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PORTABLE FUEL OIL BURNER

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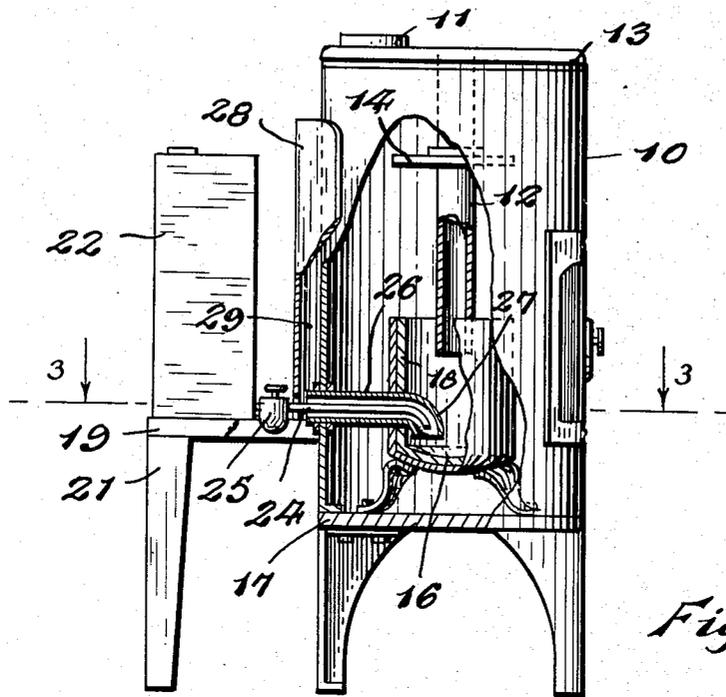


Fig. 1.

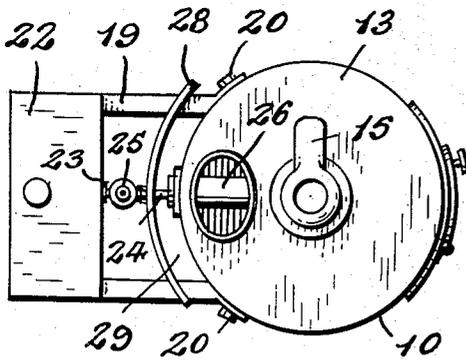


Fig. 2.

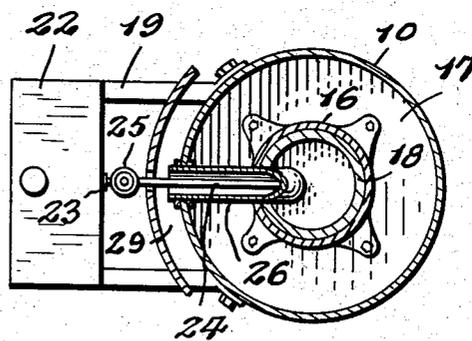


Fig. 3.

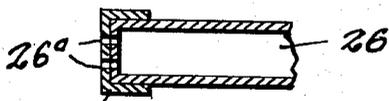


Fig. 4.

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# UNITED STATES PATENT OFFICE

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## PORTABLE FUEL OIL BURNER

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1 Claim. (Cl. 158—91)

This invention relates to a portable fuel oil burner and it consists in the constructions, arrangements, and combinations herein described and claimed.

It is an object of the invention to provide a burner wherein secondary air is admitted medially of the fire pot through a down-draft air pipe.

It is also an object of the invention to provide a novel form of oil and primary air feeding means.

It is a still further object of the invention to provide a burner which may be readily installed in a custom built heater and which will be economical in manufacture.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawing, wherein—

Figure 1 is an elevational view of a heater partly in section, showing my burner installed.

Figure 2 is a top plan view.

Figure 3 is a cross section on the line 3—3 of Fig. 1.

Figure 4 is an enlarged detail of the primary air duct.

There is illustrated a heater 10 which may be of any approved construction, but in the present instance, is shown as of circular formation and having a flue 11. A pipe 12 is secured to the top plate 13 of the heater, extending downwardly into the heater and intermediate of its length there is mounted a baffle plate 14. The baffle plate 14 will be positioned upon the pipe 12 at a point on a line adjacent the upper edge of a deflector plate presently to be described. By positioning the baffle plate 14 as shown, the flame from the burner will be deflected laterally of the burner at points below the top of the burner, and the deflector 28 prevents excessive heat from damaging the reservoir 22 or causing overheating and possible ignition of the fuel therein. The pipe 12 is positioned in the medial vertical axis of the heater, and acts as a secondary air supply, as will be more readily understood as the description proceeds. The amount of air passing into the heater by way of the pipe 12 may be controlled by a regulator 15.

A fire-pot 16 is positioned within the heater 10 supported fixedly upon the base 17 thereof and immediately below the air pipe 12. The fire pot is of a height extending upwardly above the lower end of the pipe, so that air discharged from the pipe will be directed downwardly into the pot. The fire-pot may be lined with asbestos or fire-clay 18, as desired.

A stand 19 is employed, connected at one end

to the heater, as at 20, the other end having legs 21, and upon the stand a fuel reservoir 22 is supported. A fuel outlet 23 is formed in the base of the reservoir to which a fuel line 24 is connected, and in this line there is a safety or control valve 25 for regulating the flow of fuel.

A primary air duct 26 is suitably mounted in the wall of the heater circumscribing the fuel line 24, one end opening exteriorly of the heater, the other end being presented through an aperture of the fire pot 16. The end disposed within the fire-pot is given a downward bend as at 27, so as to direct air downwardly, and the fuel pipe 24 is similarly shaped. If desired, the duct 26 may include a cap 26' disposed over the exterior portion thereof, the cap, having apertures 26a for regulating the amount of air passing there-through.

A heat deflector plate 28 is mounted upon the stand 19, interposed between the reservoir and the heater. The deflector plate 28 is arcuate-shaped, conforming to the exterior of the heater and is spaced quite close thereto, forming an air space 29. The plate 28 is apertured to admit the fuel line and partially houses the entrance opening of the duct 26.

### The operation

The operation will be understood from the following description. The fuel oil in the reservoir 22 will feed by action of gravity into the base of the fire-pot 16 through the feed line 24, the flow being controlled through adjustment of the valve 25. The air in the fire-pot mixes with air admitted through the air duct 26, forming a combustible mixture which is now ignited. A draft in the heater 10 is created by virtue of the flue 11, drawing a secondary air charge into the fire-pot through the tube 12. The baffle plate 14 deflects the flame to the sides of the heater effecting uniform distribution of heated air into a room as well as to the air space 29. It will be seen that the air passing between the heater and the deflector 28 will be heated and rise upwardly there-between, so that overheating of the reservoir 22 is avoided.

While I have shown and described a preferred form of heater, this is by way of illustration only, and I consider as my own all such variations in structure as fairly fall within the scope of the appended claim.

I claim:

A heater of the character described comprising a casing having a top portion, a valved air tube extending medially from the top downwardly

5 into the casing, a fire-pot in the casing, said fire-pot having considerable height so as to project above the lower end of the air tube, a baffle plate on the air tube spaced between the upper edge of the fire-pot and the top of the heater, and means for simultaneously feeding fuel and air

into said fire-pot below the lower end of the air tube, said means comprising concentric nozzles extended through the casing and fire-pot and terminating in downturned ends disposed a short distance above the bottom of the fire-pot. 5

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