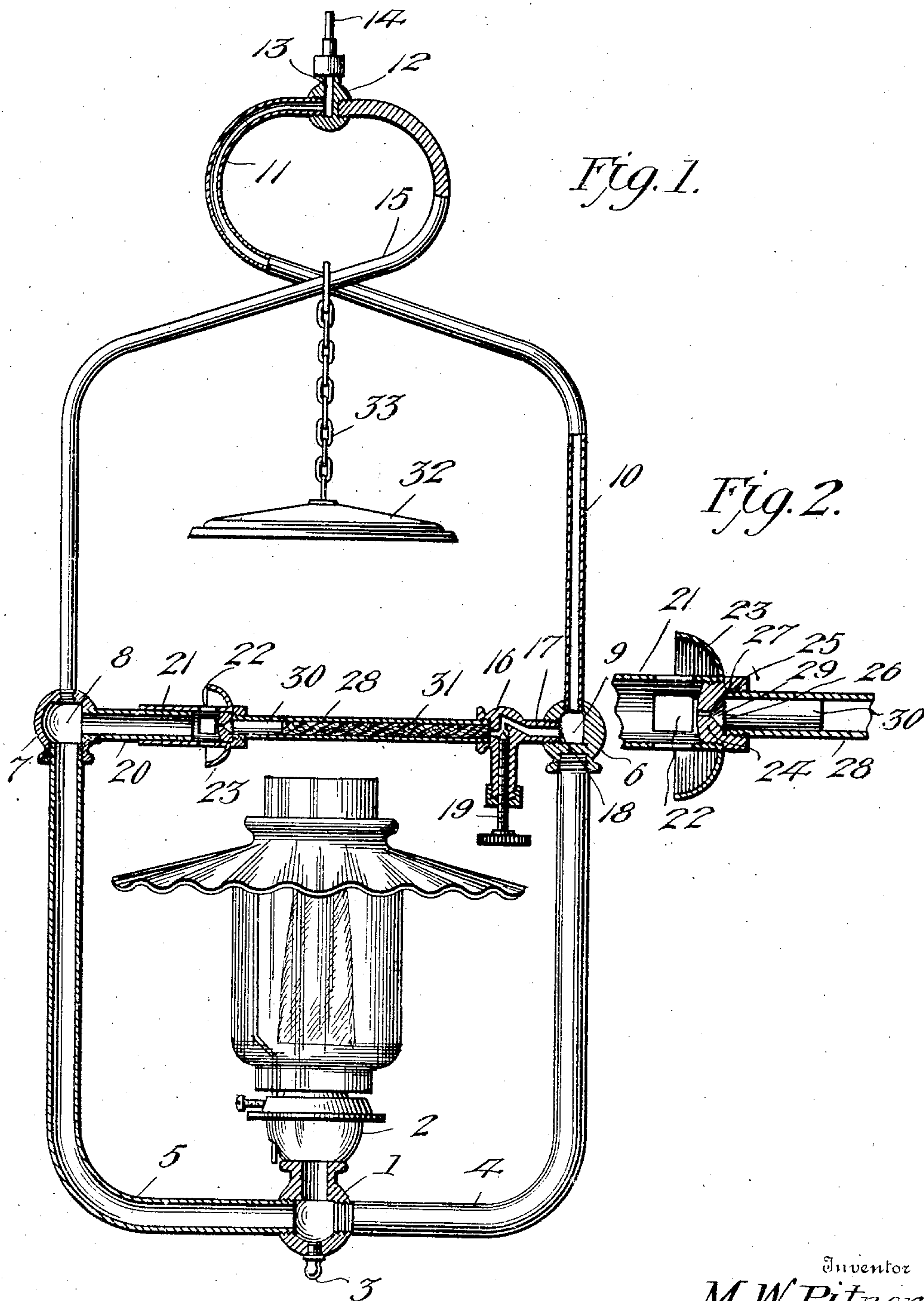


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M. W. PITNER.
VAPOR LAMP.

APPLICATION FILED OCT. 22, 1904.



Witnesses

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VAPOR-LAMP.

SPECIFICATION forming part of Letters Patent No. 786,149, dated March 28, 1905.

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To all whom it may concern:

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

My invention relates to new and useful improvements in vapor-lamps; and its object is to provide a simple and compact device of this character which is so constructed as to gradually heat the fuel supplied thereto prior to its evaporation.

A further object is to employ means whereby the proportions of air and gas when mixed will remain the same at all times and independently of the contraction and expansion of the parts of the lamp.

Another object is to employ a screen within the generator-tip and to utilize simple means for securing this screen in place.

Another object is to provide a generator-tip which can be easily manufactured and readily applied or removed from proper position.

With the above and other objects in view the invention consists of a burner which is supported by oppositely-disposed hangers, one of which serves as a vapor-conductor from a mixing-chamber which is located above the burner and at one end of a vaporizing-tube located above the burner. This mixing-chamber is formed of a tube on which is slidably mounted a sleeve having apertures therein for the admission of air to the mixing-chamber. This sleeve is detachably connected to the vaporizing-tube and has a generator-tip detachably secured within it. The vaporizing-tube is connected to a valve-casing which extends from the opposite hanger of the lamp, and a tube extends upward from this casing and over the burner and with a similarly-shaped rod connected to the other hanger forms an eye, whereby the lamp can be readily suspended from any suitable support. An inlet is formed at the upper end of the last-mentioned tube and is adapted to be connected to a suitable source of fuel-supply.

The invention also consists in the further novel construction and combination of parts

hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a front elevation of my improved burner, portions of the tubes and the mixing-chamber and vaporizing-tube being shown in section; and Fig. 2 is an enlarged section through the burner-tip and the adjoining portions of the lamp.

Referring to the figures by numerals of reference, 1 is a cup having a burner 2 mounted thereon, with any suitable devices for holding a mantle and a chimney thereabove. A screw-plug 3 is arranged in the bottom of this cup, and oppositely-arranged L-shaped hangers 4 and 5 are detachably secured within opposite sides of the cup. Detachably secured to the other ends of the hangers 4 and 5 are casings 6 and 7, respectively. The casing 7 has a compartment 8 therein which communicates with the interior of hanger 5, which is tubular and opens into the cup 1. Hanger 4, however, is preferably solid. A compartment 9 is formed in the casing 6 and communicates with the interior of a tube 10, which extends upward and over the top of burner 2 and terminates in a hook 11, which is detachably secured in one side of a knob 12. This knob has a passage 13 therein, which also extends through a stem 14, projecting from the end of the knob. A rod 15 is detachably secured in the other side of the knob 12 and is shaped similarly to tube 10 and is detachably secured within the upper end of casing 7. A valve-casing 16 is secured within one face of casing 6 and has a tortuous passage 17 extending therethrough and communicating with compartment 9. A screen 18 is located within this compartment and over the adjoining end of passage 17 and serves to prevent the admission of solid particles to said passage. A needle-valve 19 is arranged within the casing and is adapted to close or partly close passage 17. A tube 20 extends from one side of casing 7 and communicates with compartment 8, and slidably mounted on this tube is a sleeve 21, having apertures 22 therein. A cup 23 encircles the sleeve 21 and extends partly over the apertures 22. A screw-

plug 24 is detachably fitted in that end of sleeve 21 which is encircled by cup 23, and this screw-plug has a recess 25 therein, the walls of which are recessed. The end wall of this recess has a funnel-shaped outlet 26, and a shoulder 27 extends around this outlet and serves as an abutment for one end of a vaporizing-tube 28. This vaporizing-tube is detachably secured in one end of valve-casing 16. A screen 29 is also arranged on the shoulder 27 and is held in place thereon by a thin tube 30, which is located within the vaporizing-tube 28 and extends to a point above the burner 2. Packing 31 is arranged in tube 28 between casing 16 and tube 30, one end of this packing being located directly above the burner at the point which is heated to the highest degree. A bell 32 is suspended above the vaporizing-tube by a chain 33 or other suitable device.

It will be understood that oil under pressure can be conveyed from any point to the stem 14 through tubing. When the oil reaches the stem 14, it will flow through passage 13 and tube 10 into compartment 9. It will then flow through casing 16, packing 31, and tube 30 to generator-tip 24. It will mix with air as it passes through the mixing-chamber formed by tube 20 and sleeve 21 and will flow through hanger 5 to burner 2. It will be understood that hot gases formed by the operation of the burner will contact with tube 31 and will thoroughly vaporize the fuel as it passes therethrough. This vapor will be discharged through the screen 29 and into the mixing-chamber, where a thorough mixing of air and vapor is produced. As the hottest point of the vaporizing-tube is directly above the burner 2, the packing 31 has been extended to that point, so that but slight pressure will be required to release the vaporized fuel from the packing and to discharge it into tube 30 and tip 24. As is well known, the hangers 4 and 5, the tube 10, and the rod 15 will move laterally when heated, and in the type of burners now in use wherein the end of the vaporiz-

ing tube is spaced from the air and vapor mixing tube this space will be enlarged or diminished when the parts expand or contract in this manner. An uneven supply of air is thus mixed with the vapor, and a defective gas is supplied to the burner. By mounting a sleeve 21 upon tube 20, as in my device, however, the quantity of air admitted to the mixing-chamber is always uniform. By shaping the tube 10 as shown and described the fuel is brought above the burner three times, to wit: upon entering the hook 11, upon leaving said hook, and upon passing through the tube 28. The evaporation of the fuel is thus made gradual and more effective.

Having thus fully described the invention, what is claimed as new is—

In a device of the class described, a burner, a hanger-frame including a pair of lower frame-sections disposed on opposite sides of the burner, one of said sections being tubular and adapted for communication with the burner, a tube extended across the frame above the burner and constituting a vaporizing-chamber, a pair of upper frame-sections connected respectively with the lower frame-sections, one of the upper sections being tubular and adapted for communication with the lower tubular section through the medium of the vaporizing-chamber, the upper sections being crossed at a point above the burner and having their upper portions returned toward each other to form an open eye above the burner, a coupling member connecting the adjacent terminals of the upper frame-sections, a feed-tube connected to said coupling member and communicating therethrough with the upper tubular section, and a valve for controlling the flow of liquid from the upper tubular frame-section to the vaporizing-chamber.

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

MARION W. PITNER.

Witnesses:

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