or no consumption of the vapor or gas thus generated.

Above the combustion-chamber B is a flue C, formed in the present instance by a foraminous or perforated tube *c*¹.

My improved lamp is preferably of the central-draft type, and is therefore herein shown as being provided with a central air-tube *a*², extending from the base of the lamp upward through the annular wick *a*, the combustion-chamber B, and the flue C into the mixing-chamber *d*, formed by the tube D, said air-tube being surmounted by a perforated thimble *a*³, forming a screen to check the free upward flow of the air.

The air which is to be mingled with the vapor produced at the primary burner enters through perforations in the lower part of the hood or sleeve *c* into the outer air-chamber *c'* and passes thence through the perforated wall *c*² to the inner air-chamber *c*³ and thence through the perforated wall *c*⁴ of the flue C and also upward in the said inner air-chamber *c*³, which latter opens into the base of the mixing-chamber proper, *d*. The inflow of air to the air-chambers *c'* and *c*³ is regulated by

a sleeve or shutter c^5 , which may be turned slightly to close the holes in the hood or sleeve c more or less, as may be desired. By thus mingling the air with the vapor not only in the mixing-chamber d , but also within the flue C, a thorough mixture of the air and vapor is secured, so that as the mixture passes upward in the mixing-chamber formed by the tube D to the secondary burner e , with which said tube is surmounted, it is in the best possible condition to produce a smokeless high-temperature or "blue" flame at the said secondary burner when ignited there. Thus a lamp provided with my present improvements and equipped with an incandescing mantle heated at the said secondary burner will produce a steady and beautiful white light, the flame of the said secondary burner being more even and constant than could be heretofore produced in a lamp not embodying the present improvement. In other words, by perforating the wall of the flue C the mixing-chamber is practically extended downward, so that a more thorough mingling of the air and vapor is produced than was heretofore effected.

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

1. In a heating or lighting apparatus, the combination with a primary or vapor-producing burner or generator, of a combustion-

chamber into which the wick of the said burner extends, a flue above the said combustion-chamber provided with a foraminous or perforated wall, a mixing-chamber above the said flue, said mixing-chamber consisting of an extended vertical tube, means for admitting air to the said flue and mixing-chamber, and a secondary burner at the top of the tube of the said mixing-chamber.

2. In a heating or lighting apparatus, the combination with a primary or vapor-producing burner or generator, of a combustion-chamber into which the wick of the said burner extends, a flue above the said combustion-chamber provided with a foraminous or perforated wall, a mixing-chamber above the said flue, said mixing-chamber consisting of an extended vertical tube, means for admitting air to the said flue and mixing-chamber, an air-tube extending from the base of the lamp through the wick of the said primary burner and also through the said combustion-chamber and flue into the said mixing-chamber, and a secondary burner at the top of the tube of the said mixing-chamber.

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

FREDERICK R. BLOUNT.

Witnesses:

ALBERT T. OTTO,
M. L. SLATER.