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(54) ASSEMBLY-TYPE PACKAGING BOX

MONTAGEVERPACKUNGSSCHACHTEL

BOÎTE D'EMBALLAGE DE TYPE À ASSEMBLER

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(56) References cited:
JP-A- 2004 175 433
US-A- 1 886 879
US-A- 6 029 885
US-A1- 2007 251 985

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to an assembly-type packaging box of which appearance in an assembled state is, for example, a cuboid, and particularly relates to an assembly-type packaging box where an appearance is further improved by preventing exposure of cut surfaces of a material at ridge lines formed by intersecting surfaces.

Description of the Related Art

[0002] Assembly-type packaging boxes, assembled folding thick paper, such as a sheet of synthetic paper and cardboard, or a thick resin sheet into a cuboid shape, have been widely used.

[0003] Various kinds of contrivances have been made to facilitate assembly and disassembly of this kind of assembly-type packaging box, and studies have been also conducted to increase rigidity and durability to a certain extent so as to prevent deformation during conveyance. In addition, there is also a proposal for an assembly-type packaging box in which an edge panel having a fixed width is formed in a frame shape at an opening edge of a box to further improve the appearance, in order to achieve a balance between a value and quality of a product accommodated in the packaging box; and such a proposal is disclosed in JP 2005-145525 A (Patent Literature 1) and JP 2014-133580 A (Patent Literature 2). Further packaging boxes are known from US 1 886 879, US 6 029 885, JP 2004 175433 and US 2007/251985.

[0004] FIGS. 8 and 9 illustrate examples of a packaging box having a frame-shaped opening edge disclosed in Patent Documents 1 and 2 so as to correspond to an embodiment of an assembly-type packaging box close to the present invention.

[0005] A configuration of a main part of a packaging box of the related art illustrated in FIGS. 8 and 9 is similar to an embodiment according to the present invention, which will be described later with reference to FIGS. 1 to 7, except for a part (folding tabs formed on left and right outer panels). Accordingly, parts corresponding to those of the embodiment will be denoted by the same reference numerals, and a detailed description of the assembly-type packaging box will be described later with reference to FIGS. 1 to 7.

[0006] FIG. 8 is a plan view of a development sheet 10 illustrated in a state where the conventional assembly-type packaging box of the related art is developed, and FIG. 9 is an appearance view obtained by folding the development sheet 10 and forming an assembly-type packaging box 10A having a cuboid shape. Fold lines indicated by dashed lines drawn on the development sheet 10 illustrated in FIG. 8 are all valley fold lines of 90 degrees.

[0007] To assemble the assembly-type packaging box 10A shown in FIG. 9, a front panel 12 and a rear panel 13 are folded into the state of being erected with a bottom panel 11 of the development sheet 10 shown in FIG. 8 as the center. Further, each of a left-front folding tab 14 and a right-front folding tab 15 connected to the front panel 12 is folded and, each of a left-rear folding tab 16 and a right-rear folding tab 17 connected to the rear panel 13 is folded in the same manner.

[0008] In this state, the left-front folding tab 14 and the left-rear folding tab 16 are connected by being inserted to each other such that connecting slits 14a and 16a provided on the left-front folding tab 14 and the left-rear folding tab 16, respectively, intersect each other vertically. Similarly, the right-front folding tab 15 and the right-rear folding tab 17 are connected by being inserted to each other such that connecting slits 15a and 17a provided on the right-front folding tab 15 and the right-rear folding tab 17, respectively, intersect each other vertically.

[0009] Subsequently, a left outer panel 18, a left upper-edge panel 19, and a left inner panel 20 are folded in order to insert a left locking protrusion 20a formed on the left inner panel 20 into a left locking hole 11a. Accordingly, the left outer panel 18, the left upper-edge panel 19, and the left inner panel 20 cover the left-front folding tab 14 and the left-rear folding tab 16 in the state of being crossed and connected to each other, and the left upper-edge panel 19 is formed on the left side of the box so as to be positioned in a frame shape. Similarly, a right outer panel 21, a right upper-edge panel 22, and a right inner panel 23 are folded in order to insert a right locking protrusion 23a formed on the right inner panel 23 into a right locking hole 11b. Accordingly, the right outer panel 21, the right upper-edge panel 22, and the right inner panel 23 cover the right-front folding tab 15 and the right-rear folding tab 17 in the state of being crossed and connected to each other, and the right upper-edge panel 22 is formed on the right side of the box so as to be positioned in a frame shape.

[0010] Further, a left top-panel inserting tab 25 and a right top-panel inserting tab 26 are accommodated in the box by folding the left top-panel inserting tab 25 and the right top-panel inserting tab 26 with respect to an upper cover panel 24 and folding the upper cover panel 24 with respect to the rear panel 13, and a state where the left upper-edge panel 19 and the right upper-edge panel 22 are positioned on the left and right sides of the closed upper cover panel 24 in a frame shape is formed.

[0011] Subsequently, each of the left front-panel inserting tab 28 and the right front-panel inserting tab 29 is folded with respect to the front cover panel 27, and the left front-panel inserting tab 28 is inserted into a gap between the left outer panel 18 and the left-front folding tab 14. Similarly, the right front-panel inserting tab 29 is inserted into a gap between the right outer panel 21 and the right-front folding tab 15, whereby it is possible to assemble the rectangular parallelepiped-shaped pack-

aging box 10A illustrated in FIG. 9.

SUMMARY OF THE INVENTION

[0012] According to the packaging box 10A illustrated in FIG. 9 assembled in the above-described order, the left and right upper-edge panels 19 and 22 are positioned on both sides of the closed upper cover panel 24 in a frame shape, and thus, it is possible to provide the assembly-type packaging box with an aligned format on the appearance.

[0013] However, when the packaging box 10A illustrated in FIG. 9 is viewed with the upper cover panel 24 and the front cover panel 27 as the front surface side, sides of the left outer panel 18 and the right outer panel 21 appear on both sides of the front cover panel 27 in the state of being exposed as cut surfaces of a sheet material as indicated with reference signs CS1 and CS2.

[0014] In such a kind of assembly-type packaging box formed by folding a single development sheet material using a cardboard or the like, the sheet material one of whose surfaces, to be a surface side of the box, is coated with white-based paint or another specific paint color is used in many cases in order to enhance decorative effects of the surface of the assembled box.

[0015] Accordingly, the cut surfaces CS1 and CS2 of the sheet material (a cardboard sheet) without being painted appear on both sides of the painted front cover panel 27 along a height direction of the box, which cause a problem that the unpainted cut surfaces degrade the appearance and impairs high-class feeling.

[0016] Therefore, a main object of the present invention is to provide a packaging box that can be assembled by folding along a fold line drawn on a sheet material, the packaging box with excellent appearance, capable of preventing a cut surface of a sheet material from appearing on a ridge line portion at which surfaces intersect each other, particularly at least on a front surface side of the packaging box that is likely to be noticed by people and more preferably over the entire surface of the packaging box, without causing a rise in cost.

[0017] Hereinafter, an assembly-type packaging box according to the present invention, which has been made to solve the above-described problem, will be described with reference numerals of the corresponding constituent elements illustrated in the drawings for each claim in order to clarify a relationship between each feature described in the claims and each unit described in embodiments.

[0018] An assembly-type packaging box according to the present invention is an assembly-type packaging box that is assembled in a cuboid shape by erecting a front panel (12) and a rear panel (13) in front and rear of a bottom panel (11) along fold lines, respectively, and erecting a left outer panel (18) and a right outer panel (21) on the left and right of the bottom panel (11) along fold lines, respectively. Left- and right-front folding tabs (14 and 15) extending from left and right sides of the front panel (12) are disposed along inner surfaces of the left and right outer panels (18 and 21), and further, left- and right-front folding-back tabs (18a and 21a) are provided to be connected at least with front sides of the left and right outer panels (18 and 21), respectively. The left front folding-back tab (18a) is disposed to be folded between the left outer panel (18) and the left-front folding tab (14), and further, the right front folding-back tab (21a) is disposed to be folded between the right outer panel (21) and the right-front folding tab (15).

[0019] The assembly-type packaging box is further provided with rear folding tabs (16 and 17) extending from left and right sides of the rear panel (13). The left and right-rear folding tabs (16 and 17) are disposed along the inner surfaces of the left and right outer panels (18 and 21), and left and right-rear folding tabs (18b and 21b) are further provided to be connected on the rear sides of the left and right outer panels (18 and 21), respectively. The left rear folding-back tab (18b) is disposed to be folded in between the left outer panel (18) and the left-rear folding tab (16), and further, the right rear folding-back tab (21b) is disposed to be folded between in the right outer panel (21) and the right-rear folding tab (17).

[0020] In the assembly-type packaging box the left front folding-back tab (18a) and the left rear folding-back tab (18b) are formed along the entire length of front and rear sides of the left outer panel (18) to have the same length as the sides, and the right front folding-back tab (21a) and the right rear folding-back tab (21b) are formed along the entire length of front and rear sides of the right outer panel (21) so as to have the same length as the sides.

[0021] In the assembly-type packaging box upper-edge panels (19 and 22) and inner panels (20 and 23) are connected to end sides of the left and right outer panels (18 and 21) across fold lines, respectively, and the left and right-front folding tab (14 or 15) and the left and right-rear folding tab (16 or 17) extending from the left and right sides of the front panel (12) and the rear panel (13), respectively, are folded in between the outer panel (18 or 21) and the inner panel (20 or 23) by sequentially folding the outer panels (18 and 21), the upper-edge panels (19 and 22), and the inner panels (20 and 23), and the upper-edge panels (19 and 22) form a frame having a predetermined width at an opening portion of the box.

[0022] In the assembly-type packaging box upper-edge folding tabs (19a and 22a) are formed along the entire length of sides of the left and right upper-edge panels (19 and 22) at least on the left and right sides on the front surface side of the left and right upper-edge panels (19 and 22), and the upper-edge folding tabs (19a and 22a) are folded along inner sides of the left and right upper-edge panels (19 and 22), respectively.

[0023] In the assembly-type packaging box according to a second aspect of the present invention, an upper cover panel (24) and a front cover panel (27) are further connected to the rear panel (13) across fold lines, and

left and right front-panel inserting tabs (28 and 29) connected to sides of the front cover panel (27) across fold lines are inserted between the left and right-front folding tabs (18a and 21a), and the left and right-front folding tabs (14 and 15).

[0024] In the assembly-type packaging box according to a third aspect of the present invention, left and right top-panel inserting tabs (25 and 26) are connected to sides of the upper cover panel (24) across fold lines, and the top-panel inserting tabs (25 and 26) are positioned along inner surfaces of the inner panels (20 and 23), respectively.

[0025] The assembly-type packaging box according to a fourth aspect of the present invention, the left and right-front folding tabs (18a and 21a) and the left and right-rear folding tabs (18b and 21b) are formed in a trapezoidal shape.

[0026] According to a basic configuration of the above-described assembly-type packaging box, it is configured such that the front folding tabs are provided at least on the front sides of the left and right outer panels, respectively, and thus, it is possible to provide the packaging box which prevents a cut surface of a sheet material appearing on the left and right of the front panel by folding the folding tab.

[0027] In addition, it is possible to provide the packaging box that prevents the cut surface of the sheet material appearing even on a rear surface side of the packaging box by similarly providing the rear folding tab on the rear sides of the left and right outer panels.

[0028] Meanwhile, it is possible to provide the packaging box that prevents the cut surface of the sheet material appearing on the end portion of the frame formed by the upper-edge panel similarly by providing the folding tab even on the side of the upper-edge frame in the configuration in which the upper-edge panel and the inner panel are connected to the left and right outer panels and the frame is formed at the opening portion of the box by the upper-edge panel by sequentially folding the above-described panels.

[0029] In addition, it is possible to realize the packaging box with excellent appearance that prevents the cut surface of the sheet material appearing over the entire surface of the packaging box with the configuration in which the top-panel inserting tab and the front cover fitting tab are provided even on the left and right sides of the upper cover panel and the front cover panel covering the opening of the box and the front panel.

BRIEF DESCRIPTION OF THE DRAWING

[0030]

FIG. 1 is a plan view of a development sheet in a state where an assembly-type packaging box is developed in a first embodiment that is not part of the present invention;

FIG. 2 is a perspective view of the development sheet illustrated in FIG. 1;

FIG. 3 is a perspective view illustrating a state where a front panel and a rear panel are erected to connect left and right folding tab;

FIG. 4 is a perspective view illustrating a state where front, rear, left and right folding tabs are folded;

FIG. 5 is a perspective view illustrating a state where frames are formed by upper-edge panels on the left and right;

FIG. 6 is a perspective view illustrating a state where the packaging box is assembled;

FIG. 7 is a plan view of a development sheet in a state where an assembly-type packaging box is developed in an embodiment according to the present invention;

FIG. 8 is a plan view of a development sheet illustrating a state where a packaging box of the related art is developed; and

FIG. 9 is a perspective view illustrating a state where the packaging box is assembled using the development sheet illustrated in FIG. 8.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] A first embodiment of an assembly-type packaging box will be described with reference to FIGS. 1 to 6. FIGS. 1 and 2 illustrate a development sheet 1 of the assembly-type packaging box in a front view and a perspective view, and the development sheet 1 illustrated in this example is formed by performing punching on a tab of synthetic paper or a cardboard sheet.

[0032] The difference between the development sheet 1 illustrated in FIGS. 1 and 2 and a development sheet 10 illustrated in FIG. 8, which has already been described, is that folding-back tab 18a and 18b and folding tabs 21a and 21b are added on sides of left and right outer panels 18 and 21 in the development sheet 1 illustrated in FIGS. 1 and 2, respectively.

[0033] Further, broken lines between the outer panel 18 and each of the folding-back tab 18a and 18b and broken lines between the outer panel 21 and each of the folding tabs 21a and 28b are fold lines for 180° and all the other broken lines represent valley lines at 90°.

[0034] Hereinafter, a packaging box using the development sheet 1 illustrated in FIGS. 1 and 2 will be described according to an assembling sequence illustrated in FIGS. 3 to 6.

[0035] First, a front panel 12 and a rear panel 13 are folded into the state of being erected with a rectangular bottom panel 11 of the development sheet 1 as the center as illustrated in FIG. 3. Further, each of left and right-front folding tabs 14 and 15 connected to the front panel 12 is folded across the valley fold lines, and each of left and right-rear folding tabs 16 and 17 connected to the rear panel 13 is folded across the valley fold lines in the same manner.

[0036] Accordingly, slit portions of connecting slits 14a and 15a formed to the left and right-front folding tabs 14

and 15 are directed downward. Accordingly, slit portions of connecting slits 16a and 17a formed to the left and right-rear folding tabs 16 and 17 are directed upward.

[0037] The connecting slit 14a of the left-front folding tab 14 and the connecting slit 16a of the left-rear folding tab 16 are crossed and inserted to each other so as to vertically intersect each other, whereby it is possible to connect both the folding tabs. Similarly, the connecting slit 15a of the right-front folding tab 15 and the connecting slit 17a of the right-rear folding tab 17 are crossed and inserted to each other so as to vertically intersect each other, whereby it is possible to connect both the folding tabs. FIG. 3 illustrates a state where the front, rear, left- and right-folding tabs 14, 16, 15 and 17 are connected.

[0038] Further, the front folding-back tab 18a and the rear folding-back tab 18b connected to front and rear sides of the left outer panel 18 are folded toward the left outer panel 18 side (inward) as illustrated at 180 degrees at the fold lines applied at the boundary to the left outer panel 18 in FIG. 4. Similarly, the front folding-back tab 21a and the rear folding-back tab 21b connected to front and rear sides of the right outer panel 21 are folded toward the right outer panel 21 side (inward) at 180 degrees at the fold lines applied at the boundary to the right outer panel 21.

[0039] In this case, each of the left-front folding-back tab 18a and the left-rear folding-back tab 18b is formed so as to have the same length as the above-described sides along the entire length of the front and rear side sides of the left outer panel 18. In addition, the right-front folding-back tab 21a and the right-rear folding-back tab 21b are formed along the entire length of the front and rear side sides of the right outer panel 21 so as to have the same length as the above-described sides. Each of the folding-back tab 18a, 18b and 21a, 21b is formed in a trapezoidal shape, but may adopt any shape such as a square or an arc.

[0040] Subsequently, a left outer panel 18, a left upper-edge panel 19, and the left inner panel 20 are folded in order to insert a left locking protrusion 20a formed on the left inner panel 20 into a left locking hole 11a formed in the bottom panel 11. Accordingly, the left outer panel 18, the left upper-edge panel 19 and the left inner panel 20 cover the left-front folding tab 14 and the left-rear folding tab 16 in the state of being connected to each other, and the left upper-edge panel 19 is formed on the left side of the box so as to be positioned in a frame shape.

[0041] Similarly, a right outer panel 21, a right upper-edge panel 22, and the right inner panel 23 are folded in order to insert a right locking protrusion 23a formed on the right inner panel 23 into a right locking hole 11b formed in the bottom panel 11. Thus, the right outer panel 21, the right upper-edge panel 22, and the right inner panel 23 are formed to cover the right-front folding tab 15 and the right-rear folding tab 17 in the state of being connected to each other, and the right upper-edge panel 22 is positioned in a frame shape on the right side of the box.

[0042] FIG. 5 illustrates a state where the left upper-edge panel 19 and the right upper-edge panel 22 described above form frames having a predetermined width at left and right opening portions of the box (indicated by the same reference numerals as the left upper-edge panel 19 and the right upper-edge panel 22).

[0043] Further, a left top-panel inserting tab 25 and a right top-panel inserting tab 26 are folded with respect to the upper cover panel 24 to fold the upper cover panel 24 with respect to the rear panel 13, whereby the left top-panel inserting tab 25 and the right top-panel inserting tab 26 are accommodated in a box as illustrated in FIG. 5. That is, the left top-panel inserting tab 25 is turned into the state of being in contact with the left inner panel 20, and the right top-panel inserting tab 26 is turned into the state of being in contact with the right inner panel 23.

[0044] Accordingly, the left upper-edge panel 19 and the right upper-edge panel 22 are turned into the state of being positioned on both the left and right sides of the closed upper cover panel 24, respectively, in a frame shape.

[0045] Subsequently, each of the left front-panel inserting tab 28 and the right front-panel inserting tab 29 is folded with respect to the front cover panel 27, and the left front-panel inserting tab 28 is inserted into a gap between the left-front folding-back tab 18a and the left-front folding tab 14. Similarly, the right front-panel inserting tab 29 is inserted into a gap between the right-front folding-back tab 21a and the right-front folding tab 15, whereby it is possible to assemble the cuboid packaging box 1A illustrated in FIG. 6.

[0046] According to the assembly-type packaging box having the above-described configuration, it is possible to provide the packaging box which prevents a cut surface of a sheet material appearing on the left and right of the front surface side by providing the front folding-back tab 18a and 21a to be connected, respectively, at least on the front sides of the left and right outer panels 18 and 21.

[0047] In addition, it is possible to provide the packaging box that prevents the cut surface of the sheet material appearing even on the left and right on the rear surface side of the packaging box by providing the rear folding tabs 18b and 21b to be connected to the rear sides of the left and right outer panels 18 and 21.

[0048] FIG. 7 illustrates an embodiment of the assembly-type packaging box according to the present invention in the state of a development sheet. In a development sheet 2 illustrated in FIG. 7, folding-back tabs 19a and 19b are formed along front and rear sides of the left upper-edge panel 19 over the entire length of the sides in addition to the configuration of the development sheet 1 illustrated in FIG. 1. In addition, folding tabs 22a and 22b are formed similarly in the right upper-edge panel 22 along the front and rear sides thereof over the entire length of the sides.

[0049] Further, the folding-back tabs 19a and 19b are connected to the left upper-edge panel 19 across the

folded lines at 180 degrees, and the folding tabs 21a and 21b are connected to the right upper-edge panel 22 across the fold lines at 180 degrees.

[0050] The other configurations of the development sheet 2 illustrated in FIG. 7 are the same as those of the development sheet 1 illustrated in FIG. 1, and accordingly, the corresponding parts will be denoted by the same reference numerals as those in FIG. 1, and the detailed description thereof will be omitted.

[0051] When a packaging box is assembled using the development sheet 2 illustrated in FIG. 7, the folding-back tabs 19a, 19b, 22a, and 22b are positioned, respectively, at the front and rear in the depth direction of the left upper-edge panel 19 and the right upper-edge panel 22 which form the frames on the left and right in the state of being folded inward by 180 degrees with respect to the left and right upper-edge panels 19 and 22.

[0052] Consequently, it is possible to provide a packaging box that prevents the cut surface of the sheet material appearing at each end portion of the left upper-edge panel 19 and the right upper-edge panel 22.

[0053] Incidentally, all the respective folding tabs 19a, 19b, 22a, and 22b formed in the left and right upper-edge panels 19 and 22 illustrated in FIG. 7 are formed to be arc-shaped small protrusions, but may adopt any shape such as a square and a trapezoid.

[0054] Therefore, it is possible to prevent the cut surface of the sheet material generated at the end portions of the upper-edge panels 19 and 22 from being exposed and to provide the packaging box with the further improved format in the first embodiment illustrated in FIGS. 1 to 6, according to the second embodiment of the packaging box using the development sheet 2 illustrated in FIG. 7.

[0055] In addition, it is possible to realize the packaging box with the improved external appearance that prevents the cut surface of the sheet material appearing over the entire surface of the packaging box with the configuration in which the top-panel inserting tabs 25 and 26 are provided on the left and right of the top cover panel 24 and the front-panel inserting tabs 28 and 29 are provided on the left and right of the front cover panel 27 as illustrated in the first and second embodiments.

[0056] Further, it is possible to contribute to the improvement of strength in the vertical direction of the packaging box since the folding-back tab 18a, 18b, 21a, and 21b form a double structure together with the left and right outer panels by forming the respective folding tabs on the sides of the left and right outer panels 18 and 21 according to the packaging box of the present invention.

[0057] Further, the folding-back tab 18a and 21a positioned on the front surface side of the packaging box serve to press the left and right front-panel inserting tabs 28 and 29 formed in the front cover panel 27 from the both left and right sides, and thus, it is possible to provide the assembly-type packaging box which contributes to effectively suppressing the opening of the front cover panel 27 in the packaged state and hardly causes shape collapse in the packaged state.

Claims

1. An assembly-type packaging box that is assembled in a cuboid shape by erecting a front panel (12) and a rear panel (13) in front and rear of a bottom panel (11) along fold lines, respectively, and erecting a left outer panel (18) and a right outer panel (21) on the left and right of the bottom panel (11) along fold lines, respectively, the assembly-type packaging box; wherein:

front folding tabs (14 and 15) extending from left and right sides of the front panel (12) are disposed along inner surfaces of the left and right outer panels (18 and 21), and further, left and right-front folding-back tabs (18a and 21a) are provided to be connected at least on front sides of the left and right outer panels (18 and 21), respectively;
the left front folding-back tab (18a) is disposed to be folded between the left outer panel (18) and the left-front folding tab (14), and further, the right front folding-back tab (21a) is disposed to be folded between the right outer panel (21) and the right-front folding tab (15);
rear folding tabs (16 and 17) extending from left and right sides of the rear panel (13) are further provided, the left and right-rear folding tabs (16 and 17) are disposed along the inner surfaces of the left and right outer panels (18 and 21), and left and right rear folding-back tabs (18b and 21b) are further provided to be connected on the rear sides of the left and right outer panels (18 and 21), respectively, and
the left rear folding-back tab (18b) is disposed to be folded in between the left outer panel (18) and the left-rear folding tab (16), and further, the right rear folding-back tab (21b) is disposed to be folded in between the right outer panel (21) and the right-rear folding tab (17);
the left front folding-back tab (18a) and the left rear folding-back tab (18b) are formed along the entire length of front and rear sides of the left outer panel (18) to have the same length as the sides, and the right front folding-back tab (21a) and the right rear folding-back tab (21b) are formed along the entire length of front and rear sides of the right outer panel (21) so as to have the same length as the sides;
upper-edge panels (19 and 22) and inner panels (20 and 23) are connected to end sides of the left and right outer panels (18 and 21) across fold lines, respectively, and the left- and right-front folding tab (14 or 15) and the left- and right-rear folding tab (16 or 17) extending from the left

and right sides of the front panel (12) and the rear panel (13), respectively, are folded in between the outer panel (18 or 21) and the inner panel (20 or 23) by sequentially folding the outer panels (18 and 21), the upper-edge panels (19 and 22), and the inner panels (20 and 23), and the upper-edge panels (19 and 22) form frames having a predetermined width at an opening portion of the box; and

characterised in that upper-edge folding-back tabs (19a and 22a) are formed along the entire length of sides of the left and right upper-edge panels (19 and 22) at least on the left and right sides on the front surface side of the left and right upper-edge panels (19 and 22), and the upper-edge folding-back tabs (19a and 22a) are folded along inner sides of the left and right upper-edge panels (19 and 22), respectively.

2. The assembly-type packaging box according to claim 1, wherein
an upper cover panel (24) and a front cover panel (27) are further connected to the rear panel (13) across fold lines, and left and right front-panel inserting tabs (28 and 29) connected to sides of the front cover panel (27) across fold lines are inserted between the left and right front folding-back tabs (18a and 21a), and the left- and right-front folding tabs (14 and 15).

3. The assembly-type packaging box according to claim 2, wherein
left and right top-panel inserting tabs (25 and 26) are connected to a side of the upper cover panel (24) across fold lines, and the top-panel inserting tabs (25 and 26) are positioned along inner side surfaces of the inner panels (20 and 23), respectively.

4. The assembly-type packaging box according to claim 1, wherein
the left and right front folding-back tabs (18a and 21a) and the left and right rear folding-back tabs (18b and 21b) are formed in a trapezoid.

Patentansprüche

1. Verpackungsschachtel zum Zusammenbauen, die in einer Form eines Quaders zusammengebaut wird, indem ein Vorderelement (12) und ein Rückelement (13) vor bzw. hinter einem Bodenelement (11) entlang Falzlinien aufgerichtet werden, und ein linkes Außenelement (18) und ein rechtes Außenelement (21) links bzw. rechts des Bodenelements (11) entlang Falzlinien der Verpackungsschachtel aufgerichtet werden;
wobei:
vordere Faltlaschen (14 und 15), die sich von linken und rechten Seiten des Vorderelements (12) erstrecken, entlang Innenflächen der linken und rechten Außenelemente (18 und 21) angeordnet sind, und ferner linke und rechte vordere Rückfaltlaschen (18a und 21a) bereitgestellt sind, um zumindest an jeweiligen Vorderseiten der linken bzw. rechten Außenelemente (18 und 21) verbunden zu werden;
die linke vordere Rückfaltlasche (18a) angeordnet ist, um zwischen das linke Außenelement (18) und die linke vordere Faltlasche (14) gefaltet zu werden, und ferner die rechte vordere Rückfaltlasche (21a) angeordnet ist, um zwischen das rechte Außenelement (21) und die rechte vordere Faltlasche (15) gefaltet zu werden;
ferner hintere Faltlaschen (16 und 17), die sich von linken und rechten Seiten des Rückelements (13) erstrecken, bereitgestellt sind, die linken und rechten hinteren Faltlaschen (16 und 17) entlang der Innenflächen der linken und rechten Außenelemente (18 und 21) angeordnet werden, und linke und rechte hintere Rückfaltlaschen (18b und 21b) ferner bereitgestellt sind, um an den jeweiligen Rückseiten der linken bzw. rechten Außenelemente (18 und 21) verbunden zu werden, und
die linke hintere Rückfaltlasche (18b) angeordnet ist, um zwischen das linke Außenelement (18) und die linke hintere Faltlasche (16) gefaltet zu werden, und ferner die rechte hintere Faltlasche (21b) angeordnet ist, um zwischen dem rechten Außenelement (21) und die rechte hintere Faltlasche (17) eingefaltet zu werden;
die linke vordere Rückfaltlasche (18a) und die linke hintere Rückfaltlasche (18b) entlang der gesamten Länge der vorderen und hinteren Seiten des linken Außenelements (18) gebildet sind, um die gleiche Länge wie die Seiten zu haben, und die rechte vordere Rückfaltlasche (21a) und die rechte hintere Rückfaltlasche (21b) entlang der gesamten Länge der vorderen und hinteren Seiten des rechten Außenelements (21) gebildet sind, um die gleiche Länge zu haben wie die Seiten;
Oberkantenelemente (19 und 22) und Innenelemente (20 und 23) jeweils mit Endseiten der linken bzw. rechten Außenelemente (18 und 21) über Falzlinien verbunden sind, und die linke und rechte vordere Faltlasche (14 oder 15) und die linke und rechte hintere Faltlasche (16 oder 17), die sich von den linken und rechten Seiten des Vorderelements (12) bzw. des Hinterelements (13) erstrecken, zwischen das Außenelement (18 oder 21) und das Innenelement (20 oder 23) eingefaltet werden, indem die Außenelemente (18 und 21), die Oberkantenelemente

(19 und 22) und die Innenelemente (20 und 23) nacheinander gefaltet werden, und die Oberkantenelemente (19 und 22) Rahmen mit einer vorgegebenen Breite an einem Öffnungsabschnitt der Schachtel bilden; und
dadurch gekennzeichnet, dass
Oberkanten-Rückfaltlaschen (19a und 22a) entlang der gesamten Länge von Seiten der linken und rechten Oberkantenelemente (19 und 22) zumindest an den linken und rechten Seiten der Vorderflächenseite der linken und rechten Oberkantenelemente (19 und 22) gebildet sind, und die Oberkanten-Rückfaltlaschen (19a und 22a) entlang Innenseiten der linken bzw. rechten Oberkantenelemente (19 und 22) gefaltet werden.

2. Verpackungsschachtel nach Anspruch 1, wobei ein oberes Deckelelement (24) und ein vorderes Deckelelement (27) ferner mit dem Rückelement (13) über Falzlinien verbunden sind, und linke und rechte Vorderelement-Einführlaschen (28 und 29), die mit Seiten des vorderen Deckelelements (27) über Falzlinien verbunden sind, zwischen den linken und rechten vorderen Rückfaltlaschen (18a und 21a) und den linken und rechten vorderen Faltlaschen (14 und 15) eingeführt werden.

3. Verpackungsschachtel nach Anspruch 2, wobei: linke und rechte Oberelement-Einführlaschen (25 und 26) mit einer Seite des oberen Deckelelements (24) über Falzlinien verbunden sind, und die Oberelement-Einführlaschen (25 und 26) jeweils entlang Innenseitenflächen der Innenelemente (20 bzw. 23) positioniert sind.

4. Verpackungsschachtel nach Anspruch 1, wobei die linken und rechten vorderen Rückfaltlaschen (18a und 21a) und die linken und rechten hinteren Rückfaltlaschen (18b und 21b) trapezförmig ausgebildet sind.

Revendications

1. Boîte d'emballage de type à assembler, qui est assemblée sous une forme cuboïde au moyen de l'érection d'un panneau avant (12) et d'un panneau arrière (13) dans les parties avant et arrière d'un panneau inférieur (11) le long de lignes de pli, respectivement, et de l'érection d'un panneau externe gauche (18) et d'un panneau externe droit (21) à gauche et à droite du panneau inférieur (11) le long de lignes de pli, respectivement, de la boîte d'emballage de type à assembler ; dans laquelle :

des languettes de pliage avant (14 et 15), s'étendant à partir des côtés gauche et droit du panneau avant (12), sont disposées le long des surfaces internes des panneaux externes gauche et droit (18 et 21) et, en outre, des languettes de repli avant gauche et droite (18a et 21a) sont prévues pour être reliées au moins sur les côtés avant des panneaux externes gauche et droit (18 et 21), respectivement ;
la languette de repli avant gauche (18a) est disposée pour être pliée entre le panneau externe gauche (18) et la languette de pliage avant gauche (14) et, en outre, la languette de repli avant droite (21a) est disposée pour être pliée entre le panneau externe droit (21) et la languette de pliage avant droite (15) ;
des languettes de pliage arrière (16 et 17), s'étendant à partir des côtés gauche et droit du panneau arrière (13), sont également prévues, les languettes de pliage arrière gauche et droite (16 et 17) étant disposées le long des surfaces internes des panneaux externes gauche et droit (18 et 21), et des languettes de repli arrière gauche et droite (18b et 21b) sont agencées en outre pour être reliées sur les côtés arrière des panneaux externes gauche et droit (18 et 21), respectivement, et
la languette de repli arrière gauche (18b) est disposée pour être pliée entre le panneau externe gauche (18) et la languette de pliage arrière gauche (16) et, en outre, la languette de repli arrière droite (21b) est disposée pour être pliée entre le panneau externe droit (21) et la languette de pliage arrière droite (17) ;
la languette de repli avant gauche (18a) et la languette de repli arrière gauche (18b) sont formées le long de toute la longueur des côtés avant et arrière du panneau externe gauche (18) afin d'avoir la même longueur que les côtés, et la languette de repli avant droite (21a) et la languette de repli arrière droite (21b) sont formées le long de toute la longueur des côtés avant et arrière du panneau externe droit (21) afin d'avoir la même longueur que les côtés ;
des panneaux de bord supérieur (19 et 22) et des panneaux internes (20 et 23) sont reliés aux côtés d'extrémité des panneaux externes gauche et droit (18 et 22) à travers des lignes de pli, respectivement, et les languettes de pliage avant gauche et droite (14 ou 15) et les languettes de pliage arrière gauche et droite (16 ou 17), s'étendant à partir des côtés gauche et droit du panneau avant (12) et du panneau arrière (13), respectivement, sont pliées entre le panneau externe (18 ou 21) et le panneau interne (20 ou 23) au moyen du pliage séquentiel des panneaux (18 et 21) externes, des panneaux de bord supérieur (19 et 22) et des panneaux internes (20 et 23), et les panneaux de bord supérieur (19 et 22) forment des cadres présentant une

largeur prédéfinie au niveau d'une partie d'ouverture de la boîte ; et

caractérisé en ce que

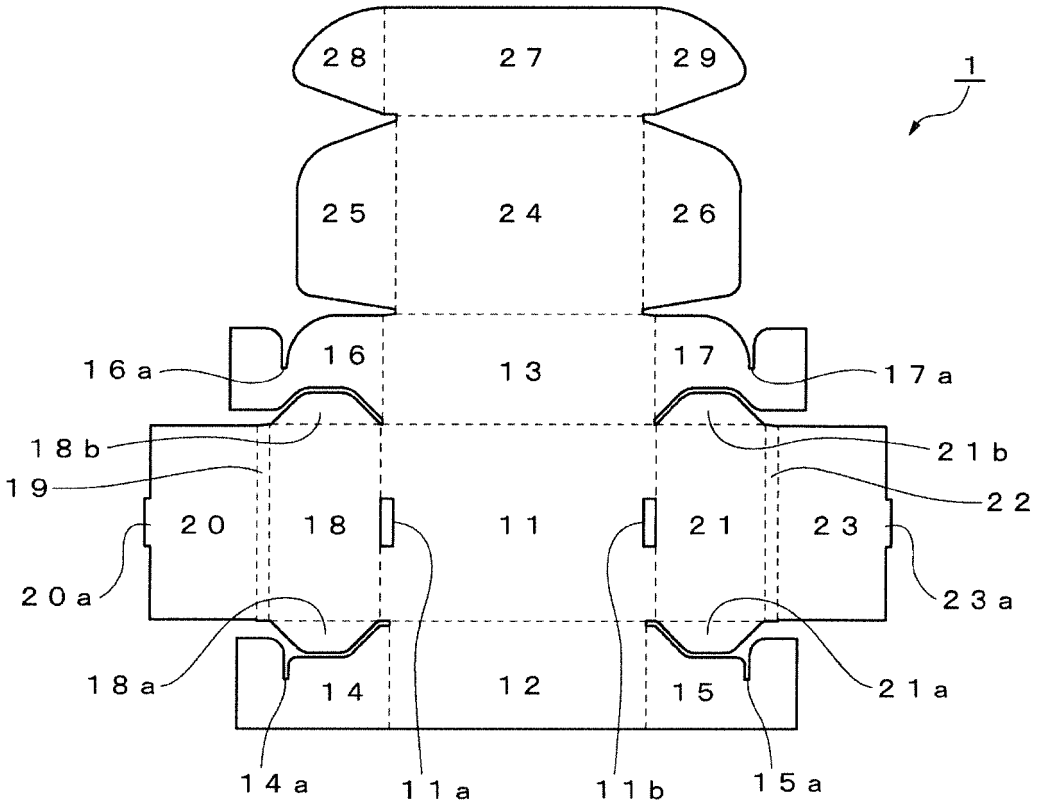
des languettes de repli de bord supérieur (19a et 22a) sont formées le long de toute la longueur des côtés des panneaux de bord supérieur gauche et droit (19 et 22) au moins sur les côtés gauche et droit du côté de surface avant des panneaux de bord supérieur gauche et droit (19 et 22), et les languettes de repli de bord supérieur (19a et 22a) sont pliées le long des côtés internes des panneaux de bord supérieur gauche et droit (19 et 22), respectivement.

2. La boîte d'emballage de type à assembler selon la revendication 1, dans laquelle un panneau de couvercle supérieur (24) et un panneau de couvercle avant (27) sont reliés en outre au panneau arrière (13) à travers des lignes de pli, et des languettes (28 et 29) d'insertion de panneau avant gauche et droit, reliées aux côtés du panneau de couvercle avant (27) à travers des lignes de pli, sont insérées entre les languettes de repli avant gauche et droite (18a et 21a) et les languettes de pliage avant gauche et droite (14 et 15).

3. La boîte d'emballage de type à assembler selon la revendication 2, dans laquelle des languettes (25 et 26) d'insertion de panneau supérieur gauche et droit sont reliées à un côté du panneau de couvercle supérieur (24) à travers des lignes de pli, les languettes (25 et 26) d'insertion de panneau supérieur étant positionnées le long des surfaces latérales internes des panneaux internes (20 et 23), respectivement.

4. La boîte d'emballage de type à assembler selon la revendication 1, dans laquelle les languettes de repli avant gauche et droite (18a et 21a) et les languettes de repli arrière gauche et droite (18b et 21b) prennent une forme trapézoïdale.

Fig. 1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1
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24
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16a
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13
17
17a
18b
21b
19
22
20
18
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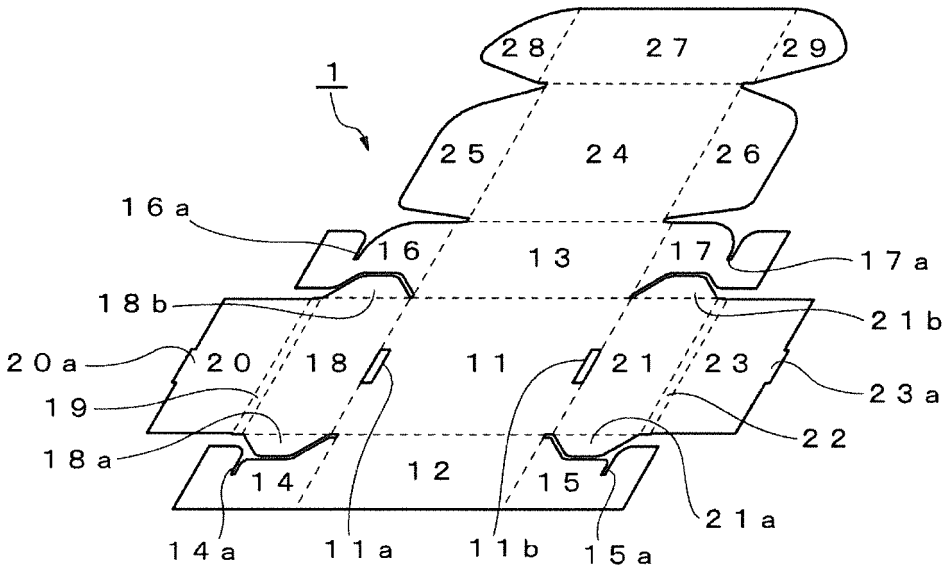
21
23
20a
23a
18a
14
12
15
21a
14a
11a
11b
15a

Fig. 2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17a
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21b
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18a
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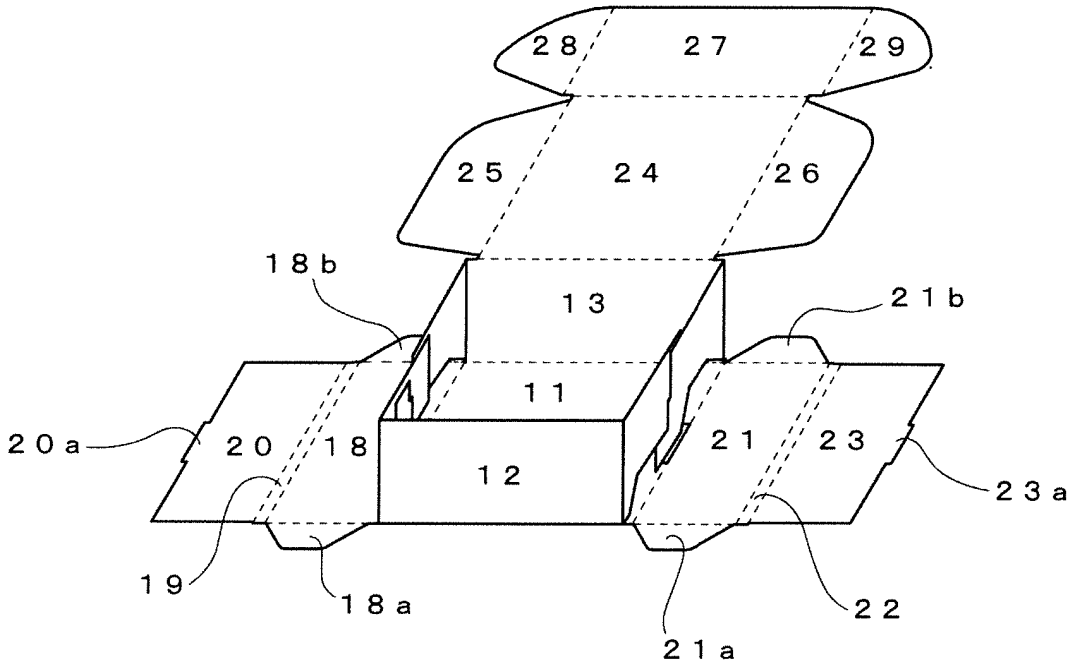
12
15
21a
14a
11a
11b
15a

Fig. 3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24
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18b
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21b
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20a
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23a
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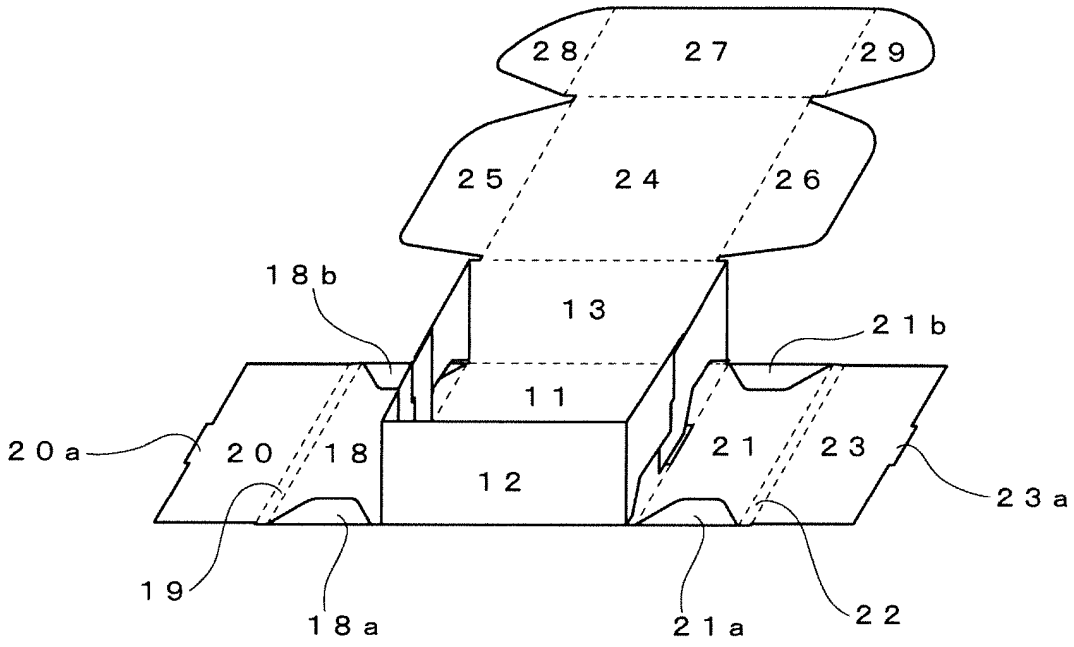
18a
21a
22

Fig. 4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24
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18b
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21b
11
20a
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21
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23a
19
18a
21a
22

Fig. 5

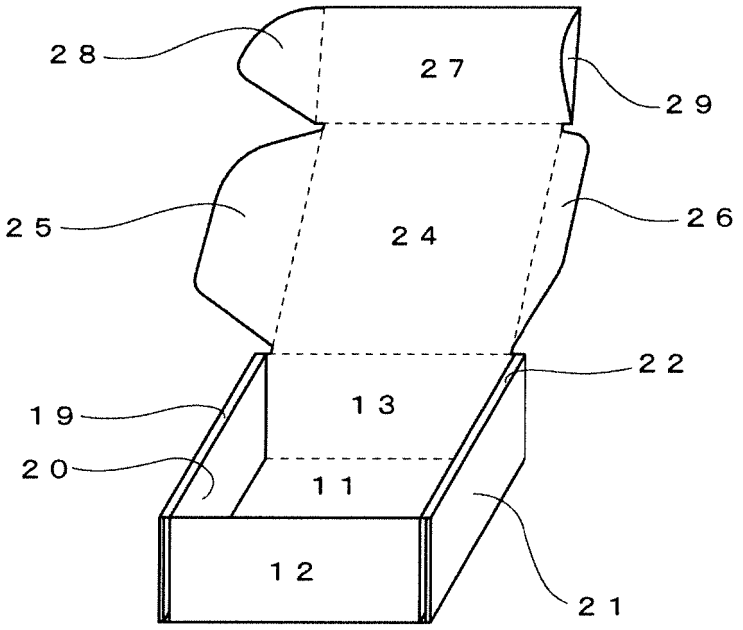
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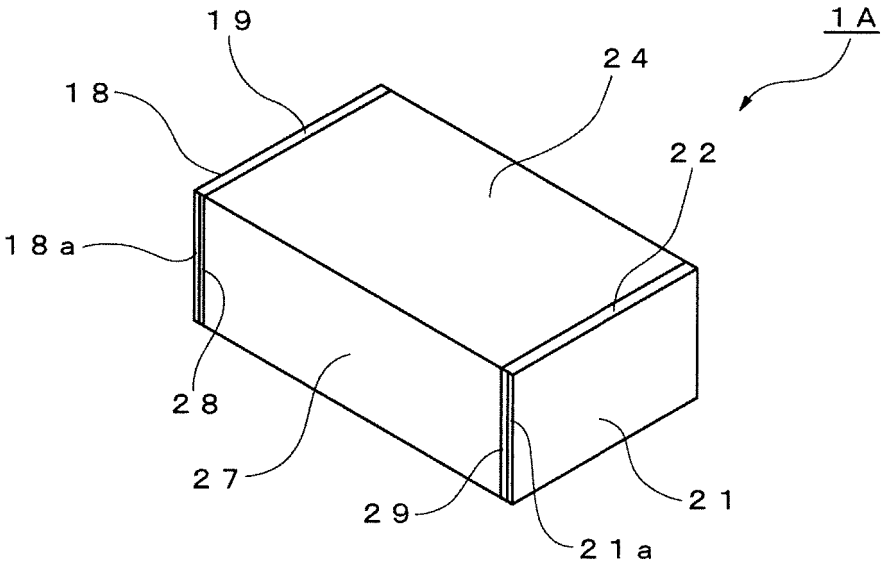
Fig. 6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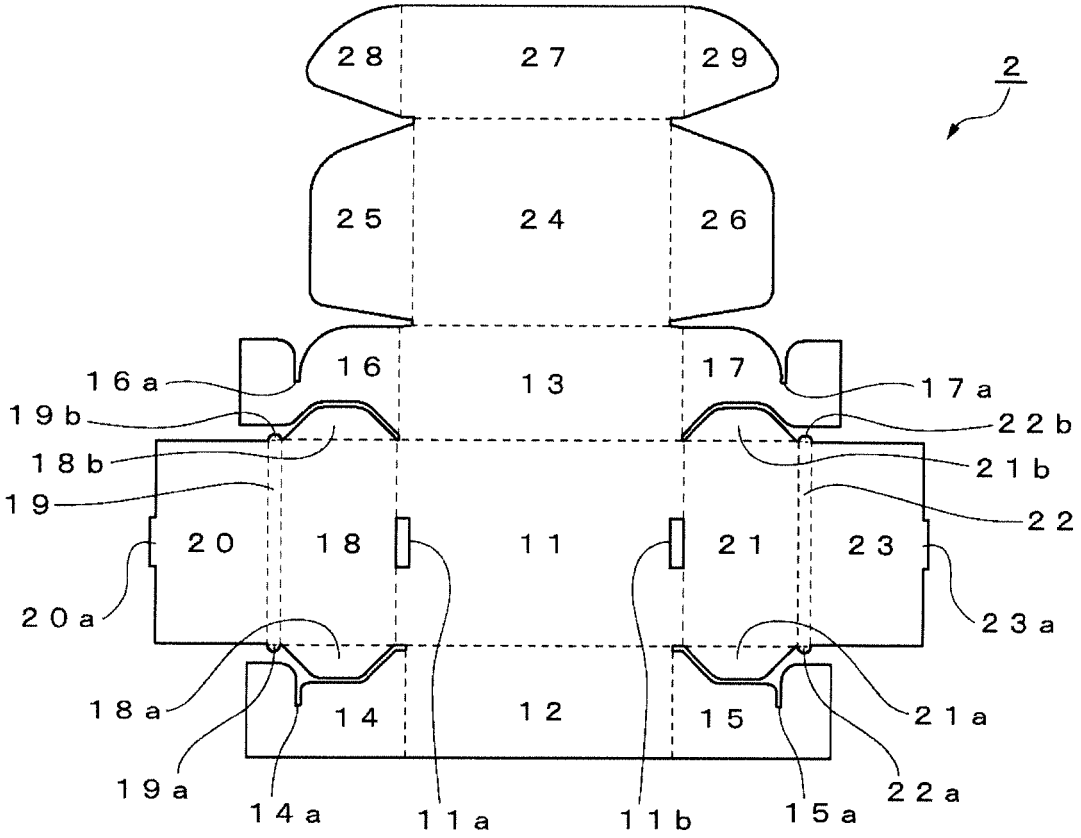
1A
24
18
22
18a
28
27
29
21
21a

Fig. 7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18
11
21
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15
21a
19a
14a
11a
11b
15a
22a

Fig. 8
Related Art

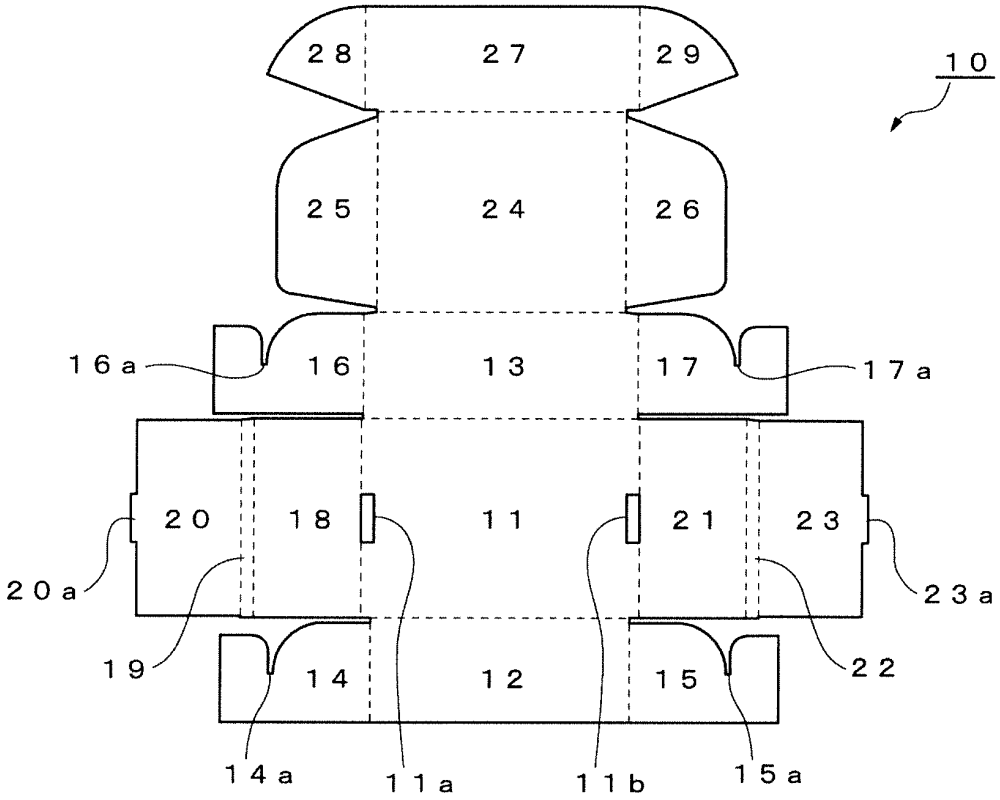
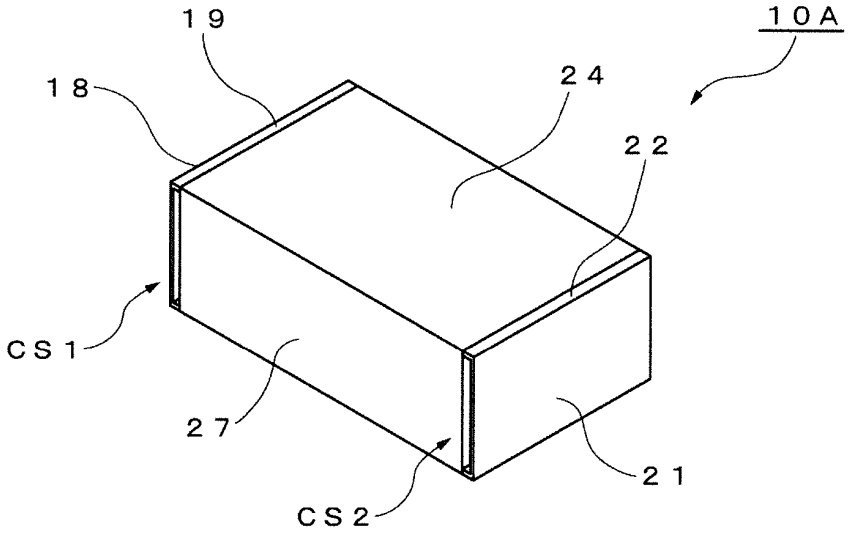


Fig. 9
Related Art



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2005145525 A **[0003]**
- JP 2014133580 A **[0003]**
- US 1886879 A **[0003]**
- US 6029885 A **[0003]**
- JP 2004175433 A **[0003]**
- US 2007251985 A **[0003]**