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(54) **CONTAINER WITH INTEGRATED SEPARATOR**

(57) Container with integrated separator, characterised in that the separator comprises an "L"-shaped strip (6) arranged attached to the inside of the container, in a folded position in which the vertical branch (3) thereof is arranged on one of the side walls thereof and it extends along the bottom, in which the horizontal branch (4) thereof is arranged with the end thereof fixed to the bottom. An end zone (13) of the vertical branch (3) is fixed to the side wall of the container, establishing an unfoldable wall

by means of fold lines (8, 9, 10 and 11) from the folded position to an unfolded position forming adjacent compartments. This configuration enables the empty container to be stacked, and makes it possible to unfold the separator, providing product storage compartments to individualise objects that are the same or different, or to sectorise the content in a more uniform and regular manner.

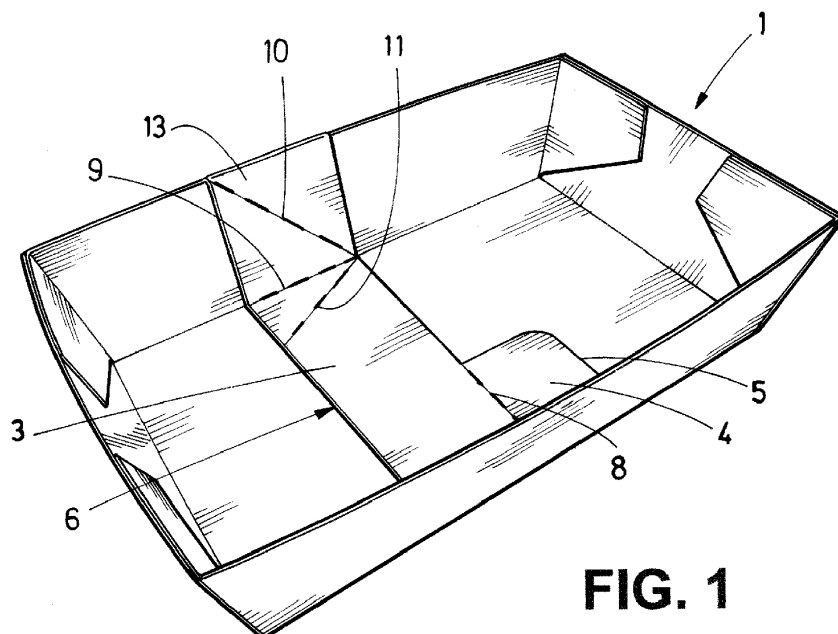


FIG. 1

Description

Object of the invention

[0001] The present invention relates to a container that integrates an unfoldable separator, which is obtained from a laminar development, the assembly of which is carried out with the separator in a folded position, which enables the empty container to be stacked, and also makes it possible for the separator to be unfolded, providing product storage compartments.

[0002] The invention is applicable in any sector of the industry in which compartmentalising the packaging of products is required, to individualise objects that are the same or different, or to sectorise the content in a more uniform and regular manner. More specifically, it is applicable in the sector of fruit and vegetable product distribution.

Background of the invention

[0003] In the state of the art, different containers are known which are equipped with separators obtained from one or more sheets, independent of the container, which are located therein, to establish independent compartments in which same or different products are to be housed, so that they do not mix, become jumbled together, or strike each other.

[0004] In this sense, documents WO 2006024106A1, US 3982684A, ES 2665814 B1, ES 2565753 T3, ES 1066293 U, ES 0146171 U, or ES 1068439, for example, can be cited, in which different separators are described, made from one or more sheets equipped with cuts and fold lines to form a separator that enables different compartments to be made inside a container.

[0005] In any of the aforementioned prior art documents, the separators are independent elements of the containers with different morphologies, which have been established based on the features of the products to be packaged. The separator is not part of the container itself in any of these containers, and the manufacturing process is not optimal.

[0006] The invention provides a new container, which, unlike those envisaged in the state of the art, integrates a separator attached to the inside thereof, according to a folded position, from which it can be unfolded, forming different independent compartments. In addition, the container and the separator can be obtained from the surface development of a single sheet, which enables them to be automatically assembled with the separator arranged in the folded position, attached to the inner surface of the container, and all this by means of a simple structure that is very easy to handle.

Description of the invention

[0007] To achieve the objectives and solve the aforementioned problems, the invention provides a container

with the novelty that it integrates a separator therein so that it is characterised in that it comprises an "L"-shaped strip, arranged attached to said inside of the container, according to a folded position, wherein the vertical branch thereof is located on one of the side walls thereof and extends along the bottom on which the horizontal branch thereof is arranged, so that the end of this horizontal branch is fixed on the bottom of the container. Furthermore, an end zone of the vertical branch is fixed to the side wall of the container, such that an unfoldable wall is established, by means of fold lines, from the folded position to an unfolded position forming independent adjacent compartments. More specifically, two adjacent compartments are formed inside the container.

[0008] In the preferred embodiment of the invention, the fold lines comprise a first fold line, which is arranged transversely on the horizontal branch of the "L"-shaped strip and in correspondence with the width of the vertical branch.

[0009] Furthermore, the vertical branch of the "L"-shaped strip comprises a second fold line, which in the folded position is located in correspondence with the joining edge of the side wall with the bottom of the container.

[0010] It has also been envisaged that the vertical branch of the "L"-shaped strip is equipped with a third and a fourth fold line, arranged obliquely, so that they converge at the end of the second fold line, on the side of the vertical branch that is adjacent to the first fold line, such that the third and fourth fold lines form an acute angle with said second fold line.

[0011] The third fold line is located on a section of the vertical branch, which in the folded position is attached to the side wall of the container, and the fourth fold line is provided on the section of the vertical "L"-shaped strip that, in said folded position, is attached to the bottom of the container, so that the angle that the third fold line forms with the second fold line is greater than the angle that the fourth fold line forms with said second fold line. This configuration facilitates the unfolding of the "L"-shaped strip, occupying a vertical position.

[0012] In the preferred embodiment, the third line delimits the end zone of the vertical branch of the "L"-shaped strip, which constitutes the fixing surface on the side wall of the container.

[0013] Furthermore, the horizontal branch of the "L"-shaped strip ends at the beginning of the side wall facing the side wall of the container in which the vertical branch is attached in the folded position, so that when unfolding the "L"-shaped strip, the length of the container occupies the entire width, depending on the position occupied by said "L"-shaped strip in the container.

[0014] The description made enables the invention to be configured from a single die-cut sheet, which includes the "L"-shaped strip, so that it constitutes the preferred embodiment of the invention, since this enables it to be automatically assembled with the separator arranged in the folded position.

[0015] In the preferred embodiment, the container

comprises a tray-like configuration.

[0016] In another embodiment of the invention, it is envisaged that the separator is made up of two "L"-shaped strips, which in the folded position are symmetrically arranged, forming a "T"-shaped strip attached to the inside of the container. Furthermore, the two "L"-shaped strips are unfolded in the same way as described for the previous case in which a single "L"-shaped strip is used. This second configuration allows obtaining a greater number of adjacent compartments inside the container, by unfolding the "L"-shaped strips. More specifically, in this case three adjacent compartments are obtained instead of two.

[0017] To facilitate the unfolding of the "L"-shaped strips, they have been equipped with gripping means, which in the preferred embodiment comprise a recess made on the side of the vertical branch, opposite the side adjacent to the first fold line (inner sides of each of said "L"-shaped portions), such that these recesses of each of the "L"-shaped strips are facing each other. These recesses make it easier to grip the "L"-shaped portions and do not create extra volume. The recess can also be provided in an embodiment in which a single "L"-shaped strip is used.

[0018] The two "L"-shaped strips have the same features as those already described for the embodiment in which a single "L"-shaped strip is used.

[0019] Obviously, a container can comprise several separators formed by the combination of "L"-shaped strips and "T"-shaped strips, depending on the dimensions of the container and the products to be packaged.

[0020] The structures described have the great advantage that the separator does not affect the nesting of empty containers to stack them, which implies that it is possible to use them even as a conventional container, in the case they do not need to be compartmentalised by means of unfolding the separator.

Description of the figures

[0021] To complete the description, and for the purpose of helping to make the features of the invention more readily understandable, this description is accompanied by a set of figures constituting an integral part of the same, which by way of illustration and not limitation represents the following:

Figure 1 shows a perspective view of a first exemplary embodiment of the invention in which the separator is made up of an "L"-shaped strip arranged transversely inside the container in the folded position.

Figure 2 shows a perspective view of the container of the previous figure in which the separator has been folded down to the unfolded position, forming two independent compartments inside the container.

Figure 3 shows a perspective view of a second exemplary embodiment of the invention in which the

separator is made up of two "L"-shaped strips arranged in the folded position, in which they form a "T"-shaped strip. In this example, the separator is arranged longitudinally inside the container.

Figure 4 shows another perspective view of the previous figure in which one of the walls that form the separator has been folded down to the unfolded position.

Figure 5 shows a perspective view of the previous figure with the two walls of the separator arranged in the unfolded position, forming three independent compartments inside the container.

Figure 6 shows a perspective view of another exemplary embodiment, similar to that of Figures 3 to 5, with the two walls of the separator arranged in the unfolded position but with the difference that in this case the separator is arranged transversely inside the container.

Preferred embodiment of the invention

[0022] A description of the invention based on the aforementioned figures follows, wherein Figures 1 and 2 show a first exemplary embodiment that consists of a container (1) obtained from a single die-cut sheet of cardboard or any other material, into which the separator itself is integrated, which is determined by an "L"-shaped strip (6), which in the exemplary embodiments is arranged as an extension of one of the edges of the mouth of the container, such that when configuring the container, said strip (6) remains attached to the inside of the container, in a folded position (Figure 1), wherein the vertical branch (3) of the "L"-shaped strip (6) runs transversely on one of the side walls of the container and extends along the bottom thereof, wherein the end (5) of the horizontal branch (4) thereof is fixed, delimited by a first fold line (8). This fixing is carried out, for example, by gluing.

[0023] The vertical branch (3) comprises a second fold line (9), arranged in correspondence with the joining edge of the side wall with the bottom of the container.

[0024] Moreover, the vertical branch (3) of the strip (6) is equipped with a third fold line (10) and a fourth fold line (11), which are oblique, which converge at the end of the second fold line (9) on the side of the vertical branch that is adjacent to the first fold line (8), such that an end portion (13) of the vertical branch (3), delimited by the third fold line (10), is fixed to the side wall of the container, for example by gluing, which together with the end (5) of the horizontal branch (4), provide fixed points that allow the "L"-shaped strip to be unfolded when moving it from the folded position, in which it is arranged parallel and attached to the inside of the container, to a stable unfolded position, in which it is located perpendicular to the bottom of the container (Figure 2), all of this through the simultaneous folding of the second, third and fourth fold lines, such that compartmentalisation of the inner volume of the container is established, generating two spaces or independent compartments for storing a product, such

as fruit, for example. The arrangement of the fold lines described enables the separator to go from the folded stable position to the unfolded stable position in a very simple and fast manner.

[0025] In the same way, the wall determined by the "L"-shaped strip (6) can be folded again, which enables the container to be stacked by introducing one container into another, since the separator does not affect the inner volume of the receptacle. The configuration described enables the separator to be folded/unfolded several times so that there is a chance that it can be reused.

[0026] Figures 3 to 6 show a second exemplary embodiment in which the separator is made up of two "L"-shaped strips (6), which in the folded position (Figure 3) are arranged symmetrically, forming a "T"-shaped strip (2) attached to the inside of the container. The two "L"-shaped strips (6) have the same features as those already described for the previous embodiment, in which a single "L"-shaped strip is used, and it is also unfolded/folded in the same way, which is why it is not described again. In this second configuration, three adjacent compartments are obtained instead of two as in the previous example. Figures 3 to 5 show an example in which the "T"-shaped strip is arranged longitudinally inside the container, and in Figure 6 it is arranged transversely, equivalently to that represented in Figure 1.

[0027] Obviously, a container can comprise several separators formed by the combination of "L"-shaped strips and "T"-shaped strips, depending on the dimensions of the container and the products to be packaged.

[0028] To facilitate the unfolding operation, it has been envisaged that the "L"-shaped strips are equipped with gripping means, which in the exemplary embodiment are determined by recesses (12), made on the inner sides of each of said "L"-shaped portions (6) and arranged facing each other. These recesses (12) make it easier to grip the "L"-shaped portions and do not create extra volume. This recess has not been described in the embodiment of Figures 1 and 2 because it is not necessary; since there is a single "L"-shaped strip, there is no difficulty in unfolding it, as occurs in the second embodiment, wherein the "L"-shaped strips in the folded position are arranged adjacent to each other, but obviously this recess (12) can also be included in the embodiment of Figures 1 and 2.

[0029] The configuration described enables the container to be automatically assembled by integrating the separator attached to the inner surface thereof, in the folded position.

Claims

1. A container with integrated separator, **characterised in that** the separator comprises:

- an "L"-shaped strip (6) arranged attached to the inside of the container, in a folded position

in which the vertical branch (3) thereof is arranged on one of the side walls thereof and it extends along the bottom, in which the horizontal branch (4) thereof is arranged with the end thereof fixed to the bottom

- wherein an end zone (13) of the vertical branch (3) is fixed to the side wall of the container, establishing an unfoldable wall by means of fold lines (8, 9, 10 and 11) from the folded position to an unfolded position forming adjacent compartments.

2. Container, according to claim 1, wherein the fold lines comprise a first fold line (8), arranged transversely on the horizontal branch (4) of the "L"-shaped strip (6) and in correspondence with the width of the vertical branch (3); and a second (9), third (10) and fourth (11) fold line, provided on the vertical branch, wherein in the folded position the second fold line (9) is arranged in correspondence with the joining edge of the side wall with the bottom of the container; and the third (10) and fourth (11) fold lines are oblique and converge at the end of the second fold line on the side of the vertical branch, adjacent to the first fold line (8), formed at an acute angle with said second fold line.

3. Container, according to claim 2, wherein the third fold line (10) is arranged on the section of the vertical branch (3) of the "L"-shaped strip (6) which, in the folded position, is attached to the side wall of the container, and the fourth fold line (11) is provided on the section of the vertical branch (3) of the "L"-shaped strip (6) which, in said folded position, is attached to the bottom of the container.

4. Container, according to claim 3, wherein the third fold line (10) delimits the end zone (13) of the vertical branch (3) of the "L"-shaped strip, which constitutes the fixing surface on the side wall of the container.

5. Container, according to claim 2, wherein the angle that the third fold line forms with the second fold line is greater than the angle that the fourth fold line forms with said second fold line.

6. Container, according to claim 1, wherein the horizontal branch (4) of the "L"-shaped strip (6) ends at the beginning of the side wall facing the side wall in which the vertical branch is attached in the folded position.

7. Container, according to any of the preceding claims, wherein the "L"-shaped strip (6) comprises gripping means to facilitate unfolding.

8. Container, according to claim 7, wherein the gripping means comprise a recess (12) made on the side of

the vertical branch (3) of the "L"-shaped strip, opposite the side thereof adjacent to the first fold line (8).

9. Container, according to any of the preceding claims, which is configured from a die-cut sheet. 5
10. Container, according to claim 9, where the "L"-shaped strip is part of the die-cut sheet.
11. Container, according to any of the preceding claims, comprising a tray-like configuration. 10
12. Container, according to any of the preceding claims, comprising two "L"-shaped strips (6), which in the folded position are symmetrically arranged, forming a "T"-shaped strip (2), attached to the inside of the container. 15

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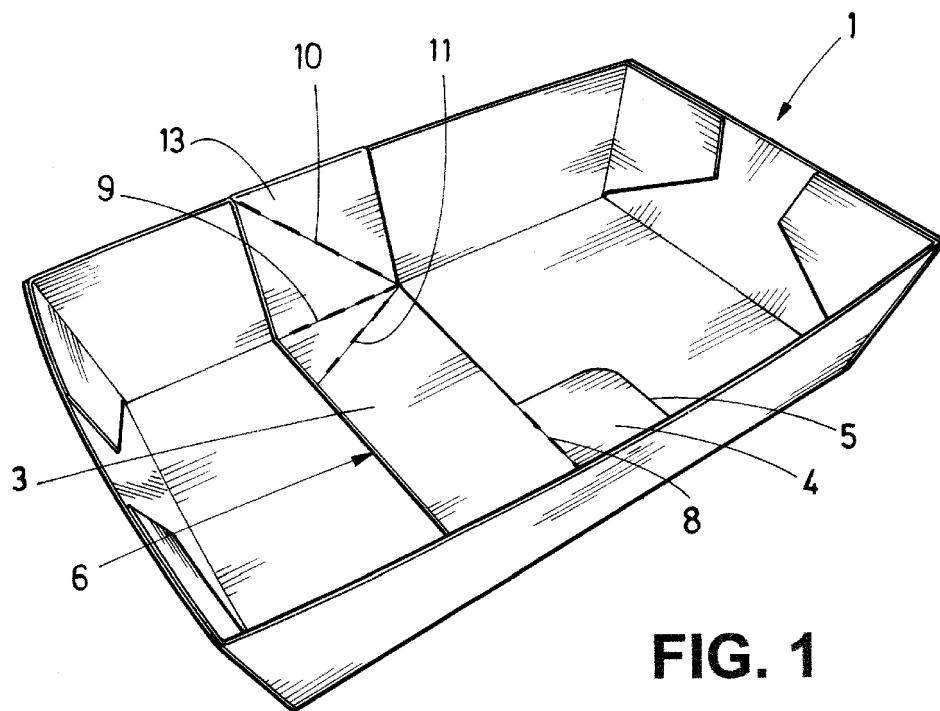


FIG. 1

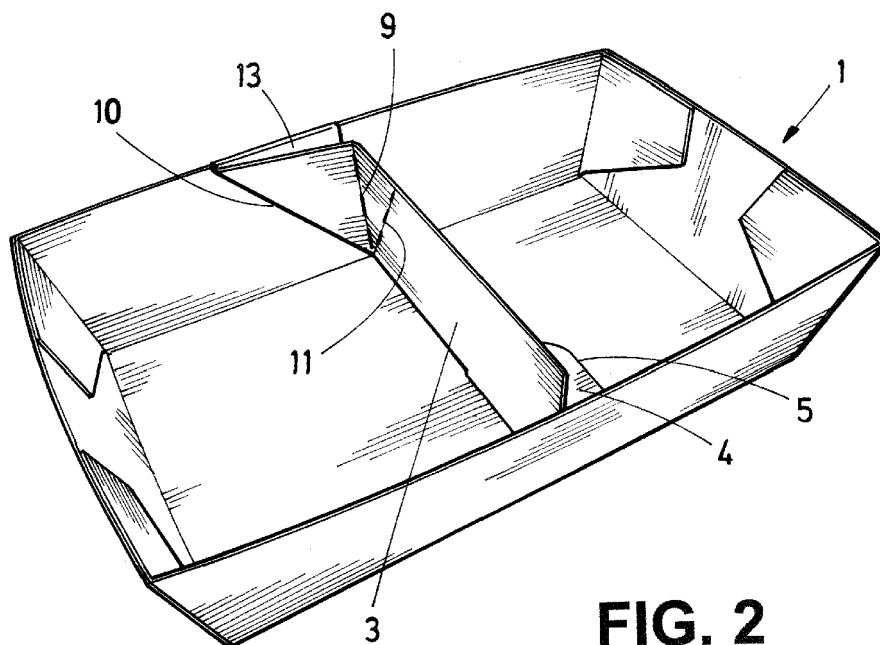
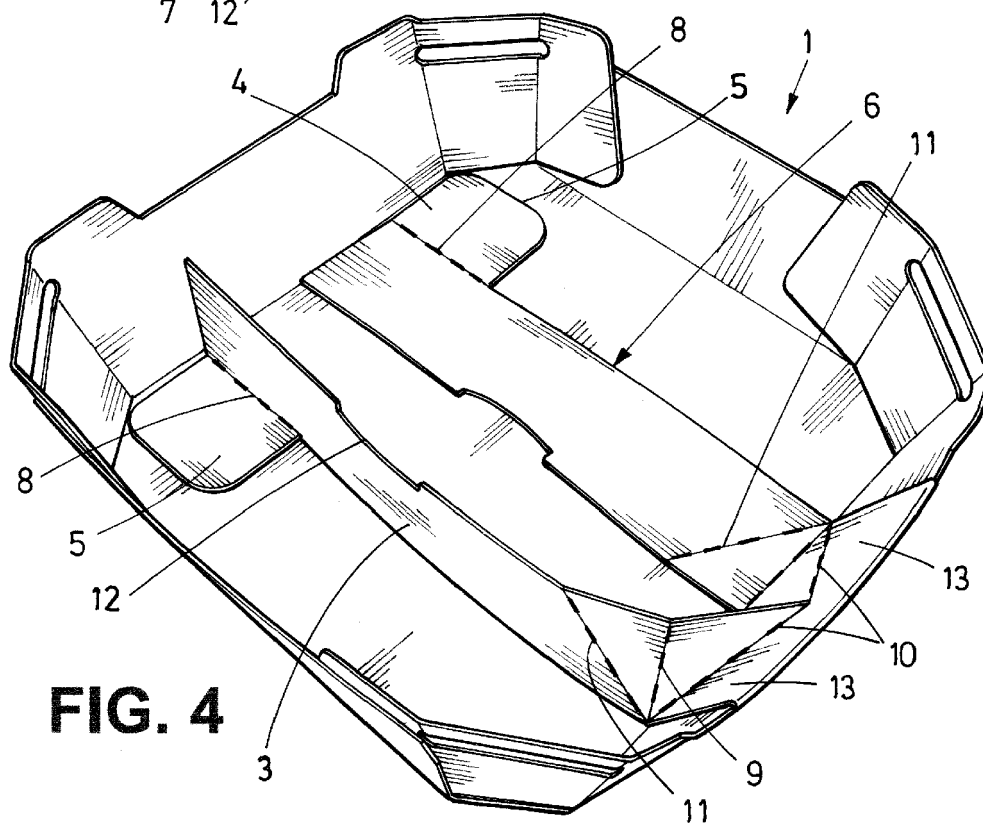
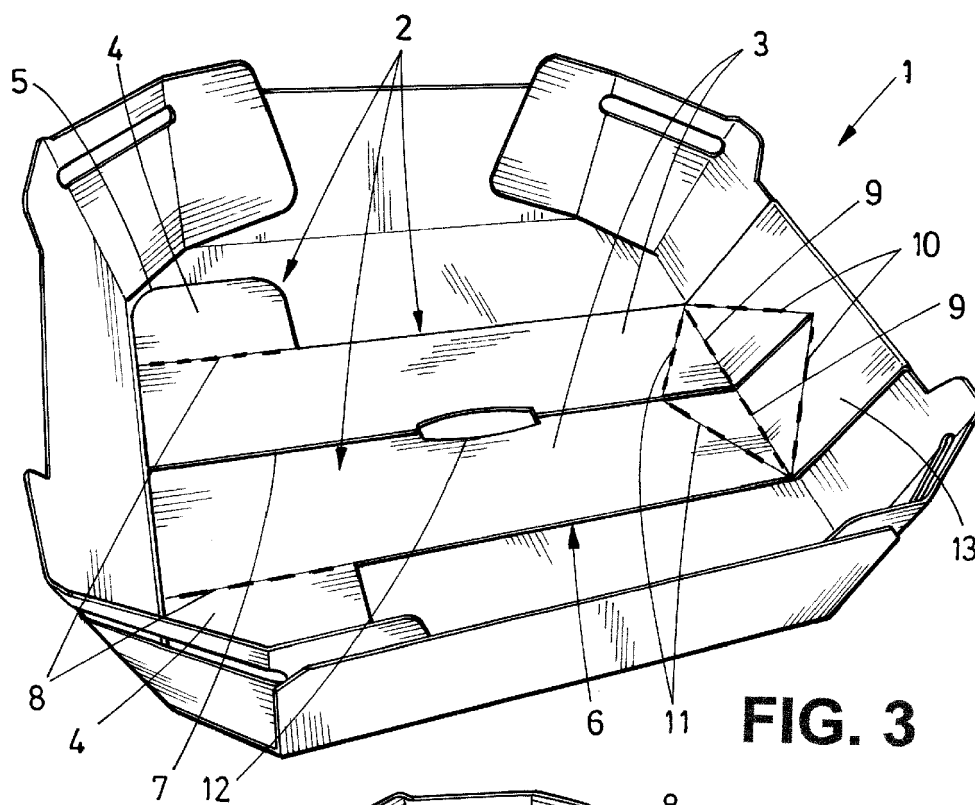
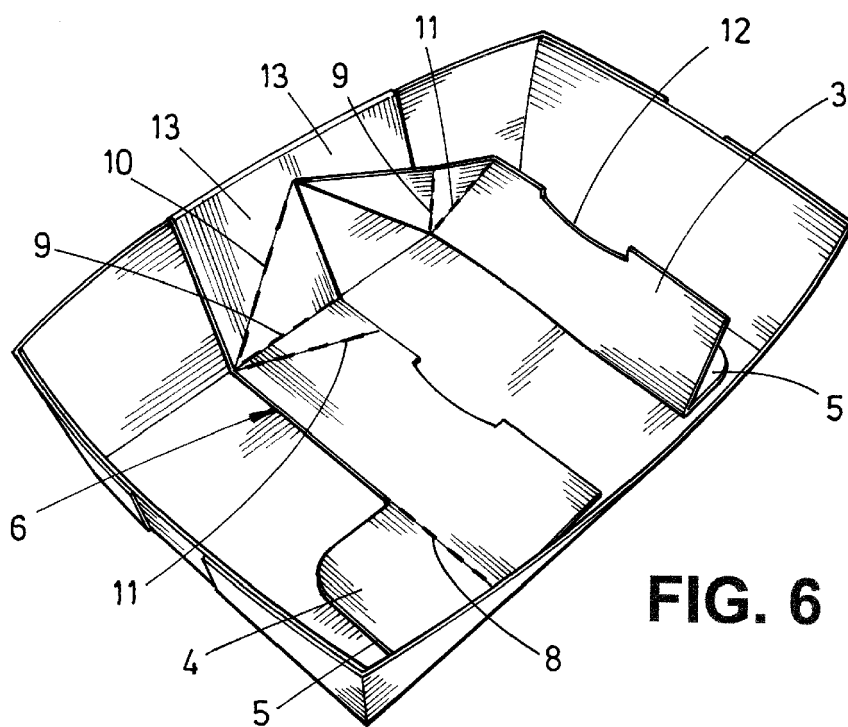
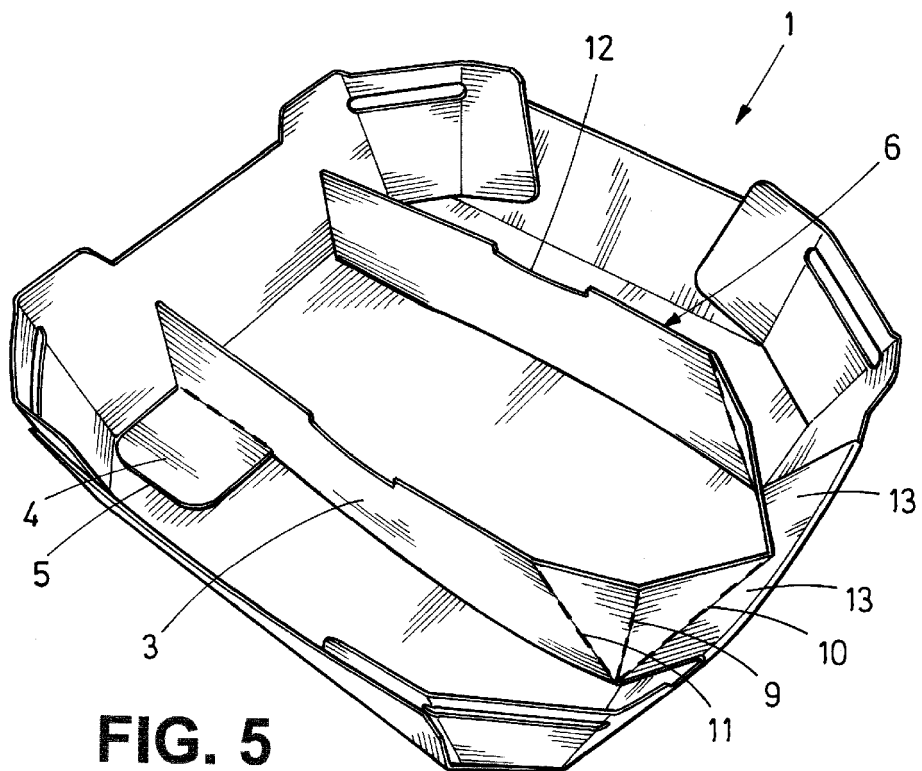


FIG. 2







EUROPEAN SEARCH REPORT

Application Number

EP 22 15 2611

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EPO FORM 1503 03.82 (P04C01)

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 3 095 722 A1 (ANDEK BEHEER BV [NL]) 23 November 2016 (2016-11-23) * column 4, paragraph 22 - column 6, paragraph 36 * * figures 5-11 *	1-12	INV. B65D5/488 B65D5/498
X	US 4 081 125 A (MEYERS GEORGE L) 28 March 1978 (1978-03-28) * column 1, line 56 - column 3, line 15 * * figures 1-5 *	1-12	
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 July 2022	Examiner Piolat, Olivier
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	

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

EP 22 15 2611

5 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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