R. A. ASTLEY.

VAPOR LAMP.

APPLICATION FILED FEB. 24, 1914.

1,100,007.

Patented June 16, 1914.

FIG. 1.

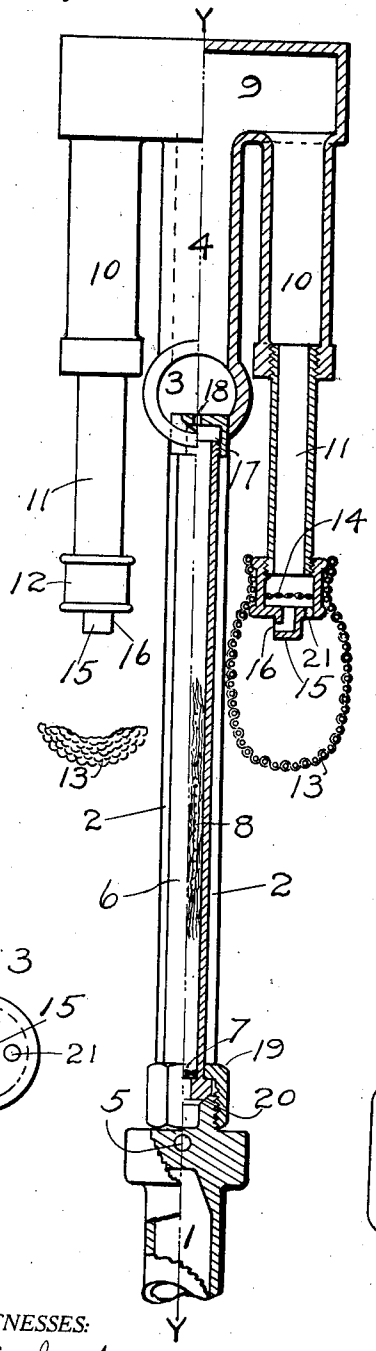


FIG. 2.

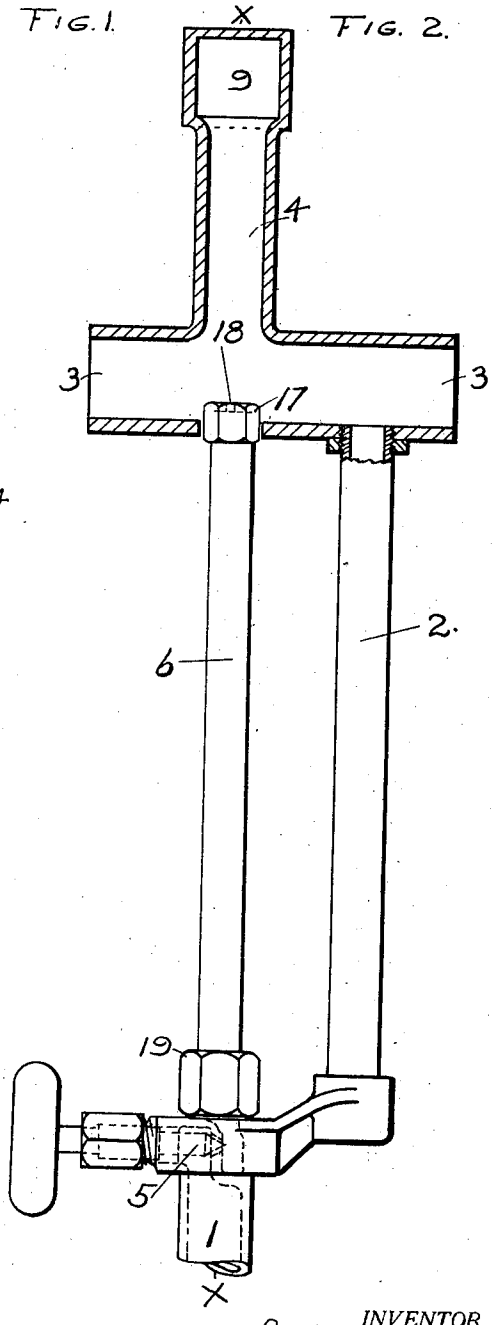
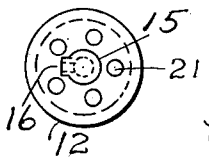


FIG 3



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VAPOR-LAMP.

1,100,007. Specification of Letters Patent. Patented June 16, 1914.

Application filed February 24, 1914. Serial No. 820,750.

To all whom it may concern:

Be it known that I, ROBERT A. ASTLEY, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented a new and useful Improvement in Vapor-Lamps, of which the following is a specification.

My invention relates to lamps for burning the vapor of kerosene, gasolene, and other hydro-carbon oils, and its purpose is to make a device that shall be capable of readily and perfectly vaporizing kerosene and similar oils, and in which the generating tube shall be readily removable for cleaning or renewal. I attain these purposes by the means shown in the accompanying drawings, in which—

Figure 1 is a view, partly in section and partly in elevation of my device, taken substantially along the line *x—x* of Fig. 2. Fig. 2 is a view, partly in section and partly in elevation along the line *y—y* of Fig. 1, being the axis of the air intake tube. Fig. 3 is a plan of the end of the burner tip.

Referring to the drawings, 1 is a fuel supply pipe, 2, a standard support of the burner, 3, the air intake of the burner, 4, the mixer tube, 5, a needle valve for admitting fuel to the generating tube, 6. These parts, with the exception of the generating tube may be of any preferred form or construction, and are all of them in various forms, well known in the art. The generating tube, 6, is removably connected to the valve, 5, and is provided near its base with a strainer, 7. At its upper end it is removably inserted into an opening in the lower side of the air inlet, 3. A wick, 8, is placed in the interior in a well known manner to prevent pulsation of the fuel in the tube. The mixing tube, 4, opens into the horizontal passage, 9, which in the form of my device shown in Fig. 1 extends in both horizontal directions and opens near each end into a vertical tube, 10, into the lower ends of which is screwed a burner tube, 11, provided at its lower extremity with a tip, 12. adapted to receive a mantle, 13. The burner tips are each provided with a wire gauze, 14, for the purpose of preventing the flashing back of the gas into the tube. At their lower extremities the burner tips, 12, are provided with a plurality of openings, 21, as shown in Fig. 3, to permit the flow of gas into the mantle, 13. An offset or projection, 15, is centrally positioned on the lower extremity of the tip, 12, and is provided with a jet orifice, 16, directed horizontally directly toward the generating tube, 6. The tube, 6, is provided at its upper extremity in the usual manner with a jet point, 17, with the usual jet opening, 18. In using my device the tube, 1, is connected in any desired manner with a supply of fuel oil such as kerosene. The generating tube, 6, is heated in any desired manner to a sufficient temperature to evaporate the oil. The valve, 5, is then opened and the oil admitted to the tube, vaporized and passes through the jet tube, the mixing tubes, and the tubes, 10, to the burner tips and into the mantles in the well known manner. At the same time a jet of vapor passes out through the opening, 16, strikes against the side of the mantle, 13, and passes on through the meshes of the fabric, which as is well known, are very loose in texture, and strikes against the side of the generating tube, 6, this jet being composed of a mixture of air and vapor, and being further intensely heated by contact with the hot gases in the interior of the mantle, acts as a glow pipe on the generating tube, 6, which it heats to a very high degree. The same effect is produced by the jet on the opposite side of the tube. The effect of these two blow pipe jets of intensely heated gases, blowing against the generating tube, is to heat it so intensely that it will vaporize kerosene and other oils heavier than gasolene, with very little deposition of carbon or other impurities to fill the tube, 6. When, however, the generating tube, 6, becomes so filled with deposit as no longer to work satisfactorily, it may be readily removed by unscrewing the union, 19, which is preferably formed as is common in such a union, with a conical seat, 20, removing the tube, 6, and replacing it with a new one. The old one may then be either cleaned or discarded, as may be deemed best. The lamp thus provided with a new generating tube, becomes practically a new lamp, as far as its operating efficiency is concerned.

I claim as my invention and desire to secure by Letters Patent:

1. The combination in a burner for hydrocarbon vapors, of a generating tube provided with a jet orifice; a mixing tube; a burner tip, having a jet orifice adapted to direct a jet of gas against said generating tube, and a mantle mounted on said burner tip and inclosing said last named jet orifice.

2. The combination in a burner for hydrocarbon vapors, of a generating tube provided with a jet orifice; a mixing tube; a burner tip, and a mantle; said burner tip having a jet orifice located within said mantle and adapted to direct a jet of gas through said mantle and against said generating tube.

3. The combination in a burner for hydrocarbon vapors, of a readily removable generating tube provided with a jet orifice; a mixing tube; a burner tip, and a mantle; said burner tip having a jet orifice located within said mantle and adapted to direct a jet of gas through said mantle and against said generating tube.

4. The combination in a burner for hydrocarbon vapors, of a readily removable generating tube provided with a jet orifice; a mixing tube; a burner tip; a mantle mounted on said burner tip, and a jet pipe opening out of said burner tip within said mantle and adapted to direct a jet of gas through said mantle and against said generating tube.

5. The combination in a burner for hydrocarbon vapors, of a removable generating tube provided with a jet orifice; a mixing tube; a burner tip; a mantle mounted on said burner tip, and a jet pipe opening out of said burner tip within said mantle and adapted to direct a jet of gas horizontally through said mantle and against said generating tube.

ROBERT A. ASTLEY.

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