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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 May 2024 (23.05.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/107794 A1

(51) International Patent Classification:
B65D 5/54 (2006.01) *B65D 5/42* (2006.01)
B65D 5/66 (2006.01)

(21) International Application Number:
PCT/US2023/079742

(22) International Filing Date:
15 November 2023 (15.11.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/425,831 16 November 2022 (16.11.2022) US

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

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

(54) Title: CARTON WITH LOCKING FEATURES, RELATED SYSTEMS AND METHODS

(57) Abstract: A carton for holding one or more articles includes a first plurality of panels extending at least partially around an interior of the carton and forming a body of the carton, and a second plurality of panels extending at least partially around the interior of the carton and forming a lid of the carton, the lid is foldably connected to the body such that the lid is repositionable between an open position and a closed position. The carton further includes a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels, and locking features for selectively maintaining the lid in a closed position, the locking features including a first locking flap foldably connected to the body and positioned for engagement with a second locking flap foldably connected to the lid.

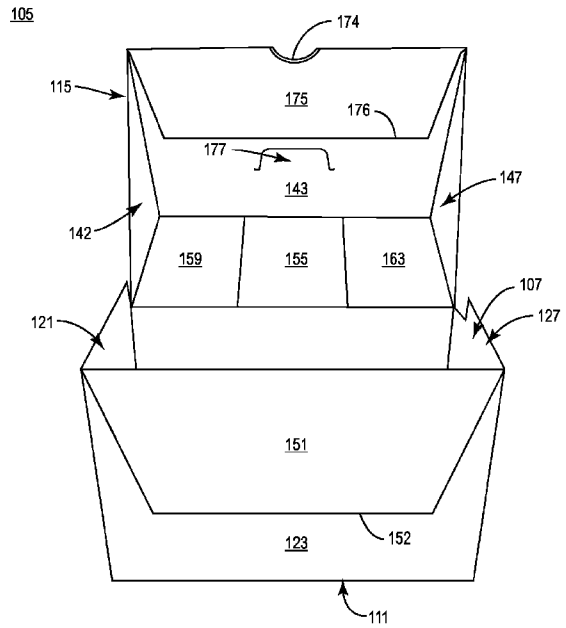


FIG. 6

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[Continued on next page]

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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

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

CARTON WITH LOCKING FEATURES, RELATED SYSTEMS AND METHODS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 63/425,831, filed on November 16, 2022.

INCORPORATION BY REFERENCE

[0002] The entire disclosures of U.S. Provisional Patent Application No. 63/425,831, filed on November 16, 2022, and U.S. Design Patent Application No. 29/906,942, filed on November 14, 2023, are hereby incorporated by reference for all purposes as if set forth in their entirety.

BACKGROUND

[0003] The present disclosure generally relates to containers for holding one or more articles. More specifically, the present disclosure relates to cartons for holding one or more articles and that include locking features for maintaining a closed configuration thereof.

SUMMARY

[0004] According to one aspect, the disclosure is generally directed to a carton for holding one or more articles, the carton comprising a first plurality of panels extending at least partially around an interior of the carton and forming a body of the carton, a second plurality of panels extending at least partially around the interior of the carton and forming a lid of the carton, the lid is foldably connected to the body such that the lid is repositionable between an open position, in which the interior of the carton is accessible, and a closed position, in which the lid at least partially overlies the interior of the carton, a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels, and locking features for selectively maintaining the lid in the closed position, the locking features including a first locking flap foldably connected to the body and positioned for engagement with a second locking flap foldably connected to the lid.

[0005] According to another aspect, the disclosure is generally directed to a blank for forming a carton for holding one or more articles, the blank comprising a first plurality of panels for extending at least partially around an interior of the carton formed from the blank and for forming a body of the carton formed from the blank, a second plurality of panels for extending at least partially around the interior of the carton formed from the blank and for forming a lid of the carton formed from the blank, the lid is for being foldably connected to the body when the carton is formed from the blank such that the lid is repositionable between an open position, in which the interior of the carton formed from the blank is accessible, and a closed position, in which the lid at least partially overlies the

interior of the carton formed from the blank, a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels, and locking features for selectively maintaining the lid in the closed position when the carton is formed from the blank, the locking features including a first locking flap foldably connected to the body of the carton formed from the blank and for being positioned for engagement with a second locking flap foldably connected to the lid of the carton formed from the blank.

[0006] According to another aspect, the disclosure is generally directed to a method of forming a carton for holding one or more articles, the method comprising obtaining a blank comprising a first plurality of panels, a second plurality of panels, a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels, and locking features comprising a first locking flap and a second locking flap, positioning the first plurality of panels extending at least partially around an interior of the carton and forming a body of the carton, positioning the second plurality of panels extending at least partially around the interior of the carton and forming a lid of the carton such that the lid of the carton is foldably connected to the body of the carton and repositionable between an open position, in which the interior of the carton is accessible, and a closed position, in which the lid at least partially overlies the interior of the carton, and positioning the first locking flap foldably connected to the body for engagement with a second locking flap foldably connected to the lid such that the lid selectively maintainable in the closed position.

[0007] Those skilled in the art will appreciate the above stated advantages and other advantages and benefits of various additional embodiments reading the following detailed description of the embodiments with reference to the below-listed drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] According to common practice, the various features of the drawings discussed below are not necessarily drawn to scale. Dimensions of various features and elements in the drawings may be expanded or reduced to more clearly illustrate the embodiments of the disclosure.

[0009] Fig. 1 is a plan view of an exterior surface of a blank for forming a carton according to an exemplary embodiment of the disclosure.

[0010] Fig. 1A is an enlarged portion of the blank of Fig. 1.

[0011] Fig. 2 is a perspective view of a closed configuration of a carton formed from the blank of Fig. 1 according to an exemplary embodiment of the disclosure.

[0012] Figs. 3-6 are sequential perspective views of an opening of the carton of Fig. 2 according to an exemplary embodiment of the disclosure.

[0013] Corresponding parts are designated by corresponding reference numbers throughout the drawings.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

[0014] The present disclosure generally relates to containers such as cartons, cartons, carriers, clips, or the like, and packages for shipping and dispensing articles that hold one or more articles such as personal care items (e.g., soaps, lotions, cosmetics, medicinal products, rinses such as mouthwash, etc.), household products (e.g., detergents, soap, hand or surface sanitizer, etc.), food products, or other articles. As described herein, such articles can be provided within a dedicated packaging, or the containers described herein can be configured to directly hold the material associated with such products.

[0015] It will be understood that it may be desirable to restrict access to some articles, which can include those to be disposed in containers described herein, by particular users. In some cases, these users can be children or other individuals whom parents/guardians/providers of consumer products may wish to avoid providing unduly simple access to articles such as those that provide a choking hazard, sweets or other indulgences, nonfood products that may be accidentally ingested, etc. At the same time, it is desirable to provide restricted access to contained articles to such selected individuals or groups of individuals while maintaining ease of access to intended end users of such articles. Accordingly, there is a need for a container solution that provides access restricting features while maintaining general ease of use for intended end users.

[0016] Containers according to the present disclosure can accommodate articles of any shape. For the purpose of illustration and not for the purpose of limiting the scope of the disclosure, the following detailed description describes product holding containers (e.g., paperboard trays and sleeves). In this specification, the terms "inner," "interior," "outer," "exterior," "lower," "bottom," "upper," and "top" indicate orientations determined in relation to fully erected and upright cartons.

[0017] As described herein, cartons may be formed by multiple overlapping panels, end flaps, and/or other portions of blanks. Such panels, end flaps, and/or other portions of the blanks can be designated in relative terms to one another, e.g., "first", "second", "third", etc., in sequential or non-sequential reference, without departing from the disclosure.

[0018] Fig. 2 is a plan view of an exterior surface 101 of a blank 103 used to form a carton 105 (Fig. 3) according to an exemplary embodiment of the present disclosure. The carton 105 defines an interior 107 (Fig. 6) within which one or more articles can be held. Fig. 1A is an enlarged portion of the exterior surface 101 of the blank 103.

[0019] As shown, the blank 103 has a longitudinal axis L1 and a lateral axis L2. It will be understood that, in some embodiments, the longitudinal axis L1 and lateral axis L2 can be transposed.

[0020] The blank 103 can have a body portion 109 for forming a body 111 of the carton 105 formed from the blank 103, as well as a lid portion 113 for forming a lid 115 of the carton 105 formed from the blank 103. As described further herein, the lid portion 113 of the blank 103 can be foldably connected to the body portion 109 of the blank 103 such that the lid 115 is foldably connected to the body 111 of the carton 105 formed from the blank 103, and such that the lid 115 repositionable between an open position and a closed position corresponding to a respective open configuration and closed configuration of the carton 105.

[0021] The blank 103 has a plurality of panels for at least partially extending around the interior 107 of the carton 105. In particular, the body portion 109 of the blank 103 can have a first plurality of panels that include a body first side panel 121, a body front panel 123 foldably connected to the first body side panel 121 at a lateral fold line 125, a body second side panel 127 foldably connected to the body front panel 123 at a lateral fold line 129, and a body back panel 131 foldably connected to the body second side panel 127 at a lateral fold line 133.

[0022] The lid portion 113 of the blank 103 can have a second plurality of panels that can include a back hinge panel 135 foldably and/or separably connected to the body back panel 131 at a longitudinal line of weakening 137, a first lid side panel 139 foldably connected to the hinge panel 135 and the body back panel 131 at respective portions of a lateral fold line 141, a lid front panel 143 foldably connected to the lid side panel 139 at a lateral fold line 145, and a lid second side panel 147 foldably connected to the lid front panel 143 at a lateral fold line 149. As described further herein, the hinge panel 135 can be foldably connected to each of the body back panel 131 and a respective end flap of a plurality of end flaps foldably connected to a respective panel of the plurality of panels of the blank 103/carton 105.

[0023] As described further herein, the first lid side panel 139 can include a base or attachment portion 140 separably connected to a distal or lid portion 142 at an oblique line of weakening 144.

[0024] In the illustrated embodiment, at least one end flap can be foldably connected to a respective panel of the plurality of panels of the blank 103. With regard to the body portion 109 of the blank 103, a first locking end flap or first locking flap 151 can be foldably connected to the body front panel 123 at a longitudinal fold line 153.

[0025] With regard to the lid portion 113 of the blank 103, a first top end flap 155 can be foldably connected to the hinge panel 135 at a respective portion of a longitudinal fold line 157, a second top end flap 159 can be foldably connected to the side panel 139 at a respective portion of the fold line 157, a third top end flap 161 can be foldably connected to the front panel 143 at a respective portion of the fold line 157, and a fourth top end flap 163 can be foldably connected to the side panel 147 at a respective portion of the fold line 157.

[0026] As also shown, a first bottom end flap 165 can be foldably connected to the body front panel 123 at a respective portion of a longitudinal fold line 167, a second bottom end flap 169 can be foldably connected to the body second side panel 127 at a respective portion of the fold line 167, a third bottom end flap 171 can be foldably connected to the body back panel 131 at a respective portion of the fold line 167, and a fourth bottom end flap 173 foldably connected to the first lid side panel 139 at a respective portion of the fold line 167.

[0027] As described further herein, a second locking end flap or second locking flap 175 can be foldably connected to the lid front panel 143 at a respective portion of the fold line 167. As shown, the portion of the fold line 167 can be at least partially interrupted by an opening or notch 174.

[0028] In this regard, the end flaps 151, 155, 159, 161, 163 can be a first plurality of end flaps positioned along a first marginal portion of the blank 103, and the end flaps 165, 169, 171, 173, 175 can be a second plurality of end flaps positioned along a second marginal portion of the blank 103.

[0029] It will be understood that the blank 103 and carton 105 formed therefrom can have a different number, configuration, and/or arrangement of panels, end flaps, and/or associated features without departing from the disclosure. For example, in some embodiments, one or both of the body side panel 121 and the second lid side panel 147 can be considered end flaps of the blank 103/carton 105.

[0030] The blank 103 and the carton 105 formed therefrom can also include locking features for selectively maintaining a closed/locked configuration of the carton 105 in which the lid 115 is in a closed position. In the illustrated embodiment, the locking features can include the locking flap 151 and the locking flap 175. Further, the locking features can include a locking release tab 177 at least partially separable from the lid front panel 143 at a generally U-shaped cut line 179.

[0031] In addition, the blank 103 and the carton 105 formed therefrom can include access features to facilitate transitioning the carton 105 from an initially closed configuration to an open configuration. As best shown in Fig. 1A, the access features can include a tear strip 181 positioned to interrupt the line of weakening 144 along the lid side panel 139. In the illustrated embodiment, the tear strip 181 can be separably connected to the base portion 140 of the lid side panel 139 at an oblique line of weakening 183 and from the distal portion 142 of the lid side panel 139 at an oblique line of weakening 185 that is collinear with the line of weakening 144. As also shown, respective oblique lines of weakening 187, 189 can extend from a respective endpoint of the line of weakening 183 to a respective endpoint of the line of weakening 185. In some embodiments, the tear strip 181 can be at least partially bisected by an additional oblique line of weakening 190 to form an access tab 192 therealong.

[0032] Access features of the blank 103 and carton 105 formed therefrom can also include an access tab 191 separably connected to the body side panel 127 at a generally lateral line of weakening 193 extending from a free edge of the panel 127 to an endpoint of a generally longitudinal or oblique line of weakening 195 that intersects the fold line 133.

[0033] It will be understood that the blank 103 and the carton 105 formed therefrom can include a different number and/or arrangement of access features without departing from the disclosure. For example, in some embodiments, the locking release tab 177 and associated features can be considered access features of the blank 103 and carton 105 formed therefrom.

[0034] Turning to Fig. 2, according to one embodiment, the carton 105 can be formed from the blank 103 by positioning the blank 103 on a supporting surface, with the exterior surface 101 facing downwardly and with an interior surface thereof facing upwardly. The locking flap 175 can be folded at the respective portion of the fold line 167 into at least partial face-to-face contact with the lid front panel 143.

[0035] The body front panel 123 can be folded at the fold line 129 into at least partial face-to-face contact with respective portions of the body side panel 127, the back panel 131, and the hinge panel 135, and such that the body side panel 121 is carried into at least partial face-to-face contact with respective portions of the back panel 131 and the hinge panel 135. Furthermore, a respective portion of the locking flap 151 can be carried into at least partial face-to-face contact with a respective portion of the top end flap 155, and the bottom end flap 165 can be carried into at least partial face-to-face contact with respective portions of the bottom end flaps 169, 171.

[0036] The locking flap 151 can then be folded at the fold line 153 into at least partial face-to-face contact with a respective portion of the exterior surface 101 of the blank 103 along the body front panel 123.

[0037] The lid side panel 139 can be folded at the fold line 141 into at least partial face-to-face contact with the body side panel 121, and such that the top end flap 159 is carried into at least partial face-to-face contact with the top end flap 155, and such that the bottom end flap 173 is carried into at least partial face-to-face contact with a respective portion of the bottom end flap 171. As described further herein, the base portion 140 of the lid side panel 139 can be attached to a respective portion of the body side panel 121.

[0038] Simultaneously or thereafter, the lid side panel 147 can be folded at the fold line 149 into at least partial face-to-face contact with respective portions of the lid front panel 143 and the locking flap 175 and such that the top end flap 163 is carried into at least partial face-to-face contact with the top end flap 161. In this regard, when the lid front panel 143 is moved upon folding of the lid side panel 139 at the fold line 141 as described above, a respective portion of the lid front panel 143 and the lid side panel 147 are carried into at least partial face-to-face contact with respective portions of the locking flap 151 and the body front panel 123.

[0039] Such an arrangement can be considered an at least partially folded configuration of the blank 103 or a collapsed configuration of the carton 105. This arrangement can be at least partially maintained via one or more applications of an adhesive such as glue. In one embodiment, an adhesive such as glue can be applied to the exterior surface 101 of the blank 103 along a portion of the body side panel 121 (e.g., such that the exterior surface of the body side panel 121 is adhered to the interior surface of the lid side panel 139) and to the interior surface of the blank 103 along a portion of the locking flap 175 (e.g., such that the interior surface of the locking flap 175 is adhered to the interior surface of the lid front panel 143).

[0040] Such an arrangement can provide an open sleeve configuration of the carton 105, in which the overlapped lid front panel 143, locking flap 175, locking flap 151, and body front panel 123 are positioned in spaced and parallel relation with the back panel 131 and hinge panel 135, with the overlapped lid side panel 139 and body side panel 121 extending from the front panel 143, 123 to the back panel 131 and the hinge panel 135 and in spaced and parallel relation to the overlapped lid side panel 147 and body side panel 127 that also extend from the front panels 143, 123 and locking flaps 175, 151 to the back panel 131 and the hinge panel 135.

[0041] In this configuration, the panels 121, 123, 127, 131, 135, 139, 143, 147 extend at least partially around the interior 107 of the carton 105, with the end flaps 155, 159, 161, 163, 165, 169, 171, 173 extending away therefrom.

[0042] Fig. 2 illustrates an initially closed configuration of the carton 105, which can be formed by further folding the top end flaps 159, 163 at respective portions of the fold line 157 toward the interior 107 of the carton 105 (e.g., in generally perpendicular relation to the panels 121, 123, 127,

131, 135, 139, 143, 147), folding the top end flap 161 at a respective portion of the fold line 157 into at least partial face-to-face contact with respective portions of the top end flaps 159, 163, and folding the top end flap 155 at a respective portion of the fold line 157 into at least partial face-to-face contact with the top end flap 161 so as to be in at least partial overlapping relation to at least partially form a closed top end/the lid 115 of the carton 105.

[0043] Similarly, the bottom end flaps 169, 173 can be folded at respective portions of the fold line 167 toward the interior 107 of the carton 105 (e.g., in generally perpendicular relation to the panels 121, 123, 127, 131, 135, 139, 143, 147) and can be positioned in at least partially overlapping relation to form a closed bottom of the carton 105.

[0044] In view of the foregoing, the first plurality of panels of the blank 103/carton 105 and the second plurality of panels of the blank 103/carton 105 can each extend at least partially around the interior 107 of the carton 105.

[0045] In the initially closed configuration of the carton 105, the locking flap 151, which is folded downwardly toward an exterior surface of the body front panel 123 and positioned between the body front panel 123 and the lid front panel 143, can be positioned to engage the locking flap 175 that is folded into at least partial face-to-face contact with the interior surface of the lid front panel 143. In particular, a free edge 152 (Fig. 1) of the locking flap 151 can be positioned for at least partial edge-to-edge engagement with a free edge 176 (Fig. 1) of the locking flap 175 and/or an exterior surface of the locking flap 175. In view of the foregoing, each locking flap 151, 175 can be positioned between the body front panel 123 and the lid front panel 143 when the lid 115 is in the closed position.

[0046] In such an arrangement, the lid 115 of the carton 105 can be in a closed position or first position at least partially overlying the interior 107 of the carton 105 so as to inhibit and/or prevent access to articles in the interior 107 of the carton 105. In some embodiments, the closed position of the lid 115 of the carton 105 can include at least partial contact with one or more portions of the body 111 of the carton 105.

[0047] With additional reference to Figs. 3-5, in order to facilitate repositioning of the lid 115 to transition the carton 105 from an initially closed configuration to an open configuration, a user can engage the tear strip 181, for example, by pinching the access tab 192 between his or her fingers and pulling the tear strip 181 away from the lid side panel 139 such that the tear strip 181 at least partially separates from the lid side panel 139 at one or more of the lines of weakening 183, 185, 187, 189, and such that the distal portion 142 of the lid side panel 139 is freely separable from the base portion 140 of the lid side panel 139 along the line of weakening 144.

[0048] Upon such removal of the tear strip 181, the aforementioned engagement of the locking flaps 151, 175 can be at least partially overcome by a user by pressing on the locking release tab 177 to cause at least partial separation thereof from the lid front panel 143 at the cut 179 and toward the locking flap 151 aligned there beneath. Accordingly, pressing on the locking release tab 177 can move the locking flap 151 away from engagement with the locking flap 175 attached to the lid front panel 143. In this regard, the locking flap 151 is movable toward and away from the body front panel 123 via the foldable connection thereto at the fold line 153.

[0049] Upon such disengagement of the locking flaps 151, 175, the lid 115 of the carton 105 can be lifted away from the body 111 of the carton 105 to an open position from which articles in the interior 107 of the carton 105 can be accessed. In some embodiments, the notch 174 can provide a conspicuous location along which a user can place his or her finger or knuckle to engage the lid 115.

[0050] The lid 115 of the carton 105 can move via folding at the respective portion of the fold line 157 that foldably connects the top end flap 155 to the hinge panel 135 and/or at the line of weakening 137 that foldably connects the hinge panel 135 to the back panel 131 such that the lid 115 has an articulable hinge arrangement that can fold at multiple points of attachment to the remainder of the carton 105. Such a lid configuration can be advantageous as compared to, for example, a lid configuration that is pivotable at only one foldable connection relative to a remainder of a carton.

[0051] The lid 115 can thus be lifted away from the body 111 of the carton 105 into the open position or second position in order to allow one or more users to access and/or retrieve one or more articles from the interior 107 of the carton 105. When it is desired to again close the carton 105, a user can lower the lid 115 over the interior 107 of the carton 105 by folding the lid 115 at one or both of the fold lines 157, 137. Furthermore, such lowering of the lid 115 onto the body 111 of the carton 105 can position the locking flaps 151, 175 in locking engagement as described above to provide not only an openable and reclosable configuration of the carton 105 via the lid 115, but also a lockable and unlockable configuration of the carton 105 via the engagement of the locking flaps 151, 175 and subsequent release thereof via the locking release tab 177.

[0052] The locking features and access features described above can be configured such that intended user's having requisite physical characteristics, e.g., strength, dexterity, etc., are provided convenient access to open/unlock and close/lock the carton 105 in a relatively easy manner, while users lacking such physical characteristics can experience one or more barriers to at least opening/unlocking the carton 105 and one or more articles in the interior 107 of the carton 105. In some embodiments, such physical characteristics can include the capability to grasp the carton 105 with two hands simultaneously as described above and the dexterity to engage the locking features and lift the lid 115 as described above.

[0053] It will be understood that, in some embodiments, for example, situations may arise in which restricted access to the interior 107 of the carton 105 to certain users is not necessary or not desired. In such situations the lid 115 and associated locking functionality of the carton 105 can be removed from the carton 105 via engaging the access tab 191, separating the tab 191 from the side panel 127 at the lines of weakening 193, 195, and further tearing the hinge panel 135 from the back panel 131 at the line of weakening 137 to partially or fully remove the lid 115 from the body 111 of the carton 105.

[0054] It will be understood that one or more features of the carton 105 can have an alternative configuration and/or arrangement without departing from the disclosure.

[0055] In general, the blanks of the present disclosure may be constructed from paperboard having a caliper so that it is heavier and more rigid than ordinary paper. The blank can also be constructed of other materials, such as cardboard, or any other material having properties suitable for enabling the carton to function at least generally as described above. The blank can be coated with, for example, a clay coating. The clay coating may then be printed over with product, advertising, and other information or images. The blanks may then be coated with a varnish to protect information printed on the blanks. The blanks may also be coated with, for example, a moisture barrier layer, on either or both sides of the blanks. The blanks can also be laminated to or coated with one or more sheet-like materials at selected panels or panel sections.

[0056] As an example, a tear line can include: a slit that extends partially into the material along the desired line of weakness, and/or a series of spaced apart slits that extend partially into and/or completely through the material along the desired line of weakness, or various combinations of these features. As a more specific example, one type of tear line is in the form of a series of spaced apart slits that extend completely through the material, with adjacent slits being spaced apart slightly so that a nick (e.g., a small somewhat bridging-like piece of the material) is defined between the adjacent slits for typically temporarily connecting the material across the tear line. The nicks are broken during tearing along the tear line. The nicks typically are a relatively small percentage of the tear line, and alternatively the nicks can be omitted from or torn in a tear line such that the tear line is a continuous cut line. That is, it is within the scope of the present disclosure for each of the tear lines to be replaced with a continuous slit, or the like. For example, a cut line can be a continuous slit or could be wider than a slit without departing from the present disclosure.

[0057] In accordance with the exemplary embodiments, a fold line can be any substantially linear, although not necessarily straight, form of weakening that facilitates folding there along. More specifically, but not for the purpose of narrowing the scope of the present disclosure, fold lines include: a score line, such as lines formed with a blunt scoring knife, or the like, which creates a crushed or depressed portion in the material along the desired line of weakness; a cut that extends

partially into a material along the desired line of weakness, and/or a series of cuts that extend partially into and/or completely through the material along the desired line of weakness; and various combinations of these features. In situations where cutting is used to create a fold line, typically the cutting will not be overly extensive in a manner that might cause a reasonable user to incorrectly consider the fold line to be a tear line.

[0058] The above embodiments may be described as having one or more panels adhered together by glue during erection of the carton embodiments. The term "glue" is intended to encompass all manner of adhesives commonly used to secure carton panels in place.

[0059] The foregoing description of the disclosure illustrates and describes various embodiments. As various changes could be made in the above construction without departing from the scope of the disclosure, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. Furthermore, the scope of the present disclosure covers various modifications, combinations, alterations, etc., of the above-described embodiments. Additionally, the disclosure shows and describes only selected embodiments, but various other combinations, modifications, and environments are within the scope of the disclosure as expressed herein, commensurate with the above teachings, and/or within the skill or knowledge of the relevant art. Furthermore, certain features and characteristics of each embodiment may be selectively interchanged and applied to other illustrated and non-illustrated embodiments of the disclosure.

What is claimed is:

1. A carton for holding one or more articles, the carton comprising:

a first plurality of panels extending at least partially around an interior of the carton and forming a body of the carton;

a second plurality of panels extending at least partially around the interior of the carton and forming a lid of the carton, the lid is foldably connected to the body such that the lid is repositionable between an open position, in which the interior of the carton is accessible, and a closed position, in which the lid at least partially overlies the interior of the carton;

a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels; and

locking features for selectively maintaining the lid in the closed position, the locking features including a first locking flap foldably connected to the body and positioned for engagement with a second locking flap foldably connected to the lid.

2. The carton of claim 1, wherein the first plurality of panels comprises a body front panel, a body back panel, and at least one body side panel, the first locking flap is foldably connected to the body front panel.

3. The carton of claim 2, wherein the second plurality of panels comprises a lid front panel and at least one lid side panel, the second locking flap is foldably connected to the lid front panel.

4. The carton of claim 3, wherein each of the first locking flap and the second locking flap is for being positioned between the body front panel and the lid front panel when the lid is in the closed position.

5. The carton of claim 4, wherein the first locking flap is movable toward and away from the body front panel.

6. The carton of claim 5, wherein a free edge of the first locking flap is for contacting a free edge of the second locking flap when the lid is in the closed position.

7. The carton of claim 6, wherein the second locking flap is in at least partial face-to-face contact with the lid front panel.

8. The carton of claim 5, wherein the locking features further comprise a locking release tab at least partially defined by a cut in the lid front panel, the locking release tab is movable relative to the lid front panel to disengage the first locking flap from the second locking flap when the lid is in the closed position.

9. The carton of claim 8, wherein the at least one lid side panel comprises a base portion at least partially separable from a distal portion at a line of weakening, the base portion of the at least one lid side panel attached to the at least one body side panel, the distal portion of the at least one lid side panel for being separated from the base portion of the at least one lid side panel when the lid is in the open position.

10. The carton of claim 9, wherein line of weakening is interrupted by a tear strip for being at least partially separated from each of the base portion and the distal portion of the at least one lid side panel to facilitate repositioning of the lid from the closed position to the open position.

11. The carton of claim 8, wherein the plurality of end flaps comprises a first top end flap foldably and a second top end flap foldably connected to a respective panel of the second plurality of panels, the first top end flap and the second top end flap at least partially overlapped to at least partially form the lid.

12. The carton of claim 11, wherein the at least one body side panel is a body first side panel, the first plurality of panels comprises a body second side panel, the at least one lid side panel is a lid first side panel, the second plurality of panels comprises a lid second side panel, the second top end flap is foldably connected to the lid front panel, and the plurality of end flaps comprises a third top end flap foldably connected to the lid second side panel and at least partially overlapping the second top end flap to at least partially form the lid.

13. The carton of claim 12, wherein the first plurality of panels comprises a hinge panel foldably connected to each of the body back panel and the first top end flap for facilitating repositioning of the lid between the closed position and the open position, the first top end flap foldably connected to the hinge panel.

14. A blank for forming a carton for holding one or more articles, the blank comprising:

a first plurality of panels for extending at least partially around an interior of the carton formed from the blank and for forming a body of the carton formed from the blank;

a second plurality of panels for extending at least partially around the interior of the carton formed from the blank and for forming a lid of the carton formed from the blank, the lid is for being foldably connected to the body when the carton is formed from the blank such that the lid is

repositionable between an open position, in which the interior of the carton formed from the blank is accessible, and a closed position, in which the lid at least partially overlies the interior of the carton formed from the blank;

a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels; and

locking features for selectively maintaining the lid in the closed position when the carton is formed from the blank, the locking features including a first locking flap foldably connected to the body of the carton formed from the blank and for being positioned for engagement with a second locking flap foldably connected to the lid of the carton formed from the blank.

15. The blank of claim 14, wherein the first plurality of panels comprises a body front panel, a body back panel, and at least one body side panel, the first locking flap is foldably connected to the body front panel.

16. The blank of claim 15, wherein the second plurality of panels comprises a lid front panel and at least one lid side panel, the second locking flap is foldably connected to the lid front panel.

17. The blank of claim 16, wherein each of the first locking flap and the second locking flap is for being positioned between the body front panel and the lid front panel when the lid of the carton formed from the blank is in the closed position.

18. The blank of claim 17, wherein the first locking flap is for being movable toward and away from the body front panel when the carton is formed from the blank.

19. The blank of claim 18, wherein the locking features further comprise a locking release tab at least partially defined by a cut in the lid front panel, the locking release tab is movable relative to the lid front panel for disengaging the first locking flap from the second locking flap when the lid of the carton formed from the blank is in the closed position.

20. The blank of claim 19, wherein the at least one lid side panel comprises a base portion at least partially separable from a distal portion at a line of weakening, the base portion of the at least one lid side panel attached to the at least one body side panel, the distal portion of the at least one lid side panel for being separated from the base portion of the at least one lid side panel when the lid of the carton formed from the blank is in the open position.

21. The blank of claim 20, wherein line of weakening is interrupted by a tear strip for being at least partially separated from each of the base portion and the distal portion of the at least one lid side panel to facilitate repositioning of the lid of the carton formed from the blank from the closed position to the open position.

22. The blank of claim 19, wherein the plurality of end flaps comprises a first top end flap foldably and a second top end flap foldably connected to a respective panel of the second plurality of panels, the first top end flap and the second top end flap for being at least partially overlapped to at least partially form the lid of the carton formed from the blank.

23. The blank of claim 22, wherein the at least one body side panel is a body first side panel, the first plurality of panels comprises a body second side panel, the at least one lid side panel is a lid first side panel, the second plurality of panels comprises a lid second side panel, the second top end flap is foldably connected to the lid front panel, and the plurality of end flaps comprises a third top end flap foldably connected to the lid second side panel and for at least partially overlapping the second top end flap to at least partially form the lid of the carton formed from the blank.

24. The blank of claim 23, wherein the first plurality of panels comprises a hinge panel foldably connected to each of the body back panel and the first top end flap for facilitating repositioning of the lid of the carton formed from the blank between the closed position and the open position, the first top end flap foldably connected to the hinge panel.

25. A method of forming a carton for holding one or more articles, the method comprising:

obtaining a blank comprising a first plurality of panels, a second plurality of panels, a plurality of end flaps foldably connected to a respective panel of the first plurality of panels and the second plurality of panels, and locking features comprising a first locking flap and a second locking flap;

positioning the first plurality of panels extending at least partially around an interior of the carton and forming a body of the carton;

positioning the second plurality of panels extending at least partially around the interior of the carton and forming a lid of the carton such that the lid of the carton is foldably connected to the body of the carton and repositionable between an open position, in which the interior of the carton is accessible, and a closed position, in which the lid at least partially overlies the interior of the carton; and

positioning the first locking flap foldably connected to the body for engagement with a second locking flap foldably connected to the lid such that the lid selectively maintainable in the closed position.

26. The method of claim 25, wherein the first plurality of panels comprises a body front panel, a body back panel, and at least one body side panel, the first locking flap is foldably connected to the body front panel.

27. The method of claim 26, wherein the second plurality of panels comprises a lid front panel and at least one lid side panel, the second locking flap is foldably connected to the lid front panel.

28. The method of claim 27, wherein each of the first locking flap and the second locking flap is for being positioned between the body front panel and the lid front panel when the lid is in the closed position.

29. The method of claim 28, wherein the first locking flap is movable toward and away from the body front panel.

30. The method of claim 29, wherein a free edge of the first locking flap is for contacting a free edge of the second locking flap when the lid is in the closed position.

31. The method of claim 30, wherein positioning the second plurality of panels comprises positioning the second locking flap in at least partial face-to-face contact with the lid front panel.

32. The method of claim 29, wherein the locking features further comprise a locking release tab at least partially defined by a cut in the lid front panel, the locking release tab is movable relative to the lid front panel to disengage the first locking flap from the second locking flap when the lid is in the closed position.

33. The method of claim 32, further comprising positioning the lid in the closed position.

34. The method of claim 33, further comprising moving the locking release tab to disengage the first locking flap from the second locking flap.

35. The method of claim 34, further comprising positioning the lid in the open position.

36. The method of claim 32, wherein the at least one lid side panel comprises a base portion at least partially separable from a distal portion at a line of weakening, the base portion of the at least one lid side panel attached to the at least one body side panel, the distal portion of the at least one lid side panel for being separated from the base portion of the at least one lid side panel when the lid is in the open position.

37. The method of claim 36, wherein line of weakening is interrupted by a tear strip for being at least partially separated from each of the base portion and the distal portion of the at least one lid side panel to facilitate repositioning of the lid from the closed position to the open position.

38. The method of claim 32, wherein the plurality of end flaps comprises a first top end flap foldably and a second top end flap foldably connected to a respective panel of the second plurality of panels, and the method further comprises at least partially overlapping the first top end flap and the second top end flap to at least partially form the lid.

39. The method of claim 38, wherein the at least one body side panel is a body first side panel, the first plurality of panels comprises a body second side panel, the at least one lid side panel is a lid first side panel, the second plurality of panels comprises a lid second side panel, the second top end flap is foldably connected to the lid front panel, and the plurality of end flaps comprises a third top end flap foldably connected to the lid second side panel, and the method further comprises at least partially overlapping the second top end flap and the third top end flap to at least partially form the lid.

40. The method of claim 39, wherein the first plurality of panels comprises a hinge panel foldably connected to each of the body back panel and the first top end flap for facilitating repositioning of the lid between the closed position and the open position, the first top end flap foldably connected to the hinge panel.

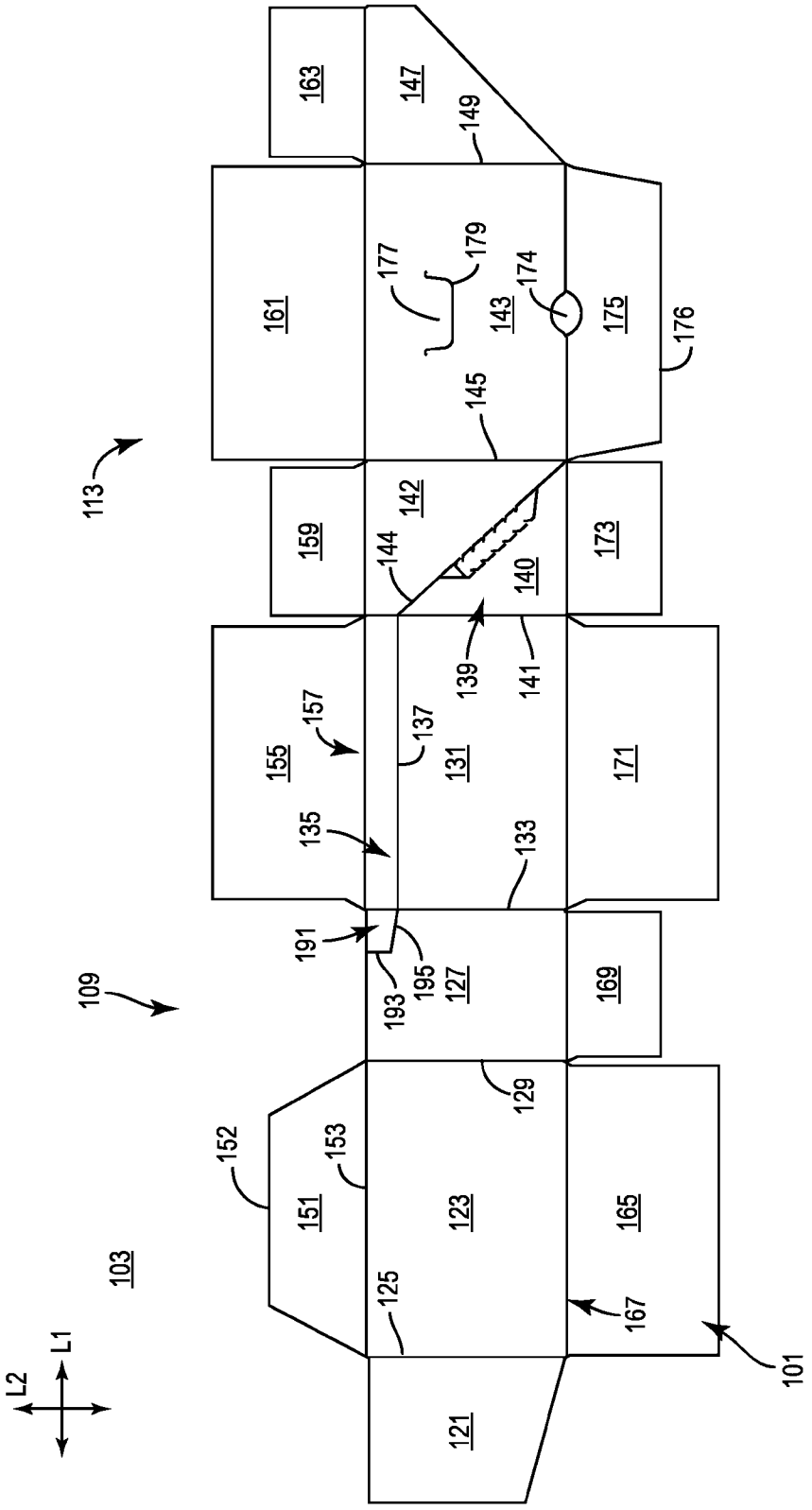

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FIG. 1

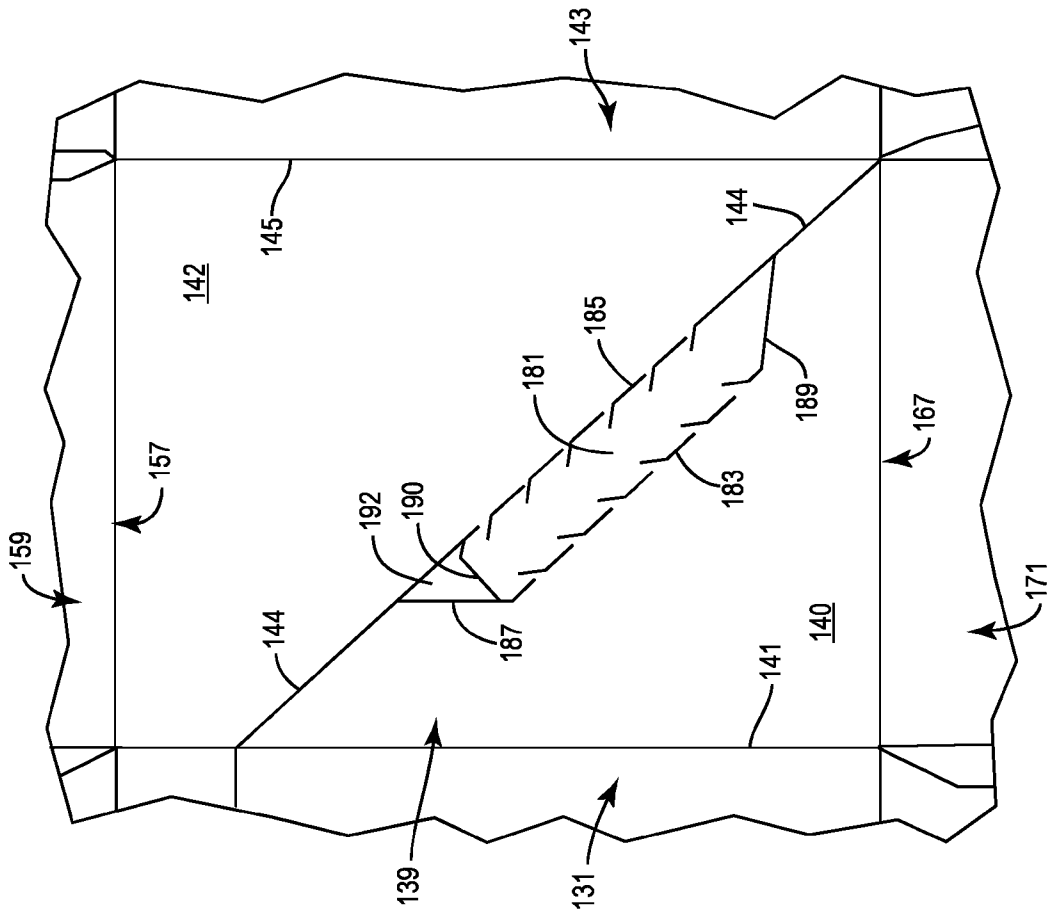

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FIG. 1A

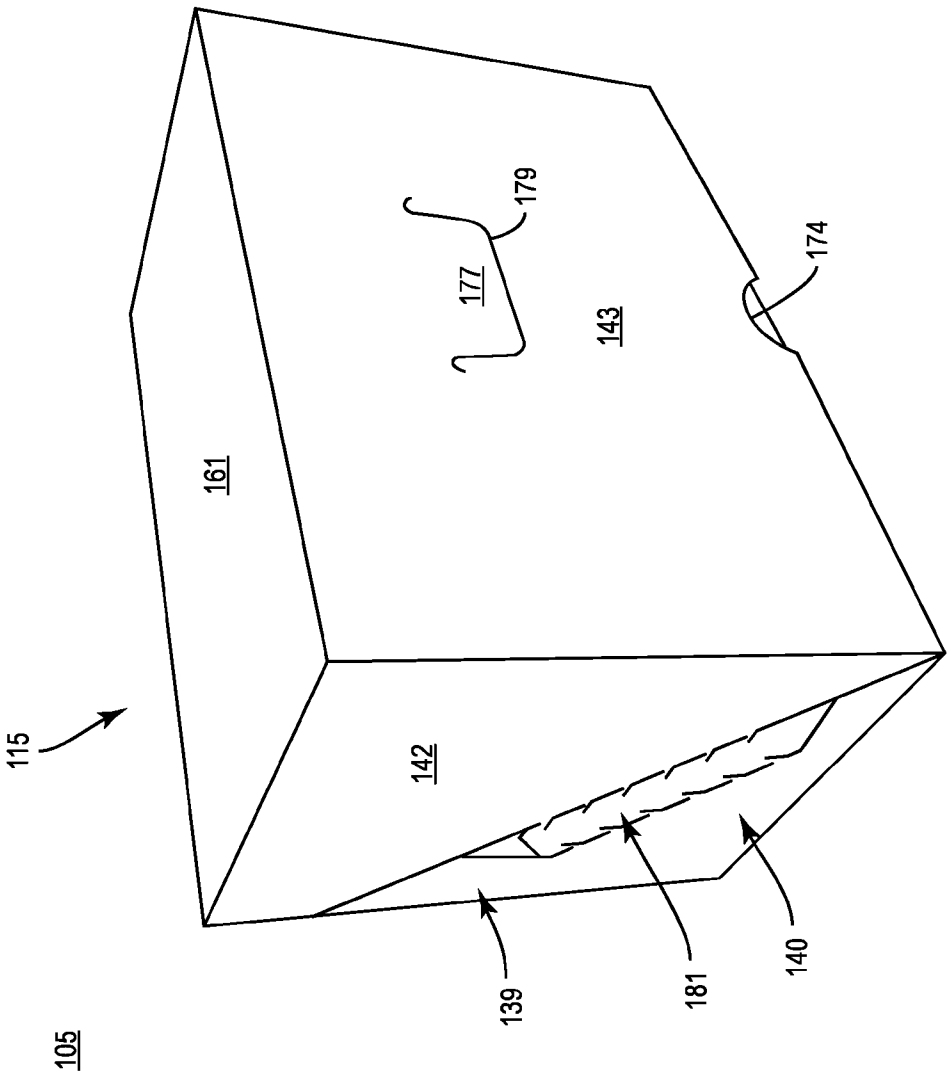


FIG. 2

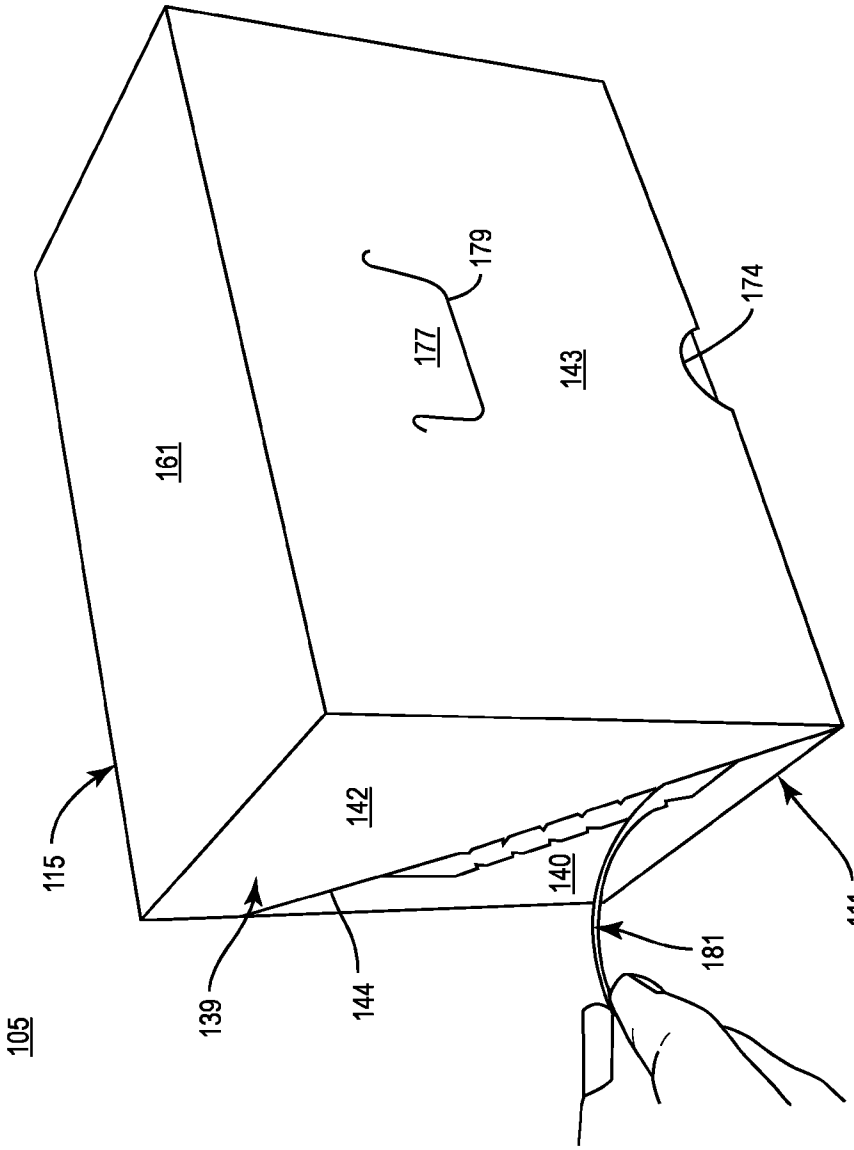


FIG. 3

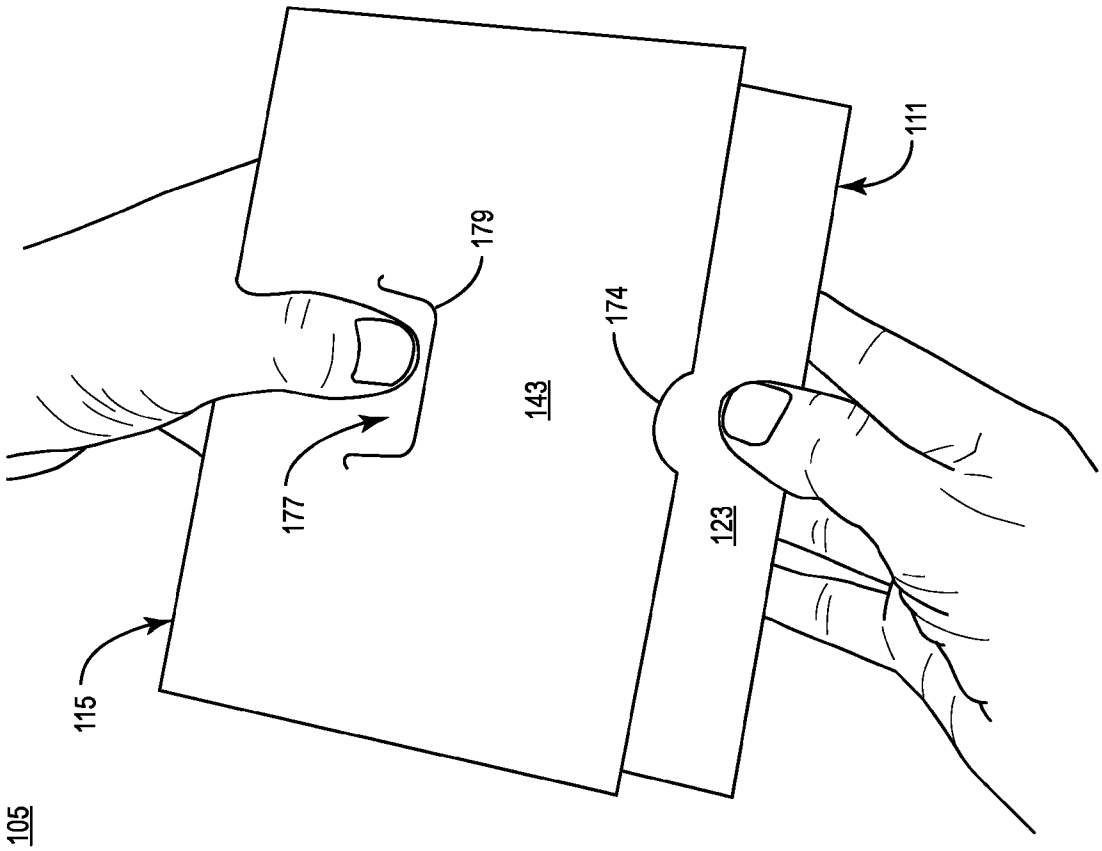


FIG. 4

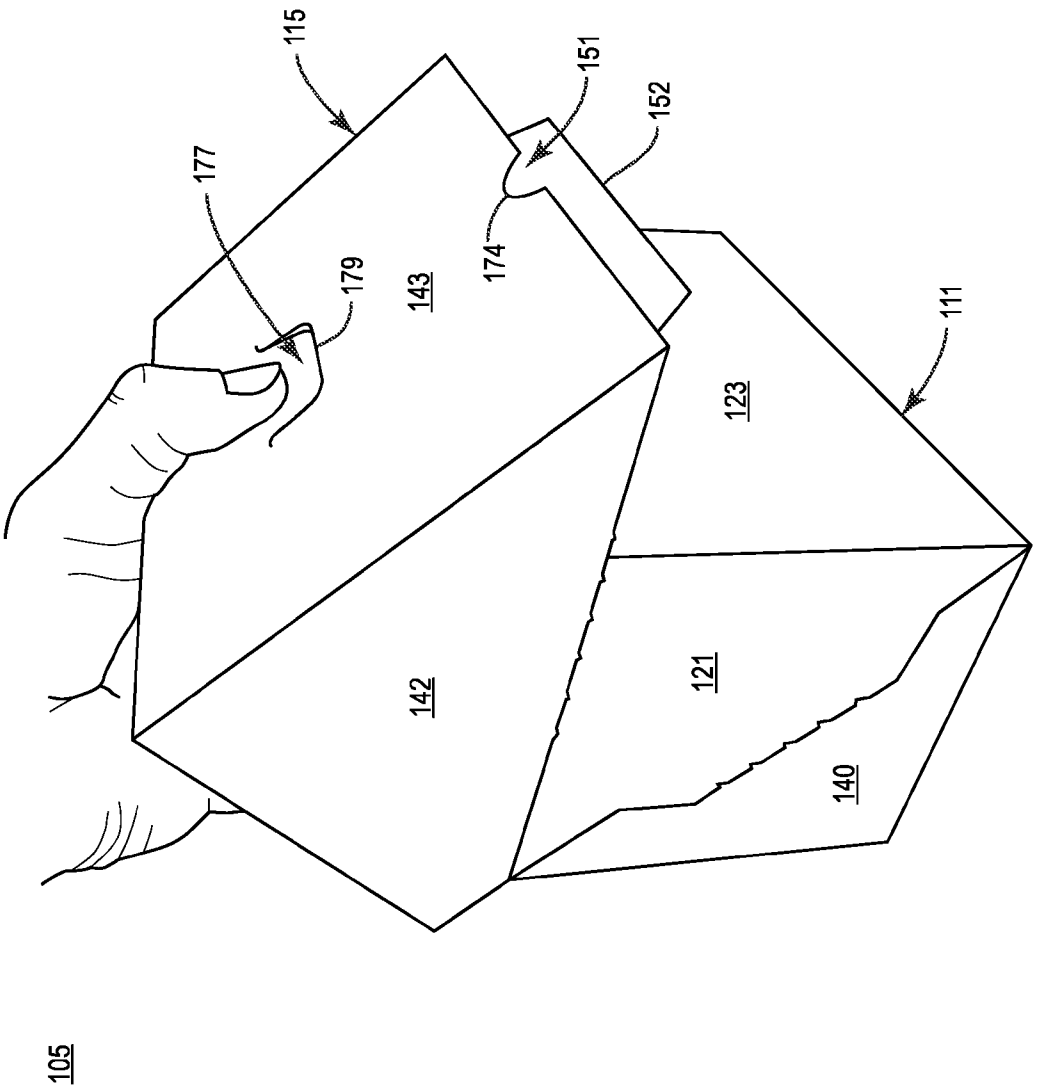


FIG. 5

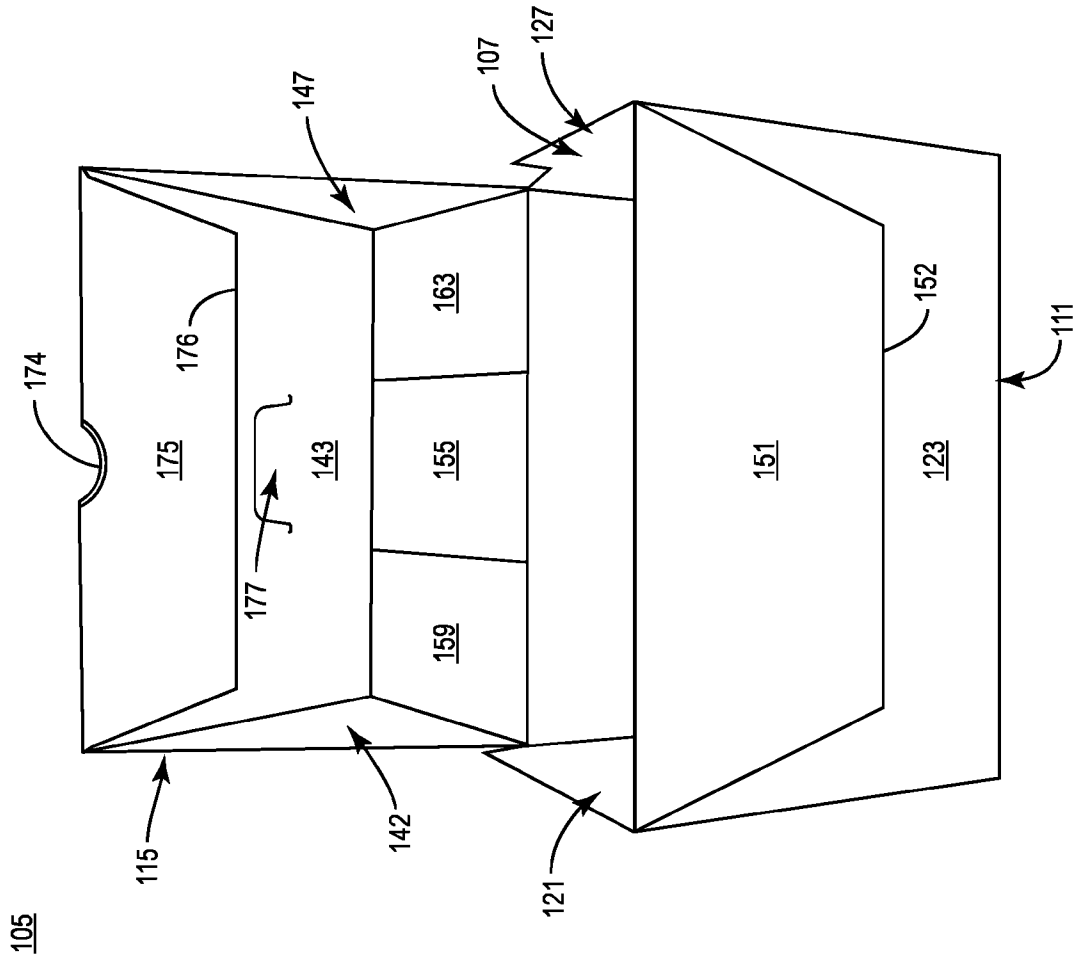

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FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2023/079742

A. CLASSIFICATION OF SUBJECT MATTER

B65D 5/54(2006.01)i; **B65D 5/66**(2006.01)i; **B65D 5/42**(2006.01)i

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 5/54(2006.01); B65D 5/02(2006.01); B65D 5/66(2006.01); B65D 85/10(2006.01)

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

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: carton, lid, fold, first locking flap, second locking flap, locking release tab

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013-076012 A1 (PHILIP MORRIS PRODUCTS S.A.) 30 May 2013 (2013-05-30) page 9, line 14 - page 11, line 29 and figures 1(a)-3(e)	1-5,14-18,25-29
Y		6-13,19-24,30-40
Y	JP 52-022499 Y2 (KINKI PRINTING CO., LTD.) 24 May 1977 (1977-05-24) column 3, lines 3-6, claim 1, and figures 1-4	6-13,19-24,30-40
Y	US 2003-0213722 A1 (KINIGAKIS, PANAGIOTIS) 20 November 2003 (2003-11-20) paragraphs [0031], [0035] and figures 1-2	9-10,20-21,36-37
A	KR 20-0310542 Y1 (SEON, MAN-GYU) 16 April 2003 (2003-04-16) claim 1 and figures 1-3	1-40
A	JP 11-049151 A (JAPAN TOBACCO INC.) 23 February 1999 (1999-02-23) paragraphs [0015]-[0034] and figures 1-7	1-40

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 March 2024	**08 March 2024**

Name and mailing address of the ISA/KR	Authorized officer
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/US2023/079742

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