(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 August 2016 (25.08.2016)

WIPO | PCT

(10) International Publication Number
WO 2016/131978 A1

(51) International Patent Classification:
B65D 5/66 (2006.01) *B65D 85/10* (2006.01)
B65D 5/42 (2006.01)

(21) International Application Number:
PCT/EP2016/053600

(22) International Filing Date:
19 February 2016 (19.02.2016)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
15155803.8 19 February 2015 (19.02.2015) EP

(71) Applicant: **PHILIP MORRIS PRODUCTS S.A.** [CH/CH]; Quai Jeanrenaud 3, CH-2000 Neuchâtel (CH).

(72) Inventor: **RUDOLF, David**; Žižkov 1010, 28401 Kutná Hora (CZ).

(74) Agent: **NEVETT, Duncan**; Reddie & Grose LLP, 16 Theobalds Road, London, Greater London WC1X 8PL (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

(54) **Title**: CONTAINER WITH AUDIBLE INDICATION OF CLOSING AND/OR OPENING

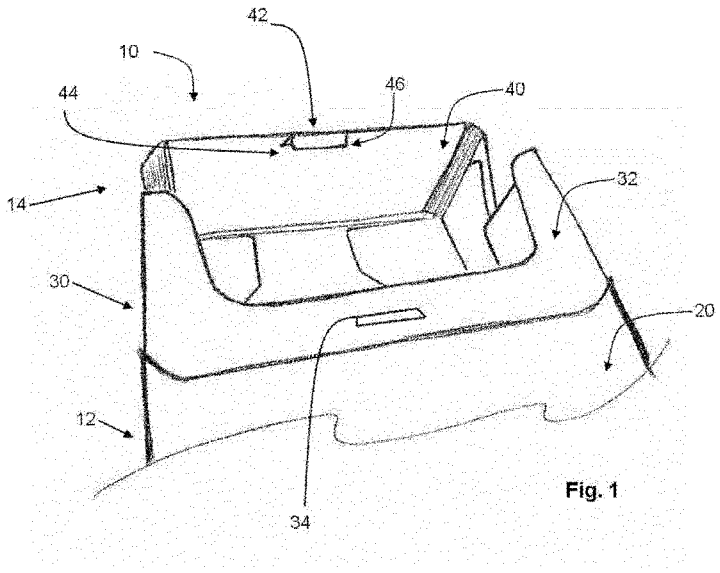

Fig. 1

(57) **Abstract**: A hinge lid container (10) for consumer articles comprises a front wall with a cut out portion (34). When the lid (14) is in the closed position, a front wall thereof overlies the front wall cut out portion (34). The lid (14) comprises a lid flap (40) depending from the lid front wall along an edge fold line (42) and folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap (40). The lid flap (40) comprises a cut line (44) forming an adhesive-free retention tab depending from the lid front wall along the edge fold line (42). During pivotal movement of the hinge lid (14) from the open position to the closed position, the retention tab slides along the container front wall and into the cut out portion (34) in the container front wall.

WO 2016/131978 A1

CONTAINER WITH AUDIBLE INDICATION OF CLOSING AND/OR OPENING

The present invention relates to a container for consumer goods and to a blank for forming such container, which find particular application for holding consumer goods, such as smoking articles.

Smoking articles such as cigarettes and cigars are typically packaged in rigid hinge-lid containers. These typically have a box part having a box front wall, a box rear wall, box side walls and a box base. They also usually have a lid part with a lid front wall, a lid rear wall, lid side walls and a lid top side. The lid part is typically hinged to the box part along a hinge line extending across a back wall of the container. A bundle of smoking articles housed in the box part is commonly wrapped in an inner liner of metallised paper, such as aluminium foil, or other flexible sheet material. To access the bundle of smoking articles within the inner liner, a consumer should remove an upper portion of the inner liner upon first opening of the hinge-lid container.

In hinge-lid containers, the lid often further comprises a lid front flap extending from the lower edge of the lid front wall along a fold line. When the container is assembled from the blank, the lid front flap is folded inwards and typically secured to the inner surface of the lid front wall. This advantageously increases the stiffness of the lid.

It is known to provide one such container with an arrangement for allowing the consumer to confirm that the container is fully closed so that the consumer goods within the container will remain inside the container. This has been achieved by providing a cut out portion in the front wall of the container and a flap depending from the lid front wall and folded inwardly towards the inner surface of the lid front wall. In more detail, this has been achieving by providing that, when the hinge lid is in the closed position, the lid front wall overlies the cut out portion in the box front wall, and that, during pivotal movement of the hinge lid from the open position to the closed position, at least a part of the lid flap slides along the box front wall and into the cut out portion in the box front wall, thereby generating a sound.

However, it may at times become difficult for the user to hear the sound generated by the flap sliding into the cut out portion. By way of example, after repeated opening and closing of the container, cooperation between the flap and the edge or edges of the cut out portion in the front wall of the container may become hindered, and thus less easy to detect for the consumer, due to bending or wear of the laminar blank material forming the flap. This incorrect interaction of the flap with the cut out portion may also be associated with a non full closure of the container. Thus, it becomes impossible for the consumer to get confirmation that consumer goods within the container will remain inside the container, for example during transportation of the container.

It would therefore be desirable to provide a container for consumer articles and a blank for the manufacture of one such container with a novel and improved arrangement such as to ensure that the hinge lid remains in the closed position between uses and that accidental opening of the hinge lid is avoided. Further, it would be desirable to provide an improved container and blank that presents the consumer with an enhanced acoustic experience. In particular, it would be desirable to provide a container that provides the consumer with a louder or more distinct audible sound upon closing. At the same time, it would be desirable to provide one such container that is easy to manufacture, in particular one that is easy to assemble from its blank, without requiring any major modification of the existing apparatus.

According to an aspect of the present invention, there is provided a container for consumer articles comprising a box portion and a hinge lid connected to the box portion along a hinge line and pivotable about the hinge line between a closed position and an open position. A front wall of the container comprises at least one cut out portion, such that, when the hinge lid is in the closed position, a front wall of the lid overlies the cut out portion in the container front wall. The hinge lid comprises a lid flap depending from the lid front wall along an edge fold line, the lid flap being folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap. The lid flap comprises at least a cut line forming an adhesive-free retention tab depending from the lid front wall along the edge fold line and at least partly raised above the plane of the remainder of the lid flap. During pivotal movement of the hinge lid from the open position to the closed position, the retention tab slides along the container front wall and into the cut out portion in the container front wall.

According to another aspect of the present invention, there is provided a blank for forming a container for consumer articles. The blank comprises a box-defining blank portion for forming a box portion of the container and a lid-defining blank portion for forming a lid of the container. The box-defining portion comprises a box front panel for forming at least part of a front wall of the container. The box front panel comprises at least one cut portion formed therein. The lid-defining blank portion comprises a lid front panel for forming a lid front wall and at least one lid flap depending from the lid front panel along an edge fold line. In the assembled container, when the hinge lid is in the closed position, the lid front wall overlies the at least one cut portion. The lid flap comprises a cut line forming a tab depending from the lid front panel along the edge fold line, such that when, during assembly of the container, the lid flap is folded towards and attached to the inner surface of the lid front wall and the tab is at least partly raised above the plane of the remainder of the lid flap.

It shall be appreciated that any features described with reference to one aspect of the present invention are equally applicable to any other aspect of the invention.

In accordance with the present invention, hinge lid containers for consumer goods are provided, wherein a front wall of the container comprises at least one cut out portion, such that, when the hinge lid is in the closed position, a front wall of the lid overlies the cut out portion. The hinge lid comprises a lid flap depending from the lid front wall along an edge fold line. The lid flap is folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap. In contrast with known hinge lid containers, in containers according to the present invention the hinge lid comprises at least a cut line forming an adhesive-free retention tab depending from the lid front wall along the edge fold line and at least partly raised above the plane of the remainder of the lid flap. During pivotal movement of the hinge lid from the open position to the closed position, the raised portion of the retention tab slides along the container front wall and into the cut out portion in the container front wall.

Thus, the cooperation between the retention tab and the cut out portion generates an audible sound. In addition, because the retention tab cooperates with the cut out portion in the front wall of the container, the lid may be held securely in the closed position.

The production of a sound during movement of the hinge lid of containers according to invention from the open position to the closed position advantageously provides the consumer with an audible indication of closure of the container. This may advantageously be employed, for example, to ensure that the container has been fully closed, thereby ensuring that all parts of the consumer goods are retained within the container.

Further, during assembly of a container according to the invention from a blank, when the lid flap is folded along the edge fold line to be attached to the lid front wall, the retention tab is also folded along the same edge fold line. However, because the portion of inner surface of the lid flap forming the retention tab is free from adhesive, the inherent spring-back force of the blank is enough for at least a portion of the retention tab to naturally project away from the remainder of the lid flap and thus be raised above the plane of the remainder of the lid flap. As shall be explained in more detail below, in some embodiments the retention tab is separated from the remainder of the lid flap prior to the first opening of the container and thus projects away from the remainder of the lid flap substantially in its entirety. In other embodiments, the retention tab is connected to the remainder of the lid flap by one or more ties and becomes separated from the remainder of the lid flap when the hinge lid is brought from the closed position to the open position for the first time. Thus, it is possible to form a container according to the present invention without the need to modify significantly the existing equipment, because it is ensured that the retention tab will not interfere with moving parts of the packing apparatus or with other elements of the container being assembled. This is because the overall shape of the lid flap is substantially unchanged with respect to existing containers, but even more so because it is not necessary to provide the packing apparatus

with means for raising the retention tab from the plane of the remainder of the lid flap during assembly of the container. Thus, the overall manufacturing process is also simplified.

As used herein, the terms “front”, “back”, “upper”, “lower”, “top”, “bottom” and “side”, refer to the relative positions of portions of containers according to the invention and components thereof when the container is in an upright position with the lid of the outer housing in the closed position and the hinge line at the back of the container. When describing containers according to the present invention, these terms are used irrespective of the orientation of the container being described. The back wall of the container is the wall comprising the hinge line.

The term “inner surface” is used throughout the specification to refer to the surface of a component of the assembled container that is facing towards the interior of the container, for example towards the consumer goods, when the container is in the closed position. The term “outer surface” is used throughout the specification to refer to the surface of a component of the container that is facing towards the exterior of the container. It should be noted that referring to a surface as the inner surface or the outer surface is not necessarily equivalent to referring to a certain side of a blank used in assembly of the container. Depending on how the blank is folded around the consumer goods, areas that are on the same side of the container can either face towards the inside or the towards the outside of the container.

The term “hinge line” refers in particular to a line about which the lid may be pivoted in order to open the container. A hinge line may be, for example, a pre-folded fold line or a score line in the panel forming the back wall of the container.

The term “height” refers to the maximum distance between the upper edge and the lower edge of a cut out portion as measured with respect to a vertical axis of the front wall of the container. The term “width” refers to the maximum distance between the left edge and the right edge of a cut out portion as measured with respect to a horizontal axis of the front wall of the container. Where the cut out portion does not have a polygonal shape, the term “height” shall be construed as referring to the distance between the uppermost point and the lowermost point of the perimeter of the cut out portion. In addition, the term “width” shall be construed as referring to the distance between the points of the perimeter of the cut out portion farthest from each other with reference to a horizontal axis of the front wall of the container.

The term “spring-back force” is a known term of art for referring to an inherent property of a laminar blank. It is sometimes also referred to as ‘the crease recovery’ and relates to the residual stresses that, after a bending operation, cause a sheet to spring back slightly. For instance, in the context of the present invention, when the lid flap is bent about the edge fold line and brought to lie against the inner surface of the lid front wall, the “spring-back force” is what causes the tendency of the lid flap to move back, to an extent, towards the unbent position.

In hinge lid containers according to the invention, the hinge lid comprises a lid flap depending from the lid front wall along an edge fold line. The lid flap is folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap.

Further, the lid flap comprises at least a cut line forming an adhesive-free retention tab depending from the lid front wall along the edge fold line and at least partly raised above the plane of the lid flap. The retention tab is configured to cooperate with a cut out portion provided in a front wall of the container, such that, during pivotal movement of the hinge lid from the open position to the closed position, the retention tab slides along the container front wall and into the cut out portion in the container front wall.

In particular, the cut line is typically U-shaped. The term U-shaped is used to mean that the cut line typically comprises a segment extending substantially parallel to the edge fold line and two legs extending from the end of said segment to the edge fold line. In practice, the ends of the U-shaped cut line are connected by the edge fold line. However, other shapes of the cut line may be possible, provided that the cut line and the fold line together define the perimeter of the retention tab.

In general, the cut line is provided at a location in the lid flap such that, when the container is closed, the retention tab is in alignment with the cut out portion in the front wall of the container. Preferably, the cut line is provided at a central location in the lid flap with respect to a transverse axis of the lid flap. Similarly, the cut out portion is preferably provided in a central location in the front wall of the container with respect to a transverse axis thereof.

In some embodiments, the cut line is a continuous cut line. Accordingly, the retention tab is separated from the remainder of the lid flap along the whole of the cut line and, due to the spring-back properties of the blank, naturally projects away from the remainder of the lid flap.

In other embodiments, the cut line is provided as a line having slits or cuts arranged at predetermined intervals and separated by one or more ties, such that for separating the retention tab from the remainder of the flap a finite, relatively small number (1-10) of ties needs to be broken. For example, the cut line may be provided as two L-shaped slits or cuts separated by a single tie. As an alternative, the cut line may, for example, be provided as three cuts or slits that together define three sides of the perimeter of the retention tab, where consecutive cuts or slits are separated by ties. Thus, two ties need to be broken to separate the lid flap from the remainder of the lid flap.

In these embodiments, due to the spring-back properties of the blank, the retention tab tends to move back in the unbent position, but is held by the ties in a configuration where it is partially raised above the plane defined by the remainder of the lid flap. For example, a portion of the retention tab is raised by about 1-2 mm above the plane of the remainder of the lid flap.

Thus, the retention tab is separable from the remainder of the lid flap upon first opening the container. In practice, when the container is opened for the first time, interaction of the partially raised retention tab with the cut out portion in the front wall of the container causes the rupture of the ties connecting the retention tab with the remainder of the tab, and the retention tab becomes free to project away from the lid flap due to the spring-back force. This is advantageous because the retention tab is held very close to the plane of the remainder of the lid flap during assembly of the container, and so the likelihood that the retention tab may be damaged through interaction with the packing apparatus, or that the retention tab may hinder the packing operation is significantly reduced. At the same time, separation of the retention tab from the remainder of the lid flap is easily achieved upon opening the container for the first time.

Preferably, in the closed position of the hinge lid, at least a part of the retention tab engages with an edge of the cut out portion to lock the hinge lid in the closed position. Thus, in order to open the container, it is necessary to apply a force to release the retention tab from engagement with the edge of the cut out portion. Accordingly, the likelihood of the hinge lid being inadvertently moved to an open position is significantly reduced. This advantageously prevents the consumer goods or parts of the consumer goods from falling out of the container.

In addition, as the hinge lid is moved from the closed position to the open position, the retention tab is preferably released from engagement with the edge of the cut out portion. This may result in the generation of another sound.

In some embodiments, the at least one cut out portion is formed in a front wall of the box portion. Because the lid, including the lid flap and the retention tab, and the box, including the cut out portion, may be formed from a single blank, it is advantageously very easy to ensure that the retention tab and the cut out portion are in substantial alignment when the container is formed from the blank.

Preferably, the front wall of the box portion comprises a first panel and a front tab extending from the upper end of the first panel, and the cut out portion is formed in the front tab.

In other embodiments, the container comprises an inner frame mounted within the box portion. The inner frame comprises a frame front wall, a portion of which extends beyond an upper edge of a front wall of the box portion. The at least one cut out portion is formed in the frame front wall. This is advantageous because, in the closed position, the lid front wall can easily align with the box front wall. Thus, the container presents to the user a substantially flat front surface.

The at least one cut out portion has a height (H) and a width (W). The height (H) is preferably at least about 0.3 mm, more preferably at least about 0.5 mm. In addition, or as an

alternative, the height (H) is preferably less than about 5 mm, more preferably less than about 3 mm.

Preferably, the width (W) of the cut out portion is at least about 5 percent of the overall width of the front wall of the container. More preferably, the width (W) of the cut out portion is at least about 10 percent of the overall width of the front wall of the container. In addition, or as an alternative, the width (W) of the cut out portion is less than about 95 percent of the overall width of the front wall of the container. More preferably, the width (W) of the cut out portion is less than about 80 percent of the overall width of the front wall of the container.

Preferably, the retention tab extends from the edge fold line by at least about 0.5 mm. More preferably, the retention tab extends from the edge fold line by at least about 1 mm.

In addition, or as an alternative, the retention tab preferably extends from the edge fold line by less than about 15 mm. More preferably, the retention tab extends from the edge fold line by less than about 10 mm. It has been found that a retention tab of such size produces a particularly clear sound when interacting with the cut out portion. On the other hand, retention tabs extending from the edge fold line by less than 0.5 mm may fail to produce a sufficiently audible sound. Further, retention tabs extending from the edge fold line by more than 10 mm have been found to not always interact correctly with the cut out portion.

Containers according to the present invention find application as containers for consumer goods, in particular elongate consumer goods such as smoking articles. However, they can also be used for several other types of consumer goods.

Containers according to the present invention are at least partially formed from a blank having a predetermined thickness. The blank may be formed from any suitable material for instance, paperboard, Preferably, the blank is a laminar cardboard blank having a weight of between about 100 grams per square metre and about 350 grams per square metre.

The container may optionally comprise an outer wrapper, which is preferably a transparent polymeric film of, for example, high or low density polyethylene, polypropylene, oriented polypropylene, polyvinylidene chloride, cellulose film, or combinations thereof and the outer wrapper is applied in a conventional manner. The outer wrapper may include a tear tape. In addition, the outer wrapper may be printed with images, consumer information or other data.

Further, the consumer articles may be provided within the container in the form of a bundle wrapped in an inner package formed of metal foil or metallised paper. The inner package material may be formed as a laminate of a metallised polyethylene film, and a liner material. The liner material may be a super-calendered glassine paper. In addition, the inner package material may be provided with a print-receptive top coating. The inner package has an access opening through which consumer goods can be removed when a lid of the container is in a respective open position.

The container is preferably a rectangular parallelepiped comprising two wider walls spaced apart by two narrower walls. Hinge lid containers according to the invention may be in the shape of a rectangular parallelepiped, with right-angled longitudinal and right-angled transverse edges. Alternatively, the hinge lid container may comprise one or more rounded longitudinal edges, rounded transverse edges, bevelled longitudinal edges or bevelled transverse edges, or combinations thereof. For example, the hinge lid container according to the invention may comprise, without limitation:

- One or two longitudinal rounded edges on the front wall, and/or one or two longitudinal rounded or bevelled edges on the back wall.

- One or two transverse rounded 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.

Where the container comprises one or more bevelled edge, preferably the bevelled edge has a width of between about 1 mm and about 10 mm, preferably between about 2 and about 6 mm. Alternatively, the container may comprise a multi-bevelled edge formed by parallel creasing or scoring lines that are spaced such that two or more distinct bevels are formed on at least one edge of the container.

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

Containers according to the invention find particular application as packs for elongate smoking articles such as, for example, cigarettes, cigars or cigarillos. It will be appreciated that through appropriate choices of the dimensions thereof, containers according to the invention may be designed for different numbers of conventional size, king size, super-king size, slim or super-slim cigarettes. Alternatively, other consumer goods may be housed inside the container.

Through an appropriate choice of the dimensions, containers according to the invention 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.

The smoking articles may be arranged in different collations, depending on the total number of smoking articles.

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 filter-less 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 mm and about 180 mm), diameter (for example, between about 4 mm and about 9 mm). Preferably, the dimensions of the container are adapted to the length of the smoking articles, and the collation of the smoking articles. Typically, the outer dimensions of the container are between about 0.5 mm to about 5 mm larger than the dimensions of the bundle or bundles of smoking articles housed inside the container.

The length, width and depth of containers according to the invention may be such that the resultant overall dimensions of the container are similar to the dimensions of a typical disposable pack of twenty cigarettes.

Preferably, containers according to the invention have a height of between about 60 mm and about 150 mm, more preferably a height of between about 70 mm and about 125 mm, wherein the height is measured from the bottom wall to the top wall of the container.

Preferably, containers according to the invention have a width of between about 12 mm and about 150 mm, more preferably a width of between about 70 mm and about 125 mm, wherein the width is measured from one side wall to the other side wall of the container.

Preferably, containers according to the invention have a depth of between about 6 mm and about 150 mm, more preferably a depth of between about 12 mm and about 25 mm wherein the depth is measured from the front wall to the back wall of the container.

Preferably, the ratio of the height of the container to the depth of the container is in between about 0.3 to 1 and about 10 to 1, more preferably between about 2 to 1 and about 8 to 1, most preferably between about 3 to 1 and 5 to 1

Preferably, the ratio of the width of the container to the depth of the container is in between about 0.3 to 1 and about 10 to 1, more preferably between about 2 to 1 and about 8 to 1, most preferably between about 2 to 1 and 3 to 1.

Preferably, the ratio of the height of the lid back wall to the height of the box back wall of the outer sleeve is between about 0 to 1 (lid located at the top edge of the container) to about 1 to 1, more preferably, between about 1 to 5 and about 1 to 10, most preferably, between about 1 to 6 to about 1 to 8.

Preferably, the ratio of the height of the lid front wall of the outer sleeve to the height of the box front wall of the outer sleeve is between about 1 to 0 (lid covering the entire front wall) to about 1 to 10, more preferably, between about 1 to 1 and about 1 to 5, most preferably, between about 1 to 2 and about 1 to 3.

The exterior surfaces of containers according to the invention may be printed, embossed, debossed or otherwise embellished with manufacturer or brand logos, trade marks, slogans and other consumer information and indicia.

Containers according to the invention may be filled and assembled using conventional apparatus and methods, modified to include the step of forming the cut out in the front wall of the container and the cut line in the lid flap forming the retention tab. Several different tools can be used for forming the cut out portions and the cut line, such as a laser or a blade.

A laser is particularly preferred as the cutting tool as it can allow for a wide variety of shapes of the cut out and the retention tab whilst never compromising the precision and efficiency of the manufacturing process. This is because it is possible to accurately control the relative movement of the laser and the blank. Further, because a laser may advantageously be used for ablating material from portions of a blank for forming a container with one or more rounded or chamfered corners, use of a laser as the cutting tool is advantageous in that the ablation and cutting operations can, to an extent, be combined in a single step of the manufacturing process.

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

Figure 1 depicts a schematic perspective view of a detail of a first embodiment of a container in accordance with the present invention;

Figure 2 shows a schematic top view of a blank for forming the container of Figure 1; and

Figure 3 shows a schematic top view of a blank for forming a second embodiment of a container in accordance with the present invention.

The container 10 shown in Figure 1 is rectangular parallelepipedal in shape and has rounded corners. It comprises a box portion 12 and a hinge lid 14 connected to the box portion 12 along a hinge line (not shown) extending across the back wall of the container 10. The overall size and construction of the box 12 and lid 14 of the container 10 are substantially the same as that of a standard hinge lid cigarette pack. The box portion 12 comprises a box front wall 20, a box back wall, a box bottom wall, a box left side wall and a box right side wall. The hinge lid 14 comprises a lid front wall, a lid back wall, a lid top wall, a lid left side wall and a lid left side wall. The hinge lid 14 is pivotable about the hinge line between a closed position and an open position. In the closed position, the hinge lid 14 covers an access opening of the container 10 and the walls of the hinge lid form extensions of the corresponding walls of the box portion. In the open position (shown in Figure 1), the hinge lid 14 is pivoted to project backwardly from the box portion 12 and the access opening at the top end of the box portion 12 is fully uncovered.

The box portion 12 and the hinge lid 14 may be formed together from a single laminar blank. The container 10 may be assembled from the laminar blank and filled using standard apparatus.

A front wall of the container comprises a cut out portion. In more detail, the container 10 comprises an inner frame 30 mounted within the box portion 12. The inner frame 30 comprises a frame front wall 32, a portion of which extends beyond an upper edge of a front wall 16 of the box portion. A cut out portion 34 is formed in the frame front wall, such that, when the hinge lid 14 is in the closed position, the front wall of the lid overlies the cut out portion 34 in the frame front wall 32. The cut out portion 34 has a height H of about 2mm and a width W of about 10mm

The hinge lid 14 comprises a lid flap 40 depending from the lid front wall along an edge fold line 42. The lid flap 40 is folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap. The lid flap 40 comprises a U-shaped a cut line 44 that defines, with the edge fold line 42, the perimeter of a retention tab 46. The retention tab 46 depends from the lid front wall along the edge fold line 42, is adhesive-free and projects away from the remainder of the lid flap 40. In the embodiments shown in Figure 1, the retention tab 46 extends from the edge fold line 42 by about 3 mm. During pivotal movement of the hinge lid 14 from the open position to the closed position, the retention tab 46 slides along the frame front wall 32 and into the cut out portion 34 in the container front wall.

Thus, in the closed position of the hinge lid 14, a part of the retention tab 46 engages with the upper edge of the cut out portion 34. This produces a sound, which provides the consumer with an audible indication of closing. As the hinge lid 14 is moved from the closed position to the open position, the retention tab 46 is released from engagement with the upper edge of the cut out portion 34. This produces a sound, which provides the consumer with an audible indication of opening.

The container 10 of Figure 1 is assembled from the cardboard laminar blank 300 shown in Figure 2. In Figure 2, solid lines indicate cut lines and dashed lines indicate fold lines.

The blank 300 comprises a box blank portion 3001 for forming a box portion of the container, and a lid blank portion 3002 for forming a lid portion of the container. The box blank portion 3001 depends from the lid blank portion 3002 along hinge line 3003. Further, Figure 2 shows an additional blank 400 for forming an inner frame.

The box blank portion 3001 comprises a front wall panel 308, a rear wall panel 312 and a bottom wall panel 309. Two side wall panels 310 extend from front wall panel 308, two side wall panels 311 extend from rear wall panel 312, and two box dust flaps 313 extend from side wall panels 311. When the box portion of the container is assembled from the box blank

portion 3001, the front wall panel 308 forms the container front wall, the rear wall panel 312 forms the container rear wall, the side wall panels 310, 311 overlap to form left and right side container walls, and the box dust flaps 313 overlap the bottom wall panel 309 to form the container bottom wall. The side wall panels 310, 311 are substantially the same size and shape as each other. When the container is formed, the side wall panels 310, 311 directly overlie each other with their free edges substantially aligned, such that the inner side wall panel is barely visible. The box dust flaps 313 are smaller than the bottom wall panel 309. When the container is formed, the box dust flaps 313 lie inside the bottom wall panel 309. They provide additional structural support for the container bottom wall of the container but are not visible from the outside of the container.

The lid blank portion 3002 comprises a front wall panel 314, a rear wall panel 318 and a top wall panel 320. Two side wall panels 316 extend from the front wall panel 314, two side wall panels 317 extend from the rear wall panel 318, and lid dust flaps 319 extend from the side wall panels 317. When the lid portion of the container is assembled from the lid blank portion 3002, the front wall panel 314 forms the container front wall, the rear wall panel 318 forms the container rear wall, the side wall panels 316, 317 overlap to form right and left container side walls, and the lid dust flaps 319 overlap top wall panel 320 to form the lid top wall. The side wall panels 316, 317 are substantially the same size and shape as each other. When the container is formed, the panels 316, 317 directly overlie each other with their free edges substantially aligned, such that the inner side wall panel is barely visible. The lid dust flaps 319 are smaller than the top wall panel 320. When the container is formed, the lid dust flaps 319 lie inside the top wall panel 320. They provide additional structural support for the container (lid) top wall, but are not visible from the outside of the container.

Further, the lid blank portion 3002 comprises a lid flap panel 325 depending from the front wall panel 314 along an edge fold line 326. The lid flap panel 325 comprises a U-shaped cut line 327 that defines, with the edge fold line 326, a retention tab. The cut line 327 is not continuous, but it is provided as a line of slits separated by ties connecting the retention tab to the remainder of the lid flap panel 325.

The additional blank 400 comprises a front frame panel 401 for forming a frame front wall and two side frame panels 402 extending from the front frame panel 401 for forming side frame walls. The front frame panel 401 comprises a cut out portion 404 arranged such that, when the inner frame is mounted within the box portion of the container and the hinge lid is in the closed position, the retention tab form defined by the cut line 327 is in alignment with the cut out portion 404. When the box portion and the hinge lid portion of the container are assembled from the blank 300, the lid flap panel 325 is folded inwards and attached by a layer of adhesive to the inner surface of the lid front wall panel. Because it is free from adhesive, the retention tab formed by the cut line tends to spring back from the remainder of the lid flap.

Because it is held in place by the ties along the cut line 327, however, the retention tab is only partly raised to form a non null angle with the remainder of the lid flap. During the first opening of the container, a raised portion of the retention tab is available for engagement with an edge of the cut out portion in the inner frame and, because of this interaction, the retention tab is separated from the remainder of the lid flap as the tie or ties of the cut line 327 are broken.

Figure 3 shows a blank 500 for forming an alternative embodiment of a container according to the present invention. Wherever possible, similar reference numerals have been used to identify corresponding elements in the blank 500 of Figure 3 and in the blank 300 of Figure 2. In particular, similar to what has been described for the blank 300, the lid blank portion 5002 comprises a lid flap panel 525 depending from the front wall panel 514 along an edge fold line 526. The lid flap panel 525 comprises a U-shaped cut line 527 that defines, with the edge fold line 326, a retention tab. The cut line 527 is not continuous, but it is provided as a line of slits separated by ties connecting the retention tab to the remainder of the lid flap panel 525.

The blank 500 differs from the blank 300 described above in that a cut out portion is formed in a front wall panel 508 of the box blank portion 5001 for forming a box portion of the container. This is advantageous in that, because the hinge lid blank portion 5002 and the box blank portion 5001 form part of the same blank, it is easier to control the relative arrangement of the cut out portion in the front wall panel 508 and the cut line 527 in the lid flap panel 525. Thus, when a container is assembled from the blank 500, it is easier to ensure that the retention tab and the cut out portion will be correctly aligned for proper cooperation and generation of a sound when the container is closed and opened.

CLAIMS

1. A container for consumer articles comprising:
a box portion; and
a hinge lid connected to the box portion along a hinge line and pivotable about the hinge line between a closed position and an open position;
a front wall of the container comprising at least one cut out portion, such that, when the hinge lid is in the closed position, a front wall of the lid overlies the cut out portion in the container front wall;
the hinge lid comprising a lid flap depending from the lid front wall along an edge fold line, the lid flap being folded inwards and attached to the inner surface of the lid front wall by an adhesive provided on a portion of the inner surface of the lid flap;
wherein the lid flap comprises at least a cut line forming an adhesive-free retention tab depending from the lid front wall along the edge fold line and at least partly raised above the plane of the lid flap;
wherein, during pivotal movement of the hinge lid from the open position to the closed position, the retention tab slides along the container front wall and into the cut out portion in the container front wall.

2. A container according to claim 1 wherein the cut line is a continuous cut line, such that the retention tab is separated from the remainder of the lid flap along the whole of the cut line and projects away from the remainder of the lid flap.

3. A container according to claim 1 wherein the lid flap comprises at least a tie at a location along the cut line connecting the retention tab and the remainder of the lid flap, such that the retention tab is separable from the remainder of the lid flap upon first opening the container.

4. A container according to any one of claims 1 to 3 wherein in the closed position of the hinge lid at least a part of the retention tab engages with an edge of the cut out portion to lock the hinge lid in the closed position.

5. A container according to any one of claims 1 to 4, wherein the at least one cut out portion is formed in a front wall of the box portion.

6. A container according to claim 5, wherein the front wall of the box portion comprises a first panel and a front tab extending from the upper end of the first panel, and wherein the cut out portion is formed in the front tab.

7. A container according to any one of claims 1 to 4, wherein the container comprises an inner frame mounted within the box portion and comprising a frame front wall, a portion of the frame front wall extending beyond an upper edge of a front wall of the box portion; and wherein the at least one cut out portion is formed in the frame front wall.

8. A container according to any one of the preceding claims, wherein the at least one cut out portion has a height (H) and a width (W), the height (H) being at least about 0.3 mm.

9. A container according to any one of the preceding claims, wherein the retention tab extends from the edge fold line by at least about 0.5 mm.

10. A container according to any one of the preceding claims, wherein the retention tab extends from the edge fold line by less than about 15 mm.

11. A container according to any one of the preceding claims containing a plurality of smoking articles.

12. A container according to any one of the preceding claims, wherein the lid flap generates an audible sound when the container is closed or when the container is opened or both.

13. A blank for forming a container for consumer articles, the blank comprising:
a box-defining blank portion for forming a box portion of the container;
a lid-defining blank portion for forming a lid of the container;
the box-defining portion comprising a box front panel for forming at least part of a front wall of the container and comprising at least one cut portion formed therein;
the lid defining blank portion comprising a lid front panel for forming a lid front wall and at least one lid flap depending from the lid front panel along an edge fold line;
such that, in the assembled container, when the hinge lid is in the closed position, the lid front wall overlies the at least one cut portion.
wherein the lid flap comprises a cut line forming a tab depending from the lid front panel along the edge fold line, such that when, during assembly of the container, the lid flap is folded

towards and attached to the inner surface of the lid front wall and the tab is at least partly raised above the plane of the lid flap.

5

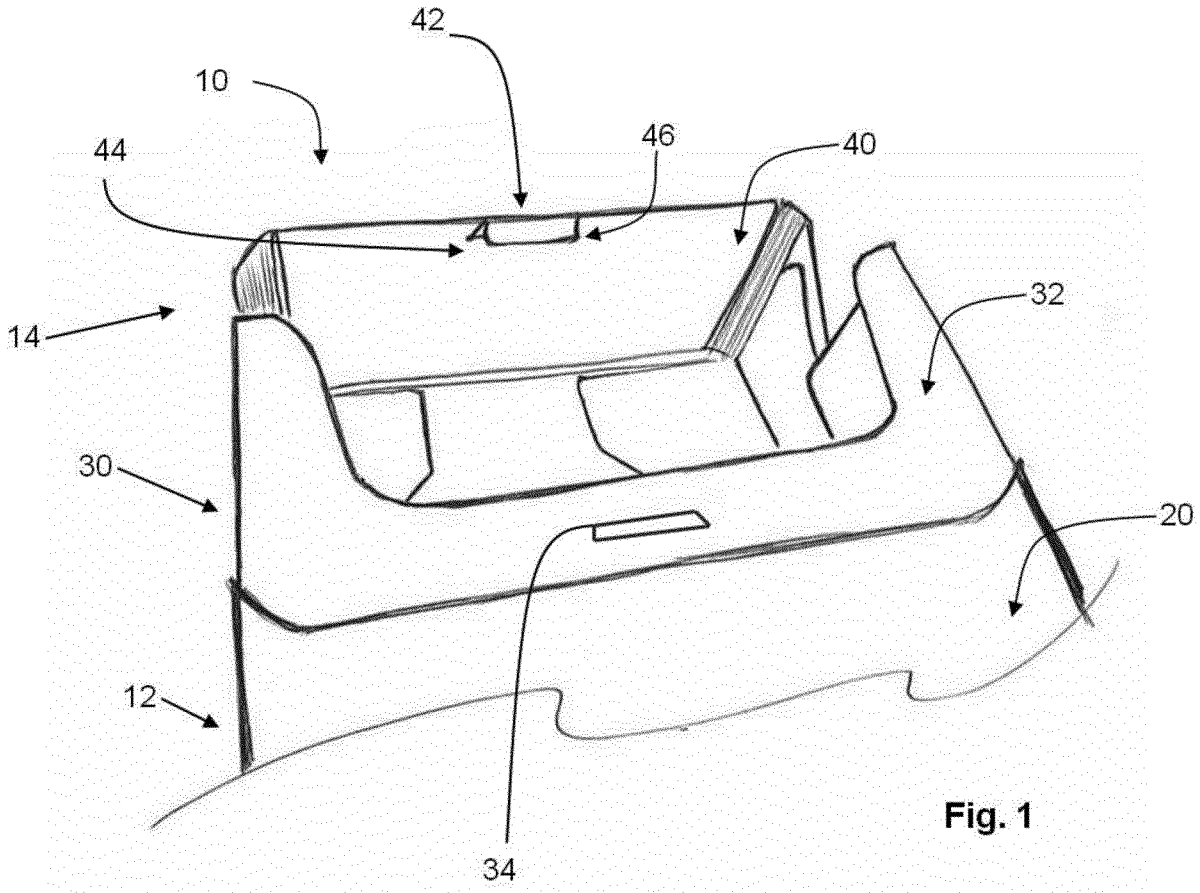

Fig. 1

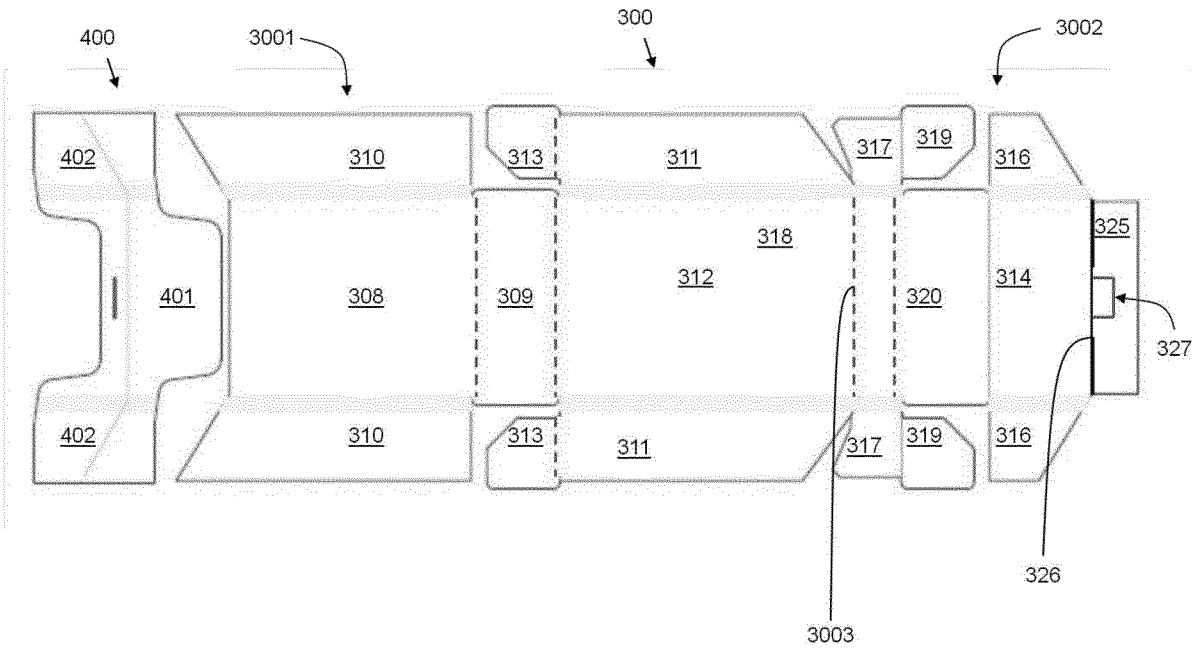
400
3001
300
3002
402
310
313
311
317
319
316
325
318
401
308
309
312
320
314
327
402
310
313
311
317
319
316
326
3003

Fig. 2

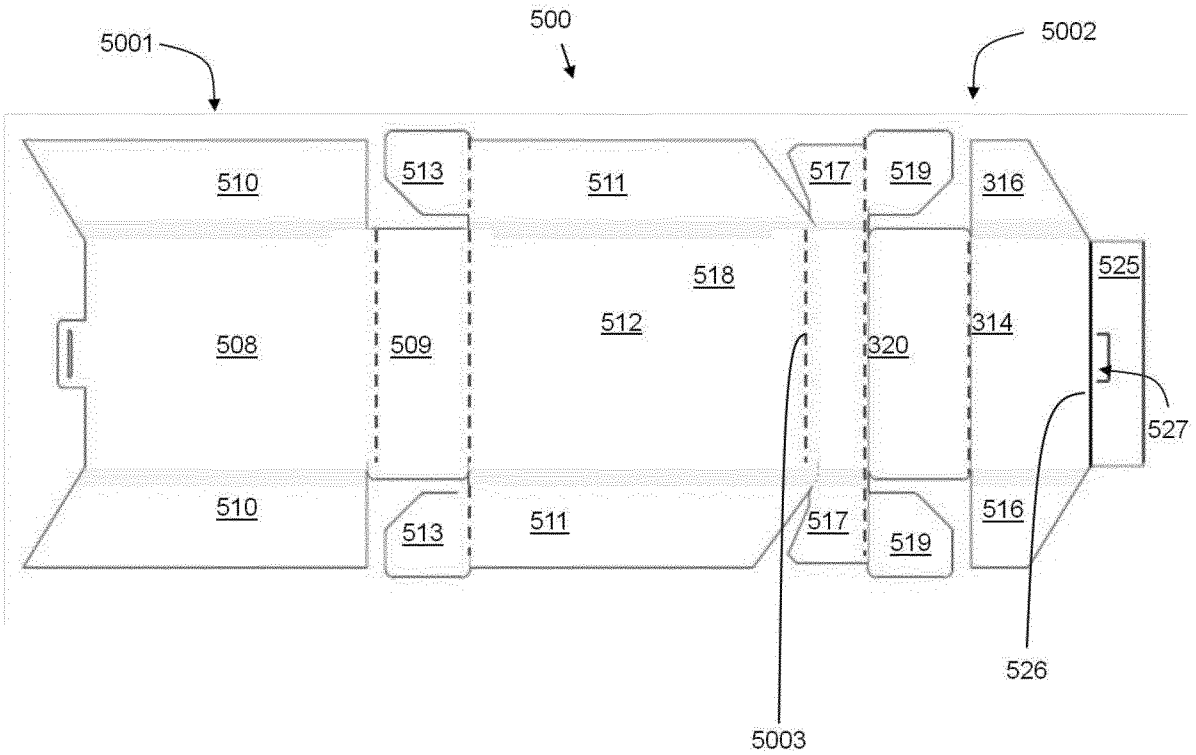
5001
500
5002
510
513
511
517
519
316
525
518
508
509
512
320
314
527
510
513
511
517
519
516
526
5003

Fig. 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/053600

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/66 B65D5/42 B65D85/10
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 199 38 167 A1 (FOCKE & CO [DE]) 22 February 2001 (2001-02-22) column 1, line 3 - column 4, line 2 figures 1-8	1-13
X	WO 93/01095 A1 (SCHUR ENG AS [DK]) 21 January 1993 (1993-01-21) page 1 - page 6 figures 1-6	1-13
X	EP 2 433 881 A1 (PHILIP MORRIS PROD [CH]) 28 March 2012 (2012-03-28) paragraph [0001] - paragraph [0075] figures 1-5	1-13

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 April 2016	20/04/2016

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Rodriguez Gombau, F

1

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/053600

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/230410 A1 (STEVEN JONES WESLEY [US] ET AL) 25 September 2008 (2008-09-25) paragraph [0004] - paragraph [0035] figures 1-7	1-13
X	EP 0 392 737 A1 (PHILIP MORRIS [US]) 17 October 1990 (1990-10-17) column 4, line 34 - column 10, line 16 figures 1-11a	1-13

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2016/053600

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19938167 A1	22-02-2001	AU 6158300 A	13-03-2001
		BR 0013356 A	30-04-2002
		CN 1373727 A	09-10-2002
		DE 19938167 A1	22-02-2001
		EP 1204571 A1	15-05-2002
		JP 4485725 B2	23-06-2010
		JP 2003507268 A	25-02-2003
		PL 354459 A1	12-01-2004
		US 6719131 B1	13-04-2004
		WO 0112527 A1	22-02-2001
WO 9301095 A1	21-01-1993	AT 134957 T	15-03-1996
		AU 666489 B2	15-02-1996
		DE 69208880 D1	11-04-1996
		DK 133391 A	11-01-1993
		DK 0593674 T3	22-07-1996
		EP 0593674 A1	27-04-1994
		ES 2087549 T3	16-07-1996
		FI 940090 A	10-01-1994
		IS 3884 A	11-01-1993
		JP 3130041 B2	31-01-2001
		JP H06511453 A	22-12-1994
		NO 940054 A	06-01-1994
		US 5443202 A	22-08-1995
		WO 9301095 A1	21-01-1993
EP 2433881 A1	28-03-2012	CN 103118960 A	22-05-2013
		EP 2433881 A1	28-03-2012
		EP 2619112 A1	31-07-2013
		JP 2013541473 A	14-11-2013
		KR 20130100147 A	09-09-2013
		RU 2013118577 A	27-10-2014
		SG 188960 A1	31-05-2013
		UA 107853 C2	25-02-2015
		US 2015034508 A1	05-02-2015
		WO 2012038085 A1	29-03-2012
US 2008230410 A1	25-09-2008	NONE	
EP 0392737 A1	17-10-1990	DE 69003719 D1	11-11-1993
		DE 69003719 T2	21-04-1994
		EP 0392737 A1	17-10-1990
		ES 2045799 T3	16-01-1994
		JP 3037958 B2	08-05-2000
		JP H02296641 A	07-12-1990
		US 4948038 A	14-08-1990