United States Patent

[11] 3,583,590

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[54] **CONTAINER**
6 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **215/10,**
220/97, 222/143
[51] **Int. Cl.** **B65d 21/02**
[50] **Field of Search** 215/10;
222/143; 220/97, 23.4

[56] **References Cited**

UNITED STATES PATENTS

3,173,581	3/1965	Pel	222/143
2,627,991	2/1953	Maersch	220/97X
1,920,515	8/1933	Marsden	215/10X

FOREIGN PATENTS

1,483,961	5/1967	France	220/97

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ABSTRACT: A nestable and stackable container having a plurality of sides defining a polygonal configuration. At least two of the sides having extended portions suitable for selective and intermittent fitting with similarly constructed containers.

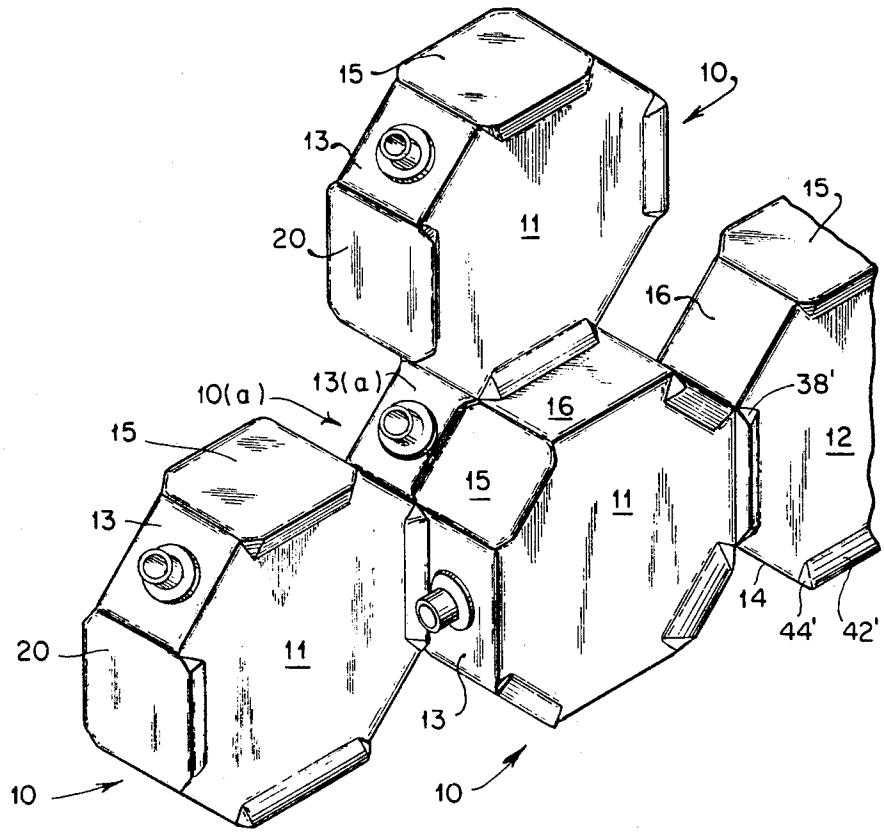


FIG. 1

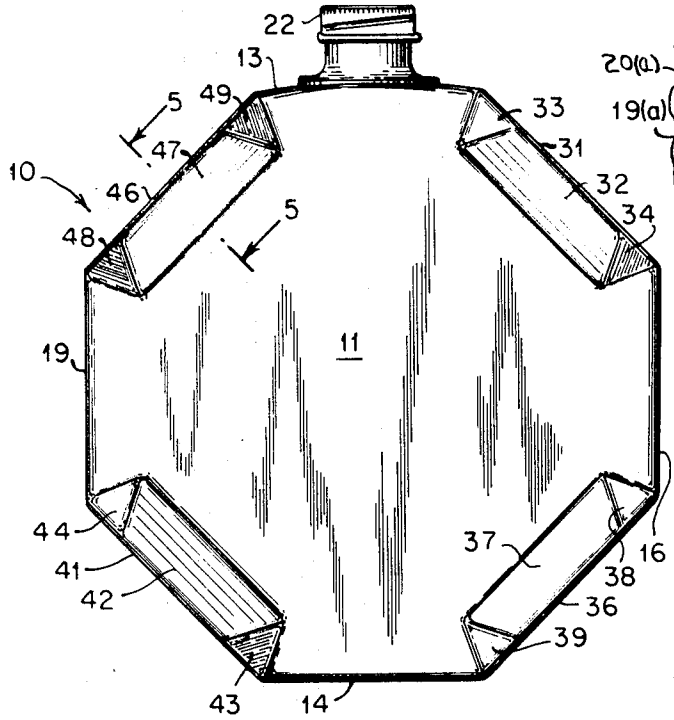


FIG. 2

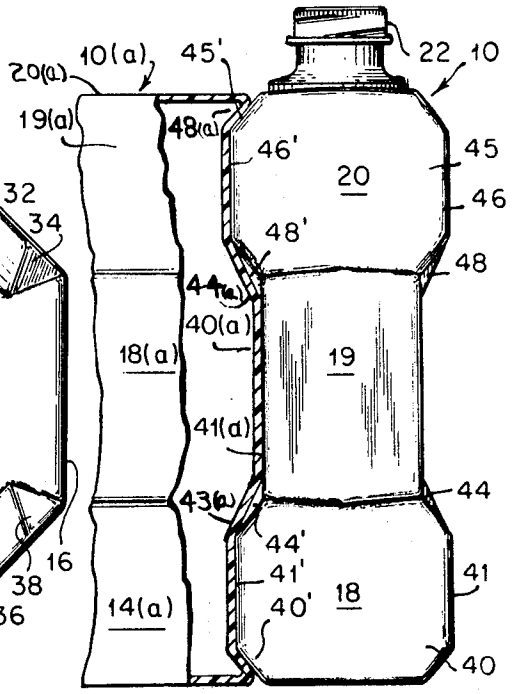
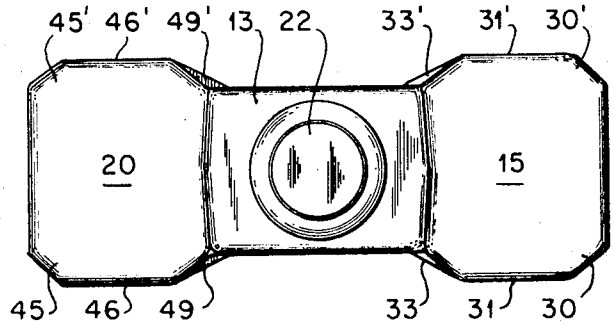


FIG. 3



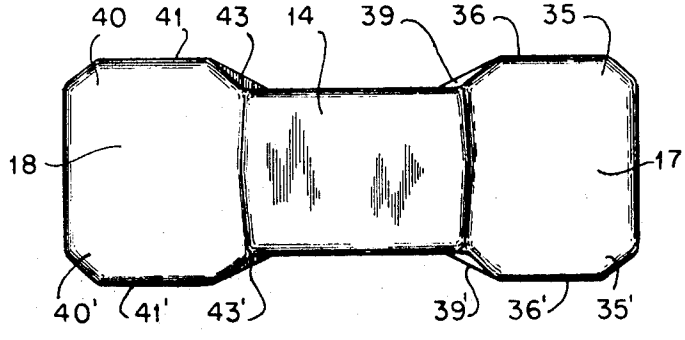


FIG. 4

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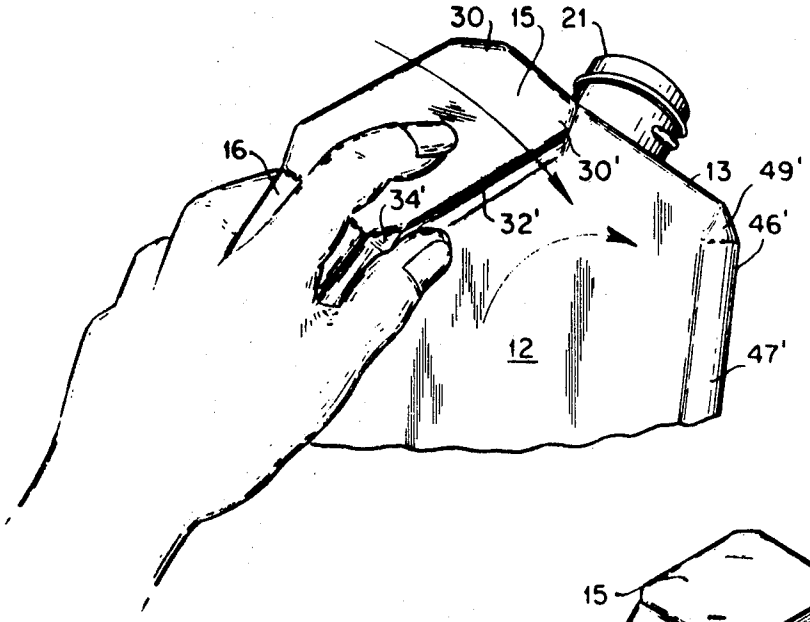

FIG. 6

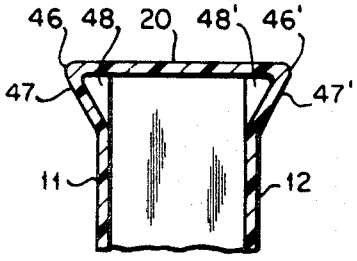

FIG. 5

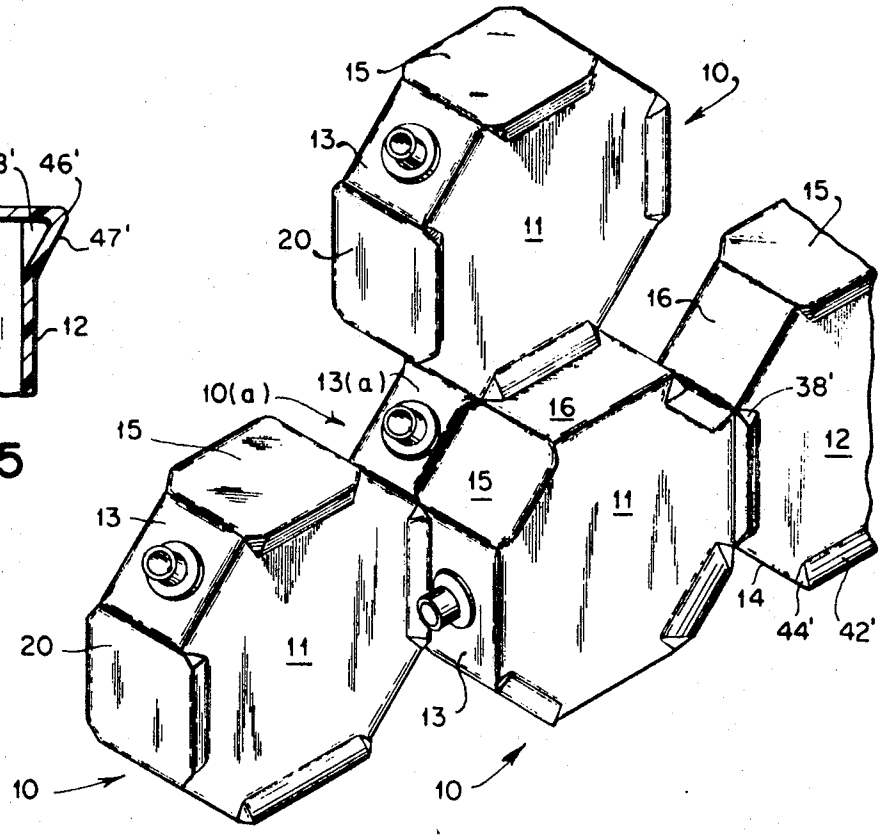

FIG. 7

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CONTAINER

BACKGROUND OF THE INVENTION

This invention relates to a container construction and, more particularly, it relates to a container which is constructed for selective nesting, stacking and gripping.

Broadly stated, the present invention relates to a container adapted for nesting and stacking with other similarly shaped containers, said container comprising a front face and a rear face, each of said front and rear faces having a substantially flat surface, the periphery of each of said front and rear faces forming a polygon, a plurality of integral substantially flat wall portions connectively engaging said front and rear faces, the number of said wall portions being equal to the number of sides in said polygon, at least two wall portions extending beyond the surface of said front face, oblique surface panels connecting said two wall portions with the surface of said front face, all other wall portions being attached to said front face at a common line of juncture, and said plurality of wall portions being similarly attached to said rear face.

In accordance with the present invention, the container is constructed so that at least two nonadjacent sides of a container having a polygonal configuration are laterally extended beyond the remaining side in order to provide a suitable gripping structure as well as a structure whereby a plurality of similarly constructed containers can be stacked and/or nested. Preferably, the container will be in the form of a polygon having an even number of sides with every other side being constructed with extensions. Accordingly, the alternating extensions of the sides are constructed so that they are of a size and shape to form a joint-type fitment with similarly constructed containers. A plurality of containers can be nested by intermittent fitting of containers. The container walls are of sufficient width to provide stability for stacking.

The present container construction is useful in that the features of the individual containers enable stable nesting or stacking in either vertical or horizontal positions for display purposes, storage purposes and shipping purposes. Since a plurality of containers can be nested horizontally in a stable alignment there is no need for partitions between each container in shipping cases. The homemaker is provided with space economy when several containers are purchased and each container is constructed so that the homemaker also is provided with a special gripping feature for controlled pouring of contents.

BRIEF DESCRIPTION OF THE INVENTION

The structural features and advantages of the invention will be better understood from the following detailed description of a typical embodiment of the invention, as now contemplated, taken in conjunction with the accompanying drawings in which:

FIG. 1 is a front elevational view of a nestable container constructed in accordance with the present invention;

FIG. 2 is a side elevational view of the container shown in FIG. 1 in a nesting relationship with a similarly constructed container;

FIG. 3 is a top view of the container shown in FIG. 1;

FIG. 4 is a bottom plan view of the container shown in FIG. 1;

FIG. 5 is a fragmentary cross-sectional view drawn to a larger scale and taken along the line 5–5 of FIG. 1;

FIG. 6 is a broken perspective view showing the nestable container with a hand gripping one side of the container;

FIG. 7 is a perspective view showing a plurality of containers in aligned, nested and stacked relationships.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, wherein like reference numerals designate similar parts throughout the various views, and primed reference numerals refer to opposite identical structures, the figures illustrate nestable container **10** of substantially octagonal configuration. Container **10** of the instant invention has a substantially flat front face **11** and a similar rear face **12** (FIG. 6). Connecting the front and rear faces of the container is a plurality of substantially flat wall sections disposed in planes perpendicular to the front and rear faces and arranged to provide the octagonal configuration as shown in FIGS. 1 and 7. These interconnecting wall sections include top wall **13**, bottom wall **14**, and sidewalls **15, 16, 17, 18, 19** and **20**. Top wall **13** is provided with material outlet **21** which may be conventionally externally threaded (FIG. 6) and having a conventionally threaded cap **22** provided for the outlet **21** (FIGS. 1 and 2).

As principally shown in FIGS. 1—4, top wall **13**, bottom wall **14** and sidewalls **16** and **19** connectively engage front face **11** and backface **12** by a common line of juncture or edge. Sidewalls **15, 17, 18** and **20** have continuous lateral extensions which connect with front face **11** and backface **12** by intermediate oblique surface panels.

In the embodiment shown, sidewall **15** is formed with lateral extensions **30, 30'** terminating at edges **31, 31'** which are connected to downwardly and inwardly directed panels **32, 32'** (FIG. 6) and end panels or chamfer portions **33, 34** and **33', 34'** (FIG. 6).

The extended sidewalls **17, 18** and **20** have structural features similar to sidewall **15**. Sidewall **17** is formed with lateral extensions **35, 35'** terminating at edges **36, 36'** which are connected to downwardly and inwardly directed panels **37, 37'** and end panels or chamfer portions **38, 39** and **38', 39'**. Sidewall **18** has lateral extensions **40, 40'** terminating at edges **41, 41'** which are connected to downwardly and inwardly directed panels **42, 42'** and end panels or chamfer portions **43, 44** and **43', 44'**. Sidewall **20** has lateral extension **45, 45'** terminating at edges **46, 46'** which are connected to downwardly and inwardly directed panels **47, 47'** and end panels or chamfer portions **48, 49** and **48', 49'**.

The structural arrangement of the lateral extensions is such that each extension (e.g., extensions **30, 30'**) is characterized by an extended area having a substantially trapezoidal configuration. This configuration with its connecting panels (e.g., elongated panels **32, 32'** and chamfer portions **33, 34** and **33', 34'**) enables a snug engagement with a side not having extensions and may form, in effect, a joint-type fitment of a scarf characteristic (FIGS. 2 and 7).

As shown in FIG. 2, the lateral extension arrangement enables containers to be nested, one next to the other. In particular, FIG. 2 shows a side elevational view of container **10** and a broken partially cutaway side elevational view of similarly constructed container **10(*a*)** which has been slightly rotated and nested with container **10**. By slight rotation of one of the similarly constructed containers, it is possible to nest two or more containers.

Container **10** nests with container **10(*a*)** when container **10(*a*)** is rotated so that the edge **41(*a*)** of lateral extension **40(*a*)** of side **18(*a*)** is adjacent to the line of juncture between sidewall **19** and the backface of container **10**. Similarly panel **44(*a*)** of side **18(*a*)** of container **10(*a*)** is adjacent to panel **48'** of side **20** of container **10** and panel **43(*a*)** of side **18(*a*)** of container **10(*a*)** is adjacent to panel **44'** of side **18** of container **10**. In a corresponding manner the edge of the lateral extension of side **20** of container **10(*a*)** will be adjacent to the line of juncture between the top wall and the backface of container **10**. The chamfer portion **48(*a*)** of side **20(*a*)** of container **10(*a*)** is adjacent to the panel or chamfer portion **(49')** of side **20** of container **10**. In a corresponding manner the edges of the lateral extension of container **10(*a*)** will be adjacent to the respective lines of juncture between the nonextended walls and the backface of container **10**. The arrangement is such that the two containers are suitably nested for display, storage and transportation. If desired, two or more containers may be packaged in a nested relationship by band wrapping, overwrapping or shrink wrapping.

As readily depicted in FIG. 6, the lateral extension structural arrangement provides a suitable gripping structure for either left-handed gripping (as shown) or right-handed

gripping (not shown). A wall (15) with extensions (30, 30') provides adequate breadth for either one or two fingers, the elongated panels (e.g., panel 32') are adequate for thumb fitment and a chamfer portion will conveniently fit a finger. To use the container the operator merely picks up the container with the thumb and fingers sliding into a stable gripping position (as shown in FIG. 6) and can tilt the container either face downwardly or side downwardly until the product flows through material outlet 21.

FIG. 7 shows, in perspective, a plurality of containers intermittently fitted in various relationships. It is illustrative of aligned containers, nested containers and stacked containers. It is to be understood that although the containers shown in the drawings utilize a material outlet extending from one wall, it will readily be apparent to those skilled in the art that this container can be modified to have 37 plug" type closures for a material outlet which is within a wall and not upstanding. Various opening and closure systems are well known and this invention is not to be construed as limited to any particular system.

The thickness of the faces and walls of the container should be sufficient to enable the container (whether empty or having contents therein) to substantially maintain its configuration so that no distortions occur in transit, in storage, in stacked or nested positions. As shown in FIG. 5 of the drawings the extended portions are hollow and provide additional space for the contents. However, the area formed by the extensions and oblique surface panels may be solid or the edges of the extensions may be reinforced by an added thickness to facilitate edge-to-edge stacking. Preferably, the extended portions of a lateral extension is less than half the width of a sidewall not having any extended portions. In general the width of any side is sufficient for upright standing support and the extended portions add sufficient areas for nesting.

Material outlet 21 preferably will not extend from top wall 13 or any other wall beyond the area between the intersection of the planes formed by the next adjacent sidewalls 15 and 20.

Container 10 is an integral structure preferably formed by blow molding of a suitable tough resilient plastic material so that the container will substantially retain its shape. The interconnecting portions of the wall sections, i.e., those portions extending from corner to corresponding corner of the octagonal contour, are substantially straight but due to molding techniques may have a slight deviation from the straight. The plastic material should be impervious and inert with respect to its contents. The containers may be formed by other molding practices such as vacuum, compression or injection molding but blow molding is preferred as less expensive and entirely adequate. While plastic materials (such as polypropylene, polyethylene, polyvinyl chloride, or some material having equivalent properties) are preferred, other material (e.g., metal and glass) which are capable of construction for the purpose intended are suitable.

The product packaged in the container may be of any suitable character such as liquids or pulverant materials. Where the product includes more volatile ingredients the interior of the container may be lined or coated. Such liners or coatings must be chemically inactive with respect to the ingredients of the container. Materials such as various vinyl chlorides, vinylidene chloride or epoxy resins may be used for lining or coating the container.

The present preferred embodiment as herein described in conjunction with the drawings shows a container having a substantially octagonal configuration. The length of the walls may be of equal lengths or unequal lengths. While an eight-sided configuration is presently preferred, the container may be in the form of other polygons, e.g., polygons having more than four sides such as six to 12 sides. The polygon must have sufficient sides to provide the container with the desired strength to permit side stacking or nesting as well as upright stacking or nesting.

What I claim is:

1. A container adapted for nesting and stacking with other similarly shaped containers, said container comprising a front face and a rear face, each of said front and rear faces having a substantially flat surface, the periphery of each of said front and rear faces forming a polygon, a plurality of integral substantially flat wall portions connectively engaging said front and rear faces, the number of said wall portions being equal to the number of sides in said polygon, at least two wall portions extending beyond the surface of said front face, oblique surface panels connecting said two wall portions with the surface of said front face, all other wall portions being attached to said front face at a common line of juncture, and said plurality of wall portions being similarly attached to said rear face.

2. A container according to claim 1 which includes a material outlet extending from one of the sidewalls.

3. A container according to claim 1 wherein the periphery of each of the front and rear faces form a polygon having an even number of sides and an even number of flat wall portions, every other wall portions being attached to said front face at a common line of juncture, the alternate wall portions extending beyond the surface of said front face and connected with the surface of said front face by said oblique surface panels.

4. A container according to claim 3 wherein the alternate wall portions extend laterally and are of a substantially trapezoidal peripheral outline.

5. A container according to claim 4 wherein a panel extends downwardly from the outer edge of the trapezoidal outline and connects with the surface of the front face, end portions extend downwardly from the nonparallel ends of the trapezoidal outline connectively engaging the surface of the front face and said panel.

6. A container adapted for nesting and stacking with other similarly shaped containers, said container comprising a front face and a rear face, each of said front and rear faces having a substantially flat surface, the periphery of each of said front and rear faces forming an octagon, integral flat wall portions connectively engaging said front and rear faces, said flat wall portions including a top wall having a material outlet extending therefrom, a bottom wall, and two series of integral sidewalls, said top wall, bottom wall and the intermediate walls of each series being attached to the front face at common lines of juncture, lateral extension areas projecting outwardly from the remaining sidewalls; each of the lateral extensions having a substantially trapezoidal peripheral outline, a panel extending downwardly and inwardly from the outer parallel edge of the trapezoid and connectively engaging the front face, end portions extending downwardly from the nonparallel ends of the trapezoid and connectively engaging the surface of the front face and said panel, and said flat wall portions being similarly attached to the rear face.