No. 740,392. PATENTED OCT. 6, 1903.

J. BYSTROM.

HYDROCARBON LAMP.

APPLICATION FILED APR. 18, 1902.

NO MODEL.

Fig. 1.

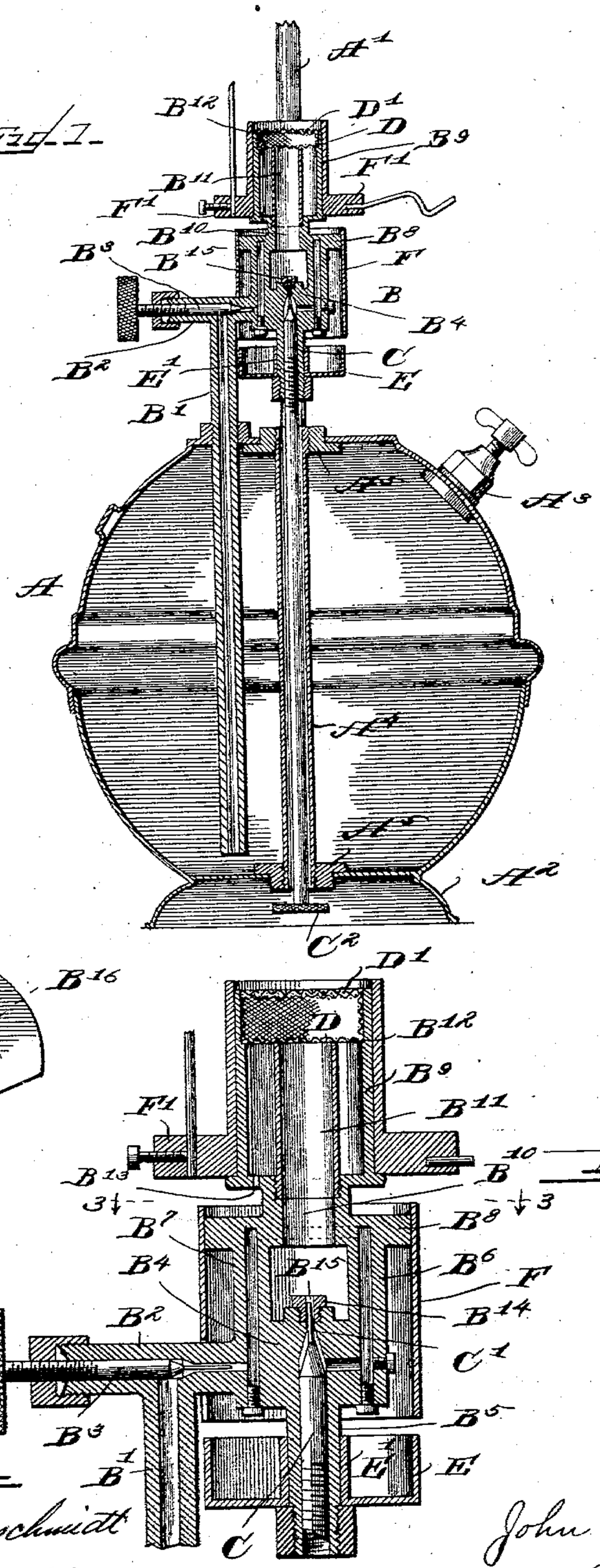

Fig. 3.

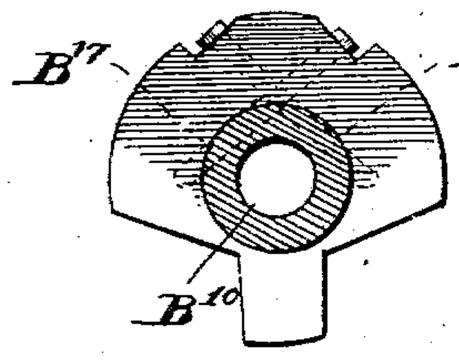

Fig. 2.

Witnesses—

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No. 740,392. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

JOHN BYSTROM, OF CHICAGO, ILLINOIS, ASSIGNOR TO BYSTROM GAS LAMP COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

HYDROCARBON-LAMP.

SPECIFICATION forming part of Letters Patent No. 740,392, dated October 6, 1903.

Application filed April 18, 1902. Serial No. 103,588. (No model.)

To all whom it may concern:

Be it known that I, JOHN BYSTROM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hydrocarbon-Lamps, of which the following is a specification.

One of the objects of this invention is the production of a hanging lamp wherein the needle-valve extends downward through the lamp-body to a point easy of access to a person standing on the floor below the lamp.

A further object of the invention is the production of an improved burner for hydrocarbon-lamps.

In the accompanying drawings, Figure 1 is a vertical central section through a lamp embodying the features of my invention. Fig. 2 is a side elevation of my improved burner. Fig. 3 is a transverse section on dotted line 3 3 of Fig. 2.

In the construction of a lamp embodying this invention I provide a body portion A, having upright arms A′ for suspending the lamp, and a flanged base A^2, upon which the lamp may rest when placed upon the floor or a suitable support. In this instance I have made the body portion substantially globular and have provided it with an air-supply valve A^3, by means of which the hydrocarbon within the lamp-body is put under air-pressure. A tube A^4 extends vertically through the lamp-body, said tube being secured to the top and bottom of said lamp-body, on the exterior walls thereof, by means of the flanged heads A^5.

A burner B surmounts the lamp-body A and is secured thereto by means of the tubular supporting-stem B′. At its upper end this stem has a transverse portion B^2, screw-threaded interiorly and exteriorly to receive a supply-valve B^3. At the inner end of the transverse portion B^2 is formed the body portion B^4 of the burner, comprising the depending central tubular stem B^5, screw-threaded inside and outside to receive the needle-valve, to be later herein described, and two upright tubular arms B^6 and B^7, supporting the generating-head B^8, over which head and formed integral therewith is provided a mixing-chamber B^9. The generating-head has a central perforation B^{10} to coincide with the tubular stem B^5 for the needle-valve, and this opening is internally screw-threaded to receive a Bunsen tube B^{11}, extending upward within the mixing-chamber B^9. At its upper end the mixing-chamber has an internal shoulder B^{12} for receiving a gauze screen and in its lower end has an opening B^{13} for a subjet adapted to heat the generating-head B^8. A nipple B^{14}, having a minute escape-orifice B^{15}, is fixed within the body portion B^4 and in line with the perforation B^{10} in the generating-head B^8, also alined with the Bunsen tube B^{11}. The generating-head is provided with the two ducts B^{16} and B^{17}, communicating with each other and connecting the upper ends of the tubular arms B^6 and B^7, respectively.

C is a needle-valve stem threaded near its upper end to engage the corresponding screw-threads within the tubular stem B^5 and having at its forward end a wire point C′. The valve-stem extends downward through the tube A^4 in the body portion of the lamp and terminates below said lamp-body in the button C^2.

D and D′ are two gauze screens, of wire or other suitable material, placed in the upper part of the mixing-chamber B^9, the screen D being in circular disk form and adapted to lie upon the shoulder B^{12} within said mixing-chamber, and the screen D′ being in cap form, its lower edge adapted to rest upon the screen D.

E represents an initial generating-cup having the tubular central stem E′ for surrounding the depending needle-valve stem B^5, upon which the generating-cup is supported.

The body portion of the lamp is provided with a housing F, and surrounding the mixing-chamber is the usual gallery F′ for supporting a mantle and globe. (Not shown.)

In operation the body portion A of the lamp is partially filled with hydrocarbon and air-pressure applied by means of an air-pump. The supply-valve B^3 is opened, and the body portion B^4 of the burner B is heated by any suitable means, as by burning alcohol in the generating-cup E. As soon as gas is generated in the body portion of the burner the needle-valve C is opened, permitting said gas to escape in a jet upward through the open-

ing B^{10} in the generating-head, through the Bunsen tube B^{11}, and into the mixing-chamber B^9. The greater quantity of this gas passes upward through the screens D and D' and burns upon the surface of the mantle. A part of the gas in the mixing-chamber B^9 is forced downward through the opening B^{13} and there burns in a subjet for heating the generating-head. The course of the hydrocarbon and the gas formed therefrom is through the tubular stem B', the transverse portion B^2 thereof, passing the supply-valve B^3, into the body portion B^4, upward through the arm B^7, through the ducts B^{16} and B^{17} in the generating-head B^8, downward through the arm B^6 into the body portion B^4 to the needle-valve, and through the orifice B^{15} into the Bunsen tube B^{11}. The needle-valve passing downward through the lamp-body is easy of access to the operator, and the flame of the lamp when suspended from the ceiling or a bracket may be regulated without taking down the lamp or compelling the operator to climb up on a ladder or chair to reach the regulating-valve.

I claim as my invention—

1. In a burner for hydrocarbon-lamps, in combination, a body portion provided with a gas-escape orifice; a generating-head located above said body portion; two tubular arms communicating between said body portion and said generating-head, said head having ducts connecting the upper ends of said tubular arms; a needle-valve for closing said escape-orifice; a mixing-chamber located above said generating-head and provided in its lower end with an opening for a subjet; and a gauze screen in the upper end of said mixing-chamber.

2. In a burner for hydrocarbon-lamps, in combination, a tubular supporting-stem having communication with the interior of the lamp-body; a transverse tubular portion for said stem; a supply-valve for said transverse portion; a body portion having a gas-escape orifice; a tubular arm communicating with the interior of said body portion; a generating-head; a second tubular arm communicating with said body portion, said generating-head having ducts connecting said tubular arms; a needle-valve for closing said escape-orifice; a mixing-chamber having an opening for a subjet; a Bunsen tube within said mixing-chamber, said tube being alined with and open to said escape-orifice; and a gauze screen in the upper end of said mixing-chamber.

3. In a hydrocarbon-lamp, in combination, a lamp-body; a tube extending through said lamp-body; a tubular supporting-stem having communication with the interior of said lamp-body; a transverse tubular portion for said stem; a body portion having a gas-escape orifice; a tubular arm communicating with the interior of said body portion; a generating-head; a second tubular arm communicating with said body portion, said generating-head having ducts connecting said tubular arms; a needle-valve for closing said escape-orifice, the stem of said valve lying within the tube extending through the lamp-body; a mixing-chamber located above said generating-head, said chamber having in its lower end an opening for a subjet; and a gauze screen in the upper end of said mixing-chamber.

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Witnesses:
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