



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
30.03.2022 Bulletin 2022/13

(51) International Patent Classification (IPC):
B65D 5/36 (2006.01) B65D 5/40 (2006.01)
B65D 5/42 (2006.01)

(21) Application number: **21199034.6**

(52) Cooperative Patent Classification (CPC):
B65D 5/40; B65D 5/3642; B65D 5/4266

(22) Date of filing: **27.09.2021**

(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
Designated Validation States:
KH MA MD TN

(71) Applicant: **Tecnocarta S.A.S.**
06080 Bettona (PG) (IT)

(72) Inventor: **TOMASSINI, Alessandro**
06080 Bettona (PG) (IT)

(74) Representative: **Ercolani, Simone Pietro Marietti, Gislone e Trupiano S.r.l.**
Via XX settembre, 80
06121 Perugia (PG) (IT)

(30) Priority: **28.09.2020 IT 202000022834**

(54) **BOX FOR FOOD PRODUCTS ALSO CONTAINING LIQUIDS**

(57) Box (1) for containing food products of the type able to switch from an upright working configuration (C1) to a depressed at rest configuration (C2), and vice-versa, said box (1) comprising a bottom wall (10) and a plurality of perimeter walls (11, 12, 13, 14) foldable with respect to said bottom wall (10) such as to switch from said depressed configuration (C2) to said upright configuration (C1), and vice-versa, said plurality of foldable perimeter walls comprising at least one front wall (11) having an inner face (11a) and an outer face (11b), and at least one side wall (12) adjacent to said front wall (11), wherein said inner face (11a) of said at least one front wall (11) is in contact with the inner face (10a) of said bottom wall (10), at least when said box is in said depressed configuration (C2), said box (1) further comprising at least one sealed connection wall (20) between said at least one front wall (11) and said at least one side wall (12), which is adapted to prevent the liquid from coming out of the box, at least when said box is in said upright configuration (C1), said at least one connection wall (20) being provided with a first folding line (25) defining a first connecting flap (21) and a second connecting flap (22), a second folding line (26) arranged between said first connecting flap (21) and said at least one first front wall (11), and a third folding line (27) arranged between said second connecting flap (22) and said at least one side wall (12), said first folding line (25) comprising a first end (25a) arranged at the meeting point (P) between said at least one front wall (11), said at least one side wall (12) and said bottom wall (10), and a second free end (25b) opposite said first end, said first flap (21) further comprising a first face (21a) and a second face (21b), said second face comprising one gluing area (21c) for gluing to the outer face (11b) of said front wall (11), said box being characterized in that said first folding line (25) is provided with a slit (40)

starting from the second free end (25b) in direction of said first end (25a).

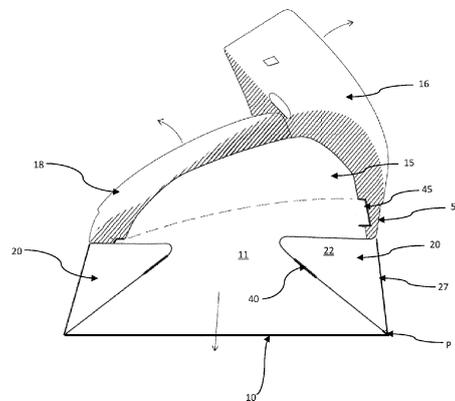


FIG. 2A

Description

FIELD OF THE INVENTION

[0001] The present invention concerns a box for food products. In particular, such box is used for containing food products which can lead to dripping and, thus, to the leaking of liquids. Thus, food products with a high liquid content such as, for example: already seasoned salads, pasta with sauce, pastries with rum, pastries with honey, etc., all fall within the protection scope of this invention.

KNOWN PRIOR ART

[0002] According to the known art, boxes adapted for containing such food products are known.

[0003] For example, a box adapted to switch from an upright working configuration to a substantially planar depressed at rest position, and vice-versa, is known. Such box comprises a quadrangular bottom wall and four perimeter walls foldable with respect to the bottom wall, such as to switch from the aforesaid depressed configuration to the upright configuration, and vice-versa. The perimeter walls comprise two opposite front walls, each having an inner face and an outer face, and two side walls both adjacent to the two front walls. The inner face of the two front walls is in contact with the inner face of the bottom walls, when the box is in its depressed configuration. The box further comprises four sealed connection walls between the two front walls and the two side walls. These connection walls are adapted to prevent the liquid from coming out of the box, at least when the box is in its upright configuration. Each connection wall is provided with a first folding line defining a first connecting flap and a second connecting flap, a second folding line arranged between the first connecting flap and one of the two front walls, and a third folding line arranged between the second connecting flap and one of the two side walls adjacent to the front wall. The first folding line comprises a first end arranged at the meeting point between the front wall, the side wall and the bottom wall, and a second free end opposite the first end. Moreover, the first flap comprises a first face and a second face, wherein the first face comprises a gluing area for gluing to the outer face of the front wall. Thus, when the box is upright, possible fluids contained inside the box cannot come out, at the first end of the first folding line, since there is continuity of material between the front walls and the side ones such as to prevent them from coming out.

[0004] For example, the document US2009261151 describes a box having characteristics similar to those mentioned above.

[0005] Such solution allows to solve the problem of efficiently containing the liquids, however, switching from the depressed configuration to the upright one achieved by displacing the two front walls from the position in which

they are in contact with the bottom wall to the one in which they are substantially rotated by 90° with respect to the bottom part, it often occurs, in the upright configuration of the box, that the first flat separates from the front wall to which it is glued, or that the first folding line gets torn, starting from the second end. This occurs since the force of the user, used to raise the front wall of 90° with respect to the bottom wall, is transmitted to the first flap, from the free end of the first fold up towards the second end of the first folding line. Such situation becomes even more critical when the user, as generally occurs, rotates the front wall with respect to the bottom wall by an angle slightly greater than 90°. Thus, the greater this rotation angle will be, and when exceeding 90°, the greater the risk of causing the separation of the first flap from the front wall, or of breaking the container along the first folding line.

[0006] Such problem thus leads to obtain, when upright, boxes that are not perfectly square or which have flaps that are not perfectly combined with the front wall, or even slit folding lines. This, to the eyes of the client, reduces the aesthetic quality of the product. Moreover, such problem can lead to a non perfect final closing of the box.

[0007] Object of the present invention is thus to implement a box which does not have the drawbacks of the known art.

[0008] Thus, object of the present invention is to prevent the box from being unpleasant from an aesthetic point of view following the breaking of the gluing constraint between the first flap and the front wall.

[0009] Further object of the present invention is to ensure a perfect closing of the box.

SUMMARY OF THE INVENTION

[0010] These and further objects are achieved by means of a device for supporting a box for containing food products according to claim 1.

[0011] In particular, the objects are achieved by means of a box for containing food products of the type able to switch from an upright working configuration to a substantially planar depressed one, and vice-versa, said box comprising a bottom wall and a plurality of perimeter walls foldable with respect to said bottom wall such as to switch from said depressed configuration to said upright configuration, and vice-versa, said plurality of foldable perimeter walls comprising at least one front wall having an inner face and an outer face, and at least one side wall adjacent to said front wall, wherein said inner face of said at least one front wall is in contact with the inner face of said bottom wall, at least when said box is in said depressed configuration, said box further comprising at least one sealed connection wall between said at least one front wall and said at least one side wall, which is adapted to prevent the liquid from coming out of the box, at least when said box is in said upright configuration, said at least one connection wall being provided with a

first folding line defining a first connecting flap and a second connecting flap, a second folding line arranged between said first connecting flap and said at least one front wall, and a third folding line arranged between said second connecting flap and said at least one side wall, said first folding line comprising a first end arranged at the meeting point between said at least one front wall, said at least one side wall and said bottom wall, and a second free end opposite said first end, said first flap further comprising a first face and a second face, said second face comprising at least one gluing area for gluing to the outer face of said front wall, said box being characterized in that said first folding line is provided with a slit starting from the second free end in direction of said first end.

[0012] Such solution thus allows the box to switch from the depressed configuration to the upright configuration such as said second flap is able to absorb part of the force used by the operator to carry out such operation and to thus prevent the gluing point created between said outer face of said front wall and said first face of said first flap from breaking, or to prevent in the bud a possible breaking of the first folding line from occurring.

[0013] In particular, the owner has noted that, in order to achieve the desired effects, said slit extends for a length between 10% and 30% of the total length of said first folding line.

[0014] Preferably, said at least one first flap and said at least one second flap are substantially triangular, wherein said first flap and said second flap are folded (and the overlapping) one another along said first folding line, at least when said box is in its upright configuration, and are substantially coplanar to each other in said depressed configuration, i.e. lying on the same plane. Thus, in practice, when the box is put upright, the first and the second flaps fold one another along the first folding line and simultaneously fold, respectively, with respect to the front wall and the side one. This way, the sealed connection wall is outside of the box, with the second flap folded on the first flap and with the first flap glued to the front wall. On the contrary, when the box is in its depressed configuration, the two flaps are lying coplanar, i.e. not folded with respect to the first folding line, thus forming a substantially rectangular wall. In this configuration, the two flaps are between said at least one front wall and said at least one side wall adjacent to said at least one front wall.

[0015] In the specific embodiment, the bottom wall is rectangular, thus the box consequently comprises two front walls, two side walls and four sealed connection walls, each placed between a side wall and the front wall adjacent thereto. In practice, a sealed connection wall will be interposed between each side and front wall.

[0016] Still according to the invention, the front wall comprises a tooth protruding along a side edge and comprising, at least in part, said at least one second folding line; said at least one side wall comprises at least one recessing portion along a side edge comprising, at least in part, said at least one third folding line and is sized to

accommodate said at least one tooth at least when said box is in its upright configuration.

[0017] Advantageously, said at least one tooth is coplanar with said at least one front wall.

5 **[0018]** In particular, said at least one tooth is arranged above said second folding line, whereas said at least one recessing portion is arranged above said third folding line, at the same height as that of the corresponding protruding engagement tooth.

10 **[0019]** The presence of the protruding tooth allows to lock the front wall in a firm position at the side wall of the box at an angle of approximately 90°. This solves the problem of preventing the box from collapsing back into its recessed position once it is brought into its upright configuration.

15 **[0020]** In particular, said at least one protruding tooth is square, at least at the area coming into contact with the recessing portion, which will thus also be square. This increases the seal when the tooth is jammed into the protruding portion. Preferably, said at least one protruding tooth is rectangular.

20 **[0021]** Still, said box comprises a plurality of upper covering walls; each covering wall is connected in a foldable way to the respective perimeter wall. Said covering walls are adapted to reversibly close said box, when in its upright position.

[0022] Moreover, the box comprises means for reversibly holding two opposite upper walls of said upper covering walls constrained to each other.

30 **[0023]** Still, said box is made of paper, cardboard, wherein said paper, or cardboard, is coated on at least one face of the box with at least one layer of plastic, or bio-compostable and/or biodegradable plastic.

35 **[0024]** In the event of a plastic layer, it comprises a material selected among polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET).

DESCRIPTION OF THE FIGURES

40 **[0025]** These and further aspects of the present invention will become clearer by the following detailed description of a preferred embodiment provided herein by way of example only and without limitations, with reference to the accompanying figures, in which:

figure 1 is a top view of the box according to the invention in its upright configuration;

figure 2A is front axonometric view of the box when switching from the recessed configuration to the upright one, or vice-versa;

figure 2B is a top view only of the box when switching from the recessed configuration to the upright one; figure 2C is a view of the box in its recessed configuration;

55 figure 3 is a front and partial axonometric view of the box according to the invention;

figure 4 is a front and partial view of the box according to the invention;

figure 5 is a top view of the die cut element for making the box according to the invention;
 figure 6A is a detailed view of the die cut element of figure 5;
 figure 6B is a detailed view of the die cut element of figure 6A, overturned by 180°;

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE PRESENT INVENTION

[0026] With particular reference to such figures, 1 denotes the box according to the invention.

[0027] A top view of the box 1 for containing food products is shown in figure 1. Such box 1 is of the type able to switch from an upright working configuration C1 (see figure 1) to a recessed at rest configuration C2 (see figure 2C, in which the lines out of sight are dashed), and vice-versa. The initial die cut element 300 for making the box of figure 1 is shown in figure 5. The box 1 comprises a bottom wall 10 and a plurality of perimeter walls 11, 12, 13, 14 foldable with respect to the bottom wall 10 around the folding lines 70, 71, 72, 73 (see figures 5 and 6A), such as to switch from the aforesaid recessed configuration C2 to the upright configuration C1, and vice-versa. The rotation of the aforesaid foldable walls 11, 12, 13, 14 with respect to the folding lines 70, 71, 72, 73 is of about 90°. The plurality of the foldable perimeter walls 11, 12, 13, 14 comprises two front walls 11, 13 opposite each other and each having an inner face 11a, 13a and an outer face 11b, 13b and two side walls 12, 14 opposite each other and adjacent to the front walls 11 and 13. Preferably, the bottom wall 10 is rectangular, thus the perimeter walls are four in number.

[0028] It should be noted that the two front walls 11 and 13 of the box 1 are identical to each other, just as the two side walls 12 and 14 are also identical to each other.

[0029] Moreover, the inner face 11a and 13a of the front wall 11 and 13 is in contact with the inner face 10a of the bottom wall 10, at least when the box 1 is in its depressed configuration C2.

[0030] The box 1 further comprises a sealed connection wall 20 between the front wall 11 and the side wall 12 which is adapted to prevent the liquid from coming out of the box 1, at least when the box 1 is in its upright configuration C1.

[0031] It should be noted that, in the embodiment described herein, the connection walls 20 are four in number. In further embodiments such number can also be different, i.e. three or other, without thereby departing from the protection scope of the present invention. This clearly depends on the number of perimeter walls with which the box 1 is provided. The other sealed connection walls 20 are between the front wall 11 and the second side wall 14, and between the second front wall 13 and the two side walls 12 and 14 adjacent thereto.

[0032] Each connection wall 20 is provided with a first folding line 25 defining a first connecting flap 21 and a

second connecting flap 22, a second folding line 26 arranged between the first connecting flap 21 and the front wall 11 (or the front wall 13), and a third folding line 27 arranged between the second connecting flap 22 and the side wall 12 (or the side wall 14) adjacent to the front wall 11 (or to the front wall 13). The first folding line 25 comprises a first end 25a arranged at the meeting point P between the front wall 11 (or the front wall 13), the side wall 12 (or the side wall 14) and the bottom wall 10, and a second free end 25b opposite the first end 25a. The first flap 21 further comprises a first face 21a and a second face 21b, wherein the second face 21b comprises a gluing area 21c for gluing to the outer face 11b of the front wall 11.

[0033] Advantageously, the first folding line 25 is provided with a slit 40 starting from the second free end 25b in direction of the first end 25a. This way, when the box 1 switches from the recessed configuration C2 to the upright configuration C1, the second flap 22 will no longer be subject to forces which, starting from the free end 25b, tend to tear the first folding line 25 or, in the best cases, separate the gluing point between the first flap 21 and the front wall 11, or 13 glued thereto.

[0034] In particular, the slit 40 extends for a length of 15% with respect to the total length of the first folding line 25. Anyway, in further embodiments, such slit 40 can also extend for a length between 10% and 30% of the total length of the first folding line 25, without thereby departing from the protection scope of the present invention. This is valid for each first folding line 25 of the remaining sealed connection walls 20 which - as said above - are identical to the connection walls 20 described previously. The only difference is that the connection walls 20 are arranged between the front wall 11 and the side wall 14, and between the front wall 13 and the two side walls 12 and 14.

[0035] According to the invention, the first flap 21 and the second flap 22 of the connection wall 20 are substantially triangular. The first flap 21 and the second flap 22 are folded one another and overlapping along the first folding line 25, at least when the box is in the upright configuration C1, and are substantially coplanar, i.e. lying on the same plane, at least when the box 1 is in the recessed configuration C2. In this last configuration C2, the sealed connection wall 20 becomes rectangular and is arranged between the front wall 11 and the adjacent side wall 12 (see figure 2C), whereas in the upright configuration C1, the connection wall 20 becomes triangular and is outside of the box 1, i.e. outside of the front wall 11, or 13 (see figures 2A, 3 and 4).

[0036] According to the embodiment described herein, the front wall 11 comprises two protruding teeth 45. The first tooth 45 of such two protruding teeth is arranged along a first side edge 110a (figure 6A) of the front wall 11 that comprises, at least in part, the second folding line 26, whereas the second tooth 45 is arranged along the second protruding side edge 110b opposite the edge 110a. Moreover, the side wall 12 comprises two recess-

ing portions 51, 51. One of such recessing portions 51 is arranged along a side edge 120a of the side wall 12 that comprises, at least in part, the third folding line 27 and is sized to accommodate the tooth 45 at least when the box 1 is in its upright configuration C1. The second recessing portion 51 is along the edge 120b opposite the edge 120a. It cooperates with the protruding tooth 45 that is on the front wall 13, at an edge 130a of the two edges 130a, 130b of the front wall 13.

[0037] Still, the two teeth 45 of the front wall 11 or of the front wall 13 are coplanar with the front wall 11, or with the front wall 13.

[0038] In particular, each protruding tooth 45 is square, at least at the area coming into contact with the corresponding recessing portion 51, which will thus also be square. This increases the seal when the tooth 45 is jammed into the protruding portion 51. Preferably, each protruding tooth 45 is rectangular.

[0039] Moreover, each tooth 45 is arranged above the second folding line 26.

[0040] Similarly, each recessing portion 51 is arranged above the third folding line 27. From here and henceforth, "above" intends to denote the position taken by the protruding teeth 45 and by the recessing portions 51 when the box is upright.

[0041] As visible in figures 3 and 4, when the box 1 is upright and, thus, the two front walls 11 and 13 were rotated with respect to the bottom wall 10 by an angle slightly greater than 90°, the teeth 45, which during this rotation are dragged along the side walls 12 and 14, are snap fitted in the recessing portions 51, thus de facto preventing the return of the front walls 11 and 13 into their original position, i.e. flattened on the bottom wall 10.

[0042] Still, the box 1 comprises a plurality of upper covering walls 15, 16, 17, 18. Each covering wall 15, 16, 17, 18 is connected in a foldable way to the respective perimeter wall 11, 12, 13, 14. Such covering walls 15, 16, 17, 18 are adapted to reversibly close the box, when in its upright position C1, such as to cover the food product contained therein.

[0043] In particular, the box 1 comprises means 60 for reversibly holding two upper walls 16, 18 constrained to each other. Such holding means 60 comprise a tooth 61 and a slot 62 made, respectively, on one 16 of the four upper walls and on the upper wall 18 opposite the upper wall 16.

[0044] Finally, the box 1 is made of paper and is coated on the inner side 1a, i.e. on the side in contact with the food product to be contained, with at least one layer of bio-compostable plastic. In further embodiments, such coating layer can also be made of biodegradable plastic or another material adapted to come into contact with food.

[0045] Still, in further embodiments, such layer comprises a material selected among polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET).

[0046] The die cut element 300 for obtaining the box 1 according to the invention is shown on the plan in figure

5.

[0047] Such die cut element 300 comprises a plurality of folding lines 70, 71, 72, 73 to define the rectangular bottom wall 10 with respect to which the perimeter walls 11, 12, 13, 14 are foldable. Such perimeter walls 11, 12, 13 and 14 then comprise two front walls 11, 13 having an inner face 11a, 13a and an outer face 11b, 13b and two side walls 12 and 14 adjacent to the front walls 11 and 13. The inner face 11a, 13a of the two front walls is in contact with the inner face 10a of the bottom wall 10, at least when the box is in its depressed configuration C2.

[0048] The die cut element 300 also has the four sealed connection walls 20, still flat, which are arranged between the two front walls 11, 13 and the two side walls 12, 14.

[0049] The generic connection wall 20 comprises a first folding line 25 defining a first connecting flap 21 and a second connecting flap 22, a second folding line 26 arranged between the first connecting flap 21 and the front wall 11 (or the front wall 13), and a third folding line 27 arranged between the second connecting flap 22 and the side wall 12 (or the side wall 14) adjacent to the front wall 11 (or to the front wall 13). The first folding line 25 comprises a first end 25a arranged at the meeting point P between the front wall 11 (or the front wall 13), the side wall 12 (or the side wall 14) and the bottom wall 10, and a second free end 25b opposite the first end 25a. The first flap 21 further comprises a first face 21a and a second face 21b, wherein the second face 21b comprises a gluing area 21c for gluing to the outer face 11b of the front wall 11.

[0050] The first flap 21 further comprises a first face 21a and a second face 2b, wherein the second face 21b comprises a gluing area 21c for gluing to the outer face 11b of the front wall 11 (see figure 6B). Moreover, the first folding line 25 is provided with a slit 40 starting from the second free end 25b in direction of the first end 25a (also see figures 6A and 6B).

[0051] Always as shown in figure 5, such slit 40 extends for a length of 15% of the length of the first folding line 25.

[0052] Moreover, while the sealed connection wall 20 is rectangular, when the die cut element 300 is in plan, thus when the box 1 still has not been made, the first flap 21 and the second flap 22 are substantially triangular.

[0053] Moreover, each front wall 11 comprises two protruding teeth 45, wherein one of the two teeth is along a side edge 110a of the front wall 11, whereas the other protruding tooth 45 is along the opposite edge 110b of the front wall 11. Such side edge 110a comprises, at least in part, the second folding line 26. The side wall 12 comprises two recessing portions 51. Each recessing portions 51 is along a side edge 120a of the side wall 12 that comprises, at least in part, the third folding line 27 and each recessing portion is sized to accommodate the tooth 45 at least when the box 1 is in its upright configuration C1.

[0054] Each tooth 45 is coplanar with the front wall 11, or 13, with which it is integrally combined.

[0055] Moreover, the teeth 45 are arranged above the

respective second folding line 26, when the box is upright.

[0056] The recessing portions 51 are also arranged above the third folding line 27, when the box is upright.

[0057] Moreover, the die cut element 300 comprises a plurality of upper covering walls 15, 16, 17, 18. Such covering walls are connected in a foldable way to the respective perimeter wall 11, 12, 13, 14, along the folding lines 81, 82, 83, 84. Such covering walls 15,16,17,18 are adapted to reversibly close the box 1, when in its upright position C1.

[0058] Finally, the means 60 for reversibly holding two opposite upper walls 16, 18 of the upper covering walls 15, 16, 17, 18 constrained to each other are visible in figure 5.

Claims

1. Box (1) for containing food products of the type able to switch from an upright working configuration (C1) to a depressed at rest configuration (C2), and vice-versa, said box (1) comprising a bottom wall (10) and a plurality of perimeter walls (11, 12, 13, 14) foldable with respect to said bottom wall (10) such as to switch from said depressed configuration (C2) to said upright configuration (C1), and vice-versa, said plurality of foldable perimeter walls comprising at least one front wall (11) having an inner face (11a) and an outer face (11b), and at least one side wall (12) adjacent to said front wall (11), wherein said inner face (11a) of said at least one front wall (11) is in contact with the inner face (10a) of said bottom wall (10), at least when said box is in said depressed configuration (C2), said box (1) further comprising at least one sealed connection wall (20) between said at least one front wall (11) and said at least one side wall (12), which is adapted to prevent the liquid from coming out of the box, at least when said box is in said upright configuration (C1), said at least one connection wall (20) being provided with a first folding line (25) defining a first connecting flap (21) and a second connecting flap (22), a second folding line (26) arranged between said first connecting flap (21) and said at least one first front wall (11), and a third folding line (27) arranged between said second connecting flap (22) and said at least one side wall (12), said first folding line (25) comprising a first end (25a) arranged at the meeting point (P) between said at least one front wall (11), said at least one side wall (12) and said bottom wall (10), and a second free end (25b) opposite said first end, said first flap (21) further comprising a first face (21a) and a second face (21b), said second face (21b) comprising at least one gluing area (21c) for gluing to the outer face (11b) of said front wall (11), said box being **characterized in that** said first folding line (25) is provided with a slit (40) starting from the second free end (25b) in direction of said first end (25a).

2. Box according to claim 1, **characterized in that** said slit (40) extends for a length between 10% and 30% of the length of said first folding line (25).
3. Box according to claim 1 or 2, **characterized in that** said at least one first flap (21) and said at least one second flap (22) are substantially triangular, said at least one first flap (21) and said at least one second flap (22) being folded one another along said first folding line (25), at least when said box is in said upright configuration (C1), and being substantially coplanar, at least when said box is in said depressed configuration (C2).
4. Box according to one or more of claims 1 to 3, **characterized in that** said bottom wall (10) is rectangular, said box (1) further comprising two front walls (11, 13), two side walls (12, 14) and four sealed connection walls (20).
5. Box according to one or more of claims 1 to 4, **characterized in that** said at least one front wall (11) comprises at least one tooth (45) protruding along at least one side edge (110a, 110b) of said front wall (11) and comprising, at least in part, said at least one second folding line (26), said at least one side wall (12) comprising at least one recessing portion (51) along at least one side edge (120a, 120b) comprising, at least in part, said at least one third folding line (27), said at least one recessing portion being sized to accommodate said at least one tooth at least when said box is in its upright configuration.
6. Box according to claim 5, **characterized in that** said at least one protruding tooth (45) is square, at least at the area coming into contact with said at least one recessing portion (51).
7. Box according to claim 5 or 6, **characterized in that** said at least one tooth (45) is coplanar with said at least one front wall (11).
8. Box according to claim 5 or 6 or 7, **characterized in that** said at least one tooth (45) is arranged above said second folding line (26).
9. Box according to one or more of claims 5 to 8, **characterized in that** said at least one recessing portion (51) is arranged above said third folding line (27).
10. Box according to one or more of claims 1 to 9, **characterized by** comprising a plurality of upper covering walls (15,16,17,18), each covering wall being connected in a foldable way to the respective perimeter wall, said covering walls being adapted to reversibly close said box, when in its upright position (C1).
11. Box according to claim 10, **characterized by** com-

prising means (60) for reversibly holding two upper walls (16, 18) of said upper covering walls (15,16,17,18) constrained to each other.

12. Box according to one or more of claims 1 to 11, **characterized by** being made of paper, cardboard, said paper, or cardboard, being coated on at least one face with at least one layer of plastic, or bio-compostable and/or biodegradable plastic.

5

10

15

20

25

30

35

40

45

50

55

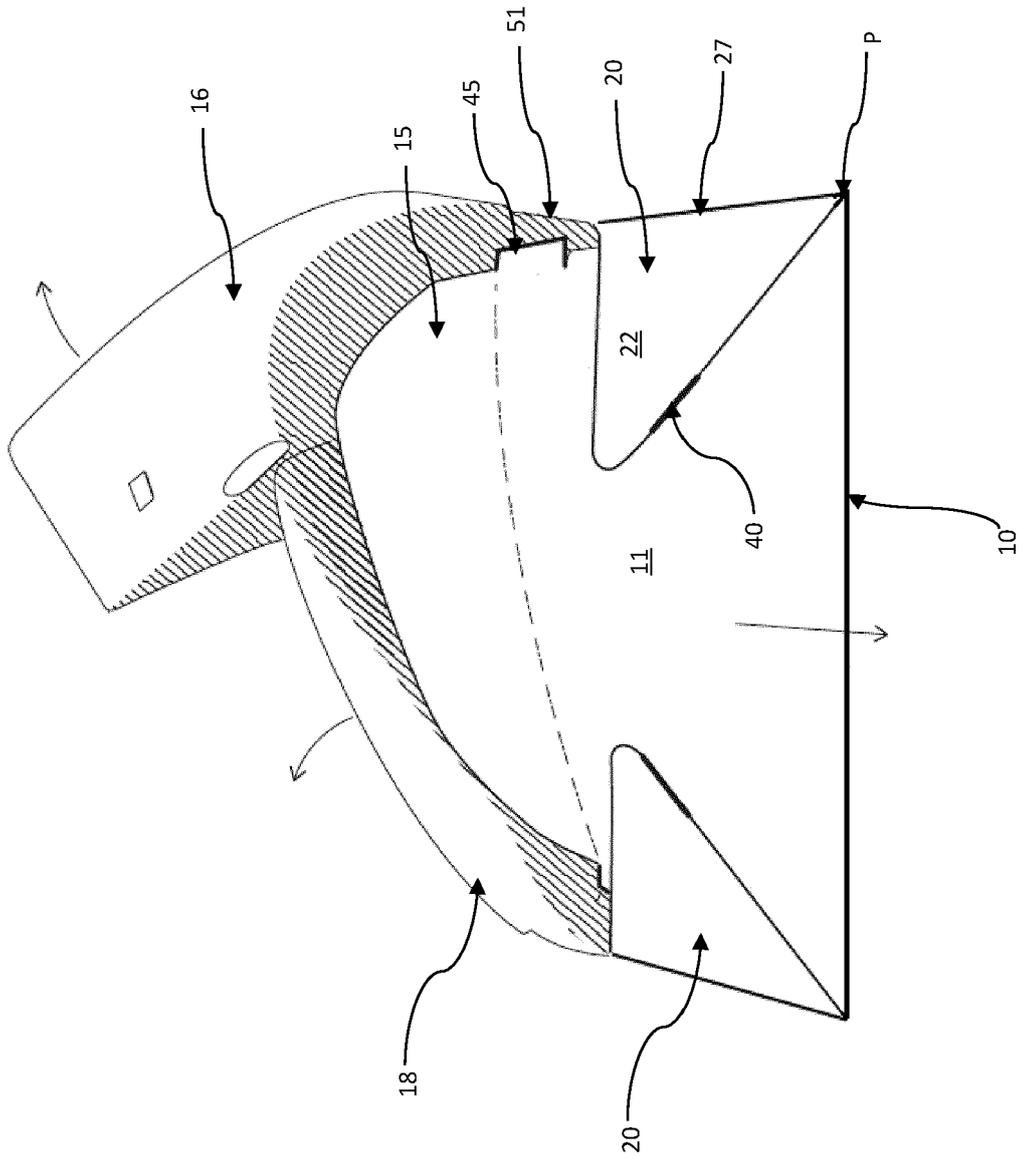


FIG. 2A

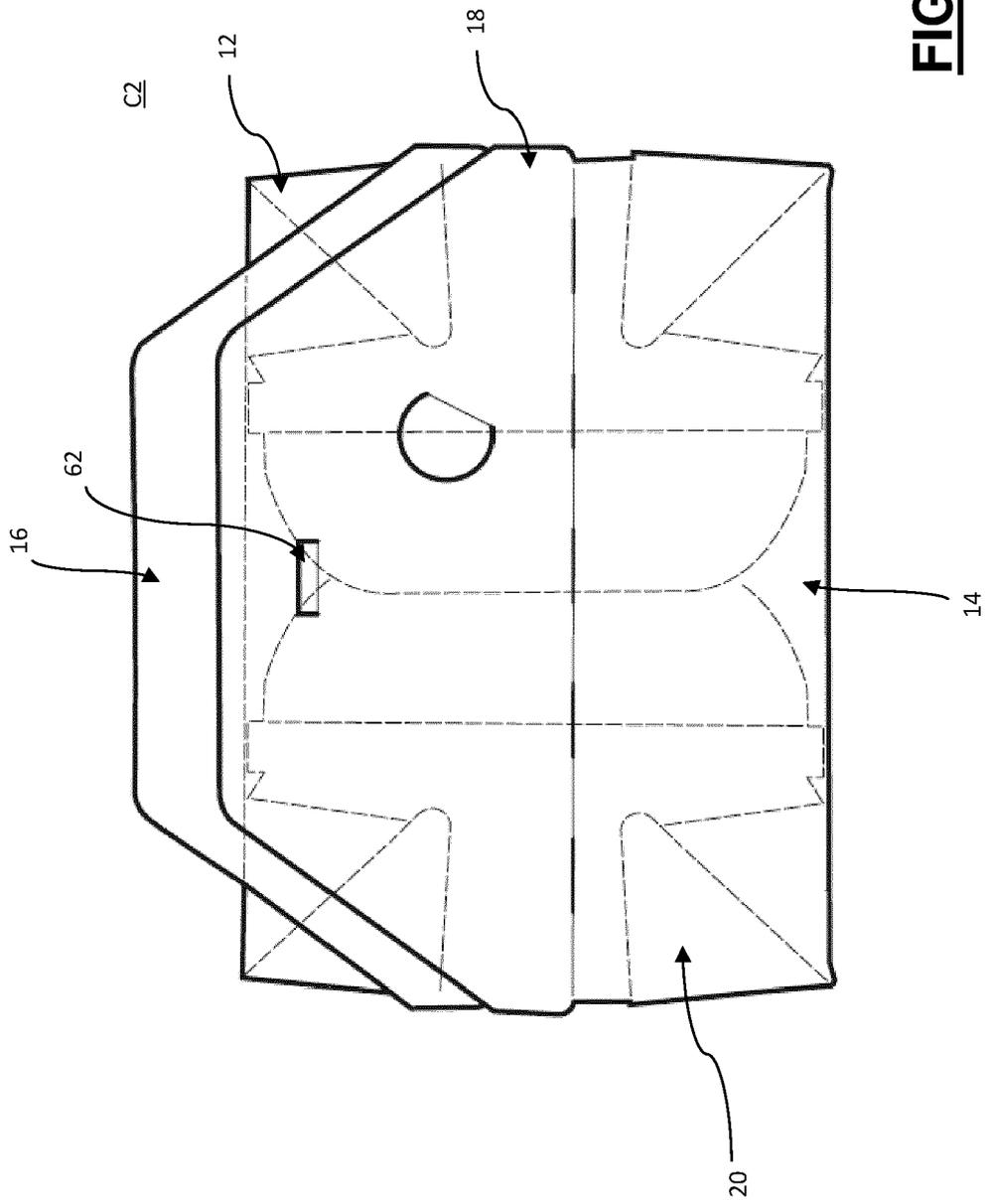


FIG. 2C

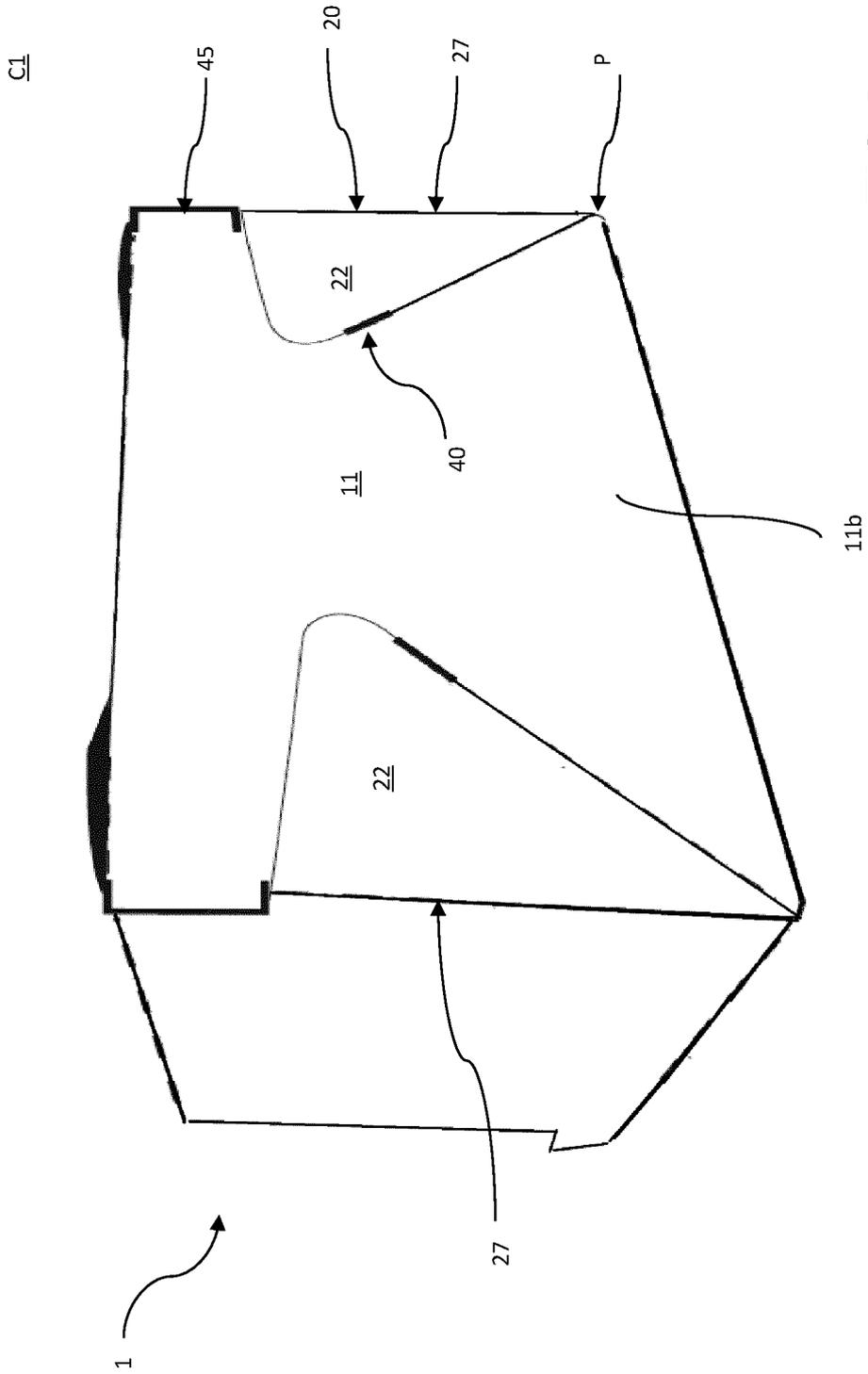


FIG.3

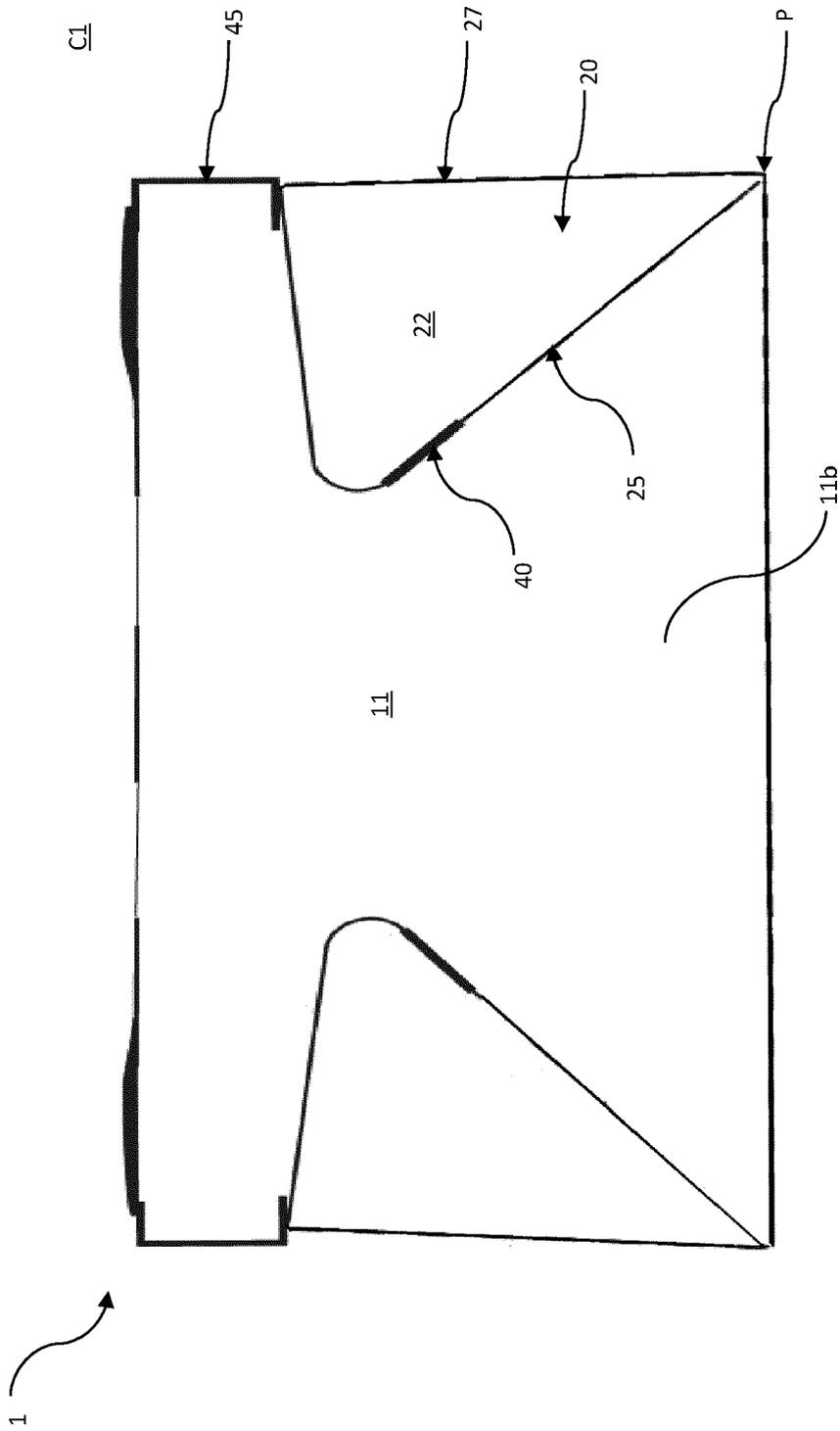


FIG.4

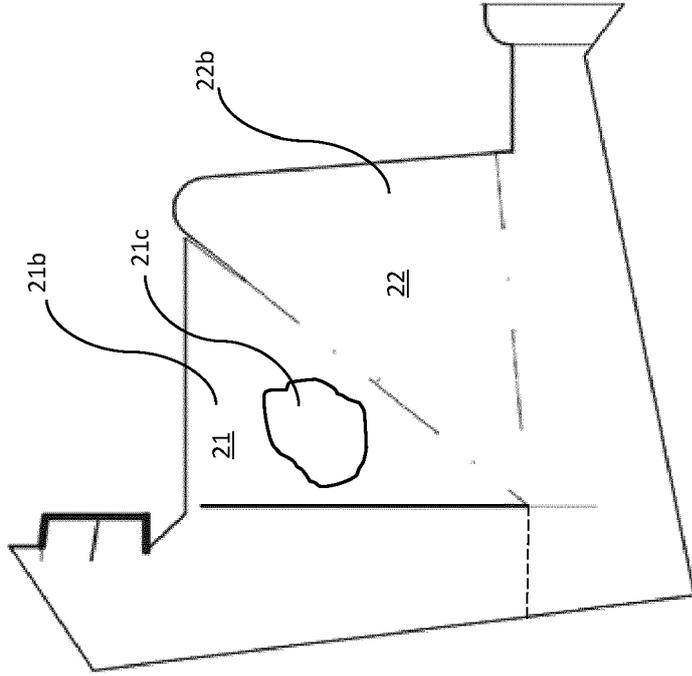


FIG. 6B

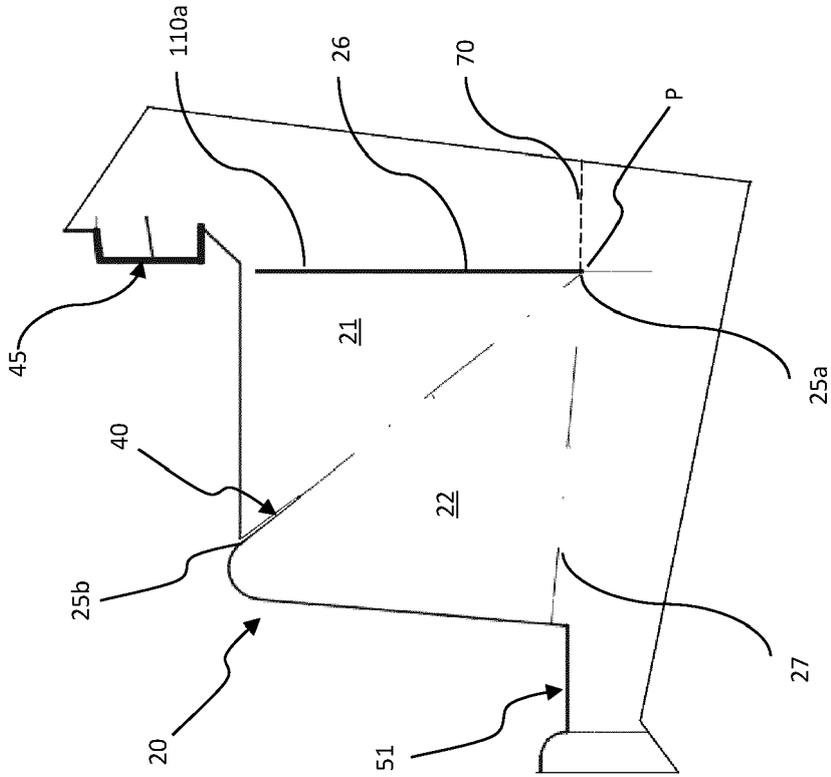


FIG. 6A



EUROPEAN SEARCH REPORT

Application Number
EP 21 19 9034

5

10

15

20

25

30

35

40

45

50

55

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	US 2009/261151 A1 (NIELSEN ELSEBETH BJERG [DK]) 22 October 2009 (2009-10-22) * figures * -----	1-12	INV. B65D5/36 B65D5/40 B65D5/42
A	KR 200 470 201 Y1 (UNKNOWN) 6 December 2013 (2013-12-06) * figures *	1	
A	CA 2 768 575 A1 (WANG CHIE-CHIUN [TW]; WANG TAO-YI [TW]) 22 August 2013 (2013-08-22) * figures *	1	
A	US 2017/043928 A1 (PIAO CHANGJIN [CN]) 16 February 2017 (2017-02-16) * figures * -----	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
1	The present search report has been drawn up for all claims		
Place of search The Hague		Date of completion of the search 7 February 2022	Examiner Fournier, Jacques
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	

EPO FORM 1503 03.82 (P04C01)

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

EP 21 19 9034

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-02-2022

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009261151 A1	22-10-2009	AT 537070 T	15-12-2011
		CA 2668499 A1	08-05-2008
		CY 1112618 T1	10-02-2016
		DK 2086847 T3	05-03-2012
		EP 2086847 A1	12-08-2009
		ES 2378578 T3	16-04-2012
		HR P20120152 T1	30-04-2012
		JP 2010508219 A	18-03-2010
		PL 2086847 T3	31-05-2012
		PT 2086847 E	16-03-2012
		RS 52127 B	31-08-2012
		SI 2086847 T1	29-06-2012
		US 2009261151 A1	22-10-2009
WO 2008052543 A1	08-05-2008		
-----	-----	-----	-----
KR 200470201 Y1	06-12-2013	NONE	
-----	-----	-----	-----
CA 2768575 A1	22-08-2013	NONE	
-----	-----	-----	-----
US 2017043928 A1	16-02-2017	BR 112016025358 A2	15-08-2017
		CN 104016019 A	03-09-2014
		JP 6384684 B2	05-09-2018
		JP 2017528378 A	28-09-2017
		KR 20160142845 A	13-12-2016
		PH 12016502207 A1	06-02-2017
		RU 2655286 C1	24-05-2018
		US 2017043928 A1	16-02-2017
		WO 2015169102 A1	12-11-2015
-----	-----	-----	-----

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

- US 2009261151 A [0004]