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(54) **Container for consumer goods having opening and closing mechanism**

(57) There is provided a container (10) for consumer goods, the container (10) comprising an outer box portion (12), an inner portion (16) for receiving consumer goods, a lid portion (14) and a lifting mechanism (40) for lifting the inner portion (16) when the lid portion (14) is opened. The lifting mechanism (40) comprises a first panel (42) having a length, A, substantially the same as a height of the outer box portion (12). A first end of the first panel (42) depends from the lid portion (14) along a hinge line (44), which is spaced along the lid portion (14) from the top of an outer box portion back wall (22) by a distance, X. The lifting mechanism (40) further comprises a second panel (46) having a first end depending along a first fold line (48) from a second end of the first panel (42), and a second end depending from an inner portion bottom wall (38) along a hinge line (50). A distance, Y, between the first fold line (48) and a top edge of an inner portion front wall varies when the lid portion (14) is moved between the open and closed positions so that the distance, Y, has a maximum value, $Y(max)$, and a minimum value, $Y(min)$. The dimensions of the container (10) are such that they satisfy the inequality $A - X + Y(min) > L$, wherein L is the length of the container (10).

Figure 2

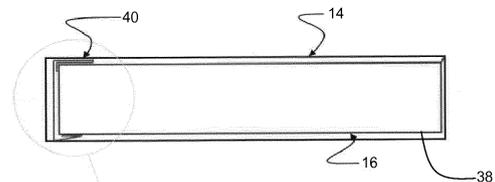
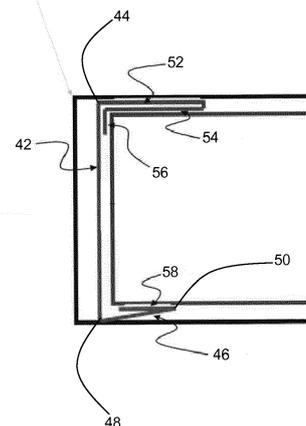


Figure 3



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Description

[0001] The present invention relates to a container for consumer goods having an opening and closing mechanism. The invention finds particular application as a container for elongate consumer goods.

[0002] It is known to package elongate consumer goods, such as smoking articles, in containers formed from folded laminar blanks. Smoking articles, such as cigarettes and cigars, are commonly sold in packs having a box for housing the smoking articles and a lid connected to the box about a hinge line at, or on, the back of the container. For example, in the so-called "shoulder pack" the elongate smoking articles underlie the lid and lay parallel with the bottom wall of the container. In use, the lid is pivoted about the hinge line to open the pack and allow access to the smoking articles held in the box.

[0003] In some cases the box portion of the container may comprise an inner box received within an outer box. For example, in the design of some shoulder packs the lid opens to reveal an inner box lying within an outer box. The inner box may be hinged at one end with respect to the outer box so that the inner box can be pivoted upwards to allow access to the consumer goods within the inner box. However, in some cases it may be difficult for a consumer to pivot the inner box and access the consumer goods. For example, it may be difficult for the consumer to simultaneously hold the outer box, grasp and lift the inner box and remove one or more consumer goods.

[0004] It would be desirable to provide a novel lifting mechanism within a container for consumer goods, the container comprising an inner portion received within an outer box and wherein the lifting mechanism facilitates easy access to consumer goods received on or within the inner portion.

[0005] According to the present invention there is provided a container for consumer goods, the container comprising an outer box portion, an inner portion for receiving consumer goods, a lid portion and a lifting mechanism.

[0006] The outer box portion has a length, L , extending between outer box portion front and back walls. The inner portion is received within the outer box portion, the inner portion comprising an inner portion bottom wall adjacent the outer box portion bottom wall and an inner portion front wall adjacent the outer box portion front wall. The lid portion depends along a first hinge line from the outer box portion back wall, the lid portion moveable about the first hinge line between a closed position and an open position.

[0007] The lifting mechanism is configured to lift the inner portion when the lid portion is moved from the closed position to the open position. The lifting mechanism comprises a first panel having a first end and a second end, wherein a length, A , of the first panel between the first and second ends is substantially the same as a height of the outer box portion back wall. The first

end of the first panel depends from the lid portion along a second hinge line, and the second hinge line is spaced along the lid portion from the first hinge line by a distance, X .

5 **[0008]** The lifting mechanism further comprises a second panel having a first end and a second end, wherein a length, B , of the second panel between the first and second ends is less than the length of the first panel. The first end of the second panel depends along a first fold line from the second end of the first panel, and the second end of the second panel depends from the inner portion bottom wall along a third hinge line. A distance, Y , between the first fold line and a top edge of the inner box portion front wall varies when the lid portion is moved between the open and closed positions so that the distance, Y , has a maximum value, $Y(max)$, and a minimum value, $Y(min)$. The dimensions of the container are such that they satisfy the inequality $A - X + Y(min) > L$.

10 **[0009]** In the following description of the invention the terms "side", "top", "bottom", "front", "back" and other terms used to describe relative positions of the components of containers according to the invention refer to the container in an upright position with the lid portion at the top. When describing containers according to the present invention, these terms are used irrespective of the orientation of the container being described. The lid portion hinge line that allows opening the lid portion of the container by a pivotal movement is located at the "back" of the container. Conversely, the "front" of the container refers to the side of the container opposite the "back" of the container.

15 **[0010]** The term "hinge line" refers to a line about which two elements may be pivoted relative to each other. A hinge line may be, for example, a fold line, a perforation line or a score line in a wall or panel of the container, or between two walls of the container. Where the hinge line is a perforation line, the perforation line may be used to remove parts of the container.

20 **[0011]** The term "panel" is used herein to refer to a portion of the container formed from a single, continuous portion of material. A panel may depend along one or more fold lines from one or more other panels. The term "flap" refers to a panel that depends along only one fold line from only one other panel.

25 **[0012]** The term "wall" refers more generally to a facet of the container, and a wall may be formed from a single panel or flap, or a wall may be formed from two or more abutting or overlapping panels or flaps.

30 **[0013]** The terms "height", "width" and "depth" refer to the external dimensions of the container or a component of the container along three perpendicular axes, when the lid is in the closed position. For example, the "height" of the container refers to the vertical distance between the top and the bottom of the container, the "width" of the container refers to the distance between opposed sides of the container and the "depth" of the container refers to the distance between the front and the back of the container. The terms "internal height", "internal width"

and "internal depth" refer to the corresponding dimensions inside the container or component. The difference between the external dimensions of the container and the internal dimensions of the container is determined by the thickness of the material, the number of layers and additional elements, like for example the thickness of an adhesive. Containers according to the present invention preferably have a height that is shorter than each of the width and the depth of the container.

[0014] Containers according to the present invention include a lifting mechanism to automatically lift the inner portion, as the lid portion is opened, into a position in which consumer goods on or within the inner portion can be accessed. Furthermore, the particular construction of the lifting mechanism, which satisfies the inequality of $A - X + Y(\min) > L$, is such that the lifting mechanism provides a spring effect in both the opening and closing directions. That is, the lifting mechanism provides an unstable transition between the open and closed positions so that the container 'snaps' open as the lid portion is moved from the closed position to the open position, and the container 'snaps' closed as the lid portion is moved from the open position to the closed position. Therefore, containers according to the present invention not only assist the consumer in opening the container, but also assist the consumer in closing the container.

[0015] The 'snap' effect provided by the lifting mechanism of containers according to the present invention during opening of the container in part relies upon the interaction between the outer box portion back wall and the first panel of the lifting mechanism. In particular, as the lid portion is moved from the closed position to the open position, the first panel of the lifting mechanism pivots against a top edge of the outer box portion back wall during at least part of the range of motion of the lid portion. To ensure that this feature of the lifting mechanism functions consistently and reliably during repeated opening and closing of the container, the distance, X , between the second hinge line and the first hinge line is preferably at least about 1.5 millimetres, more preferably at least about 2 millimetres.

[0016] In any of the embodiments described above, the inner portion bottom wall may comprise a first end adjacent the outer box portion back wall. Preferably, the maximum diagonal dimension of the inner portion between a corner of the inner portion bottom wall at the first end of the inner portion bottom wall and the diagonally opposite top corner of the inner portion front wall is at least 0.5 millimetres shorter than the length, L , of the outer box portion. Providing an inner portion having such a relative length, or smaller, provides sufficient space between the first end of the inner portion bottom wall and the outer box portion back wall to allow rotation of the inner portion during opening of the lid portion.

[0017] In any of the embodiments described above, the dimensions of the container preferably satisfy the inequality $B > (A - X) * 0.5$. Providing a lifting mechanism second panel having at least this length ensures that the

first end of the inner portion bottom wall is lifted to at least the height of the top edge of the outer box portion back wall when the lid portion is in the fully open position.

[0018] Additionally, or alternatively, the dimensions of the container preferably satisfy the inequality $B < A - X$, which represents the maximum useful length of the lifting mechanism second panel that can be used to lift the inner portion to the maximum possible height for the particular container dimensions.

[0019] In any of the embodiments described above, the lifting mechanism preferably further comprises: a third panel having first and second ends and first and second surfaces, wherein the first surface of the third panel is secured to the lid portion, and wherein the first end of the third panel depends along the second hinge line from the first end of the first panel; a fourth panel having first and second ends and first and second surfaces, wherein the fourth panel overlies the third panel and wherein the first surface of the fourth panel is secured to the second surface of the third panel; and a fifth panel having first and second ends, wherein the first end of the fifth panel depends along a fourth fold line from the first end of the fourth panel, and wherein the fifth panel overlies the first panel.

[0020] Advantageously, the third panel provides a convenient means for securing the lifting mechanism to the lid portion in those embodiments in which the lid portion and the lifting mechanism are formed separately. The third panel also provides the second hinge line around which the first panel pivots. For example, the first panel may depend along a fold line from the third panel, wherein the fold line forms the second hinge line.

[0021] Furthermore, providing a fifth panel overlying the first panel advantageously assists the closing action of the lifting mechanism when the lid portion is moved from the open position to the closed position. Specifically, as the lid portion is moved from the open position to the closed position, the fifth panel pushes against the first panel and therefore facilitates the 'snap' effect from the open position to the closed position.

[0022] To ensure proper operation of the fifth panel of the lifting mechanism, the fifth panel must pivot around a hinge line adjacent to the second hinge line around which the first panel pivots. Therefore, the fourth panel advantageously connects the fifth panel to the third panel and provides the fourth fold line around which the fifth panel pivots. That is, the fourth fold line functions as a hinge line.

[0023] Preferably, the second end of the fourth panel depends along a fifth fold line from the second end of the third panel. That is, preferably the third and fourth panels are formed integrally from the same material. Most preferably, the first, second, third, fourth and fifth panels of the lifting mechanism are all formed integrally from the same material such that each panel depends along a fold line from each adjacent panel.

[0024] For example, to simplify the assembly of the container, all of the panels of the lifting mechanism may

be integrally formed from a sheet material that is folded during manufacture to form the first, second, third, fourth and fifth panels.

[0025] In some embodiments, the lifting mechanism is formed integrally with the inner portion such that the second end of the second panel depends along the third hinge line directly from a panel forming at least part of the inner portion bottom wall. In such embodiments, the third hinge line is a fold line between the second panel and the inner portion bottom wall.

[0026] In alternative embodiments, the lifting mechanism is formed separately from the inner portion. In such embodiments, the lifting mechanism preferably comprises a sixth panel having first and second ends and first and second surfaces, wherein a first surface of the sixth panel is secured to the inner portion bottom wall and wherein the first end of the sixth panel depends along the third hinge line from the second end of the second panel.

[0027] Advantageously, the sixth panel provides a convenient means for securing the lifting mechanism to the inner portion in those embodiments in which the inner portion and the lifting mechanism are formed separately. The sixth panel also provides the third hinge line around which the second panel pivots. For example, the second panel may depend along a fold line from the sixth panel, wherein the fold line forms the third hinge line.

[0028] In any of the embodiments described above, the inner portion may be an inner box portion. For example, the inner portion may further comprise an inner portion top wall opposite the inner portion bottom wall. An inner portion opening allows removal of consumer goods from the inner portion, wherein at least a portion of the inner portion opening is covered by the outer box portion back wall when the lid portion is in the closed position, and wherein at least part of the inner portion opening is uncovered when the lid portion is moved into the open position and the inner portion is lifted by the lifting mechanism.

[0029] Providing an inner portion opening at an end of the inner portion adjacent the outer box portion back wall provides a limited opening through which consumer goods can be removed from the inner portion when compared with, for example, an inner portion opening that may be provided in the inner box portion top wall, or an inner portion which does not comprise an inner portion top wall. Providing such a limited opening advantageously reduces the risk of consumer goods being accidentally dropped through the inner portion opening and out of the container, particularly since the inner portion opening is covered by the outer box portion back wall until the lid portion has been moved into the open position.

[0030] In any of the embodiments described above, the inner portion may further comprise first and second opposed inner portion side walls, wherein a width of the inner portion between the inner portion side walls is less than a width of the outer box portion between the outer box portion side walls. In such embodiments, the con-

tainer preferably further comprises at least one spacer element positioned between the inner portion and the outer box portion, wherein the combined width of the at least one spacer element and the inner portion is substantially the same as the width of the outer box portion.

[0031] The at least one spacer element is incorporated within the container to occupy a portion of the internal space within the outer box portion which the inner portion does not occupy. In such embodiments, the at least one spacer advantageously guides the inner portion as it moves between the open and closed positions.

[0032] The at least one spacer element can advantageously be incorporated into a wide variety of container designs and sizes, without the need for significant modification to the overall construction of the container. Furthermore, the position, size, shape and number of spacer elements can each readily be adjusted so that the container can be adapted to accommodate different sized inner portions, without changing the overall external dimensions of the container.

[0033] The at least one spacer element may consist of a single spacer element. However, preferably, the at least one spacer element comprises a first spacer element positioned adjacent a first side of the inner portion and a second spacer element positioned adjacent a second side of the inner portion. In a particularly preferred embodiment, the first and second spacer elements have substantially the same width. Using first and second spacer elements having the same width provides a symmetrical container in which the inner portion is positioned centrally within the outer box portion. Providing a symmetrical construction may facilitate construction of the container on high speed construction and packing machinery.

[0034] In any of the embodiments described above, the outer box portion may further comprise an outer box portion bottom wall, first and second opposed outer box portion side walls, and an outer box portion opening opposite the outer box portion bottom wall. In such embodiments, when the lid portion is moved into the open position the lifting mechanism lifts the inner portion at least partially through the outer box portion opening.

[0035] In any of the embodiments described above, the lid portion may comprise a lid portion top wall depending along the first hinge line from the outer box portion back wall. In such embodiments, the first panel depends along the second hinge from the lid portion top panel, and the height of the outer box portion back wall extends between the outer box portion bottom wall and the lid portion top wall.

[0036] Additionally, or alternatively the lid portion may comprise a lid portion front wall overlying the outer box portion front wall when the lid portion is in the closed position. In such embodiments, the container may further comprise a flap defined by a cut and a fold line in one of the lid portion front wall and the outer box portion front wall, and a closure cut-out in the other of the lid portion front wall and the outer box portion front wall. The flap is

arranged to engage the closure cut-out to retain the lid portion in the closed position, which advantageously minimises accidental opening of the lid portion.

[0037] Preferably, the flap is a click flap that generates a click sound when entering the closure cut-out upon fully closing the lid portion. The click sound assures the consumer of the closure of the container.

[0038] In one embodiment, the lid portion front wall has an engagement cut-out so as to provide an engagement portion for opening the container. This feature is particularly suitable for such containers according to the invention where the lid portion front wall at least partly overlies the outer box portion front wall when the lid portion is in the closed position. Advantageously, the outer box portion front wall can be engaged by a consumer through the engagement cut-out in the lid portion front wall. Furthermore, the engagement cut-out enables the consumer to apply pressure to the outer box portion front wall to elastically deform the outer box portion front wall towards the back of the container. This facilitates the separation of the flap from the closure cut-out and therefore advantageously allows easy opening of the container.

[0039] In any of the embodiments described above, the outer box portion and the lid portion may be formed separately from an outer box portion laminar blank and a lid portion laminar blank respectively. However, for ease of construction of the container, the outer box portion and the lid portion are preferably formed from a single outer laminar blank.

[0040] The inner portion may be formed separately from an inner portion laminar blank. Alternatively, the inner portion may be formed integrally with the outer box portion, in which case the inner portion is formed from the outer box portion laminar blank, or the single outer laminar blank in those embodiments in which the lid portion is also formed integrally with the outer box portion.

[0041] The lifting mechanism may be formed separately from a lifting mechanism laminar blank and attached to the lid portion and the inner portion. Alternatively, the lifting mechanism may be formed from one of the lid portion laminar blank, the inner portion laminar blank, or the single outer laminar blank in those embodiments in which at least one of the lid portion and the inner portion is formed integrally with the outer box portion.

[0042] Preferably, the outer box portion and the lid portion are formed from a single outer laminar blank and the inner portion and the lifting mechanism are formed from a single inner laminar blank.

[0043] In those embodiments comprising at least one spacer element, the at least one spacer element may be formed separately from at least one spacer element laminar blank. In those embodiments comprising first and second spacer elements, the spacer elements may be formed from a single spacer element laminar blank, or the first and second spacer elements may be formed separately from first and second spacer element laminar blanks respectively.

[0044] Alternatively, the at least one spacer element

may be formed integrally with either the outer box portion or the inner portion. Therefore, the at least one spacer element can be formed from the outer box portion laminar blank, the inner portion laminar blank, or the single inner laminar blank in those embodiments in which the inner portion and the lifting mechanism are formed from a single laminar blank. Alternatively, in those embodiments in which the lid portion, or the inner portion, or both the lid portion and the inner portion are formed integrally with the outer box portion, the at least one spacer element can be formed from the single outer laminar blank.

[0045] In any of the embodiments above in which the container is formed from one or more folded laminar blanks, the laminar blanks may be formed from any suitable material including, but not limited to, cardboard, paperboard, plastic, metal, or combinations thereof. Where the laminar blanks are formed of cardboard, preferably, the cardboard has a basis weight of between about 100 grams per square metre and about 350 grams per square metre.

[0046] Containers according to the invention may be in the shape of a rectangular parallelepiped, with right-angled longitudinal and right-angled transverse external edges. Alternatively, the container may comprise one or more rounded longitudinal external edges, rounded transverse external edges, bevelled longitudinal external edges or bevelled transverse external edges, or combinations thereof. For example, the container according to the invention may comprise, without limitation:

- One or two longitudinal rounded or bevelled edges on the front wall, and/or one or two longitudinal rounded or bevelled edges on the back wall.
- One or two transverse rounded or bevelled edges on the front wall, and/or one or two transverse rounded or bevelled edges on the back wall.
- One longitudinal rounded edge and one longitudinal bevelled edge on the front wall, and/or one transverse rounded edge and one transverse bevelled edge on the back wall.
- One or two transverse rounded or bevelled edges on the front wall and one or two longitudinal rounded or bevelled edges on the front wall.
- Two longitudinal rounded or bevelled edges on a first side wall or two transverse rounded or bevelled edges on the second side wall.

[0047] Where the container comprises one or more rounded edges and is made from one or more laminar blanks, preferably the blanks comprise three, four, five, six or seven scoring lines or creasing lines to form each rounded edge in the assembled container. The scoring lines or creasing lines may be either on the inside of the container or on the outside of the container. Preferably, the scoring lines or creasing lines are spaced from each other by between about 0.3 millimetres and about 4 millimetres.

[0048] Preferably, the spacing of the creasing lines or

scoring lines is a function of the thickness of the laminar blanks. Preferably, the spacing between the creasing lines or scoring lines is between about 0.5 and about 4 times larger than the thickness of the laminar blanks.

[0049] Where the container comprises one or more bevelled edge, preferably the bevelled edge has a width of between about 1 millimetre and about 10 millimetres, preferably between about 2 and about 6 millimetres. Alternatively, the container may comprise a double bevel formed by three parallel creasing or scoring lines that are spaced such that two distinct bevels are formed on the edge of the container.

[0050] Where the container comprises a bevelled edge and is made from one or more laminar blanks, the bevel may be formed by two parallel creasing lines or scoring lines in the laminar blank. The creasing lines or scoring lines may be arranged symmetrically to the edge between a first wall and a second wall. Alternatively, the creasing lines or scoring lines may be arranged asymmetrically to the edge between the first wall and the second wall, such that the bevel reaches further into the first wall of the container than into the second wall of the container.

[0051] Alternatively, the container may have a non-rectangular transversal cross section, for example polygonal such as triangular or hexagonal, semi-oval or semi-circular.

[0052] In any of the embodiments described above, the container may comprise a plurality of elongate consumer goods received within the container, wherein the longest dimension of each of the consumer goods is substantially parallel to the lid portion top wall and the outer box portion bottom wall when the lid portion is in the closed position. In a preferred embodiment, the plurality of elongate consumer goods comprises a plurality of smoking articles, such as, for example, cigarettes, cigars or cigarillos. Preferably, the plurality of smoking articles is a bundle of smoking articles wrapped in an inner liner, which must be at least partially removed before the smoking articles can be accessed.

[0053] It will be appreciated that through appropriate choices of the dimensions of the container the inner box portion may be designed for different numbers of conventional size, king size, super-king size, slim or super-slim cigarettes.

[0054] Through an appropriate choice of the dimensions of the container the inner portion may be designed to hold different total numbers of smoking articles, or different arrangements of smoking articles. For example, through an appropriate choice of the dimensions containers according to the invention may be designed to hold a total of between ten and thirty smoking articles.

[0055] The smoking articles may be arranged in different collations, depending on the total number of smoking articles. For example, the smoking articles may be arranged in a single row of six, seven, eight, nine or ten. Alternatively, the smoking articles may be arranged in two or more rows. The two or more rows may contain the

same number of smoking articles. For example, the smoking articles may be arranged in: two rows of five, six, seven, eight, nine or ten; three rows of five or seven; or four rows of four, five or six. Alternatively, the two or more rows may include at least two rows containing different number of smoking articles to each other. For example, the smoking articles may be arranged in: a row of five and a row of six (5-6); a row of six and a row of seven (6-7); a row of seven and a row of eight (7-8); a middle row of five and two outer rows of six (6-5-6); a middle row of five and two outer rows of seven (7-5-7); a middle row of six and two outer rows of five (5-6-5); a middle row of six and two outer rows of seven (7-6-7); a middle row of seven and two outer rows of six (6-7-6); a middle row of nine and two outer rows of eight (8-9-8); or a middle row of six with one outer row of five and one outer row of seven (5-6-7).

[0056] Containers according to the present invention may hold smoking articles of the same type or brand, or of different types or brands. In addition, both filterless smoking articles and smoking articles with various filter tips may be contained, as well as smoking articles of differing length (for example, between about 40 millimetres and about 180 millimetres), diameter (for example, between about 4 millimetres and about 9 millimetres). In addition, the smoking articles may differ in strength of taste, resistance to draw and total particulate matter delivery.

[0057] Preferably, containers according to the invention have a height of between about 5 millimetres and about 150 millimetres, more preferably a height of between about 10 millimetres and about 20 millimetres, wherein the height is measured from the top wall to the bottom wall of the container.

[0058] Preferably, containers according to the invention have a width of between about 12 millimetres and about 180 millimetres, more preferably a width of between about 70 millimetres and about 125 millimetres, wherein the width is measured from a first side wall to a second side wall of the container.

[0059] Preferably, containers according to the invention have a depth of between about 6 millimetres and about 180 millimetres, more preferably a depth of between about 80 millimetres and about 100 millimetres wherein the depth is measured from the front wall to the back wall of the container.

[0060] The interior surfaces or exterior surfaces of containers or both interior and exterior surfaces of containers according to the invention may be printed, embossed, debossed or otherwise embellished with manufacturer or brand logos, trademarks, slogans and other consumer information and indicia.

[0061] The consumer goods within the containers according to the invention may be individually wrapped, or wrapped altogether in a single wrapper or may be wrapped in multiple groups of consumer goods, for example, two, three or four groups of consumer goods, wrapped in respective wrappers. Typically, the wrapper

is removed before the consumer goods can be accessed.

[0062] Once filled, containers according to the invention may be shrink wrapped or otherwise over wrapped with a transparent polymeric film of, for example, high or low density polyethylene, polypropylene, oriented polypropylene, polyvinylidene chloride, cellulose film, or combinations thereof in a conventional manner. Where containers according to the invention are over wrapped, the over wrapper may include one or more tear tapes. In addition, the over wrapper may be printed with images, consumer information or other data.

[0063] Where the container comprises smoking articles, the container may further comprise waste-compartments (for example for ash or butts) or other consumer goods, for example matches, lighters, extinguishing means, breath-fresheners or electronics. The other consumer goods may be attached to the outside of the container, contained within the container along with the smoking articles, in a separate compartment of the container, or combinations thereof.

[0064] The invention will be further described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a perspective view of a container in accordance with an embodiment of the present invention;

Figure 2 shows a longitudinal cross-sectional view of the container of Figure 1 with the lid portion in the closed position;

Figure 3 shows an enlarged cross-sectional view of the lifting mechanism of the container of Figure 1 with the lid portion in the closed position;

Figures 4 and 5 show longitudinal cross-sectional views of the container of Figure 1 with the lifting mechanism at different stages during the opening process;

Figure 6 shows a longitudinal cross-sectional view of the container of Figure 1 with the lid portion in the open position;

Figure 7 shows a longitudinal cross-sectional view of the container of Figure 1 and in particular shows some of the relative dimensions of the lifting mechanism and the outer box portion; and

Figure 8 shows a laminar blank for forming the lifting mechanism integrally with the inner portion.

[0065] Figure 1 shows a container 10 according to an embodiment of the present invention. The container 10 comprises an outer box portion 12, a lid portion 14 and an inner portion 16. A lifting mechanism for lifting the inner portion 16 when the lid portion 14 is opened is omitted from Figure 1 for clarity, but is shown in and described with reference to Figure 2.

[0066] The outer box portion 12 comprises a bottom wall, a first side wall 18, a second side wall opposite the first side wall, a front wall 20 and a back wall 22. The outer box portion first side wall 18, second side wall, front

wall 20 and back wall 22 depend along fold lines from the outer box portion bottom wall 16. An outer box portion opening is opposite the outer box portion bottom wall and extends generally between the top edges of the outer box portion first side wall 18, second side wall, front wall 20 and back wall 22.

[0067] The lid portion 14 comprises a top wall 24, a front wall 26 depending along a fold line from the top wall 24, and first and second side walls 28 and 30 depending along fold lines from the top wall 24. The lid portion top wall 24 depends along a fold line from the outer box portion back wall 22, so that the fold line forms a first hinge line 32 between the lid portion 14 and the outer box portion 12. The lid portion 14 is shown in a partially open configuration in Figure 1. In the closed position, the lid portion top wall 24 overlies the outer box portion opening, and in the open position the lid portion 14 may be rotated about the first hinge line 32 from the closed position through an angle of approximately 180 degrees.

[0068] The outer box portion 12 and the lid portion 14 are formed from a single laminar blank.

[0069] The inner portion 16 is received within the outer box portion 12 and comprises a front wall, a first side wall 34, a second side wall opposite the first sidewall, a top wall 36 and a bottom wall 38 (shown in Figure 2) opposite the top wall 36. The inner portion 16 also comprises an inner portion opening opposite the inner portion front wall and adjacent the outer box portion back wall 22. The inner portion opening allows access to consumer goods received within the inner portion 16.

[0070] The inner portion 16 is connected at its front end to the outer box portion 12 by a hinge so that the back end of the inner portion 16 can be pivoted upward into an open position to reveal the inner portion opening when the lid portion 14 is in the open position. The inner portion 16 is shown in a partially open configuration in Figure 1.

[0071] For ease of construction, the inner portion 16 is not formed from the same laminar blank as the outer box portion 12 and the lid portion 14, but is instead formed from a separate laminar blank.

[0072] As shown in Figure 2, the container 10 comprises a lifting mechanism 40 extending between the lid portion 14 and the inner portion 16 so that the inner portion 16 is automatically pivoted between the open and closed positions when the lid portion 14 is moved between the open and closed positions.

[0073] As shown more clearly in Figure 3, the lifting mechanism 40 comprises a first panel 42 depending at its first end from the lid portion top wall 24 along a second hinge line 44. The second hinge line 44 is spaced from the first hinge line 32 along the lid portion top wall 24. The lifting mechanism 40 further comprises a second panel 46 depending at its first end from the second end of the first panel 42 along a fold line 48, and depending at its second end from the inner portion bottom wall 38 along a third hinge line 50.

[0074] The second hinge line 44 is formed by a fold

line between the first end of the first panel 42 and a first end of a third panel 52, wherein the third panel 52 is adhered to the lid portion top wall 24. The lifting mechanism 40 further comprises a fourth panel 54 depending along a fold line from a second end of the third panel 52, wherein the fourth panel 54 is folded back over and adhered to the third panel 52. A fifth panel 56 depends along a fold line from the opposite end of the fourth panel 54 and overlies the first panel 42.

[0075] The third hinge line 50 is formed by a fold line between a second end of the second panel 46 and a sixth panel 58, wherein the sixth panel 58 is adhered to the inner portion bottom wall 58.

[0076] Figures 4 and 5 illustrate the operation of the lifting mechanism 40 during opening of the container 10. As the lid portion 14 is rotated into the open position around the first hinge line 32, the first panel 42 of the lifting mechanism initially rotates about a pivot point 60 formed by the top edge of the outer box portion back wall 22. The initial rotation of the first panel 42 against the top edge of the outer box portion back wall 22 results from the displacement of the second hinge line 44 away from the first hinge line 32 along the lid portion top wall 24.

[0077] During the initial opening of the lid portion 14 the second end of the first panel 42 follows a first rotational arc 62 centred around the pivot point 60 until it reaches a first position marked as 64 in Figure 4. As the second end of the first panel 42 reaches the first position 64 the connection of the first panel 42 to the inner portion bottom wall 38 by the second panel 46 creates a second rotational arc 66 for the second end of the first panel 42, the second rotational arc 66 centred around the hinge line 68 between the inner portion front wall and the outer box portion front wall 20.

[0078] The conflict between the first and second rotational arcs 62, 66 creates an unstable configuration as the second end of the first panel 42 reaches the first position 64, since the second end of the first panel 42 cannot follow both rotational arcs 62, 66 simultaneously. Therefore, further rotation of the lid portion 14 towards the open position creates a 'snap' effect as the second end of the first panel 42 jumps from the first position 64 to a second position 70 (shown in Figure 5), which is a second point at which the first and second rotational arcs 62, 66 coincide. The 'snap' effect results in a sudden movement of the inner portion 16 into the open position with minimal movement of the lid portion 14.

[0079] Once the second end of the first panel 42 has snapped into the second position 70, the pivot point 60 and the hinge line 68 no longer affect the rotation of the first panel 42 such that further rotation of the lid portion 14 towards the open position rotates the first panel 42 around the second hinge line 44, which raises the inner portion 16 further out from the outer box portion 12. As the first panel 42 rotates around the second hinge line 44, the second end of the first panel 42 follows a third rotational arc 72, which is centred on the second hinge line 44.

[0080] During closing of the lid portion 14, the same events with respect to the lifting mechanism 40 occur in reverse order to provide the same 'snap' effect in reverse, which snaps the inner portion 16 into the closed position.

5 To assist the second end of the first panel 42 in snapping from the second position 70 back into the first position 64, the fifth panel 56 pushes against the first panel 42 as the lid portion 14 is moved from the open position towards the closed position, as shown in Figure 6.

10 **[0081]** To provide the 'snap' effect during the opening and closing of the container 10, the dimensions of the container satisfy the inequality $A - X + Y(\min) > L$, where A is the length of the first panel 42, X is the distance between the first and second hinge lines 32, 44, $Y(\min)$ is the minimum distance between the second end of the first panel 42 and the hinge line 68 between the inner portion front wall and the outer box portion front wall 20, and L is the length of the outer box portion. The relevant dimensions are shown in Figure 7.

20 **[0082]** In the embodiment described with reference to Figures 1 to 7, the lifting mechanism 40 is formed separately from the inner portion 16 and therefore requires a sixth panel 58 for adhering the lifting mechanism 40 to the inner portion bottom wall 38. Figure 8 shows a laminar blank 100 for forming a lifting mechanism 140 integrally with an inner portion 116. The blank 100 comprises first, second, third, fourth and fifth panels 42, 46, 52, 54 and 56 of the lifting mechanism 40 in the same manner as described above with reference to Figures 1 to 7, except that the second panel 46 depends along a fold line 102 directly from the inner portion bottom wall 138. The remaining construction of the inner portion 116 is the same as the inner portion 16 described with reference to Figures 1 to 7.

Claims

1. A container for consumer goods, the container comprising:

an outer box portion having a length, L , extending between outer box portion front and back walls;

an inner portion for receiving consumer goods and received within the outer box portion, the inner portion comprising an inner portion bottom wall adjacent the outer box portion bottom wall and an inner portion front wall adjacent the outer box portion front wall;

a lid portion depending along a first hinge line from the outer box portion back wall, the lid portion moveable about the first hinge line between a closed position and an open position; and

a lifting mechanism configured to lift the inner portion when the lid portion is moved from the closed position to the open position, the lifting mechanism comprising:

- a first panel having a first end and a second end, wherein a length, A , of the first panel between the first and second ends is substantially the same as a height of the outer box portion back wall, wherein the first end of the first panel depends from the lid portion along a second hinge line, and wherein the second hinge line is spaced along the lid portion from the first hinge line by a distance, X ; and
- a second panel having a first end and a second end, wherein a length, B , of the second panel between the first and second ends is less than the length of the first panel, wherein the first end of the second panel depends along a first fold line from the second end of the first panel, and wherein the second end of the second panel depends from the inner portion bottom wall along a third hinge line;
- wherein a distance, Y , between the first fold line and a top edge of the inner portion front wall varies when the lid portion is moved between the open and closed positions so that the distance, Y , has a maximum value, $Y(max)$, and a minimum value, $Y(min)$; and wherein the dimensions of the container satisfy the inequality $A - X + Y(min) > L$.
2. A container according to claim 1, wherein the distance, X , between the second hinge line and the first hinge line is at least 1.5 millimetres.
 3. A container according to claim 1 or 2, wherein the inner portion bottom wall comprises a first end adjacent the outer box portion back wall, and wherein the maximum diagonal dimension of the inner portion between a corner of the inner portion bottom wall at the first end of the inner portion bottom wall and the diagonally opposite top corner of the inner box portion front wall is at least 0.5 millimetres shorter than the length, L , of the outer box portion.
 4. A container according to claim 1, 2 or 3, wherein the dimensions of the container satisfy the inequality $B > (A - X) * 0.5$.
 5. A container according to any preceding claim, wherein the dimensions of the container satisfy the inequality $B < A - X$.
 6. A container according to any preceding claim, wherein the lifting mechanism further comprises:
 - a third panel having first and second ends and first and second surfaces, wherein the first surface of the third panel is secured to the lid portion, and wherein the first end of the third panel depends along the second hinge line from the first end of the first panel;
 - a fourth panel having first and second ends and first and second surfaces, wherein the fourth panel overlies the third panel and wherein the first surface of the fourth panel is secured to the second surface of the third panel; and
 - a fifth panel having first and second ends, wherein the first end of the fifth panel depends along a fourth fold line from the first end of the fourth panel, and wherein the fifth panel overlies the first panel.
 7. A container according to claim 6, wherein the second end of the fourth panel depends along a fifth fold line from the second end of the third panel.
 8. A container according to any preceding claim, wherein the inner portion further comprises:
 - an inner portion top wall opposite the inner portion bottom wall; and
 - an inner portion opening to allow removal of consumer goods from the inner portion, wherein at least a portion of the inner portion opening is covered by the outer box portion back wall when the lid portion is in the closed position, and wherein at least part of the inner portion opening is uncovered when the lid portion is moved into the open position and the inner portion is lifted by the lifting mechanism.
 9. A container according to any preceding claim, wherein the inner portion further comprises first and second opposed inner portion side walls, wherein a width of the inner portion between the inner portion side walls is less than a width of the outer box portion between outer box portion side walls, the container further comprising at least one spacer element positioned between the inner portion and the outer box portion, wherein the combined width of the at least one spacer element and the inner portion is substantially the same as the width of the outer box portion.
 10. A container according to any preceding claim, wherein the inner portion and the lifting mechanism are formed from a single folded laminar blank.
 11. A container according to any preceding claim, further comprising a plurality of elongate consumer goods received on or within the inner portion, wherein the longest dimension of each of the consumer goods is substantially parallel with the lid portion and the outer box portion bottom wall when the lid portion is in the closed position.
 12. A container according to claim 11, wherein the plurality of elongate consumer goods comprises a plu-

rality of smoking articles.

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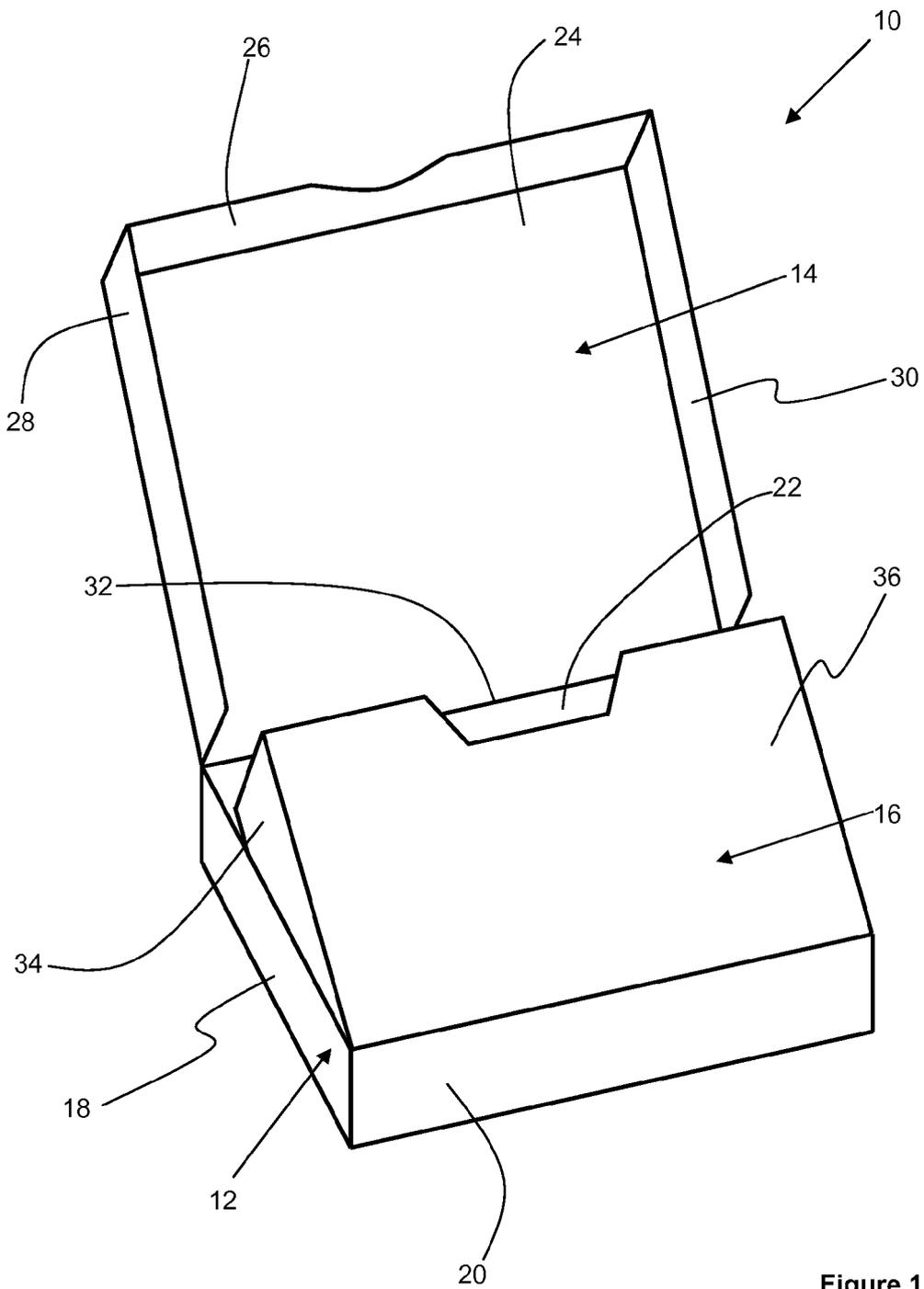


Figure 1

Figure 2

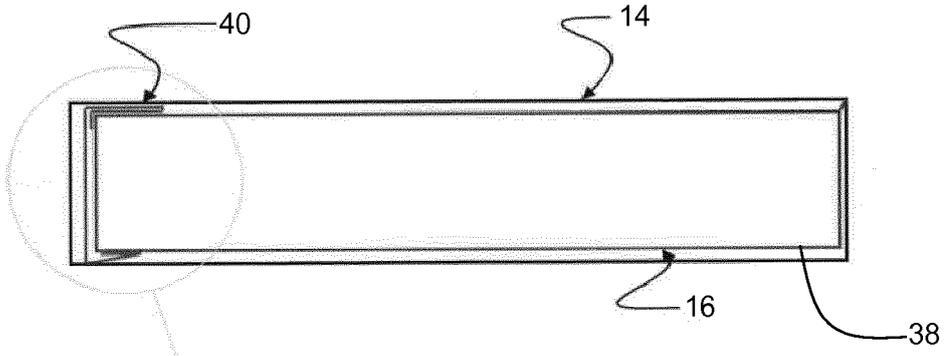
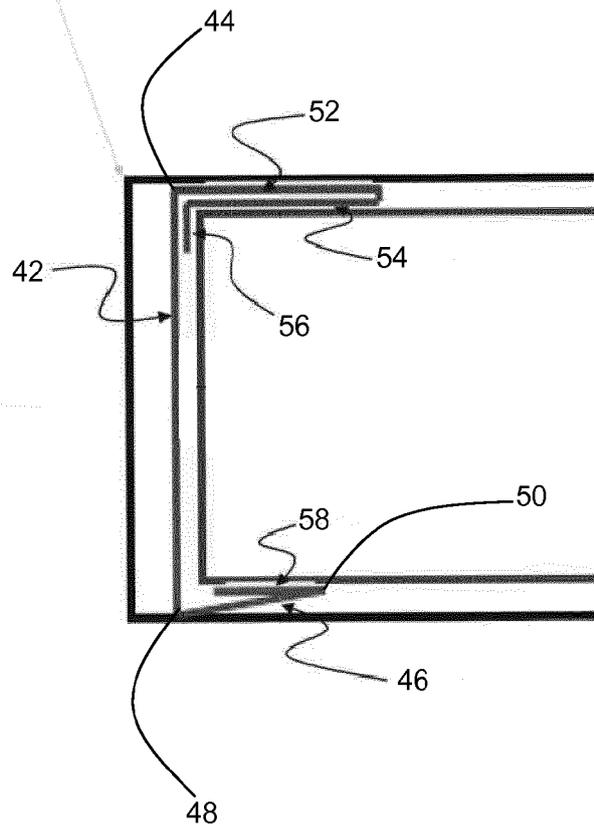


Figure 3



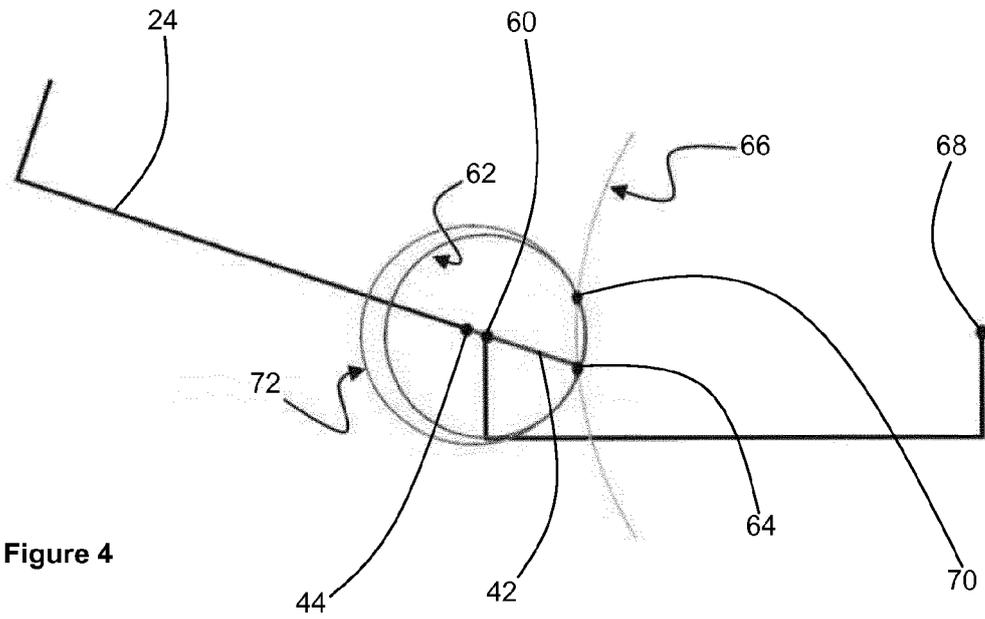


Figure 4

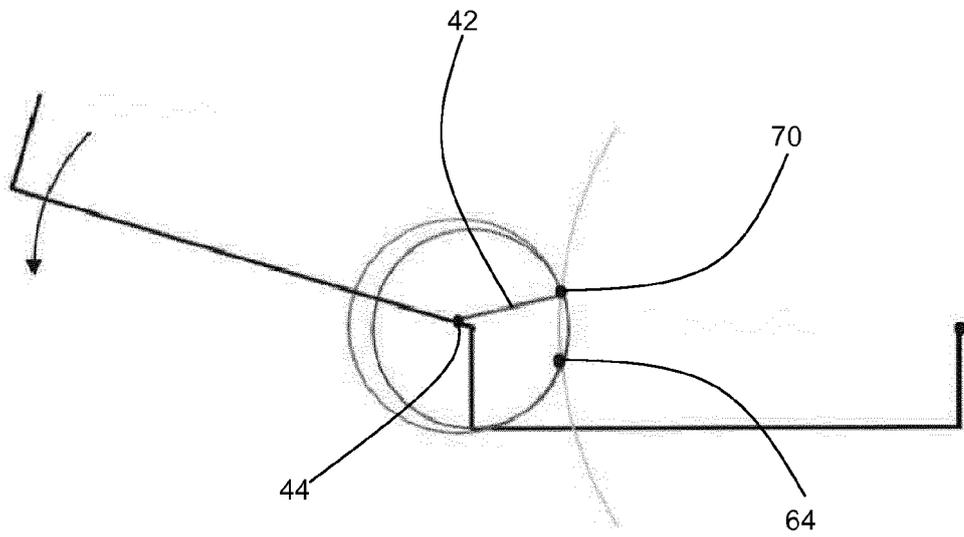


Figure 5

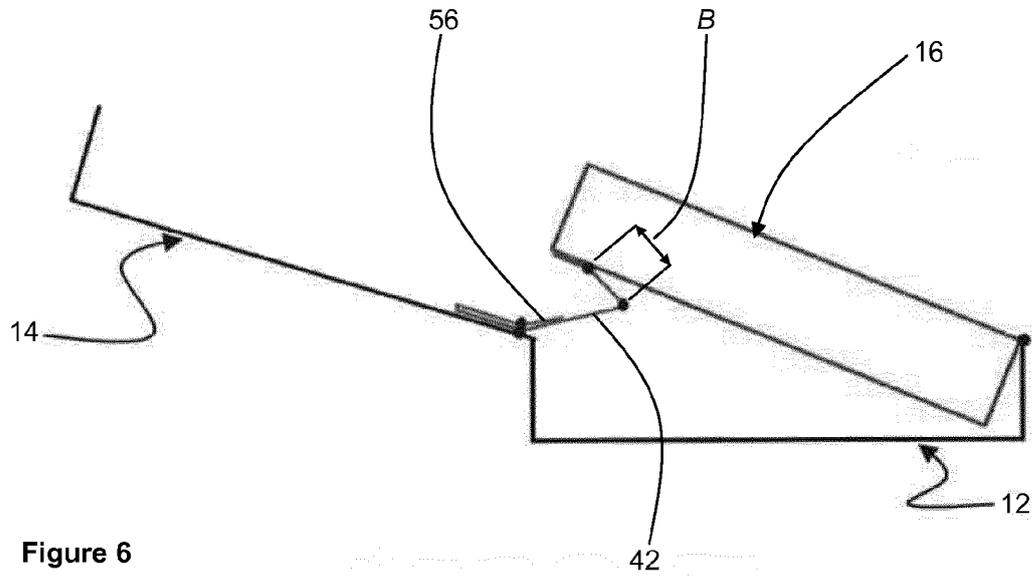


Figure 6

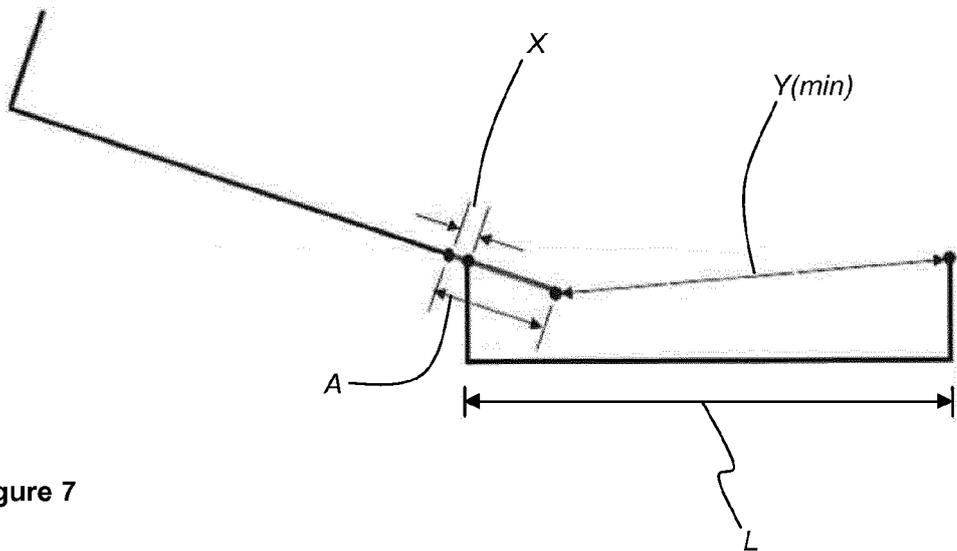


Figure 7

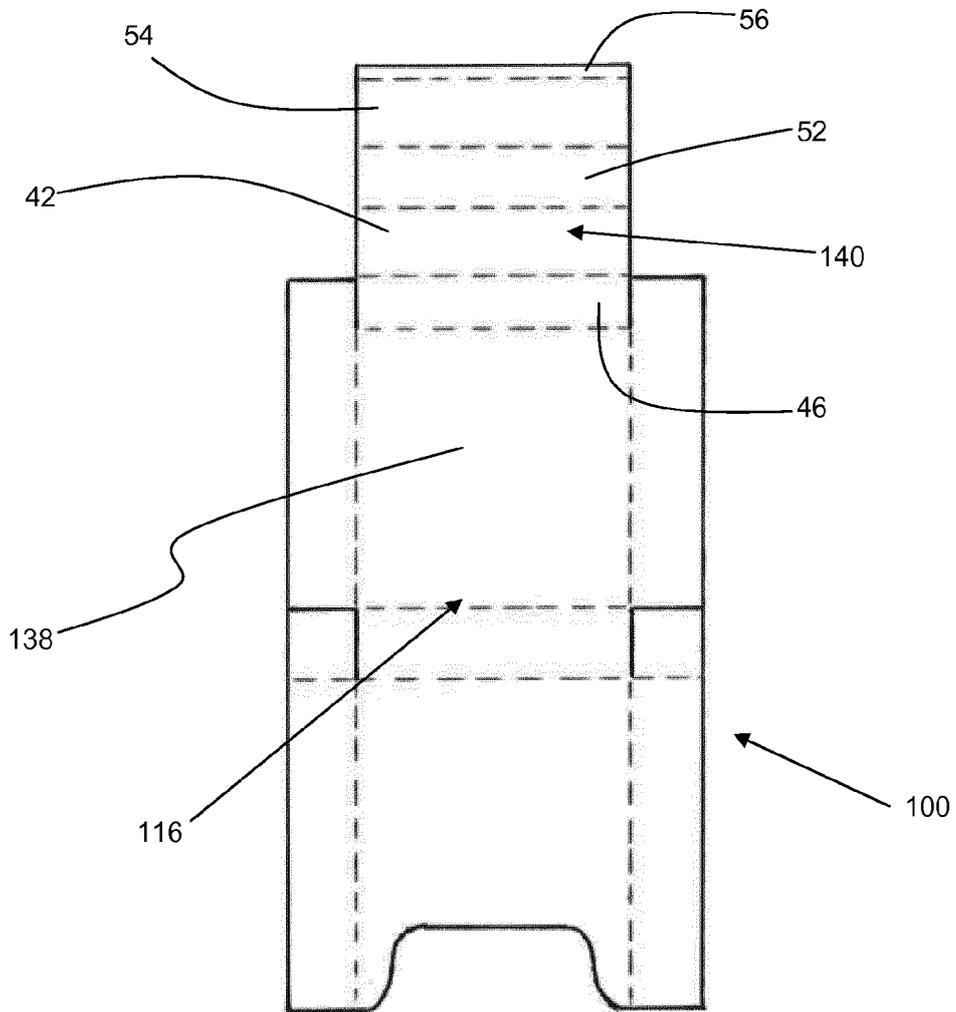


Figure 8



EUROPEAN SEARCH REPORT

Application Number
EP 14 20 0572

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A	WO 2011/072806 A1 (PHILIP MORRIS PROD [CH]; SAINT-GIRONS SANDRINE [CH]) 23 June 2011 (2011-06-23) * the whole document * -----	1-12	
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			B65D
Place of search		Date of completion of the search	Examiner
Munich		23 June 2015	Ngo Si Xuyen, G
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	

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

EP 14 20 0572

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
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23-06-2015

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