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PROTECTING GUARD FOR OIL BURNER RESERVOIRS

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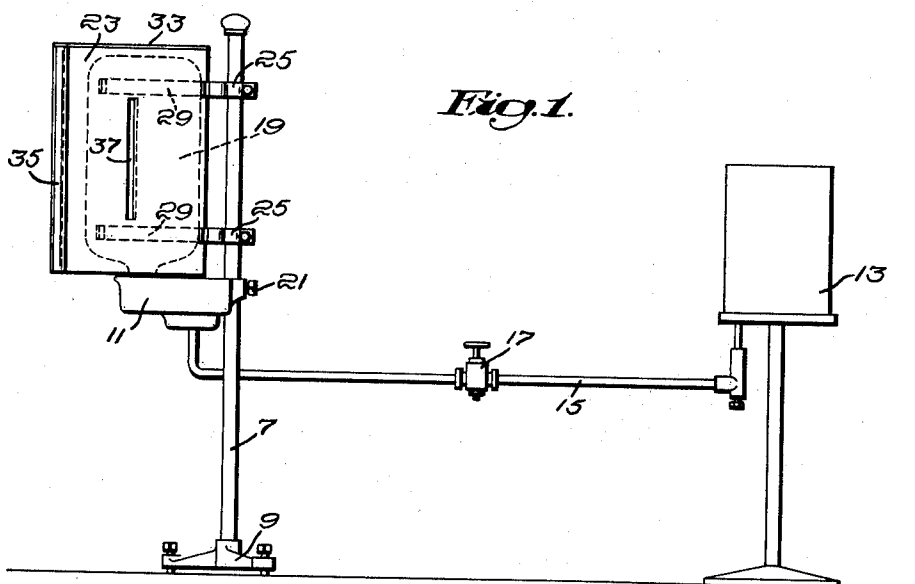


Fig. 1.

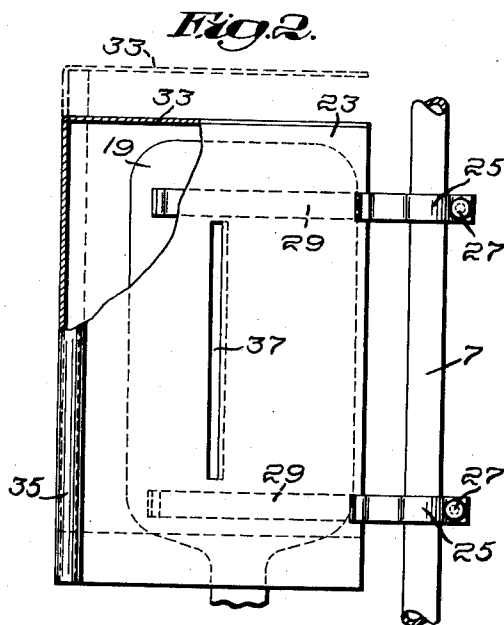


Fig. 2.

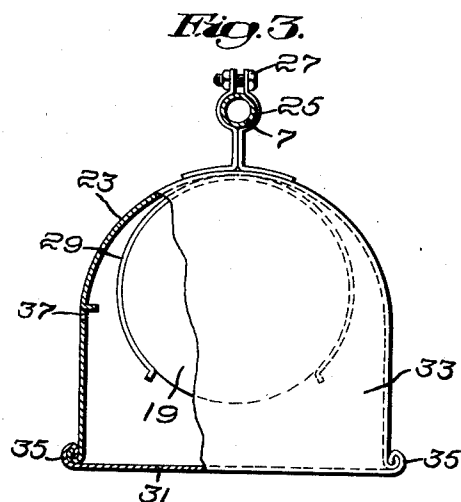


Fig. 3.

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PROTECTING GUARD FOR OIL BURNER
RESERVOIRS

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Application October 29, 1931, Serial No. 571,931

14 Claims. (Cl. 137—68.5)

This invention relates to protecting guards for oil burner reservoirs, having for one of its objects the provision of a simple, inexpensive guard adapted to protect the reservoir against acci-
5 dental injuries and readily applicable to installations of the type now generally in use.

In connection with oil or other liquid fuel burners, and especially those of the self-vaporizing type, such as combustion tube burners, it is usual
10 to provide a supply receptacle replenished from an open-mouth reservoir, which, as commonly used, is in the form of a glass bottle. The latter is placed in inverted liquid sealed relation to the supply chamber of the receptacle, the latter
15 with the bottle being mounted on an upright support where it is commonly unprotected, open and exposed to view. A glass bottle or other reservoir thus exposed is subject to the danger of breakage through accidental shock or blow and
20 often presents an unsightly appearance.

One object of the invention, among others, is to provide a guard sufficient to cover the glass bottle or other reservoir and protect it against
25 breakage or other injury due to accidental shocks or blows, while providing at the same time a simple and inexpensive construction, readily applicable to the supporting standards which are now commonly used for supporting the bottle
30 and its supply receptacle, and making also such provision that the bottle is readily accessible for removal or replacement.

The invention will be best understood by reference to the following description when taken
35 in connection with the accompanying illustration, while its scope will be more particularly pointed out in the appended claims.

In the drawing:

Fig. 1 is a side elevation of a bottle reservoir with a protecting guard applied, assembled
40 with the supply receptacle and support, and showing the connection of the supply receptacle to a typical form of burner;

Fig. 2 is a side elevation of the bottle and the protector, partly broken away to show the
45 method of applying and withdrawing the removable front and top of the protector; and

Fig. 3 is a plan view partly in section.

Referring to the drawing and to the embodiment of the invention which is therein shown for
50 illustrative purposes, a supply receptacle and reservoir are carried upon an upright support 7 in the form of a rod or pipe length, the lower end of which is secured to the floor base 9. The supply receptacle comprises a casing 11, which for
55 descriptive purposes may be referred to as a bowl,

this bowl having an oil supply chamber in which a continuously replenished supply of oil is maintained at a constant level and from which it is delivered by gravity to the base of the burner 13 through an intermediate pipe connection 15 and controlling valve 17. The burner 13 is represented as typifying any of the usual types of self-vaporizing burners with which an oil feeding device of the type shown is adapted to be used.

A constantly replenished supply of oil is maintained in the bowl by any suitable means, a common method of accomplishing this being to provide an oil replenishing reservoir, which, in the form of the invention shown, comprises a glass
60 bottle 19 air-tight except for its delivery opening or mouth, the bottle being inverted above the supply device with its mouth within the latter and immersed in and sealed by the oil therein. The latter escapes from the reservoir to replenish the supply chamber under the well-known barometric principle to maintain the supply therein as the oil is withdrawn by gravity therefrom. Such supply receptacles of this type are well known in the art and no further description is required, the particular form of receptacle
70 herein shown being similar to that illustrated in the co-pending application of Sherman and Gilbert, Serial No. 526,533, filed March 30, 1931 (Patent No. 1,912,014, granted May 30, 1933).

In the illustrative form of the invention, the glass bottle 19 is placed inverted with its mouth resting in the bowl, the supply reservoir and bottle being capable of being raised as a unit by the adjustable set screw 21 carried by the bowl.
75 To provide a protecting guard for the bottle, the sides of the latter are enclosed by a sheet metal protecting wall 23, the back of which (in plan view, Fig. 3) is semi-cylindrical in shape, terminating in substantially flat sides which extend
80 forwardly, leaving an open front or mouth and providing a casing having an approximately U-shaped cross section. This guard wall is of sufficient height to extend from above the inverted base of the bottle down to approximately the neck thereof. This protecting guard is secured to the upright supporting rod 7 by one or more split
85 rings 25 (herein two in number) formed each of pairs of sheet metal strips welded, riveted or otherwise secured to the back of the guard wall, and clamped to the supporting rod by bolts 27. Within the guard wall, the bottle is preferably held against displacement by the provision of one or more pairs (herein two in number) of resilient clasping arms 29 which are in the form
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of parti-cylindrical, resilient sheet metal strips secured at the back of the inner walls of the protecting guard at or adjacent the guide rings 25. The ends of these resilient arms are flared or bent back to receive the bottle, and the arms are of such size and resiliency that when the mouth of the bottle is placed in its receptacle the bottle may be swung into position within the protecting wall and engaged and held by the arms. If desired, the clasping arms 29 may be omitted.

When the bottle is in position the front of the protecting guard is closed by a removable front wall 31 which has secured thereto the top plate 33 conforming in shape to the top of the protecting wall 23 and fitting over and closing the top of the protector. The removable front wall 31 may be removably secured to the front of the protector in any desired way, but herein its outer edges are curled or turned over inwardly at 35 to mate and form a sliding fit with the outwardly curled side edges of the protecting wall 23. To remove or examine the bottle, therefore, it is only necessary to raise the slide (see dotted lines, Fig. 2) and remove the wall 31 and with it the top closure 33, whereupon the bottle is readily accessible for removal when empty and can be replaced by another, after which the front wall and top are again slid into position.

It will be seen that the shape of the guard is such as to leave ample clearance around the bottle at the front and sides thereof, which not only facilitates handling the latter when installed or removed, but provides ample protection against injury to the bottle from accidental blows or shocks applied to the side walls of the protector. Preferably a small opening 37 is formed in the side of the protector, the same comprising a narrow elongated slot through which observation may be had of the level of the liquid fuel remaining in the bottle at any time.

While I have herein shown and described for purposes of illustration one specific embodiment of the invention, it is to be understood that extensive changes may be made in the form illustrated, all without departing from the spirit of the invention.

I claim:

1. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is adjustably mounted, a protecting guard for said bottle, the same comprising a sheet metal casing of approximately U-shaped cross section, means for securing the casing to the upright support, resilient arms secured to the interior of the casing to engage the bottle, and a removable front wall for the casing having sliding engagement therewith, said front wall having secured thereto a closure for the top of said casing which is removable with the front wall.

2. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is adjustably mounted, a protecting guard for said bottle, the same comprising a sheet metal casing of ap-

proximately U-shaped cross section, means for securing the casing to the upright support, and a removable front wall for the casing having sliding engagement therewith, said front wall having secured thereto a closure for the top of said casing which is removable with the front wall.

3. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is secured, a protecting casing for the bottle having a side opening and an open top through which the bottle may be installed or removed, and a member slidably engaged with said protecting casing for closing the side and top thereof.

4. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is secured, a protecting casing for the bottle having a side opening and an open top through which the bottle may be installed or removed, and means for closing the side and top of the casing.

5. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply glass bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device, the combination of an upright support on which said receptacle is secured, a protecting casing for the bottle having a side opening through which said bottle may be viewed or removed or installed, and means for closing the side of the casing, said casing when closed surrounding the top and sides of said inverted bottle down to its neck.

6. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is adjustably mounted, a protecting casing enclosing the top and sides of said bottle down to its neck, said casing being separate from said receptacle and secured to an extension of said upright support, and means within the casing engaging the bottle to hold the same in relatively fixed position therein.

7. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in inverted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is adjustably mounted, and a protecting casing enclosing the top and sides of said bottle down to its neck, said casing being separate from said receptacle and secured to an extension of said upright support.

8. In a liquid-level maintaining system of the type involving a constant level supply receptacle, a liquid-supply bottle adapted to be held in in-

verted position thereover, a device in which the liquid level is maintained, and a conduit for supplying liquid from said constant level receptacle to said device; the combination of an upright support on which said receptacle is adjustably mounted, and a protecting casing above the receptacle and covering the top and sides of said bottle down to its neck.

9. In a constant level liquid supplying system, a constant level supply receptacle for communicating with a device in which the liquid level is maintained, a glass bottle removably positioned in inverted liquid sealed supply relation to said receptacle to maintain the constant level therein and resting through its inverted end on said receptacle, a sheet metal bottle protective casing separate from said bottle and enclosing the sides and inverted bottom thereof, said casing having an opening through which the liquid level in said bottle may be ascertained, means carried by said casing for securing the bottle therein, supporting means fixed with relation to said receptacle and extending above the latter at the side of said casing, and means for supporting the bottle casing through said supporting means whereby to hold firmly and in erect position the casing and through it the bottle.

10. In a constant level liquid supply device, a constant level supply receptacle, a glass bottle removably positioned in inverted liquid sealed supply relation to said receptacle to maintain the constant level therein and resting through its inverted end on said receptacle, a sheet metal bottle protective casing separate from said bottle and

enclosing the sides and inverted bottom thereof, said casing having an opening through which the liquid level in said bottle may be ascertained, means comprising resilient members clasped against the bottle for securing the latter in the casing, supporting means fixed with relation to said receptacle and extending above the latter at the side of said casing, and means for supporting the bottle casing through said supporting means whereby to hold firmly and in erect position the casing and through it the bottle.

11. In a constant level liquid supplying device, an upright support, a constant-level bowl secured to said support, a bottle removably positionable in inverted liquid sealed supply relation to said bowl to maintain the constant level therein, a bottle casing separate from said bowl, means carried by said bottle casing for securing the bottle therein, and means for supporting the bottle casing above said bowl to hold it, and through it the bottle, in operative relation to said bowl.

12. The combination defined in claim 11, said bottle casing being vertically adjustable relative to said upright support to effect raising and lowering of the bottle.

13. The combination defined in claim 11, said bowl and bottle casing both being vertically adjustable relative to said upright support.

14. The combination defined in claim 11, said bottle being transparent and said bottle casing being formed with means, as an opening, through which observation may be had of the level of liquid in the bottle.

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