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(54) **Stabilised packaging container**

(57) The present invention provides a packaging container suitable for the transport, storage and retail display of individually packaged products, the packaging container comprising a base (10) having an upper surface (11) comprising anti-slip means (20), the anti-slip means comprising a non-slippery substance that does not adhere to the individually packaged products. The

invention improves the point of sale presence of the individually packaged products by maintaining them in an upright position when some of the products are removed by consumers for purchase. Also provided are packaging units comprising the packaging container and a plurality of individually packaged products and a method of manufacturing the packaging container and packaging unit herein.

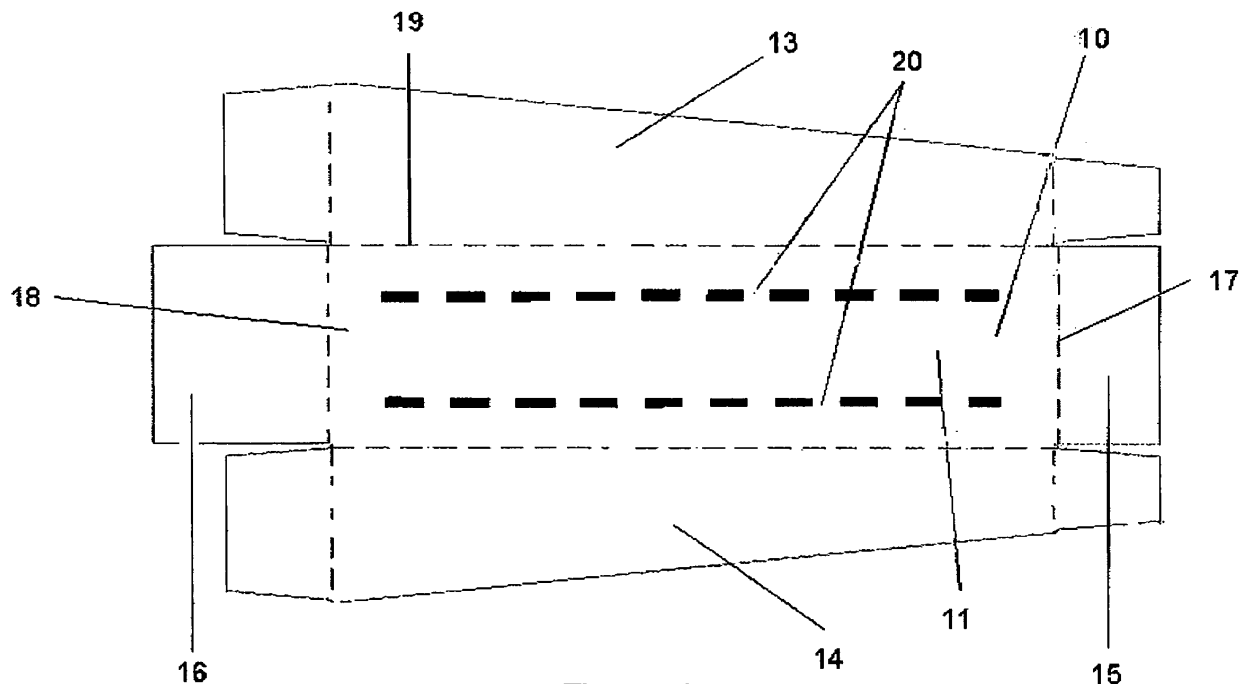


Figure 1

Description

FIELD OF THE INVENTION

[0001] The pre sent invention provides an improved packaging container that stabilizes individual packaging products stored therein during transport, display and purchase by the consumer. The packaging container has an anti-slip surface on the base comprising a non-slippery substance which does not physically adhere to the individually packaged products.

BACKGROUND OF THE INVENTION

[0002] The present invention relates generally to a packaging container for shipping and storage, as well as support and upright display of a plurality of individually packaged products. Packaging containers, including paperboard cartons or boxes, have been used for many years to transport and store individually packaged products including, for example, packaged food products such as confectionary, cereals, snack foods, personal care products, household and laundry products, baby care products and the like. Several individually packaged products are generally packed within a single packaging container which may be provided with a removable lid or an integral folded top which is sealed. The individually packaged products are generally transported within the closed or sealed box from a manufacturing site to a place of retail sale. In order to display the individually packaged products for retail sale, the removable lid is removed, and then the entire packaging container can be placed on a shelf and used as a display unit without requiring the individually packaged products to be removed and placed on a shelf individually. This display is quick and easy for the retailer to set up and also allows the manufacturer to present greater advertising space to the public both on the packaging container and on the individually packaged products.

[0003] For tall individually packaged products with bases of small cross-sectional area, it is desirable for the largest face of the product to be on display to the consumer. However, such products are unstable when placed upright, particularly those packaged in flexible packaging. When the packaging container is full, the products are held upright by the enclosing sides of the packaging container and by their interaction with one another. However, once the first item has been removed from the front of the tray, there is a gap between the next item and the front of the tray and therefore nothing to hold the next item upright. There is a great tendency for the products to fall over, or in the case of products in flexible packaging, for the base to slide over the base of the packaging container so that the item lies flat, face up, looking both untidy and becoming obscured from the view of the consumer.

[0004] Packaging containers of the prior art have generally used paperboard or cardboard structures within

the design of the packaging unit itself to overcome this problem. Generally this involves complex design of the packaging container itself and increased manufacturing cost see e.g. GB2240321 A, GB2199563 A, GB2390083 A and GB2071056 A. Therefore, there is a need for packaging containers for the transport and display of individually packaged products having improved stability features that maintain the individually packaged products in an upright configuration.

SUMMARY OF THE INVENTION

[0005] The present invention provides a packaging container for transporting and/or displaying a plurality of individually packaged products containable therein, the packaging container comprising a base having an upper surface comprising anti-slip means, characterised in that the anti-slip means comprises a non-slippery substance which does not physically adhere to the individually packaged products. The present invention further provides a packaging unit comprising a packaging container according to the present invention and a plurality of individually packaged products. Also provided is a method of manufacturing the packaging container of the present invention comprising the steps of:

- a) providing a base for said packaging container that is adapted for erection or transformation into said packaging container, the base having an upper surface;
- b) applying a non-slippery substance to the upper surface of the base which is adapted to not physically adhere to the individually packaged products intended to be packaged thereon; and
- c) erecting or transforming the base into a packaging container.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

Figure 1 is a schematic representation of a carton blank according to the present invention before erection.

Figure 2 is a representation of the carton blank of figure 1 after erection.

DETAILED DESCRIPTION OF THE INVENTION

[0007] In a first embodiment, the present invention provides a packaging container for transporting and/or displaying a plurality of individually packaged products containable therein, the packaging container comprising a base having an upper surface comprising anti-slip means, characterised in that the anti-slip means comprises a non-slippery substance which does not physically adhere to the individually packaged products.

[0008] The packaging container of the present inven-

tion comprises a base. Preferably, the base has, extending upwards therefrom in a generally perpendicular direction, side panels to help store the individually packaged products therein. These panels may define an interior void into which the individually packaged products are placed. The base has an upper surface and a lower surface, the lower surface being the surface which faces the outside of the packaging container and is in contact with the surface of a shelf when the packaging container is placed in the display position. The upper surface of the base faces internally to the packaging container and forms the base surface onto which the individually packaged products are placed for storage, transport and display. The base is preferably in the form of a planar shape, with square or rectangular preferred, more preferably rectangular. Where the base is a square or rectangular shape, the base may generally have two side panels extending upwardly therefrom. When the packaging container is intended to be used for both transport and display it may further have front and rear panels extending upwardly therefrom so as to define the interior void of the packaging container. The front panel is defined as the side of the packaging container intended to be the forward most part of the packaging container that is displayed towards the consumer. The front panel and rear panel respectively define the front panel end and rear panel end of the base.

[0009] The packaging container of the present invention may be used for both the transport and display on shelf of the individually packaged products therein. Preferably the packaging container is adapted to be used as an on-shelf display following transport, whereby the amount of manual manipulation to display the individually packaged products at the point of retail sale is reduced. Preferably, therefore, the packaging container of the present invention further comprises a lid. The lid may be separately manufactured and placed over the packaging container in a separate assembly step after packaging of the individually packaged products. Alternatively, the lid may be manufactured in conjunction with the rest of the packaging container, and may be provided with perforations or other means of detachment. The lid is preferably easily removed following transport to enable display of the individually packaged goods at the point of sale without their removal from the packaging container itself; i.e. the packaging container with lid removed is placed directly onto the shelf with the individually packaged goods therein.

[0010] The upper surface of the base of the packaging container comprises anti-slip means comprising a non-slippery substance which does not physically adhere to the individually packaged products. The non-slippery substance increases the frictional force between the individually packaged products and the upper surface of the base. Non-slippery substances that physically adhere to the individually packaged products may cause damage to the individually packaged products as they are removed from the packaging container. The non-slip-

pery substance may be any substance that can be coated, applied, attached or otherwise bonded or impregnated onto or into the upper surface of the base. Suitable non-limiting examples include adhesives, rubber materials, latex materials, lacquers, varnishes, or mixtures thereof. Preferably the non-slippery substance comprises an adhesive, more preferably the non-slippery substance is an adhesive. The use of non-slippery substances such as an adhesive is relatively inexpensive compared with more complex constructional methods of stabilization. Furthermore, the use of an adhesive improves the manufacture of the packaging container as it is relatively simple to apply to the base of the packaging container either before or after it is assembled. In particular, the use of an adhesive is particularly suited to automated manufacturing and high speed processes.

[0011] The non-slippery substance may be coated or applied onto the entire area of the upper surface of the base. In a further embodiment a sheet of non-slippery substance such as rubber may be attached via conventional bonding methods to the upper surface of the base. Alternatively, the non-slippery substance may be applied onto the upper surface of the base as a single line or as a plurality of lines or rows, each of which may be linear or curvilinear, preferably linear. The single row or plurality of rows may be separated by an area of base upper surface. The rows themselves may be continuous or alternatively in the form of intermittent sections along a linear path with bare areas in between, such as in the form of dots or dashes (see figure 1). The rows may run along the length of the base from the front panel end to the rear panel end, roughly parallel in direction to the side panels, or alternatively run transversely across the width of the base from side panel to side panel, roughly parallel to the front and rear panel ends. Preferably, the rows run along the length of the base from the front panel end to the rear panel end. Preferably the base comprises at least two separated rows of non-slippery substance, preferably an adhesive. Where at least two separated rows of non-slippery substance are used, the rows are preferably linear and parallel to one another. In a preferred embodiment, the anti-slip means comprises an adhesive that is applied onto the upper surface of the base in two rows running the length of the base from the front panel end to the rear panel end, the rows separated by an area of bare base and having an area of bare base on the side panel side of each row, the rows being generally linear and parallel to one another.

[0012] In a preferred embodiment the non-slippery substance comprises an adhesive. As used herein, the term "adhesive" refers to any adherent composition or product known to the person skilled in the art as an adhesive. However, the adhesive is only applied onto and adhered to the upper surface of the base and not the individually packaged products. The adhesive may be any adhesive that provides the necessary frictional force between the adhesive and the individually packaged products to stabilize said products within the packaging

container. The adhesive is preferably cured before the individually packaged products are placed into the packaging container, thereby preventing physical adherence between the adhesive and the individually packaged products. Adhesives that physically adhere to the individually packaged products may cause damage to the individually packaged products as they are removed from the packaging container. The appropriate adhesive will vary according to the type of product and its packaging that forms the individually packaged products. The adhesive should be strong enough to remain adhered to the upper surface of the base when the individually packaged products are placed therein, but provide mechanical grip on the products placed thereon, thereby providing an anti-slip surface.

[0013] Preferably the adhesive is a hot-melt adhesive. Hot-melt adhesives are preferred as they are generally more suited to automated manufacture and can be quickly applied and have greater stability on storage and transport at room temperature. The hot-melt adhesives for use herein are preferably designed to adhere to the upper surface of the base when applied hot but to have limited adhesion to further surfaces once cooled. These adhesives are referred to as "low-tack" adhesives.

[0014] Preferred hot-melt adhesives for use in the present invention include adhesives having a softening point as measured using a ring and ball apparatus according to ASTM E28-99 of from about 70°C to about 150°C, preferably from about 80°C to about 125°C, more preferably from about 90°C to about 120°C. Hot-melt adhesives exclude low-temperature resins as well as high-melting resins. Preferably the hot-melt adhesive has a viscosity of from about 500 to about 15000 mPa.s, more preferably from about 1000 to about 10000 mPa.s, more preferably still from about 1000 to about 5000 mPa.s. As used herein, viscosity is measured at 175°C using a Brookfield viscometer, Spindle 27 according to ASTM D 3236-88.

[0015] Suitable hot-melt adhesives are based upon thermoplastic rubber, amorphous polyolefins, polyacrylates, polymethacrylates, acrylic acid copolymers, thermoplastic elastomers or mixtures thereof. Preferably the hot-melt adhesive is based upon thermoplastic elastomers. More preferred are thermoplastic elastomers comprising olefinic-based elastomers (TPO), styrene-based elastomers (TPS), urethane-based elastomers (TPU), cross-linked ethylene propylene diene synthetic rubbers (TPV), acrylonitrile butadiene PVC synthetic rubber (TPZ), nylon-based elastomers (TPA) or mixtures thereof, preferably styrene-based elastomers. Even more preferred adhesives comprise styrene-based elastomers further comprising hydrocarbons and resin. A non-limiting example of a suitable hot-melt adhesives for use herein includes LUNATAK® P 4080 C, available from H. B. Fuller.

[0016] The packaging container of the present invention may be made from many materials commonly known in the art of transport and display packaging containers.

Suitable examples include paperboard, cardboard, wood, metals, fibreboard, corrugated paperboard, plastic trays, thermoformed plastic trays, mixtures thereof and the like. Preferably, the packaging container is manufactured from corrugated board, which is a layered construction of paper-based liners and paper-based fluting material that gives the board mechanical strength. The packaging container may be manufactured from a carton blank comprising a base as per figure 1 which is then folded and the side panels are held in place using conventional attachment means such as an adhesive or staples or the like.

[0017] In a further embodiment of the present invention there is provided a packaging unit comprising a packaging container comprising a base having an upper surface comprising anti-slip means comprising a non-slippery substance, the packaging unit further comprising a plurality of individually packaged products.

[0018] Individually packaged products suitable for use herein include confectionary products, personal care products, household and laundry products, baby care products or mixtures thereof, preferably confectionary products or personal care products. Preferred confectionary products herein include hard boiled candies, chewing gums, gummies, or mixtures thereof, preferably hard boiled candies. Preferred personal care products include soap bars, shampoos or conditioners.

[0019] The individually packaged products suitable to be transported and displayed in the packaging container of the present invention may be any product. The products may be packaged as individual units in rigid or flexible packaging, preferably flexible packaging. Suitable types of flexible packaging include any flexible packaging material comprising either a monolayer of flexible material or a multi-layered laminate comprising at least two layers of flexible material selected from the list comprising polyethylene or polypropylene, aluminium, polyethylene terephthalate, nylon, polystyrene, polyvinylchloride, paper, or mixtures thereof. Preferred flexible packages comprise a multi-layered laminate comprising at least two layers of flexible material bonded together. More preferred flexible packages comprise a multi-layered laminate comprising at least one oriented polypropylene layer and at least one layer selected from the list comprising polyethylene, polypropylene, aluminium, polyethylene terephthalate, nylon, polystyrene, polyvinylchloride, paper, or mixtures thereof, preferably polyethylene, polypropylene or mixtures thereof. The flexible packaging may be made into the shape of a sealed bag or sachet, or as a gusseted pouch or bag. Preferably, the flexible packaging is a sealed bag having at least one sealed edge.

[0020] Where the individually packaged products comprise a flexible package, it is preferable that the flexible package sits on the upper surface of the base comprising the non-slippery substance in a particular orientation. Preferably, the flexible packages are orientated so as to not sit vertically on the base. Preferably, the flexible pack-

ages are packed into the packaging container so that they are inclined towards the rear panel end of the packaging container. More preferably, the flexible packages are inclined towards the rear panel end of the packaging container at an angle of from greater than about 0° to about 45° from the vertical. More preferably still the angle is from about 10° to about 40° from the vertical, even more preferably from about 20° to about 35° from the vertical. It has been surprisingly found that the packing angle of the flexible packages influences the stability of the individually packaged products when displayed on shelf at the retail point of sale, and particularly after the first few individually packaged products have been removed from the packaging container by consumers. If the products are packaged vertically, or beyond 45° the individually packaged products will tend to fall forwards or backwards so as to hide the display area from the consumers view. The packing angle in combination with the non-slippery substance maintains stability and viewability of the individually packaged products in transport and on shelf, and particularly after the first few individually packaged products have been removed from the packaging container.

[0021] The present invention further provides a method of manufacturing the packaging container of the present invention. It is generally known to the person skilled in the art how to assemble packaging containers *per se*. Generally, when using cardboard or paperboard, a carton blank comprising a container base similar to that shown in figure 1 is provided which is erected or transformed by folding along predetermined fold lines and the upright side, front and rear panels held in place by adhesives or staples. Alternatively, the packaging container may be manufactured by providing a container base and separate sides, front and rear panels and optionally a lid and erecting or transforming the individual parts into a packaging container by attaching the sides and front and rear panels to the base followed by attachment of the optional lid. It has been discovered that the anti-slip means comprising a non-slippery substance of the present invention are particularly suited to application during the erection stage of manufacture of the packaging container, rather than during the fabrication of the carton blank or container base as this improves the transportability of the carton blank or container base and its processability at the erection or transformation phase.

[0022] The packaging container of the present invention may be manufactured by a method comprising the steps of:

- a) providing a base for said packaging container that is adapted for erection or transformation into said packaging container, the base having an upper surface;
- b) applying a non-slippery substance to the upper surface of the base which is adapted to not physically adhere to the individually packaged products intended to be packaged thereon; and

c) erecting or transforming the base into a packaging container.

[0023] The method of manufacture preferably provides for steps (a) and (b) to be carried out sequentially, that is step (a) first and then step (b). Steps (b) and (c) may be carried out sequentially in either order; that is (b) first and then (c), or alternatively (c) and then (b). In an alternate embodiment, steps (b) and (c) may be carried out concurrently. Step (c), erecting or transforming the base into a packaging container, preferably involves the attachment and/or erection into a vertical position of the side panels and preferably front and rear panels. These panels are held in place by use of attachment means known to the person skilled in the art of packaging container construction. Non-limiting examples include the use of adhesives or staples; however the sides may be attached via other attachment means such as screws, brackets, nails or mixtures thereof.

[0024] The method of manufacture may further comprise the step of allowing the non-slippery substance applied to the upper surface of the base to solidify, cool or cure before packaging the individually packaged products into the packaging container thus manufactured. This step must occur after the application of the non-slippery substance to the base, but may occur before, after or during erection or transformation of the base into the packaging container of the present invention. Preferably the non-slippery substance is left to solidify, cool or cure for a period of at least about 10 seconds, preferably from about 10 seconds to about 120 seconds, more preferably from about 20 seconds to about 60 seconds.

[0025] Where the non-slippery substance comprises an adhesive, the adhesive is preferably applied to the upper surface of the base either before, at the same time as, or after the application of adhesives used to hold the vertical side, front and rear panels in place. Such method of construction improves the speed and ease of erection of the packaging container of the present invention. It also avoids the need for complex mechanical manipulations of the packaging container in order to provide the stabilizing effect on the individually packaged products therein.

[0026] Following erection or transformation of the base into a packaging container according to the present invention, the packaging unit of the present invention may be manufactured by taking the packaging container obtained by the method of manufacture above and placing therein a plurality of individually packaged products. The individually packaged products are preferably packaged therein so as to be inclined towards the rear panel of the packaging container at an angle of from about greater than 0° to about 45° from the vertical, more preferably from about 10° to about 40° from the vertical, even more preferably from about 20° to about 35° from the vertical.

EXAMPLE

[0027] A carton blank comprising a base according to figure 1 made from corrugated board is provided. The carton blank can be erected to create a packaging container according to the present invention. The carton blank has a base (10) of rectangular shape having an upper surface (11) and a lower surface (12). Provided down the longer sides of the rectangular base (10) are two side panels (13, 14) which sit in the horizontal position in the carton blank but extend upwardly in a perpendicular direction from the base (10) of the packaging container following erection. A front panel (15) is provided at the front panel end (17) of the base (10). A rear panel (16) is provided at the rear panel end (18) of the base (10). The front and rear panels (15, 16) sit in the horizontal position in the carton blank but, similar to the side panels, extend upwardly in a perpendicular direction from the base (10) of the packaging container following erection. Generally, the side panels (13, 14) and the front and rear panels (15, 16) are erected by folding the carton blank along the fold lines (19) that separate the base (10) from the upright panels (13, 14, 15, 16). The front and rear panels (15, 16) are held in place against the side panels by use of an adhesive, HL9202 available from Henkel Technologies.

[0028] Once erected, the packaging unit appears as per figure 2. The anti-slip means are represented by dashed lines (20). The anti-slip means (20) are formed of two separated parallel linear rows of LUNATAK[®] P 4080 C, available from H. B. Fuller, a hot-melt adhesive having a softening temperature of 92°C and a viscosity of 1700mPa.s at 175°C. The linear rows are applied as a series of dashes along the lengthwise axis of the packaging container, running from the front panel end (17) to the rear panel end (18). The LUNATAK[®] P 4080 C hot-melt non-slippery substance is applied to the carton blank during mechanised erection either before, after or at the same time as the application of the HL9202 polyethylene-based hot-melt adhesive available from H. B. Fuller that holds the side, front and rear panels (13, 14, 15, 16) together. The base (10), side panels (13, 14) and front and rear panels (15, 16) are then erected to form the packaging container. The finished packaging container is allowed to stand for about 20 to about 30 seconds to allow the LUNATAK[®] P 4080 C hot-melt non-slippery substance and the HL9202 adhesive to cool before passing to the packing phase.

[0029] Once assembled and the adhesives have cured, twelve to twenty individually packaged products comprising confectionary products contained in a flexible package made of a multi-layered laminate comprising an oriented polypropylene layer and a polyethylene layer are placed into the packaging container. The flexible packages comprise a sealed bag having two sealed edges at the bottom and top of the bag. The flexible packages are placed on the upper surface (11) and anti-slip means (20) in the packing container at an angle of 30° to the

vertical. The packaging container is transported to a place of retail sale where the packaging container is placed directly onto the shelf for display for retail sale. Even after transport and the first few individually packaged products are removed from the packaging container, the individually packaged products remain standing upright with their front faces still displayed towards the consumer, increasing the point of sale shelf presence of the individually packaged products.

Claims

1. A packaging container for transporting and/or displaying a plurality of individually packaged products containable therein, the packaging container comprising a base having an upper surface comprising anti-slip means, **characterised in that** the anti-slip means comprises a non-slippery substance which does not physically adhere to the individually packaged products.
2. The packaging container according to claim 1 wherein the non-slippery substance comprises an adhesive.
3. The packaging container according to claim 1 or claim 2 wherein said adhesive is a hot-melt adhesive.
4. The packaging container according to any one of the preceding claims wherein said adhesive comprises an adhesive based upon thermoplastic rubber, amorphous polyolefins, polyacrylates, polymethacrylates, acrylic acid copolymers, thermoplastic elastomers or mixtures thereof.
5. The packaging container according to any one of the preceding claims wherein the non-slippery substance is applied to the entirety of the upper surface of the base, or is applied as a single row or a plurality of separated rows.
6. The packaging container according to claim 5 wherein the base has a front panel end and a rear panel end and wherein the non-slippery substance is applied as a single row or a plurality of separated rows running along the length of the base from the front panel end to the rear panel end.
7. The packaging container according to claim 5 or claim 6 wherein the said separated rows are linear or curvilinear, preferably linear.
8. The packaging container according to any one of claims 5 to 7 wherein the separated rows are linear and parallel to one another.
9. The packaging container according to any one of

claims 5 to 8 wherein said non-slippery substance is applied as at least two rows, more preferably two rows.

- 10.** A packaging unit comprising: 5
- a) a packaging container according to any one of claims 1 to 9; and
 - b) a plurality of individually packaged products. 10
- 11.** The packaging unit according to claim 10 wherein said individually packaged products comprise rigid or flexible packaging, preferably flexible packaging.
- 12.** The packaging unit according to claim 10 or claim 11 wherein said individually packaged products are filled into the packaging unit so as to be inclined towards the rear panel end of the base at an angle of from greater than about 0° to about 45° from the vertical. 20
- 13.** The packaging unit according to any one of claims 9 to 12 wherein said products comprise confectionary products, personal care products, household and laundry products, baby care products or mixtures thereof, preferably confectionary products or personal care products. 25
- 14.** A method of manufacturing a packaging container suitable for transport and/or display of individually packaged products comprising the steps of: 30
- a) providing a base for said packaging container that is adapted for erection or transformation into said packaging container, the base having an upper surface; 35
 - b) applying a non-slippery substance to the upper surface of the base which is adapted to not physically adhere to the individually packaged products intended to be packaged thereon; and 40
 - c) erecting or transforming the base into a packaging container.
- 15.** A method of manufacturing a packaging unit according to any one of claims 10 to 13 comprising manufacturing a packaging container according to the method of claim 14 and the additional step of filling a plurality of individually packaged products into the packaging container. 45
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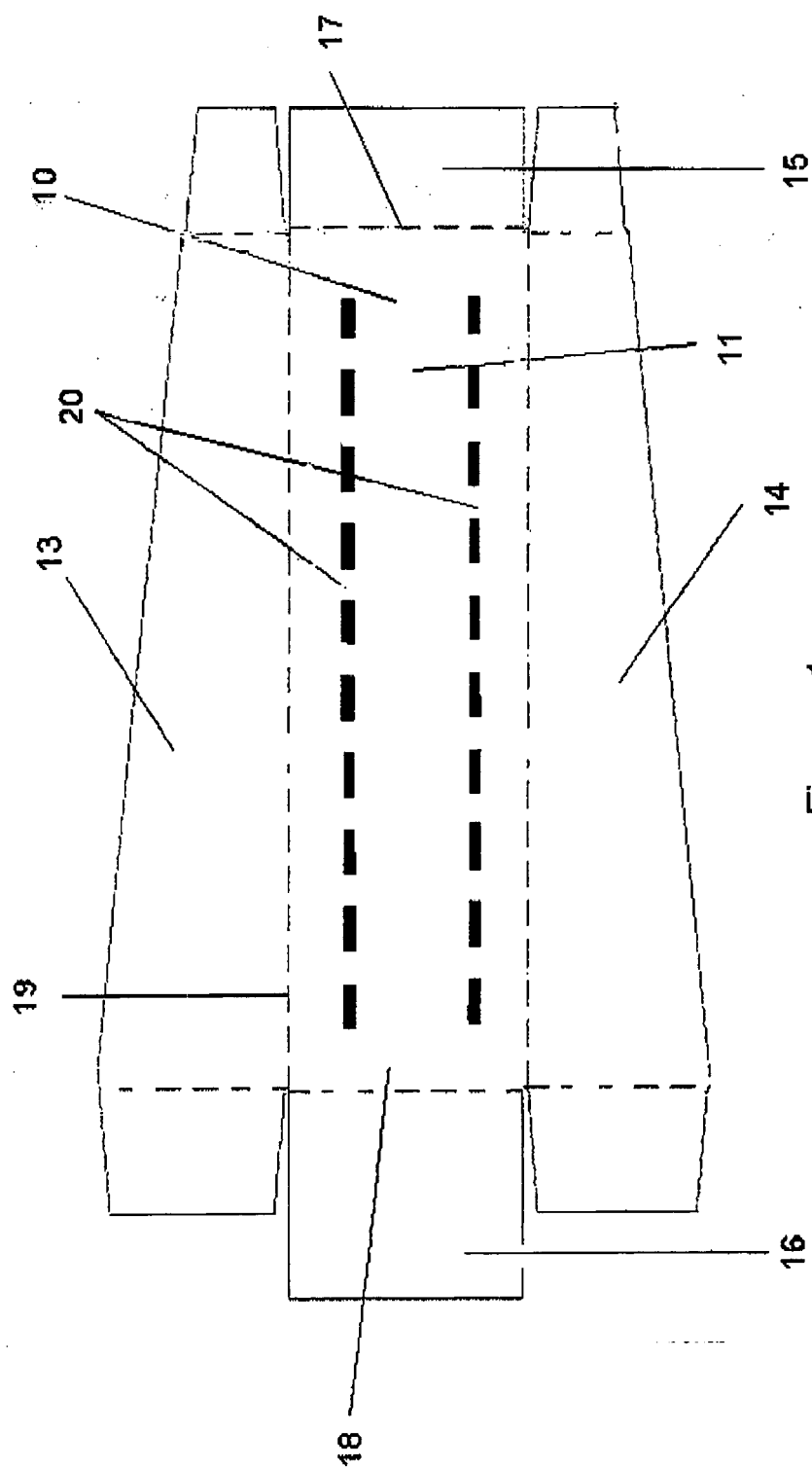


Figure 1

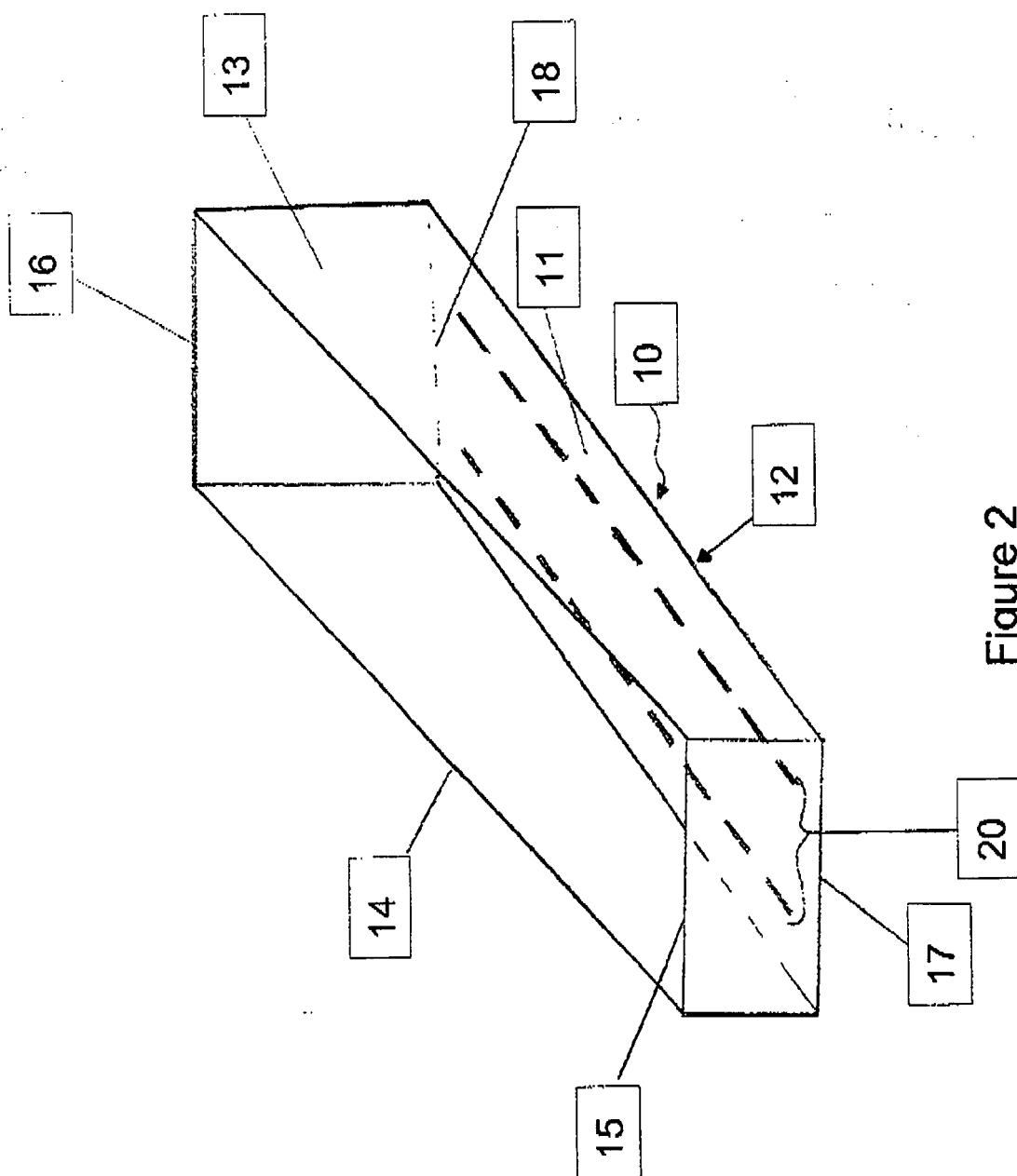


Figure 2



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 01 7232

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	EP 0 154 933 B1 (HENKEL KGAA [DE]) 4 October 1989 (1989-10-04) * page 1, line 6 - page 2, line 24; figures 1-4,10 *	1,2,5-13	INV. B65D5/50
X	US 5 887 717 A (ANDERSEN DALE C [US] ET AL) 30 March 1999 (1999-03-30) * the whole document *	1-11	
X	US 5 692 612 A (WEDER DONALD E [US] ET AL) 2 December 1997 (1997-12-02) * column 3, line 11 - line 64 * * column 4, line 36 - column 5, line 4; figures 1,2 *	1,2, 4-12,14, 15	
X	US 2005/255199 A1 (ALDRIDGE ALLEN S [US]) 17 November 2005 (2005-11-17) * paragraph [0002] - paragraph [0003] * * paragraph [0007] - paragraph [0008] * * paragraph [0017] * * paragraph [0026] - paragraph [0027] * * paragraph [0034]; figures 1-5 *	1,2, 5-11, 13-15	TECHNICAL FIELDS SEARCHED (IPC) B65D
X	FR 2 496 062 A (NICOLLET HUGUES SA [FR]) 18 June 1982 (1982-06-18) * the whole document *	1,2, 5-11,14, 15	
A	EP 1 459 992 A1 (VKR HOLDING AS [DK]) 22 September 2004 (2004-09-22) * the whole document *		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 19 January 2007	Examiner MANS-KAMERBEEK, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 01 7232

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-01-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0154933	B1	04-10-1989	DE 3409337 A1	19-09-1985
			EP 0154933 A2	18-09-1985

US 5887717	A	30-03-1999	NONE	

US 5692612	A	02-12-1997	US 5701721 A	30-12-1997
			US 5816402 A	06-10-1998

US 2005255199	A1	17-11-2005	NONE	

FR 2496062	A	18-06-1982	NONE	

EP 1459992	A1	22-09-2004	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- GB 2240321 A [0004]
- GB 2199563 A [0004]
- GB 2390083 A [0004]
- GB 2071056 A [0004]