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(54) Title: COMPACT-PACKAGING DISPOSABLE GLASSES

(57) Abstract: Disposable glasses (301) which are of decreasing sizes and the lateral walls (302) and the rims (303) thereof both so conformed that putting the glasses in a stack the one inside the other, the lateral walls and the rims mate by overlapping, with reciprocal abutment of the bottoms (305) of the glasses, to the object of the maximum packaging compactness of the glasses.

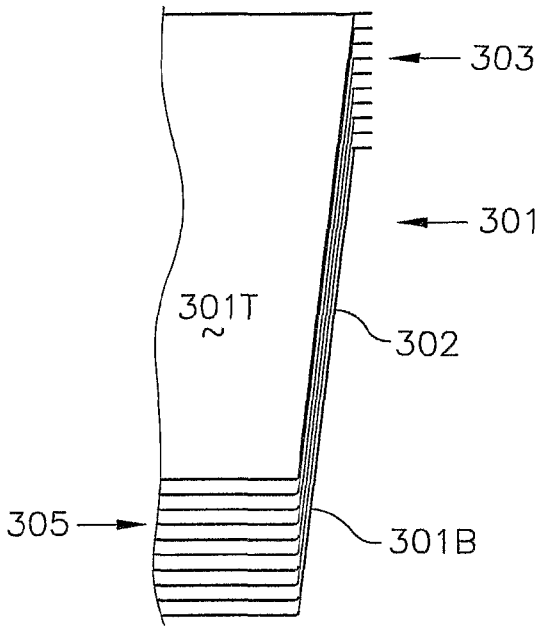


FIG. 7

WO 2010/092601 A1

COMPACT-PACKAGING DISPOSABLE GLASSES

TECHNICAL FIELD

The present invention relates to disposable glasses.

PRIOR ART

Disposable glasses are a known and very widespread article for the advantages of practicality and hygiene they offer. They are made in sheet material, and are packaged by stacking them the one into the other.

Disposable glasses are presently manufactured identically equal, i.e. equal in shape and size, in each package. This. However, impedes a priori the exact coupling of a glass into the other up to the reciprocal abutment of the bottoms thereof, as the lateral walls of the glasses will jam up with each other beforehand, so that the number turns out to be reduced of glasses that can be packaged in a stack for a given height of the stack itself.

Presently known disposable glasses have their upper rim, to be brought to the mouth, endowed with an annular bulging. This annular bulging under an aspect facilitates sorting individual glasses from the packaging stack by acting upon the external rim of the glasses, without having to put the fingers in the glasses; but, under another aspect, has the drawback of determining an

inherent widening of the packaging space of the glasses in the stack, equal to the height of the annular bulging itself.

Moreover, the annular bulging determines a zone which easily breaks under compression of the rim in a diametrical direction, as can be inadvertently applied keeping the glass in a hand.

In consideration of the aforesaid disadvantageous aspects, the present invention purs itself the object of providing disposable glasses that can be packaged in a stack with the maximum degree of compactness, so as to reduce the encumbrance of the package substantially, the number of glasses being the same, or to increase the number sensibly of glasses packaged, the height of the stack being the same, bringing it to the physically possible minimum, given by the thickness of the sheet material of the glasses itself.

It is a further object of the present invention to provide disposable glasses that do not have their rim that can be easily broken under a diametrical compression like prior art ones.

DISCLOSURE OF THE INVENTION

The present invention achieves the aforesaid objects by providing that the glasses have decreasing sizes with the lateral walls and the rims thereof both so conformed

that once the glasses arranged in a stack the one into the other, the lateral walls and the rims are mated by overlapping, with reciprocal abutment of said bottoms.

Particularly, the inventive glasses do not present the annular bulging of the rim of prior art glasses. The elimination of the annular bulging may be obtained by resorting to ex-novo molds or by modifying the present molds for their manufacturing.

The rims of disposable glasses according to the present invention have profiles that can be perfectly mated by overlapping, wherein by 'perfectly' it is to be meant that they overlap the one onto the other with no force fitting. This means that it is possible to introduce a glass into the other up to make the bottoms of the glasses themselves to abut with each other, without the rims interfering with their thickness impeding such abutment, as takes place with the rims having an annular bulging, which go into abutment the one on the other without overlapping of their profiles.

So the compactness of a stack of glasses is brought to the maximum degree reachable, i.e. up to the physical limit, only determined by the thickness of the sheet material constituting the glasses.

Within the inventive concept the rims fall which are flush with the lateral wall. Moreover, the rims may have

a planar, simple or pressed-flap projecting lip. The lip may be for instance conical too. Generally, rims having any profile, that turn out to be overlapped without any force fitting onto equal profiles, fall within the inventive concept.

To the object of aiding in sorting the glasses out of a stack, the present invention envisages that the rims of the inventive glasses are equipped with respective grip tongues projecting radially. In a stack of glasses, these ones may be so arranged that the tongues turn out to be staggered relative to each other angularly in a helicoidal arrangement along the axial direction of the stack.

Therefore, it is the subject of the present invention a kit of disposable glasses, having respective rims to be brought to the mouth and respective bottoms, and that can be packaged the one into the other in a stack, characterized in that the glasses are of decreasing sizes, said lateral walls and the rims thereof both being so conformed that putting the glasses in a stack the one inside the other, said lateral walls and said rims mate by overlapping, with reciprocal abutment of said bottoms, to the object of the maximum packaging compactness of the glasses.

According to an embodiment, said lateral walls of the

glasses are smooth.

According to another embodiment, said lateral walls respectively bear a helical rib bucklings for the reciprocal engagement of a glass within the other for the screwing thereof up to the abutment of the respective bottoms.

According to an embodiment, said rims are flush with said lateral walls.

According to another embodiment, said rims are endowed with a planar lip.

Particularly, said planar lip may be a pressed-flap lip.

According to another embodiment, said rims are endowed with respective conical lips having a taper that decreases from glass to glass.

It is also the subject of the present invention a kit of disposable glasses according to Claim 1, wherein said rims are endowed with respective conical radially projecting tongues.

The inventive glasses bring a great advantage relative to prior art ones as regards logistics. Indeed, the sector of concern works with a very little added value, and the profit margin is minimum on these products. The space saving advantage in the packaging of inventive disposable glasses corresponds to having to

effect a lesser number of full-load trips in distributing the product, allowing a greater profit. The sales too may be increased as a consequence of the advantage of space economy for the purchaser. Indeed the glasses turn out to be more practical both at home and on the journey, in refreshment rooms and in automatic beverage dispensers.

A further advantage of inventive glasses is that they determine a sensible increase of the diametrical flexibility of the glasses compared with prior art ones, which break easily if compressed in diametrical direction.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be exhaustively understood based on the following detailed disclosure of embodiments thereof exclusively given as a matter of example, absolutely not of restriction, referring to the annexed drawings, wherein:

- FIGURE 1 represents a stack of two prior-art disposable glasses in a lateral view;
- FIGURE 2 represents a stack of two disposable glasses according to an embodiment of the present invention in a lateral view;
- FIGURE 3 represents a stack of a plurality of glasses according to another embodiment of the present invention, in a top view, i.e. from the part

of the rim of the glasses;

- FIGURE 4 represents an enlargement of the rim of prior-art glasses;
- FIGURE 5 represents an enlargement of the planar rim of the inventive glasses of FIGURE 2;
- FIGURE 6 represents a planar rim of an inventive glass in a pressed-flap embodiment;
- FIGURE 7 illustrates a view in a partial section of a stack of glasses, and
- FIGURE 8 represents an embodiment with the lateral wall of the glasses which bears a helix buckling for the reciprocal engaging of a glass into the other by screwing.

BEST MODES FOR CARRYING OUT THE INVENTION

Referring to FIGURE 1 and to FIGURE 4, prior art disposable glasses 1, 11 are illustrated. Glass 11 is stacked within glass 1. The glasses are identically equal, i.e. equal in shape and size. This a priori impedes the exact coupling of glass 11 within glass 1, where by 'exact' it is to be meant with the abutment of bottom 15 up bottom 5, as the lateral wall of glass 11 will be blocked in the lateral wall of glass 1 beforehand.

Moreover glasses 1, 11 are respectively endowed with rims having an annular bulging 3, 13, as better seen in

FIGURE 4. This too would impede the abutment of bottom 15 on bottom 5, as bottom 15 would be anyhow blocked at a distance from bottom 5 at least equal to thickness L of annular bulging 13.

As illustrated in FIGURE 7 according to the inventive concept disposable glasses 301 in a stack have lateral walls 302 and rims 303 thereof both so conformed that stacking glasses the one into the other, the lateral walls and the rims mate by overlapping, with reciprocal abutment of bottoms 305 , with the aim of the maximum compactness of the packaging of glasses.

That is, the glasses are of sizes which are not equal, but that decrease from the maximum size of glass 301B at the bottom of the stack up to the minimum size of glass 301T at the top of the stack. The capacity of the glasses for instance may vary from 206 cc of the glass at the bottom of the stack, or the most external one, to 194 cc of the glass at the top of the stack, i.e. the most internal one.

The inventive glasses may have the lateral wall smooth, i.e. without projections or recesses of any type, particularly without ribs.

Moreover, an embodiment is illustrated in FIGURE 8 wherein the lateral wall of the glasses 202, 212 bears a helical rib buckling 207, 217 for the reciprocal engaging

of a glass within the other by screwing up to the abutment of respective bottoms 205, 215.

The embodiment of FIGURE 2 illustrates glasses having lateral walls 102, 112 respectively endowed with planar lips 103, 113, as better seen in FIGURE 5, such as not to determine a thickness along the axis of the stack that determines a hindrance to the abutment of the bottoms of the glasses. The inventive glasses 101, 111 arranged in a stack with glass 111 in glass 101 are such as there is not hindrance in respective bottoms 105, 115 abutting with each other. So, bottoms 105, 115 are mating with each other, as represented in FIGURE 2, whereby the object of the present invention is reached.

An embodiment is illustrated in FIGURE 6 wherein the planar lip is a pressed-flap lip 203, i.e. it is planar with a double thickness instead of a simple thickness.

A conical projecting lip too is such, like planar lips 103, 113, as not to interfere with the abutment of the bottoms and therefore falls within the inventive concept.

A lip which is flush with the lateral wall of the glasses falls too within the inventive concept.

Referring to FIGURE 3, a stack is illustrated from above of inventive disposable glasses 201_1 … 201_N. It is envisaged within the inventive concept that the rim of

the glasses is provided with a respective tongue 207_1 … 207_N that projects in a radial direction to facilitate sorting the glasses from the stack. In packaging the stack, the glasses may be so arranged that the tongues arrange themselves angularly staggered along a helix along the axial direction of the stack, so as to facilitate the grip thereof, as can be seen in FIGURE 3A.

The present invention has been disclosed and illustrated referring to specific embodiments thereof, but variations, additions or omissions can be made without so departing from the scope of protection of the enclosed claims.

CLAIMS:

1. Kit of disposable glasses, having respective rims to be brought to the mouth and respective bottoms, and that can be packaged the one into the other in a stack, characterized in that the glasses are of decreasing sizes, said lateral walls and the rims thereof both being so conformed that putting the glasses in a stack the one inside the other, said lateral walls and said rims mate together by overlapping, with reciprocal abutment of said bottoms, to the object of the maximum packaging compactness of the glasses.

2. Kit of disposable glasses according to Claim 1, wherein said lateral walls of the glasses are smooth.

3. Kit of disposable glasses according to Claim 1, wherein said lateral walls respectively bear a helical rib bucklings for the reciprocal engagement of a glass within the other for the screwing thereof up to the abutment of the respective bottoms.

4. Kit of disposable glasses according to Claim 1, wherein said rims are flush with said lateral

walls.

5. Kit of disposable glasses according to Claim 1, wherein said rims are endowed with a planar lip.

6. Kit of disposable glasses according to Claim 5, wherein said planar rim is a pressed-flap rim.

7. Kit of disposable glasses according to Claim 1, wherein said rims are endowed with respective conical lips having a taper that decreases from glass to glass.

8. Kit of disposable glasses according to Claim 1, wherein said rims are endowed with respective conical radially projecting tongues (207_1 … 207_N).

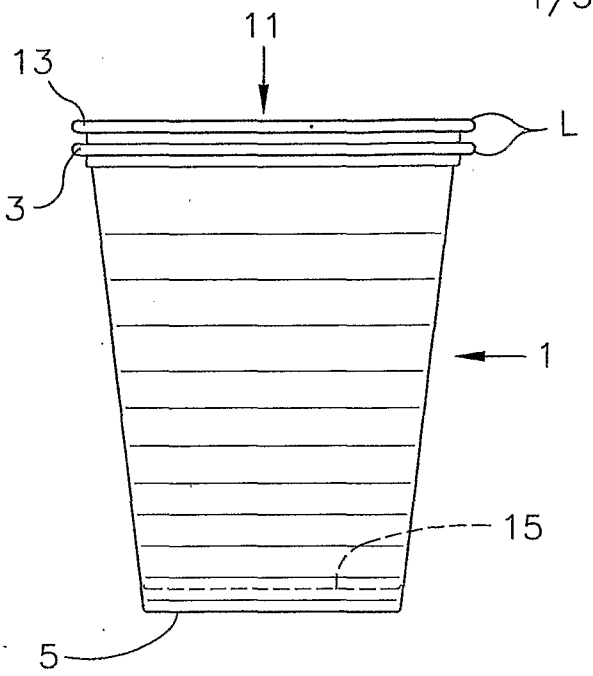


FIG. 1

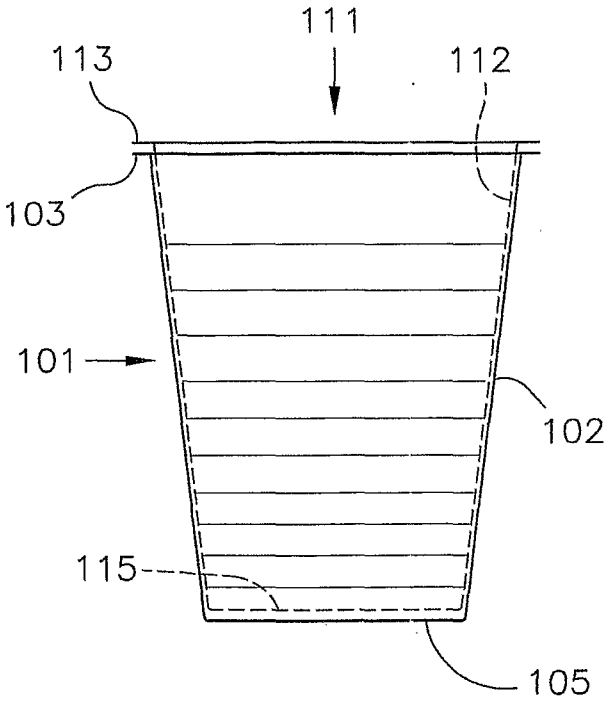


FIG. 2

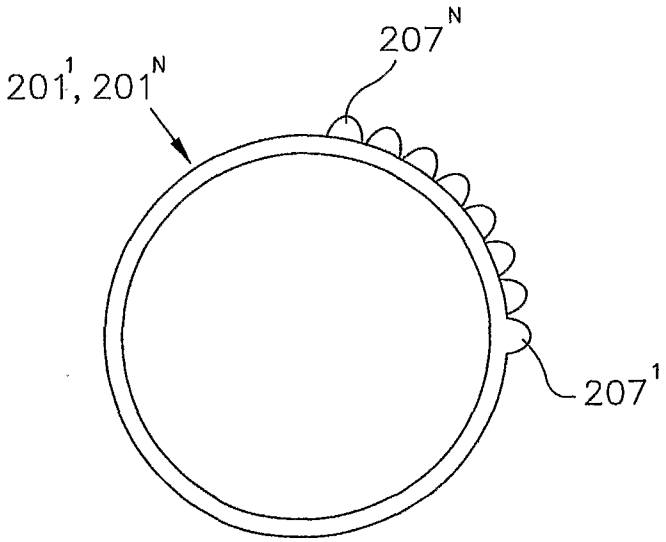


FIG. 3

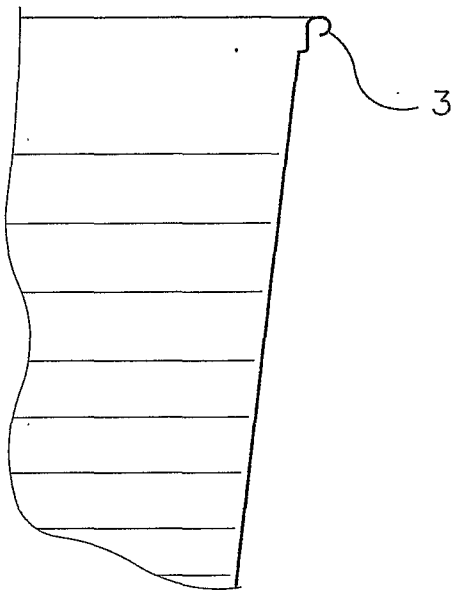


FIG. 4

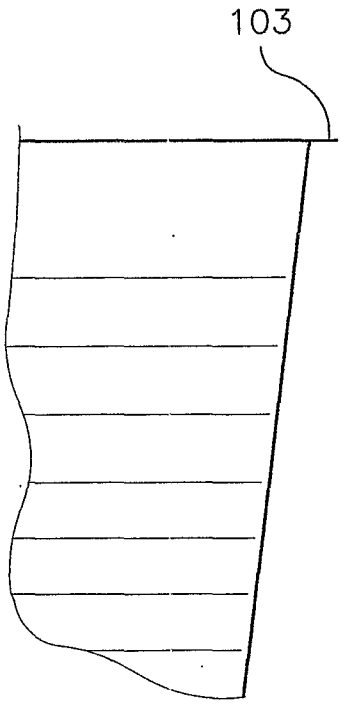


FIG. 5

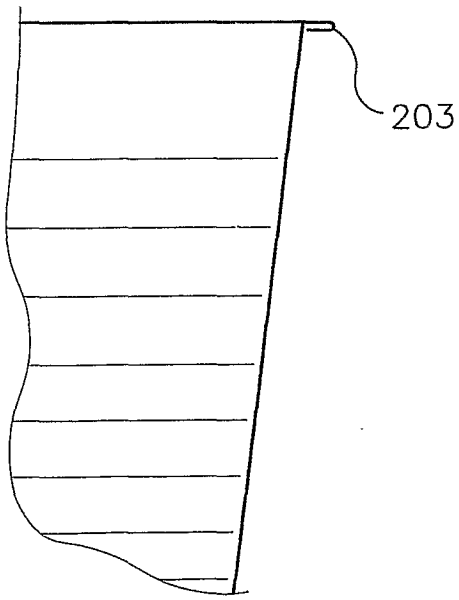


FIG. 6

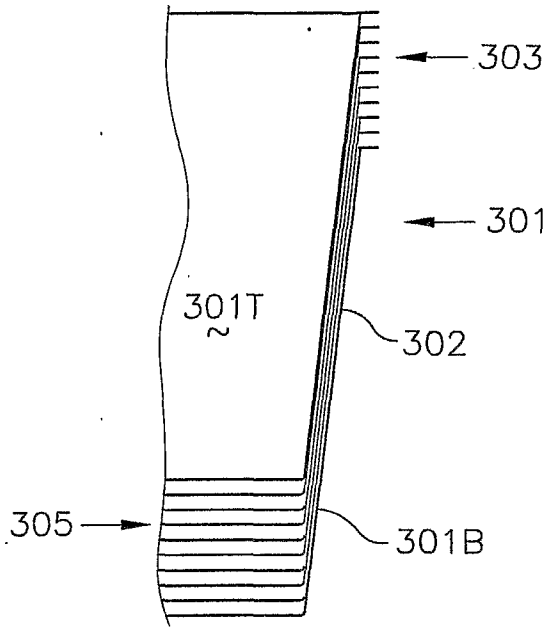


FIG. 7

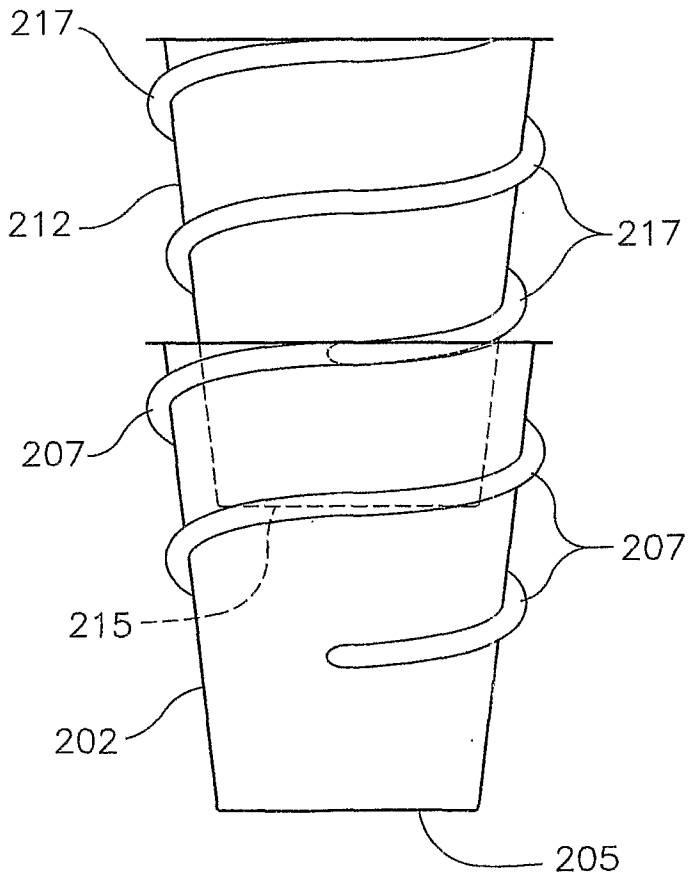


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No
PCT/IT2009/000051

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D1/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D A45F A47G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 610 358 A (WALTER THOMAS H [US]) 9 September 1986 (1986-09-09) column 1, line 27 - line 34 column 5, line 52 - column 6, line 9 column 8, line 58 - line 65; figures 1,5	1
A	US 109 739 A (G.M. HUNTLY) 29 November 1870 (1870-11-29) page 1, paragraph 3; figures 1,3	1
A	US 3 495 736 A (RAGETTLI CHRISTIAN) 17 February 1970 (1970-02-17) the whole document	3
A	US 2004/222120 A1 (SOMMER MICHAEL MATTHEW [US]) 11 November 2004 (2004-11-11) figures 1,4	8

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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Date of the actual completion of the international search	Date of mailing of the international search report
29 October 2009	05/11/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Fax: (+31–70) 340–3016	Mans-Kamerbeek, M

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IT2009/000051

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