No. 656,749. Patented Aug. 28, 1900.

A. C. ROEBUCK & F. McMILLAN.

GENERATING APPARATUS FOR HYDROCARBON LAMPS.

(Application filed Aug. 16, 1899.)

(No Model.)

Fig. 1.

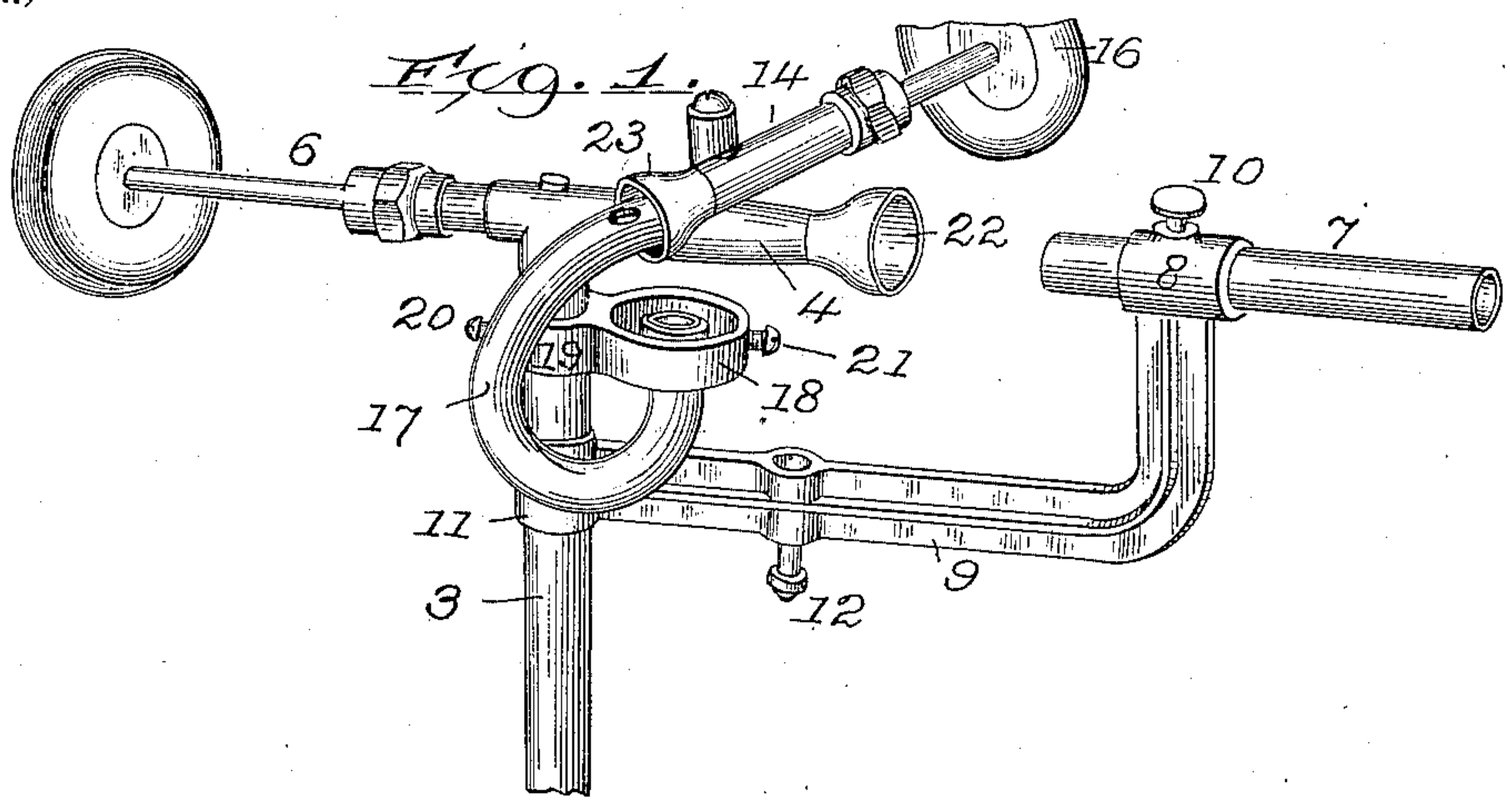


Fig. 2.

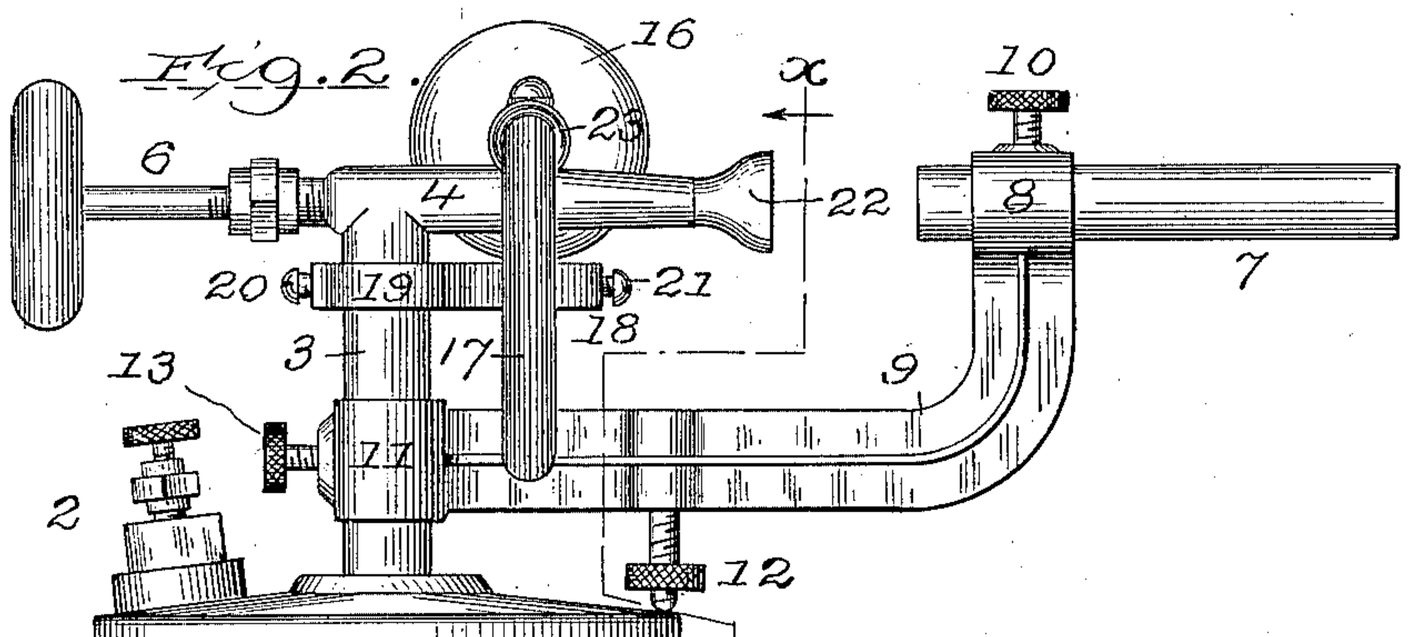


Fig. 3.

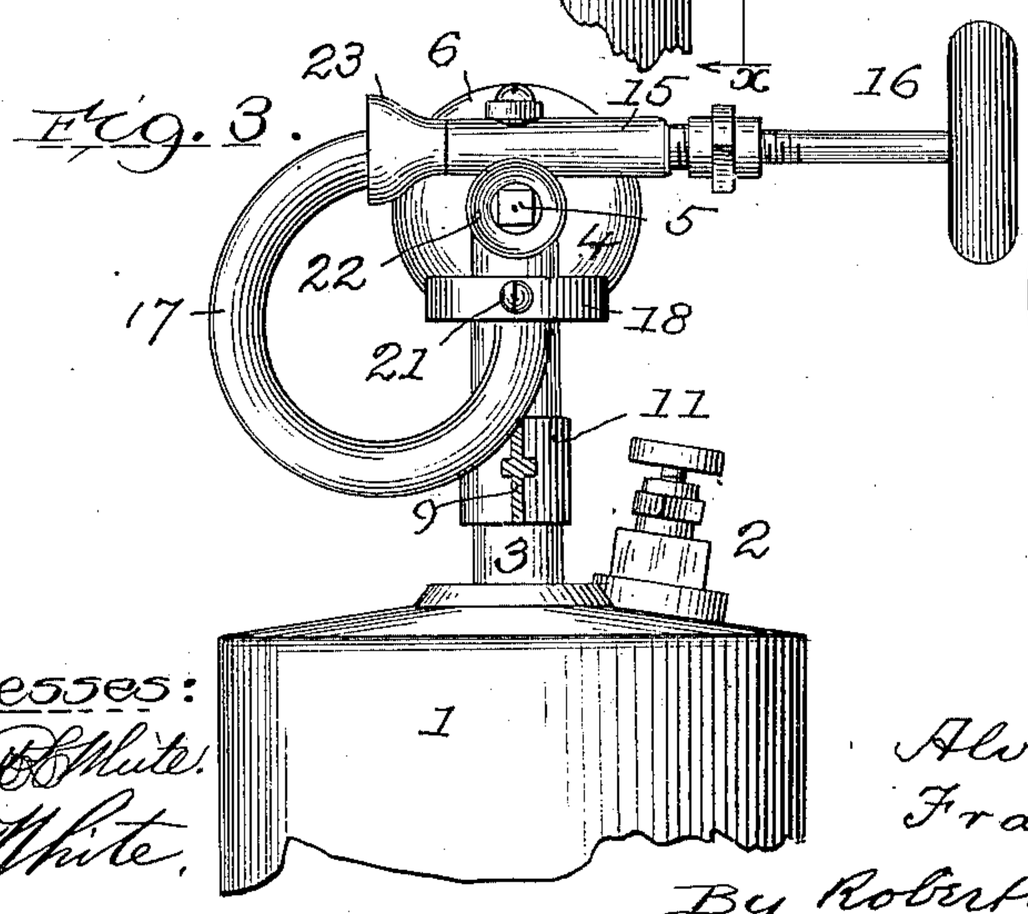
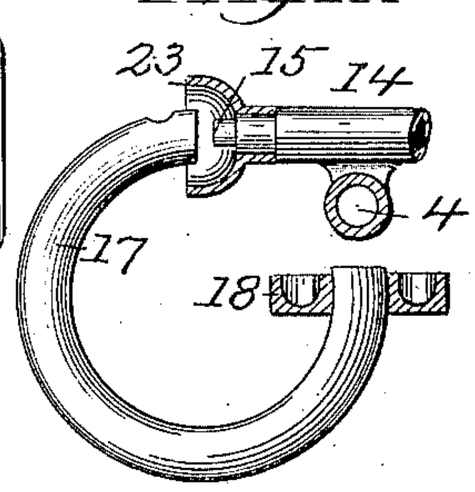


Fig. 4.



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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-LAMPS.

SPECIFICATION forming part of Letters Patent No. 656,749, dated August 28, 1900.

Application filed August 16, 1899. Serial No. 727,442. (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-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 generally to that class of hydrocarbon-vapor lamps in which the hydrocarbon vapor as it is discharged under pressure from the vapor-generator draws along with it a proper volume of air into the commingling-chamber, from whence the mixed air and vapor is carried to an incandescent-mantle burner and by a combination in contact with the burner-mantle effects an incandescent illumination; and the present invention more especially relates to that particular type of such apparatus in which an auxiliary jet or burner is employed to afford a constant source of heat to the vapor-generator of the apparatus.

The object of the present improvement is to provide a simple, convenient, and effective construction and arrangement of the generating and commingling portions of the apparatus whereby a perfect adjustment of the various parts of the apparatus to suit the varying conditions met with in use can be effected in a ready, convenient, and substantial manner, all as will hereinafter more fully appear and be more particularly pointed out and set forth in the claims. We attain such object by the formation and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a detail perspective view of the generator, commingling-chamber, and connections. Fig. 2 is a side elevation of a vapor-generating apparatus embodying the present invention; Fig. 3, a transverse sectional elevation at line *x x*, Fig. 1; Fig. 4, a detail transverse sectional elevation illustrating the auxiliary burner and its connections.

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

Referring in detail to the drawings, 1 represents the closed reservoir, adapted to contain the supply of gasolene or other light hydrocarbon liquid; 2, a valved inlet through which a pressure of air can be introduced into the interior of the reservoir to cause a forced feed of the gasolene or other liquid to the vapor-generator, and 3 a vertically-arranged tubular post fixedly attached to the top of the reservoir 1 and having the usual tubular extension down through the interior of such chamber, as usual in apparatus of this type.

4 is the horizontal vapor generator or retort, arranged at the upper end of the vertical post 3 and receiving its supply of gasolene or other like fluid therefrom. 5 is the outlet-jet from the said retort and adapted to discharge a jet of vapor into the commingling-tube hereinafter described.

6 is the horizontally-arranged needle-valve, by which the vapor-outlet is regulated and controlled.

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 has a suitable hose or other usual connection 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 any varying requirement that may arise in the varied applications of the present invention, and such adjustments will comprise a longitudinal adjustment in a horizontal line to and from the outlet-jet 5 in order to vary the distance between such jet and the mouth of the commingling-tube, such adjustment being readily effected by means of the guide-collar 8 on the supporting-bracket 9 and the fastening-screw 10, 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 readily and efficiently effected by connecting the bracket 9 to the vertical post 3 by a collar 11, so as to be capable of a vertical adjustment thereon, which is in turn effected by means of the vertically-arranged adjustable screw 12, screwing into the bracket 9, with its lower end bearing or abutting upon

the top of the reservoir, as shown, and a swinging adjustment in a horizontal plane, the post 3 constituting the fulcrum of such movement, the parts being held to the required adjustment by a set-screw 13.

The auxiliary burner, by means of which a constant heat is maintained beneath the generator or retort 4, comprises in the present construction a transversely-arranged tube 14, arranged immediately above the retort 4 and communicating therewith, so as to receive a supply of vapor therefrom. Such tube 14 is provided at one end with an outlet-jet 15 and at the other end with a needle-valve 16, by which the outlet of vapor is controlled.

17 is a tubular segmental commingling-chamber, one end of which is adapted to receive the jet of vapor discharged by the outlet-jet 15, while the other end is adapted to discharge such vapor commingled with air directly beneath the retort 4 and by the combination of such mixture maintain the retort or generator at the desired elevated temperature. The segmental commingling-chamber 17 is supported by the tray-shaped bracket 18, attached, by means of its collar 19 and set-screw 20, to the vertical post 3 in a vertically and horizontally swinging manner, so as to attain a proper adjustment of such tray-shaped bracket beneath the generator or retort 4. In addition to the adjustments above described of the tray-shaped bracket the segmental commingling-tube is also adjustably attached thereto at its outlet end by means of the set-screw 21, so as to further aid in the universal adjustment of the parts and the attainment of the proper relation of such parts one to the other.

The tray-shaped bracket 18 is intended in addition to forming a support for the sector-shaped commingling tube or chamber 17 to also perform its usual function of a preliminary heater for the generator in first starting up the apparatus, and for this reason is chambered out on top to receive a quantity of liquid combustible, by the combination of which the preliminary heating of the retort or generator is effected as usual in the present type of apparatus.

22 and 23 are hoods arranged over the jets 5 and 15 and adapted to shield the same from the flame of the auxiliary burner, so that the vapor will not be ignited at its point of issue from such jets.

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 retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a combined vertical and longitudinal adjustment of the commingling-tube, substantially as set forth.

2. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a vertical adjustment of the commingling-tube, the same comprising a bracket carrying said tube and having vertical movement on a post of the apparatus and an adjusting-screw screwing into the bracket and having abutment against the top of the reservoir, substantially as set forth.

3. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and means for effecting a combined vertical and longitudinal adjustment of the commingling-tube, the same comprising a bracket formed with a holding-sleeve in which such tube is adjustable in a longitudinal direction, and adapted to have vertical movement on a post of the apparatus, and an adjusting-screw screwing into the bracket and having abutment against the top of the reservoir, substantially as set forth.

4. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube, substantially as set forth.

5. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube and means for effecting a swinging adjustment of such tray-shaped bracket in a horizontal plane, substantially as set forth.

6. In a hydrocarbon generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube, and means for effecting a combined vertical and swinging adjustment in a horizontal plane to such tray-shaped bracket, substantially as set forth.

7. In a hydrocarbon-vapor generator and burner of the class described, the combination of a retort having an outlet-jet, a horizontal commingling-tube in line therewith, and an auxiliary heater comprising a vapor-jet, a segmental commingling-tube and a tray-shaped bracket supporting said tube in a manner to permit of an adjustment in a circular plane, substantially as set forth.

In testimony whereof witness our hands this 12th day of August, 1899.

ALVAH C. ROEBUCK.
FRANK McMILLAN.

In presence of—
ROBERT BURNS,
JAMES LAVALLIN.