

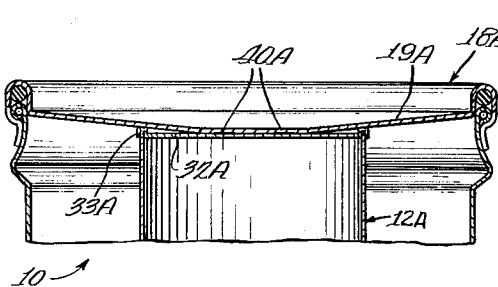
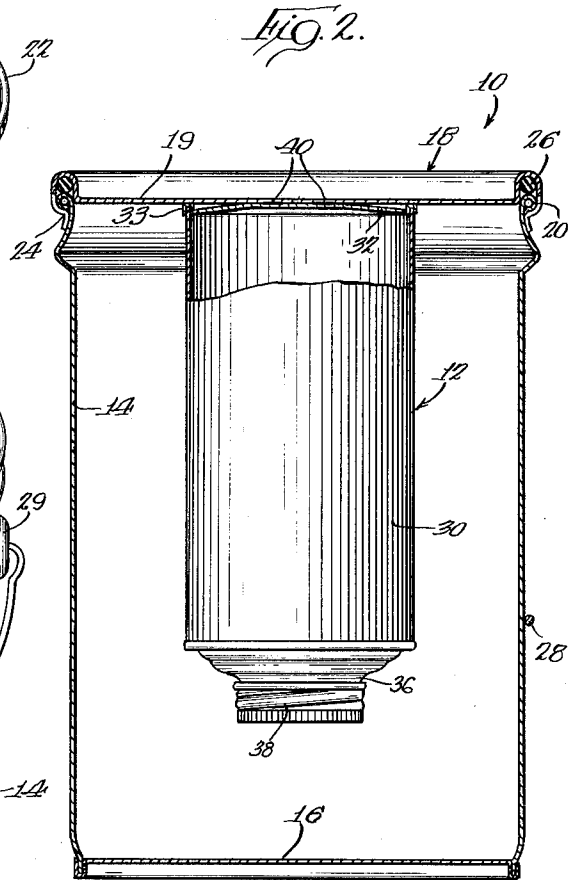
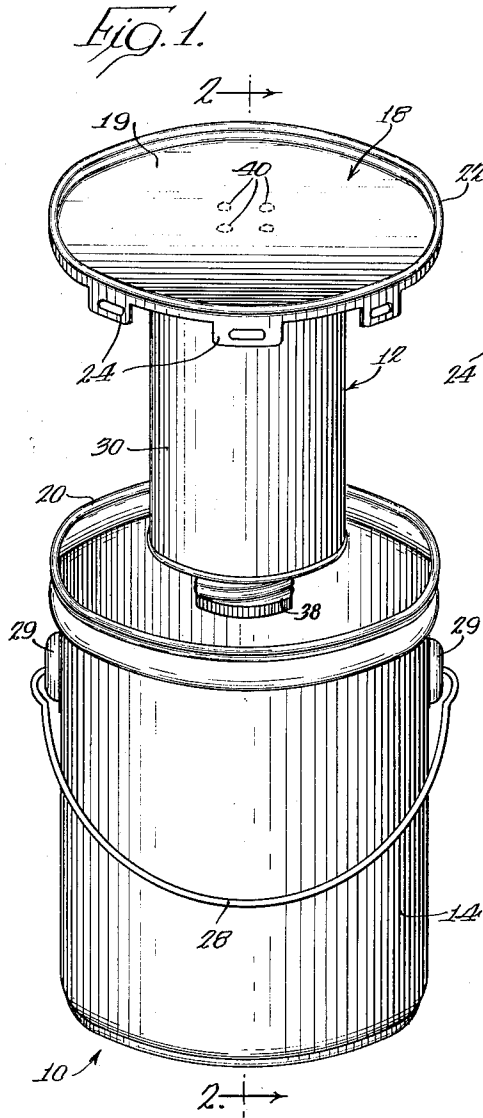
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COMPOSITE CONTAINER

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## COMPOSITE CONTAINER

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The present invention relates to improvements in metal containers and more particularly to containers of the composite type comprising two or more separate receptacles assembled one within the other in a unitary structure and adapted for holding separate ingredients of a material which are to be mixed for use.

Composite containers of this type are especially useful in receiving, storing, or shipping such material as metallic paints which are commonly prepared with their liquid and solid ingredients left unmixed until ready for use. Similarly various plastics are prepared with the catalyst-plasticizer admixture separate from the primary material until use is imminent at which time they are put together for reaction.

One object of the invention is to provide a composite container structure of the above general character which permits of economical manufacture, which is convenient to pack, which occupies a minimum of space particularly with respect to separate storage and shipment of the inner receptacles.

Another object is to provide an improved composite container structure embodying an improved construction for securing the inner or admixture receptacle within the outer or primary ingredient receptacle in a manner effectually preventing the inner receptacle from becoming separated as a result of rough handling in shipment or other wise whereby damage to a lining that might be applied to the outer receptacle as well as to the inner receptacle is avoided.

Still another object is to provide a composite container structure of the foregoing general character wherein the inner receptacle is maintained in spaced relation with respect to the side wall and bottom of the outer receptacle yet is conveniently accessible and capable of being removed from the filled outer receptacle by a simple lifting operation and when removed is not likely to be upset.

A further object is to provide an improved composite container structure which facilitates manufacture, particularly from the standpoint of handling by requiring no special positioning during assembly to avoid interference with or damage to other elements of the device. A related object lies in the construction and arrangement facilitating use in that the outer container is free of obstacles so as to readily permit complete emptying thereof and reclamation of the used container.

The objects of the invention thus generally set forth together with other objects and ancillary advantages are attained by the construction and arrangement shown by way of illustration in the accompanying drawing in which:

Figure 1 is an exploded perspective view of an improved composite container embodying the features of the present invention.

Fig. 2 is a vertical section taken substantially in the plane of line 2-2 in Fig. 1.

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Fig. 3 is a fragmentary section similar to Fig. 2, but illustrating a modified form of the invention.

While the invention has been shown and will hereinafter be described as embodied in a preferred form of composite container structure, it is to be understood that various alterations and modifications to the form, construction and arrangement can be made without departing from the spirit and scope of the invention as expressed in the appended claims.

The improved composite container comprises, in general, an outer receptacle or drum 10 large enough to hold all of the primary ingredients required for a predetermined quantity of unmixed material, and an inner receptacle 12 in the form of a separate independently closable can of sufficient capacity to hold the admixture ingredients of the material to be received in the composite container. The can is adapted to be received within the drum to the end that the receptacles comprise when assembled a unitary structure with the inner receptacle disposed for convenient access.

While the inner and outer receptacles may be of any suitable form or construction, it is preferred to employ a standard sheet metal drum 10 such as that shown in Fig. 1 as the outer receptacle and an ordinary screw top can 12 as the inner receptacle. Drums and cans of this character are standard articles of commerce presently manufactured in large quantities and are therefore relatively inexpensive. The drum 10 as herein shown comprises a cylindrical body 14 closed at its lower end by a permanently attached bottom 16. At its upper end the drum is adapted to be closed by a removable cover 18. The upper edge of the body is rolled outwardly to form an annular bead 20 for seating the cover.

The cover 18 has a depressed central portion 19 adapted to fit snugly into the upper end of the drum 10 and to define its upper end wall. The marginal edge portion of the cover is rolled outwardly and downwardly to form an annular channel 22 of semi-cylindrical cross-section adapted to fit over the bead 20 of the drum 10. The outer wall of the lid channel 22 is appropriately formed to define slotted lugs 24 which may be crimped or bent under the bead 20 to secure the cover 18 to the drum 10. A gasket 26 of rubber or other suitable material is inserted in the channel for engagement with the bead to effect a tight seal.

To facilitate handling the drum is equipped with a bail 28. The bail is pivotally mounted upon the drum 10 by means of cup-shaped ears 29 for the reception of the ends of the bail. The ears are permanently fixed at diametrically opposite points on the drum wall adjacent the upper end of the drum.

As shown the inner receptacle 12 is an ordinary can of cylindrical form fashioned of sheet metal and is of a substantially lighter gauge than that of which the drum and its cover are formed. The can includes a side wall 30 and a bottom end wall 32 which are roll-seamed together to define a peripheral bead 33 about the lower end of the can. The bead projects longitudinally beyond the bottom end wall 32 of the can. While any suitable upper end wall may be provided, as illustrated one of generally conical form terminating in a screw-threaded neck 36 has been shown by way of example. Thus the can is adapted to be closed by an appropriately fashioned, screw-threaded cap or so-called screw top 38.

In carrying out the present invention, the construction and arrangement is such that the upper end wall 19 of the drum 10 and the bottom end wall 32 of the can 12 are brought together and joined, and thus the can bead 33 is drawn and held in intimate engagement with the juxtaposed drum end wall surface. As shown in Fig. 2, the end wall 32 of the can is fixed centrally thereof to the depressed central portion 19 of the cover 18 which

can be by spot welding at 40. Preferably this is centrally of the cover 18. This means of attachment is preferred because it can be easily accomplished by readily available equipment although it will be apparent that soldering, brazing or the like can be utilized for this purpose.

In order to effect the fusing attachment of the end walls 32 and 19 together, one or the other or both of them is dished so that the juxtaposed surfaces are brought into intimate engagement. As hereinbefore noted, the can 12 is conveniently fashioned of somewhat lighter gauge sheet metal than that of the drum 10. Thus, it is somewhat more resilient, and therefore it permits of deformation more readily than the drum end wall portion 19 of the cover 18.

It will be recognized that during the formation of the cover 18 the central area 19 can be appropriately formed so that a curvature is imparted thereto which is sufficient to dispose its central portion for engagement with the outer surface of the bottom end wall. Such a modified form is illustrated in Fig. 3 of the drawing. Therein, a can 12A is shown which is provided with a substantially flat bottom or end wall 32A having a longitudinally projecting peripheral bead 33A. In this form a cover 18A is utilized which has a dished central area 19A. The central portion 19A is so fashioned as to engage the can end wall 32A and to be fixed thereto as at 40A to hold the bead 33A engaged with the juxtaposed cover surface.

In either case it will be apparent that with the end wall of the drum and the end wall of the can fixed together centrally of the latter, the peripheral bead of the can that projects longitudinally outward beyond the can bottom is caused to firmly engage the juxtaposed surface of the cover 18. The maintenance of engagement of the bead 33 with the juxtaposed surface of the cover 18 precludes lateral movement of the inner container 12 with respect to the cover thereby relieving the junction between the end wall 32 of the can and the cover of strain that would be imposed by a rocking of the can. Repeated application of such strain, as will be apparent to one skilled in the art, could result in a fatigue failure of the can bottom to the end that a leak might occur or perhaps even cause the can to separate from the cover. This, however, is precluded by the construction and arrangement according to the teachings of the present invention.

Furthermore, it will be apparent that the disposition of the inner container 12 in centrally fixed relation with respect to and depending from the cover 18 results in a similar disposition of the inner container within the drum 10. As a result the inner receptacle is widely spaced from the drum side wall. Further, this construction permits the contents of the drum to effectively assist in damping or cushioning any tendency toward lateral movement of the can within the drum even though the composite container be subjected to severe mishandling.

It will be apparent that a composite container constructed as taught herein permits removal of the inner receptacle 12 by a simple lifting operation simultaneously with the removal of the cover 18. When removed the

outer container is completely free of any obstruction thus permitting complete emptying of its contents. Too, the outer receptacle can be readily cleaned and reclaimed for reuse. Further, when the inner receptacle is removed from assembled relation with the outer receptacle, its attachment to the cover provides a broad peripheral flange rigid therewith which serves to prevent accidental upsetting thereof and loss of its contents.

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 within said drum, said can having a side wall and an end wall seamed together to define a peripheral bead about one end of the can, a removable cover for said drum for closing the same and having a central portion defining one end wall of the drum, at least one of said end walls being centrally dished and fixed to the juxtaposed surface of the other end wall holding said bead firmly engaged with the juxtaposed surface of the other of said end walls.

2. A composite container structure comprising, in combination, a drum container constituting an outer receptacle, a substantially smaller can constituting an inner receptacle for insertion within said drum, said can having a side wall and an imperforate end wall seamed together to define a longitudinally projecting peripheral bead about one end of the can, a removable imperforate cover for said drum for closing the same, said cover and the end wall of said can being respectively heavier and lighter gauge sheet material centrally fixed together and resiliently holding said bead engaged with the juxtaposed surface of said cover.

3. A composite container structure comprising, in combination, a sheet metal drum having an imperforate removable cover and constituting an outer receptacle, a substantially smaller independently closable can constituting an inner receptacle for insertion within said drum, said can having a side wall and an imperforate end wall seamed together to define a peripheral bead about one end of the can, said cover and the end wall of said can being fixed together substantially centrally of the latter with said bead firmly engaging the juxtaposed surface of said cover.

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