No. 656,750. Patented Aug. 28, 1900.

A. C. ROEBUCK & F. McMILLAN.

GENERATING APPARATUS FOR HYDROCARBON VAPOR LAMPS.

(No Model.) (Application filed Sept. 2, 1899.)

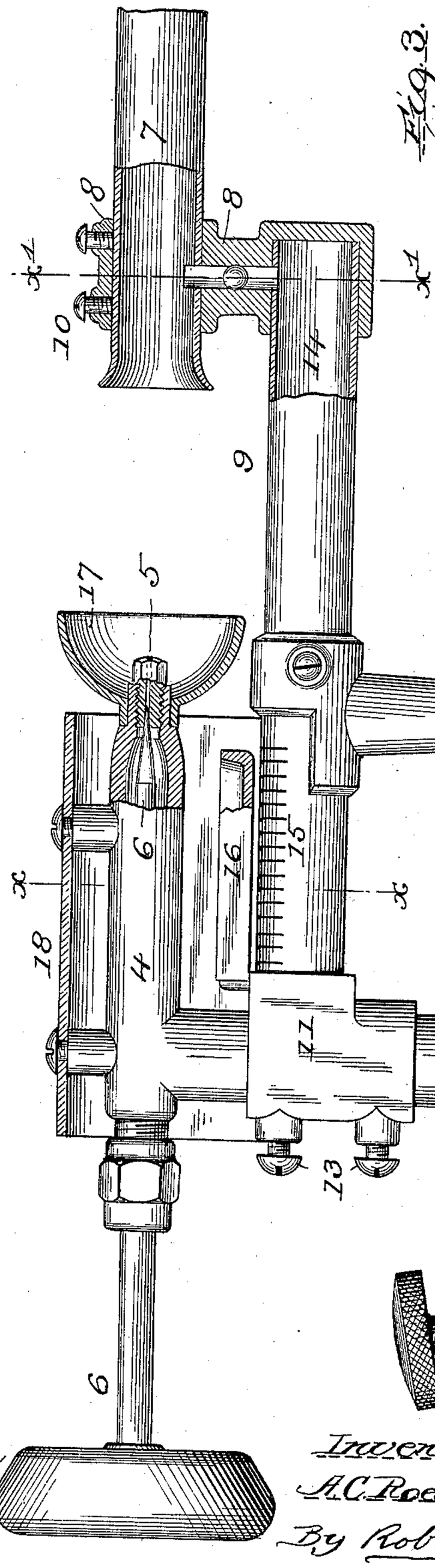

Fig. 1.

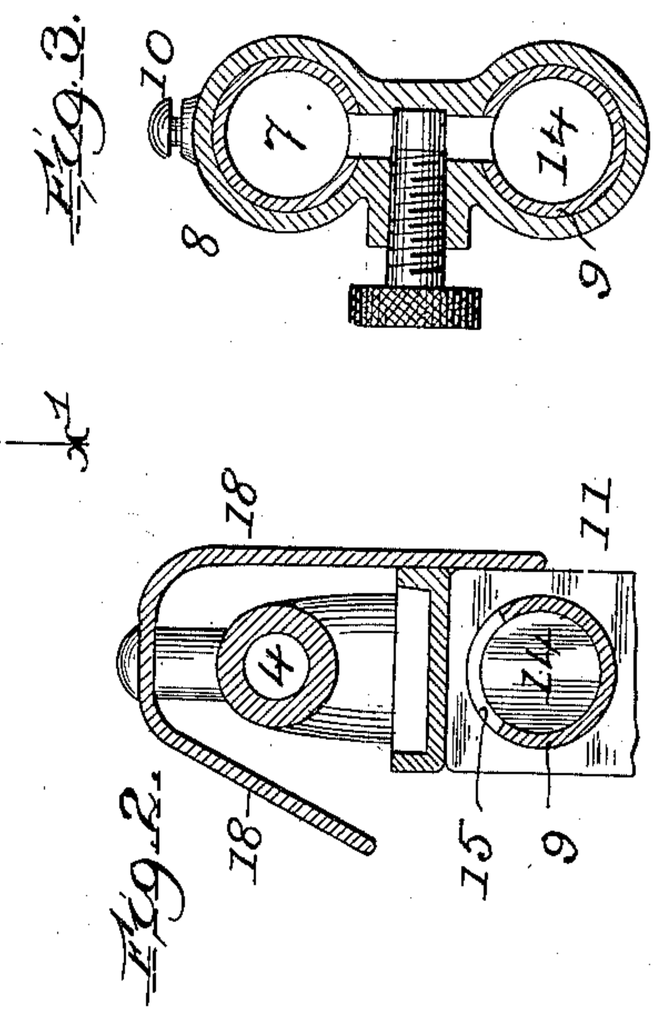

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK AND FRANK McMILLAN, OF CHICAGO, ILLINOIS, ASSIGNORS TO THE ENTERPRISE OPTICAL MANUFACTURING COMPANY, OF SAME PLACE.

GENERATING APPARATUS FOR HYDROCARBON-VAPOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 656,750, dated August 28, 1900.

Application filed September 2, 1899. Serial No. 729,365. (No model.)

To all whom it may concern:

Be it known that we, ALVAH C. ROEBUCK and FRANK MCMILLAN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Generating Apparatus for Hydrocarbon-Vapor Lamps; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to that type of hydrocarbon-vapor generators in which an auxiliary jet or burner is adapted to maintain the main vapor-generator or retort at the required temperature.

One object of the present improvement is to provide a simple and efficient construction and arrangement of parts whereby a portion of the mixed vapor and air from the mixing or commingling chamber is reconducted back to supply an auxiliary burner beneath the vapor-generator to afford a constant and uniform heat beneath the same, as will hereinafter more fully appear.

A further object of the present improvement is to provide a durable and convenient construction of the apparatus in which a ready and accurate adjustment of the parts with relation to each other can be effected to meet the varying requirements in the different uses of the apparatus, as will hereinafter more fully appear.

We attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in axial section, illustrating the present invention; Fig. 2, a transverse section at line $x\,x$, Fig. 1; Fig. 3, a similar view at line $x'\,x'$, Fig. 1.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the supply-tank of the apparatus, containing the supply of hydrocarbon liquid; 2, a valved inlet through which a pressure of air is introduced to cause a forced feed of the liquid hydrocarbon to the generating-chamber or retort; 3, a tubular post attached to the reservoir 1 and having the usual tubular extension or branch-pipe connection with the bottom portion of the supply-chamber 1; 4, a horizontally-arranged vapor-generator or retort attached to the upper end of the post 3 and adapted to receive its supply of hydrocarbon therefrom. 5 is the outlet-jet from said retort, controlled by a horizontally-arranged needle-valve 6 and adapted to discharge a jet of vapor into the mixing or commingling tube of the apparatus.

7 is the horizontally-arranged commingling-tube, one end of which is in line with the outlet-jet 5, so as to receive the jet of vapor therefrom, while the other end is connected in any usual manner, by flexible hose or otherwise, with an ordinary incandescent mantle-burner. In the present invention a duplex adjustment of the commingling-tube 7 is provided, whereby an adjustment of the same can be attained to suit the varying requirements that will arise in the different uses of the apparatus, and such adjustments will comprise a vertical adjustment of said commingling-tube in a vertical direction, so as to adjust the same in proper axial alinement with the outlet-jet 5, such adjustment being afforded in the present construction by the bracket-piece 9, provided at one end with a collar 8 and set-screw 10 for engaging the commingling-tube 7 and at the other end with a collar 11, surrounding the vertical post 3, so as to be capable of a vertical movement thereon, which vertical movement is in turn effected by a vertically-arranged adjusting-screw 12, screwing into the bracket 9, with its lower end resting or abutting upon the top or other fixed part of the supply-tank, as shown, and a swinging adjustment in a horizontal plane, the post 3 constituting the pivot of such movement, while the parts are held to the desired adjustment by set-screws 13.

The auxiliary burner, by means of which a constant heat is maintained beneath the generator-retort 4, will in the present improvement comprise the formation of the supporting-bracket 9 with an interior passage 14, one end of which communicates with the

interior of the commingling-chamber, as shown, and is adapted to receive a supply of mixed air and combustible vapor therefrom, while the other end of said chamber ends in the burner-slits 15 or other like orifices in the top surface of the bracket immediately beneath the generator or retort 4, as shown, to constitute the auxiliary burner beneath the retort for maintaining the same at the required temperature in an even and uniform manner.

16 is a tray pivoted at one end to the collar 11 and adapted to swing in a horizontal plane into a position immediately beneath the retort or generator and into another position out of the way of the auxiliary burner of the apparatus. The purpose of this tray is to contain a supply of liquid combustible by the combustion of which the initial heating of the generator is attained.

17 is a semispherical hood arranged over the outlet-jet 5, the purpose of which is to shield such jet from the flame of the auxiliary burner and prevent the ignition of the vapor as it issues from such jet.

18 is a confining hood or casing encompassing the generator and adapted to confine the flame of the auxiliary burner around such generator.

The special means for effecting a vertical adjustment as well as a swinging adjustment of the commingling-tube forms a part of the subject-matter of our former application, Serial No. 727,442, filed August 16, 1899, and accordingly no claim is made in the present application to such means of adjustment.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, and a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, substantially as set forth.

2. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, and a confining-hood secured to the retort and inclosing the burner portion of horizontal burner portion of the bracket, substantially as set forth.

3. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a horizontal commingling-tube in line therewith, a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, and means for effecting a vertical adjustment of the commingling-tube and the tubular return-bracket, substantially as set forth.

4. In a hydrocarbon-vapor generator and burner of the class described, the combination of a horizontally-arranged retort having an outlet-jet at one end, a hood or shield for such jet, a horizontal commingling-tube in line therewith, and a supporting-bracket for the commingling-tube formed with a horizontal passage connected at one end with the commingling-tube, and at the other end provided with a series of transverse burner-slits located beneath the retort, substantially as set forth.

In testimony whereof witness our hands this 28th day of August, 1899.

ALVAH C. ROEBUCK.
FRANK McMILLAN.

In presence of—
ROBERT BURNS,
JAMES LAVALLIN.