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J. H. CONANT

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OIL BURNER

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Fig. 1.

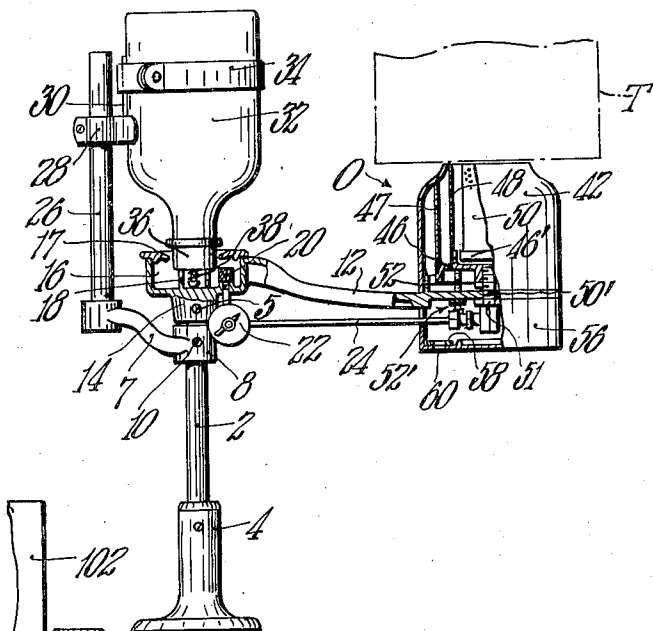


Fig. 2.

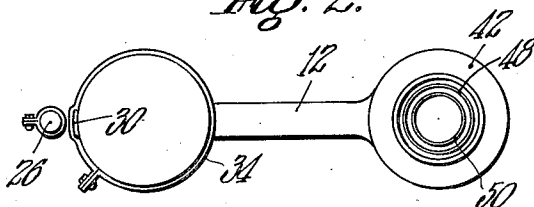


Fig. 3.

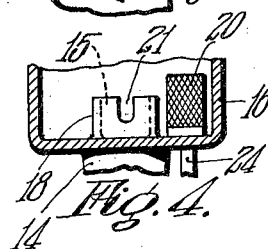
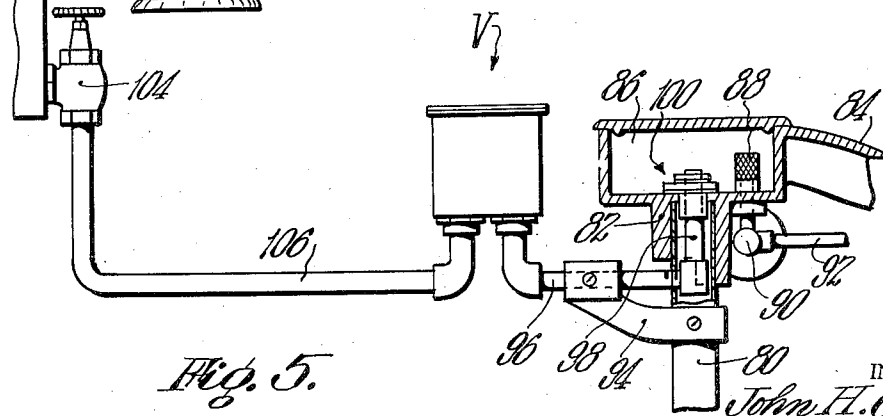


Fig. 4.

Fig. 5.



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## UNITED STATES PATENT OFFICE

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## OIL BURNER

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2 Claims. (Cl. 158—40)

This invention relates to improvements in oil burning apparatus and is directed more particularly to oil burners of the type known as domestic burners. The burner is particularly adapted for use in connection with a water heater or the like.

One object of the invention is the provision of a burner apparatus wherein a bracket member is pivoted on a support for swinging movements. This member supports on its outer end an oil burner structure while a sump is associated with its pivoted end. A fuel reservoir having a discharge opening disposed in the sump is associated with the support and so arranged that the bracket member and burner may be swung back and forth from a position beneath an apparatus such as a water heater or a tank to a position at a side thereof without disturbing the relation of the outlet of the reservoir and sump.

Another object of the invention is the provision of an oil burner structure wherein an arm or bracket has a sump associated with an end thereof pivoted on a support so that its outer end may support an oil burner structure in combination with means for supplying fuel to the sump from a stationary supply. This makes it possible for the fuel supply to be located at a remote distance from the burner and yet swinging movements of the burner relative to an apparatus such as a water heater with which it may be used are permitted.

A still further object of the invention is the novel combination and arrangement of parts to provide a structure which is not only simple in form but which is efficient in operation all to the end that the apparatus may be economically manufactured and efficient while at the same time it has certain novel features of construction contributing to its usefulness in use with various forms of apparatus.

Various novel features and advantages of the invention will be hereinafter referred to more fully in connection with the accompanying description of the present preferred form thereof, reference being had to the drawing wherein:

Fig. 1 is an elevational view of a burner apparatus embodying the novel features of the invention, with parts in section for clearness.

Fig. 2 is a plan view of the burner apparatus shown in Fig. 1.

Fig. 3 is a fragmentary elevational view of certain parts of a burner apparatus to explain certain features of the invention.

Fig. 4 is a sectional elevational view of the

sump showing how the bracket arm is mounted for movements on the support, and

Fig. 5 is a fragmentary elevational view showing a modified form of certain features of the invention.

Referring now to the drawing more in detail the invention will be fully described.

A support 2 is shown in Fig. 1 which in one form of the invention is preferably fixed in a base 4 which may in any usual manner be secured to a floor or the like.

A bracket 7 has a hub 8 which is adjustable on the support 2 and this may be held in various positions of adjustment by any suitable means such as a set screw 10 or the like. An arm 12 has a hub 14 on its inner end that is preferably rotatable through a certain angle relative to the support 2. This is accomplished as in Fig. 3 by providing a groove 3 around the support and a screw 5 or other member in the hub 14. As the arm is oscillated the screw brings up against the ends of the groove whereby the arm is limited in its oscillating movements. If desired the groove may be continuous. A sump 16 is associated with the said inner end of the arm and is preferably disposed concentrically relative to the support.

An oil burner structure indicated generally by O is associated with and supported by the outer end of the arm 12 and this will be hereinafter more fully referred to.

The sump 16 has a centrally disposed well 15 formed by an annular wall 18, see Fig. 4. A strainer 20 is provided in association with a suitable outlet to which is connected a valve structure 22 of usual form. In this way, the flow of fuel from the sump through a pipe 24 to the burner may be controlled as will later appear.

The wall of the well is provided with one or more openings or slots 21 so that fuel may flow from the well into the sump.

A rod 26 extends upwardly from the member 7 and has a clamp 28 adjustable thereon. From the clamp 28 extends in an upward direction a bayonet part 30, as shown. A reservoir preferably in the form of a bottle 32 is provided which has a strap 34 securely embracing the same that is provided with a socket for receiving the bayonet 30 as shown in Fig. 2. In this way the reservoir 32 may be slipped upwardly so as to be released from the bayonet for the purposes of filling, etc. As shown the bottle is removably supported by the rod 26 and associated parts.

A cap 36 is provided for the outlet of the bottle 32 which includes the usual valve mechanism.

This mechanism generally embodies a stem 38 which is spring-pressed outwardly. The parts are arranged so that as the stem is depressed when placed in the well, fuel is allowed to flow through the opening of the cap and reservoir.

When the reservoir is attached to the support as shown whereby it is in axial alignment with the axis of the sump the member 38 is depressed so that fuel may flow from the reservoir into the well and then into the sump and finally through the strainer 20 through or past the valve 22 to the burner O by way of the pipe line 24.

The member 12 is rotatable relative to support 2 so that the arm 20 may be swung back and forth. Since the fuel reservoir is disposed and supported centrally of the sump, free swinging movements of the arm are permitted without the necessity of removing the reservoir or interfering in any way with the connections between the reservoir and the sump. Therefore it will not be necessary in order to swing the arm to remove the reservoir and then replace it to light the burner. The sump is provided with a cover 17 which as usual is provided with an opening to loosely receive the endmost portions of the reservoir.

The arm 12 supports in some suitable manner an upwardly extending shell 42 provided with a more or less restricted opening at its upper end, as shown. This makes it possible to position the burner O beneath a water heater or the like so that heat may be directed upwardly thereinto. Such a water heater, tank or other unit is indicated by dot dash lines T.

The burner may take the usual form but in the embodiment shown, there is a base 46 from which extends a perforated shell 48. Another shell 50 is supported by a central member 46'. A shell 47 extends upwardly from the base 46 which is preferably not perforated so that it may function to insulate the outer shell 42.

A fuel connection commonly called a carbon leg or support 50' passes through the arm 12 and is suitably associated with the base member 46. The fuel pipe 24 is connected to this member 50' after the manner commonly employed so that fuel is conducted from the sump into the burner structure.

An adjusting screw or screws 52 are threaded in the outer end of the arm 12 and bear against the member 46. When a plurality of such screws are used it is possible by manipulating the screws to level the burner base parts which is desirable in order to provide a uniform depth of oil throughout the burner base and regulate the depth of oil in the burner casting. A nut 51 associated with the member 50 locks the parts in adjusted positions.

A lower cover 56 is carried by the lower side of the arm 12 and it has a ring-like damper 58 resting on the lower wall thereof. The lower wall of the cover and member 58 are provided with perforations such as 60 through which air is admitted to the burner. The member 58 is preferably oscillatable to bring the openings thereof into and out of register with those in the wall of the cover 56. This facilitates varying of the amount of air admitted to the burner.

The modification of the invention shown in Fig. 5 will now be described.

In this form of the invention a support 80 is provided, on the upper end of which is a hub 82 of an arm 84 similar to arm 12. A sump 86 is associated with the arm 84 and a strainer 88 is in communication with a valve structure 90 from which leads a pipe 92 for connection to an oil

burner structure which may be supported on the end of arm 84 after the manner already described.

A bracket 94 for supporting a pipe 96 is carried by the support 80. The pipe 96 leads from a constant level valve V while a pipe 98 is connected to an end of pipe 96 and is disposed within the support 80 which in this case is preferably tubular. A stuffing box construction of usual form indicated generally by 100 is associated with the lower wall of the sump and the pipe 98 so that fuel delivered into the sump will not leak or flow past pipe 98 but will at the same time permit swinging movements of the sump and arm relative to the support 80.

A fuel supply which in this case is preferably in the form of a stationary tank or reservoir 102 is connected through a valve 104 if necessary and pipe 106 to the inlet side of the constant level valve V. The constant level valve is of ordinary construction and may consist of a float or other means to allow fuel to pass therethrough when fuel in the sump has reached a certain low level and it will control or restrict the flow of fuel to maintain the desired level. This valve forms no part of the present invention.

With this form of the invention the reservoir 102 may be located at a distance remote from the oil burner apparatus and yet a level of fuel may be maintained in the sump which being associated with the arm is oscillatable therewith to facilitate the burner carried by the end of the arm being moved away from beneath such a unit as a water heater to a side thereof and vice versa.

This makes it possible to swing the arm back and forth without making it necessary to disconnect the burner from the fuel supply and altogether the burner structure is quite independent of the tank which is desirable and necessary.

While I have described my invention in great detail and with respect to preferred embodiments thereof, I do not desire to be limited to such detail or embodiments since many changes or modifications may be made without departing from the spirit and scope of the invention in its broader aspects. What I desire to claim as new and secure by Letters Patent of the United States is:

1. A liquid fuel burning apparatus of the class described comprising in combination, a vertically disposed support, a hub member vertically adjustable on said support and having an arm extending outwardly therefrom, a substantially horizontal bracket member swingable relative to said support and including a hub part coaxial with and oscillatable on the support and a free end part being provided with means for supporting a liquid consuming means, a liquid fuel consuming device supported by said means, a sump on said hub part of the bracket member in coaxial alignment with said support, a liquid fuel reservoir removably supported by and having its outlet in said sump so that said sump may be rotated relative to said reservoir when the latter is held against movement, positioning means extending upwardly from said arm holding said reservoir against movement in feeding position on said sump, and feeding connections between said sump and consuming device whereby said bracket member may be swung into various positions to move said consuming device independently of and relative to said reservoir.

2. A liquid fuel burning apparatus of the class described comprising in combination, a vertically

disposed support, a hub member vertically adjustable on said support and having an arm extending outwardly therefrom, a substantially horizontal bracket member swingable relative to  
5 said support and including a hub part co-axial with and oscillatable on the support above said hub member and a free end part extending away therefrom, said free end part being provided with means for supporting a liquid fuel consuming device, a liquid fuel consuming device supported by said means, an upwardly extending annular wall on said hub part of the bracket member forming a sump in co-axial alignment  
10 with said support, a liquid fuel reservoir remov-

ably supported by and having its outlet in said sump so that said sump may be rotated relative to said reservoir when the latter is held against movement, said reservoir being provided with a depressible fuel release member engaging said  
5 sump, positioning means extending upwardly from said arm holding said reservoir against movement in feeding position on said sump, and feeding connections between said sump and consuming device, whereby said bracket member  
10 may be swung into various positions to move said consuming device independently of and relative to said reservoir.

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