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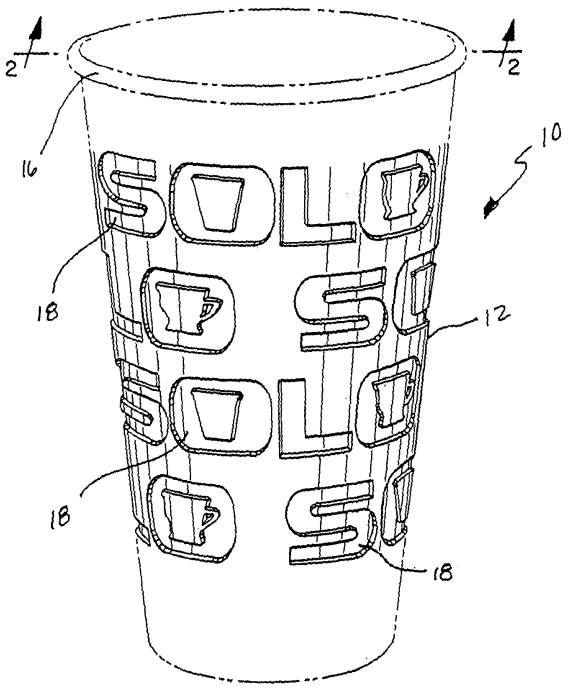
(54) Single wall paper container with integrally embossed/debossed side wall with improved grip-ability

(57) A single-wall paper container for holding beverages is provided. The container (10) comprises a side wall (12) that is comprised of a single layer of paperboard. The container also comprises a bottom wall (14) affixed to the side wall such that a liquid receptacle is thereby formed. The bottom wall and side wall both have exterior and interior surfaces. The container also includes a plurality of non-insulating impressed patterns (18). The impressed patterns are integrally formed into the side wall and are observable on the interior and exterior surfaces of the side wall. The impressed patterns are of sufficient depth to provide a non-uniform gripping surface on the side wall of the container.

FIG. 1



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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

TECHNICAL FIELD

[0003] The invention relates to a single-wall paper container, and more particularly to a single-wall paper cup with an integrally formed embossed or debossed side wall with improved grip-ability.

BACKGROUND OF THE INVENTION

[0004] The use of single-wall containers for use with hot and cold beverages and the like has become increasingly prevalent in connection with both commercial and consumer use. One reason for the increased demand for paper-based containers is that they allow more detailed marketing and advertising print than plastic or polystyrene bead foam cups. Additionally, paper-based containers are readily biodegradable, making them more environmentally friendly than, for example, polystyrene bead foam containers.

[0005] In view of this increased demand and use, the beverage and container industries continue to search for ways to improve paper containers while maintaining a cost effective product. Areas which can be improved include safety, cost, design, and manufacturing methods. Although these areas are often interrelated, these are also often at odds with one another. For example, costs of materials and manufacturing often dictate the other properties of a container.

[0006] Nonetheless, one area that has an increasing need for improvement is the ergonomics associated with paper containers, particularly paper cups. This is particularly true in view of the increased popularity of "to go" beverages. Masses of people everywhere are walking, running, driving, commuting, and working with one or both hands wrapped around a cup of soda, water, coffee, tea, and other beverage. One ergonomic problem associated with traditional single-wall paper containers is the lack of grip-ability. Unlike the exterior texture of polystyrene bead foam containers, the side walls of single wall paper containers typically have a smooth texture. Accordingly, there is an increased tendency for paper cups to slip while in a user's grasp. Such slippage can ultimately result in a user dropping the container or spilling its contents. Accordingly, it is necessary therefore that these cups provide adequate gripping ability to prevent slippage and spillage.

[0007] One approach to solving this problem is to include raised surfaces on a second layer of paperboard applied to the side wall of the container, whether in the form of an exterior wrap or a double-wall paper stock. Such a technique is exemplified in U.S. Patent No. 5,820,016 to Stopkay, in which insulative bodies are configured on the exterior surface of a outer wrap or on the exterior surface of the side wall. While this design may meet some degree of success in providing insulation for hot beverage containers, the technique of applying an outer wrap can be extremely costly and wasteful when used in connection with beverages for which insulation is not required. Instead of constructing the side wall of the container from a single sheet of paperboard, a second sheet of paperboard or a double-wall paperboard is required. This, of course, substantially defeats one of the purposes of the paper-based cup, i.e., reducing unnecessary environmental waste. Moreover, the use of a second layer of paperboard or a double-wall paperboard increases the overall material and manufacturing costs associated with the product.

[0008] Accordingly, there exists a need to provide a single-wall paper container with improved grip-ability without increasing the overall material costs associated with manufacturing the product. The present invention is provided to solve the problems discussed above and other problems, and to provide advantages and aspects not provided by prior paper containers of this type. A full discussion of the features and advantages of the present invention is deferred to the following detailed description, which proceeds with reference to the accompanying drawings.

SUMMARY OF THE INVENTION

[0009] The present invention provides a single-wall paper container for holding hot or cold beverages. The container has a side wall that is comprised of a single layer of paperboard. The container also has a bottom wall affixed to the side wall such that a liquid receptacle is thereby formed. The bottom wall and side wall both have exterior and interior surfaces. The container also includes a plurality of non-insulating impressed patterns. The impressed patterns are integrally formed (either embossed, debossed, or a combination of both) into the side wall and are observable on the interior and exterior surfaces of the side wall. Furthermore, the impressed patterns are of sufficient depth to provide a non-uniform gripping surface on the side wall of the container.

[0010] According to another aspect of the present invention, each of the plurality of impressed patterns has an insulating value that is substantially the same as adjacent non-embossed portions of the side wall.

[0011] According to yet another aspect of the present invention, the impressed patterns define a plurality of debossed surfaces having a textured substrate adhered thereto.

[0012] Other features and advantages of the invention will be apparent from the following specification taken in

conjunction with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] To understand the present invention, it will now be described by way of example, with reference to the accompanying drawings in which:

[0014] FIG. 1 is a perspective view of a paper container according to the present invention;

[0015] FIG. 2 is a cross-sectional view of the paper container shown in FIG. 1 as taken through the line 2-2;

[0016] FIG. 3 is a perspective view of another embodiment of a paper container according to the present invention;

[0017] FIG. 4 is a cross-sectional view of the paper container shown in FIG. 3 as taken through the line 4-4;

[0018] FIG. 5 is a bottom view of the paper container in FIG. 3;

[0019] FIG. 6 is a perspective view of another embodiment of a paper container according to the present invention;

[0020] FIG. 7 is a cross-sectional view of the paper container shown in FIG. 6 as taken through the line 6-6;

[0021] FIG. 8 is a perspective view of another embodiment of a paper container according to the present invention;

[0022] FIG. 9 is a cross-sectional view of the paper container shown in FIG. 8 as taken through the line 9-9; and,

[0023] FIG. 10 is a perspective view of another embodiment of a paper container according to the present invention.

DETAILED DESCRIPTION

[0024] While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail preferred embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated. For example, the present invention is described and shown only as a paperboard cup for containing hot or cold liquid beverages such as soda, water, juice, coffee, tea, etc. However, it should be understood that the present invention may take the form of many different types of paperboard containers used for holding hot or cold liquids.

[0025] Referring now in detail to the FIGS. 1-10, there is shown generally a liquid-tight container 10 comprising a hollow body having a side wall 12, a bottom wall 14, and an outwardly turned rim 16. The side wall 12 and the bottom wall 14 combine to create a liquid receptacle. As shown in FIGS. 1-10, the container 10 is preferably a cup having a generally frustoconical configuration. However, the beverage container 10 can take any geometric form without departing from the present invention.

[0026] According to the present invention, the side wall 12 of the container 10 is comprised of a single layer of paperboard. Both the bottom wall 14 and side wall 12 have an exterior surface and an interior surface. According to one embodiment of the present invention, the single layer of paperboard forming the side wall 12 of the container 10 is made from 175 lb./ream paperboard. While it is contemplated that the paperboard may be of any weight suitable for the given use of the container 10, it is preferable the paperboard have a basis weight of between 50 and 400 lbs./ream. According to one embodiment of the present invention, the container 10 is preferably made from Mead Westvaco cupstock. However, it is contemplated that the container 10 be made from any grade of paperboard suitable for the application in which the container 10 is used. It is also contemplated that the paperboard cupstock be comprised of recycled or virgin grade paperboard stock

[0027] According to one embodiment of the present invention, the paperboard is single-sided polyethylene coated paper-stock. The polyethylene coating generally provides a barrier to minimize leakage of liquid held within the container 10 through the side wall 12. In another embodiment of the invention, typically in cold beverage container applications, a double-sided polyethylene paper stock is employed. In this embodiment the polyethylene coating also assists in retarding formation of condensation on the side wall 12 of the container 10. It is also contemplated by the present invention that the bottom wall 14 of the container 10 may also be coated with a polyethylene on one or both sides to prevent leakage and/or formation of condensation. Of course, coatings other than polyethylene that are suitable for consumer beverage containers may also be used on the side wall 12 and/or bottom wall 14 without departing from the scope of the present invention. For example, the coating may be polypropylene, polyester terephthalate, a blend of these polymers or any type of polymer that can be extruded onto paperboard of a printing press or paper-machine applied coating, such as a water-based acrylic emulsion. It is also contemplated that the container of the present invention use an uncoated paperboard or other suitable paper-stock. For example, an pre-impregnated paper-stock that does not require surface coating may be used without departing from the present invention.

[0028] As may be seen in FIGS. 1-10, the container 10 also includes a plurality of non-insulating impressed patterns 18 observable on the interior and exterior surfaces of the side wall 12. According to the present invention, the impressed patterns 18 are integrally formed into the side wall 12 of the container, and are of sufficient depth to provide a non-uniform gripping surface on the side wall 12 of the container 10. It is contemplated that the impressed patterns 18 may be a plurality of debossed surfaces outwardly raised from the side wall 12 of the container 10. Alternatively, the impressed patterns 18 may be a plurality of embossed surfaces inwardly pro-

jecting from the side wall 12 of the container 10. In either instance, the impressed patterns 18 create a texture that alters the topographical surface of the side wall 12 of the container 10. It is preferable that the embossed or debossed patterns be impressed to a depth of between two thousandths of an inch to fifty thousandths of an inch (.002 to .050 inches). However, the depth of the emboss or deboss may be of any depth suitable to create a textured surface that improves grip ability of the present container 10 over traditional smooth-side wall paper containers.

[0029] As may be seen in FIGS. 1-10, different patterns of embossing or debossing may be utilized. For example, FIGS. 1 and 10 illustrate an example of an embossed pattern 18 comprised of a plurality of alphanumeric identifying indicia. In FIG. 1, the identifying indicia 18 are arranged in a vertically repeating pattern. As may be seen in FIG. 10, the embossed indicia 18 can also be arranged as a single level of texture that provides the non-uniform surface. Alternatively, as seen in FIGS. 8 and 9, the impressed patterns 18 may be a plurality of debossed indicia 18 outwardly raised on the side wall 12 of the container 10. It is also contemplated that the impressed patterns 18 be comprised of patterns other than identifying indicia. For example, the embossed or debossed pattern 18 may be of the designs illustrated in FIGS. 3-6, or any other pattern suitable for providing improved grip-ability as compared with smooth-side wall paper containers. For example, the patterns may be logos for various sports teams, universities, venues, companies, etc.

[0030] In one embodiment of the present invention in which the impressed surface is defined by a plurality of debossed surfaces, at least the debossed regions of the side wall 12 are coated with a textured substrate. Preferably, the substrate is a thermoplastic elastomer (TPE). However, the substrate may be any substrate having a coefficient of friction greater than the uncoated surface of the side wall 12 paperboard.

[0031] While the specific embodiments have been illustrated and described, numerous modifications come to mind without significantly departing from the spirit of the invention, and the scope of protection is only limited by the scope of the accompanying Claims.

Claims

1. A single-wall paper container for holding beverages, the paper container comprising:

a side wall having exterior and interior surfaces, the side wall comprising a single layer of paperboard;

a bottom wall having exterior and interior surfaces, the bottom wall being affixed to the side wall to form a liquid receptacle; and,

a plurality of non-insulating impressed patterns, the patterns being integrally formed into the side wall and observable on the interior and exterior surfaces of the side wall; and,

wherein the impressed patterns are of sufficient depth to provide a non-uniform gripping surface on the side wall of the container.

2. The paper container of claim 1, wherein the impressed patterns define a plurality of debossed surfaces outwardly raised from the side wall of the container.

3. The paper container of claim 2, wherein the debossed surfaces include a textured substrate adhered, the textured substrate having a coefficient of friction greater than the coefficient of friction of the paperboard.

4. The paper container of claim 3, wherein the textured substrate adhered to the debossed surfaces is a thermoplastic elastomer.

5. The paper container of claim I, wherein the impressed patterns define a plurality of embossed surfaces inwardly projecting into the side wall of the container.

6. The paper container of claim 1, wherein the interior surface of the side wall is coated with polyethylene.

7. The paper container of claim 1, wherein the interior surface of bottom wall is coated with polyethylene.

8. The paper container of claim 1 , wherein the paperboard has a basis weight of between 50 and 400 pounds per ream.

9. The paper container of claim 1, wherein the depth of the impressed patterns are between .002 inches and .050 inches.

10. The paper container of claim I, wherein the paperboard is comprised of recycled paperboard stock.

11. The paper container of claim 1, wherein the impressed pattern comprises a plurality of repeated indicia.

12. The paper container of claim 1, wherein the impressed patterns define a plurality of embossed and debossed surfaces, wherein the embossed surfaces inwardly project into the side wall of the container and the debossed surfaces are outwardly raised from the side wall of the container.

13. The paper container of claim 1, wherein at least one of the exterior and interior surfaces of the side wall are coated with a polyethylene coating.

14. A single-wall paper container for holding beverages, the paper container comprising:

a side wall having exterior and interior surfaces, the side wall comprising a single layer of paperboard;
a bottom wall having exterior and interior surfaces, the bottom wall being affixed to the side wall to form a liquid receptacle; and,
a plurality of non-insulating impressed patterns, the patterns being integrally formed into the side wall and observable on the interior and exterior surfaces of the side wall; and,
wherein the impressed patterns are of sufficient depth to provide a non-uniform gripping surface on the side wall of the container, each of the plurality of impressed patterns having an insulating value that is substantially the same as adjacent non-embossed portions of the side wall.

15. The paper container of claim 14, wherein the impressed patterns define a plurality of debossed surfaces outwardly raised from the side wall of the container.

16. The paper container of claim 15, wherein the debossed surfaces include a textured substrate adhered thereto, the textured substrate having a coefficient of friction greater than the coefficient of friction of the paperboard.

17. The paper container of claim 16, wherein the textured substrate adhered to the debossed surfaces is a thermoplastic elastomer.

18. The paper container of claim 14, wherein the impressed patterns define a plurality of embossed surfaces inwardly projecting into the side wall of the container.

19. The paper container of claim 14, wherein the impressed patterns define a plurality of embossed and debossed surfaces, wherein the embossed surfaces inwardly project into the side wall of the container and the debossed surfaces are outwardly raised from the side wall of the container.

20. The paper container of claim 14, wherein at least one of the exterior and interior surfaces of the side wall are coated with a polyethylene coating.

21. The paper container of claim 14, wherein at least one of the exterior and interior surfaces of the bottom wall are coated with a polyethylene coating.

22. The paper container of claim 14, wherein the paperboard has a basis weight of between 50 and 400 pounds per ream.

23. The paper container of claim 14, wherein the depth of the impressed patterns are between .002 inches and .050 inches.

24. The paper container of claim 14, wherein the paperboard is of one of either comprised recycled and virgin grade paperboard stock.

25. The paper container of claim 14, wherein the impressed pattern comprises a plurality of repeated indicia.

FIG. 2

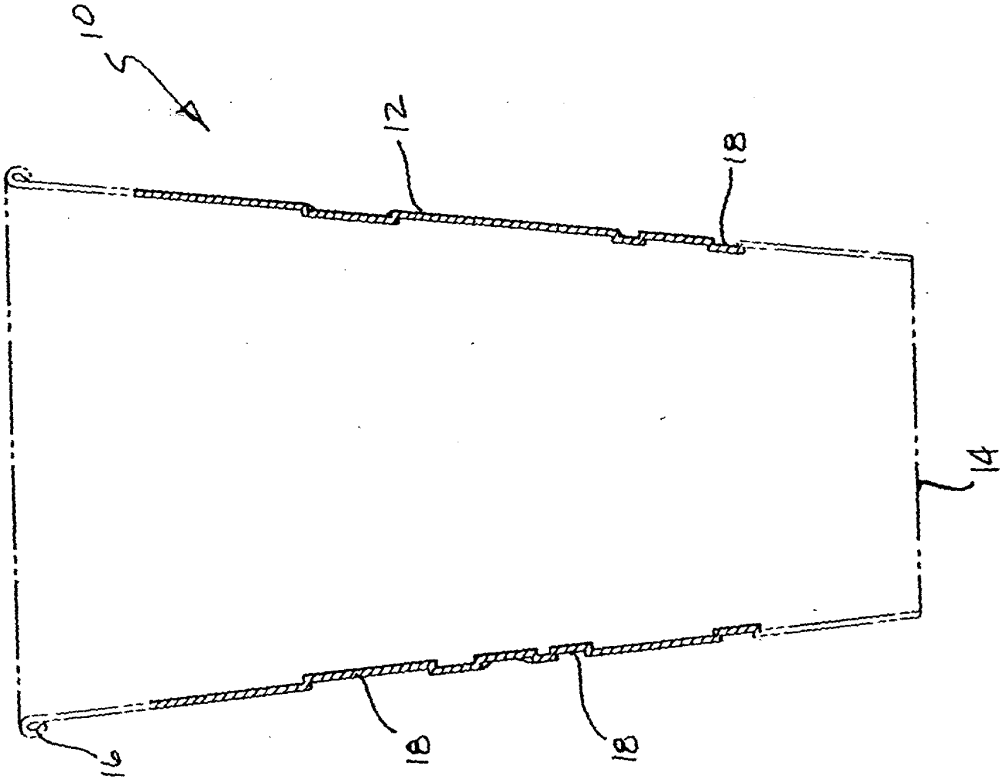
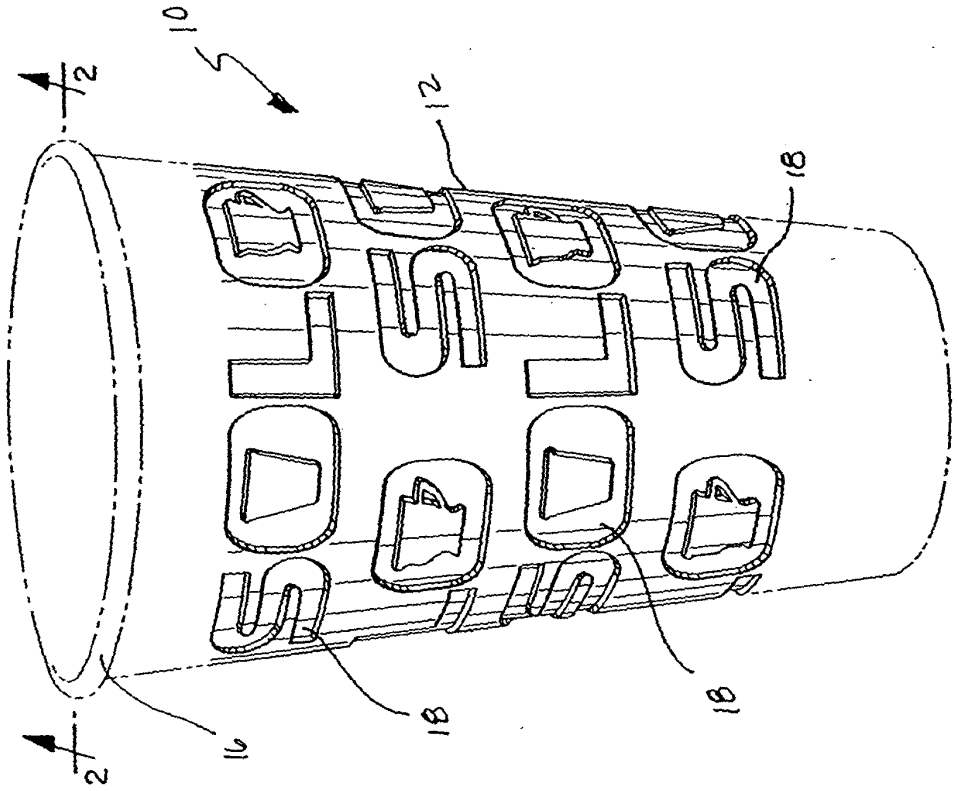


FIG. 1



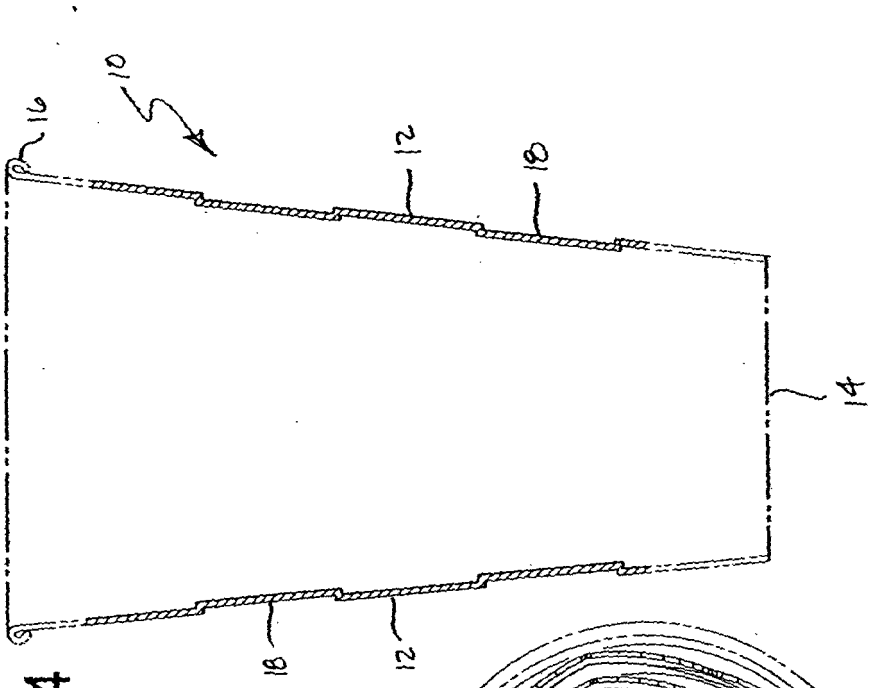


FIG. 4

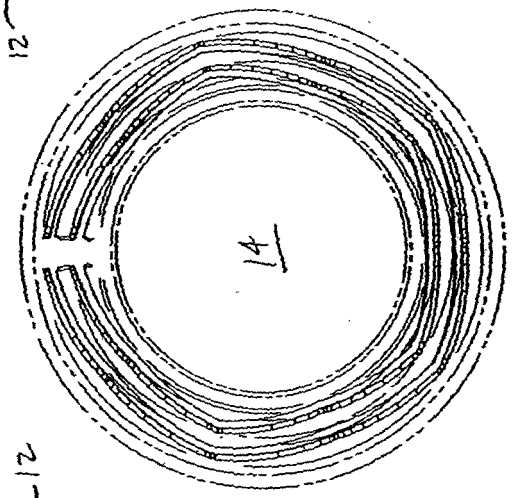


FIG. 5

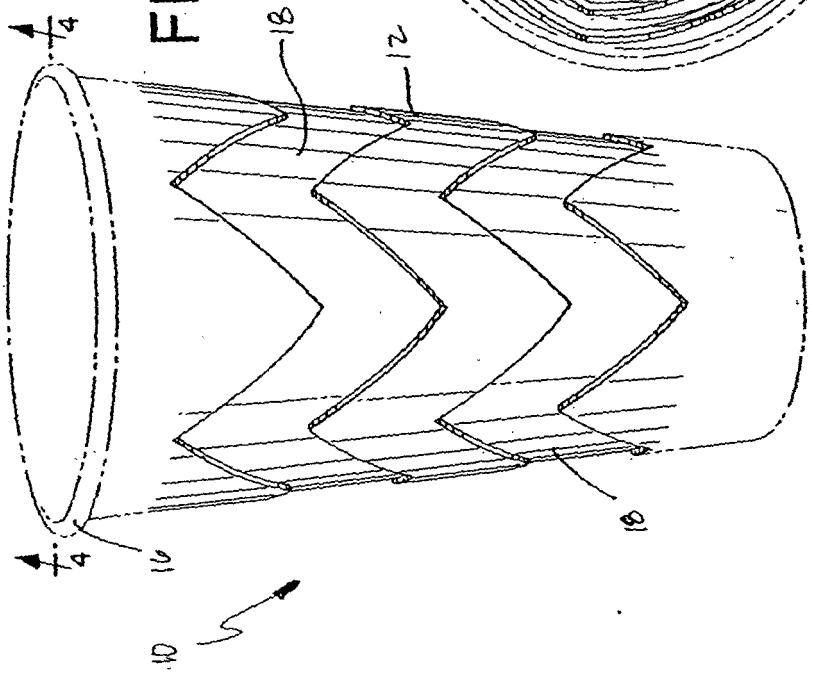


FIG. 3

FIG. 7

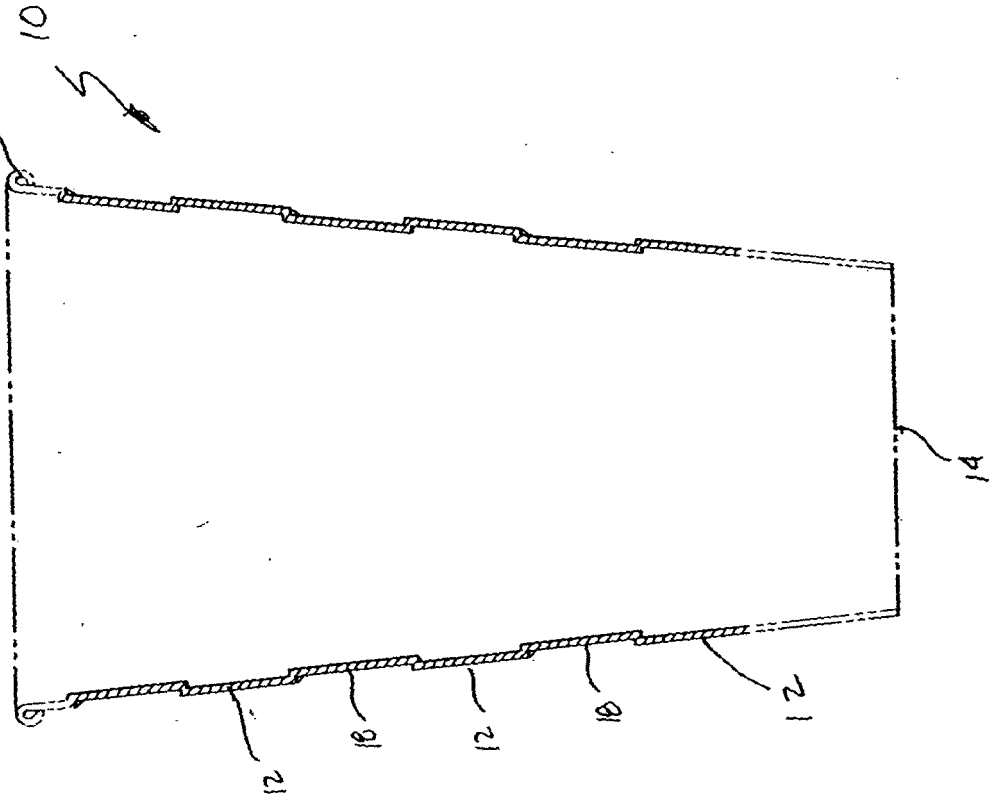


FIG. 6

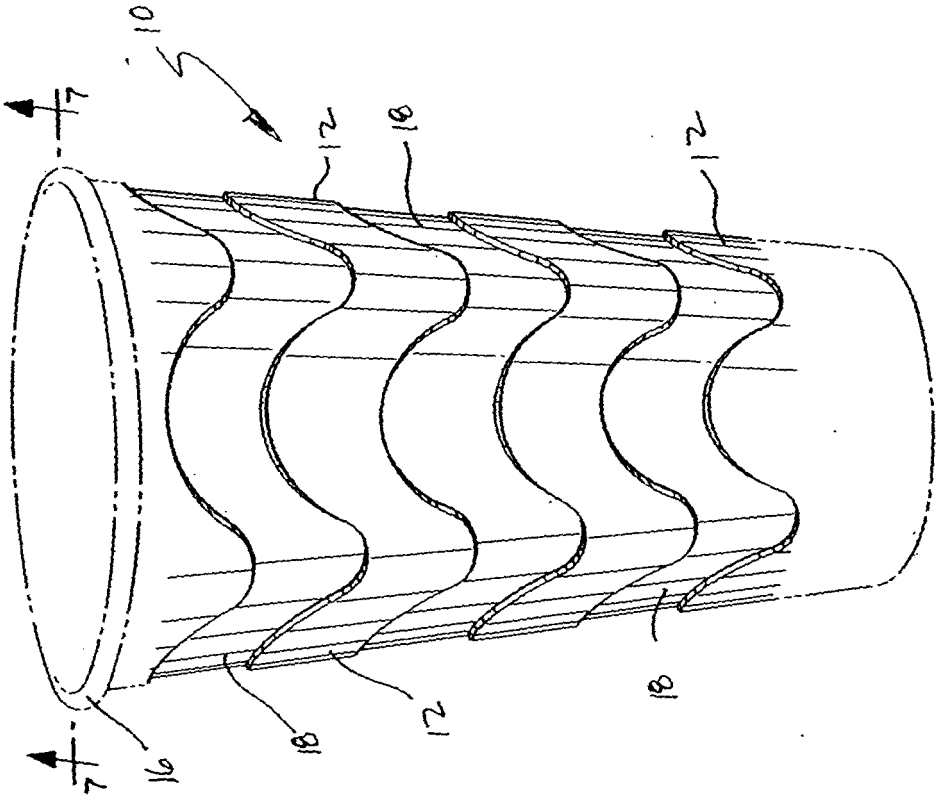


FIG. 9

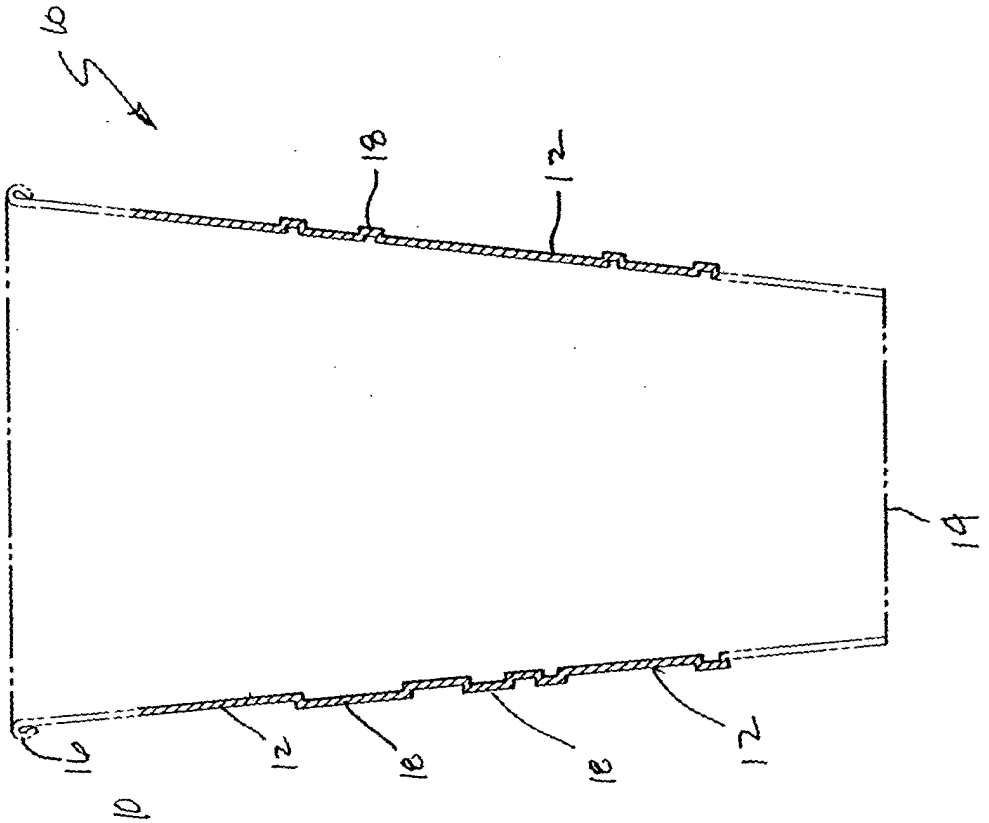


FIG. 8

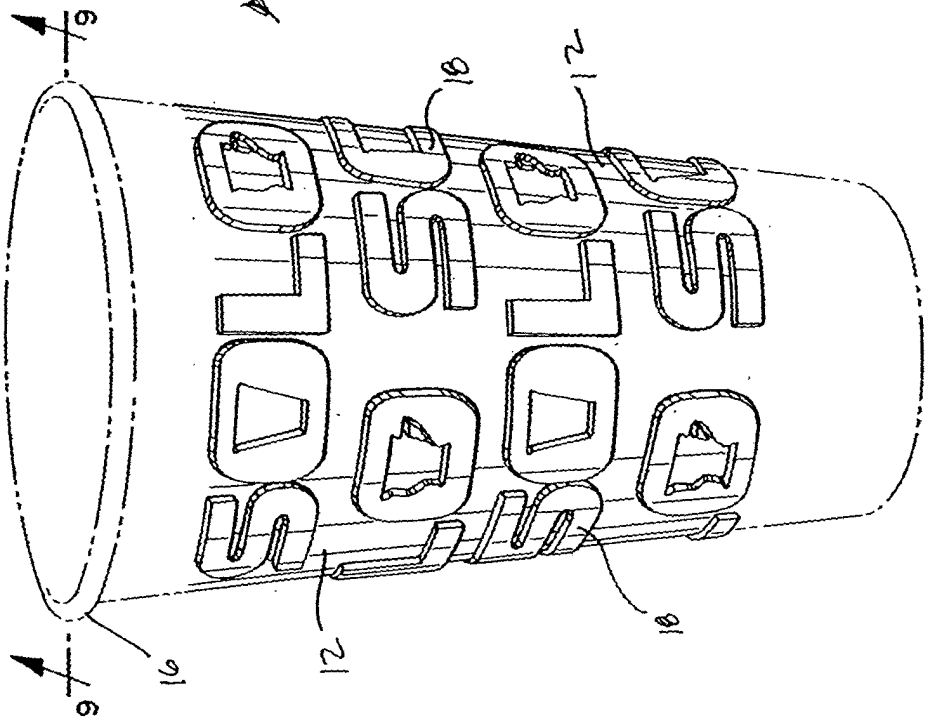
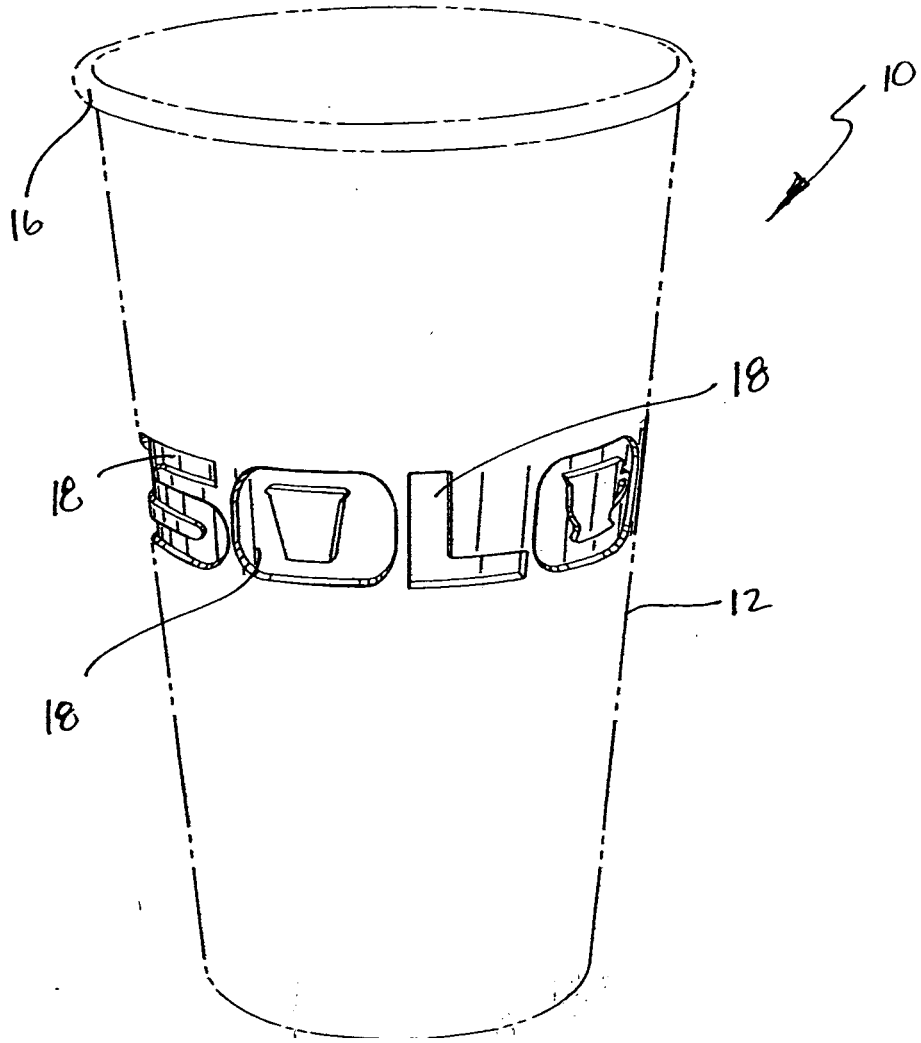


FIG. 10



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EUROPEAN SEARCH REPORT

Application Number
EP 05 25 3813

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 02/49834 A (KORSNAES AB ; JOHANSSON, TORD; LARSSON, NILS, AAKE) 27 June 2002 (2002-06-27) * page 1, line 30 - page 2, line 13 * * page 2, line 27 - page 3, line 15; claims 1,2,5; figures 1,2 *	1,2,5-7, 13-15, 18,20,21	B65D3/06 B65D3/28 B65D25/28
X	US 1 952 435 A (HOGAN GEORGE FRANCIS) 27 March 1934 (1934-03-27) * page 1, line 60 - page 2, line 21; claims 1,2; figures 6,7 *	1,2,11, 14,15	
A	US 3 223 305 A (EDWARDS BRYANT) 14 December 1965 (1965-12-14) * column 2, line 39 - column 3, line 54; claims 1,2; figures 1-9 *	1-25	

TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 October 2005	Janosch, J

CATEGORY OF CITED DOCUMENTS

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