Oct. 20, 1925. 1,558,148

M. DEMYANOVICH

OIL BURNER

Filed July 28, 1924

Fig. 1.

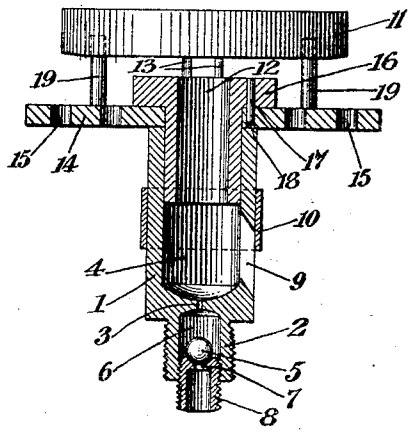
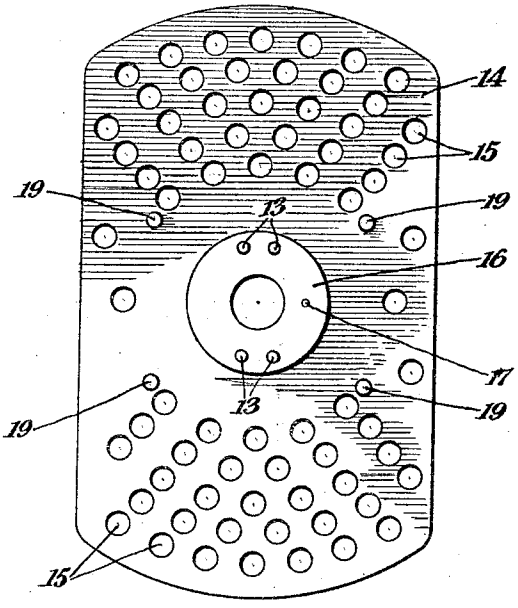


Fig. 2.



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UNITED STATES PATENT OFFICE.

MYLAN DEMYANOVICH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO GIOVACCHINO PIERI, OF NEW YORK, N. Y.

OIL BURNER.

Application filed July 28, 1924. Serial No. 728,557.

To all whom it may concern:

Be it known that I, MYLAN DEMYANOVICH, a citizen of the United States, a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Oil Burner, of which the following is a specification.

The invention relates to an oil burner unit more particularly such a burner as will be suitable for the combustion of gasified hydro-carbon oils. The primary objects of the invention are to provide such a burner unit which will be simple in construction and readily assembled, dismounted or adjusted and which will be efficient in burning vaporized oils without smoke and with a flame, the characteristics of which may be readily controlled.

Further objects and advantages of the invention will be in part obvious and in part specifically pointed out in the description hereinafter contained, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof; such embodiment however, is to be considered as merely illustrative of its principles.

In the drawings, Fig. 1 is a central longitudinal section of a burner constructed in accordance with the invention.

Fig. 2 is a top plan view of the burner shown in Fig. 1, with its deflector cap removed.

The burner is provided with a body member 1, which conveniently may be made hexagonal in shape and constructed to be attached to a fuel feeding pipe as by providing the same with a screw-threaded hub 2.

The illustrated type of burner is designed more particularly for the combustion of hydro-carbon oils which have been heated sufficiently to vaporize them, for example by passing the fuel-feeding pipe (not shown) through the space around the burner which is subjected to the heat of the latter, or in any other suitable manner, but as the mode of preheating the oil is not essential to the present invention, it will not be specifically described herein.

From the fuel-feeding pipe (not shown) the gasified oil passes through a restricted passageway 3 in body member 1, into a larger mixing chamber 4 within such member. A float valve is employed in connection with the burner for the purpose of controlling the pressure at which the gasified oil will pass into chamber 4. In the present instance the float valve consists of the ball 5 contained within a small chamber 6 in hub 2 and adapted to seat over an opening 7 in a screw-threaded plug 8 which fits into the end of hub 2. Particularly in starting, the float valve 5 will act to prevent the gasified oil from flowing through the burner until enough gaseous pressure has been built up to bring about a proper mixture between the fuel and the air, avoiding the smoking which otherwise would occur in the burner when the pressure of the gasified oil dropped down. With the use of the float valve the pressure which the gasified oil is fed into the burner is substantially constant at all times, the valve acting as an automatic pressure regulator.

The stream of gasified oil which enters chamber 4 through passageway 3 is mixed with air entering the chamber through an opening 9 therein, although preferably the amount of air fed in it this time is somewhat less than is required for complete combustion of the fuel. If desired, the amount of air entering through opening 9 may be regulated in any suitable manner, as by adjustment of a collar 10 slidable along the body member 1.

The mixture of the fuel and air passes upwardly through chamber 4 to the space beneath an enlarged deflector head or cap 11 at the top of the burner, the deflector being spaced from the body member 1 in such manner as to provide an annular outlet passageway 12 for the fuel mixture, whereby such mixture may be projected out radially of the burner in all directions.

I find it necessary however, in order to prevent smoking, to split up the annular sheet of fuel which is projected outwardly through passageway 12, into a plurality of fan shaped component parts, which is accomplished by providing a plurality of baffle members 13 in such passageway. The number and arrangement of these baffle members will depend upon the type of flame desired. In the present instance, four of such members are employed and the jets of flame between the baffle members which are spaced the greater distance, will be much greater in area than the jets of flame issuing between the pins which are relatively close together. Thus the total area of the flame will be oblong in shape, whereas an equal

spacing of the baffle members would tend to make the flame more circular in area.

The burner also is preferably provided with what I have termed a draft washer 14 which under-lies the sheet of fuel issuing from passageway 12, and is provided with a plurality of perforations 15 which supply to the fuel, such additional air as may be necessary to complete the combustion thereof.

In the present instance, the baffle members 13 consist of pins projecting upwardly from the flanged collar 16, which is slidably and rotatably received within the hollow body member 1, and the draft washer 14 is interposed between the collar 16 and the top of the body member. In cases where the baffle members 13 are arranged to produce a non-symmetrical flame, the draft washer 14 preferably is shaped according to the flame produced, and properly aligned with the baffle members, this being accomplished in the present instance by a pin 17 in collar 16 which fits in a slot 18 in the draft washer and thus insures that the longer dimension of the draft washer will under-lie the longer jets of flame.

In the illustrated embodiment of the invention, the deflector cap 11 is in the form of a disk which rests upon the tops of baffle members 13 and is properly centered with regard to the burner by means of a plurality of pins 19. As shown in Fig. 1, the top surface of the deflector cap 11 is plane and the bottom surface is convex. In the position shown the flame will be somewhat cup shaped, whereas if the deflector cap be inverted to present its flat surface to the stream of fuel, the flame will be substantially flat as well.

The illustrated structure of the burner enables the deflector cap and associated parts to be readiy removed for cleaning or adjustment at any time, and the baffle members 13 may be turned angularly with regard to the body of the burner, to project the flame in any desired direction which is of particular advantage where a non-symmetrical flame is employed and it is desired to concentrate the heat in any particular zone about the burner.

While a specific embodiment of the invention has been described, it will be obvious that many changes may be made therein without departing from its principles as set forth in the appended claims.

I claim:

1. An oil burner unit comprising a hollow body member having a mixing chamber therein with air and gasified fuel inlets leading to said mixing chamber, a float valve associated with said gasified fuel inlet, an enlarged deflector head spaced from said body member to provide a laterally directed outlet passageway communicating with said mixing chamber, a plurality of baffle members being located in said outlet passageway to split up the jet of fuel into fan-shaped component parts and a draft washer underlying said passageway having openings communicating between its opposite side faces to supply supplementary air to the sheet of flame which issues between the deflector head and the draft washer.

2. An oil burner unit comprising a hollow body member having a mixing chamber therein, a fuel chamber leading to said mixing chamber, a collar member axially slidable within said body member, said collar member having a flange at the outer end of the body member, a deflector cap detachably mounted above the collar member, said collar member being provided with baffle members supporting said cap, and a perforated draft washer detachably supported between said flange and said body member.

In testimony that I claim the foregoing, I have hereunto set my name this 16th day of July, 1924.

MYLAN DEMYANOVICH.