

J. STUBBERS.
HYDROCARBON BURNER.
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935,430.

Patented Sept. 28, 1909.

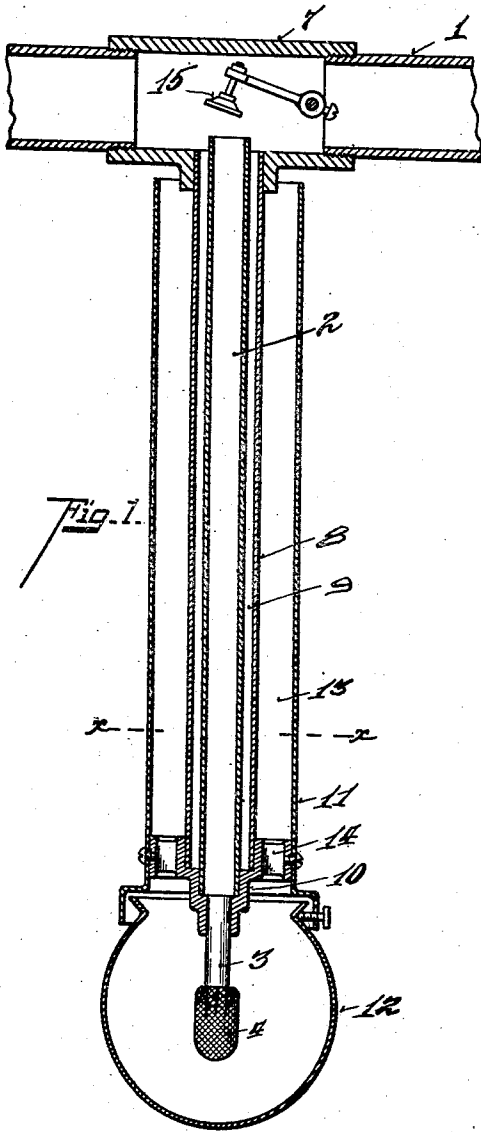


Fig. 1.

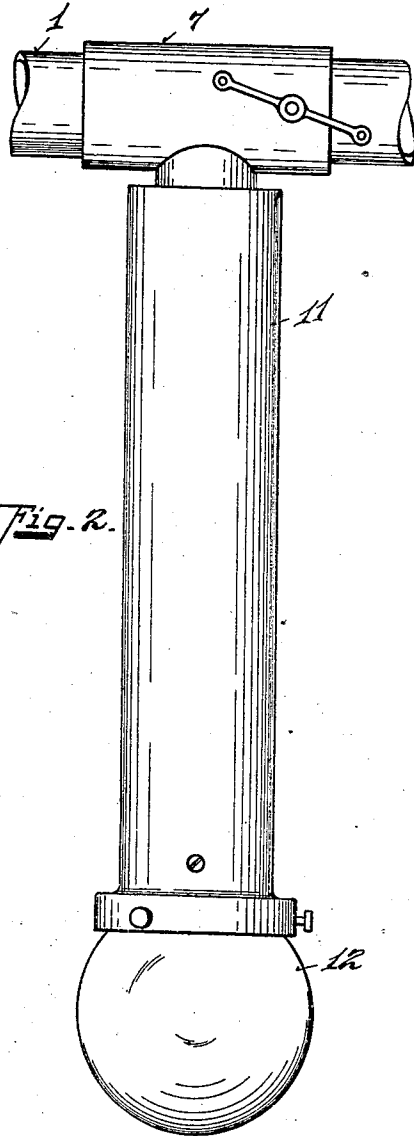


Fig. 2.

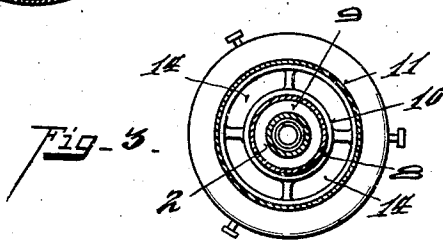


Fig. 3.

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Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH STUBBERS, OF COVINGTON, KENTUCKY, ASSIGNOR TO THE INCANDESCENT LIGHT & STOVE COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

HYDROCARBON-BURNER.

935,430.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed March 20, 1909. Serial No. 484,684.

To all whom it may concern:

Be it known that I, JOSEPH STUBBERS, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

My invention relates to an improvement in hydro-carbon burners.

The object of my invention is to produce an inverted burner having provision for trapping the fluids of condensation into a chamber exposed to the heating zone of the burner and preferably supplementally heated by the products of combustion so that the trapped fluids will be revaporized and returned to the service-pipe.

It is also an object of the invention to so construct the conduits that the fluids of condensation may not flow into the burner proper.

The features of the invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a central vertical section of my improved device. Fig. 2 is a side elevation. Fig. 3 is a line on *x, x*, Fig. 1.

In the drawings, 1 represents the service-pipe which is a horizontally extending conduit for the hydro-carbon vapor.

2 represents the burner supply pipe vertically depending from service-pipe 1. On the lower end of pipe 2 is the burner tube proper 3, from which depends the inverted mantle 4. Preferably, the service-pipe 1 consists of the horizontal pipes engaging into a fitting 7. From the bottom of the fitting 7 a fluid-trap 8 is suspended surrounding the pipe 2 and forming an intermediate fluid-chamber 9.

The trap-pipe 8 is suspended from the fitting 7 and the bracket or sleeve 10 is secured to its lower end. The supply pipe 2 is supported upon this bracket 10 and extends perpendicularly up into the horizontal fitting 7, at a point above the opening into the trap pipe 8. The burner tube 3 is also suspended from and supported by this bracket 10.

11 represents a sleeve surrounding the pipe 8 and attached to the bracket sleeve 10.

12 represents a globe supported within the lower end of the sleeve 11 and open at the top so as to pass the products of combustion into the chamber 13, between sleeve 11 and pipe 8, the bracket 10 being provided with

the orifices 14 for the vertical passage of the products of combustion. The sleeve 11 is open at the top and terminates slightly below the outer wall of the fitting 7, so as to carry the products of combustion substantially full length of the pipes 2 and 8. The upper end of the pipe 2 preferably extends slightly above the level of the inner surface of the lower wall of the fitting 7, the upper end of the pipe 8 opening flush with said lower wall of the fitting 7, so that the fluids of condensation will flow into the chamber 9 and will not find their way into the supply-pipe 2.

15 represents a valve in the fitting 7 for controlling the inlet to supply-pipe 2.

The fluids passing through the chamber 9 will flow downward to the bracket 10 in the intermediate zone of the burner heat and being supplementally heated by the products of combustion within the compartment 13, they will be revaporized and returned to the service-pipe 1 for redistribution to the burners. By means of the arrangement of the sleeve 11, the products of combustion will also serve to heat the pipe 2 and the fitting 7 thus preheating the hydro-carbon vapor, whereby it is delivered to the burner-tube in a better condition for combustion.

It is to be understood that the vapor in the service-pipe has been previously mixed with the necessary amount of air to form a preferably combustible gas.

This device is a very great safe-guard against accidents, it efficiently takes care of the fluids of condensation and it moreover presents a very neat and ornamental appearance, as indicated in Fig. 2.

Having described my invention, I claim:—

1. In combination with a horizontally extending hydro-carbon service-pipe, a vertically extending supply-pipe and burner-tube, a pipe for trapping the fluids of condensation formed in the service-pipe surrounding the supply-pipe and closed at the lower end in the proximity of the burner, the supply-pipe extending perpendicularly up into the service-pipe, and means for supporting said pipes with reference to the service-pipe.

2. In combination with a horizontally extending hydrocarbon service-pipe, a vertically extending supply-pipe and burner-tube, a pipe for trapping the fluids of condensation formed in the service-pipe, said

trap-pipe surrounding the supply-pipe, a sleeve surrounding the trap-pipe adapted to catch the products of combustion from the burner and convey them upwardly in contact with the trap-pipe, and means for supporting said pipe and sleeve in a position of suspension relative to the service-pipe.

3. In combination with a horizontally extending hydro-carbon service-pipe, a vertically extending supply-pipe and burner-tube, a pipe for trapping the fluids of condensation formed in the service-pipe, said trap-pipe surrounding the supply-pipe, a sleeve surrounding the trap-pipe, a globe surrounding the burner and secured in the lower end of the sleeve whereby the products of combustion escape upwardly and contact with the trap-pipe, and means for supporting said pipe and sleeve in a position of suspension relative to the service-pipe.

4. In combination with a horizontally extending hydro-carbon service-pipe, a trap-pipe suspended from the service-pipe, a bracket secured to the lower end of the trap-pipe, a burner-tube extended from the bracket a supply-pipe supported by the

bracket and extending upwardly into the service-pipe and lying within the trap-pipe, the latter being closed at the lower end in proximity of the burner, whereby the fluids of condensation formed in the service-pipe flow into the trap-pipe and are vaporized and returned into the service-pipe.

5. In combination with a horizontally extending hydro-carbon service-pipe, a trap-pipe suspended from the service-pipe, a bracket secured to the lower end of the trap-pipe, a burner-tube suspended from the bracket, a supply-pipe supported by the bracket within the trap-pipe and extending upwardly into the service-pipe, said trap-pipe being closed at the lower end, and a sleeve supported by the bracket and open at each end, whereby the products of combustion are conveyed upwardly in contact with the trap-pipe.

In testimony whereof, I have hereunto set my hand.

JOSEPH STUBBERS.

Witnesses:

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