Jan. 20, 1942. A. C. CAMERTONI 2,270,623

OIL BURNER

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Fig. 1.

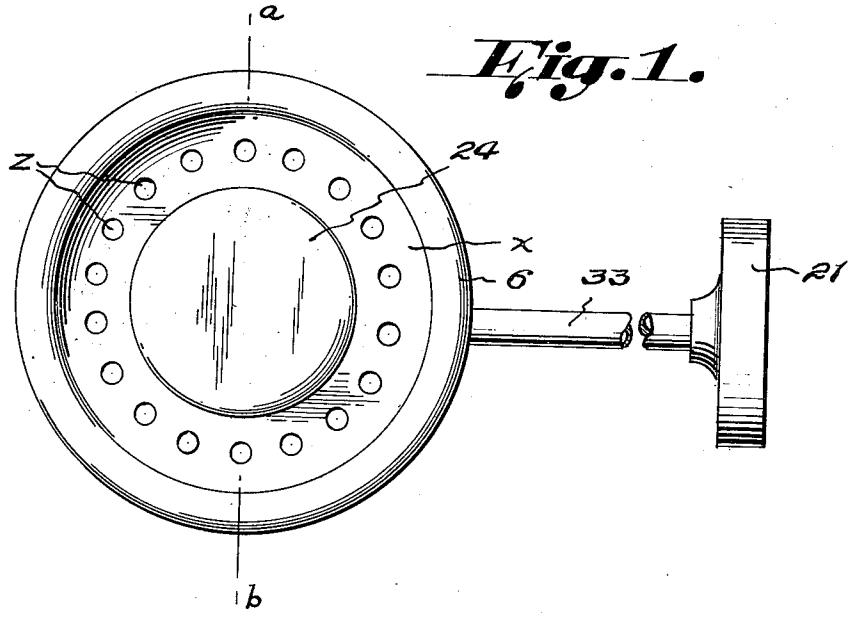
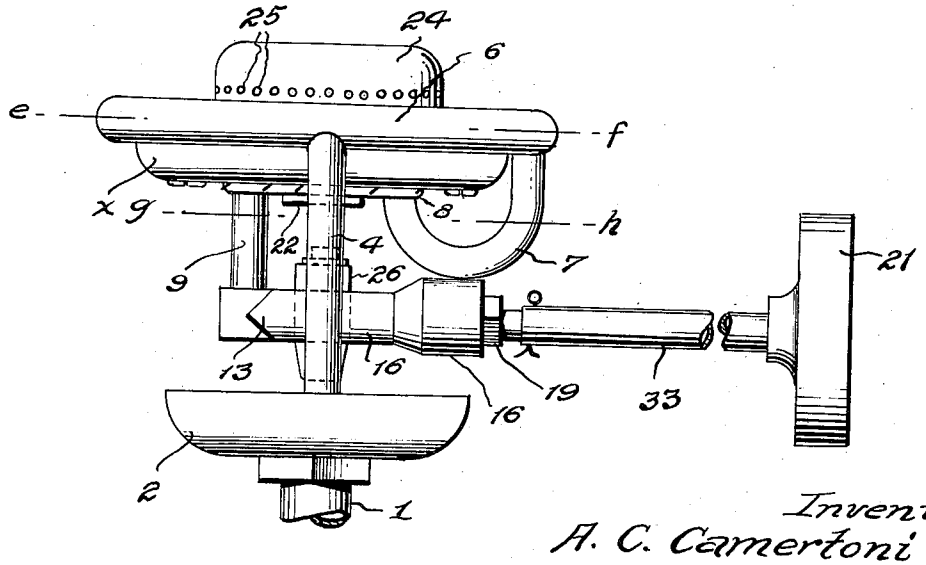


Fig. 2.



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Fig. 3.

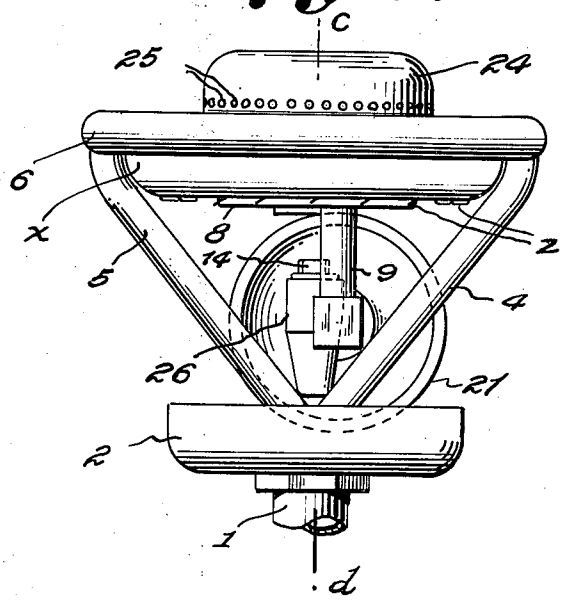
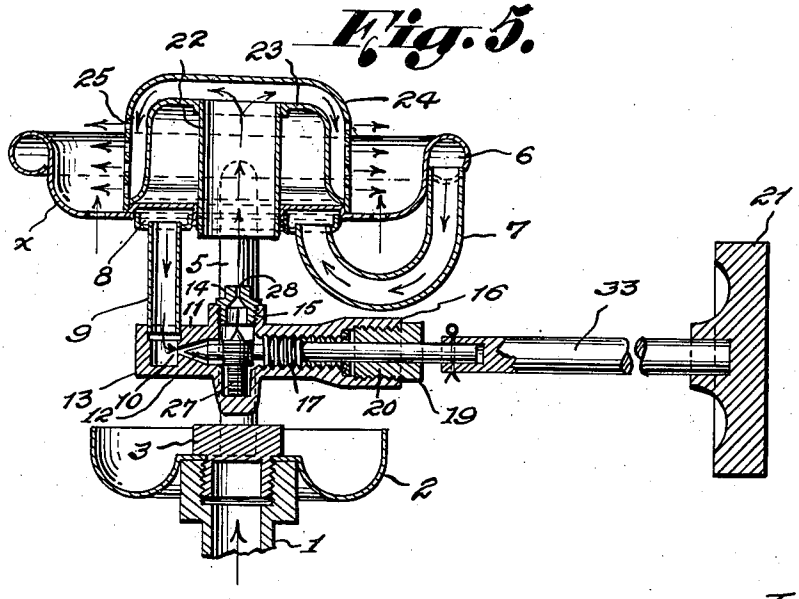


Fig. 5.



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Fig. 4.

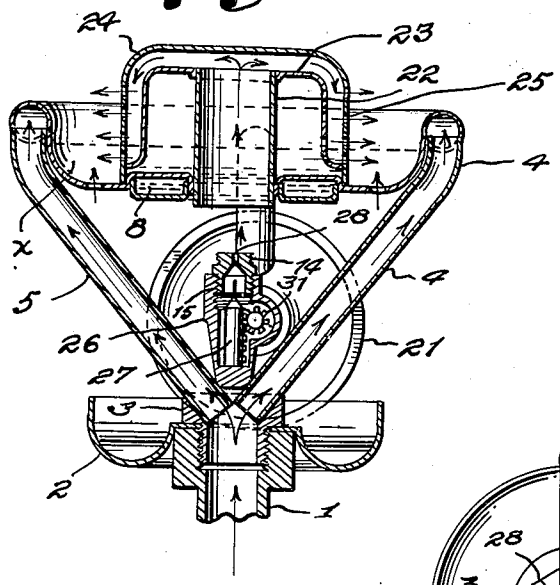


Fig. 7.

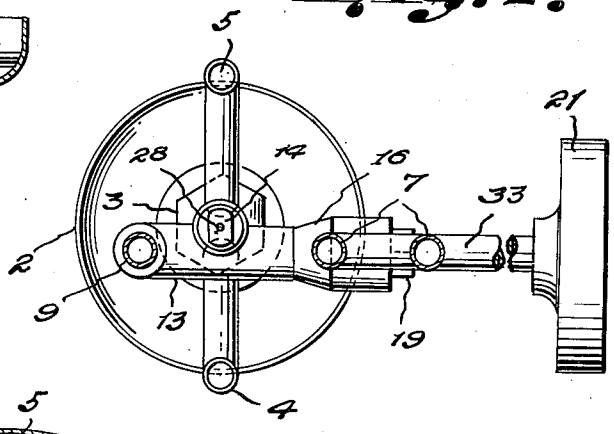
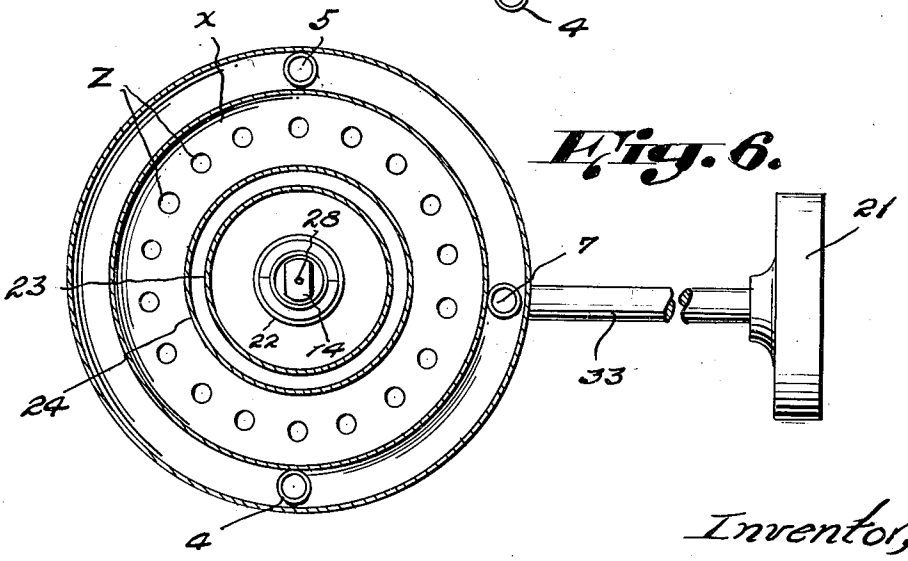


Fig. 6.



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UNITED STATES PATENT OFFICE

2,270,623

OIL BURNER

Alexander Cesar Camertoni, Sao Paulo, Brazil, assignor to Washington de Noronha Figueiredo, São João, Brazil

Application September 11, 1939, Serial No. 294,371
In Brazil May 27, 1939

1 Claim. (Cl. 158—63)

This invention relates to improvements in liquid fuel burners and has for its object to provide a device having vaporizing chambers arranged in such manner as to permit the utilization of comparatively low grades of fuel.

A further object of the invention is the provision of a means for insuring the free passage of fuel through the discharge orifice and to prevent the accumulation of foreign matter therein.

In the accompanying drawings, wherein an approved embodiment of the invention is illustrated:

Figure 1 is a top plan view of a burner constructed in accordance with the invention.

Figures 2 and 3 are side and front elevations, respectively, thereof.

Figure 4 is a vertical sectional view on the line *a—b* of Figure 1.

Figure 5 is a vertical sectional view on the line *c—d* of Figure 3.

Figure 6 is a section on the line *e—f* of Figure 2.

Figure 7 is a section on the line *g—h* of Figure 2.

Referring to the drawings in detail the numeral 1 indicates an upright fuel supply pipe supporting a tray 2 for containing a quantity of liquid fuel to be used to prime the burner. A fitting 3 is positioned in the upper part of the pipe 1 and supports upwardly diverging branch pipes 4 and 5 connecting the supply pipe 1 with an annular tube 6 in which the liquid fuel is vaporized. A second vaporizing chamber 8 is provided and connected with the annular tube 6 by a pipe 7, the chamber 8 being also of annular form and arranged concentrically within and below the tube 6.

A valve housing 13 is arranged below the chamber 8 and connected therewith by a pipe 9. The valve port 10 is controlled by a needle valve 12 and the upper part 11 of the housing 13 is provided with an upstanding hollow extension 15 receiving the fuel nozzle 14 having an orifice 28 for the passage of fuel.

The stem of the valve 12 is threaded at 17 in an extension 16 of the valve housing. The extension 16 is provided with threads 18 receiving a nut 19 and a packing 20 to establish a fluid tight joint between the valve housing and stem. An extension 33 is attached to the valve stem and is provided with a turning knob 21 for controlling the position of the needle valve 12.

An upright tube 22 is fixed centrally within the vaporizing member forming the chamber 8 in spaced relation above the orifice 28. The annular vaporizing tube 6 is connected with the vaporizing member 8 by an inverted bell-shaped member *x* having apertures *z* in the lower portion thereof. A second bell-shaped member 24 is arranged upon the member *x* and is provided in the vertical wall thereof with openings 25 for the passage of the vaporized fuel. As shown in Figure 5, the openings 25 are directly opposite the annular tube 6 whereby the flame produced by the burning fuel effectively heats the tube 6 and thus vaporizes the liquid fuel.

The medial portion 26 of the valve housing 13 is shaped to accommodate gear teeth 31 formed on the stem of the valve 12, the gear teeth being engaged with a rack 27 movable vertically in the valve housing and provided at its upper end with a needle which, when the valve 12 is closed, is moved upwardly by the tooth and rack 31—27 and enters the orifice 28, thereby clearing the latter and preventing the obstruction thereof by foreign matter.

In operation, operation of the burner is initiated by heat supplied from fuel deposited in the priming tray 2. The fuel arises through the branch pipes 4 and 5 and is vaporized in the annular tube 6 and passes therefrom through pipe 7 to the vaporizing member 8 in which it is further vaporized. From this point the vaporized fuel descends through the pipe 9 and passes through the port 10 in quantity depending upon the adjustment of the needle valve 12. The fuel is discharged through the orifice 28 and rising in the chamber 22 is mixed with air. Upon leaving the tube 22 the fuel vapor expands between the bell 24 and the member 23 disposed thereunder and discharges through the openings 25, the flame resulting from the combustion of the fuel heating the nozzle tube 6 and thereby maintaining the vaporization of the fuel for continued operation of the burner. As shown in Fig. 5 the needle valve 12 is in open position for operation of the burner and the clearing needle on the rack 27 is withdrawn from the orifice 28. When the needle valve 12 is turned to such extent as to close the passage through the port 10, the rack 27 is raised sufficiently to cause the clearing needle to enter the orifice 28. The bell-shaped member 29 is removable to afford access to the interior thereof.

What I claim is:

A detachable burner unit for association with a fuel supply pipe including a double walled dome-shaped member having openings on the outer vertical wall for the passage of vaporized fuel undergoing combustion, an annular vaporizing member arranged externally of the first mentioned member and adjacent the openings therein and connected thereto to support the dome-

shaped member, an apertured fitting arranged beneath the vaporizing chamber and detachably connected to the supply pipe, upwardly divergent pipes extending from said fitting and having their outer ends connected to and communicating with the vaporizing chamber and acting to support the same, a second annular vaporizing chamber coaxial with, and having a smaller over all diameter than, said first mentioned vaporizing chamber, means establishing communication between said vaporizing chambers, the inner wall of the dome-shaped member having a central opening therein at the top thereof, a mixing tube having one end secured within said opening and the other end connected to the inner periphery of the second mentioned vaporizing chamber, a nozzle detachably arranged adjacent said mixing tube to discharge therein and means for conducting the vaporized fuel from said second mentioned vaporizing chamber to said nozzle for introduction into said mixing tube.

ALEXANDER CESAR CAMERTONI.