



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
27.03.2013 Bulletin 2013/13

(51) Int Cl.:
B65D 5/48 (2006.01)

(21) Application number: **12185385.7**

(22) Date of filing: **21.09.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Cartotrentina SRL**
38017 Mezzolombardo TN (IT)

(72) Inventor: **Dolzan, Daniele**
38017 MEZZOLOMBARDO TN (IT)

(74) Representative: **Modiano, Micaela Nadia**
Modiano & Partners
Via Meravigli 16
20123 Milano (IT)

(30) Priority: **22.09.2011 IT VR20110184**

(54) **Box for containing items**

(57) A box (1) for containing items, comprising a tubular structure (2), having a rectangular transverse cross-section, which defines four side walls (2c) and is closed at a first end (2a) by a bottom wall (3) and defines, at the second end (2b), which is opposite to the first end (2a), an access inlet (4) which can be closed by means of a closure device (5) which is connected to at least one first edge (20) of the access inlet (4), at least one second edge (21) arranged laterally with respect to the first edge (20) being connected to a respective lateral band (30) which has at least one notch (30a) which is parallel to the second edge (21); the or each lateral band (30) is foldable toward the bottom wall (3) of the box (1) to define

at least two upper accommodation seats (40) which are arranged with their longitudinal axis (104) parallel to the bottom wall (3) of the box (1) and in a spaced position from the bottom wall (3); the box further comprises a plate-like body (6) which is connected to a connecting portion of the tubular structure (2) and can be folded toward the inside of the box (1), the plate-like body (6) having at least one first group of notches (50) designed to provide a respective lateral wall (50a) for spacing from the bottom wall (3) in order to define at least two lower accommodation seats (51) which are arranged so as to be parallel and correspond to the at least two upper accommodation seats (40).

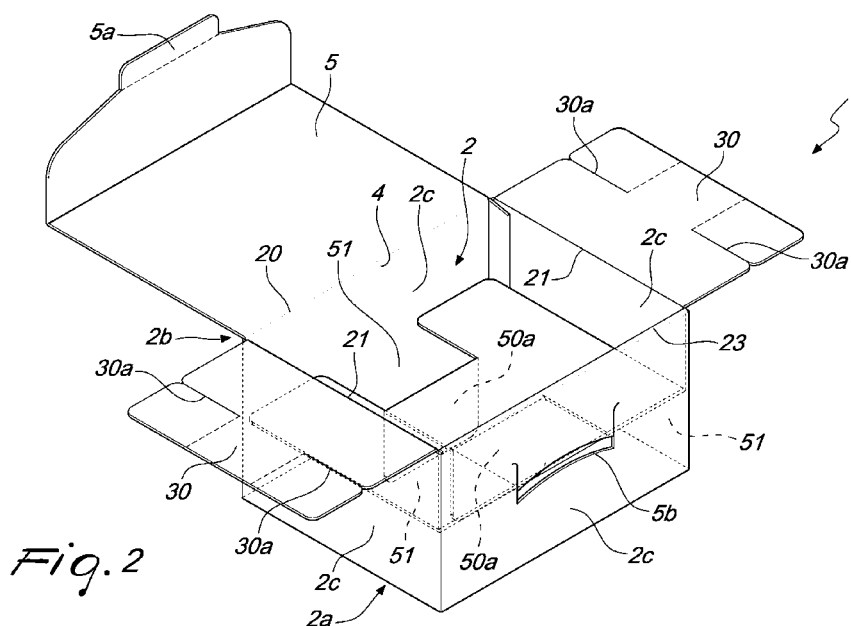


Fig. 2

Description

[0001] The present invention relates to a box or case for containing items and in particular elongated items such as bottles or the like.

[0002] Boxes are currently known which are used for example to accommodate bottles and are obtained starting from a flat structure made of cardboard which is die-cut and on which respective portions are provided which are designed to provide the lower wall or bottom wall, the side walls and the upper closure wall.

[0003] The free flaps of the portions designed to provide the side walls are mutually glued so as to provide a closed and flattened structure.

[0004] In many cases, both the lower wall and the upper wall are constituted by flaps which are connected to the side walls by means of respective folding lines and are designed to be superimposed and glued.

[0005] A particular type of box is the one that can be associated detachably, on the bottom, with a structure which defines typically three lower accommodation seats for respective bottles or other items to be arranged so that their longitudinal axis is parallel to the bottom of the box, case or packaging.

[0006] Finally, respective elements, which also can be folded toward the inside of the box, are connected above the upper edge of the box to opposite sides and in turn cooperate to define three upper accommodation seats for respective bottles or other items arranged so as to correspond to the three lower accommodation seats.

[0007] Such types of box or case, while being widely used at present, are however not devoid of drawbacks.

[0008] In particular, it is necessary to manage two or three distinct elements during production and during storage/shipping.

[0009] Moreover, the assembly of the boxes is in any case slow and laborious, since it is necessary to insert each time the structure that defines the three lower accommodation seats and, in some cases, also the structure that defines the three upper accommodation seats.

[0010] The aim of the present invention is to provide a single box for containing items, such as for example bottles, that is capable of eliminating the drawbacks noted above.

[0011] Within this aim, an important object of the present invention is to provide a box for containing items that has a very simple structure and has a competitive production cost, so that its use is advantageous also from an economic standpoint.

[0012] This aim, as well as these and other objects that will become better apparent hereinafter, are achieved by a box according to claim 1.

[0013] Further characteristics and advantages of the invention will become better apparent from the description of some preferred but not exclusive embodiments of a box with improved closure according to the present invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a first embodiment of a box or case according to the invention in the fully open condition;

Figure 2 is another perspective view of the first embodiment of the box according to the invention, in which the plate-like body is folded inwardly;

Figure 3 is a perspective view of the first embodiment of the box according to the invention, in which the lateral bands are folded toward the inside of the box; Figure 4 is a perspective view of a second embodiment of a box according to the invention in the fully open condition;

Figure 5 is again a perspective view of the second embodiment of the box according to the invention, in which the plate-like body is folded inwardly;

Figure 6 is a perspective view of the second embodiment of the box according to the invention, in which the lateral bands are folded toward the inside of the box;

Figure 7 is a perspective view of a third embodiment of a box according to the invention in the fully open condition;

Figure 8 is an again a perspective view of the third embodiment of the box according to the invention, in which the plate-like body is folded inwardly and glued to the box;

Figure 9 is a perspective view of the third embodiment of the box according to the invention, in which the lateral bands are folded toward the inside of the box.

[0014] In the exemplary embodiments that follow, individual characteristics, given in relation to specific examples, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

[0015] With reference to the figures, a box for containing items, such as bottles or the like, is generally designated by the reference numeral 1 and comprises a tubular structure 2, which has a rectangular (or square) transverse cross-section and defines four lateral walls 2c.

[0016] The tubular structure 2 is closed at a first end 2a by a bottom wall 3, which is constituted typically by four mutually interlocked or glued lower flaps, and defines, at the second end 2b that is opposite the first end 2a, an access inlet 4, which can be closed by means of a closure device 5 that is connected to at least one first edge 20 of the access inlet 4.

[0017] The closure device 5 conveniently has an insertion tab 5a which can be inserted within a slot 5b provided on a side wall 2c or at an edge that is opposite with respect to the first edge 20.

[0018] In greater detail, at least a second edge 21 of the access inlet 4 arranged laterally with respect to the first edge 20 is connected to a respective lateral band 30 that has at least a notch 30a that is parallel to the second edge 21.

[0019] The lateral band or bands 30 can be folded,

advantageously, by way of folding lines, toward the bottom wall 3 of the box 1 in order to define at least two upper accommodation seats 40 which are arranged so that their longitudinal axis 104 is parallel to the bottom wall 3 of the box 1.

[0020] In particular, the upper accommodation seats 40 are arranged in a spaced position with respect to the bottom wall 3.

[0021] According to the present invention, the box 1 comprises a plate-like body 6 which is connected to a connecting portion defined on the tubular structure 2.

[0022] The plate-like body 6 can be folded toward the inside of said box 1 and has at least a first group of notches 50 designed to provide a respective side wall 50a for spacing from the bottom wall 3 in order to define at least two lower accommodation seats 51 which are arranged so as to be parallel and correspond to the at least two upper accommodation seats 40.

[0023] Advantageously, as shown in Figures 1 to 6 related to the first and second embodiments, the connecting portion comprises a third edge 23 of the access inlet 4 which is arranged opposite the first edge 20 and accordingly the plate-like body is provided in a single piece with the other elements that constitute the box 1.

[0024] However, as shown in Figures 7 to 9, the plate-like body 6 might not be provided in a single piece and thus be connected by means of a respective folding line to the third edge 23 of the access inlet 4, but the plate-like body can be associated stably, for example by gluing, to a side wall 2c of the tubular structure 2.

[0025] In this manner it is possible to use a closure device 5 which has, as shown, two mutually opposite closure portions.

[0026] Conveniently, the box 1 comprises two mutually opposite lateral bands 30 which are connected to respective second edges 21 which are mutually opposite.

[0027] With reference to a preferred embodiment, each lateral band 30 has two mutually opposite notches 30a for defining three upper accommodation seats 40.

[0028] Likewise, the plate-like body 6 has at least two groups of notches 50 which are designed to provide a respective side wall 50a for spacing from the bottom wall 3 in order to define three lower accommodation seats 51.

[0029] In greater detail, the plate-like body 6 can comprise a connecting band 6a which lies between the third edge 23 and a group of notches 50.

[0030] A first group of notches 50, and particularly the one arranged toward the third edge 23, comprises a U-shaped notch in which the concavity is directed away with respect to the third edge 23.

[0031] The optional other group of notches 50 comprises a pair of mutually spaced notches which extend from the edge that is opposite the third edge 23 and at right angles thereto.

[0032] As regards the manner of providing a box 1 according to the invention, it can be obtained from a die-cut plate-like body which has a longitudinal band provided with folding portions and designed to define the side walls

2c of the box 1.

[0033] The longitudinal band has the respective longitudinal ends which can be mutually connected to provide a closed structure that is adapted to pass, on command, between a collapsed closure condition and an extended open condition in which it defines a tubular structure 2 which has a rectangular transverse cross-section.

[0034] The first end 2a of the tubular structure 2 is connected to a plurality of bottom elements which are connected to the first end 2a through first folding lines and are intended to provide, in the extended open condition, the bottom wall 3 of the box 1.

[0035] The second end 2b of the tubular structure 2 is connected, by means of respective second folding lines, to the closure device 5, to at least one lateral band 30 and to at least one plate-like body 6.

[0036] The use of a box for containing items according to the invention is evident from what has been described above.

[0037] All the characteristics of the invention indicated above as advantageous, convenient and the like, may also be omitted or be replaced with equivalents.

[0038] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0039] In practice it has been found that the invention has achieved, in all the embodiments, its intended aim and objects.

[0040] In practice, the materials used, as well as the contingent shapes and dimensions, may be an according to requirements.

[0041] All the details may further be replaced with other technically equivalent elements.

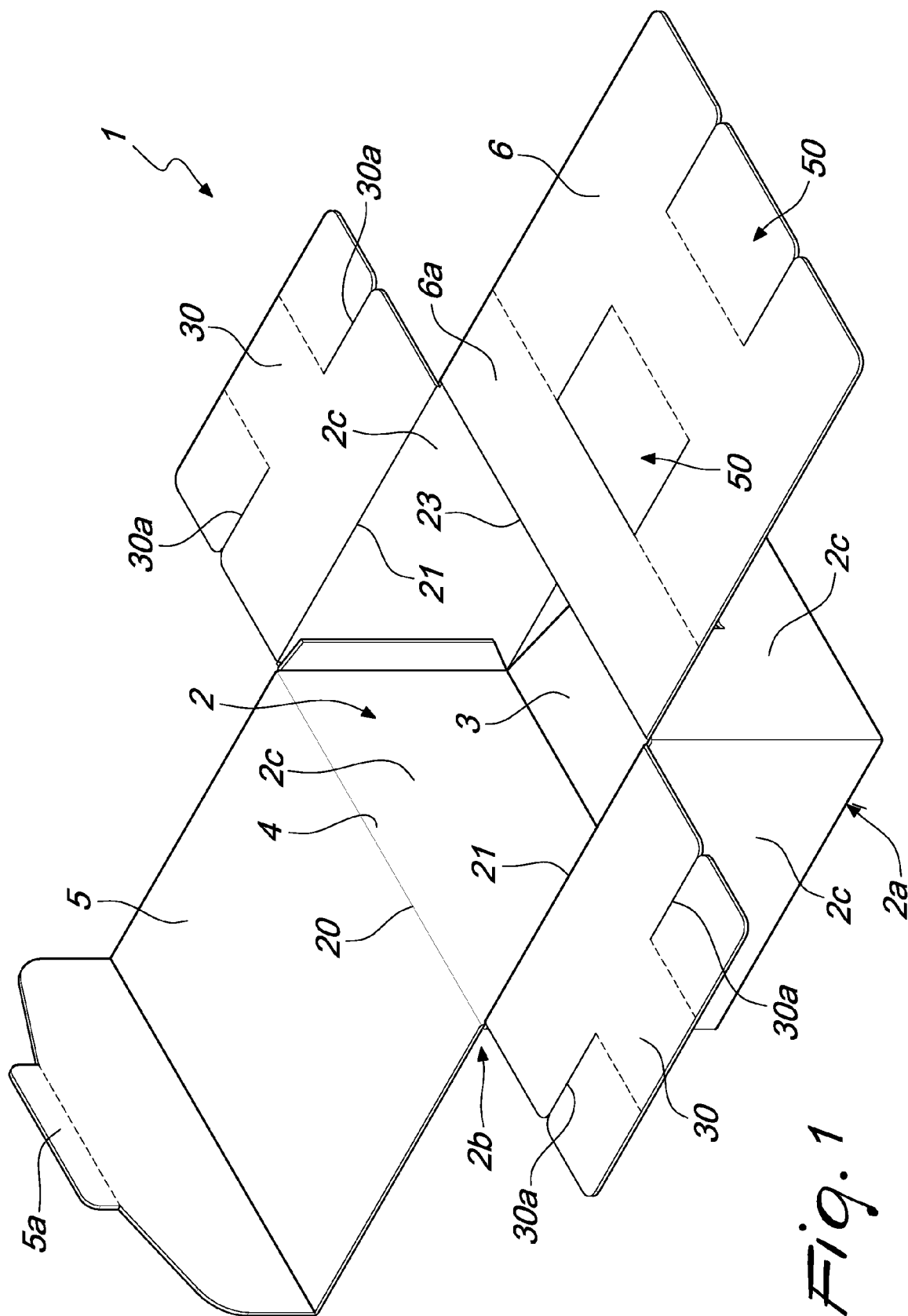
[0042] The disclosures in Italian Patent Application No. VR2011A000184 from which this application claims priority are incorporated herein by reference.

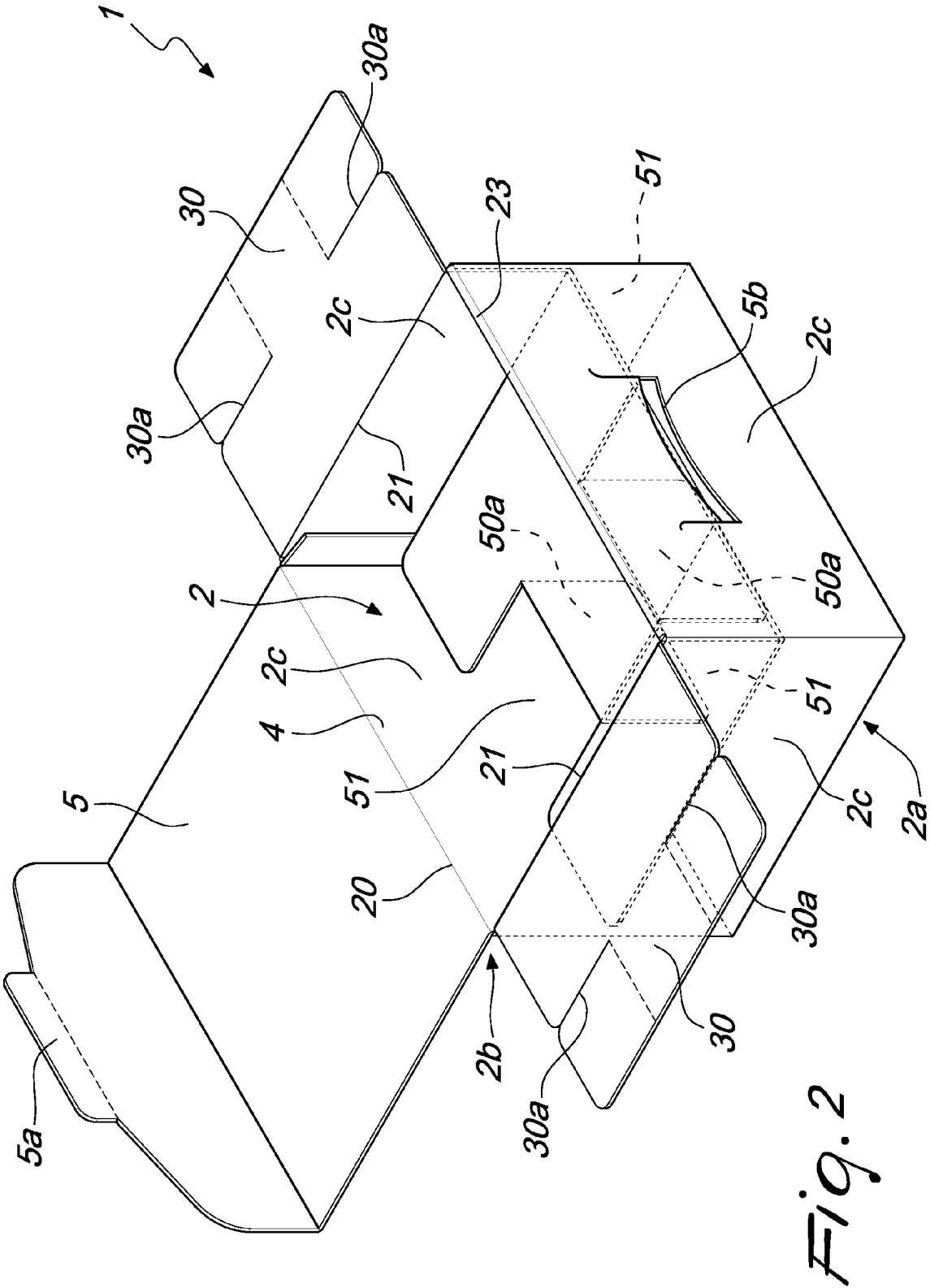
[0043] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A box (1) for containing items, comprising a tubular structure (2), having a rectangular transverse cross-section, which defines four side walls (2c) and is closed at a first end (2a) by a bottom wall (3) and defines, at the second end (2b), which is opposite to said first end (2a), an access inlet (4) which can be closed by means of a closure device (5) which is connected to at least one first edge (20) of said access inlet (4), at least one second edge (21) arranged laterally with respect to said first edge (20) being connected to a respective lateral band (30) which

- has at least one notch (30a) which is parallel to said second edge (21), said at least one lateral band (30) being foldable toward the bottom wall (3) of said box (1) to define at least two upper accommodation seats (40) which are arranged with their longitudinal axis (104) parallel to the bottom wall (3) of said box (1) and in a spaced position from said bottom wall (3), said box being **characterized in that** it comprises a plate-like body (6) which is connected to a connecting portion of said tubular structure (2) and can be folded toward the inside of said box (1), said plate-like body (6) having at least a first group of notches (50) designed to provide a respective lateral wall (50a) for spacing from said bottom wall (3) in order to define at least two lower accommodation seats (51) which are arranged so as to be parallel and correspond to said at least two upper accommodation seats (40).
2. The box (1) according to claim 1, **characterized in that** said connecting portion comprises a third edge (23) of said access inlet (4) which is arranged opposite with respect to said first edge (20).
 3. The box (1) according to one or more of the preceding claims, **characterized in that** it comprises two mutually opposite lateral bands (30) which are connected to respective second edges which are arranged so as to be mutually opposite.
 4. The box (1) according to one or more of the preceding claims, **characterized in that** said at least one lateral band (30) has two mutually opposite notches (30a) in order to define three upper accommodation seats (40), and **in that** said plate-like body (6) has at least two groups of notches (50) designed to provide a respective lateral wall (50a) for spacing from said bottom wall (3) in order to define three lower accommodation seats (51).
 5. The box (1) according to one or more of the preceding claims, **characterized in that** said plate-like body (6) comprises a connecting band (6a), which is extended between said third edge (23) and said at least one group of notches (50).
 6. The box (1) according to one or more of the preceding claims, **characterized in that** said at least one group of notches (50) comprises a U-shaped notch in which the concavity is directed away from said third edge (23).
 7. The box (1) according to one or more of the preceding claims, **characterized in that** said at least one group of notches (50) comprises a pair of notches that extend from the edge that is opposite to said third edge (23) and at right angles thereto.
 8. The box (1) according to one or more of the preceding claims, **characterized in that** it comprises a die-cut plate-like body which has a longitudinal band provided with folding portions and designed to define the side walls of said box (1), said longitudinal band having the respective longitudinal ends that can be mutually connected to provide a closed structure which is adapted to pass, on command, between a collapsed closed condition and an extended open condition, in which it defines a tubular structure having a rectangular transverse cross-section, said first end of said tubular structure (2) being connected to a plurality of bottom elements which are connected to said first end (2a) by means of first folding lines and are designed to provide, in said extended open condition, said bottom wall (3) of said box (1), the second end (2b) of said tubular structure (2) being connected, by respective second folding lines, to said closure device (5), to said at least one lateral band (30) and to said at least one plate-like body (6).
 9. The box (1) according to one or more of the preceding claims, **characterized in that** said items are selected from the group that comprises bottles, agricultural products, spray cans, flasks and the like.
 10. The box (1) according to one or more of the preceding claims, **characterized in that** said plate-like body (6) can be associated stably, by automated or manual adhesive bonding, with a side wall (2c) of the tubular structure (2).





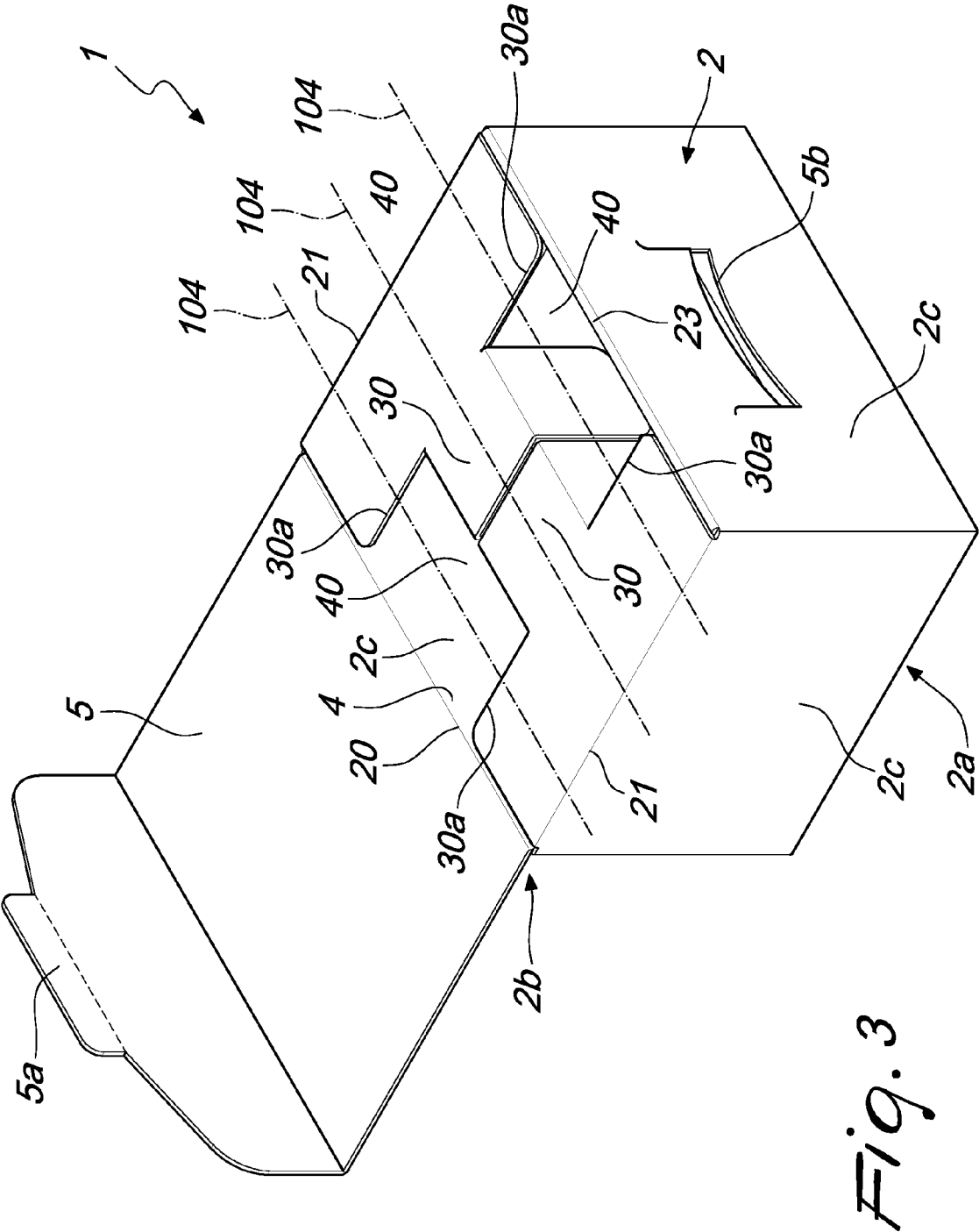
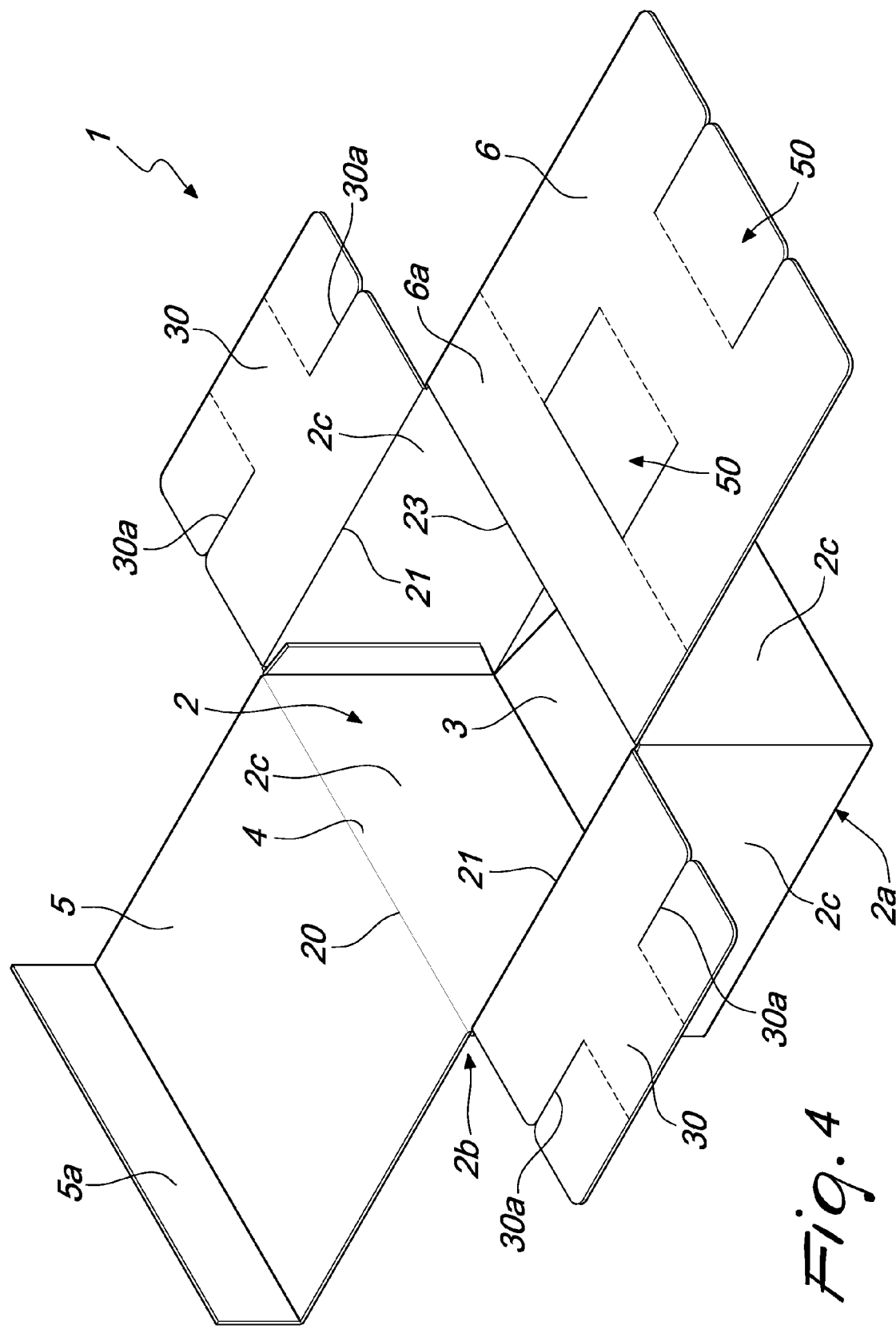
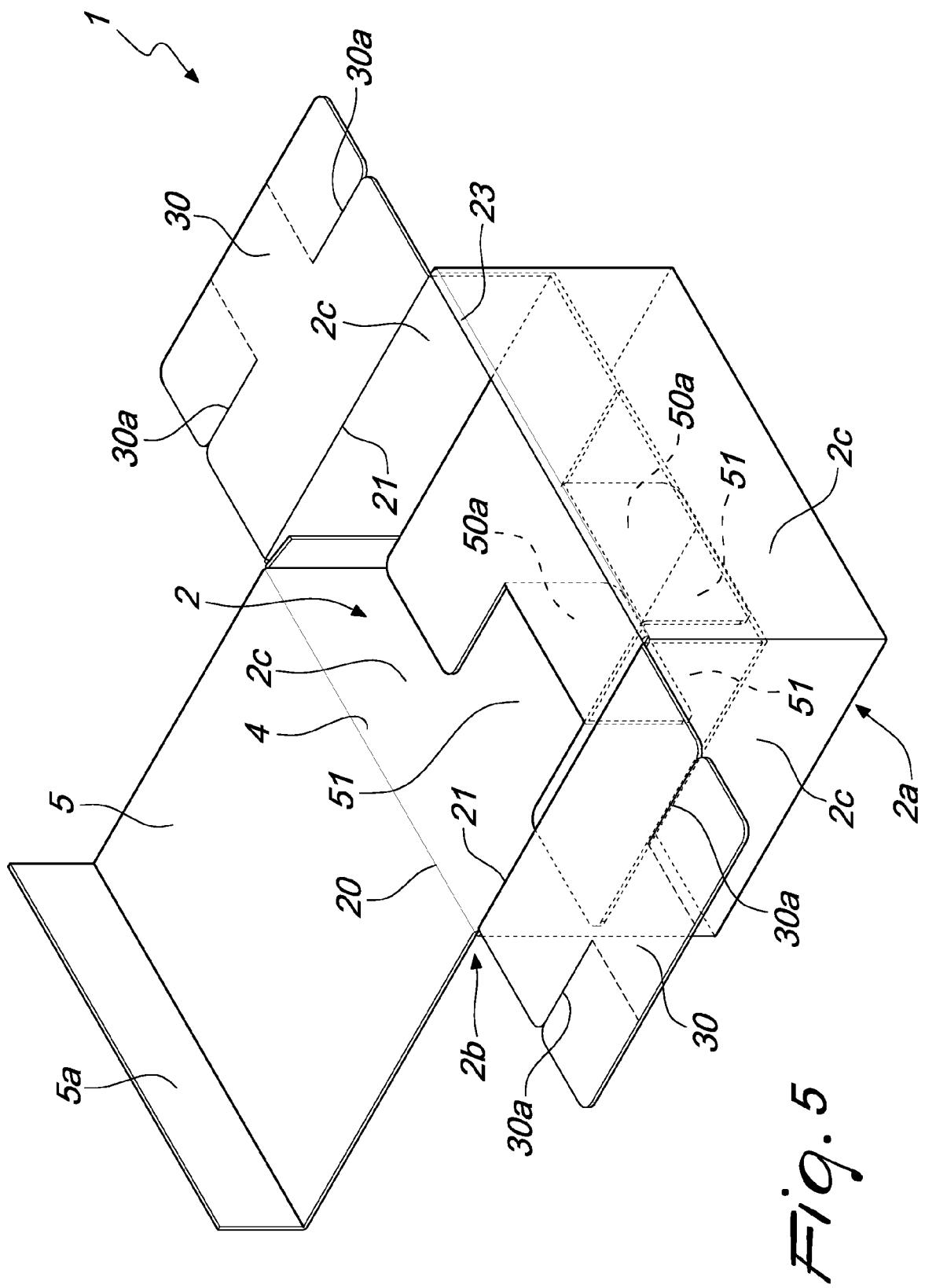
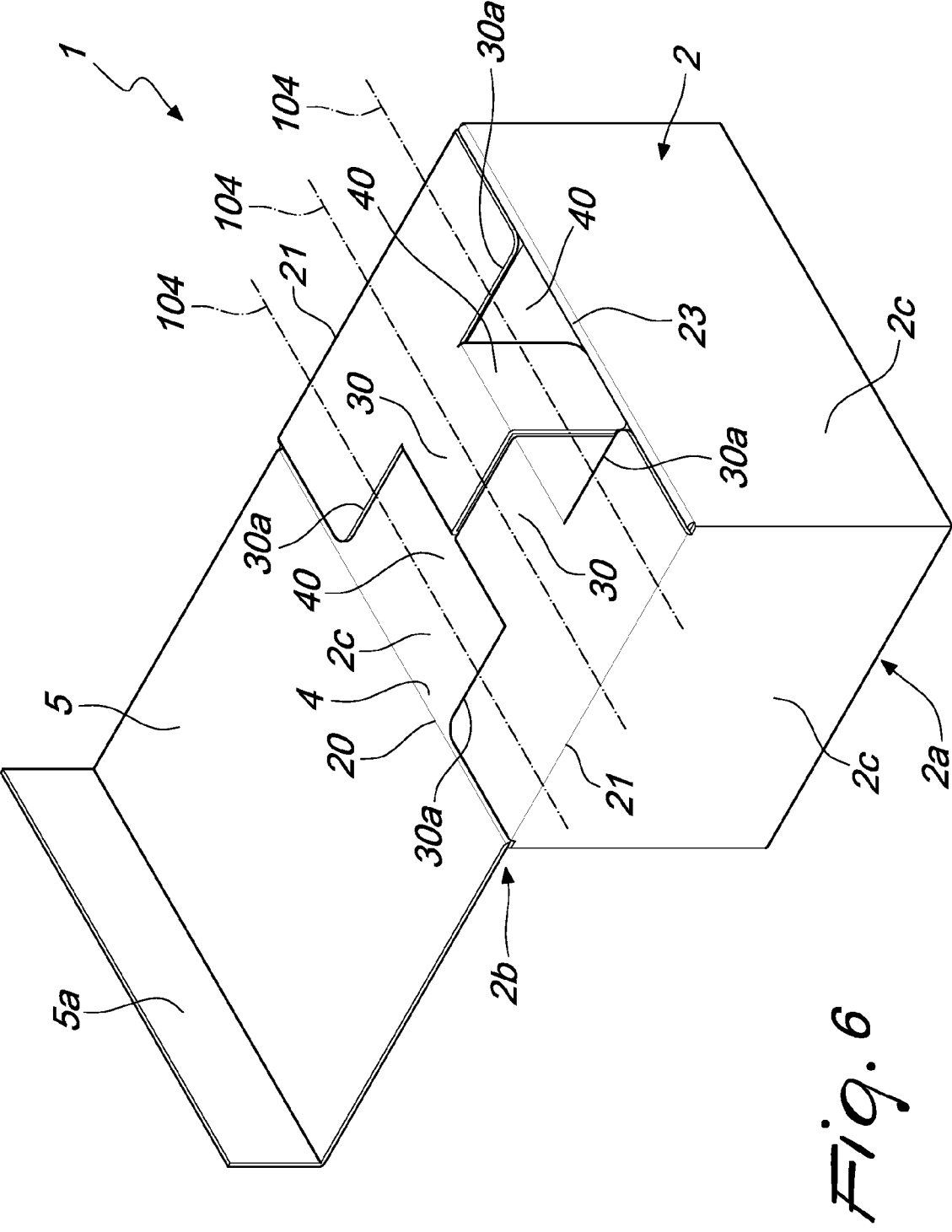


Fig. 3







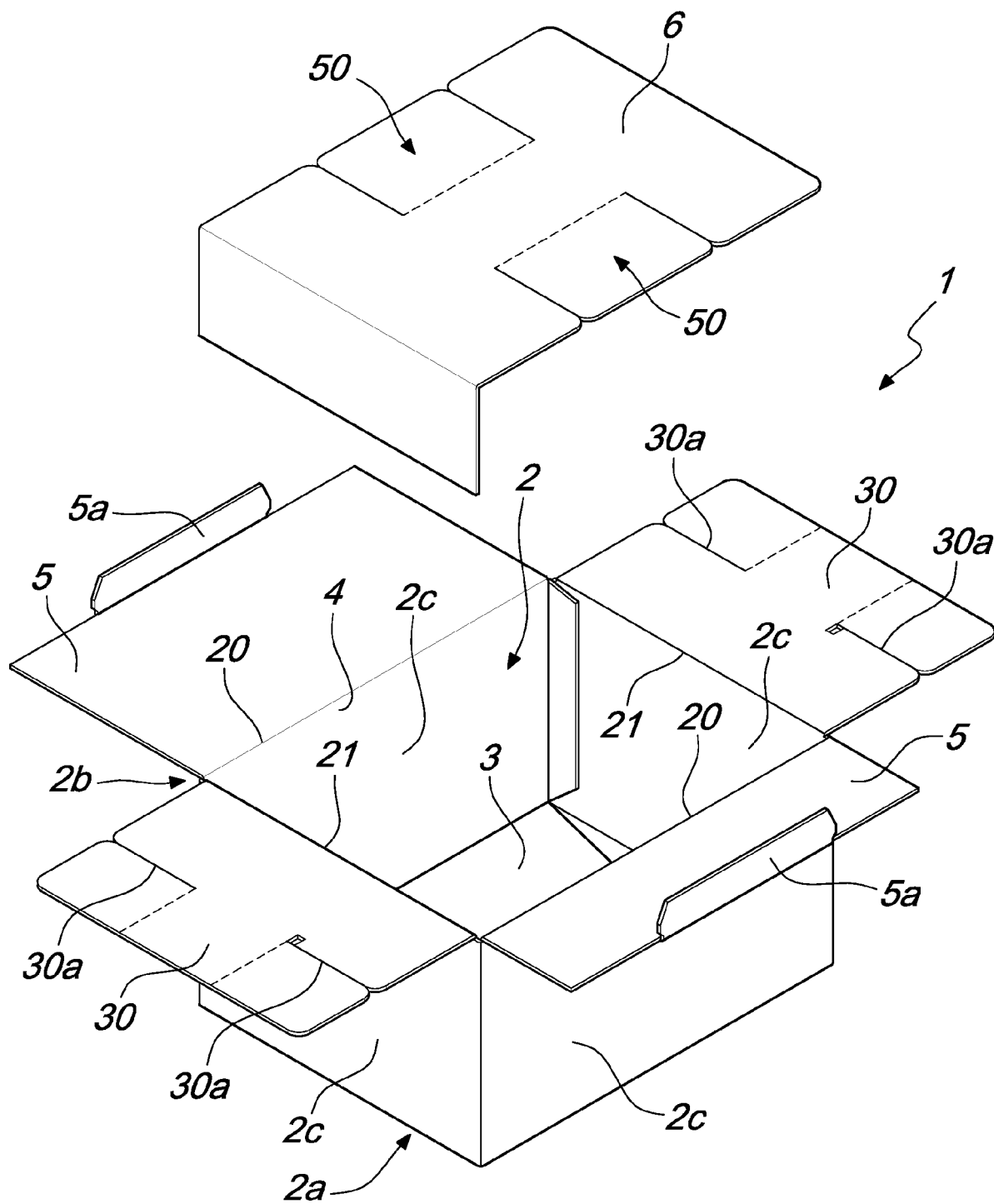


Fig. 7

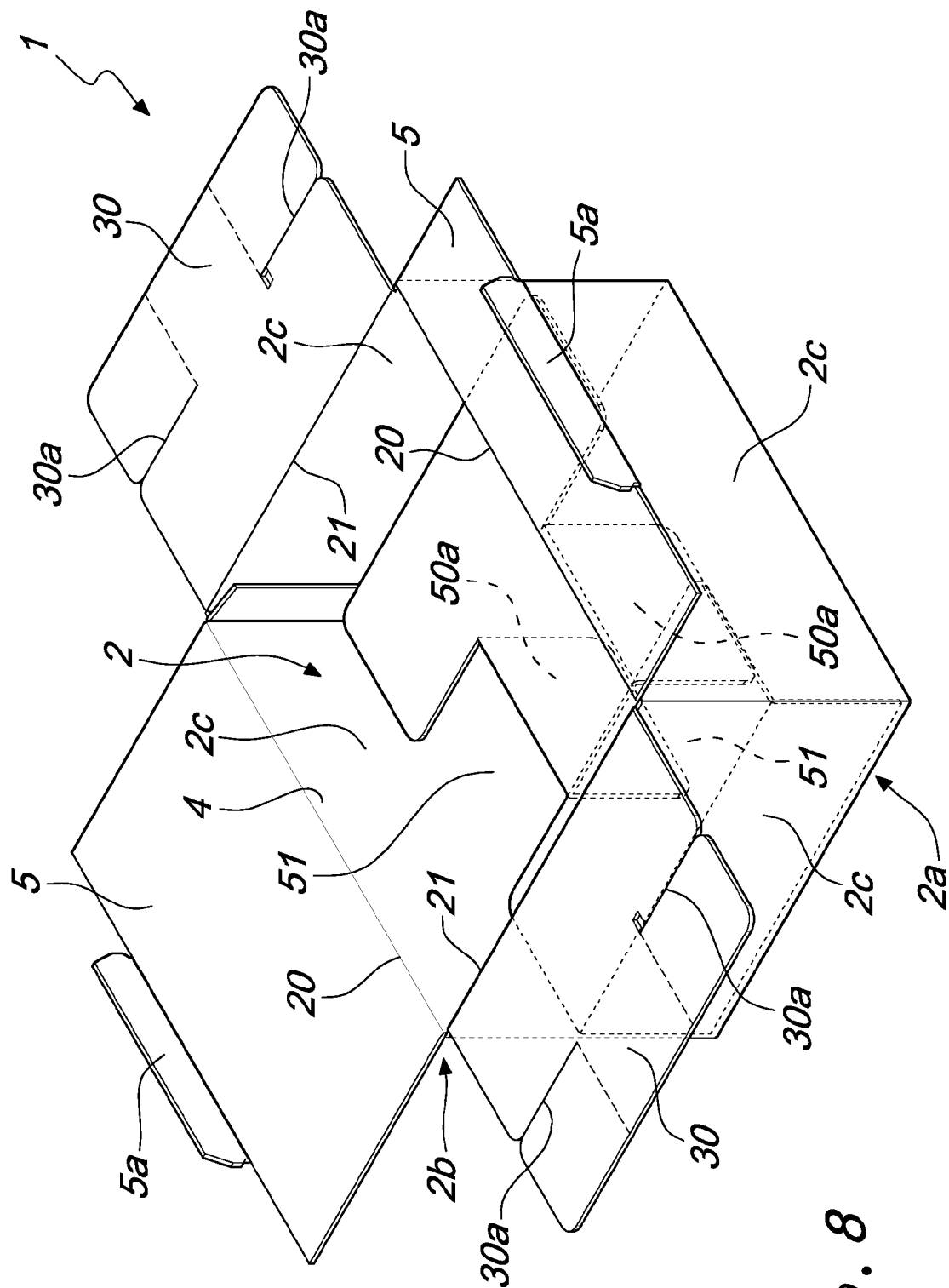


Fig. 8

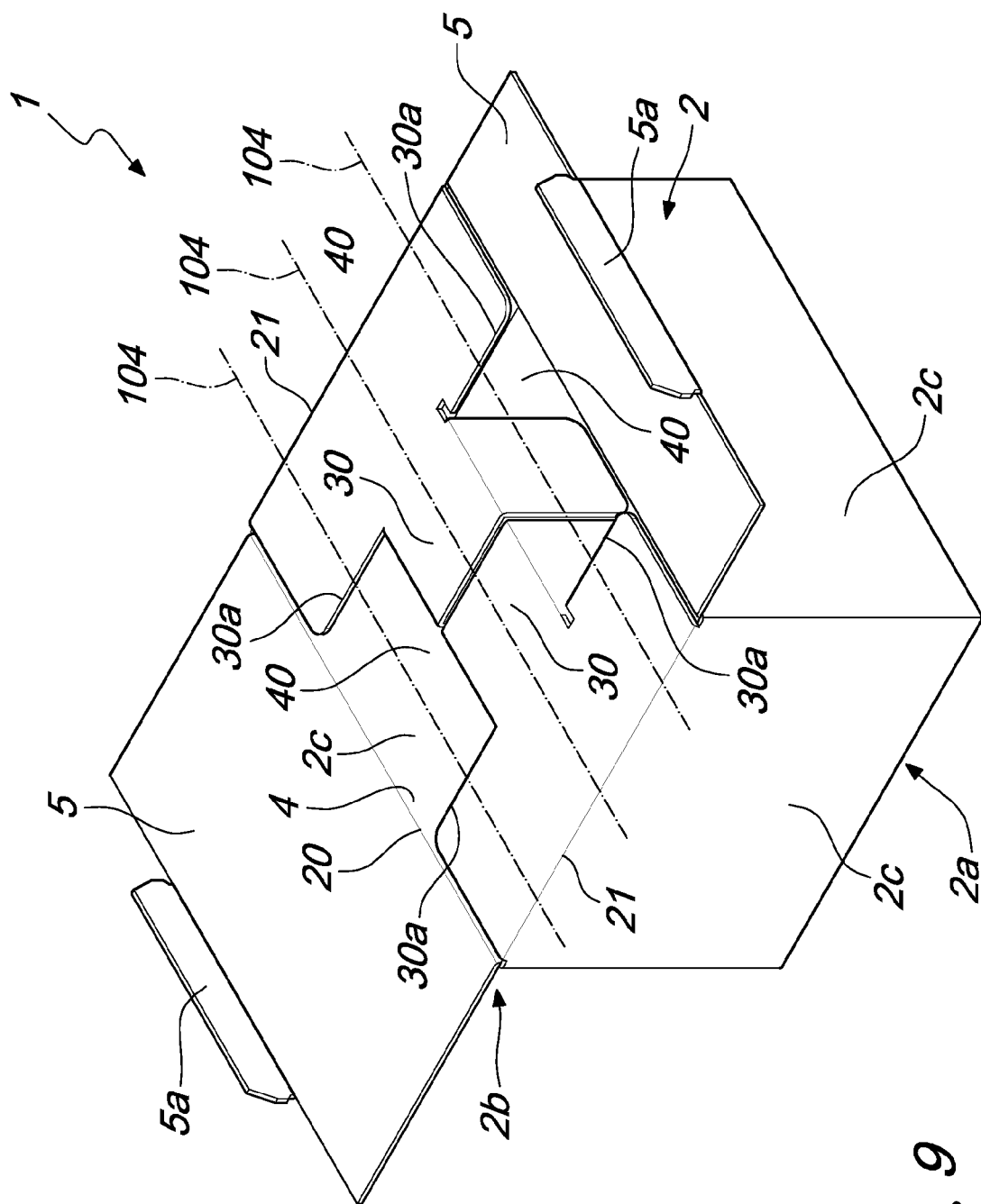


Fig. 9



EUROPEAN SEARCH REPORT

Application Number
EP 12 18 5385

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	FR 1 252 223 A (DROPSY) 27 January 1961 (1961-01-27) * the whole document *	1	INV. B65D5/48
A	JP 57 017925 U (*) 29 January 1982 (1982-01-29) * figures 1-6 *	1	
A	FR 2 532 622 A1 (LEMBACEL SA [FR]) 9 March 1984 (1984-03-09) * page 7, lines 1-29; figures 6-8 *	1	
A	US 2 693 902 A (ROSS COLIN A) 9 November 1954 (1954-11-09) * column 2, line 10 - column 3, line 2; figures 1-6 *	1	
A	FR 2 922 526 A1 (PAPETERIES D ESPALY SOC PAR AC [FR]; NORMANDE DE CARTON ONDULE SNCO [F] 24 April 2009 (2009-04-24) * figures 1-21 *	1	
			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 9 November 2012	Examiner Grondin, David
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			

 1
EPO FORM 1503 03.82 (P04C01)

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

EP 12 18 5385

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-11-2012

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1252223	A	27-01-1961	NONE	
JP 57017925	U	29-01-1982	NONE	
FR 2532622	A1	09-03-1984	NONE	
US 2693902	A	09-11-1954	NONE	
FR 2922526	A1	24-04-2009	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- IT VR20110184 A [0042]