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3,381,845

DISPOSABLE PLASTIC CONTAINER FOR SPRAY GUNS

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Fig. 1.

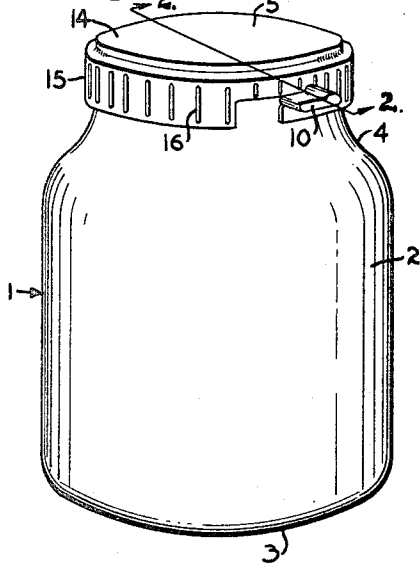


Fig. 2.

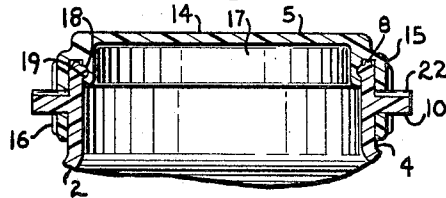


Fig. 3.

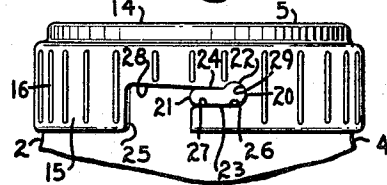


Fig. 4.

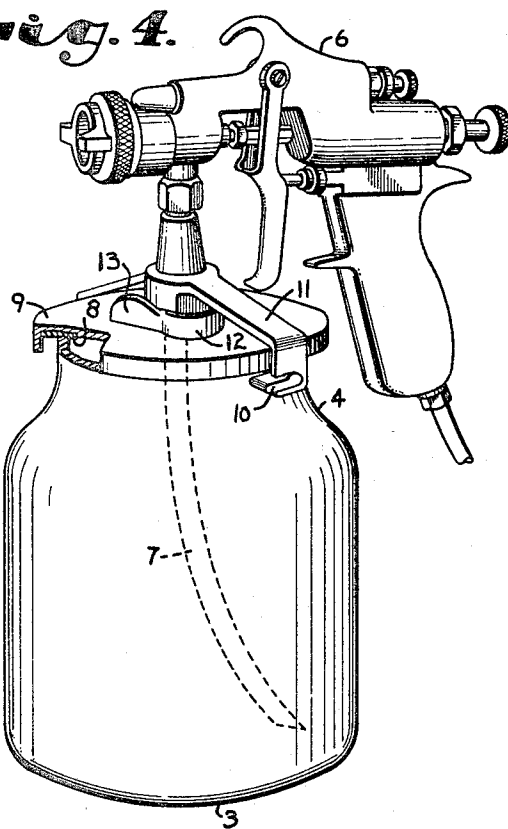
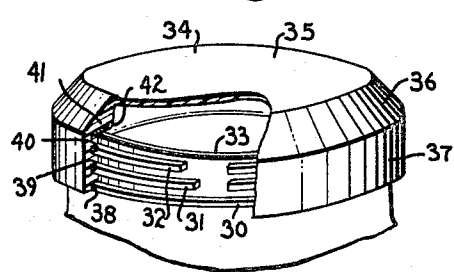


Fig. 5.



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3,381,845 DISPOSABLE PLASTIC CONTAINER FOR SPRAY GUNS

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ABSTRACT OF THE DISCLOSURE

A disposable seamless container of plastic having an airtight cap and adapted to contain liquids such as paint and lacquer during shipment, storage, and mixing by shaking. The container top when the cap is removed engages standard spray guns whereby the contents are sprayed directly therefrom.

In present practice, paint spray guns are in common use in automobile repair shops and various other places for spraying paints, lacquers, and other liquid materials upon a surface to be finished or refinished. The spray guns atomize the material by mixing with a stream of compressed air and blowing the spray against the surface to be coated. Sprayers of this type have been used in very large numbers and have become standardized in design usually having a nozzle mounted on a metal paint cup and having a handle or a pistol grip with a trigger for control of air pressure. The nozzle has a suction dip tube depending from the sprayer head into the specially designed cup adapted only for the nozzle and for holding the paint, lacquer, or other liquid materials. The cups heretofore used were generally made of aluminum and were relatively expensive. In automobile repair shops particularly a large number of colors are required to be kept in stock and heretofore when any particular color was needed a quantity of the material was poured from the container in which it was distributed commercially into the aluminum cup of the spray gun. The spray nozzle was then attached to the aluminum cup and the material sprayed as desired. When each particular object was completed the liquid material remaining in the cup was poured back into its original container and the aluminum cap and the spray gun was required to be cleaned thoroughly before another color could be used. Such operations have resulted in a considerable loss in both time and cleaning material as well as the cost thereof. Also, heretofore the commercial metal containers had grooves and seams at the closure which trapped paint pigment so that when the container was put in a standard paint shaker to remix the contents a certain amount of the pigment was trapped in the grooves or seams and was not mixed into the liquid, resulting in different colors or shades of paint from that intended by the mixture or blend.

The principal objects of my invention are to provide a shipping and spray container that eliminates the aforesaid difficulties; to provide an economical plastic shipping container for paints, lacquers and other liquid materials, said container being low in cost and disposable when emptied; to provide a container in which paints, lacquers and other liquid materials may be shipped, stored, mixed and then the container may be opened and attached to a spray nozzle and paint and the like sprayed directly therefrom; to provide a container that may be resealed if the entire contents are not used; to provide a single piece container with smooth inner surfaces without grooves, seams or recesses that might trap pigment; to provide a paint shipping container that is opened and directly applied to standard paint spray guns; to eliminate time consuming cleanup operations, and to provide a container of

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substantially quart capacity that may be used as a spray gun cup, but that fits conventional receiving grips of a paint shaker mixer.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings in which are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a perspective view of the container embodying the present invention.

FIG. 2 is a fragmentary sectional view of the container showing the airtight cap thereon and taken on line 2-2, FIG. 1.

FIG. 3 is a fragmentary elevation of the container and cap in the locked or closed position.

FIG. 4 is a perspective view of a standard spray gun with the container serving as the sprayer cup and with parts broken away to show the connection.

FIG. 5 is a partial perspective of a modified form of the container with the cap being a screw type airtight cap.

Referring more in detail to the drawings:

The reference numeral 1 generally designates a jar shaped container embodying the present invention having a body portion 2 with a bottom 3 of a size to fit the quart grip of a standard paint shaker (not shown). The container 1 has a narrower neck portion 4 on which a cap 5 is secured and the cap engages the pint grip of a standard paint shaker (not shown). When the cap 5 is removed the container 1 serves as a paint cup for a standard spray gun 6 which has a dip tube 7 inserted into the contents of the container 1. The contents of the container 1 may be removed by suction through the tube 7 by operation of the spray gun 6.

On the top of the neck portion 4 is a suitable seal member such as a resilient bead 8 which engages an interior surface on a head 9 of the standard spray gun 6. The neck portion has members for detachable securing to a spray gun or cover. In the illustrated structure the exterior of the neck portion 4 has integral opposed bayonet lugs 10 which engage a standard yoke 11 of the spray gun 6. The head 9 of the spray gun 6 is provided with a tightening cam 12 controlled by the thumb or finger portion 13 which when rotated causes the yoke 11 to securely engage the bayonet lugs 10 and the head 9 to engage the resilient bead 8 to make the head 9 and the container 1 thereby airtight and the contents of the container 1 may then be sprayed directly therefrom when the head 9, yoke 11 and tube 7 are in place.

The cap 5 has a top portion 14 that engages the conventional pint receiving grips of a standard paint shaker mixer (not shown). The cap 5 has an exterior annular wall 15 depending from the top portion 14 forming a cylinder having an internal diameter similar to the external diameter of the neck portion 4 so that the two surfaces are in registry when the cap 5 is in place on the container 1. The exterior of the wall 15 has a plurality of spaced vertical ridges 16 defining an anti-slip surface to assist in tightening and removing the cap 5. The cap 5 has an interior annular wall 17 forming an interior cylinder having an external diameter similar to the internal diameter of the neck portion 4 so that the two surfaces are substantially in registry when the cap 5 is placed on the container 1. To provide interengagement between the neck portion 4 and the cap 5, the interior surface of the neck portion 4 has an annular seal ring 18 and the exterior of the interior wall 17 of the cap 5 has a complementary recess 19 which resiliently engages the seal ring 18.

In the illustrated structure the bayonet lugs 10 are integral with the container 1 and are diametrically opposed and extend outwardly from the neck portion 4. As viewed

in FIG. 1 a clockwise rotation of the cap 5 encounters a first edge 20. The bayonet lug 10 also has a second edge 21 opposed to the first edge 20. The first edge 20 of each bayonet lug 10 has a locking lip 22 coextensive therewith. The bayonet lug 10 also has a bottom surface 23 and a top surface 24 having the locking lip 22 upstanding therefrom and adjacent the first edge 20. The bottom surface 23 of the bayonet lug 10 is tapered slightly so that the first edge 20 is slightly higher than the second edge 21.

The exterior wall 15 has diametrically opposed inverted L-shaped slots 25 each having a substantially horizontal bayonet lug receiving portion 26. The bayonet lug receiving portion 26 of slot 25 has a lower edge 27 and an upper edge 28 having a recess 29 therein. The recess 29 is complementary to the locking lip 22 and is designed to resiliently engage said locking lip. When the cap 5, illustrated in FIGS. 1 to 3, inclusive, is turned in a clockwise direction, as viewed in FIGS. 1 and 3, the lower edge 27 of the bayonet lug receiving portion 26 of slot 25 engages the inclined bottom surface 23 of lug 10 resulting in a downward movement of the cap 5. During the downward movement of the cap 5, bead 8 engages the interior of the top portion 14 of cap 5, seal ring 18 on the interior of neck portion 4 resiliently engages the recess 19 in the interior annular wall 17 and the locking lip 22 engages in the recess 29 of the upper edge 28 of the lug receiving portion 26 of slot 25. When the bead 8, seal ring 18 and bayonet lug 10 are engaged by the cap 5, the container 1 is substantially airtight.

FIG. 5 illustrates a modified form of my invention. The neck portion 4 of the container 1 has a continuous outstanding annular rib shown at 30, 31 and 32. Also on the top of neck portion 4 is a head 33 similar to bead 8. The lowermost part of the rib shown at 30 is continuous and the rib shown at 31 and 32 is discontinuous at diametrically opposed locations. The rib shown at 31 engages the standard yoke 11 of the spray gun 6. When the cam 12 is operated by the thumb or finger portion 13, the yoke 11 securely engages the rib shown at 31 and bead 33 resiliently engages the interior surface on the head 9 of a standard spray gun 6 (not shown in FIG. 5) to make the head 9 and the container 1 thereby airtight and the contents of the container 1 may then be sprayed directly therefrom when the head 9, yoke 11, and tube 7 are in place.

Also illustrated in FIG. 5 is a modified cap 34, having a top portion 35, a tapered portion 36, and an exterior annular wall 37 similar to wall 15. The top portion 35 engages the conventional pint receiving grips of a standard paint shaker mixer (not shown). In the interior surface of the annular wall 37 is a continuous furrow shown at 38, 39, and 40, which is complementary to the rib shown at 30, 31 and 32 on the neck portion 4. The tapered portion 36 of the cap 34 has a thickened portion forming a shoulder 41, said shoulder having a gasket 42 therein. The rib shown at 30, 31 and 32 is inclined so as to form one continuous spiral and the furrow shown at 38, 39 and 40 is also continuous to form one continuous spiral. When the illustrated cap 34 is rotated clockwise as viewed in FIG. 5 around the neck portion 4 the top portion 35 of cap 34 moves toward the bottom 3 of the container 1 until the shoulder 41 and the gasket 42 securely engage the bead 33 on the top of the neck portion 4, thereby closing the container 1 relatively airtight.

Paints, lacquers, or other liquid material are placed in the container 1 at the factory and cap 5 or 34 is secured on the container 1. When the cap is in place the container is airtight and thus serves as a shipping container. Also the container 1 serves as a shipping container for automobile jobbers, who supply body shops with specially mixed colors.

When a surface is to be finished or refinished a painter places the container 1 in a standard paint shaker mixer

(not shown) with the bottom 3 in the standard quart grip and the cap 5 or 34 in the pint grip. The container 1 and the cap 5 or 34 have no pigment trapping grooves or seams so that all of the original pigment is removed with the contents of the container 1 and color uniformity is thus obtained from containers of the same color shipment. After mixing, the cap 5 or 34 is removed and the spray gun 6 is installed directly on the container 1 and the paint, lacquer, or other liquid material therein is sprayed as desired. The container 1 serving as the paint cup may be disposed of if completely emptied. However, if there is paint, lacquer, or other liquid material remaining in the container 1, the cap 5 or 34 is replaced and the container 1 is stored for future use.

Cleaning the spray gun 6 merely requires the dip tube 7 of the spray gun 6 to be placed in paint thinner and the thinner shot through the spray gun 6. The spray gun is thus cleaned and prepared for another project in a matter of seconds.

Eliminated from prior operations are pouring paint, lacquer or other liquid materials from their shipping container into an expensive metal cup; pouring unused portions from the metal cup back into the original container, and cleaning the metal cup for each change of color and change of material.

Furthermore, although the invention has been particularly described for paint and lacquer sprays, it is applicable for other kinds of sprayers. Especially important, for example, is the garden insecticide and fungicide sprayers, both commercial and residential. Ready-mixed sprays and liquid fertilizers may be shipped in the container and easily used with a single sprayer as they are needed.

It is to be understood that while I have illustrated and described one form of my invention, it is not to be limited to the specific form or arrangement of parts herein described and shown except insofar as such limitations are included in the claim.

What I claim and desire to secure by Letters Patent is:

1. A container for use with spray guns comprising,
 - (a) a container body portion having a reduced neck portion with an open end, said body and neck portions being of molded plastic,
 - (b) bayonet lugs integral with said neck portion and extending outwardly therefrom in opposed relation, said lugs each having an upstanding locking lip on its upper surface and an inclined bottom surface having one edge higher than the other edge,
 - (c) a cap having a top and an annular wall,
 - (d) means securing the cap to the neck portion and having complementary slots receiving said bayonet lugs and retaining said cap on the neck portion,
 - (e) said neck portion having an integral resilient bead on the top edge around said open end,
 - (f) said cap having a surface on the inside engaging said resilient bead and forming a seal therewith when the cap is held on the neck portion,
 - (g) said container having a bottom fitting a standard quart grip and the cap fitting a standard pint grip on a standard paint shaker mixer.

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