

(No Model.)

C. A. HANABLE.
HYDROCARBON BURNER.

No. 569,412.

Patented Oct. 13, 1896.

Fig. 1.

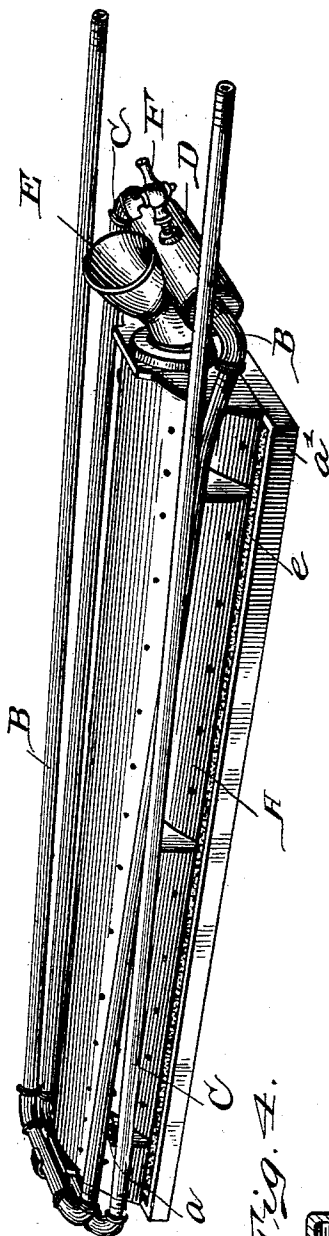


Fig. 4.

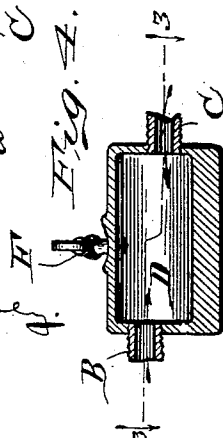


Fig. 3.

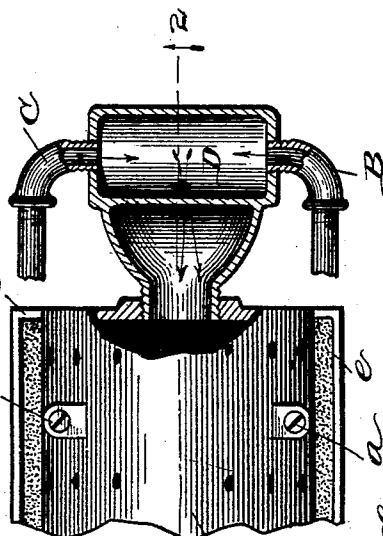


Fig. 2.

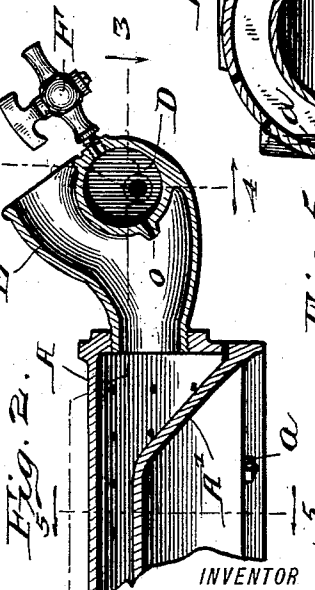
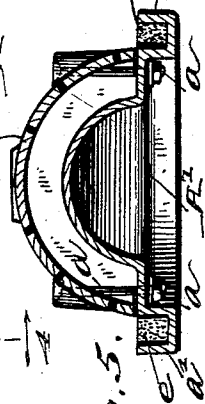


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES A. HANABLE, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM L. TAYLOR, OF SAME PLACE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 569,412, dated October 13, 1896.

Application filed February 25, 1896. Serial No. 580,669. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. HANABLE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

The object of my said invention is to produce a highly efficient hydrocarbon-burner whereby commingled vapors or oil and water may be employed as a fuel.

A burner embodying said invention will first be fully described, and the novel features thereof will be then pointed out in the claim.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a burner embodying my said invention; Fig. 2, a detail sectional view of that end where the fuel is introduced as seen when looking in the direction indicated by the arrows from the dotted line 2 2 in Fig. 3; Fig. 3, a view, partly in top plan and partly in horizontal section, as seen when looking downwardly from the dotted line 3 3 in Figs. 2 and 4; Fig. 4, a vertical sectional view as seen from the dotted line 4 4 in Fig. 2; and Fig. 5, a transverse sectional view of the body of the burner, showing its preferred form and construction.

In said drawings the portions marked A represent the body of the burner; B, the water or steam ingress pipe; C, the vapor or oil ingress pipe; D, the chamber in which the commingling takes place; E, an air-ingress opening, and F a valve.

The body of the burner consists of a hollow shell composed of two parts A and A', united by bolts a, said part A having numerous perforations. The parts are convex and concave in cross-section throughout their length, except at the immediate point of ingress, as shown in Fig. 2, the bottom A' thereof extending up on an angle until it nearly reaches the top, and a comparatively thin chamber is thus formed therein, as shown in Figs. 2 and 5. This secures a comparatively large surface on the burner, while the quantity of fuel required to fill it is comparatively small. A flange a' extends around the bottom A' and

forms a trough, which is adapted to receive any fuel which may not be fully vaporized and flow out through the cracks between the parts A and A'. This trough has asbestos placed therein to absorb any such fuel and act as a wick in holding it in condition to be consumed.

The pipes B and C are for the purpose of introducing the oil or vapor and water or steam, which combine together and form the fuel. A feature of my invention is that the steam or water pipe enters the body at the higher level, as shown most plainly in Fig. 4, and the vapor or oil pipe at a lower level, so that the water—or steam, into which the water has been converted by the time it reaches this point—will be impregnated by the oil or vapor as it rises. These elements, when assembled in the chamber D, are under considerable pressure, as the orifice o, leading from said chamber into the burner, is very small. The elements having passed twice the length of the burner through the combustion-chamber subject to the action of the fire enveloping the pipes, as shown in Fig. 1, said elements are very highly heated, and are thus vaporized when they enter this chamber. A sufficient amount of hot air from the interior of the combustion-chamber surrounding the burner is admitted through the opening E therefrom, and the three elements enter the burner proper in a thoroughly commingled condition.

The valve F, as shown most plainly in Fig. 2, is directly in line with the orifice o, and is mainly for the purpose of permitting said orifice to be cleaned in case it becomes obstructed in any way, which is done by inserting a fine wire or equivalent article through the valve, and which will pass directly on through said orifice, forcing out any obstruction therein.

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

In a hydrocarbon-burner, the combination, of the burner-body, the air-tube with open end leading into said body, a horizontal mixing-chamber secured to the same end of the structure, a steam-inlet pipe and a vapor-inlet pipe leading into opposite ends of said

horizontal mixing-chamber to discharge toward each other, the discharge-orifice of said steam-pipe being in a plane higher than that of the vapor-pipe, said mixing-chamber being
5 provided with a small discharge-orifice in one side which leads into said air-tube, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 22d day of February, A. D. 1896.

CHARLES A. HANABLE. [L. s.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.