United States Patent

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[54] **CONTAINER AND INSERT THEREFOR**
9 Claims, 2 Drawing Figs.

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[51] **Int. Cl.** **B65d 25/08,** B65d 5/56, B65d 77/08
[50] **Field of Search** ..... 229/3.5 (nf); 220/97 (C); 206/4; 229/1.5 (B), 14, 14 (BI), 14 (H), 15; 206/47 (B), 47; 220/9 (F), 20

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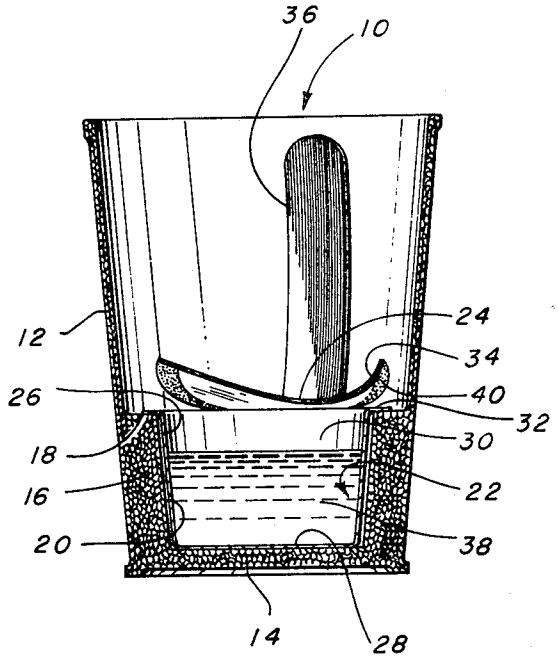
ABSTRACT: A container assembly comprises a container having an end wall and a sidewall with an inwardly extending portion adjacent the end wall providing an inwardly extending shelf and defining an inner recess. An insert seated in the recess includes a body with a material-receiving cavity and a flange extending outwardly therefrom which is of lesser lateral dimension than the shelf and is sealed thereupon.



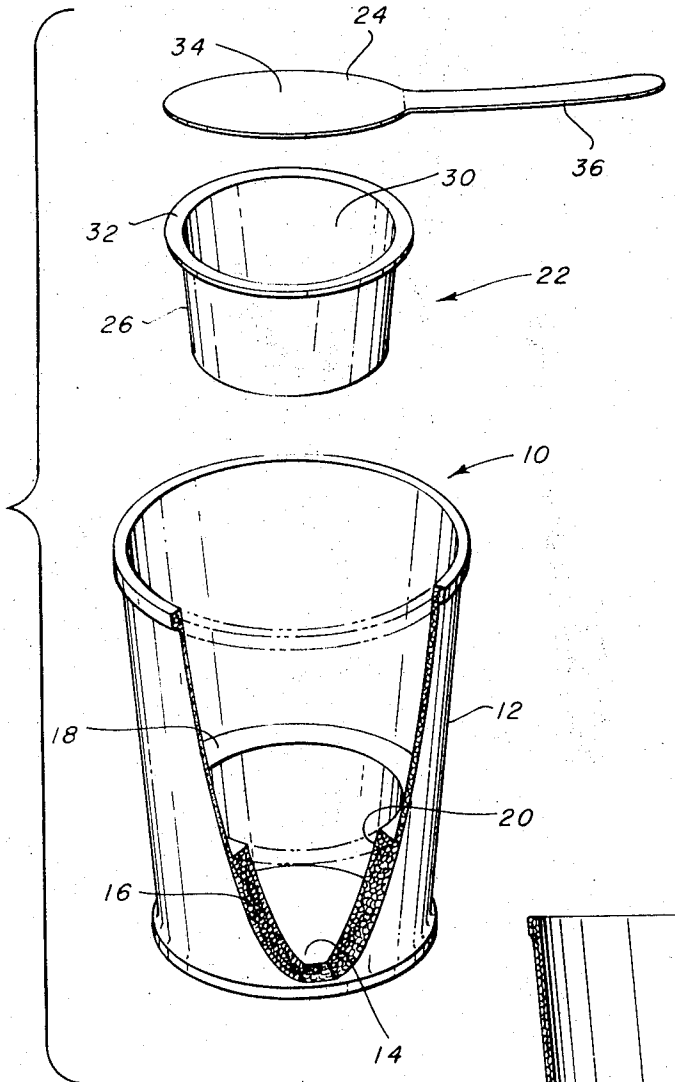


Fig. 2

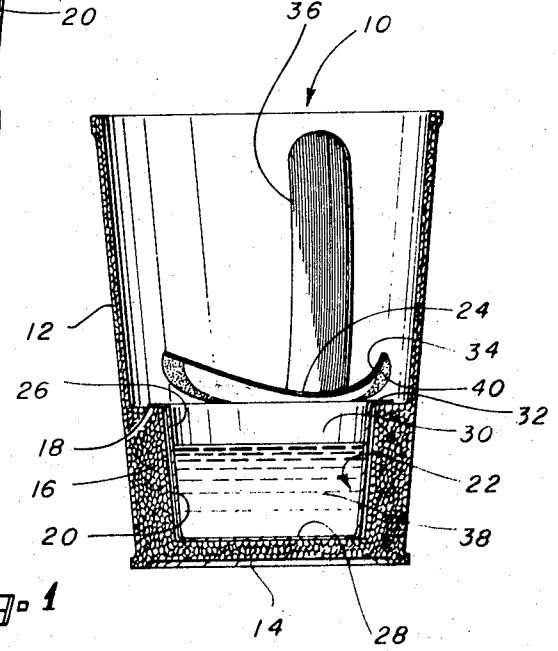


Fig. 1

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CONTAINER AND INSERT THEREFOR

BACKGROUND OF THE INVENTION

Various dispensing containers have been proposed which may be prefilled with food stuffs, food concentrates, medicaments and the like for future consumption with or without dilution.

Generally, the prior art containers of this type have not provided a simple and economical construction which would allow convenient prefilling of a separate receptacle which thereafter could be secured conveniently and economically in the container to provide an entirely satisfactory assembly. Generally, the available assemblies suffer from one or more drawbacks such as difficulty and/or undue cost in manufacture and assembly, a lack of sufficient resistance to deformation and rupture of the material-containing insert, a lack of sufficient protection against disassembly of the parts thereof, and an inadequate level of protection against contamination by liquid or solid matter passing and becoming entrapped under and about inner structure, where employed. Although the Anthony patent illustrates a construction involving a separate insert which is intended for subsequent assembly, very little in the way of protection against impact is provided for the insert illustrated therein, and the manufacture of the container and the insert would appear to involve significant problems from the standpoint of forming and assembling. Moreover, there is little in the way of means for reducing the potential for contamination by matter passing between the insert and the main body of the container.

Accordingly, it is an object of the present invention to provide a novel dispenser container assembly having an independent material-receiving insert, wherein the elements of the assembly are conveniently and relatively inexpensively produced and are readily assembled.

It is also an object of the invention to provide such an assembly wherein the insert and elements thereof are protected against damage and disassembly.

Another object is to provide such an assembly wherein contamination by passage of material under and about the insert is substantially or entirely prevented.

Still another object is to provide such an assembly wherein there is a desirable level of heat insulation.

SUMMARY OF THE INVENTION

It has now been found that the foregoing and related objects may be readily attained in a container assembly comprising a container having a sidewall and an end wall closing one end thereof and wherein the sidewall has a portion adjacent the closed end extending inwardly about its inner periphery to provide a shelf spaced from the closed end and defining an inner recess within the container between the shelf and the end wall. An insert is cooperatively dimensioned to seat in the inner recess and has a body defining a material-receiving cavity therein and a flange extending outwardly from the body, which is supported on the shelf. The width of the flange is less than that of the shelf to space the outer edge thereof inwardly from the sidewall.

The sidewall portion preferably extends from the shelf to the end wall, and is conveniently provided by thickening the sidewall adjacent the end wall. The sidewall, sidewall portion and the receptacle are desirably generally circular in cross section. Preferably, the sidewall of the container is frustoconical, and most desirably the thickened portion is substantially uniform in thickness to define a generally frustoconical configuration for the inner recess. A particularly suitable material for the container is a foamed synthetic resin.

With respect to the insert, the body thereof may have a sidewall and a bottom wall closing the inner end thereof with the outer end being open to provide the cavity mouth; such an insert normally includes a closure member releasably secured on the outer end of the body to close the cavity therein. Preferably the flange is positioned on the body adjacent the outer end thereof and the flange may be bonded to the shelf of the container with a flexible, nontoxic, water-insoluble adhesive. Most desirably, the insert, including the cover member, is fabricated of a relatively thin material, such as aluminum foil, which is quite inexpensive and has a relatively low level of structural strength and resistance to deformation.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a sectional elevational view of a container assembly embodying the present invention with the cover portion of the closure member partially lifted from the insert for the purpose of illustration; and

FIG. 2 is an exploded perspective view of the elements of the container assembly of FIG. 1 with a portion of the container sidewall broken away for clarity of illustration.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Turning now in detail to the attached drawing, a cup, generally designated by the numeral **10**, is depicted having a frustoconical sidewall **12** and a bottom wall **14** closing the lower end thereof. The sidewall **12** has a portion **16** of increased thickness which extends inwardly about the inner periphery thereof to provide a radially extending shelf **18**, and the portion **16** is of a uniform thickness as it extends from the shelf **18** to the bottom wall **14** to define the frustoconical inner recess **20** in the bottom of the cup **10**.

The elements of the insert are shown assembled with each other and within the cup **10** in FIG. **1**, and prior to assembly in FIG. **2**. The body, generally designated by the numeral **22**, has a frustoconical sidewall **26** and a bottom wall **28** closing the inner end thereof which cooperate to define a material-receiving cavity **30** therein, and the body **22** has a radially outwardly extending circumferential flange **32** adjacent the outer end thereof. The closure member **24** consists of a cover portion **34** configured and dimensioned to overlie the flange **32** and a handle portion **36** extending outwardly at one point on the periphery thereof.

With more particular reference to FIG. **1**, the closure member **24** is secured over the mouth of the cavity **30** in the body **22** to seal the material **38** therein. As can be seen on the peeled open section of the cover portion **34** of the closure member **24**, adhesive material **40** is preferably employed on the underside thereof to secure the closure member **24** to the upper side of the flange **32**. The insert is seated in close fitting relationship in the recess **20** at the bottom of the cup **10**, and the flange **32** thereof is supported upon the shelf **18** provided by the thickened portion **16** of the sidewall **12**. The flange **32** is somewhat less in width than the shelf **18** so that there is spacing between the outer edge of the flange **32** and the portion of the sidewall **12** which is adjacent the shelf **18**. As a result of the peripheral spacing, forces applied radially to the cup will be transmitted to a much diminished degree to the flange **32**, thus reducing the possibility of damaging the insert or inadvertently disengaging the closure member **24** from the body **22**. This is particularly true if the insert is secured to the shelf **18** with a flexible adhesive as illustrated or if the point of engagement is below the plane of the flange **32**, so that the sidewall **12** of the cup can deform inwardly somewhat independently of the flange **32** of the insert. As is also illustrated in FIG. **1**, the cup **10** is fabricated of a foamed synthetic plastic material, and it will be appreciated that the closure member **24** is made of a flexible material so that the handle portion **36** can conform to the sidewall **12** of the cup **10** in the manner depicted.

The containers employed for the assembly of the present invention may have a wide variety of sizes and configurations. Most usually, they will be circular in cross section and preferably will have a sidewall which tapers downwardly toward the closed end of the container to provide a frustum such as that illustrated. Such a container is desirable not only from the standpoint of convenience and cost of manufacture,

but also due to the facility with which it may be assembled with a suitable insert, and the convenience with which the insert can be opened manually or mechanically when it is desired to expose the contents thereof. In addition, this configuration permits a number of containers to be nested within one another as is desirable for packaging and transporting in bulk.

The shelf provides support under the flange and permits the outer edge thereof to be spaced inwardly from the sidewall of the container, and at the same time allows a seal to be formed between the insert and the sidewall which prevents the entry of foreign matter about and beneath it. Although the thickened portion need not extend entirely to the bottom wall or end closure (i.e., it may be an annulus spaced upwardly therefrom), most desirably the sidewall is thickened along its entire length extending between the shelf and the bottom wall of the container. The extra material enhances the structural strength of the assembly to protect the insert and also provides increased thermal insulation to reduce heat transfer and render the container more comfortable to hold.

The containers may be fabricated of any of numerous materials such as plastics, paper and the like; particularly desirable materials are foamed synthetic resins such as polystyrene, since they provide good structural strength coupled with desirable heat insulating characteristics. The material used should also have good molding characteristics, so as to facilitate manufacture and reduce costs, and it should be noted that the use of containers having frustoconical sidewalls and receptacles therein further facilitates manufacture since such a configuration involves no intricate or undercut portions and makes the containers highly suitable for molding by conventional techniques.

As is the case with the containers, a wide variety of sizes and configurations are suitable for the insert included therein. Normally, the insert will be designed so that substantially all of it is contained within the inner recess in close fitting conformity therewith; however, the insert may be smaller or larger than the receptacle (e.g. when the flange is not adjacent the cavity mouth so that a portion of the body extends above the shelf) and it is not necessary that the configuration of the insert complement that of the receptacle. Thus, it may simply be an envelope or flexible packet having a suitable flange which can be supported on the shelf when the packet is received in the receptacle. Although the insert will frequently have a sidewall (of circular, rectangular, triangular, etc. cross section depending upon the shape of the receptacle) and a bottom wall closing one end thereof, it is not necessary that such elements be distinctly defined and the body may be in the form of a spherical segment or the like.

The flange on the body of the insert permits it to be supported on the shelf formed in the container, and preferably, the flange extends continuously about the periphery of the insert. However, the flange may be provided by a plurality of outwardly projecting fingers with spaces therebetween, although it is significantly less desirable due to the decreased support and the increased potential for contamination under the insert which it affords. As has been suggested previously, the flange may be located adjacent or below the upper end of the body, but locating it as close as possible to the upper end of the body may generally be preferable since substantially all of the insert may thereby be confined within the inner recess and protected thereby. Moreover, it may be most desirable to position the flange (or to design the body and/or inner recess) so that the insert is suspended above the bottom wall of the container when inserted therein; this will tend to reduce further the possibility of damage to the insert by furnishing an underlying space and "cushion" against impact from below and by allowing the flange to absorb the impact, rather than the body of the insert. Preferably, the insert is secured within the receptacle by bonding the flange to the shelf, most desirably with a flexible adhesive. HOwever, other adhesives or nonadhesive means may be used, such as mechanical members which may be independent, e.g., pins, staples, etc., or a part of the body, e.g., a depending skirt or the like on the flange. Moreover, the affixing means need not be on the flange although it is quite preferable to have it so deposed rather than along the length of the sidewall of the body.

The insert may be an integrally formed packet with no separately defined or releasably engaged cover or closure member, in which case a tear strip or the like may be provided to open the packet, or it may be designed to be opened by a separate tool. Generally, however, the insert will have an upwardly opening cavity and will be designed to include a closure member releasably secured thereon to seal the cavity and protect the material therein. The closure member is desirably simple in structure, such as that shown in the drawing, but it may be more complex and may include a bead, fingers, or the like for frictional or mechanical interengagement with complementary members on the insert body. Most desirably, the flange on the body is adjacent the mouth of the cavity with the closure member secured thereover by the use of a pressure sensitive or like adhesive provided either on the underside of the closure member or the upper surface of the body flange. In any event, if the insert is to be retained in the container the means of securing the closure member to the body must be less tenacious than that employed to secure the insert within the recess. However, in certain cases it may be advantageous to temporarily secure the insert in the container such as by reliance only upon a friction fit so that the insert can be removed prior to use. It is convenient to design the closure member with a tab or handle (which, as is shown in the drawing, is desirably elongated for ready access from the top of the container) and the closure member or a portion thereof may serve other purposes as well, e.g., as a stirrer if the handle is elongated. If necessary, the handle should be flexible to allow it to fit within the container in conformity to the shape thereof, and it may be furnished by a plastic member, a metal strip or wire, a string or cord, etc.

The insert, including any separate closure member, may be fabricated of numerous materials such as paper products, synthetic plastics, metal sheet or foil, etc., and combinations thereof, depending principally upon the material to be contained therein and/or the nature of a diluent or additive to be admixed therewith; aluminum foil has been found to be particularly suitable from the standpoint of its inertness to many solids and liquids, the protection against contamination which it affords, and also the ease with which it can be formed into desirable shapes. It is a particularly notable feature of the invention that the protection provided by the design and construction of the container permits readily deformable inserts to be used therewith, which inserts may be quite inexpensive due to low manufacturing costs and the suitability of using small quantities of inexpensive materials therefor.

Thus, it can be seen that the present invention provides a container assembly including an independent material-receiving insert, wherein the elements of the assembly are conveniently and relatively inexpensively produced and are readily assembled. The insert and the elements thereof are protected against damage and disassembly, and at the same time contamination under and about the insert may be substantially or entirely prevented; moreover, the construction involved generally provides a desirable level of heat insulation in addition to the other advantageous features.

I claim:

1. In a dispensing container assembly, the combination comprising a container having a sidewall and an end wall closing one end thereof, said sidewall having a portion adjacent said closed end extending inwardly about its entire inner periphery to provide a substantially continuous shelf spaced from said closed end and defining an inner recess within said container between said shelf and end wall; and a readily deformable insert fabricated of a relatively thin material and cooperatively dimensioned to seat in said inner recess, said insert having a body with a material-receiving cavity therein and a flange extending outwardly about the entire periphery thereof and sealingly secured entirely thereabout in a substan-

tially fixed position on said shelf, the width of said flange being lesser than that of said shelf with the outer edge thereof being spaced inwardly from said sidewall.

2. The assembly of claim 1 wherein said sidewall portion extends from said shelf to said end wall.

3. The assembly of claim 1 wherein said sidewall, sidewall portion and receptacle are generally circular in cross section.

4. The assembly of claim 3 wherein said sidewall is generally frustoconical and wherein said portion extends between said shelf and said end wall and is of substantially uniform thickness to define a generally frustoconical configuration for said recess.

5. The assembly of claim 1 wherein said container is a cup fabricated of a foamed synthetic resin.

6. The container assembly of claim 1 wherein said insert

body has a sidewall and a bottom wall closing the inner end thereof, the outer end of said body being open to provide said cavity therein and wherein said insert includes a closure member releaseably secured on said outer end of said body to close said cavity.

7. The assembly of claim 1 wherein said flange on said body is adjacent the outer end thereof.

8. The assembly of claim 1 wherein said material is aluminum foil.

9. The assembly of claim 1 wherein a nontoxic, water-insoluble, flexible adhesive is employed continuously about the underside of said flange to bond it to said shelf and provide a seal.