

[54] SOLVENT DISPENSER
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 [51] Int. Cl. B67d 3/00
 [58] Field of Search 222/465, 470, 525;
 215/1 R, 1 C, 100 A

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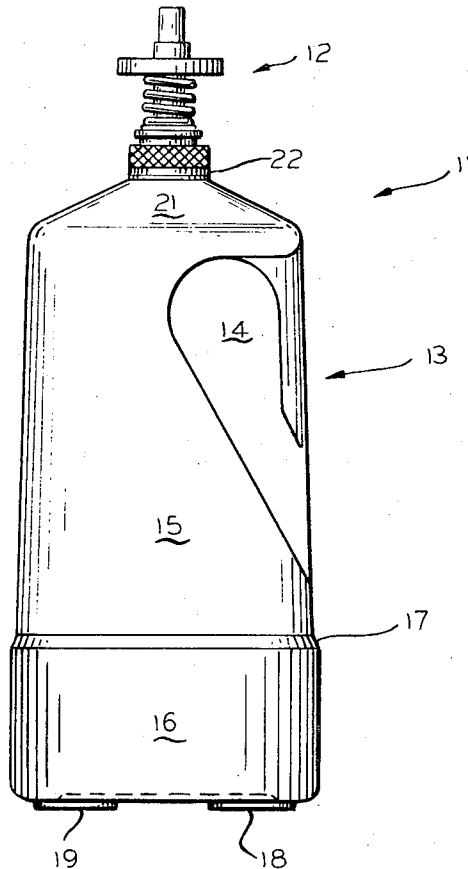
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[57] **ABSTRACT**

A self-closing solvent dispensing container fabricated from plastic and characterized so that the forefinger of the hand holding the container can operate a dispensing valve on the container without the container slipping from the grip.

2 Claims, 3 Drawing Figures



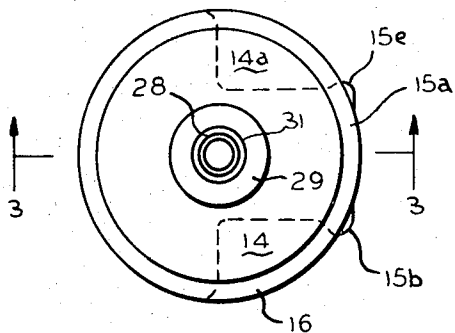


FIG. 2

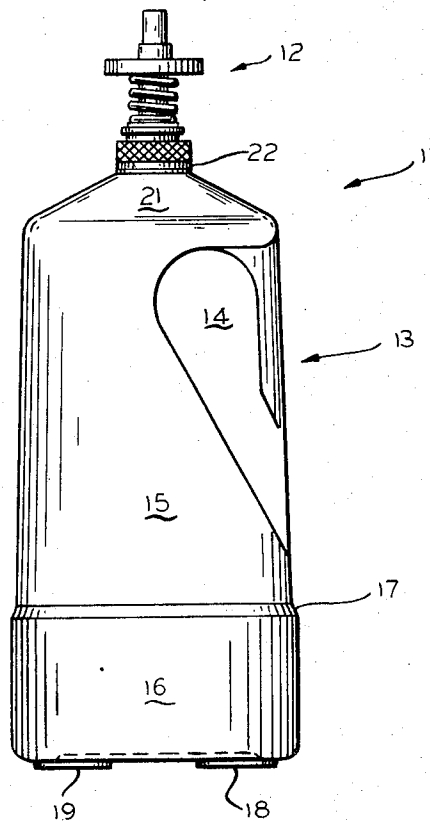


FIG. 1

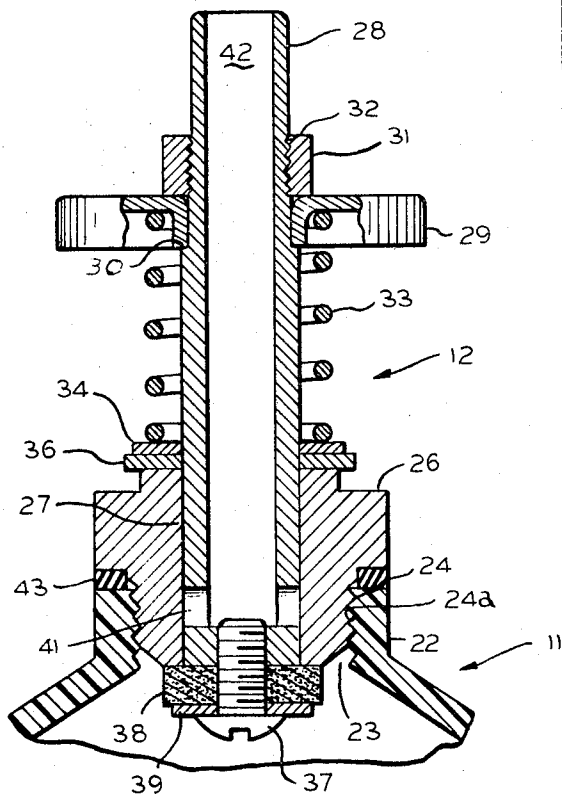


FIG. 3

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SOLVENT DISPENSER

This invention relates in general to dispensing containers, and more particularly to containers used for dispensing small amounts of flammable solvents directly on the work. Such containers open by finger pressure on nozzle valves in the containers, which close automatically, and are therefore spill proof.

Self-closing solvent containers are well known in the art. Previously, they have been fabricated from metallic cans. An objection to such cans are that they add to the hazards of working with flammable materials because it is possible to cause sparks by bumping the containers against other metal objects. Further, such bumping tends to weaken the can and particularly scratch any protective plating thereon so as to enable rust or other corrosion to occur and thus decrease the life expectancy of the can.

A further adversity encountered in utilizing the metallic solvent dispensing self-closing can has been that many times the users hands are slippery making it difficult for one to handedly hold and operate the can valve without the can slipping.

Yet another objection to the metallic can is the great number of operations necessary for assembling the can. The cans are assembled from a variety of parts and accordingly leakage of cans does occur at the junction points of the separate parts. The junction points must be soldered together, tested for leakage and then resoldered where leakage is found. This, of course, adds to the cost of the can.

Accordingly, it is an object of this invention to provide new and unique solvent dispenser containers amenable for reliable leak proof operation with one hand even when the hand or the container is slippery.

Yet another object of this invention is to provide plastic containers for solvents capable of being operated with one hand for dispensing the solvent therein.

A related object of this invention is to provide solvent containers that are not subject to corrosion.

Still, another object of the invention is to provide characterized shaped containers which are shaped so as to prevent slippage when held and operated with one hand.

A preferred embodiment of the invention accomplishes these and other objects in that such preferred embodiment is a plastic container which is blow molded and characterized by a pair of oppositely disposed cut-away sections or grooves, each designed for the nesting therein of the thumb while the container is being held in the hand. The nesting of the thumb locks the container in place preventing the slipping of the container, and thereby enables the operation of a dispensing valve at the top of the can with the fingers of the same hand that is holding the container. The blow molded plastic container has a threaded opening for receiving the valve. The fabrication of the container does not require a multitude of assembly steps to insure against leakage.

The foregoing and other objects and advantages of this invention and the manner of obtaining them will become more apparent, and the invention itself will be best understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a pictorial side elevational view of the characterized plastic dispensing container;

FIG. 2 is a top view of the dispensing container of FIG. 1; and

FIG. 3 is a cross sectional view of the dispensing valve portion of the container showing the coupling to the container of the valve.

The container 11 of FIG. 1 includes means for dispensing the contents of the container, such as a valve assembly 12 and the plastic solvent container portion 13. The container portion is preferably blow molded and shaped to provide a non-slipping grip making it possible to operate the valve 12 at the top of the container with the same hand that is holding the container. The characterization or shaping includes a cut-away portion 14 which is ideally shaped for receiving and enabling the thumb of the user to nest therein. The base or bottom portion 16 of the container is shown as being cylindrically shaped. The shaped portion 15 is separated from the base portion 16 by biased section 17.

The base section 16 has a slight cavity 18 at its bottom and is also equipped with pads or feet, such as foot 19.

It should be understood that the plastic material from which the container is blow molded is preferably a celcon U10-11 acetal copolymer sufficiently thick to be rigid. Thus, this is not a squeezable type dispenser. Instead, the valve 12 must be operated to dispense the solvent container therein. Such solvent dispensers are used, for example, for cleaning of machines, presses, type forms and similar relatively immobile equipment. The convenience of the container and its automatic closing feature decrease the work time, reduce fire hazard, conserve solvents and eliminate toxic vapors from the work area. For example, printers use such containers.

As best seen in FIGS. 2 and 3, the container 11 has a dome section 21 rising above the shaped section 15. The dome section ends in a cylindrical portion 22 that defines an opening 23. It is through this opening that the container is loaded. The cylindrical portion 22 is molded with internal threads 24.

The valve 12 comprises a valve coupling section 26 used to couple the valve to the container 11 at the thread 24. Thus, the valve coupling section 26 terminates in threads 24a that mesh with threads 24. The coupling section 26 has an aperture or hole 27 extending through the length thereof.

The valve 28 is slip fitted into the hole 27. The valve is equipped with an operating cap 29. The operating cap abuts against ledge 30 and is held in place on the valve by collar 31 that is threaded onto threads 32 on the valve until the collar abuts the cap. The collar 31 is then locked in place by soldering around the top of the collar.

Spring means, such as spring 33, normally forces operating cap 29 against collar 31. The bottom of spring 33 rests against washer 34, which in turn rests against sealing or valve washer 36, and the valve washer 36 is preferably fabricated from leather.

The valve 28 as can be seen is a hollow tube terminating in a threaded portion at the bottom end thereof. A screw 37 threads into the threaded bottom of the valve 28. The screw holds an air vent leather washer 38 normally contiguous to valve coupling section 26. Protecting the leather washer is a brass washer 39. The coupling section 26 is then threaded into the container.

To assemble the valve to the container, the valve 28 is placed through hole 27. Screw 37 with washers 38,

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39 thereabout is threaded into the bottom of the valve 28. Washers 34, 36 are placed over the valve to rest on the top of coupling section 26. Spring 33 is then placed over the valves. Operating cap 29 and collar 31 are assembled to force the spring against washer 34.

To operate the valve, the operating cap 29 is pressed down by fingers of the hand that are holding the container. As the fingers press the valve down through the hole 27 in the top of coupling section 26, the valve 28 is lowered into the container at least far enough to expose an air vent portion 41 to the interior of the container. The air vent 41 comprises a horizontal hole drilled into the major hollow section 42 of the valve. Thus, section 42 is exposed to the contents of the container through hole 41, and the solvent in these containers is enabled to run through hole 41 and hollow section 42 of valve 28.

When pressure on operating cap 29 is released, spring 33 forces the valve 28 back into the closed position with the air vent washer 38 abutting coupling section 26. The valve tube container attachment is further protected from leakage at the threads by a coupling washer 43 also preferably made from leather.

FIG.2 shows that the other side of the container of FIG. 1 is a mirror image of the first side of the container. Thus, there is a similar cavity or nesting portion 14a on the opposite side. There is a slight overlap of the unshaped section 15a onto the cut-out portions. The overlaps are shown as 15b and 15c and add to the ability of the thumbs to nest in the grooves.

Thus, the solvent container and dispenser described is easy and economical to manufacture and in addition is operable while using only one hand for holding the dispenser without slipping.

While the principles of the invention have been described in connection with specific apparatus and applications, it should be understood that this description is made only by way of example and not as a limitation on the scope of the invention.

I claim:

1. A self-closing solvent container comprising an elongated cylindrical plastic can with a continuous one piece wall terminating at a threaded opening, said wall having integrally-formed on one end of said cylinder a dome terminating in said threaded opening and on the other end of said cylinder a plurality of feet for elevating the bottom of said container above a supporting structure, the elongated cylindrical walls of said container hav-

ing a pair of oppositely disposed characterized portions in the form of indentations extending inwardly toward said dome and diagonally away from a line lying on the surface of said cylinder and parallel to the axis thereof,

said indentations having a general shape and contour which form nesting grooves for the thumb and fingers of a human hand, thereby providing a grip handle for said container,

normally closed valve means seated in and closing said opening for controlling the flow of fluids from said can, operating means on said valve for selectively opening said valve,

said operating means being positioned relative to said indentations so that said valve may be opened by movement of at least one finger of the hand gripping said container,

means for keeping said valve assembly in said opening comprising said threads in said opening,

matching threads on a valve coupling portion of said valve assembly for threading said valve assembly onto said container,

said valve means comprising a hollow cylindrical tube,

aperture means going from the hollow portion of said tube to the outer periphery of said tube at the bottom portion of said tube,

spring means being located external to said container and said tube for maintaining said aperture means normally nesting in said valve coupling portion of said valve assembly thereby isolating said aperture means from the interior of said container and keeping said valve normally closed, and

said operating means comprising a circular plate surrounding said tube for moving said tube against said spring means so that said aperture means is placed inside the container to enable the solvent contents of said container to flow from said container.

2. The container of claim 1, wherein said operating means if fixed to said tube and positioned to be operated by the forefinger of the hand holding the container with the thumb and the fingers nested in said indentations, and

wherein said externally placed spring means is positioned between said bottom of said circular plates and said valve coupling portion of said valve assembly.

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