



(11) **EP 3 357 834 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
08.08.2018 Bulletin 2018/32

(51) Int Cl.:
B65D 83/08 (2006.01)

(21) Application number: **17460051.0**

(22) Date of filing: **29.08.2017**

(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:
MA MD

(71) Applicant: **Grnpak Spolka Jawna M. Korczak R. Marczak**
32-652 Bulowice (PL)

(72) Inventors:
• **Bablok, Dominika**
32-600 Oswiecim (PL)
• **Korczak, Mariusz**
34-120 Roczyny (PL)

(30) Priority: **02.02.2017 PL 12600117**

(74) Representative: **Karczmitowicz, Teresa Ewa**
Ul. Kujawska 24 lok.2
30-042 Kraków (PL)

(54) **BOX**

(57) A box composed of items joined along the creasing lines (3, 15, 19), respectively: a bottom panel (1) with closing dust flaps (8, 9) adjoining along the shorter creased edges (6, 7); first lateral wall (5) with closing dust flaps (12, 13) adjoining along its shorter creased edges (10, 11); top panel (17) with the closing flaps (22, 23) adjoining along the shorter creased edges (21, 22); second lateral wall (20) with the closing dust flaps (27, 28) adjoining along the shorter creased edges (25, 26), **characterized in that** the top panel (17) comprises a window (18) constituting the tissue dispenser, whose left edge (OL1) is a creasing line with the shape of the arch convex towards the creasing line (15), while the right edge (OL2) is a wavy line with the shape of the sinusoid section with one central maximum and with two side minima, wherein the wavy line is the cut line to half the thickness of the material from which the box is made and in the second half of the thickness it is the creasing line, and the area of the centre of maximum comprises a pressed component (OL3) in the shape of a circle section, less or equal to a semicircle with the diameter shorter than the width of the centre maximum, and the shorter edges (OL4) of the window (18) are the lines of straight cut, which connect to the creasing line (OL1) and the wavy line (OL2) and curve archwise towards the inner side of the window (18).

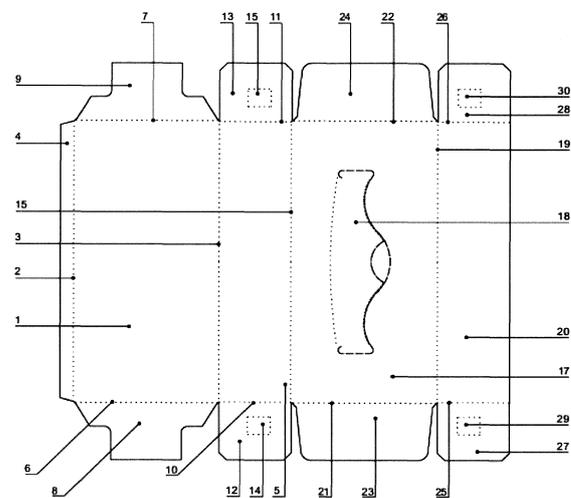


Fig.1

EP 3 357 834 A1

Description

[0001] The present invention relates to the box used as a package of cellulose tissues made of one piece of flat material with a characteristic shape, with cuts, bends and a tissue dispenser.

[0002] From the European Patent No. EP0286538 there is known a box comprising interlaced sheets and a sheet stacking method, wherein the stacked sheets can be pulled out of a box of cuboid or cube shape. There are holes in the upper walls of the box: with the shape similar to an ellipse or a circle, respectively.

[0003] From the German utility model DE202004005094 (U1) there is also known an ornamental box of paper tissues, consisting of a cubic bottom part and a cubic top part put on it, which has a central diamond-shaped opening made in it allowing the tissues to be pulled out of the box.

[0004] Packages in the form of folded boxes made from one blank are also known. Thus, the description of the Polish utility model No. Ru.58301 discloses a box of one-piece cardboard blank, which has a rectangular top wall forming its base, joined along the edges of the fold with lateral walls comprising flaps. The lateral walls, located along the shorter edges of the fold of the base, have the rear outer flaps partially overlapping each other. The lateral walls have diagonal bevels in the corners and are connected with the inner rear flaps

[0005] From the description of the Polish utility model there is also known a box for storage, display and transport of products and made from one blank. The box is characterized by a rectangular, broader lateral wall with a rectangular cut with rounded corners. The lateral wall has the rectangular, narrower lateral walls with oval cut-outs adjoining to its longer edges. One of the narrower lateral walls is connected additionally to the other broader lateral wall and the next narrower lateral wall is provided with a lateral fastening tab in the shape of trapezium. The wider lateral wall has a rectangular bottom tab with a rectangular cut, while another wider lateral wall is fitted with a trapezoidal bottom tab with a rectangular tongue, wherein the width of the tongue is identical to the width of the cut-out. Narrower lateral walls are fitted with rectangular top tabs and reinforcing wings in the shape of two rectangular trapezoids joined by bases. Narrower lateral walls have rectangular cut-outs in the shape of rectangular with rounded corners and cut-outs in the shape of three perpendicular sections joined by rounds.

[0006] There are commonly known boxes for tissues in the form of a cuboid or cube with an upper wall, with an elliptical cut in the middle thereof. The elliptical piece, during normal use, is pushed out, thus forming an elliptical opening under which there is the film cut along the large axis of the ellipse. The incision is used to pull out the tissues.

[0007] The above-mentioned boxes for tissues or paper napkins, after consuming thereof, are thrown away and as waste paper they are most often transferred to

the recovery of material for reuse for further processing. The polyethylene liner present therein significantly hinders the recycling process, because to maintain the quality of the cellulosic material - which could be used for further processing - it has to be removed since its retention will result in a reduction in the quality of the recovered material or completely eliminates the possibility of its recovery.

[0008] Bearing in mind the above-mentioned disadvantages, the goal was set out to eliminate them by producing a box of useful properties as a package of tissues or napkins, forming an aesthetic form of product packaging made from one optimum blank sheet, folded for transport purposes.

[0009] The essence of the invention is that, the box made of a cellulosic material, preferably a carton in the form of a single blank with a window forming a tissue dispenser, which allows the tissues to be efficiently slid, which are arranged inside the box in the form of a stack so that pulling one of them causes the fragment of the next one to slide out.

[0010] The box consists of a rectangular bottom panel, which is its base, which is connected along its right, longer creased edge with the first lateral wall and with the trapezoidal adhesive flap along the left, longer creased edge. The bottom panel is connected along shorter creased edges with trapezoidal closing flaps with a rectangular tongue. The base area is connected to the lateral wall in the shape of a rectangle. The rectangular closing dust flaps with chamfered outer corners adjoin to the lateral wall, along the shorter creased edges. There are stampings in the shape of rectangles in the area of the closing dust flaps, used to align the level of adhesive connecting the dust flaps. The top panel with the window centrally situated on the surface of the top panel, which is a dispenser of tissues or napkins, adjoins the lateral wall, along the longer creased edge. The left, longer edge of the window forms a creasing in the shape of a smooth arc, and the right edge is a wavy line in the form of an axisymmetric sinusoid section, i.e. the sinusoid with a single maximum and two local minima. A pressed component in the shape of a circle sector, smaller or even to a semicircle with a diameter less than the middle maximum width, is formed in the middle of the wavy line and on its left side. The pressed component is determined by the cut lines, while the rest of the wavy line is the cut line to half the thickness of the material (from which the box is made) with the creasing in the second half of the thickness. When the user presses the pressed component, a hole is formed that allows lifting the left part of the window from which the tissue or napkin is drawn.

Shorter sides of the window are the cut lines, which curve archwise towards the inner side of the window and connect to the creasing line and the sinusoidal line with the pressed component. The wavy (sinusoidal) line forms a convenient dispenser of tissues or napkins. The use of creasing affects the left side of the window rising relative to the right side, while the lateral incisions of the right

part of the window allow it to move freely up-down, under the influence of the hand pressure, causing the tissues to move. Thus, the shape of the cutting line affects the way the tissues are laid and reduces the pressure on the deflecting part of the window, while the end of the lateral cut lines with the arcs also limits the possibility of tearing the material from which the box is made. The window length taken as the distance between the shorter sides, which are the cut lines, shall not be less than 70% and not more than 75% of the lateral length of the longer wall of the upper panel, wherein its width taken as the length of the shorter side, which is the cut line, shall be not less than 40% and not more than 45% of the length of the shorter wall of the upper panel.

[0011] In the process of preparing a flat semi-product to make a box according to the invention (i.e. punching, cutting, creasing), the cutting of the wavy line takes place using the holding locks, i.e., the mini-notches on the wavy line of the cutter on the die, thereby all the components of the window are kept together. The components are separated along the cut line only by the pressure of the user's hand.

[0012] The second rectangular lateral wall adheres the top panel along the right, longer creased edge, while the trapezoidal closing flaps adhere to the top panel along the shorter creased edge, wherein the trapezoid side walls are slightly rounded at the top, while at the base they are slightly, archwise concave.

[0013] Then, the second lateral wall has the closing dust flaps, adjoining along its shorter creased edges, with the shape of the rectangular with chamfered external corners, in the centre of which there are rectangular-shaped stampings to align the level of adhesive joining the dust flaps.

[0014] The length of the shorter sides of the lateral walls is less than or equal to the length of the shorter sides of the top and bottom panels, and the height of the closing flaps of the lower and upper panels is equal to the height of the closing dust flaps of the lateral walls of the box.

[0015] When folding the box according to the invention, the adhesive flap and the bottom panel are folded down along the long creasing lines of the bottom panel, and then the second lateral wall is folded and the adhesive flap is glued to the second lateral panel, thereby creating a flat semi-product convenient to transport. Then the upper panel is folded, which is to be filled with the stacked tissues or napkins.

After loading the tissues, the dust flaps are folded along their shorter creasing lines and connected with the adhesive, and then the box is closed by gluing the closing flaps of the top panel to the closing flaps of the bottom panel.

The user of the product pushes the half-circle-shaped pressed component to form a hole in the window and then lifts the left side of the window and pulls out the first tissue. The next tissues are fed through a dispenser made up of two parts of the window.

[0016] The box according to the invention allows avoiding additional operations related to film gluing in the package, but the lack of film makes it possible to designate a box for simple recycling. The blank of the starting material sheet, from which the box is folded, makes it possible to transport it "flat", thus optimizing the transport conditions for a large number of packages occupying a relatively small area. In addition, the utility benefits of using a particular waveform in the form of an axial symmetrical sinusoid section are also obtained. Now, it is easy to open the box, tilt the window cover and remove tissues.

[0017] The subject of the invention is shown in the drawing, in which Fig. 1 shows a box blank; Figure 2 shows a window made in the top panel of the box; fig. 3 to fig. 9 illustrate the sequential steps of folding a box based on a cardboard blank.

[0018] The rectangular box of the invention is made of a cardboard blank.

[0019] As shown in fig. 1 and fig. 2, the box has a rectangular bottom panel 1 forming a base thereof, to which an adhesive flap 4 and lateral wall 5, connected to the bottom panel 1, adjoin along the long creased edges 2 and 3. The closing flaps 8 and 9 in the shape of a trapezoid with rectangular tongue adjoin to the bottom panel 1 along the shorter creased edges 6 and 7. The rectangular-shaped closing dust flaps 12, 13 with chamfered outer corners adjoin to the lateral wall 5, along its shorter creased edges 10 and 11. There are rectangular stampings 14, 15 inside the closing dust flaps 12, 13. The top panel 17 along with the window 18 forming the dispenser of tissues or napkins adjoin the lateral wall 5. The left, longer edge OL1 of the window 18 forms archwise creasing, while the right edge OL2 is a wavy line in the shape of the axial symmetrical sinusoid section, which is the cut line to half the thickness of the material from which the box is made and the creasing line in the second half of the material thickness. The pressed component OL3 similar in shape to a semicircle, whose outer lines are the cutting lines is performed from the left side of the OL2 edge. The shorter sides of the OL4 window 18 are the cut lines that connect to the OL1 and OL2 lines and curve archwise towards the inner side of the window 18. The second lateral wall 20 in the shape of a rectangle adjoins the top panel 5, along the right, longer creased edge 19, while the trapezoidal closing flaps 22 and 23 adjoin the top panel 5 along the shorter creased edges 21 and 22. Then, the second lateral wall 19 along its shorter creased edges 25 and 26 has the adjoining rectangular-shaped, closing dust flaps 27 and 28, inside which there are rectangular-shaped stampings to align the level of adhesive joining the dust flaps.

[0020] As shown in Figure 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7, Fig. 8 and 9, when folding the box of the invention, the adhesive flap 4 and the first lateral wall 5 are folded along the longer creasing lines 2 and 3 of the bottom panel 1, then the second lateral wall 20 is folded along the longer creasing line 19 and successively the top panel 17 along the longer creasing line 15, then the resulting space is

filled with stacked tissues or napkins and the adhesive flap 4 is glued to the second lateral panel 20. Then the closing dust flaps 12 and 13 are folded along the shorter creasing lines 10 and 11 and bound together with the adhesive, and then the box is closed by gluing the closing flaps 23 and 24 of the top panel 17 to the closing flaps 8 and 9 of the bottom panel 1.

Claims

1. A box composed of items joined along the creasing lines (3, 15, 19), respectively: a bottom panel (1) with closing dust flaps (8, 9) adjoining along the shorter creased edges (6, 7); first lateral wall (5) with closing dust flaps (12, 13) adjoining along its shorter creased edges (10, 11); top panel (17) with the closing flaps (22, 23) adjoining along the shorter creased edges (21, 22); second lateral wall (20) with the closing dust flaps (27, 28) adjoining along the shorter creased edges (25, 26), **characterized in that** the top panel (17) comprises a window (18) constituting the tissue dispenser, whose left edge (OL1) is a creasing line with the shape of the arch convex towards the creasing line (15), while the right edge (OL2) is a wavy line with the shape of the sinusoid section with one central maximum and with two side minima, wherein the wavy line is the cut line to half the thickness of the material from which the box is made and in the second half of the thickness it is the creasing line, and the area of the centre of maximum comprises a pressed component (OL3) in the shape of a circle section, less or equal to a semicircle with the diameter shorter than the width of the centre maximum, and the shorter edges (OL4) of the window (18) are the lines of straight cut, which connect to the creasing line (OL1) and the wavy line (OL2) and curve arch-wise towards the inner side of the window (18).
2. A box according to claim 1, **characterized in that** the window (18) constituting the tissue dispenser is centred on the surface of the top panel (17) and its length taken as a distance between the lines of straight cuts (OL4) is not less than 70% and not more than 75% of the length of the top panel (17) and its width taken as the length of the straight cut line (OL4) is not less than 40% and not more than 45% of the width of the top panel (17).

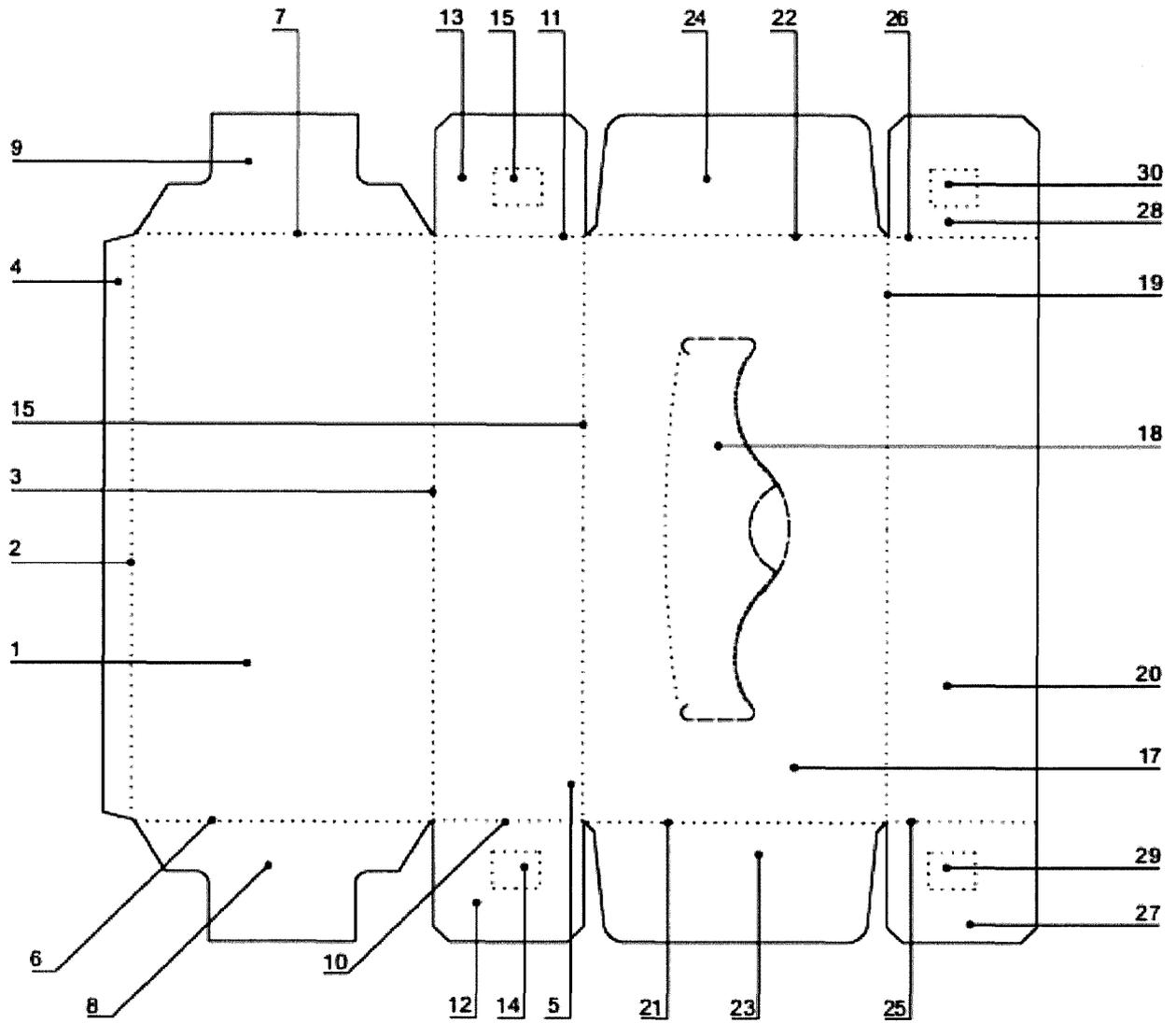


Fig.1

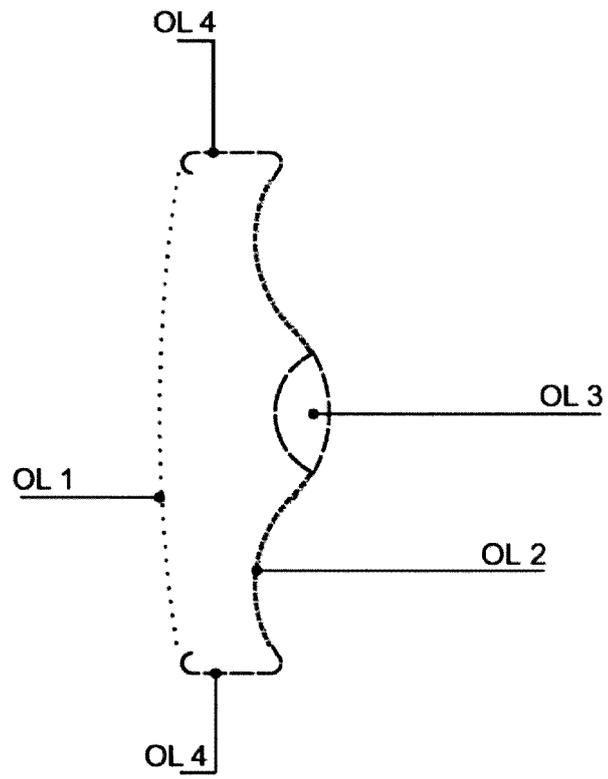


Fig.2

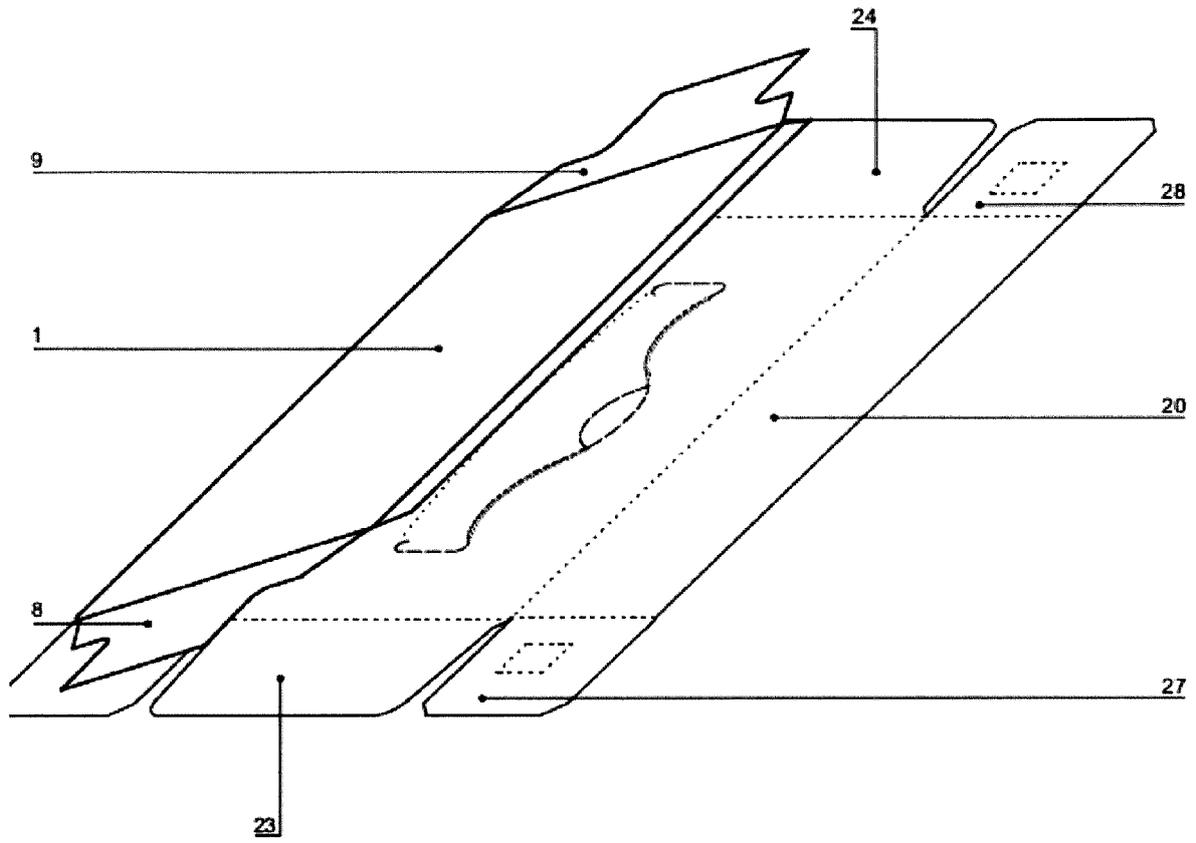


Fig.3

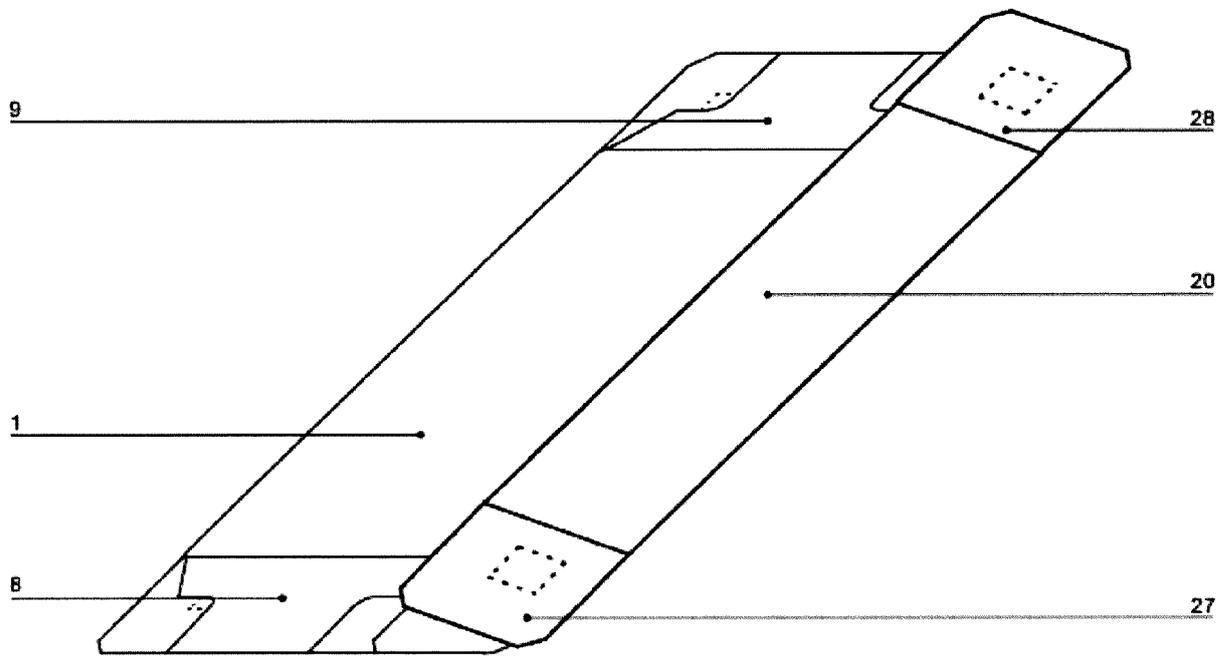


Fig.4

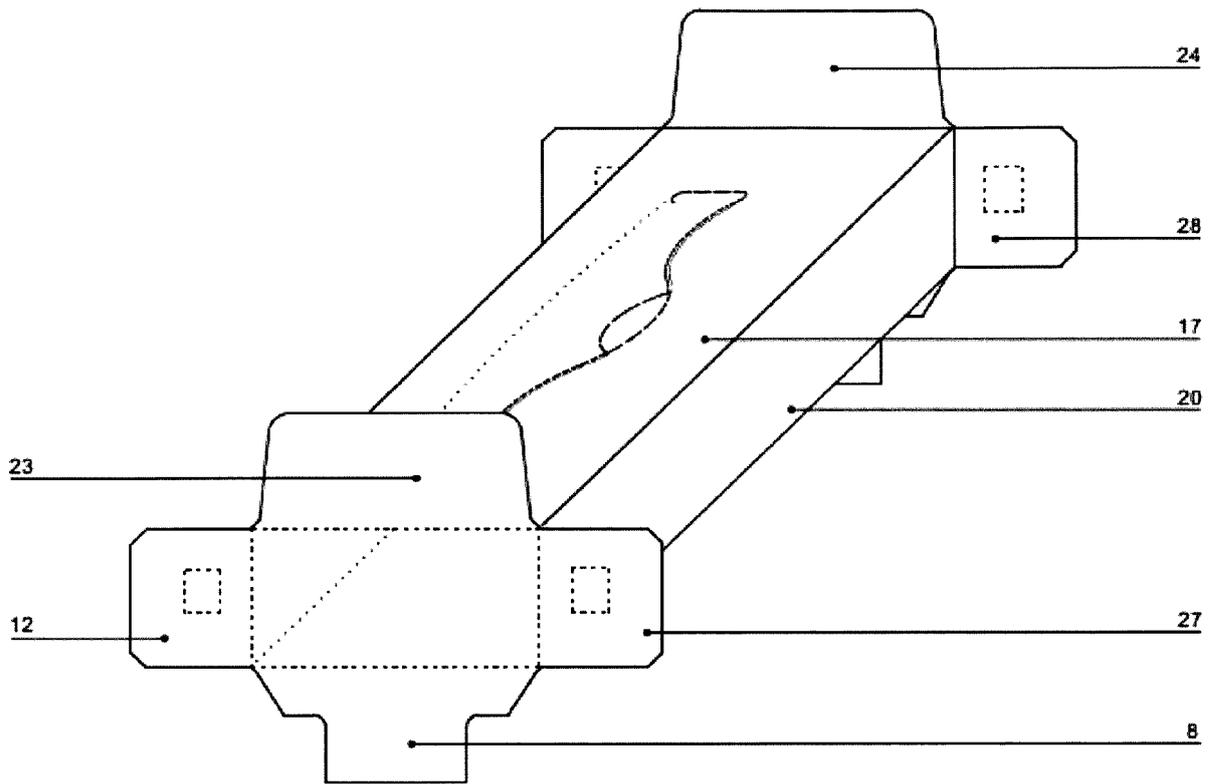


Fig.5

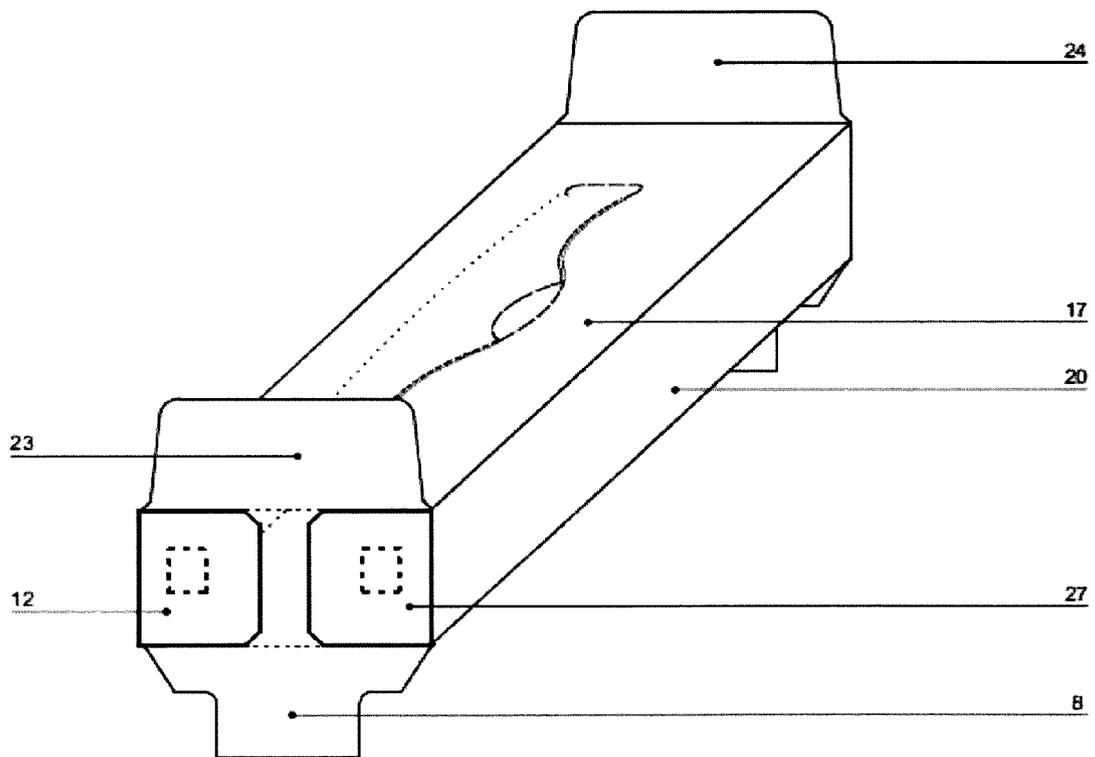


Fig.6

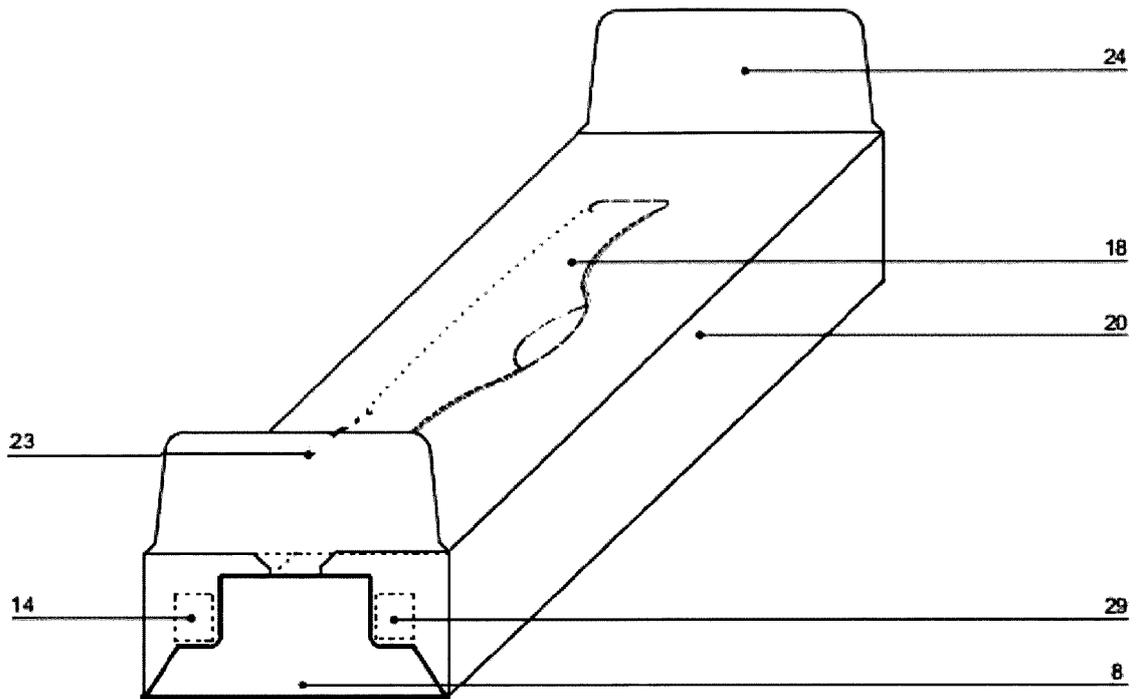


Fig.7

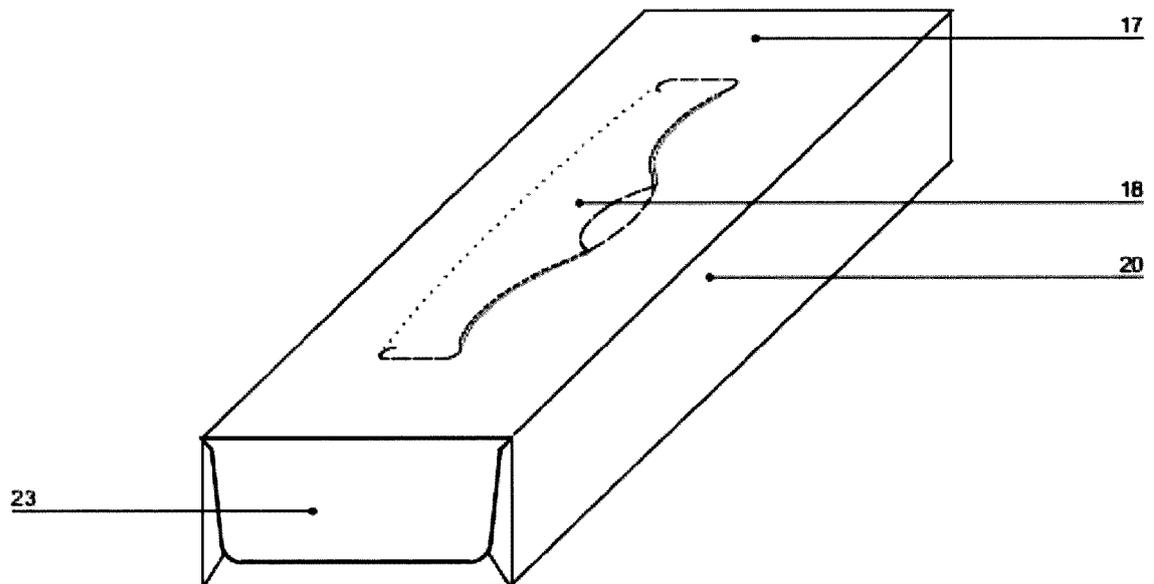


Fig.8

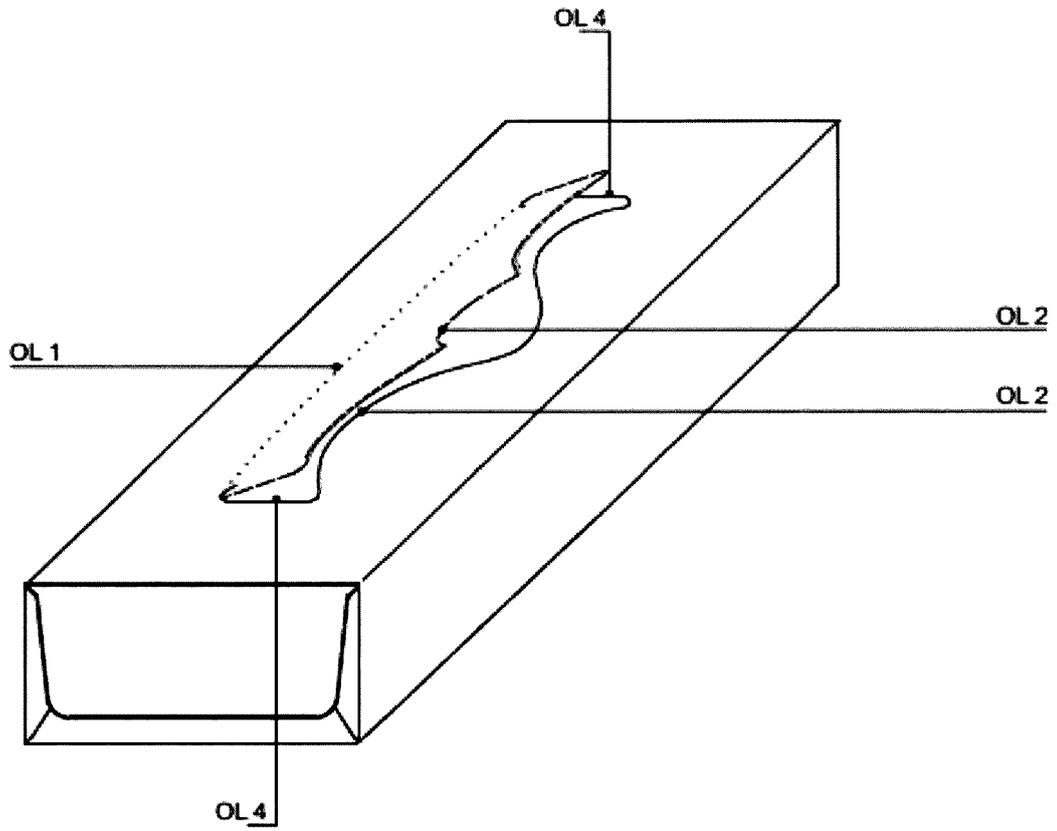


Fig.9



EUROPEAN SEARCH REPORT

Application Number
EP 17 46 0051

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 2004/164087 A1 (ISHIDA JIRO [JP]) 26 August 2004 (2004-08-26) * paragraph [0050] - paragraph [0053]; figures 1-20 * | 1 | INV. B65D83/08 |
| A | JP 2010 013181 A (ANDO KIKAKU KK) 21 January 2010 (2010-01-21) * abstract; figures 1-31 * | 1 | |
| A | US 4 586 631 A (LODER HARRY A [US]) 6 May 1986 (1986-05-06) * column 2, line 49 - column 3, line 32; figures 1-3 * | 1 | |
| | | | TECHNICAL FIELDS SEARCHED (IPC) |
| | | | B65D |
| The present search report has been drawn up for all claims | | | |
| Place of search Munich | | Date of completion of the search 21 March 2018 | Examiner Grondin, David |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | | |

EPO FORM 1503 03/02 (P04C01)

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

EP 17 46 0051

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.

21-03-2018

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|----------------------------------|--------------------------|
| US 2004164087 A1 | 26-08-2004 | NONE | |
| JP 2010013181 A | 21-01-2010 | JP 4673395 B2 JP 2010013181 A | 20-04-2011 21-01-2010 |
| US 4586631 A | 06-05-1986 | NONE | |

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

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

Patent documents cited in the description

- EP 0286538 A [0002]
- DE 202004005094 U1 [0003]