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(54) **PACKAGES WITH INDIVIDUALLY SEALED COMPARTMENTS AND METHOD FOR PRODUCTION THEREOF**

VERPACKUNGEN MIT EINZELN ABGEDICHTETEN FÄCHERN UND VERFAHREN ZU DESSEN HERSTELLUNG

EMBALLAGES À COMPARTIMENTS SCELLÉS INDIVIDUELLEMENT ET PROCÉDÉ DE FABRICATION

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Description**Cross-Reference to Related Application**

[0001] This application claims the benefit of U.S. Provisional Application No. 62/036,021, filed August 11, 2014, which is hereby incorporated by reference in its entirety.

Field

[0002] Packages and methods for their manufacture are described herein and, in particular, packages having a plurality of individually sealed compartments, such as for confectionery products.

Background

[0003] Flexible film and cardboard packages are used for a variety of food products (e.g., chewing gum sticks, chocolates, candy, and the like). One common format of a gum package is a blister pack removably contained in a cardboard sleeve and including a first layer with thermoformed pockets for containing individual pellets and a second layer of film sealed to the first layer to cover the pockets. Pressing on the blister pack from the first layer side toward the second layer can cause the gum piece to rupture the second layer to form an opening through which the gum can be removed for consumption.

[0004] A disadvantage of such blister packs is the use of at least two different types of materials and increased number of steps for manufacture. This can undesirably increase complexity and cost of the manufacturing process. In addition, before a user can press on the blister pack to remove a piece of gum, the consumer has to first remove the blister pack from its paperboard sleeve, adding an extra step for the consumer during the opening of the package.

[0005] US4035984 pertains to wrapping machines and more particularly relates to high speed twin lane wrapping machines which simultaneously entube pairs of transversely spaced articles in a web of wrapping material.

[0006] WO2010088492 relates generally to a package for containing one or more confectionery products and which may be opened to permit removal of one or more products. More specifically, it relates to an openable sealed pouch for containing and dispensing a plurality of confectionery products which may be repeatedly re-closed.

[0007] CA2823465 relates to a pillbox comprises a pill receptacle comprising a number of pill compartments; and a cover sheet attached to the pill receptacle.

[0008] WO0168473 relates to multicompartment foil packages made from one or two foils sealed on their three or four side and used for packing together solid materials and/or materials in bulk to be used simultaneously.

Summary

[0009] The packages described herein include a plurality of individually sealed compartments, optionally formed from a single web of film. Each of the compartments includes a line of weakness that can be ruptured by pushing on the film material and the gum piece toward the line of weakness. The line of weakness advantageously provides the compartments with a hinged flap that opens in response to a force being applied by a consumer and remains attached to remainder of the film after opening. The hinged flap may provide a tamper-evidence feature for the package and may be configured to make a snapping or other audible noise upon initial opening along the line of weakness. The individually sealed compartments are separable from each other to permit a user to discard empty compartments after the food product is removed. Optionally, the used gum may be placed in the empty compartment to permit the user to discard both the used gum and the empty compartment.

[0010] In one form, a package comprises a plurality of individually sealed compartments. Each of the compartments contains a food product in an interior defined between a back panel sealed to a front panel about the interior. The front panel includes a flap detachable from adjacent portions of the front panel along a flap line of weakness to form an access opening configured to permit removal of the food product from the interior of the compartment.

[0011] The flap line of weakness may have first and second spaced ends intersecting a free edge portion of the package about which the flap is configured to pivot to form the access opening and the flap line of weakness extends from the first and second ends thereof toward an opposite edge portion of the package.

[0012] The package may be formed from a single sheet of flexible film. The front panel and the back panel of each of the compartments may be made of identical materials. The package may be formed from one or more sheets of undeformed flexible film.

[0013] In one form, each of the compartments is completely detachable from the package along at least one compartment line of weakness extending between the compartments. The at least one compartment line of weakness may extend between two adjacent compartments, a first of the two adjacent compartments may include a first seal extending in a direction along the compartment line of weakness, and a second of the two adjacent compartments may include a second seal extending in a direction along the compartment line of weakness. The first and second seals may be on opposite sides of the at least one compartment line of weakness.

[0014] In one approach, at least one of the compartments is detachable from the package along at least two compartment lines of weakness and the at least two compartment lines of weakness are perpendicular to each other. In another approach, at least one of the compartments is detachable from the package along at least two

compartment lines of weakness and the at least two compartment lines of weakness are parallel to each other.

[0015] The flap may be defined by the flap line of weakness and the free edge portion of the package. The flap may include four sides and the flap line of weakness extends along three of the sides of the flap. The flap line of weakness may be U-shaped.

[0016] In one form, the back panel and the front panel of each of the compartments are non-detachably sealed to each other along the opposite edge portion of the package and along first and second sides of the compartment extending perpendicular to the free edge portion and the opposite edge portion.

[0017] In one form, first and second portions of the flap line of weakness extending from the first and second ends thereof toward the opposite edge portion of the package are parallel to each other and interconnected by a third portion of the flap line of weakness perpendicular to the first and second portions of the flap line of weakness. The third portion of the flap line of weakness may be closer to a top end portion of the compartment formed by attachment of the front panel and the back panel to each other than to a bottom end portion of the compartment formed by intersection of the front and back panels at the free edge portion of the package.

[0018] The food product may be a plurality of gum pieces with each of the gum pieces being contained in the interior of a respective one of the plurality of individually sealed compartments. Each of the gum pieces may be positioned in the interior of the respective one of the plurality of individually sealed compartments such that each of the gum pieces is positioned between the flap line of weakness of the respective one of the individually sealed compartments and the free edge portion of the package.

[0019] In one form, the compartment is configured to form a hermetic seal around the food product.

[0020] The flap may be non-detachable from the bottom of the compartment. The flap may be movable from an unopened position to an open position in response to a force applied to the back panel in a direction toward the front panel.

[0021] A method of manufacturing the above package includes: providing a flexible material having first and second longitudinal edges; forming a plurality of U-shaped lines of weakness in the flexible film between the first and second longitudinal edges and a longitudinal center line; depositing portions of the food product on the flexible material on opposite sides of the longitudinal center line and at least in part between the U-shaped lines of weakness; folding the first and second longitudinal edges of the flexible material in a direction toward the longitudinal center line to overlay the food product; forming seals between overlying portions of the flexible film to form the plurality of individually sealed compartments, each of the compartments including the food product; and forming a longitudinal line of weakness coinciding with the longitudinal center line and a plurality of transverse lines of weakness extending in a direction perpendicular

to the longitudinal line of weakness, each of the transverse lines of weakness extending between adjacent compartments to permit separation of the adjacent compartments from each other.

[0022] The method may further include opening at least one of the compartments by applying a force to the package to separate the flap along the flap line of weakness from adjacent portions of the package to gain access to the food product in the at least one of the compartments; and singulating the at least one of the compartments from the package by propagating a tear along the longitudinal line of weakness and at least one of the transverse lines of weakness.

[0023] In one form, a flexible package comprises a plurality of individually sealed compartments. Each of the compartments contains a food product in an interior defined between a back panel sealed to a front panel. The front panel includes a flap partially detachable from adjacent portions of the front panel along a flap line of weakness to form an access opening configured to permit removal of the food product from the interior of the compartment.

[0024] The flap line of weakness may include at least two free ends. The flap line of weakness may extend across portions of the flap overlying the food product contained in the interior of the compartment. The flap line of weakness may include at least two lines that intersect one another.

[0025] The compartments may further include a second flap partially detachable from adjacent portions of the back panel along a second flap line of weakness.

[0026] In another form, a flexible package comprises a plurality of individually sealed compartments and each of the compartments contains a food product in an interior defined between a back panel sealed to a front panel about the interior. Each compartment includes a flap detachable from adjacent portions of the compartment along at least one flap line of weakness to form an access opening configured to permit removal of the food product from the interior of the compartment. The package is movable from a folded configuration where at least one of the compartments is nested between two other compartments to an unfolded configuration where the at least one of the compartments is not nested between the two other compartments.

[0027] At least two of the compartments may be nested between two other compartments in the unfolded configuration.

[0028] The flap of the at least one compartment may face in a first direction and the flap of each of the two other compartments between which the at least one compartment may be nested in the unfolded configuration may face in a second direction opposite to the first direction.

[0029] A first portion of the package including a free end of the package may form a closure flap removably attached by an adhesive to a second portion of the package.

[0030] The adhesive may be a pressure-sensitive adhesive configured to permit multiple openings and reclosings of the closure flap.

[0031] In one form, a flexible package comprises a plurality of individually sealed compartments and each of the compartments contains a food product in an interior defined between a back panel sealed to a front panel about the interior, each compartment including a flap detachable from adjacent portions of the compartment along at least one flap line of weakness to form an access opening configured to permit removal of the food product from the interior of the compartment. The package is movable from a folded configuration where at least one of the compartments is positioned in a closed configuration above another of the compartments to an open configuration where the at least one of the compartments is not positioned above the another of the compartments.

[0032] At least two of the compartments may be stacked above two other compartments in the open configuration.

[0033] Two of the flaps of two of the compartments may face in a first direction and two of the flaps of two other compartments above which the two of the compartments are stacked in the open configuration may face in a second direction opposite to the first direction.

[0034] A first portion of the package including a free end of the package may form a closure flap removably attached by an adhesive to a second portion of the package.

[0035] The adhesive may be a pressure-sensitive adhesive configured to permit multiple openings and reclosings of the closure flap.

[0036] The package may have a maximum height in the unfolded configuration and a maximum height in the closed configuration that is at least twice the maximum height in the open configuration.

[0037] The package has a maximum length in the closed configuration and a maximum height in the unfolded configuration that is at least twice the maximum length in the open configuration.

[0038] At least one of the flaps may include graphical indicia.

[0039] At least one of the compartments may be positioned in the closed configuration above another of the compartments by at least one of rolling, folding, and stacking.

Brief Description of the Drawings

[0040]

FIG. 1 illustrates a perspective view of a first exemplary package having separable individual compartments each unopened;

FIG. 2 illustrates a front perspective view of the package of FIG. 1 with one of the compartments being partially open with a flap of the compartment being moved by a force applied by a consumer to the par-

tially open position via separation from adjacent portions of the compartment along a line of weakness; FIG. 3 illustrates a front elevational view of the package of FIG. 2 in a fully open position with the food product accessible by the consumer and the flap being completely detached from adjacent portions of a front panel of the compartment along the line of weakness and with the flap being attached to a free edge portion of the package;

FIG. 4 illustrates a cross-section of the package of FIG. 1 taken along line 4-4 thereof;

FIG. 5 illustrates a cross-section of the package of FIG. 2 taken along line 5-5 thereof;

FIG. 6 illustrates a front perspective view of the package of FIG. 1, shown with one of the compartments being completely detached from the package along two lines of weakness between adjacent compartments;

FIG. 7 illustrates a front perspective view of the package of FIG. 1, shown with two of the compartments being partially detached from the package along a line of weakness between compartments;

FIG. 8A illustrates a top plan view of an exemplary sheet of material, which can be part of a larger web of material, that can be used to form the package of FIG. 1;

FIG. 8B illustrates a top plan view of an exemplary sheet of material, which can be part of a larger web of material, that can be used to form a package alternative to the package of FIG. 1;

FIG. 8C illustrates a top plan view of another exemplary sheet of material, which can be part of a larger web of material, that can be used to form a package alternative to the package of FIG. 1;

FIG. 8D illustrates a top plan view of another exemplary sheet of material, which can be part of a larger web of material, that can be used to form a package alternative to the package of FIG. 1;

FIG. 9 is a top plan view of the sheet of material of FIG. 8A having the food product deposited thereon and with portions of the sheet of material being folded toward a sealing position covering the food product;

FIG. 10 is a top plan view of the sheet of material of FIG. 9 with the portions of the sheet of material being sealed to each other by multiple seals to form eight individually sealed compartments each enclosing one of the food products and with lines of weakness being formed in the sheet of material;

FIG. 11 illustrates a perspective view of a second exemplary package having separable individual compartments each in an unopened configuration;

FIG. 12 illustrates a front perspective view of the package of FIG. 11 with one of the compartments being partially open with the flap being moved by a force being applied by a consumer to the partially open position via separation from adjacent portions of the compartment along a line of weakness;

FIG. 13 illustrates a cross-section of the package of

FIG. 11 taken along line 13-13 thereof;
 FIG. 14 illustrates a cross-section of the package of
 FIG. 12 taken along line 14-14 thereof;
 FIG. 15 illustrates a front perspective view of the
 package of FIG. 11, shown with one of the compart-
 ments being partially detached from the package
 along a line of weakness between adjacent compart-
 ments;
 FIG. 16A illustrates a top plan view of an exemplary
 sheet of flexible material, which can be part of a larg-
 er web of material, that can be used to form the pack-
 age of FIG. 11;
 FIG. 16B illustrates a top plan view of two opposing
 sheets of flexible material that can be used to form
 the package of FIG. 11;
 FIG. 16C illustrates a top plan view of an exemplary
 sheet of material that can be part of a larger web of
 material that may be used in a flow wrap process to
 form a package similar to the package of FIG. 11;
 FIG. 16D illustrates a package including a fin seal
 formed via the flow wrap process of FIG. 16C;
 FIG. 16E illustrates a package including a lap seal
 formed via the flow wrap process of FIG. 16C;
 FIG. 17 is a top plan view of the sheet of material of
 FIG. 16 having a food product deposited thereon and
 with a portion of the sheet of material being folded
 toward a sealing position covering the food product;
 FIG. 18 is a top plan view of the sheet of material of
 FIG. 17 and with portions of the sheet of material
 being sealed to each other by multiple seals to form
 five sealed compartments covering the food product
 and lines of weakness being formed in the sheet of
 material;
 FIG. 19 illustrates a cross-section of a third exem-
 plary package taken along a line similar to line 4-4
 of FIG. 1, showing the package in an unopened con-
 figuration;
 FIG. 20 illustrates a cross-section of the package of
 the package of FIG. 19 taken along a line similar to
 line 5-5 in FIG. 2, showing the package in a partially
 open configuration;
 FIG. 21 illustrates a top plan view of an exemplary
 sheet of material, which can be part of a larger web
 of material, that can be used to form the package of
 FIG. 19;
 FIG. 22A illustrates a top plan view of the sheet of
 material of FIG. 21, showing a plurality of thermo-
 formed pockets formed therein;
 FIG. 22B illustrates a top plan view of an exemplary
 sheet of flexible material, which can be part of a larg-
 er web of material, that can be used to form a pack-
 age alternative to the package of FIG. 11;
 FIG. 22C illustrates a side elevational view of the
 package formed from the sheet of flexible material
 shown in FIG. 16E and folded into an accordion-
 shaped configuration;
 FIG. 23A is a top plan view of the sheet of material
 of FIG. 22A having the food product deposited ther-

eon and with portions of the sheet of material being
 folded toward a sealing position covering the food
 product;
 FIG. 23B illustrates a top plan view of two opposing
 sheets of flexible material that can be used to form
 the package of FIG. 19;
 FIG. 24 is a top plan view of the sheet of material of
 FIG. 23 with the portions of the sheet of material
 being sealed to each other by multiple seals to form
 eight individually sealed compartments each enclos-
 ing one of the food products and with lines of weak-
 ness formed in the sheet of material;
 FIG. 25 illustrates a top plan view of a fourth exem-
 plary package having nested individually sealed
 compartments in an unopened configuration;
 FIG. 26 illustrates a top plan view of the package of
 FIG. 25 in an open configuration;
 FIG. 27 is an elevational end view of the package of
 FIG. 26;
 FIG. 28 is the same view as in FIG. 27, shown with
 a portion of the package of FIG. 27 being moved in
 a direction toward the nested configuration;
 FIG. 29 is the view of FIG. 28, shown with the pack-
 age of FIG. 28 being in the nested configuration and
 a closure flap being in an open configuration;
 FIG. 30 is the view of FIG. 29, shown with the pack-
 age of FIG. 29 being in the nested configuration and
 the closure flap being moved toward the closed con-
 figuration;
 FIG. 31 is the view of FIG. 30, shown with the pack-
 age being in the nested configuration and the closure
 flap being in the closed configuration;
 FIG. 31A illustrates a fragmentary top plan view of
 one of the compartments of the package of FIG. 31
 showing an exemplary configuration of the flap line
 of weakness;
 FIG. 31B illustrates a fragmentary top plan view of
 an exemplary alternative configuration of the flap line
 of weakness of a compartment of the package of
 FIG. 31;
 FIG. 31C illustrates a fragmentary top plan view of
 another exemplary alternative configuration of the
 flap line of weakness of a compartment of the pack-
 age of FIG. 31;
 FIG. 31D illustrates a fragmentary top plan view of
 yet another exemplary alternative configuration of
 the flap line of weakness of a compartment of the
 package of FIG. 31;
 FIG. 31E illustrates a fragmentary top plan view of
 still another exemplary alternative configuration of
 the flap line of weakness of a compartment of the
 package of FIG. 31;
 FIG. 31F illustrates a fragmentary top plan view of
 still another exemplary alternative configuration of
 the flap line of weakness of a compartment of the
 package of FIG. 31;
 FIG. 32 illustrates a top plan view of an exemplary
 package having an alternative food product orienta-

tion that can be used to form a package alternative to the package of FIG. 25;

FIG. 33 illustrates a top plan view of a fifth exemplary package having stacked individual compartments each unopened;

FIG. 34 illustrates a top plan view of an exemplary package that can be used to form the package of FIG. 33;

FIG. 35 is an elevational end view of the package of FIG. 34;

FIG. 36 is the view as in FIG. 35, shown with a portion of the package being moved in a direction toward the stacked configuration;

FIG. 37 is the view of FIG. 36, shown with the package being in the stacked configuration and a closure flap being in an open configuration;

FIG. 38 is the view of FIG. 37, shown with the package being in the stacked configuration and the closure flap being moved toward the closed configuration;

FIG. 39 is the view of FIG. 38, shown with the package being in the stacked configuration and the closure flap being in the closed configuration;

Fig. 40 illustrates an elevational end view of the package of FIG. 26 in a rolled configuration; and

FIG. 41 illustrates a top plan view of an exemplary package having an alternative food product orientation that can be used to form a package alternative to the package of FIG. 33.

Detailed Description

[0041] The packages described herein include individually sealed compartments, which can be formed by a single web of film or opposing webs of film. The compartments each include a line of weakness that can be ruptured by pushing on the rear of the film material and the gum piece toward the line of weakness. The line of weakness advantageously provides the compartments with a hinged flap that may remain attached to remainder of the film after opening of the compartment by the consumer. During the initial opening of the compartment due to the rupturing of a portion of the line of weakness, a snapping or other audible noise may be provided to the consumer to indicate that the package has been opening. The flap thus advantageously provides a tamper-evidence for the package.

[0042] A first exemplary package 10 is shown in FIGS. 1-5. The package 10 has a first side edge portion 11, a second side edge portion 13 opposite the first side edge portion 11, a first free edge portion 15 and a second free edge portion 17 opposite the first free edge portion 15. The package 10 has a length defined by a distance from the first side edge portion 11 to the second side edge portion 13. The package 10 has a width transverse to the length and defined by a distance from the first free edge portion 15 to the second free edge portion 17.

[0043] The exemplary package 10 includes eight indi-

vidually sealed compartments 12 each configured to contain a food product therein. Each of the compartments 12 is individually sealed (preferably hermetically) via seals 14, 16, and 18, as shown in FIG. 1. Adjacent compartments 12 abut each other as shown in FIG. 1 and are separable from each other and the package 10 by one or more compartment lines of weakness 20, 22, 23, and 25. The adjacent compartments 12 may be separated from each other individually as shown in FIG. 6, in clusters of two as shown in FIG. 7, or in clusters of three or more.

[0044] As shown in FIG. 1, the compartment line of weakness 20 extends from the first side edge portion 11 to the second side edge portion 13 of the package 10 and the compartment lines of weakness 22, 23, and 25 extend from the first free edge portion 15 to the second free edge portion 17. The compartment lines of weakness 20, 22, 23, and 25 may be formed by a series of ablated portions or score lines as shown in FIG. 1. Alternatively, the compartment lines of weakness 20, 22, 23, and 25 may be formed by a single continuous line of weakness similar to a flap line of weakness 24.

[0045] The compartment lines of weakness 22, 23, and 25 can be parallel to each other and perpendicular to the compartment line of weakness 20, as shown in FIG. 1. Alternatively, the compartment lines of weakness 22, 23, and 25 can converge or diverge relative to each other. Further, while the compartment line of weakness 20 has been shown as being parallel to a longitudinal axis of the package 10, the compartment line of weakness 20 may be inclined at various angles to the longitudinal axis of the package 10. While the longitudinal axis of the package 10 is not illustrated in FIG. 1, it will be understood that the longitudinal axis of the package 10 extends parallel to the first and second free edge portions 15 and 17 and passes through the first and second side edge portions 11, 13 of the package 10. While the compartment lines of weakness 20, 22, 23, and 25 have been shown as being straight, the compartment lines of weakness 22, 23, and 25 may be curved (e.g., convex, concave, undulating, etc.).

[0046] One of the compartments 12 may be separated from the package 10 by tearing the compartment 12 along the compartment lines of weakness 20 and 22, as generally shown in FIG. 6. Alternatively, two of the compartments 12 may be separated from the package 10 by tearing the compartments 12 away from the package 10 along the compartment line of weakness 22 from the first free edge portion 15 to the second free edge portion 17 as shown in FIG. 7. It will be appreciated that the lines of weakness 20 and 22 permit a consumer to separate any number of compartments 12 from the package 10 at one time. For example, a tear along the compartment line of weakness 23 would permit the consumer to separate four compartments 12 at one time while a tear along the compartment line of weakness 25 would permit the consumer to separate six compartments 12 at one time.

[0047] Each of the compartments 12 is configured to

contain a food product 90, for example, a pellet or piece of gum, as depicted in FIG. 3. It is to be appreciated that the number of the compartments 12 (i.e., eight) and the number of gum pieces 90 (i.e., one) in each of the compartments 12 has been shown by way of example only, and that the package 10 may have less than 8 compartments (e.g., two, four, six, etc.), or more than eight compartments (e.g., ten, twelve, fourteen, or more), and that each of the compartments 12 may contain more than one gum piece or another confectionery or other food product 90 therein. Further, while the gum piece 90 is shown in FIG. 3 as not being individually wrapped, it will be appreciated that the gum piece or any other food product 90 contained in a compartment 12 of the package 10 may be individually wrapped by a wrapper separate from the package 10. It is also to be appreciated that the gum pieces are shown as the food product 90 by way of example only, and that other products, for example, chocolate, candy, or non-food products may be contained in the compartments 12 of the package 10.

[0048] Each of the compartments 12 has a hermetically sealed interior 28 containing the food product 90 therein and an opening 30 to provide access to the food product 90 retained in the interior 28, as shown in FIG. 5. The compartment 12 includes a back or rear panel 32 and a front panel 34, which are sealed to each other to define the interior 28. More specifically, the back panel 32 and the front panel 34 are sealed to each other along a longitudinal seal 14 and transverse seals 16, 18, as shown in FIG. 1. The front panel 34 and the back panel 32 are also connected to each other at the free edge portion 15 of the package 10, permitting a portion of the front panel 34 (i.e., flap 26) to move (e.g., by pivoting) relative to the back panel 32 about the free edge portion 15 of the package 10 when the compartment 12 is being opened by a consumer.

[0049] The back panel 32 of the compartment 12 has an outer surface 36 and an inner surface 38 and the front panel 34 of the compartment 12 has an outer surface 40 and an inner surface 42, as shown in FIG. 4. The compartment 12 is configured such that the inner surfaces 38 and 42 of the back and front panels 32 and 34, respectively, face each other. When the package 10 is in the unopened position shown in FIG. 4, the food product 90 is contained in the interior 28 of the compartment 12 between the inner surfaces 38 and 42 of the back and front panels 32 and 34, respectively.

[0050] With reference to FIG. 4, the back panel 32 and the front panel 34 intersect each other and are joined at the free edge portion 15 of the package 10 to form a closed bottom end portion 44 of the compartment 12. While the bottom end portion 44 of the compartment 12 is shown in the form of a fold in FIG. 4, it will be appreciated that the bottom end portion 44 of the compartment 12 may be formed via an attachment of a portion of the back panel 32 and a portion of the front panel 34 by way of a seal (e.g., hot seal, cold-seal, etc.), adhesive, or the like.

[0051] The back panel 32 and the front panel 34 are non-detachably attached to each other via the longitudinal seal 14 to form a closed top end portion 46 of the compartment 12. In addition, the back panel 32 and the front panel 34 are preferably non-detachably attached to each other via the transverse seals 16, 18 to form closed first and second side portions 48, 50 of the compartment 12, as shown in FIG. 6. For purposes of this disclosure, "non-detachable" means an attachment that is not meant to be detached.

[0052] As shown in FIG. 1, the longitudinal seal 14 extends generally parallel to the free edge portion 15 and the opposite free edge portion 17 of the package 10 while the transverse seals 16 and 18 extend generally parallel to each other and perpendicular to the longitudinal seal 14 and to the free edge portions 15 and 17 of the package 10. In particular, the longitudinal seal 14 extends in a direction parallel to the longitudinal axis of the package 10 and to the compartment line of weakness 20 and interconnects the seals 16 and 18, which extend in a direction parallel to the compartment line of weakness 22 and perpendicular to the longitudinal axis and to the compartment line of weakness 20. The seals 14, 16, and 18 may include a metalized layer to facilitate their formation.

[0053] A portion of the front panel 34 of the compartment 12 is configured in the form of an integral flap 26 that permits the compartment 12 to be opened by a consumer to gain access to the food product 90 in the compartment 12. In the embodiment of FIG. 1, each of the compartments 12 of the package 10 includes a flap line of weakness 24 that permits the flap 26 of the compartment 12 to move about the free edge portion 15 of the package 10 from an unopened position shown in FIG. 1, where access to a food product 90 is restricted, to an open position shown in FIG. 3, where the food product 90 is accessible by the consumer. The flap line of weakness 24 can be a score line, which can be formed by laser ablation, die-cutting, microabrasion, or the like. The flap line of weakness 24 has first and second spaced ends intersecting the free edge portion 15 of the package 10 and extends from the first and second ends thereof toward an opposite free edge portion 17 of the package 10, as shown in FIG. 3. Generally, the area defined between the primary line of weakness 24 and the free end portion 15 of the package 10 defines the flap 26, as shown in FIGS. 1-3.

[0054] In the embodiment illustrated in FIG. 1, the primary line of weakness 24 is generally U-shaped, and the flap 26 includes four sides, and the flap line of weakness 24 extends along three of the sides of the flap 26. The flap line of weakness 24 has first and second portions 24a and 24b that are substantially parallel to each other and extend from the first free edge portion 15 toward the second free edge portion 17 of the package 10. The first and second portions 24a, 24b of the flap line of weakness 24 are interconnected by a third portion 24c of the flap line of weakness 24 that is substantially perpendicular to the first and second portions 24a, 24b of the primary line

of weakness 24 as shown in FIGS. 1 and 3.

[0055] The flap line of weakness 24 has been illustrated as being generally U-shaped by way of example only, and it will be appreciated that the flap line of weakness 24 may be of any other suitable shape, for example, square, triangular, oval, circular, trapezoidal, or the like. More specifically, while the portions 24a, 24b of the flap line of weakness 24 have been shown as being straight and parallel to the side edge portions 11, 13 of the package 10 as shown in FIG. 3, the portions 24a, 24b of the flap line of weakness 24 may be non-parallel to the side edge portions 11, 13 and may be a non-linear (e.g., undulating or arcuate) or in the form of a discontinuous line.

[0056] In addition, while the flap line of weakness 24 has been shown in FIGS. 1-3 as having its first and second ends intersect the free edge portion 15 of the package 10, the flap line of weakness 24 may be slightly spaced from the free edge portion 15 of the package 10 in a direction toward the opposite free edge portion 17 of the package 10. For purposes of this disclosure, "substantially intersect" will be understood to mean that two lines physically intersect or are slightly spaced (e.g., 1-5 millimeters, 1-4 millimeters, 1-3 millimeters, 1 or 2 millimeters or less) from each other without physically intersecting.

[0057] When the package 10 is in an unopened position as shown in FIG. 4, the adjacent compartments 12 are joined to each other and separably attached to each other at the compartment line of weakness 20. The compartment line of weakness 20 also provides a hinge about which the adjacent compartments 12 may pivot relative to each other. The hinge provided by the compartment line of weakness 20 may permit a consumer to move four of the compartments 12 the package 10 about the compartment line of weakness 20 to bring the free edge portions 15 and 17 such that they substantially overlies each other, advantageously folding the storage size of the package 10 in half. Similarly, the compartment lines of weakness 22, 23 and 25 provide hinges that permit the adjacent compartments 12 to move about a respective one of the compartment lines of weakness 22, 23, or 25, allowing a user to fold the package 10 to reduce its length.

[0058] As can be seen in FIGS. 4 and 5, the top end portion 46 of the compartment 12 is formed by the longitudinal seal 14 between the converging portions of the back and front panels 32, 34, and the bottom end portion 44 of the compartment 12 is formed by a fold connecting the back and front panels 32, 34 and defining the free edge portion 15 of the package 10. FIGS. 4-5 show that since the exemplary package 10 is formed from one sheet of flexible material, a gap 52 defined by a distance between free ends 54, 56 of the flexible material may separate the top end portions 46 of the adjacent compartments 12.

[0059] When the compartment 12 of the package 10 is in the unopened position, access to the opening 30 and the interior 28 of the compartment 12 of the package 10 is blocked by the flap 26. While the inner surface 42

of the front panel 34 and the inner surface 38 of the back panel 32 have been shown in FIG. 4 as spaced apart from the exterior surface of the food product 90 for clarity, the inner surfaces 38 and 42 of the back and front panels 32 and 34, respectively, may be in direct contact with the exterior surface of the food product 90, in this example, gum pieces, when the package 10 is in an unopened position.

[0060] It is to be appreciated that the package 10 is not drawn to scale and the gum pieces 90 may be closer to each other or further away from each other than shown in FIGS. 4-5. In addition, the gum pieces 90 are not shown in FIGS. 4-5 in cross-section for clarity purposes. While the package 10 has been shown in FIGS. 1-5 with the flap 26 being formed in the front panel 34, the flap 26 may alternatively be formed in the back panel 32 instead of the front panel 34. In another alternative embodiment, the package 10 may be formed such that each of the front and back panels 32 and 34 each include the separable flap 26, permitting a consumer to gain access to the food product 90 within the interior 28 of the compartment 12 either via the front panel 34 by pushing on the back panel 32, or via the back panel 32 by pushing on the front panel 34.

[0061] With the package 10 being in the unopened position shown in FIG. 4, the closure flap 26 is detachably attached to adjacent portions of the front panel 34 at the flap line of weakness 24 as shown in FIGS. 1 and 4. For purposes of this disclosure, "detachably attached" means an attachment that is meant to be detached. The flap 26 of the compartment 12 is movable from the unopened position of FIG. 4 toward the open position of FIG. 5 in response to a force applied by a consumer. Specifically, to open the compartment 12 in order to gain access to the food product 90 stored in the interior 28 of the compartment 12, the consumer may apply (e.g., via one or more fingers) a force to the back panel 32 of the compartment 12 in a direction shown by the arrow in FIG. 5. It will be appreciated that instead of applying a force to the back panel 32 of the compartment 12 to open the flap 26 as shown in FIG. 5, the user may, for example, use two fingers to pinch the compartment 12 on both sides (i.e., on both the rear panel 32 and front panel 34) as shown in FIGS. 2 and 5 and move both fingers while pinching the compartment 12 to both initiate a tear in the flap line of weakness 24 and propagate the tear along the flap line of weakness 24 to separate the flap 26 from adjacent portions of the front panel 34 such that the flap 26 opens to provide the consumer with access to the interior 28 of the compartment 12.

[0062] The force being applied by the consumer to the exterior surface 36 of the back panel 32 of the compartment 12 causes the back panel 32, which is made of a flexible film, as discussed in more detail below, to deviate in the direction shown by the arrow in FIG. 5. This deviation of the back panel 32 of the compartment 12 permits the force being applied by the consumer to be indirectly applied, via the interior surface 38 of the back panel 32,

to the food product 90, and causes the food product 90 to exert a force in the direction toward the front panel 34. The force exerted by the food product 90 onto the interior surface 42 of the front panel 34 along the flap 26, causes the flap 26 to separate from adjacent portions of the front panel 34 along the flap line of weakness 24. This separation permits the flap 26 to pivot about the first free edge portion 15 of the package 10 toward an open position shown in FIG. 5, where the food product 90 is accessible to the consumer through the opening 30 created in the compartment 12 due to the separation of the flap 26 from adjacent portions of the front panel 34.

[0063] The tension provided by the opening force applied by the consumer in FIG. 5 is likely to cause a tear through the portion 24c of the flap line of weakness 24, since the upper end of the food product 90, where the greatest opening force is being applied by the consumer, is substantially aligned with the portion 24c of the flap line of weakness 24 as shown in FIG. 3. It is to be appreciated that the tear in the flap line of weakness 24 may also initiate at either one or, simultaneously, at both of the portions 24a and 24b of the flap line of weakness 24. In one form, the flap line of weakness 24 may be configured such that the portion 24c requires less tensile force to rupture than the portions 24a and 24b of the flap line of weakness 24, thus ensuring that the flap line of weakness 24 preferentially ruptures initially at the portion 24c.

[0064] The flap 26 provides a consumer with a visual indication of the degree of opening of the compartment 12 of the package 10 as shown in FIGS. 3 and 5. Since a consumer would feel some resistance during the detachment of the flap 26 along the flap line of weakness 24, the flap 26 can provide a tactile response to the consumer during the initial opening of the compartment 12 of the package 10. Furthermore, since the consumer would hear a snapping sound during the initial detachment of the flap 26 along the flap line of weakness 24, the flap 26 can provide an auditory response to the consumer during the initial opening of the package 10.

[0065] After the flap 26 is detached from adjacent portions of the front panel 34 of the compartment 12 along the flap line of weakness 24, the flap 26 no longer obstructs the opening 30 of the compartment 12 and no longer seals the interior 28 of the compartment 12. An interior surface 86 of the opened flap 26 may include graphical indicia that may be visually appealing to the consumers. The graphical indicia may be printed, stamped, painted, or applied to the interior surface 86 of the flap 26 via any other suitable means. The graphical indicia may be of any regular or irregular geometric shape (e.g., triangle, star, snow-flake) or a physical object (e.g., flower, butterfly, cartoon character, or the like). The graphical indicia may be applied to the interior surface 86 of each of the compartments flaps 26, to some of the flaps 26, or to none of the flaps 26.

[0066] The flap 26 may be non-detachably connected to the rear panel 32 at the first free edge portion 15 of

the package 10 as shown in FIG. 3. Thus, when the compartment 12 is in the open position shown in FIGS. 3 and 5, the flap 26 remains attached to the rear panel 32 of the compartment 12 at the free edge portion 15, but no longer seals the compartment 12 of the package 10, or blocks access to the opening 30 of the compartment 12. Instead, a consumer is permitted to remove the food product 90 from the compartment 12 through the opening 30 shown in FIG. 5. It will be appreciated that the front panel 34 of the compartment 12 and the flap line of weakness 24 may be configured such that the flap 26 is completely detachable from the front panel 34 and the back panel 32 of the compartment 12. The flap 26 thus provides a freshness seal and/or tamper-evidence feature for the each of the compartments 12 of the package 10 such that the absence of, or the partial detachment of the flap 26, would visually indicate to a consumer that a compartment 12 of the package 10 has been previously opened or tampered with.

[0067] A consumer desiring to at least partially reclose the compartment 12 of the package 10 from the open position of FIG. 5 toward the unopened position of FIG. 4 after initially opening the compartment 12 as described above and using the food product 90 (e.g., sticks or pieces of gum) may place the used piece of gum 90 back into the interior 28 of the compartment 12 and move the front panel 34 in a direction toward the used piece of gum 90 and the rear panel 32 such that the interior surface 86 of the flap 26 contacts and adheres to the outer surface of the gum piece 90. The consumer may apply some force by, for example, pinching the rear and front panels 32, 34 of the compartment 12 toward each other to ensure a secure attachment of the used piece of gum 90 to the interior surface 38 of the rear panel 32 and the interior surface 86 of the front panel 34 of the compartment 12, at least partially reclosing the used gum piece 90 in the compartment 12 for disposal in a trash bin.

[0068] When the compartment 12 of the package 10 is at least partially reclosed as described above, the food product 90 is contained in the compartment 12 of the package 10 and restricted from falling out of the compartment 12. A consumer desiring to dispose the compartment 12 containing the used food product 90 may then fully detach the compartment 12 from the package 10 along the compartment lines of weakness 20 and 22 as shown in FIG. 6 and then place the detached compartment 12 containing the used food product 90 in a trash bin. This advantageously provides a consumer with an easy way of discarding used gum pieces 90 without having to look for a piece of paper to wrap around the used gum piece 90.

[0069] An exemplary method of manufacturing the package 10 is described with reference FIGS. 8A-10. The method of manufacture is generally depicted in FIGS. 8A-10 by illustrating the orientation and manipulation of the flexible material 100 from which the package 10 is made without showing the accompanying assembly line machinery. It is to be appreciated that the flexible material

100 can be unwound from a feed roll and fed as a web in a machine direction shown by the directional arrow shown in FIG. 10. It will be understood that the flexible film 100 and the food product 90 can be fed on top of a stationary plate, moving conveyor, or the like.

[0070] The package 10 may be manufactured from a single sheet of flexible material 100 as shown, for example, in FIG. 8A. Alternatively, the package 10 may be manufactured from two opposite sheets of flexible material 100 as shown, for example, in FIG. 8B. The flexible material 100 may be a film made formed from polymers, laminates, metalized polymers, paper, or the like. For clarity of illustrating the method, a portion of the flexible film 100 from which the package 10 may be manufactured is depicted in FIGS. 8A-10. When oriented in a machine direction indicated in FIG. 8A by an arrow, the exemplary single sheet of flexible film 100 has a leading edge 111 (corresponding to the side edge portion 11 of the package 10), a rear edge 113 (corresponding to the side edge portion 13 of the package 10), a first longitudinal side edge 154 (corresponding to the free end 54 of the film of the package 10), a second longitudinal side edge 156 (corresponding to the free end 56 of the film of the package 10), and an upward-facing surface 160 on which the food product 90 may be placed during manufacture of the package 10.

[0071] As the flexible film 100 moves in the machine direction shown by the directional arrow in FIG. 8A, crease lines and/or fold lines as well as lines of weakness may be made in the flexible film 100. In particular, lines of weakness 124 (corresponding to the flap lines of weakness 24 of the package 10) may be made in the flexible film 100 using, for example, a laser. In addition, lines of weakness 120, 122, 123, and 125 (corresponding to the compartment lines of weakness 20, 22, 23, and 25 of the package 10) may be made in the film 100, using, for example, laser ablation. The flap lines of weakness 124 as well as the compartment lines of weakness 120, 122, 123, and 125 may be formed in the flexible film 100 before or after the flexible film 100 is unwound from the feed roll in the machine direction. The flap lines of weakness 124 as well as the compartment lines of weakness 120, 122, 123, and 125 may be formed in the flexible film 100 before or after the food product 90 is deposited onto the upper-facing surface 160 of the flexible film 100.

[0072] A pair of crease lines or fold lines 115 and 117 (corresponding to the free edge portions 15 and 17 of the package 10, respectively) may be formed in the flexible film 100 as shown in FIG. 8A. In the exemplary method shown in FIG. 8A, the fold lines 115, 117 extend from the leading edge portion 111 to the trailing edge portion 113 and intersect the first and second ends of the flap lines of weakness 124. The fold lines 115, 117 can be made in the flexible film 100 before or after the flexible film 100 is unwound from the feed roll in the machine direction. The fold lines 115 and 117 may be formed in the flexible film 100 before or after the food product 90 is deposited onto the upper-facing surface 160 of the

flexible film 100. Preferably, the fold lines 115, 117 are made when the longitudinal edge portion 154, 156 of the flexible film 100 are folded in a direction shown by the directional arrows in FIG. 9. In an approach where the fold lines 115 and 117 are created in the flexible film 100 prior to the folding of the flexible film 100 shown in FIG. 9, such fold lines can be made, for example, by suitable rollers, lasers, or the like prior to the time the flexible film 100 is unwound from the feed roll or after the flexible film 100 is unwound from the feed roll.

[0073] While the first and second fold lines 115 and 117 have been shown in FIG. 8A as intersecting both the leading and trailing edge portions 111, 113 of the flexible film 100, as well as the free ends of the flap lines of weakness 124, it will be appreciated that the fold lines 115, 117 may "substantially intersect" the leading and trailing edge portions 111, 113 and the free ends of the flap lines of weakness 124. In other words, the fold lines 115, 117 may be slightly spaced (e.g., 1-2 millimeters or less) from the leading and trailing edge portions 111, 113 and from the free end portions 115, 117 of the flap lines of weakness 124. While the fold lines 115, 117 and the compartment lines of weakness 120, 122, 123, and 125 have been shown in FIG. 8 as straight lines, it will be appreciated that one or both of the fold lines 115, 117 and the compartment lines of weakness 120, 122, 123, and 125 may be non-linear, curved, or discontinuous instead of being in the form of a single continuous line.

[0074] With reference to FIG. 8A, area 126 of the flexible film 100 between the flap line of weakness 124 and the fold line 115 corresponds to the flap 26 of the package 10. Area 134 located adjacent the flap line of weakness 124 and located within a perimeter defined by the compartment lines of weakness 120, 122, the fold line 115, and the leading edge 111 of the flexible film 100 corresponds to the front panel 34 of the compartment 12 of the package 10. Area 132 located within a perimeter defined by the leading and trailing ends 111, 113, the longitudinal edge portion 154, and the fold line 115 of the flexible film 100 corresponds to the rear panel 32 of the compartment 12 of the package 10.

[0075] It is to be appreciated that the locations of the flap lines of weakness 124 in the flexible film 100 as shown in FIG. 8A is shown by way of example only, and that the flap lines of weakness 124 may be alternatively formed in the flexible film 100 at exemplary locations shown in FIG. 8B-D, or other locations suitable for a particular package. For example, the formation of the flap lines of weakness 124 at locations in the flexible film as shown in FIG. 8B provides for a package having a different orientation of the flaps 26 of the assembled package 10. In particular, while the flap 26 of the package 10 assembled from the flexible film 100 shown in FIG. 8A moves to an open position by pivoting relative to the back panel 32 about the free edge portion 15 of the package 10 when the compartment 12 is being opened by a consumer as shown in FIG. 3, in a package assembled from the flexible film 100 shown in FIG. 8B, the flap 26 moves

to an open position by pivoting relative to the back panel 32 about the longitudinal edge portion 156 of the package, which may substantially overlie the compartment line of weakness 20.

[0076] FIG. 8C shows yet another alternative formation of the flap lines of weakness 124 in the flexible film 100. In particular, while the flap lines of weakness 124 in FIG. 8A are made in the areas 132 of the flexible film 100 that correspond to the rear panels 32 of the package 10, the flap lines of weakness 124 in FIG. 8B are made both in the areas 132 of the flexible film 100 that correspond to the rear panels 32 of the package 10 and in the area 134s of the flexible film 100 that correspond to the front panels 34 of the package 10. The arrangement of the flap lines of weakness 124 as shown in FIG. 8B provides for a package having openable flaps 26 formed in both the front and rear panels of the package, which permits a user to open the package by applying an opening force from either side of the package unlike the package 10 of FIG. 4, which has an openable flap 26 formed only in the front panel 34 and may be opened by an opening force applied from one side (i.e., the rear panel 32) of the package 10.

[0077] FIG. 8D also shows another alternative formation of the flap lines of weakness in the flexible film 100. In particular, while the flap lines of weakness 124 in FIG. 8C made in the areas 132 and 134 of the flexible film 100 are oriented in the same direction, the flap lines of weakness 124 in FIG. 8D made in the areas 132 and 134 of the flexible film 100 are oriented in opposite directions. Similarly to the arrangement of the flap lines of weakness 124 as shown in FIG. 8C, the arrangement of the flap lines of weakness 124 as shown in FIG. 8D provides for a package having openable flaps 26 formed in both the front and rear panels of the package, but the flaps 26 on the front panels 34 of the package 10 made from flexible film 100 of FIG. 8C would have a reversed orientation as compared to the flaps 26 on the front panels 34 of the package 10 made from flexible film 100 of FIG. 8D.

[0078] As the flexible film 100 is moved in the machine direction, a food product such as gum pieces 90 is deposited onto the upward-facing surface 160 of the flexible film 100, as shown in FIG. 9. The gum pieces 90 are positioned on the upward-facing surface 160 of the flexible film such that each of the gum pieces 90 fully fits within the area of the flap 126, i.e., without protruding beyond either the flap line of weakness 124 or the fold line 115. It will be appreciated that any one or more of the gum pieces 90 may partially protrude (e.g., by 1-3 millimeters or less) from the area enclosed by the flap 126.

[0079] While the food product 90 has been shown in FIG. 9 in the form of gum pieces, food products other than gum pieces, for example, candy, chocolates, or the like, may be used in combination with the flexible film 100 instead of gum pieces. In one approach, a non-food product to be wrapped in the package 10 may be used in combination with the flexible film 100. Optionally, the food

product 90 or the non-food product may be removably attached to the upward-facing surface 160 of the flexible film 100, for example, via a suitable adhesive material, tape, or the like. Optionally, the areas 126 of the upward-facing surface 160 of the flexible film 100 where the food products 90 are placed may at least in part include a non-slip surface. Such a non-slip surface and/or removable attachment of the food product 90 to the upward-facing surface 160 of the flexible film 100 may keep the food product 90 from undesirably shifting on the upward-facing surface 160 of the flexible film 100 as the flexible film 100 moves in the machine direction during manufacture.

[0080] With the food product 90 being positioned on the upward-facing surface 160 of the flexible film 100 as shown in FIG. 9, the opposite longitudinal edge portions 154, 156 of the flexible film 100 may be folded inward about the fold lines 115 and 117, respectively, and brought toward each other in the direction shown by the directional arrows in FIG. 9. As shown in FIG. 10, the first and second longitudinal edge portions 154, 156 of the flexible film 100 are moved into a position where the portions 132 of the flexible film 100 overlay the portions 126 and 134 of the flexible film 100 and covers the food product 90, while the first and second longitudinal edge portions 154 and 156 are positioned adjacent one another to create the gap 152 therebetween. The gap 152 may be, for example, about 1-3 millimeters or less.

[0081] It is to be appreciated that the gap 152 between the first and second longitudinal edges 154 and 156 is exaggerated for clarity purposes and that the gap 152 may not be visible on the finished package 10 to the consumer. It is also to be appreciated that the first and second longitudinal edges 154 and 156 may be placed in direct contact with each other such that the gap 152 therebetween is substantially eliminated. In addition, it is to be appreciated that the dimensions in FIGS. 8-10 are merely exemplary and not drawn to scale, and that the flexible film 100 may be used to manufacture flexible packages of various shapes and sizes. Examples of such packages are illustrated in FIGS. 11-41 and will be discussed below.

[0082] After the first and second longitudinal edges 154 and 156 of the flexible film 100 folded inward as shown in FIGS. 9 and 10, portions of the areas 132 and 134 of the flexible film 100 are sealed together along the areas 114, 116, and 118 to form eight individually (and preferably hermetically) sealed compartments 112 each including a single piece of gum 90. The sealing may be performed via a cold seal or a hot seal. Adhesive materials, lamination, bonding, welding, UV-curing, or fusion may be used instead of heat sealing.

[0083] Finally, the package 10 may be singulated from the remainder of the flexible film 100. For example, a cutting device such as cutting jaws can make one or more cuts through the flexible film 100 to singulate the individual package 10. The above-described method advantageously allows the above-described package 10 to be easily formed from a single sheet of flexible film 100 (or two opposing identical sheets of flexible film 100), and

avoids the use of one material for the back panel of the package 10 and another, different, material for the front panel of the package 10.

[0084] A package 200 according to another form is illustrated in FIGS. 11-15. Unlike the package 10, which includes eight individually sealed compartments 12 arranged in two rows of four compartments 12 in each row as shown in FIG. 1, the package 200 includes five compartments arranged in a single row. Each of the compartments 12 is configured to contain a food product 90, for example, a gum stick, as shown in FIG. 12. The gum sticks may be unwrapped as illustrated in FIG. 12, or may be optionally each individually wrapped in a separate wrapper material. It is to be appreciated that the number of the compartments (i.e., five) and the number of gum sticks (i.e., one) in each of the compartments 212 has been shown by way of example only, and that the package 200 may have less than five compartments (e.g., four, three, or two), or more than five compartments (e.g., six, seven, eight, or more), and that each of the compartments 12 may contain more than one gum stick or another food product or non food product 90. The package 200 is otherwise generally similar to the package 10 as will be described in more detail below.

[0085] For ease of reference, aspects of the package 200 that are similar to aspects of the package 10 described above have been designated with similar reference numbers, prefaced with a "2." The package 200 has a similar general construction to the package 10 described above and may be formed from a single sheet of flexible film or from two sheets of flexible film, with some differences highlighted below.

[0086] Adjacent compartments 212 of the package 200 abut each other and are joined to each other by a respective one of the compartment lines of weakness 222, 223, 225, or 227 as shown in FIG. 11. The adjacent compartments 212 of the package 200 may be separated from each other and from the package 200 along the compartment line of weakness 222 as shown in FIG. 15. Alternatively, two of the compartments 212 may be simultaneously separated from the package 200 along the compartment line of weakness 223, three of the compartments 212 may be simultaneously separated from the package 200 along the compartment line of weakness 225, or four of the compartments 212 may be simultaneously separated from the package 200 along the compartment line of weakness 227. This is one difference between the package 200 and the package 10, since separation of an individual compartment 12 from the package 10 requires separation of the compartment 12 along two compartment lines of weakness 20 and 22 as shown in FIG. 6.

[0087] As shown in FIG. 11, the compartment lines of weakness 222, 223, 225, and 227 extend from the first free edge portion 215 to the second free edge portion 217 of the package 200. Similar to the compartment lines of weakness 22, 23, and 25, the compartment lines of weakness 222, 223, 225, and 227 may be formed by a

series of ablated portions or score lines as shown in FIG. 11, or may be formed by a single continuous line of weakness similar to the flap line of weakness 224. The compartment lines of weakness 222, 223, 225, 227 may provide hinge areas between adjacent compartments 212 such that the adjacent compartments 212 may be movable about a respective one of the compartment lines 222, 223, 225, and 227 to fold the package 200 such that it has a shorter length.

[0088] The compartment lines of weakness 222, 223, 225, and 227 can be parallel to each other as shown in FIG. 11, or may converge or diverge relative to each other. Further, while the compartment line of weakness 222, 223, 225, and 227 have been shown as being perpendicular to a longitudinal axis of the package 200, the compartment lines of weakness 222, 223, 225, and 227 may be inclined at various angles to the longitudinal axis. While the compartment lines of weakness 222, 223, 225, and 227 have been shown as being straight, the compartment lines of weakness 222, 223, 225, and 227 may be curved (e.g., convex, concave, undulating, etc.).

[0089] Each individual compartment 212 of the package 10 is preferably hermetically sealed. In the embodiment illustrated in FIG. 11, each of the compartments 212 includes three seals 214, 216, 218. The adjacent compartments 212 are joined to each other by, and separable from each other along, the compartment lines of weakness 222, 223, 225, and 227 extending between the adjacent compartments 212 of the package 10. The longitudinal seal 214 extends in a direction along the longitudinal axis of the package 10 and interconnects the transverse seals 216 and 218, which extend in a direction parallel to the compartment line of weakness 222 and perpendicular to the longitudinal axis and the longitudinal seal 214. The longitudinal axis of the package 200 is not shown in FIG. 11, but it will be understood that the longitudinal axis extends parallel to the first and second free edge portions 215, 217 of the package 200 and passes through the first and second side edge portions 211, 213 of the package 200.

[0090] Each of the compartments 212 has a hermetically sealed interior 228 configured to retain the food product 290 therein and an opening 230 to provide access to the food product 290, as shown in FIG. 14. The compartment 212 includes a back panel 232 and a front panel 234, which are sealed to each other to define the interior 228. In particular, the back panel 232 and the front panel 234 are sealed to each other along a longitudinal seal 214 and transverse seals 216, 218, as shown in FIG. 11. The front panel 234 and the back panel 232 are also connected to each other at the first free edge portion 215 of the package 200, permitting a portion of the front panel 234 such as the flap 226 to move (e.g., by pivoting) relative to the back panel 232 about the free edge portion 215 of the package 15 when the compartment 212 is being opened by a consumer.

[0091] With reference to FIGS. 13-14, the back panel 232 and the front panel 234 intersect and are joined at

the first free edge portion 215 of the package 200 to form a closed bottom end portion 244 of the compartment 212. The back panel 232 and the front panel 234 are non-detachably attached to each other at the second free edge portion 217 of the package 200 via the seal 214 to form a closed top end portion 246 of the compartment 212 as shown in FIGS. 13. In addition, the back panel 232 and the front panel 234 are non-detachably attached to each other via the transverse seals 216, 218 to form closed first and second side portions 248, 250 of the compartment 212 of the package 200, as shown in FIG. 15.

[0092] A portion of the front panel 234 of the compartment 212 is configured in the form of a flap 226 that permits the compartment 212 of the package 200 to be opened by a consumer from an unopened position to an open position to gain access to the food product 290 in the compartment 212. Each of the compartments 212 of the package 200 shown in FIG. 11 includes a flap line of weakness 224 that permits the flap 226 of the compartment 212 to move about the free edge portion 215 of the package 200 from an unopened position shown in FIG. 11, where access to a food product 290 is restricted, to an open position shown in FIG. 12, where the food product 290 is accessible by the consumer. During the movement of the flap 226 from the unopened position to the open position, the flap 226 separates from adjacent portions of the front panel 234 but may remain attached to the free edge portion 215 of the package 200 as shown in FIGS. 12 and 13.

[0093] As shown in FIG. 11, the flap line of weakness 224 of the package 200 is similar to the flap line of weakness 24 of the package 10 in that it also has parallel first and second portions 224a, 224b having first and second ends that intersect the free edge portion 215 and extend toward the second edge portion 217 of the package 200 from the free edge portion 215 of the package 200. The first and second portions 224a, 224b of the flap line of weakness 224 are interconnected by a third portion 224c of the flap line of weakness 224 that is perpendicular to the first and second portions 224a, 224b of the flap line of weakness 224.

[0094] As can be seen, for example, in FIGS. 9 and 17, the food product 290 stored in the package 200 has a larger length and is a more elongated rectangle as compared to the food product 90. In other words, the food product 290 is illustrated in the form of gum sticks and the food product 90 is illustrated in the form of pellets. To accommodate for the larger length of the food product 290 as compared to the food product 90, the compartments 212 of the package 200 correspondingly have a larger width in a direction from the first free end portion 215 to the second free end portion 217 of the package 200 than the compartments 12 of the package 10. The flaps 226 of the compartment 212 of the package 200 also have a longer length than the flaps 26 of the compartment 12 of the package 10, which can be seen with reference to FIGS. 1 and 11.

[0095] When the compartment 212 of the package 200

is in the unopened position shown in FIG. 13, access to the opening 230 and the interior 228 of the compartment 212 of the package 200 is blocked by the flap 226. The flap 226 of the compartment 212 of the package 200 is movable from the unopened position of FIG. 13 toward the open position of FIG. 14 in response to a force applied by a user to compartment 212 and in turn to the food product 290 as described above with reference to FIG. 5. In particular, to open the compartment 212 of the package 200 in order to gain access to the food product 290 stored in the interior 228 of the compartment 212, a consumer may apply (e.g., via one or more fingers) a force to the exterior surface 236 of the back panel 232 of the compartment 212 in a direction shown by the arrow in FIG. 14. The compartment 212 of the package 200 then opens as shown in FIGS. 12 and 14 similarly to the way the compartment 12 of the package 10 opens as shown in FIGS. 2 and 5 in response to the force exerted by the user. It will be appreciated that instead of applying a force to the back panel 232 of the compartment 212 to open the flap 226 as shown in FIG. 14, the user may, for example, use two fingers to pinch the compartment 212 on both sides as shown in FIGS. 12 and 14 and move both fingers while pinching the compartment 212 to both initiate a tear in the flap line of weakness 224 and propagate the tear along the flap line of weakness 224 to separate the flap 226 from adjacent portions of the front panel 234 such that the flap 226 opens to provide the consumer with access to the interior 228 of the compartment 212.

[0096] An exemplary method of manufacturing the package 10 is described with reference FIGS. 16A-16C, 17, and 18. Generally, the package 200 can be manufactured from a single sheet of flexible material 300 (or opposing sheets 300A and 300B of the flexible material 300) using a method substantially similar to the method depicted in FIGS. 8-10 with reference to the flexible film 100 above. Since the package 200 includes only one row having five adjacent compartments 212 instead of two rows having four adjacent compartments as in the package 10, the method shown in FIGS. 16A-16C, 17, and 18 includes a difference from the method of FIGS. 8-10.

[0097] In particular, as discussed above, in the method of FIGS. 8-10, two free ends (or longitudinal edges) 154, 156 of the flexible film 100 are folded toward each other in the direction shown in FIG. 9 about the fold lines 115 and 117, respectively, and positioned adjacent to each other to substantially overlies the line of weakness 120 and cover the food product 90, as shown in FIG. 10. Conversely, in the method of FIGS. 16A-16C, 17 and 18, only one free end or longitudinal edge 356 of the flexible film 300 is folded in the direction shown in FIG. 17 about a fold line 315 and positioned to substantially overlies the free end portion or longitudinal edge 317 of the film 300 and cover the food product 290 as shown in FIG. 18. As such, while the flexible film 100 includes two fold lines 115 and 117 and a compartment line of weakness 120, the flexible film 300 includes only one fold line 315 and does not have a line of weakness that corresponds to

the compartment line of weakness 120.

[0098] Oriented in the machine direction indicated by the arrow in FIG. 16A, the exemplary single sheet of flexible film 300 has a leading edge portion 311 (corresponding to the side edge portion 311 of the package 200), a trailing edge portion 313 (corresponding to the side edge portion 213 of the package 200), a first longitudinal side edge portion 354 (corresponding to the free end 254 of the film of the package 200), a second longitudinal side edge portion 317 (corresponding to a free end portion 217 of the package 200), and an upward-facing surface 360 on which the food product 290 may be placed during manufacture of the package 200. The fold line 315 may be formed prior to unrolling the flexible film 300 from a roll, after unrolling the flexible film 300 from the roll and before or after the food product 290 is placed on the film 300 and the film 300 is folded as shown in FIG. 17, or as a result of the folding of the film 300 as shown in FIG. 17.

[0099] With reference to FIG. 16A, area 326 of the flexible film 300 between the flap line of weakness 324 and the fold line 315 corresponds to the flap 226 of the package 200. Area 334 adjacent the flap line of weakness 324 and located within a perimeter defined by the compartment line of weakness 322, the fold line 315, the leading edge portion 311 and longitudinal edge portion 317 of the flexible film 300 corresponds to the front panel 234 of the compartment 212 of the package 200. A portion of the area 332 of the flexible film 300 that is opposite and corresponding to the area 334 corresponds to the rear panel 232 of the compartment 212 of the package 200.

[0100] While the package 200 is shown in FIG. 16A, 17, and 18 as being made of a single sheet of flexible film 300, it will be appreciated that the package 200 may be alternatively made from two opposing sheets or webs of film 300A and 300B as shown in FIG. 16B. In the embodiment shown in FIG. 16B, instead of forming the package 200 by folding a single sheet of flexible film 300 about the fold line 315 to cover the gum sticks 290 as shown in FIG. 17, a sheet of film 300B is placed to overlie the gum sticks 290 positioned on the sheet 300A, and the sheets of film 300A and 300B are sealed to each other via cold seal, hot seal, and/or adhesives to provide a closed configuration of the flexible film 300 substantially as shown in FIG. 18. While the sheets of film 300A and 300B have been illustrated in FIG. 16B as having compartment lines of weakness 222, 223, 225, and 227 formed therein prior to the sealing attachment of the sheets of film 300A and 300B to each other, it is to be appreciated that the sheets of film 300A and compartment lines of weakness 222, 223, 225, and 227 may be formed after the sheets of film 300A and 300B are sealed to each other. It is to be appreciated that any of the packages described herein may be made from two sheets of film sealed to each other as shown in FIG. 16B instead of a single sheet of film folded about one or more fold lines as shown in FIGS. 8-10.

[0101] In an alternative embodiment, instead of the

package 200 being formed by folding a single sheet of flexible film 300 about the fold line 115 as shown in FIGS. 17-18, the package 200 may be formed from a single sheet of flexible film 600 by a continuous flow wrap packaging process moving in a machine direction indicated by the arrow as shown in FIG. 16C. In the embodiment shown in FIG. 16D, the exemplary package 700 made by the continuous flow wrap process is similar to the package 200 shown in FIGS. 13-14, but includes a fin seal 751 extending from the rear panel 732 that seals the free ends of the film 752 and 754 to each other via a sealing area 714, which may be a cold seal, hot seal, or an adhesive. In an alternative embodiment shown in FIG. 16E, an exemplary package 1700 made by the continuous flow wrap process is similar to the package 700 shown in FIG. 16D, but, instead of the fin seal 751, includes a lap seal 1761 that extends over a portion of the rear panel 1732 and is sealed to the exterior surface of the rear panel 1732 via a sealing area 1714, which may be a cold seal, hot seal, or an adhesive. It is to be appreciated that any of the packages described herein may be made by encapsulating the food product in a single sheet of flexible film via flow wrap packaging instead of folding a single sheet of flexible material about one or more fold lines as shown in FIGS. 9-10 and 17-18.

[0102] As the flexible film 300 of FIG. 16A is moved in the machine direction, a food product 290 is deposited onto the upward-facing surface 360 of the flexible film 300, as shown in FIG. 17. The gum sticks 290 are positioned on the upward-facing surface 360 of the flexible film such that each of the gum sticks 290 fully fits within the area of the flap 326, i.e., without protruding beyond either the flap line of weakness 324 or the fold line 315. It will be appreciated that any one or more of the gum sticks 290 may partially protrude (e.g., by 1-2 millimeters or less) from the area 326 that defines the flap 226 of the package 200.

[0103] With the food product 290 being positioned on the upward-facing surface 360 of the flexible film 300 as shown in FIG. 17, the longitudinal edge 356 of the flexible film 300 is folded in the direction shown by the directional arrows and positioned to substantially overlie the longitudinal edge portion 317 and cover the food product 290 and portions 326 and 334 of the flexible film 300, as depicted in FIGS. 17-18. It will be appreciated that "substantially overlie" will be understood to mean that the longitudinal edge 356 of the flexible film 300 does not have to directly overlie the longitudinal edge portion 317 but may be positioned in close proximity to the longitudinal edge portion 317, with a small space therebetween, for example, 1-5 millimeters, 1-4 millimeters, 1-3 millimeters, 1-2 millimeters or less.

[0104] After the longitudinal edge 356 of the flexible film 100 folded inward as shown in FIG. 17 to a position shown in FIG. 18, portions of the areas 332 and 334 of the flexible film 134 are sealed together along the areas 314, 316, and 318, for example, by heat sealing, to form five individually (and preferably hermetically) sealed

compartments 312, each of the compartments 312 including a single piece of gum 290. Adhesive materials, lamination, bonding, welding, UV-curing, or fusion may be used instead of heat sealing.

[0105] Finally, the package 200 is singulated from the remainder of the flexible film 300. For example, a cutting device such as cutting jaws can make one or more cuts through the flexible film 300 to singulate the individual package 200 shown in FIG. 18. The above-described method advantageously allows the above-described package 200 to be easily formed from a single sheet of flexible film 300 or two sheets of flexible film 300 while avoiding the use of one material for the back panel 232 of the package 200 and another, different, material for the front panel 234 of the package 200. In addition, the method provides a package 200 with a feature that provides easy opening of a compartment 212 of the package 200, an auditory signal that indicates to the consumer that the compartment 212 has been opened, and a tamper-indicator.

[0106] A package 400 according to another form is illustrated in FIG. 19. The package 19 is generally similar to the package 10 in that the package 400 includes eight individually sealed compartments 412 arranged in two rows of four compartments 412 in each row. As shown in FIG. 19, the package 400 has a similar general construction to the package 10 and 400 described above in that the package 400 may be formed from a single sheet of flexible film (via folding or flow wrap processing) or by attachment of two sheets of flexible film, and may be opened substantially the same way as the package 10 in response to an application of force by a consumer to a panel of the package 400, with some differences highlighted below. For ease of reference, aspects of the package 400 that are similar to aspects of the package 10 described above have been designated with similar reference numbers, prefaced with a "4."

[0107] In particular, as shown in FIG. 8A, when the food product 90 is placed on the flexible film 100 that is used to make the package 10, the areas 126 of the flexible film 100 where the food product 90 is placed are oriented in the same horizontal plane as the adjacent areas 134 of the flexible film 100. One challenge that may arise during manufacture of a package from the flexible film 100 as shown in FIG. 8A is that the food product 90 may unintentionally shift or move from the desired position on the flexible film 100 due to the movement of the flexible film 100 along an assembly line in the machine direction shown in FIG. 8A.

[0108] To restrict movement of the food product 90 on the flexible film 500 during manufacture, thermoformed recesses may be made in the flexible film 500 of FIG. 21 from which the package 400 is made to form pockets 580 in the flexible film 500 as shown in FIG. 22A. The pockets 580 retain the gum pieces 90 therein as shown in FIG. 23A. The thermoformed pockets 580 may be formed, for example, by one or more vacuum devices and correspondingly shaped molds positioned below a surface on

which the flexible film 500 moves such that the vacuum device may cause portions of the flexible film 500 to fill the molds and assume a shape of a pocket 480 that retains the gum pieces 90 as shown in FIGS. 19 and 20.

5 After the pockets 580 each having a perimeter 582 are formed in the flexible film 500 and the food product 90 is placed into the pockets 580 as shown in FIG. 23A, the package 400 may be formed similarly to the way the package 10 is formed from the flexible film 100, as shown in
10 FIGS. 8-10. In particular, the package 400 may be formed from the flexible film 500 by folding portions of the flexible film 500 in the direction shown by the arrows in FIG. 23A to a position shown in FIG. 24. It will be appreciated that the package 400 may be alternatively made from two
15 opposing sheets or webs of film 500A and 500B as shown in FIG. 23B.

[0109] One difference between the package 10 of FIGS. 4-5 and the package 400 of FIGS. 19-20 is that, due to the presence of the thermoformed pockets 482 in the package 400, portions of the rear panel 432 of the package 400 retain and enclose more of the food product 90 therebetween than corresponding portions of the rear
20 panel 32 of the package 10. In other words, while portions of the rear panels 32 and the front panels 34 diverge from each other and relative to the side edge portion 13 of the package 10 at similar angles as shown in FIGS. 4 and 5, portions of the rear panels 432 of the package 400
25 diverge away from the side edge portion 413 of the package 400 to a larger degree than corresponding portions 32 diverge from the side edge portion 13 of the package 10.
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[0110] As can be also seen in FIGS. 4-5 and 19-20, another difference between the package 10 and the package 400 is that portions of the front panels 434 of the package 400 retain less of the food product 90 therebetween than corresponding portions of the front panels 34 of the package 10. In other words, portions of the front panels 434 diverge from the side edge portion 413 of the package 400 to a lesser degree than corresponding portions of the front panels 32 diverge from the side edge
35 portion 13 of the package 10. In other words, the orientation of the front and rear panels 32 and 34 appears to be more symmetrical relative to the side edge portion 13 of the package 10 than the orientation of the front and back panels 432 and 434 relative to the side edge portion 413 of the package 400, as can be seen in FIGS. 4-5 and 19-20.
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[0111] FIG. 22B illustrates a flexible sheet of material 800 according to an alternative embodiment where some of the flap score lines 824 are formed on one side of the fold line 815, and some of the flap score lines 824 are formed on an opposite side of the fold line 815. More specifically, FIG. 22B illustrates an embodiment of a flexible film material 800 where, in addition to the compartment lines of weakness 822, 823, 825, and 827 and the flap lines of weakness 824, the flexible film 800 includes
45 adhesive areas 860 that permit the resulting package 900 to be folded into an unopened configuration as shown

in FIG. 22C.

[0112] With reference to FIG. 22C, the package 900 is similar to the package 200 in that it includes five gum sticks wrapped in five individually sealed compartments 912a-912e of the package 900. Similarly to the package 200, the compartments 912a-912e of the package 900 may be individually opened to retrieve the food product 290 retained therein and individually separated from the package 900 along one of the respective compartment lines of weakness 922, 923, 925, and 927. Unlike the package 200, which have an orientation that may be described as generally planar, linear, or side-by-side as shown in FIG. 11, the package 900 has an orientation that may be described as accordion-shaped as shown in FIG. 22C that permits the package 900 to be more compact by having a lesser length.

[0113] Another difference between the packages 200 and 900 is that the adjacent compartments 912a-912e of the package 900 are not only joined to one another by a respective compartment line of weakness 222, 223, 225, and 227 as the compartments 212 of the package 200, but also non-detachably attached to one another by the adhesive areas 960 as shown in FIG. 22C. The adhesive selected for the adhesive areas 960 is selected to create a non-detachable attachment of the rear panel 932 of an upper adjacent compartment, for example, 912a, to a portion of the flap 926 of a lower adjacent compartment, for example, 912b. For purposes of this disclosure, "non-detachable" means an attachment that is not meant to be detached. For example, the adhesive areas 960 may be in the form of one or more glue dots (shown in FIG. 22C), pressure-sensitive adhesive, adhesive tape/strips, velcro, or the like. This permits the rear panel 932 of the compartment 912a to remain attached to the flap 926 of the compartment 912b when the compartment 912 is opened and/or separated from the package 900 completely for disposal.

[0114] A consumer may open the package 900 by grasping a portion of an outer compartment 912a and pulling the outer compartment 912a away from its adjacent compartment 912b such that the compartment line of weakness 922 provides a hinge about which the outer compartment 912a moves relative to its adjacent compartment 912b. Once the consumer moves the compartment 912a away from its adjacent compartment 912b, the consumer may open the outer compartment 912a by applying an opening force to the panel 932 in a direction toward the stick of gum retained in the interior of the compartment 912a and toward the panel 936 substantially as shown in FIG. 12 in reference to the opening of the outer compartment 212 of the package 200. The consumer may then remove the gum stick 290 from the opened outer compartment 912a and, if desired, may completely detach the now empty outer compartment 912a from the remainder of the package 900 along the compartment line of weakness 922 and dispose of the empty compartment 912.

[0115] In one form, the relative strengths of the material forming the panel 934 of the package 900 along the flap line of weakness 924 and the adhesive areas 960 may be provided such that as the outer compartment 912a is moved by the consumer away from its adjacent compartment 912b in a direction toward the open position, the opening force and tension being applied by the consumer initiates a tear in the flap line of weakness 924 and causes the flap 926 to separate from the panel 934 of the compartment 912b by tearing along the flap line of weakness 924 even if the consumer does not apply an opening force to the panel 932 of the compartment 912b as described above. This embodiment may advantageously provide a configuration where the outer compartment 912a moves away from its adjacent compartment 912b and the flap 926 of the compartment 912b opens in response to a one continuous motion by the consumer.

[0116] A package 1000 according to another form is illustrated in FIGS. 25-31. The package 1000 is generally similar to the packages 10 and 400 in that the package 1000 includes eight individually sealed compartments 1012 arranged in two rows of four compartments 1012 in each row as shown in FIG. 26, which illustrates the package 1000 in an open or extended configuration. The package 1000 has a similar general construction to the packages 10 and 400 described above in that the package 1000 may be formed by folding or flow wrap processing from a single sheet of flexible film (indicated by reference numeral 1100 for example only in FIG. 28) or by attachment of two sheets of flexible film (indicated by reference numerals 1100A and 1100B for example only in FIG. 27).

[0117] While the package 1000 is not illustrated as having compartment lines of weakness 22, 23, and 25 similar to the package 10, it will be appreciated that the package 1000 may be provided with compartment lines of weakness that permit any of the compartments 1012 of the package 1000 to be completely separated from the package 1000 individually and discarded. In addition, while the package 1000 is shown with an optional removable area 1099 and the package 10 is shown without such a removable area, it will be appreciated that the package 10 or any other package described herein may include a removable area similar to the removable area 1099. The removable area 1099 of the package 1000 may be separated from the package to expose an opening to permit the package 1000 to be placed on a hanging display rack at a convenience store or supermarket.

[0118] The package 1000 may be in a form of front and rear panels 1083 and 1085 sealed to each other along one or more edges by end seals 1089 being formed from a material selected to provide a detachable attachment of the front and rear panels 1083 and 1085 such that the package 1000 may be opened from the closed configuration of FIG. 25 to the extended configuration of FIG. 26 by movement of the front and rear panels 1083 and 1085 of the package 1000 away from each other. The package may also include a closure flap 1095 non-detachably at-

tached to a portion of the rear panel 1085 by a seal 1081 or an adhesive and including a line of weakness 1087 that permits portions of the closure flap 1095 to separate from each other along the line of weakness 1087 when the package 1000 is initially opened and moved from the position of FIG. 25 to the position of FIG. 26. The closure flap 1095 and the line of weakness 1087 thus provide a tamper-evidence feature for the package 1000 such that the partial detachment of the closure flap 1095 would visually indicate to a consumer that the package 1000 has been previously opened or tampered with. The compartments 1012 of the package 1000 may be opened substantially the same way as the compartments 12, 212, and 412 of the packages 10, 200, and 400 in response to an application of force by a consumer to a panel of the package 1000 to force a flap 1026 of a compartment 1012 of the flexible package 1000 to separate from adjacent portions of the compartment 1012 along a flap line of weakness 1024 and move to an open position to provide the consumer with access to the food product 90 retained in the compartment 1012.

[0119] A configuration of a compartment 1012 of the package 1000 illustrating the shape of a pocket 1080 where the gum pieces are retained and indicating the shape and orientation of the flap line of weakness 1024 is shown in FIG. 31A. It will be appreciated that the shape and orientation of the flap line of weakness 1024 may be selected from various alternatives that may be selected, for example, to facilitate the ease of the opening of the compartments 1012 of the package 1000 by the consumers, or to provide a visual indication of where the compartment 1012 may be opened, or just to provide a visually pleasing design. Some possible alternatives of the shapes and orientations of the flap lines of weakness 1024 of the compartment 1012 of the package 1000 are shown in FIGS. 31B-31E. In the embodiment shown in FIG. 31E, the flap line of weakness 1024 includes first and second segments 1024a and 1024b each having end portions 1025 and 1027 that are hook shaped, which may restrict unintended propagation of a tear along the flap line of weakness 1024 beyond the endpoints 1025 and 1027.

[0120] In the embodiment shown in FIG. 31D, one of the segments 1024b of the flap line of weakness 1024 having the hook-shaped portions 1025b and 1027b may be shorter than the other one of the segments 1024a of the flap line of weakness 1024 having the hook-shaped portions 1025a and 1027a such that the flap line of weakness 1024 may preferentially tear initially at the segment 1024a rather than the segment 1024b when the consumer applies an opening force to the compartment 1012. The package 1000 may be similar to the package 400 of FIGS. 19 and 20 in that the compartments 1012 of the package 1000 include thermoformed pockets 1080. It will be appreciated that the compartments 1012 of the package 1000 may alternatively be formed without the thermoformed pockets 1080 similarly to the compartments 12 of the package 10. Some differences between

the packages 10, 400, and 1000 are highlighted below. For ease of reference, aspects of the package 1000 that are similar to aspects of the package 400 described above have been designated with similar reference numbers, prefaced with a "10."

[0121] The package 1000 is illustrated in a closed configuration in FIG. 25 and in an open configuration in FIG. 26. FIGS. 27-31 illustrate how the package 1000 may be folded from the open configuration shown in FIG. 26 to the closed configuration of FIG. 25. The material selected for the end seals 1089 of the package 1000 (shown in FIG. 25) may be selected to permit multiple openings and reclosings of the package 1000 from the configuration of FIG. 25 to the configuration of FIG. 26. In particular, the package 1000 may be initially folded from the open configuration shown in FIG. 27 by bringing a free end 1052 of the package toward the free end 1054 of the package 1000 in a direction shown by the arrow in FIG. 28. As shown in FIG. 28, portions of the flexible film from which the package 1000 may be made may pivot about two hinge areas 1053 and 1055 as the free end 1052 of the package 1000 is moved toward the free end 1054 of the package 1000. It will be appreciated that the free end 1052 of the package may be brought toward the free end 1054 of the package 1000 from the position shown in FIG. 27 to the position shown in FIG. 31 by pivoting about only one hinge area.

[0122] The free end 1052 of the package 1000 may be brought toward the free end 1054 of the package 1000 to a position where portions of the package 1000 substantially enclose all of the compartments 1012 of the package 1000 as shown in FIG. 29. While FIG. 29 shows that the free end 1052 of the package 1000 does not fully enclose the compartment 1012d, it will be appreciated that the package 1000 may be folded such that the free end 1052 is positioned to extend beyond the compartment 1012d toward the free end 1054 such that the compartment 1012d is fully covered by the flexible film of the folded portion of the package 1000.

[0123] In FIG. 29, the compartments 1012 are positioned in a nested configuration relative to one another where the compartment 1012a is positioned between the compartments 1012c and 1012d while the compartment 1012c is positioned between the compartments 1012a and 1012b. The nesting of the compartments 1012a-1012d shown in FIGS. 29-31 advantageously permits the package 1000 to be folded from the longer, open configuration of FIG. 27 to the more compact configuration of FIG. 25 without increasing the thickness (i.e., height) of the package 1000 by the thickness or height of the individual compartments 1012a-1012d.

[0124] When the package 1000 is in the nested configuration shown in FIG. 29, the package 1000 may be further folded such that the free end 1054 of the package 1000 is brought toward the free end 1052 of the package 1000 in a direction indicated by an arrow in FIG. 30 until the free end 1054 is in the position shown in FIG. 31 and a portion of the film that forms the package 1000 forms

the closure flap 1095 that may be non-detachably attached to underlying portions of the package 1000 by an adhesive material, a hot seal, or a cold seal.

[0125] A package 1300 according to another form is illustrated in FIGS. 33-39. The package 1300 is generally similar to the package 1000 in that the package 1300 includes a front panel 1383, a rear panel 1385 detachably sealed to each other via a seal 1389, a closure flap 1395 non-detachably sealed to the rear panel 1385 via a seal 1381, and eight individually sealed compartments 1312 arranged in two rows of four compartments 1312 in each row as shown in FIG. 34, which illustrates the package 1300 in an open or extended configuration. The package 1300 has a similar general construction to the package 1000 described above in that the package 1300 may be formed by folding or flow wrap processing from a single sheet of flexible film (indicated by reference numeral 1400 for example only in FIG. 36) or by attachment of two sheets of flexible film (indicated by reference numerals 1400A and 1400B for example only in FIG. 35).

[0126] While the package 1300 is not illustrated as having compartment lines of weakness 22, 23, and 25 similar to the package 10, it will be appreciated that the package 1300 may be provided with compartment lines of weakness that permit any of the compartments 1312 of the package 1300 to be completely separated from the package 1300 individually and discarded. In addition, while the package 1000 is shown with an optional removable area 1099 and the package 1300 is shown without such a removable area, it will be appreciated that the package 1300 may include a removable area similar to the removable area 1099.

[0127] The package 1300 may be opened substantially the same way as the package 1000 via movement of the front and rear panels 1383 and 1385 away from each other and tearing along the line of weakness 1087 of the closure flap 1095 as described above. The compartments 1312 of the package 1300 may also be opened substantially the same way as the compartments 1012 of the package 1000 in response to an application of force by a consumer to a panel of the package 1300 to force a flap 1326 of a compartment 1312 of the flexible package 1300 to separate from adjacent portions of the compartment 1312 along a flap line of weakness 1324 and move to an open position to provide the consumer with access to the food product 90 retained in the compartment 1312. The package 1300 may have flap lines of weakness 1324 having a configuration selected from one or more of the configurations (e.g., U-shaped, X-shaped, I-shaped) shown and described above in FIGS. 31A-31E.

[0128] The package 1300 may be similar to the package 1000 of FIGS. 25-31 in that the compartments 1312 of the package 1300 include thermoformed pockets 1080. It will be appreciated that the compartments 1312 of the package 1300 may alternatively be formed without the thermoformed pockets 1380 similarly to the compartments 12 of the package 10. Some differences between the packages 1300 and 1000 are highlighted below. For

ease of reference, aspects of the package 1300 that are similar to aspects of the package 1000 described above have been designated with similar reference numbers, prefaced with a "13."

[0129] The package 1300 is illustrated in a closed or compact configuration in FIG. 33 and in an open or extended configuration in FIG. 34. FIGS. 35-39 illustrate how the package 1300 may be folded from the open configuration shown in FIG. 34 to the closed configuration of FIG. 33. The material selected for the end seals 1389 of the package 1300 (shown in FIG. 33) may be selected to permit multiple openings and reclosings of the package 1300 from the configuration of FIG. 33 to the configuration of FIG. 34. Similarly to the package 1000 described above, the package 1300 may be initially folded from the open configuration shown in FIG. 35 by bringing a free end 1352 of the package toward the free end 1354 of the package 1300 in a direction shown by the arrow in FIG. 36. The free end 1352 of the package 1300 may be brought toward the free end 1354 of the package 1300 to a position where portions of the package 1300 substantially enclose all of the compartments 1312 of the package 1300 as shown in FIG. 37.

[0130] Since the package 1300 is made of a flexible material, the package 1300 may be configured in a rolled configuration shown in FIG. 40. The rolled configuration of FIG. 40 may advantageously make the package 1300 more compact for storage in a user's pocket, backpack, or purse. When the package 1300 is in the rolled configuration of FIG. 40, an end portion of the flexible film forming the package 1300 that includes the free end 1354 may be optionally detachably attached to an opposite portion of the package 1300 by an adhesive 1374 selected to provide multiple attachments and detachments of the free end 1354 such that the package 1300 may be unrolled and rolled back up multiple times as the consumer uses the gum sticks in the package 1300.

[0131] Unlike the package 1000, where the compartments 1012a-1012d are positioned in a nested configuration relative one another as shown in FIG. 29, the positions of the compartments 1312a-1312d of the package 1300 are such that upon folding the package 1300 from the position of FIG. 35 to the position of FIG. 37, the compartments 1312a-1312d of the package 1300 are positioned in a stacked configuration where the compartments 1312a and 1312d are opposite each other and the compartments 1312b and 1312c are positioned opposite each other. The relative positions of the compartments 1312a-1312d are shown by way of example only and the compartments 1312a and 1312b as well as the compartments 1312c and 1312d may be closer to one another than is shown in FIGS. 37-39 and the compartments 1312a and 1312d as well as the compartments 1312b and 1312c may be in contact with one another or spaced from one another when in the stacked configuration.

[0132] The stacked configuration of the compartments 1312a-1312d shown in FIGS. 37-39 permits the package 1300 to be folded from the longer, open configuration of

FIG. 34 to the more compact, closed configuration of FIG. 33. Although the thickness (i.e., height) of the package 1300 in the closed configuration of FIG. 39 is increased as compared to the thickness or height of the package 1000 of FIG. 31, the package 1300 has a length that is approximately one half of the length of the package 1000 due to the stacking of the compartments 1312a and 1312b on top of the compartments 1312d and 1312c, respectively.

[0133] The package 1300 as illustrated in FIG. 34 is also different from the package 1000 as illustrated in FIG. 26 in that each of the compartments 1312 of the package 1300 includes graphical indicia 1391 which may be visually appealing to consumers and another portion of the package 1300 separate from the compartments 1312 also includes graphical indicia 1393 which may be visually appealing to the consumers. The graphical indicia 1391 and 1393 may be printed, stamped, painted, or applied to the package 1300 via any other suitable means. The graphical indicia 1391 and 1393 may be of any regular or irregular geometric shape (e.g., triangle, star, snowflake) or a physical object (e.g., flower, butterfly, cartoon character, or the like). The graphical indicia 1391 may be applied to each of the compartments 1312 as shown in FIG. 34, or may be on some of the compartments 1312. It will be appreciated that different packages 1300 may include different graphical indicia 1391, 1393 selected for different themes and or collectable purposes. It will be appreciated that the package 1000 may include graphical indicia similar to the graphical indicia 1391 and 1393.

[0134] The location and spacing between the compartments 1012 of the package 1000 and the compartments 1312 of the package 1312, as well as the number of the compartments 1012 and 1312 of the packages 1000 and 1300 are selected by way of example only, and may be numbered, shaped, and located to suit any desired application and package size. For example, exemplary packages 1200 and 1500 having different pattern and number of compartments 1212 and 1512, respectively, are illustrated in FIGS. 32 and 41, respectively. It will be appreciated that packages having a nested configuration of the compartments as described above may include three, four, five, six, seven, nine, ten, or more compartments and that packages having a stacked configuration of the compartments as described above may include three, four, five, six, seven, nine, ten, or more compartments.

[0135] Any of the foregoing packages may be made of a variety of materials including, but not limited to, metalized or unmetalized polymers, laminates, plastics, paper, paperboard, cardboard, and the like, as well as combinations thereof. Any of the foregoing packages can optionally be hermetically sealed to maintain the freshness of a food or other product contained in the package prior to initial opening of the packages. Any of the foregoing packages can optionally be configured in rectangular or non-rectangular formats, such as trapezoidal, circular,

oval, triangular, and the like.

[0136] While preferred embodiments have been described in detail, variations and modifications can be effected within the configurations described herein.

Claims

1. A package (10, 200, 400) comprising a plurality of individually sealed compartments (12, 212, 412), each of the compartments containing a food product (90) in an interior (28, 228, 428) defined between a back panel (32, 232, 432) sealed to a front panel (34, 234, 434) about the interior, the front panel including a flap (26, 226, 426) at least partially detachable from adjacent portions of the compartment along a flap line of weakness (24, 224, 424) to form an access opening configured to permit removal of the food product from the interior of the compartment;

characterized in that:

the flap line of weakness has first and second spaced ends intersecting a free edge portion (15, 215, 415) of the package about which the flap is configured to pivot to form the access opening, the flap line of weakness extending from the first and second ends thereof toward an opposite edge portion (17, 217, 417) of the package; and

the food product is a plurality of pieces, each of the pieces being contained in the interior of a respective one of the plurality of individually sealed compartments such that each of the pieces is positioned between the flap line of weakness of the respective one of the individually sealed compartments and the free edge portion of the package.

2. The package (10, 200, 400) of claim 1, wherein the package is formed from a single sheet of flexible film (100, 300, 500).
3. The package (10, 200, 400) of claim 1, wherein the front panel and the back panel of each of the compartments are made of identical materials.
4. The package (10, 200, 400) of claim 1, wherein the package is formed from one or more sheets of undeformed flexible film.
5. The package (10, 200, 400) of claim 1, wherein each of the compartments is completely detachable from the package along at least one compartment line of weakness (22, 222, 422) extending between the compartments.
6. The package (10, 200, 400) of claim 5, wherein the at least one compartment line of weakness (22, 222,

- 422) extends between two adjacent compartments, a first of the two adjacent compartments including a first seal (18, 218, 418) extending in a direction along the compartment line of weakness, a second of the two adjacent compartments including a second seal (16, 216, 416) extending in a direction along the compartment line of weakness, the first and second seals being on opposite sides of the at least one compartment line of weakness.
7. The package (10, 200, 400) of claim 1, wherein the flap is defined by the flap line of weakness and the free edge portion of the package.
8. The package (10, 200, 400) of claim 1, wherein the back panel and the front panel of each of the compartments are non-detachably sealed to each other along the opposite edge portion of the package and along first and second sides of the compartment extending perpendicular to the free edge portion and the opposite edge portion.
9. The package (10, 200, 400) of claim 1, wherein the flap includes four sides and the flap line of weakness extends along three of the sides of the flap.
10. The package (10, 200, 400) of claim 1, wherein first and second portions of the flap line of weakness extending from the first and second ends thereof toward the opposite edge portion of the package are parallel to each other and interconnected by a third portion of the flap line of weakness perpendicular to the first and second portions of the flap line of weakness.
11. The package (10, 200, 400) of claim 10, wherein the third portion of the flap line of weakness is closer to a top end portion of the compartment formed by attachment of the front panel and the back panel to each other than to a bottom end portion of the compartment formed by intersection of the front and back panels at the free edge portion of the package.
12. The package (10, 200, 400) of claim 1, wherein the flap is non-detachable from a bottom end portion (44, 244, 444) of the compartment.
13. A method of manufacturing the package (10, 200, 400) of claim 1, the method comprising:
- providing a flexible material (100, 300, 500) having first and second longitudinal edges (154, 354, 554; and 156, 356, 556) ;
- forming a plurality of U-shaped lines of weakness (124, 324, 524) in the flexible film between the first and second longitudinal edges and a longitudinal center line (120, 320, 520) ;
- depositing portions of the food product (90) on the flexible material on opposite sides of the longitudinal center line and at least in part between the U-shaped lines of weakness;
- folding the first and second longitudinal edges of the flexible material in a direction toward the longitudinal center line to overlay the food product;
- forming seals (114, 314, 514; 116, 316, 516; and 118, 318, 518) between overlying portions of the flexible film to form the plurality of individually sealed compartments (112, 312, 512), each of the compartments including the food product; and
- forming a longitudinal line of weakness coinciding with the longitudinal center line and a plurality of transverse lines of weakness (122, 123, 125; 322, 323, 325; and 522, 523, 525) extending in a direction perpendicular to the longitudinal line of weakness, each of the transverse lines of weakness extending between adjacent compartments to permit separation of the adjacent compartments from each other.
14. The package (10, 200, 400) of claim 1, wherein the flap line of weakness including at least two free ends.
15. The package (10, 200, 400) of claim 1, wherein the flap line of weakness extends across portions of the flap overlying the food product contained in the interior of the compartment.
16. The package (10, 200, 400) of claim 1, wherein the flap line of weakness includes at least two lines that intersect one another.
17. The package (10, 200, 400) of claim 1, wherein the compartments further include a second flap partially detachable from adjacent portions of the back panel along a second flap line of weakness.

Patentansprüche

1. Verpackung (10, 200, 400), die eine Vielzahl von einzeln versiegelten Kammern (12, 212, 412) umfasst, wobei jede der Kammern ein Lebensmittelprodukt (90) in einem Innenraum (28, 228, 428) enthält, der zwischen einer hinteren Wand (32, 232, 432), die um den Innenraum an eine vordere Wand (34, 234, 434) gesiegelt ist, wobei die vordere Wand eine Lasche (26, 226, 426) beinhaltet, die zumindest teilweise von angrenzenden Abschnitten der Kammer entlang einer Laschenschwächungslinie (24, 224, 424) abnehmbar ist, um eine Zugangsöffnung zu bilden, die dazu konfiguriert ist, die Entfernung des Lebensmittelprodukts aus dem Innenraum der Kammer zu ermöglichen;
- dadurch gekennzeichnet, dass:**

- die Laschenschwächungslinie erste und zweite beabstandete Enden aufweist, die einen freien Kantenabschnitt (15, 215, 415) der Verpackung schneiden, um den die Lasche zum Schwenken konfiguriert ist, um die Zugangsöffnung zu bilden, wobei die Laschenschwächungslinie von ihren ersten und zweiten Enden zu einem gegenüberliegenden Kantenabschnitt (17, 217, 417) der Verpackung verläuft; und das Lebensmittelprodukt eine Vielzahl von Stücken ist, wobei jedes der Stücke im Innenraum einer jeweiligen der Vielzahl individuell versiegelter Kammern enthalten ist, so dass jedes der Stücke zwischen der Laschenschwächungslinie der jeweiligen der einzeln versiegelten Kammern und dem freien Kantenabschnitt der Verpackung positioniert ist.
2. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Verpackung aus einem einzelnen Bogen einer flexiblen Folie (100, 300, 500) gebildet ist. 20
 3. Verpackung (10, 200, 400) nach Anspruch 1, wobei die vordere Wand und die hintere Wand jeder der Kammern aus identischen Materialien hergestellt sind. 25
 4. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Verpackung aus einem oder mehreren Bögen unverformter flexibler Folie gebildet ist. 30
 5. Verpackung (10, 200, 400) nach Anspruch 1, wobei jede der Kammern von der Verpackung entlang mindestens einer zwischen den Kammern verlaufenden Kammerschwächungslinie (22, 222, 422) vollständig abnehmbar ist. 35
 6. Verpackung (10, 200, 400) nach Anspruch 5, wobei die mindestens eine Kammerschwächungslinie (22, 222, 422) zwischen zwei angrenzenden Kammern verläuft, wobei eine erste der beiden angrenzenden Kammern eine in einer Richtung entlang der Kammerschwächungslinie verlaufende erste Versiegelung (18, 218, 418) beinhaltet, eine zweite der beiden angrenzenden Kammern eine in einer Richtung der Kammerschwächungslinie verlaufende zweite Versiegelung (16, 216, 416) beinhaltet, wobei sich die erste und die zweite Versiegelung auf gegenüberliegenden Seiten der mindestens einen Kammerschwächungslinie befinden. 40
45
50
 7. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Lasche durch die Laschenschwächungslinie und den freien Kantenabschnitt der Verpackung definiert ist. 55
 8. Verpackung (10, 200, 400) nach Anspruch 1, wobei die hintere Wand und die vordere Wand jeder der Kammern entlang des gegenüberliegenden Kantenabschnitts der Verpackung und entlang einer ersten und einer zweiten Seite der Kammer, die senkrecht zu dem freien Kantenabschnitt und dem gegenüberliegenden Kantenabschnitt verlaufen, nicht abnehmbar miteinander versiegelt sind.
 9. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Lasche vier Seiten beinhaltet und die Laschenschwächungslinie entlang drei der Seiten der Lasche verläuft.
 10. Verpackung (10, 200, 400) nach Anspruch 1, wobei erste und zweite Abschnitte der Laschenschwächungslinie, die von deren erstem und zweitem Ende zu dem gegenüberliegenden Kantenabschnitt der Verpackung verlaufen, parallel zueinander sind und durch einen dritten Abschnitt der Laschenschwächungslinie senkrecht zu den ersten und zweiten Abschnitten der Laschenschwächungslinie miteinander verbunden sind.
 11. Verpackung (10, 200, 400) nach Anspruch 10, wobei der dritte Abschnitt der Laschenschwächungslinie näher an einem oberen Endabschnitt der Kammer ist, der durch Aneinanderbefestigen der vorderen Wand und der hinteren Wand gebildet wird, als an einem unteren Endabschnitt der Kammer, der durch ein Sichschneiden der vorderen und hinteren Wand am freien Kantenabschnitt der Verpackung gebildet wird.
 12. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Lasche von einem unteren Endabschnitt (44, 244, 444) der Kammer nicht abnehmbar ist.
 13. Verfahren zum Herstellen der Verpackung (10, 200, 400) nach Anspruch 1, wobei das Verfahren Folgendes umfasst:
Bereitstellen eines flexiblen Materials (100, 300, 500) mit ersten und zweiten Längskanten (154, 354, 554; und 156, 356, 556);
Bilden einer Vielzahl von U-förmigen Schwächungslinien (124, 324, 524) in der flexiblen Folie zwischen den ersten und zweiten Längskanten und einer Längsmittellinie (120, 320, 520);
Anordnen von Abschnitten des Lebensmittelprodukts (90) auf dem flexiblen Material auf gegenüberliegenden Seiten der Längsmittellinie und zumindest teilweise zwischen den U-förmigen Schwächungslinien;
Falten der ersten und der zweiten Längskanten des flexiblen Materials in einer Richtung zu der Längsmittellinie hin, um das Lebensmittelprodukt zu überlagern;
Bilden von Versiegelungen (114, 314, 514; 116, 316, 516; und 118, 318, 518) zwischen darüber

liegenden Abschnitten der flexiblen Folie, um die Vielzahl individuell versiegelter Kammern (112, 312, 512) zu bilden, wobei jede der Kammern das Lebensmittelprodukt beinhaltet; und 5
Bilden einer längslaufenden Schwächungslinie, die mit der Längsmittellinie zusammenfällt, und einer Vielzahl transversaler Schwächungslinien (122, 123, 125; 322, 323, 325; und 522, 523, 525), die in einer Richtung senkrecht zur längslaufenden Schwächungslinie verlaufen, wobei 10
jede der transversalen Schwächungslinien zwischen angrenzenden Kammern verläuft, um eine Trennung der angrenzenden Kammern voneinander zu ermöglichen.

14. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Laschenschwächungslinie mindestens zwei freie Enden beinhaltet. 15
15. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Laschenschwächungslinie über Abschnitte der Lasche verläuft, die über dem Lebensmittelprodukt liegen, das im Innenraum der Kammer enthalten ist. 20
16. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Laschenschwächungslinie mindestens zwei Linien beinhaltet, die einander schneiden. 25
17. Verpackung (10, 200, 400) nach Anspruch 1, wobei die Kammern ferner eine zweite Lasche beinhalten, die teilweise von angrenzenden Abschnitten der hinteren Wand entlang einer zweiten Laschenschwächungslinie abnehmbar ist. 30

Revendications

1. Emballage (10, 200, 400) comprenant une pluralité de compartiments scellés individuellement (12, 212, 412), chacun des compartiments contenant un produit alimentaire (90) dans un intérieur (28, 228, 428) défini entre un panneau arrière (32, 232, 432) scellé à un panneau avant (34, 234, 434) autour de l'intérieur, le panneau avant incluant un rabat (26, 226, 426) au moins partiellement détachable de parties adjacentes du compartiment le long d'une ligne d'affaiblissement (24, 224, 424) de rabat afin de former une ouverture d'accès conçue pour permettre l'enlèvement du produit alimentaire depuis l'intérieur du compartiment ; 40

caractérisé en ce que : 45

la ligne d'affaiblissement de rabat présente des première et seconde extrémités espacées coupant une partie de bord libre (15, 215, 415) de l'emballage autour de laquelle le rabat est conçu pour pivoter pour former l'ouverture d'accès, la ligne d'affaiblissement de rabat s'étendant de- 55

puis les première et seconde extrémités de celle-ci vers une partie de bord opposée (17, 217, 417) de l'emballage ; et
le produit alimentaire est une pluralité de morceaux, chacun des morceaux étant contenu à l'intérieur d'un compartiment respectif de la pluralité de compartiments individuellement scellés de sorte que chacun des morceaux est positionné entre la ligne d'affaiblissement de rabat du compartiment respectif des compartiments individuellement scellés et la partie de bord libre de l'emballage.

2. Emballage (10, 200, 400) selon la revendication 1, dans lequel l'emballage est formé à partir d'une seule feuille de film flexible (100, 300, 500). 15
3. Emballage (10, 200, 400) selon la revendication 1, dans lequel le panneau avant et le panneau arrière de chacun des compartiments sont faits de matériaux identiques. 20
4. Emballage (10, 200, 400) selon la revendication 1, dans lequel l'emballage est formé à partir d'une ou plusieurs feuilles de film flexible non déformé. 25
5. Emballage (10, 200, 400) selon la revendication 1, dans lequel chacun des compartiments est complètement détachable de l'emballage Le long d'au moins une ligne d'affaiblissement (22, 222, 422) de compartiment s'étendant entre les compartiments. 30
6. Emballage (10, 200, 400) selon la revendication 5, dans lequel la au moins une ligne d'affaiblissement (22, 222, 422) de compartiment s'étend entre deux compartiments adjacents, un premier des deux compartiments adjacents incluant un premier joint (18, 218, 418) s'étendant dans une direction le long de la ligne d'affaiblissement de compartiment, un second compartiment des deux compartiments adjacents incluant un second joint (16, 216, 416) s'étendant dans une direction le long de la ligne d'affaiblissement de compartiment, les premier et second joints étant sur des côtés opposés de la au moins une ligne d'affaiblissement de compartiment. 35
7. Emballage (10, 200, 400) selon la revendication 1, dans lequel le rabat est défini par la ligne d'affaiblissement de rabat et la partie de bord libre de l'emballage. 40
8. Emballage (10, 200, 400) selon la revendication 1, dans lequel le panneau arrière et le panneau avant de chacun des compartiments sont scellés de manière non détachable l'un à l'autre le long de la partie de bord opposée de l'emballage et le long des premier et second côtés du compartiment s'étendant perpendiculairement à la partie de bord libre et à la 45

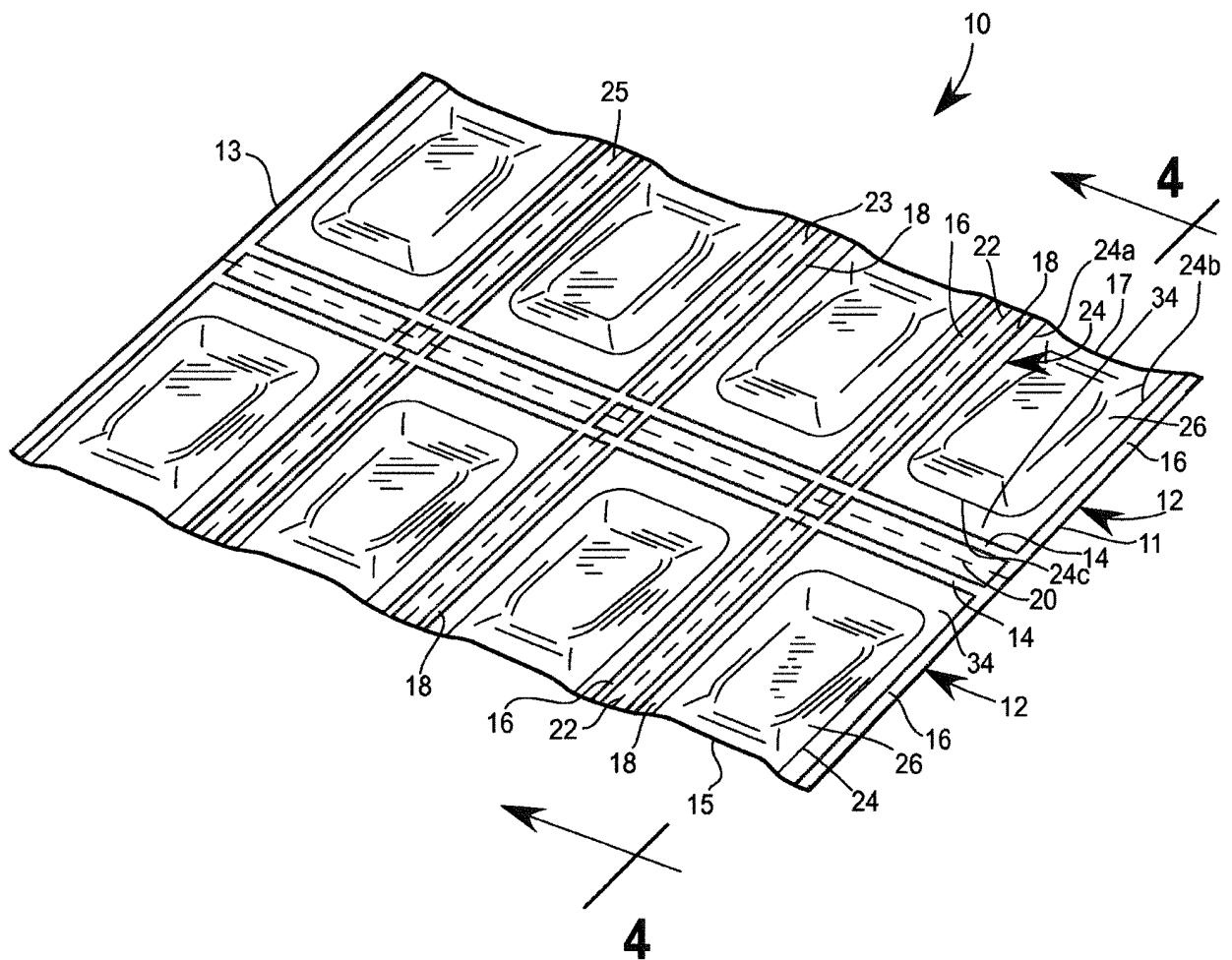
partie de bord opposée.

9. Emballage (10, 200, 400) selon la revendication 1, dans lequel le rabat inclut quatre côtés et la ligne d'affaiblissement de rabat s'étend le long de trois des côtés du rabat. 5
10. Emballage (10, 200, 400) selon la revendication 1, dans lequel des première et seconde parties de la ligne d'affaiblissement de rabat s'étendant à partir des première et seconde extrémités de celle-ci vers la partie de bord opposée de l'emballage sont parallèles et interconnectées par une troisième partie de la ligne d'affaiblissement de rabat perpendiculaire aux première et seconde parties de la ligne d'affaiblissement de rabat. 10
11. Emballage (10, 200, 400) selon la revendication 10, dans lequel la troisième partie de la ligne d'affaiblissement de rabat est plus proche d'une partie d'extrémité supérieure du compartiment formée par la fixation du panneau avant et du panneau arrière l'un à l'autre que d'une partie d'extrémité inférieure du compartiment formée par l'intersection des panneaux avant et arrière au niveau de la partie de bord libre de l'emballage. 15
12. Emballage (10, 200, 400) selon la revendication 1, dans lequel le rabat est non détachable d'une partie d'extrémité inférieure (44, 244, 444) du compartiment. 20
13. Procédé de fabrication de l'emballage (10, 200, 400) de la revendication 1, le procédé comprenant : 25
 - la fourniture d'un matériau flexible (100, 300, 500) ayant des premier et second bords longitudinaux (154, 354, 554 ; et 156, 356, 556) ;
 - la formation d'une pluralité de lignes d'affaiblissement en forme de U (124, 324, 524) dans le film flexible entre les premier et second bords longitudinaux et une ligne centrale longitudinale (120, 320, 520) ; 40
 - le dépôt de parties du produit alimentaire (90) sur le matériau flexible sur des côtés opposés de la ligne centrale longitudinale et au moins en partie entre les lignes d'affaiblissement en forme de U ; 45
 - le pliage des premier et second bords longitudinaux du matériau flexible dans une direction vers la ligne centrale longitudinale pour recouvrir le produit alimentaire ; 50
 - la formation de joints (114, 314, 514 ; 116, 316, 516 ; et 118, 318, 518) entre des parties superposées du film flexible pour former la pluralité de compartiments individuellement scellés (112, 312, 512), chacun des compartiments incluant le produit alimentaire ; et 55

la formation d'une ligne d'affaiblissement longitudinale coïncidant avec la ligne centrale longitudinale et d'une pluralité de lignes d'affaiblissement transversales (122, 123, 125 ; 322, 323, 325 ; et 522, 523, 525) s'étendant dans une direction perpendiculaire à la ligne d'affaiblissement longitudinale, chacune des lignes d'affaiblissement transversales s'étendant entre des compartiments adjacents pour permettre la séparation des compartiments adjacents l'un de l'autre.

14. Emballage (10, 200, 400) selon la revendication 1, dans lequel la ligne d'affaiblissement de rabat comprend au moins deux extrémités libres.
15. Emballage (10, 200, 400) selon la revendication 1, dans lequel la ligne d'affaiblissement de rabat s'étend à travers des parties du rabat recouvrant le produit alimentaire contenu à l'intérieur du compartiment.
16. Emballage (10, 200, 400) selon la revendication 1, dans lequel la ligne d'affaiblissement de rabat inclut au moins deux lignes qui se croisent.
17. Emballage (10, 200, 400) selon la revendication 1, dans lequel les compartiments incluent en outre un second rabat partiellement détachable des parties adjacentes du panneau arrière le long d'une seconde ligne d'affaiblissement de rabat.

FIG. 1



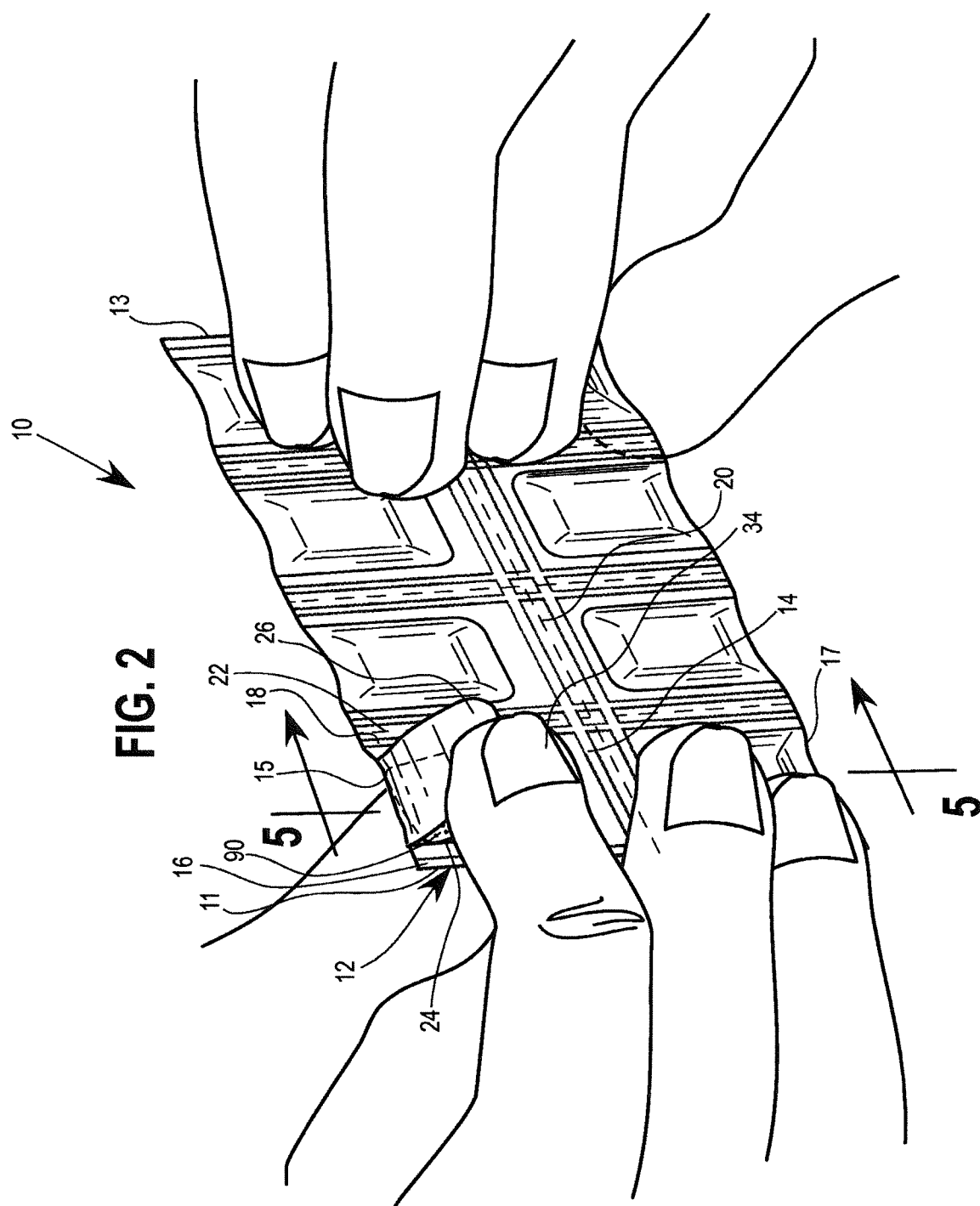


FIG. 3

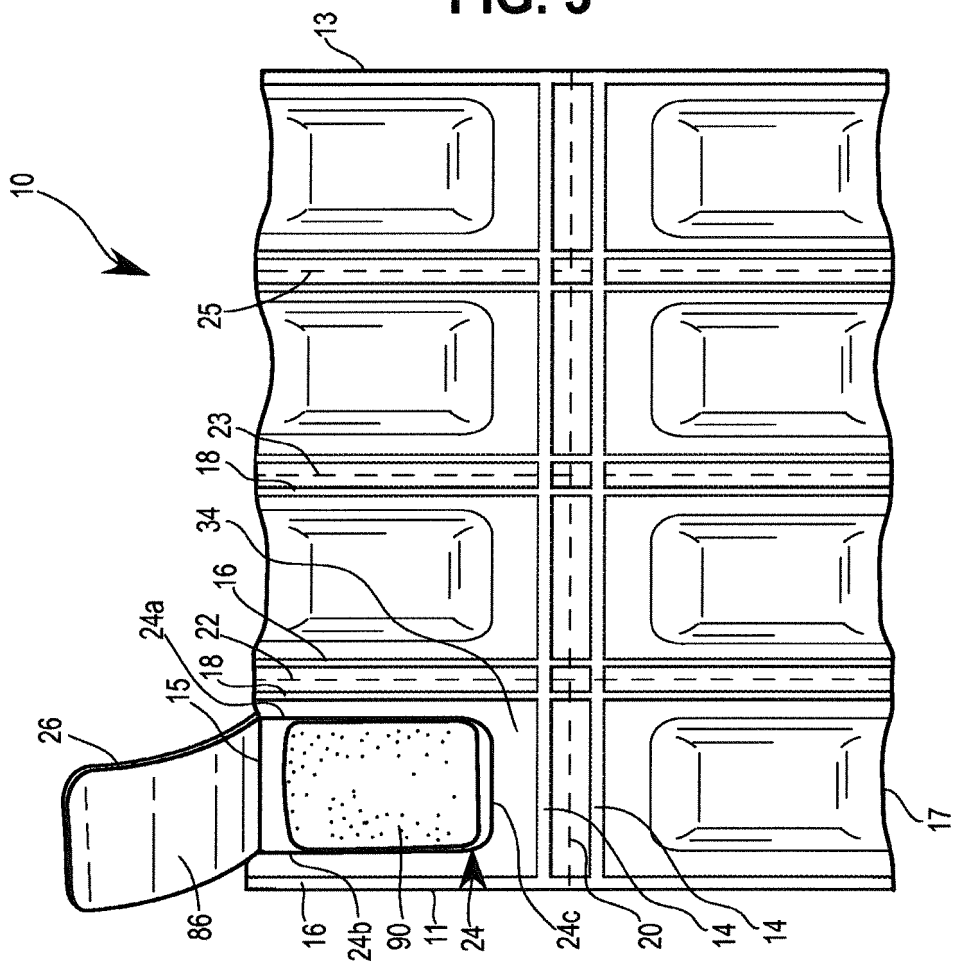


FIG. 4

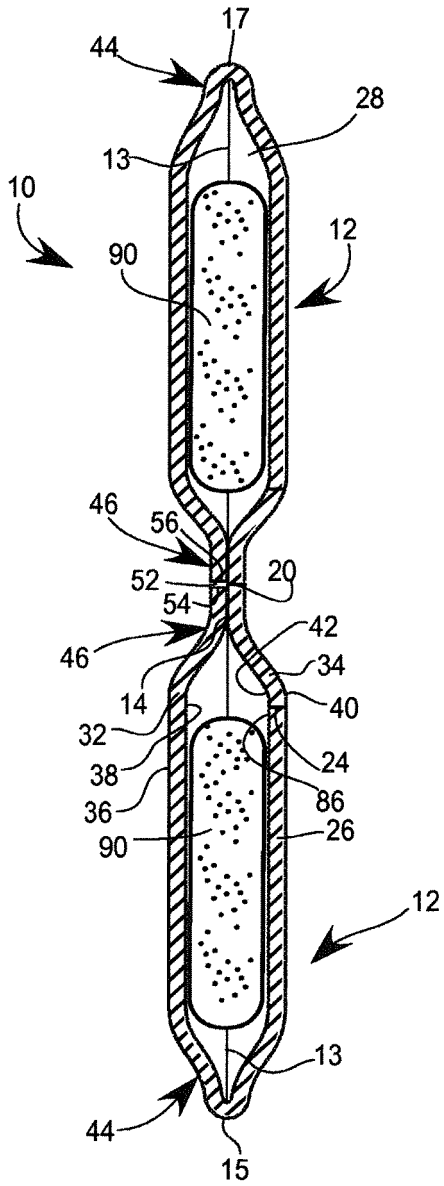
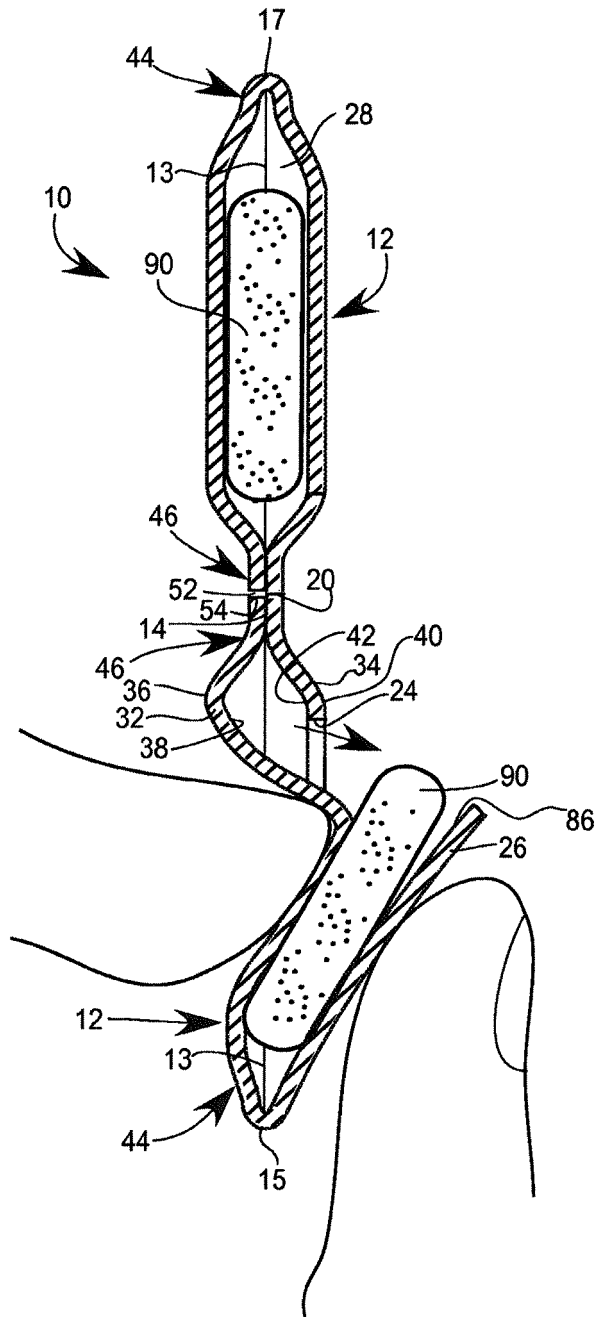
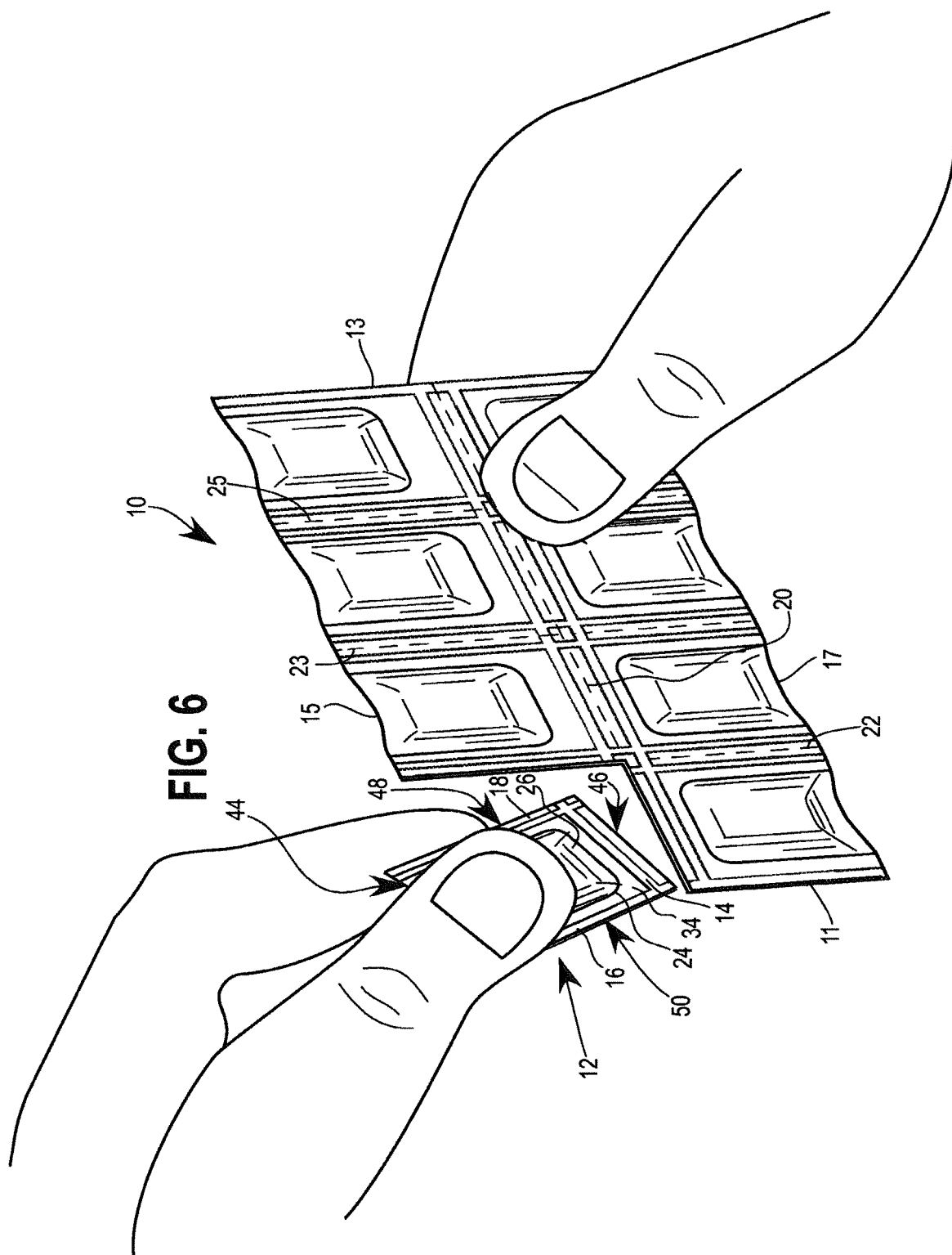


FIG. 5





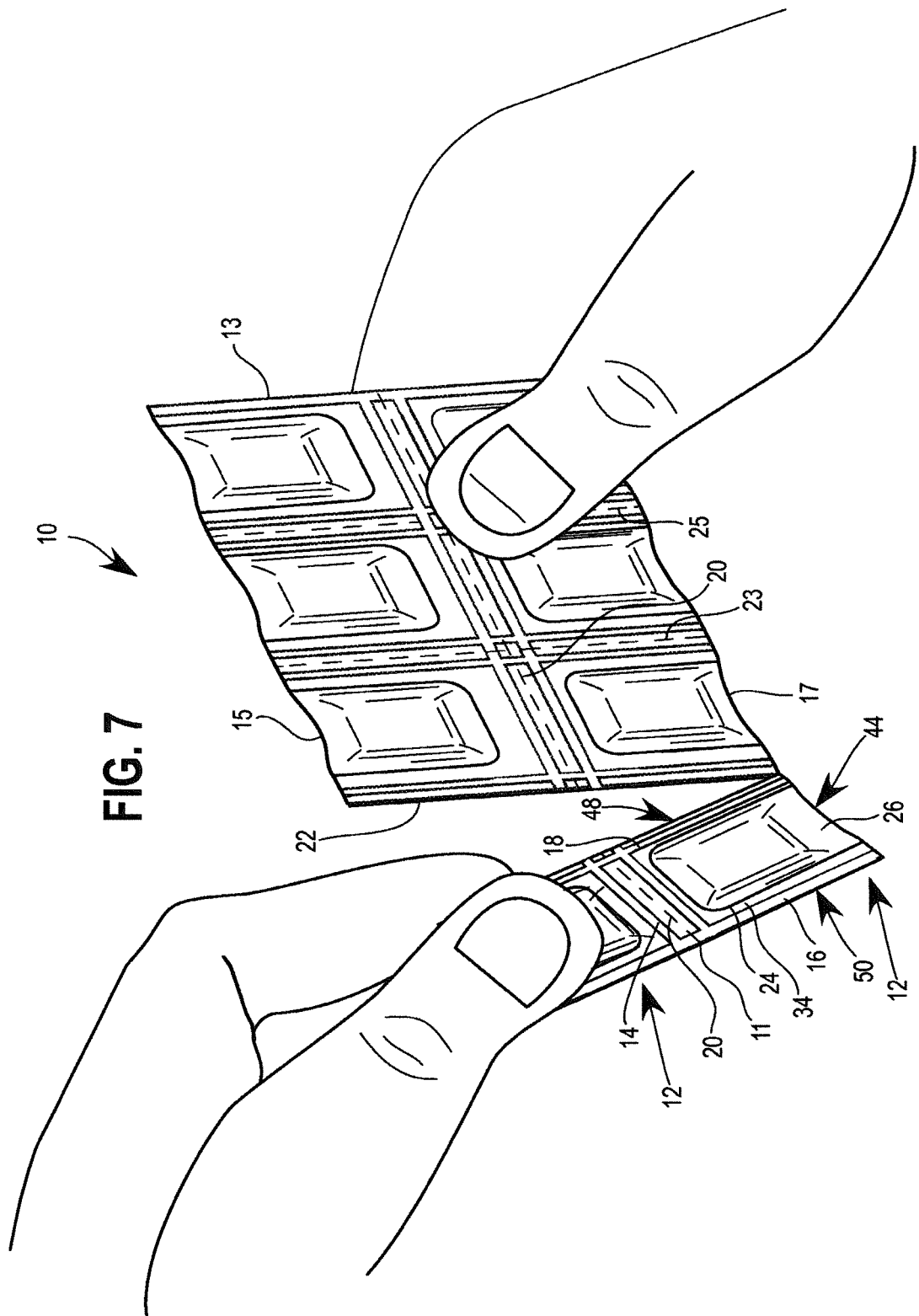


FIG. 8A

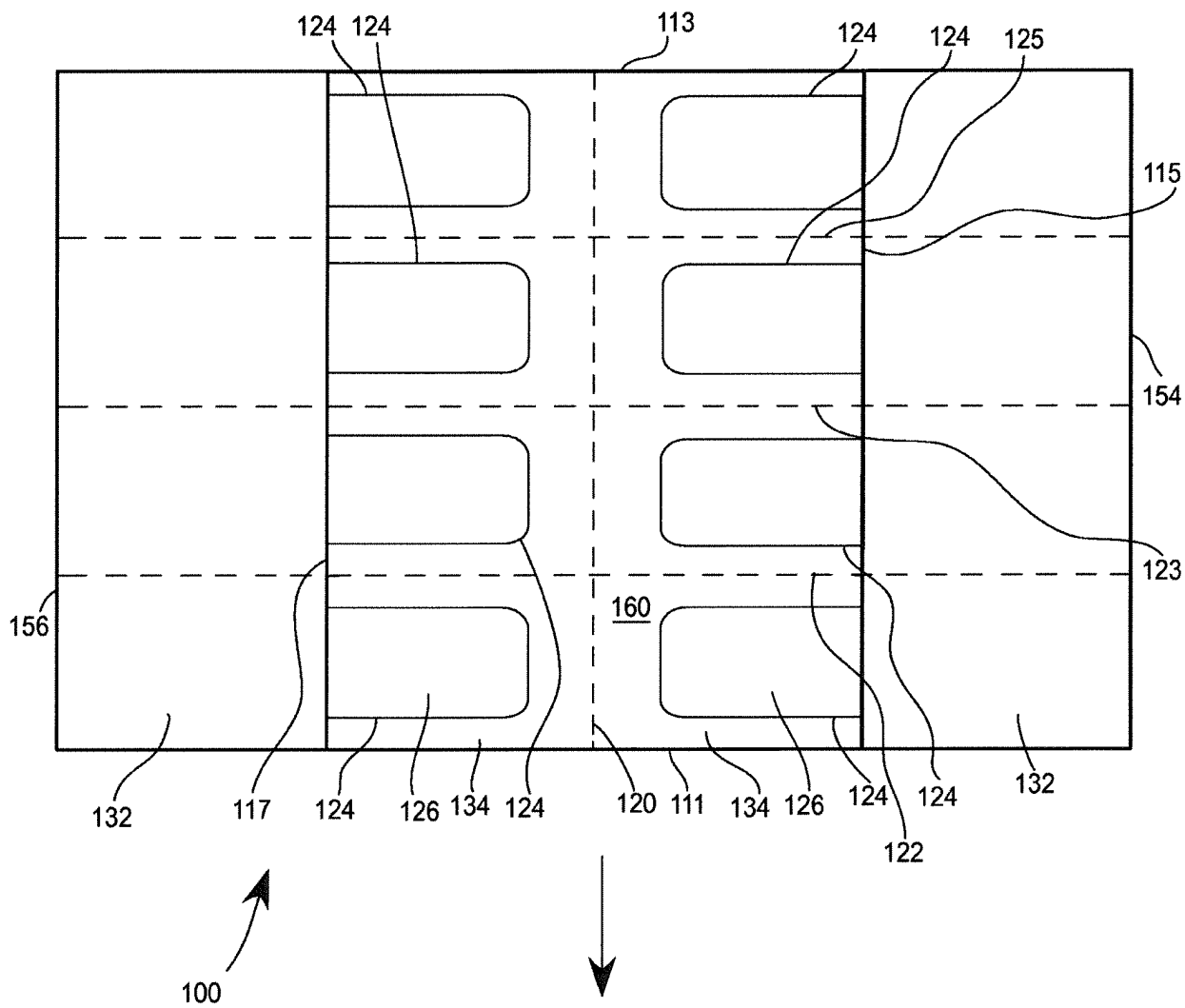


FIG. 8B

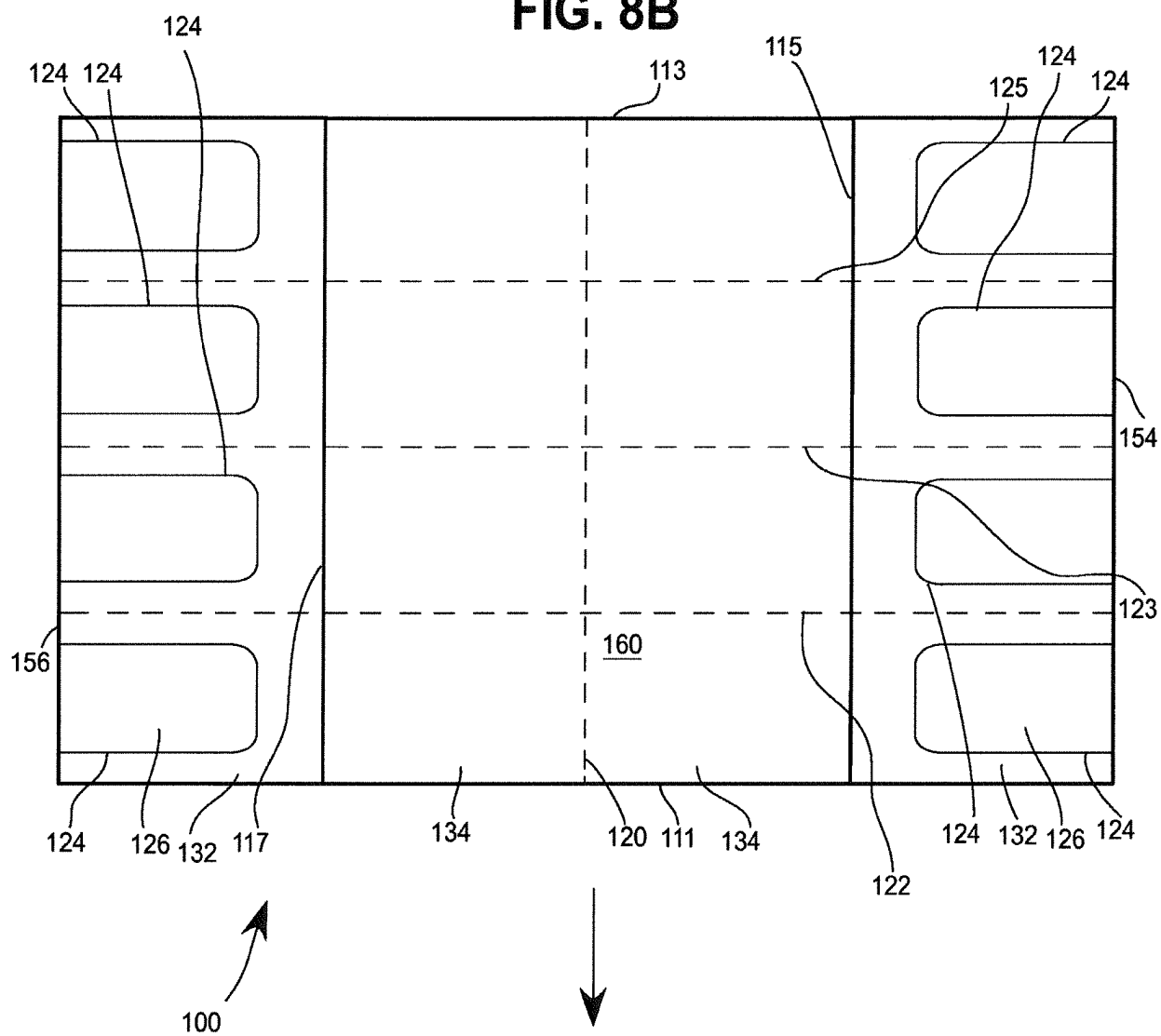


FIG. 8C

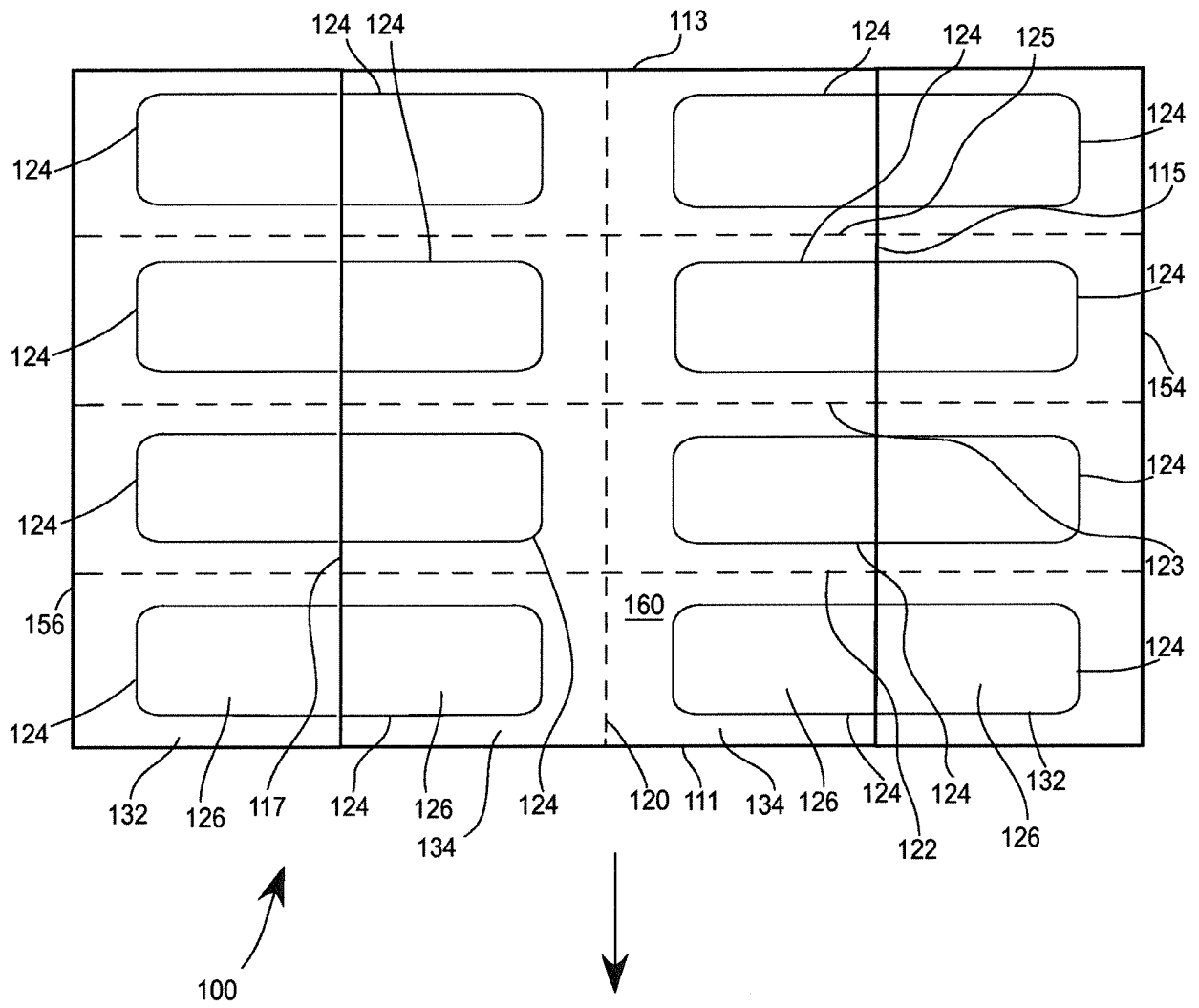


FIG. 8D

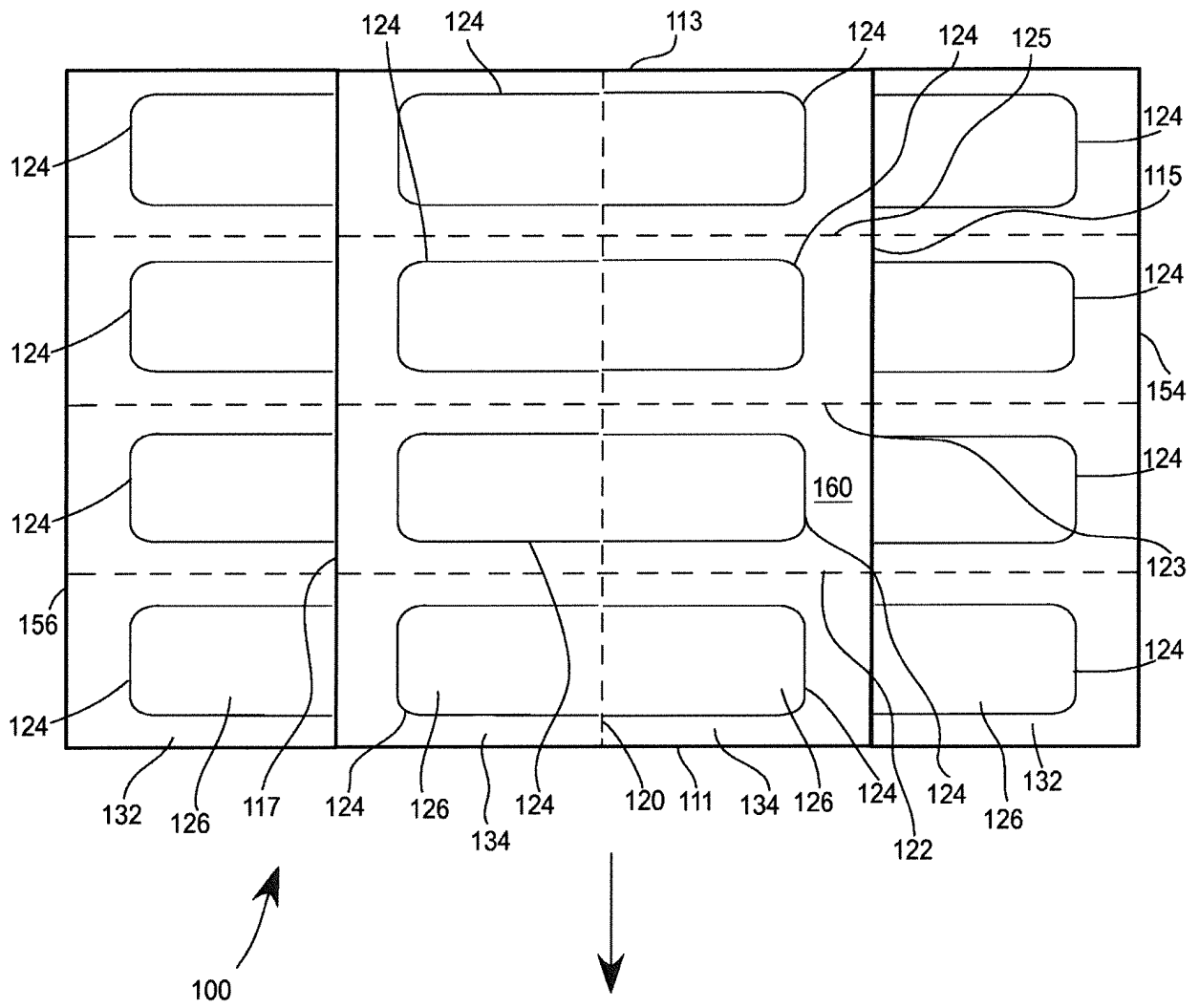


FIG. 9

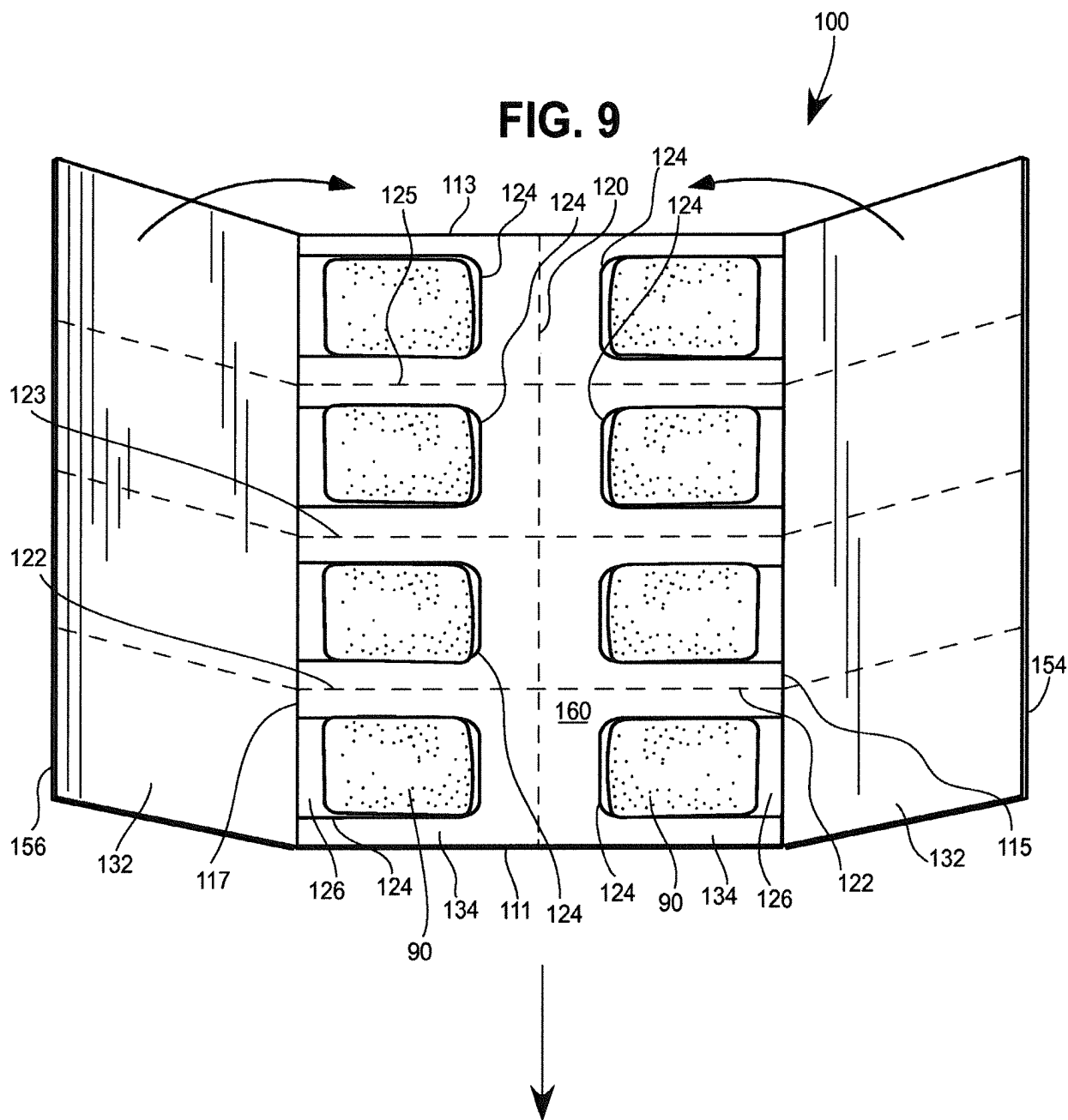


FIG. 10

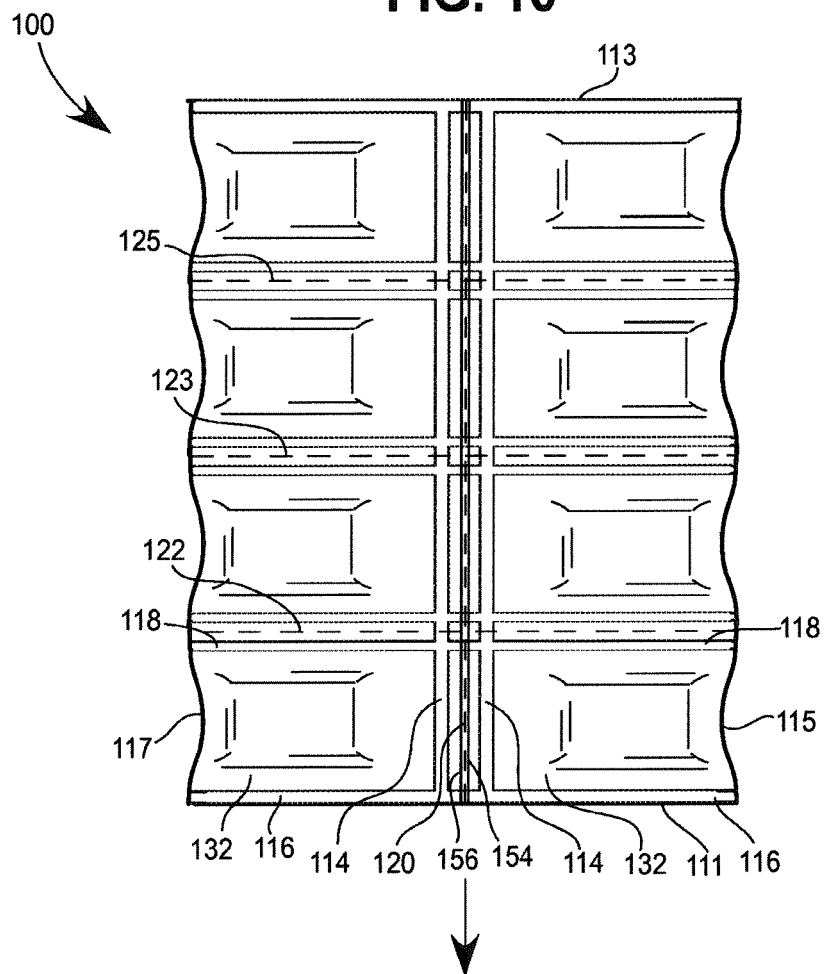
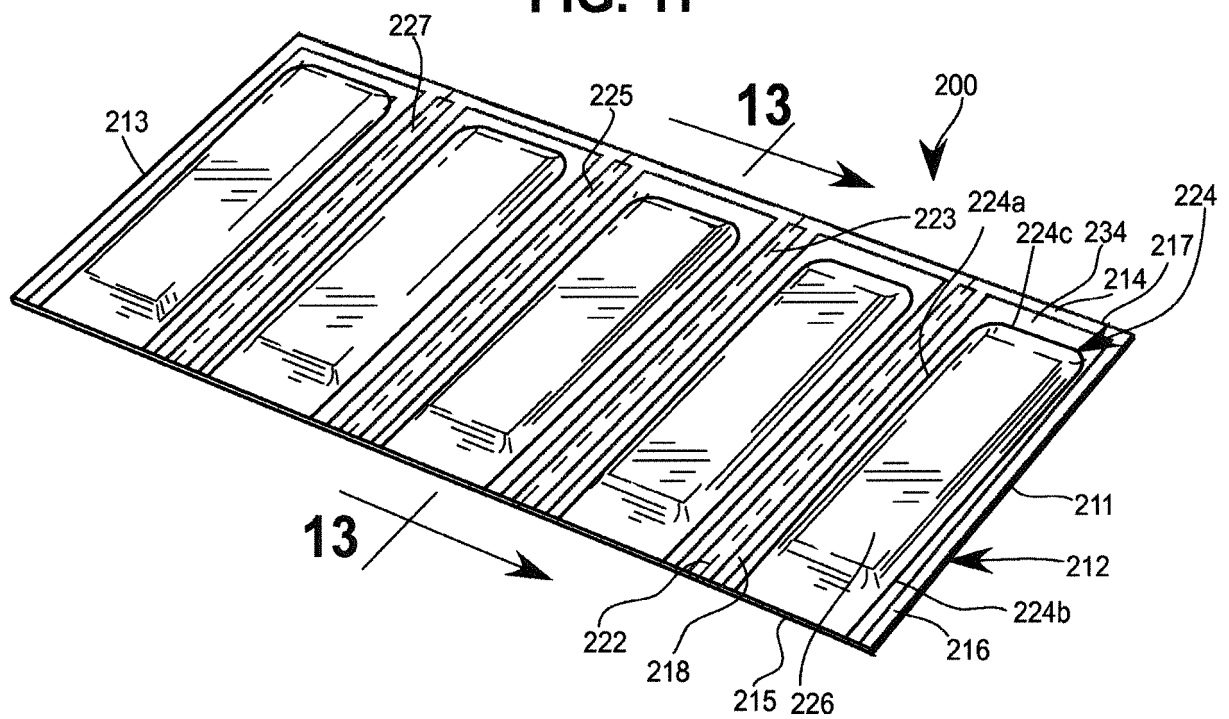


FIG. 11



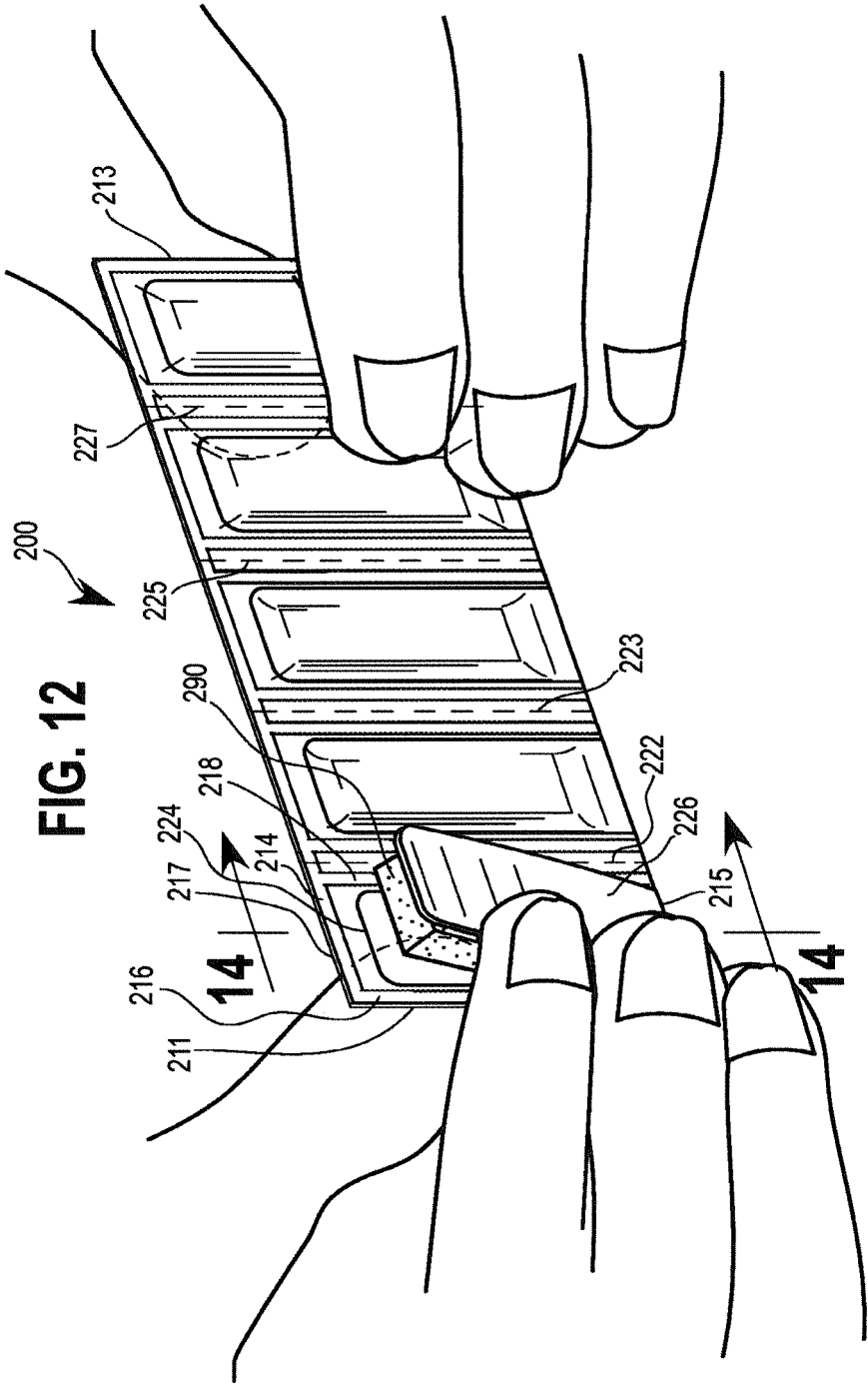


FIG. 12

FIG. 13

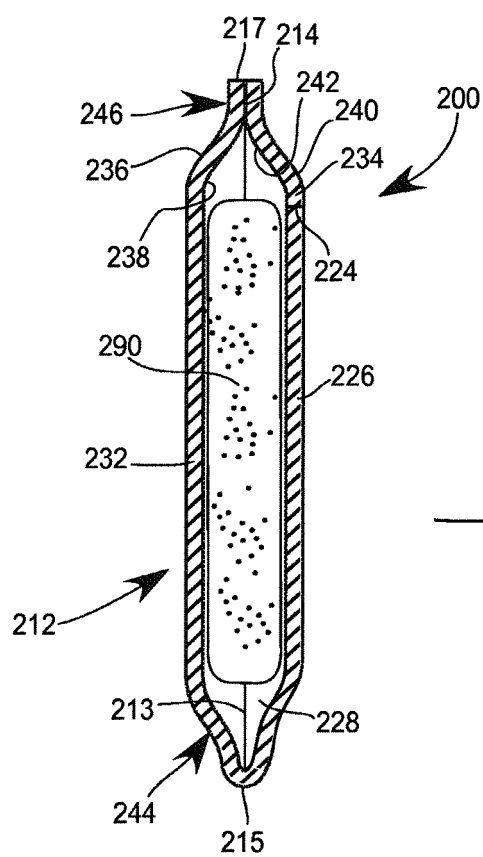


FIG. 14

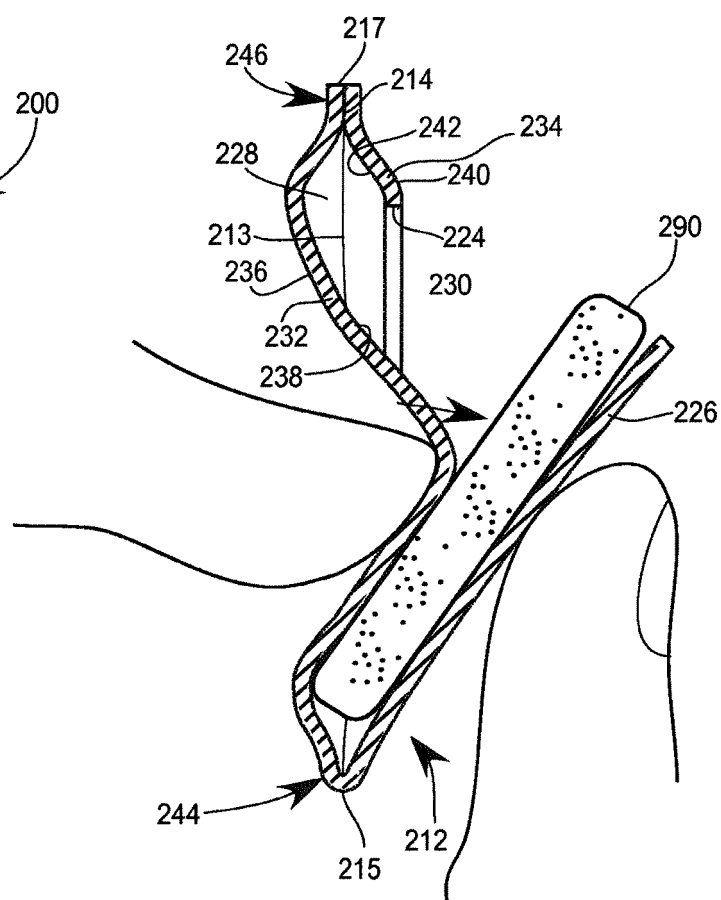


FIG. 15

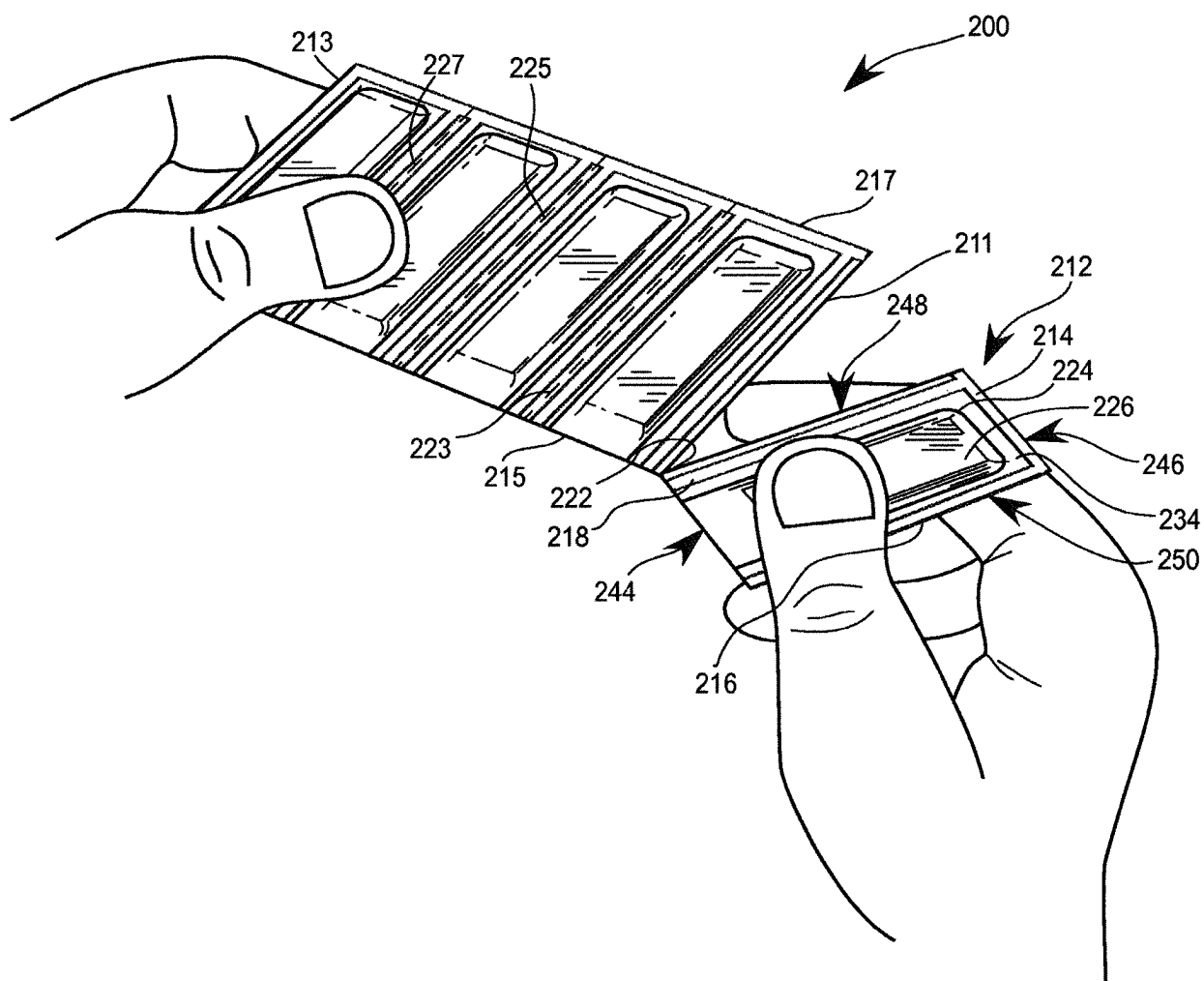


FIG. 16A

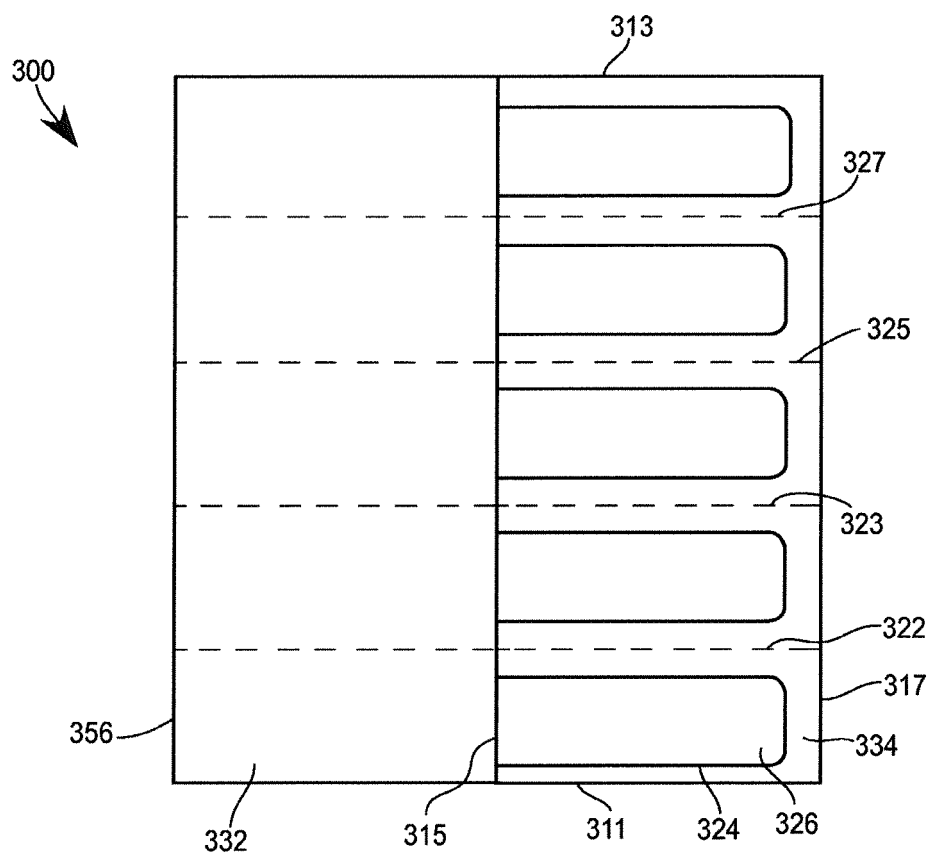


FIG. 16B

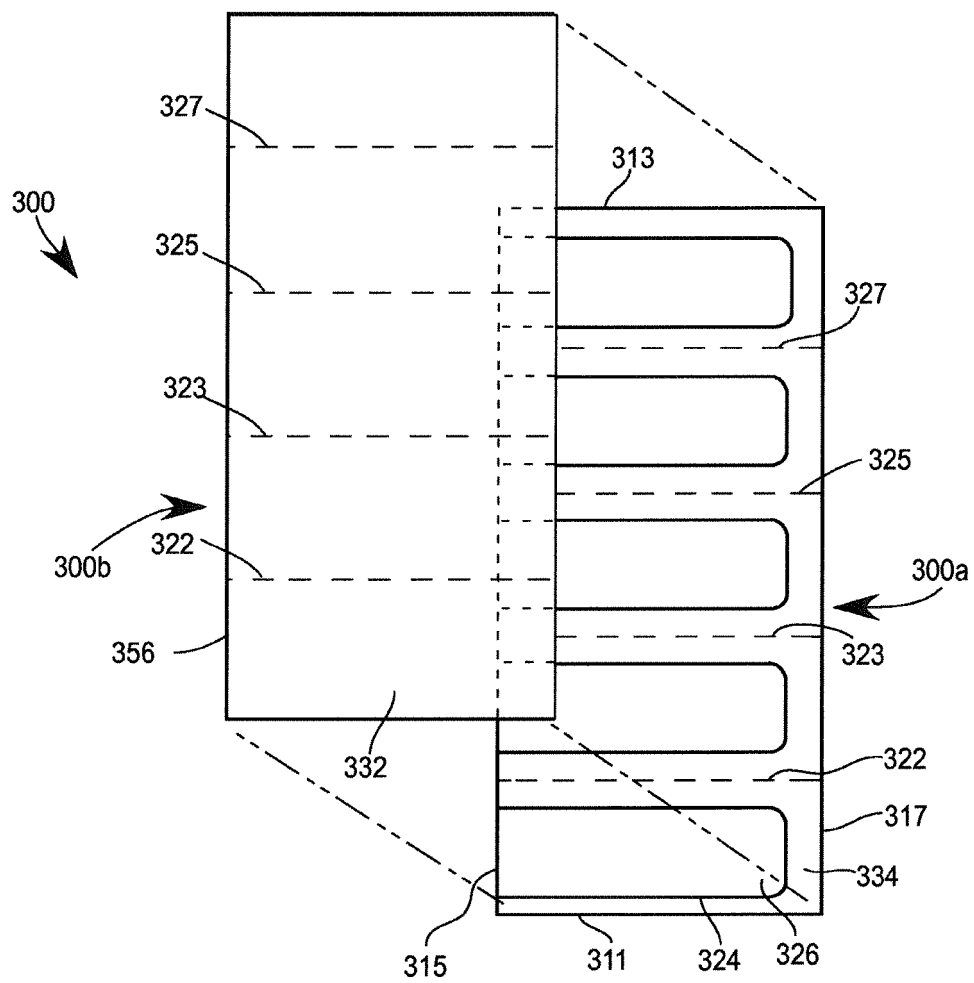


FIG. 16C

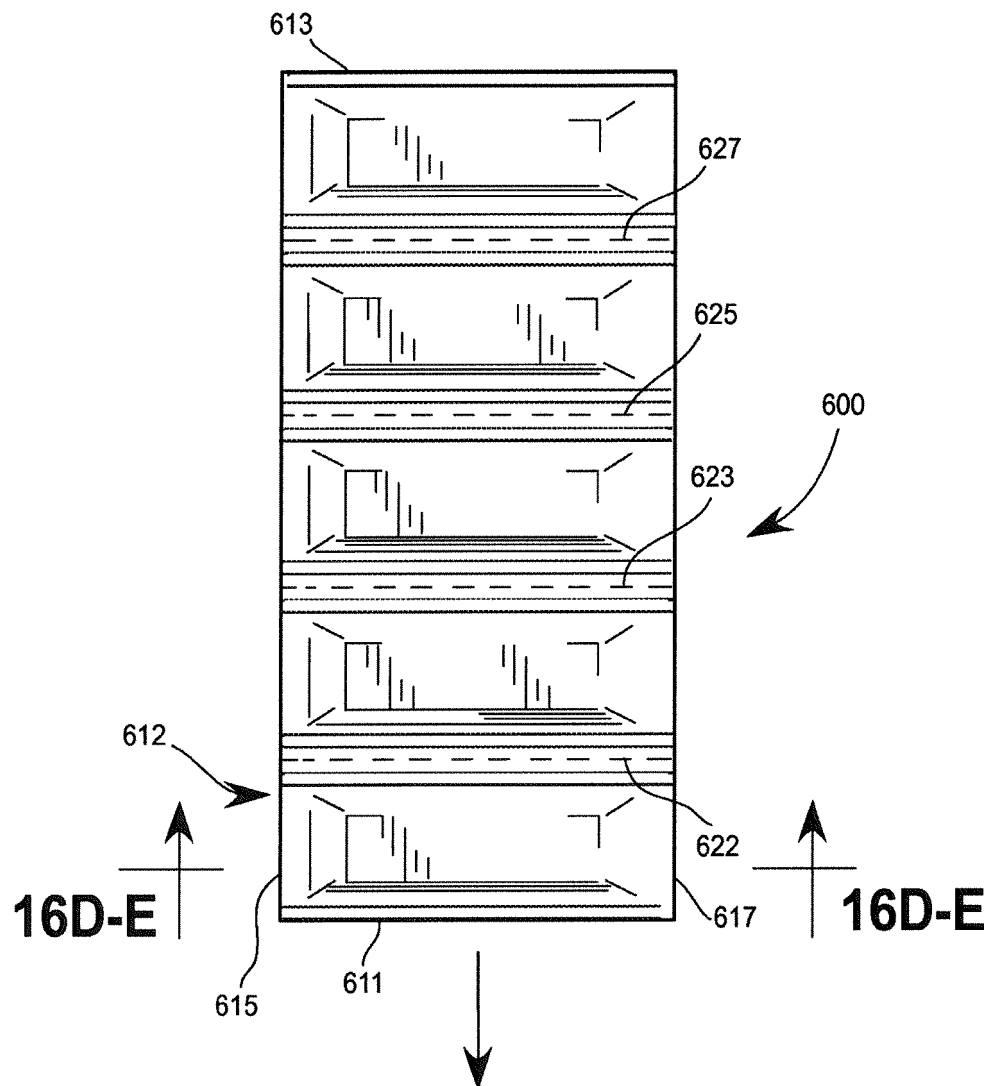


FIG. 16D

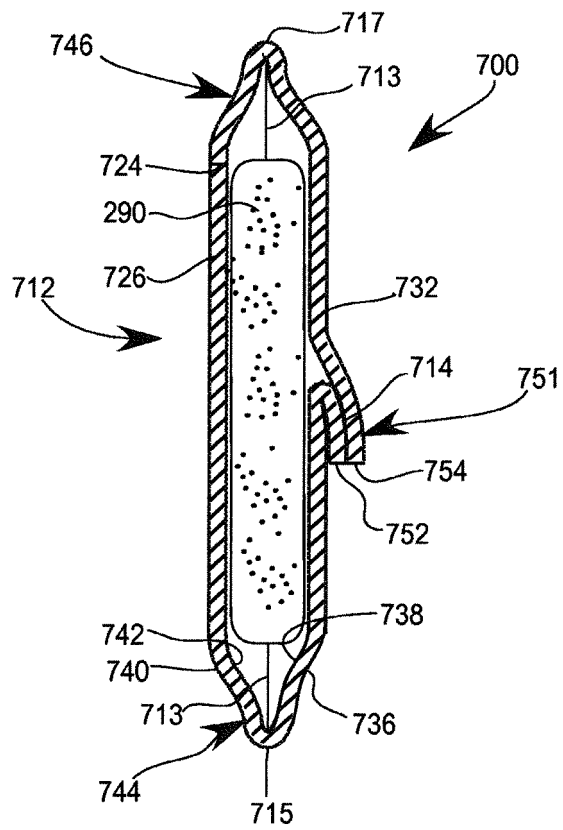


FIG. 16E

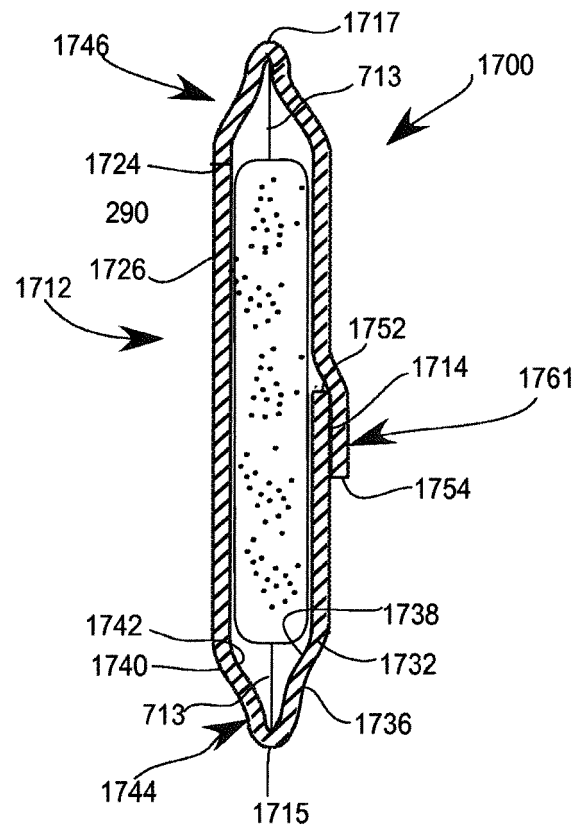


FIG. 17

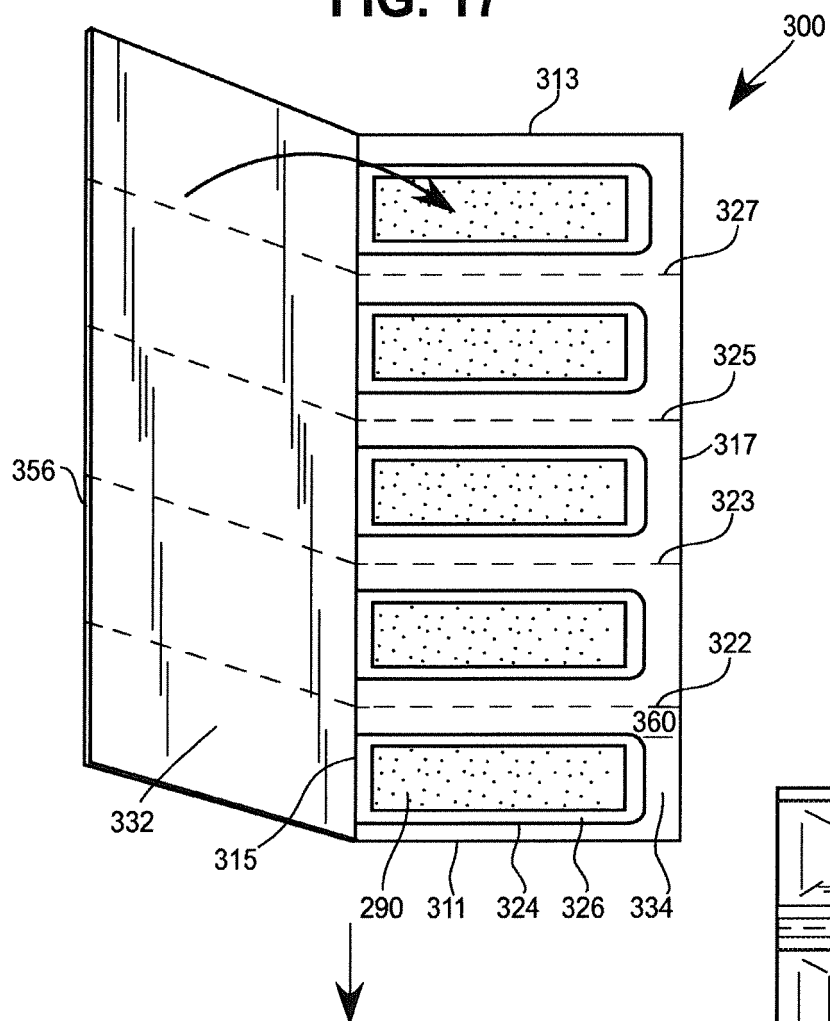


FIG. 18

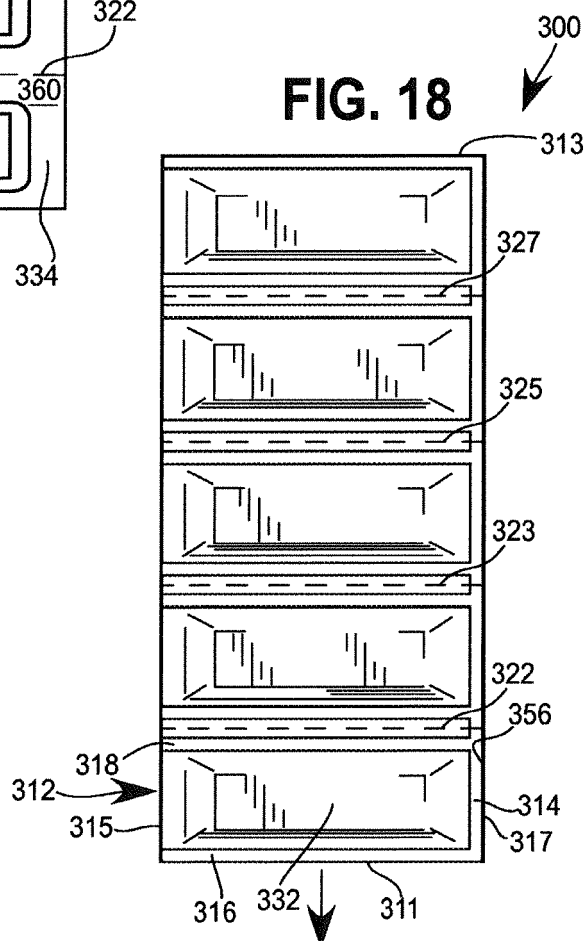


FIG. 19

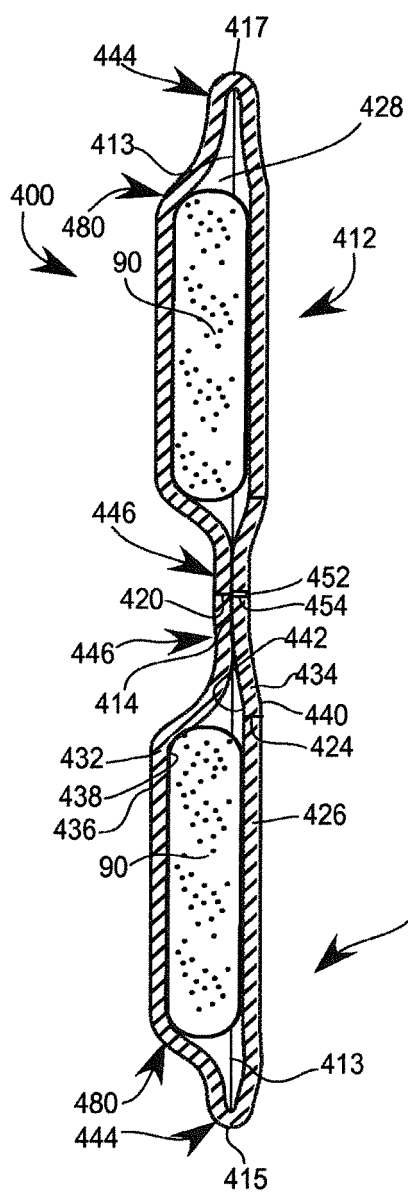


FIG. 20

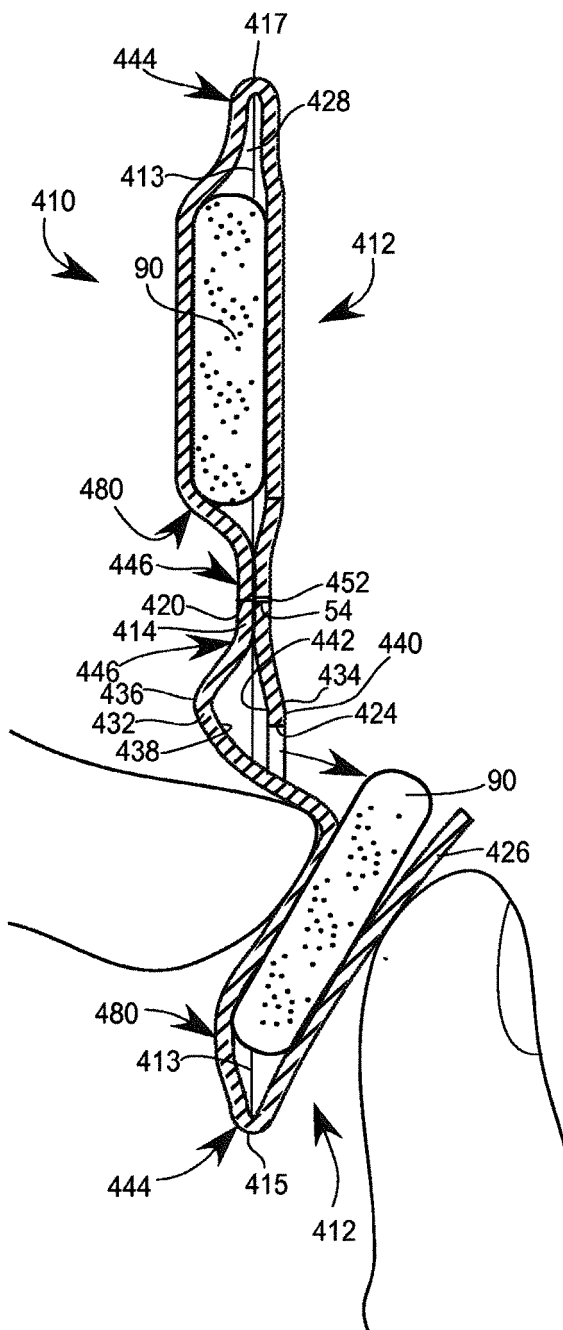


FIG. 21

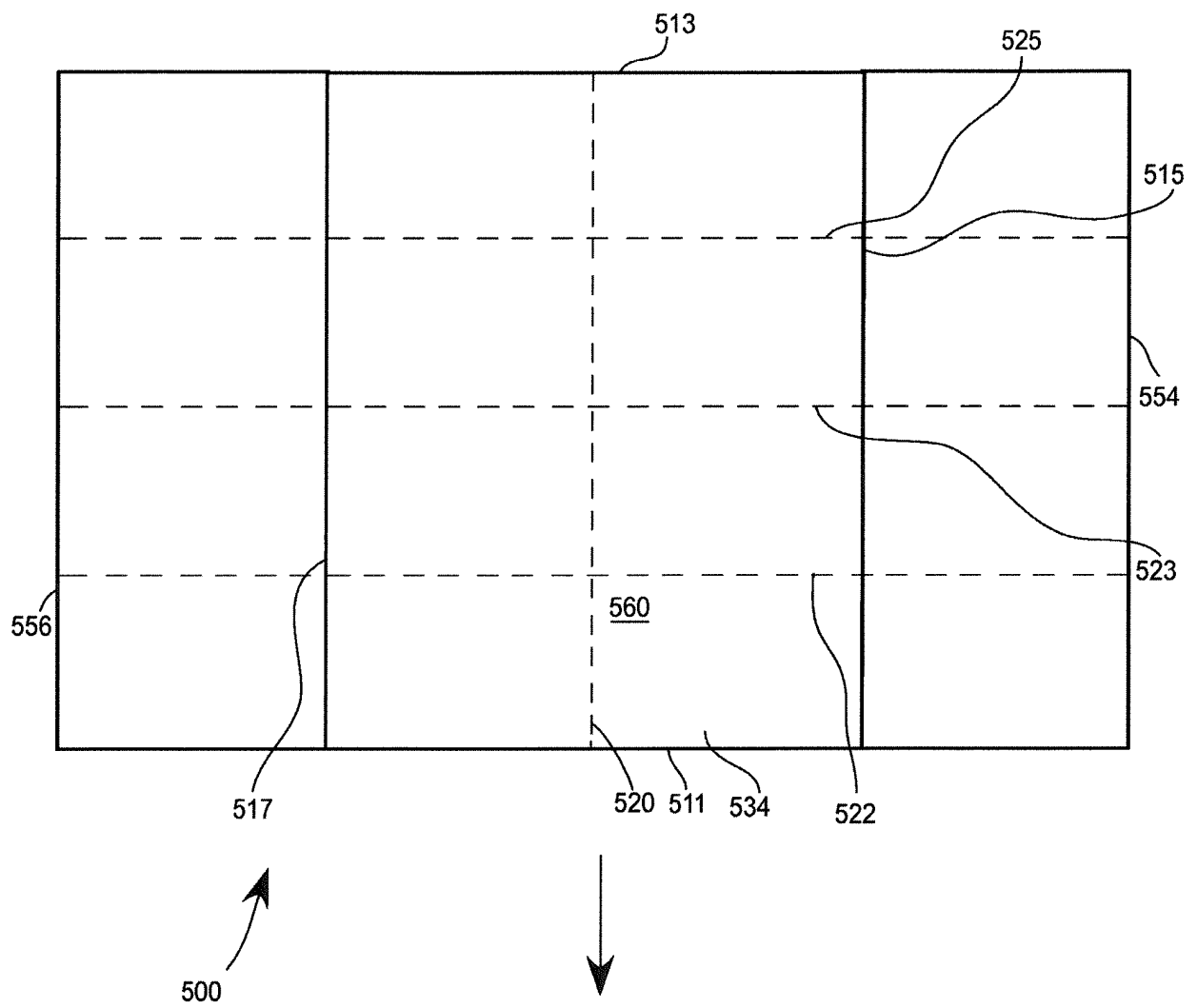


FIG. 22A

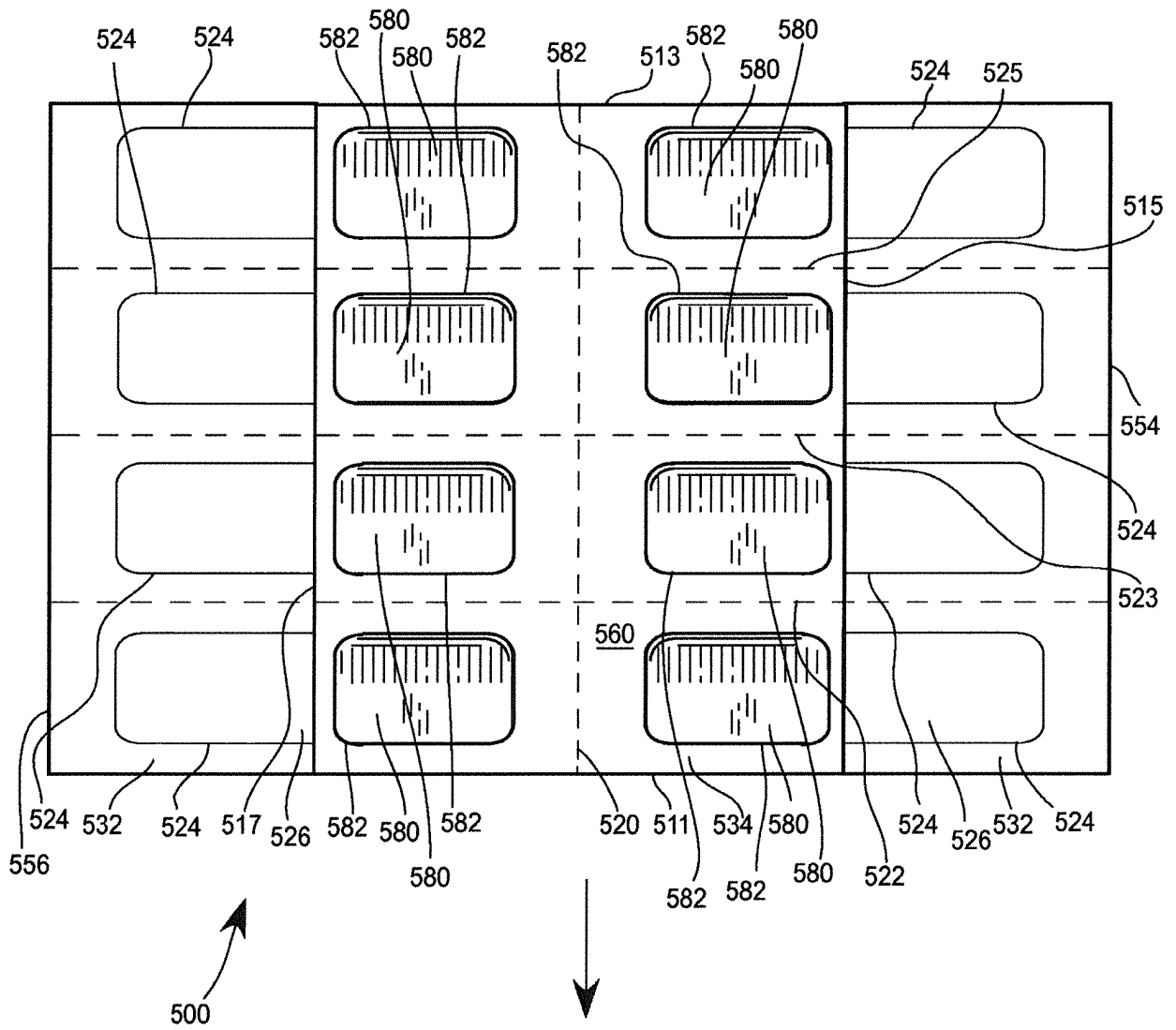


FIG. 22B

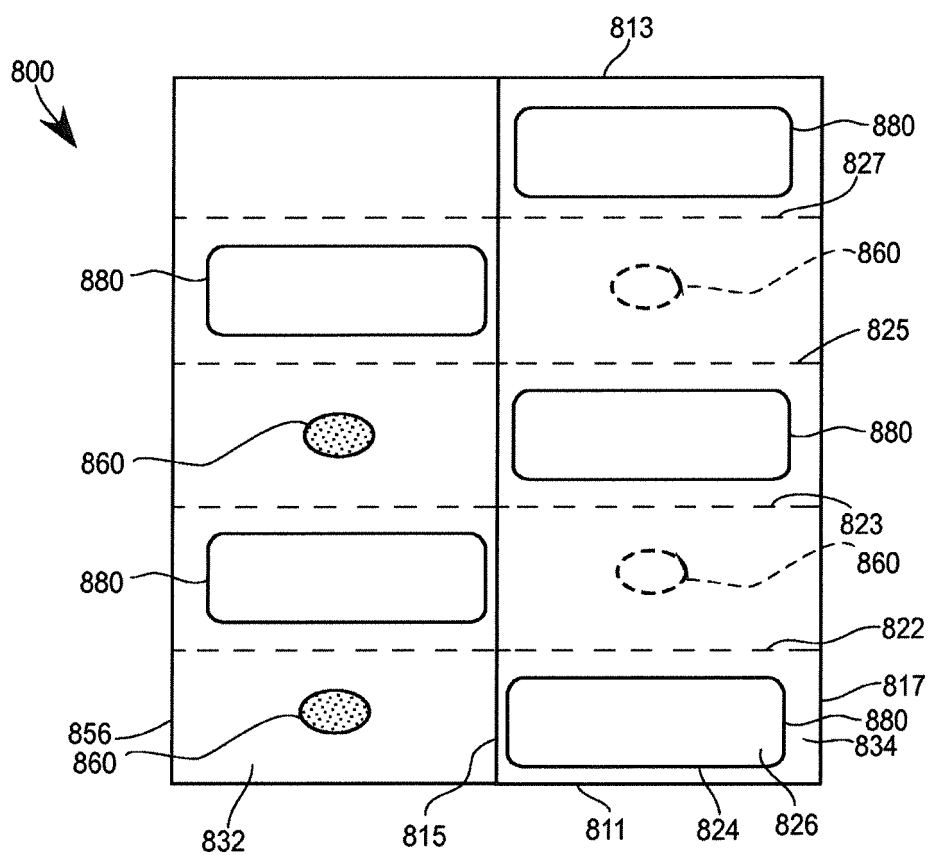
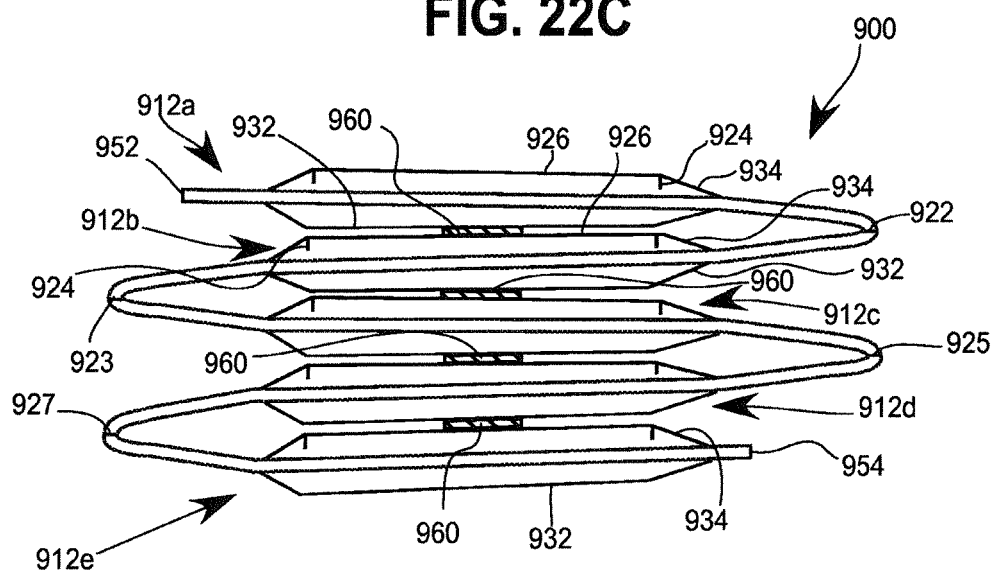
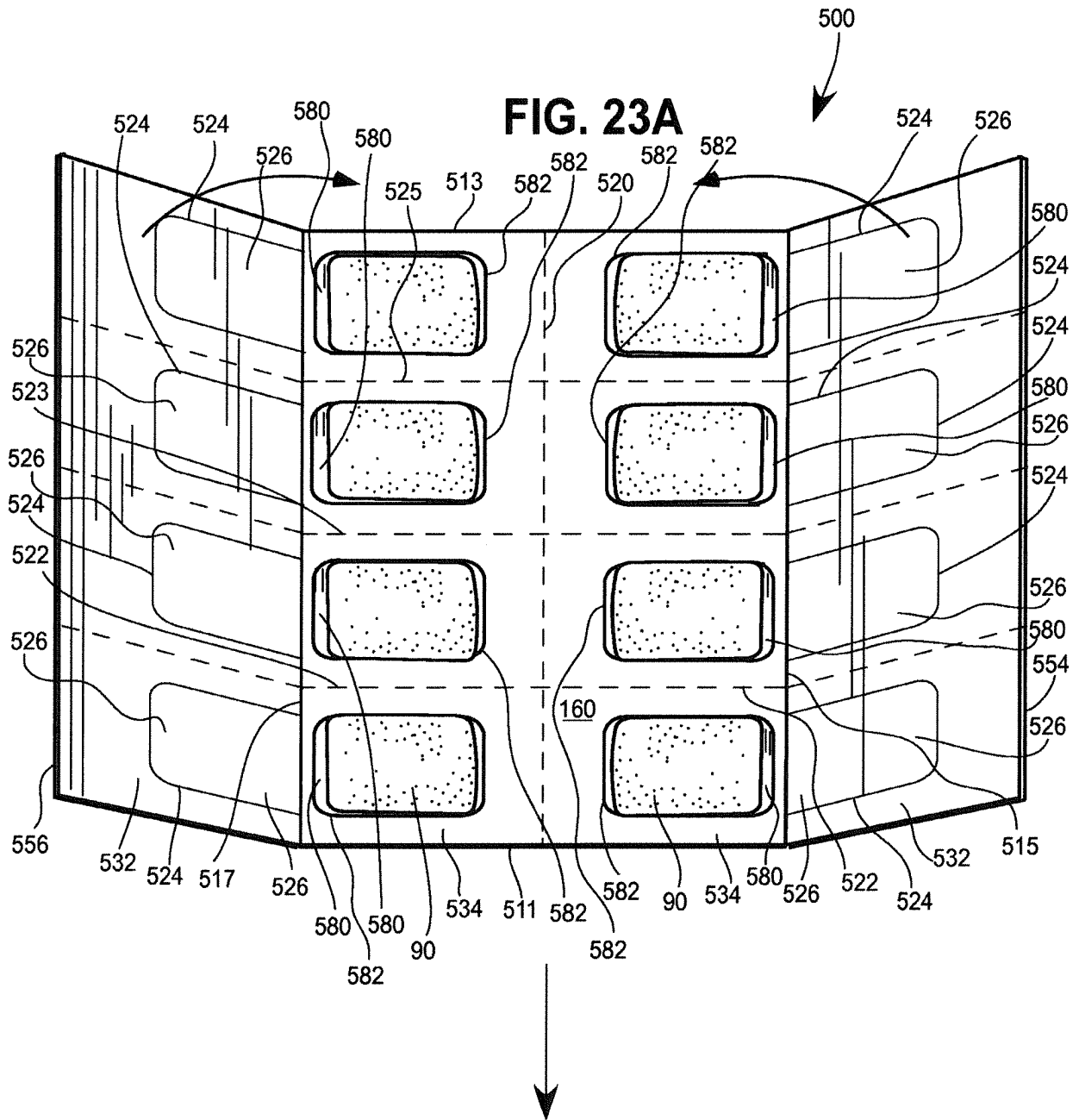


FIG. 22C





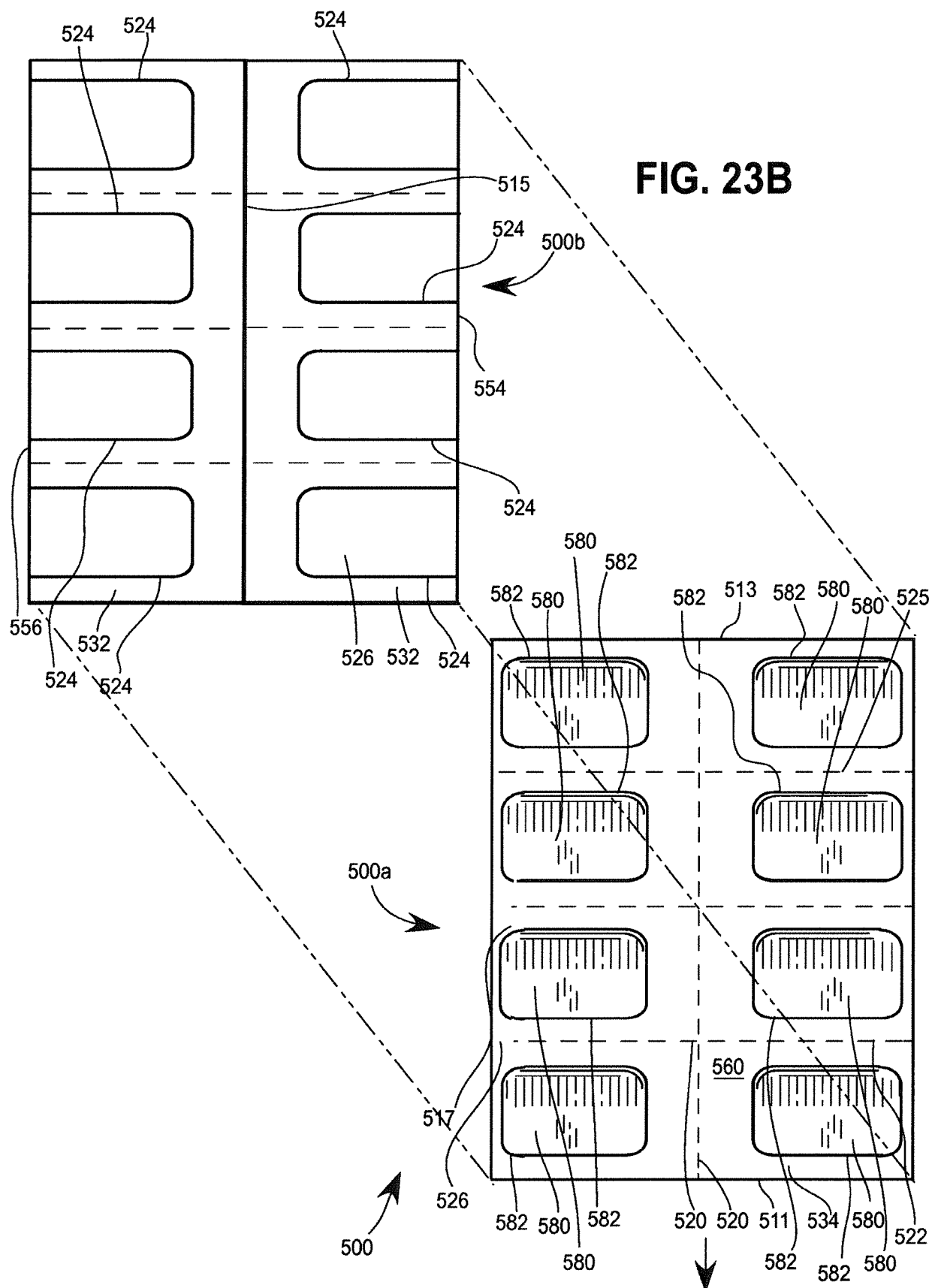


FIG. 24

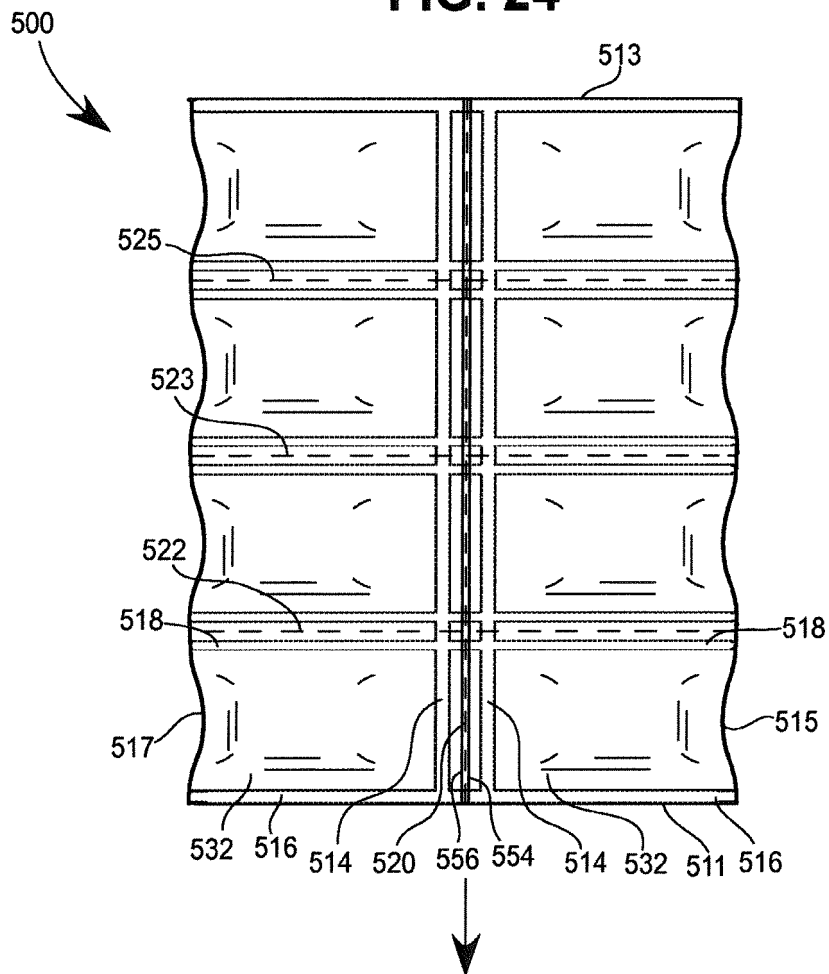


FIG. 25

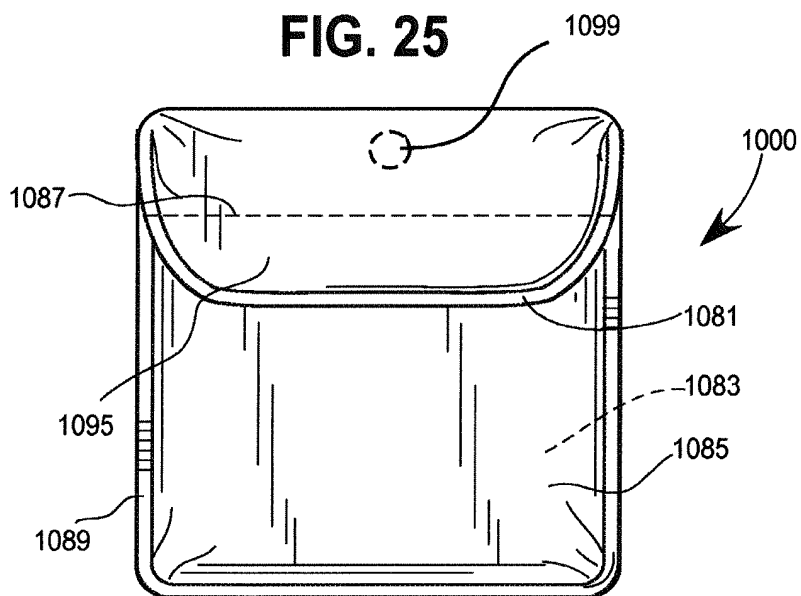


FIG. 26

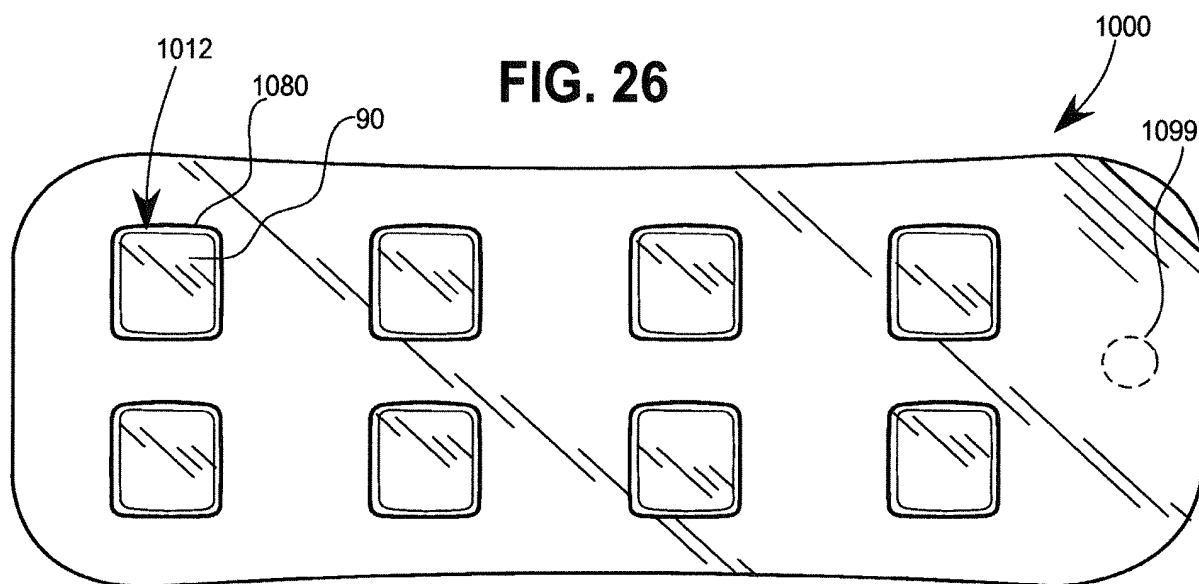


FIG. 27

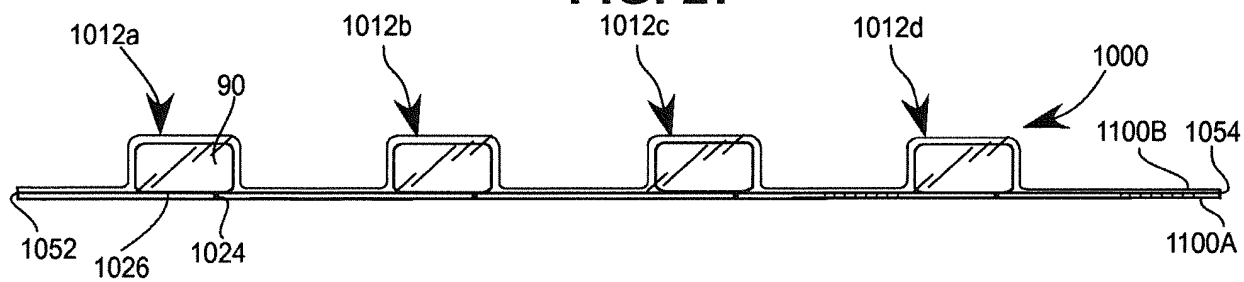


FIG. 28

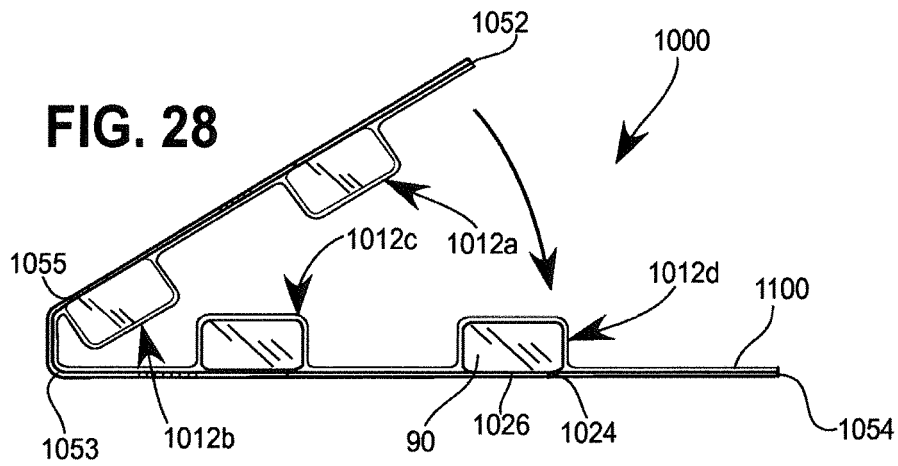


FIG. 29

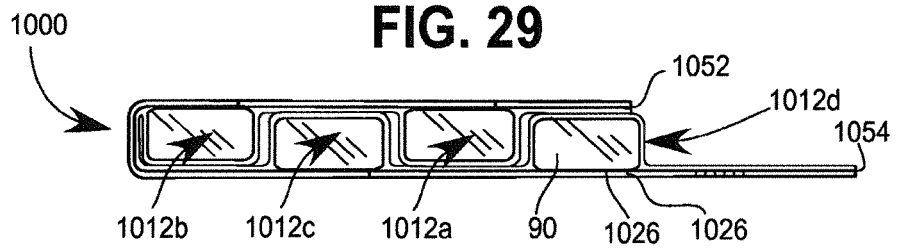


FIG. 30

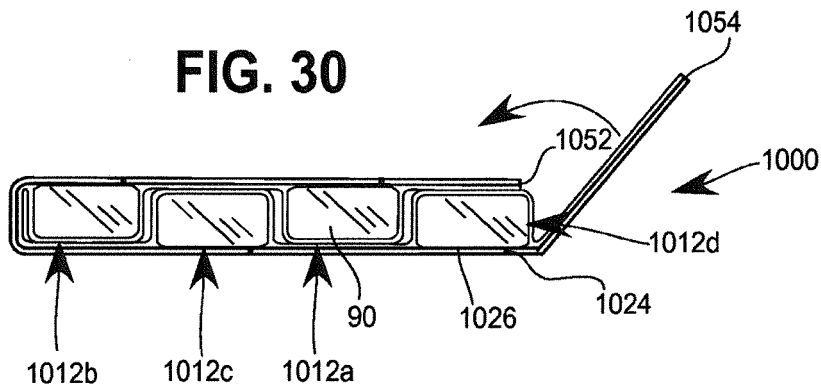


FIG. 31

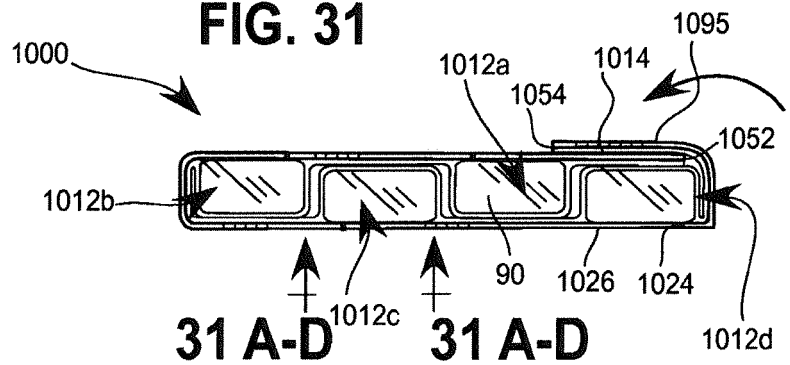


FIG. 31A

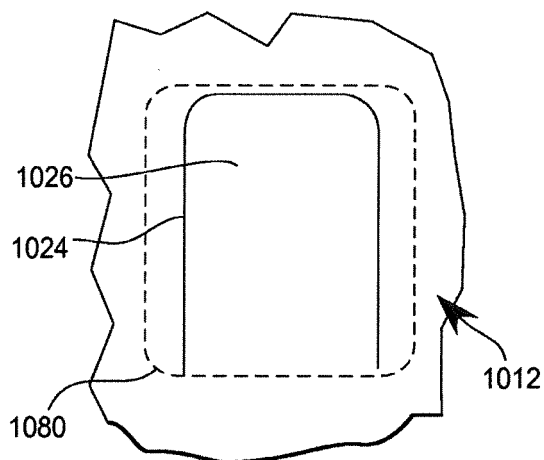


FIG. 31B

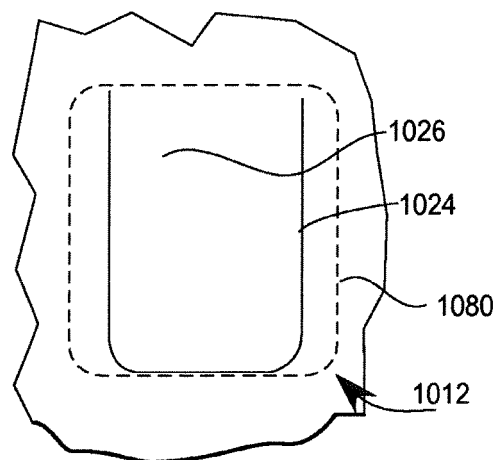


FIG. 31C

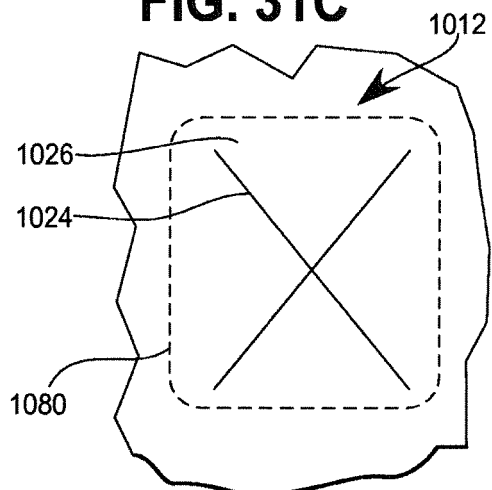


FIG. 31D

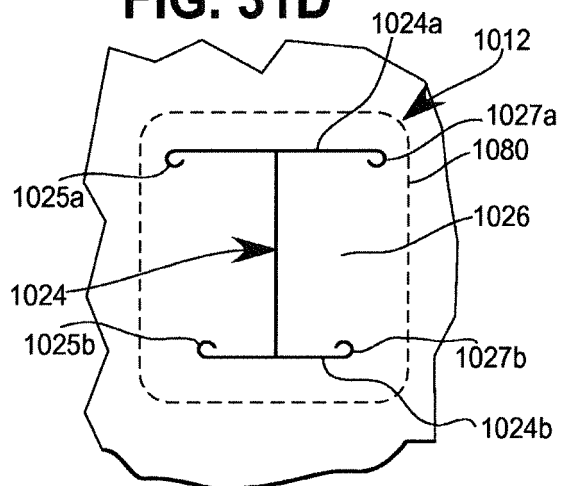


FIG. 31E

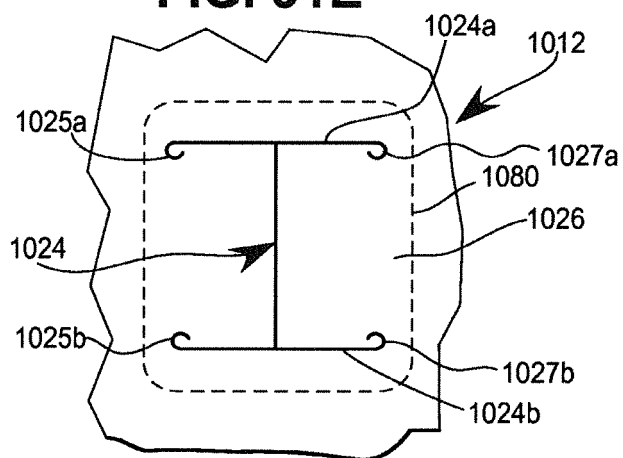


FIG. 31F

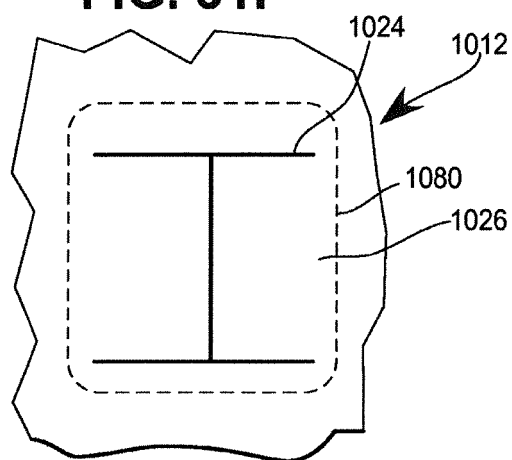
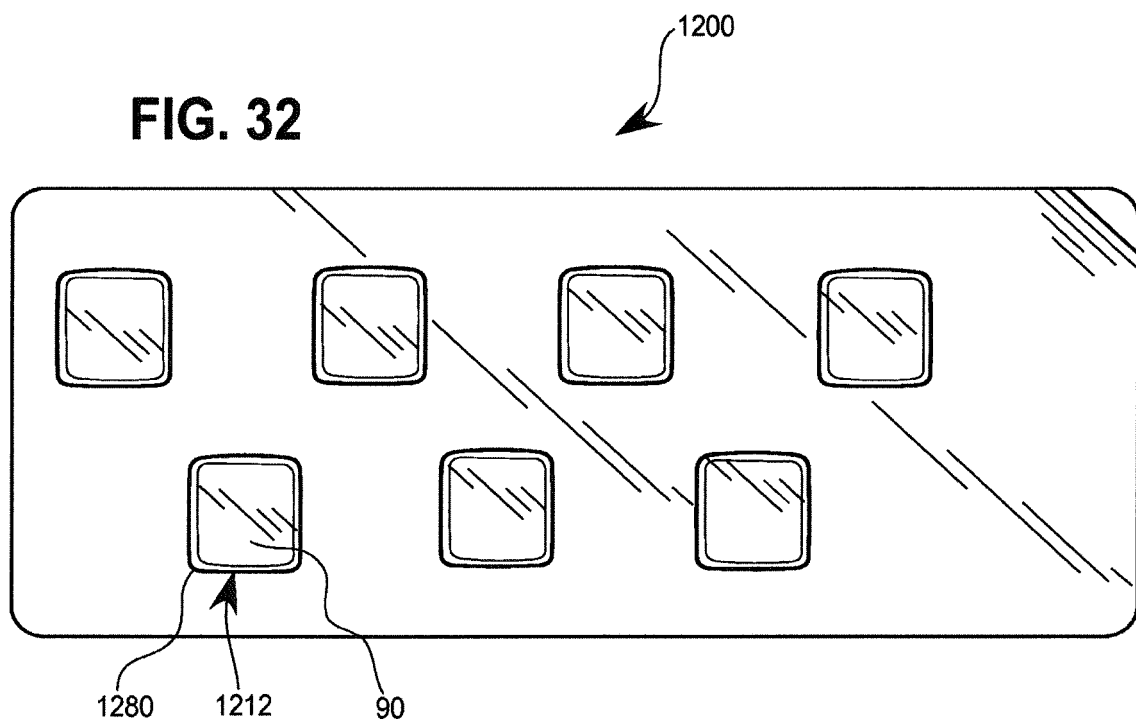
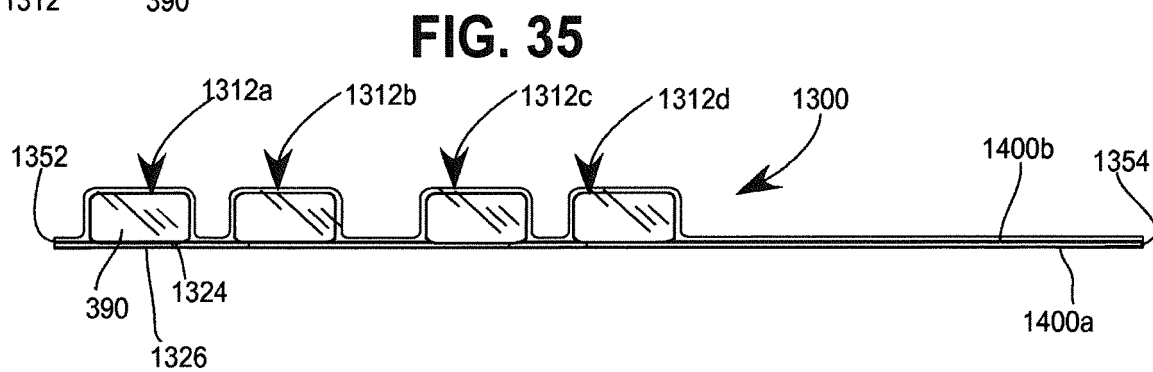
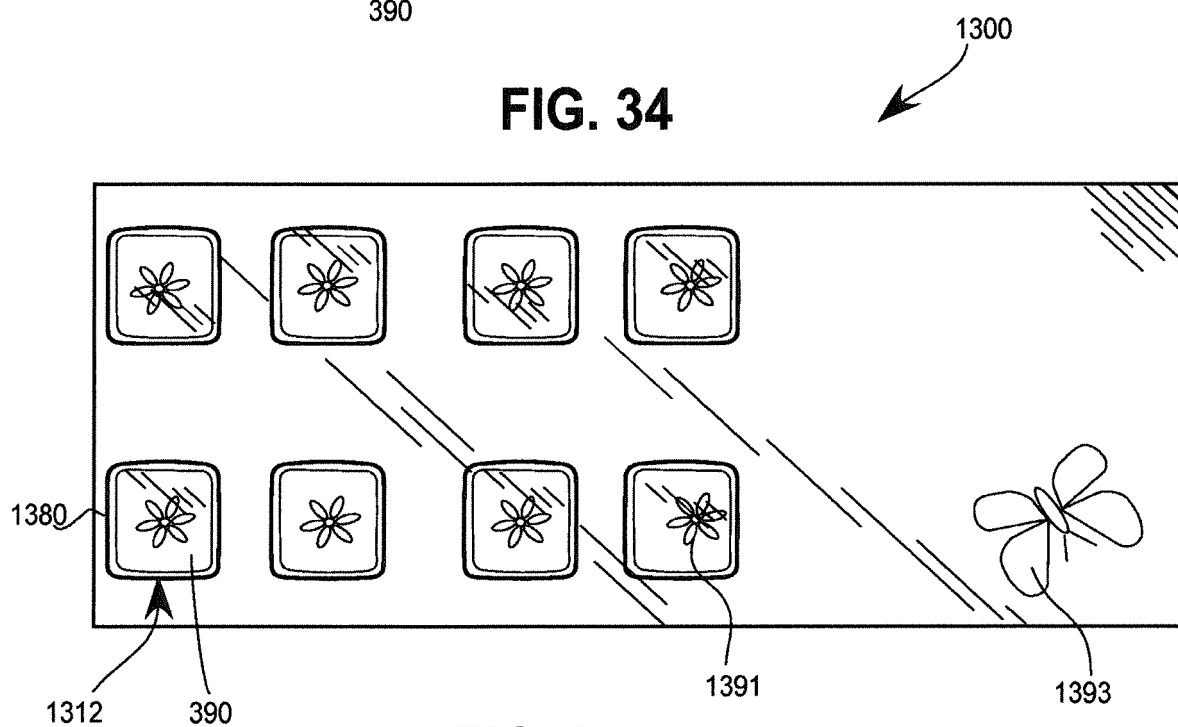
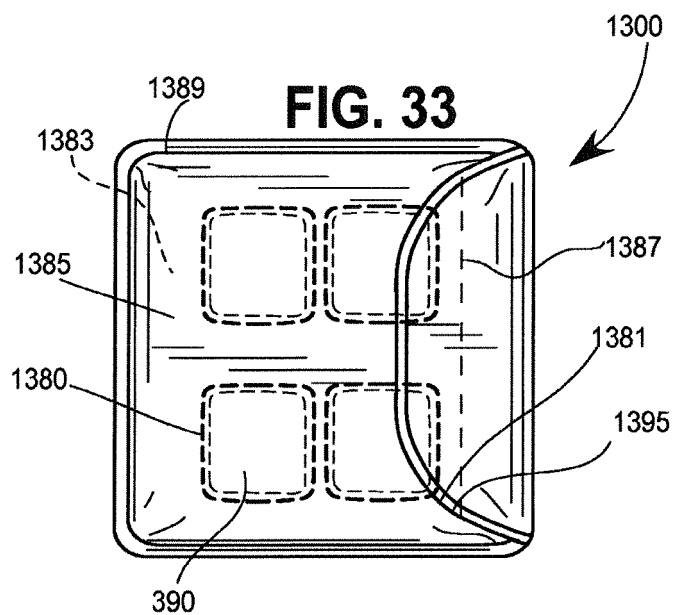


FIG. 32





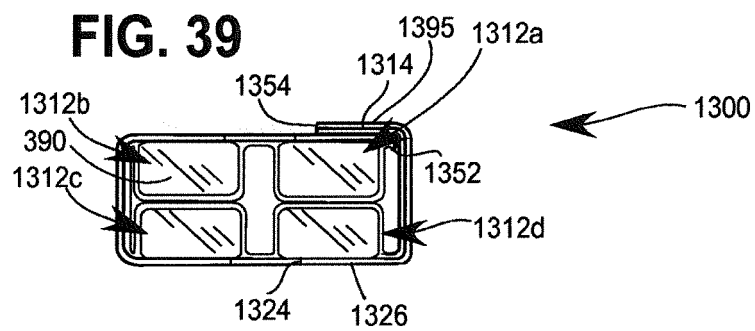
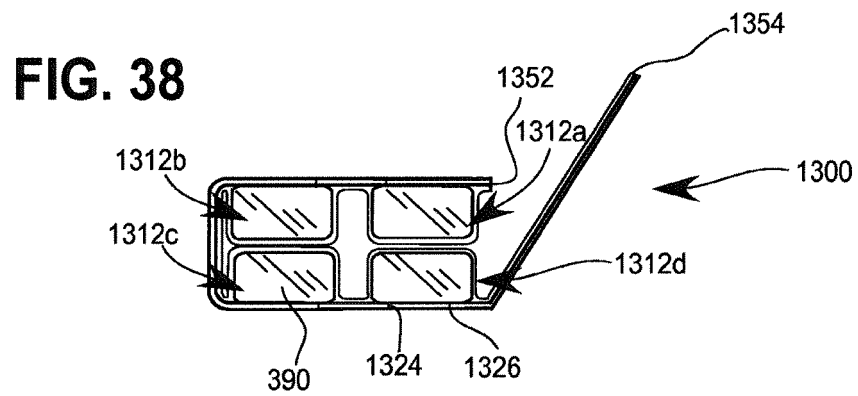
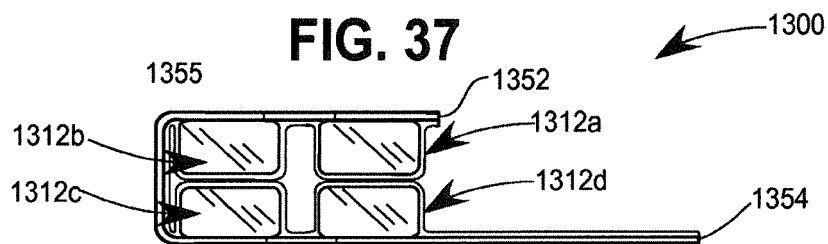
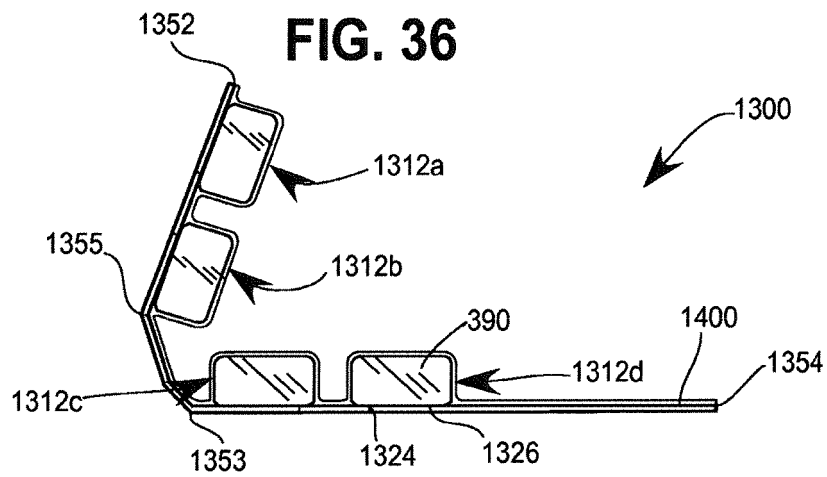


FIG. 41

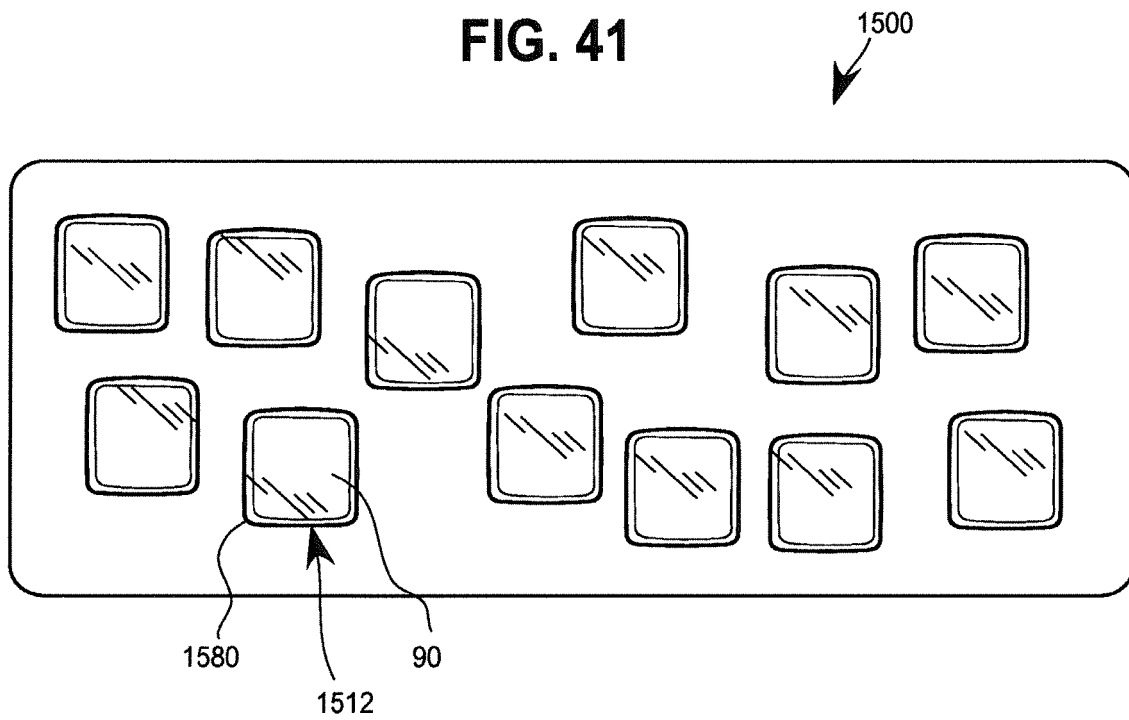
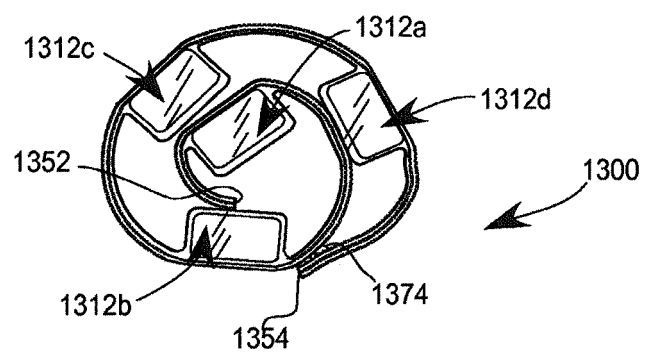


FIG. 40



REFERENCES CITED IN THE DESCRIPTION

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