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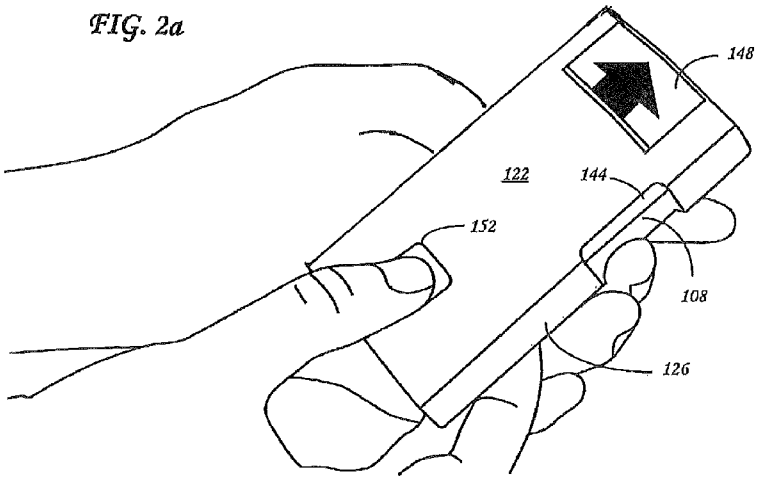
(54) Title: LOOSE FILL PACKAGING SYSTEM

FIG. 2a



(57) Abstract: A packaging system comprises: an inner container including an access opening on its top panel and a first locking structure; and an outer container including an access opening on its top panel, a second locking structure, and optionally a third locking structure on its side panels. The first locking structure engages with the second locking structure in a locked position to prevent the inner container from sliding within the outer container and the articles in the inner container from being accessible. In an unlocked position, the first locking structure is disengaged from the second locking structure allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible.

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LOOSE FILL PACKAGING SYSTEM

FIELD OF THE DISCLOSURE

[0001] This application relates to a packaging system comprising an inner container for containing articles and an outer container adapted to receive the inner container.

SUMMARY OF THE DISCLOSURE

[0002] A packaging system comprises an inner container containing articles and an outer container adapted to receive the inner container. The inner container comprises a top panel that includes an access opening and a bottom panel that includes a first locking structure. The outer container comprises an inner top panel that includes an access opening and a second locking structure, a bottom panel, and side panels connecting the top and bottom panels. In a locked position, the inner container is received within the outer container such that the first locking structure engages with the second locking structure of the outer container to prevent the inner container from sliding within the outer container and the articles in the inner container from being accessible. In an unlocked position, the first locking structure of the inner container is disengaged from the second locking structure of the outer container allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible.

[0003] In one embodiment of present disclosure, at least one of the side panels of the outer container includes a third locking structure, wherein during an unlocking operation the third locking structure is engaged to facilitate the sliding of the inner container within the outer container to further enhance accessibility of the articles in the inner container.

[0004] In one embodiment of present disclosure, the inner container comprises a front end panel; a rear end panel; a top panel that includes an access opening cut out area at the front end; a bottom panel that include a first locking structure; side panels connecting the top and bottom panels, wherein the first locking structure includes a foldable tongue lock panel hingedly connected to the rear end of the bottom panel. The outer container comprises a front end panel; a rear end panel; an inner top panel that includes an access opening cut out area positioned at the front

end and a second locking structure at the rear end; a bottom panel; and side panels connecting the inner top and bottom panels, wherein the second locking structure comprises a locking slot and a lock release tab. In a locked position, the inner container is received within the outer container with the foldable tongue engages the locking slot on the inner top panel of the outer container to prevent the inner container from sliding within the outer container and the articles in the inner container from being accessible. In an unlocked position, the lock release tab on the inner top panel of the outer container is pressed downward causing the foldable tongue of the inner container to disengage from the locking slot thereby allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible.

[0005] When desired, at least one side panels of the outer container may include a cut out opening area that may be engaged/ pressed to facilitate the sliding of the inner container within the outer container during an unlocking operation to further enhance accessibility of the articles in the inner container.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] Figure 1 illustrates a single piece blank that may be formed into a packaging system comprised of an inner container and an outer container according to one embodiment of the disclosure.

[0007] Figures 2a and 2b illustrate views of the assembled blank of Figure 1.

[0008] Figures 3a and 3b illustrate two blanks that may be formed into a packaging system comprised of an inner container and an outer container according to one embodiment of the disclosure.

[0009] Figures 4a and 4b illustrate views of the assembled blank of Figure 1.

DETAILED DESCRIPTION OF THE DISCLOSURE

[0010] The present disclosure now will be described more fully hereinafter, but not all embodiments of the disclosure are necessarily shown. While the disclosure has been described with reference to exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be

substituted for elements thereof without departing from the scope of the disclosure. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the essential scope thereof.

[0011] Figure 1 illustrates a single piece blank 100 that may be formed into a packaging system comprised of an inner container and an outer container according to one embodiment of the disclosure. The blank suitable for use in the present disclosure may include paperboard blank, polymeric blank, or combination thereof.

[0012] The paperboard blank 100 may be divided into two main sections. The first section includes the elements that comprise an inner container. The second section includes the elements that comprise an outer container. Once assembled the inner container is received within the outer container such that the loose fill articles packaged in the inner container may be accessible upon releasing the locking structures and exposing the access openings as will be more fully described below.

[0013] The inner container elements comprise a plurality of panels that include a bottom panel 102, a top panel 110 having an access opening 118, a pair of tapered side panels 106 and 108, a reinforcing side panel 112, a tapered rear end panel 114, a front end panel 116, and a foldable tongue lock panel 104 hingedly connected to the bottom panel 102.

[0014] The inner container may be assembled by folding the various panels to form a container that includes a locking structure and an access opening, wherein the locking structure may be unlocked and the access opening of the inner container may be aligned with the access opening of the outside container. The inner container may contain loose filled articles that can be dispensed when the access opening of the inner container is aligned with the access openings of the outside container.

[0015] When the substrate blank for forming the inner container and the outer container is a single unit, the blank may include a perforated edge 200 separating side panel 106 of the first section from inner top panel 142 of the second section. The perforated edge 200 may be easily torn during assembly to separate the inner container elements from the outer container elements.

[0016] The inner container may be assembled by folding the various panels to form a container with a tapered rear end. Assembly of the inner container may involve folding top panel 110 above and parallel to bottom panel 102. Top panel 110 is separated from bottom panel 102 by tapered side panels 106, 108 and reinforcing side panel 112. Reinforcing side panel 112 may then be glued or otherwise adhered to side panel 106 to form the inner container. Front end panel 116 may be folded up to form a first closed end with a pressure against bottom panel 102 holds it in place. Tapered end panel 114 may be folded down to form a second closed end with a pressure against bottom panel 102 holds it in place. Tongue lock 104 may be folded up along the taper of side panels 106, 108 and generally back atop itself such that it may catch on locking slot 156 of the outer container during use.

[0017] The outer container elements comprise a plurality of panels that include a bottom panel 120, an outer top panel 122 having an access opening 148, side panels 124 and 126, a bottom rear end panel 134, a bottom front end panel 136, a top rear end panel 138, a top front end panel 140, an inner top panel 142 having an access opening 150, side openings 144 and 146, an outer lock release tab 152, an inner lock release tab 154, and a locking slot 156, and optionally a cover panel assembly (128, 130 and 132).

[0018] The outer container is assembled by folding the various panels to form a container having an inner chamber adapted to receive the inner container. Assembly of the outer container may involve folding inner top panel 142 above bottom panel 120 followed by folding outer top panel 122 atop inner top panel 142. Inner top panel 142 and outer top panel 122 may be glued or otherwise adhered together and may be parallel to but separated from bottom panel 120 by side panels 124, 126. Top and bottom rear end panels 138, 134 are folded up and atop one another, and may be glued or adhered together to form a first closed end. Similarly, top and bottom front end panels 140, 136 are folded up and atop one another and may be glued or adhered together to form a second closed end after the inner container has been assembled and inserted into the inner chamber of the outer container. The optional cover panel may be formed by folding panels 128, 130, 132 atop one another and gluing or otherwise adhering flap 132 to panel 128 to provide stability and strength to the cover panel. The cover panel may be designed to cover

the access opening on the outer container and/or providing additional surface area for printed material such as product labeling and instructions.

[0019] Figures 2a and 2b illustrate views of the assembled blank of Figure 1. Figure 2a illustrates the packaging system in a closed locked state with a user preparing to unlock the inner container.

[0020] Referring to Figure 2a, the user grasps in one hand the outer container with a thumb atop the outer lock release tab 152 and the rest of the hand supporting the underside of the outer container. With the other hand, the user gently pinches against the tapered side panels 106, 108 of the covered inner container. The downward pressure of the thumb against lock release tab 152 causes tongue lock 104 release from locking slot 156 of the outer container such that the user can freely slide the inner container forward using the other hand that is grasping tapered side panels 106, 108. Without the downward pressure of the thumb against lock release tab 152 the inner container will remain lockably engaged with locking slot 156 keeping the inner container securely within the outer container. Inner container is slid forward until its access opening 118 aligns with the access openings 148, 150 of the outer container.

[0021] Figure 2b illustrates the packaging system in its open state capable of dispensing the loose fill articles in the inner container.

[0022] To return the inner container to a closed state within the outer container, the user again grasps tapered side panels 106, 108 and slides the inner container back until the lock release tab 152 slides across and lockably engages with locking slot 156.

[0023] The illustrations shown in Figures 2a and 2b are but one example of grasping and exposing the covered inner container. Other methods of grasping and exposing the inner container may be implemented by the user without affecting the scope of the present disclosure.

[0024] Figures 3a and 3b illustrate two substrate blanks that may be formed into a packaging system comprised of an inner container 300 and an outer container 330 according to one embodiment of the disclosure.

[0025] Referring to Figure 3a, the inner container elements comprise a plurality of panels that include a bottom panel 302, a top panel 304 having an access opening 328, a pair of side panels 316, 318, a reinforcing side panel 314, rear end panels 306, 310, front end panels 308, 312, reinforcing tabs 322, 326, and locking tongues 320, 324.

[0026] The inner container 330 of this embodiment may be assembled by folding the various panels to form a container that includes a locking structure and an access opening 328 which may be aligned with the access openings 336, 364 on the outside container 330. The resulting inner container may contain loose filled items that can be dispensed when the access opening 328 is aligned with the access openings 336, 364 on the outside container 330.

[0027] Assembly of the inner container 300 may involve folding top panel 302 above and parallel to bottom panel 304. Top panel 302 is separated from bottom panel 304 by side panels 316, 318 and reinforcing side panel 314. Reinforcing side panel 314 is then glued or otherwise adhered to side panel 318 to form the inner container. Top front end panel 308 and bottom front end panel 312 are folded up and glued or other wise adhered to one another to form a first closed end. Top rear end panel 306 and bottom rear end panel 310 are folded up and glued or other wise adhered to one another to form a second closed end. Locking tongues 320, 324 are folded back atop themselves such that they may be engaged with lock stop tabs 338, 362 of the outer container 330 during use.

[0028] Referring to Figure 3b, the outer container 330 elements of this embodiment comprise a plurality of panels that include a bottom panel 350; an inner top panel 334; side panels 342, 356; top and bottom rear end panels 358, 346; top and bottom front end panels 366, 348; an outer top panel 360; side openings 340, 354; access openings 336, 364; lock release tabs 344, 352; and lock stop tabs 338, 362.

[0029] The outer container 330 may be assembled by folding the various panels to form a container having an inner chamber adapted to receive the inner container 300. Assembly of the outer container 330 involves folding inner top panel 334 above bottom panel 350, followed by folding outer top panel 360 atop inner top panel 334. Inner top panel 334 and outer top panel 360 may be glued or otherwise adhered

together and are parallel to but separated from bottom panel 350 by side panels 342, 356. Top and bottom rear end panels 358, 346 are folded up and atop one another, and may be glued or adhered together to form a first closed end. Similarly, top and bottom front end panels 366, 348 are folded up and atop one another, and may be glued or adhered together to form a second closed end after the inner container has been assembled and inserted into the inner chamber of the outer container 330.

[0030] As shown in Figure 3 for one embodiment of present disclosure, the lock release tabs 344, 352 may be circular in shape and positioned on the side panels 342, 356 respectively near the rear end of the outer container 330. The circle shapes may be cut in a semi-circular fashion that permits the cut out portion to jut inward into the defined chamber when pressure is applied in that direction.

[0031] Figures 4a and 4b illustrate views of the assembled blanks of Figures 3a and 3b. Figure 4a illustrates the packaging system in a closed locked state with a user preparing to unlock the inner container. Figure 4b illustrates the packaging system in an open state capable of dispensing the loose fill articles in the inner container.

[0032] In Figure 4a, the user grasps the outer container with a thumb pressing against one of the lock release tabs 344 and another finger pressing against the other lock release tabs 352. The user's other hand grasps the side panels of the inner container 300 through side openings 340, 354. The user presses against lock release tabs 344, 352 causing locking tongues 320, 324 to release from lock stop tabs 338, 362 of the outer container 330 such that the user can freely slide the inner container 300 forward using the hand that is grasping side panels 342, 356. Without the pressure against lock release tabs 344, 352 the inner container 300 will remain lockably engaged with lock stop tabs 338, 362 of outer container 330 keeping the inner container 300 securely within the outer container 330. Inner container 300 may be slid forward until its opening 328 aligns with the access openings 336, 364 of the outer container 330.

[0033] Figure 4b illustrates the packaging system in its open state capable of dispensing the loose fill articles in the inner container. To return the inner container 300 to a closed state within the outer container 330 the user again grasps side panels 342, 356 and slides the inner container 300 back until the lock release tabs

344, 352 slide across and lockably engage with lock stop tabs 338, 362 of outer container 330.

[0034] The illustrations shown in Figures 4a and 4b are but one example of grasping and exposing the inner container. Other methods of grasping and exposing the inner container may be implemented by the user without affecting the scope of the present disclosure.

[0035] Various substrates may be used for forming the packaging system of present disclosure. These include all foldable sheet materials such as paperboard, corrugated board, cardboard, plastic, combinations thereof, and the like. Examples of paperboard suitable for the present disclosure include, but are not limited to, coated natural kraft board (CNK board), solid bleached sulfate board (SBS), solid unbleached sulfate board (SUS), coated recycled board (CRB), coated white lined chipboard (WLC), folding inner containerboard (FBB), and other paperboard grades suitable for packaging applications.

[0036] It is believed that the present disclosure includes many other embodiments that may not be herein described in detail, but would nonetheless be appreciated by those skilled in the art from the disclosures made. Accordingly, this disclosure should not be read as being limited only to the foregoing examples or only to the designated embodiments.

Claims:

1. A packaging system comprising:

(a) an inner container for containing articles, the inner container comprising:

a top panel including an access opening,

a bottom panel,

side panels connecting the top and bottom panels, and

a first locking structure;

(b) an outer container for receiving the inner container, the outer container comprising:

an inner top panel including an access opening,

a bottom panel,

a second locking structure, and

side panels connecting the top and bottom panels, at least one of the side panels including a third locking structure, wherein:

in a locked position, the inner container is received within the outer container such that the first locking structure on the inner container engages with the second locking structure of the outer container to prevent the inner container from sliding within the outer container,

in an unlocked position, the first locking structure on the inner container disengages from the second locking structure of the outer container allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible, and

in an unlocked position, the third locking structure of the at least one side panels of the outer container is engaged to facilitate the sliding of the inner container within the outer container to allow accessibility of the articles in the inner container.

2. The system of Claim 1, wherein the first locking structure is on the bottom panel of the inner container and the second locking structure is on the inner top panel of the outer container.

3. The system of Claim 1, wherein the first locking structure is on at least one of the side panels of the inner container and the second locking structure is on at least one of the side panels of the outer container.

4. The system of Claim 1, wherein the outer container further comprises an outer top panel positioned over the inner top panel, the outer top panel including an inner locking structure aligned with the second locking structure of the inner top panel.

5. The system of Claim 1, wherein the inner and the outer containers are formed from a single substrate blank.

6. The system of Claim 1, wherein:

the first locking structure of the inner container comprises a foldable tongue,

the second locking structure of the outer container comprises a locking slot and a lock-releasing element, wherein:

in a locked position, the inner container is received within the outer container such that foldable tongue of the first locking structure engages the locking slot of the second locking structure to prevent the inner container from sliding within the outer container, and

in an unlocked position, the lock-releasing element of the second locking structure is engaged causing the foldable tongue of the first locking structure to disengage from the locking slot thereby allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible.

7. The system of Claim 1, wherein the third locking structure of the at least one side panel of the outer container comprises a cut out opening area to facilitate the sliding of the inner container within the outer container to allow accessibility of the articles in the inner container.

8. A packaging system comprising:

(a) an inner container comprising:

a top panel including an access opening,

a bottom panel,

side panels connecting the top and bottom panel, and

a first locking structure comprising a foldable tongue,

(b) an outer container for receiving the inner container, the outer container comprising:

an inner top panel including an access opening,

a bottom panel,

a second locking structure comprising a locking slot and a lock-releasing element, and

side panels connecting the top and bottom panels, wherein:

in a locked position, the inner container is received within the outer container such that the foldable tongue of the first locking structure engages the locking slot of the second locking structure to prevent the inner container from sliding within the outer container, and

in an unlocked position, the lock-releasing element of the second locking structure is pressed downward causing the foldable tongue of the first locking structure to disengage from the locking slot thereby allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles in the inner container are accessible.

9. The system of Claim 8, wherein the first locking structure is on the bottom panel of the inner container and the second locking structure is on the inner top panel of the outer container.

10. The system of Claim 8, wherein the first locking structure is on at least one of the side panels of the inner container and the second locking structure is on at least one of the side panels of the outer container.

11. The system of Claim 8, wherein at least one of the side panels of the outer container further includes a cut out opening area; wherein

in an unlocked position, the cut out opening area is engaged to facilitate the sliding of the inner container within the outer container to allow accessibility of the articles in the inner container.

12. The system of Claim 8, wherein the outer container further comprises an outer top panel positioned over the inner top panel, the outer top panel including an inner locking structure aligned with the second locking structure of the inner top panel.

13. The system of Claim 8, wherein the outer container further comprises a cover panel.

14. At least one or more structure blank comprising:

(1) a first section for forming an inner container, the first section comprising:

a top panel including an access opening;

a bottom panel,

side panels connecting the top and bottom panel, and

a first locking structure,

(b) a second section for forming an outer container, the second section comprising:

an inner top panel including an access opening,

a bottom panel,

side panels connecting the top and bottom panels, and

a second locking structure, wherein:

in a locked position, the inner container is received within the outer container such that the first locking structure on the inner container engages with the second locking structure of the outer container to prevent the inner container from sliding within the outer container,

in an unlocked position, the first locking structure on the inner container disengages from the second locking structure of the outer container allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles within the inner container are accessible.

15. The blank of Claim 14, wherein the first locking structure comprises foldable tongue lock panel, and the second locking structure comprises a locking slot and a lock-releasing element, wherein:

in a locked position, the inner container is received within the outer container such that an edge of the foldable tongue of the first locking structure engages the locking slot of the second locking structure to prevent the inner container from sliding within the outer container, and

in an unlocked position, the lock-releasing tab of the second locking structure is engaged causing the foldable tongue of the first locking structure to disengage from the locking slot thereby allowing the inner container to slide within the outer container such that the access opening of the inner container aligns with the access opening of the outer container and the articles within the inner container are accessible.

16. The blank of Claim 14, wherein at least one of the side panels of the outer container includes a cut out opening area; wherein

in an unlocked position, the cut out opening area on at least one side panel of the outer container is engaged to facilitate the sliding of the inner container within the outer container to allow accessibility of the articles within the inner container.

17. The blank of Claim 14, wherein the first and second sections are connected to one another on a single blank by at least one perforated line.

18. The blank of Claim 14, wherein the second section further comprises a cover panel.

19. The blank of Claim 14, wherein the first locking structure is on the bottom panel of the first section and the second locking structure is on the inner top panel of the second section.

20. The system of Claim 14, wherein the first locking structure is on at least one of the side panels of the first section and the second locking structure is on at least one of the side panels of the second section.

FIG. 1

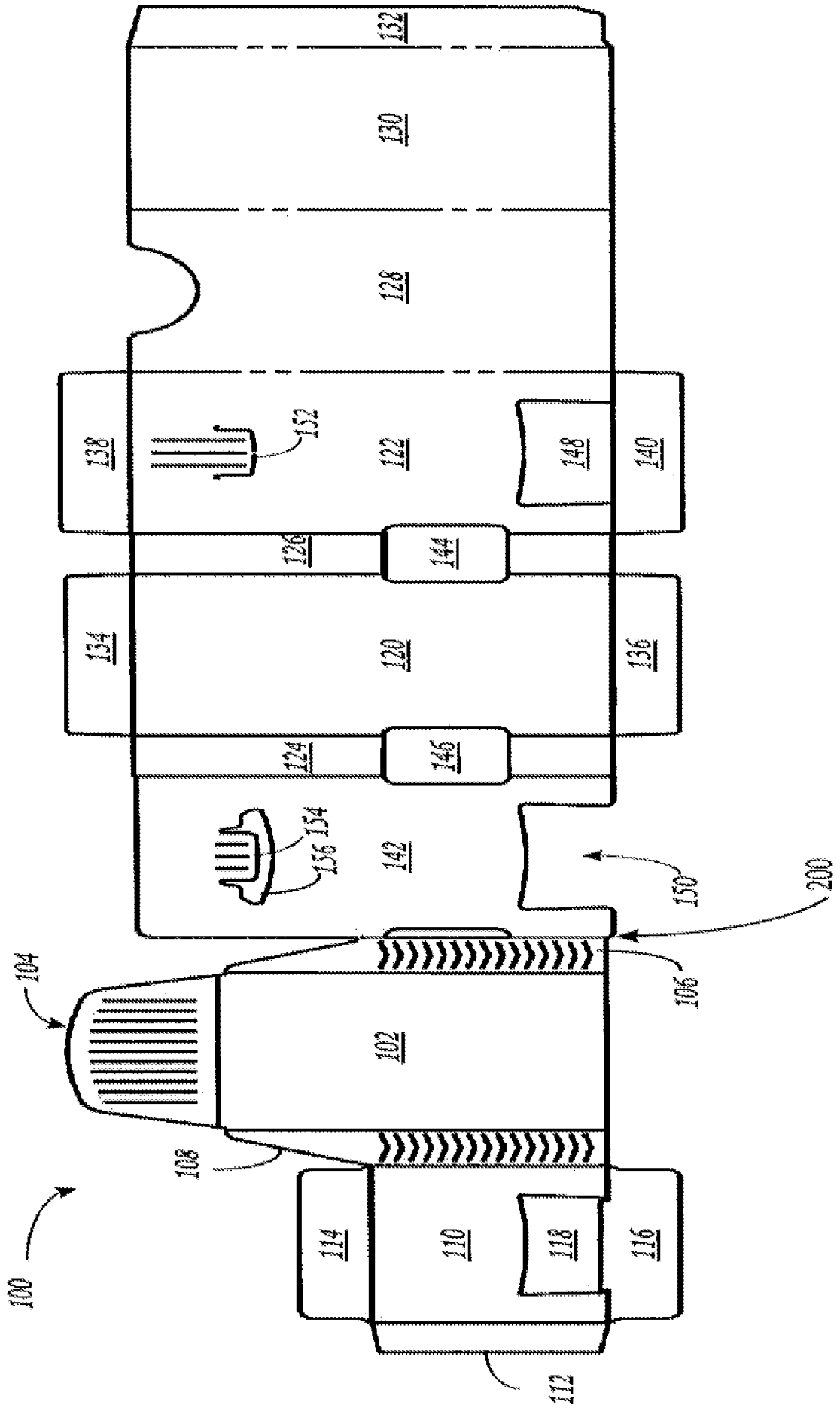
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FIG. 2a

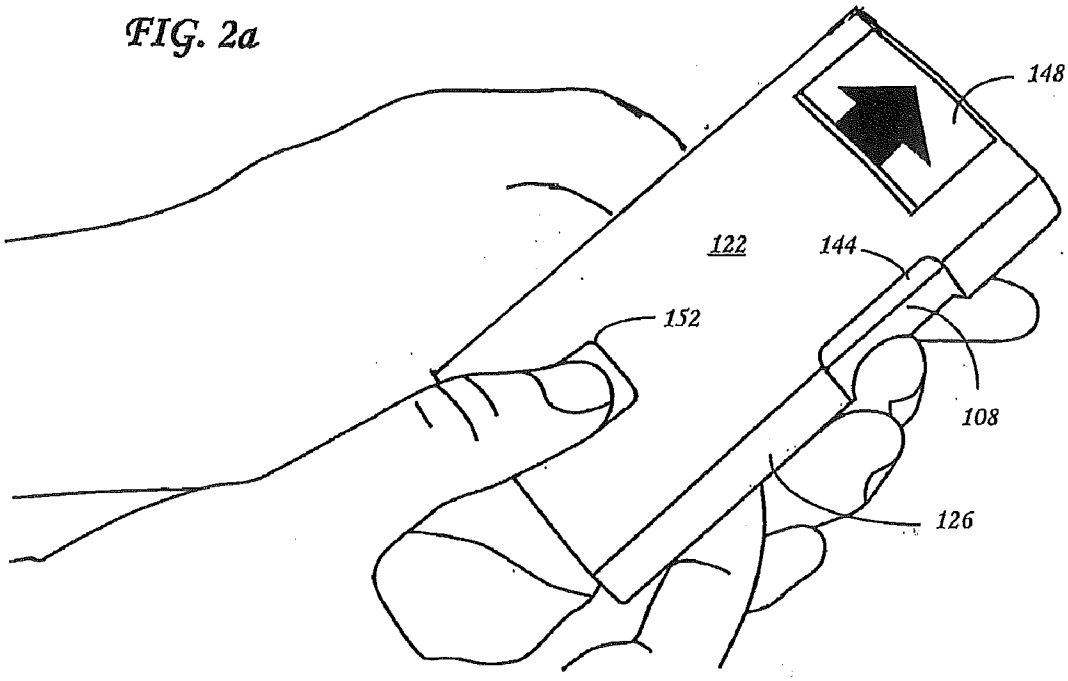

FIG. 2b

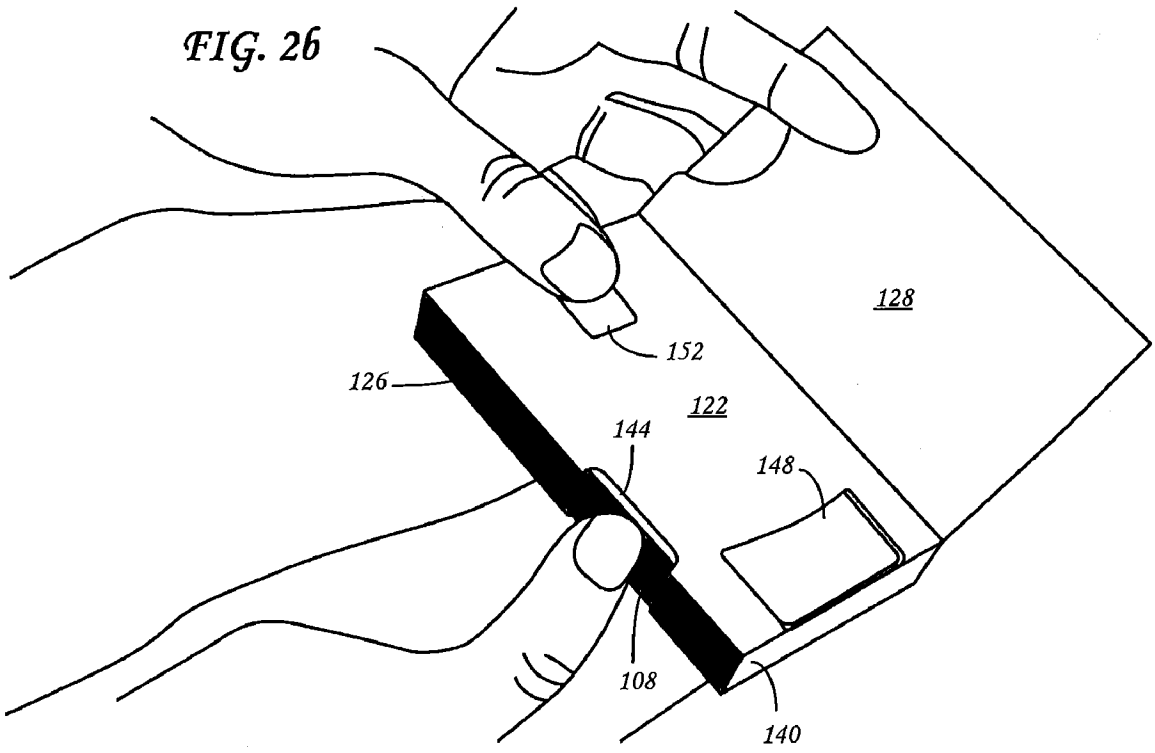

FIG. 3a

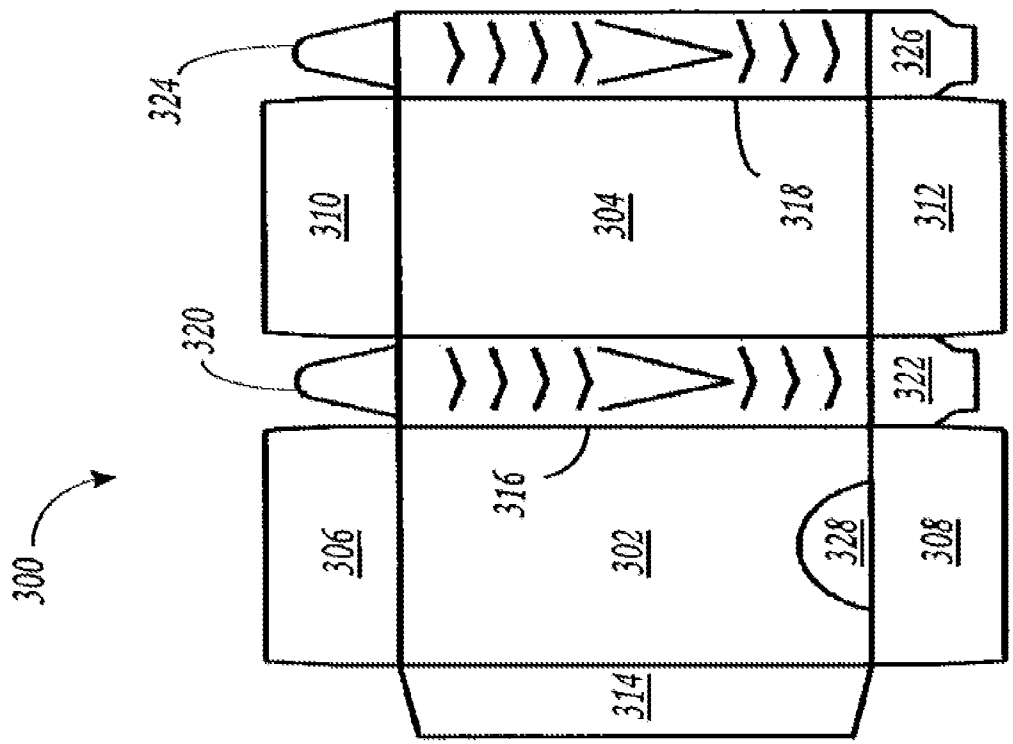
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FIG. 3b

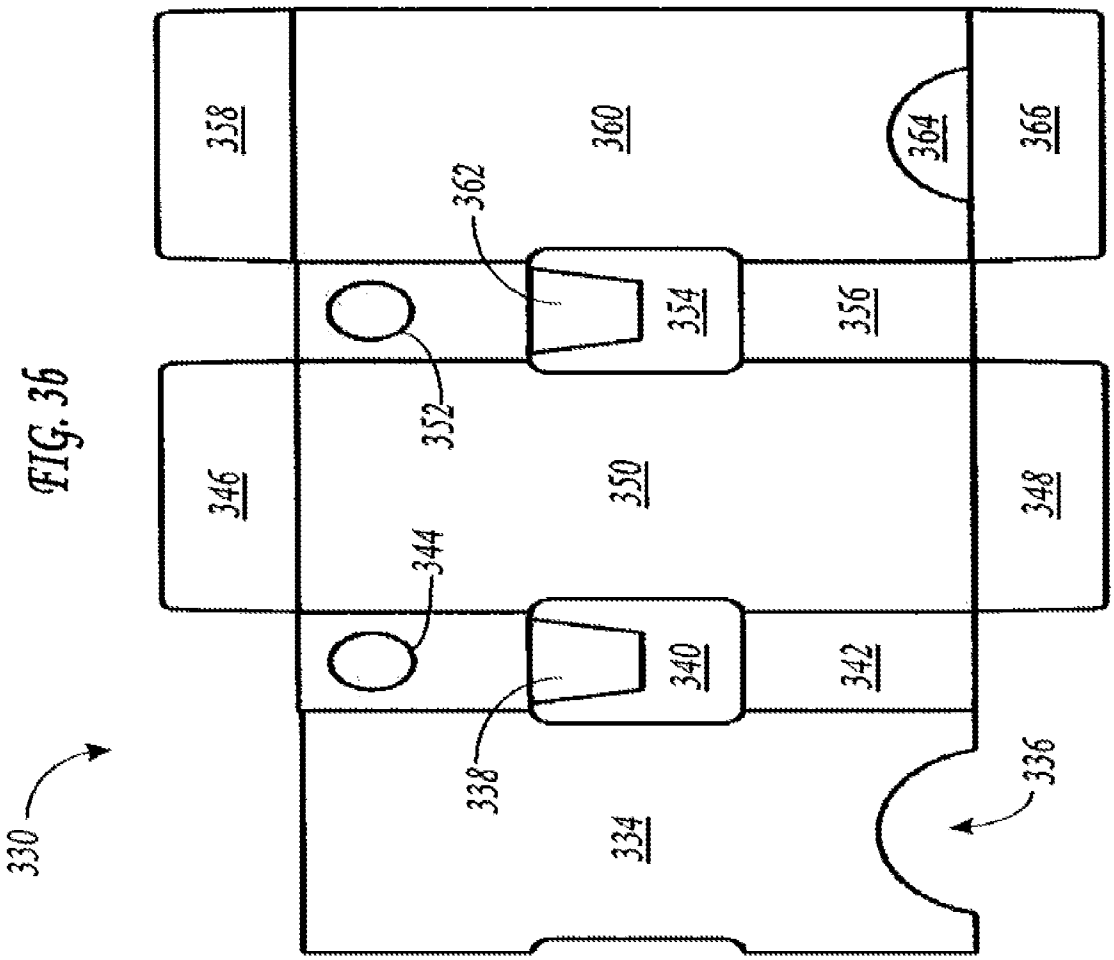
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FIG. 4a

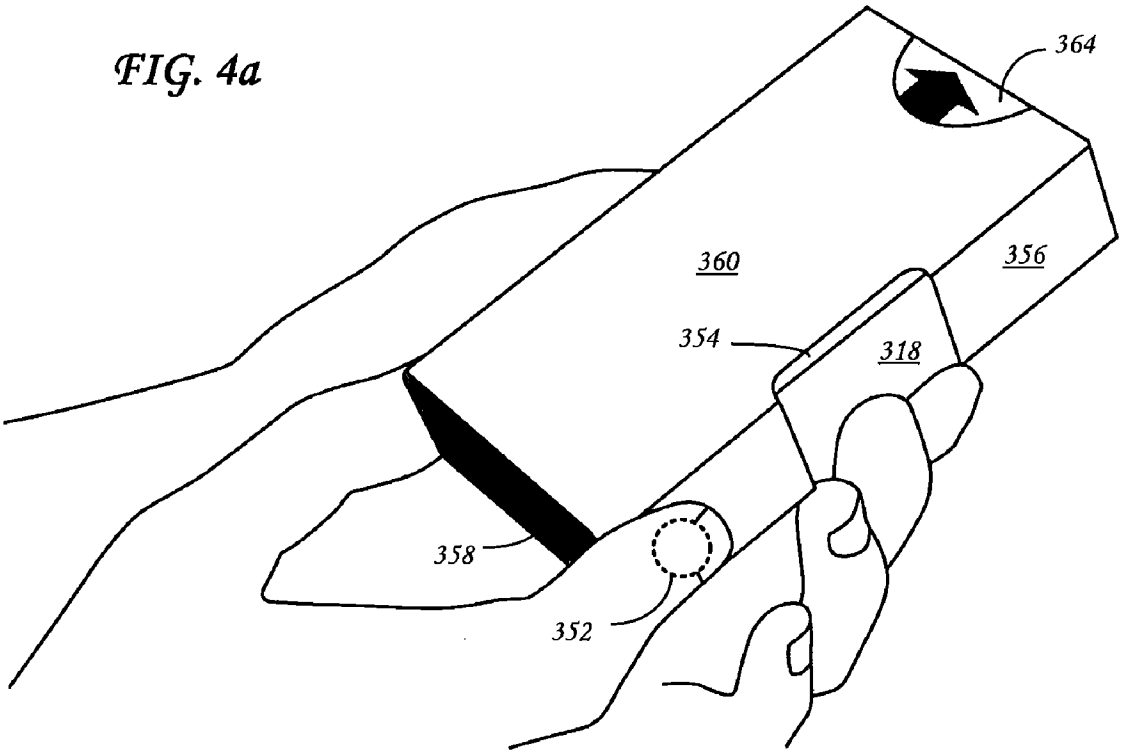
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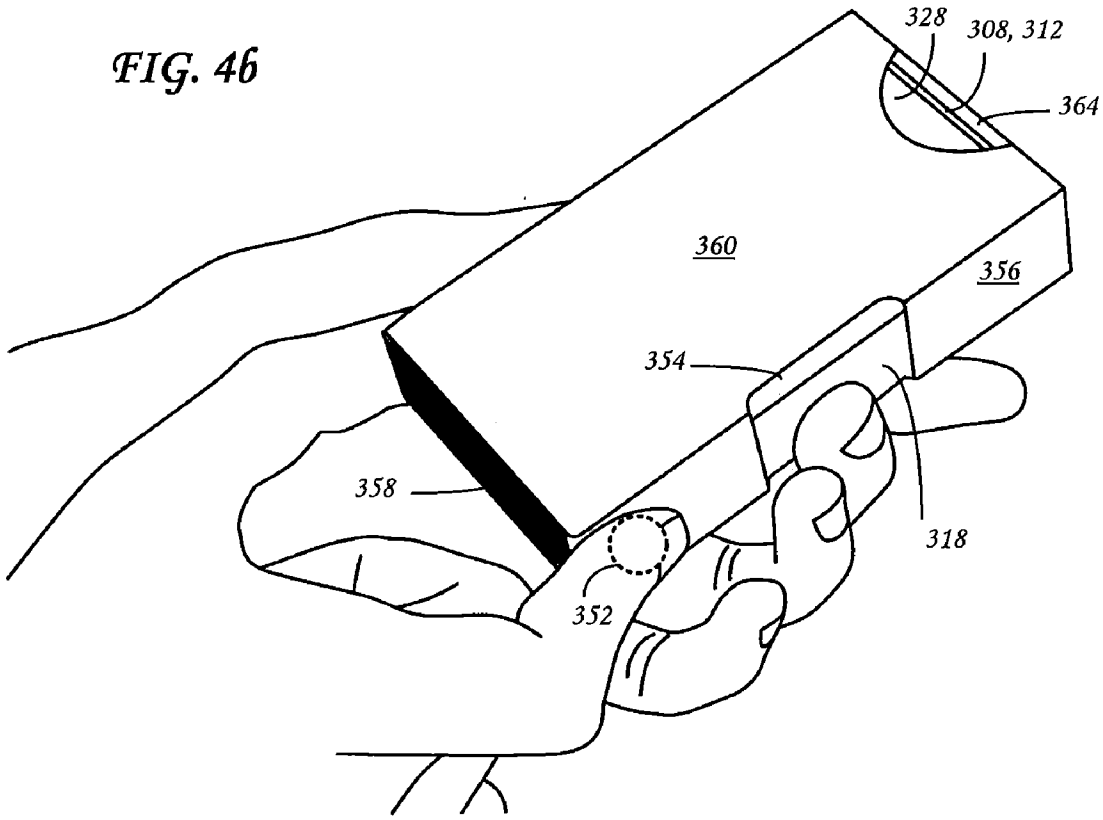
FIG. 4b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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/026857

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/38 B65D5/72
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.
Y	EP 1 002 744 A1 (WESTVACO CORP [US] MEADWESTVACO CORP [US]) 24 May 2000 (2000-05-24) columns 3-5; figures 1-11	1-20
Y	EP 1 048 577 A1 (ZEILER AG [CH]) 2 November 2000 (2000-11-02) paragraphs [0013] - [0026]; figures 1-4	1-20

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

☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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