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(71) Applicant: **Embalajes Capsa, S. L.**
08360 Canet De Mar (ES)

(72) Inventors:
- **López Masagué, Manuel**
  08360 CANET DE MAR (Barcelona) (ES)
- **López Crespo, Laura, Carmen**
  08360 CANET DE MAR (Barcelona) (ES)

(74) Representative: **Herrero & Asociados, S.L.**
Cedaceros, 1
28014 Madrid (ES)

(54) **STORAGE BOX**

(57) The storage box is formed from a single sheet of material, said box comprising side walls (1) and a bottom (2), in which at least one of the side walls (1) comprises a stacking flange (3), wherein said stacking tab (3) is mounted on a flap (4) hinged to said at least one side wall (1) and said stacking tab (3) is movable between a position of use, in which it protrudes through a mounting slot (5), and a hidden position, in which it does not protrude from the box.

A storage box is provided that allows the stacking tabs to be used only when necessary, not protruding from the box when not in use.

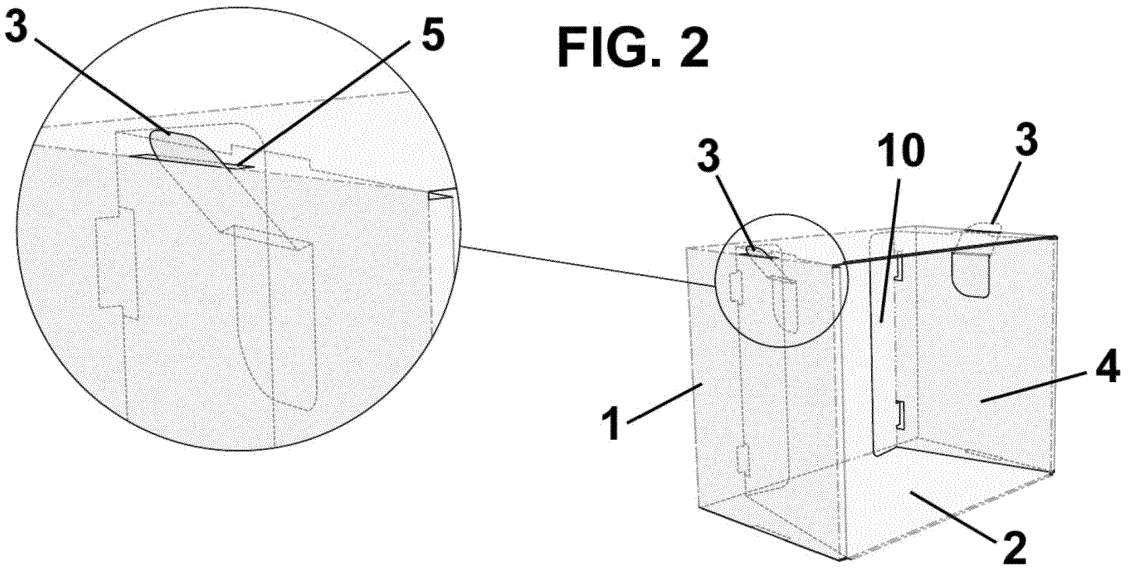

FIG. 2

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Description

[0001] The present invention relates to a storage box, comprising stacking tabs that can be placed in a position of use or in a hidden position.

Background of the invention

[0002] Boxes are known that are used to store objects. These boxes are normally made of cardboard and are normally formed from a sheet provided with a number of folding lines, in such a way that by means of an assembly process the box is obtained and is ready for use.

[0003] Stackable storage boxes usually comprise stacking tabs protruding from the box, which allow one or more boxes to be stacked together as said stacking tabs are housed in corresponding stacking slots located in the other box with which it is intended to stack. Usually each model has both stacking tabs and stacking slots, thus each box is a modular element that can be combined with other identical or similar compatible boxes.

[0004] In conventional storage boxes these stacking tabs are fixed, that is, they always protrude from the box, regardless of whether they are used or not. However, the permanent presence of the stacking tabs protruding from the box has the drawback that they can be accidentally damaged, so that when they are used, they may not be effective to allowing the stacking.

[0005] Therefore, an objective of the present invention is to provide a storage box that allows the use of the stacking tabs only when necessary, not protruding from the box when they are not intended to be used.

Disclosure of the invention

[0006] With the storage box of the invention said disadvantages are solved, presenting other advantages that will be described below.

[0007] The storage box according to the present invention is formed from a sheet, which is preferably of corrugated material, said corrugated material defining a plurality of channels parallel to each other, said box comprising side walls and a bottom, in which at least one of the side walls comprises a stacking tab, and it is characterized in that said stacking tab is mounted on a flap hinged to said at least one side wall and said stacking tab is movable between a position of use, in which it protrudes through a mounting slot located next to a folding line that delimits said at least one side wall, and a hidden position, in which it does not protrude from the body of the box.

[0008] This way, the stacking tab or tabs can be placed in their use position only when they are to be used, without accidentally damaging them when not in use.

[0009] Advantageously, the storage box also has stacking slots, which serve to house the stacking tabs of another box that is the same or compatible so that the boxes are one on top of the other. This way, the two or more boxes stacked with each other are held allowing a more stable stacking, preventing the boxes from moving to each other.

[0010] Advantageously, two opposite side walls comprise said stacking flange and said stacking slot.

[0011] Furthermore, said stacking flange is advantageously mounted on said flap in an articulated manner, said stacking flange being able to be mounted on a middle portion of said flap or at one end of said flap.

[0012] According to a preferred embodiment, said flap can comprise a projection that, in the hidden position of the stacking flange, is housed in said mounting slot of the side wall, in which case said stacking flange preferably comprises a cut-out area for forming said projection.

[0013] In one embodiment, said flap may be hinged to said at least one side wall along a folding line inclined with respect to the bottom of the box.

[0014] In another embodiment, said flap can be hinged from a middle portion of said side wall, said stacking flange being hinged from said flap, so that in its hidden position it forms part of the side wall and in its uncovered position it is housed in said mounting slot.

Brief description of the drawings

[0015] For better understanding of what has been disclosed, some drawings in which, schematically and only by way of a non-limiting example, a practical case of embodiment is shown.

Figure 1 is a perspective view of the box according to the present invention, according to a first embodiment, with the flaps carrying the stacking tabs in their open position;

Figure 2 is a perspective view of the box according to said first embodiment during the placement of the stacking tabs in their position of use, with an enlarged part to facilitate understanding;

Figure 3 is a perspective view of two boxes according to said first embodiment, with the upper box with the stacking tab in its hidden position and with the lower box with the stacking tab in its use position;

Figure 4 is a perspective view of the box according to the present invention, according to a second embodiment, with the flaps carrying the stacking tabs in their open position;

Figure 5 is a perspective view of the box according to said second embodiment during the placement of the stacking tabs in their position of use, with an enlarged part to facilitate understanding;

Figure 6 is a perspective view of the box according to said second embodiment with the stacking tabs in their use position;

Figure 7 is a perspective view of the box according to said second embodiment with the stacking tabs in their hidden position;

Figure 8 is a perspective view of two boxes according to said second embodiment, with the upper box with the stacking tab in its use position and with the lower box with the stacking tab in its hidden position;

Figure 9 is a perspective view of the box according to a third embodiment with the stacking tab in the hidden position; and

Figure 10 is a perspective view of the box according to a third embodiment with the stacking tab in the open position, with an enlarged portion in an intermediate step to show the transition.

Description of a preferred embodiment

[0016] Firstly, it is indicated that the box according to the present invention is formed from a single sheet of material, preferably a corrugated material, such as corrugated cardboard, defining a plurality of channels substantially parallel to each other.

[0017] The box of the present invention may be used for storage of products, i.e., it requires strength characteristics to prevent the products from being damaged during the use of the box, which is also stackable.

[0018] A first embodiment of the box according to the present invention is shown in Figures 1 to 3.

[0019] According to this first embodiment, the box is formed from a corrugated cardboard sheet that, in its mounting position, defines side walls 1 and a bottom 2. In the shown embodiment, the side walls 1 are three, and an upper part 9 is also present, so that a front opening is defined for access to the box.

[0020] In this position of use shown in the figures, the corrugated cardboard channels are arranged vertically or inclined, to provide adequate resistance to stacking.

[0021] According to this embodiment, two flaps 4 extend from two opposite side walls 1, which in the position of use are placed on the internal part of the side walls 1, as can be seen in figure 3.

[0022] Furthermore, these flaps 4 also comprise reinforcing tabs 10, which are placed in contact with the other side wall 1 to reinforce the resistance to stacking. These reinforcing tabs 10 comprise projections 11 that keep each flap 4 slightly separated from the corresponding side wall 1.

[0023] Each of these flaps 4 further comprises a stacking tab 3, which is hinged with respect to the flap 4, and which can be placed in a position of use or in a hidden position, as will be explained below.

[0024] It is precisely in the space between the flap 4 and the side wall 1 that we have previously mentioned where the stacking tabs 3 are housed in their position of use; both those of the box itself and those of the same or compatible box that is stacked with the first one. The stacking tabs 3 of a box are housed in the space between the two surfaces of another similar or compatible box when inserted through stacking slots 5.2 conveniently located at the bottom of the box.

[0025] This stacking tab 3 is preferably arranged in a middle position near the top of the flap, according to the shown position of use, and it is hinged with respect to a substantially horizontal folding line, so that it can be placed in a position vertically down (figure 3, upper box) or in a vertical up position (figure 3, lower box).

[0026] In figure 2 it can be seen how the stacking tab 3 is placed in its upright position, or use position, protruding through a mounting slot 5 located in the upper part 9 next to the upper edge of the corresponding side wall 1.

[0027] In order to place the stacking tab 3 in its position of use, firstly, the flaps 4 are folded into the box, and then the stacking tabs 3 are folded upwardly, entering the mounting slots 5.

[0028] In figure 3 two boxes of the invention according to this first embodiment are shown. The upper box is with the stacking tabs 3 in their hidden position, while the stacking tabs 3 are in their use position, allowing the upper box to be stacked using the stacking slots 5.2.

[0029] In figures 4 to 8 a second embodiment of the box according to the present invention is shown.

[0030] For simplicity and clarity reasons, the same reference numbers are used to identify the same components of the box that in the previous embodiment. In addition, only the differences with respect to the first embodiment previously disclosed are described for the sake of simplicity.

[0031] The main difference of this second embodiment is the position of the stacking tabs 3, which are arranged at the end of the flaps 4, and are oriented downwardly, so that in their position of use they protrude from the lower portion of the box.

[0032] As can be seen in figure 4, the flaps 4 have a shape defined by two portions, a proximal portion that is extended in a hinged way from an inclined folding line 8 of the front of the box, and a distal portion provided with the stacking tab 3 at its end.

[0033] Said stacking tab 3 forms a cut-out area 7, defining a projection 6, which is housed in the mounting slot 5 of the box in the hidden position of the stacking tab 3, as will be described below. In this embodiment, the mounting slot 5 is located at the bottom 2.

[0034] The box of this second embodiment also comprises a frontal flap 12 provided with a longitudinal folding line 13 that divides it in two, so that, in its use position, it forms a double-thickness front wall, as shown in figure 8, with reinforcing plates 16. For fastening, this frontal flap 12 comprises projections 14 that are housed in complementary slots 15 arranged on the frontal edge of the bottom 2.

[0035] For the placement of the stacking tabs 3 in their position of use, the flaps 4 are folded towards the inside of the box (figure 5), the stacking tabs 3 being inserted

in the mounting slots 5 in the side edges of the bottom 2 of the box (figure 6), the stacking tabs 3 protruding on the lower portion for their coupling with a lower box, with is the same as the first one or compatible with the first one, which has corresponding stacking slots 5.2 located on the side edges of the upper part 9.

[0036] For the placement of the stacking tabs 3 in their hidden position, the flaps 4 are also folded towards the inside of the box (figure 5), the projections 6 being inserted in the mounting slots 5 in the side edges of the bottom 2 of the box (figure 7), locking the flaps 4 in their position substantially in contact with the side walls 1.

[0037] In figure 8 two boxes according to this second embodiment are shown, with the stacking tabs 3 in their use position in the upper box and in their hidden position in the lower box.

[0038] In figures 9 and 10 a third embodiment of the box according to the present invention is shown.

[0039] For simplicity and clarity reasons, the same reference numbers are used to identify the same components of the box that in the previous embodiment. In addition, only the differences with respect to the first embodiment previously disclosed are described for the sake of simplicity.

[0040] The main difference of this third embodiment with respect to the first embodiment is that the flaps 4 are hinged from a middle portion of said side wall 1, said stacking tabs 3 being arranged at the end of the flaps 4.

[0041] To place the stacking tab 3 in its position of use, firstly, the flaps 4 are folded upwardly, as shown in the detail of figure 10, and then the stacking tabs 3 are folded upwardly, being inserted inside the mounting slots 5.

[0042] Although reference has been made to specific embodiments of the invention, it is apparent to a person skilled in the art that the described storage box is susceptible of numerous variations and modifications, and that all the details mentioned can be replaced by other technically equivalents, without departing from the scope of protection defined by the appended claims.

Claims

1. Storage box, formed from a single sheet of material, said box comprising side walls (1) and a bottom (2), in which at least one of the side walls (1) comprises a stacking flange (3), **characterized in that** said stacking tab (3) is mounted on a flap (4) hinged to said at least one side wall (1) and said stacking tab (3) is movable between a position of use, in which it protrudes through a mounting slot (5), and a hidden position, in which it does not protrude from the box.

2. Storage box according to claim 1, wherein two opposite side walls (1) comprise said stacking tab (3).

3. Storage box according to claim 1, wherein said stacking tab (3) is mounted in a hinged way on said flap (4).

4. Storage box according to claim 3, wherein said stacking tab (3) is mounted on a middle portion of said flap (4).

5. Storage box according to claim 3, wherein said stacking tab (3) is mounted on one end of said flap (4).

6. Storage box according to claim 1 or 5, wherein said flap (4) comprises a projection (6) which, in the hidden position of the stacking flange (3), is housed in said mounting slot (5).

7. Storage box according to claim 6, wherein said stacking tab (3) comprises a cut-out area (7) to form said protrusion (6).

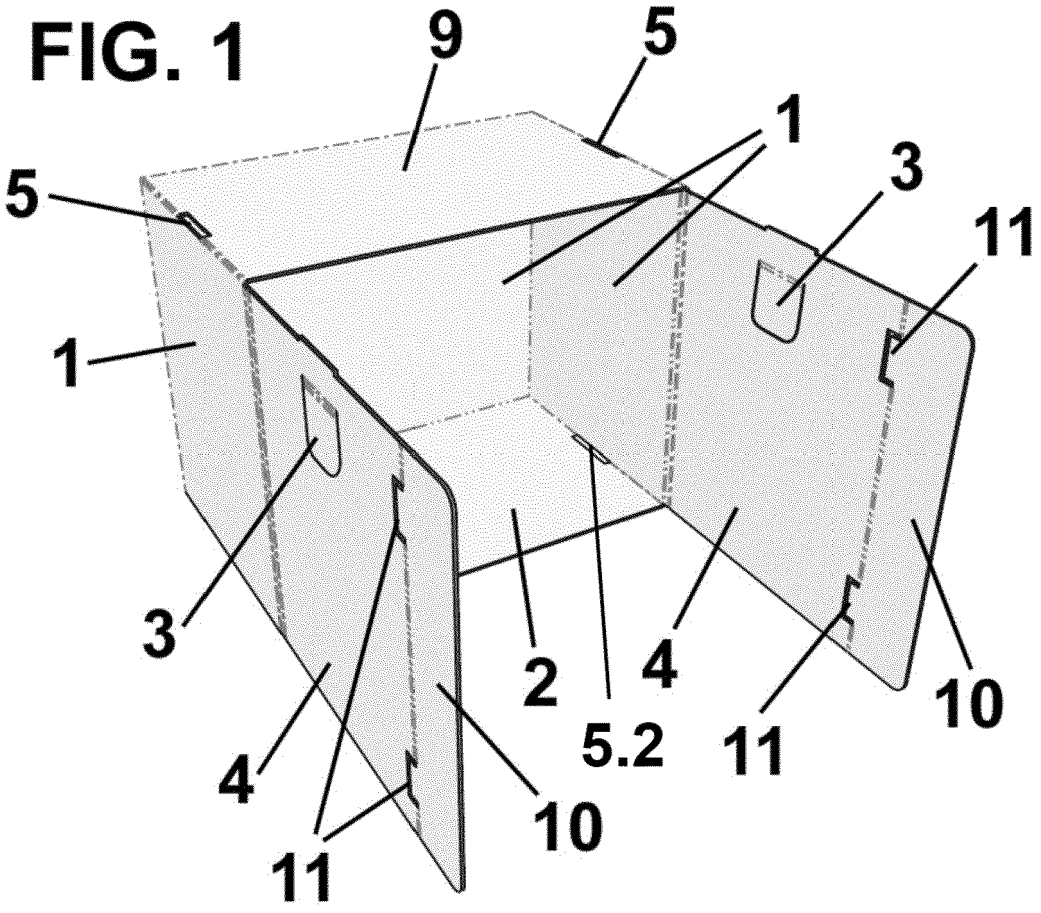
8. Storage box according to claim 1, wherein said flap (4) is hinged with said at least one side wall (1) along a folding line (8) inclined with respect to the bottom (2) of the box.

9. Storage box according to claim 1, comprising stacking slots (5.2) for housing stacking tabs (3) of another storage box.

10. Storage box according to any of the previous claims, which is formed from a sheet of corrugated material, said corrugated material defining a plurality of channels parallel to each other.

11. Storage box according to claim 10, wherein the channels of the corrugated material are arranged vertically or inclined on the side walls (1) in their position of use.

FIG. 1



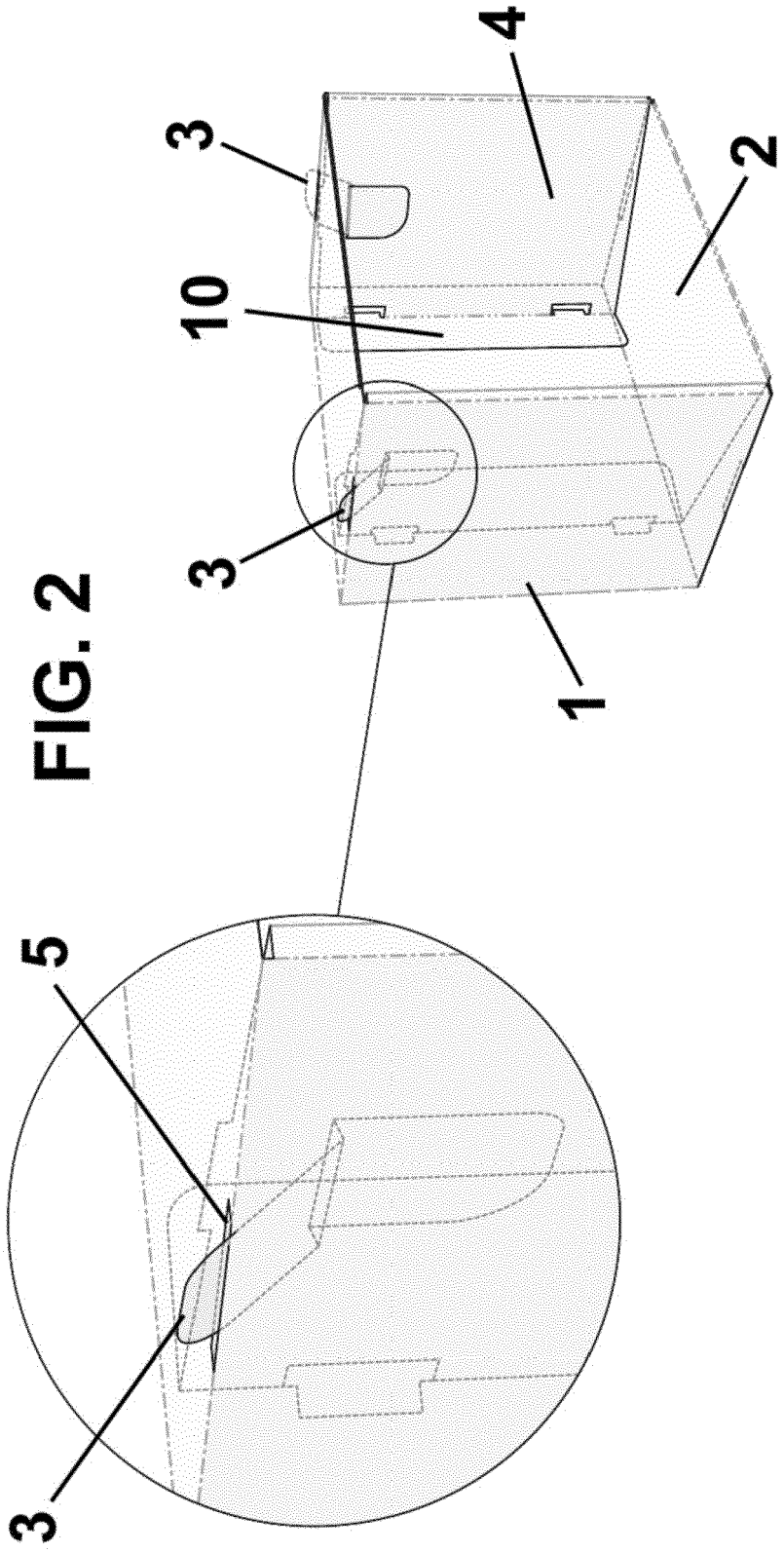


FIG. 2

FIG. 3

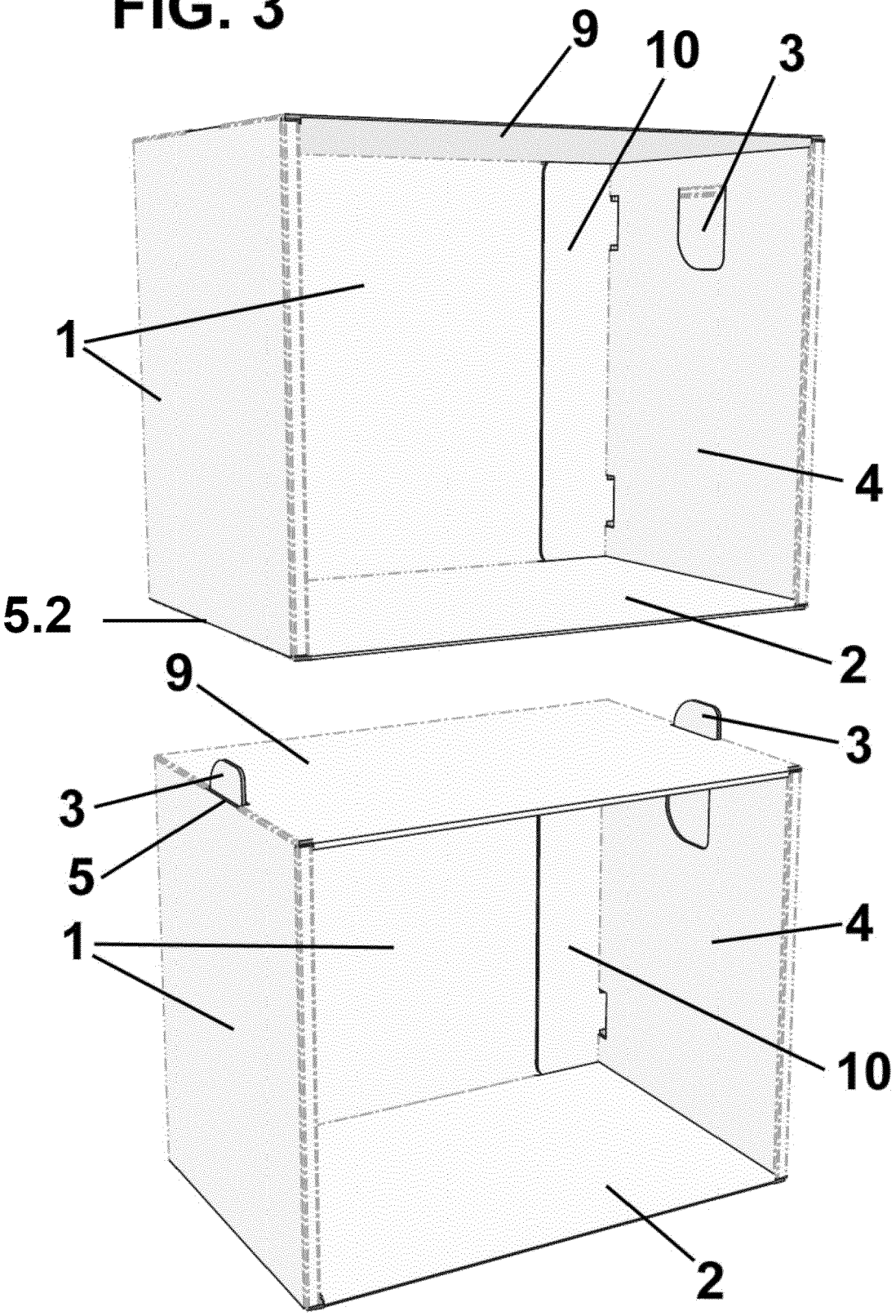
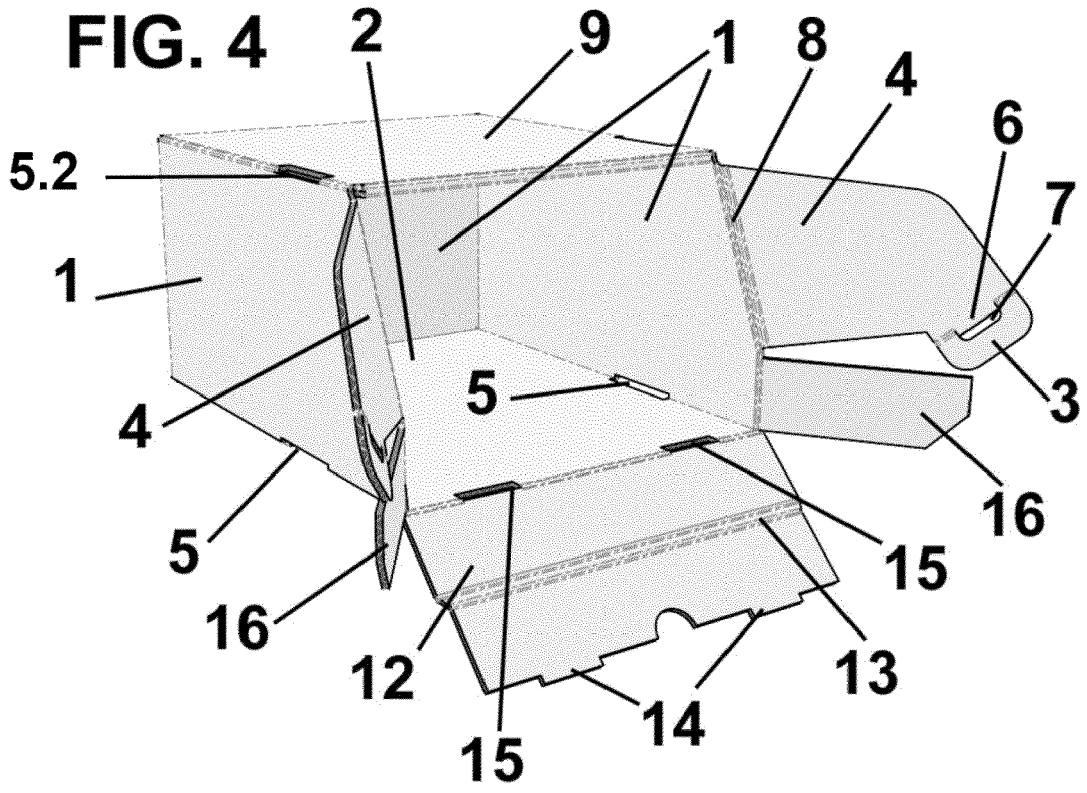


FIG. 4



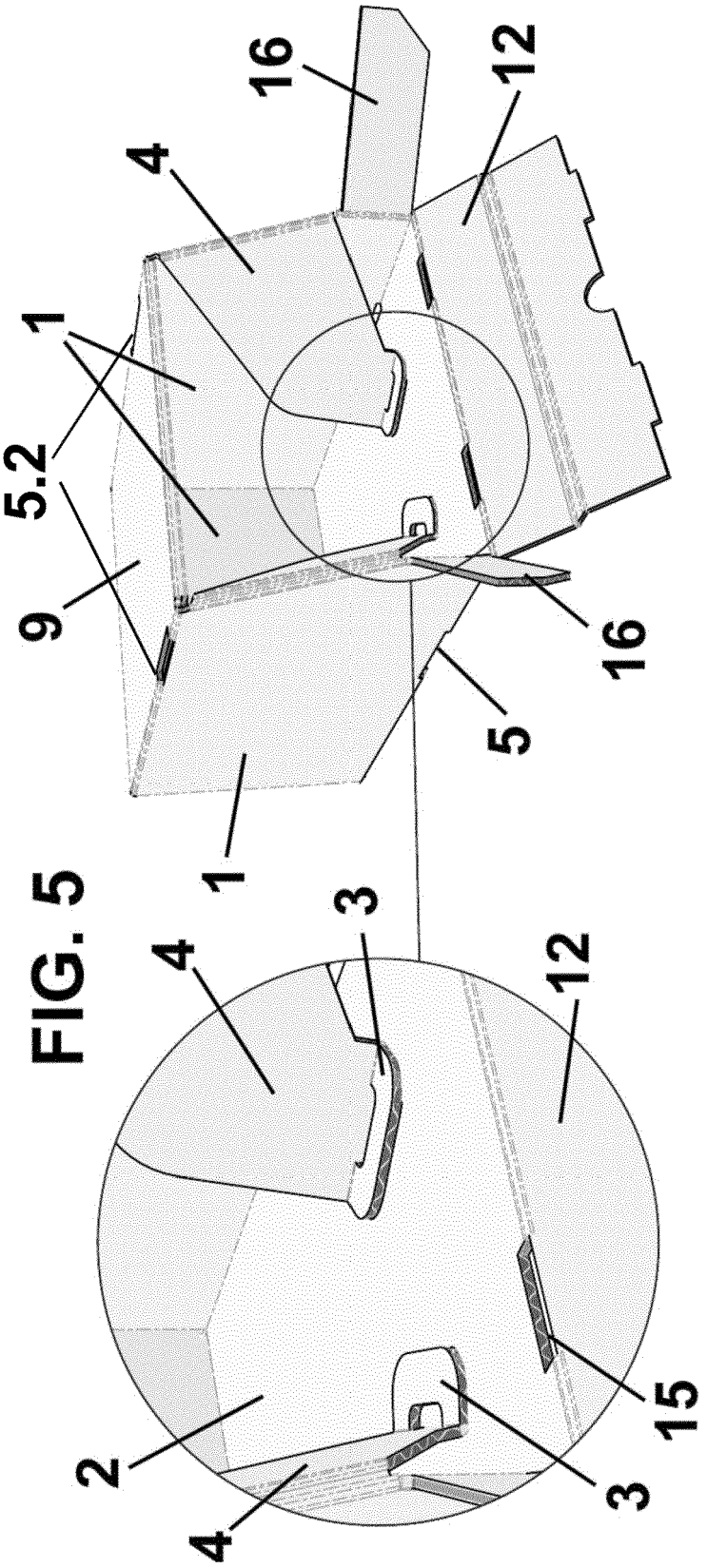


FIG. 5

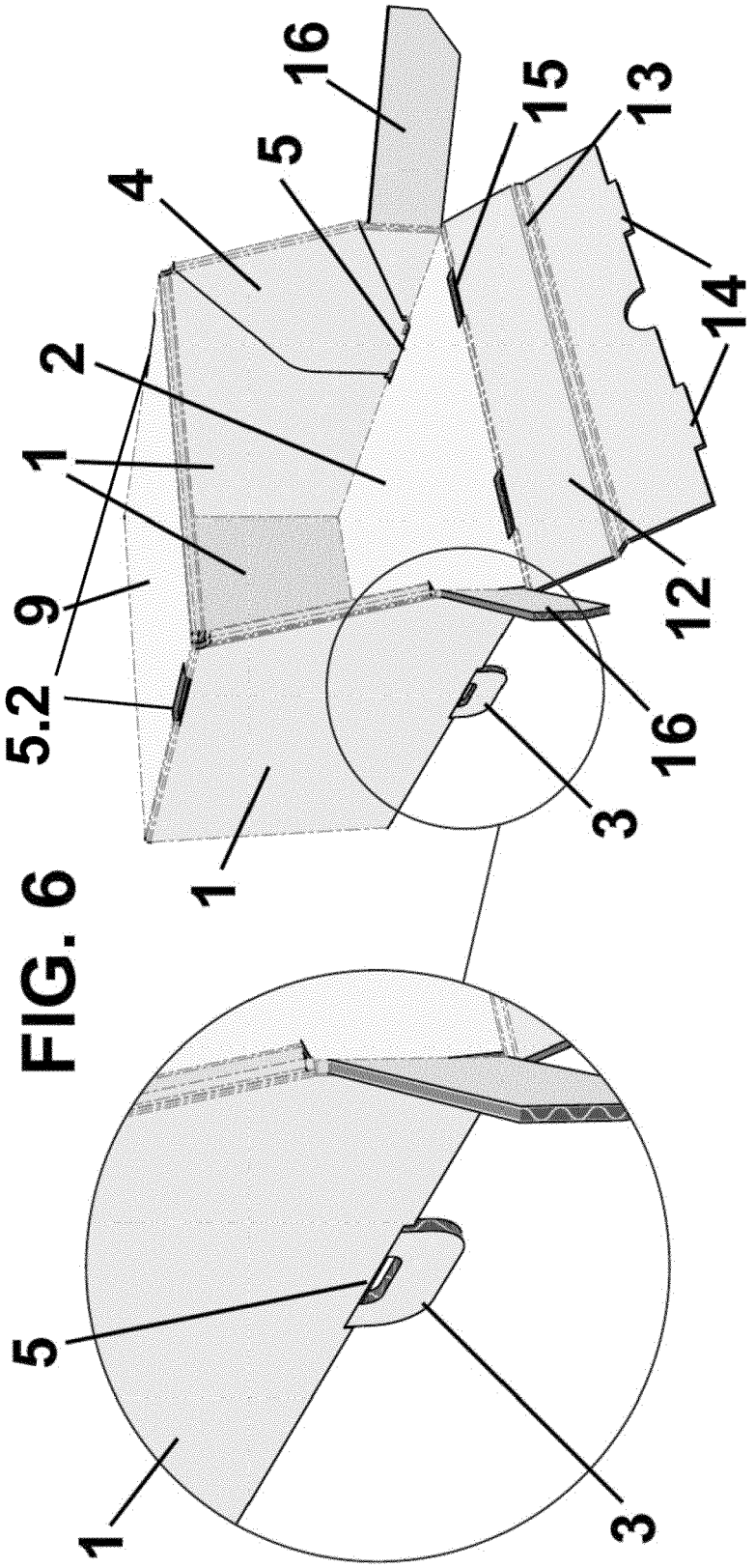


FIG. 6

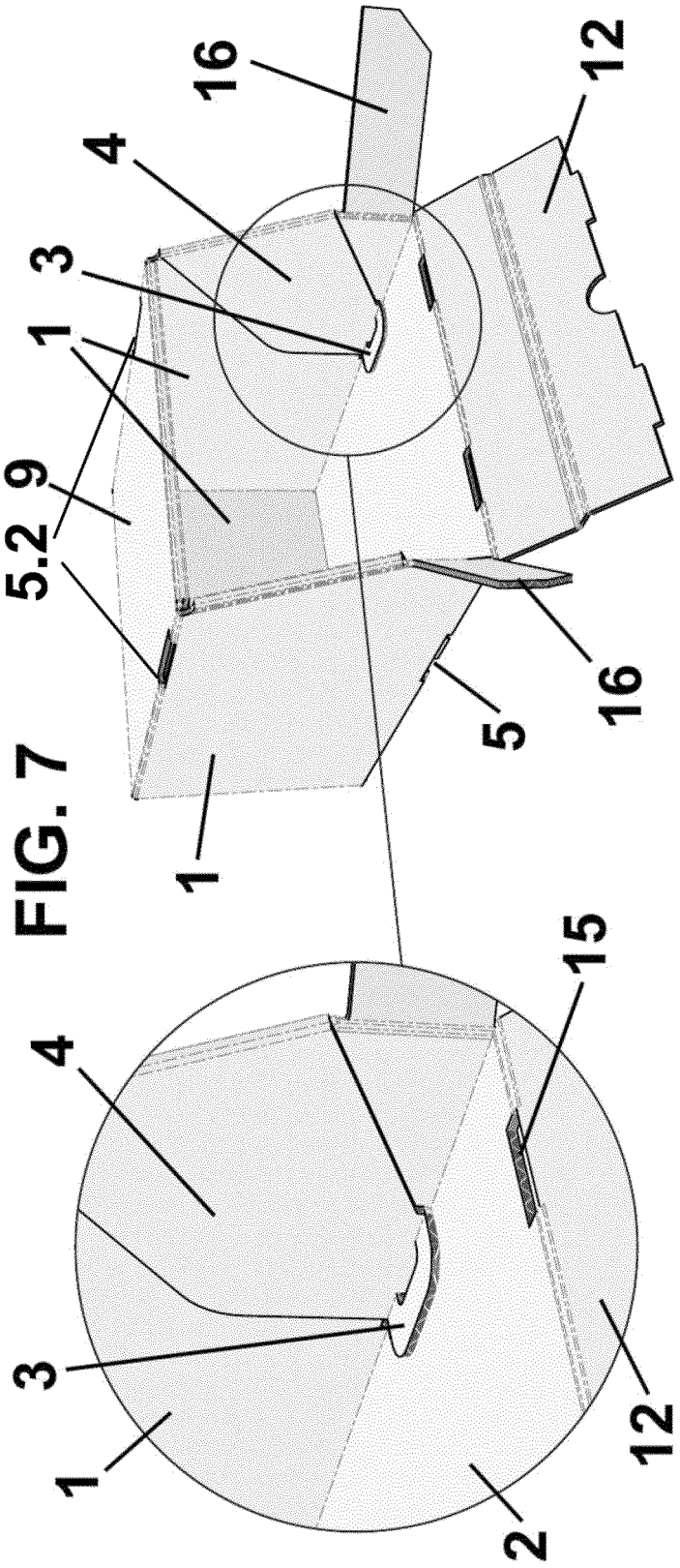


FIG. 7

FIG. 8

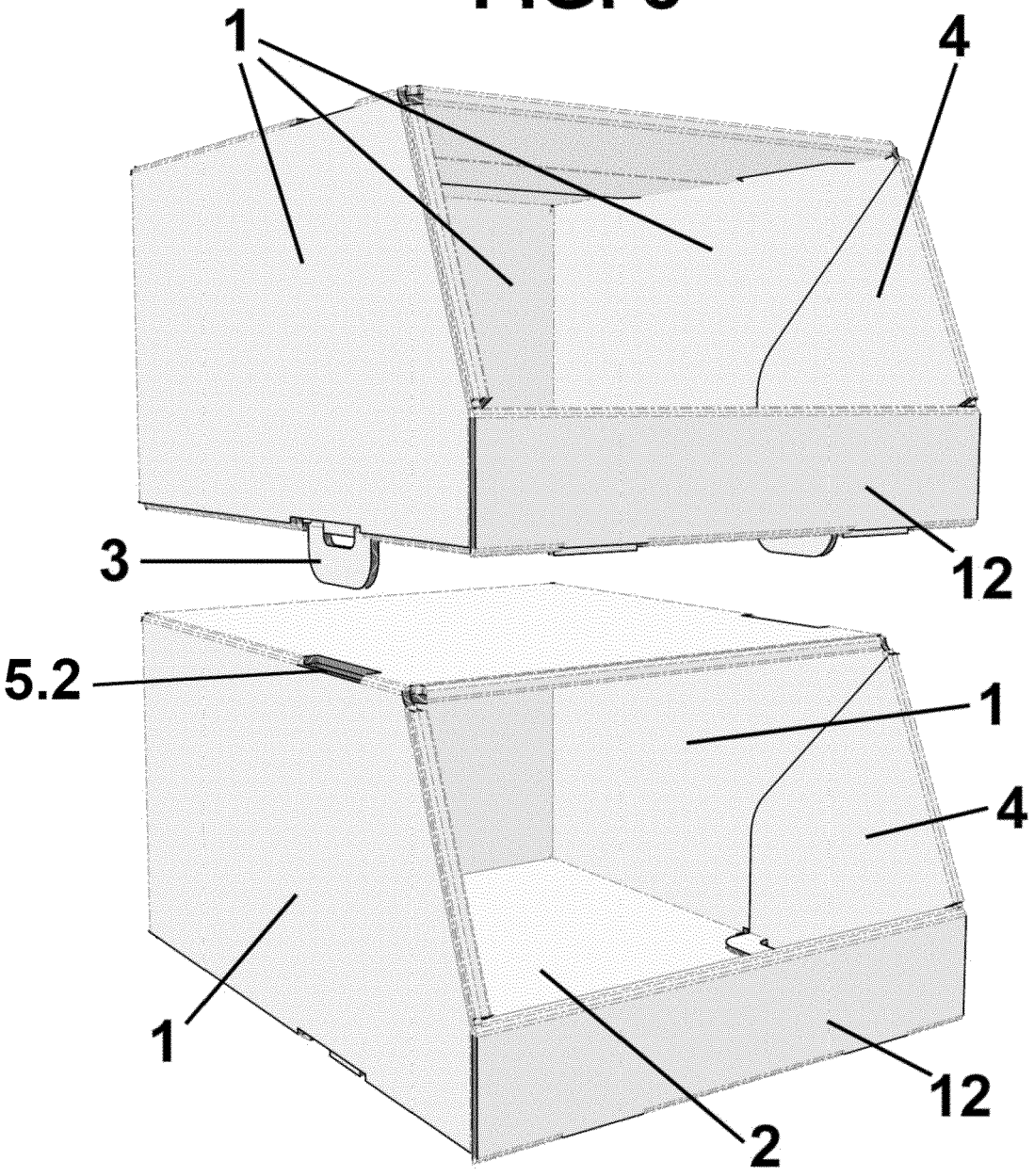


FIG. 9

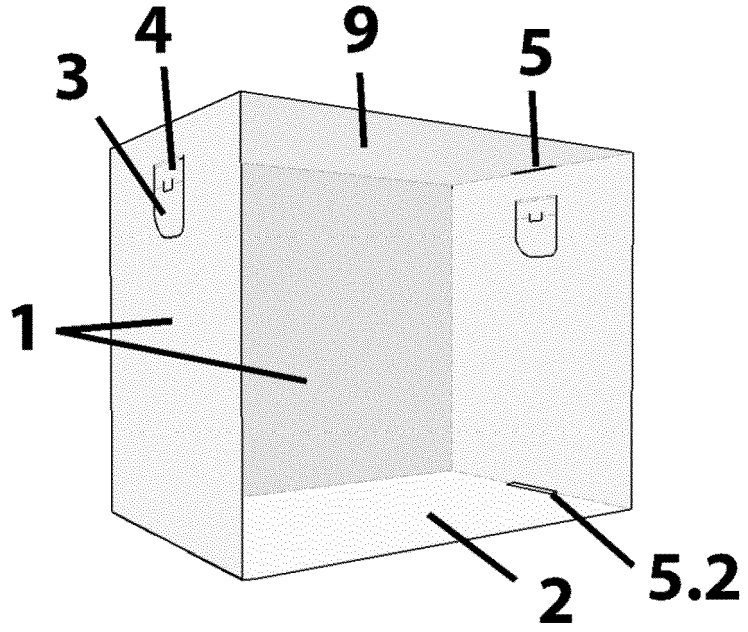
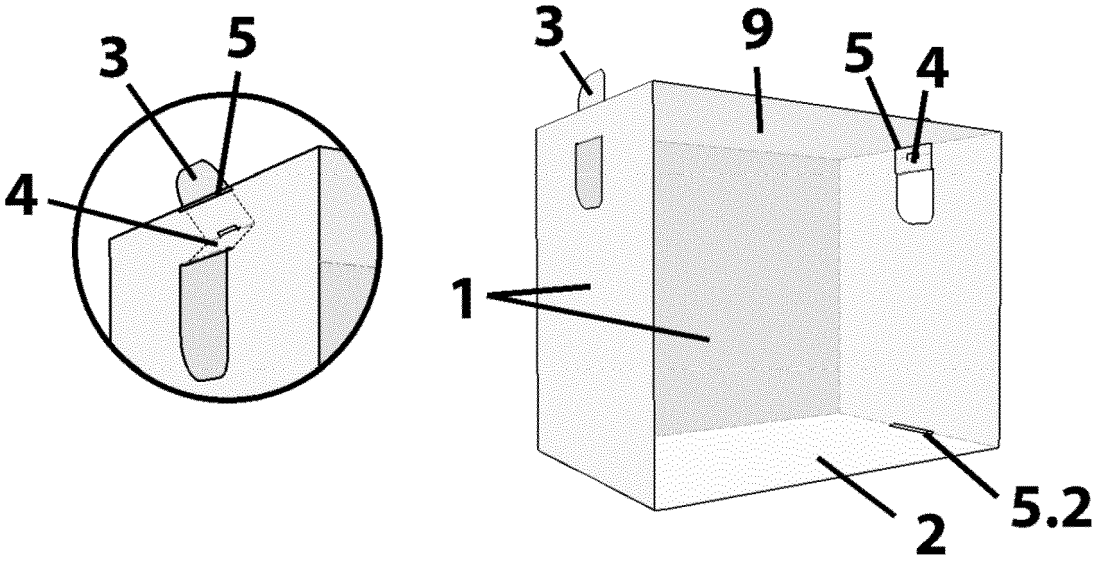


FIG. 10



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EUROPEAN SEARCH REPORT

Application Number
EP 20 38 2723

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	FR 2 323 585 A1 (SOFHUNIC SA [FR]) 8 April 1977 (1977-04-08) * page 3, line 10 - page 5, line 36; figures 1-4 *	1-11	INV. B65D5/00
A	US 6 502 698 B1 (MCKENNA DAVID J [US] ET AL) 7 January 2003 (2003-01-07) * figures 1-4 *	1-11	

TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	11 January 2021	Jervelund, Niels

CATEGORY OF CITED DOCUMENTS

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2323585 A1	08-04-1977	NONE	
US 6502698 B1	07-01-2003	NONE	

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