E. SEITZ.

VAPOR LAMP.

APPLICATION FILED MAR. 16, 1908.

1,004,478. **Patented Sept. 26, 1911.**

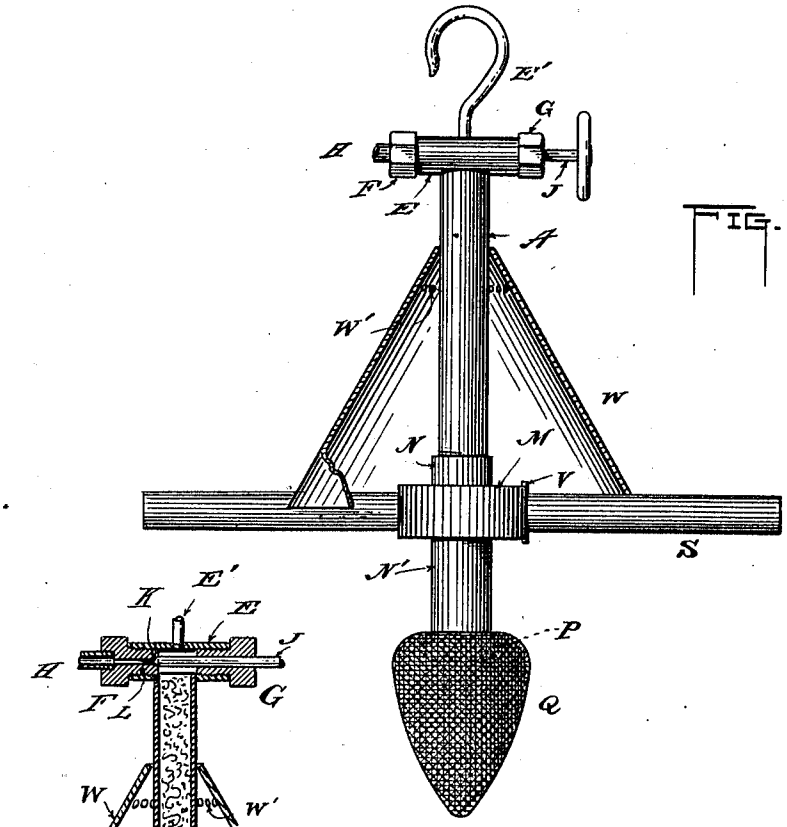

FIG. 1.

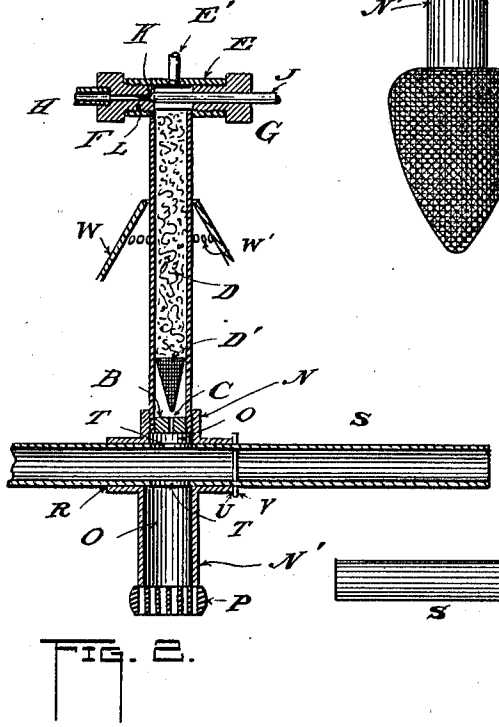

FIG. 2.

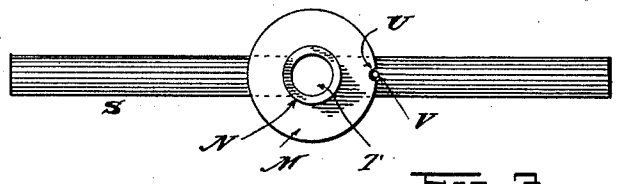

FIG. 3.

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UNITED STATES PATENT OFFICE.

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VAPOR-LAMP.

1,004,478. Specification of Letters Patent. Patented Sept. 26, 1911.

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To all whom it may concern:

Be it known that I, EDWARD SEITZ, citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Vapor-Lamps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a vapor lamp.

The object of the invention is to produce a lamp of very simple form and therefore one costing but little to manufacture.

The invention also relates to certain details of construction and arrangement of parts as will be pointed out hereinafter and will constitute the subject of the claims.

In the drawings presented herewith Figure 1 is an elevation of the lamp. Fig. 2 is a vertical section of portions of the same, and Fig. 3 is a plan of certain fittings shown in Fig. 1.

The lamp is composed of but few parts which may be easily and cheaply produced in any shop and there are no castings entering into its construction and the fittings used consist chiefly of tubing cut to the desired length.

In the figures A indicates a vertically disposed generator consisting of a piece of tubing having suitably secured in its lower end a plug B provided with an orifice C. Said generator is filled with asbestos or other suitable straining material D except at its lower end where it is provided with a conical strainer D′ adapted to catch particles of foreign matter carried by the gasolene and to prevent said particles entering the orifice C described. The upper end of the generator is suitably secured to a piece of horizontally disposed tubing E capped at both ends by threaded nuts F and G and which constitutes a valve. Connected to and opening through the cap F is a hollow wire H through which gasolene is conducted. The opposite cap G is bored out to receive the stem J of a needle valve, the end of said stem being conical in form and adapted to fit in a conical seat K in an extension L of the cap F.

In the top of the member or valve E is secured in any suitable manner a hook E′ by which the lamp may be suspended from the ceiling. The lower end of the generator receives a fitting M preferably turned out of solid metal which has a round body as viewed in Fig. 3. From its upper and lower surface extend portions N and N′ respectively, the lower one being considerably longer than the upper one, there being a bore O extending vertically through the fitting and the portions just described. The upper portion N is adapted to screw upon the lower threaded extremity of the generator by means of internal threads on said portion. Upon the lower portion N′, Fig. 2, is secured a member P to receive the inverted mantle Q shown in Fig. 1, said member having perforations for passage of vapor into said mantle. The fitting M is bored horizontally as at R and receives an air receiving and mixing tube S which is removably held therein. This tube is open at both ends and provided with apertures at diametrically opposite sides at substantially the middle of its length. These apertures are indicated by the letter T and are designed to register with the orifice C of the generator and the bore O of the fitting M so that vapor discharged through said orifice will pass through both apertures T to the burner mantle.

In operation the generator after being preferably heated by means of a torch or other device, not shown, is given a charge of gasolene by opening the valve E. The fluid on entering the generator is immediately vaporized by the heated parts and issues with force through the orifice C and through the tube S into the mantle Q. The mixer necessary for the air and vapor is the passage O within the fitting M. Since the heated products of combustion arising from the mantle would enter the bore R of the fitting M and would interfere with the proper operation of the lamp, I have provided the removable tube S described the ends of which extend some considerable distance beyond the mantle at each side so that the heated products of combustion from said mantle in rising can in no way find entrance to the lamp. It is evident that the mixing chamber besides being the passage O must also be a portion of the tube S immediately adjacent to the apertures T and vapor issuing with force from the orifice C will naturally be mixed with the air entering from the open ends of the said tube S, the mixture being

in proper condition for burning on reaching the mantle. In order that said tube S can be located with sufficient exactness to bring its passages T in line with the orifices C, I have provided a notch in the vertical edge of the fitting M indicated at U. Extending vertically through the tube S is a pin V whose ends project from each side and which lie within the notch. By having this tube removable the orifice C can be readily reached through the fitting M by means of the usual wire cleaner for this purpose by which said orifice may be thoroughly cleaned of any deposit such as would interfere with the proper operation of the lamp. In replacing the tube it is only necessary to see that the pin V lies within the notches described. The pin also will prevent the tube from changing its position due to such jarring as would be likely to carry the apertures out of proper register with the jet orifice C and the passage O.

It is desirable to provide means for keeping the generator thoroughly heated during the operation of the lamp so as to produce thorough vaporization of the fluid. To accomplish this I provide a cone W whose upper small end surrounds the generator; its lower large end resting upon the tube S substantially as shown although other means may be used by which it may be held in place. Near the top of the cone are perforations W′ to permit escape of enough of the heated products of combustion to cause a draft from the mantle into the cone by which to keep the generator thoroughly heated.

Various changes can be made in the lamp such as will fall within the spirit and intent of the invention.

Having thus described my invention, I claim:

1. In a vapor lamp, the combination of a fuel valve, a conduit for fuel connected therewith, a vapor generator also connected into and suspended from the valve and having a discharge nozzle at its lower extremity, a mixing chamber suspended from and connected with said generator comprising a depending extension provided with a burner, a removable air tube extending into and through the mixing chamber and provided at substantially opposite sides with apertures lying opposite the discharge nozzle and the said mixing chamber.

2. In a vapor lamp the combination of a fuel-valve, a conduit for fuel connected therewith, a vapor generator depending from and communicating with the valve and provided with a discharge nozzle, a mixing chamber connected with the generator and comprising a depending extension axially in line with the discharge orifice of the nozzle, a tube extending through the chamber from diametrically opposite sides thereof and removably held therein, there being apertures in the walls of the tube at opposite sides in the path of the vapor discharge from the nozzle, and means to sustain the tube in position relative to said discharge nozzle.

3. In a vapor lamp the combination of a fuel-valve, a conduit for fuel connected therewith, a vapor generator depending from said valve and having a discharge nozzle, a mixing chamber carried by said generator and entirely inclosing the nozzle, and comprising a depending tubular portion provided with a discharge opening, a removably carried tubular extension communicating with the interior of the mixing chamber and projecting from diametrically opposite sides thereof to supply air thereto, and a hollow conical hood inclosing the upper portion of the generator and having provision for the passage of air through its top, the said hood being widely flared and open at its lower extremity.

4. As an article of manufacture, a portable vapor lamp consisting of a valve, means attached to it by which to suspend it, a fluid conduit connected into the valve, a vapor generator suspended from the valve and consisting of a tube having a discharge nozzle at its lower extremity, a mixing chamber secured to and suspended from the generator and consisting of a depending tubular extension to receive a mantle, there being a horizontal bore through the chamber, a tube removably held in the latter and extending from both sides thereof, and provided with apertures at substantially the middle of its length at diametrically opposite sides, and means to hold the tube in position to permit discharge of vapor from the nozzle through the apertures of said tube toward the mantle.

5. As an article of manufacture, a portable vapor lamp consisting of a valve, means attached to it by which to suspend it, a fluid conduit connected into the valve, a vapor generator suspended from the valve and consisting of a tube having a discharge nozzle at its lower extremity, a mixing chamber secured to and suspended from the generator and consisting of a depending tubular extension to receive a mantle, there being a horizontal bore through the chamber, a tube removably held in the latter and extending from both sides thereof, and provided with apertures at substantially the middle of its length at diametrically opposite sides, means to hold the tube in position to permit discharge of vapor from the nozzle through the apertures of said tube toward the mantle, and a conical hood having its upper small end inclosing the generator and its lower flared end resting upon said last named tube and having provision in its said upper small end for the passage of air therethrough around the generator.

6. In a vapor lamp a vapor generator having a discharge nozzle at its lower end, a mixing chamber suspended from the generator, the latter being connected therewith, said mixing chamber consisting of a casting having a horizontal bore and a depending integral tubular extension provided at its extremity with a discharge opening, a mantle suspended from said extension and a tube removably carried in the horizontal bore of the chamber and perforated within the latter to provide an unbroken passage from the nozzle to the discharge opening of said tubular extension of the chamber.

7. In a vapor lamp the combination of a vertical tube to constitute a vapor generator and having a discharge nozzle at its lower end, a fluid supply valve at its upper end from which it is suspended, a mixing chamber connected to the nozzle, a hood surrounding the generator, its upper small end lying close to the latter, its lower end being widely flared, and an air receiving extension for the mixing chamber, the same extending beyond the flared lower end of the hood and arranged to receive the lower end of the latter and act as a support for the same.

8. In a vapor lamp the combination of a vertical tube provided with a straining material and constituting a vapor generator and having a discharge nozzle at its lower end, a fluid supply valve at its upper end from which it is suspended, a mixing chamber connected to the nozzle, a hood surrounding the generator, its upper small end lying close to the latter, its lower end being widely flared, an air receiving tube removably held in the mixing chamber, the same extending beyond the flared lower end of the hood, and means to locate the tube in its proper position in said chamber and hold it from movement.

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

EDWARD SEITZ.

Witnesses:

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L. M. THURLOW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."