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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 November 2013 (07.11.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/164372 A1

(51) International Patent Classification:
B65D 85/10 (2006.01)

(21) International Application Number:
PCT/EP2013/059070

(22) International Filing Date:
1 May 2013 (01.05.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12166476.7 2 May 2012 (02.05.2012) EP

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(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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, 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, 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, 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, ML, MR, NE, SN, TD, TG).

Published:

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

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(54) Title: PACKAGING

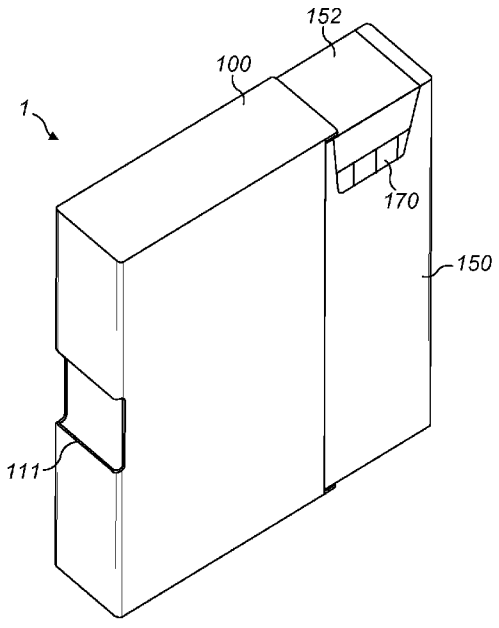

FIG. 1B

(57) Abstract: Packaging (1) is provided which comprises an inner packet part (150) and an outer packet part (100) which are movable relative to each other. The inner packet part (150) can be moved from a closed position to an open position by a user. A locking tab and an engagement portion are provided, which provide resistance to this movement, thereby ensuring that the packaging (1) does not open accidentally. Furthermore, the locking tab may provide a noise as it is received in one or both of the closed position and the open position.

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Packaging

Field of the Invention

The present invention generally relates to the field of packaging, particularly for tobacco products. More particularly, the present invention relates to a new type of cigarette packaging, and blanks used in the construction of such packaging.

Background to the Invention

It is an ongoing requirement to improve the ergonomic and practical design of packaging. One area in which such a requirement is prevalent is the provision of packaging for tobacco products such as cigarette packaging.

Cigarette packaging must meet a range of challenging requirements. In particular, not only should the packaging be cheap and capable of mass production, but it should also be sufficiently robust to keep the cigarettes safe, maintain their freshness and retain its integrity over multiple sequences of opening and closing the packaging.

Perhaps the most common design for cigarette packaging today can be characterised as a hinged lid pack. In this design, a cardboard pack is provided with a hinged lid integrally formed at an upper end. The cigarettes are disposed longitudinally such that a user may remove the cigarettes by their ends when the lid is open.

It is of course desirable that the hinged lid does not open without active user input. In one design an inhibition on movement of the lid between a closed position and an open position is achieved by the use of a collar or sleeve over which the lid must pass. The sleeve is designed such that as the lid opens (or closes) an element of friction is introduced between the lid and sleeve which must be overcome if the lid is to be moved further.

In alternative designs, a locking tab may additionally or alternatively be used. For example, a locking tab may be mounted to the pack in such a manner that as the lid is opened it engages with an engagement portion of the lid. The engagement of the locking tab can inhibit movement unless the user overcomes the resistive force that results.

While the above solutions and others have found some success in the context of hinged lid packs, they are not appropriate for other design concepts. For example, it has been proposed to provide cigarette packaging with slide or swing opening mechanisms. In such an approach, an inner packet part which holds the cigarettes is disposed within an outer packet part. In a closed position, an opening of the inner packet part is covered by the outer packet part, while the inner packet part is movable relative to the outer packet part to an open position in order to allow access to the cigarettes stored within.

In a slide arrangement, the inner packet part moves relative to the outer packet part with a linear motion, while in a swing arrangement the inner packet part moves relative to the outer packet part with motion comprising at least some rotation. In these arrangements, as well as in others, there is an ongoing desire to provide some control over the relative movement of the inner packet part and the outer packet part to avoid unwanted opening of the packaging.

Summary of the Invention

According to a first aspect of the present invention, there is provided packaging, comprising: an outer packet part; an inner packet part disposed within the outer packet part, the inner packet part being movable relative to the outer packet part between a first position and a second position; a locking mechanism comprising a locking tab and an engagement portion provided on opposing faces of the inner packet part and the outer packet part, wherein the locking tab and the engagement portion are arranged such that movement of the inner packet part from the first position to the second position is effective to rotate the at least one locking tab around a hinge from a first orientation to a second orientation through

a perpendicular orientation in which the locking tab extends perpendicularly to the opposing faces.

The present invention can provide packaging in which spontaneous movement of an inner packet part relative to an outer packet part is inhibited. As the locking tab is rotated it passes through a perpendicular orientation, at which point the maximum separation is required between the opposing faces of the inner packet part and the outer packet part. Accordingly, in order to rotate the locking tab it is necessary to force these faces apart. The force required to separate the faces may result in the inhibiting effect on movement between the first and second positions. Preferably, the packaging is arranged such that in both the first and second positions, the inner packet part is in contact with the outer packet part via the locking tab. Accordingly, the locking tab may be retained in the appropriate orientation by the inner packet part and the outer packet part.

In preferred embodiments, the locking tab is concealed by the outer packet part in one or both of the first position and the second position. Preferably, the locking tab is concealed by the outer packet part both in the first position and in the second position. In this manner, the operation of the locking tab is hidden from the user. This increases the effectiveness of the sensation provided by the locking tab.

Preferably, the packaging further comprises a second engagement portion arranged to engage with the at least one locking tab during movement of the inner packet part from the second position to the first position such that the locking tab is rotated around said hinge from the second orientation to the first orientation through the perpendicular orientation. Accordingly, an inhibiting effect may be provided in both directions. For example, the first position may be a closed position, whereas the second position may be an open position. In the closed position, the outer packet part may prevent user access to products contained within the inner packet part, while in the open position a user may access the products in the inner packet part. By providing two engagement portions it is possible to create an inhibiting effect on either closing or opening

the packaging. Moreover, the provision of a second engagement portion enables the locking tab to be automatically reset in the first orientation, enabling repeated operation of the locking tab without the needed for any other action to reset the position of the locking tab.

In preferred embodiments, the locking tab is arranged to generate a sound, preferably an audible sound, when the inner packet part reaches at least one of the first position or the second position. Preferably, the locking tab is arranged to generate a sound when the inner packet part reaches the first position and when the inner packet part reaches the second position. This can provide a signal to the user that the inner packet part has reached the desired position. This increases confidence in the operation of the packaging, particularly when a sound is generated when the inner packet part reaches a closed position.

In preferred embodiments, the locking tab is arranged to generate the sound by striking against one of the opposing faces of the inner packet part of the outer packet part. In particular, the locking tab may be biased against the opposing face and the first and/or second engagement portions may comprised a raised area of said face. Accordingly, as the locking tab passes over the edge of such a raised area it is released to strike against the face.

Preferably, the packaging comprises a second locking mechanism, wherein the first locking mechanism is disposed on a first side of the packaging and the second locking mechanism is disposed on a second side of the packaging. In particularly preferred embodiments, the first and second sides of the packaging are opposing sides.

The first and second sides of the packaging can either be the upper and lower sides or the front and back sides of it. In practice, having locking mechanisms on opposite sides of the packaging further improves stability of the inner and outer packet parts of the packaging relative to each other.

By providing locking mechanisms on more than one side of the packaging, preferred embodiments can improve the locking effect of the present invention.

The second locking mechanism preferably comprises the same features as the first locking mechanism and may thus operate in an analogous manner.

Preferably, the first locking mechanism is offset from the centre of the first side of the packaging in a first direction and the second locking mechanism is offset from the centre of the second side of the packaging in a second direction opposite to the first direction. In particularly preferred embodiment, the offset of the first and second locking mechanisms is equal in magnitude. Accordingly, in preferred embodiments, the locking mechanisms can be located away from a centre of the packaging, which may be required for other purposes, while retaining an overall balance in the operation of the mechanisms.

Preferably, the present invention further comprises a restraining mechanism arranged to limit movement of the inner packet part relative to the outer packet part. In particular, the restraining mechanism may prevent movement of the inner packet part beyond the first and/or second positions.

In preferred embodiments, the restraining mechanism comprises a first restraining element and a second restraining element provided on opposing faces of the inner packet part and the outer packet part, wherein engagement of the first and second elements is effective to limit movement of the inner packet part relative to the outer packet part.

Preferably, the first restraining element is a restraining tab and the second restraining element is arranged to receive the restraining tab between the second restraining element and a face of the inner packet part or the outer packet part. The second restraining element may, for example, comprise a restraining flap folded inwardly from the face of the outer packet part or inner packet part, or may comprise a restraining portion which allows ingress of the restraining tab into a position between the restraining element and the face of the inner packet part or outer packet part.

In preferred embodiments, the outer packet part comprises at least one opening through which one can push the inner packet part to initiate movement of the

inner packet part relative to the outer packet part. This allows easy opening of packaging by a user.

Preferably, longitudinal edges of the packaging when the inner packet part is in a closed position have a curved profile. This provides a pleasing configuration for the user, and in particular improves comfort in the user's hand. It further reduces the risk of damage to the vessel in which the packaging is carried, such as a user's pocket or bag, that might otherwise result from sharp edges of the packaging.

In preferred embodiments, the relative movement of the inner packet part and the outer packet part occurs substantially parallel to the opposing faces on which the locking mechanism is provided. In particular, movement of the inner packet part from the first position to the second position may comprise linear movement. Alternatively or additionally, movement of the inner packet part from the first position to the second position may comprise rotational movement.

Preferably, at least one engagement portion is provided on the outer packet part. Similarly, in preferred embodiments, at least one locking tab is provided on the inner packet part. This arrangement is found to offer an effective and reliable engagement between the locking tab and the engagement portion.

In preferred embodiments, the inner packet part comprises at least one opening in an upper face to allow access to a product in the inner packet part, wherein the opening is concealed by the outer packet part when the inner packet part is in the first position. Accordingly, the first position is a closed position in which access to the product is not possible. In the second, open position, the outer packet part does not conceal the opening. More generally, the opening may be placed on any face through which it is desired to provide access to the contents of the inner packet part.

Preferably, the opening of the inner packet part extends into at least one side of the inner packet part. This arrangement further facilitates user access to products within the inner packet part.

In preferred embodiments, the inner packet part and the outer packet part are each obtained from a single foldable blank of paper, cardboard or plastic material or a combination thereof. Indeed, the present invention further encompasses blanks for use in the production of the inner packet part and the outer packet part. Furthermore, the invention comprises a method for forming the inner packet part or the outer packet part from such blanks.

Brief Description of the Figures

Preferred embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings, in which:

Figure 1A shows a first preferred embodiment of the present invention in a closed position;

Figure 1B shows the first preferred embodiment in an open position;

Figure 2A is a side view of a front of an outer packet part of the first preferred embodiment;

Figure 2B is a side view of a rear of the outer packet part of the first preferred embodiment;

Figure 3 shows a blank for use in the production of the outer packet part of the first preferred embodiment;

Figure 4A is a side view of a front of an inner packet part of the first preferred embodiment;

Figure 4B is a side view of a rear of the inner packet part of the first preferred embodiment;

Figure 5 shows a blank for use in the production of the inner packet part of the first preferred embodiment;

Figure 6A is a side view illustrating the position of the inner packet part within the outer packet part when in a closed position;

Figure 6B is a side view illustrating the position of the inner packet part within the outer packet part when in an intermediate position as the inner packet part is moved from the closed position towards an open position;

Figure 6C is a side view illustrating the position of the inner packet part within the outer packet part when in the open position;

Figure 6D is a side view illustrating the position of the inner packet part within the outer packet part when in the intermediate position as the inner packet part is moved from the open position towards the closed position;

Figure 7A shows a cross section of the first preferred embodiment from above when the inner packet part is in the closed position;

Figure 7B shows a cross section of the first preferred embodiment from above when the inner packet part is in the open position;

Figure 8A shows a second preferred embodiment of the present invention in a closed position;

Figure 8B shows the second preferred embodiment in a first open position;

Figure 8C shows the second preferred embodiment in a second open position;

Figure 9 is a side view of a front of an outer packet part of the second preferred embodiment;

Figure 10 shows a blank for use in the production of the outer packet part of the second preferred embodiment;

Figure 11 is a side view of a front of an inner packet part of the second preferred embodiment;

Figure 12 shows a blank for use in the production of the inner packet part of the second preferred embodiment;

Figure 13A is a side view illustrating the position of the inner packet part within the outer packet part when in the closed position;

Figure 13B is a side view illustrating the position of the inner packet part within the outer packet part when in the first open position;

Figure 13C is a side view illustrating the position of the inner packet part within the outer packet part when in the second open position;

Figure 14A shows a third preferred embodiment of the present invention in a closed position;

Figure 14B shows the third preferred embodiment in an open position;

Figure 15 is a side view of a front of an outer packet part of the third preferred embodiment;

Figure 16 shows a blank for use in the production of the outer packet part of the third preferred embodiment;

Figure 17 is a side view of a front of an inner packet part of the third preferred embodiment;

Figure 18 shows a blank for use in the production of the inner packet part of the third preferred embodiment;

Figure 19A is a side view illustrating the position of the inner packet part within the outer packet part when in a closed position; and

Figure 19B is a side view illustrating the position of the inner packet part within the outer packet part when in the open position.

Detailed Description

Referring to Figures 1A and 1B, there is shown a first preferred embodiment of packaging 1 according to the present invention. The packaging 1 comprises an outer packet part 100 and an inner packet part 150. The inner packet part 150 is movable relative to the outer packet part and in particular is slidable between a first, closed position as illustrated in Figure 1A and a second, open position as shown in Figure 1B.

The user may effect sliding of the inner packet part 150 by pushing the part of the inner packet part 150 that is exposed through an opening 111 in the outer packet part 100 with a thumb or finger. As can be seen in Figure 1B, the inner packet part 150 comprises a tear strip 152 which can be removed to form an opening inner packet part 150 to expose cigarettes 170.

The outer packet part 100 and the inner packet part 150 are coupled to each other in such a way as to provide an audible noise when the pack enters either the closed position or the open position. Furthermore, a degree of resistance is provided to retain the inner packet part in the open position and in the closed position. In this manner, accidental movement of the outer pack 100 relative to the inner packet part 150 can be inhibited. The mechanism by which these effects are produced can be understood with reference to Figures 2A to 5, and will be described in greater detail below.

Figures 2A, 2B and 3 illustrate the outer packet part 100. The outer packet part is formed by folding a cardboard blank, illustrated in Figure 3. Figure 2A shows

a front side view of the outer packet part, while Figure 2B shows a rear side view of the outer packet part 100.

The outer packet part 100 comprises a front face 101a and a rear face 101b which oppose each other when the outer packet part 100 is formed. The front face 101a and the rear face 101b are connected by a side face 105. The opening 111 is formed in the side face 105. Furthermore, a front strengthening flap 106a and a rear strengthening flap 106b are formed towards the front and rear of the opening 111 respectively. When the outer packet part 100 is formed, the strengthening flaps 106a, 106b are folded inwardly and glued to the inner front and rear faces 101a, 101b of the outer packet part 100, as illustrated in Figures 2A and 2B.

A top face of the outer packet part 100 is formed of front top face part 102a, rear top face part 102b and side top face part 102c. When the outer packet part 100 is formed, rear top face part 102b and side top face part 102c are glued to an underside of front top face part 102a. Similarly, a bottom face of the outer packet part is formed of front bottom face part 103a, rear bottom face part 103b and side bottom face part 103c. When the outer packet part is formed, rear bottom face part 103b and side bottom face part 103c are glued to a top side of front bottom face part 103a.

The outer packet part 100 further comprises a front restraining flap 107a and a rear restraining flap 107b, which extend from the front face 101a and the rear face 101b respectively. The front restraining flap 107a and the rear restraining flap 107b are folded inwardly when the outer packet part 100 is formed, as shown in Figures 2A and 2B. It should also be understood that the front restraining flap 107a and rear restraining flap 107b are not glued to inner surfaces of the front face 101a and rear face 101b respectively, but are instead merely folded over, allowing material to enter between the flaps 107a, 107b and the faces 101a, 101b.

Additionally, the outer packet part 100 comprises a front engagement flap 108a and a rear engagement flap 108b. Each of the front engagement flap 108a and

the rear engagement flap 108b comprises a first engagement portion 109a, 109b and a second engagement portion 110a, 110b. The engagement portions 109a, 109b, 110a, 110b are cut away sections of the engagement flaps 108a, 108b. By cutting away a section of the engagement flap 108a, 108b, a distinction is created on the inner surface of the outer packet part 100 between a raised area and the engagement portions.

Figures 4A, 4B and 5 illustrate the inner packet part 150. The inner packet part 150 is formed by folding a cardboard blank, illustrated in Figure 5. Figure 4A shows a front side view of the inner packet part 150, while Figure 4B shows a rear side view of the inner packet part 150.

The inner packet part 150 comprises a front face 151a and a rear face 151b which oppose each other when the inner packet part 150 is formed. The front face 151a and the rear face 151b are connected by a base face 156. A first side face is formed of a front first side flap 154a and rear first side flap 154b, while a second side face is formed of a front second side flap 155a and a rear side face flap 155b. The rear side face flaps 154b, 155b are glued to inner surfaces of the front side flaps 154a, 155a to form front and rear sides of the inner packet part 150.

Base flaps 157 are connected to the first and second rear side flaps 154b, 155b. When the inner packet part 150 is formed, the base flaps are glued to an upper surface of the base face 156.

A top face of the inner packet part is formed of a rear top face flap 153b, a front top face flap 153a, a rear tear strip flap 152b and a front tear strip flap 152a. The front and rear top face flaps 152a, 152b are glued together to form a permanent portion of the top face of the inner packet part 150. The front and rear tear strip flaps 152a, 152b are glued together to form the tear strip 152 shown in Figure 1B. The front and rear tear strip flaps are connected to the remainder of the inner packet part 150 by perforations, allowing the user to remove the tear strip 152 when they wish.

The inner packet part further comprises a front locking tab 161a and a rear locking tab 161b. The locking tabs 161a, 161b are disposed in cut away portions 160a, 160b of the front face 151a and rear face 151b respectively. It is noted that front locking tab 161a is disposed in an upper portion of the front face 151a, while the rear locking tab 161b is disposed in a lower portion of the rear face 151b. More generally, the front locking tab 161a and rear locking tab 161b are preferably disposed in different regions of the front and rear faces 151a, 151b, and in particular are offset in opposing directions from a centre of the front and rear faces 151a, 151b between the base face 156 and the opposing end of the front and rear faces 151a, 151b.

Additionally, the inner packet part comprises a front restraining tab 159a and a rear restraining tab 159b. The restraining tabs 159a, 159b are disposed in cut away portions 158a, 158b of the front face 151a and rear face 151b respectively. It is noted that front restraining tab 159a is disposed in a lower portion of the front face 151a, while the rear restraining tab 159b is disposed in an upper portion of the rear face 151b. More generally, the front restraining tab 159a and rear restraining tab 159b are preferably disposed in different regions of the front and rear faces 151a, 151b, and in particular are offset in opposing directions from a centre of the front and rear faces 151a, 151b between the base face 156 and the opposing end of the front and rear faces 151a, 151b.

The operation of the packaging 1 can be understood with reference to Figures 6A to 6D, which show the position of the inner packet part 150 relative to the outer packet part 100 from a front view during movement between the closed and open positions, and also with reference to Figures 7A and 7B, which show a plan view through the cross sections A-A in Figures 6A and 6C. In Figures 6A to 6D features of the outer packet part 100 which are not visible are shown in dashed lines, while those of the inner packet part 150 that are not visible are shown in dotted lines.

Figures 6A and 7A show the inner packet part 150 in a closed position relative to the outer packet part 100. In this position, the locking tabs 161a, 161b are disposed behind first engagement portions 109a, 109b, as best seen from figure

7A. The locking tabs are disposed in a first orientation at this stage, the first orientation extending away from the opening 111.

In order for the user to move the inner packet part from the closed position shown in Figures 6A and 7A, the packet must be moved such that the locking tabs 161a, 161b engage with first engagement portions 109a, 109b. As the inner packet part 150 moves progressively, this causes the locking tabs 161a, 161b to rotate outwardly around their hinged mounting to the front and rear faces 151a, 151b of the inner packet part 150. This action is only possible if the inner packet part 150 and/or outer packet part 100 are slightly distorted from their natural shapes to allow space for the locking tabs 161a, 161b. As a result, an inhibiting effect on the movement of the inner packet part 150 relative to the outer packet part 100 is created as the locking tabs 161a, 161b rotate outwardly.

After rotation of the locking tabs 161a, 161b, they are disposed in a second orientation, in which they extend towards the opening of the outer packet part 100. To reach the second orientation, the locking tabs 161a, 161b pass through a perpendicular orientation when they are disposed perpendicular to the faces 101a, 101b, 151a, 151b of the inner packet part 100 and the outer packet part 150. This is shown in Figure 6B, which illustrates a position intermediate to the closed position and the open position.

The inner packet part 150 is then moved relative to the outer packet part 100 further to the open position, as shown in Figures 6C and 7B. As the inner packet part enters the open position, the locking tabs 161a, 161b are received in the second engagement positions 110a, 110b. This allows the inner packet part 150 and/or outer packet part 100 to return to their natural, non-distorted shapes. The locking tabs 161a, 161b therefore strikes the inner surface of the front and rear faces 101a, 101b, causing an audible click, giving the user a sense that the inner packet part has reached the correct position.

Excessive opening of the inner packet part 150 relative to the outer packet part 100 is prevented by engagement of the restraining tabs 159a, 159b with the restraining flaps 107a, 107b. In particular, the restraining tabs 159a, 159b are

received between the restraining flaps 107a, 107b and the front and rear faces 101a, 101b of the outer packet part 100 respectively. Thus, when the front edges restraining flaps 107a, 107b engage with the base of the restraining tabs 159a, 159b the inner packet part 150 can move no further relative to the outer packet part 100.

When the inner packet part 150 is moved from the open position shown in Figures 6C and 7B towards the closed position, the tip of the locking tabs engages with the second engagement portions 110a, 110b, causing it to rotate outwardly. As for movement from the closed position, movement from the open position is therefore inhibited as it requires distortion of the inner packet part 150 and or the outer packet part 100.

Moving the inner packet part from the open position towards the closed position therefore causes the locking tabs to rotate to the first orientation, as shown in Figure 6D. The locking tabs 161a, 161b are thus reset to their original position.

As inner packet part 150 enters the closed position, the locking tabs 161a, 161b are received in the first engagement portions 109a, 109b. At this point, the inner packet part 150 and/or the outer packet part 100 may revert to their natural, non-distorted positions. This causes an audible click as the locking tabs 161a. 161b strike against the inner surfaces of the front and rear faces 101a, 101b of the outer packet part 150. This gives the user a reassuring sensation that the closing action is complete, helping to give the user comfort that the packaging 1 will not open by itself.

Figures 8A, 8B and 8C illustrate a second embodiment of the present invention. The packaging 2 comprises an outer packet part 200 and an inner packet part 250. The inner packet part 250 is movable relative to the outer packet part 200 and in particularly is slidable between a closed position as illustrated in Figure 8A and first and second open positions, shown in Figures 8B and 8C respectively.

The user may effect sliding of the inner packet part 250 by pushing or pulling the inner packet part 250 relative to the outer packet part 200. When the inner packet part is in either the first or second open positions, the user may extract cigarettes 270 from the packaging 2.

As for the first embodiment, in the second embodiment the outer packet part 200 and the inner packet part 250 are coupled to each other in such a way as to provide an audible noise when the pack enters either the closed position or the open position. Furthermore, a degree of resistance is provided to retain the inner packet part 250 in the open position and in the closed positions. In this manner, accidentally movement of the outer packet part 200 relative to the inner packet part 250 can be inhibited. The mechanism by which these effects are produced can be understood with reference to Figures 9 to 12C, and will be described in greater detail below.

Figures 9 and 10 illustrate the outer packet part 200 of the second embodiment. The outer packet part 200 is formed by folding a cardboard blank, illustrated in Figure 10. Figure 9 shows a front side view of the outer packet part 200, with features which are not visible as they are folded behind a front surface 201a shown in dashed lines.

The outer packet part 200 comprises a front face 201a and a rear face 201b which oppose each other when the outer packet part 200 is formed. The sides of the outer packet part 200 are open to allow movement of the inner packet part 250.

The outer packet part 200 further comprises a first front flap 208a and a second front flap 207a which are folded over behind the front face 201a when the outer packet part is formed. Furthermore, the outer packet part 200 comprises a first rear flap 208b and a second rear flap 207b which are folded over behind the rear face 201b when the outer packet part is formed.

Each of the first front flap 208a and the first rear flap 208b comprises a first engagement portion 209a, 209b and a second engagement portion 210a, 210b.

The engagement portions 209a, 209b are edges of the flaps, while the second engagement portions 210a, 210b are cut away portions of the first flaps 208a, 208b. The first and rear front flaps 208a, 208b each further comprise a restraining portion 212a, 212b. At least a tip of the restraining portion is not fixed to the inner surface of the front/rear face 201a, 201b, thereby allowing entry of material between the restraining portion and the front/rear face 201a, 201b.

The outer packet part 200 further comprises a front restraining flap 207a and a rear restraining flap 207b, which extend from the front face 201a and the rear face 201b respectively. The front restraining flap 207a and the rear restraining flap 207b are folded inwardly when the outer packet part 200 is formed, as shown in Figure 9. It should also be understood that the front restraining flap and rear restraining flap are not glued, or are not entirely glued, to inner surfaces of the front face 201a and rear face 201b respectively, and accordingly material may enter between the retraining flaps 207a, 207b and the front/rear faces 201a, 201b.

A top face of the outer packet part 200 is formed of a front top face part 202a and a rear top face part 202b. When the outer packet part is formed, the rear top face part 202b is glued to an underside of front top face part 202a. A bottom face 203 is disposed between the front face 201a and the rear face 201b so that when the outer packet part 200 is formed, the bottom face 203 forms the bottom of the outer packet part 250.

Figures 11 and 12 illustrate the inner packet part 250. The inner packet part 250 is formed by folding a cardboard blank, illustrated in Figure 12. Figure 11 shows a front side view of the inner packet part 250 once formed.

The inner packet part 250 comprises a front face 251a and a rear face 251b which oppose each other when the inner packet part 250 is formed. The front face 251a and the rear face 251b are connected by a base face 256. A first side face is formed of a front first side flap 254a and rear first side flap 254b, while a second side face is formed of a front second side flap 255a and a rear side face flap 255b. The rear side face flaps 254b, 255b are glued to inner surfaces of the

front side flaps 254a, 255a to form front and rear sides of the inner packet part 250.

Base flaps 257 are connected to the first and second rear side flaps 254b, 255b. When the inner packet part 250 is formed, the base flaps are glued to an upper surface of the base face 256.

A top face of the inner packet part is formed of a rear top face flap 252b and a front top face flap 252a. The front and rear top face flaps 252a, 252b are glued together to form the top face, but do not cover the entire upper end of the inner packet part. In fact, the top face allows two openings in the inner packet part 250 for retrieval of cigarettes.

The inner packet part 250 further comprises a front locking tab 261a and a rear locking tab 261b. The locking tabs 261a, 261b are flaps foldably connected to the front/rear faces 201a, 201b and are formed in cut away portions 260a, 260b. The cut away portions 260a, 260b and locking tabs 261a, 261b are disposed substantially in the centre of the relevant front/rear face 201a, 201b. The connection between the locking tabs 261a, 261b and the front/rear faces is such that the locking tabs 261a, 261b are biased to extend outwardly from the inner packet part 250.

Additionally, the inner packet part comprises a first front restraining tab 259a, a second front restraining tab 262a, a first rear restraining tab 259b and a second rear restraining tab 262b. The restraining tabs 259a, 259b, 262a, 262b are cut from the front and rear faces 201a, 201b of the inner packet part 250 to form flaps which are foldably connected to the front/rear faces 201a, 201b. The restraining tabs 259a, 259b, 262a, 262b are biased outwardly from the inner packet part.

When the packaging 2 is formed, the inner packet part 250 is disposed within the outer packet part 200. The locking tabs 261a, 261b and the restraining tabs 259a, 259b, 262a, 262b thus extend from the front/rear faces 251a, 251b of the inner packet part 250 to which they are foldably connected to contact the inner

surfaces of the front/rear faces 201a, 201b of the outer packet part due to their outward bias. The interactions of these tabs integrally formed with the inner packet part 250 with the various elements of the outer packet part 200 is able to limit the relative movement of the inner packet part 200 and the outer packet part 200. In addition, the locking tabs 261a, 261b can provide an audible signal as certain relative positions are reached.

The operation of the packaging 2 can be understood with reference to Figures 13A to 13C, which show the position of the inner packet part 250 relative to the outer packet part 200 in the various positions illustrated in Figures 8A to 8C from a front view. Features of the outer packet part 200 which are not visible are shown in dashed lines, while those of the inner packet part that are not visible are shown in dotted lines.

In Figures 8A and 13A the inner packet part 250 is in a closed position relative to the outer packet part 200. In Figures 8B and 13B, the inner packet part has been moved from the closed position in a first direction to a fist open position. In Figures 8C and 13C, the inner packet part 250 has been moved in a second direction from the closed to a second open position.

In the closed position illustrates in Figures 8A and 13A, the locking tabs 261a, 261b are disposed such that they extend with their tips facing engagement portions 209a, 209b.

As the user moves the inner packet part 250 from the closed position shown in Figures 8A and 13A to the first open position shown in Figures 8B and 13C, the locking tab 261a engages with the first engagement portion 209a. As the inner packet part 250 moves progressively, this causes the locking tabs 261a to rotate outwardly around its hinged mounting to the front face 251a of the inner packet part 250. This action is only possible if the inner packet part 250 and/or outer packet part 200 are slightly distorted from their natural shapes. As a result, an inhibiting effect on the movement of the inner packet part 250 in the first direction relative to the outer packet part 200 is created as the locking tab 261a rotates outwardly.

As the inner packet part 250 is moved further in the first direction, the locking tab 261a is rotated by engagement with the first engagement portion 209a to a second orientation, in which it extends from the front face 251a of the inner packet part 250 towards the first engagement portion 209a. As the inner packet part reaches the first open position shown in Figures 8B and 13B, the locking tab 261a is received in the second engagement portion 210a. The locking tab 261a then springs outwardly to strike the inner surface of the front face 201a, causing an audible click, giving the user a sense that the inner packet part has reached the correct position.

Excessive opening of the inner packet part 250 relative to the outer packet part 200 is prevented by engagement of the second front restraining tabs 262a with the restraining portion 212a and of the first rear restraining tab 259b with the rear restraining flap 207b. In particular, the restraining tab 262a is received between the restraining portion 212a and the front face 201a, while the restraining tab 259b is received between the restraining flap 207b and the rear face 201b of the outer packet part 200. As a result, this engagement of the restraining tabs 262a, 259b prevents movement of the inner packet part beyond the first open position.

When the inner packet part 250 is returned from the first open position shown in Figures 8A and 13A towards the closed position, the tip of the locking tab 261a engages with the second engagement portions 210a, causing it to rotate outwardly. As for movement from the closed position, movement from the open position is therefore inhibited as it requires distortion of the inner packet part 250 and/or the outer packet part 200.

Moving the inner packet part from the open position towards the closed position therefore causes the locking tabs to rotate to the first orientation, as shown in Figure 13A. The locking tab 261a is thus reset to its original position.

As inner packet part 250 enters the closed position, the locking tab 261a is received in the first engagement portion 209a. This causes an audible click as the locking tab 261a springs outwardly to strike the inner surface of the front face

201a. This gives the user a reassuring sensation that the closing action is complete, helping to give the user comfort that the packaging 2 will not open by itself.

It is noted that the locking tab 261a is engaged during movement of the inner packet part 250 between the closed position and the first open position, while the locking tab 261b does not engage during this movement. In contrast, during movement of the inner packet part 250 between the closed position and the second open position, shown in Figures 8C and 13C, the locking tab 261b engages with the engagement portions 209b, 210b on the rear face 201b of the outer packet part 200b, while the locking tab 261a is not engaged. The action of the locking tab 261b during movement between the closed position and the second open position is analogous to that of the locking tab 261a during movement between the closed position and the first open position. In particular, the locking tab 261b is effective to initially to inhibit movement away from the set positions, and subsequently to cause an audible click when a position is reached.

Similarly, while the engagement tabs 259a, 262b are not engaged when reaching the first open position, they are engaged when reaching the second open position, and thus act analogously to the engagement tabs 259b, 262a in the first open position.

Packaging 3 according to a third preferred embodiment of the invention is illustrated in Figures 14A and 14B. Like the first and second embodiments, the packaging 3 of the third embodiment comprises an inner packet part 350 and an outer packet part 300. The inner packet part 350 is movable relative to the outer packet part and in particularly is rotatable between a closed position as illustrated in Figure 14A and an open position as shown in Figure 14B.

The user may effect rotation of the inner packet part 350 by pushing the part of the inner packet part 350 that is exposed through an opening 311 in the outer packet part 300 with a thumb or finger. Although not shown in Figure 14B, when

the outer packet part is in the open position, cigarettes held within the inner packet part 350 may be accessed by the user.

The outer packet part 300 and the inner packet part 350 are coupled to each other in such a way as to provide an audible noise when the pack enters either the closed position or the open position. Furthermore, a degree of resistance is provided to retain the inner packet part in the open position and in the closed position. In this manner, accidentally movement of the outer packet part 300 relative to the inner packet part 350 can be inhibited. The mechanism by which these effects are produced can be understood with reference to Figures 16 to 19B, and will be described in greater detail below.

Figures 15 and 16 illustrate the outer packet part 300. The outer packet part is formed by folding a cardboard blank, illustrated in Figure 16. Figure 15 shows a front side view of the outer packet part 300 once formed.

The outer packet part 300 comprises a front face 301a and a rear face 301b which oppose each other when the outer packet part 300 is formed. The front face 301a and the rear face 301b are connected by a side face 305. The opening 311 is formed in the side face 305. Furthermore, a front strengthening flap 306a and a rear strengthening flap 306b are formed towards the front and rear of the opening 311 respectively. When the outer packet part 300 is formed, the strengthening flaps 305a, 305b are folded inwardly and glued to the inner front and rear faces 301a, 301b of the outer packet part 300, as can be seen in Figure 15.

A top face of the outer packet part is formed of front top face part 302a, rear top face part 302b and side top face part 302c. When the outer packet part 300 is formed, rear top face part 302b and side top face part 302c are glued to an underside of front top face part 302a. Similarly, a bottom face of the outer packet part 300 is formed of front bottom face part 303a, rear bottom face part 303b and side bottom face part 303c. When the outer packet part 300 is formed, rear bottom face part 303b and side bottom face part 303c are glued to a top side of front bottom face part 303a.

The bottom face formed of the bottom face parts 303a, 303b, and 303c does not cover the entire bottom surface of the outer packet part 300 when formed. The outer packet part further comprises a connecting flap 304, which is foldably connected to the bottom face part 303b. Unlike the bottom face part 303b, the connecting flap is separated from the rear face 301b. As a result, when the outer packet part 300 is formed, the connecting flap 304 is able to move rotationally relative to the rest of the outer packet part 300. As will be described further below, the inner packet part 350 is mounted to the connecting flap 304.

The outer packet part 300 further comprises a front flap 308a and a rear flap 308b. The front flap is folded over behind the front face 301a when the outer packet part is formed, while the rear flap 308b is folded over behind the rear face 301b when the outer packet part 300 is formed.

Each of the front flap 308a and the rear flap 308b comprises a first engagement portion 309a, 309b and a second engagement portion 310a, 310b. The first engagement portions 309a, 309b are edges of the flaps 308a, 308b, while the second engagement portions 310a, 310b are cut away portions of the flaps 308a, 308b. The rear flap 308b further comprises a restraining portion 307b which is a cut-away region of the rear flap 308b. The rear flap is preferably fixed to the rear face 301b when the outer packet part 300 is formed in such a way that it is possible for material entering through the restraining portion to be held between the rear flap 308b and the rear face 301b.

The outer packet part 300 further comprises a restraining flap 307a which extends from the front face 301a. The restraining flap 307a is folded inwardly when the outer packet part 300 is formed, as shown in Figure 19A.

Figures 17 and 18 illustrate the inner packet part 350. The inner packet part 350 is formed by folding a cardboard blank, illustrated in Figure 17. Figure 18 shows a front side view of the inner packet part 350 once formed.

The inner packet part 350 comprises a front face 351a and a rear face 351b which oppose each other when the inner packet part 350 is formed. The front face 351a and the rear face 351b are connected by a base face 356. A first side face is formed of a front first side flap 354a and rear first side flap 354b, while a second side face is formed of a front second side flap 355a and a rear side face flap 355b. The rear side face flaps 354b, 355b are glued to inner surfaces of the front side face flaps 354a, 355a to form front and rear sides of the inner packet part 350.

Base flaps 357 are connected to the first and second rear side flaps 354b, 355b. When the inner packet part 350 is formed, the base flaps are glued to an upper surface of the base face 356.

The inner packet part 350 has an open top. Front reinforcing flap 353a and rear reinforcing flap 353b are connected to upper edges of the front and rear faces 351a, 353b respectively, and are folded inwardly.

The inner packet part 350 further comprises a front locking tab 361a and a rear locking tab 361b. The locking tabs 361a, 361b are disposed in cut away portions 360a, 360b of the front face 351a and rear face 351b respectively. Additionally, the inner packet part comprises a front restraining tab 359a and a rear restraining tab 359b. The restraining tabs 359a, 359b cut are from the front face 351a and rear face 351b respectively, though they remain attached by a fold line at a base end. Both the locking tabs 361a, 361b and the restraining tabs 359a, 359b are biased outwardly from the inner packet part 350 when formed.

When the packaging 3 of the third preferred embodiment is formed, the inner packet part 350 is disposed within the outer packet part 300. The base 356 of the outer packet part 350 is affixed, for example by gluing, to the connecting flap 304 of the inner packet part 300. The locking tabs 361a, 361b and the restraining tabs 359a, 359b extend from the front/rear faces 351a, 351b of the inner packet part 350 to which they are foldably connected to contact the inner surfaces of the front/rear faces 301a, 301b of the outer packet part 300 due to

their outward bias. The interactions of these tabs integrally formed with the inner packet part 350 with the various elements of the outer packet part 300 is able to limit the relative movement of the inner packet part 300 and the outer packet part 300. In addition, the locking tabs 361a, 361b can provide an audible signal as certain relative positions are reached.

The operation of the packaging 3 can be understood with reference to Figures 19A and 19B, which show the position of the inner packet part 350 relative to the outer packet part 300 from a front view in both the closed position of Figure 14A and the open position of Figure 14B. In Figures 19A and 19B, features of the outer packet part 300 not visible are shown in dashed lines, while features of the inner packet part 350 that are not visible are shown in dotted lines.

Figure 19A shows the inner packet part 350 in a closed position relative to the outer packet part 300. In this position, the locking tabs 361a, 361b are disposed such that they extend with their tips facing engagement portions 309a, 309b.

As the user moves the inner packet part 350 from the closed position shown in Figures 14A and 19A to the first open position shown in Figures 14B and 19B, the locking tabs 361a, 361b engage with the first engagement portions 309a, 309b. As the inner packet part 350 moves progressively, this causes the locking tabs 361a, 361b to rotate outwardly around their hinged mounting to the front/rear faces 351a, 351b of the inner packet part 350. This action is only possible if the inner packet part 350 and/or outer packet part 300 are slightly distorted from their natural shapes. As a result, an inhibiting effect on the movement of the inner packet part 350 in the first direction relative to the outer packet part 300 is created as the locking tabs 361a, 361b rotate outwardly.

As the inner packet part 350 is moved further in the first direction, the locking tabs 361a, 361b are rotated by engagement with the first engagement portions 309a, 309b to a second orientation, in which they extends from the front face 351a of the inner packet part 350 towards the first engagement portions 309a, 309b. As the inner packet part reaches the first open position shown in Figures 14B and 19B, the locking tabs 361a, 361b are received in the second

engagement portions 310a, 310b. The locking tabs 361a, 361b then spring outwardly to strike the inner surface of the front/rear faces 301a, 301b, causing an audible click, giving the user a sense that the inner packet part has reached the correct position.

Excessive opening of the inner packet part 350 relative to the outer packet part 300 is prevented by engagement of the front restraining tabs 359a with the restraining flap 307a and of the rear restraining tab 359b with the restraining flap 307b. In particular, the front restraining tab 359a is received between the restraining flap 307a and the front face 301a, while the rear restraining tab 359b is received through the restraining portion 307b between the rear flap 308b and the rear face 301b of the outer packet part 300. As a result, this engagement of the restraining tabs 359a, 359b prevents movement of the inner packet part 350 beyond the first open position.

When the inner packet part 350 is returned from the open position shown in Figures 14B and 19B towards the closed position, the tips of the locking tabs 361a, 361b engage with the second engagement portions 310a, 310b causing the locking tabs 361a, 361b to rotate outwardly. As for movement from the closed position, movement from the open position is therefore inhibited as it requires distortion of the inner packet part 350 and/or the outer packet part 300.

Moving the inner packet part from the open position towards the closed position therefore causes the locking tabs to rotate to the first orientation, as shown in Figure 19A. The locking tab 361a is thus reset to its original position.

As inner packet part 350 enters the closed position, the locking tab 361a is received in the first engagement portion 309a. This causes an audible click as the locking tab 361a springs outwardly to strike the inner surface of the front face 301a. This gives the user a reassuring sensation that the closing action is complete, helping to give the user comfort that the packaging 3 will not open by itself.

The above description relates to three particularly preferred embodiments of the invention, but it will be appreciated that other implementations are possible. In particular, the skilled person may modify or alter the particular geometry and arrangement of the particular features of the packaging. Particularly, the respective positions of the locking tabs and engagement portions on the inner and outer packet parts can easily be modified or inverted by the skilled person without affecting the functional behaviour of the packaging of the invention. Other variations and modifications will also be apparent to the skilled person. Such variations and modifications may involve equivalent and other features which are already known and which may be used instead of, or in addition to, features described herein. Features that are described in the context of separate embodiments may be provided in combination in a single embodiment. Conversely, features which are described in the context of a single embodiment may also be provided separately or in any suitable sub-combination.

Claims

1. Packaging, comprising:

an outer packet part;

an inner packet part disposed within the outer packet part, the inner packet part being movable relative to the outer packet part between a first position and a second position; and

a locking mechanism comprising a locking tab and an engagement portion provided on opposing faces of the inner packet part and the outer packet part,

wherein the locking tab and the engagement portion are arranged such that movement of the inner packet part from the first position to the second position is effective to rotate the at least one locking tab around a hinge from a first orientation to a second orientation through a perpendicular orientation in which the locking tab extends perpendicularly to the opposing faces.

2. Packaging according to claim 1, wherein the locking tab is concealed by the outer packet part in one or both of the first position and the second position.

3. Packaging according to claim 1 or claim 2, further comprising a second engagement portion arranged to engage with the at least one locking tab during movement of the inner packet part from the second position to the first position such that the locking tab is rotated around said hinge from the second orientation to the first orientation through the perpendicular orientation.

4. Packaging according to any one of the preceding claims, wherein the locking tab is arranged to generate a sound when the inner packet part reaches the first position or when the inner packet part reaches the second position.

5 Packaging according to claim 4, wherein the locking tab is arranged to generate the sound by striking against one of the opposing faces of the inner packet part of the outer packet part.

6. Packaging according to any one of the preceding claims, further comprising a second locking mechanism, wherein the first locking mechanism is disposed on a first side of the packaging and the second locking mechanism is disposed on a second side of the packaging.

7. Packaging according to claim 6, wherein the first and second sides of the packaging are opposing sides of the packaging.

8. Packaging according to any one of the preceding claims, further comprising a restraining mechanism arranged to limit movement of the inner packet part relative to the outer packet part.

9. Packaging according to claim 8, wherein the restraining means comprises a first restraining element and a second restraining element provided on opposing faces of the inner packet part and the outer packet part, wherein engagement of the first and second elements is effective to limit movement of the inner packet part relative to the outer packet part.

10. Packaging according to any one of the preceding claims, wherein the outer packet part comprises at least one opening through which one can push the inner packet part to initiate movement of the inner packet part relative to the outer packet part.

11. Packaging according to any one of the preceding claims, wherein longitudinal edges of the packaging when the inner packet part is in a closed position have a curved profile.

12. A blank for forming the inner packet part of any one of the preceding claims.

13. A blank for forming the outer packet part of any one of claims 1 to 11.

14. A method of forming an inner packet part, comprising folding the blank of claim 12.

15. A method of forming an outer packet part, comprising folding the blank of claim 13.

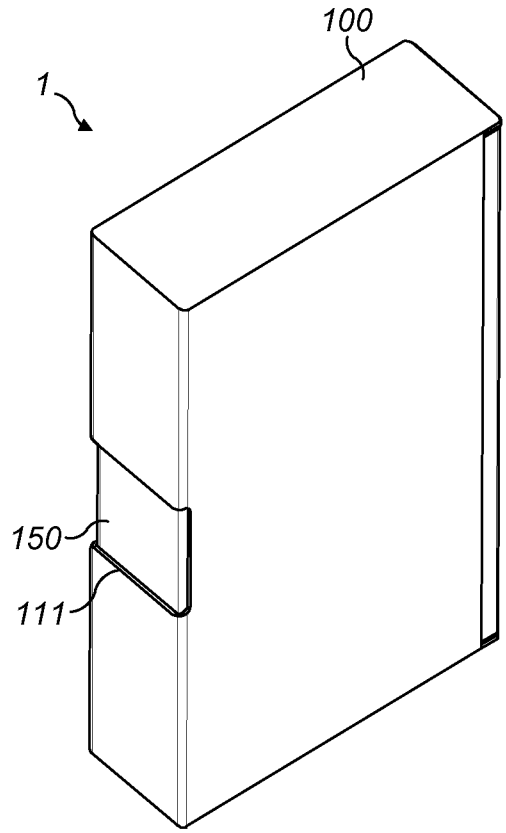


FIG. 1A

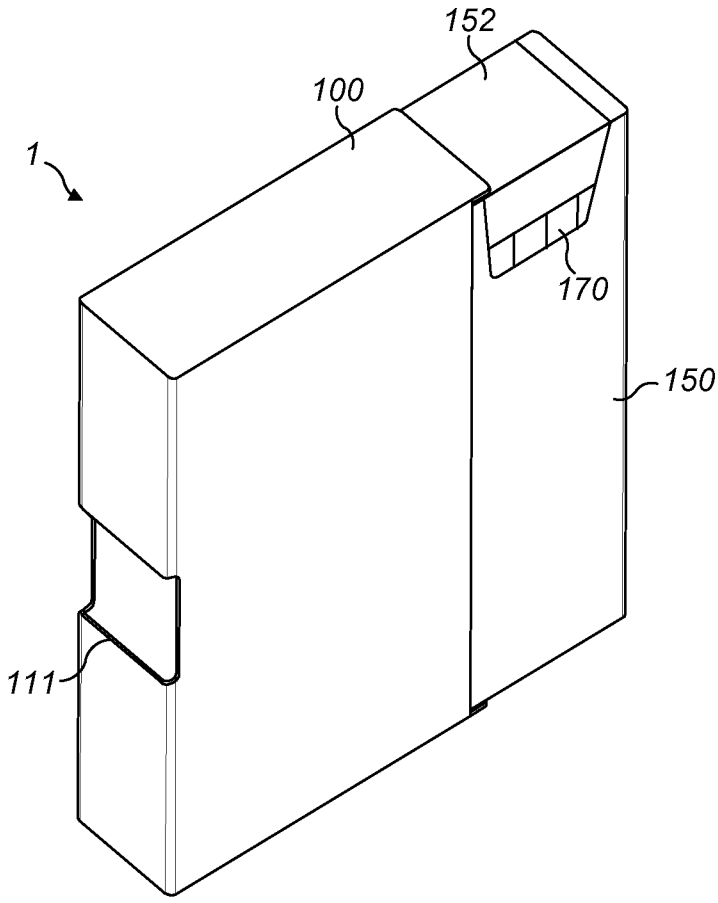


FIG. 1B

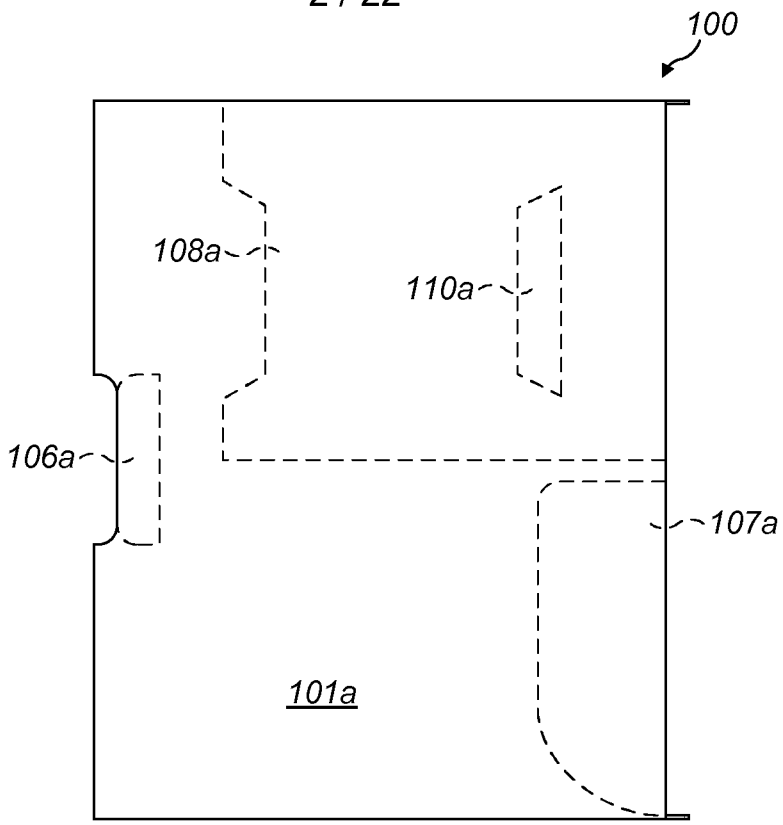


FIG. 2A

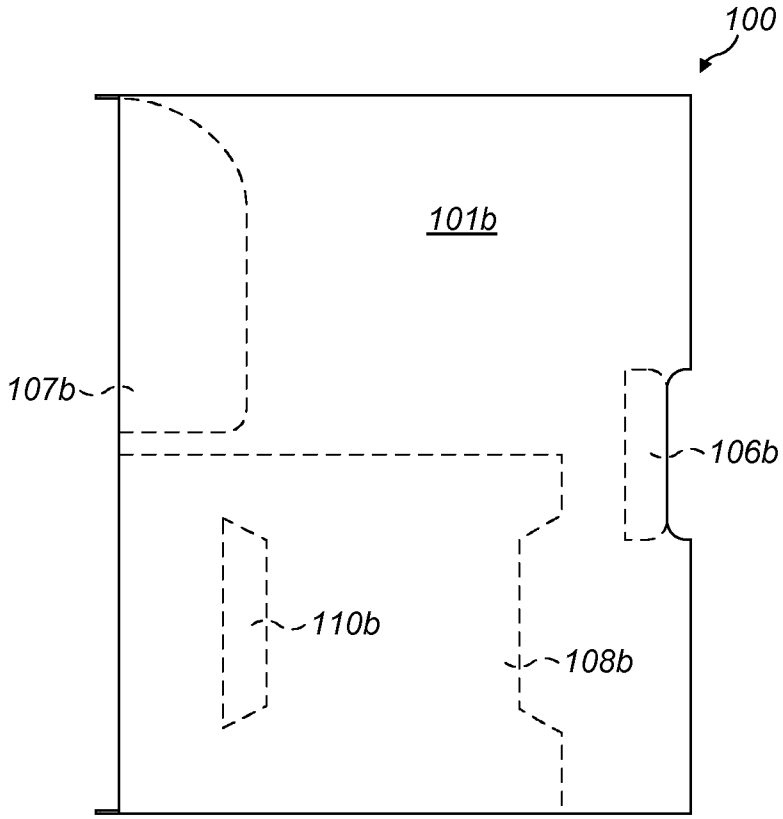
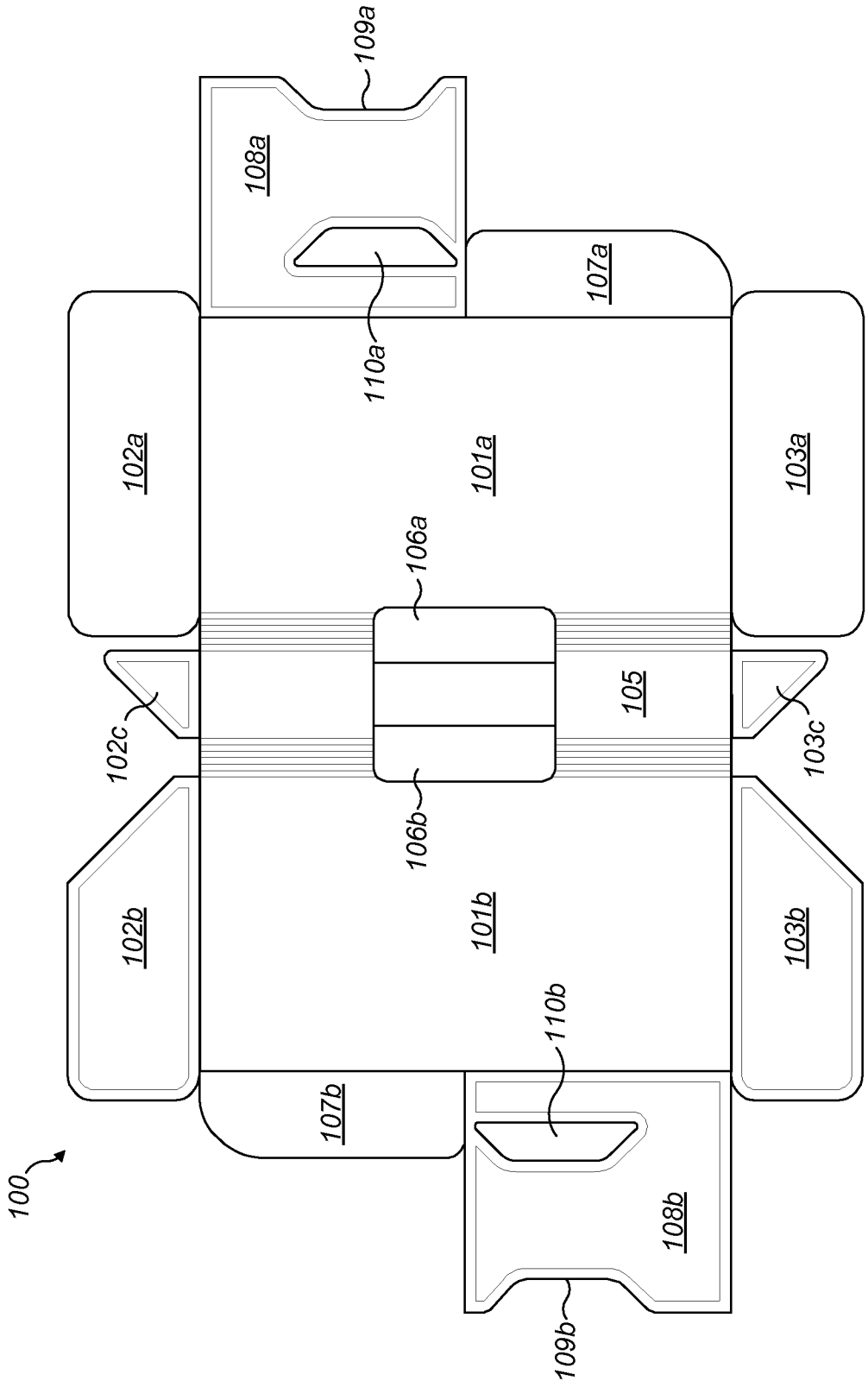


FIG. 2B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102b
102c
103a
103b
103c
105
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107b
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109b
110a
110b

FIG. 3

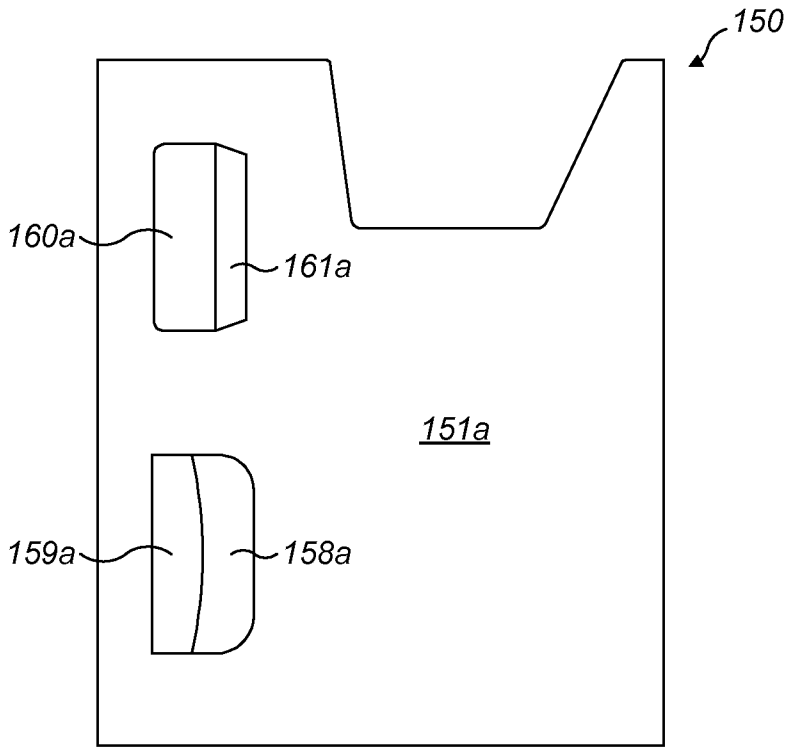


FIG. 4A

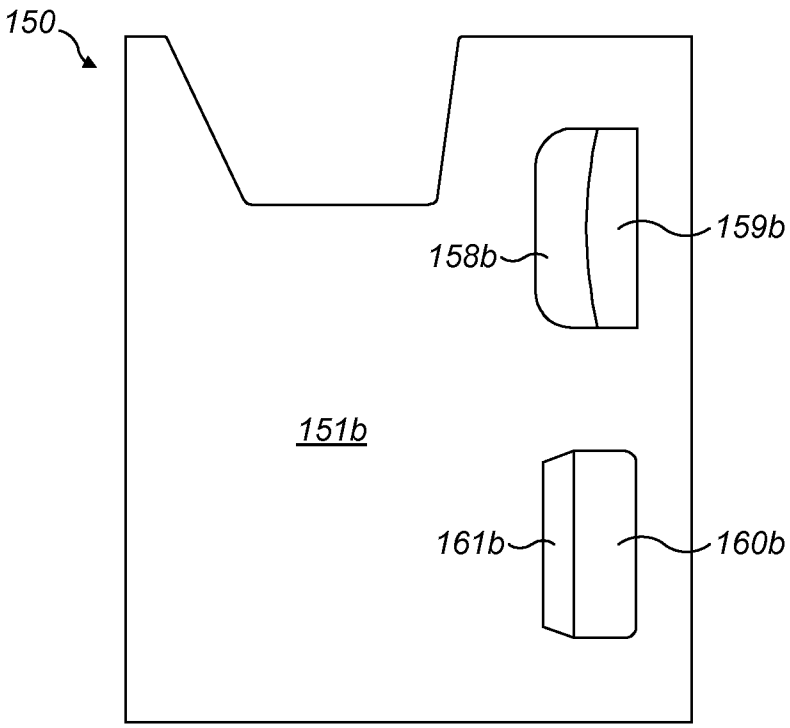
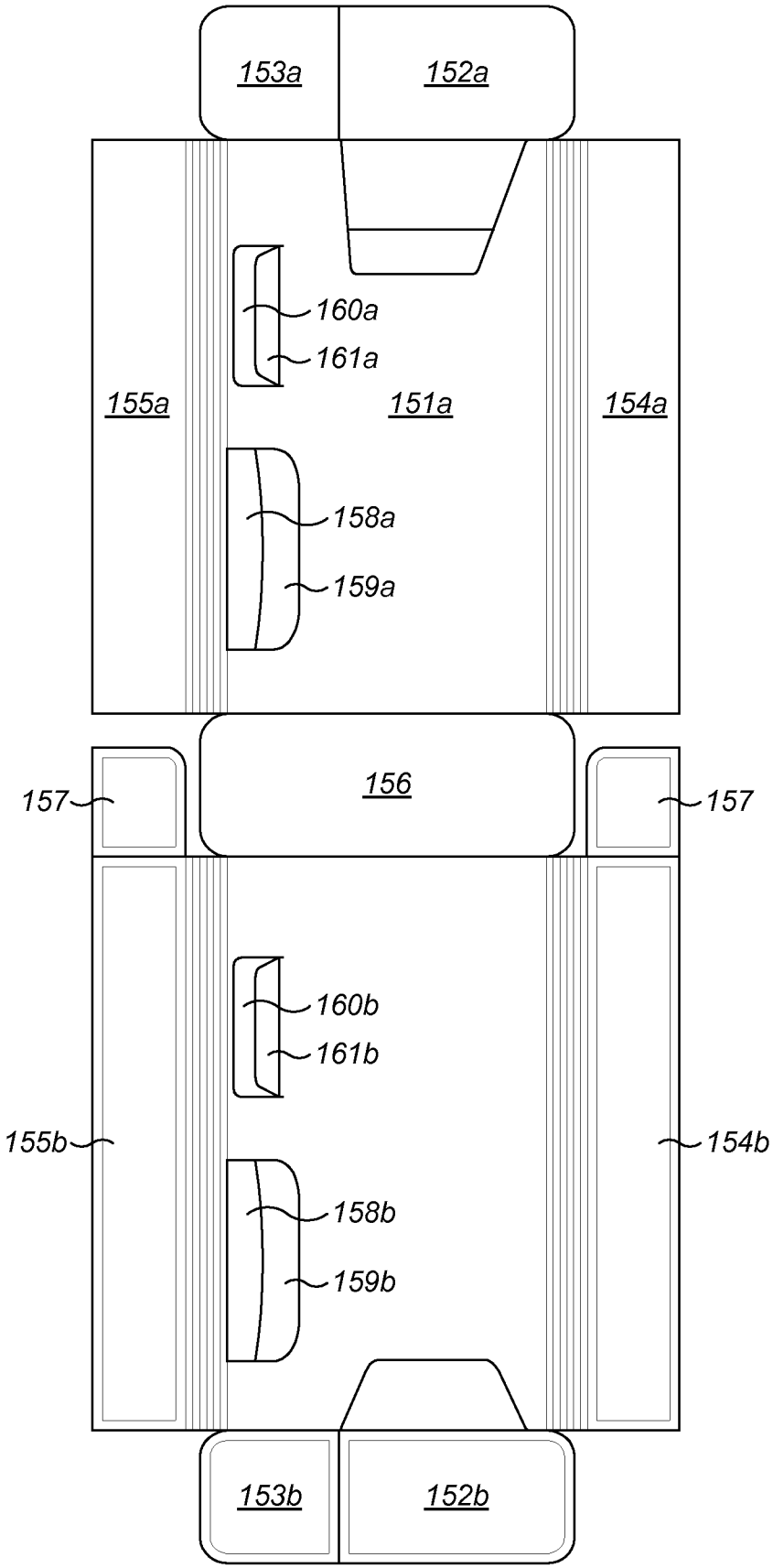


FIG. 4B


153a
152a
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159a
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157
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160b
161b
155b
154b
158b
159b
153b
152b

FIG. 5

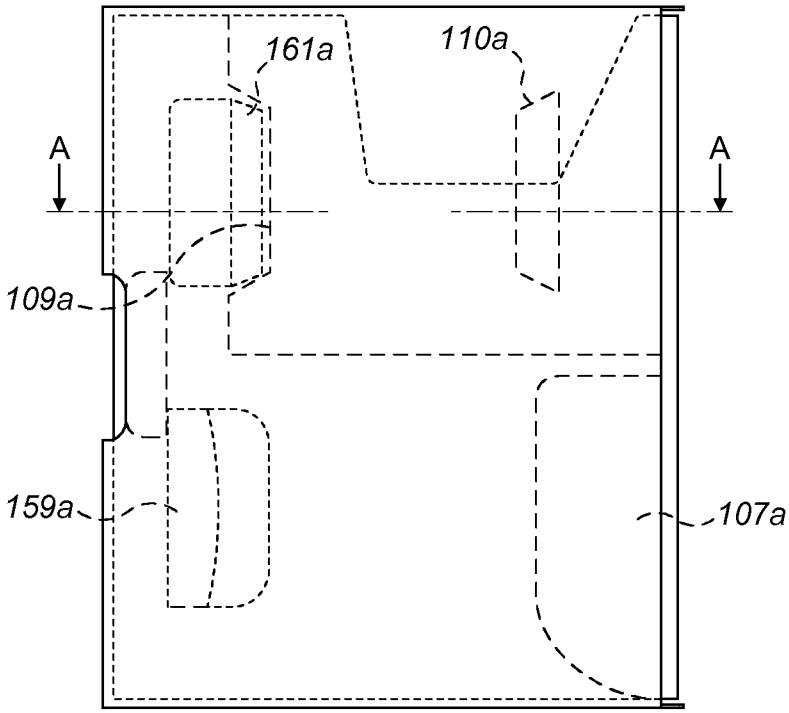


FIG. 6A

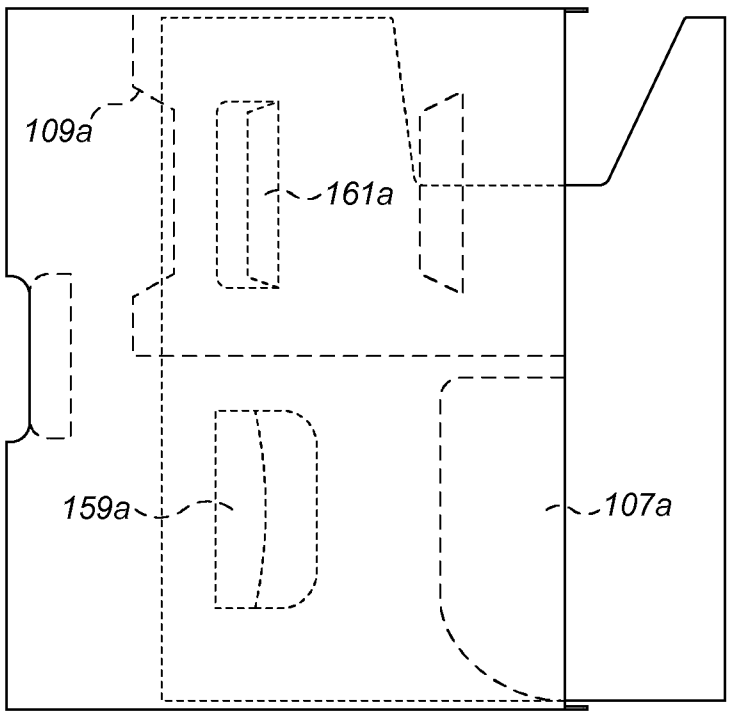


FIG. 6B

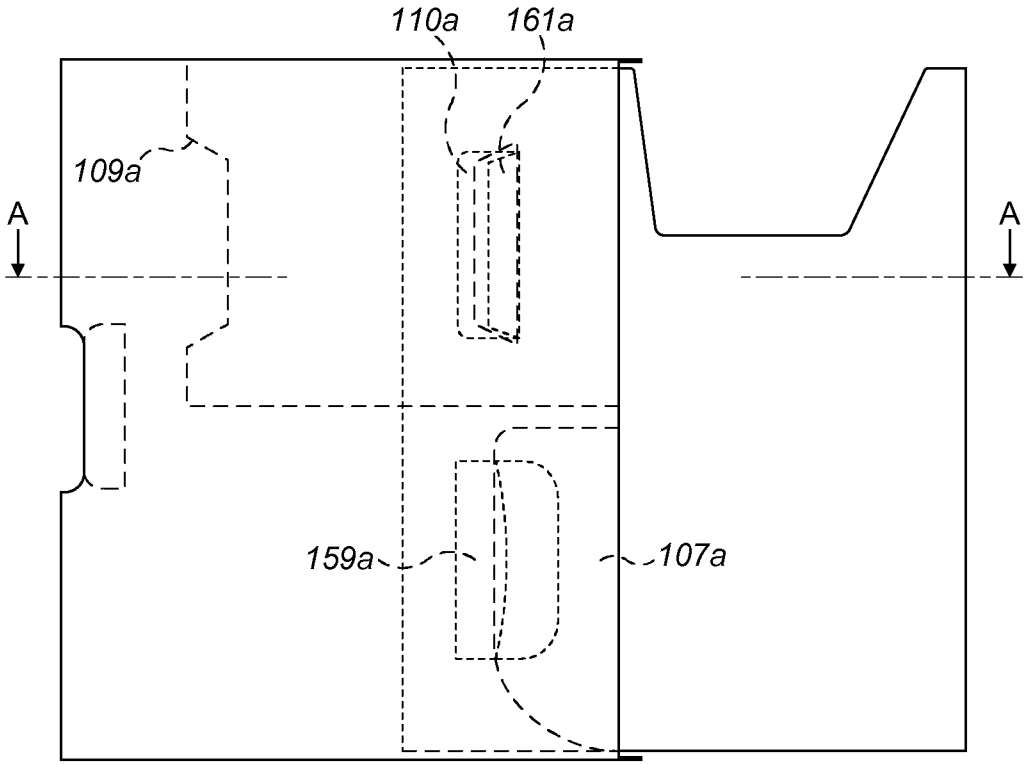


FIG. 6C

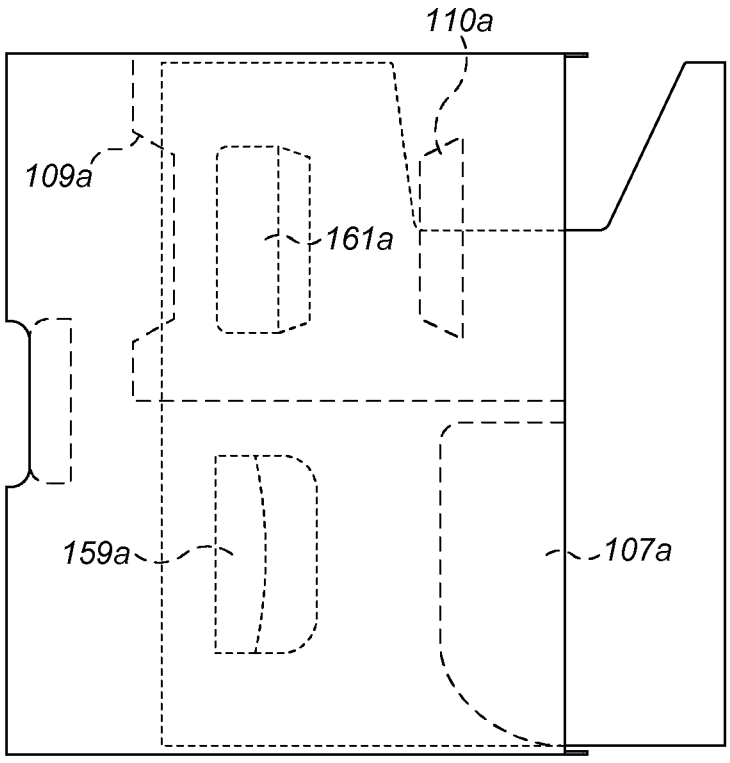


FIG. 6D

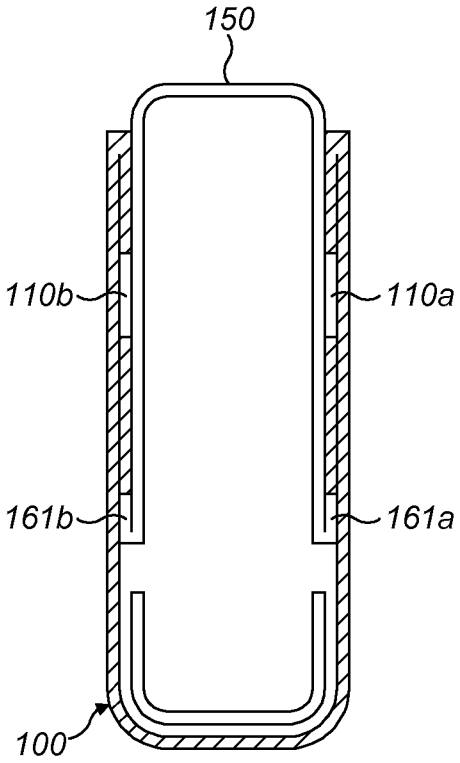


FIG. 7A

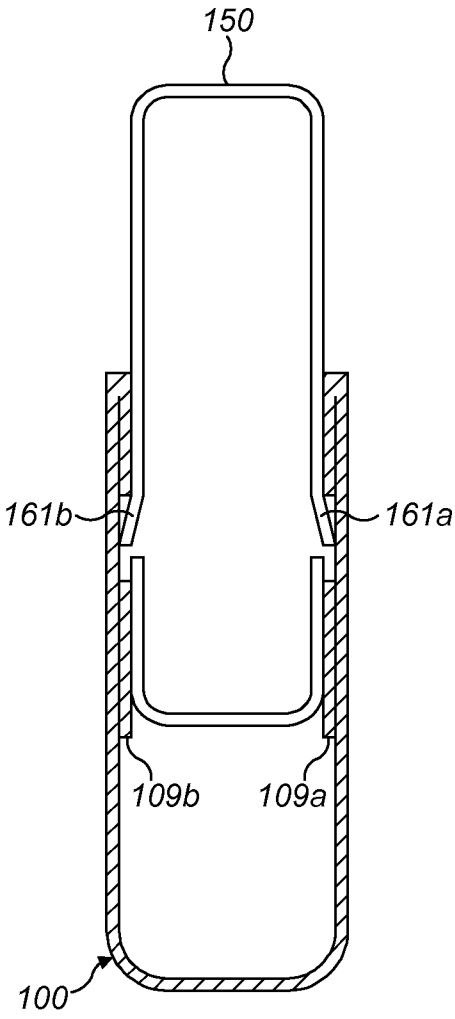


FIG. 7B

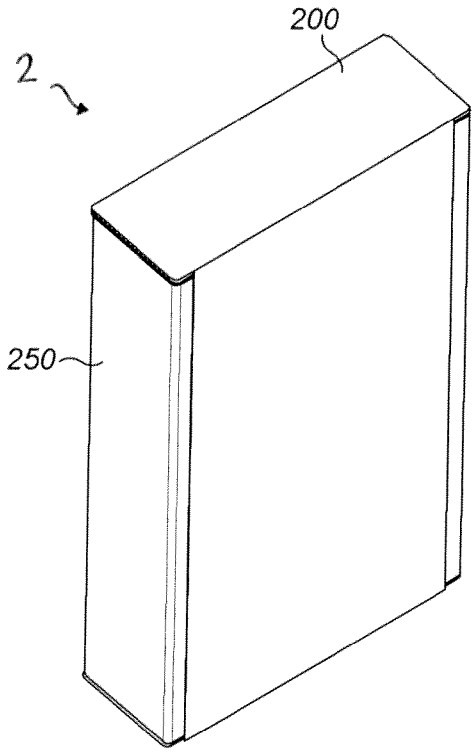


FIG. 8A

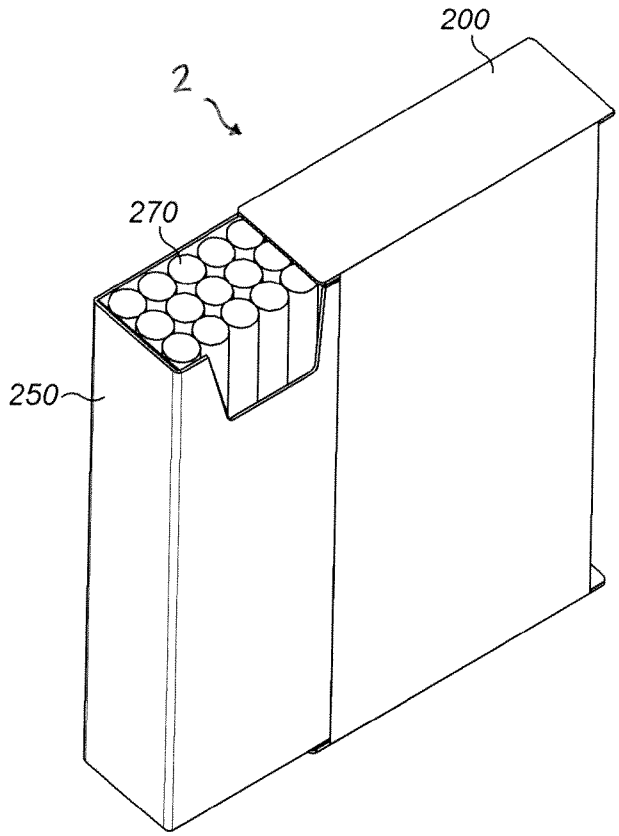


FIG. 8B

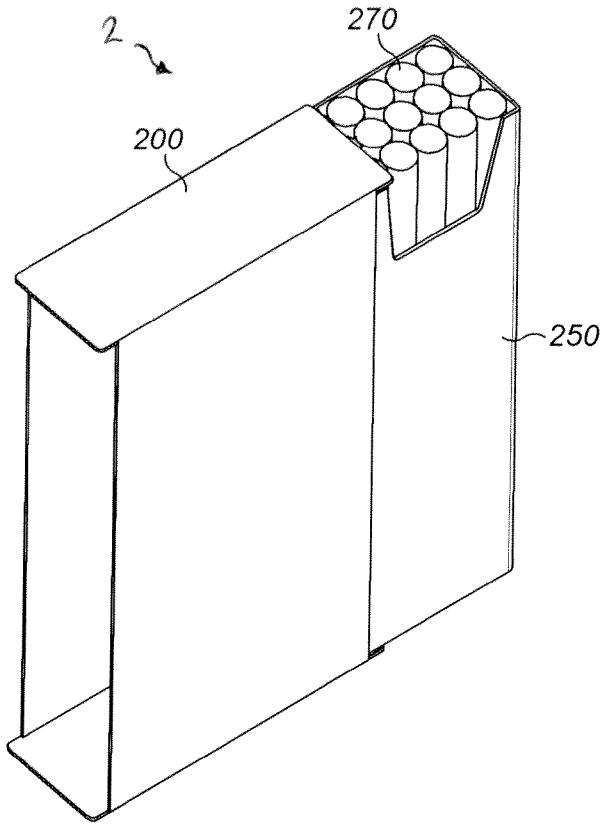


FIG. 8C

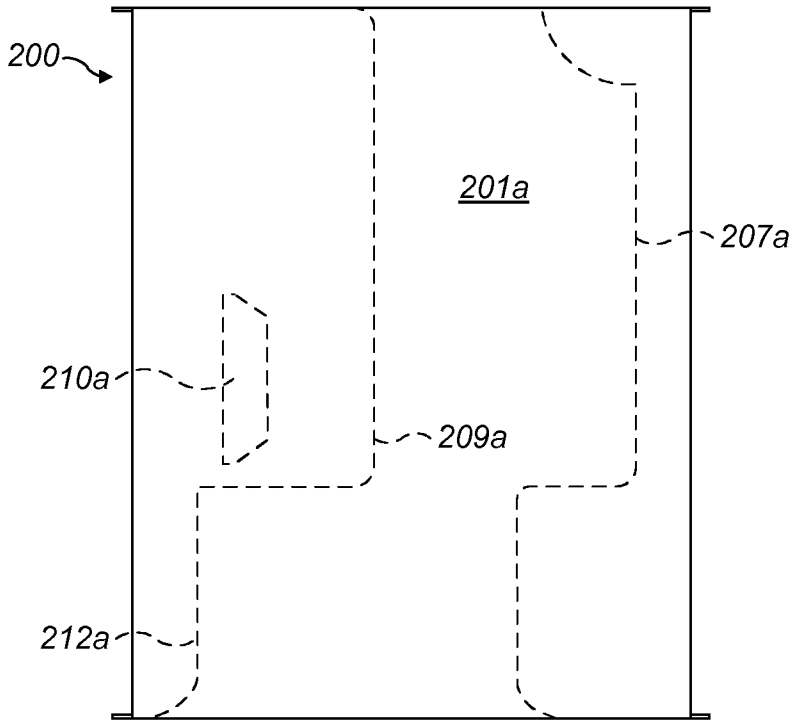


FIG. 9

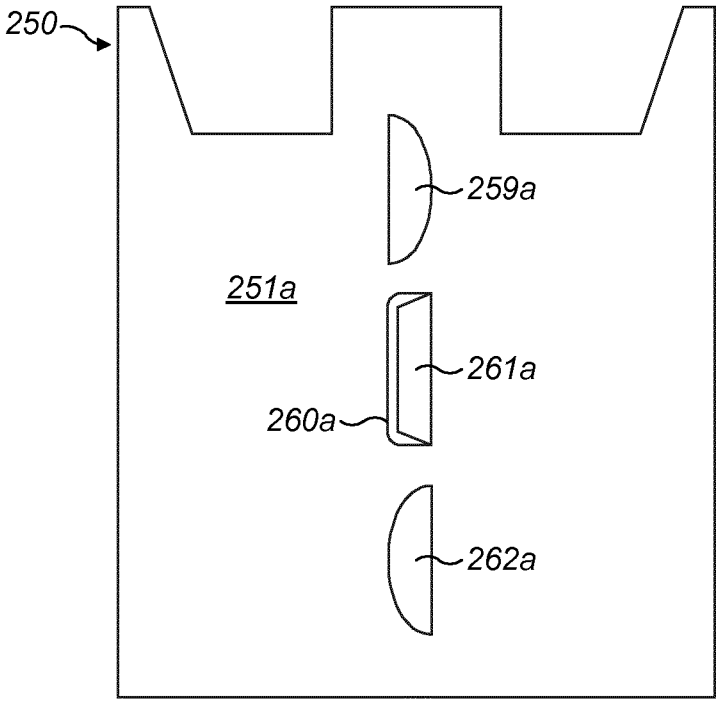
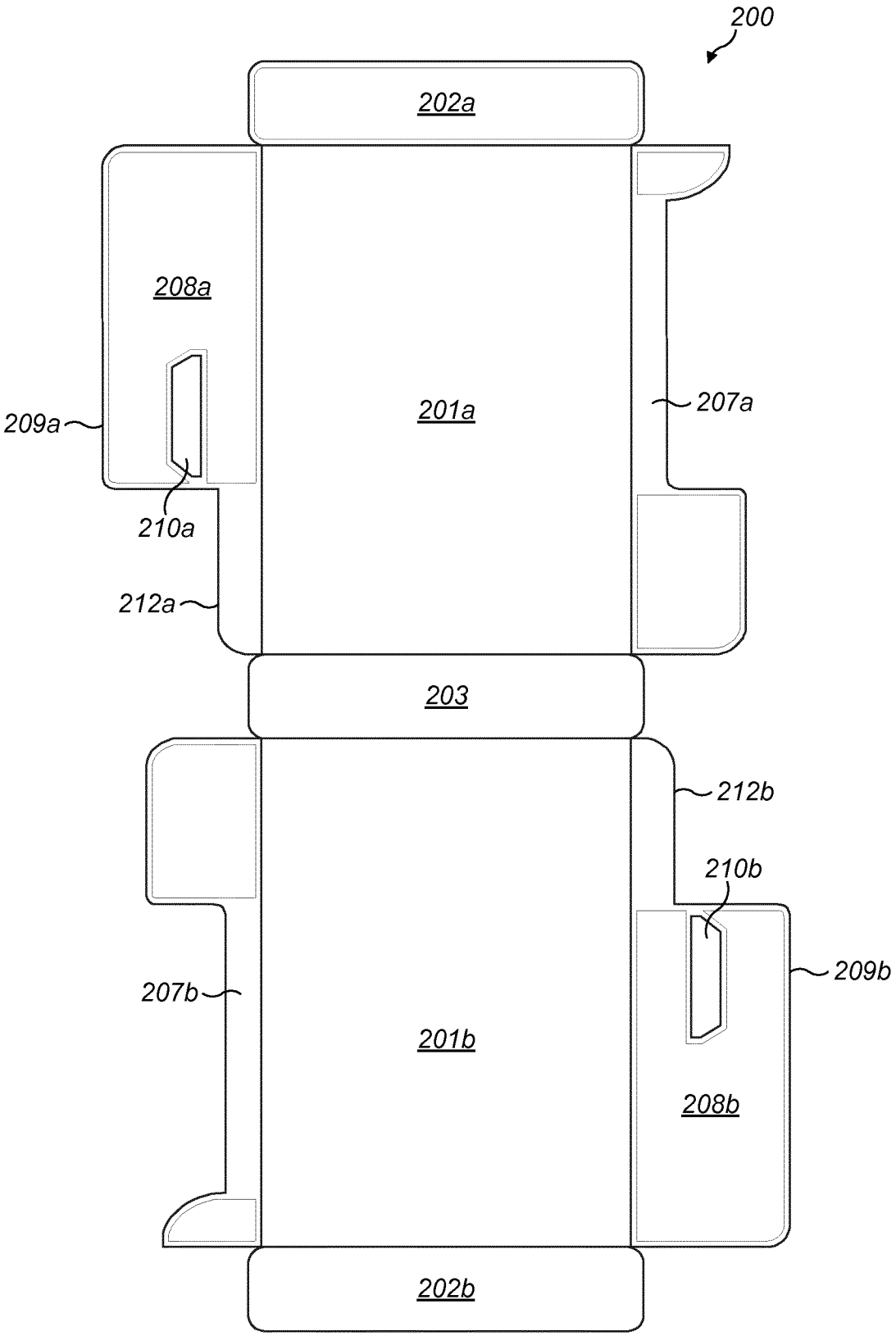


FIG. 11


200
202a
208a
209a
201a
207a
210a
212a
203
212b
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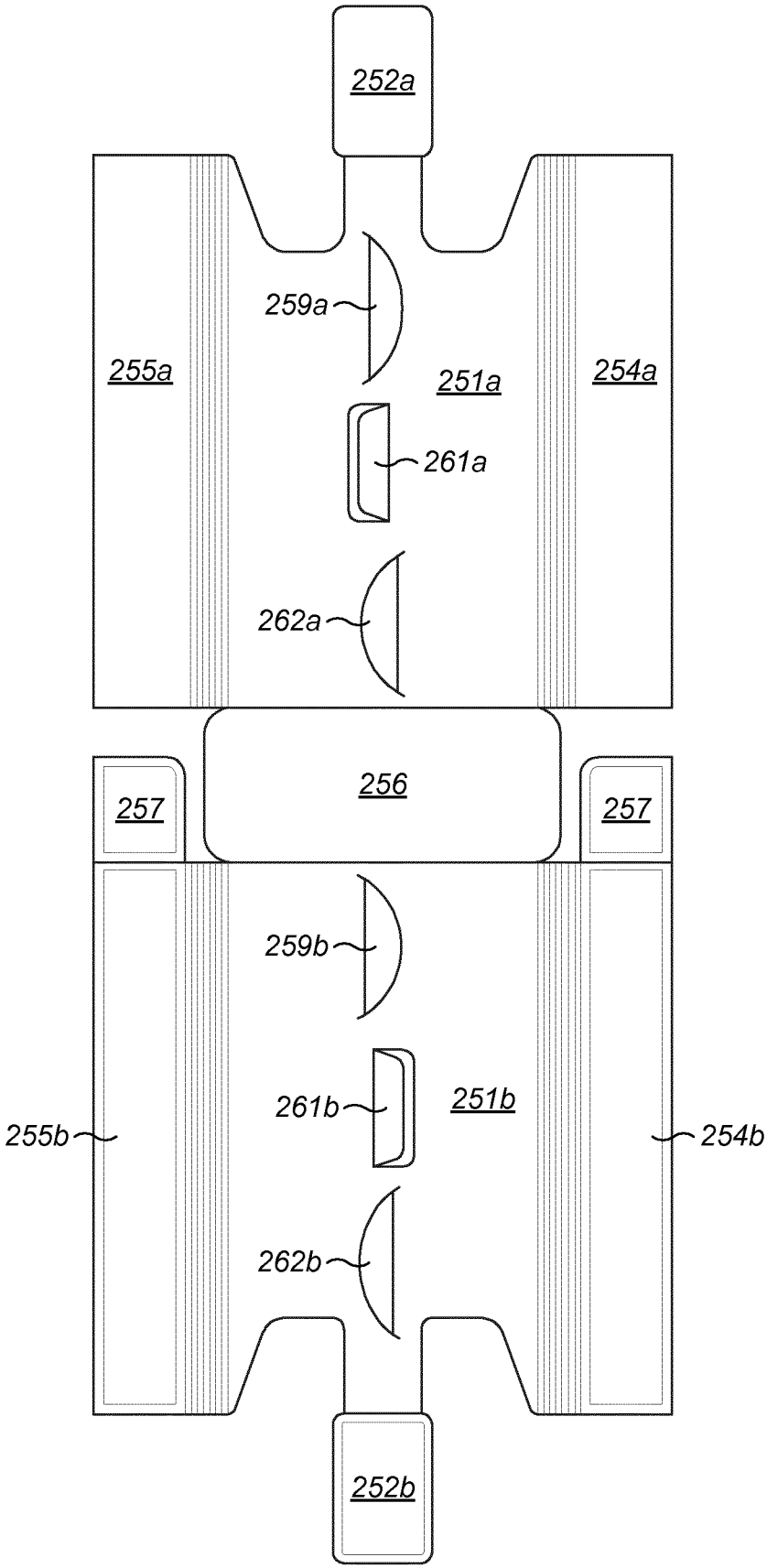
209b
207b
201b
208b
202b

FIG. 10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262a
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257
257
259b
261b
251b
255b
254b
262b
252b

FIG. 12

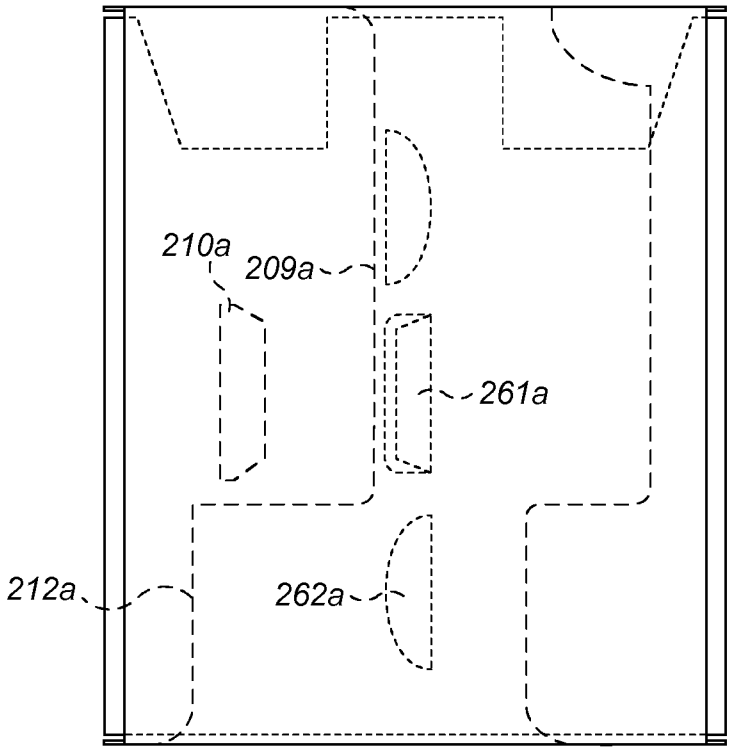


FIG. 13A

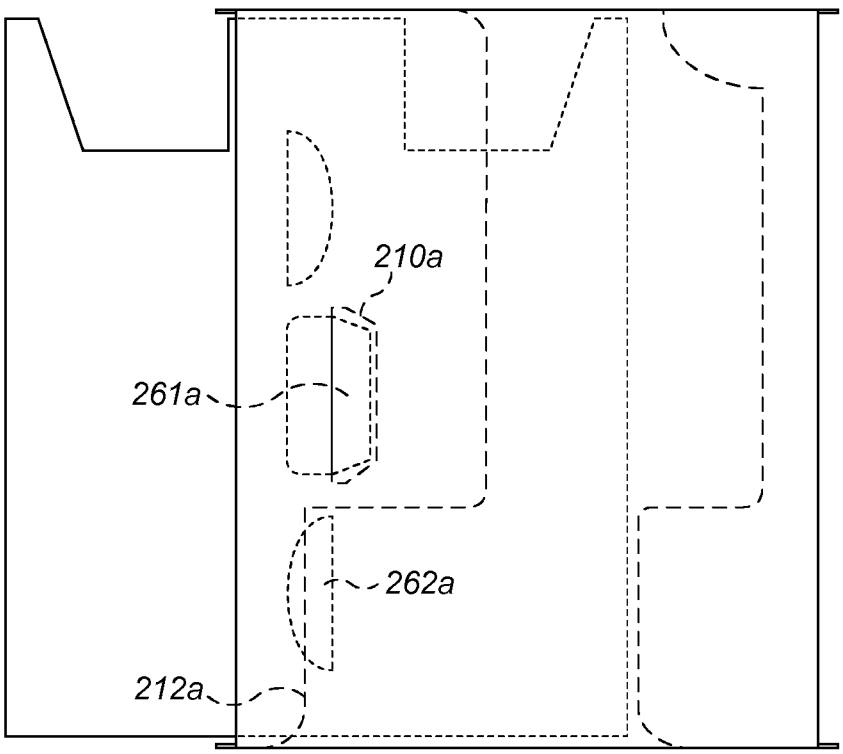


FIG. 13B

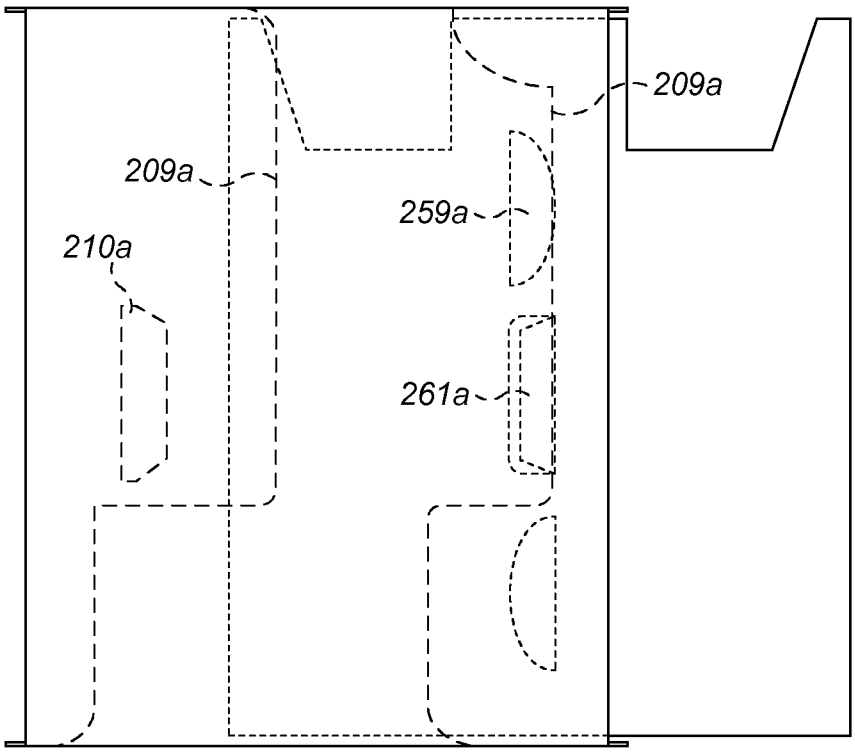


FIG. 13C

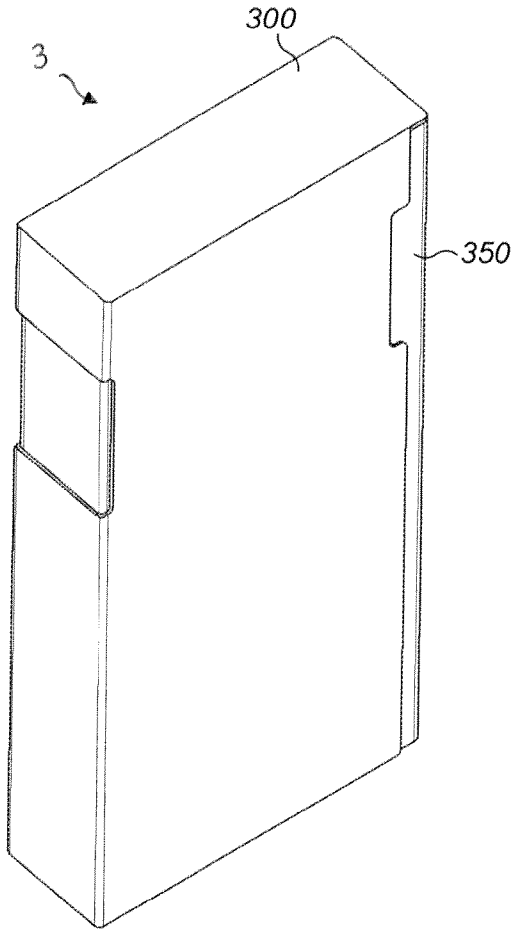


FIG. 14A

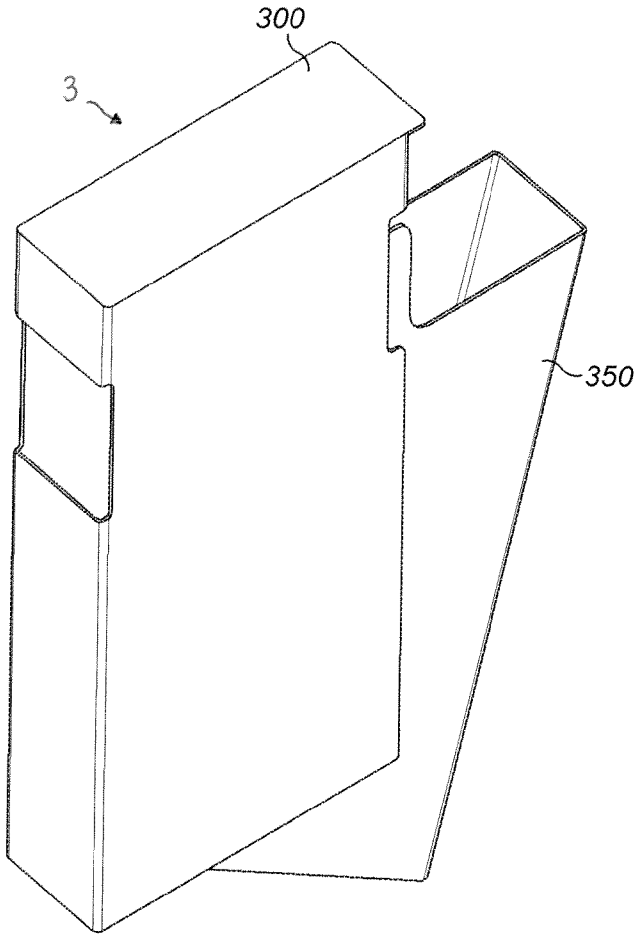


FIG. 14B

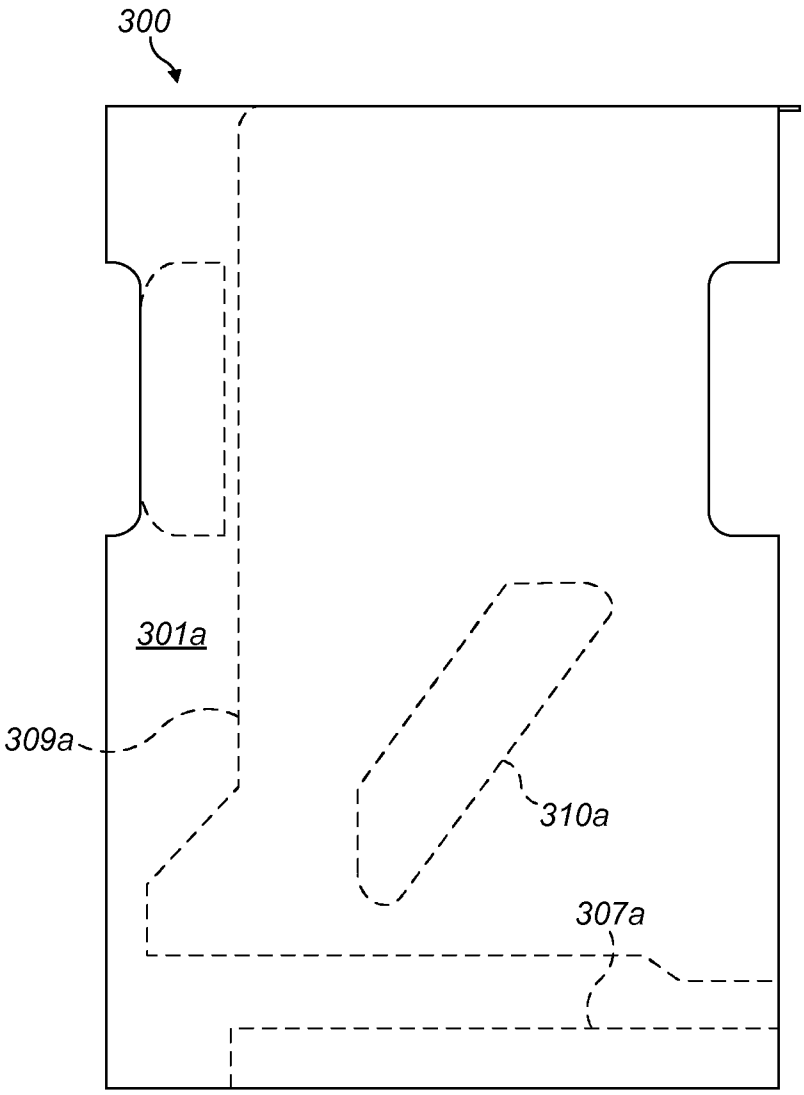
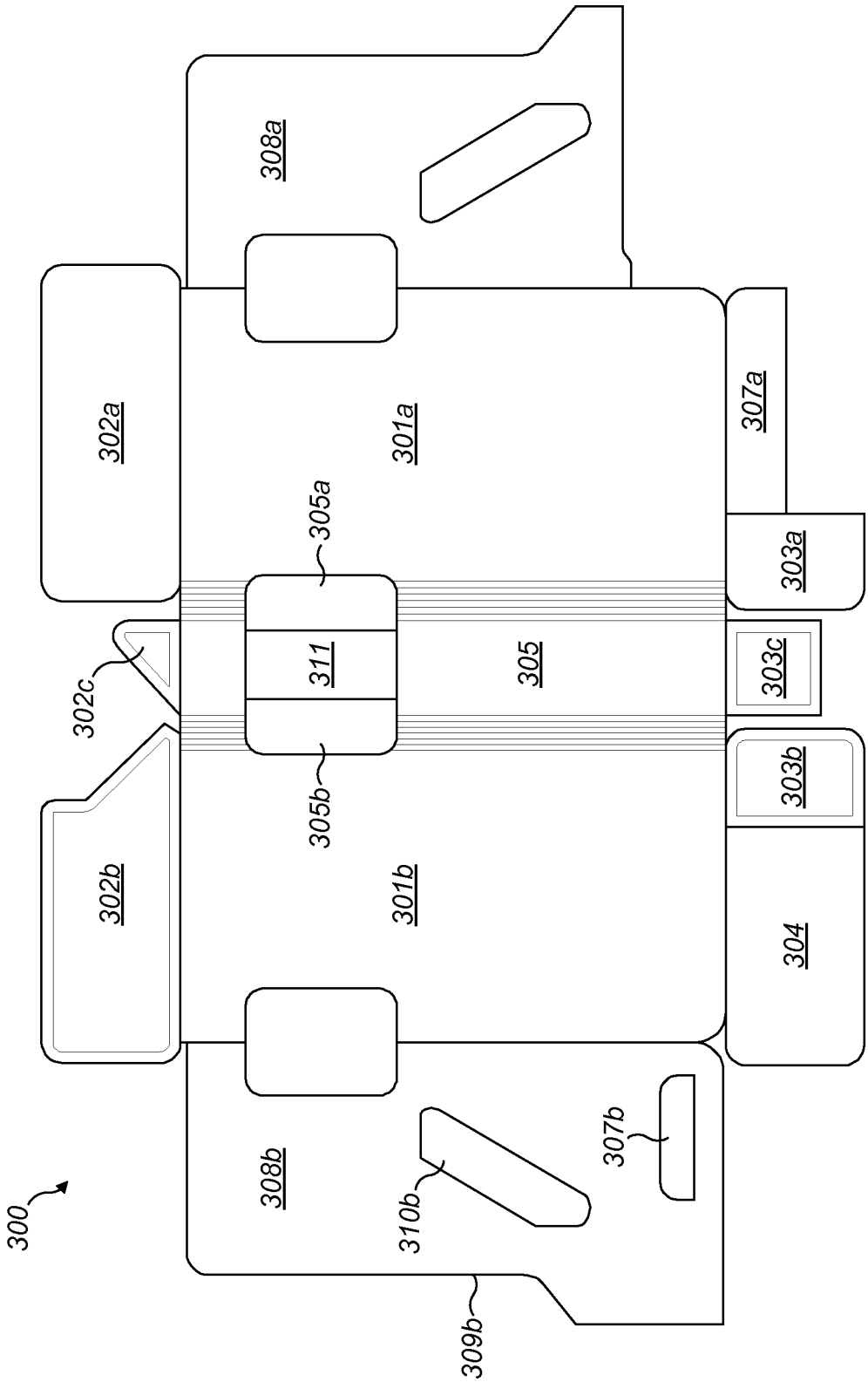


FIG. 15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308a
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307a
305a
303a
311
305
303c
302c
303b
305b
302b
301b
304
308b
310b
307b
309b

FIG. 16

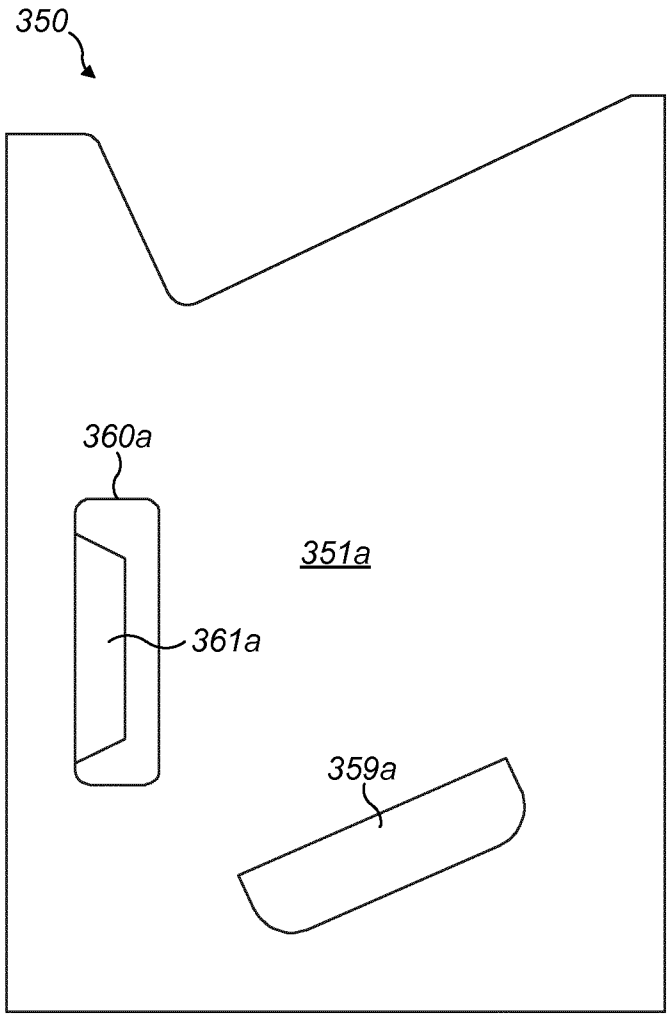
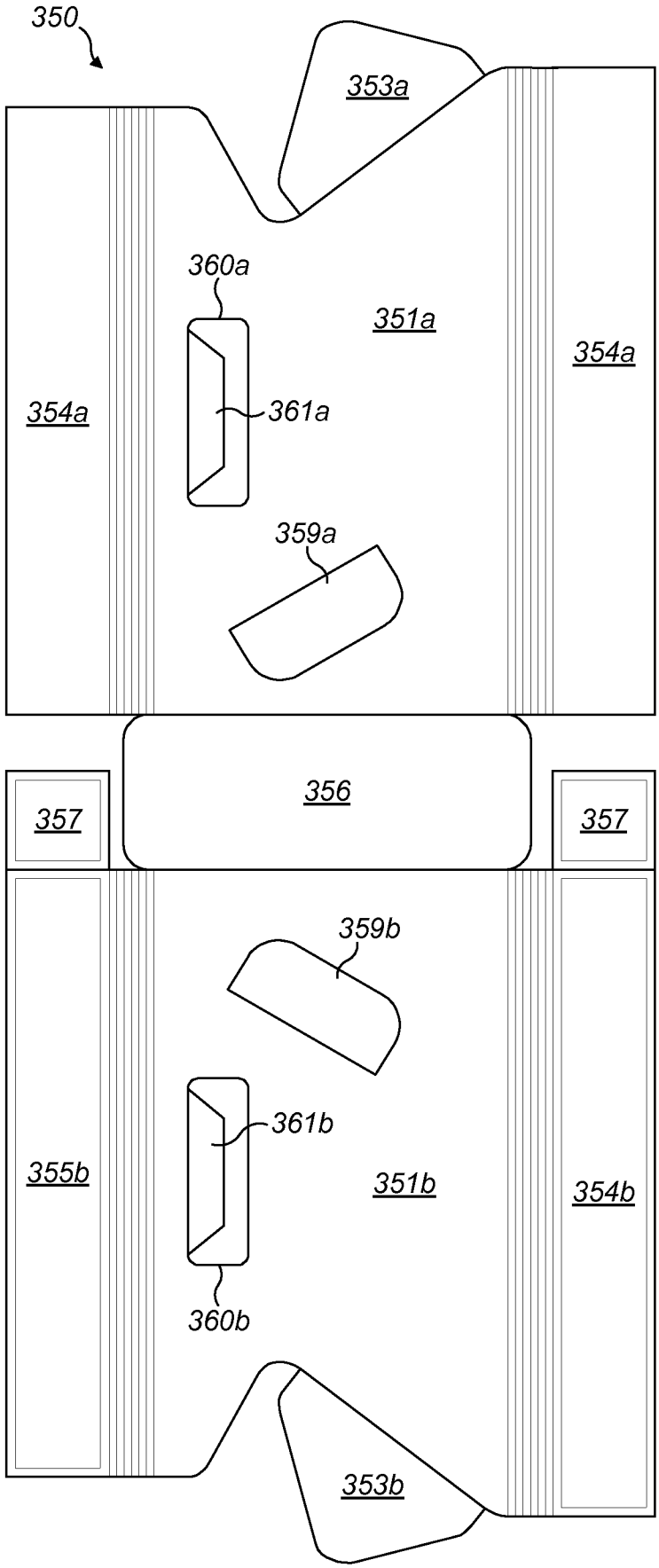


FIG. 17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359a
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357
357
359b
361b
355b
351b
354b
360b
353b

FIG. 18

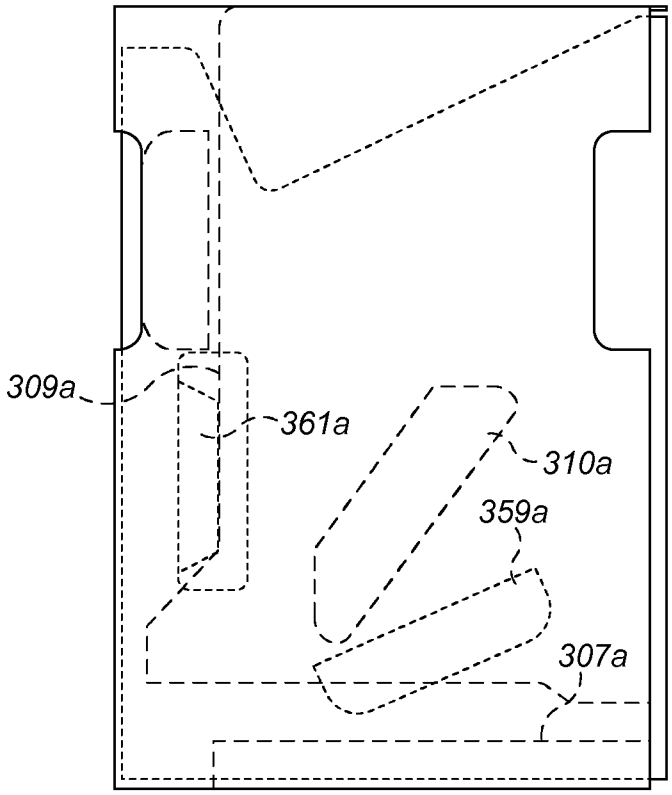

FIG. 19A

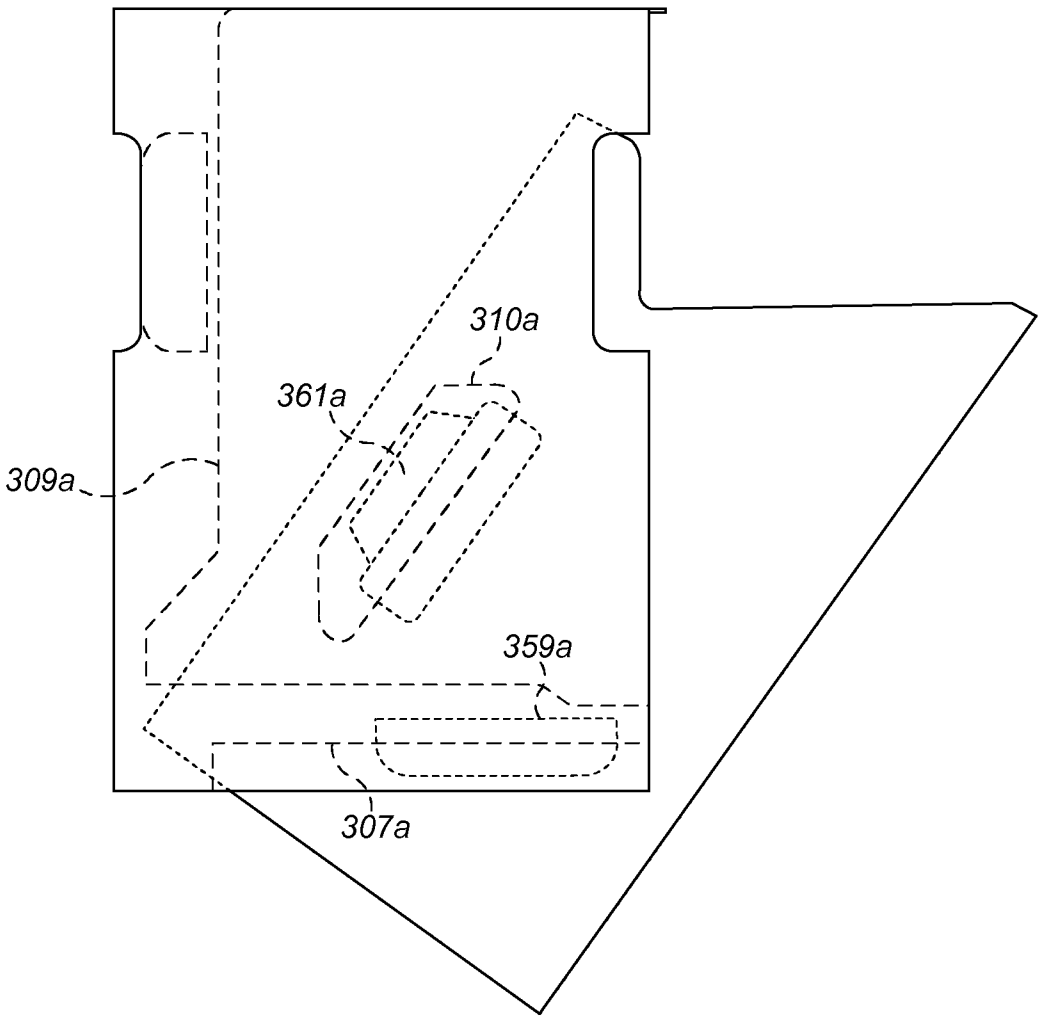

FIG. 19B

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2013/059070

A. CLASSIFICATION OF SUBJECT MATTER
INV. 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	WO 2011/154822 A1 (GD SPA [IT]; GHINI MARCO [IT]; BIONDI ANDREA [IT]) 15 December 2011 (2011-12-15) abstract; figures 1-16 page 4, line 15 - page 13, paragraph 1	1-15
A	EP 2 143 663 A1 (REEMTSMA H F & PH [DE]) 13 January 2010 (2010-01-13) abstract; figures 1-4 paragraph [0018] - paragraph [0034]	1-15
A	US 2011/062037 A1 (BERTUZZI IVANOE [IT] ET AL) 17 March 2011 (2011-03-17) abstract; figures 1-9 paragraph [0021] - paragraph [0041]	1-15

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 August 2013	03/09/2013

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	Segerer, Heiko

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2013/059070

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		EP 2580134 A1	17-04-2013
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		US 2011062037 A1	17-03-2011