Sept. 30, 1941. V. I. McCARTHY 2,257,569

COMPOSITE CONTAINER

Filed March 22, 1939

Fig. 1

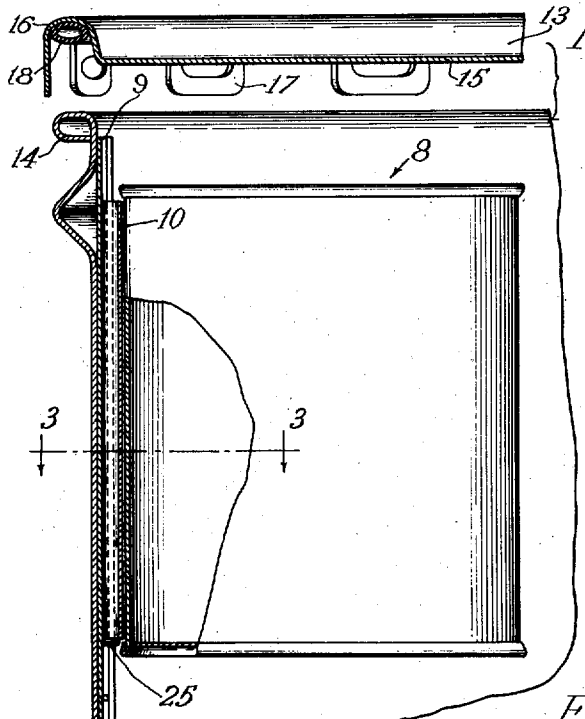



Fig. 2

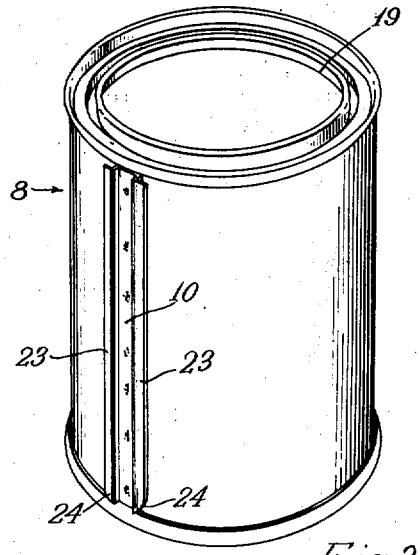



Fig. 3

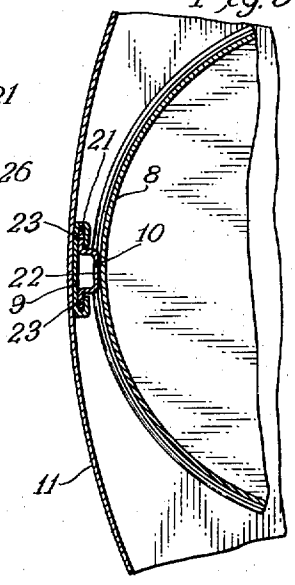



Fig. 4

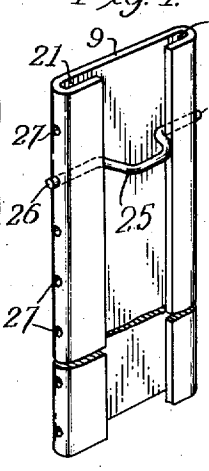



Fig. 5

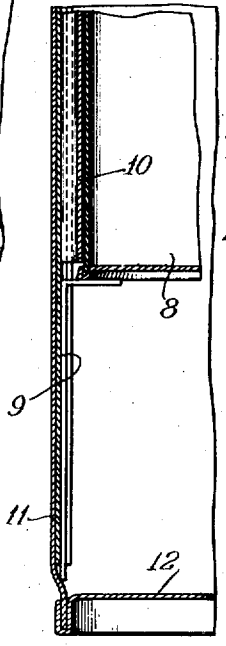
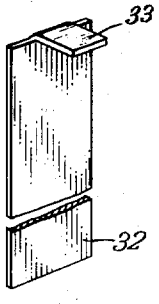



Fig. 6

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# UNITED STATES PATENT OFFICE

2,257,569

## COMPOSITE CONTAINER

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5 Claims. (Cl. 220—17)

The invention relates to improvements in metal containers and particularly to containers of the composite type comprising two or more separate receptacles assembled one within another in a unitary structure and adapted respectively for holding the unmixed liquid and solid ingredients of metallic paint or the like.

One object of the invention is to provide a composite container structure of the above general character which is inexpensive to manufacture, which is convenient to pack, and which is economical of space, particularly with respect to the separate storage and shipment of the inner receptacles intended to hold the solid ingredients in the paint.

Another object is to provide an improved composite container structure embodying novel means for securing the solid ingredient receptacle within the liquid ingredient receptacle in a manner such as to effectually prevent the inner receptacle from becoming separated due to rough handling in shipment or otherwise, whereby accidental opening of the inner receptacle or damage to the lining of the outer receptacle is avoided.

Still another object is to provide a composite container structure embodying novel means for supporting the inner receptacle in a manner such that it is conveniently accessible and capable of being removed from the filled outer receptacle by a simple lifting operation.

Other objects and advantages of the invention will become apparent from the following detailed description of the preferred embodiment illustrated in the accompanying drawing, in which:

Figure 1 is a vertical sectional view of a composite container structure embodying the features of the invention showing the various parts of the container in assembled relation.

Fig. 2 is a perspective view of the inner receptacle.

Fig. 3 is a horizontal sectional view taken substantially along the line 3—3 of Fig. 1.

Fig. 4 is a detail view of a part of the interlocking means for assembling the inner and outer receptacles as a unit and one form of positioning means for positioning the inner receptacle for convenient access.

Fig. 5 is a fragmentary vertical sectional view showing a modified form of positioning means for positioning the inner container for convenient access.

Fig. 6 is a perspective view of one part of the modified positioning means.

While the invention has been shown and will herein be described as applied to a preferred type of container, it is to be understood that various changes and modifications in the form, construction and arrangement of the parts may be made by those skilled in the art without departing from the spirit and scope of the invention as expressed in the appended claims.

The improved composite container comprises generally an outer receptacle or drum 7 large enough to hold all of the ingredients required for a predetermined quantity of unmixed paint and an inner receptacle 8 in the form of a separate independently closable can of sufficient capacity to hold the solid ingredients of the paint. Interlocking elements 9 and 10 on the respective receptacles cooperate to secure the receptacles together in a unitary structure with the inner receptacle positioned adjacent the top of the outer receptacle for convenient access.

While the inner and outer receptacles 7 and 8 may be of any suitable form or construction, it is preferred to employ a standard sheet metal drum such as that shown in Fig. 1 as the outer receptacle and an ordinary friction top can as shown in Fig. 2 as the inner receptacle. Drums and cans of this character are standard articles of commerce now manufactured in large quantities and therefore relatively inexpensive.

The drum 7 as herein shown comprises a cylindrical body 11 closed at its lower end by a permanently attached bottom 12 and at its upper end by a removable cover 13. The upper edge of the body 11 is rolled outwardly to form an annular bead 14 for seating the cover 13. The cover 13 as shown in Fig. 1 has a depressed central portion 15 adapted to fit tightly into the top of the drum and its marginal edge is rolled outwardly and downwardly to form an annular channel 16 of semicylindrical cross section adapted to fit over the bead 14 of the drum. The outer wall of the channel 16 is slotted to form lugs 17 which may be crimped or bent under the bead 14 to secure the cover to the drum. A gasket 18 of rubber or other suitable material is usually inserted in the channel 16 to effect a tight seal.

The inner receptacle 8 as shown in Fig. 2 is an ordinary can of cylindrical form adapted to be closed by a friction top 19 of the usual and well known construction. It should be understood, of course, that cans of other shapes may be employed and likewise other types of closures as, for example, screw tops may be used in connection with these cans.

The drum and can above described are of

standard construction and in order to enable them to cooperate to attain the objects and advantages of the invention the interlocking elements 9 and 10 are attached respectively thereto. The element 9 in its preferred form comprises an elongated strip of sheet metal having opposite marginal edges bent back upon themselves to form spaced parallel inwardly facing grooves 21 which constitute a guideway for the element 10. The element 9 is secured to the side wall of the drum 7 as by soldering, spot welding, or other suitable manner, so that its upper end lies closely adjacent the top of the drum and its lower end adjacent the bottom thereof with the guideway extending lengthwise of the drum.

The cooperating element 10, which is also in the form of an elongated metal strip, is soldered or otherwise suitably attached to the side of the can 8 extending longitudinally thereof. The element 10 in its preferred form comprises a channel-shaped central portion 22 having the edge portions of its two sides bent outwardly to form flanges 23 extending generally parallel to the wall of the can and spaced laterally therefrom as shown in Fig. 3. The dimensions of the channel portion 22 of the flanges 23 are such as to permit the flanges to enter the grooves 21 of the element 9 with the channel portion projecting outwardly and supporting the can 8 in spaced relation to the body of the drum 7.

Preferably, the lower corners of the flanges 23 are beveled as at 24 to facilitate the insertion of the flanges in the channels 21. The flanges may be readily entered in the upper ends of the grooves 21 and, by simply sliding the can 8 endwise relative to the drum, the element 10 is interlocked for its entire length with the element 9 on the drum. The elements thus cooperate to hold the drum and can securely together as an integral, unitary structure. The can 8 is rigidly held thoughout its entire length, thus effectually preventing it from swinging and eliminating any possibility of it breaking loose incident to the handling of the assembled container as in shipment.

To facilitate the opening of the container and the removal of the paint ingredients therefrom, it is desirable to retain the can 8 in a position adjacent the upper end of the drum preferably above the level of the liquid therein so that it may be lifted out of the drum without the user's hands coming in contact with such liquid. Suitable positioning means is therefore provided for limiting the relative movement of the flanged element 10 in the guideway formed by the grooves 21.

The preferred form of the positioning means as shown in Fig. 4 comprises a generally U-shaped spring clip 25 having oppositely projecting end portions 26 adapted to engage in apertures 27 arranged in pairs in opposite sides of the element 9. As herein shown, a plurality of pairs of apertures 27 are provided, these being spaced longitudinally of the element 9 so that the stop member 25 may be variously positioned to accommodate cans of different size. Due to the spring construction of the stop member, the ends 26 may be withdrawn from the apertures by compressing its U-shaped central portion so that the member may be readily moved from one set of apertures to the other. In this way, the stop member 25 may be adjustably positioned longitudinally of the guideway so that regardless of the size of the can 8, it will be positioned closely adjacent the top of the drum for convenient access.

Another form of positioning means is shown in Figs. 5 and 6 which may be used advantageously in some cases. In this instance, a flat elongated strip 32 of substantially the same width as the guideway provided by the grooves 21 constitutes the stop member. The upper end of the strip 32 is bent laterally to form a lug 33 which, when the strip is inserted in the guideway, projects radially into the interior of the drum and provides a rest for the bottom of the can 8. Thus the stop member serves to position the can for convenient access when the drum is opened. The strip 32 will ordinarily be made of a length such as to properly position the smallest can to be used in the container assembly and when used with larger cans may be cut down to the size required. In use, the stop member is inserted in the guideway and pushed to the bottom thereof as shown in Fig. 5 and the interlocking element of the can 10 is then engaged in the guideway in the usual manner.

The improved container structure readily lends itself to improved methods of packing paint ingredients. In particular, it permits the separate packing in shipment of the solid ingredients by the manufacturer of the same. Since the only projecting part on the can 8 is the interlocking element 10 which does not extend either above or below the top of the can, such cans can be packed in a minimum space. In fact, the cans 8 equipped with interlocking elements may be packed in cartons of the same size as ordinary cans not so equipped. This is advantageous from the standpoint of the packer since standard shipping cartons may be used.

It will be apparent from the foregoing that the invention provides a composite container structure of novel and advantageous construction. By reason of the novel form of interlocking elements, the inner and outer receptacles may be quickly and easily assembled and, when so assembled, the inner receptacle is securely held in place on the outer container throughout its entire length. The assembly is strong and rigid, thus providing a unitary structure that cannot come apart accidentally. Accidental opening of the can 8 or damage to the lining of the drum is thus effectually avoided. Due to the provision of the novel positioning means, the inner receptacle or can 8 is positioned in the upper portion of the drum so that it is conveniently accessible and may be removed therefrom by a simple lifting operation. Since the positioning means is adjustable, it may be used with cans of any size.

I claim as my invention:

1. A composite container structure comprising, in combination, a sheet metal drum constituting an outer receptacle, a substantially smaller independently closable can constituting an inner receptacle for insertion in said drum, means for removably supporting the inner receptacle on the body of said drum including an elongated element extending substantially from the bottom to the top of the drum and rigidly secured to the side wall thereof, and a second elongated element secured to the outer wall of the inner receptacle, said second element being shaped to interlock with the first element and thus hold the two receptacles together as a unitary structure.

2. A composite container structure comprising,

in combination, a sheet metal drum constituting an outer receptacle, a substantially smaller independently closable can constituting an inner receptacle for insertion in said drum, means for removably supporting the inner receptacle on the body of said drum including an elongated element secured to the inner wall of the drum and defining oppositely facing spaced grooves extending lengthwise of the drum, a cooperating element secured to the outer wall of said can having oppositely projecting flanges adapted to be slidably engaged in said grooves by endwise movement of the can relative to the drum, and stop means carried by said first element engageable with said second element to position said can for convenient access in the upper portion of the drum.

3. A composite container structure comprising, in combination, a sheet metal drum constituting an outer receptacle, a substantially smaller independently closable can constituting an inner receptacle for insertion in said drum, means for removably supporting the inner receptacle on the body of said drum including an elongated element secured to the inner wall of the drum and defining oppositely facing spaced grooves extending lengthwise of the drum, a cooperating element secured to the outer wall of said can having oppositely projecting flanges adapted to be slidably engaged in said grooves by endwise movement of the can relative to the drum, adjustable stop means carried on one of said elements and engageable with the other element for positioning said can for convenient access adjacent the open end of the drum.

4. A composite container structure comprising, in combination, a sheet metal drum constituting an outer receptacle, a substantially smaller independently closable can constituting an inner receptacle for insertion in said drum, means for removably supporting the inner receptacle on the body of said drum including an elongated element secured to the inner wall of the drum and defining oppositely facing spaced grooves extending lengthwise of the drum, a cooperating element secured to the outer wall of said can having oppositely projecting flanges adapted to be slidably engaged in said grooves by endwise movement of the can relative to the drum, a stop member having vertical edge portions adapted to slidably engage in said grooves, and a laterally projecting lug on said member adapted to engage the bottom of said can to support the can for convenient access adjacent the top of the drum when said stop member is inserted in the grooved element prior to the engagement of the flanged element of the can therewith.

5. As an article of manufacture, a sheet metal drum adapted for assembly with a smaller independently closable receptacle having an elongated flanged element secured to its outer wall, said drum comprising a generally cylindrical body portion, a bottom permanently closing the lower end of the body, an annular bead on the upper end of the body for seating a removable cover, an elongated member extending from a point adjacent said bead to a point adjacent said bottom and rigidly secured to the inner wall of said body portion, and means on said member defining spaced grooves for slidably receiving the flanges of the element secured to the smaller receptacle.

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