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(54) Cigarette pack

(57) There is described herein packaging in the form of a hinged-lid box comprising: a housing comprising two side faces connected by a back face and a bottom face; and a lid comprising two side faces connected by a back face and a top face; wherein: at least one of said housing and said lid further comprises a front face; and the lid is connected to the housing by means of a hinge formed by an arcuate fold line connecting said back faces of the housing and the lid. There is further described herein a blank and a method for forming such packaging.

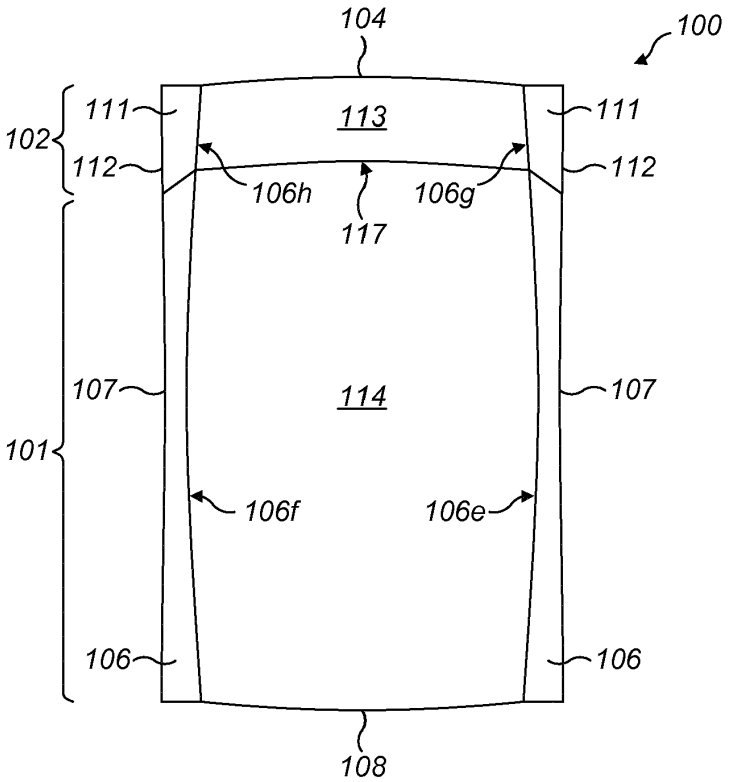

FIG. 5A

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Description

[0001] The present invention generally relates to the field of packaging, for example for tobacco products. In particular, the present invention relates to a new type of cigarette pack, and blank therefor.

[0002] A common design for cigarette packaging consists in a hinged lid packet. This is typically a generally cuboid cardboard packet with a hinged lid integrally formed at an upper end. The cigarettes are disposed longitudinally such that a user can remove the cigarettes by their ends when the lid is open.

[0003] These cardboard packs are susceptible to deformation, particularly when the pack is constrained by a non-linear space, such as that defined by the inside pocket of a user's garment. Such deformation can result in a phenomenon known as "smiling", where the flip-top lid of the pack sits slightly open with respect to the body of the pack, thereby preventing the pack from completely closing in its rest state. When carried in a garment, loose tobacco contained in the pack can find its way into the user's pocket through the aperture created by this "smiling" effect.

[0004] Accordingly, there is a need for a cigarette pack with a structure which reduces this "smiling" effect.

[0005] There is described herein packaging in the form of a hinged-lid box, wherein a hinge connecting a housing of the box to a lid of the box is of arcuate form. The arcuate hinge provides increased resistance to opening and closing of the box, reducing the "smiling" effect.

[0006] Where the terms "upper", "lower", "left", "right", "front", "back", "top", "bottom", "side" etc. are used in the following description and claims, they are used merely to designate particular locations corresponding to those shown in the figures as presented and are not intended to tie interpretation of the claims to any particular orientation.

[0007] According to a first aspect there is provided packaging in the form of a hinged-lid box. Said box comprising a housing comprising two side faces connected by a back face and a bottom face. The box further comprises a lid comprising two side faces connected by a back face and a top face. At least one of said housing and said lid further comprise a front face. The lid is connected to the housing by means of a hinge formed by an arcuate fold line connecting said back faces of the housing and the lid.

[0008] Said arcuate fold line could curve up towards said top face from lower ends adjoining said side faces of the lid.

[0009] The perpendicular distance between the apex of said arcuate fold line and the chord of the arcuate fold line could be from approximately 0.5mm to approximately 2.0mm.

[0010] Both of the housing and the lid could further comprise front faces.

[0011] One or more of the faces could be bowed.

[0012] All faces of the packaging could be bowed. All external edges of the packaging could be arcuate.

[0013] One or more connections between faces could be by means of rounded edges.

[0014] One or more connections between faces could be by means of bevels. One or more of said bevels could be defined by arcuate edges.

[0015] The housing could comprise a front face. The housing could further comprise a first bevel situated on one side of said housing front face and being attached to the housing front face by a first longitudinal fold line. The housing could further comprise a second bevel situated on the other side of the housing front face and being attached to the housing front face by a second longitudinal fold line. The first and second fold lines could be curved away from the centre of the housing front face such that the housing front face is at least partially concavely bowed in a longitudinal direction.

[0016] The first and second fold lines could be curved away from the centre of the housing front face such that the housing front face is concavely bowed in a lateral direction.

[0017] The housing front face could be concavely bowed in a longitudinal direction from a location substantially adjacent the top face to an area substantially adjacent the bottom face.

[0018] The packaging could be formed of cardboard.

[0019] According to a second aspect there is provided a blank for forming the packaging of the first aspect. Said blank could comprise a housing front panel; two housing side panels connected by said housing front panel; a housing bottom panel; a housing back panel connected to the housing front panel by said housing bottom panel; a lid front panel; two lid side panels connected by said lid front panel; a lid top panel; and a lid back panel connected to the lid front panel by said lid top panel. Said lid back panel could be connected to said housing back panel by an arcuate fold line.

[0020] According to a third aspect there is provided a method for forming the packaging of the first aspect comprising folding the blank of the second aspect.

[0021] Several specific embodiments of the present invention will now be described with reference to the accompanying drawings (which are not necessarily to scale), in which:

Figure 1 is a perspective view of a first hinged-lid pack;

Figure 2A is a top view of the hinged-lid pack of Figure 1;

Figure 2B is a bottom view of the hinged-lid pack of Figure 1;

Figure 3 is a front view of the hinged-lid pack of Figure 1;

Figure 4A is a left side view of the hinged-lid pack of Figure 1;

Figure 4B is a right side view of the hinged-lid pack of Figure 1;

Figure 5A is a back view of the hinged-lid pack of

Figure 1;

Figure 5B is a close-up on the view of Figure 5A showing detail on arcuate hinge 117;

Figure 6 is a perspective view of the hinged-lid pack of Figure 1 with the lid open;

Figure 7 is a diagram of a blank used to construct the hinged-lid pack of Figure 1 with a blank used as an optional pack collar for the hinged-lid pack of Figure 1;

Figure 8 shows back, perspective (lid closed) and perspective (lid open) views of a second hinged-lid pack;

Figure 9 shows back, perspective (front and right side) and perspective (back and left side) views of a third hinged-lid pack; and

Figure 10 shows back, perspective (front and right side) and perspective (back and left side) views of a fourth hinged-lid pack.

Figure 1 is a perspective view of a first hinged-lid pack 100. All external edges of hinged-lid pack 100 are arcuate. All faces of hinged-lid pack 100 are bowed (i.e. not flat; the faces arching inwardly or outwardly from their edges).

[0022] The pack 100 comprises a main body or housing 101 and a lid 102. The main body 101 comprises a bowed front face 103, arched-edged bevels 106, side faces 107 and a bottom face 108. The lid 102 comprises a front face 105, arched-edged bevels 111, side faces 112 and a top face 104. (Arched-edged bevels as described herein are bevels defined by arcuate edges.)

[0023] An arched-edged bevel 106, defined by arcuate fold line pairs 106a, 107a and 106b, 107b is situated on either side of the bowed front face 103. Arcuate fold lines 106a, 106b of the arched-edged bevels 106 cause the front face 103 of the pack main body 101 to bow inwardly. That is, with the pack stood upright in the orientation shown in Figures 1 and 3 to 6, the front face 103 curves in from both the top and bottom edges towards a horizontal axis in a median portion of the pack. An arched-edged bevel 111, defined by arched fold line pairs 106c, 107c and 106d, 107d is situated on either side of the bowed front face 103. Arched fold lines 106c, 106d of the arched-edged bevels 111 cause the front face 105 of the pack lid 102 to continue the bow of the front face 105 into the bottom portion of the lid 102. Curved front fold 104a and rear fold 104b forming the edges of the top face 104 (as shown in Figure 2A) arch inwardly and upwardly as can be seen from figures 2A and 3.

[0024] Figure 2A is a top view of the hinged-lid pack of Figure 1. As can be seen, the top face 104 is defined by the top edges of the plurality of arched-edged bevels 111 and lid side faces 112, the curved front fold 104a and the curved rear fold 104b.

[0025] Figure 2B is a bottom view of the hinged-lid pack of Figure 1. As can be seen, the bottom face 108 is defined by the bottom edges of the plurality of arched-edged bevels 106 and side faces 107, a curved front fold 118 and a curved rear fold 119. 108a and 108b both arch inwardly and downwardly as can be seen from figures 2B and 3

[0026] Figure 3 is a front view of the hinged-lid pack 100 of Figure 1. Each arched-edged front bevel 106 has a curved fold 106a, 106b. The curved folds 106a and 106b cooperate in order to cause the front face 103 to bow inwardly, as shown in Figure 4.

[0027] Each arched-edged front bevel 111 also has a curved fold 106c, 106d. Curved folds 106c and 106d cooperate such that the bowing of the front face 103 is continued into the bottom portion of the front face 105 of the lid 102.

[0028] The bowed front faces 103 and 105 provide the pack with a shape that is similar to a hip-flask. As a consequence of this shape, the pack is comfortable to carry in a user's garment pocket. Moreover, because the pack comprises an inwardly bowed front face, when the lid is closed, it must be forced over the protrusion created by the bowing of the front face. This protrusion will then bias the lid in the closed position, thereby further reducing the problem of a "smiling" lid.

[0029] Figures 4A and 4B are respectively left and right side views of the pack of Figure 1. The front face 103 of the pack body 101 is inwardly bowed. The front face 105 of the pack lid 102 continues the shape of the front face 103 of the pack body 101. The continuity of the bowed front face 103 of the pack body 101 and the bottom portion of the bowed front face 105 of the pack lid 102 (i.e. proximate the point where the body 101 meets the lid 102) is caused by the continuity between the curved folds 106a and 106c and curved folds 106b and 106d, respectively.

[0030] Figure 5A is a back view of the hinged-lid pack 100 of Figure 1. An arched-edged bevel 106, defined by arched fold line pairs 106e, 107e and 106f, 107f is situated on either side of the bowed back face 114. The curved folds 106e and 106f cooperate in order to cause back face 114 to bow inwardly, as shown in Figure 4.

[0031] An arched-edged bevel 111, defined by arched fold line pairs 106g, 107g and 106h, 107h is situated on either side of the bowed back face 113. Curved folds 106g and 106h cooperate such that the bowing of the back face 114 is continued into the bottom portion of back face 113 of the lid 102.

[0032] The bowed back faces 114 and 113 provide the pack with a shape that is similar to a hip-flask. As a consequence of this shape, the pack is comfortable to carry in a user's garment pocket.

[0033] Figure 5A shows arcuate fold line 117 which is the hinge line for opening and closing the hinged-lid box. The arcuate hinge 117 provides increased resistance to opening and closing of the box, reducing the "smiling" effect.

[0034] Figure 5B is a close-up on hinge 117. Hinge line 117 curves symmetrically upwards from end-points at the joins between 106f with 106h and 106e with 106g. The apex of arc 117 is a perpendicular distance x from its chord. x could advantageously be e.g., from approx-

imately 0.5mm to approximately 2.0mm for a pack of width from approximately 5cm to approximately 6cm.

[0035] Figure 6 is a perspective view of the hinged-lid pack 100 of Figure 1 with the lid open, lid 102 having been swung back with respect to body 101, by pivoting about arcuate fold line 117. Figure 6 shows an optional internal collar formed from the blank 124 of Figure 7 (described below). The collar front face 121, a collar arched-edged front bevel 125 and a collar side face 122 are visible.

[0036] Figure 7 shows a blank 120 for making the pack of Figures 1 to 6. The blank 120 comprises a plurality of panels separated by fold lines (represented by broken lines) and cut lines (represented by solid lines).

[0037] Inner front panel 105' is connected as a transverse flap to front face 105 of the pack lid 102 by fold lines 105a and 105b. The inner ends of fold lines 105a and 105b terminate on arcuate cut lines 105c and 105d. Cut lines 105c and 105d define a slit which can be cut or punched out of the blank material during manufacture. Arched-edged front bevels 111 are connected as longitudinal flaps to front face 105 by arcuate fold lines 106c and 106d. Arched-edged front bevels 111 are in turn connected to side faces 112 on either side of the pack lid 102 by arcuate fold lines 107c and 107d. Front face 105 is connected as a transverse flap to top face 104 by arcuate fold line 104a.

[0038] Top face 104 is connected as a transverse flap to the rear face 113 of the pack lid 102 by arcuate fold line 104b. A bevel 111 is connected to each side of rear face 113 by arcuate fold lines 106g, 106h. A side reinforcement panel 115 is connected as a transverse flap to each bevel 111 by arcuate fold lines 107g, 107h. Top reinforcement panels 116 are connected as longitudinal flaps to side reinforcement panels 115 by arcuate fold lines 116a and 116b.

[0039] Rear face 113 of the pack lid 102 is connected as a longitudinal flap to the rear face 114 of the pack body 101 by arcuate hinge line 117. Side bevels 106 are connected as transverse flaps to each side of rear face 114 by arcuate fold lines 106e and 106f. Side reinforcement panels 110 are connected as transverse flaps to side bevels 106 by arcuate fold lines 107e and 107f. Bottom reinforcements 109 are connected as longitudinal flaps to side reinforcement panels 110 by fold lines 109a and 109b. Bottom face 108 is connected as a longitudinal flap to rear face 114 by arcuate fold line 119. As will be appreciated, the bottom face of a pack in accordance with the present invention can be of any suitable shape, depending on the shape of the pack's sides. For example, the shape of the bottom face could be substantially rectangular.

[0040] The front face 103 is connected as a transverse flap to the bottom face 108 of the pack body 101 by arcuate fold line 118. Arched-edged front bevels 106 are connected as transverse flaps to front face 103 by arcuate fold lines 106a and 106b. Side panels 107 are connected as transverse flaps to arched-edged front bevels 106 by arcuate fold lines 107a and 107b.

[0041] Also shown in Figure 7 is a blank for an optional pack collar 124. Back bevels 123 are connected as transverse flaps to side panels 122 by arcuate fold lines 123a, 123b. Side panels 122 are connected as transverse flaps to side bevels 125 by arcuate fold lines 122a, 122b. Side bevels 125 are in turn connected as transverse flaps to front panel 121 by arcuate fold lines 121 a, 121 b.

[0042] With reference to Figure 7, the method of folding blank 120 will now be described. First, rear face 114 is folded at a right angle with respect to bottom face 108 around fold line 119. Bottom reinforcements 109 are then fixed to the inside of bottom face 108. Throughout this specification, "fixing" can be by any known means including, but not limited to, gluing and bonding.

[0043] Then, the front face 103 is folded at a right angle with respect to bottom face 108 around fold line 118. Side panels 107 are wrapped around corresponding reinforcement side panels 110 and fixed thereto. The front face 103, bottom face 108 and rear face 114 now form the main part of the pack body 101. At this point, the collar portion 124 is folded in on itself. The collar is then inserted into the main part of the pack body such that fold lines 121 a and 121 b are adjacent fold lines 106a and 106b, respectively, and reinforcement side panels 110 overlap side panels 122 of the collar 124. The collar is then fixed to the interior of the pack body such that its upper edge lies at the height of or below hinge line 117. As will be appreciated, whilst the collar 124 contributes to the aesthetics of the pack, it also increases the radial strength of the pack.

[0044] Once the pack body has been created, panel 105' is folded at a 180 degree angle with respect to front face 105, and is fixed to the inner face thereof. Front face 105 is then folded at a right angle with respect to top face 104 along curved fold line 104a. Top face 104 is then folded at a right angle with respect to rear face 113, along curved fold line 104b. Top reinforcements 116 are then fixed to the inside of top face 104. Side panels 112 of the lid 102 are then wrapped around corresponding reinforcement side panels 115 and fixed thereto.

[0045] As will be appreciated, whilst the blank 120 is flat when initially cut from a piece of cardboard, the curved folds will result in all of the faces being bowed when the pack is formed. This provides a pack shape which is both comfortable for a user to carry in a pocket of their clothing and which is resistant to the "smiling" effect that more angularly shaped packs are prone to when carried in confined spaces.

[0046] Figures 8, 9 and 10 illustrate alternative hinged-lid packs, all comprising arcuate hinges 217, 317 and 417 respectively. The pack of Figure 8 is of similar form to the pack of Figure 1, but with a longer lid. In the pack of Figure 8, the lid front face preferably has a length accounting for at least 65% of the total length of the pack 200. In such configuration, the arcuate hinge line 217 further helps in maintaining the lid in the open position. The pack of Figure 9 is similar to that of Figure 1, but

comprises only straight fold lines except for arcuate hinge line 317. The pack of Figure 10 is similar to that of Figure 9, but with curved (rounded) side edges in place of bevels.

[0047] Any of the packs described can be formed of cardboard or other foldable materials. The packs can be used to contain smoking articles such as cigarettes, cigars or cigarillos. Alternatively the packs could be used to contain various other products, for example matches, confectionary or chewing gum.

[0048] The skilled reader will appreciate the features described with reference to the above embodiments can be combined in any number of ways. For example, any suitable combination of bowed and flat faces, arcuate and straight folds could be used. The above description relates to exemplary uses of the invention, but it will be appreciated that other implementations and variations are possible. In addition, the skilled person can modify or alter the particular geometry and arrangement of the particular features of the packaging. Other variations and modifications will also be apparent to the skilled person. Such variations and modifications can involve equivalent and other features which are already known and which can be used instead of, or in addition to, features described herein. Features that are described in the context of separate embodiments can be provided in combination in a single embodiment. Conversely, features which are described in the context of a single embodiment can also be provided separately or in any suitable sub-combination.

Claims

1. Packaging in the form of a hinged-lid box comprising:

a housing comprising two side faces connected by a back face and a bottom face; and
a lid comprising two side faces connected by a back face and a top face; wherein:
at least one of said housing and said lid further comprises a front face; and
the lid is connected to the housing by means of a hinge formed by an arcuate fold line connecting said back faces of the housing and the lid.

2. Packaging according to claim 1, wherein said arcuate fold line curves up towards said top face from lower ends adjoining said side faces of the lid

3. Packaging according to either of claims 1 or 2, wherein the perpendicular distance between the apex of said arcuate fold line and the chord of the arcuate fold line is from approximately 0.5mm to approximately 2.0mm.

4. Packaging according to any of claims 1 to 3, wherein both of the housing and the lid further comprise front faces.

5. Packaging according to any preceding claim, wherein one or more of the faces are bowed.

6. Packaging according to claim 5, wherein all faces of the packaging are bowed.

7. Packaging according to either of claims 5 or 6, wherein all external edges of the packaging are arcuate.

8. Packaging according to any preceding claim, wherein one or more connections between faces are by means of rounded edges.

9. Packaging according to any preceding claim, wherein one or more connections between faces are by means of bevels.

10. Packaging according to claim 9, wherein one or more of said bevels are defined by arcuate edges.

11. Packaging according to claim 10, wherein the housing comprises a front face, further comprising:

a first bevel situated on one side of said housing front face and being attached to the housing front face by a first longitudinal fold line; and
a second bevel situated on the other side of the housing front face and being attached to the housing front face by a second longitudinal fold line; wherein
the first and second fold lines are curved away from the centre of the housing front face such that the housing front face is at least partially concavely bowed in a longitudinal direction.

12. Packaging according to claim 11, wherein the first and second fold lines are curved away from the centre of the housing front face such that the housing front face is concavely bowed in a lateral direction.

13. Packaging according to either of claims 11 or 12, wherein the housing front face is concavely bowed in a longitudinal direction from a location substantially adjacent the top face to an area substantially adjacent the bottom face.

14. A blank for forming the packaging of any preceding claim comprising:

a housing front panel;
two housing side panels connected by said housing front panel;
a housing bottom panel;
a housing back panel connected to the housing front panel by said housing bottom panel;

a lid front panel;
two lid side panels connected by said lid front panel;
a lid top panel; and
a lid back panel connected to the lid front panel by said lid top panel; wherein
said lid back panel is connected to said housing back panel by an arcuate fold line.

15. A method for forming the packaging according to any of claims 1 to 13 comprising folding the blank according to claim 14.

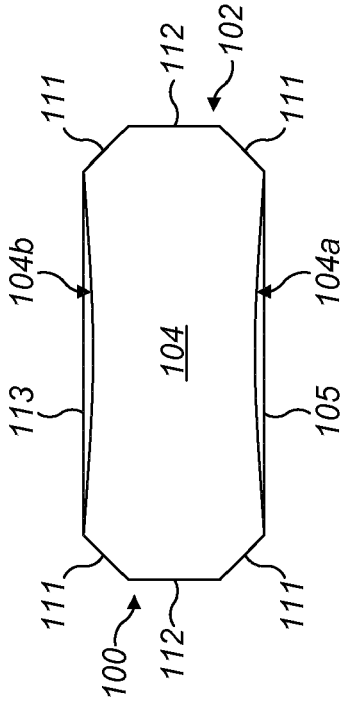


FIG. 2A

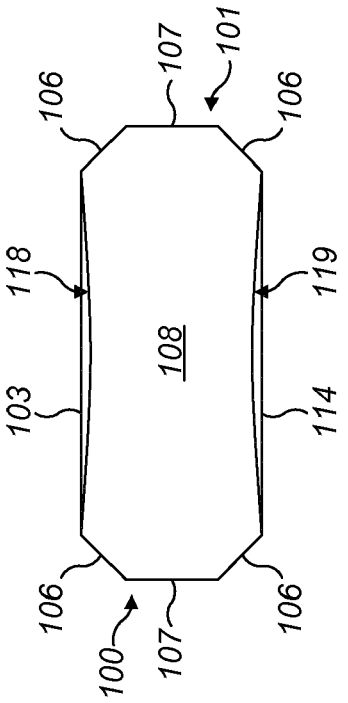


FIG. 2B

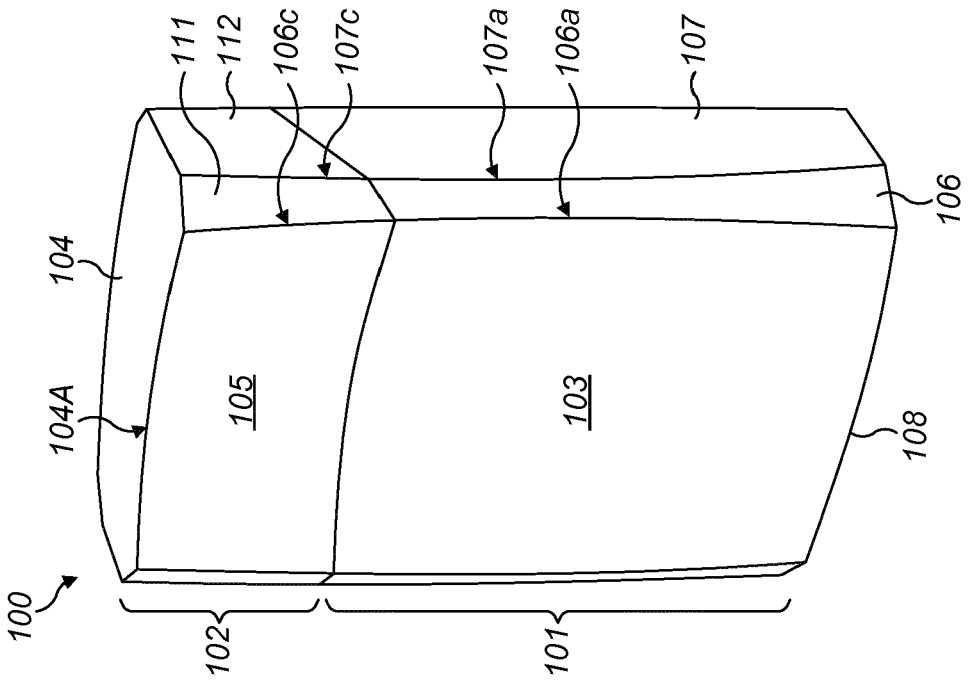


FIG. 1

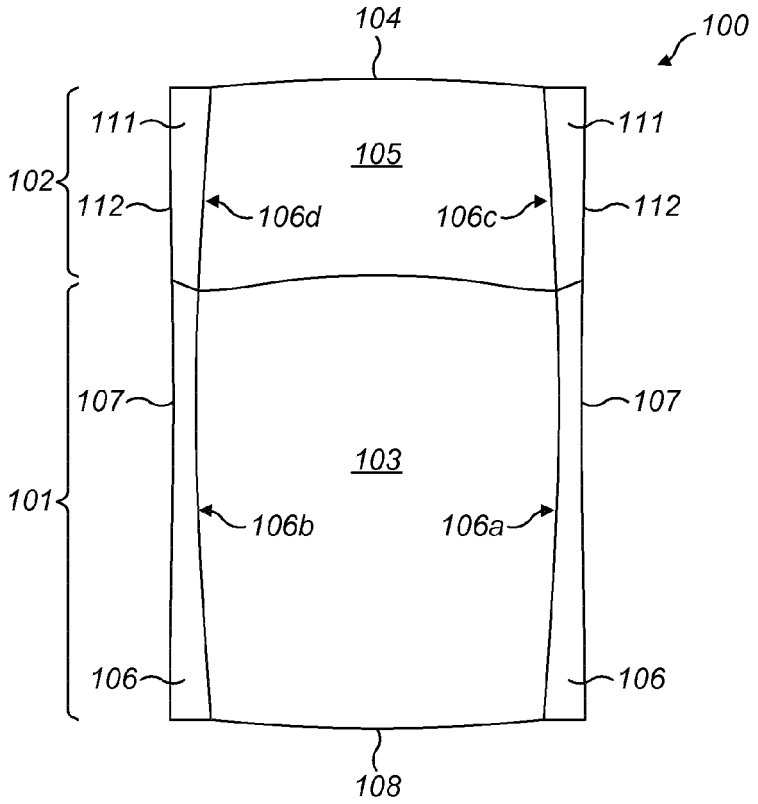


FIG. 3

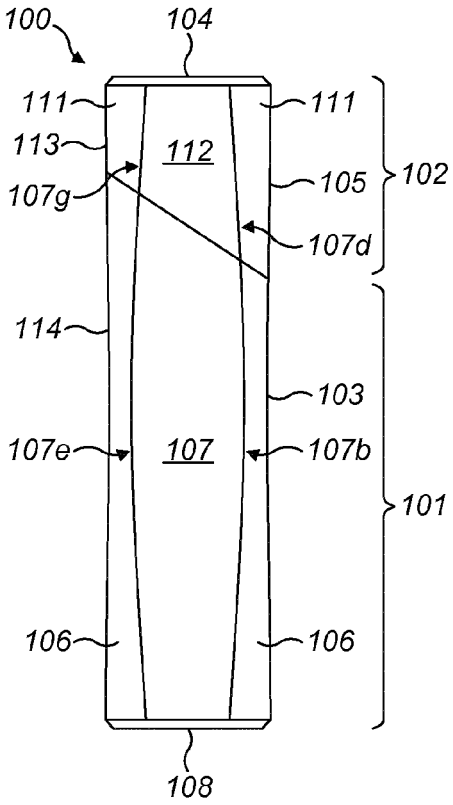


FIG. 4A

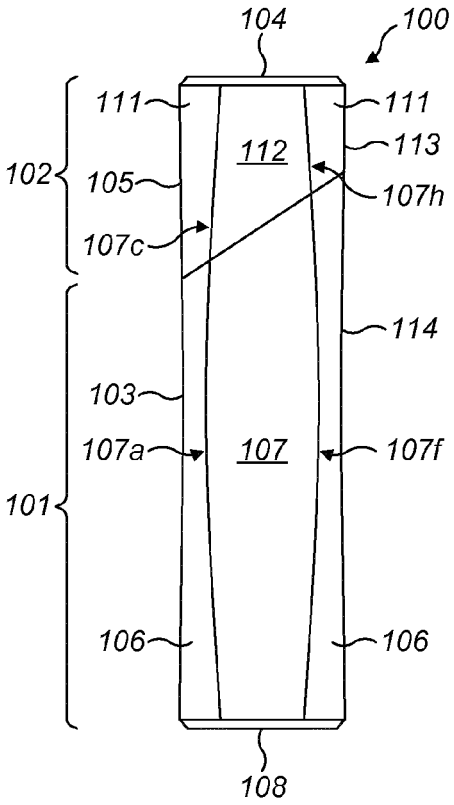


FIG. 4B

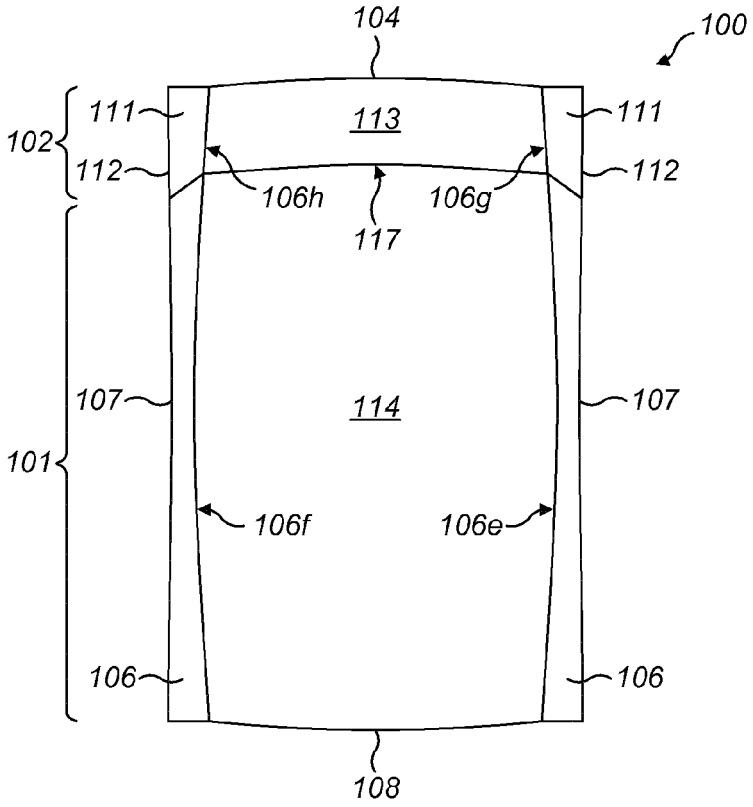
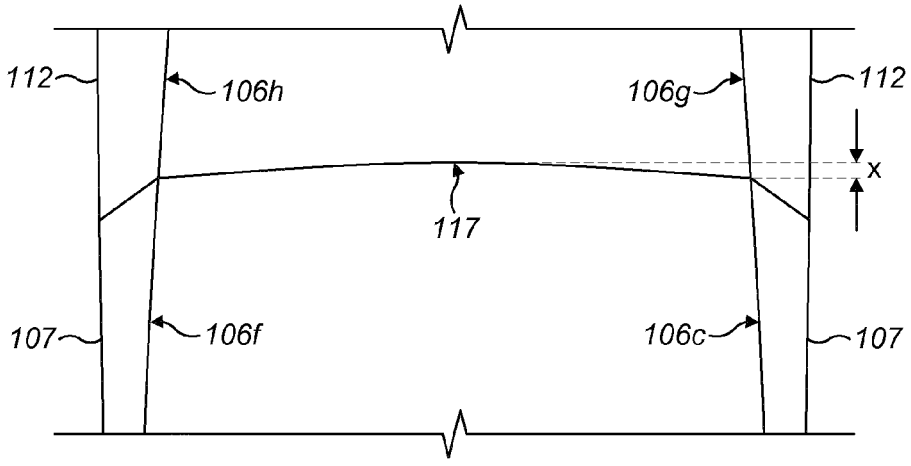

104
100
111
113
111
102
112
112
106h
106g
117
107
114
107
101
106f
106e
106
106
108

FIG. 5A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106g
112
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117
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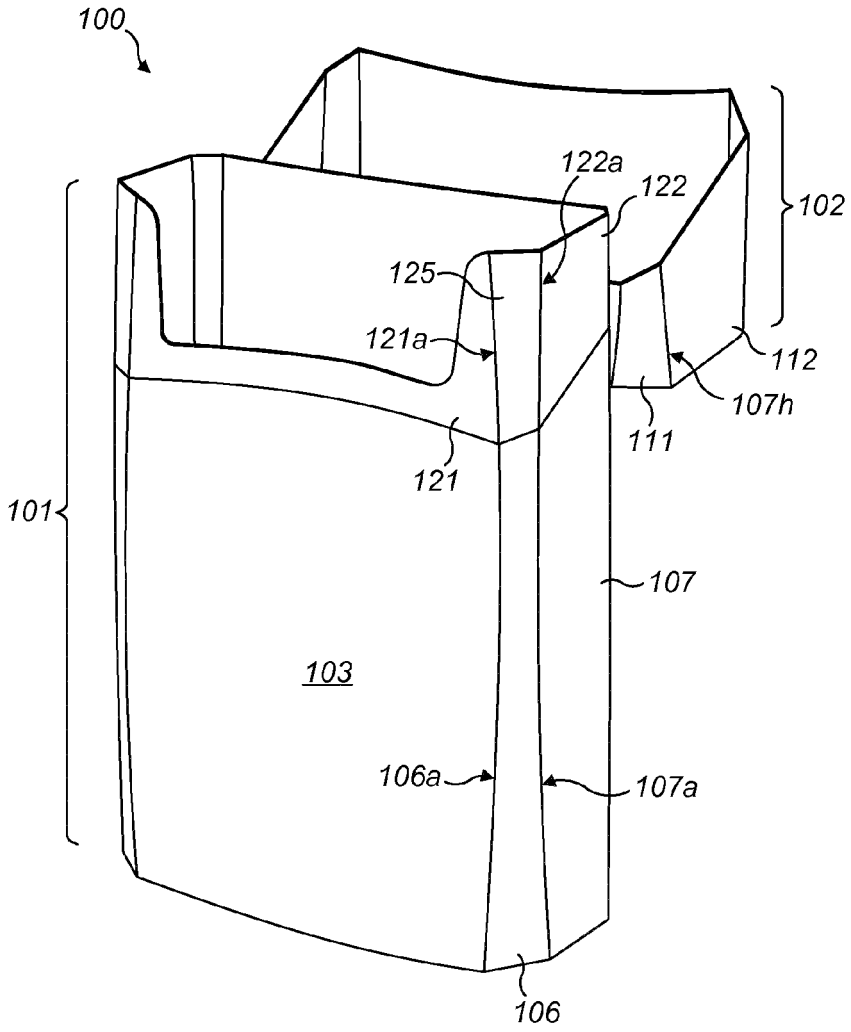
106c
107

FIG. 5B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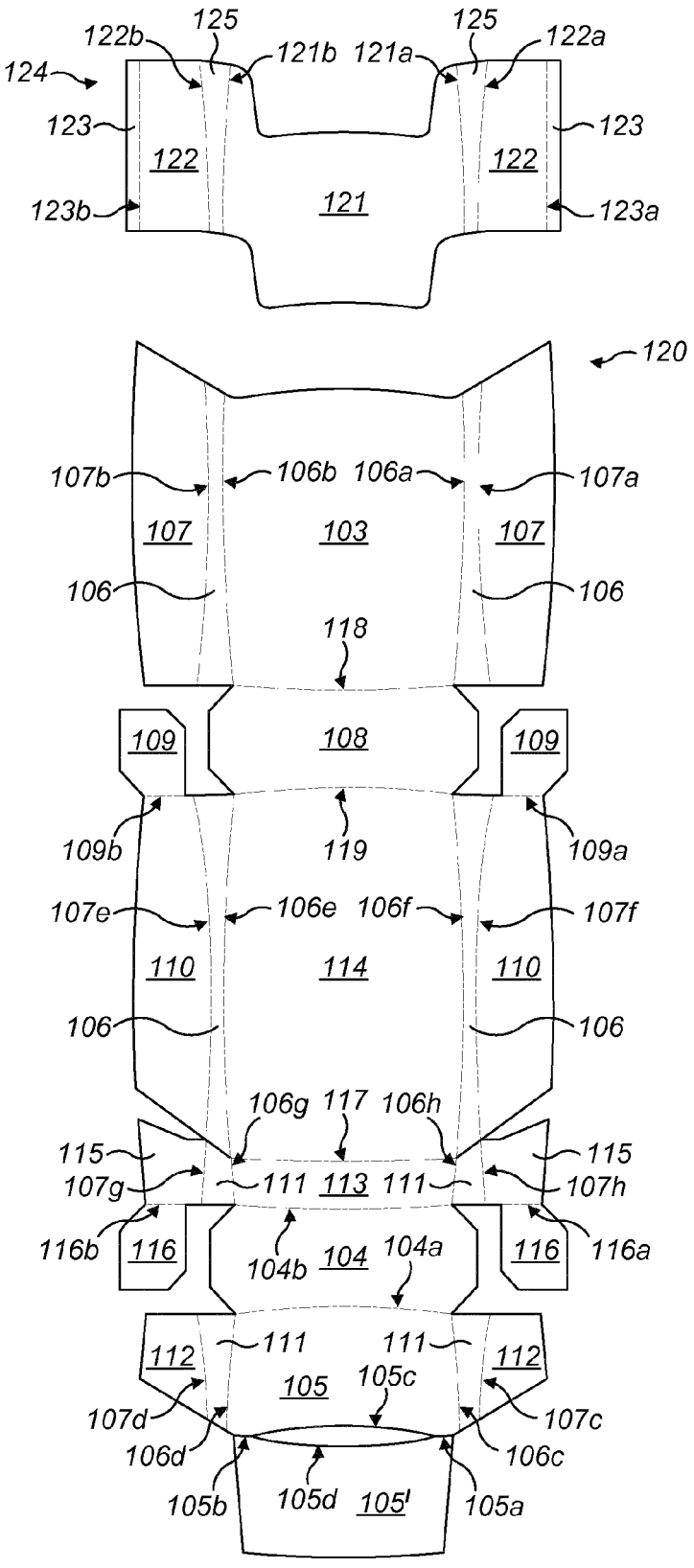
102
125
121a
112
107h
111
121
101
107
103
106a
107a
106

FIG. 6


122b
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121b
121a
125
122a
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123b
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123a
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107a
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103
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118
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109b
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109a
107e
106e
106f
107f
110
114
110
106
106
106g
117
106h
115
115
107g
111
113
111
107h
116b
116
104b
104
104a
116
116a
112
111
111
112
105
105c
107d
107c
106d
106c
105b
105d
105'
105a

FIG. 7

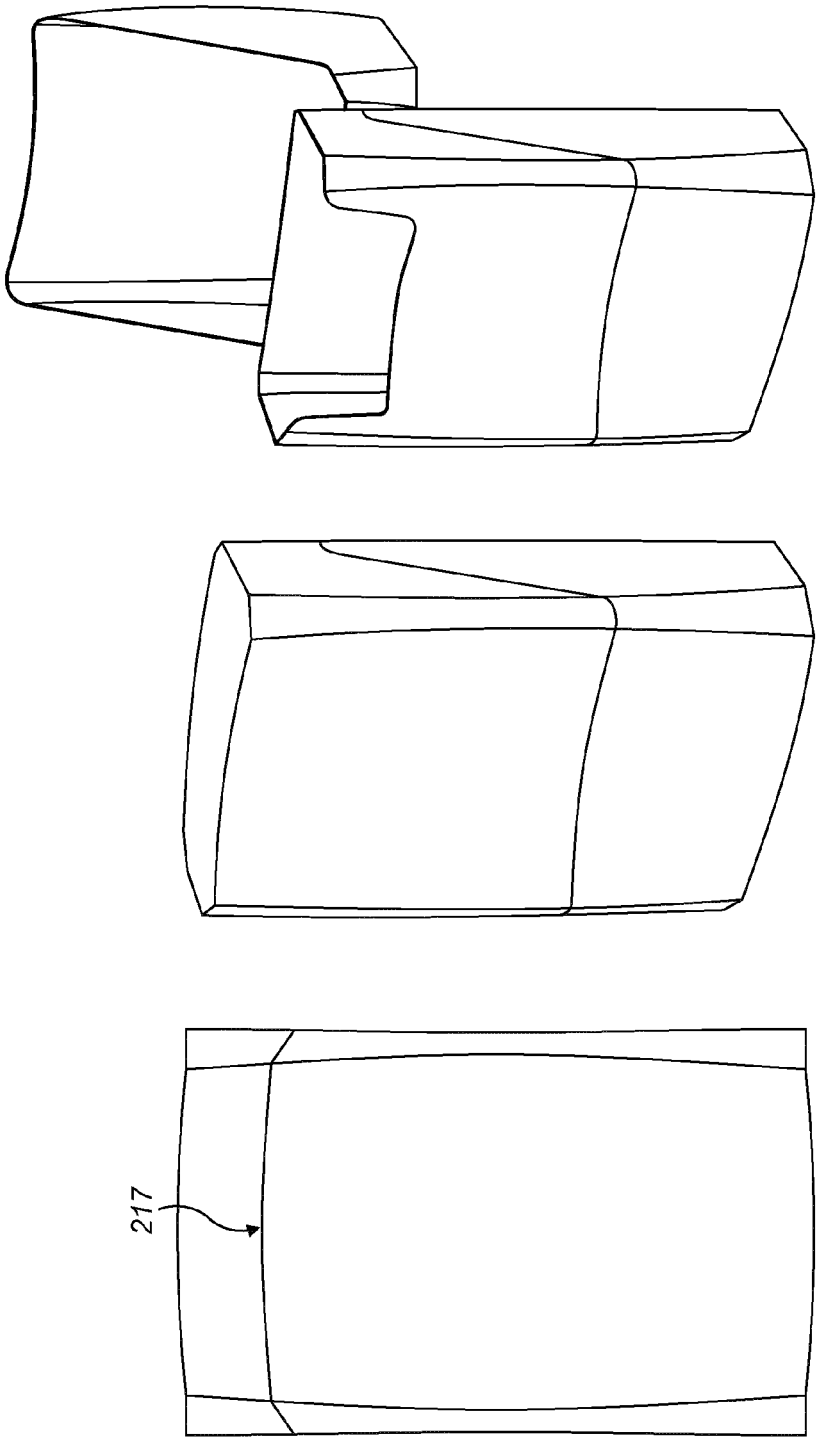

FIG. 8

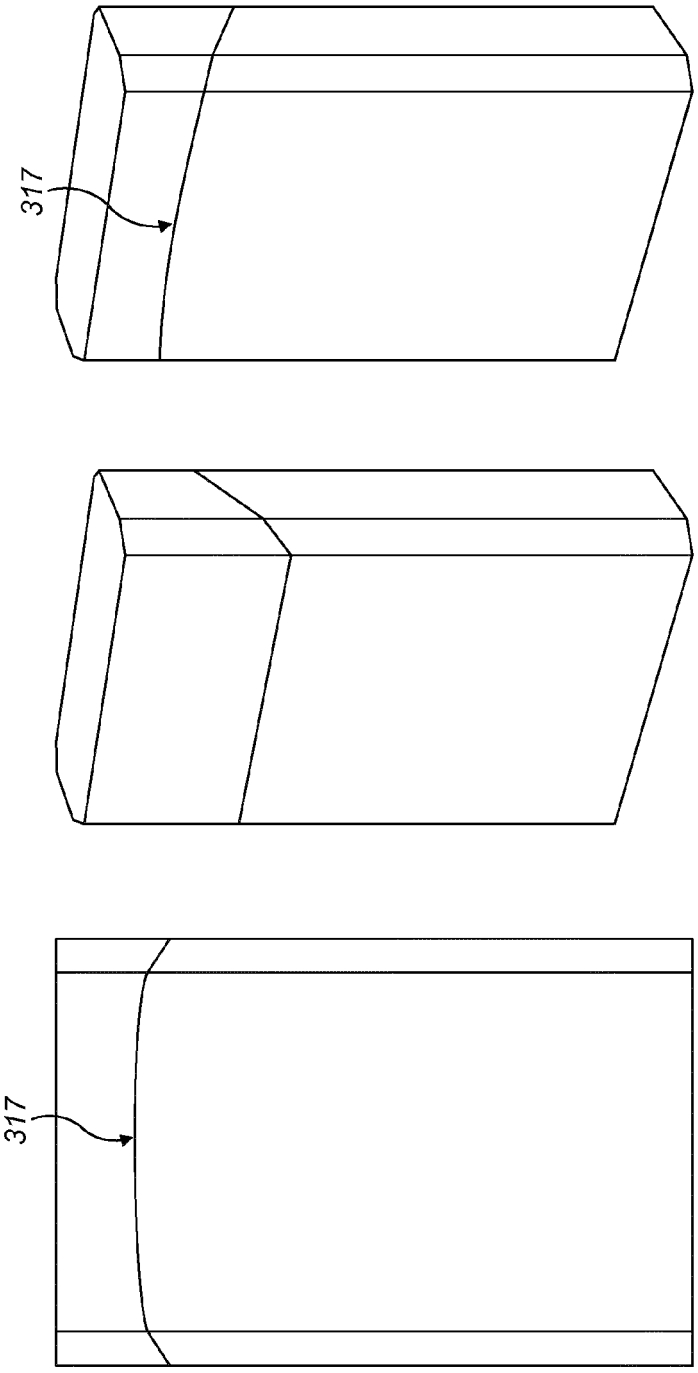

FIG. 9

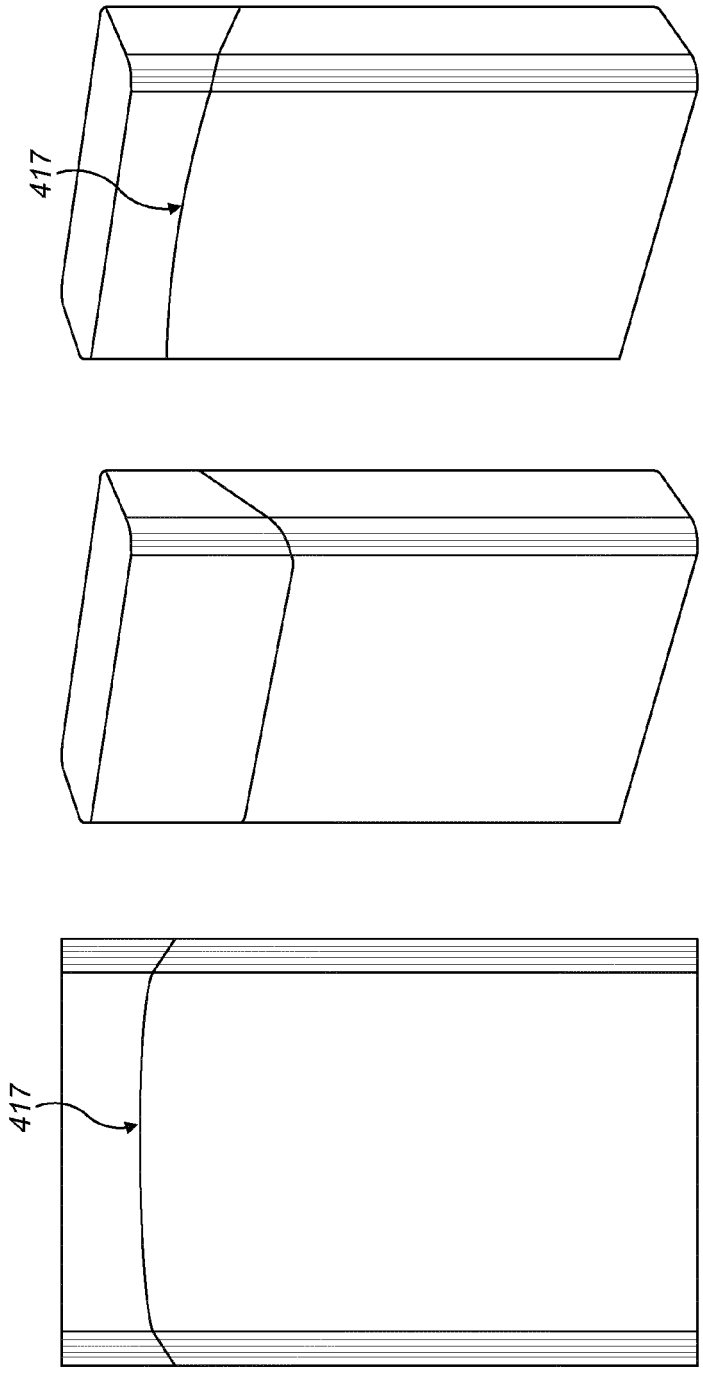

FIG. 10

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European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 14 17 0437

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	DE 699 05 301 T2 (GD SPA [IT]) 16 October 2003 (2003-10-16) * page 4, line 4 - page 7, line 5; figures 3,4 *	1-10,14, 15 11-13	INV. B65D5/02 B65D85/10
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Place of search	Date of completion of the search	Examiner
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