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(71) Applicant: **HENKEL AG & CO. KGAA** [DE/DE];
Henkelstr. 67, 40589 Düsseldorf (DE).

(72) Inventors: **RUIZ HERNANDEZ, Robert**; Karl-An-
ton-Str. 14, 40211 Düsseldorf (DE). **BREISINGER, Ju-
lia**; Rheinstahlstr. 7, 40597 Düsseldorf (DE). **STRATH-
MANN, Stefan**; Erlenweg 12, 40699 Erkrath (DE).

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(54) Title: CONTAINER FOR UNIT DOSE DETERGENT PACKAGES

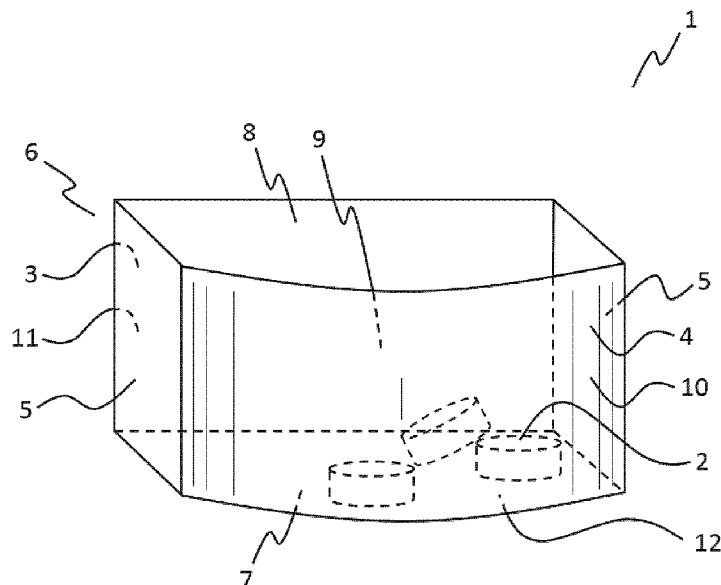


Fig. 1

(57) Abstract: The present invention concerns a container (1), for unit dose detergent packages (2), comprising a back panel (3), a front panel (4), and two side panels (5), each of the side panels (5), connecting the back panel (3) to the front panel (4); wherein the back panel (3), the front panel (4), and the two side panels (5) form a tube (6) with an inner storage volume, wherein the tube (6) is closed by a bottom panel (12) on one end (7) and comprises an opening on the opposite end (8) for allowing access to the container's interior (9); and wherein the front panel (4) is outwardly convex, and wherein the back panel (3) is, and optionally also the side panels (5) are, each less outwardly convex than the front panel (4).



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„Container for unit dose detergent packages“

The present invention concerns a container for storing unit dose detergent packages.

Detergent compositions are known in different formats, liquid, powder or granulate, or unit (or unitary) dose packages such as tablets or caps. The unit dose detergent packages are convenient for the consumer, since they can be easily added to the house-hold cleaning apparatus without concern about dosage quantity because they already have sufficient dosage for one cleaning round.

The unit dose detergent packages are sold in outer packages such as doypacks or containers containing a multiple of unit dose packages. Such outer packages have a sufficiently sized opening so that the consumer can take the unit dose packages out of the outer package, one at a time, and then reclose the outer package.

An example of a container for unit dose packages is described in WO2011/094685 A2. While the container described in that document tries to satisfy the requirements of sufficiently dimensioned opening and certain volume, it has the problem that the surface available for the label is relatively small while it is also positioned inwards of the front surface, therefore impairing the visibility and transmission of information to a consumer.

This problem is solved by a container according to claim 1. The dependent claims relate to further developments of the invention.

The invention is a container for unit dose detergent packages. The container comprises a back panel, a front panel, and two side panels. Each of the side panels connects the back panel to the front panel. Preferably, the side panels have essentially the same dimension. The side panels are not necessarily parallel to each other. The back panel, the front panel, and the two side panels form a tube with an inner storage volume, wherein the tube is closed by a bottom panel on one end and comprises an opening on the opposite end for allowing access to the container's interior, thus allowing unit dose detergent packages, to be taken out of the container. The front panel is outwardly convex. The back panel is, and optionally also the side panels are, each less outwardly convex than the front panel.

The back panel is preferably arranged with a right angle to each of the side panels. Right angle means $90^\circ \pm 3^\circ$. In addition, the edges between any two neighboring panels can be rounded, thus giving a more comfortable hold of the container when held by a person's hand.

The back panel is preferably essentially flat. Alternatively or in addition, the side panels are preferably essentially flat. When the panels are flat, especially the side panels, the container has an improved stability within a tray of containers.

The area of the front surface of the front panel is at least 10% greater, preferably at least 20% greater, than the area of the back surface. The front surface of the front panel is the surface facing outwards the tube. The back surface is also the surface of the back panel facing outwards the tube. With facing outwards, it is meant facing away from the interior. The increased front surface of the front panel has the advantage of providing enough surface area for a label with increased surface. Further, it was found that the outwardly convexity of the front panel increases the perception of a viewer of graphic elements on the label's surface. Thus, a container according to the invention can be easier identified by a consumer.

It was found advantageous, that a flat back label, enabled by a flat back panel, is better for printing larger amount of text, such as more detailed information about the product. The flatness increases readability of such larger amount of text. Larger amount of text means at least 3 times more, preferably 10 times more, characters than in the front label.

The container according to the invention preferably has an inner storage volume that is between 260ml and 5000ml, more preferably between 650ml and 3500ml. Thus, the storage volume can contain at least 4 dosing units.

Preferably, the container according to the invention is elongated between the side panels, preferably the ratio (d/L) between the longest diagonal (d) at the bottom panel and the length (L) of the back panel is between 1.01 and 1.11. The elongation, and especially the d/L ratio, gives a high ratio of area of the front label surface per storage volume.

Preferably, the shortest distance from a point on the back panel to the front panel is at some point at least 1.1 times and not more than 1.6 times the shortest distance, adjacent to the side panel, between the back and front panel, further preferably at least 1.2 and not more than 1.5. The front panel is bulging out, thus increasing the angular visibility of a label on its surface.

In a preferred embodiment of the invention, the arrangement of the back panel, the front panel, the two side panels, and the bottom panel has a reflection symmetry, about the plane that is equidistant from the side panels. This enables a consumer to observe an equal area of the label surface independently from which side the consumer approaches the container from the side, when the container is e.g. on a shelf.

The elongated format of the container has the additional advantages of providing larger surfaces for the back label, while having a more ergonomic shape, since it can be better gripped with a hand.

The unit dose packages are to be used preferably in house-hold cleaning apparatuses. Preferably, the unit doses packages are to be used in dishwasher and laundry machine, further preferably in laundry machine.

Outwardly means from the container's interior to the outside. A person looking to the front panel from the outside will be looking at the convex surface of the front panel, or at the label if the front panel comprises a label.

The bottom panel has a respective shape to connect to the front panel. The perimeter segment defined the transition between the bottom panel to the front panel is longer than the perimeter segment defined by the transition from the bottom panel to the back panel.

wherein the front panel is curved outwardly of the tube for increasing the label surface, such that it's outer surface is at least 5% larger than the surface of the panel if it were planar.

The label preferably comprises an identification marker.

An identification marker according to the invention comprises machine-readable information. Machine-readable information has a code created specifically to be read by machines (thus natural languages are excluded). In one preferred further development of the invention, the machine-readable information is coded in form of a bar code, such as a one-dimensional bar code, or a two dimensional bar code, e.g. a QR-code. Alternatively or in addition, in another further development of the invention, the machine-readable information is coded such that it is electronically readable, such as from an electronic remotely sensed multi-bit communication tag, for example an RFID tag or an NFC tag. The information stored in the identification marker has a binary-equivalent content size of at least 8 bits, although the information itself does not have to be stored and or transmitted in a binary format. The identification marker can further comprise human readable language, for example "scan here".

In one mode of the invention, the identification marker is integral to the label, preferably as mark printed on the label surface. This has the advantage of faster production, since the identification marker can be printed with the label-printing step that also prints other indicia.

In another mode of the invention, the identification marker was added to the label, e.g. a sticker. This is especially advantageous when the sticker comprises an electronic tag, because the tag comes from a different manufacturing process and is then easily added to the label.

An embodiment of the invention is shown in Figure 1, which is a schematic drawing of the container. Fig. 1 shows a container 1, for unit dose detergent packages 2, comprising a back panel 3, a front panel 4, and two side panels 5. The side panels 5, are connecting the back panel 3 to the front panel 4. The back panel 3, the front panel 4, and the two side panels 5 form a tube 6 with an inner storage volume. Tube 6 is closed by a bottom panel 12 on one end 7 and comprises an opening on the opposite end 8 for allowing access to the container's interior 9. The front panel 4 is outwardly convex.

The side panels 5, the back panel 3 and the bottom panel 12 are essentially flat. The container 1 is shown storing unit dose detergent packages 2 in its interior 9.

Index of reference numbers

- 1 container
- 2 unit dose detergent packages
- 3 back panel
- 4 front panel
- 5 two side panels
- 6 tube
- 7 closed end
- 8 open end
- 9 container's interior
- 10 front surface (surface of the front-panel - surface available at the outside of the front panel)
- 11 back surface
- 12 bottom panel

Claims

1. A container (1), for unit dose detergent packages (2), comprising a back panel (3), a front panel (4), and two side panels (5), each of the side panels (5), connecting the back panel (3) to the front panel (4); wherein the back panel (3), the front panel (4), and the two side panels (5) form a tube (6) with an inner storage volume, wherein the tube (6) is closed by a bottom panel (12) on one end (7) and comprises an opening on the opposite end (8) for allowing access to the container's interior (9); and wherein the front panel (4) is outwardly convex, and wherein the back panel (3) is, and optionally also the side panels (5) are, each less outwardly convex than the front panel (4).
2. A container (1) according to claim 1, wherein the back panel (3) is, and optionally also the side panels (5) are, essentially flat.
3. A container (1) according to claims 1 or 2, wherein the area of the front surface (10) of the front panel (4) is at least 10% greater, preferably at least 20% greater, than the area of the back surface (11) of the back panel (3).
4. A container (1) according to any of the previous claims, wherein the inner storage volume is between 260ml and 5000ml, more preferably between 650ml and 3500ml.
5. A container (1) according to any of the previous claims, wherein the container (1) is elongated between the side panels(5), preferably the ratio (d/L) between the longest diagonal (d) at the bottom panel (12) and the length (L) of the back panel (3) is between 1.01 and 1.11.
6. A container (1) according to any of the previous claims, wherein the shortest distance from a point on the back panel (3) to the front panel (4) is at some point at least 1.1 times and not more than 1.6 times the shortest distance at the side panel (5).
7. A container (1) according to any of the previous claims, wherein the arrangement of the back panel (3), the front panel (4), the two side panels (5), and the bottom panel has a reflection symmetry, about the plane that is equidistant from the side panels (5).
8. A container (1) according to any of the previous claims, wherein the front panel is windowless, preferably wherein the back panel (3), the front panel (4), and the two side panels (5) are each opaque.
9. A container (1) according to any of the previous claims, wherein the front panel (4) comprises a primary label with a primary label surface, wherein the primary label surface is visible when the label is attached to the container and wherein the primary label surface comprises indicia, the indicia comprising information.

Figures

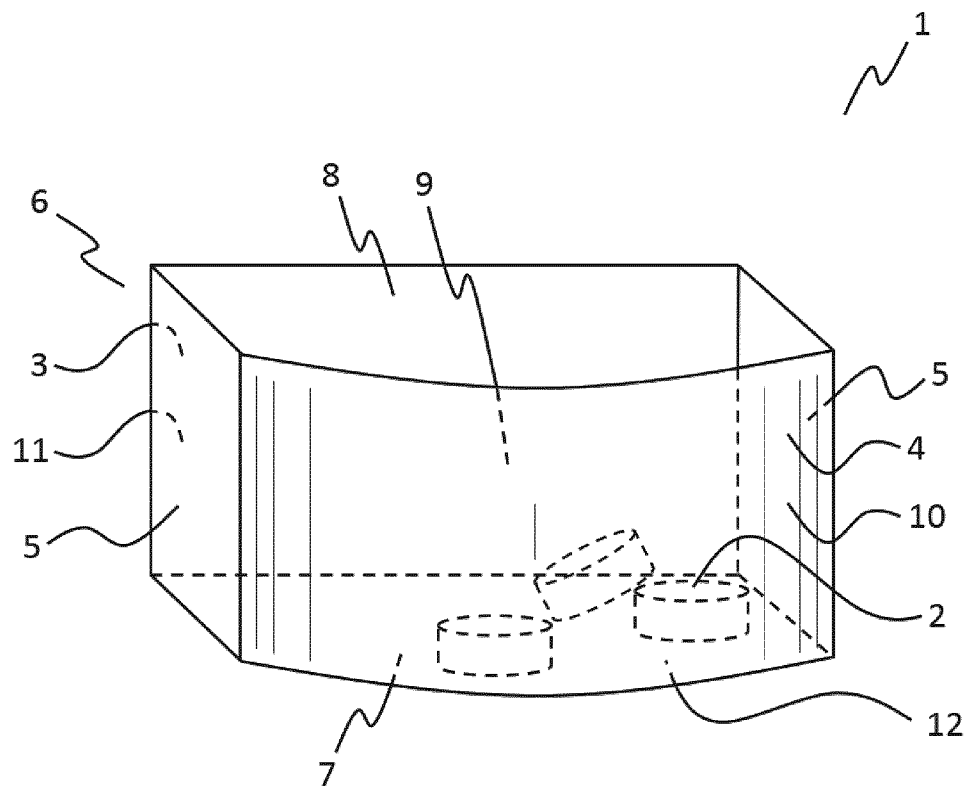


Fig. 1

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/075409

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/02 B65D1/14
ADD.

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 A47B

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 practicable, 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.
X	DE 20 2004 005727 U1 (CHEN FENG YAO [TW]) 21 October 2004 (2004-10-21) figures 1, 2, 4	1-4,6-9
X	----- US 6 039 205 A (FLINK CHRISTOPHER M [US]) 21 March 2000 (2000-03-21) figure 1	1,4-9
X	----- DE 20 2012 001927 U1 (DUERRWANG HELMUT [DE]; STRAUB ALFRED [DE]) 3 May 2012 (2012-05-03) paragraph [0001]; figures 1, 2	1,2,4-9



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Bridault, Alain

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202004005727 U1	21-10-2004	NONE	
US 6039205 A	21-03-2000	NONE	
DE 202012001927 U1	03-05-2012	NONE	