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CONTAINER FOR SPRAY APPLIANCE

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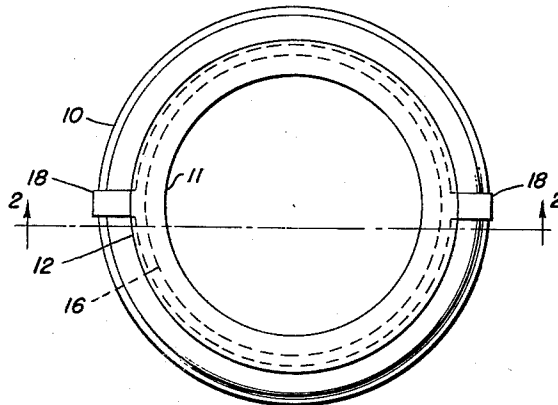


Fig. 1.

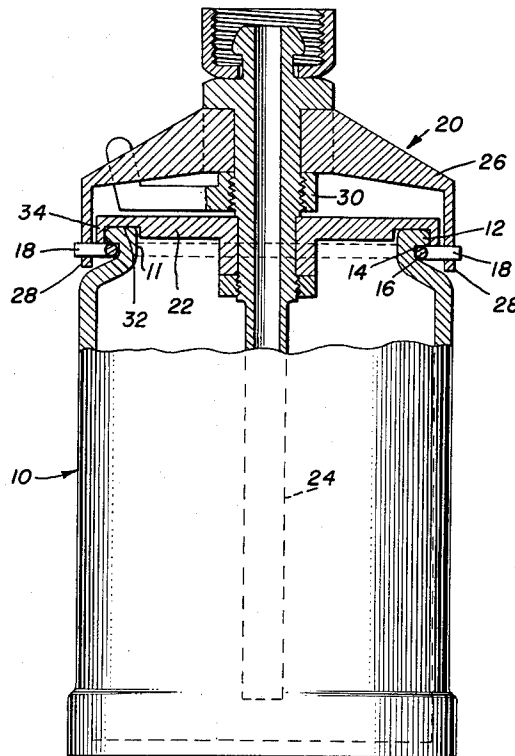


Fig. 2.

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CONTAINER FOR SPRAY APPLIANCE

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This invention relates to spraying appliances and more particularly to a container and container closure arrangement having utility in spraying devices of the type used to apply paint, enamels, lacquer and the like.

In the use of portable electric or air actuated paint spraying appliances on a commercial or industrial basis, an acute problem is presented when it is desired to change the color of paint, enamel or lacquer being used. For example, in an automobile body repair shop, it is often necessary to use several different colors over the course of one working day. Unless a different spraying unit is available for each color used (which is economically impractical), the unit must be completely cleaned between color changes. Perhaps the easiest and quickest way to clean a spray unit is to fill the container with a solvent or other cleansing fluid and pass it through the spray gun until it comes out clear. The principal difficulty with this technique is that the sealing means between the paint container and the cover assembly therefor is untouched by the solvent and therefore must be separately cleaned. This sealing means in paint spraying appliances heretofore available consists of an annular gasket disposed in the underside of the container closure and since this gasket constitutes a separate member exposed to the paint or lacquer being used, it is necessary to completely remove the gasket and clean both sides thereof. As is most often the case, either because the gasket material is incapable of being properly cleansed or because it is damaged in removing it from the cover, the old gasket is necessarily discarded for each color change, thus giving rise to a substantial expense.

Another problem arises because of the construction of the containers used with spraying appliances of the type aforementioned. The containers presently available for this purpose are metallic and quite often formed from such soft and light metals as aluminum. In the event containers constructed of such materials are dropped, or the cover engaging lip thereof is otherwise bent or damaged, the container must be discarded. Also, the manufacturing techniques used to produce such containers are such that an irregular inner surface is developed particularly in the area of the lugs provided for attachment to the cover assembly. Moreover, the rigid character of these containers makes it difficult for one to insert his hand into the container for cleaning purposes. As a result, a considerable amount of time and money are wasted.

Accordingly, an object of this invention is to provide a new and improved container for paint spraying appliances, by which some of the problems heretofore encountered are effectively overcome.

Another object of this invention is to provide a container of the type referred to which eliminates the need for auxiliary sealing means such as gaskets or the like and thereby eliminates the cleaning problems incidental thereto.

A further object of this invention is the provision of a container for portable spraying appliances which is formed of resilient plastic material and thus is economical to manufacture as well as being completely resistant to denting or other deforming as may be caused by accidentally dropping the containers.

Still another object of this invention is that of providing a container of the type referred to in which an extremely smooth inner surface is easily attainable and which is

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deformable to greatly facilitate cleaning thereof, particularly when changing from one color of paint, enamel or lacquer to another.

Other objects and further scope of applicability of the present invention will be apparent from the detailed description given hereinafter. It should be understood, however, that the detailed description, while indicating a preferred embodiment of the invention, is given by way of illustration only, since it will demonstrate to those skilled in the art that various changes and modifications can be made without departing from the spirit and scope of this invention.

In general, the aforementioned objects are accomplished by forming the container from a suitable moldable plastic material resistant to solvents used in paints, enamels and lacquers and providing the upper edge or mouth portion of the container with an outwardly flaring lip of such dimensions that an effective liquid-tight seal may be made by engagement thereof with a metallic cover forming a part of the spray gun assembly. A metallic or otherwise rigid and continuous ring is positioned about the neck or mouth portion of the receptacle immediately below the lip, which ring is provided with radially extending lugs engageable by depending hooks on a yoke carried by the spray gun assembly, thereby permitting an upward force to be exerted against the under side of the lip and urging it into engagement with the cover member. Also, due to the flexibility of the material from which the container is made, the ring may be separated from the container by collapsing the upper or neck portion thereof, including the radial lip or flange, and removing the ring from the container by lifting it from the collapsed neck portion.

A more complete understanding of the new and improved container of this invention may be had by reference to the accompanying drawing in which:

FIG. 1 is a plan view of the new, improved container with the closure assembly removed, and

FIG. 2 is a cross-sectional view taken along lines 2-2 of FIG. 1 illustrating the container of this invention combined with a standard spray gun closure assembly.

The new and improved container of this invention is designated generally in the drawings by the numeral 10 and as aforementioned is formed of any suitable plastic or synthetic resinous material which may be molded and which is not harmed in any manner by the solvents used in the paints, enamels, varnishes or lacquers currently available. Examples of such material are polyethylene, polychloroprene, or polypropylene. It is to be understood, however, that these specific compositions are given by way of illustration only and that other materials having the general characteristics aforementioned are contemplated as being within the true spirit and scope of this invention. Likewise, the specific shape of the container 10, though shown in the drawings as being cylindrical, may be changed considerably as will be readily understood by those familiar with this art. It is essential, however, that the container be formed having an opening or mouth in a neck portion 11, preferably of sufficient proportions to permit the user to insert his hand into the container for cleaning purposes and also to be adaptable with existing closure assemblies. The neck portion 11 is provided with an outwardly flaring lip 12 surrounding the open mouth, and the lip has a configuration such that an annular recess 14 is formed immediately thereunder. A metallic or otherwise rigid ring 16 is received within the recess 14 and is provided with at least two radially extending lugs 18. The lugs 18 extend beyond the lip 12 to permit engagement by a closure assembly as will be described more fully hereinafter.

A closure assembly commonly used with spray guns presently available is designated generally by the numeral

20 in FIG. 2 of the drawings. This assembly is standard and therefore by itself constitutes no part of the present invention. Further, since the operation of the assembly 20 is fully described in U.S. Patent No. 1,583,927, a detailed description thereof is deemed unnecessary herein. Generally, however, the closure assembly 20 includes a cover member 22 rigidly supporting a discharge tube 24 through which the paint or other material to be sprayed is to be passed. The upper portion of the tube 24 carries slidably a yoke 26, having at least two depending hooks 28 and movable vertically with respect to the cover 22 by a lever actuated sleeve 30 threadedly received on the tube 24. Also, it will be noted that the cover member is formed having an annular groove 32 as well as a depending outer wall 34 and that the radial extent of the lip 12 is substantially the same as the radial width of the recess 32.

In use, the continuous ring 16 is placed onto the container 10 by merely collapsing the neck portion of the container laterally of its axis, passing the ring over the collapsed neck portion, and allowing it to expand such that the recess 14 properly receives the ring. After the ring 16 is properly in place, the container is filled and the spray gun attached thereto by sealing the cover 22 on the lip 12 and engaging the hooks 28 with the lugs 18. The lever actuated sleeve is then manipulated to develop an upward movement of the hooks 28 so as to squeeze the lip 12 into engagement against the cover member 22. In this manner, a highly effective seal is provided between the container and the cover 22. It will be noted from the drawing that although the neck portion 11 is smaller than the lower or body portion of the container, and the ring 16 is smaller than both the body portion of the container and the lip 12, the ring may be applied and removed from the container by laterally collapsing the neck and mouth portion of the container as explained above.

When it is desired to change the color of paint, enamel or lacquer in the container 10, the remainder of the first color used is dumped out and a solvent placed in a container and sprayed through the gun until the gun is clean. The container is then removed from the gun by lowering the hooks 28 by proper manipulation of the lever actuated sleeve 30 and the cleaning operation completed by wiping the lip 12 and the recess 32 in the cover with a rag or the like. Also, if necessary, since the neck or mouth portion of container 10 is collapsible and distensible, the user may insert his hand through the neck portion and easily wipe the interior of the container clean.

Thus, it will be seen that by this invention, an extremely effective container for spraying appliances is provided by this invention. The forming of the container of a material which is suitably flexible to form with the metallic cover a liquid-tight seal eliminates the need for separate gaskets and the expenses and inconvenience incurred thereby. Further, the use of such material renders the container practically indestructible and generally much easier to clean than the metallic containers heretofore available. Also, it will be noted that the container is adaptable to standard spray gun assemblies without change thereof.

It is contemplated further that my improved container is adapted for use for the storage and shipment of liquids, whether they be used for spraying operations or not. For this purpose, each container would be provided with a simple cover constructed substantially like the cover plate 22 except that it would be a solid circular plate without a central opening, and would be provided at its peripheral edge with depending hook elements, such as bayonet

slots formed in the peripheral flange for receiving the radially extending lugs 18 and clamping the lip 12 between the ring 16 and the cover member 22. When each container is provided with its individual cover member, the container may be used initially for the shipment of liquids which are to be used for various purposes, including spraying operations. Also, the container may be used for the storage of unused liquid between spraying operations.

Since many possible changes can be made in the container of this invention as described above, changes will be suggested to those familiar in this art by the above description. It is to be distinctly understood that the foregoing is given by way of illustration only, and that the true spirit and scope of this invention is to be determined by the appended claims.

I claim:

1. A container for use with spray appliances comprising: a receptacle having a reduced neck portion with an open mouth at the end thereof provided with an outwardly flared lip; a continuous ring of rigid material positioned about the neck of the mouth of said receptacle and underlying said lip; said neck portion and said lip being formed of resilient plastic material and being collapsible toward the axis of said neck portion to permit withdrawal of said collapsed neck portion from said ring; and radially extending lugs on said ring extending beyond said lip for engagement by the spray appliance.

2. A spraying appliance comprising: an upwardly opening receptacle having an outwardly flared lip at the upper edge of the neck thereof, a continuous ring of rigid material positioned about the neck portion of said receptacle and underlying said lip; said neck portion and said lip being formed of resilient plastic material and being collapsible toward the axis of said neck portion to permit withdrawal of said collapsible neck portion from said ring; radially projecting lugs on said ring and closure means for said receptacle including a cover member, hook means and a discharge tube supported on said cover for passing material to be sprayed, said cover being engageable with the upper surface of said outwardly flared lip, and said hook means being engageable with said lugs and movable vertically with respect to said cover member for clamping said lip between said ring and said cover.

3. A container for liquids comprising: an upwardly opening receptacle having an outwardly flared lip at the upper edge of the neck portion thereof; a continuous ring of rigid material positioned about the neck portion of said receptacle and underlying said lip and being collapsible towards the axis of the neck portion to permit withdrawal of said collapsed neck portion from said ring; radially projecting lugs on said ring extending beyond said lip; and closure means for said receptacle including a cover member engageable with the upper surface of said outwardly flared lip, and clamping means engageable with said lugs for clamping said lip between said ring and said cover to form a liquid-tight seal between said lip and said cover member.

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