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(54) **Carrier for cartons**

Trägervorrichtung für Kartons

Dispositif porte-cartons

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Description

Background of the invention

[0001] The invention relates to a carrying device, in accordance with the preamble of claim 1, for a multipackage of cartons, the multipackage being arranged for binding at least two cartons to one another so as to enable them to be carried together.

[0002] Examples of known carrying devices for a multipackage of cartons are described in publications US 2675264 and US 2 713 508, the latter disclosing a carrying device according to the preamble of independent claim 1.

Brief description of the invention

[0003] An object of the invention is to provide a carrying device enabling a multipackage to be formed from two or more cartons. The object of the invention is achieved by a carrying device which is characterized by what is stated in the independent claim. Preferred embodiments of the invention are disclosed in the dependent claims.

[0004] The invention is based on the idea that, for each carton to be included in the multipackage, the carrying device is provided with at least one tongue which is arranged, in use, to apply a vertical supporting force to a recess located at an upper part of the carton, and with at least one lateral supporting section which is arranged, in use, to apply a lateral supporting force to the carton, below the recess.

[0005] An advantage of the carrying device according to the invention is its simplicity, low manufacturing costs, and ease of use.

Brief description of the figures

[0006] The invention is now described in closer detail in connection with preferred embodiments and with reference to the accompanying drawings, in which:

Figure 1 shows a carrying device which does not form a part of the invention;
 Figure 2 shows two cartons placed side by side;
 Figure 3 shows a multipackage formed from the carrying device of Figure 1 and the cartons of Figure 2;
 Figure 4 shows a cross section of the multipackage of Figure 3;
 Figure 5 shows a crease arranged to turn a tongue with respect to a frame;
 Figure 6 shows a carrying device according to an embodiment of the invention;
 Figure 7 shows a carrying device according to a second embodiment of the invention; and
 Figure 8 shows a multipackage formed by using a carrying device which does not form a part of the invention.

Detailed description of the invention

[0007] Figure 1 shows a carrying device which does not form a part of the invention, which is arranged for forming a multipackage containing two cartons. Figure 2 shows two cartons 31 placed side by side, the carrying device of Figure 1 being arranged to receive said two cartons 31 so as to form a multipackage. Figure 3 shows a multipackage formed from the carrying device of Figure 1 and the cartons of Figure 2.

[0008] The carrying device comprises a frame 2 which is arranged, in use, to surround peripherally an upper part of the cartons 31 of the multipackage when the cartons 31 are placed side by side. In a use situation, the frame 2 resides tightly against the cartons 31 in a lateral direction. The frame 2 is provided with supporting means and carrying means. The supporting means are arranged, in use, to apply supporting forces to each carton 31 of the multipackage to enable carrying. The carrying means are arranged to enable a user to take hold of the multipackage in order to carry the multipackage.

[0009] For each carton 31 to be included in the multipackage, the supporting means comprise a tongue 6 at an upper part of the frame 2 as well as a lateral supporting section 8 at a lower part of the frame 2. Each tongue 6 is arranged, in use, to apply a vertical supporting force to a recess 35 located at the upper part of the carton 31, and each lateral supporting section 8 is arranged, in use, to apply a lateral supporting force to the carton 31, below the recess 35.

[0010] It can be seen in Figure 4, which shows a cross section of the multipackage of Figure 3, how the tongue 6 penetrates into the recess 35. The vertical supporting force applied by each tongue 6 is designated by arrow 65, while the lateral supporting force applied by each lateral supporting section 8 is designated by arrow 85.

[0011] Each tongue 6 is an integral part of the frame 2, in a use situation projecting obliquely from a side wall of the frame 2 with which it is associated. Each tongue 6 is associated with the frame 2 through a crease 62 which is arranged to turn the tongue 6 inwards with respect to the part of the frame 2 with which the tongue 6 is associated. One such crease is shown in Figure 5 wherein a bending force generated by the crease is designated by arrow 95.

[0012] Each lateral supporting section 8 is an integral part of the frame 2. Each lateral supporting section 8 is formed by a part of a straight side wall of the frame 2 located below an adjacent tongue 6 while the lateral supporting section 8 is located on the same side of the frame 2 as the adjacent tongue 6.

[0013] The carrying means comprises two carrying holes 12 provided in the frame 2, each being arranged to receive, at least partly, at least one finger of the user for carrying the multipackage. The carrying holes 12 are located on opposite sides of the frame 2, these opposite sides being perpendicular to each side of the frame 2 which comprises a tongue 6.

[0014] The carrying device of Figure 1 further comprises a top wall 14 provided with an information aperture 16. When forming the multipackage, the information aperture 16 is arranged to allow a top 33 of each carton 31 of the multipackage to penetrate through the top wall 14 such that in a use situation a "best before" date provided at the top 33 of each carton 31 is readable.

[0015] The information aperture 16 divides the top wall 14 into two parts, each part being associated with an adjacent side wall containing a carrying hole 12 via a crease 72. Further, each part of the top wall 14 is associated with an adjacent side wall, containing a tongue 6, in order to stiffen the carrying device. A side wall containing a tongue can be provided with a projection which, when manufacturing the carrying device, is bent so as to be parallel with the top wall and glued thereto.

[0016] The top wall 14 is provided with two cap openings 18, each being arranged to receive a cap 37 of the respective carton 31. The cap openings 18 enable the top wall 14, which extends perpendicularly to the side walls of the frame 2 and which, in a use situation, thus extends horizontally, to be located lower than upper parts of the caps 37.

[0017] The carrying device may not comprise a top wall. In such a case, it is naturally to be ensured that the side walls containing a carrying hole are strong enough to withstand stresses caused by carrying of the multipackage.

[0018] The carrying device shown in Figure 1 is arranged for forming a multipackage from cartons whose cross section below the recess has the shape of a rectangular parallelogram. To be more precise, the shape of the cross section of the cartons 31 of the multipackage of Figure 3 below the recess 35 is that of a square. The carrying device may also be arranged for forming a multipackage from cartons whose cross section below the recess has the shape other than that of a rectangular parallelogram.

[0019] The multipackage of Figure 3 contains two cartons. The carrying device according to the invention may also be arranged for binding more cartons to one another so as to enable them to be carried together. For instance, a carrying device for a four-carton multipackage is obtained by keeping the dimensions of the side walls containing a carrying hole as before and by enhancing the dimensions of the side walls perpendicular thereto so as to correspond with two adjacent cartons. In such a case, each side wall perpendicular to the side walls containing a carrying hole is thus provided with at least one tongue for each carton located on the side in question, said at least one tongue being arranged, in use, to apply a vertical supporting force to the recess located at the upper part of the respective carton.

[0020] The relative expressions used in the above disclosure, such as "at the upper part of the carton", "at the upper part of the frame" and "below the recess", refer to a normal use situation wherein the multipackage is in the vertical position according to Figure 3. In the multipack-

age of Figure 3, the caps 37 of the cartons 31 reside at the upper part of the multipackage, as do the carrying holes 12.

[0021] Figure 6 shows a carrying device according to an embodiment of the invention. In the carrying device of Figure 6, a tongue 6' is an integral part of a frame 2', in a use situation projecting obliquely inwards from the side wall of the frame 2' with which it is associated. Each tongue 6' is associated with the frame 2' through a crease 62' which is arranged to turn the tongue 6' inwards with respect to the part of the frame 2' with which the tongue 6' is associated. The crease 62' is positioned in a lower edge of the tongue 6'. The crease 62' is curved such that a middle part of the crease 62' resides lower than ends of the crease 62'. An imaginary line passing through the ends of the crease 62' is horizontal. Since the crease 62' defines the lower edge of a tongue, the lower edge of the tongue 6' is curved.

[0022] The tongue 6' further comprises a middle crease 64' which extends from a tip of the tongue 6' to the lower edge and which is arranged to turn the middle part of the tongue 6' inwards with respect to edge parts of the tongue 6', making the tongue a concave groove.

[0023] Figure 7 shows a carrying device according to a second embodiment of the invention, which is arranged for forming a multipackage containing three cartons. The carrying device of Figure 7 differs from the carrying devices of Figures 1 and 6 also in that in the carrying device of Figure 7, tongues 6" are positioned on long sides of a frame 2", i.e. two tongues 6" are provided per each carton to be received, i.e. six tongues in total.

[0024] Each tongue 6" is associated with the frame 2" through a crease 62". The crease 62" is positioned in a lower edge of the tongue 6". Each crease 62" has the shape of a wide V such that a middle part of the crease 62" resides lower than ends of the crease 62". An imaginary line passing through the ends of the crease 62" is horizontal. Each tongue 6" comprises a middle crease 64" which extends from a tip of the tongue 6" to the lower edge and which is arranged to turn the middle part of the tongue 6" inwards with respect to edge parts of the tongue 6", making the tongue a concave groove. Each tongue 6" is symmetrical in respect of its middle crease 64".

[0025] Figure 8 shows a multipackage formed by using a carrying device which does not form a part of the invention. In the carrying device of Figure 8, a tongue 6''' is an integral part of a frame 2'''. The tongue 6''' is associated with the frame 2''' through a crease 62''' which is arranged to turn the tongue 6''' inwards with respect to the part of the frame 2''' with which the tongue 6''' is associated. The crease 62''' is positioned in a side edge of the tongue 6'''. Thus, the crease 62''' extends in a vertical direction. The height of the tongue 6''' in its outermost part is smaller than in a part adjacent to the crease 62'''. An upper edge of the tongue 6''' comprises a horizontal section next to the crease 62''', and an inclined part at a distance from the crease 62''', the inclined part of the upper edge sloping downwards, i.e. the lowest point of

the inclined part of the upper part is located at an end that is far from the crease 62". A lower edge of the tongue 6" is upwardly inclined, the lower edge rising upwards as the distance from the crease 62" grows.

[0026] In the carrying devices according to the invention, each tongue is associated with the frame at one of its edges only. The rest of the edges of the tongue are clear of the frame part.

[0027] The top walls of the carrying devices of Figures 6 to 8 are provided with information apertures but do not comprise cap openings. When necessary, however, said carrying devices may be provided with cap openings. The carrying device according to the invention may be made e.g. from cardboard, corrugated board, plastic material or a combination thereof. The carrying device may be manufactured from a sheet-like initial preform, which is first provided with necessary perforations and creases, after which the perforated and creased initial preform is folded into its final shape and glued together.

[0028] It is apparent to one skilled in the art that the basic idea of the invention may be implemented in many different ways. The invention and its embodiments are thus not restricted to the above-described examples but may vary within the scope of the claims.

Claims

1. A carrying device for a multipackage of cartons for binding at least two cartons (31) to one another so as to enable them to be carried together, the carrying device comprising a frame (2', 2'') comprising supporting means and carrying means, the supporting means being arranged, in use, to apply supporting forces to each carton (31) of the multipackage to enable carrying, and the carrying means being arranged to enable a user to take hold of the multipackage in order to carry the multipackage, the frame (2', 2'') being arranged, in use, to surround peripherally an upper part of the cartons (31) of the multipackage when the cartons (31) are placed side by side, the supporting means comprising, for each carton (31) to be included in the multipackage, at least one tongue (6', 6'') at an upper part of the frame (2', 2'') and at least one lateral supporting section at a lower part of the frame (2', 2''), each tongue (6', 6'') being an integral part of the frame (2', 2'') and being arranged, in use, to apply a vertical supporting force to a recess (35) provided at the upper part of the carton (31), and each lateral supporting section being arranged, in use, to apply a lateral supporting force to the carton (31), below the recess (35), each tongue (6', 6'') being associated with the frame (2', 2'') at one of its edges only, a joint between the tongue (6', 6'') and the frame (2', 2'') comprising a crease (62', 62'') arranged to turn the tongue (6', 6'') inwards with respect to a part of the frame (2', 2'') with which the tongue (6', 6'') is associated, **characterized in that** the crease (62', 62'') between the tongue (6', 6'') and the frame (2', 2'') is a nonlinear crease such that a middle part of the crease (62', 62'') resides lower than the ends of the crease (62', 62''), and each tongue (6', 6'') comprises a middle crease (64', 64'') which extends from a tip of the tongue (6', 6'') to a lower edge of the tongue (6', 6'') and which is arranged to turn a middle part of the tongue (6', 6'') inwards with respect to edge parts of the tongue (6', 6''), making the tongue a concave groove.

2. A carrying device as claimed in claim 1, **characterized in that** each lateral supporting section is an integral part of the frame (2', 2'').

3. A carrying device as claimed in claim 2, **characterized in that** each lateral supporting section is formed by a part of a straight side wall of the frame (2', 2'') which is located below an adjacent tongue (6', 6''), the lateral supporting section residing on the same side of the frame as the adjacent tongue.

4. A carrying device as claimed in any one of the preceding claims, **characterized in that** the carrying means comprise two carrying holes provided in the frame (2', 2'') and located on opposite sides of the frame, these opposite sides being perpendicular to each side of the frame which comprises a tongue (6', 6'').

5. A carrying device as claimed in any one of the preceding claims, **characterized in that** the carrying device further comprises a top wall arranged to stiffen the carrying device, the top wall having an information aperture arranged, when forming the multipackage, to allow a top (33) of each carton (31) of the multipackage to penetrate through the top wall such that in a use situation a "best before" date provided at the top (33) of each carton (31) is readable.

6. A carrying device as claimed in any one of the preceding claims, **characterized in that** the carrying device is adapted for carrying cartons (31) whose cross section below the recess (35) has the shape of a rectangular parallelogram.

7. A carrying device as claimed in any one of the preceding claims, **characterized in that** the frame (2', 2'') is made from cardboard, corrugated board, plastic material or a combination thereof.

8. A carrying device as claimed in any one of the preceding claims, **characterized in that** the crease (62') is curved.

9. A carrying device as claimed in any one of claims 1-7, **characterized in that** the crease (62'') has the

shape of a wide V.

Patentansprüche

1. Tragevorrichtung für eine Mehrfachpackung von Kartons zum miteinander Verbinden von mindestens zwei Kartons (31), um zu ermöglichen, dass sie gemeinsam getragen werden, wobei die Tragevorrichtung einen Rahmen (2', 2'') umfasst, der Stützmittel und Tragemittel umfasst, die Stützmittel während der Verwendung dafür eingerichtet sind, Stützkkräfte auf jeden Karton (31) der Mehrfachpackung auszuüben, um Tragen zu ermöglichen, und die Tragemittel dafür eingerichtet sind, einem Benutzer zu ermöglichen, die Mehrfachpackung zu ergreifen, um die Mehrfachpackung zu tragen, der Rahmen (2', 2'') dafür eingerichtet ist, während der Verwendung einen oberen Teil der Kartons (31) der Mehrfachpackung, wenn die Kartons (31) nebeneinander angeordnet sind, hinsichtlich des Umfangs zu umgeben, die Stützmittel für jeden Karton (31), der in der Mehrfachpackung beinhaltet sein soll, mindestens eine Zunge (6', 6'') an einem oberen Teil des Rahmens (2', 2'') und mindestens einen seitlichen Stützabschnitt an einem unteren Teil des Rahmens (2', 2'') umfassen, jede Zunge (6', 6'') ein integraler Teil des Rahmens (2', 2'') ist und dafür eingerichtet ist, während der Verwendung eine vertikale Stützkraft auf eine Ausnehmung (35), die am oberen Teil des Kartons (31) bereitgestellt ist, auszuüben, und jeder seitliche Stützabschnitt dafür eingerichtet ist, während der Verwendung eine seitliche Stützkraft auf den Karton (31) unterhalb der Ausnehmung (35) auszuüben, jede Zunge (6', 6'') mit dem Rahmen (2', 2'') nur an einem ihrer Ränder assoziiert ist und eine Verbindungsstelle zwischen der Zunge (6', 6'') und dem Rahmen (2', 2'') einen Knick (62', 62'') umfasst, der dafür eingerichtet ist, die Zunge (6', 6'') bezogen auf einen Teil des Rahmens (2', 2''), mit dem die Zunge (6', 6'') assoziiert ist, nach innen zu kehren, **dadurch gekennzeichnet, dass** der Knick (62', 62'') zwischen der Zunge (6', 6'') und dem Rahmen (2', 2'') ein nichtlinearer Knick ist, so dass ein Mittelteil des Knicks (62', 62'') niedriger als die Enden des Knicks (62', 62'') liegt, und jede Zunge (6', 6'') einen Mittelknick (64', 64'') umfasst, der sich von einer Spitze der Zunge (6', 6'') zu einem unteren Rand der Zunge (6', 6'') hin erstreckt und der dafür eingerichtet ist, einen Mittelteil der Zunge (6', 6'') bezogen auf Randteile der Zunge (6', 6'') nach innen zu kehren, was die Zunge zu einer konkaven Rille macht.
2. Tragevorrichtung gemäß Anspruch 1, **dadurch gekennzeichnet, dass** jeder seitliche Stützabschnitt ein integraler Teil des Rahmens (2', 2'') ist.
3. Tragevorrichtung gemäß Anspruch 2, **dadurch ge-**

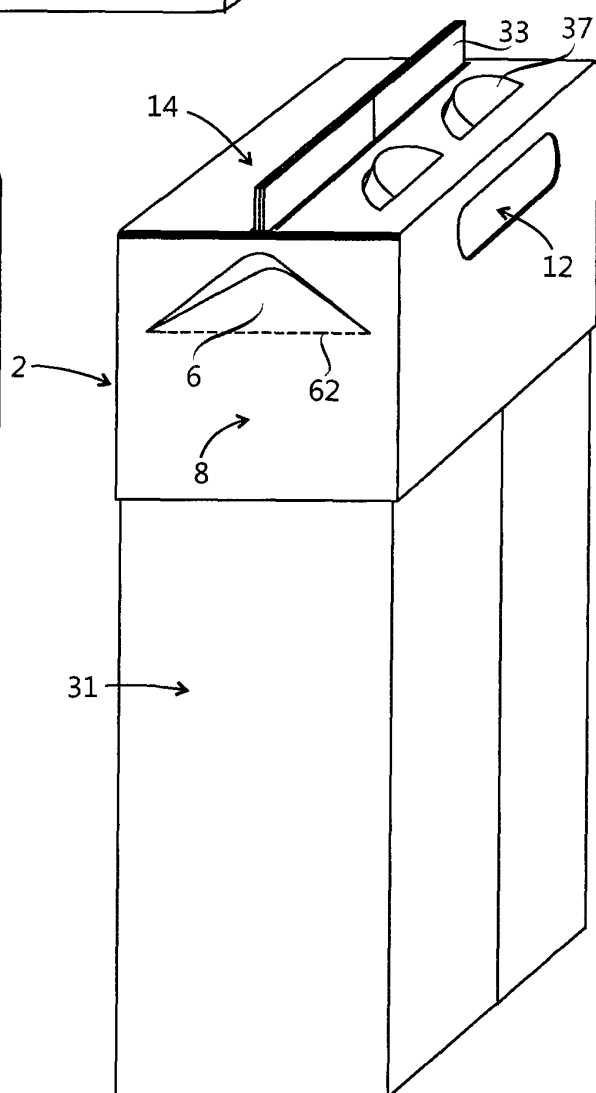
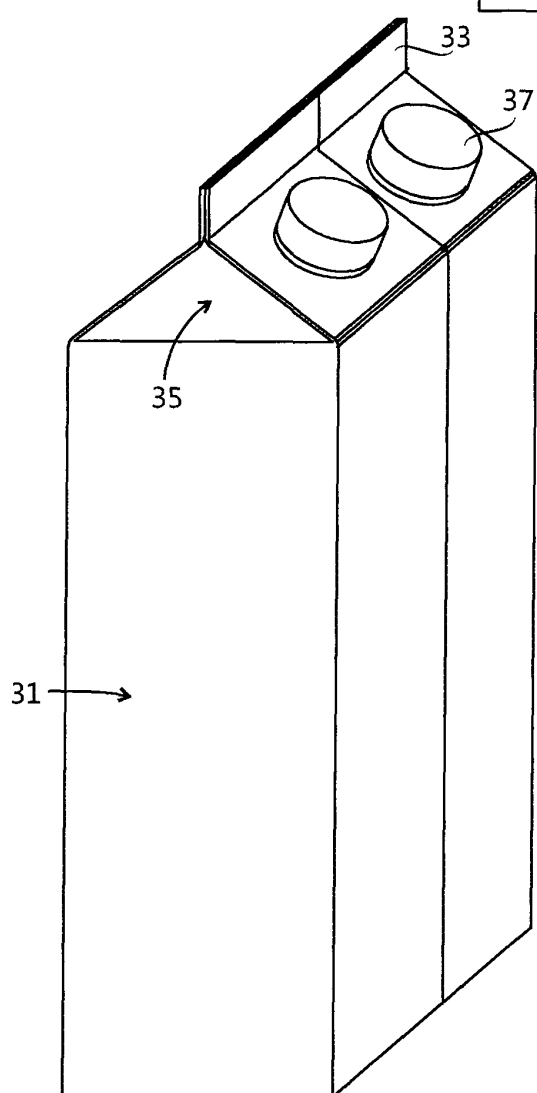
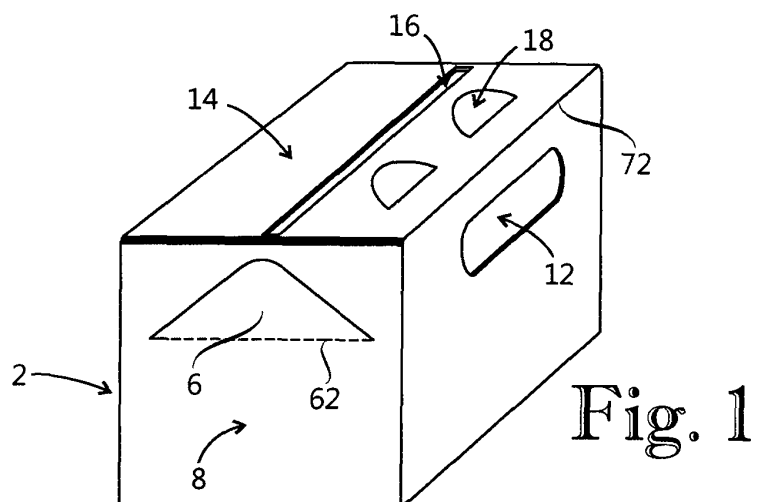
kennzeichnet, dass jeder seitliche Stützabschnitt durch einen Teil einer geraden Seitenwand des Rahmens (2', 2'') gebildet ist, der unterhalb einer angrenzenden Zunge (6', 6'') angeordnet ist, wobei der seitliche Stützabschnitt auf der gleichen Seite des Rahmens wie die angrenzende Zunge angesiedelt ist.

4. Tragevorrichtung gemäß einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Tragemittel zwei Tragelöcher umfassen, die im Rahmen (2', 2'') bereitgestellt und auf entgegengesetzten Seiten des Rahmens lokalisiert sind, wobei diese entgegengesetzten Seiten senkrecht zu jeder Seite des Rahmens sind, die eine Zunge (6', 6'') umfasst.
5. Tragevorrichtung gemäß einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Tragevorrichtung außerdem eine obere Wand umfasst, die dafür eingerichtet ist, die Tragevorrichtung zu versteifen, wobei die obere Wand eine Informationsöffnung aufweist, die dafür eingerichtet ist, beim Bilden der Mehrfachpackung ein Oberteil (33) jedes Kartons (31) der Mehrfachpackung durch die obere Wand hindurchtreten zu lassen, so dass in einer Verwendungssituation ein "Mindestens haltbar bis"-Datum, das am Oberteil (33) jedes Kartons (31) bereitgestellt ist, lesbar ist.
6. Tragevorrichtung gemäß einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Tragevorrichtung zu Tragen von Kartons (31) eingerichtet ist, deren Querschnitt unterhalb der Aussparung (35) die Form eines rechteckigen Parallelogramms hat.
7. Tragevorrichtung gemäß einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Rahmen (2', 2'') aus Kartonage, Wellpappe, Kunststoff oder einer Kombination davon gefertigt ist.
8. Tragevorrichtung gemäß einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Knick (62') gekrümmt ist.
9. Tragevorrichtung gemäß einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** der Knick (62'') die Form eines breiten V hat.

Revendications

1. Dispositif porteur pour un multi-emballage de cartons pour relier au moins deux cartons (31) l'un à l'autre afin de permettre de les porter ensemble, le dispositif porteur comprenant un cadre (2', 2'') comprenant des moyens de support et des moyens por-

- teurs, les moyens de support étant agencés, en utilisation, pour appliquer des forces de support à chaque carton (31) du multi-emballage afin de pouvoir les porter, et les moyens porteurs étant agencés pour permettre à un utilisateur de prendre le multi-emballage afin de porter le multi-emballage, le cadre (2', 2'') étant agencé, en utilisation, pour entourer de manière périphérique une partie supérieure des cartons (31) du multi-emballage lorsque les cartons (31) sont placés côte à côte, les moyens de support comprenant pour chaque carton (31) à inclure dans le multi-emballage, au moins une langue (6', 6'') à une partie supérieure du cadre (2', 2'') et au moins une section de support latérale à une partie inférieure du cadre (2', 2''), chaque langue (6', 6'') faisant partie intégrante du cadre (2', 2'') et étant agencée, en utilisation, pour appliquer une force de support verticale à un évidement (35) fourni à la partie supérieure du carton (31), et chaque section de support latérale étant agencée, en utilisation, pour appliquer une force de support latérale au carton (31), au-dessous de l'évidement (35), chaque langue (6', 6'') étant associée au cadre (2', 2'') à l'un de ses bords uniquement, une jointure entre la langue (6', 6'') et le cadre (2', 2'') comprenant un pli (62', 62'') agencé pour tourner la langue (6', 6'') vers l'intérieur par rapport à une partie du cadre (2', 2'') à laquelle la langue (6', 6'') est associée, **caractérisé en ce que** le pli (62', 62'') entre la langue (6', 6'') et le cadre (2', 2'') est un pli non linéaire de sorte qu'une partie de milieu du pli (62', 62'') réside plus bas que les extrémités du pli (62', 62''), et chaque langue (6', 6'') comprend un pli de milieu (64', 64'') qui s'étend à partir d'un bout de la langue (6', 6'') jusqu'à un bord inférieur de la langue (6', 6'') et qui est agencé pour tourner une partie de milieu de la langue (6', 6'') vers l'intérieur par rapport à des parties de bord de la langue (6', 6''), en faisant de la langue une rainure concave.
2. Dispositif porteur selon la revendication 1, **caractérisé en ce que** chaque section de support latérale fait partie intégrante du cadre (2', 2'') .
 3. Dispositif porteur selon la revendication 2, **caractérisé en ce que** chaque section de support latérale est formée par une partie d'une paroi latérale droite du cadre (2', 2'') qui est située au-dessous d'une langue adjacente (6', 6''), la section de support latérale résidant sur le même côté du cadre que la langue adjacente.
 4. Dispositif porteur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les moyens porteurs comprennent deux trous porteurs fournis dans le cadre (2', 2'') et situés sur des côtés opposés du cadre, ces côtés opposés étant perpendiculaires à chaque côté du cadre qui comprend une langue (6', 6'').
 5. Dispositif porteur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** dispositif porteur comprend en outre une paroi supérieure agencée pour renforcer le dispositif porteur, la paroi supérieure comportant une ouverture d'information agencée, lors de la formation du multi-emballage, pour permettre à un sommet (33) de chaque carton (31) du multi-emballage de pénétrer à travers la paroi supérieure de sorte que, dans une situation d'utilisation, une date d'expiration fournie au sommet (33) de chaque carton (31) soit lisible.
 6. Dispositif porteur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le dispositif porteur est apte à porter des cartons (31) dont la coupe transversale au-dessous de l'évidement (35) a la forme d'un parallélogramme rectangulaire.
 7. Dispositif porteur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le cadre (2', 2'') est constitué de carton, de carton ondulé, de matière plastique ou d'une combinaison de ceux-ci.
 8. Dispositif porteur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le pli (62') est incurvé.
 9. Dispositif porteur selon l'une quelconque des revendications 1 à 7, **caractérisé en ce que** le pli (62'') a la forme d'un V large.



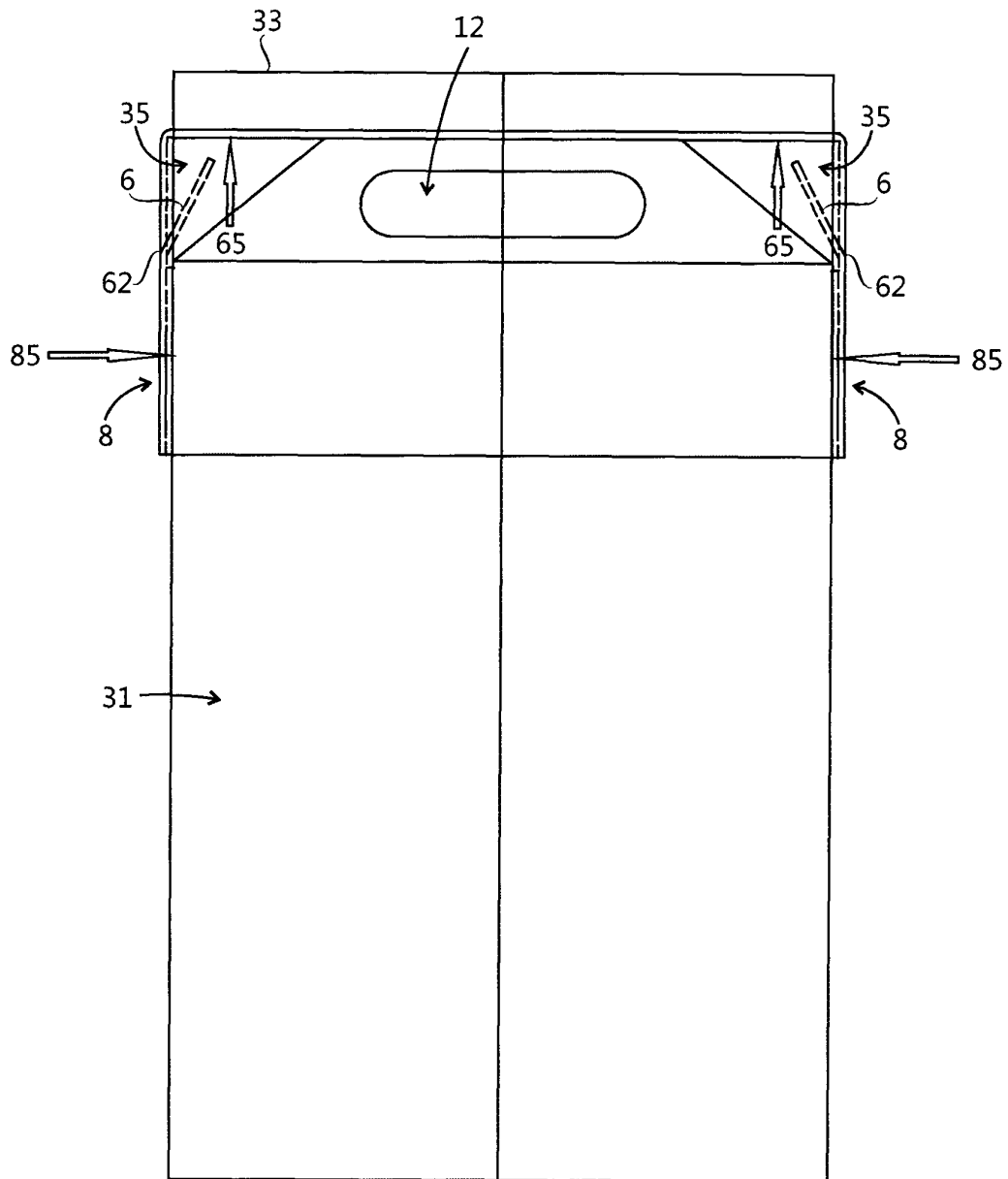


Fig. 4

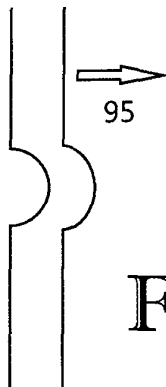


Fig. 5

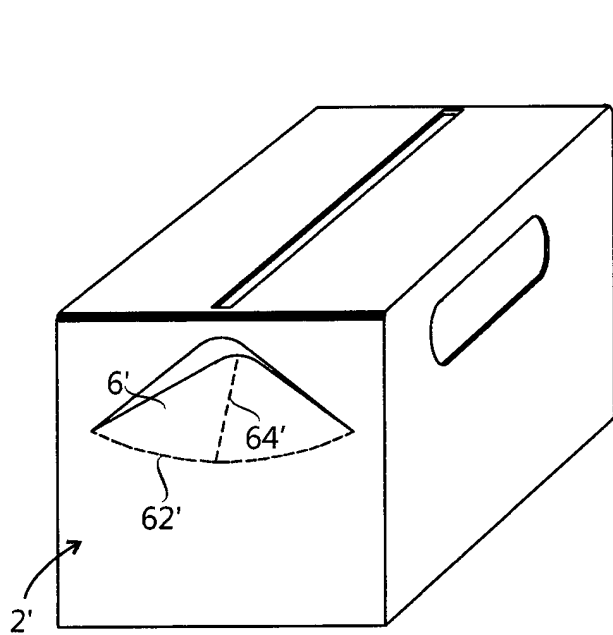


Fig. 6

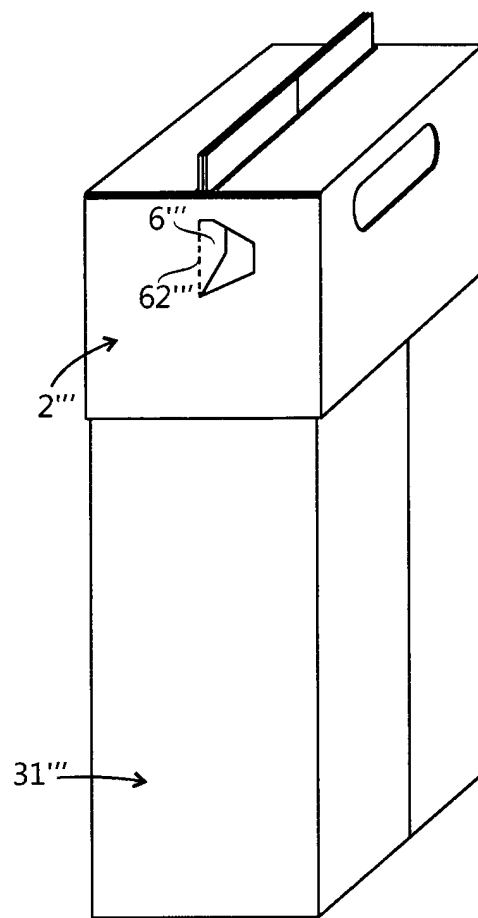


Fig. 8

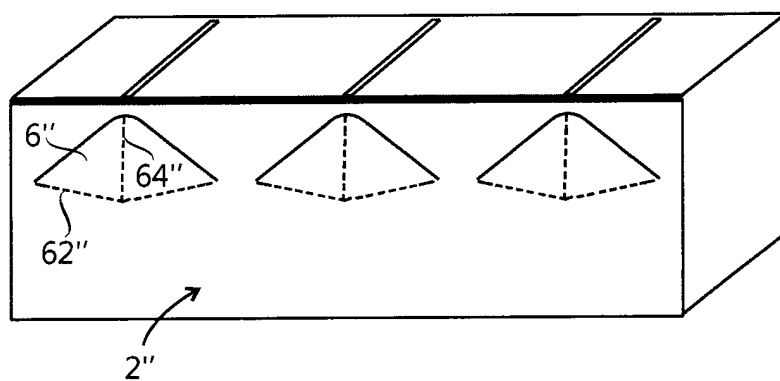


Fig. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 2675264 A [0002]
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