

[54] CONTAINER

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220/8, 220/345.

[51] Int. Cl. B65d 41/00, B65d 7/02, B65d 7/24

[58] Field of Search 220/42 B, 42 C, 97 R, 8,
220/42 R, 42 D, 24.5; 229/DIG. 11; 215/47

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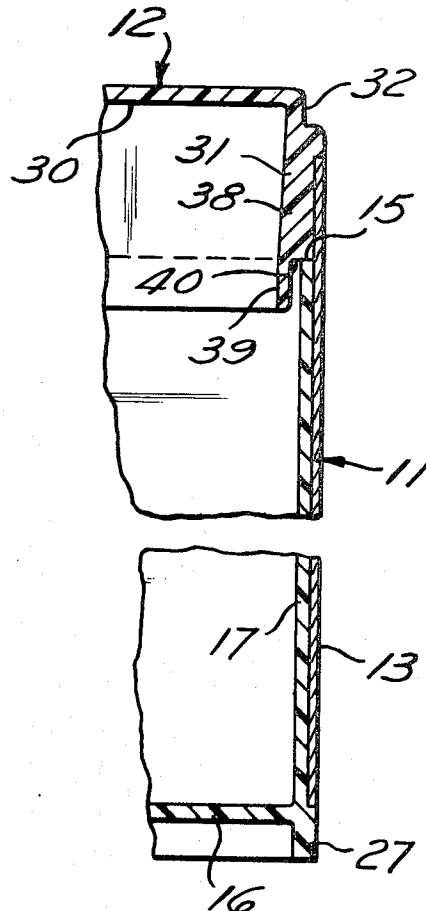
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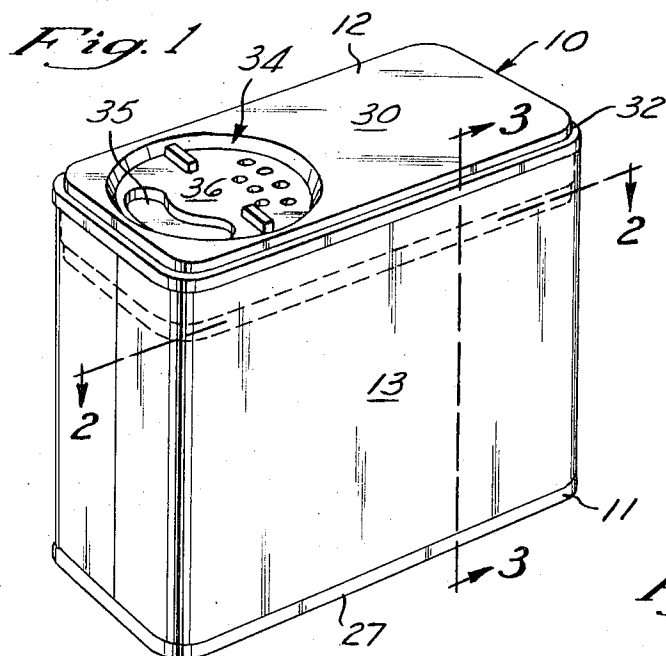
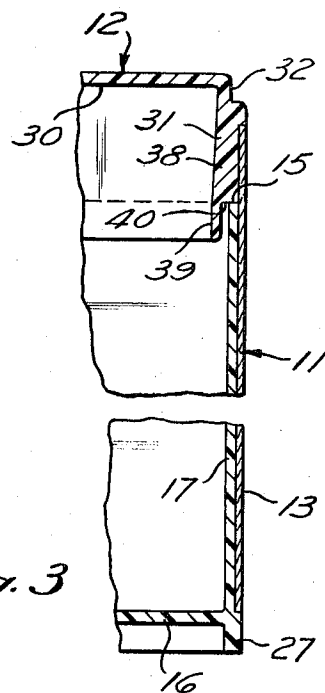
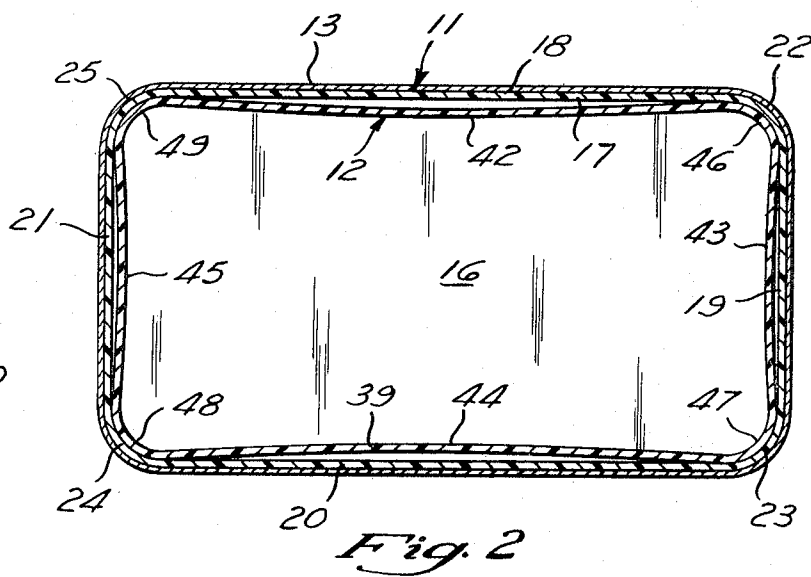
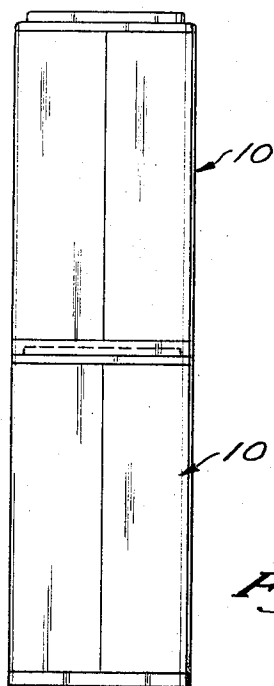
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ABSTRACT

A container is disclosed which includes a receptacle, a cover, and a label. The receptacle and the cover each include longitudinally extending skirt portions of rectangular configuration which are telescopically connected. The skirt portions of the receptacle and the cover each include side portions and rounded corner portions. When the skirt portions are telescopically connected, confronting corner portions engage one another with an interference fit to prevent lateral movement of the cover relative to the receptacle and to provide frictional resistance to longitudinal movement of the cover relative to the receptacle, and confronting side portions are stressed to hold the confronting corner portions against one another. The sides of the inner one of the skirt portions are convexly curved when viewed from the interior of the container so that confronting sides of the container are spaced from one another and so that any deflection of the inner sides caused by such inner sides being stressed will be in a direction away from the outer sides. This prevents interfering engagement of the confronting sides when the cover is assembled onto the receptacle with an interference fit, and provides a container in which the strength of a thin paper label is sufficient to hold and seal the cover on the receptacle without gluing the juncture of the cover and the receptacle.

7 Claims, 4 Drawing Figures





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CONTAINER

BACKGROUND OF THE INVENTION

Dispensing containers are widely used for storing, merchandising, and dispensing a wide variety of commodities including, in particular, food products.

Prior art dispensing containers for food products include containers of the type which provide a paper fibre receptacle and a plastic apertured cover. The receptacle is filled by automatic machinery with the desired commodity, and the cover is secured on the receptacle and sealed against leakage by gluing the juncture of the receptacle and the cover. Information relating to the contents of the container is printed on the receptacle.

The present invention provides a dispensing container which includes a plastic receptacle and a plastic cover which are easily assembled and which are sealingly secured together without gluing the juncture of the receptacle and the cover.

This is accomplished by providing a receptacle and a cover which include skirt portions of a novel configuration which are telescopically connected together. The skirt portions are each of similar polygonal cross section, and each skirt portion has a plurality of side portions and a plurality of rounded corner portions.

According to the principles of the invention, confronting corners of the telescopically connected skirt portions are dimensioned to provide an interference fit, and confronting sides of the telescopically connected skirt portions are dimensioned to be spaced from one another. The corners mechanically lock the cover and the receptacle against relative lateral movement and provide substantial frictional resistance to relative longitudinal movement. The sides of the outer one of the telescopically connected skirt portions are placed in tension and the sides of the inner one of the telescopically connected skirt portions are placed in compression to hold the confronting corners against one another. The sides of the inner skirt portion are slightly curved in a direction away from the sides of the outer skirt portion (i.e., convexly curved when viewed from the interior of the container) so that confronting sides of the container are spaced from one another and so that any deflection of the inner sides caused by such inner sides being placed in compression will be in a direction away from their confronting outer sides. In this manner, the invention provides a container in which the cover is secured on the receptacle by an interference fit, and in which interfering engagement of confronting sides of the container is prevented when the cover is assembled on the receptacle.

Because the rounded corner portions of the telescopically connected skirt portions prevent lateral movement between the cover and the receptacle and also provide substantial frictional resistance to longitudinal movement between the cover and receptacle, the strength of a thin paper label is sufficient to positively lock the cover onto the receptacle without requiring gluing the juncture of the cover and the receptacle. In the preferred embodiment, the label covers the skirt portions of the cover and the receptacle to secure the cover and receptacle against longitudinal movement therebetween and to seal the joint between the cover and the receptacle.

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DESCRIPTION OF THE PREFERRED EMBODIMENT

These and other aspects and advantages of the invention may be understood by a comprehensive understanding of the preferred embodiment of the invention shown in the accompanying drawings, wherein:

FIG. 1 is a perspective view of a dispensing container according to the principles of the invention;

FIG. 2 is a cross-sectional view taken along reference view line 2—2 of FIG. 1;

FIG. 3 is a cross-sectional view taken along reference view line 3—3 of FIG. 1; and

FIG. 4 is a side elevational view showing two containers of the type shown in FIG. 1, with one of the containers stacked upon the other of the containers.

Referring now to the drawings in greater detail, FIG. 1 shows an apertured dispensing container 10 which includes a receptacle 11, a cover 12, and a label 13. The receptacle 11 and cover 12 are preferably injection molded polyethylene or polypropylene, and the label 13 is a suitable adhesive backed paper on which information relating to the contents of the container is printed.

As best seen in FIGS. 1 and 2, the receptacle 11 includes a bottom portion 16 and a skirt portion 17 which extends longitudinally from the bottom portion 16 toward the cover 12 and which terminates at a top edge 15. The skirt portion 17 of the receptacle 11 is of rectangular polygonal lateral cross-section and includes four side portions 18, 19, 20 and 21 joined by four rounded corner portions 22, 23, 24 and 25. As best seen in FIG. 3, the receptacle 11 also includes a foot portion 27 of rectangular polygonal lateral cross-section which depends from the bottom portion 16.

As best seen in FIGS. 1 and 3, the cover 12 includes a top portion 30 and a skirt portion 31 which extends longitudinally from the top portion 30 toward the receptacle 11. The junction of the top portion 30 and the skirt portion 31 is provided with an outwardly facing recessed portion 32 which extends about the entire periphery of the cover 12. As seen in FIG. 1, the top portion 30 includes an apertured closing device 34 of the type disclosed in U.S. Pat. No. 2,961,132 issued Nov. 22, 1960. The closing device 34 includes a removable portion 35 which is molded integrally with the top portion 30 and which can be removed to permit dispensing of the contents of the container 10. The closing device 34 also includes a closure disc 36 which is rotatably disposed on the top portion 30 for providing selective opening and closing of the container 10.

As best seen in FIGS. 2 and 3, the skirt portion 31 of the cover 12 includes a normal thickness portion 38 and a reduced thickness portion 39, and the juncture of the portions 38 and 39 defines a shoulder 40. The reduced thickness portion 39 of the skirt portion 31 is of rectangular polygonal lateral cross-section and includes four side portions 42, 43, 44 and 45 which are joined by rounded corner portions 46, 47, 48 and 49.

After the commodity which is to be stored, merchandised and/or dispensed in the container 10 has been placed in the receptacle 11 by automated machinery, the cover 12 is positioned on the receptacle 11 by such automated machinery. When this occurs, the reduced thickness portion 39 is telescopically received within the skirt portion 17, and the edge 15 butts against the

shoulder 40. The skirt portions 17 and 31 are dimensioned so that the confronting corner portions 25 and 49, 22 and 46, 23 and 47, and 24 and 48 fit together by an interference fit. In this manner, such confronting corner portions positively prevent relative lateral movement between the cover 12 and the receptacle 11, and the static frictional engagement between such corner portions provides a substantial resistance to relative longitudinal movement between the cover 12 and the receptacle 11.

When such confronting corner portions are telescopically interconnected in this manner, the confronting side portions 18 and 42, 19 and 43, 20 and 44, and 21 and 45 are spaced from one another. As best seen in FIG. 2, this is accomplished by molding the side portions of the skirt portion 17 (which is the outer one of the telescopically connected skirt portions) so that such sides extend in a substantially straight line prior to assembly, and by molding the side portions of the skirt portion 31 (which is the inner one of the telescopically connected skirt portions) so that such sides are slightly curved in a direction away from their confronting sides prior to assembly. By this arrangement, the curved side portions 42, 43, 44 and 45 of the inner skirt portion 31 are placed in compression, and the straight side portions 18, 19, 20 and 21 of the outer skirt portion 17 are placed in tension, so that the resilience of such stressed side portions urges the corner portions of the skirt portion 31 against the confronting corner portions of the skirt portion 17. Because the sides 42, 43, 44 and 45 of the inner skirt portion curve convexly when viewed from the interior of the container 10, any deflection of such sides from such compressive stress will be in a direction away from their confronting sides of the outer skirt portion. This permits the space between the confronting sides to be minimal to minimize the chance of leakage of the container contents through such space, and assures that any deflection of the container sides will not cause confronting sides to engage and interfere with assembly.

In this manner, the invention provides a container in which a tight interference fit between the cover 12 and the receptacle 11 is achieved, and in which the cover 12 may easily be assembled on the receptacle 11 without interfering engagement of the side portions.

Because the confronting corner portions of the telescopically interconnected skirt portions positively prevent lateral movement between the skirt portions and frictionally resist longitudinal movement between the skirt portions, the strength of the thin paper label 13 is sufficient to prevent longitudinal separation of the cover 12 from the receptacle 11 even when the container 10 is shaken vigorously to dispense its contents through the closure device 34. As best seen in FIG. 3, the label 13 is received by a recessed portion of the skirt portions 17 and 31 and is adhered to both skirt portions 17 and 31 by a suitable adhesive. In this manner, the label 13 also seals the container 10 against leakage without requiring glue at the juncture of the receptacle 11 and the cover 12.

FIG. 4 shows the manner in which two of the containers 10 may be stacked for shipping and for merchandising. As seen in FIG. 4, the foot portion 27 of the top receptacle 10 is received by the outwardly facing recess 32 of the bottom container 10. This aligns the containers for stacking and prevents lateral shifting movement of vertically adjacent containers.

What is claimed is:

1. A container comprising a receptacle, a cover, and a label, said receptacle and said cover each including longitudinally extending skirt portions, said skirt portions each being of polygonal configuration and having a plurality of rounded corners and a plurality of sides, said skirt portions being longitudinally telescopically connected so that said corners and sides of said cover skirt portion confront similarly disposed corners and sides of said receptacle skirt portion, said confronting corners of said skirt portions engaging one another with an interference fit to prevent lateral movement of said cover relative to said receptacle and to provide frictional resistance to longitudinal movement of said cover relative to said receptacle, said label extending between and being secured to said cover and said receptacle to prevent longitudinal movement of said cover relative to said receptacle said sides of the outer one of said skirt portions being substantially straight prior to assembly of said receptacle and cover, said sides of the inner one of said skirt portions being curved in a direction away from said confronting sides of said outer skirt portion convexly when viewed from the interior of said container prior to assembly of said receptacle and cover, whereby deflection of said inner sides upon assembly of said receptacle and cover is always in a direction away from said outer sides.

2. A container in accordance with claim 1 wherein said interference fit of said confronting corners compresses said sides of the inner one of said skirt portions in a direction substantially perpendicular to said longitudinal direction and tensions said sides of the outer one of said skirt portions in a direction substantially perpendicular to said longitudinal direction, and the resilience of said compressed and tensioned sides urges said confronting corners together.

3. A container in accordance with claim 2 wherein said sides of said inner skirt portion are curved in a direction away from said confronting sides of said outer skirt portion convexly when viewed from the interior of said container, and deflection of said sides of said inner skirt portion by said compression is in a direction away from said confronting sides of said outer skirt portion.

4. A container in accordance with claim 2 wherein said cover skirt portion is telescopically received within said receptacle skirt portion, said compressed sides are said cover skirt portion sides, said tensioned sides are said receptacle skirt portion sides, said receptacle skirt portion sides are substantially straight, and said cover skirt portion sides are gently curved away from said confronting receptacle skirt portion sides convexly when viewed from the interior of said container.

5. A container in accordance with claim 1 wherein said polygonal configuration is rectangular.

6. A container comprising a plastic receptacle and a plastic cover, said receptacle and said cover each including longitudinally extending skirt portions, said skirt portions each being of polygonal configuration and having a plurality of corners and a plurality of sides, said skirt portions being longitudinally telescopically connected so that said corners and sides of said cover skirt portion confront similarly disposed corners and sides of said receptacle skirt portion, said confronting corners of said skirt portions engaging one another with an interference fit to prevent lateral movement of said cover relative to said receptacle and to provide

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frictional resistance to longitudinal movement of said cover relative to said receptacle, said interference fit of said confronting corners compressing said sides of the inner one of said skirt portions in a direction substantially perpendicular to said longitudinal direction and tensioning said sides of the outer one of said skirt portions in a direction substantially perpendicular to said longitudinal direction, the resilience of said compressed and tensioned sides urging said confronting corners together, said confronting sides being spaced from one another to prevent interfering engagement of said confronting sides during assembly of said cover and said receptacle, said sides of said outer skirt portion being substantially straight prior to assembly, and said sides of said inner skirt portion being curved in a

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direction away from said confronting sides of said outer skirt portion convexly when viewed from the interior of said container prior to assembly so that deflection of said sides of said inner skirt portion by said compression during assembly is in a direction away from said confronting sides of said outer skirt portion.

7. A container in accordance with claim 6 including a label, said compressed sides being said cover skirt portion sides, said tensioned sides being said receptacle skirt portion sides, said receptacle skirt portion sides being substantially straight, and said label extending between and being secured to said cover and said receptacle to prevent longitudinal movement of said cover relative to said receptacle.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,851,792 Dated December 3, 1974

Inventor(s) Robert W. Ankney, deceased

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the title page, Twinsbury, Ohio should read "Twinsburg, Ohio".

Column 4, line 37 through 43, delete claim 3 in its entirety.

On the title page "7 Claims" should read -- 6 Claims --.

Signed and sealed this 18th day of February 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks