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(54) **TRAY FOR TRANSPORTING AND DISPLAYING FOODSTUFF PRODUCTS**

(57) A tray is described for transporting and displaying foodstuff products, comprising a sheet that is folded so as to define:

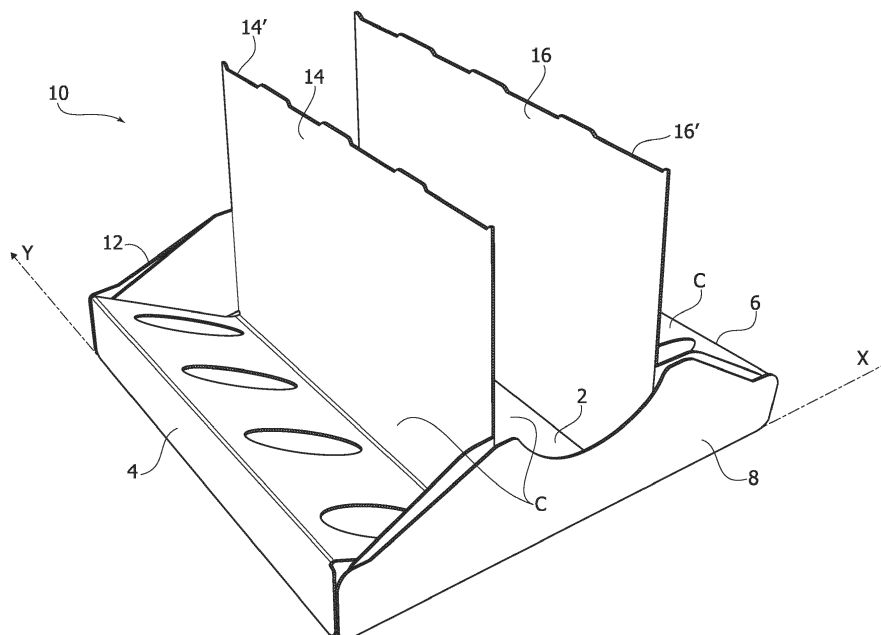
- a bottom (2);
- a first pair of side walls (4, 6) oriented along a first direction (Y); and
- a second pair of side walls (8, 12) oriented along a second direction (X) transversal to said first direction (Y), said tray being characterized in that said folded sheet, furthermore, defines: two separating walls (14, 16) that extend along said first

direction (Y), and are parallel to one another and are spaced apart from each other so as to divide the tray in distinct compartments (C);

wherein said separating walls (14, 16) extend along said first direction (Y) so far as to place respective opposite edges immediately next to said second pair of side walls (8, 12),

wherein said separating walls (14, 16) and/or said second pair of side walls (8, 12) have connecting portions (132) that connect said opposite edges of said separating walls (14, 16) to said second pair of side walls (8, 12).

FIG. 1



Description

[0001] The present invention relates to a tray made from paper or cardboard material, for transporting and displaying foodstuff products.

[0002] In general, trays of this type are already known in the art. They must combine properties such as a resistant structure that is suitable for use as packaging, with a predisposition to render the carried products clearly visible.

[0003] A very widespread example is constituted by a folded sheet container, having four side walls with reduced height, which leave prevalent portions of the carried products exposed. This type of tray offers the advantage of presenting a simple and low-cost structure.

[0004] In applications with products packaged in rigid or semi-rigid containers, these trays can be stacked directly on top of each other, according to a condition in which the weight of the formed stack is supported by the products themselves carried by the trays.

[0005] In this context, the present invention proposes the provision of an improved solution, which is able to satisfy one or more of the following requirements:

- providing an arrangement of the products that also includes a support for the products;
- providing an arrangement of the products that guarantees stability even during handling and transport of the tray;
- providing a simple and low-cost structure;
- providing a simple and quick assembly of the tray;
- providing an improved display method.

[0006] The tray according to the present invention is characterized in that it has the characteristics referred to in claim 1.

[0007] The claims form an integral part of the technical disclosure provided here in relation to the invention.

[0008] Further characteristics and advantages of the invention will become apparent from the description that follows with reference to the attached drawings, provided purely by way of non-limiting example, wherein:

- Figure 1 represents a preferred embodiment of the tray described here, according to an axonometric view;
- Figure 2 represents the tray of Figure 1, in a condition wherein a series of products have been loaded onto it;
- Figure 3 is a cross-sectional view of the tray of Figure 1;
- Figure 4 represents an example of a sheet for constructing the tray of Figure 1.

[0009] In the following description, various specific details are illustrated aimed at a thorough understanding of the embodiments. The embodiments may be implemented without one or more of the specific details, or with

other methods, components, materials, etc. In other cases, known structures, materials or operations are not shown or described in detail to avoid obscuring various aspects of the embodiments.

[0010] The references used here are only for convenience and do not therefore define the field of protection or the scope of the embodiments.

[0011] As anticipated above, the tray described here is intended to be used for transporting and displaying foodstuff products.

[0012] In particular, the tray described herein has been designed for applications with products packaged in rigid or semi-rigid containers, for example, made of plastic, paper, glass, aluminum material etc.

[0013] With reference to the figures, the tray described herein, indicated as a whole by the reference number 10, is formed by a single folded sheet so as to define:

- a bottom 2,
- a first pair of side walls 4, 6 oriented along a first direction Y,
- a second pair of side walls 8, 12 oriented along a second direction X perpendicular to said first direction Y,
- two separating walls 14, 16 that extend along the first direction Y, and are parallel to one another and are spaced apart from each other so as to divide the tray in distinct compartments C.

[0014] The compartments C obtained are - in total - three, or rather, a central one and two side ones positioned on opposite sides of the central one.

[0015] According to an important characteristic of the tray described herein, the separating walls 14 and 16 are directly connected to the two walls 8 and 12 via connecting portions.

[0016] In various preferred embodiments, these connecting portions define the only connecting points of the tray. "Connecting points" are the parts of the sheet forming the tray, which are mutually connected, following the folding of the sheet, to lock the sheet in the folded configuration.

[0017] In various preferred embodiments, these connecting portions define the only gluing points.

[0018] In various preferred embodiments, as well as in the illustrated one, the two walls 14 and 16 both rest on the bottom 2. Furthermore, in various preferred embodiments, as in the one illustrated, the indicated sheet defines a pair of folded portions 125, 127 which, respectively, connect each separating wall 14, 16 to the closest wall 4 or 6, and which, in the mounted condition of the tray, are arranged within a respective compartment C of the tray, in particular, in the two side compartments in the example illustrated.

[0019] As can be seen in Figure 3, preferably, the two portions 125, 127 assume a downwardly-inclined position, starting from the respective side wall 4 or 6, so that the two separating walls 14, 16 are brought into contact

with the bottom 2, resting thereon with their lower edges.

[0020] The separating walls 14, 16 have the function of dividing the tray into the indicated compartments, and, in addition, of constituting a support for the products. The second function is particularly advantageous for applications in which the products have a non-flat bottom so that they are not able to remain in an upright position or are not self-supporting. In various preferred embodiments, as in that shown in Figure 2, the products in question are products packaged in containers 20.

[0021] In various preferred embodiments, as in the illustrated one, these containers are arranged according to an orderly array of parallel rows. Preferably, in each row, each container is connected at least to one other container of the same row.

[0022] In various preferred embodiments, as well as in the one illustrated, the containers 20 are provided, at their upper ends, with respective peripheral edges 21 which project laterally with respect to the underlying portion of the individual container.

[0023] The aforesaid connection between containers can be made at these perimetric edges, in the form of connecting points or lines formed at these edges.

[0024] In the embodiment of Figure 2, the containers 20 of each row are connected to each other along connecting lines T.

[0025] The containers 20 described can, for example, be obtained by means of a conventional form-fill-seal process, in which a plurality of containers are thermoformed starting from a single sheet of plastic material. The connecting lines (or points) T indicated consist of weakening lines (or points) of the formed plastic sheet, in order to facilitate the separation of the individual containers.

[0026] Returning to the tray 10, the described group of products is arranged thereon according to an arrangement whereby adjacent containers of the same row are arranged on either side of the dividing walls 14, 16.

[0027] In this way, within a respective compartment C, therefore, containers 20 of different rows are arranged, and the connecting lines T of the individual rows are found above the dividing walls 14 and 16.

[0028] The two separating walls 14 and 16 act as a support to the containers 20 to keep them stably in a vertical position.

[0029] In various preferred embodiments, the two walls 14 and 16 extend vertically until they reach the connecting lines T. In various preferred embodiments, as in the one illustrated, the upper edges of these walls are shaped in such a way as to define a plurality of recesses 14', 16' within which the connecting lines T and, possibly, the corresponding confining portions of the containers 20 are received.

[0030] Thanks to the configuration described, the two walls 14 and 16 are able to hold the containers 20 in both the directions X and Y.

[0031] In alternative embodiments, the same containers 20 can be separated from each other and not connected to each other; also in this case, the separating

walls 14, 16 and the respective shaped edges nonetheless exert a stabilization action on the containers 20.

[0032] With reference now to Figure 4, this represents an example of a sheet for constructing the tray 10 of Figures 1 and 2. This sheet can, for example, be made of cardboard, corrugated cardboard, etc.

[0033] This sheet, indicated in Figure 4 as a whole by the reference number 100, has an outer profile 101 and predefined folding lines 103.

[0034] In various preferred embodiments, as in the illustrated one, the sheet 100 defines a quadrangular portion 111, which is included between a first pair of folding lines 103^I and 103^{II}, parallel to each other, and a second pair of folding lines 103^{III} and 103^{IV}, parallel to each other and perpendicular to the lines 103^I e 103^{II}. The portion 111 is intended to define the bottom 2 of the tray 10.

[0035] To the portion 111 are connected, on opposite sides, via the folding lines 103^I and 103^{II}, the two portions 113, 115, respectively, which are instead intended to define the two walls 4 and 6 of the tray 10.

[0036] Still on opposite sides, the portion 111 is also connected, through the folding lines 103^{III} and 103^{IV}, to the additional portions 117, 119, which are instead intended to define the walls 8 and 12 of the tray 10.

[0037] Furthermore, the sheet 100 has two end portions 121, 123, which are located at opposite ends of the sheet and are intended to define the two separating walls 14, 16 of the tray 10.

[0038] The two end portions 121, 123 are connected, respectively, to the portions 113 and 115, through the two additional portions 125, 127 indicated above, which constitute the connection of the two separating walls to the base structure of the tray (consisting of the bottom and the side walls), and whose width (measured in the direction of the folding lines 103^{IV} and 103^{III}) determines the positioning of the two walls on the bottom 2.

[0039] In particular, the portion 125 is connected to the portion 113 through the folding line 103^V, and to the end portion 121 through the folding line 103^{VI}. On the other hand, the portion 127 is connected to the portion 115 through the folding line 103^{VII}, and to the end portion 123 through the folding line 103^{VII}.

[0040] As already highlighted above, in the mounted condition of the tray, the portions 125, 127 are found within the two side compartments C and, preferably, assume a downwardly-inclined orientation - starting from the respective side walls of the tray to which they are connected - so that the separating walls 14 and 16 can rest with their lower edges directly on the bottom 2, thus further increasing the stability of the overall structure.

[0041] In various preferred embodiments, as well as in the one illustrated, these portions 125 and 127 each have a series of openings 125', 127', respectively, suitable for receiving the individual products.

[0042] As mentioned above, according to an important characteristic of the tray described herein, the separating walls 14 and 16 are directly connected to the two walls 8 and 12 through connecting portions.

[0043] In this regard, with reference to the sheet 100, in various preferred embodiments, as in the one illustrated, the two end portions 121 and 123 - which define the two separating walls 14, 16 - are arranged with their respective opposite edges perpendicular to the folding lines 103^{VI} and 103^{VIII}, with flaps 132 that are connected to the portions 121, 123 through folding lines 103^{IX}, and which are intended to be connected to the inner faces of the two portions 119, 117 - these defining the two side walls 8 and 12.

[0044] In various preferred embodiments, the flaps 132 identify the only connecting points of the tray 10.

[0045] In particular, it should be noted that these flaps create a connection, between the two separating walls 14 and 16 and the side walls 8 and 12, configured to create a mutual support between these, which is sufficient to rigidly lock the entire structure of the tray in its closed configuration. Finally, with reference to the construction process of the tray 10, it simply requires folding the sheet 100 along the indicated folding lines, to bring the portions 119, 113, 117, 115, 121 and 123 into an upright position, and to connect the flaps 132 to the portions 117 and 119.

[0046] In view of the above, the simplicity of the structure and the ease of assembly of the tray described here thus appear evident.

[0047] Of course, without prejudice to the principle of the invention, the details of construction and the embodiments may vary, even significantly, with respect to those illustrated here, purely by way of non-limiting example, without departing from the scope of the invention as defined by the attached claims.

Claims

1. A tray for transporting and displaying foodstuff products, comprising a sheet that is folded so as to define:

- a bottom (2);
- a first pair of side walls (4, 6) oriented along a first direction (Y); and
- a second pair of side walls (8, 12) oriented along a second direction (X) transversal to said first direction (Y),

said tray being **characterized in that** said folded sheet, furthermore, defines:

two separating walls (14, 16) that extend along said first direction (Y), and are parallel to one another and are spaced apart from each other so as to divide the tray into distinct compartments (C);
wherein said separating walls (14, 16) extend along said first direction (Y) so far as to place respective opposite edges immediately next to said second pair of side walls (8, 12),

wherein said separating walls (14, 16) and/or said second pair of side walls (8, 12) have connecting portions (132) that connect said opposite edges of said separating walls (14, 16) to said second pair of side walls (8, 12).

2. A tray according to claim 1, wherein said separating walls (14, 16) are provided with one or more flaps (132) at said opposite edges, for connecting said opposite edges to said second pair of side walls (8, 12) .

3. A tray according to claim 2, wherein said flaps are connected to said second pair of side walls (8, 12) by means of glue or via a snap-fit connection.

4. A tray according to any one of the previous claims, wherein said connecting portions (132) define the only connecting points of said tray, preferably said connecting points being covered with glue.

5. A tray according to any one of the previous claims, wherein said sheet defines, furthermore, a pair of folded portions (125, 127) which, respectively, connect each separating wall (14, 16) to the closest wall of said first pair of side walls (4, 6), and which, in the mounted condition of said tray, place themselves within a respective compartment (C) of said tray.

6. A tray according to claim 5, wherein said portions (125, 127) have a series of openings for receiving said products, and preferably assume a downwardly-inclined position starting from said respective closest side walls (4, 6).

7. A tray according to any one of the previous claims, wherein said separating walls (14, 16) rest on said bottom (2).

8. A tray according to any one of the previous claims, comprising a plurality of products that are packaged in containers (20) provided, at their upper ends, with respective perimetral edges (21) that project laterally with respect to the portion below the single container, wherein said containers (20) are placed within said distinct compartments (C) according to an ordered arrangement of parallel rows, wherein the containers of the same row are connected to one another via said perimetral edges (21), at or along connecting points or lines (T), and are placed on said tray so that adjacent containers of the same row straddle one of said separating walls (14, 16), wherein said separating walls (14, 16) have upper edges shaped in such a way that define a series of recesses (14', 16'), wherein said connecting points or lines (T) between said perimetral edges of said adjacent containers are placed within said recesses (14', 16').

9. A rigid or semi-rigid sheet having a perimetral contour and preformed folding lines, which are configured for providing a tray according to any one of the previous claims.

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FIG. 1

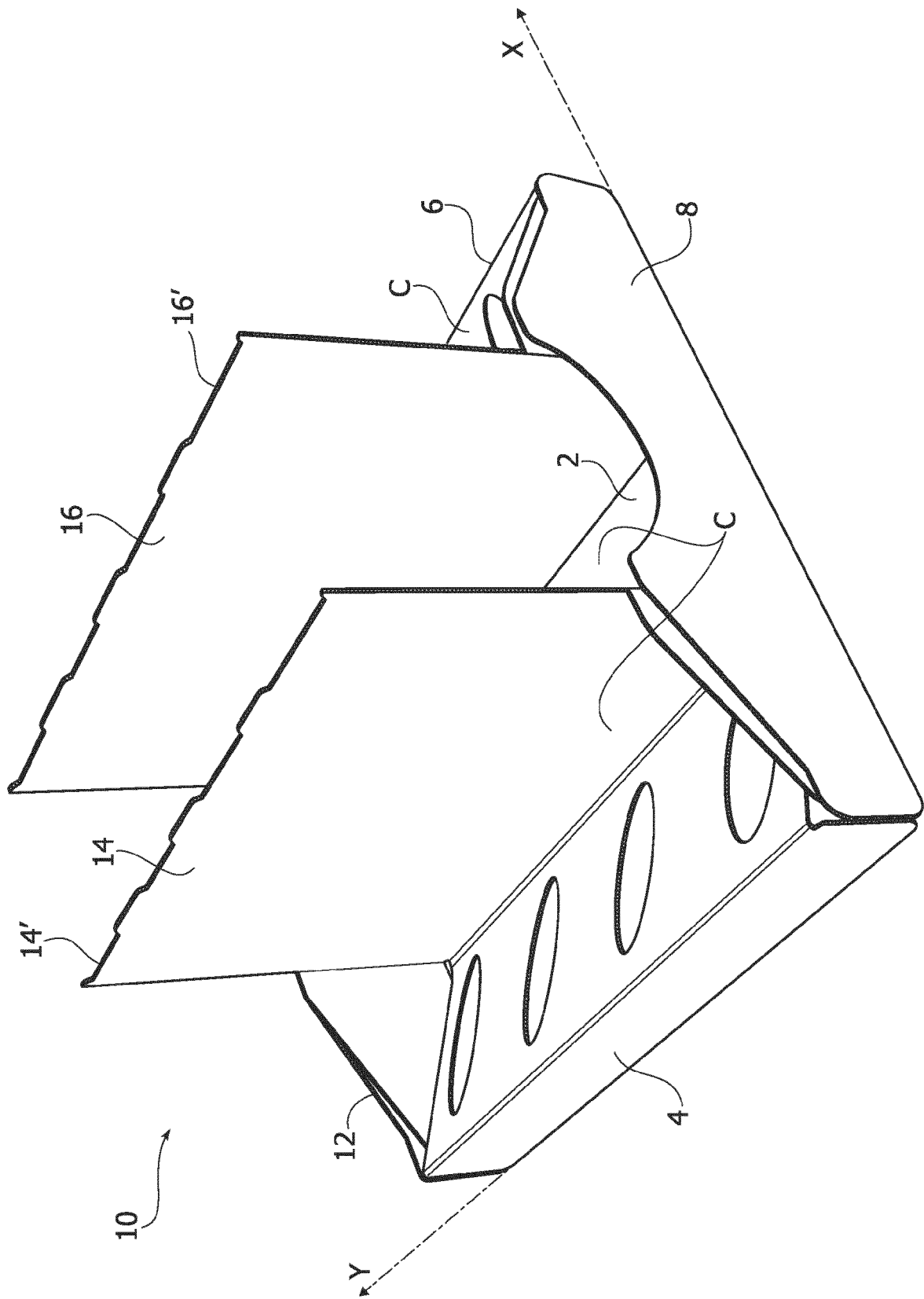


FIG. 2

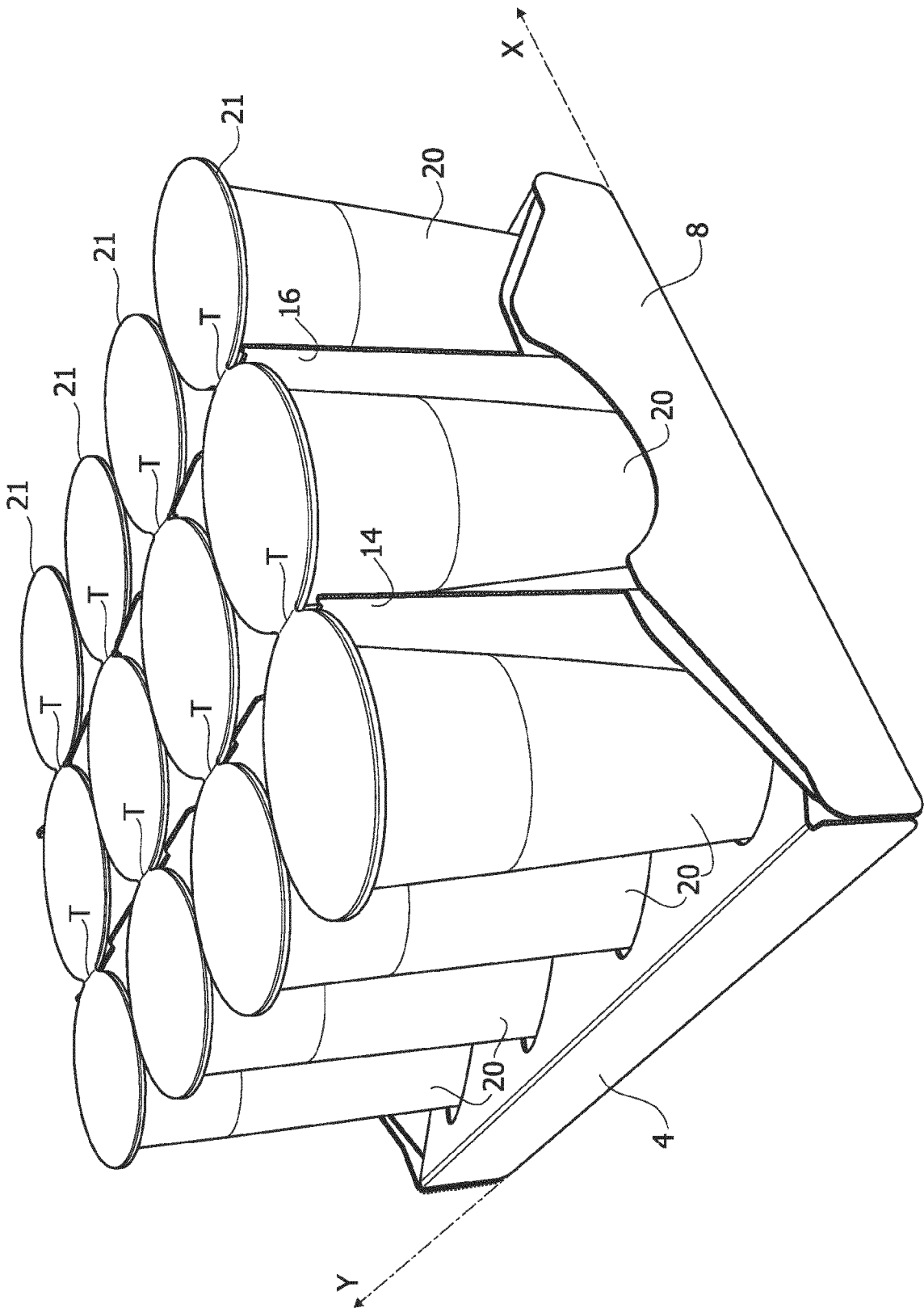


FIG. 3

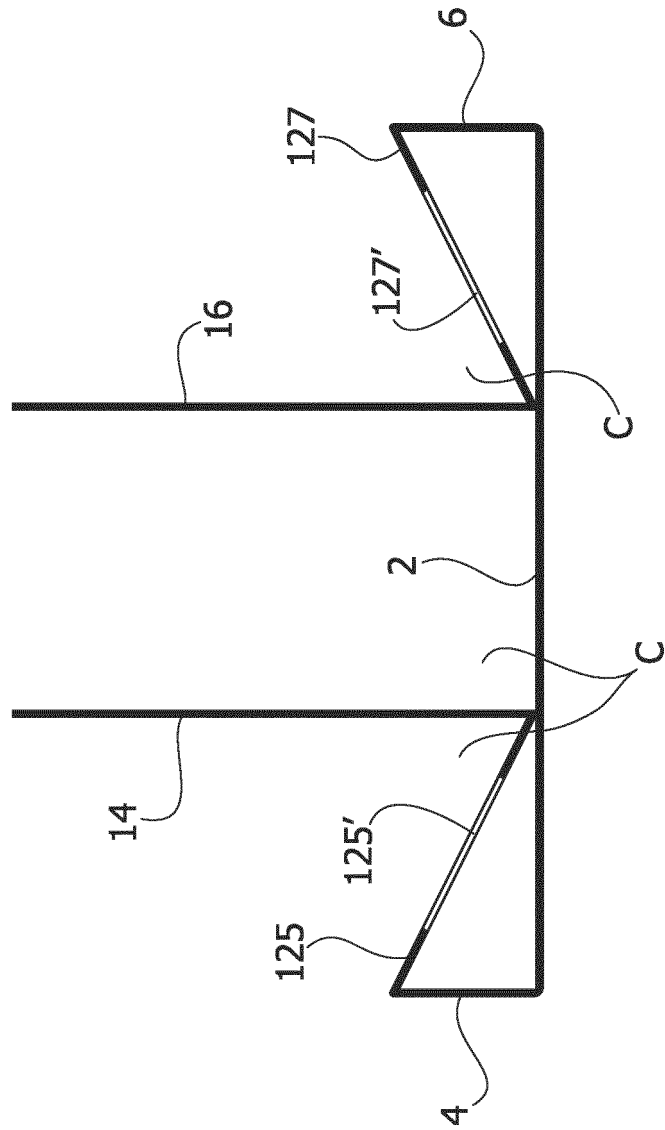
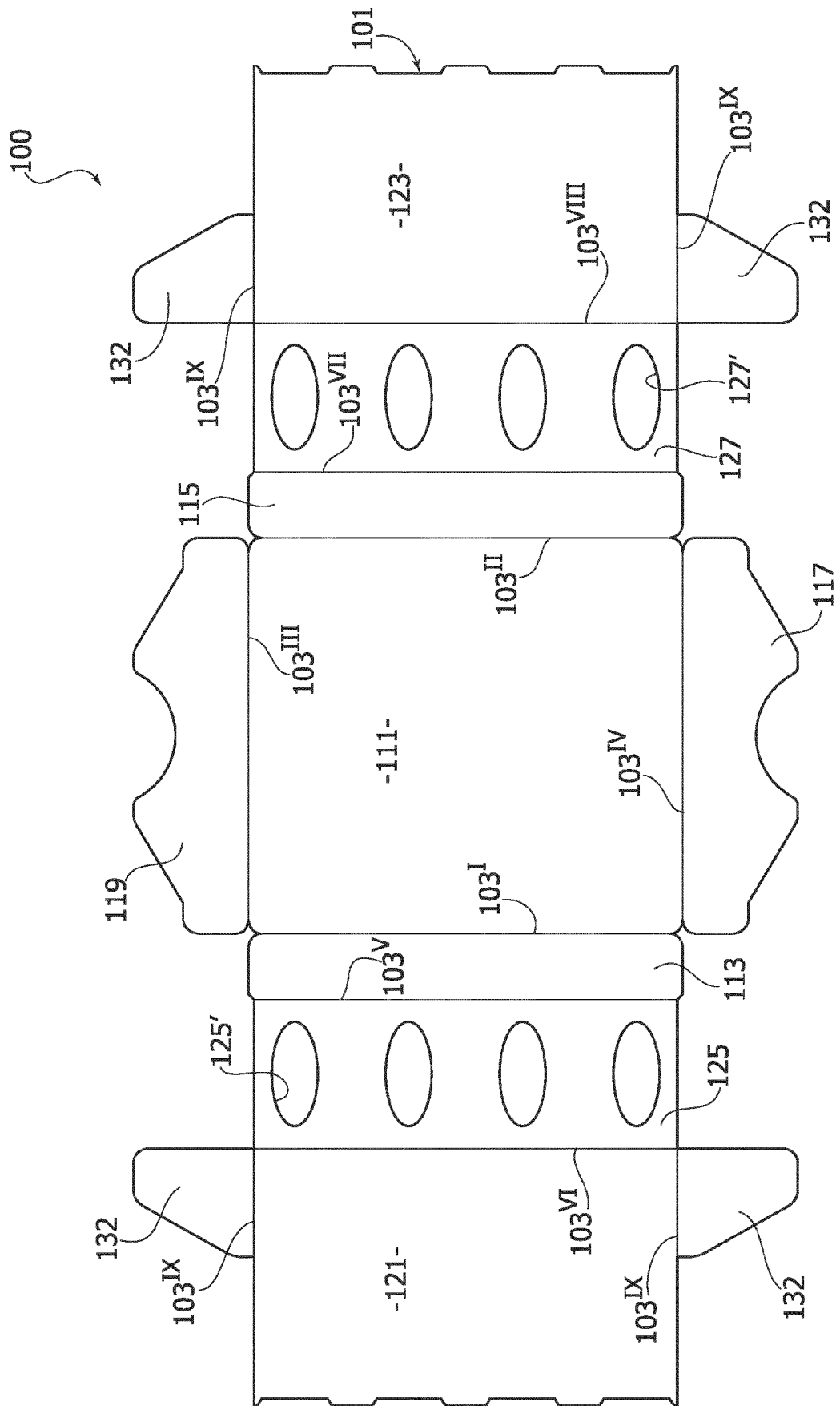


FIG. 4





EUROPEAN SEARCH REPORT

Application Number
EP 19 20 9004

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EPO FORM 1503 03.02 (P04C01)

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2 457 291 A (WENZEL FREDERICK W) 28 December 1948 (1948-12-28)	1-4,7-9	INV. B65D5/48
A	* column 4, line 14 - line 29; figures 6, 7 *	5,6	B65D71/00 B65D5/50
A	US 2005/023162 A1 (HSU FENG-LING [TW]) 3 February 2005 (2005-02-03) * paragraph [0018] - paragraph [0022]; figures 1-4 *	1-9	
			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 25 March 2020	Examiner Derrien, Yannick
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ON EUROPEAN PATENT APPLICATION NO.**

EP 19 20 9004

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25-03-2020

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