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(54) **PACKAGING FOR SMOKING ARTICLES**

PACKUNG FÜR RAUCHWAREN

EMBALLAGE POUR ARTICLES À FUMER

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Description

Field of the Invention

[0001] The present invention generally relates to the field of packaging for tobacco products such as smoking articles. In particular, the present invention relates to improved packaging comprising a sliding or swinging chamber, and a method for construction of such packaging.

Background to the Invention

[0002] 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 a packaging for tobacco products such as cigarette packaging.

[0003] 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 protect the cigarettes, maintain their freshness and retain its integrity over multiple sequences of opening and closing the packaging.

[0004] 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.

[0005] Various smoking articles packaging designs are also often used nowadays. For example, some designs include side-slide or side-swing opening mechanisms. GB 21 15386 A, WO 2004024295 A and WO 201 1154822 A1 disclose packaging of that kind. DE 10 2011 107531 discloses a package cardboard for cigarettes. EP 1927550 discloses a slide and shell container and blank.

[0006] 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 through a side opening in the outer packet part to an open position in order to allow access to the cigarettes stored within.

[0007] 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, consumer may complain about the reduced rigidity of the inner packet part when grasped by users in the open position of the packaging once a few cigarettes have been removed from the inner packet part. This reduced rigidity can sometimes lead to the inner packet part being partially crushed by users, the remaining cigarettes as well as the structural integrity of the

inner packet part being potentially damaged.

[0008] This drawback is further becoming even more important with packaging where the inner packet part have rounded or bevelled corners between front, rear and side walls thereof.

There is consequently a need for improvement of the rigidity of smoking articles packaging with slide or swing opening mechanisms, and particularly of the rigidity of the inner packet part thereof.

Summary of the Invention

[0009] According to the present invention, there is provided packaging for smoking articles the packaging comprising: an outer packet part comprising a front wall and a back wall connected by at least a top wall, a bottom wall and a side wall to form a sleeve with at least one side-opening opposite the side wall; an inner packet part comprising a front wall and a back wall connected to each other by at least a bottom wall and two opposite substantially parallel side walls to define an enclosure for housing a bundle of smoking articles, said enclosure having at least one top opening between said front, back and side walls, the inner packet part being housed within the outer packet part and being movable relative to the outer packet part through the at least one side-opening between a closed position, in which the inner packet part is fully inserted in the outer packet part, and an open position, in which the inner packet part is at least partly extracted from the outer packet part, characterised in that the inner packet part further comprises reinforcement means configured to increase resistance of at least one of its front and back walls to compression forces (Fc) having at least one component exerted perpendicularly towards said front and back walls; and the reinforcement means comprises at least one reinforcement plate abutting at least one of said front and back walls and is further configured to improve resistance to compression forces (Fc) of at least one of the corners between at least one of said front and back walls and at least one of said side walls of the inner packet part.

[0010] The present invention can provide packaging with slide or swing opening mechanisms where the inner packet part does not suffer the reduced rigidity of the packs known from the prior art. In particular, the packaging according to the present invention ensures that at least one of the main walls of the inner packet part, i.e. the front and rear wall, and preferably the two are strengthened by reinforcement means.

[0011] According to the invention, the reinforcement means are configured to improve resistance of the front and/or rear walls of the inner packet part at least to compression forces applied to these walls by consumers upon opening of the packaging and removing of smoking articles. In the present invention, one should understand and interpret the terms "compression forces" as encompassing any kind of pressure force exerted directly on one of the walls of the inner packet part, said force having

at least a component exerted perpendicularly towards a wall. These compression forces are the cause of inner pack crushing with prior art side and swing pack designs and the packaging of the invention now provides much improved resistance to these compression forces through the arrangement of reinforcement means for the inner packet means.

[0012] In preferred embodiments of the invention, the reinforcement means comprises at least one reinforcement plate positioned against one of said front and back walls at least. Such reinforcement plate is an advantageous reinforcement means for the front and/or back walls of the inner packet part, which can be easily manufactured in different materials and different shapes to give the appropriate strength depending of the material of the inner packet part, which is usually of cardboard. A reinforcement plate is further very easy to handle and add to the packaging of the invention inside or outside of the inner packet part, without a need for important machine changes in the existing manufacturing lines for existing cigarette packaging with slide or swing opening mechanisms.

[0013] The reinforcement means is attached against one of said front and back walls at least.

Preferably, the reinforcement means is positioned within the inner packet part against one of said front and back walls at least.

[0014] Further, the reinforcement means is further configured to improve resistance to compression forces of at least one of the corners between at least one of said front and back walls and at least one of said side walls of the inner packet part. In particular, the reinforcement means preferably extends against at least one of said side walls of the inner packet part.

In other preferred embodiments, the reinforcement means is positioned against a top part of one of said front and back walls at least.

This can be achieved by simple positioning and attachment of an individual reinforcement plate to a top part, particularly a top half, of the front and/or back walls. In a variant, the reinforcement means may comprise at least one counter panel folded against at least one of said front and back walls along a hinge line at a top end thereof, said hinge line forming at least partly a side of said top opening. In such embodiment the reinforcement means is advantageously formed by a counter panel integral with the inner packet part front and/or back walls. It can therefore be formed in a single foldable blank and just an additional folding and gluing step of the inner packet part blank is required to provide the reinforcement means during manufacture of the pack.

In another preferred embodiment, the reinforcement means is positioned against both of said front and back walls and further against at least one of said side wall and is attached thereto. Such embodiment is particularly advantageous in that the inner packet part is thereby reinforced against compression forces on at least three of its four walls, the front and back walls and also one of

the side walls, preferably the side wall being extracted from the outer packet part in the open position of the packaging and subject to manual pressure from a user.

[0015] Preferably, the reinforcement means is made of a same material as the inner packet part, preferably of cardboard.

[0016] In a second object, the present invention proposes a method for making a packaging as previously disclosed, the method comprising at least the steps of:

a) forming an inner packet part comprising parallel front and back walls connected in a spaced relationship by at least a bottom wall and two opposite parallel side walls by folding and gluing of a first blank comprising at least:

i. first and second main panels for forming said front and back walls,

ii. a connection panel attached along folding lines to a bottom side of said first and second main panels to form said bottom wall,

iii. side counter-panels attached along folding lines on longitudinal sides of the first and second main panels ,

iv. side counter-panels of the first and second main panels being superimposed and glued to form the side walls of the inner packet part and define an enclosure having at least one top opening (O) for housing a smoking article bundle (B),

b) forming an outer packet part (2) comprising parallel front and back walls connected by at least top and bottom walls by folding and gluing of a second blank comprising :

i. first and second main panels for forming said front and back walls ,

ii. a connection panel attached along folding lines to a longitudinal side of said first and second main panels to form said side wall ,

iii. top counter-panels attached along folding lines on top sides of the first and second main panels,

iv. bottom counter-panels attached along folding lines on bottom sides of the first and second main panels,

v. top and bottom counter-panels of the first and second main panels being respectively superimposed and glued to each other form the top and bottom walls of the outer packet part and

form a sleeve with at least one side-opening opposite the side wall,

c) inserting the inner packet part in the outer packet part such that movable relative to the outer packet part through the at least one side-opening between a closed position and an open position,

Wherein the method further comprises the step of:

d) providing reinforcement means by attaching at least one reinforcement plate to one of said front and back walls at least of the inner packet part before inserting the inner packet part in the outer packet part, the reinforcement means being configured to increase resistance of at least one of the inner packet part front and back walls to compression forces (Fc) having at least one component exerted perpendicularly towards said front and/or back walls; and being further configured to improve resistance to compression forces (Fc) of at least one of the corners between at least one of said front and back walls (31, 32) and at least one of said side walls of the inner packet part.

[0017] According to the method of the invention, step d) preferably comprises attaching at least one reinforcement plate to one of said front and back walls at least.

[0018] Preferably, the reinforcement means is attached to at least one of the first and second main panels of the first blank before or during step a).

[0019] In a preferred embodiment of the method of the invention step a) comprises folding and gluing said first blank about a wrapped smoking article bundle to house said bundle in the enclosure of said inner packet part and wherein step d) comprises positioning, and preferably attaching, said reinforcement means to the wrapped smoking article bundle before step a).

[0020] In a preferred embodiment of the method of the invention steps b) and c) are simultaneous by folding and gluing said second blank about the inner packet part containing the wrapped smoking articles bundle formed in step a).

Brief Description of the Figures

[0021] 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 side-slide packaging according to the prior art in a closed position;

Figure 1B shows a side-slide packaging according to the prior art in an open position;

Figure 2 shows a top view of a side-slide packaging according to the prior art in an open position with a user grasping the inner packet part and crushing it;

Figure 3 shows a blank for use in the production of

the outer packet part of the packaging represented in fig 1A and a first preferred embodiment of a packaging according to the invention;

Figure 4 shows a blank for use in the production of the inner packet part of the packaging represented in fig 1A and a first preferred embodiment of a packaging according to the invention;

Figure 5A shows a side-slide packaging according to a first preferred embodiment of the invention in a closed position;

Figure 5B shows a side-slide packaging according to a first preferred embodiment of the invention in an open position;

Figure 6 is a front view of a first embodiment of a reinforcement plate for a packaging as shown in Fig. 5A and 5B;

Figure 7 is a side view illustrating the position of the reinforcement plate of Fig. 6 in the inner packet part of the packaging shown in Fig. 5A and 5B;

Figure 8 is a top view of the inner packet part including a reinforcement plate as represented in Fig. 7;

Figure 9 represents a manufacturing process for a packaging of Fig. 5A and 5B including a reinforcement plate of Fig. 6;

Figure 10 shows details of the manufacturing process of Fig. 9 in a first station S1;

Figure 11 shows a front view of a second embodiment of a reinforcement plate for a packaging as shown in Fig. 5A and 5B;

Figure 12 shows a top view of the inner packet part of the packaging according to Fig. 5A and 5B including a reinforcement plate as represented in Fig. 11;

Figure 13A and 13B show details of the manufacturing process of Fig. 9 in a first station S1 with the reinforcement plate of Fig. 11;

Figure 14 shows a second preferred embodiment of a blank for forming an inner packet part of a packaging according to the invention as represented in Fig. 5A and 5B;

Figure 15 shows a pre-folding step of the blank of Fig. 14 for making an inner packet part of the packaging of the invention in stations S3 and S4 of the process described in Fig. 9

Detailed Description

[0022] Referring to Figures 1A and 1B, there is shown a so-called side-slide packaging 1 as known from the prior art. The packaging comprises an outer packet part 2 and an inner packet part 3. The inner packet part 3 is movable relative to the outer packet part 2 and in particular is slidable between a closed position as illustrated in Figure 1A and an open position as shown in Figure 1B.

[0023] The user may effect sliding of the inner packet part 3 by pushing the part of the inner packet part 3 that is exposed through an opening 26 in the outer packet part 2 with a thumb or finger. As can be seen in Figure 1B, once the inner packet part 3 has been pushed open through the opening 26 in the outer part 2 a user can manually draw on the inner packet part 3 to open it fully and to expose, after removal of a protective foil on the first opening, a cigarette bundle B contained therein.

[0024] The outer packet part 2 comprises a front wall 21 and a rear wall 22 which oppose each other when the outer packet part 2 is formed. The front wall 21 and the rear wall 22 are connected by a side wall 25, a top wall 23 and a bottom wall 24. The opening 26 is formed in the side wall 25.

The outer packet part 2 and the inner packet part 3 are coupled to each other in such a way as to prevent the inner packet part 3 from being fully extracted and removed from the outer packet part 2. Furthermore, retaining elements may be provided for preventing accidental movement of the inner packet part 3 relative to the outer packet part 2. The mechanism by which these effects are produced can be understood with reference to Figures 3 and 4 representing respectively a blank 200 for making the outer packet part and a blank 300 for making an inner part.

[0025] The outer packet part is formed by folding and gluing a cardboard blank 200, illustrated in Figure 3.

[0026] A top wall 23 of the outer packet part 2 is formed of at least two top counter-panels 204, 205 articulated on a top side of a rear main panel 202 and a front main panel 201 for forming the back and front walls 22, 21 of the outer packet part respectively. Preferably, the top wall 23 is further formed from a side top counter panel 208 extending on a top side of a connection panel 203 for forming the side wall 25 of the outer packet part 2, said connection panel 203 being attached along folding lines 11, 12 to a longitudinal side of said first and second main panels 201, 202. In the represented example, the folding lines 11, 12 consists each of multiple creases adapted to form rounded corners for the outer packet part 2. However, they could also be formed of a single crease line to form a square corner pack or dual creases to form bevelled corners.

[0027] When the outer packet part 2 is formed, top counter-panel 204 and side top counter-panel 208 are glued to an underside of top counter-panel 205.

[0028] Similarly, a bottom wall 24 of the outer packet part 2 is formed of at least two bottom counter-panels

206, 207 articulated on a bottom side of the rear main panel 202 and the front main panel 201. Preferably, the bottom wall 24 is further formed from a side bottom counter panel 209 extending on a bottom side of the connection panel 203. When the outer packet part 2 is formed bottom counter-panel 206 and side bottom counter-panel 209 are glued to an upperside of bottom counter-panel 207. The outer packet part 2 further comprises front and back restraining flaps (not shown in fig. 1A and 1B) to retain the inner packet part 3 in the open position. These restraining flaps are advantageously made of side flaps 210, 211, which extend from the rear main panel 202 and the front main panel 201 respectively. The restraining flaps 210, 211 are folded inwardly against an inner face of the front and rear main panels 201, 202 when the outer packet part 2 is formed. It should also be understood that the restraining flaps are not glued to inner surfaces of the front and rear main panels 201, 202, but are instead merely folded over, allowing material to enter between the flaps and the front and back walls 21, 22 of the finished outer packet part 2.

[0029] The inner packet part 3 comprises a front wall 31 and a rear wall 32 which oppose each other when the inner packet part 3 is formed. The front wall 31 and the rear wall 32 are connected by a base wall 33. A first side wall 35 and a second side wall 34 connect the base wall 33 and front and rear walls 31, 32 to define an enclosure opened at the top and housing the cigarette bundle B.

[0030] The inner packet part 3 is formed by folding a cardboard blank 300, illustrated in Figure 4. The blank 300 comprises a first main panel 301 and a second main panel 302 for forming respectively said front and back walls 31, 32 of the inner packet part 3. These two main panels 301, 302 are connected at a bottom side by a connection panel 303 to form the bottom wall 33 of the inner packet part 3.

[0031] Each main panel 301, 302 comprises a top cut-away portion 310, 311 to define a front and rear access to the enclosure and cigarettes in the inner packet part 3. Preferably the cut-away portions 310, 311 are symmetrical in the main panels 301, 302 with regards to the connection panel 303.

[0032] Additionally, front and rear restraining tabs 312, 313 are provided in the main panels 301, 302. The restraining tabs 312, 313 are disposed in cut away portions 314, 315 of the main panels 301, 302, preferably in a symmetrical position with regards to the connection panel 303. The restraining tabs 312, 313 are advantageously provided to form in the inner packet part 3 restraining means complementary to the restraining flaps 210, 211 of the outer packet part 2 to limit the movement of the inner packet part 3 in the open position and prevent full extraction thereof from the outer packet part 2 by mutual hooking engagement of the restraining tabs 312, 313 in between the restraining flaps 210, 211 and front and back walls of the outer packet part 2.

[0033] Furthermore, the blank 300 comprises longitudinal side counter panels 305, 307 and 304, 306 articu-

lated along folding lines I3, I4, I5, I6 on the longitudinal sides of the front main panel 301 and rear main panel 302 respectively. In the represented example, the folding lines I3, I4, I5, I6 consists each of multiple creases adapted to form rounded corners for the outer packet part 2. However, they could also be formed of a single crease line to form a square corner pack or dual creases to form bevelled corners.

[0034] Preferably, additional bottom flaps 308, 309 are also provided on a bottom side of the side counter panels 304, 306 to provide anchoring means for the side walls 34, 35 of the inner packet part 3 to the bottom wall 33 as described herein after.

[0035] When the outer packet part 3 is formed, main panel 302 is first brought in perpendicular position to the connection panel 303 and the bottom flaps 308, 309 glued to an inner surface of the connection panel 303, thereby maintaining side counter-panels 304, 306 folded about their respective folding lines in perpendicular orientation with regard to the main panel 302. Then main panel 301 is also brought perpendicular to the connection panel 303 and its side counter-panels 305, 307 are glued to an upper face of side counter-panels 304, 306 of the second main panel 302 respectively to form the inner packet part 3.

[0036] As represented in figure 2, a disadvantage of the prior art side-slide packs (and side-swing packs), particularly when the inner packet part has rounded corner as represented here, can be the reduced rigidity of the front and back walls 31, 32 of the inner packet part when grasped by users in the open position of the packaging once the inner packet part 3 is partially empty. This reduced rigidity leads to the inner packet part 3 being partially crushed under compression forces F_c applied substantially perpendicularly to front and back walls by user's fingers upon grasping of the inner packet part. This crushing of the inner packet part can both damage the remaining cigarettes as well as the structural integrity of the inner packet part. This also provides users with a negative impression about the quality of the packaging.

[0037] To address this drawback the present invention provides an improved packaging 10 as represented in figures 5A to 12 and described hereinafter.

[0038] A first embodiment of a packaging according to the invention is represented in figures 5A and 5B, which is shown in closed and open position respectively. As appears in these figures, the packaging 10 of the invention comprises an outer packet part 2 and an inner packet part 3 slidable between closed and open positions as known from the prior art slide packs and previously described in relation to figures 1 to 4. However, according to the present invention the packaging 10 further comprises reinforcement means 4 configured to increase resistance of the front wall 31 to compression forces. In this embodiment, the reinforcement means 4 can advantageously take the form of a reinforcement plate 40 as represented in figure 6. This reinforcement plate 40 comprises a main panel 41 configured to match, as shown in

figure 7, a top portion at least, preferably a top half at least, of either the front or back walls 31, 32 of the inner packet part 3 such that a reinforcement plate 40 can be applied against said top portion of at least one, preferably both of the front and back walls 31, 32 to provide, as represented in figure 8, an additional reinforcing material layer to increase resistance of said front and/or back walls 31, 32 against compression forces applied by users upon grasping of the inner packet part 3 as shown in figure 2, which tend to crush the inner packet pack and urging the front and back walls towards each other.

[0039] Preferably, the reinforcement plate 40 further comprises side panels 42, 43 articulated along creased folding lines on the lateral sides of the main panel 41. These side panels 42, 43 further provide extensions of the main panel 41 to the corners and side walls 34, 35 of the inner packet part 3 and thereby improve resistance to compression forces of at least one of the corners between at least one of said front and back walls 31, 32 and at least one of said side walls of the inner packet part 3, as can be seen from figure 8 where the side panels 42, 43 of the reinforcement plate 40 are applied against side walls 34, 35 of the inner packet part 3 and front rounded corners thereof.

[0040] The reinforcement plate 40 is configured to match the top side at least of the inner packet part 3 where a top opening is formed to access the interior of the inner packet part. To that aim, the reinforcement plate preferably comprises a top cut-away portion 44 of same shape and dimensions as the cut-away parts 310, 311 in the front and rear walls 31, 32.

[0041] The reinforcement plate 40 can advantageously be formed from a reel of cardboard material, for example a same or similar cardboard material as the one of the inner packet part 3. In such a case, the reinforcement plate 40 further comprises a bottom tongue 45 corresponding to the cut-away portion 44 in the top side of the main panel 41. Thereby, the cut-away portion 44 is formed in each reinforcement plate 40 from upon detachment of the tongue 45 of a previous one from a reel during manufacture of the packaging 10 as will be described in more details below.

[0042] However, the reinforcement plate 40 could also be free from bottom tongue 45 and show a straight bottom side or any other shape and be provided in stacks to be used during manufacture of the packaging 1.

[0043] Reinforcement means 4 for the packaging 10 of the present invention can be provided on either an external face or an internal face of the front and back walls 31, 32 of the inner packet part 3 at least. A preferable embodiment has the reinforcement means 4 being provided inside the inner packet part 3, for example by means of a reinforcement plate 40 as described above and represented in figures 6 to 8. Indeed, the provision of the reinforcement means 4 inside the inner packet part 3 allow for a sleeker and smoother outer surface of the front and back walls 31, 32, which is preferable for proper sliding of the inner packet part 3 within the outer packet

part 2 between closed and open positions.

[0044] A method for manufacturing a packaging 10 according to the present invention is represented schematically in figure 9, where a reinforcement plate 40 as represented in figure 6 is provided as reinforcement means 4 for the inner packet part 3.

[0045] The method of the invention comprises at least the main steps of:

- a) forming the inner packet part 3 by folding and gluing of a first blank 300 as represented in figure 4,
- b) forming the outer packet part 2 by folding and gluing of a second blank 200 as represented in figure 3,
- c) inserting the inner packet part 3 in the outer packet part 2 such that it is movable relative to the outer packet part through the at least one side-opening between a closed position and an open position, and
- d) providing reinforcement means 4 for the inner packet part 3 before inserting it in the outer packet part.

[0046] In a preferred embodiment represented in figure 9, step d) for providing the reinforcement means 4 in the inner packet part 3 is advantageously carried out before formation of the inner packet part 3 by positioning the reinforcement means about a bundle of cigarettes B wrapped in a protective foil sheet before forming the inner packet part 3 directly about said bundle B and reinforcement means.

[0047] As represented in figure 9, cigarette bundles B made of previously collected groups of cigarettes wrapped in a protective foil sheet are provided to a first station S1 of a packing line where reinforcement means 4 in the form of a reinforcement plate 40 is fed from a feeding station S2 to each cigarette bundle B. Reinforcement plates 40 are individually detached or cut in the feeding station S2 from a reel R and then provided with glue dots from a glue applicator G. Individual reinforcement plates 40 are then transferred, as represented in details in figure 10, by any appropriate transfer system T onto a cigarette bundle B to stick the reinforcement plate 40, i.e. the main panel 41 and side panels thereof onto a main face and side faces of the cigarette bundle B.

[0048] Cigarette bundles B equipped with a reinforcement plate 40 are then transferred by conveying means (suction belts of the like for example) to a first blank feeding station S3 where blanks 300 for forming the inner packet part 3 of the packaging 10 are provided from stacks. In the first blank feeding station S3 the cigarette bundles B are positioned onto one of the main panels 301, 302 such that the cut-away portion 44 of the reinforcement plate 40 is superimposed with a corresponding cut-away 310, 311 of said main panel 301, 302. The blank 300 is then formed and glued by folding, preferably according to the principles of longitudinal folding, in a first fold-

ing station S4 to obtain the inner packet part 3 with the cigarette bundle housed in the enclosure between main, side and bottom walls 31, 32, 33, 34, 35 of the inner packet part 3.

[0049] Preferably, glue dots are provided on an external surface of the reinforcement plate 40 during transfer between station S1 and S3 to provide for the reinforcement plate 40 being stuck directly to the interior surface of one of the main panels 301, 302 of the blank 300, thereby to front or back walls 31, 32 of the finished inner packet part 3 at the outlet of station S4.

[0050] Once the inner packet part 3 containing a cigarette bundle B and reinforcement plate 40 is formed in station S4 this inner packet part 3 is transferred to a second blank feeding station S5 to provide blanks 200 for the outer packet part 2. The blanks 200 for the outer packet part 200 are then folded and glued about the first inner packet part 3 in a second folding station S6 to form the full, finished, packaging 10 in the closed position thereof as represented in figure 5A.

[0051] The reinforcement means 4 of the packaging 10 of the present invention can advantageously take other forms than the one of reinforcement plate 40 depicted in figures 6 to 10 without impairing the quality or resistance of the finished packaging 10.

[0052] A first variant of reinforcement means 4 is represented in figure 11. In this variant, the reinforcement means 4 consists in a reinforcement plate 50 comprising two main panels 51, 52 articulated along folding lines on longitudinal sides of an intermediate connection panel 53. The two main panels 51, 52 are symmetrical to each other about the connection panel 53 and each comprise a top cut away portion 54 identical in size and shape to the cut away portions 310, 311 in main panels 301, 302 of the blank 300 for the inner packet part 3 of the packaging 10 of the invention. In addition, the main panels 51, 52 are preferably substantially equal in width to said main panels 301, 302 of the blank 300 for the inner packet part 3, thereby to the front and back wall 31, 32 thereof, and the connection panel 53 is substantially of the same width as the side walls 34, 35 of the inner packet part.

[0053] Such a reinforcement plate 50 is particularly advantageous as it allows for simultaneous reinforcement of both front and back walls of the inner packet part 3 as well as of at least one of the side walls 34, 35 and corners connecting said front and back walls as represented in figure 12.

[0054] Reinforcement plate 50 is further advantageous as it does not need modification of the full manufacturing process of the packaging 10 but just the initial stage of positioning the reinforcement plate 50 about the wrapped cigarette bundle B as represented in Figures 13A and 13B. The reinforcement plate 50 is preferably provided in planar form (fig 11) with glue dots on one surface of each of the main panels, preferably of the main and connection panels, and further folded in a U-shape about a wrapped cigarette bundle B (Figure 13A) such that the glued surfaces of the main panels 52, 53 are stuck to the

outside surface of the wrapped bundle B as shown in Figure 13B. The wrapped bundle B together with the stuck reinforcement plate 50 are then provided to the first blank feeding station S3 in the packing line as previously described in Figure 9.

[0055] Another embodiment of the packaging 10 of the invention is described in Figures 14 and 15. In this embodiment, reinforcement means for the inner packet part 3 of the packaging are provided as integral members of an alternative blank 300' for forming said inner packet part, said blank being represented in Figure 14.

[0056] The blank 300' comprises panels 301', 302', 303', 304', 305', 306', 307', 308', 309' which correspond respectively to panels 301, 302, 303, 304, 305, 306, 307, 308, 309 of the blank 300 of figure 4 to which referenced is made. The blank 300' also comprises restraining tabs 312', 313' are disposed in cut away portions 314', 315' of the main panels 301', 302', preferably in a symmetrical position with regards to the connection panel 303'. Advantageously, the blank 300' further comprises reinforcement counter-panels 310', 311' extending at an end of the main panels 301', 302' opposite the connection panel 303' and being articulated along a folding line 17', 18' at said end so as to be foldable against the corresponding main panel 301', 302' before formation of the inner packet part as represented in figure 15 and thereby providing integrated reinforcement means for the main panels 301', 302' of the blank 300' and the inner packet part 3 obtained therefrom in the same way as previously described with reference to figure 4.

[0057] Preferably, cut away openings 312', 313' of regular shape (pentagonal in the represented example) are also provided in the blank 300' such that top cut-away portions are provided in the main panels 301', 302' even once the reinforcement counter panels 310', 311' have been folded against said main panels. These top cut away portions then provide lateral access opening in the front and back walls 31, 32 of the inner packet part 3 for an easier access to the cigarettes as shown in figure 5B.

[0058] Use of a blank 300' to form the inner packet part 3 of the packaging 10 of the present invention requires very little amendment to the manufacturing method described in figure 9. In fact, it leads to some extent to a simplification of the method. Indeed, the feeding station S2 for individual reinforcement plates is not required anymore and can be suppressed from the line. The wrapped cigarette bundles B are directly provided to the first blank feeding station S3 for the inner packet blanks 300'. Individual blanks 300' are fed to a pre-folding station (not shown in figure 9) where reinforcement counter panels 310', 311' are both folded, and preferably glued to the inner face of the main panels 301', 302'. Then a wrapped cigarette bundle B is positioned onto either one or the other of the main panels 301', 302' and the blank 300' then undergo folding and gluing about the bundle B in station S4 as previously described. The rest of the manufacturing process is in turn identical to the previously described process in stations S5 and S6 to obtain a fin-

ished packaging 10.

[0059] The packaging 10 of the invention provides an improved and reinforced packaging with a slide opening mechanism which can better resist compression forces. While the present invention has been described in reference to figures showing a packaging with side slide opening mechanism it must be noted that the reinforcement principles would apply to packaging with a side swing opening mechanism, which has an inner packet part pivoting within an outer packet part.

Claims

1. Packaging (1) for smoking articles the packaging comprising:

an outer packet part (2) comprising a front wall (21) and a back wall (22) connected by at least a top wall (23), a bottom wall (24) and a side wall (25) to form a sleeve with at least one side-opening (26) opposite the side wall (25);

an inner packet part (3) comprising a front wall (31) and a back wall (32) connected to each other by at least a bottom wall (33) and two opposite substantially parallel side walls (34, 35) to define an enclosure for housing a bundle of smoking articles (B), said enclosure having at least one top opening between said front, back and side walls, the inner packet part (3) being housed within the outer packet part (2) and being movable relative to the outer packet part through the at least one side-opening between a closed position, in which the inner packet part (3) is fully inserted in the outer packet part (2), and an open position, in which the inner packet part (3) is at least partly extracted from the outer packet part (2),

characterised in that the inner packet part (3) further comprises reinforcement means (4) configured to increase resistance of at least one of its front and back walls (31, 32) to compression forces (Fc) having at least one component exerted perpendicularly towards said front and back walls (31, 32); and the reinforcement means (4) comprises at least one reinforcement plate abutting at least one of said front and back walls (31, 32) and is further configured to improve resistance to compression forces (Fc) of at least one of the corners between at least one of said front and back walls (31, 32) and at least one of said side walls of the inner packet part.

2. Packaging according to claim 1, wherein the reinforcement plate comprises a main panel configured to match a top half at least, of the one of said front or back walls.

3. Packaging according to claim 1 or 2, wherein the reinforcement means (4) is applied inside the inner packet part against one of said front and back walls (31, 32) at least.
4. Packaging according to any one of the preceding claims, wherein the reinforcement means (4) extends against at least one of said side walls of the inner packet part.
5. Packaging according to any one of the preceding claims, wherein the reinforcement means (4) is attached against one of said front and back walls (31, 32) at least.
6. Packaging according to any one of the preceding claims, wherein the reinforcement means (4) comprises at least one counter panel folded against at least one of said front and back walls (31, 32) along a hinge line at a top end thereof, said hinge line forming, at least partly, a side of said top opening.
7. Packaging according to any one of the preceding claims, wherein the reinforcement means (4) is positioned against both of said front and back walls (31, 32) and further against at least one of said side wall and is attached thereto.
8. Packaging according to any one of the preceding claims, wherein the reinforcement means (4) is made of a same material as the inner packet part, preferably of cardboard.
9. A method for making a packaging according to any of claims 1 to 8, the method comprising the steps of:

forming an inner packet part comprising front and back walls (31, 32) connected in a spaced relationship by at least a bottom wall (33) and two opposite side walls (34, 35) by folding and gluing of a first blank comprising :

first and second main panels for forming said front and back walls,
a connection panel attached along folding lines to a bottom side of said first and second main panels to form said bottom wall,
side counter-panels attached along folding lines on longitudinal sides of the first and second main panels,
side counter-panels of the first and second main panels being superimposed and glued to form the side walls of the inner packet part and define an enclosure having at least one top opening (O) for housing a smoking article bundle (B);

forming an outer packet part (2) comprising front

and back walls (21, 22) connected by at least top and bottom walls (23, 24) by folding and gluing of a second blank comprising :

first and second main panels for forming said front and back walls (21, 22),
a connection panel attached along folding lines to a longitudinal side of said first and second main panels to form said side wall (25),
top counter-panels attached along folding lines on top sides of the first and second main panels,
bottom counter-panels attached along folding lines on bottom sides of the first and second main panels,
top and bottom counter-panels of the first and second main panels being respectively superimposed and glued to each other form the top and bottom walls of the outer packet part and form a sleeve with at least one side-opening (26) opposite the side wall (25);

inserting the inner packet part in the outer packet part such that it is movable relative to the outer packet part through the at least one side-opening between a closed position and an open position,

characterized in that the method further comprises the step of:

providing reinforcement means (4) by attaching at least one reinforcement plate to one of said front and back walls (31, 32) at least of the inner packet part before inserting the inner packet part in the outer packet part, the reinforcement means being configured to increase resistance of at least one of the inner packet part front and back walls (31, 32) to compression forces (Fc) having at least one component exerted perpendicularly towards said front and back walls (31, 32) and being further configured to improve resistance to compression forces (Fc) of at least one of the corners between at least one of said front and back walls (31, 32) and at least one of said side walls of the inner packet part.

10. Method according to claim 9, wherein the reinforcement means is attached to at least one of the first and second main panels of the first blank before or during the step of forming the inner packet part.
11. Method according to any of claims 9 to 10, wherein the step of forming the inner packet part comprises folding and gluing said first blank about a wrapped smoking article bundle to house said bundle in the enclosure of said inner packet part and wherein the step of providing the reinforcement means (4) comprises positioning, and attaching, said reinforcement

means to the wrapped smoking article bundle before the step of forming the inner packet part.

12. Method according to claim 11, wherein the steps of forming the outer packet part and inserting the inner packet part are simultaneous by folding and gluing said second blank about the inner packet part containing the wrapped smoking articles bundle formed in the inner packet part forming step.

Patentansprüche

1. Verpackung (1) für Rauchartikel, wobei die Verpackung Folgendes umfasst:

einen äußeren Packungsteil (2), der eine vordere Wand (21) und eine hintere Wand (22) umfasst, die durch wenigstens eine obere Wand (23), eine untere Wand (24) und eine seitliche Wand (25) verbunden sind, um eine Hülse mit wenigstens einer seitlichen Öffnung (26) gegenüber der seitlichen Wand (25) auszubilden;
einen inneren Packungsteil (3), der eine vordere Wand (31) und eine hintere Wand (32) umfasst, die durch wenigstens eine untere Wand (33) und zwei gegenüberliegende, im Wesentlichen parallele seitliche Wände (34, 35) miteinander verbunden sind, um eine Einfassung zum Aufnehmen eines Bündels von Rauchartikeln (B) zu definieren, wobei die Einfassung wenigstens eine obere Öffnung zwischen der vorderen, hinteren und seitlichen Wand aufweist, wobei der innere Packungsteil (3) innerhalb des äußeren Packungsteils (2) aufgenommen ist und relativ zu dem äußeren Packungsteil durch die wenigstens eine seitliche Öffnung zwischen einer geschlossenen Position, in der der innere Packungsteil (3) vollständig in den äußeren Packungsteil (2) eingesetzt ist, und einer offenen Position, in der der innere Packungsteil (3) wenigstens teilweise aus dem äußeren Packungsteil (2) entnommen wird, bewegbar ist,

dadurch gekennzeichnet, dass der innere Packungsteil (3) ferner ein Verstärkungsmittel (4) umfasst, das konfiguriert ist, um einen Widerstand seiner vorderen und/oder hinteren Wand (31, 32) gegen Druckkräfte (F_c) zu erhöhen, die wenigstens eine Komponente aufweisen, die senkrecht in Richtung der vorderen und/oder der hinteren Wand (31, 32) ausgeübt wird; und das Verstärkungsmittel (4) wenigstens eine Verstärkungsplatte aufweist, die an die vordere und/oder die hintere Wand (31, 32) anstößt und ferner konfiguriert ist, um den Widerstand gegen Druckkräfte (F_c) von wenigstens einer der Ecken zwischen der vorderen und/oder der hinteren Wand (31, 32) und wenigstens einer der seitlichen Wände

des inneren Packungsteils zu verbessern.

2. Verpackung nach Anspruch 1, wobei die Verstärkungsplatte eine Hauptplatte umfasst, die konfiguriert ist, um zu einer oberen Hälfte der vorderen und/oder der hinteren Wand zu passen.
3. Verpackung nach Anspruch 1 oder 2, wobei das Verstärkungsmittel (4) innenliegend des inneren Packungsteils wenigstens gegen die vordere oder die hintere Wand (31, 32) angelegt wird.
4. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Verstärkungsmittel (4) sich gegen wenigstens eine der seitlichen Wände des inneren Packungsteils erstreckt.
5. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Verstärkungsmittel (4) an wenigstens der vorderen oder der hinteren Wand (31, 32) befestigt ist.
6. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Verstärkungsmittel (4) wenigstens eine Gegenplatte umfasst, die entlang einer Scharnierlinie an einem oberen Ende davon gegen wenigstens eine der vorderen und/oder der hinteren Wand (31, 32) gefaltet ist, wobei die Scharnierlinie wenigstens teilweise eine Seite der oberen Öffnung ausbildet.
7. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Verstärkungsmittel (4) gegen beide der vorderen und der hinteren Wand (31, 32) und ferner gegen wenigstens eine der seitlichen Wände positioniert und daran befestigt ist.
8. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Verstärkungsmittel (4) aus einem gleichen Material wie der innere Packungsteil hergestellt ist, vorzugsweise aus Karton.
9. Verfahren zum Herstellen einer Verpackung nach einem der Ansprüche 1 bis 8, wobei das Verfahren die folgenden Schritte umfasst:

Ausbilden eines inneren Packungsteils, der die vordere und die hintere Wand (31, 32) umfasst, die durch wenigstens eine untere Wand (33) und zwei gegenüberliegende seitliche Wände (34, 35) in einer beabstandeten Beziehung verbunden sind, durch Falten und Kleben eines ersten Zuschnitts, Folgendes umfassend:

eine erste und zweite Hauptplatte zum Ausbilden der vorderen und der hinteren Wand, eine Verbindungsplatte, die entlang Faltlinien an einer unteren Seite der ersten und

der zweiten Hauptplatte befestigt ist, um die untere Wand auszubilden, seitliche Gegenplatten, die entlang Faltlinien an den Längsseiten der ersten und der zweiten Hauptplatte befestigt sind, 5
seitliche Gegenplatten der ersten und der zweiten Hauptplatte, die übereinandergelegt und verklebt sind, um die seitlichen Wände des inneren Packungsteils auszubilden und eine Einfassung mit wenigstens einer oberen Öffnung (O) zum Aufnehmen eines Rauchartikelbündels (B) zu definieren; 10

Ausbilden eines äußeren Packungsteils (2), der die vordere und die hintere Wand (21, 22) umfasst, die durch wenigstens die obere und die untere Wand (23, 24) verbunden sind, durch Falten und Kleben eines zweiten Zuschnitts, Folgendes umfassend:

eine erste und zweite Hauptplatte zum Ausbilden der vorderen und der hinteren Wand (21, 22),
eine Verbindungsplatte, die entlang Faltlinien an einer Längsseite der ersten und der zweiten Hauptplatte befestigt ist, um die seitliche Wand (25) auszubilden, 25
obere Gegenplatten, die entlang Faltlinien an oberen Seiten der ersten und der zweiten Hauptplatte befestigt sind, 30
untere Gegenplatten, die entlang Faltlinien an den unteren Seiten der ersten und der zweiten Hauptplatte befestigt sind, 35
obere und untere Gegenplatten der ersten und der zweiten Hauptplatte, die jeweils übereinandergelegt und miteinander verklebt sind, die die obere und die untere Wand des äußeren Packungsteils ausbilden und eine Hülse mit wenigstens einer der seitlichen Wand (25) gegenüberliegenden seitlichen Öffnung (26) ausbilden; 40

Einsetzen des inneren Packungsteils in den äußeren Packungsteil derart, dass er relativ zu dem äußeren Packungsteil durch die wenigstens eine seitliche Öffnung zwischen einer geschlossenen Position und einer offenen Position bewegbar ist,

dadurch gekennzeichnet, dass das Verfahren 50
ferner die folgenden Schritte umfasst:
Bereitstellen eines Verstärkungsmittels (4) durch Befestigen wenigstens einer Verstärkungsplatte an der vorderen oder der hinteren Wand (31, 32) wenigstens des inneren Packungsteils vor dem Einsetzen des inneren Packungsteils in den äußeren Packungsteil, wobei das Verstärkungsmittel konfiguriert ist, um den 55

Widerstand der vorderen und/oder der hinteren Wand des inneren Packungsteils (31, 32) gegen Druckkräfte (Fc) zu erhöhen, die wenigstens eine Komponente aufweisen, die senkrecht in Richtung der vorderen und/oder der hinteren Wand (31, 32) ausgeübt wird; und ferner konfiguriert ist, um den Widerstand gegen Druckkräfte (Fc) von wenigstens einer der Ecken zwischen der vorderen und/oder der hinteren Wand (31, 32) und wenigstens einer der seitlichen Wände des inneren Packungsteils zu verbessern.

10. Verfahren nach Anspruch 9, wobei das Verstärkungsmittel vor oder während des Schritts des Ausbildens des inneren Packungsteils an der ersten und/oder der zweiten Hauptplatte des ersten Zuschnitts befestigt wird.

11. Verfahren nach einem der Ansprüche 9 bis 10, wobei der Schritt des Ausbildens des inneren Packungsteils das Falten und Kleben des ersten Zuschnitts um ein eingewickelteres Rauchartikelbündel herum umfasst, um das Bündel in der Einfassung des inneren Packungsteils aufzunehmen, und wobei der Schritt des Bereitstellens des Verstärkungsmittels (4) das Positionieren und Befestigen des Verstärkungsmittels an dem Rauchartikelbündel vor dem Schritt des Ausbildens des inneren Packungsteils umfasst.

12. Verfahren nach Anspruch 11, wobei die Schritte des Ausbildens des äußeren Packungsteils und des Einsetzens des inneren Packungsteils gleichzeitig durch Falten und Kleben des zweiten Zuschnitts um den inneren Packungsteil herum, der das in dem Ausbildungsschritt des inneren Packungsteils ausgebildete eingewickelte Rauchartikelbündel enthält, umfasst.

Revendications

1. Emballage (1) pour articles à fumer, l'emballage comprenant :

une partie extérieure de paquet (2) comprenant une paroi avant (21) et une paroi arrière (22) reliées par au moins une paroi de dessus (23), une paroi de fond (24) et une paroi latérale (25) pour former un manchon doté d'au moins une ouverture latérale (26) faisant face à la paroi latérale (25) ;

une partie intérieure de paquet (3) comprenant une paroi avant (31) et une paroi arrière (32) reliées l'une à l'autre par au moins une paroi de fond (33) et deux parois latérales sensiblement parallèles se faisant face (34, 35) pour définir

une enceinte destinée à loger un ensemble d'articles à fumer (B), ladite enceinte ayant au moins une ouverture de dessus entre lesdites parois avant, arrière et latérale, la partie intérieure du paquet (3) étant logée à l'intérieur de la partie extérieure du paquet (2) et étant déplaçable par rapport à la partie extérieure du paquet à travers l'au moins une ouverture latérale entre une position fermée, dans laquelle la partie intérieure du paquet (3) est complètement insérée dans la partie extérieure du paquet (2), et une position ouverte, dans laquelle la partie intérieure du paquet (3) est au moins partiellement extraite de la partie extérieure du paquet (2),

caractérisé en ce que la partie intérieure du paquet (3) comprend en outre un moyen de renfort (4) conçu pour augmenter la résistance d'au moins l'une de ses parois avant et arrière (31, 32) à des forces de compression (F_c) ayant au moins une composante exercée de manière perpendiculaire vers lesdites parois avant et arrière (31, 32) ; et le moyen de renfort (4) comprend au moins une plaque de renfort venant en butée contre au moins l'une desdites parois avant et arrière (31, 32) et est en outre conçu pour améliorer la résistance à des forces de compression (F_c) d'au moins l'un des coins entre au moins l'une desdites parois avant et arrière (31, 32) et au moins l'une desdites parois latérales de la partie intérieure du paquet.

2. Emballage selon la revendication 1, dans lequel la plaque de renfort comprend un panneau principal conçu pour correspondre à au moins une moitié de dessus de l'une desdites parois avant ou arrière.
3. Emballage selon la revendication 1 ou 2, dans lequel le moyen de renfort (4) est appliqué à l'intérieur de la partie intérieure du paquet contre au moins l'une desdites parois avant et arrière (31, 32).
4. Emballage selon l'une quelconque des revendications précédentes, dans lequel le moyen de renfort (4) s'étend contre au moins l'une desdites parois latérales de la partie intérieure du paquet.
5. Emballage selon l'une quelconque des revendications précédentes, dans lequel le moyen de renfort (4) est fixé contre au moins l'une desdites parois avant et arrière (31, 32).
6. Emballage selon l'une quelconque des revendications précédentes, dans lequel le moyen de renfort (4) comprend au moins un contre-panneau replié contre au moins l'une desdites parois avant et arrière (31, 32) le long d'une ligne d'articulation au niveau d'une extrémité de dessus de celle-ci, ladite ligne d'articulation formant, au moins en partie, un côté

de ladite ouverture de dessus.

7. Emballage selon l'une quelconque des revendications précédentes, dans lequel le moyen de renfort (4) est positionné contre à la fois lesdites parois avant et arrière (31, 32) et, en outre, contre au moins l'une desdites parois latérales, et est fixé à celle-ci.
8. Emballage selon l'une quelconque des revendications précédentes, dans lequel le moyen de renfort (4) est fabriqué en un même matériau que la partie intérieure du paquet, de préférence en carton.
9. Procédé de fabrication d'un emballage selon l'une quelconque des revendications 1 à 8, le procédé comprenant les étapes consistant à :

former une partie intérieure du paquet comprenant des parois avant et arrière (31, 32) reliées de manière espacée par au moins une paroi de fond (33) et deux parois latérales se faisant face (34, 35) par pliage et collage d'une première découpe comprenant :

des premier et second panneaux principaux destinés à former lesdites parois avant et arrière,

un panneau de liaison fixé le long de lignes de pliage à un côté de fond desdits premier et second panneaux principaux pour former ladite paroi de fond,

des contre-panneaux latéraux fixés le long de lignes de pliage sur des côtés longitudinaux des premier et second panneaux principaux,

des contre-panneaux latéraux des premier et second panneaux principaux étant superposés et collés pour former les parois latérales de la partie intérieure du paquet et définir une enceinte ayant au moins une ouverture de dessus (O) destinée à loger un ensemble d'articles à fumer (B) ;

former une partie extérieure du paquet (2) comprenant des parois avant et arrière (21, 22) reliées par au moins des parois de dessus et de fond (23, 24) par pliage et collage d'une seconde découpe comprenant :

des premier et second panneaux principaux destinés à former lesdites parois avant et arrière (21, 22),

un panneau de liaison fixé le long de lignes de pliage à un côté longitudinal desdits premier et second panneaux principaux pour former ladite paroi latérale (25),

des contre-panneaux de dessus fixés le long de lignes de pliage sur des côtés de

dessus des premier et second panneaux principaux,
des contre-panneaux de fond fixés le long de lignes de pliage sur des côtés de fond des premier et second panneaux principaux,
des contre-panneaux de dessus et de fond des premier et second panneaux principaux étant respectivement superposés et collés l'un à l'autre formant les parois de dessus et de fond de la partie extérieure du paquet et formant un manchon doté d'au moins une ouverture latérale (26) faisant face à la paroi latérale (25) ;

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l'insertion de la partie intérieure du paquet dans la partie extérieure du paquet de telle manière qu'elle est déplaçable par rapport à la partie extérieure du paquet à travers l'au moins une ouverture latérale entre une position fermée et une position ouverte,

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caractérisé en ce que le procédé comprend en outre l'étape consistant à :

fournir un moyen de renfort (4) en fixant au moins une plaque de renfort à au moins l'une desdites parois avant et arrière (31, 32) de la partie intérieure du paquet avant d'insérer la partie intérieure du paquet dans la partie extérieure du paquet, le moyen de renfort étant conçu pour augmenter la résistance d'au moins l'une des parois avant et arrière de la partie intérieure du paquet (31, 32) aux forces de compression (Fc) ayant au moins une composante exercée perpendiculairement vers lesdites parois avant et arrière (31, 32) et étant en outre conçu pour améliorer la résistance aux forces de compression (Fc) d'au moins l'un des coins entre au moins l'une desdites parois avant et arrière (31, 32) et au moins l'une desdites parois latérales de la partie intérieure du paquet.

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10. Procédé selon la revendication 9, dans lequel le moyen de renfort est fixé au moins à l'un des premier et second panneaux principaux de la première découpe avant ou pendant l'étape consistant à former la partie intérieure du paquet.

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11. Procédé selon l'une quelconque des revendications 9 à 10, dans lequel l'étape consistant à former la partie intérieure du paquet comprend le pliage et le collage de ladite première découpe autour d'un ensemble d'articles à fumer enveloppés pour loger ledit ensemble dans l'enceinte de ladite partie intérieure du paquet, et l'étape consistant à fournir le moyen de renfort (4) comprenant le positionnement, et la fixation, dudit moyen de renfort au paquet d'articles à fumer enveloppés avant l'étape consistant à former la partie intérieure du paquet.

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12. Procédé selon la revendication 11, dans lequel les étapes consistant à former la partie extérieure du paquet et à insérer la partie intérieure du paquet sont effectuées simultanément en pliant et en collant ladite seconde découpe autour de la partie intérieure du paquet contenant l'ensemble d'articles à fumer enveloppés formé lors de l'étape consistant à former la partie intérieure du paquet.

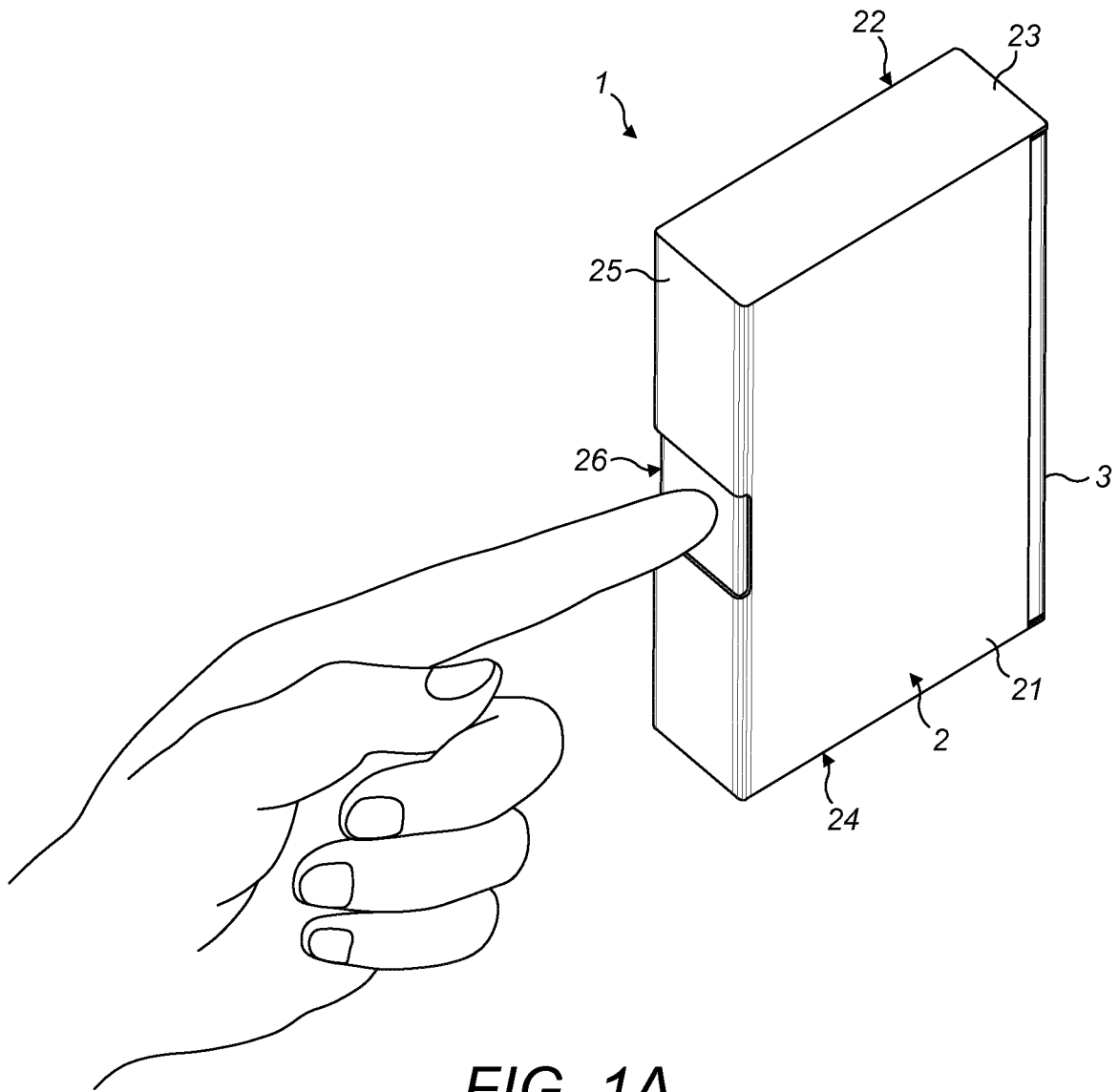


FIG. 1A
(Prior Art)

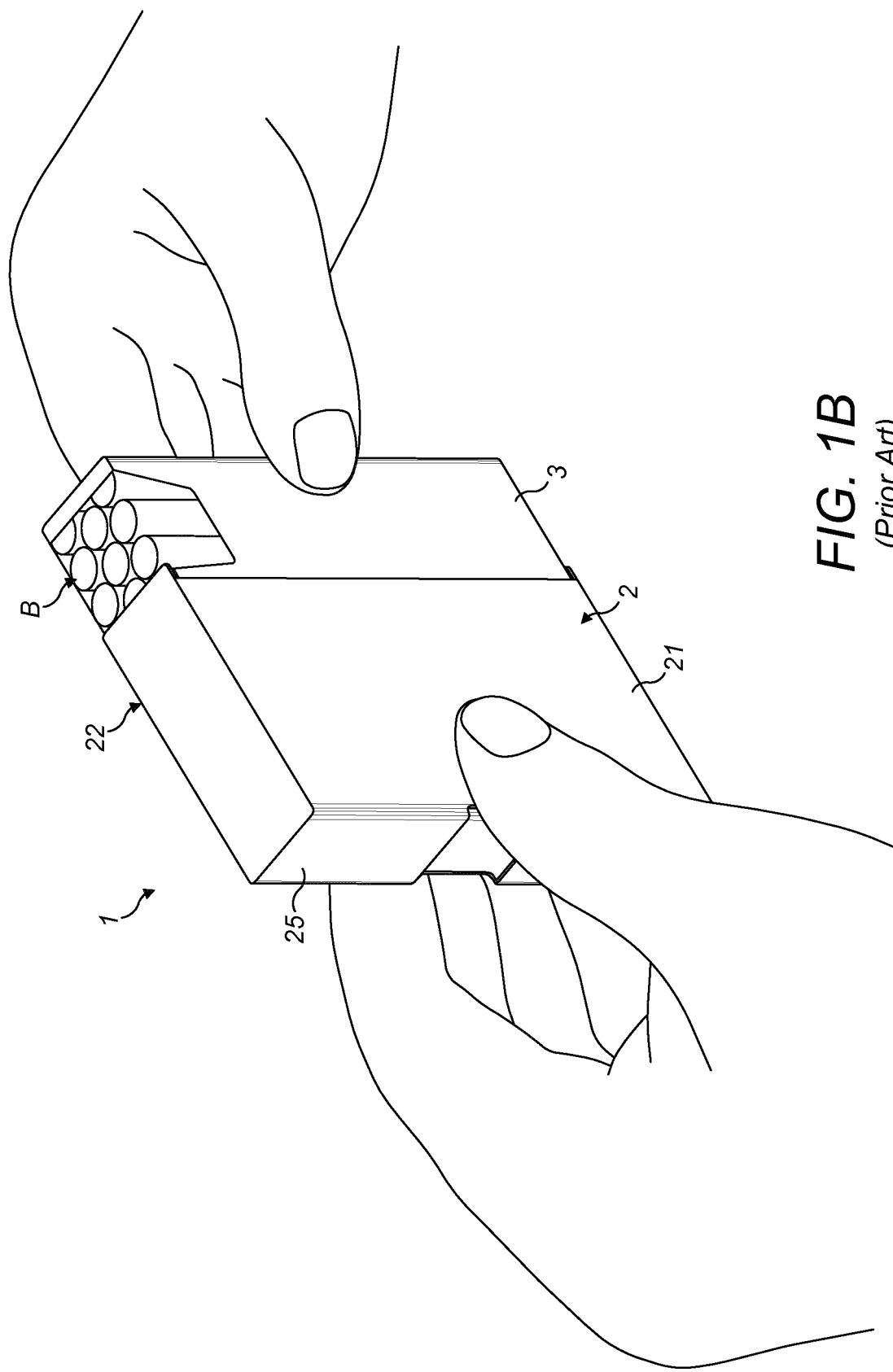


FIG. 1B
(Prior Art)

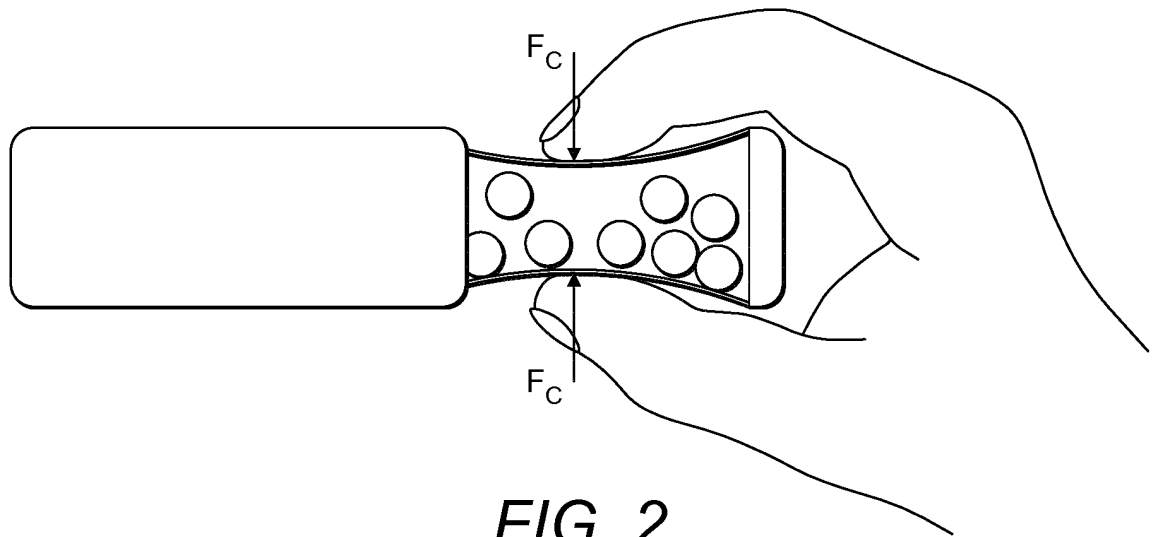


FIG. 2

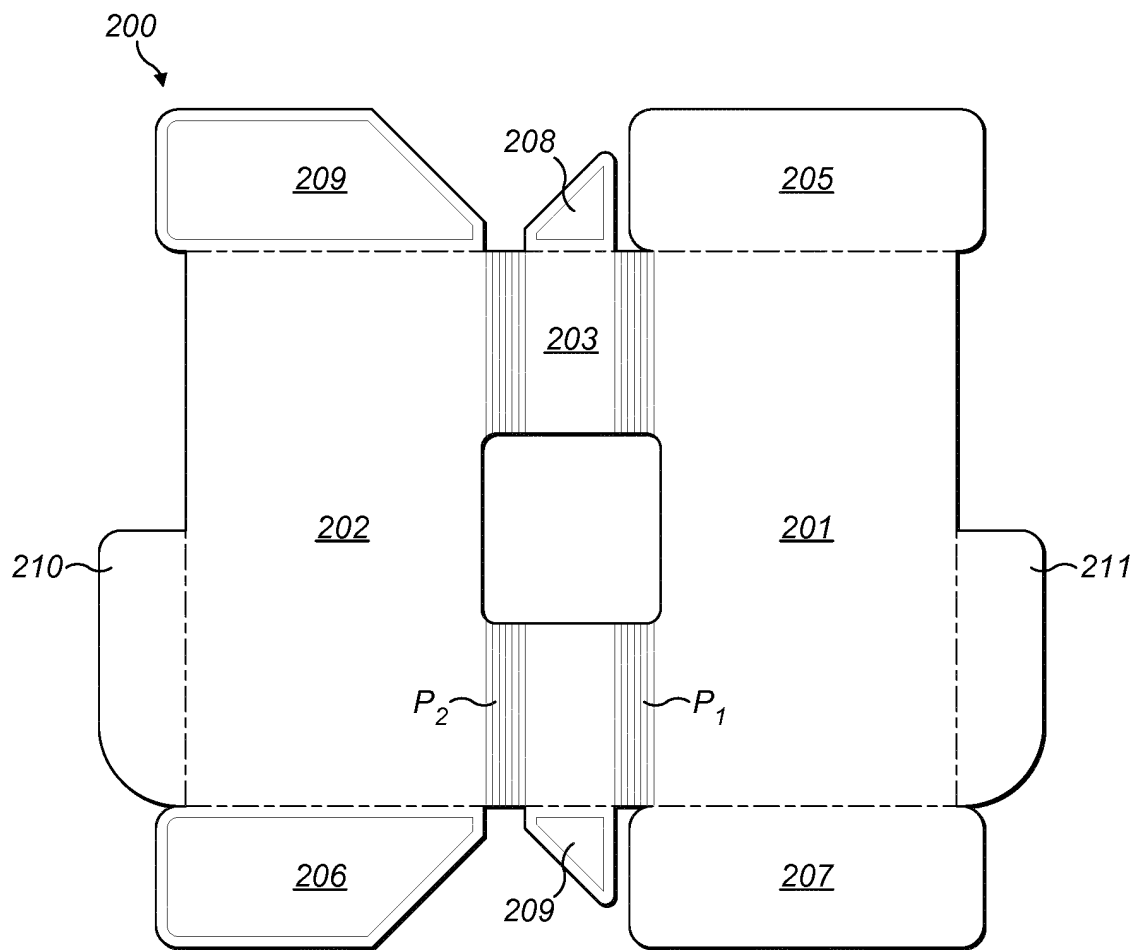


FIG. 3

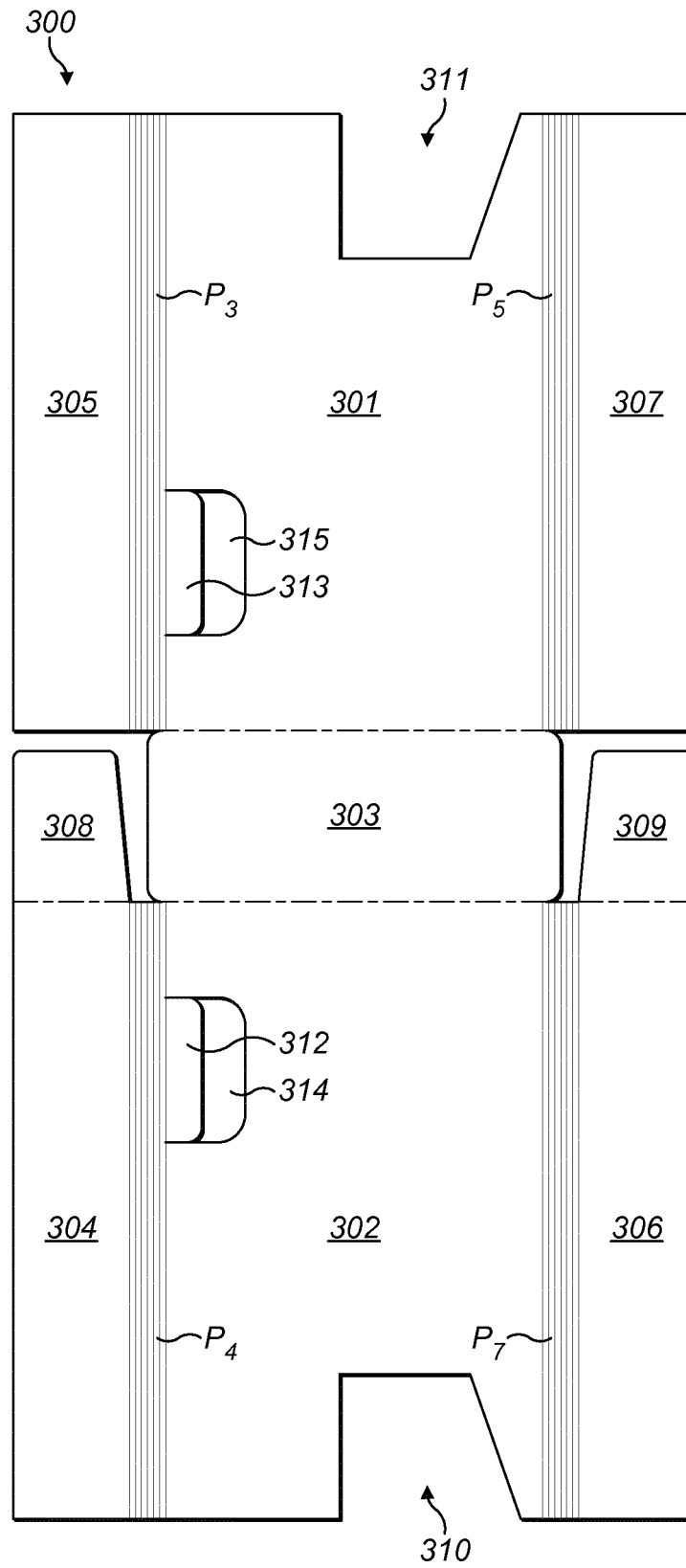


FIG. 4

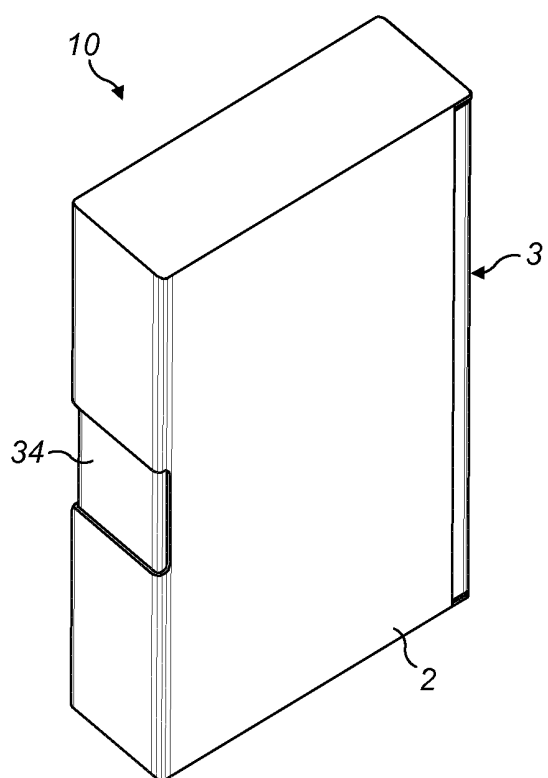


FIG. 5A

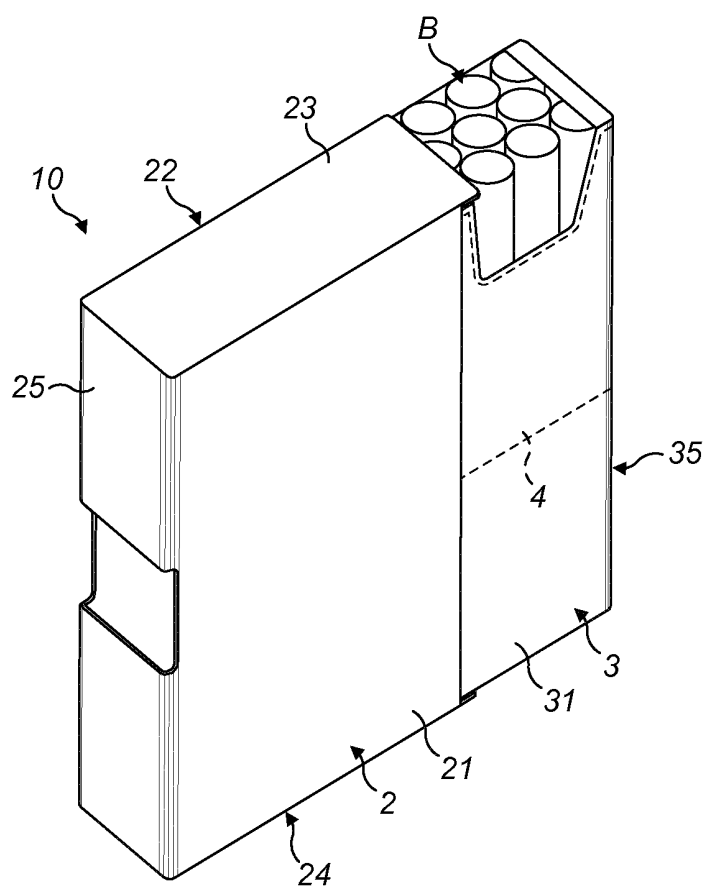


FIG. 5B

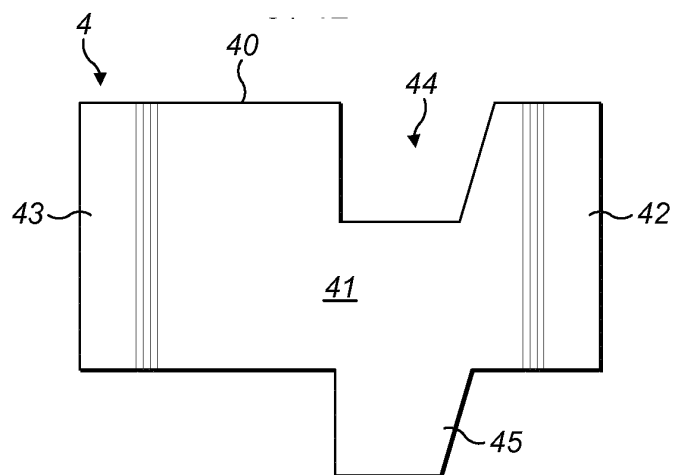


FIG. 6

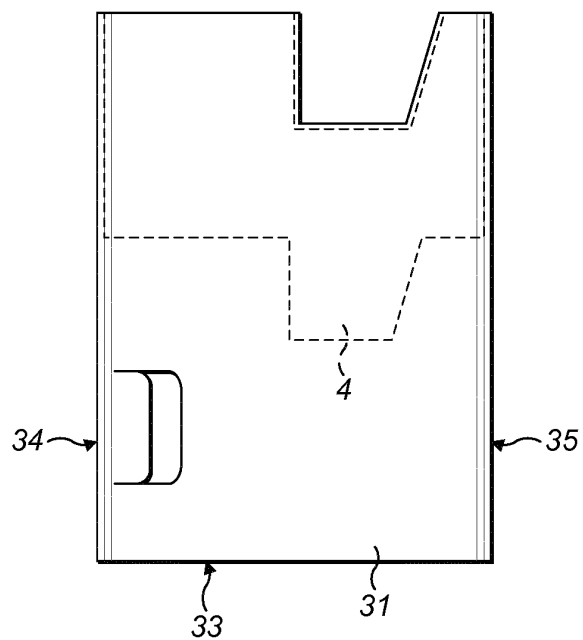


FIG. 7

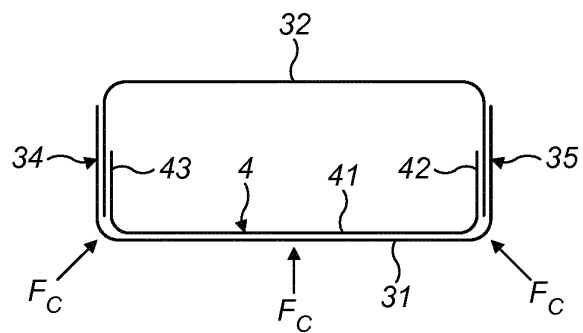
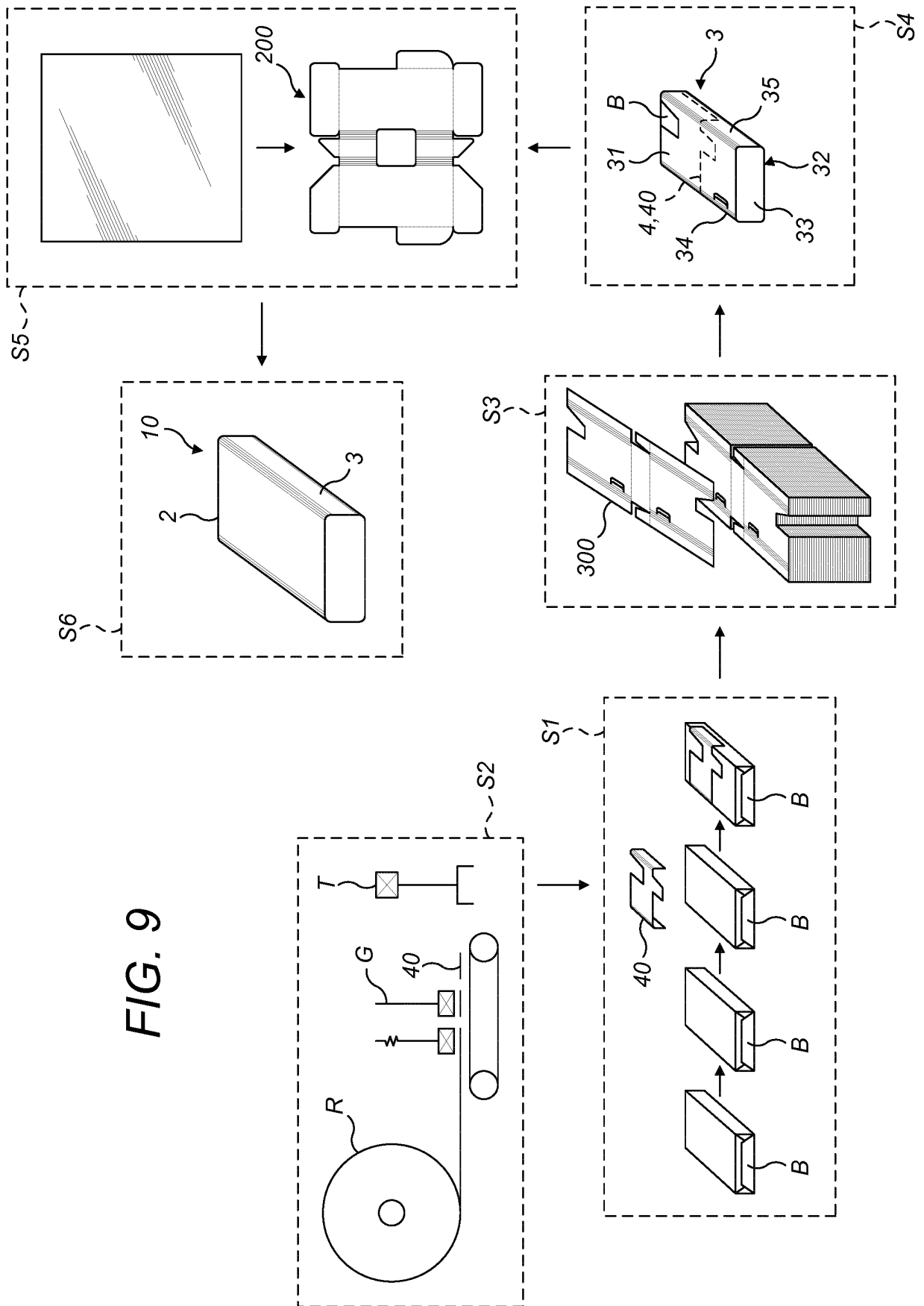


FIG. 8

FIG. 9



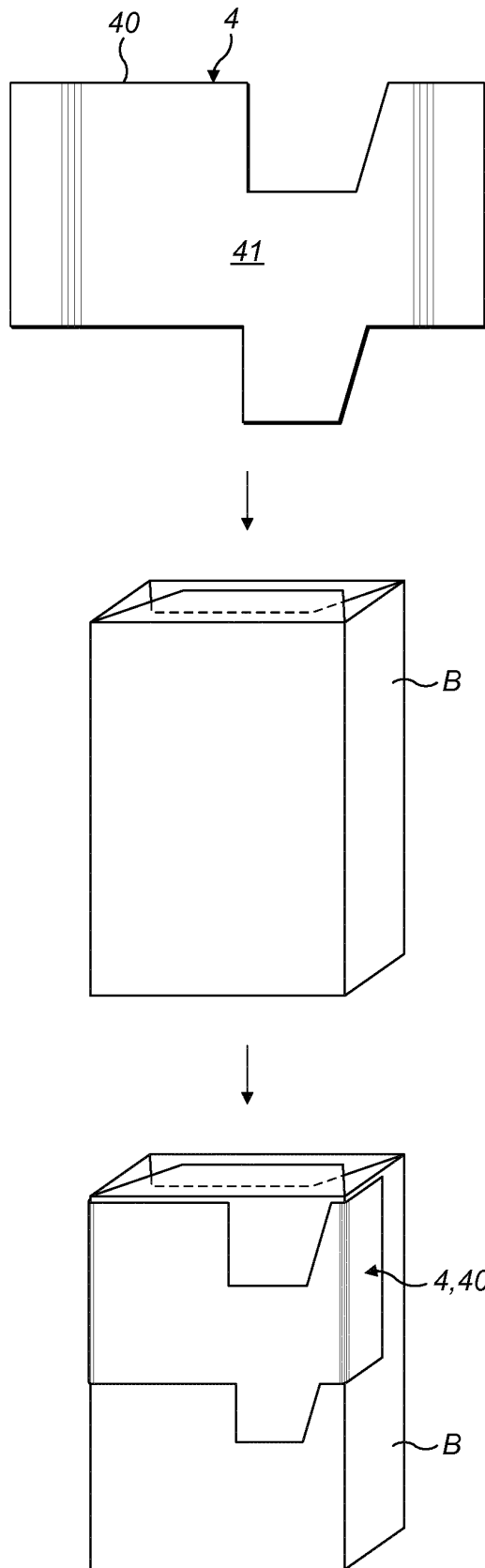


FIG. 10

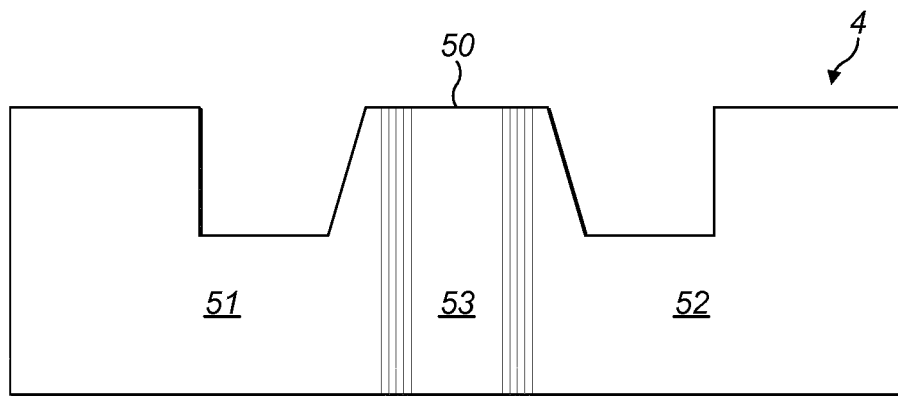


FIG. 11

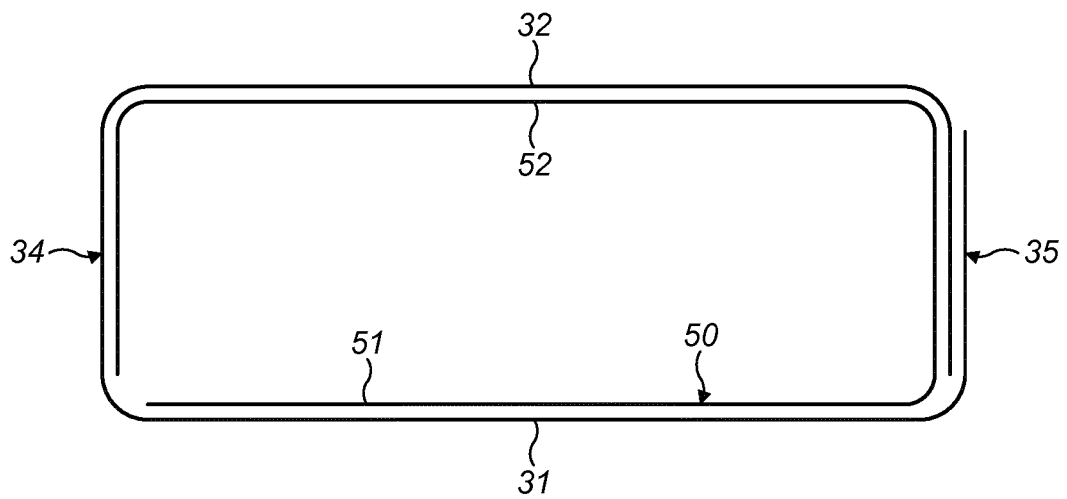


FIG. 12

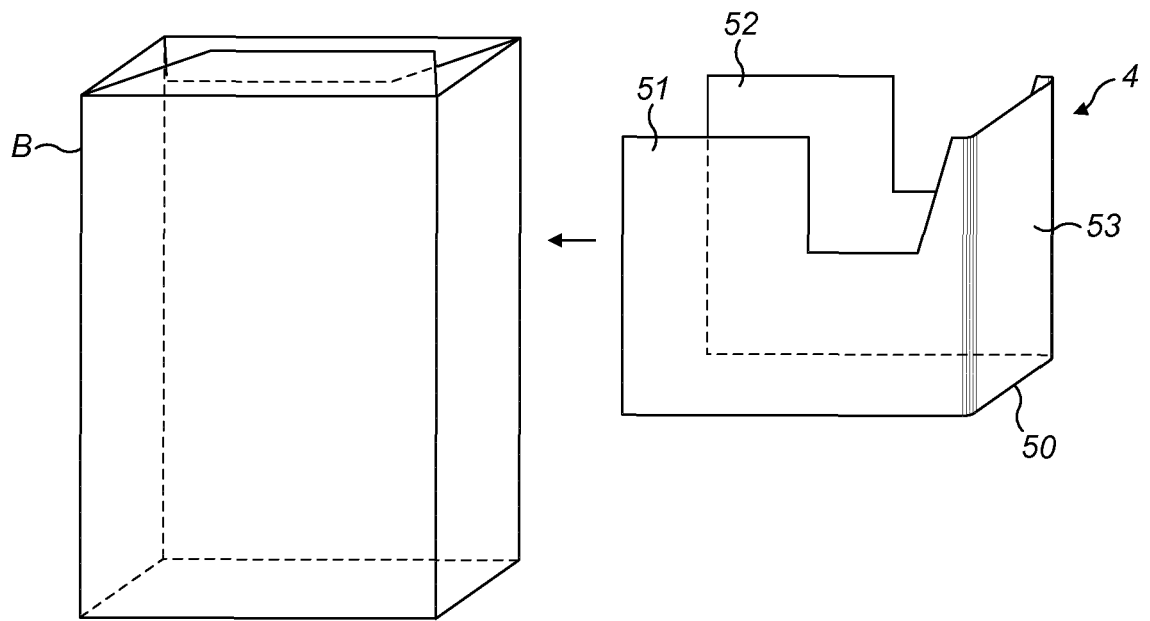


FIG. 13A

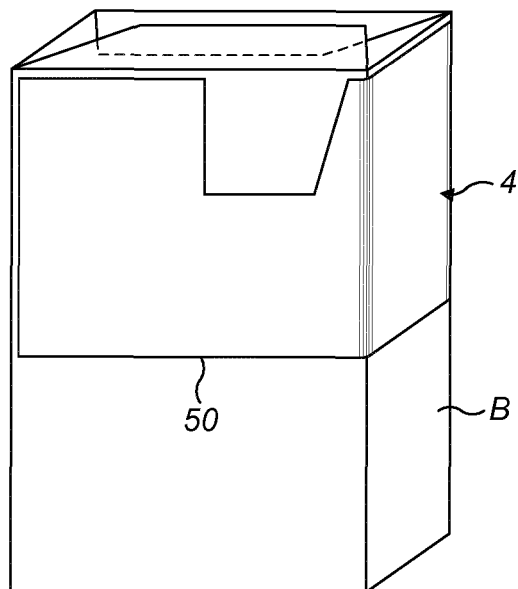


FIG. 13B

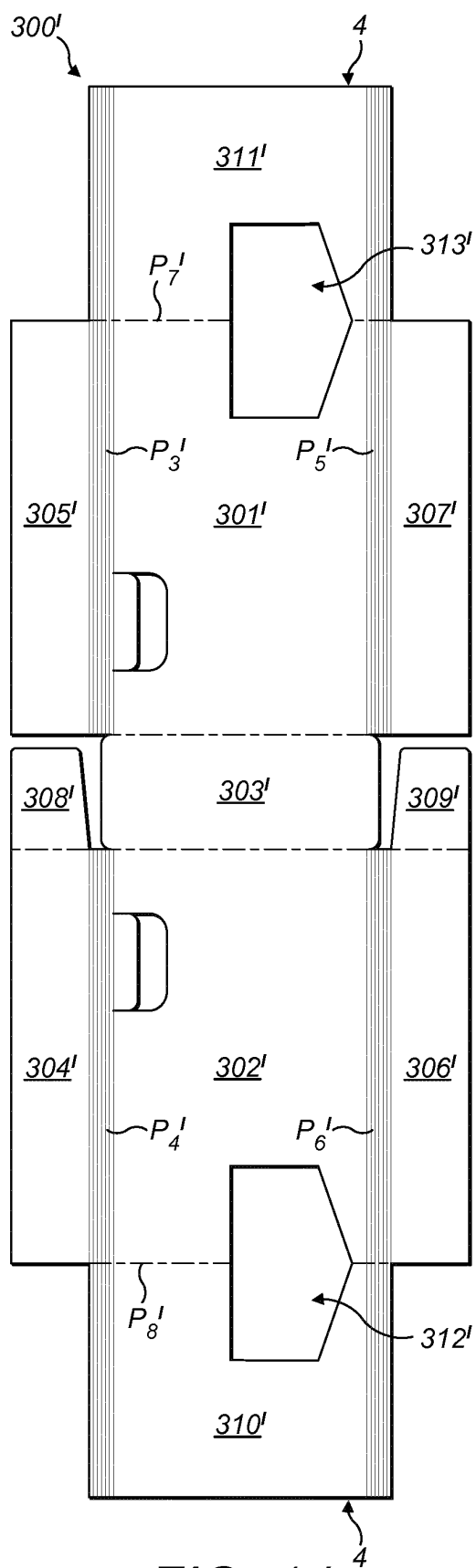


FIG. 14

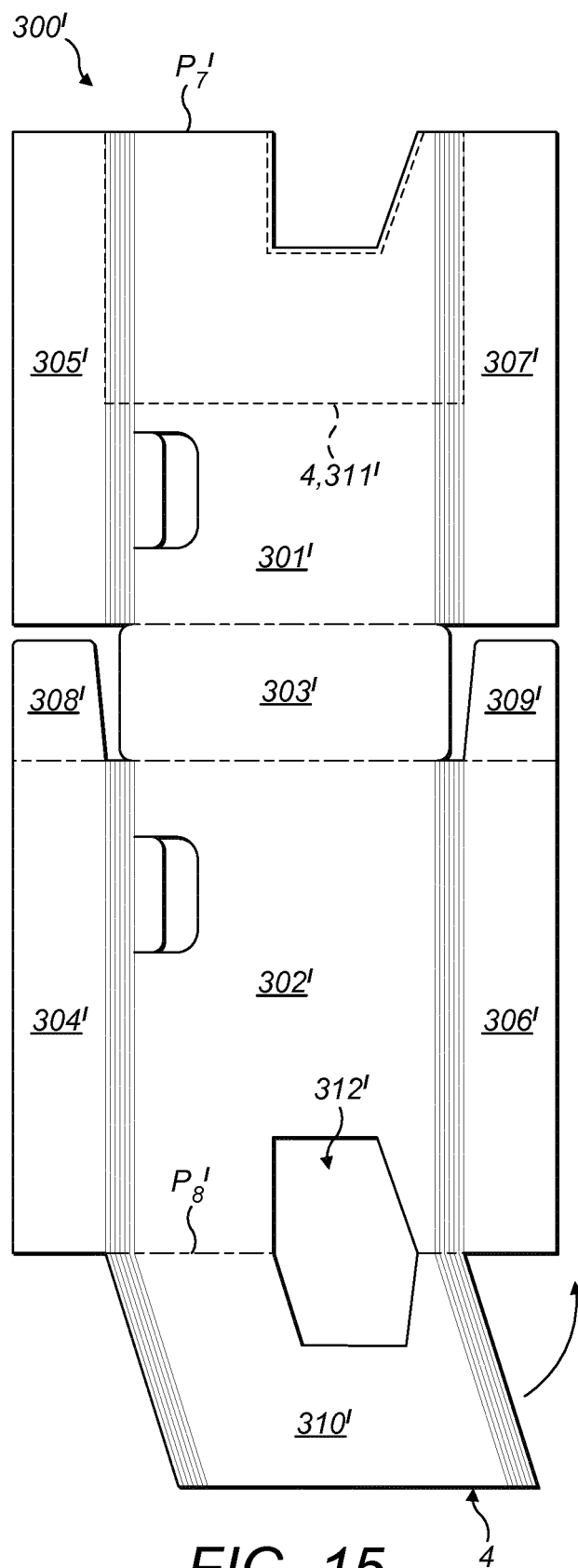


FIG. 15

REFERENCES CITED IN THE DESCRIPTION

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