(No Model.)

W. A. MYERS.

OIL BURNER.

No. 453,346. Patented June 2, 1891.

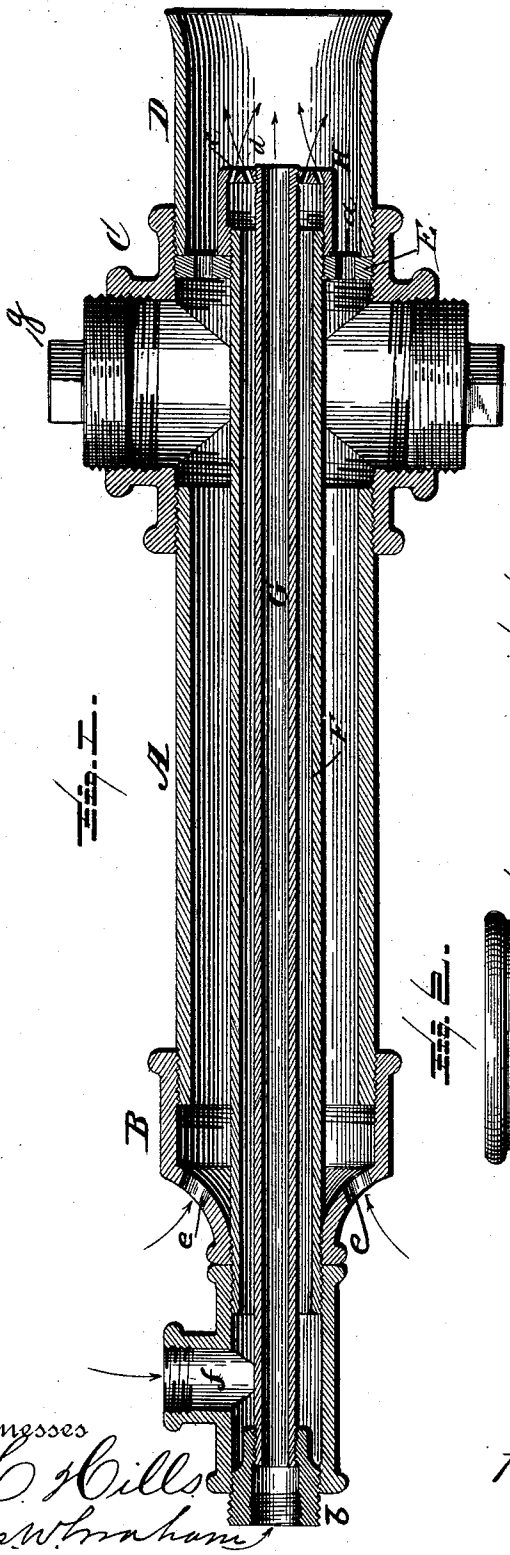


Fig. 1.

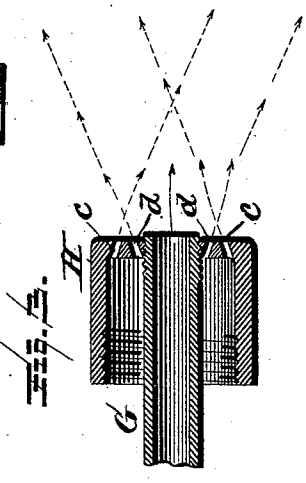


Fig. 3.

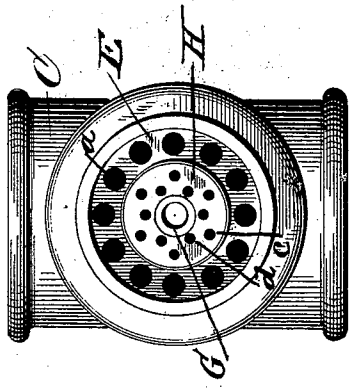


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM A. MYERS, OF BOLIVAR, NEW YORK.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 453,346, dated June 2, 1891.

Application filed November 28, 1890. Serial No. 372,807. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MYERS, a citizen of the United States, residing at Bolivar, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Oil-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings represents a longitudinal section of my invention; Fig. 2, an end view thereof; Fig. 3, a detail sectional view, on an enlarged scale, of the discharge-end of the device where the oil-gas and heat medium mix and mingle together.

The present invention has for its object to provide a simple and effective means of producing gas from oil or other like fatty substances to be used as a gaseous fuel for heating purposes, which objects I attain by the the construction substantially as shown in in the drawings, and hereinafter described and claimed.

In the accompanying drawings, A represents the outer cylinder or pipe, to the ends of which are connected the reducing-head B and the coupling-head C. I have shown in the present instance screw-threads on the ends of the pipe or cylinder for engaging screw-threads on the heads above described; but, if preferred, the pipe or cylinder may be cast with the heads all in one piece. As this difference of construction is not material and would come within ordinary mechanical skill, I reserve the right to make any changes in the details of construction not affecting the principle of the invention.

The head C has interior screw-threads for connecting therewith the extension or conducting chamber D and perforated diaphragm E, the perforations *a* therein being arranged as shown in Fig. 2. This diaphragm E has a screw-opening extending centrally through it for connecting therewith the screw-threaded end of a longitudinal pipe F, the opposite screw-threaded end of said pipe engaging with interior screw-threads on the reducing-head B, whereby the pipe is held centrally in the outer pipe or cylinder A.

A pipe G is located within the pipe F, and its length is somewhat greater than the former-mentioned pipe, so that its ends which are screw-threaded will extend beyond the same and have connected to them, respectively, a screw-coupling *b* and discharge-head H for the steam. This discharge-head H has interior screw-threads to engage with the projecting ends of the pipe F, to which it is coupled, thereby being supported by both the pipes by its screw-connections therewith. The perforations *c d* in the head H extend at an angle from the horizontal and in opposite directions, as shown more clearly in Fig. 3, the advantages of which will be hereinafter described.

The reducing-head B has perforations *e*, and connected to the screw-threaded end of the pipe F and to the screw-coupling *b* is a T-coupling *f*.

Having now described the construction of the several parts and their relative position with each other, I will now describe the operation of the invention.

It should be understood that through the medium of the coupling *b* connection is made with the pipe leading to the supply of oil, and by means of the coupling *f* connection is made in like manner with the pipe leading to steam-boiler. Now as the oil from the supply passes through the pipe G the steam from the source of supply passes through the pipe F, thereby the oil in the pipe is generated into vapor-gas before it leaves said pipe. As the gas or vapors are being generated, the steam passing out through the perforations in the head H forms a vacuum and draws the air through the openings or perforations *e* into the pipe A. The air as it thus passes into and through the pipe A becomes of the same temperature as the steam and oil in the pipes F G, respectively, and as the heated air passes out through the perforations *a* in the diaphragm E it becomes mingled and mixed with the gases generated and forms a perfect combustion in the conducting-chamber D, where it can be utilized as fuel. The supply of air to the pipe A may be increased by removing the plugs *g* in the head C, thereby diminishing the heat by an additional supply of cold air or increasing the heat by a supply

of hot air, as circumstances require, the hot air coming from a furnace or other heat-generating device. It will be noticed that the perforations in the head H are disposed on an angle to a horizontal and extend in opposite directions to each other, so that the jets of steam as they pass out will cross each other at an angle, as shown in dotted lines, Fig. 3. A funnel-shaped space is presented to the front end of the pipe G by the intermingling and crossing of the steam-jets, so that the vapor as it passes out of the pipe will come in direct contact with the steam around the funnel-shaped space and be most thoroughly mixed therewith. The inner ones of the perforations, as shown at *d*, not only act in conjunction with the outer perforations *c* for the purpose above described, but the steam-jets passing therefrom will impinge against the interior sides of the conducting-chamber D, which will produce a vacuum necessary to draw the air through the perforations *e* into the pipe A.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the outer air-supply pipe, the perforated reducing-head, the coupling-head and extension, and the perforated diaphragm within the coupling-head, of the central oil-pipe, the intermediate steam-pipe, and the perforated head secured to the steam-pipe and to the oil-pipe, and the steam and oil inlets at right angles to each other, the said head being provided with perforations extending both at an angle to the horizontal and in opposite directions to each other, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM A. MYERS.

Witnesses:
CHAS. H. FOWLER,
E. M. DAWSON.