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Said two dividers (5, 6) are as high as the four side walls (21, 22, 23, 24) in such a way as to provide a support for the lid (3) in extending themselves towards the opening (40', 40").



Description

[0001] The present invention relates to a self-assembling box for containing bottles in a lying-down position.

[0002] In particular, the present invention lies in the packaging sector for the containment of bottles.

[0003] The term "self-assembling box" refers to a box wherein the assembly thereof is obtained in pre-arranging the die-cut in a flat position, pre-gluing the lower flaps that form the bottom and applying a lateral compression force.

[0004] Known in the state of the art are solutions for self-assembling boxes for containing bottles in a lying-down position arranged in multiple rows.

[0005] In these known box embodiments there are vertical dividing elements that are suitable for separating two bottles belonging to the same row.

[0006] Self-assembling box solutions are known wherein the vertical dividers may be inserted into the box once one or more rows of bottles have been arranged within the same. For example, in some known self-assembling box solutions the vertical divider elements are generated by means of the appropriate bending of the side walls.

[0007] A typical problem with regard to self-assembling boxes of the prior art is in relation to the fact that the dividers are arranged between the bottles that are lying down thereby encountering resistance and thus encountering possible breakage and/or bending and therefore not ensuring the correct separation of the inserted bottles. An incorrect separation of two adjacent bottles furthermore determines a greater probability of breakage of the same when moving the box.

[0008] A further problem in relation to self-assembling boxes of the prior art is in relation to the fact that the side walls are only intended to withstand the force of the weight exerted by those boxes arranged thereabove. Such boxes are therefore often subject to breakages and rupturing in the presence of elevated loads.

[0009] The object of the present invention is to fulfill the needs of the sector and to overcome the problems of the aforementioned prior art.

[0010] Such object is achieved by means of the self-assembling box claimed in claim 1. In addition, such object is also achieved by means of the method for obtaining and assembling of a box according to claim 14. The claims dependent on these request protection for further features and entail further technical benefits.

[0011] In addition, further features and advantages of the invention will become clear from the description provided below of the preferred embodiments thereof given as nonlimiting examples in reference to the attached figures, wherein:

- Figure 1a shows a die-cut of a self-assembling box, according to the present invention, according to a first embodiment;
- Figure 1b shows a die-cut of a self-assembling box,

according to the present invention, according to a second embodiment;

- Figure 2a shows the die-cut of Figure 1, folded in a flat box configuration according to the shape in Figure 1;
- Figure 2b depicts the self-assembling box of Figure 1 in an open box configuration containing a first row of bottles lying down;
- Figure 2c shows the self-assembling box of Figure 2b wherein a separator has been arranged;
- Figure 2d depicts the self-assembling box of Figure 2c containing a second row of bottles lying on top of the separator;
- Figure 2e shows the self-assembling box of Figure 2d in a closed box configuration;
- Figures 3', 3'', 3''' show the steps of assembling a self-assembling box according to the present invention, according to a second embodiment;
- Figures 4', 4'', 4''' show the steps of assembling a self-assembling box according to the present invention, according to a third embodiment;
- Figures 5', 5'', 5''' show the steps of assembling a self-assembling box according to the present invention, according to a fifth embodiment.

[0012] With reference to the accompanying figures a self-assembling box for containing at least six bottles, arranged on at least two superimposed rows in a lying-down position, is indicated with the numeral 1.

[0013] In particular, in the box 1 according to the present invention, each row comprises three bottles.

[0014] In the following description reference will be made to three different configurations of the self-assembling box: a first flat box configuration that corresponds to the configuration wherein the die-cut, described hereinafter, is folded upon itself, as supplied by the client and ready for assembly; a second assembled box configuration which corresponds to the configuration wherein the bottom of the box is formed and the self-assembling box is ready to be filled with bottles; a third closed box configuration which corresponds to the configuration wherein the lid is arranged and the box is ready for sale or stacking.

[0015] The box 1 comprises four side walls 11, 12, 13, 14 joined to four lower flaps 21, 22, 23, 24, respectively. Said joining of each of the four side walls 11, 12, 13, 14 to the respective lower flap is obtained by means of a lower folding segment 51, 52, 53, 54.

[0016] With reference to the accompanying figures, the numerical order of the reference numbers used is a mere convention; specifically the numeration, for example, of the aforesaid described side walls is performed with the object of distinguishing therebetween, without conferring varying importance to the first wall 11 in comparison to the fourth wall 14. Preferably, the numeration order of the walls with respect to the die-cut 100 of Figure 1 is the third wall 13, the first wall 11, the fourth wall 14 and the second wall 12.

[0017] The four lower flaps 21, 22, 23, 24 are suitable for being engaged therebetween in order to form a bottom 2 of the box 1.

[0018] According to a preferred embodiment, the four lower flaps 21, 22, 23, 24 are equal to two by two. Preferably, a first lower flap 21 is equal to a second lower flap 22, a third lower flap 23 is equal to a fourth lower flap 24. Preferably, the first lower flap 21 is joined to the first side wall 11, the second lower flap 22 is joined to the second side wall 12, the third lower flap 23 is joined to the third side wall 13 and the fourth lower flap 24 is joined to the fourth side wall 14.

[0019] According to a preferred embodiment, the first lower flap 21 and the second lower flap 22 each comprise a gluing portion 211, 221, preferably of a substantially triangular shape.

[0020] Furthermore, preferably, the first lower flap 21 and the second lower flap 22 each comprise a bottom portion 212, 222, wherein said gluing portion 211, 221 is suitable for being glued to the third lower flap 23 and to the fourth lower flap 24, respectively, to form the bottom 2 of the box 1.

[0021] Preferably, the first gluing portion 211 is suitable for being glued to the third lower flap 23, the second gluing portion 221 is suitable for being glued to the fourth lower flap 24.

[0022] According to a preferred embodiment, each gluing portion 211, 221 is joined to the respective bottom portion 212, 222 by means of a bottom folding segment 141, 142.

[0023] According to one embodiment, the bottom folding segment 141, 142 comprises at least one central throughcut that is suitable for facilitating the folding of said gluing portion 211, 221 outwards.

[0024] According to a preferred embodiment, the box 1 further comprises a gluing side wing 8 joined to the second side wall 12 by means of a side folding segment 122. Said gluing side wing 8 is suitable for being glued to the third side wall 13 in order to obtain the assembled box configuration.

[0025] Preferably, the gluing side wing 8 has an inclined first edge side wing 81.

[0026] Preferably, the gluing side wing 8 has a second edge side wing 82 that is substantially parallel to the side folding segment 122.

[0027] The box 1, according to the present invention, furthermore comprises at least one upper flap 32 joined to the second side wall 12 by means of at least one upper folding segment 112. The at least one upper flap 32 is suitable for closing the box 1 in the closed box configuration, wherein said at least one upper flap 32 forms a lid 3 of the box 1. In other words, the lid 3 of the box 1 is formed from the at least one upper flap 32.

[0028] Furthermore, the box 1, according to the present invention, comprises two protruding elements 61, 62 joined to the first lower flap 21 and to the second lower flap 22, respectively, each by means of a first bottom folding segment 101 and a second bottom folding

segment 102. Said protruding elements 61, 62, when assembling the box 1, form two dividers 5, 6 each separating two adjacent bottles.

[0029] According to one embodiment, each protruding element 61, 62 has a profile 610, 620 comprising two steps 611', 611", 621', 621", respectively.

[0030] According to the present invention, the box 1 comprises a separator 4 that is suitable for horizontally separating two superimposed rows of bottles in a lying-down position.

[0031] Said separator 4 has two openings 40', 40".

[0032] According to the present invention, each divider 5, 6 extends through a respective opening 40', 40" of the separator 4.

[0033] Each opening 40', 40" preferably has such a shape to enable the separator 4 to be engaged with a respective divider 5, 6. Preferably, the edges of each opening 40', 40" are shaped in a way that is complementary to the dividers 5, 6 to maintain them in an elevated position.

[0034] Preferably, the first protruding element 61 has a profile 610 comprising two steps 611', 611" that may be engaged in support of the separator 4.

[0035] Preferably, the second protruding element 62 has a profile 620 comprising two steps 621', 621" that may be engaged in support of the separator 4.

[0036] According to a preferred embodiment, when assembling the box 1, each gluing portion 211, 221 carries out a dragging action on the third lower flap 23 and the fourth lower flap 24, respectively, forming the bottom 2 and performing the verticalization of a respective protruding element 61, 62.

[0037] According to the present invention, said two dividers 5, 6 are as tall as the four side walls 21, 22, 23, 24 in such a way as to provide a support for the lid 3 in the closed box configuration.

[0038] According to a preferred embodiment, the third lower flap 23 and the fourth lower flap each have a profile 230, 240 comprising a first perimeter portion 231, 241 formed by a first bottom edge 231a, 241a and by a second bottom edge 231b, 241b, a second perimeter portion 232, 242, a third perimeter portion 233, 243, a fourth perimeter portion 234, 244 having a step profile and a fifth perimeter portion 235, 245, wherein each thereof is consecutive.

[0039] Preferably, the first bottom edge 231a, 241a of the first perimeter portion 231, 241 has the same inclination as the edge side wing 81 which is suitable for ensuring the correct positioning of the gluing side wing 8 in such a way as to be glued to the third side wall 13 in the flat wall configuration.

[0040] Preferably, the second bottom edge 231b, 241b of the first perimeter portion 231, 241 is suitable for ensuring the correct positioning of the gluing side wing 8 in such a way as to match with said second edge side wing 82 in the flat box configuration.

[0041] Preferably, the second perimeter portion 232, 242 and the fifth perimeter portion 235, 245 are suitable for ensuring the correct verticalization of the two protrud-

ing element 61, 62 during the step of assembling the box 1.

[0042] Preferably, the third perimeter portion 233 of the third lower flap 23 is suitable for being matched with the respective third perimeter portion 243 of the fourth lower flap 24 during the formation of the bottom 2 of the box 1.

[0043] Preferably, the fourth perimeter portion 234 of the third lower flap 23 is suitable for being matched with the respective fourth perimeter portion 244 of the fourth lower flap 24 during the formation of the bottom 2 in the assembled box configuration.

[0044] According to a second embodiment shown by way of example in Figure 1b, the third lower flap 23 and the fourth lower flap each have a profile 230, 240.

[0045] Each profile 230, 240 comprises a first perimeter portion 231, 241 formed by a first bottom edge 231a, 241a and by a second bottom edge 231b, 241b, a second perimeter portion 232, 242 formed by a second portion first edge 232a, 242a and by a second portion second edge 232b, 242b, a third perimeter portion 233, 243, a fourth perimeter portion 234, 244 have a step profile and formed by a fourth portion first edge 234a, 244a and by a fourth portion second edge 234b, 244b and a fifth perimeter portion 235, 245, wherein each thereof is consecutive.

[0046] According to such embodiment, each profile 230, 240 comprises a perimeter support portion 234, 244 formed by a fourth portion first edge 234a, 244a and by a fourth portion second edge 234b, 244b that are incident therebetween. Preferably, the fourth portion first edge 234a, 244a and the fourth portion second edge 234b, 244b are perpendicular therebetween.

[0047] According to such embodiment shown in figure 1b, the second portion first edge 232a, 242a extends in a direction that is substantially parallel to the lower folding segment 53, 54 and the second portion second edge 232b, 242b extends in a direction that is incident with respect to the second portion first edge 232a, 242a so that the second portion first edge 232a of the third lower flap 23 is suitable for engaging with the second portion first edge 242a of the fourth lower flap 24.

[0048] According to such embodiment shown in Figure 1b, the third lower flap 23 and the fourth lower flap 24 each have an auxiliary support flap 23a, 24a. The auxiliary support flap 23a, 24a is joined to the third lower flap 23 and to the fourth lower flap 24 respectively by means of the fourth portion first edge 234a of the third lower flap 23 and the fourth portion first edge 244a of the fourth lower flap such as to rotate with respect to an axis passing through the fourth portion first edge 234a, 244a and suitable for engaging, respectively, with a protruding element 61 and a second protruding element 62 of said two protruding elements 61, 62 during the step of closing the box 1. Each auxiliary support flap 23a, 24a preferably engages, respectively, with each protruding element 61, 62 so as to support it and maintain it in a vertical position once the box has been assembled but not yet filled with

bottles. In other words, each auxiliary support flap 23a, 24a facilitates maintaining the respective divider 5,6 in a vertical position once the step of assembling the box has been completed but before the step of filling the box.

[0049] According to such embodiment, each bottom portion 212, 222 has a bottom portion first edge 2121, 2221 and a bottom portion second edge 2122, 2222. In particular, the bottom portion first edge 2121, 2221 has the same inclination as the edge side wing 81 which is suitable for ensuring the correct positioning of the gluing side wing 8 in such a way as to be glued to the third side wall 13 in the flat wall configuration. In other words, the bottom portion first edge 2121, 2221 represents the extension of the edge side wing 81 such as to form a singular edge having a singular inclination. The bottom portion second edge 2122, 2222 extends in a direction that is substantially perpendicular to the lower folding segment 51, 52.

[0050] According to a preferred embodiment, the box 1 further comprises at least two side flaps 33, 34 joined to at least two side walls 13, 14, respectively, each by means of an upper folding segment 113, 114, wherein said side flaps 33, 34, together with the upper flap 32, form the lid 3 of the box 1.

[0051] According to the embodiment shown by way of example in Figures 3', 3", 3"', the box 1 comprises an upper flap 32' and two side flaps 33' and 34' suitable for forming the lid 3 of the box 1.

[0052] According to the embodiment shown by way of example in Figures 4", 4"', the box 1 comprises an upper flap 32" and three side flaps 31", 33" and 34" suitable for forming the lid 3 of the box 1.

[0053] According to the embodiment shown by way of example in Figures 5', 5", 5"', the box 1 comprises two upper flaps 31'", 32'" and two side flaps 33'" and 34'" suitable for forming the lid 3 of the box 1.

[0054] According to the embodiment shown by way of example in Figures 5', 5", 5"', the two upper flaps 31'", 32'" have respectively one upper flap edge 310'", 320'", wherein said upper flap edges 310'", 320'" are matching in the closed box configuration.

[0055] According to one embodiment, said four lower folding segments 51, 52, 53, 54 are comprised in a single lower folding line 58 given by the joining of the single lower folding segments 51, 52, 53, 54.

[0056] According to a further embodiment, said four lower folding segments 51, 52, 53, 54 are individual and separate sections therebetween.

[0057] According to one embodiment, said upper folding segments 111, 112, 113, 114 are comprised in a single folding line 118 given by the joining of the single upper folding segments 111, 112, 113, 114.

[0058] According to a further embodiment, the four upper folding segments 111, 112, 113, 114 are individual and separate sections therebetween.

[0059] According to a preferred embodiment, the box 1 further comprises a foldable closing wing 9 joined by means of a lid folding segment 132 to the at least one

upper flap 32.

[0060] According to the embodiment shown by way of example in Figure 3', said foldable closing wing 9 comprises a protruding engagement portion 90 extending on the same plane as said foldable closing wing 9. The engagement portion 90 is suitable for engaging with a side opening 91 in the first side wall 11 of the four side walls 11, 12, 13, 14 when the box 1 is in the assembled box configuration. Said side opening 91 is formed in a direction that is substantially parallel with respect to the lower folding segment 51. In other words, the engagement portion 90 of the foldable closing wing 9 is suitable for engaging with the side opening 91 in order to determine the closing of the box 1.

[0061] According to the embodiment shown by way of example in Figure 4', the side flap 31" comprises a protruding portion 310" that extends on the same plane as said side flap 31", wherein said protruding portion 310" comprises a protruding open portion 3100" suitable for being engaged by said foldable closing wing 9 when the box 1 is found to be in the closed box configuration.

[0062] According to the embodiment shown by way of example in Figures 4', 4", 4"', the two side flaps 33", 34" each have a groove 330", 340", wherein said two side flaps 33", 34" are suitable for fitting together by means of the grooves 330' , 340' ' when the box 1 is in the closed box configuration.

[0063] According to a preferred embodiment, shown by way of example in Figure 1, the box 1 comprises an auxiliary foldable wing 7 joined by means of an upper an upper folding segment 111 to the first side wall 11, wherein said auxiliary foldable wing 7 is suitable for being folded towards the interior of the box 1, parallel to the first side wall 11. The separator 4, by means of the auxiliary folding segment 121, is joined to the auxiliary foldable wing 7.

[0064] According to a preferred embodiment, the separator 4 is suitable for being folded in such a way as to be positioned above the at least one first row of bottles lying-down. In the assembled box configuration, and therefore when the separator 4 has already been horizontally arranged to separate at least two bottles that are lying-down, the auxiliary foldable wing 7 is parallel to the first side wall 11. In other words the auxiliary foldable wing 7 is suitable for being folded towards the interior of the box 1, parallel to the first side wall 11, the separator 4 is suitable for being folded so as to be arranged above the at least first row of bottles.

[0065] According to the embodiment shown by way of example in Figures 4', 4", 4"', the separator 4 is, instead, a horizontal divider element, separate from the four side walls 11, 12, 13, 14. In other words, the separator 4 and the box 1 are two distinct elements.

[0066] According to the embodiment shown by way of example in Figures 5', 5", 5"', the separator 4 is a horizontal divider element, separate from the four side walls 11, 12, 13, 14 and comprises two separator side wings 41, 42 each joined by a folding segment 410, 420, wherein said separator side wings 41, 42 are folded and parallel

to the two side walls 11, 12 respectively. In other words, the two separator side wings 41, 42 are respectively parallel to the two side walls 11, 12 in the configuration wherein the separator 4 is inserted above a row of bottles lying-down.

[0067] According to the embodiment shown by way of example in Figures 5', the separator side wings 41, 42 acts as feet for the separator 4.

[0068] As mentioned, the object of the present invention is also the method for obtaining and assembling a box comprising the steps of:

a) obtaining a die-cut 100 that comprises:

- four side walls 11, 12, 13, 14 joined to four lower flaps 21, 22, 23, 24, respectively, each by means of a lower folding segment 51, 52, 53, 54;
- two protruding element 61, 62 joined to a first lower flap 21 and a second lower flap 22, each by means of a first bottom folding segment 101 and a second bottom folding segment 102;
- two gluing portions 210, 221, preferably substantially triangular in shape, joined to a first lower flap 21 and to a second lower flap 22;
- at least one upper flap 32 joined to a second side wall 12 by means of an upper folding segment 112;
- a gluing side wing 8 joined to the second side wall 12 by a side folding segment 122.

b) folding each lower flap 21, 22, 23, 24 onto the respective side walls 11, 12, 13, 14;

c) folding each gluing portion 211, 221;

d) folding a third side wall 13 onto a first side wall 11 and the second side wall 12 onto a fourth side wall 14;

e) gluing the first gluing portion 211 to a third lower flap 23 and the second gluing portion 221 to a fourth lower flap 24, respectively;

f) gluing the gluing side wing 8 to the third side wall 13 so as to obtain said die-cut 100 in a flat configuration which is planar with respect to an imaginary plane I (as shown by way of example in Figure 2a) ;

g) applying a lateral compression force in a direction lying on said imaginary plane I so that each gluing portion 211, 221 carries out a dragging action on the third lower flap 23 and the fourth lower flap 24, respectively, performing the verticalization of the two protruding elements 61, 62 resulting in the formation of the bottom 2 of the box 1 and the two dividers 5, 6;

h) positioning a separator 4 for separating two superimposed rows of bottles;

i) positioning the lid 3 to close the box 1.

[0069] According to the embodiment wherein the die-cut 100 furthermore comprises an auxiliary foldable wing 7 joined by means of an upper folding segment 111 to the first side wall 11 and comprising the separator 4 joined by means of an auxiliary folding segment 121 to the aux-

iliary foldable wing 7, the method for obtaining and assembling a box 1 comprises the steps of:

- folding the auxiliary foldable wing 7 towards the interior of the box 1 parallel to the first side wall 11;
- folding the separator 4 so as to be positioned above a first row of bottles.

[0070] Innovatively, the self-assembling box and the method for obtaining and assembling a box amply fulfill the intended purpose thereof in overcoming the typical problems of the prior art.

[0071] Advantageously, the self-assembling box, object of the present invention, has two dividers that are suitable for separating two adjacent bottles lying-down, that are joined at the bottom of the box and that are engageable by the lid of the box.

[0072] Advantageously, the self-assembling box, object of the present invention, is suitable for supporting elevated loads in discharging the action of the force of weight both on the side walls and on the partitions. Advantageously, the dividers, object of the present invention, significantly reduce possible lid failures. Advantageously, the lower tendency for the lid to fail results in a lower probability that bottles contained inside the box will be broken.

[0073] Advantageously, the self-assembling box, object of the present invention, has two dividers with a profile comprising a step that provides a support for the separator. Advantageously, those dividers with a step profile support the action of the weight of force, for example of a row of bottles, discharged onto the separator. Advantageously, with bottles of varying diameters that are inserted into the box, by virtue of said step, the separator is in a position that is substantially parallel to the bottom. Advantageously, the separator is arranged in a stable manner.

[0074] Advantageously, the box, object of the present invention has a separator that unloads the action of the weight of force exerted on a row of bottles. Advantageously, the side flaps of the separator are suitable for supporting the action of the weight of force, for example of a row of bottles and/or of boxes that are superimposed in the stacking phase. Advantageously, the feet of the separator ensure greater stability for the separator when it is arranged above a row of bottles lying-down.

[0075] Advantageously, the self-assembling box object of the present invention may be configured in a flat configuration that confers storage convenience thereto and that simplifies storage and handling operations.

[0076] Advantageously, the self-assembling box, object of the present invention, comprises a separator that may be inserted onto the two dividers using simple operations.

[0077] Advantageously, the self-assembling box, object of the present invention, may be configured in an open configuration starting from the flat configuration, by means of a simple pressure action on two side edges.

[0078] Advantageously, the method for obtaining and assembling a box is simple and intuitive, as well as fool-proof.

[0079] Advantageously, the method for obtaining and assembling a box ensures the correct dragging of the bottom flaps during assembly in promoting the verticalization of the dividers, minimizing the possibility of the dividers experiencing any breakage.

[0080] Advantageously, the method for obtaining and assembling a box makes it possible to obtain a box in an assembled configuration by means of the application of a lateral compression force quickly and easily for any user.

[0081] Advantageously, the method for obtaining and assembling a box, object of the present invention, makes it possible to select the method for obtaining the lid according to the intended use of the box itself.

[0082] Advantageously, the insertion of bottles of wine prevents the incidence of breakage or bending of dividers.

[0083] Advantageously, the auxiliary support flap engages with the protruding element such as to support it and maintain it in a vertical position once the box has been assembled but not yet filled with bottles.

[0084] Advantageously, the auxiliary support flap facilitates the insertion of the first row of bottles without the requirement to manually keep the two dividers separate. Advantageously, the auxiliary flap makes filling the box quicker and easier both on the part of a user and on the part of an automatic filling mechanism.

[0085] Advantageously, the auxiliary flap greatly reduces the probability of damaging the two vertical separators during the step of filling the box.

[0086] It is clear that a person skilled in the art may make changes to the invention described above in order to meet contingent needs, which changes all fall within the scope of protection as defined in the following claims.

Claims

1. A self-assembling box (1) for containing at least six bottles arranged on at least two superimposed rows in a lying-down position, wherein said box (1) comprises:

- four side walls (11, 12, 13, 14) joined to four lower flaps (21, 22, 23, 24), respectively, each by means of a lower folding segment (51, 52, 53, 54), wherein said four flaps are mutually engageable to form a bottom (2) of the box (1);
- at least one upper flap (32) joined to a second side wall (12) by means of at least one upper folding segment (112), wherein said at least one upper flap (32) forms a lid (3) of the box (1);
- a separator (4) suitable for horizontally separating two superimposed rows of bottles, wherein said separator (4) has two openings (40', 40'');

- wherein the box (1) comprises two protruding elements (61, 62) joined to a first lower flap (21) and to a second lower flap (22), respectively, each by means of a first bottom folding segment (101) and a second bottom folding segment (102);
 wherein, when assembling the box (1), said two protruding elements (61, 62) form two dividers (5, 6) each separating two adjacent bottles lying down, wherein said two dividers (5, 6) are as tall as the four side walls (21, 22, 23, 24) so as to provide a support for the lid (3), wherein each divider (5, 6) extends through a respective opening (40', 40'') of the separator (4).
2. Box (1) according to claim 1, wherein each protruding element (61, 62) has a profile (610, 620) comprising two steps (611', 611'', 621', 621''), respectively.
 3. Box (1) according to any one of the preceding claims, wherein a first lower flap (21) and a second lower flap (22) each comprise a gluing portion (211, 221), preferably substantially triangular in shape, glued to a third lower flap (23) and a fourth lower flap (24), respectively, to form the bottom (2) of the box (1).
 4. Box (1) according to claim 3, wherein, when assembling the box (1), each gluing portion (211, 221) carries out a dragging action on the third lower flap (23) and the fourth lower flap (24), respectively, performing the verticalization of a respective protruding element (61, 62).
 5. Box (1) according to any one of the preceding claims, further comprising at least two side flaps (33, 34) joined to at least two side walls (13, 14), respectively, each by means of an upper folding segment (113, 114), wherein said side flaps (33, 34) together with the upper flap (32) form the lid (3) of the box (1).
 6. Box (1) according to any one of the preceding claims, comprising a foldable closing wing (9) joined by means of a lid folding segment (132) to the at least one upper flap (12).
 7. Box (1) according to any one of the preceding claims, wherein said four lower folding segments (51, 52, 53, 54) are comprised in a single lower folding line (58), and/or wherein said four upper folding segments (111, 112, 113, 114) are comprised in a single lower folding line (118).
 8. Box (1) according to any one of the preceding claims, wherein said four lower folding segments (51, 52, 53, 54) are single sections and separate from one another, and/or wherein said four upper folding segments (111, 112, 113, 114) are single sections and separate from one another.
 9. Box (1) according to any one of the preceding claims, comprising an auxiliary foldable wing (7) joined by means of an upper folding segment (111) to the first side wall (11), wherein the auxiliary foldable wing (7) is suitable for being folded towards the interior of the box (1) parallel to the first side wall (11).
 10. Box (1) according to claim 9, wherein the separator (4) is joined by means of an auxiliary folding segment (121) to the auxiliary foldable wing (7), wherein said separator (4) is suitable for being folded so as to be positioned above a row of bottles.
 11. Box (1) according to any one of claims 1 to 8, wherein the separator (4) is a horizontal divider element, separate from the four side walls (11, 12, 13, 14).
 12. Box (1) according to claim 11, wherein the separator (4) comprises two separator side wings (41, 42) each joined by a folding segment (410, 420), wherein said separator side wings (41, 42) are folded and parallel to the two side walls (11, 12) respectively.
 13. Box (1) according to any one of the preceding claims, further comprising a gluing side wing (8) engaged with a second side wall (12) by a side folding segment (122), wherein said gluing side wing (8) is glued to a third side wall (10).
 14. Box (1) according to any one of the preceding claims, wherein the third lower flap (23) and the fourth lower flap (24) each has a profile 230, 240 comprising a perimeter support portion (234, 244) having a step profile and formed by a fourth portion first edge (234a, 244a) and by a fourth portion second edge (234b, 244b) incident therebetween, and each comprising an auxiliary support flap (23a, 24a), wherein said auxiliary support flap (23a, 24a) is joined to the third lower flap (23) and to the fourth lower flap (24) respectively by means of the fourth portion first edge (234a) and the fourth portion first edge (244a).
 15. A method for obtaining and assembling a box (1) according to any one of the preceding claims, comprising the steps of:
 - a) obtaining a die-cut (100) comprising:
 - four side walls (11, 12, 13, 14) joined to four lower flaps (21, 22, 23, 24), respectively, each by means of a lower folding segment (51, 52, 53, 54);
 - two protruding elements (61, 62) joined to a first lower flap (21) and a second lower flap (22), respectively, each by a first bottom folding segment (101) and a second bottom

folding segment (102);
 - two gluing portions (211, 221), preferably substantially triangular in shape, joined to a first lower flap (21) and a second lower flap (22); 5
 - at least one upper flap (32) joined to a second side wall (12) by means of at least one upper folding segment (112);
 - a gluing side wing (8) joined to a second side wall (12) by a side folding segment (122); 10

b) folding each lower flap (21, 22, 23, 24) onto the respective side walls (11, 12, 13, 14);
 c) folding each gluing portion (211, 221); 15
 d) folding a third side wall (13) onto a first side wall (11) and the second side wall (12) onto a fourth side wall (14);
 e) gluing the first gluing portion (211) to the third lower flap (23) and the second gluing portion (221) to the fourth lower flap (24) respectively; 20
 f) gluing the gluing side wing (8) to the third side wall (13) so as to obtain said die-cut (100) in a flat configuration which is planar with respect to an imaginary plane (I); 25
 g) applying a lateral compression force in a direction lying on said imaginary plane (I) so that each gluing portion (211, 221) carries out a dragging action on the third lower flap (23) and the fourth lower flap (24), respectively, performing the verticalization of the two protruding elements (61, 62) resulting in the formation of the bottom (2) of the box (1) and the two dividers (5,6); 30
 h) positioning a separator (4) for separating two superimposed rows of bottles; 35
 i) positioning the lid (3) to close the box (1).

16. Method for obtaining and assembling a box (1) according to claim 15, wherein the die-cut (100) comprises an auxiliary foldable wing (7) joined by means of an upper folding segment (111) to the first side wall (11) and comprising the separator (4) joined by means of an auxiliary folding segment (121) to the auxiliary foldable wing (7), wherein the method comprises the steps of: 40
 45

- folding the auxiliary foldable wing (7) towards the interior of the box (1) parallel to the first side wall (11);
 - folding the separator (4) so as to be positioned above a first row of bottles. 50

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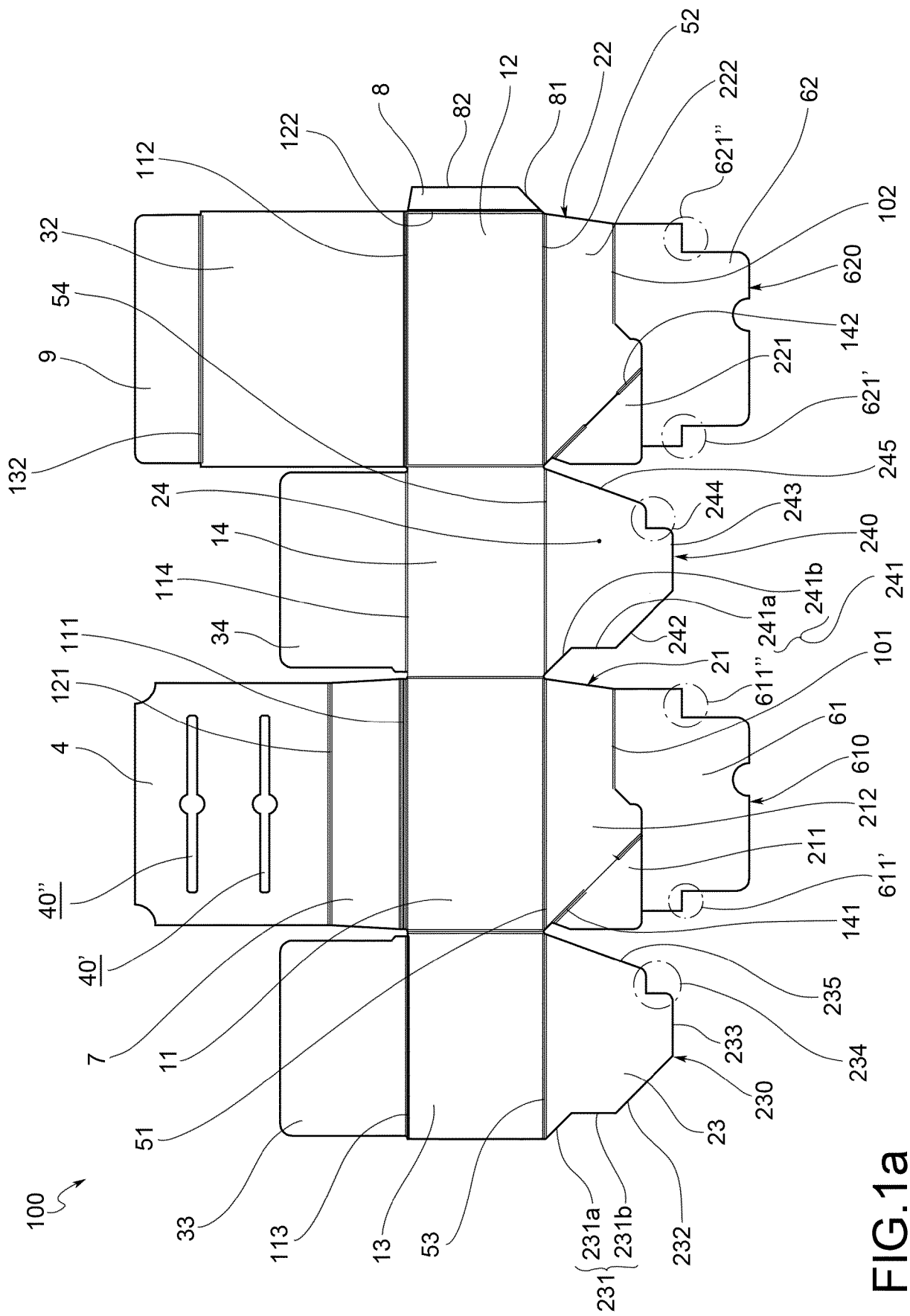
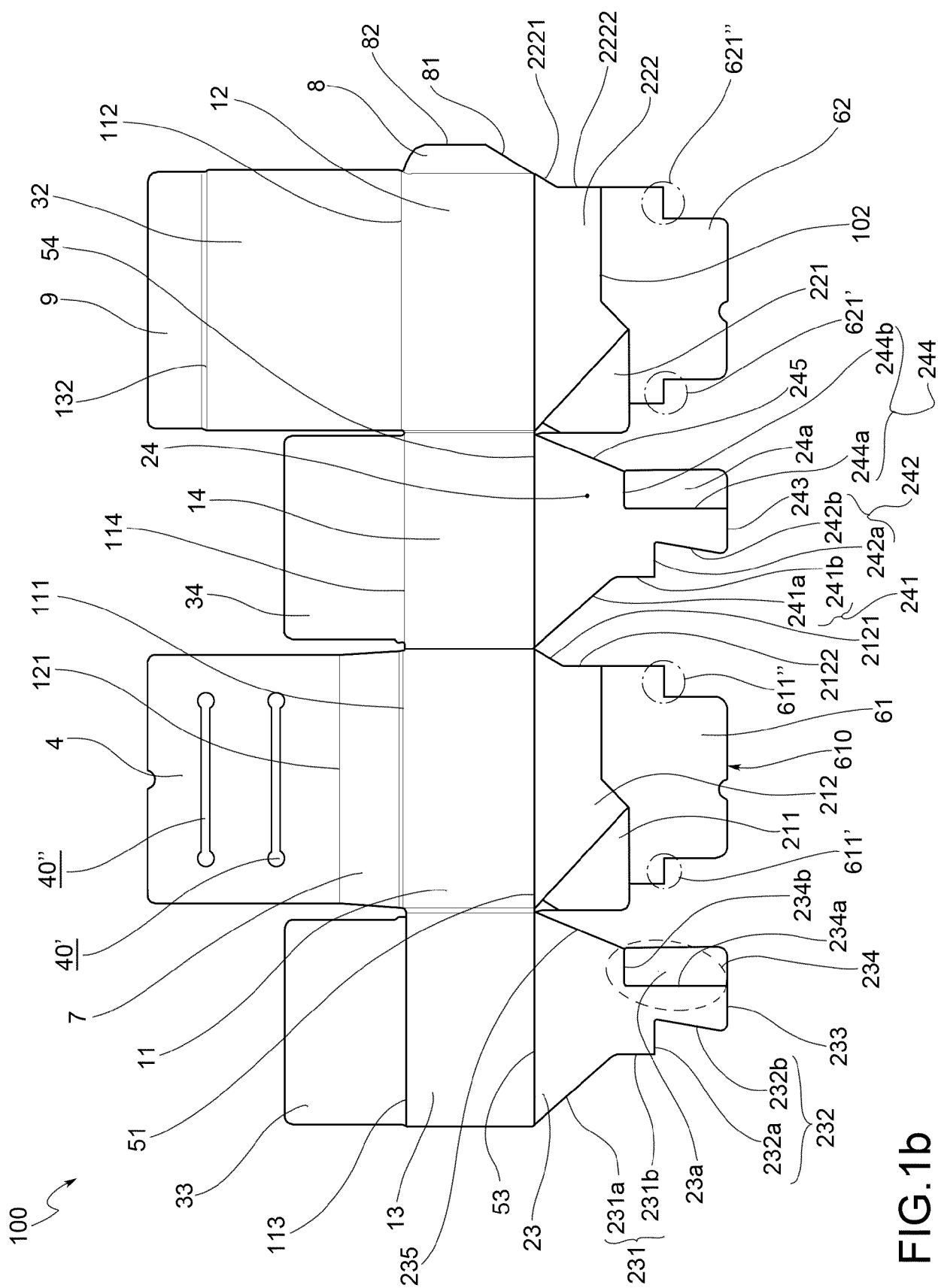


FIG.1a



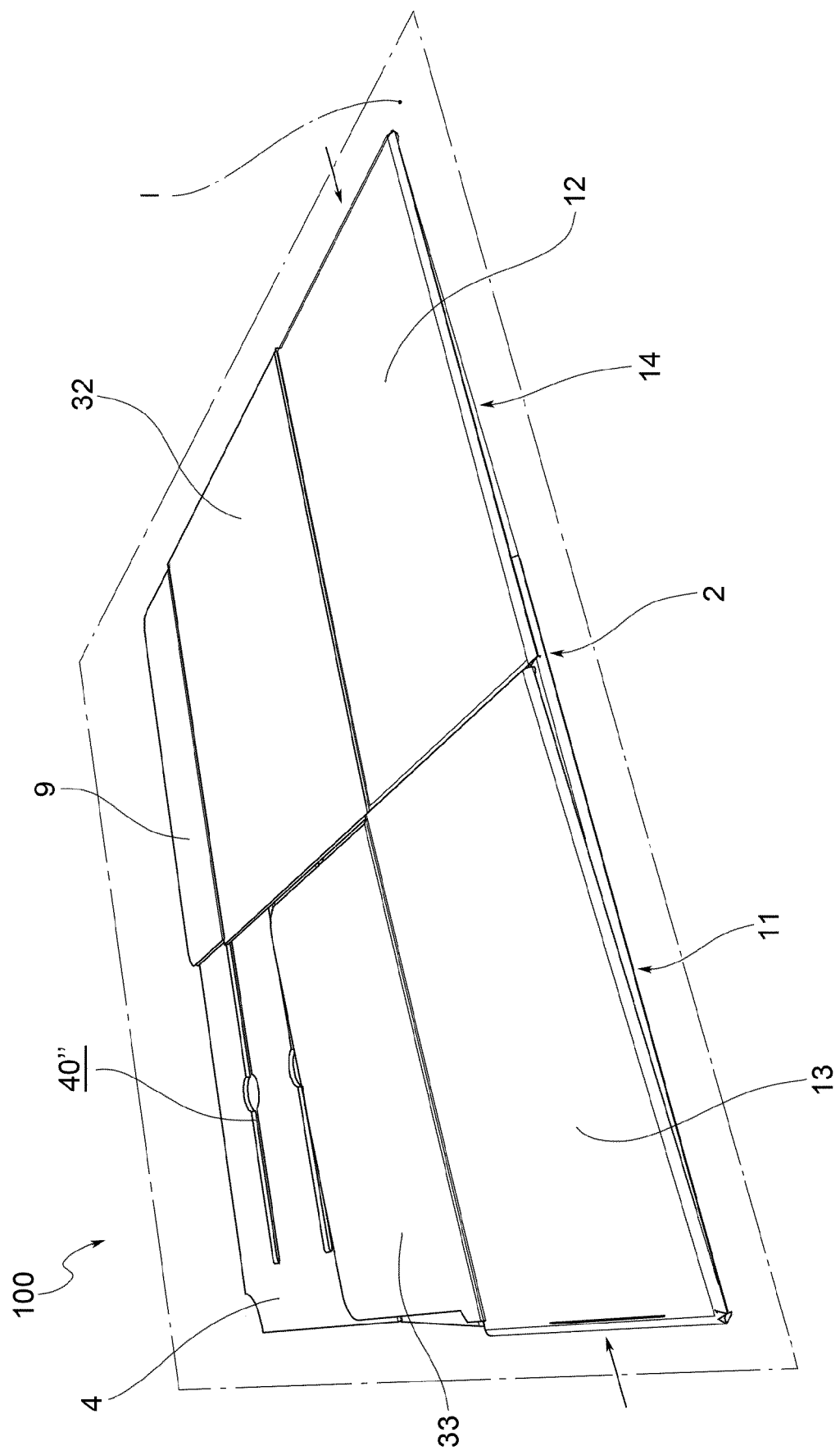
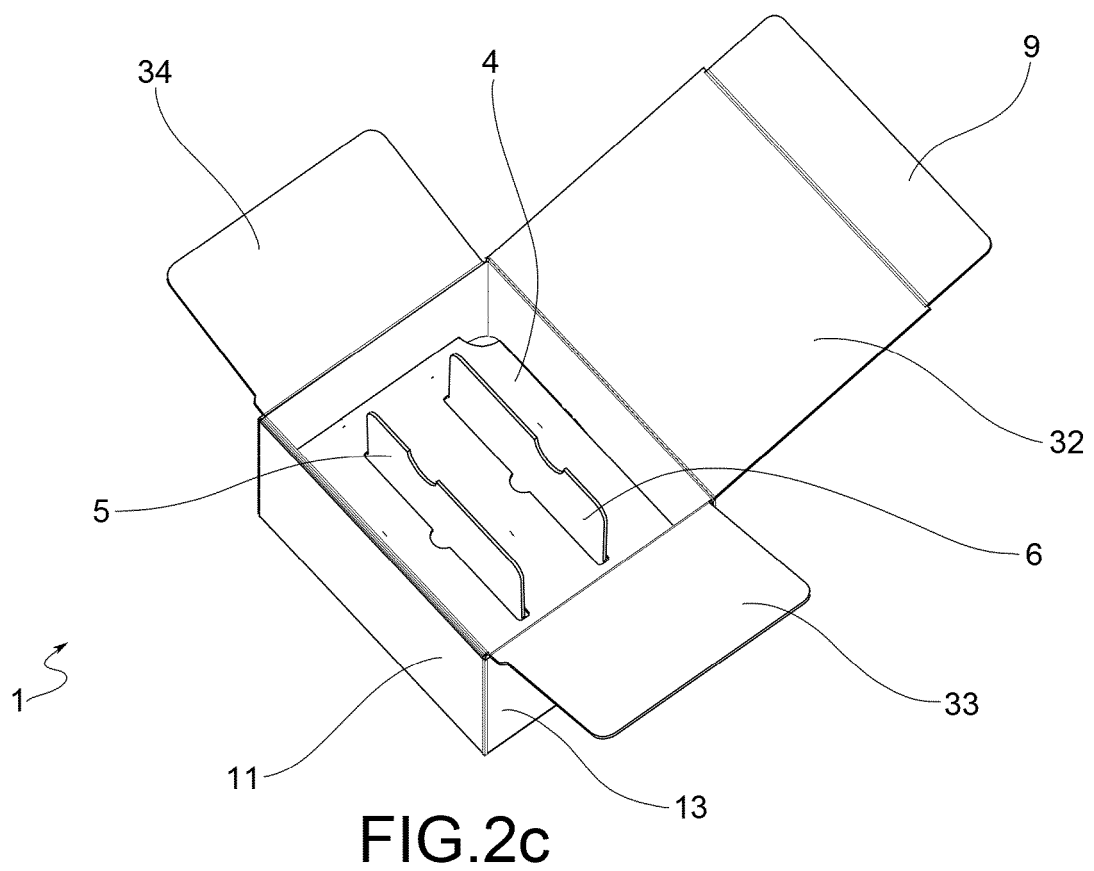
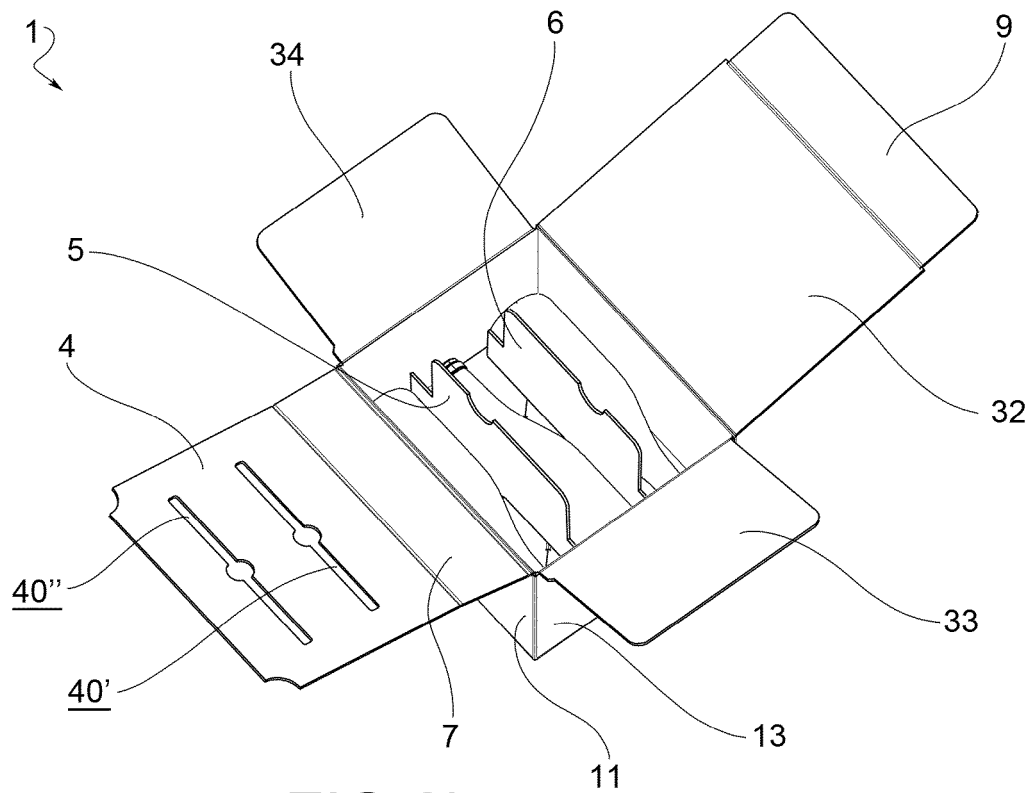


FIG.2a



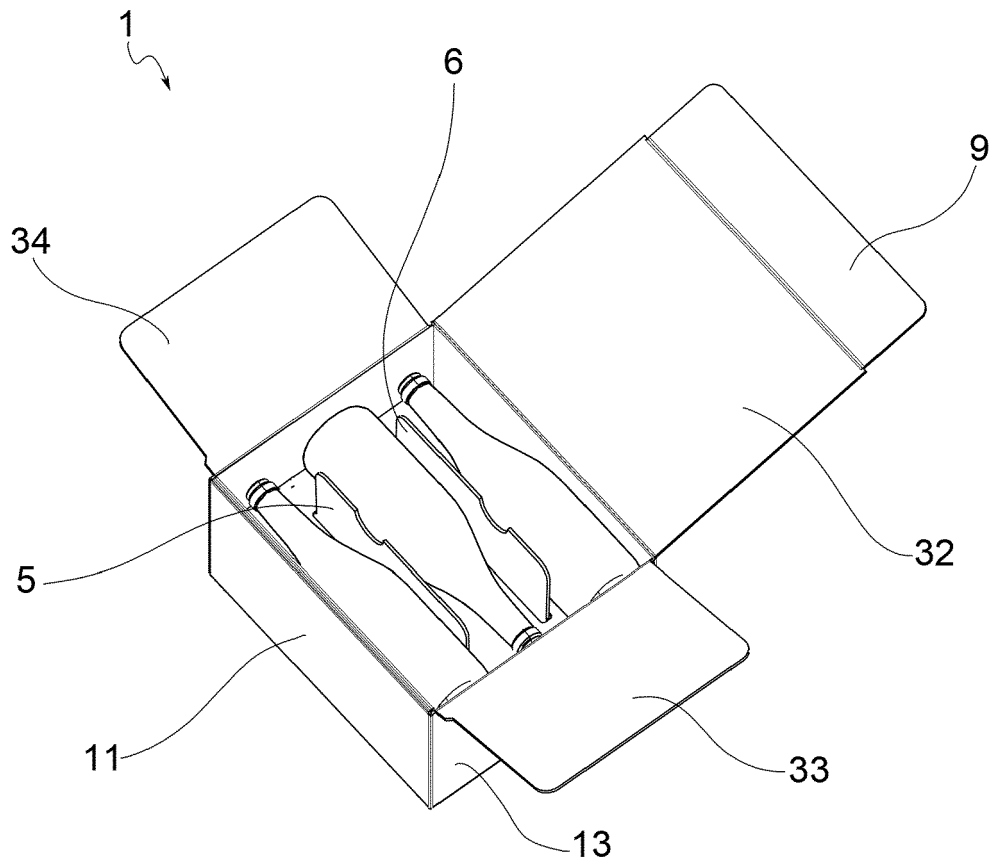


FIG. 2d

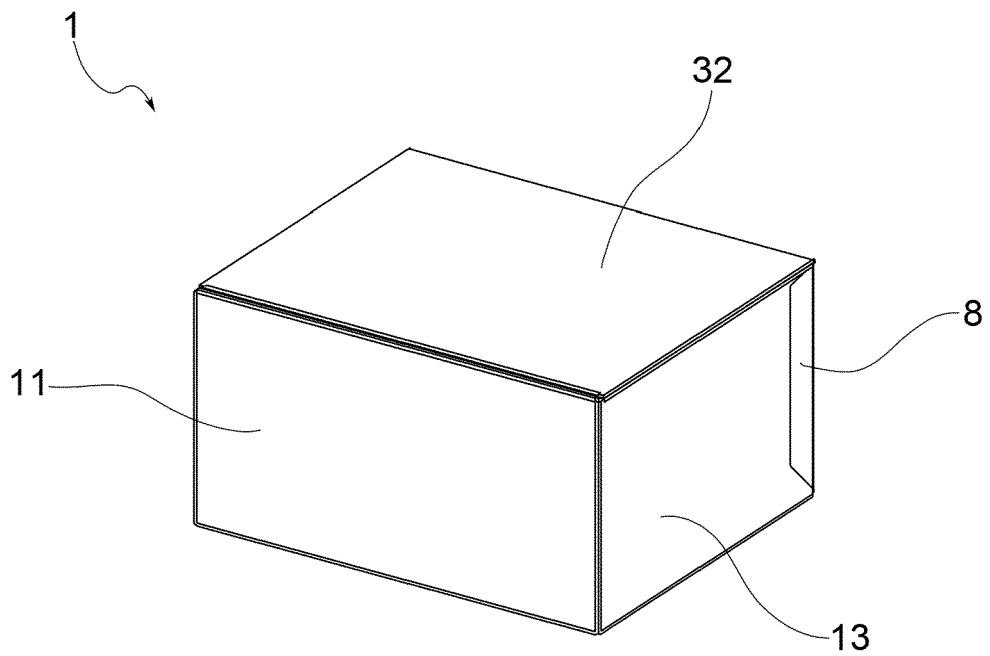


FIG. 2e

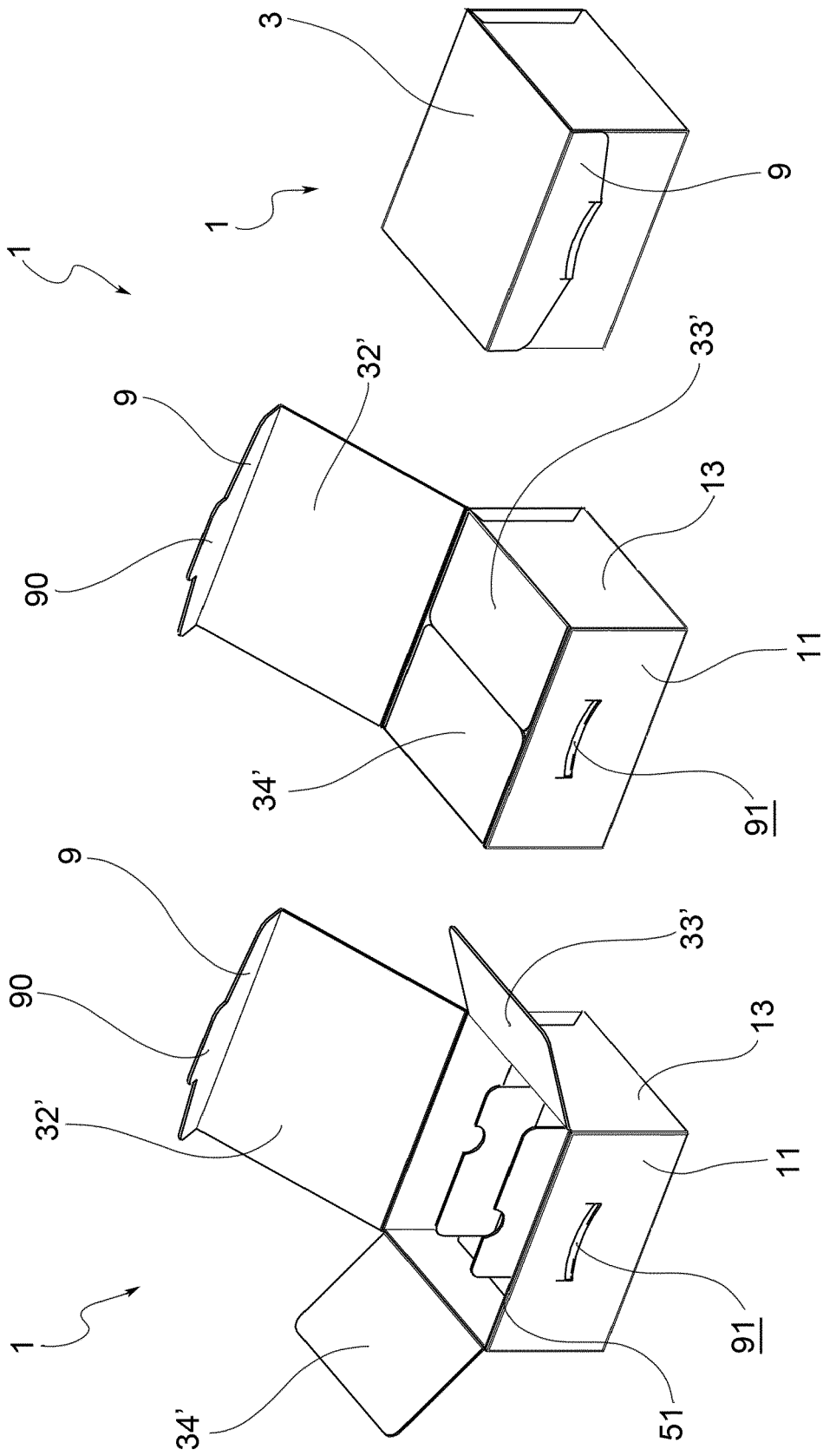


FIG.3''

FIG.3'

FIG.3

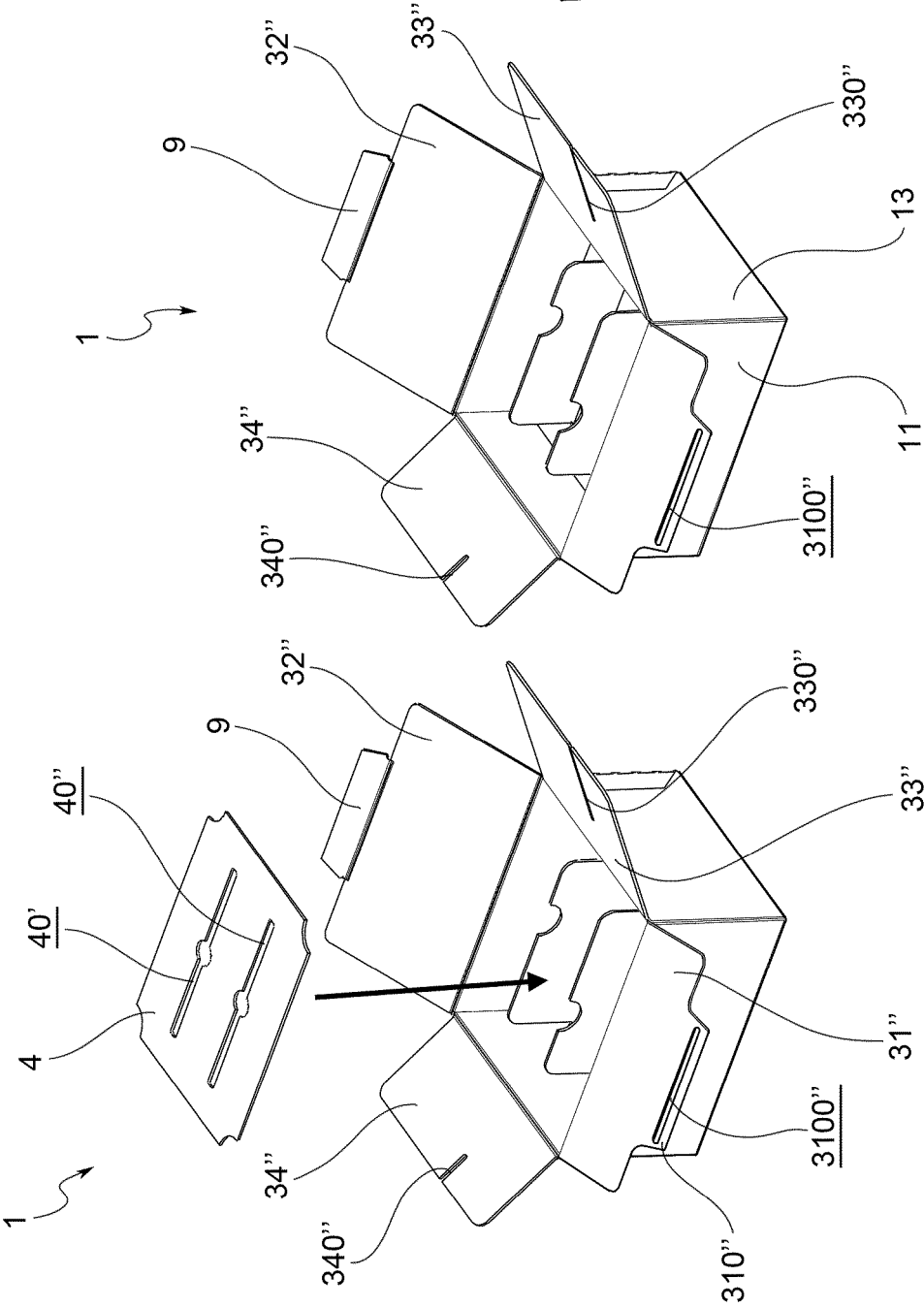
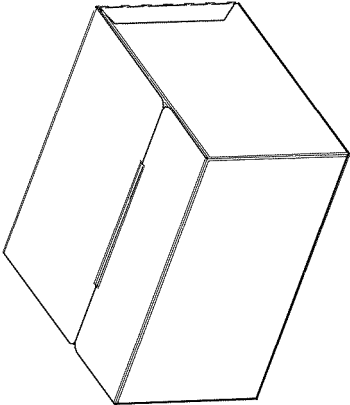


FIG.4''

FIG.4'

FIG.4'''



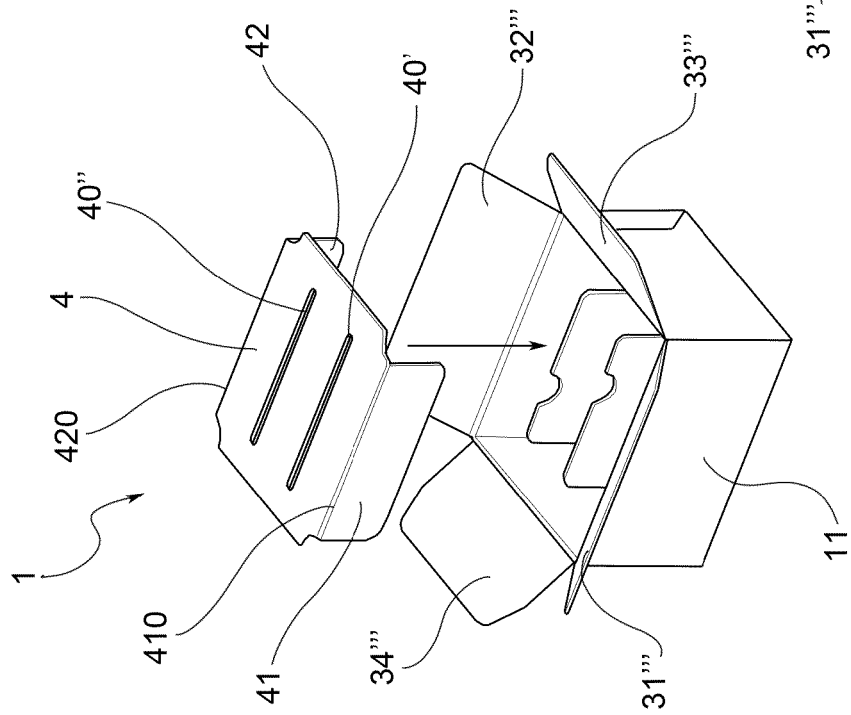


FIG. 5'

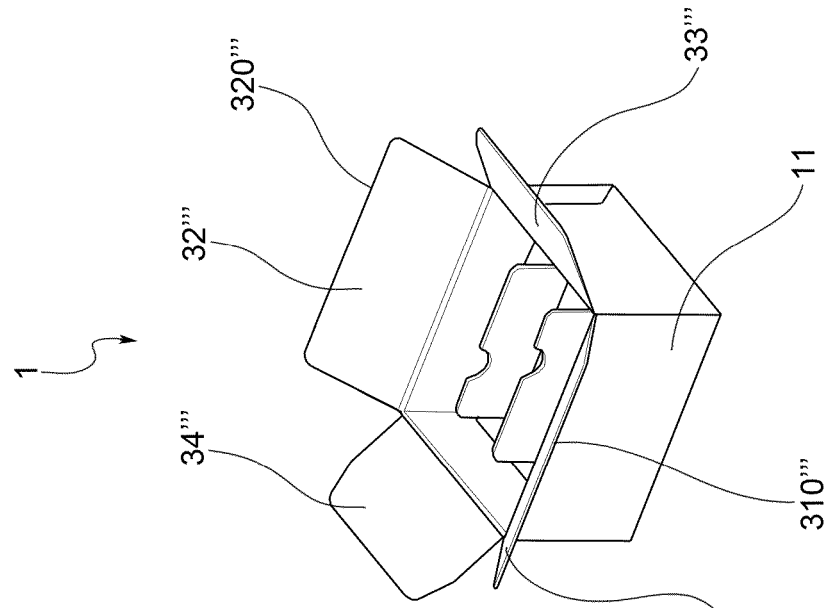


FIG. 5''

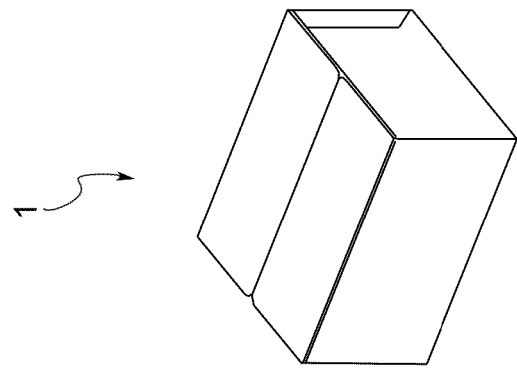


FIG. 5'''



EUROPEAN SEARCH REPORT

Application Number

EP 24 15 7321

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	JP 2006 168742 A (SHARP KK) 29 June 2006 (2006-06-29) * abstract; figures 1-12 * -----	1-16	INV. B65D5/487 B65D5/36
A	EP 3 248 896 A1 (BERTOLIN IMBALLAGGI S R L [IT]) 29 November 2017 (2017-11-29) * paragraph [0035] - paragraph [0094] * * figures 1-6 * -----	1-16	
A	JP 2009 023713 A (RENGO CO LTD) 5 February 2009 (2009-02-05) * abstract; figures 1-10 * -----	1-16	
A	EP 3 406 535 A1 (SCATOLIFICIO CERIANA S R L [IT]) 28 November 2018 (2018-11-28) * paragraph [0025] - paragraph [0043] * * figures 1-10 * -----	1-16	
			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		15 July 2024	Fitterer, Johann
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ON EUROPEAN PATENT APPLICATION NO.

EP 24 15 7321

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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15-07-2024

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	JP 2006168742 A	29-06-2006	NONE	

15	EP 3248896 A1	29-11-2017	NONE	

	JP 2009023713 A	05-02-2009	NONE	

20	EP 3406535 A1	28-11-2018	EP 3406535 A1	28-11-2018
			ES 2828651 T3	27-05-2021

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