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(54) Corrugated cardboard box particularly for hospital waste

(57) A corrugated cardboard box particularly for hospital waste, comprising at least one grip handle (5, 6) provided with a slot (7a, 7b, 11b, 8a, 8b, 12b), which is obtained monolithically from walls (2) of the box (1) and

comprises at least two layers at least in the region that surrounds the slot, at least one layer having the corrugations of the cardboard at right angles to the upper side of the slot (7a, 7b, 11b) and at least one layer (11, 12) having the corrugations parallel to the side.

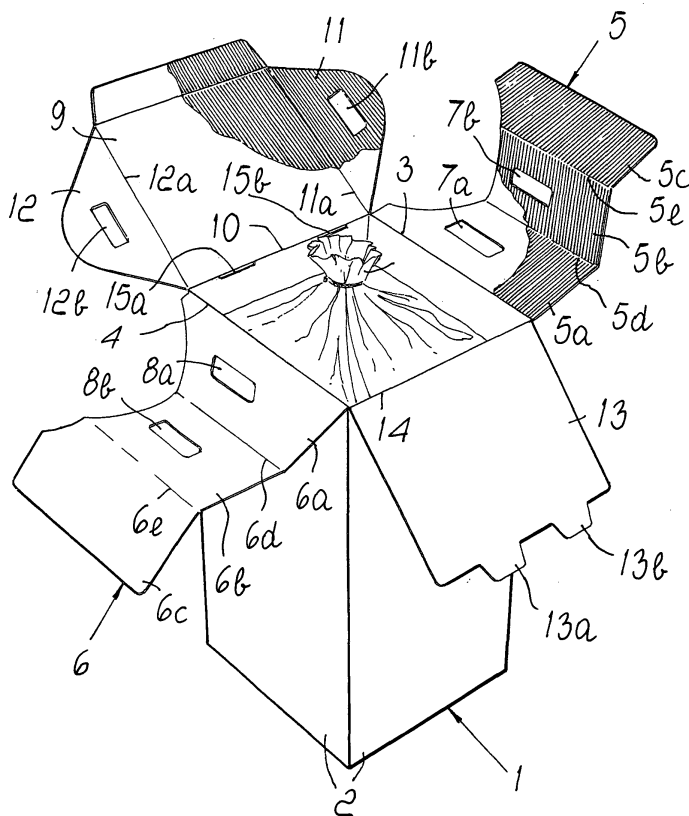


Fig. 1

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Description

[0001] The invention relates to a corrugated cardboard box particularly for hospital waste.

[0002] Boxes made of corrugated cardboard are known which are shaped like parallelepipeds and are provided with a bottom and a lid, and comprise internally a plastic bag intended to contain waste; such boxes are obtained from a single cardboard sheet and are provided with grip handles obtained monolithically from sides of the upper opening.

[0003] The aim of the present invention is to provide a corrugated cardboard box, particularly but not exclusively adapted to contain hospital waste, provided with very strong grip handles so as to allow to lift the box when full without the risk of breakage.

[0004] This aim and other objects is achieved by a corrugated cardboard box according to the invention, characterized in that it comprises at least one grip handle provided with a slot, which is obtained monolithically from walls of the box and comprises at least two layers at least in the region that surrounds said slot, at least one layer having the corrugations of the cardboard at right angles to the upper side of the slot and at least one layer having the corrugations parallel to said side.

[0005] Further characteristics and advantages will become better apparent from the description of two preferred but not exclusive embodiments of the box according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the box according to the invention in the open condition;

Figures 2 and 3 are perspective views of the box according to the invention, respectively during closure and in the fully closed condition;

Figures 4, 5 and 6 are perspective views of another embodiment of the box according to the invention, according to the same sequence as above.

[0006] With reference to Figures 1, 2 and 3, the reference numeral 1 generally designates the box shaped like a parallelepiped with a quadrangular base, with walls such as 2 in which the corrugations of the cardboard are perpendicular to the bottom and to the upper opening, as shown by the cutouts in Figure 1.

[0007] The box is formed by a single sheet of corrugated cardboard, which is appropriately cut and provided with folding creases.

[0008] Two flaps 5 and 6 protrude monolithically from the sides 3 and 4 of the upper opening at creases provided at said sides, and each flap can be folded into three portions along creases which are perpendicular to the corrugations of the cardboard; accordingly, reference numerals 5a, 5b, 5c designate the three portions of the flap 5 that are separated by the creases 5d and 5e, and reference numerals 6a, 6b, 6c designate the three portions of the flap 6 that are separated by the creases 6d and 6e.

[0009] The portions 5a and 5b are provided with two slots 7a and 7b, which are designed to overlap following the folding of said portions, as described hereinafter, and likewise the portions 6a and 6b are provided with two slots 8a and 8b.

[0010] The reference numeral 9 further designates a first lid, which is adapted to close the upper opening of the box by protruding monolithically from one wall of the box at a crease 10 provided at one side of the upper opening; said lid 9 is provided with two flaps 11 and 12, which protrude monolithically at two creases 11a and 12a and are provided with two slots 11b and 12b respectively, which are described hereinafter.

[0011] A second lid 13 protrudes monolithically from a wall of the box at a crease 14 and is provided with locking means such as tabs 13a and 13b, which lock it by entering slits 15a and 15b.

[0012] Finally, the reference numeral 16 designates a plastic bag, which is inserted in the box for containing hospital waste.

[0013] In order to close the box, first of all the lid 9 is closed, moving into the closure position shown in Figure 2, with the flaps 11 and 12 that protrude upwardly.

[0014] The flap 5 is then folded as shown in Figure 2, and therefore the flap 11 lies between the portions 5a and 5b, while the portion 5c is arranged so as to rest on the lid 9.

[0015] A similar operation is performed on the flap 6, and in these operations the slots 7a, 7b and 11b and the slots 8a, 8b and 12b are arranged so as to coincide.

[0016] By closing the lid 13, the assembly is locked, as shown in Figure 3, and it is evident that the shape of the handles has three layers; the figures illustrate in particular the fact that the handle that is visible on the right comprises the two layers 5a and 5b, in which the corrugations of the cardboard are perpendicular to the upper side of the slot, whereas they are parallel to said side of the slot 11b in the layer of flap 11 that completes the handle, thus providing a very strong handle.

[0017] Figures 4, 5 and 6 illustrate a box 17 according to another embodiment, which is likewise formed by a single corrugated cardboard sheet with side walls in which the corrugations are perpendicular to the bottom and to the upper opening.

[0018] Two flaps 20 and 21 protrude monolithically from the sides 18 and 19 of the upper opening and each one can be folded into three portions along creases that are perpendicular to the corrugations of the cardboard shown in a cutout view of the flap 20: therefore, reference numerals 20a, 20b, 20c designate the three portions of the flap 20 that are separated by creases 20d, 20e, and reference numerals 21 a, 21 b, 21c designate the three portions of the flap 21 that are separated by creases 21 d, 21e.

[0019] The portions 20a, 20b are provided with slots 22a and 22b, which are designed to overlap each other, and likewise the portions 21a and 21b are provided with slots 23a and 23b.

[0020] Moreover, the reference numeral 24 designates a crease that is inclined at 45°, although a different angle might be also selected, with respect to the orientation of the corrugations of the cardboard and divides the portion 20c into a blind portion and into a portion provided with the slot 25, which is adapted to overlap the slot 22b after folding along said crease 24.

[0021] A similar crease 26 is provided on the flap 21, which is provided with a slot 27 which is similar to the slot 25 of the flap 20.

[0022] Moreover, the reference numerals 28 and 29 designate a first lid and a second lid, which are entirely similar to the lids 9 and 13 of the box 1 described earlier, and finally the reference numeral 30 designates a plastic bag contained in the box.

[0023] A handle is formed in the manner shown in Figures 5 and 6.

[0024] First of all, the flap 20 is folded along the crease 24, so that the slot 25 is arranged so that it coincides with the slot 22b, and then folds are performed along the creases 20d, 20e until the final situation of Figure 6 is reached, with the result that the handle is formed by three layers, two of which, specifically the outer layers, have cardboard corrugations that are perpendicular to the upper side of the slot, while the intermediate layer has corrugations that are parallel to said side.

[0025] The described invention is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims; all the details may further be replaced with other technically equivalent elements.

[0026] The disclosures in Italian Patent Application No. MN2004A000020 from which this application claims priority are incorporated herein by reference.

[0027] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A corrugated cardboard box, particularly for hospital waste, **characterized in that** it comprises at least one grip handle (5, 6) provided with a slot (7a, 7b, 11b, 8a, 8b, 12b), which is obtained monolithically from walls (2) of the box (1) and comprises at least two layers at least in the region that surrounds said slot (7a, 7b, 11b, 8a, 8b, 12b), at least one layer (5a, 5b, 5c) having the corrugations of the cardboard at right angles to the upper side of the slot (7a, 7b, 11b) and at least one layer (11, 12) having the corrugations parallel to said side.

2. The box according to claim 1, shaped like a paral-

lelepiped having a quadrangular base, **characterized in that** it comprises:

- two first flaps (5, 6), which protrude monolithically from opposite sides of the opening, each flap (5, 6) being able to fold into three portions (5a, 5b, 5c, 6a, 6b, 6c) along creases (5d, 5e, 6d, 6e) that are parallel to said sides, the two portions (5a, 5b, 6a, 6b) of each flap (5, 6) that are adjacent to said sides and are designed to form two layers of each handle after folding being provided with grip slots (7a, 7b, 8a, 8b);
- a first lid (9), which is adapted to close the upper opening of the box (1) by protruding monolithically from another side of said opening, said first lid (9) being provided with two mutually opposite flaps (11, 12), which protrude monolithically from the sides that are perpendicular to said side of the opening, each flap (11, 12) being provided with a slot (11b, 12b) and being adapted to be inserted, after folding, between the two portions (5a, 5b, 6a, 6b) of each one of said first flaps (5, 6) that are adapted to form two layers of each handle;
- a second lid (13), which protrudes monolithically from the side of the opening that lies opposite the side from which the first lid (9) protrudes, is adapted to overlap the first lid (9) and the two end portions (5c, 6c) of the two first flaps (5, 6) that are superimposed thereon, and is provided with locking means (13a, 13b, 15a, 15b).

3. The box according to claim 1, shaped like a parallelepiped having a quadrangular base, **characterized in that** it comprises:

- two flaps (20, 21), which protrude monolithically from opposite sides (18, 19) of the opening, each flap (20, 21) being able to fold into three portions (20a, 20b, 20c, 21a, 21b, 21c) along creases (20d, 20e, 21d, 21e) that are parallel to said sides (18, 19), the two portions (20a, 20b, 21a, 21b) of each flap (20, 21) that are adjacent to said sides (18, 19) and are designed to form two layers of each handle after folding being provided with grip slots (22a, 22b, 23a, 23b), the end portion (20c, 21c) of each flap (20, 21) being able to be folded onto the intermediate portion (20b, 21b) along a crease (24, 26), which is inclined with respect to said creases (20d, 20e, 21d, 21e) that are perpendicular to the corrugations of the cardboard and being provided with a slot (25, 27), which is adapted to be arranged, as a consequence of folding along said crease (24, 26), so as to coincide with the slots (22a, 22b, 23a, 23b) provided in the first two portions (20a, 20b, 21a, 21b);
- two closure lids (28, 29), which protrude mon-

olithically from the additional opposite sides of the opening of the box (17) and are provided with locking means.

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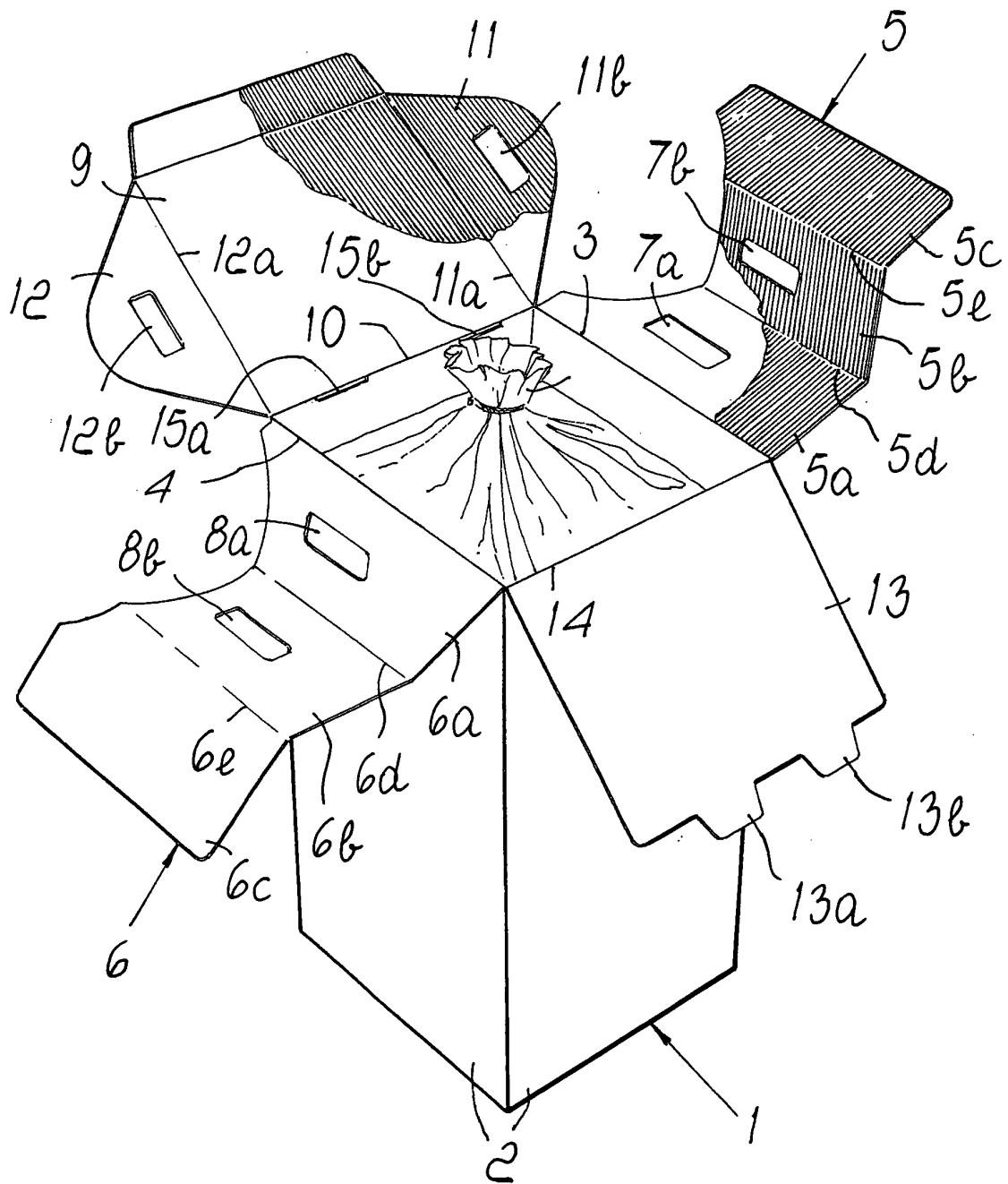
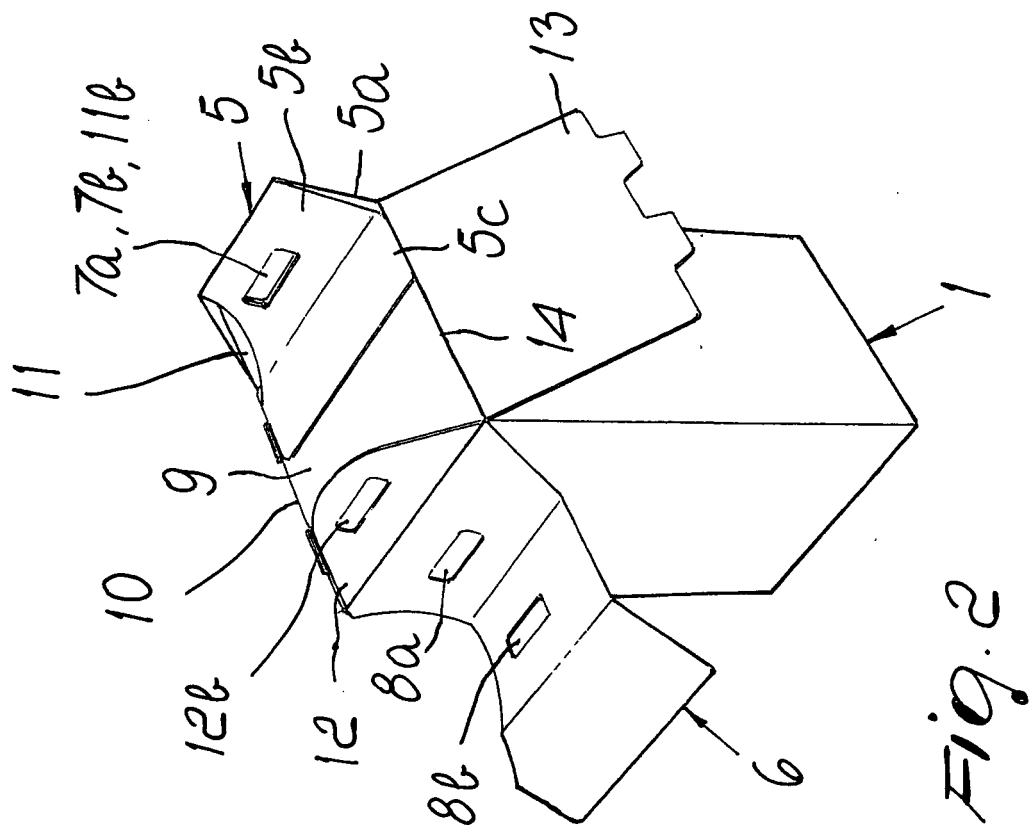
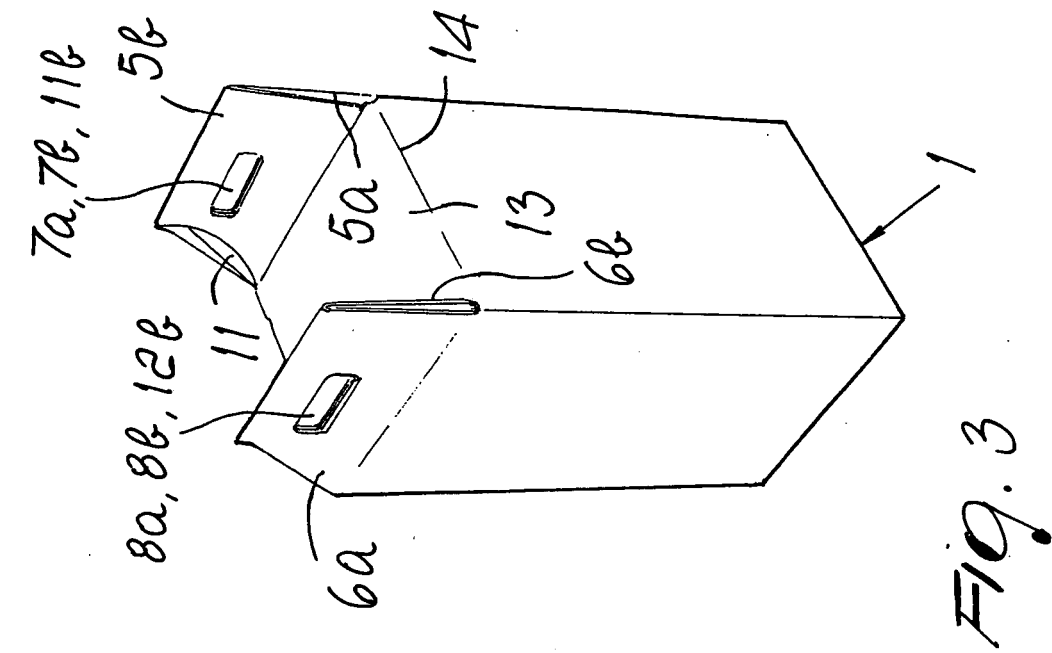


Fig. 1



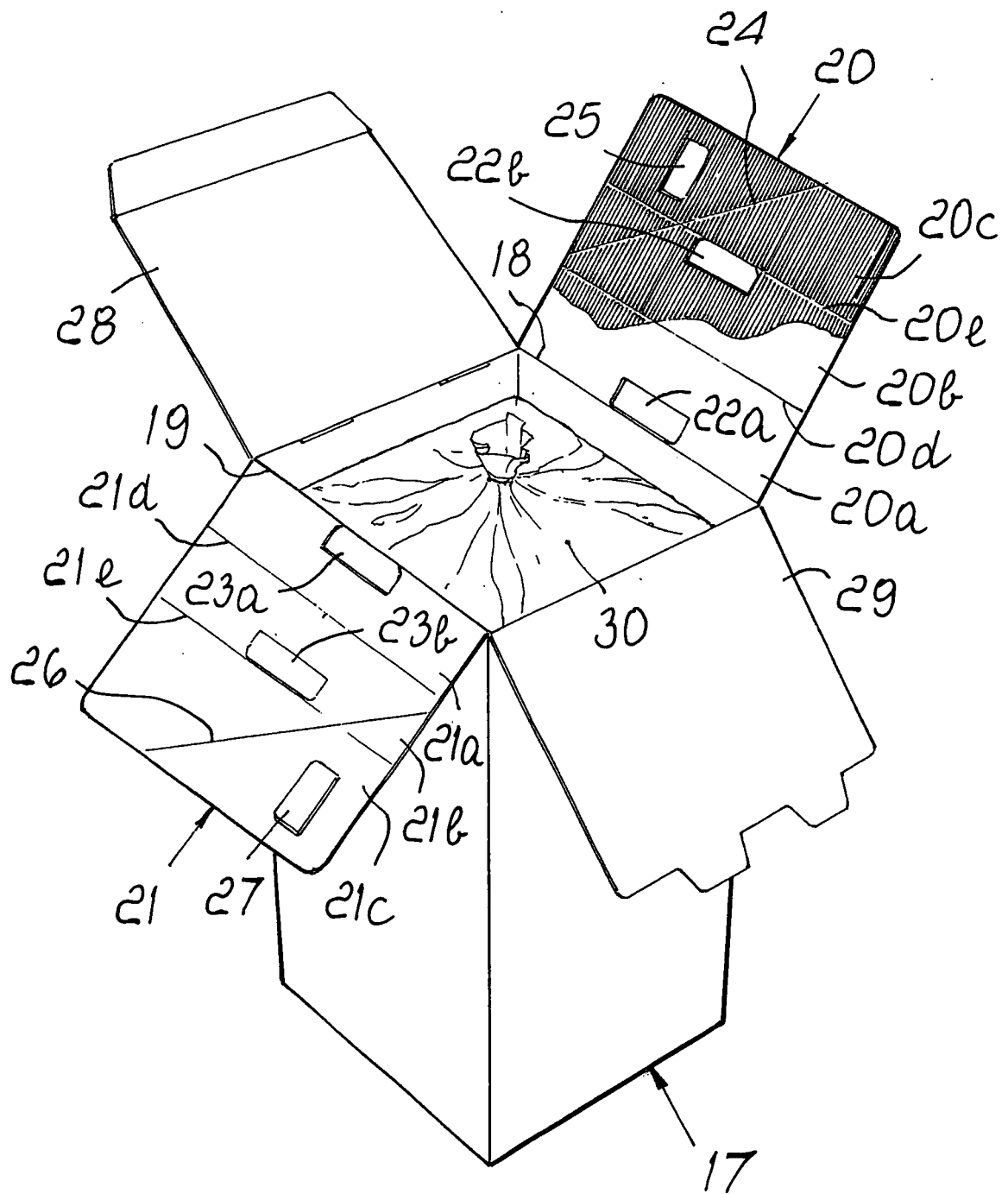
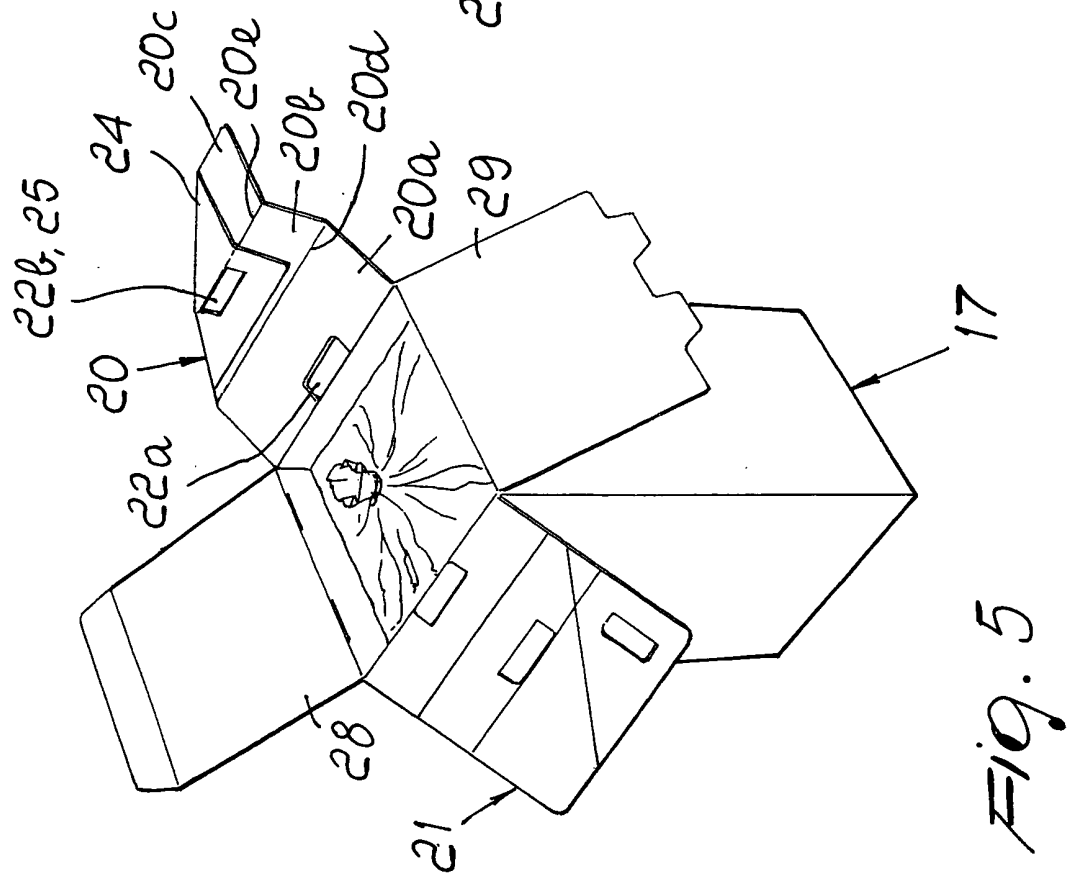
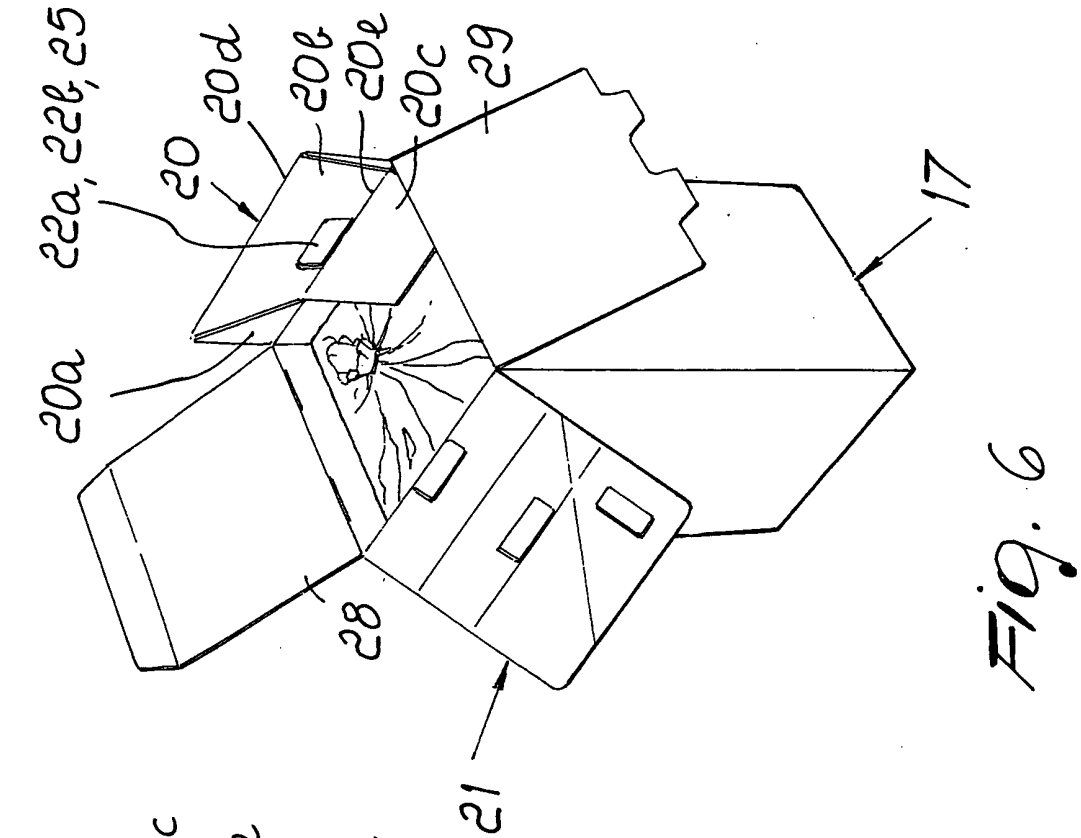


Fig. 4





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EUROPEAN SEARCH REPORT

Application Number
EP 05 01 5199

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	FR 2 744 427 A (SMURFIT SOCAR SA) 8 August 1997 (1997-08-08)	1	B65F1/14
Y	* page 1, line 3 - line 6 * * page 3, line 22 - page 5, line 21 * * figures 1-4 *	2	B65D5/46 B65D5/44
Y	----- GR 1 004 262 B1 (SCA PACKAGING HELLAS) 9 June 2003 (2003-06-09) * figures *	2	
X	----- GB 395 751 A (R. FILMER) 24 July 1933 (1933-07-24)	1	
A	* page 2, line 51 - line 126 * * figures 1-6 *	2	
X	----- US 5 398 868 A (M. DENSEN) 21 March 1995 (1995-03-21)	1	
A	* column 2, line 44 - column 3, line 49 * * figures 1,3,4 *	2	
A	----- EP 0 333 147 A (ALLPACK SRL) 20 September 1989 (1989-09-20) * column 2, line 29 - column 3, line 7 * * column 3, line 31 - column 4, line 29 * * figures 1-5 *	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65F B65D A61B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 October 2005	Examiner Smolders, R
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 01 5199

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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25-10-2005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2744427	A	08-08-1997	NONE	
GR 1004262	B1	09-06-2003	NONE	
GB 395751	A	24-07-1933	NONE	
US 5398868	A	21-03-1995	NONE	
EP 0333147	A	20-09-1989	NONE	