S. A. SLOAN.

HYDROCARBON BURNER.

APPLICATION FILED AUG. 19, 1911. RENEWED JUNE 17, 1912.

1,044,276. Patented Nov. 12, 1912.

Fig. 1

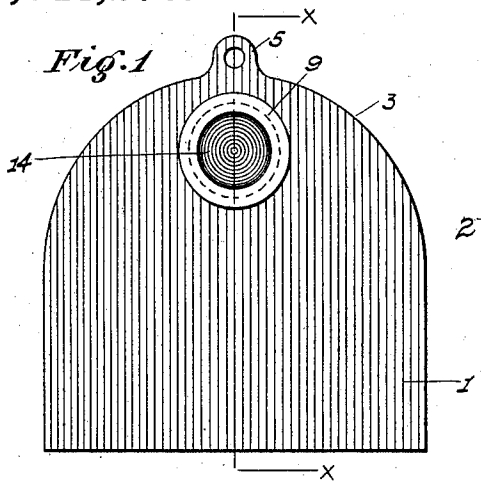


Fig. 2

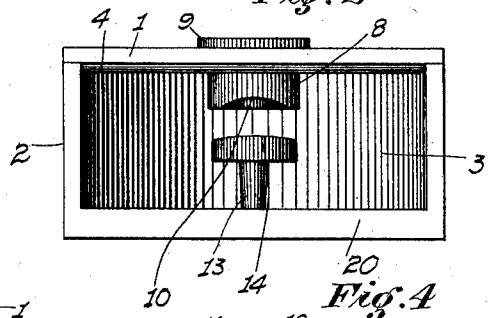


Fig. 4

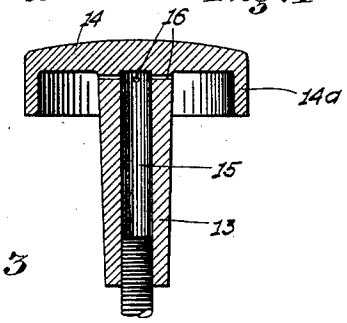


Fig. 3

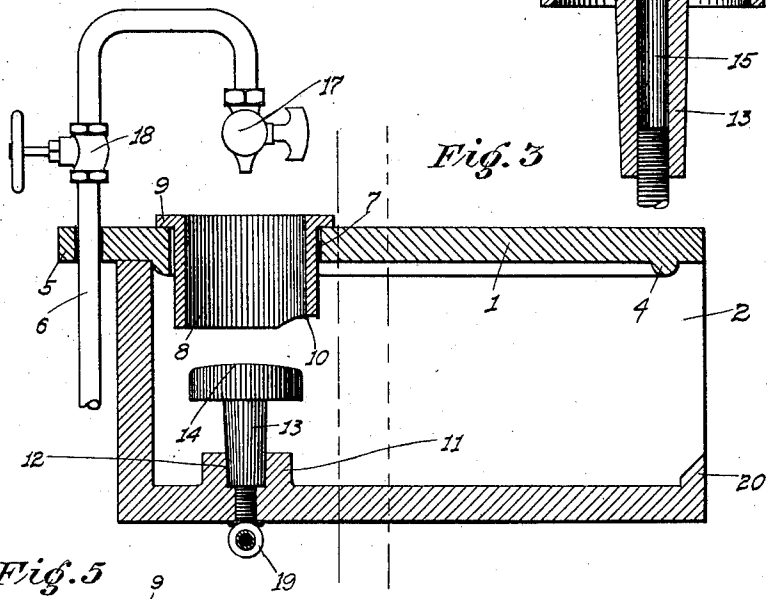
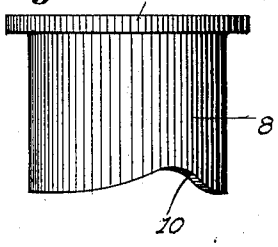


Fig. 5



Witnesses

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UNITED STATES PATENT OFFICE.

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HYDROCARBON-BURNER.

1,044,276. Specification of Letters Patent. Patented Nov. 12, 1912.

Application filed August 19, 1911, Serial No. 644,933. Renewed June 17, 1912. Serial No. 704,238.

To all whom it may concern:

Be it known that I, SAMUEL A. SLOAN, a citizen of the United States, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in liquid fuel burners and particularly to hydrocarbon burners adapted to the use of crude oil or distillate the object of the invention being to produce a burner which will give the highest efficiency of combustion with the use of a minimum amount of fuel. Also a burner which by reason of this efficiency of combustion will not smoke or cause soot, but will produce a clean white flame.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a top plan view of my improved burner. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional view taken on a line X—X of Fig. 1. Fig. 4 is a sectional view of a combustion member. Fig. 5 is a side elevation of a feed inlet collar.

Referring now more particularly to the characters of reference on the drawings 1 designates the body of the burner proper which is substantially box shaped and inclosed on three sides with the fourth side entirely open as at 2, the closed corners of the member 1 being curved as at 3. The top of the member 1 is removable and is provided with a bottom rib or flange 4 which holds it in position. This top is also provided at its rear end with a projecting centrally orificed lug 5 to receive and hold stationary a fuel feed pipe 6. The top of the member 1 is further provided with a feed orifice 7 near its closed end into which fits a collar 8 having a flange 9 to maintain it in position, such collar having a recess 10 cut in its lower edge to permit of the escape of air and to thus muffle the roaring noise caused by the suction of the draft of the furnace or range.

Disposed directly below the orifice 7 in the bottom of the member 1 is a seat 11 having an orifice 12 to receive a supporting pin 13 carrying on its upper end an inverted cup like member 14 cast as a part of said pin 13, a depending edge flange 14^a forming the cup-like structure. The pin 13 has a central orifice 15 and directly under the bottom of the member 14 said pin 13 has a plurality of lateral orifices 16 communicating from the orifice 15 to the cup-like portion of the member 14.

In practice the fuel pipe 6 is turned and directed to discharge through the orifice 7, being provided with a nipple 17 and cock 18 to regulate the flow.

The fuel drops upon the member 14 which is hot and atomizes the oil and the draft of the furnace or range draws the same through the open side 2 and thence to the flue. I further provide a water air or steam feed which further atomizes the oil which water feed structure is as follows, viz: I lead a water air or steam supply pipe 19 through the bottom of the member 1 and screw it into the pin 13 and communicating with the orifice 15 and I give this water, air or steam feed any suitable pressure desired. This causes the water, air or steam to spray out the orifices 16 and upon the burning oil which immediately further atomizes the oil and produces a perfect combustion. The flange 14^a prevents any of the oil running off the member 14 to get into the cup-like receptacle and thus the orifices 16 cannot become clogged. I provide a projecting flange 20 on the bottom of the member 1 across the open end 2 to prevent any unburned or non-atomized fuel from leaving the burner.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such devia-

tions from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A hydrocarbon burner comprising a box-like structure open at one end and provided with an orifice in its top, a combustion member disposed below said orifice, and a flanged collar projecting into said orifice, the lower edge of said collar being spaced from said combustion member, said collar being provided with a recess cut into its bottom edge as described.

2. A hydro-carbon burner comprising a box like structure open at one end and provided with an orifice in its top, a centrally orificed pin disposed below said orifice, an inverted cup shaped member on said pin, said pin having a plurality of lateral orifices opening from said central orifice into said cup shaped member in a plane above the lower edge of said cup shaped member, a water supply pipe connected with said central orifice in said pin, and a fuel supply pipe adapted to discharge through the orifice in the top of said box like structure and onto said inverted cup member, as described.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL A. SLOAN.

Witnesses:
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PERCY S. WEBSTER.