H. W. AXFORD & J. E. CLEARWATER.

OIL BURNER.

APPLICATION FILED AUG. 22, 1911.

1,017,493. Patented Feb. 13, 1912.

Fig. 1.

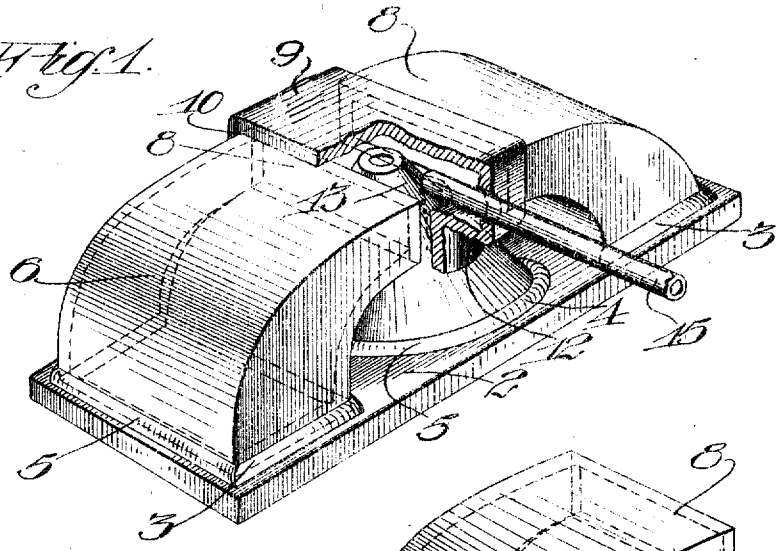


Fig. 3.

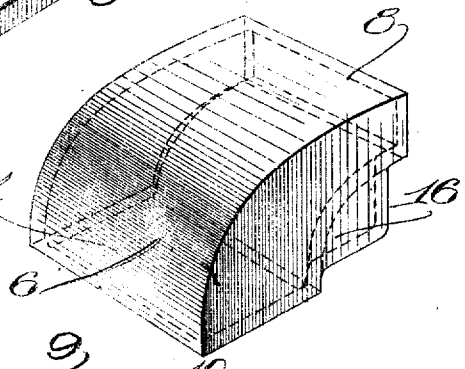
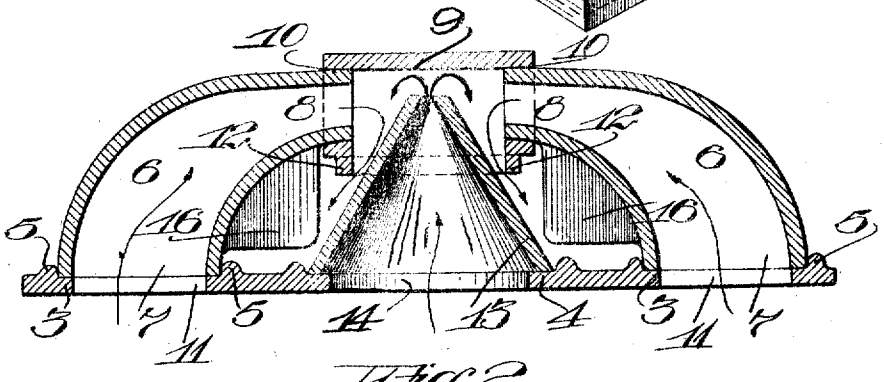


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

HARRY W. AXFORD AND JOHN E. CLEARWATER, OF SAN FRANCISCO, CALIFORNIA.

OIL-BURNER.

Specification of Letters Patent. Patented Feb. 13, 1912.

1,017,493.

Application filed August 22, 1911. Serial No. 645,346.

To all whom it may concern:

Be it known that we, HARRY W. AXFORD and JOHN E. CLEARWATER, citizens of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to oil burners.

The object of this invention is to provide an easily assembled and disassembled burner, parts of which are simple in design and are interchangeable and renewable.

Another object is to provide a burner designed for perfect combustion of hydrocarbon fuel.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the burner partly in section. Fig. 2 is a central vertical longitudinal section of the burner. Fig. 3 is a perspective view of one of the air flues, showing the deflector.

The burner comprises a plate or pan 2, having seats 3 at its ends on the upper surface and a central circular seat 4, the several seats being surrounded by suitable ridges 5 to guide and support the lower ends of flues 6 having flaring inlet openings 7 and contacted necks 8. The flues 6 are of similar proportions and interchangeable and are here shown as curved and tapering from their lower to their upper ends, the latter being insertible in a coupler 9 having rectangular side openings 10 into which the necks of the flues have a snug fit. When the flues 6 are inserted in the coupler 9 and the lower ends of the flues seated upon the pan 2 a substantial arch is formed into which air may flow through openings 11 in the pan.

The lower side of the coupler 9 is provided with an annular collar 12 into which projects a conical flue 13 which is seated centrally on the pan 2 and covers an inlet 14. The openings 11 and 14 provide means for the ingress of air from the chamber below the pan 2 when the latter is erected in a stove or furnace, the draft flowing upwardly through the flues 6 and then downwardly through the annular space within the collar 12 and around the conical flue 13 by which further air to aid combustion is introduced into the coupler 9.

The hydrocarbon for combustion may be introduced in the burner in any suitable manner, and to that end there is provided a transversely projecting supply pipe 15 which is inserted in an opening in the side of the coupler 9. The pipe 15 is adapted to be connected to any appropriate source of supply.

In operation, when the burner pan 2 has been erected in a stove or furnace, a quantity of fuel may be permitted to flow through the pipe 15 down upon the external surface of the central flue 13. When the fuel is ignited combustion occurs below the coupler 9 and under the arched surfaces of the flues 6. The heat of combustion volatilizes the incoming fuel and a perfect combustion of the latter results. The peculiar arrangement of the arched side flues and the central conical flue insures an ample supply of air for combustion and the position of the central conical flue insures the heating of the air as it rises therein.

The flues 6 may be provided with depending webs or flanges 16 on one or the other sides which are designed to deflect the plane of combustion from one side of the burner toward the other so that a greater heating efficiency may be obtained to heat a water back or the like with relation to which the burner may be arranged in juxtaposition.

One of the salient features of the present invention is the provision of a burner of simple, substantial construction so designed that the several parts are small and light and easily removed and renewed when necessary at small expense, and which burner can readily be assembled by a person of ordinary intelligence thus avoiding the aid of an expensive mechanic or expert to erect a burner in a stove or furnace.

Having thus described our invention what we claim and desire to secure by Letters Patent is—

1. An oil burner comprising a pan having a plurality of draft openings surrounded by ridges forming seats, curved flues tapering from one end to the other having the larger ends seated upon the pan, a coupler having side openings engaging and retaining the smaller ends of the flues, and having a downwardly opening mouth, means for supplying liquid fuel to the interior of the

burner, and a conical flue seated upon the central portion of the pan and projecting upwardly into said coupler.

2. A hydrocarbon oil burner comprising a substantially flat plate or pan having draft openings, a plurality of seats upon the upper surface of the pan, curved flues tapering from one end to the other having the lower larger ends seated upon the pan, a central coupler in which the flues rest at their upper smaller ends, a central, conical flue projecting into the coupler, and flame deflecting webs formed upon one side of said flues to direct the products of combustion to the opposite side of the burner.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

HARRY W. AXFORD.
JOHN E. CLEARWATER.

Witnesses:
J. C. CLEVELAND,
B. F. BODWELL.