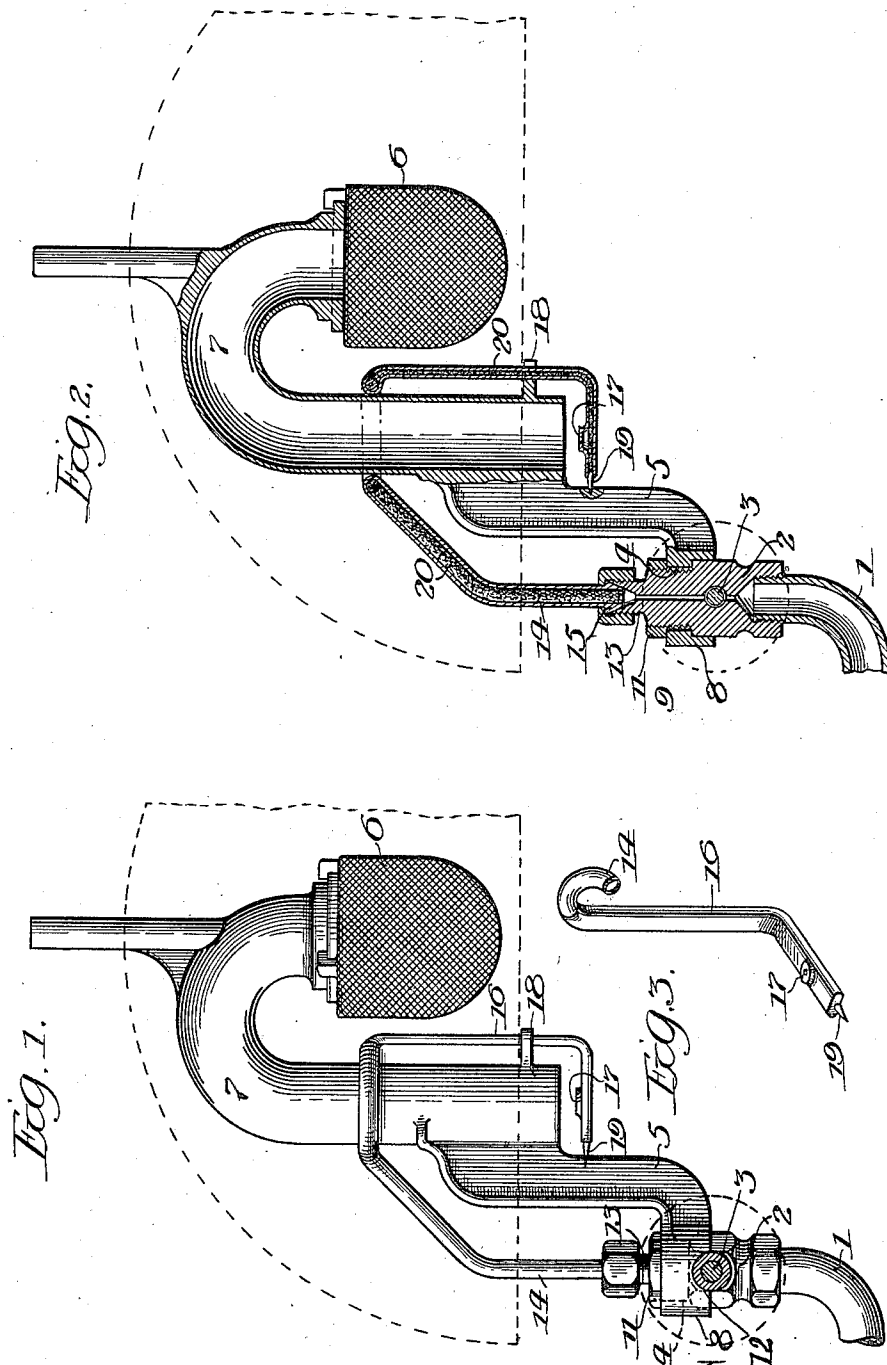


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LAMP.

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1,030,082.

Patented June 18, 1912.



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UNITED STATES PATENT OFFICE

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LAMP.

1,030,082.

Specification of Letters Patent.

Patented June 18, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH GRANZ, a subject of the Emperor of Austria-Hungary, having made declaration of becoming 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 Lamps, of which the following is a full, clear, and exact description.

My invention relates to hydro-carbon gas burners and more particularly to burners for the purpose of illumination wherein the oil or fluid is supplied to the lamp under pressure.

The object of my invention is to construct a lamp of this type in as simple a manner as possible, with a minimum number of detachable or removable parts, and also to provide therein an efficient vaporizer.

It is a further object of my invention to provide a hydro-carbon gas lamp with a vaporizer that is removable, that is inexpensive to make, and at the same time is capable of rapidly generating the gas for feeding to the burner or tip. By reason of its novel construction and its particular arrangement relative to the other parts of the lamp, this vaporizer is capable of being operated to generate gas in a relatively short space of time.

These and other objects I accomplish by the means and in the manner hereinafter fully described and as more particularly pointed out in the claims, reference being had to the accompanying drawings forming a part hereof, in which,

Figure 1 is a vertical side elevation of a hydro-carbon gas lamp showing my improvements applied thereto. Fig. 2 is a central vertical section thereof through the feed pipe and mixing chamber. Fig. 3 is a detail view of the removable vaporizer, drawn in perspective.

Referring to the drawings, 1 represents a suitable feed pipe through which the illuminating or hydro-carbon fluid is fed from a reservoir (not shown) under pressure to the vaporizer and which at its lower end is preferably upturned and tapped into the inlet head of a needle-valve 2. This needle-valve may be of any well-known construction, and preferably has its spindle 3 projecting outwardly from one side thereof in a horizontal plane. The discharge head of the valve is reduced slightly in diameter to

form a tubular screw-threaded extension 4, as shown in the drawings, upon which a bracket 5 for supporting the burner 6 and mixing chamber 7 is mounted. This bracket is preferably formed T-shape in cross section and is shaped into a compound or S-curve the lower end of which is provided with an integral lateral boss 8. The central portion of this boss is bored out and it is provided at its upper edge with a shoulder 9 so that it may be fitted over the extension 4 of the valve casing above mentioned. A lock nut 11 is screwed on to extension 4 of the valve to prevent the removal of the bracket and in order to avoid any accidental transverse rotation of the same on its seat a semi-circular recess 12 is cut in one of the lower edges of boss 8 so that when the bracket is placed in position this recess will seat upon the extended end of the spindle of the valve. Extension 4 of the valve is provided with a reduced portion 13 that extends above the lock nut 11 and is preferably screw-threaded and has the upper end of the central bore thereof counter-sunk at its outer end, as shown.

A vaporizer, consisting of a pipe 14 of relatively small transverse dimensions is secured to the discharge end of the valve by means of a conical shaped jamb 15 on its lower end that is seated in the counter-sunk portion just mentioned and it is securely held in place by a suitable clamp-nut that screws onto the reduced end 13 of the valve discharge head. This vaporizer pipe preferably extends upwardly a short distance in a vertical plane and is then bent laterally in an inclined direction toward the mixing chamber 7. At a height approximately in a plane with the top of the burner (mantle) 6 the vaporizer pipe is bent semi-circular in a horizontal plane half-way around the intake member of the mixing chamber 7 and the remaining portion 16 is flattened. This flattened portion depends in a vertical direction parallel to the adjacent side of the intake end of the mixing chamber 7 and close to the burner and is then bent laterally at right angles to itself across the intake opening. At a point directly below the center of the intake opening this flattened vaporizer pipe is provided with a suitable tip or embossment 17 formed on the upper surface thereof and has a minute orifice through which the generated gas or vapor is injected up-

wardly and discharged into the intake of the mixing chamber. In order to assist in holding the vaporizer pipe in position I provide the lower end of the mixing chamber with a suitable bifurcated bracket 18 that projects laterally therefrom in which the flattened portion 16 of said pipe is seated, and I prefer to close the end of said pipe with a pin 19 that is adapted to be inserted in an alining recess or opening formed in the vertical web of the bracket 5. The entire bore of this vaporizer pipe is filled with a suitable wick 20 of asbestos or the like that restricts the flow of the hydro-carbon fluid as well as acts as a filter for removing any foreign particles from the fluid.

In operation, the needle valve being opened, a flame is applied to the lower horizontal portion of the vaporizer and the heat therefrom will, in a very few seconds, generate sufficient gas to start the operation of the lamp and the mantle may then be lighted. The heat radiating from the mantle coming in contact with the flattened portion of the vaporizer will thereafter be sufficient to generate the gas and the operation will be continuous until the fluid is turned off at the needle valve.

It will be observed that the vaporizer is simply constructed and being readily removable can easily be replaced by another in case of wear or accident.

What I claim as new is:—

1. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing chamber, and a vaporizer extending up from said feed-pipe on the side of the longer branch of said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower open end of the same into which it discharges.

2. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing-chamber, and a vaporizer of less diameter than and extending up from said feed-pipe on the side of the longer branch of

said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower open end of the same into which it discharges.

3. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing-chamber, a valve controlling said feed-pipe, a bracket surrounding said valve and made integral with and supporting said mixing-chamber, and a vaporizer of less diameter than and extending up from said feed-pipe on the side of the longer branch of said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower open end of the same into which it discharges.

4. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing-chamber, a valve controlling said feed-pipe the end of the discharge end of which is countersunk, a vaporizer the inlet end of which is truncated and removably clamped by a sleeve-nut in the countersunk opening in said valve, said vaporizer extending up from said feed-pipe on the side of the longer branch of said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower open end of the same into which it discharges.

5. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing-chamber, a valve controlling said feed-pipe,

a bracket surrounding said valve and made integral with and supporting said mixing-chamber, and a vaporizer of less diameter than and extending up from said feed-pipe on the side of the longer branch of said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower open end of the same into which it discharges, and has the end of its horizontal member engaging and held by a portion of said bracket.

6. A hydro-carbon gas lamp comprising an inverted substantially U-shaped mixing-chamber the branches of which are of unequal length and the end of the longer branch of which is open and the end of the shorter branch of which is in a plane above the opposite open end, a stud projecting from the connecting member of said mixing-chamber on which a shade is supported, a burner closing the end of the shorter branch of said chamber, a feed-pipe terminating below and to one side of the lowermost open end of said mixing-chamber, and a vaporizer extending up from said feed-pipe on the side of the longer branch of said mixing-chamber opposite said burner and extending partly around said longer branch to a point substantially between said burner and longer branch and then extending downward below said longer branch across the lower end of the same into which it discharges.

7. A hydro-carbon gas lamp comprising in combination, a feed-pipe, a valve controlling the same, an inverted substantially U-shaped mixing-chamber having its lower end open, a burner on the upper end of said chamber, and a vaporizer connected to said feed-pipe, a portion of which vaporizer is adjacent to and derives radiated heat from

said burner and discharges into the open end of the mixing-chamber and the remaining portion of said vaporizer being disposed on the opposite side of said chamber which latter protects the same from the heat of said burner.

8. A hydro-carbon gas lamp comprising in combination a feed-pipe, a valve at the end thereof for controlling the discharge, a superposed offset inverted substantially U-shaped mixing-chamber one arm of which is longer than the other, a burner on the shorter arm thereof, a vaporizer connected to and extending from the valve in said feed-pipe, a portion of which is adjacent the burner and directly receives the radiated heat from the burner, the remainder of which is protected on the opposite side of said chamber and the discharge end of which descends to and discharges into the lower open end of the longer arm of said chamber.

9. A hydro-carbon gas lamp comprising in combination a feed-pipe, a valve at the end thereof for controlling the discharge, a superposed offset inverted substantially U-shaped mixing-chamber one arm of which is longer than the other, a burner on the shorter arm thereof, a vaporizer removably connected to and extending from the valve in said feed-pipe, a portion of which is adjacent the burner and directly receives the radiated heat from the burner, the remainder of which is protected on the opposite side of said chamber and the discharge end of which descends to and discharges into the lower open end of the longer arm of said chamber.

In witness whereof I have hereunto set my hand this 25th day of July, 1911.

JOSEPH GRANZ.

Witnesses:

THEODORE NAGEL,
E. K. LUNDY.