H. W. DOPP.

HYDROCARBON LIQUID ATTACHMENT FOR GAS-BURNERS.

No. 190,673. Patented May 15, 1877.

FIG. 1.

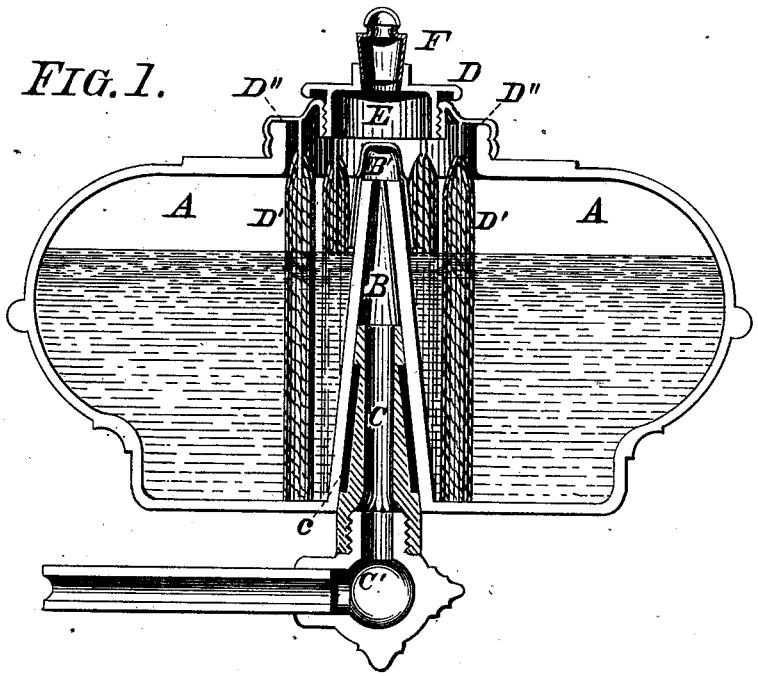
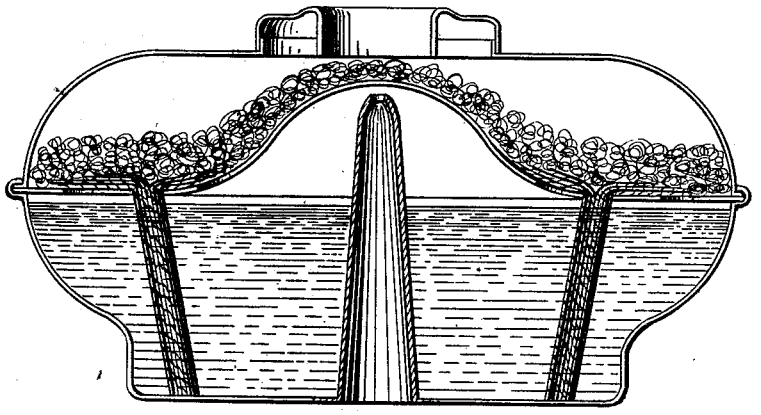


FIG. 2.



Witnesses:

Michael J. Stark

Frank Hirsch

Inventor:

H. W.m Dopp,

UNITED STATES PATENT OFFICE.

H. WILLIAM DOPP, OF BUFFALO, NEW YORK.

IMPROVEMENT IN HYDROCARBON-LIQUID ATTACHMENTS FOR GAS-BURNERS.

Specification forming part of Letters Patent No. **190,673**, dated May 15, 1877; application filed March 26, 1877.

To all whom it may concern:

Be it known that I, H. WILLIAM DOPP, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on a Hydrocarbon-Liquid Attachment to Common Gas-Burners; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has special reference to a hydrocarbon-liquid attachment to common gas-burners; and it consists in the arrangement, with a hydrocarbon-reservoir, having a gas-tip in its cap, of a heat-conducting device, to transport heat from the flame to an evaporator within said reservoir, whereby the evaporation of the liquid is accelerated and increased, and thereby a larger quantity of hydrocarbon-vapor mixed with common coal-gas passing through said reservoir than can otherwise be obtained.

The object of my said invention is to increase the volume of the common coal-gas, and thereby to considerably reduce the expense of burning coal-gas, as hereinafter fully set forth and explained.

In the drawings, Figure 1 is a longitudinal transverse section of my improved carbureted-hydrogen gas lamp attachment to common gas-fixtures. Fig. 2 is a modified form of the same.

A is the reservoir for the hydrocarbon liquid provided with a central tapering tube, B, made either in one piece with the body of A, or permanently affixed thereto. This body A is provided with a common lamp-collar, D, as found on all kerosene, &c., lamps, attached thereto in the usual manner, care being taken to make a tight joint to prevent the escape of gas around said collar D. The tube B is provided with a cap, B′, so arranged that the gas, passing through the said tube, can readily escape without allowing liquid to enter the same when the lamp is filled, corrugations on the exterior of the tube or collar being provided for this purpose. The larger end of the tube B is fitted with a tapering tube, C, having a screw-socket on its lower extremity for attachment to the common screw-base C′ of a gas-bracket, pendant, chandelier, &c. This tube is either ground into the tube B to make a tight joint, or it is provided with a suitable packing, *c*, for this purpose. Attached to the collar D are a series of pendant conductors, D″, made of metal having a high heat conducting power, and they are surrounded with a liquid absorbent, D′, such as cotton wicking, &c., extending down to the bottom of the reservoir A. The collar D is closed by a screw-cap, E, having centrally a preferably metallic burner-tip, F.

To operate this lamp, fill it with hydrocarbon oil to the usual height of a common lamp, and place it on a gas-fixture upon the tube C previously screwed thereon. Now, open the gas-supply and ignite the gas on the burner-tip F. As soon as the flame is burning its heat will cause the lamp-collar to become elevated in temperature, and thereby to convey heat to the pendant conductors D″, which will cause the hydrocarbon liquid raised by capillary attraction of the absorbent D′ to evaporate and commingle with the passing coal-gas, the volume of which is thereby increased in proportion to the evaporating capacity of the liquid absorbent and exposed surface thereof.

In Fig. 2 I have illustrated a modified form of my lamp, in which a metallic diaphragm is substituted for the metallic pendant conductors, and the liquid absorbent placed upon said diaphragm, the liquid being carried up by capillary attraction, the same as in the lamp heretofore described. In this case the body of the lamp, which, in the one shown in Fig. 1 is made of glass, should be made of metal, to conduct heat from the flame to assist in the evaporation of the hydrocarbon oil.

It is obvious that in my lamp all the hydrocarbon oils can be burned with equal facility, particularly the heavier oils, because they are readily vaporized in my lamp, on account of the introduction of heat within. These oils cannot otherwise be successfully vaporized, and my lamp is, therefore, perfectly safe and harmless as compared with others in which

only the very highest hydrocarbon oils, such as naphtha, gasoline, &c., can be successfully converted into vapor.

Having thus fully described my invention, I desire to secure to me by Letters Patent of the United States—

1. A hydrocarbon-oil reservoir, having a gas-burner in its cap, provided with a series of pendant metallic strips attached to said burner, and surrounded by a liquid absorbent, whereby the oil is rapidly vaporized within said reservoir, substantially as hereinbefore set forth and described.

2. The combination, with a hydrocarbon-oil reservoir, of a common gas-burner and a liquid-evaporating device, arranged to effect the vaporization of the liquid within by means of conductors leading the heat from the flame to the said evaporating device, substantially in the manner and for the use and purpose specified.

3. The combination, with the cap D provided with a burner-tip, of the metallic heat-conductors D″, surrounded with a liquid absorbent, whereby the heat from the burner is conducted into the reservoir, to accelerate and increase the evaporization of the hydrocarbon liquid within, in a manner as and for the purpose heretofore stated.

4. The combination, with the tube B, of the cap B′, as described, said tube or cap being corrugated, to prevent the liquid from entering said tube when the reservoir is filled without interfering with the escape of the gas from said tube B, as stated.

In testimony that I claim the foregoing as my invention, I have hereunto set my hand and affixed my seal in the presence of two subscribing witnesses.

H. WM. DOPP. [L.S.]

Attest:
MICHAEL J. STARK,
FRANK HIRSCH.