

No. 879,002.

PATENTED FEB. 11, 1908.

P. B. REED.
OIL BURNER.
APPLICATION FILED JULY 6, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

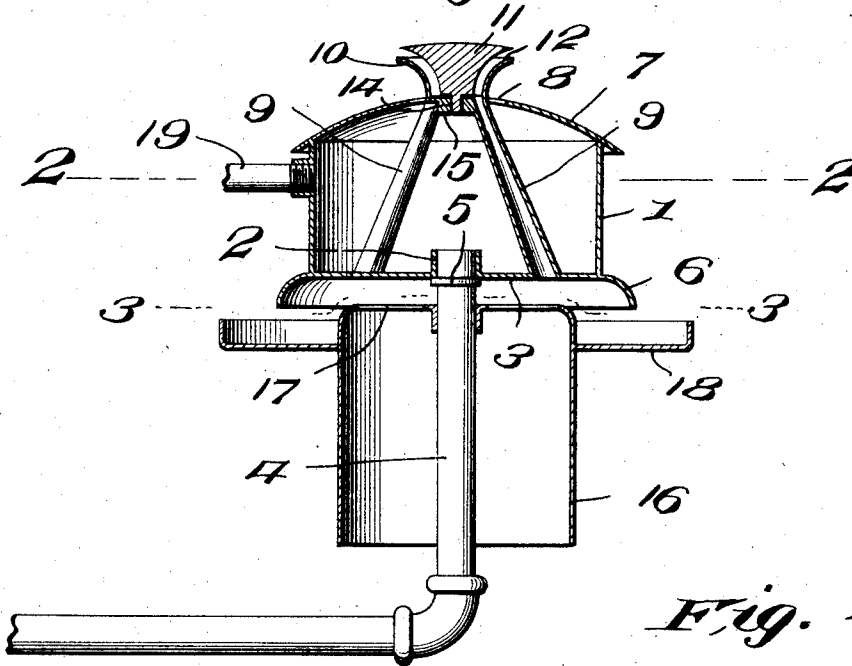
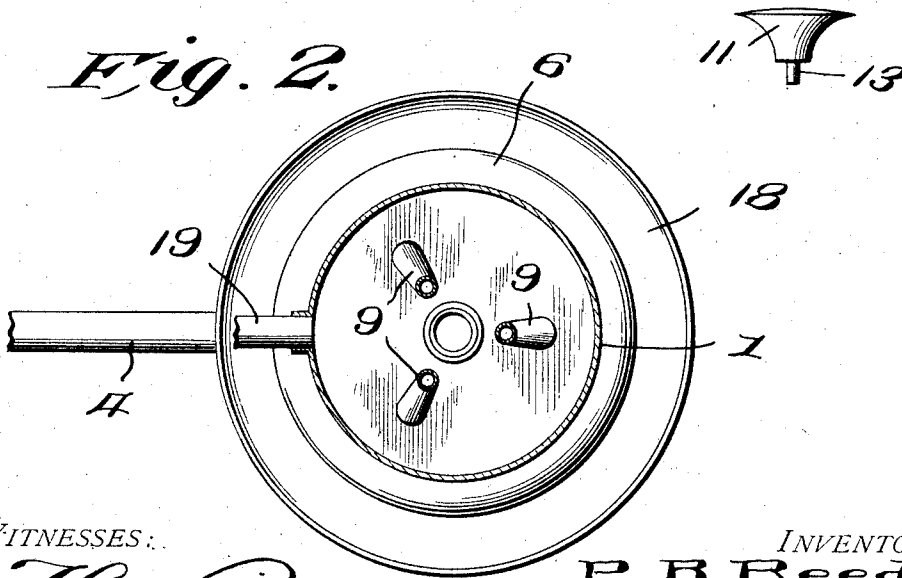


Fig. 4.

Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 5.

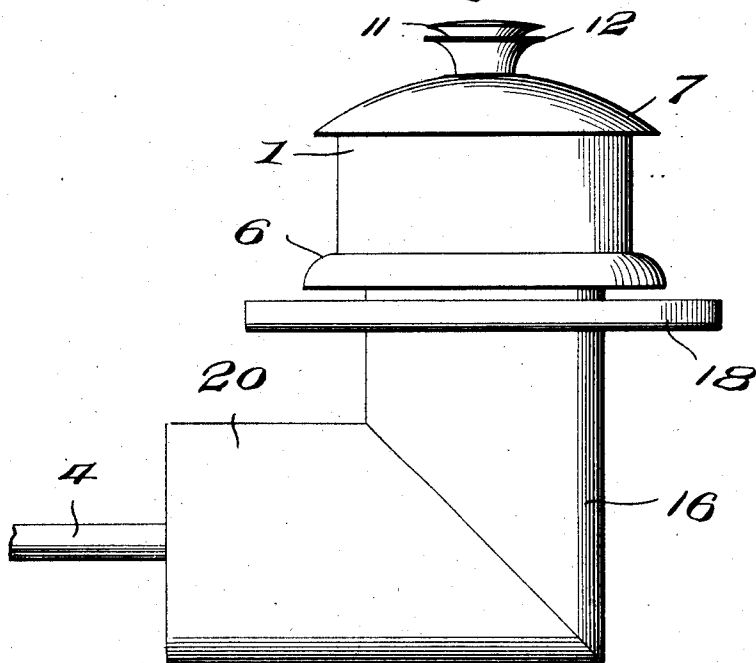
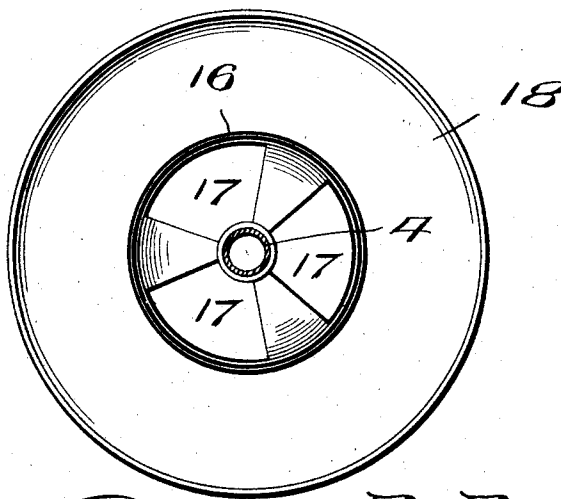


Fig. 3.



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UNITED STATES PATENT OFFICE.

PEARL B. REED, OF TOPEKA, KANSAS.

OIL-BURNER.

No. 879,002.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed July 5, 1907. Serial No. 382,374.

To all whom it may concern:

Be it known that I, PEARL B. REED, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Oil-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in burners, and more particularly to that class adapted to be used for burning crude oil, and my object is to provide means for forming a perfect combustion, whereby the crude oil will produce a perfect, or blue flame.

A further object is to provide means for heating the oil, whereby the same will be delivered to the combustion point in jets.

A still further object is to provide a suitable pan for catching the drippings and a still further object is to provide means for mixing air with the oil in the dripping pan, whereby a perfect combustion of the same will be obtained.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1 is a central, vertical, sectional view through the burner. Fig. 2 is a sectional view thereof, as seen on line 2—2, of Fig. 1. Fig. 3 is a sectional view as seen on line 3—3, Fig. 1. Fig. 4 is a side elevation of an air distributor employed in producing perfect combustion, and, Fig. 5 is a side elevation of the burner showing a slightly modified form of air drum.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a tank having an opening 2 in the bottom 3 thereof, through which extends an oil feed pipe 4, said pipe being provided with a collar 5, on which the bottom 3 of the tank rests.

The bottom 3 extends beyond the wall of the tank and is bent downwardly to form a deflector 6, while the upper end of the tank 1 is provided with a dome-like cover 7, having at its apex, a passage 8, through which the oil is adapted to escape from the tank.

In order to introduce and mix air with the burning oil, so that perfect combustion will

be accomplished, I provide a plurality of air tubes 9, which extend upwardly and inwardly from the bottom 3 to the passage 8 in the cover 7, said air tubes being flared from their lower to their upper ends and terminating in the upwardly and outwardly curved flange 10, the curved portion of said flange extending over the passage 8 in the cover 7 and at a pre-determined distance above the passage 8, will be uniformly distributed around the flange and directed outwardly therefrom, and in order to properly commingle the air with the oil to obtain a perfect combustion, I provide an air distributor 11, the peripheral surface of which is shaped similarly to the flange 10, but is of less diameter than the flange, so that an air space 12 is formed between the flange and distributor and the distributor is secured in position by directing a stem 13, on the lower end of the distributor, through a bore 14, in the bottom wall 15 of the flange 10, and by arranging the upper ends of the air tubes 9 so that the openings therein will register with the air space 12, it will be seen that the air will be uniformly directed around the distributor 11 and into the gases arising from the burning oil, and by regulating the flow of the air through the tubes, a perfect combustion may be accomplished.

Surrounding the feed pipe 4, at a suitable point below the bottom 3 of the tank, is an air drum 16, through the upper end of which is formed ports 17, thereby allowing the air entering the drum to freely pass into the space below the deflector 6 and into the air tubes 9, the lower end of the drum 16 being open, so that air may readily pass into the drum.

Surrounding the drum 6, and adjacent the upper end thereof, is a pan 18, into which any unused oil may descend from the burner and said pan is also used for generating purposes, so that the tank containing the oil may be heated to start the flow of oil through the passage 8, and it will further be seen that the oil descending from the burner or otherwise dripping into the pan, may be ignited and the air passing between the pan and deflector will serve to cause perfect combustion of the oil being burned in the pan.

I prefer to use the crude oil in its natural state, and by the present construction of the burner, I am enabled to obtain complete combustion, but, if desired, water may be em-

ployed in connection with the oil and when so employed, the water is directed into the tank through a pipe 19, which extends from any suitable source of supply and enters the
5 tank 1 adjacent the upper end thereof.

These burners are adapted to be placed directly in a fire box of the usual, or any preferred form of stove and the air drum extended through the grate in the stove and
10 into the usual form of ash-pit where air enters the drum, but, if preferred, an elbow 20 may be attached to the lower end of the drum 16 and extended forwardly through the front wall of the stove, so that the air
15 may enter the drum without passing into the ash-pit.

In starting my improved burner, a quantity of oil is placed in the pan 18 and ignited, the heat and flame arising therefrom surrounding the tank 1 and passing through the
20 tubes 9 and, thereby, heating the oil in the tank, so that by the time the oil in the pan is consumed, the oil in the tank will have been heated to the boiling point, so that the oil
25 will be thrown through the passage 8 and deflected over the cover of the burner by the flange 10 and when the oil exuding from the passage 8 is ignited, the heat therefrom will keep the oil in the tank at the proper tem-
30 perature, and an air distributor will direct the air into the flame around the flange and produce a proper combustion.

It will thus be seen that I have provided a very cheap and economical form of burner
35 and one wherein crude oil may be employed for producing combustion, and it will further be seen that by arranging the air tubes and distributors therefor, as shown, the air will be properly commingled with the oil to
40 produce a perfect combustion.

What I claim is:

1. In a burner of the class described, the

combination with a tank having a bottom therein and a dome-like cover at the upper
end of said tank, said cover having a passage 45 in its apex; of a curved flange extending through and above said passage, a distributor surrounded by said flange and of less diameter than the diameter of the flange, whereby an air space is formed between the
50 flange and distributor, a plurality of air tubes extending through said tank and communicating at their upper ends with the air passage, a deflector surrounding the lower end of said tank, means to direct the air into
55 said deflector and through the air tubes and means to convey oil into said tank.

2. In a burner of the class described, the combination with a tank having a bottom section, a dome-like cover at the upper end
60 of said tank, said cover having a passage through the center thereof; of an upwardly and outwardly curved flange extending through said passage, a distributor surrounded by said flange, the peripheral wall
65 of which is curved to conform to the contour of the flange, said distributor being of less diameter than the flange to form a space between the flange and distributor, a plurality
70 of air tubes extending through the bottom section and communicating at their upper ends with the air space between the distributor and the flange, a deflector surrounding the lower end of said tank, a feed pipe entering
75 said tank through the bottom section, an air drum below said bottom section and a drip pan below said tank.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PEARL B. REED.

Witnesses:

B. S. BARTON,
J. R. McNARY.