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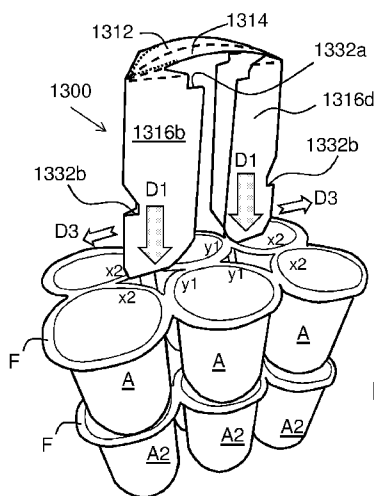


FIGURE 53

(57) **Abstract:** A package comprising: a group of articles (A) arranged in one or more tiers; an engaging member (F); and a handle (1300) attached to the group of articles via the engaging member. The handle comprising: a handle portion (1314) structured and arranged for being grasped by a user and at least one hook (1316a, b) coupled to the handle portion and comprising at least one tooth (1332a, b). The at least one hook comprising at least two hook panels (1316a, b) folded with respect to one another and each comprising at least one tooth, at least part of the handle being received in an aperture (H) defined in the engaging member such that the at least one tooth of each of the at least two hook panels engages the engaging member and thereby the group of articles, whereby the handle is connected to the group of articles.

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PACKAGE WITH CARRYING HANDLE AND BLANK THEREFOR

FIELD OF THE INVENTION

[001] The present invention relates to an attachable carrying handle by which an article may be carried and/or by which one or more articles may be held together; more particularly, but not exclusively, the invention relates to a package comprising an attachable carrying handle; to one or more blanks for forming an attachable handle; to a reinforced carrying handle; and to a top cover for providing a bill-board advertising area and/or for protecting articles held in the package. Further specifically but not exclusively, the top cover may be held against a group of articles by the attachable carrying handle.

BACKGROUND OF THE INVENTION

[002] In the field of packaging, it is often required to provide consumers with a package comprising multiple primary products. Such multi-packs are desirable for shipping and distribution and for display of promotional information. For cost and environmental considerations, such cartons or carriers need to be formed from as little material as possible and cause as little wastage in the materials from which they are formed as possible. Another consideration is the strength of the packaging and its suitability for holding and transporting large weights of articles. A further consideration is the comfort of the consumer when carrying or handling the packaged products for transporting them through a store and onwards to their home.

[003] The present invention seeks to provide one or more improvements in the field of packaging by providing an attachable carrying handle and a package comprising an attachable carrying handle. In some embodiments, the invention provides a

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supplementary panel or top cover for presenting information or advertising graphics. The top cover is attached to an article group and held in place thereon by the attachable carrying handle. Another aspect of the invention provides a carrying handle that is reinforced.

SUMMARY OF INVENTION

[004] The present invention seeks to provide an improvement in the field of packaging. Aspects of the invention relate to a package, a carrying handle, a kit of parts and a blank as defined in the appended claims.

[005] According to a first aspect of the invention for which protection is sought, there is provided a package comprising a group of articles arranged in one or more tiers; an engaging member joined to the group of articles having a lifting surface; and a handle attached to the group of articles via engagement of the handle with the engaging member, the handle comprising a handle portion structured and arranged for being grasped by a user and at least one hook coupled to the handle portion, the at least one hook comprising at least two hook panels folded with respect to one another and each comprising at least one tooth, at least part of the handle being received in an aperture defined in the engaging member such that the at least one tooth of each of the at least two hook panels engages the lifting surface of the engaging member, whereby the handle is connected to the group of articles.

[006] Preferably, the at least one hook comprises two hooks, and each of the two hooks comprises two hook panels folded with respect to one another and wherein a first pair of hook panels is coupled to a first end of the handle portion, and a second pair of hook panels is coupled to a second end of the handle portion opposing the first end.

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[007] Additionally, the said at least two hook panels may be folded with respect to one another at an angle relative to one another such that a cross-section through the at least two hook panels is substantially "V"-shaped.

[008] Preferably, at least one tooth of a first of said at least two hook panels of one of the hooks has an engaging edge that is disposed, at least in part, in the same plane as an engaging edge of a tooth of a second of said at least two hook panels, such that the two teeth simultaneously engage the lifting surface of the engaging member at spaced locations.

[009] Preferably, the handle portion is coupled to said at least one hook by one or more gusset panels such that the handle portion is foldable at an angle relative to the at least one hook and into flat face contacting relationship with an upper surface of the group of articles.

[0010] Preferably, each of the one or more tiers comprises an array of articles having a dimension of at least two articles by at least two articles, wherein each of the articles comprises a flange and wherein each article is frangibly connected to at least two adjacent articles by their respective flanges.

[0011] The engaging member may be formed from at least a portion of the flange of one or more of the articles of the group, and the at least one tooth of each hook panel engages a separate portion of a lowermost surface of the flange of one or more of the articles of the group. Alternatively, the engaging member may be formed from an insert, wherein the insert comprises a panel having an aperture for receiving the tooth and the tooth engages a lowermost surface of the panel of the insert.

[0012] The package may further comprise a top cover comprising a primary panel having at least one aperture, said at least part of the at least one hook of the handle

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is additionally received in the at least one aperture of the primary panel, and the top cover is attached to the group of articles by virtue of the connection of the handle to the group of articles.

[0013] Preferably, the package may further comprise at least one reinforcement panel hinged to a hook panel and/or hinged to the handle portion, said at least one reinforcement panel being folded into a substantially flat-face contacting relationship with the said hook panel and/or said handle portion.

[0014] The at least one tooth of each hook may project from an outer edge of a hook panel, the at least one reinforcement panel may be hinged to a hook panel and may comprise an outer edge that has a shape similar to the shape of an outer edge of the hook panel and the reinforcement panel may reinforce the at least one tooth.

Preferably, aforesaid one or more reinforcement panels is hinged to at least one tooth. Preferably, at least a portion of the at least one hook has a cross-section that is substantially chevron-shaped.

[0015] The top cover may further comprise one or more end panels and/or one or more side panels hinged to the primary panel and wherein the at least one aperture of the primary panel may be elliptical in shape.

[0016] The or each hook panel may comprise a number of teeth selected from the group consisting of: one tooth, two teeth, three teeth and four teeth.

[0017] According to a second aspect of the invention for which protection is sought, there is provided a carrying handle comprising a handle portion and at least one hook, the handle portion being structured and arranged for being grasped by a user and the at least one hook comprising at least two hook panels each coupled to the handle portion, the at least two hook panels being folded with respect to one another

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and each having at least one tooth, wherein each tooth extends from a respective one of the at least two hook panels for engaging with an engaging member of an article group such that the carrying handle is suitable for being attached to an article group.

[0018] The at least one hook may comprise two hooks, a first hook coupled to a first end of the handle portion and a second hook coupled to a second end of the handle portion opposing the first end and wherein each hook comprises at least two hook panels, folded with respect one another and each having at least one tooth.

[0019] Preferably, the carrying handle may further comprise gusset panels for at least partially coupling each of the at least one hooks to the handle portion.

[0020] The at least one tooth of each of the at least two hook panels may extend from a respective one of the at least two hook panels to form a ratchet and the carrying handle may further comprise one or more reinforcement panels hinged to the at least one hook and/or to the handle portion.

[0021] Preferably, the one or more reinforcement panels may comprise at least two reinforcement panels hinged to the at least two hook panels via respective hinged connections. Additionally, the at least one hook may comprise two hooks each comprising a pair of hook panels coupled to a respective one of opposed ends of the handle portion, and said one or more reinforcement panels may comprise four reinforcement panels, the four reinforcement panels being hinged to each hook panel of said two pairs of hook panels via respective hinged connections.

[0022] Preferably, the carrying handle further comprises a gusset panel coupling each of the at least two hook panels to the handle portion, wherein none of the one or more reinforcement panels overlaps or reinforces said gusset panels.

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[0023] According to a third aspect of the invention for which protection is sought, there is provided a blank for forming a carrying handle comprising a handle portion structured and arranged for being grasped by a user and at least one hook coupled to the handle portion, the blank comprising at least two hook panels foldable with respect to one another and each comprising at least one tooth, and a handle portion, at least part of the handle being configured such that it can be received in an aperture defined in an engaging member of an article array such that the at least one tooth of each of the at least two hook panels can engage such an engaging member, whereby the carrying handle formed from the blank is attachable to the group of articles.

[0024] Within the scope of this application it is envisaged that the various aspects, embodiments, examples, features and alternatives set out in the preceding paragraphs, in the claims and/or in the following description and drawings may be taken independently or in any combination thereof. For example, features described in connection with one embodiment are applicable to all embodiments unless there is incompatibility of features.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] Exemplary embodiments of the invention will now be described with reference to the accompanying drawings, in which:

[0026] FIGURE 1 is a plan view of a blank for forming an attachable carrying handle according to a first embodiment of the invention;

[0027] FIGURE 2 is a plan view of a blank for forming an attachable carrying handle according to a second embodiment of the invention;

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[0028] FIGURE 3 is a plan view of a blank for forming an attachable carrying handle according to a third embodiment of the invention;

[0029] FIGURE 4 is a perspective view from the front and side of an attachable carrying handle formed by folding the blank of Figure 1;

[0030] FIGURE 5 is a perspective view from the front and side of a four-tiered stack of arrayed articles;

[0031] FIGURE 6 is a perspective view from the front and side of the attachable carrying handle of Figure 4, being inserted into the four-tiered stack of arrayed articles of Figure 5;

[0032] FIGURE 7 is a perspective view from the bottom of the four-tiered stack of arrayed articles of Figure 5, showing the engagement of adjoined and co-operative hooks of the attachable carrying handle with the underside of an array of articles of the tiered stack;

[0033] FIGURE 8 is a perspective view from the top, front and side of the four-tiered stacked-array of Figure 5 being lifted by a user deploying the attachable carrying handle formed from the blank of Figure 1;

[0034] FIGURE 9 is a plan view of a blank for forming an attachable carrying handle according to a fourth embodiment of the invention;

[0035] FIGURE 10 is a plan view of a blank for forming an attachable carrying handle according to a fifth embodiment of the invention;

[0036] FIGURE 11 is a perspective view from above of the blank of Figure 9 being folded to form an attachable carrying handle;

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[0037] FIGURE 12 is a perspective view from of the underside of the blank of Figure 9 being folded to form an attachable carrying handle;

[0038] FIGURE 13 is a perspective view from above of the attachable carrying handle formed from the blank of Figure 9;

[0039] FIGURE 14 is a perspective view of the front and side of a two-tiered stack of six-arrayed articles held together as a unit by the attachable carrying handle of Figure 13;

[0040] FIGURE 15 is a perspective view from above of the package of Figure 14;

[0041] FIGURE 16 is a perspective view from above of the package of Figure 15 being lifted by a user deploying the attachable carrying handle;

[0042] FIGURE 17 is a plan view of a blank for forming an attachable carrying handle according to a sixth embodiment of the invention;

[0043] FIGURE 18 is a plan view of a blank for forming an attachable carrying handle according to a seventh embodiment of the invention;

[0044] FIGURE 19 is a perspective view from above of a package formed from an attachable carrying handle formed from the blank of Figure 17 when attached to an array of six adjoining articles. The package is shown when being lifted by a user deploying the attachable carrying handle;

[0045] FIGURE 20 is a perspective view from the bottom of the package of Figure 19, showing the engagement of adjoining and co-operative hooks of the attachable carrying handle with the underside of an array of six adjoining articles;

[0046] FIGURE 21 is a plan view of a blank for forming a top cover according to a first embodiment of a further aspect of the invention;

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[0047] FIGURE 22 is a perspective view from above of the front and side of a two-tiered stack of articles with the top cover formed from the blank of Figure 21 being folded thereabout;

[0048] FIGURE 23 is a plan view of a blank for forming a top cover according to a second embodiment of the further aspect of the invention;

[0049] FIGURE 24 is a perspective view from above of the front and side of a two-tiered stack of articles with the top cover formed from the blank of Figure 23 folded thereabout;

[0050] FIGURE 25 is a perspective view from above of the front and side of a two-tiered stack of articles, with the top cover of Figure 23 folded thereabout and with the two tiers and the top cover held together as a unit by the attachable carrying handle of Figure 9;

[0051] FIGURE 26 is a plan view of a blank for forming a top cover according to a third embodiment of the further aspect of the invention;

[0052] FIGURE 27 is a perspective view from above of the front and side of a two-tiered stack of articles with the top cover formed from the blank of Figure 26 folded thereabout;

[0053] FIGURE 28 is a plan view of a blank for forming a top cover according to a fourth embodiment of the further aspect of the invention;

[0054] FIGURE 29 is a perspective view from above of the front and side of a two-tiered stack of articles with the top cover formed from the blank of Figure 28 folded thereabout, and with the two tiers and the top cover held together as a unit by an attachable carrying handle shown in Figures 33 to 35;

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[0055] FIGURE 30 is a perspective view from above of the top and side of the unitary package of Figure 29, wherein a user is grasping the attachable carrying handle for lifting the package;

[0056] FIGURE 31 is a plan view of a blank for forming a top cover according to a fifth embodiment of the further aspect of the invention;

[0057] FIGURE 32 is a perspective view from above of the top, front and side of a two-tiered stack of articles with the top cover formed from the blank of Figure 31 folded thereabout;

[0058] FIGURE 33 is a plan view of a blank for forming a carrying handle according to an eighth embodiment of the invention;

[0059] FIGURE 34 is an illustration of the blank of Figure 33 being folded to form a carrying handle;

[0060] FIGURE 35 is an illustration of the inside of the carrying handle of Figure 34 in a further step of the handle's construction;

[0061] FIGURE 36 is an illustration of the carrying handle formed from the blank of Figure 33 being attached to a two-tiered stack of articles, each tier comprising a 2 x 3 grouped array of articles;

[0062] FIGURE 37 is a view from the bottom of a unitary package formed from the carrying handle of Figure 33 and the two-tiered stacked array of Figure 36, showing the teeth of the carrying handle contacting the underside of the engagement member of the stacked array;

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[0063] FIGURE 38 is a perspective view from above of the top and side of the unitary package of Figures 36 and 37, wherein a user is grasping the carrying handle for lifting the package;

[0064] FIGURE 39 is a plan view of a blank for forming a carrying handle according to a ninth embodiment of the invention;

[0065] FIGURE 40 is an illustration of the blank of Figure 39 being folded to form a carrying handle;

[0066] FIGURE 41 is an illustration of the inside of the carrying handle ready for insertion into a group of articles or container;

[0067] FIGURE 42 is a plan view of a blank for forming an attachable carrying handle according to a tenth embodiment of the invention, for a single-tier handle;

[0068] FIGURE 43 is a plan view of a blank for forming an attachable carrying handle according to an eleventh embodiment of the invention, for a two-tier handle;

[0069] FIGURE 44 is a perspective view from the front and side of an attachable carrying handle formed by folding the blank of Figure 42;

[0070] FIGURE 45 is a perspective view from the front and side of the attachable carrying handle, folded further;

[0071] FIGURE 46 is a perspective view from the front and side of a single tier of arrayed articles;

[0072] FIGURE 47 is a perspective view from the front and side of the attachable carrying handle of Figure 45, being inserted into the single tier of arrayed articles of Figure 46;

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[0073] FIGURE 48 is a perspective view from the top, front and side of the single tier of arrayed articles of Figure 46 being lifted by a user deploying the attachable carrying handle formed from the blank of Figure 42;

[0074] FIGURE 49 is a plan view from the top of contact points where the attachable carrying handle engages the single tier of arrayed articles as shown in Figure 48;

[0075] FIGURE 50 is a perspective view from the front and side of an attachable carrying handle formed by folding the blank of Figure 43;

[0076] FIGURE 51 is a perspective view from the front and side of the attachable carrying handle, folded further;

[0077] FIGURE 52 is a perspective view from the front and side of a two-tiered stack of arrayed articles;

[0078] FIGURE 53 is a perspective view from the front and side of the attachable carrying handle of Figure 51, being inserted into the two-tiered stack of arrayed articles of Figure 52;

[0079] FIGURE 54 is a perspective view from the top, front and side of the two-tiered stack of arrayed articles of Figure 52 being lifted by a user deploying the attachable carrying handle formed from the blank of Figure 43; and

[0080] FIGURE 55 is a plan view from the top of contact points where the attachable carrying handle engages the upper tier and the lower tier of the arrayed articles as shown in Figure 54.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS OF THE INVENTION

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[0081] Detailed descriptions of specific embodiments of the package, blanks, carrying handles and top covers are disclosed herein. It will be understood that the disclosed embodiments are merely examples of the way in which certain aspects of the invention can be implemented, and do not represent an exhaustive list of all of the ways the invention may be embodied. As used herein, the word “exemplary” is used expansively to refer to embodiments that serve as illustrations, specimens, models, or patterns. Indeed, it will be understood that the package, blanks, carrying handles and top covers described herein may be embodied in various and alternative forms. The Figures are not necessarily to scale, and some features may be exaggerated or minimised to show details of particular components. Well-known components, materials or methods are not necessarily described in great detail in order to avoid obscuring the present disclosure. Any specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the invention.

[0082] Figure 1 illustrates a blank 10 for forming a carrying handle according to a first embodiment; the blank 10 is shown in a folded condition in Figure 4 prior to use with a group of articles ‘A’ as shown in Figure 5. The carrying handle cooperates with the group of articles ‘A’ to form a package as illustrated in Figure 8.

[0083] In the exemplary embodiments, the packages show an exemplary arrangement of exemplary articles. For example, the arrangement is a matrix including rows and columns such as a 2x3 arrangement of articles. The carrying handles and top covers disclosed herein can be alternatively configured for other articles and/or different arrangements of articles.

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[0084] Referring to Figure 1, it can be seen that the blank 10 comprises a series of hinged and foldably connected panels cut and creased from a sheet of material. Any suitable substrate or combinations of substrate materials may be used for forming the blank 10, in a preferred embodiment, the sheet of material from which the blank 10 is cut is a paperboard sheet. Blank 10 may comprise a first handle panel or handle portion 14, and a reinforcing handle panel 12 hinged to first handle panel 14 along fold line 13. First and second hook panels 16a, 16b together form a hook 16a/16b in use. First and second hook panels 16a, 16b are hingedly connected to the first handle panel 14, indirectly along fold lines 27, 25 respectively that connect the first and second hook panels 16a, 16b to gusset panels that connect through fold lines 23, 31 to the first handle panel 14. First hook panel 16a is hingedly connected to hook panel 16b along a medial or central, longitudinally extending hook panel fold line 29. The first and second hook panels 16a, 16b may be symmetrical about the hook panel fold line 29, in other words the first and second hook panels 16a, 16b may be mirror images of one another.

[0085] In alternative embodiments, a spine panel may be provided to hingedly interconnect first hook panel 16a with second hook panel 16b. In such embodiments, the first handle panel 14 may be hingedly connected to the spine panel either in addition to the hinged connection to the first and second hook panels 16a, 16b, or as an alternative to the hinged connection to the first and second hook panels 16a, 16b.

[0086] The first handle panel 14 may comprise a substantially triangular first gusset panel defined in part by fold line 25 and in part by a fold line 21 disposed at an angular relationship to fold line 25. The first handle panel 14 may comprise a

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substantially triangular second gusset panel defined in part by fold line 27 and in part by a fold line 23 disposed at an angular relationship to fold line 27. In the illustrated embodiment, each of the fold lines 21, 23, 25, 27 converge at a common vertex.

However, in other embodiments, other arrangements are envisaged. For example, the fold lines 23, 27 may converge at a separate vertex to a vertex at which fold lines 21, 25 converge. Where the fold lines 21, 23, 25, 27 converge at a common vertex, the longitudinal hook panel fold line 29 may converge at the same vertex as well.

[0087] The first handle panel 14 may comprise a first tab 20 struck therefrom. The first tab 20 may be defined in part by a cut line, and in part by a fold line 19. In the illustrated embodiment, the cut line is arcuate or horseshoe shaped. In other embodiments, other shapes may be envisaged. The first tab 20 defines an aperture in the first handle panel 14 when the first tab 20 is folded out of the plane of the handle panel 14. In use, the aperture may be engaged by a user to carry a group of articles 'A' using the carrying handle 16a/16b/14. Reinforcing handle panel 12 may also comprise a second tab 18 struck therefrom. The second tab 18 may be defined in part by a cut line, and in part by a fold line 17. It is envisaged that the second tab 18 will be similar in shape to the first tab 20, and be arranged so that when reinforcing handle panel 12 is folded about fold line 13 to be in face contacting relationship with first handle panel 14, the second tab 18 is in registry with the first tab 20 such that when both the first and second tabs 20, 18 are folded out of the plane of the respective panels 14, 12, the apertures thereby formed in each of the first handle panel 14 and the reinforcing handle panel 12 are also in registry. The first handle panel 14 may comprise a pair of nicks or cuts or other weakened lines of severance 24. The weakened lines of severance 24 extend radially outwardly from the cut line defining the first tab 20. The pair of weakened lines of severance 24

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define a portion of the first handle panel therebetween, which may yield when a user engages with the first tab 20, and the aperture it defines, to carry the handle structure. In embodiments comprising the reinforcing handle panel 12 and a second tab 18, a pair of weakened lines of severance 22 may also be provided, extending outwardly from the cut line defining the second tab 18.

[0088] Each of the first and second hook panels 16a, 16b may comprise one or more teeth 30, each extending outwardly from the free side edge of the respective hook panel 16a, 16b. Each tooth 30 comprises a shoulder portion 32 defined by an engaging edge. The engaging edge or shoulder portion 32 may extend substantially perpendicularly to the side edge of the hook panel 16a, 16b from which it extends. In other embodiments, other shapes and arrangements are envisaged such that each tooth 30 may form a hooking element. Each tooth 30 may also comprise a ramp or slope 34 along the lower edge of the tooth 30 opposing the shoulder portion 32 so as to form a ratchet type structure. The lowermost teeth 30 on the first and second hook panels 16a, 16b may comprise sloped edges 36a, 36b respectively, which form a leading edge of each hook panel 16a/16b. The sloped edges 36a, 36b may extend from the lowermost teeth 30 substantially to the hook panel fold line 29.

[0089] The material from which a blank 10 of Figure 1 may be formed is paperboard. The handle portion 14/12 may be of sufficient size and/or shape such that it can be held or grasped by a user. The handle portion 14, 12 may be formed from more one or more panels of material 14, 12 and may comprise any one or more or a combination of: apertures, cushion flaps or other features to assist a user securely and comfortably grasping the handle panel 14.

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[0090] Referring to Figure 8, there is shown a perspective view from the top, front and side of a package constructed from a four-tiered arrangement of articles 'A' (shown separately in Figure 5) and an attachable carrying handle. The attachable carrying handle that forms part of the package shown in Figure 8 is formed from the blank 10 that is shown in Figure 1 and described above. The attachable carrying handle is perhaps best viewed in Figure 4. To form the attachable carrying handle, the reinforcement handle panel 12 is folded about fold line 13 to bring the reinforcement panel 12 and handle portion 14 into face contacting relationship. The handle portion 14 and reinforcement panel 12 may be adhered or otherwise affixed together or may just be folded together. The first and second hook panels 16a, 16b are folded about hook panel fold line 29 toward one another to form a hook having a cross-sectional shape that is substantially "V"-shaped. The handle portion 14/12 may be folded using the gusset panels, about fold lines 23, 21, 25 and 27, relative to the hook. The attachable carrying handle of Figures 4, 6, 7 and 8 comprises a single hook 16a/16b, having one or more, (in this arrangement eight), teeth 30, which are connected to the first handle panel 14 via the hook 16a/16b. The teeth 30 are arranged in four pairs, wherein each pair is disposed substantially in the same plane, but spaced apart due to the folded nature of the first and second hook panels 16a, 16b.

[0091] The teeth 30 of the attachable carrying handle each comprise a hooked or engaging edge 32 (see Figures 1 and 7). The engaging edges 32 are arranged in pairs so that the engaging edges 32 of each pair are disposed in use at substantially the same elevation and function as a single hooking means. The hook 16a/16b of the attachable carrying handle preferably comprises the hinged hook panels 16a, 16b foldable with respect to each other so that it can be moved through a path or

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aperture provided by an article 'A' or an arrangement of a group of articles 'A'. The hook 16a/16b then unfolds or opens, at least partially, such that it cannot easily be withdrawn again. Thereby the attachable handle is readily installed and not so readily un-installed from an article 'A' or article 'A' group. The hook 16a/16b may unfold naturally, by virtue of the natural tendency of the material from which it is formed to return to its unfolded state. Additionally, or alternatively, the handle may be configured or arranged such that unfolding is encouraged or promoted. In the illustrated embodiment, the first and second hook panels 16a, 16b unfold to define a substantially V-shaped structure when viewed in cross-section, as can be seen in Figure 7.

[0092] In use, the carrying handle engages with a group of sixteen articles 'A'. As shown in Figure 8, the group of articles 'A' comprises four tiers of articles 'A' stacked in vertical registry. Each tier comprises a group of four articles 'A' arranged in a two by two array. Each article 'A' is connected, preferably by frangible connections J, to two adjacent articles 'A' in the array and preferably is separated from (or indirectly connected to) a diagonally opposing article 'A'. Each article 'A' may comprise a flange or protrusion F extending outwardly from walls of the article 'A'. In the illustrated embodiment, the flange F is disposed at the top of each article 'A' and defines a surface for securing a lid thereto. An aperture H is disposed centrally in the array and is defined in part by a portion of the flange F of each article 'A' in the array. The flange edges F about the aperture H provides an engaging member having an upper surface and a lower most surface. The lowermost surface provides a lifting edge.

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[0093] The group of articles 'A' illustrated in Figures 5 and 8 comprises an article arrangement having a surface, aperture, edge or other framing feature that can be engaged by the attachable handle, proximate an aperture, channel or other suitable hollow through which the hook 16a/16b may be inserted or slotted. In the illustrated arrangement of Figures 5 and 8, the four-tiered article arrangement is formed from four layers or tiers of similar article groups. Each article group may be an arrangement of four pots or cups 'A', each covered by a film and each frangibly connected to two adjacent pots 'A' by a joint J. Each pot 'A' has a flanged top which protrudes beyond the extent of the base or upper sides of the pot A to create a projecting ledge. This flange F provides the point of frangible connection between adjacent pots 'A' and, in the configuration of four arranged pots 'A' as illustrated in Figure 5, creates an aperture H which may be centrally disposed. The aperture H may be edged by the flanges F of four adjacent pots 'A' such that a curved diamond-shaped aperture H is formed. The specific shape of aperture H, the provision of an aperture H, and the provision of a flange-edged aperture H, are each optional aspects of the invention. The illustrated arrangement of Figures 5 and 8 comprises such an edged aperture H and, in this example, the edged aperture H enables the carrying handle to engage the article group when the handle is arranged such that the first handle panel 14 and reinforcing handle panel 12 are positioned above the edged aperture H. This is achieved in the illustrated arrangements by a pair of teeth 30 abutting, contacting, or engaging the underside edge of the edged aperture H of each tier of articles 'A'. Stated differently, part of the flanges F of the articles or pots A provides an engaging member via which the carrying handle is attached to the article group. It is envisaged that other forms of engaging member, via which the carrying handle is attached to a group of articles may be used according to the

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present invention. Such other engaging members should allow the carrying handle to be sufficiently strongly connected to the article arrangement as well as to restrict the carrying handle from being withdrawn back out of the article arrangement such that the package (the combination of the handle structure and articles 'A') thus formed may be carried by a user by his/her gripping the first handle panel 14 and/or reinforcing panel 12.

[0094] The attachable handle may be of sufficient size, shape and configuration that it may beneficially serve to also group a number of articles 'A' together. This is the case in respect of the embodiment shown in Figures 1 and 4 to 8. The handle comprises four pairs of teeth 30 and each pair is used to secure and affix the handle to multiple arrays of articles 'A'. As such, the handle structure beneficially can provide a means for grouping multiple arrays or tiers of articles 'A' together to that they may conveniently be manipulated as a single group. As is illustrated in Figure 7, as the handle is inserted, each of the four pairs of teeth 30 is pushed past at least one flange F of one of the tiers of the article stack or group. The lowermost pair of teeth 30 travels past the flange F of all the tiers. Then, once all pairs are disposed beneath (with reference to the view of Figure 8) the respective tier that they are intended to engage with, the hinged connection between each the first and second hook panels 16a, 16b is allowed to relax or open, causing the hook 16a/16b to adopt a non-coplanar structure and enabling the teeth 30 to catch onto the flanged edge F (see Figure 7). As is most clearly illustrated in Figure 1, the shoulder or hooking portion 32 of each tooth 30 is placed in secure engagement with an article 'A' disposed within the article group.

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[0095] In alternative embodiments the articles 'A' may not comprise a flange or protrusion F. In such embodiments, the package may further comprise a separate engaging member in the form of, for example, an insert that is placed beneath each tier of articles 'A'. Such an insert may comprise an aperture for receiving at least a part of the hook 16a/16b such that one or more teeth 30 may engage with the insert. The lowermost inset may comprise a spacer element, such as side or end walls, for raising an article receiving surface or panel of the insert, in a pallet like manner, such that the lowermost tooth 30 may engage beneath the article receiving panel of the insert.

[0096] Referring now to Figures 2 and 3, there are shown alternative embodiments of the present invention. In the second and third illustrated embodiments, shown in Figures 2 and 3 respectively, like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix "100" or "200" to indicate that these features belong to the second or third embodiment. The alternative embodiments share many common features with the first embodiment and therefore only the differences from the embodiment illustrated in Figures 1 and 4 to 8 will be described in any greater detail.

[0097] Figure 2 illustrates a blank 110 according to a second embodiment. In the embodiment of Figure 2, the handle formed from the blank 110 is arranged to engage with a stack of articles 'A' comprising three tiers, wherein the first and second hook panels 116a, 116b comprise three pairs of oppositely disposed teeth 130, arranged for this purpose. Each of the first and second hook panels 116a, 116b comprises three teeth 130, each extending outwardly from the free side edge of the respective hook panel 116a, 116b. Each tooth 130 comprises a shoulder portion 132

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defined by an engaging edge. The shoulder portion 132 may extend substantially perpendicularly to the side edge of the respective hook panel 116a, 116b from which it extends. Each tooth 130 may also comprise a ramp or slope 134 along the lower edge of the tooth 130 opposing the shoulder portion 132 so as to form a ratchet type structure. The lowermost teeth 130 on the first and second hook panels 116a, 116b may comprise sloped edges 136a, 136b respectively, which form a leading edge of each hook panel 116a/116b. The sloped edges 136a, 136b may extend from the lowermost teeth 130 substantially to the hook panel fold line 129.

[0098] Figure 3 illustrates a blank 210 according to a third embodiment. In the embodiment of Figure 3, the handle formed from the blank 210 is arranged to engage with a stack of articles 'A' comprising two tiers. The first and second hook panels 216a, 216b comprise two pairs of oppositely disposed teeth 230 for this purpose. Each of the first and second hook panels 216a, 216b comprises two teeth 230, each extending outwardly from the free side edge of the respective hook panel 216a, 216b. Each tooth 230 comprises a shoulder portion 232 defined by an engaging edge. The shoulder portion 232 may extend substantially perpendicularly to the side edge of the respective hook panel 216a, 216b from which it extends. Each tooth 230 may also comprise a ramp or slope 234 along the lower edge of the tooth 230 opposing the shoulder portion 232 so as to form a ratchet type structure. The lowermost teeth 230 on the first and second hook panels 216a, 216b may comprise sloped edges 236a, 236b respectively, which form a leading edge of each hook panel 216a/216b. The sloped edges 236a, 236b may extend from the lowermost teeth 230 substantially to the hook panel fold line 229.

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[0099] Referring now to Figures 9 to 20, there are shown fourth to seventh alternative embodiments of the present invention. In the fourth to seventh illustrated embodiments, like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix “300”, “400”, “500” or “600” to indicate that these features belong to the respective alternative embodiment. The alternative embodiments share many common features with the first embodiment and therefore only the differences from the embodiment illustrated in Figures 1 and 4 to 8 will be described in any greater detail.

[00100] Referring to Figure 9, there is illustrated a blank 310 for forming an attachable carrying handle according to a fourth embodiment.

[00101] The blank 310 is formed from a sheet or substrate of suitable material. It is to be understood that, as used herein, the term “suitable substrate” includes all manner of foldable sheet material such as paperboard, corrugated board, cardboard, plastic, combinations thereof, and the like. It should be recognized that one or other numbers of blanks may be employed.

[00102] Referring to Figure 9, it can be seen that blank 310 comprises a series of hinged and foldably connected panels cut and creased from a sheet of material. Blank 310 comprises: a first handle panel 312 (also referred to as handle portion 312); reinforcing handle panels 314 (also referred to as cushion flaps 314) hinged to either side of the first handle panel 312 along fold lines 311; first and second hook panels 316a, 316b, which together form a first hook 316a/316b in use; and third and fourth hook panels 316c, 316d, which together form a second hook 316c/316d in use.

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[00103] The handle panel 312 comprises a pair of cushion flaps 314 disposed on opposing sides thereof. A cut line 309 or weakened line of severance is disposed at each end of fold line 311. The cut lines 309 separate a portion of the cushion flap 314 from the handle panel 312. The cut lines 309 may be disposed at an angular relationship to the fold line 311 such that the cut lines 309 and fold line 311 are not co-linear. The cut lines 309 are preferably arranged such that they converge towards the fold line 311 and diverge towards the respective free side edge of the handle panel 312. The handle portion 312/314 may be of sufficient size and/or shape which may be held or grasped by a user.

[00104] First and second hook panels 316a, 316b are hingedly connected to the first handle panel 312 along fold lines 327a, 325a respectively. First hook panel 316a is hingedly connected to second hook panel 316b along a centre or medial hook panel fold line 329a. The first handle panel 312 comprises or is linked to a first pair of gusset panels defined in part by fold lines 325a/321a and 327a/323a. The gusset panel fold lines 325a/321a and 327a/323a are disposed at an acute angular relationship relative to one another.

[00105] Third and fourth hook panels 316c, 316d are hingedly connected to the first handle panel 312 along fold lines 327b, 325b respectively. Third hook panel 316c is hingedly connected to fourth hook panel 316d along a centre or medial, longitudinally extending hook panel fold line 329b. The first handle panel 312 comprises a second pair of gusset panels disposed on the opposite side of the handle panel 312 to the first pair of gusset panels. The second pair of gusset panels are defined in part by fold lines 325b/321b and 327b/323b. Again, the gusset panel

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fold lines 325b/321b and 327b/323b are disposed at an acute angular relationship to one another.

[00106] In the illustrated embodiment, each of the pairs of fold lines for each pair of gusset panels 325a/321a and 327a/323a; and 325b/321b and 327b/323b converge at a common vertex, coincidental with a termination of the medial hook panel fold line 329a and 329b respectively.

[00107] Each of the first, second, third and fourth hook panels 316a, 316b, 316c, 316d comprises one or more teeth 330 (in this illustrated arrangement, two teeth 330 each) each extending outwardly from the free side edge thereof. Each tooth 330 comprises a shoulder portion 332 defining an engaging edge. The engaging edge or shoulder portion 332 extends substantially perpendicularly to the side edge of the hook panel 316a, 316b, 316c, 316d from which it extends. In other embodiments, other shapes and arrangements are envisaged such that each tooth 330 may form a hooking or engaging element. Each tooth 330 may also comprise a ramp or slope 334 along a lower (in use) edge of the tooth 330 opposing the shoulder portion 332 so as to form a ratchet type structure. The lowermost tooth 330 on the hook panels 316a, 316b, 316c, 316d may comprise sloped edges 336a, 336b, 336c, 336d, which form a leading edge of each hook panel 316a, 316b, 316c, 316d when folded and formed into a carrying handle. The sloped edges 336a, 336b, 336c, 336d may extend from the lowermost teeth 330 substantially toward the hook panel fold line 329a, 329b respectively.

[00108] Formation of the blank 310 into a carrying handle is achieved by folding the first and second hook panels 316a, 316b about hook panel fold line 329a substantially into face contacting relationship and by folding the third and fourth hook

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panels 316c, 316d about hook panel fold line 329b substantially into face contacting relationship with one another. The pairs of first/second 316a/316b and third/fourth 316c/316d hook panels are folded into substantially perpendicular relationship relative to the handle panel 312, (as illustrated in Figure 11). The gusset panels are folded about fold lines 321a, 323a, 321b, 323b respectively such that each of the gusset panels are brought substantially into face contacting relationship with the handle panel 312.

[00109] The carrying handle formed from the blank 310 may be arranged to engage with a group of articles 'A', having two tiers as is shown in Figure 14. The group of articles 'A' comprises two tiers of articles 'A' each tier comprising an array of six articles 'A' arranged in a two by three array. Each array comprises a pair of apertures; each aperture being disposed centrally between four of the articles 'A' in the array.

[00110] In use, the carrying handle forms a package with the article group 'A'; a double-ply hook 316a/316b, 316c/316d is inserted into a respective one of the holes 'H' formed in the 2 x 3 array of articles of each tier, as explained above.

[00111] Figure 10 illustrates a blank 410 according to a fifth embodiment. In the embodiment of Figure 10, the carrying handle formed from the blank 410 is arranged to engage with a group of articles 'A' that comprises two tiers. The first, second, third and fourth hook panels 416a, 416b, 416c, 416d each comprises two oppositely disposed teeth 430 for this purpose. The handle panel 412 is longer in length than the handle panel 312 of the embodiment of Figure 9. The carrying handle formed from the blank 410 is adapted to engage with an article group of a two-tier structure in which each tier comprises an array of articles 'A' larger than two

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by three, for example, but not limited to, 2x4, 2x5, 2x6. In this embodiment, the handle engages with a first and second aperture formed in each array of articles 'A'. The first and second apertures are each disposed adjacent to an endmost article 'A' in the array, or alternatively, the first and second apertures are separated from one another by more than one article 'A'.

[00112] The first, second, third and fourth hook panels 416a, 416b, 416c, 416d comprise four pairs of oppositely disposed teeth 430. Each of the first, second, third and fourth hook panels 416a, 416b, 416c, 416d comprises two teeth 430, each extending outwardly from the free side edge of the respective hook panel 416a, 416b, 416c and 416d. Each tooth 430 comprises a shoulder portion 432 defined by an engaging edge. The engaging edge or shoulder portion 432 may extend substantially perpendicularly to the side edge of the respective hook panel 416a, 416b, 416c, 416d from which it extends. Each tooth 430 may also comprise a ramp or slope 434 along the lower edge of the tooth 430 opposing the shoulder portion 432 so as to form a ratchet type structure. The lowermost teeth 430 on the hook panels 416a, 416b, 416c, 416d may comprise sloped edges 436a, 436b respectively, which form a leading edge of each hook panel 416a/416b/416c/416d. Each sloped edge 436a, 436b, 436c, 436d may extend from the respective lowermost tooth 430 substantially to the respective hook panel fold line 429a/429b.

[00113] Figure 17 illustrates a blank 510 adapted to carry a stack of articles 'A' comprising a single tier in accordance with a sixth embodiment. Figure 18 illustrates a blank 610 adapted to engage with a group of articles 'A' comprising a single tier in accordance with a seventh embodiment. Figures 19 and 20 illustrate a carrying

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handle formed from the blank 610 and a package comprising the handle and a one-tier article group in which the articles are arranged in a two by three array.

[00114] The first, second, third and fourth hook panels 516a, 516b, 516c, 516d of the sixth embodiment comprise two pairs of oppositely disposed teeth 530. Each of the first, second, third and fourth hook panels 516a, 516b, 516c, 516d comprises one tooth 530 extending outwardly from the free side edge of the respective hook panel 516a, 516b, 516c and 516d. Each tooth 530 comprises a shoulder portion 532 defined by an engaging edge. The engaging edge or shoulder portion 532 may extend substantially perpendicularly to the side edge of the respective hook panel 516a, 516b, 516c, 516d from which it extends. Each tooth 530 on the hook panels 516a, 516b, 516c, 516d may comprise a sloped edge 536a, 536b, 536c, 536d which forms a leading edge of the respective hook panel 516a/516b/516c/516d. Each sloped edge 536a, 536b, 536c, 536d may extend from the respective tooth 530 substantially to the respective hook panel fold line 529a/529b.

[00115] The first, second, third and fourth hook panels 616a, 616b, 616c, 616d of the seven embodiment also comprise two pairs of oppositely disposed teeth 630. Each of the first, second, third and fourth hook panels 616a, 616b, 616c, 616d comprises one tooth 630 extending outwardly from the free side edge of the respective hook panel 616a, 616b, 616c and 616d. Each tooth 630 comprises a shoulder portion 632 defined by an engaging edge. The engaging edge or shoulder portion 632 may extend substantially perpendicularly to the side edge of the respective hook panel 616a, 616b, 616c, 616d from which it extends. Each tooth 630 on the hook panels 616a, 616b, 616c, 616d may comprise a sloped edge 636a, 636b, 636c, 636d which forms a leading edge of the respective hook panel

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616a/616b/616c/616d. Each sloped edge 636a, 636b, 636c, 636d may extend from the respective tooth 630 substantially to the respective hook panel fold line 629a/629b.

[00116] In Figures 21 to 32, there are illustrated an exemplary variety of top covers configured and arranged for use with an attachable carrying handle, but not limited to the carrying handle shown in Figures 1 to 20, described above as well as Figures 33 to 41 or 42 to 55 described below. It will be understood that the top cover arrangements disclosed herein serve merely to illustrate the invention and do not represent an exhaustive recitation of all the possible formats and configurations of top cover that may be used with a handle that attaches to a group of articles and joins together more than one tier of articles (and at the same time joins the top cover to the articles).

[00117] Referring now to Figure 21, there is shown a blank 700 for forming a top cover for folding about an article group, such as a two-tiered stack of frangibly linked articles 'A', as shown in Figure 22. The blank 700 comprises a primary panel 750 which comprises one or more apertures 756 for aligning with the one or more holes 'H' present in the article group to which a carrying handle is to be attached. In the presently described arrangement, the top cover formed from the blank 700 is for a two-tiered stack of articles 'A' arranged in a 2 x 3 array, having a hole 'H' between each 2 x 2 sub-array of articles. As such, the primary panel 750 is provided with two apertures 756, each defined by a cut line 758.

[00118] The primary panel 750 is hinged at each of its ends to an end panel 752a, 752b by means of fold lines 754a, 754b respectively. The top cover formed from the blank 700 is sized and arranged to fit onto and about a two-tiered group of

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articles 'A' (see Figure 22). The fold lines 754a, 754b are spaced apart by a distance that substantially matches (or is slightly greater than) the length of the 2x3 article array. In this way, the primary panel 750 can be placed on top of the uppermost 2x3 article array of the two-tiered stack, and the end panels 752a, 752b, folded about fold lines 754a, 754b. The end panels 752a, 752b are sized to match the height of the stacked array. In other embodiments, the end panels 752a, 752b are shorter than the height of the stacked array to which they are attached. As can be seen in Figure 22, the elliptically shaped apertures 756 overlay and thereby expose the apertures or holes 'H' present in the 2x3 article arrays. The holes 'H' in the top tier are the same as those in the lower tier(s) so that a handle, such as the carrying handle depicted in Figure 11 (or Figures 36 and 41, described further below), can fit: through the apertures 756 provided in the primary panel 750; through the holes 'H' in the uppermost tier; and through the holes 'H' in the lowermost tier. The tapered leading edge of the carrying handle facilitates insertion of the handle, and the teeth 330, 330', 230' through the holes 'H'. Withdrawal of the carrying handle is prevented because of the edge defined by the shoulder portion 332 engaging against or catching on a flanged edge 'F' of the grouped array of articles 'A'. (This engagement is also described above). As such, the carrying handle has served to connect two-tiers of articles 'A' together and has served to connect a top cover formed from the blank 700 at least to the uppermost tier of articles 'A' in the stack.

[00119] In Figures 23 and 24, a variation of top cover is shown. The top cover is formed from a blank 800 (see Figure 23) and comprises a primary panel 850 having two apertures 856. In this embodiment, two side panels 852c, 852d are provided rather than end panels 752a, 752b as in the previously described embodiment. Again, apertures 856 provided in a suitable number (typically one or

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two), size and position, have been formed in the primary panel 850. The side panels 852c, 852d are spaced in correspondence with the width of the article tier so that the side panels 852c, 852d can be folded about fold lines 854c, 854d, downwardly with respect to primary panel 850, and into an overlapping position against the sides of the grouped article tier(s). In Figure 25, it has been illustrated how a carrying handle, (such as the carrying handle illustrated in Figures 9, 11 & 14) has been inserted into each aperture 856, through the holes 'H' in the uppermost tier and through the holes 'H' in the lowermost tier to form a unitary package. The underside of the flanges of the article arrays about the holes 'H' provide engaging edges for the shoulders 332 of the teeth 330 of the carrying handle such that attachment of the handle to the article tiers, and connection of the top cover formed from the blank 800 to the grouped stack of articles 'A' is achieved by means of a mechanical lock. It can be seen that the top cover 800 is sandwiched between the tiered articles 'A' and the carrying handle and held in place by means of the mechanical locking of the carrying handle to the arrayed articles.

[00120] No adhesive is necessary or required in the construction of the handle, top cover or package. This is advantageous because the package is easier to assemble and disassemble; the package can easily be formed manually if required; and the top cover may remain intact and without any fibre tear (which can often occur when a package constructed using adhesive is disassembled). As such, if required, the top cover can be used for promotional purposes and the promotional material printed or otherwise provided on the top cover is unlikely to suffer from damage during package disassembly. The handle and top cover are recyclable and being easy to disassemble and fold flat (without the need to break adhesive connections), may encourage the end consumer to recycle them. Furthermore, the

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provision of a carrying handle and top cover 800 from separate blanks (310, 850) provides for the option to construct the top cover 800 from a lower caliper, lower grade, lower weight and/or different type of material compared to the carrying handle. As such, the carrying handle may be formed of a stronger, heavier weight board, whereas the top cover may be formed from a less costly lower weight material.

[00121] A further blank 900 for forming a top cover according to another embodiment is illustrated in Figures 26 and 27, wherein a primary panel 950 is again provided with two apertures 956 because the primary panel 950 has been formed and sized specifically for a 2 x 3 article array. Only one side panel 952c is attached to the primary panel 950 by means of a hinged connection 964c. The side panel 952c and hinged connection 964c are each of the same maximum length. The side panel 952c and hinged connection 964c each have a maximum length that is less than the maximum length of either the lowermost or uppermost tier of connected articles 'A'.

[00122] Yet a further embodiment of blank 1000 for forming a top cover is illustrated in Figures 28, 29, and 30 wherein only a primary panel 1050 is provided. The primary panel 1050 is sized and shaped to overlay a substantial area of the top surface of the uppermost tier of arrayed articles 'A' and may be provided with two apertures 1056, each preferably elliptical. In Figure 29, the attachment of the top cover formed from the blank 1000 to a stacked group of articles 'A' is shown. A carrying handle formed from the blank 310' of Figure 33 (see below) has been inserted through each aperture 1056 and through the holes 'H' of the arrayed articles 'A' to attach the articles 'A' and top cover together.

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[00123] A final illustrated variation of top cover is shown in Figure 31 wherein a blank 1100 is illustrated (see also Figure 32). A four-sided primary panel 1150 is attached at each end to an end panel 1152a, 1152b and is attached at each side to a side panel 1152c, 1152d. Fold lines 1154a, 1154b, 1154c, 1154d are provided to facilitate the accurate folding of the side and end panels 1152c, 1152d, 1152a, 1152b downwardly (relative to primary panel 1150) against the sides of the article stack 'A'.

[00124] The primary panel 750, 850, 950, 1050, 1150 of the top cover may be sized such that it covers or substantially covers the tops of the articles 'A' of the uppermost tier and in doing so can serve to protect those tops from damage. Often, where yogurt and other such dairy products are packaged in pots, the pots are sealed with a foil film. The foil film is thin enough that it can be punctured during transportation, shelf-display, purchase and storage, i.e. before consumption of the product is required. This can be disadvantageous and can result in undesired mess, product damage and wastage. The provision of a primary panel 750, 850, 950, 1050, 1150 provides a level of protection for the articles 'A' which may help to limit or mitigate such accidents and product loss. In other envisaged embodiments, the primary panel 750, 850, 950, 1050, 1150 may be asymmetrically shaped; may have three or more sides; may have curved and/or straight edge sections; may be similar in size and/or shape to the article array; may be different in size and/or shape to the article array; and/or may be reusable; and/or may not entirely cover the uppermost tier of articles and the primary panel may provide a panel for attaching a side or end panel of larger size to the article stack.

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[00125] Furthermore, the two apertures 756, 856, 956, 1056, 1156 are shown as being dimensionally similar. In other arrangements, where the hook panels 316a/316b; 316c/316d of the carrying handle are not identical, it is envisaged that the apertures 756, 856, 956, 1056, 1156 may also be suitably non-identical.

[00126] In further envisaged embodiments, the one or more aperture(s) 756, 856, 956, 1056, 1156 may not be elliptical in shape. Preferably, however, the one or more aperture(s) 756, 856, 956, 1056, 1156 are elliptical in shape, as this shape may best accommodate the hook panel(s) 316a/316b; 316c/316d of a carrying handle for a tight fit which may improve the secure attachment of the carrying handle to the articles 'A' and top cover.

[00127] Turning now to Figures 33 to 38 and 39 to 41, there are shown two further embodiments of attachable carrying handle. In these illustrated embodiments of carrying handle, like numerals have, where possible, been used to denote like parts, albeit with the addition of the suffix ' (prime) to indicate that these features belong to a different embodiment. The alternative embodiments share many common features with the embodiments of Figures 9, 11, 12, 13, 14 and Figure 3 respectively and therefore only the differences from the embodiments of carrying handle and blank therefor previously illustrated and described will be described in any greater detail.

[00128] In Figure 33, the blank 310' of the eighth embodiment is provided with a series of reinforcement panels 313a', 313b', 313c', 313d', 312a', 312b', 314a' and 314b'. Each of the reinforcement panels 313a', 313b', 313c', 313d', 312a', 312b', 314a' and 314b' is coupled to the blank 310' such that it can be folded about a fold line 331a', 331b', 331c', 331d', 333b', 333a', 311a', 311b', and into substantially

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face-contacting arrangement or overlaying arrangement with the original carrying handle panel 316a', 316b', 316c', 316d', 312', 314' that it is provided to reinforce.

[00129] To construct the carrying handle, the reinforcement panels 313a', 313b', 313c', 313d', 312a', 312b', 314a' and 314b' are folded about the fold lines 331a', 331b', 331c', 331d', 333b', 333a', 311a', 311b' to bring them into face contact with the panels 316a', 316b', 316c', 316d', 312', 314' that they reinforce. (See Figures 34 and 35). Then the carrying handle is constructed as described before by:

- i. folding the first and second hook panels 316a'/313a' and 316b'/313b' toward one another using medial hook panel fold line 329a';
- ii. folding the third and fourth hook panels 316c'/313c' and 316d'/313d' toward one another using medial hook panel fold line 329b';
- iii. folding the four plies of first hook panel/second hook panel/ first hook panel reinforcement/second hook panel reinforcement 316a'/313a'/316b'/313b' into substantially perpendicular relationship with the handle panel 312';
- iv. folding the four plies of third hook panel/fourth hook panel/ third hook panel reinforcement/fourth hook panel reinforcement 316c'/313c'/316d'/313d' into substantially perpendicular relationship with the handle panel 312';
- v. folding the gusset panels about fold lines 321a', 325a', 321b', 325b', 321c', 325c', 321d', 325d' respectively such that each of the gusset panels is brought substantially into face contacting relationship with the handle panel 312; and

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- vi. folding the cushion flap reinforcements 314a', 314b' about fold lines 311a' and 311b' (as illustrated in Figure 36).

[00130] The resulting carrying handle structure comprises two pair of teeth 330': each pair of teeth 330' is disposed at the respective one of opposing ends of the handle portion 312'. The teeth 330' each is two plies of material thick. Each of the four teeth 330' has a shoulder 332'. The teeth 330' and their shoulders 332' are formed by the provision of the shaped apertures 335a', 335b', 335c', 335d' (see Figure 33) and the fold lines 331a', 331b', 331c', 331d'.

[00131] After insertion of the carrying handle into holes 'H' of one or more tiers of articles the teeth 330' contact an underside of an engaging member provided by a flanged edge 'F' about the hole 'H'. In this way the flanged edge 'F' provides a lifting surface. See Figure 37 wherein, it can be seen how the shoulder portions 332' of the teeth 330' contact the engaging member.

[00132] Furthermore in Figure 37, it can be seen how the fold lines 331a', 331b', 331c', 331d' between a hook panel 316a', 316b', 316c', 316d' and its reinforcement 313a', 313b', 313c', 313d' keep the hook panel 316a', 316b', 316c', 316d' and its reinforcement 313a', 313b', 313c', 313d' reasonably close together, but not necessarily "in contact" to create a connected tooth 330' having a substantially triangular cross-section. The teeth 330' of substantially triangular cross-section each have two shoulder portions or engaging edges 332'. This creates an increased contact area between the hook tooth 330' and the engaging member F. The hook comprises two adjacent teeth 330' such that in parts, the cross-sectional shape of the hook is at least substantially chevron-shaped. (Consider the shape made by tracing the following course: hook panel fold line 329a' to fold line 331b'; to the free

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edge of reinforcement 313b' and the edge of reinforcement 313a' to the fold line 331a' to the hook panel fold line 329a' and see Figure 37).

[00133] Furthermore, the slight fanning out from a completely flat face contacting position of the hook panel 316a', 316b', 316c', 316d' and its reinforcement 313a', 313b', 313c', 313d' (due to the natural resilience of the material from which the blank 310' is formed) increases the effective width or thickness of each hook (316a'/313a'/316b'/313b' and 316c'/313c'/316d'/313d' respectively). This may improve the tightness of the fit of the carrying handle in the holes 'H' (and also preferably in the apertures 756, 856, 956, 1056, 1156 in the primary panel 750, 850, 950, 1050, 1150, where the carrying handle is used together with a top cover, for example, see Figure 11). The provision of one or more reinforcement panels 313a', 313b', 313c', 313d', 312a', 312b', 314a' and 314b' may enable the carrying handle to be formed from a lower weight or caliper material and/or may increase the rigidity of the blank which is a consideration in the high-speed automated folding of such blanks into a part formed carrying handle ready for insertion into a package.

[00134] A ninth illustrated embodiment of a carrying handle having reinforcement panels is shown in Figures 39 to 41, wherein a carrying handle has a pair of hook panels 216a', /216b' with two teeth 230'. Each tooth 230' projects from the edge of the respective hook panel 216a', 216b' and is reinforced by the respective reinforcement panel 213a', 213b' (see Figure 41 in particular). Each tooth 230' has a reinforced shoulder portion or engaging edge 232' provided by the two layers of paperboard or otherwise appropriate sheet material. The carrying handle preferably also has reinforced finger tab 220'/218a'/218b' hingedly connected to a reinforced handle portion 214a'/212a'/214b'/212b'.

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[00135] The blank 210' for forming the carrying handle comprises a first hook panel 216a' and its reinforcement 213a' connected thereto by means of a hinged connection 231a' provided on the tooth edge. In this way the reinforcement 213a' can reinforce the tooth 230' which is beneficial since it is the tooth 230' of the carrying handle that engages an engaging member 'F' of an article 'A'. Again, the provision of two-ply shoulder 232' edges per tooth 230' increases the amount of engagement between the carrying handle and the articles 'A' it is attached to. Similarly, a second hook panel 216b' and its reinforcement 213b' is provided; these are connected to the first hook panel 216a' by means of hook panel fold line 229'. A single pair of gusset panels 203a', 203b' are provided at one end only of the handle portion 214a'/214b', defined by fold lines 225', 221', 227', 223'. Handle portion reinforcements 212a'/212b' are also provided. The reinforcement panels 213a', 213b', 212a', 212b' may not be co-extensive with the panel they serve to reinforce. In other embodiments it is envisaged that any or all of the reinforcement panels 213a', 213b', 212a', 212b' may be co-extensive with the panel they serve to reinforce. The carrying handle operates by being inserted into a hole 'H' in an article 'A' or article package and becomes mechanically locked thereto by the engagement of the teeth 230' and a lifting surface or engaging member of the articles or package. The carrying handle may be used in conjunction with one or more top cover(s).

[00136] It can be appreciated that various changes may be made within the scope of the present invention. For example, the size and shape of the panels and apertures may be adjusted to accommodate articles 'A' of differing size or shape.

[00137] In alternative embodiments the articles 'A' may not comprise a flange or protrusion 'F'. In such embodiments, the package may further comprise an insert

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placed beneath each tier of articles. The insert may comprise an aperture for receiving at least a part of the hook 16a/16b, 316a/316b such that one or more teeth 30, 330 may engage with the insert. The lowermost insert may preferably comprise a spacer element, such as side or end walls, for raising an article receiving surface or panel of the insert, in a pallet like manner, such that the lowermost tooth may engage beneath the article receiving panel of the insert.

[00138] It will be understood upon reading the description and reviewing the illustrations that articles 'A' of various shapes and sizes may be suitable for having an attachable handle according to various aspects of the present invention attached to them. It is envisaged that the attachable handle may be formed in a variety of shapes and sizes and of various configurations to enable it to be attached in a secure enough manner for lifting one or more articles, or a group, or a plurality of groups of articles 'A'. Furthermore, whereas aspects of the invention have been described in relation to pots or cups 'A' (preferably for dairy stuffs, yogurt and the like), it is envisaged that the invention may be applied to other articles 'A' and reference to pots 'A', article arrangements, frangibly connected pot, articles 'A' with film, articles 'A' with flanges and other descriptive terms are used to aid the reader in understanding the arrangements illustrated and are not limiting.

[00139] It is fully recognised that other types of article 'A' and other types of article connection method will be suitable for combination with the attachable handle of the present invention. The attachable handle may be attached directly to one or more articles 'A', or indirectly via an outer carton or carrier to one or more articles 'A'. For example, top-gripping carriers are known in the art for gripping the tops of articles 'A' and collating them. It is realised that the attachable handle described

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herein may be used in combination with such a top gripping carrier, to provide a more comfortable manner for carrying those types of package and/or to provide a means for grouping together a series of similar top-gripping carrier packages.

Further still, the attachable handle may be usefully deployed in relation to a single article 'A' that may comprise an integral engaging edge and/or may comprise a fitment in co-operation with which the attachable handle may be used.

[00140] The present invention provides a carrying handle which can be attached to a group of frangibly connected articles to form a package having one or more tiers of articles. In embodiments having two or more tiers the carrying handle secures the tiers together in a fixed relationship to one another.

[00141] It will be appreciated that the carrying handle may be folded into a stowed position when not in use. In the stowed configuration, the handle portion or panel of the carrying handle is substantially flat or planar, and is disposed in close proximity to the upper surface of the articles with which it is in engagement, thereby facilitating grouping and/or stacking of packages, for example, on a pallet or shelf. The carrying handle can be deployed to a carrying position wherein the handle portion or panel is spaced apart from the upper surface of the article group such that it may be grasped by user.

[00142] In alternative embodiments, a spine panel may be provided to hingedly interconnect first hook panel 316a with second hook panel 316b. In such embodiments, the first handle panel 314 may be hingedly connected to the spine panel either in addition to the hinged connection to the first and second hook panels 316a, 316b or as an alternative to the hinged connection to the first and second hook panels 316a, 316b. In other embodiments, other gusset panel arrangements are

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envisaged, for example, the fold lines 325a/321a may converge at a separate vertex to a vertex at which fold lines 327a/323a converge; and preferably, similarly the fold lines 325b/321b may converge at a separate vertex to a vertex at which fold lines 327b/323b converge.

[00143] Figure 42 illustrates a blank 1210 for forming a carrying handle 1200 according to a tenth embodiment, suitable for a single tier array of articles. Figure 43 illustrates a similar blank 1310 for forming a carrying handle 1300 according to an eleventh embodiment, suitable for a two-tier stack of arrayed articles. The blank 1210 is shown in a folded condition in Figure 44, and a further-folded condition in Figure 45, prior to use with a group of articles 'A' as shown in Figure 46. The carrying handle 1200 cooperates with the group of articles 'A' to form a package as illustrated in Figure 48.

[00144] Referring to Figure 42, it can be seen that the blank 1210 comprises a series of hinged and foldably connected panels cut and creased from a sheet of material. Any suitable substrate or combinations of substrate materials may be used for forming the blank 1210, in a preferred embodiment, the sheet of material from which the blank 1210 is cut is a paperboard sheet. Blank 1210 includes a first handle panel or handle portion 1212, and a second handle panel or handle portion 1214 hinged to first handle panel 1212 along fold line 1213. First and second hook panels 1216a, 1216b, 1216c, 1216d together form two hooks 1216a/1216b, 1216c/1216d in use. First and third hook panels 1216a, 1216c each is hingedly connected to the first handle panel 1212, preferably indirectly along fold lines 1227, 1225, 1223 so that two gusset panels are defined between the first handle panel 1212 and each of the first and third hook panels 1216a, 1216c. Second and fourth hook panels 1216b, 1216d

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each is hingedly connected to the second handle panel 1214, preferably indirectly along fold lines 1227, 1225, 1223 so that two gusset panels are defined between the second handle panel 1214 and each of the second and fourth hook panels 1216b, 1216d. First and third hook panels 1216a, 1216c are hingedly connected to second and fourth hook panels 1216b, 1216d along medial or central, longitudinally extending hook fold lines 1229 that may be considered extensions of fold line 1213. Preferably, the first and second hook panels 1216a, 1216b are symmetrical about hook fold line 1229, and the first and second hook panels 1216a, 1216b are mirror images of one another. Preferably, the third and fourth hook panels 1216c, 1216d are symmetrical about hook fold line 1229, and the third and fourth hook panels 1216c, 1216d are mirror images of one another.

[00145] Preferably, either or both of first handle panel 1212 and second panel 1214 may comprise a substantially triangular first gusset panel defined in part by fold line 1225 and in part by a fold line 1221 disposed at an angular relationship to fold line 1225. Preferably, either or both handle panels 1212, 1214 comprises a substantially triangular second gusset panel defined in part by fold line 1221 and in part by a fold line 1223 disposed at an angular relationship to fold line 1225. In the illustrated embodiment, each of the fold lines 1221, 1223, 1225 converge at a common vertex. However, in other embodiments, other arrangements are envisaged. For example, the fold lines 1223, 1221 may converge at a separate vertex to a vertex at which fold lines 1221, 1225 converge. Where the fold lines 1221, 1223, 1225 converge at a common vertex, the longitudinal fold line 1213 and hook fold line 1229 may converge at the same vertex as well.

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[00146] Each of the first, second, third and fourth hook panels 1216a, 1216b, 1216c, 1216d comprises one or more and preferably a single shoulder portion 1232a defined by an engaging edge. Preferably, the engaging edge or shoulder portion 1232a extends substantially at a non-right angle with respect to the side edge of the respective hook panel 1216a, 1216b, 1216c, 1216d from which it extends. The engaging edge or shoulder portion 1232a may be considered an edge of a tooth region or tooth 1230. The teeth 1230 may be considered to lie along a free edge of a hook panel, for example an outer or perimeter edge of blank 1210. In other embodiments, other shapes and arrangements are envisaged for the shoulder portion 1232a. Additional shoulder portions 1232b may be formed along hook fold line 1229, for example as sides of cutaway areas 1228 in blank 1210. Thus additional shoulder portions 1232b may be considered to lie along a fold line (1229) between hook panels, while the teeth 1230 and/or shoulder portions 1232a may be considered to lie along a free edge of a hook panel. A ramp or slope 1236a may be formed on the outer distal edge of each hook panel 1216a, 1216b, 1216c, 1216d. Also a ramp or slope 1236b may be formed on the inner distal edge of each hook panel 1216a, 1216b, 1216c, 1216d at the respective end of the hook fold line 1229.

[00147] Preferably, the material from which a blank 1210 of Figure 42 may be formed is paperboard. Preferably, the handle portion 1212/1214 is of sufficient size and/or shape such that it can be held or grasped by a user. Preferably, the handle portion 1212, 1214 may be formed from more one or more panels of material 1212, 1214 and preferably may comprise any one or more or a combination of: apertures, cushion flaps or other features to assist a user securely and comfortably grasping the handle panel 1212, 1214.

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[00148] Referring to Figure 44, blank 1210 may be folded to form a handle 1200. The handle 1200 being made from a folded sheet material, the hook panels 1216a, 1216b, 1216c, 1216d may tend to splay outwardly as shown in Figure 45. However, the sheet material and folds having some flexibility may be further folded inward as shown in Figure 45. It may be noted that at a configuration somewhere between Figure 44 and Figure 45, the shoulder portions 1232a, 1232b may be at approximately the same elevation. This will be useful for grasping containers 'A' as shown in Figure 48.

[00149] Referring to Figure 46, there is shown a perspective view from the top, front and side of a package constructed from a one-tiered arrangement of articles 'A' in a two-by-three array. The containers may each have a flange F which may all be in a common plane. Apertures H may be formed between the articles 'A'. Joints 'J' may be formed between the flange areas of adjacent articles.

[00150] Referring to Figure 47, the handle 1200 may be inserted into the arrangement of articles 'A' so that the hook panels 1216a/1216b and 1216c/1216d are placed into the apertures H by a downward movement D1. Ramp areas 1236a, 1236b may help guide the handle into apertures H. After passing through the apertures, the hook panels 1216a, 1216b, 1216c, 1216d may relax and splay outwardly as shown by outward movement D3. This movement will then bring shoulder portions 1232a into supporting contact at points y1, under the flange F atop the inner containers, and bring the additional shoulder portions 1232b into supporting contact at points x1, under the flange atop the outer containers.

[00151] The hook portions 1216a/1216b, 1216c/1216d when unfolded, opened, or splayed outwardly least partially, cannot easily be withdrawn again from apertures

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H. Thereby the attachable handle is readily installed and not so readily un-installed from an article 'A' or article 'A' group. Preferably, the hook 1216a/1216b, 1216c/1216d may unfold naturally, by virtue of the natural tendency of the material from which it is formed to return to its unfolded state. Additionally, or alternatively, the handle may be configured or arranged such that unfolding is encouraged or promoted.

[00152] Preferably, the aperture H is edged by the flanges F of four adjacent pots 'A' such that a curved diamond-shaped aperture H is formed. The specific shape of aperture H, the provision of an aperture H, and the provision of a flange-edged aperture H, are each optional aspects of the invention.

[00153] As shown in Figure 48, the one-tier array of articles 'A' may be lifted (direction D2) and carried by handle 1200 by a user gripping the handle panels 1212, 1214.

[00154] As shown from the top in Figure 49, the shoulder portions 1232a support the tier of articles toward the center of the tier, for example supporting the two center articles under flange F at points y1. The additional shoulder portions 1232b along hook fold line 1229 support the tier of articles toward the ends of the tier, for example supporting the four outer articles under flange F at points x1.

[00155] While the blank 1210 shown in Figure 42 forms a handle 1200 suitable for a single tier of articles as shown in Figures 44-49, the blank 1310 shown in Figure 43 forms a handle 1300 suitable for a double tier of articles, as shown in Figures 50-55. In the eleventh embodiment of Figures 43 and 50-55, like numerals have, where possible, been used to denote like parts, albeit with the prefix 1300 to indicate that these features belong to the eleventh embodiment. The engaging edge or

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shoulder portions 1332a may be considered an edge of a tooth region or tooth 1330. Additional shoulder portions 1332b may be formed along longitudinal hook fold line 1329, for example as sides of cutaway areas 1328 in blank 1310. Thus additional shoulder portions 1332b may be considered to lie along a fold line (1329) between hook panels, while the tooth 1330 (on which is the shoulder portion 1332a) may be considered to lie along a free edge of a hook panel. A ramp or slope 1336a may be formed on the outer distal edge of each hook panel 1316a, 1316b, 1316c, 1316d. Also a ramp or slope 1336b may be formed on the inner distal edge of each hook panel 1316a, 1316b, 1316c, 1316d at the respective ends of the longitudinal hook fold line 1329.

[00156] Comparing Figures 44 with 50, it can be seen that in Figure 50, the handle 1300 (of the eleventh embodiment) for a two-tier stack of articles 'A' has the additional shoulder portion 1332b, formed along hook fold line 1329, positioned lower on hook panels 1316a, 1316b, 1316c, 1316d than the similar additional shoulder portion 1232b in Figure 44 for a single tier stack. Therefore, with reference to Figures 52 and 53, when the taller handle 1300 is inserted into a two-tier stack of articles 'A', with hook panels 1316a, 1316b, 1316c, 1316d placed into the apertures H by a downward movement in the direction of the arrow D1, then after passing through the apertures H, the hook panels 1316a, 1316b, 1316c, 1316d may also relax and splay outwardly as shown by the arrows D3 indicating the outward moving direction. This movement will then bring shoulder portions 1232a into supporting contact at points y1, under the flange F of the upper inner containers, but bring the additional shoulder portions 1332b along hook fold line 1329 into supporting contact at points x2, under the flange of the lower outer containers. (Notations 'x2' refer to positions on the lower outer containers.)

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[00157] Again, as shown in Figure 54, the two-tier array of articles 'A' may be lifted (in the direction of the arrow D2) and carried by handle 1300 by a user gripping the handle panels 1312, 1314.

[00158] As shown from the top in Figure 55, the shoulder portions 1332a support the upper tier of articles toward the center of the tier, for example supporting the two center upper articles under flange F at points y1. The additional shoulder portions 1332b along hook fold line 1329 support the lower tier of articles toward the ends of the tier, for example supporting the four outer lower articles under flange F at points x2.

[00159] In alternative embodiments the articles 'A' may not comprise a flange or protrusion F. In such embodiments, the package may further comprise a separate engaging member in the form of, for example, an insert that is placed beneath each tier of articles 'A'. Such an insert may comprise an aperture for receiving at least a part of the hook 1216a/1216b or 1216c/1216d; 1316a/1316b or 1316c/1316d such that one or more shoulders 1232a, 1232b; 1332a, 1332b may engage with the insert.

[00160] It will be recognized that as used herein, directional references such as "top", "bottom", "front", "back", "end", "side", "inner", "outer", "upper" and "lower" do not limit the respective panels to such orientation, but merely serve to distinguish these panels from one another.

[00161] As used herein, the terms "hinged connection" and "fold line" refer to all manner of lines that define hinge features of the blank, facilitate folding portions of the blank with respect to one another, or otherwise indicate optimal panel folding locations for the blank. A fold line is typically a scored line, an embossed line, or a debossed line. Any reference to hinged connection or fold line should not be

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construed as necessarily referring to a single fold line only; indeed it is envisaged that hinged connection can be formed from any one or more of the following, a short slit, a frangible line or a fold line without departing from the scope of the invention.

[00162] As used herein, the term “severance line” refers to all manner of lines that facilitate separating portions of the substrate from one another or that indicate optimal separation locations. Severance lines may be frangible or otherwise weakened lines, tear lines, cut lines, or slits.

[00163] It should be understood that hinged connection, severance lines and fold lines can each include elements that are formed in the substrate of the blank including perforations, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, a cut line, an interrupted cut line, slits, scores, any combination thereof, and the like. The elements can be dimensioned and arranged to provide the desired functionality. For example, a line of perforations can be dimensioned or designed with degrees of weakness to define a fold line and/or a severance line. The line of perforations can be designed to facilitate folding and resist breaking, to facilitate folding and facilitate breaking with more effort, or to facilitate breaking with little effort.

CLAIMS

1. A package comprising a group of articles arranged in one or more tiers; an engaging member joined to the group of articles having a lifting surface; and a handle attached to the group of articles via engagement of the handle with the engaging member, the handle comprising a handle portion structured and arranged for being grasped by a user and at least one hook coupled to the handle portion, the at least one hook comprising at least two hook panels folded with respect to one another along a hook fold line and each comprising at least one tooth, at least part of the handle being received in an aperture defined in the engaging member such that the at least one tooth of each of the at least two hook panels engages the lifting surface of the engaging member, whereby the handle is connected to the group of articles.
2. A package according to claim 1, further comprising at least one shoulder located along the hook fold line and engaging the lifting surface of the engaging member.
3. A package according to claim 1, wherein the tooth is located along a free edge of a hook panel.
4. A package according to claim 1, 2 or 3 wherein the at least one hook comprises two hooks, and wherein each of the two hooks comprises two hook panels folded with respect to one another and wherein a first pair of hook panels is coupled to a first end of the handle portion, and a second pair of hook panels is coupled to a second end of the handle portion opposing the first end.
5. A package according to any preceding claim wherein the said at least two hook panels are folded with respect to one another at an angle relative to one another such that a cross-section through the at least two hook panels is substantially "V"-shaped.
6. A package according to claim 5 wherein at least one tooth of a first of said at least two hook panels of one of the hooks has an engaging edge that is

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disposed, at least in part, in the same plane as an engaging edge of a tooth of a second of said at least two hook panels, such that the two teeth simultaneously engage the lifting surface of the engaging member at spaced locations.

7. A package according to any one of claims 1 to 5, wherein the handle portion is coupled to said at least one hook by one or more gusset panels such that the handle portion is foldable at an angle relative to the at least one hook and into flat face contacting relationship with an upper surface of the group of articles.
8. A package according to any one of the preceding claims wherein each of the one or more tiers comprises an array of articles having a dimension of at least two articles by at least two articles, wherein each of the articles comprises a flange and wherein each article is frangibly connected to at least two adjacent articles by their respective flanges.
9. A package according to claim 8 wherein the engaging member is formed from at least a portion of the flange of one or more of the articles of the group, and the at least one tooth of each hook panel engages a separate portion of a lowermost surface of the flange of one or more of the articles of the group.
10. A package according to any one of claims 1 to 9 wherein the engaging member is formed from an insert, wherein the insert comprises a panel having an aperture for receiving the tooth and the tooth engages a lowermost surface of the panel of the insert.
11. A package according to any one of the preceding claims wherein the package further comprises a top cover comprising a primary panel having at least one aperture, said at least part of the at least one hook of the handle is additionally received in the at least one aperture of the primary panel, and the top cover is attached to the group of articles by virtue of the connection of the handle to the group of articles.
12. A package according to any one of the preceding claims further comprising at least one reinforcement panel hinged to a hook panel and/or hinged to the

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handle portion, said at least one reinforcement panel being folded into a substantially flat-face contacting relationship with the said hook panel and/or said handle portion.

13. A package according to claim 12 wherein the at least one tooth of each hook projects from an outer edge of a hook panel, wherein the at least one reinforcement panel is hinged to a hook panel and comprises an outer edge that has a shape similar to the shape of an outer edge of the hook panel and wherein the reinforcement panel reinforces the at least one tooth.
14. A package according to any one of claims 12 or 13 wherein said one or more reinforcement panels is hinged to at least one tooth.
15. A package according to claim 14 wherein at least a portion of the at least one hook has a cross-section that is substantially chevron-shaped.
16. A package according to any one of the preceding claims when dependent upon claim 11 wherein the top cover further comprises one or more end panels and/or one or more side panels hinged to the primary panel and wherein the at least one aperture of the primary panel is elliptical in shape.
17. A package according to any one of the preceding claims wherein the or each hook panel comprises a number of teeth selected from the group consisting of: one tooth, two teeth, three teeth and four teeth.
18. A package according to claim 2, wherein the articles are arranged in two or more tiers; wherein the at least one tooth engages the lifting surface of an engaging member proximate a first article on an upper tier, and the at least one shoulder located along the hook fold line engages the lifting surface of an engaging member proximate a second article on a lower tier, the second article not being directly below the first article.
19. A carrying handle comprising a handle portion and at least one hook, the handle portion being structured and arranged for being grasped by a user and the at

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least one hook comprising at least two hook panels each coupled to the handle portion, the at least two hook panels being folded with respect to one another along a hook fold line and each having at least one tooth, wherein each tooth extends from a respective one of the at least two hook panels for engaging with an engaging member of an article group such that the carrying handle is suitable for being attached to an article group.

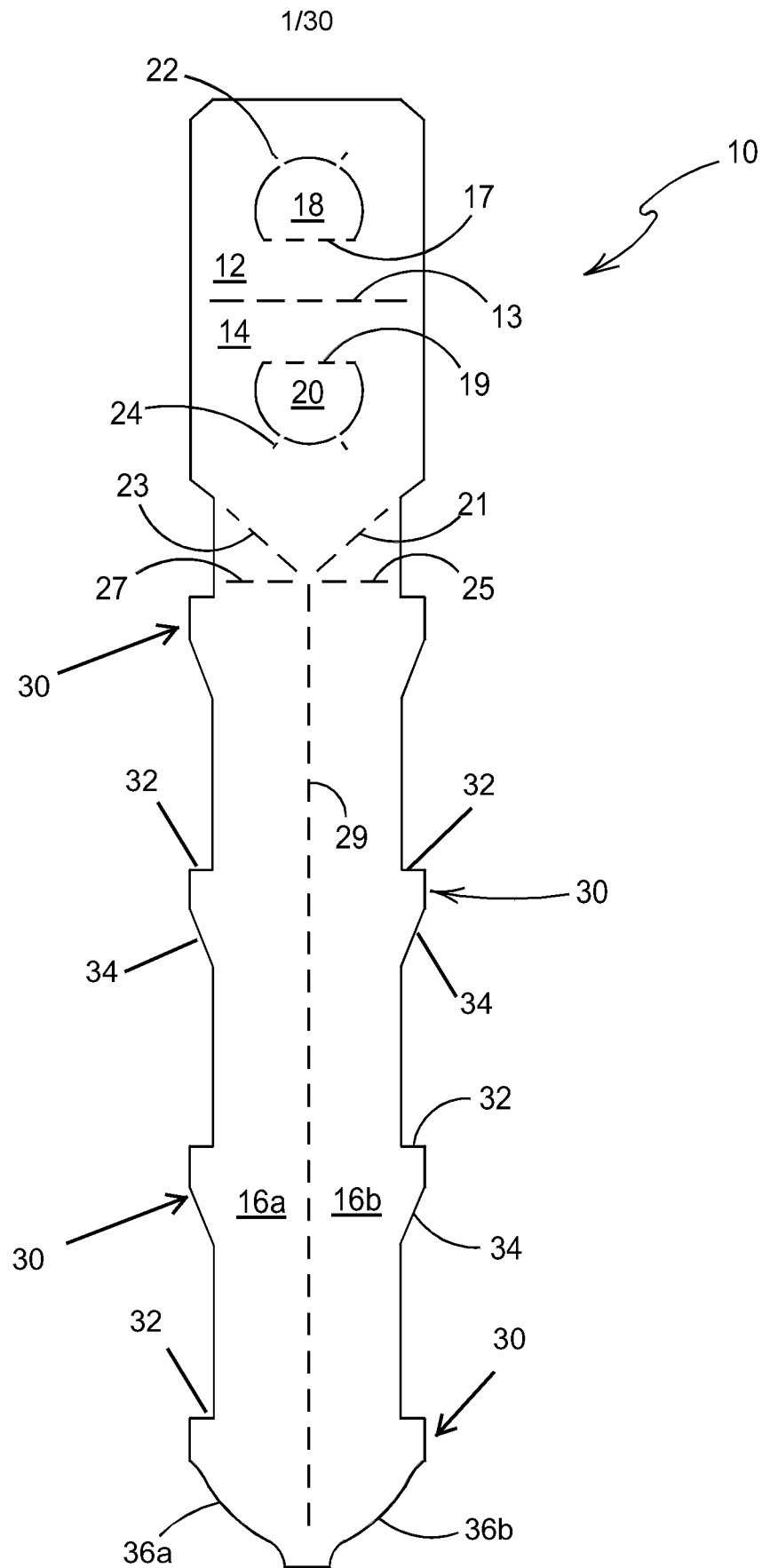
20. A carrying handle according to claim 19, further comprising at least one shoulder located along the hook fold line for engaging with an engaging member of an article group.
21. A carrying handle according to claim 19, wherein the tooth is located along a free edge of a hook panel.
22. A carrying handle according to any of claims 19-21 wherein the at least one hook comprises two hooks, a first hook coupled to a first end of the handle portion and a second hook coupled to a second end of the handle portion opposing the first end and wherein each hook comprises at least two hook panels, folded with respect one another and each having at least one tooth.
23. A carrying handle according to any one of claims 19-22 further comprising gusset panels for at least partially coupling each of the at least one hooks to the handle portion.
24. A carrying handle according to any one of claims 19-23 wherein the at least one tooth of each of the at least two hook panels extends from a respective one of the at least two hook panels to form a ratchet and wherein the carrying handle further comprises one or more reinforcement panels hinged to the at least one hook and/or to the handle portion.
25. A carrying handle according to claim 24 wherein the one or more reinforcement panels comprise at least two reinforcement panels hinged to the at least two hook panels via respective hinged connections.

26. A carrying handle according to claim 25 wherein the at least one hook comprises two hooks each comprising a pair of hook panels coupled to a respective one of opposed ends of the handle portion, and wherein said one or more reinforcement panels comprises four reinforcement panels, the four reinforcement panels being hinged to each hook panel of said two pairs of hook panels via respective hinged connections.
27. A carrying handle according to claim 26 further comprising a gusset panel coupling each of the at least two hook panels to the handle portion, wherein none of the one or more reinforcement panels overlaps or reinforces said gusset panels.
28. A blank for forming a carrying handle comprising a handle portion structured and arranged for being grasped by a user and at least one hook coupled to the handle portion, the blank comprising at least two hook panels foldable along a hook fold line with respect to one another and each comprising at least one tooth, and a handle portion, at least part of the handle being configured such that it can be received in an aperture defined in an engaging member of an article array such that the at least one tooth of each of the at least two hook panels can engage such an engaging member, whereby the carrying handle formed from the blank is attachable to the group of articles.
29. A blank according to claim 28, further comprising at least one shoulder located along the hook fold line for engaging with an engaging member of the article array.
30. A blank according to claim 28, wherein the tooth is located along a free edge of a hook panel.
31. A blank according to any of claims 28-30 wherein the at least one hook comprises two hooks including a first hook coupled to a first end of the handle portion, and a second hook coupled to a second end of the handle portion opposed to the first end and wherein each hook comprises at least two hook

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panels foldable with respect to one another and each comprising at least one tooth.

32. A blank according to any one of claims 28-31 further comprising a gusset panel for at least partially coupling each of the at least two hook panels to the handle portion.
33. A blank according to any one of claims 28 to 32, wherein the at least one tooth extends from a free edge of a respective one of the at least two hook panels to form a ratchet and the blank further comprising one or more reinforcement panels hinged to the at least two hook panels and/or to the handle panel.
34. A blank for forming a carrying handle according to claim 33 wherein the one or more reinforcement panels comprises at least two reinforcement panels, one reinforcement panel being hinged to each of the at least two hook panels via a hinged connection.
35. A blank according to claim 31 wherein said one or more reinforcement panels comprise four reinforcement panels hinged to the hook panels of the first and second hooks via hinged connections respectively.
36. A package, carrying handle or blank substantially as described herein with reference to and/or as illustrated by the accompanying Figures.
37. A kit of parts for forming a package, the kit comprising a first blank according to any one of claims 28 to 35 for forming a carrying handle and a second blank for forming a top cover having at least one aperture for receiving the at least two hook panels of the carrying handle formed from the first blank.



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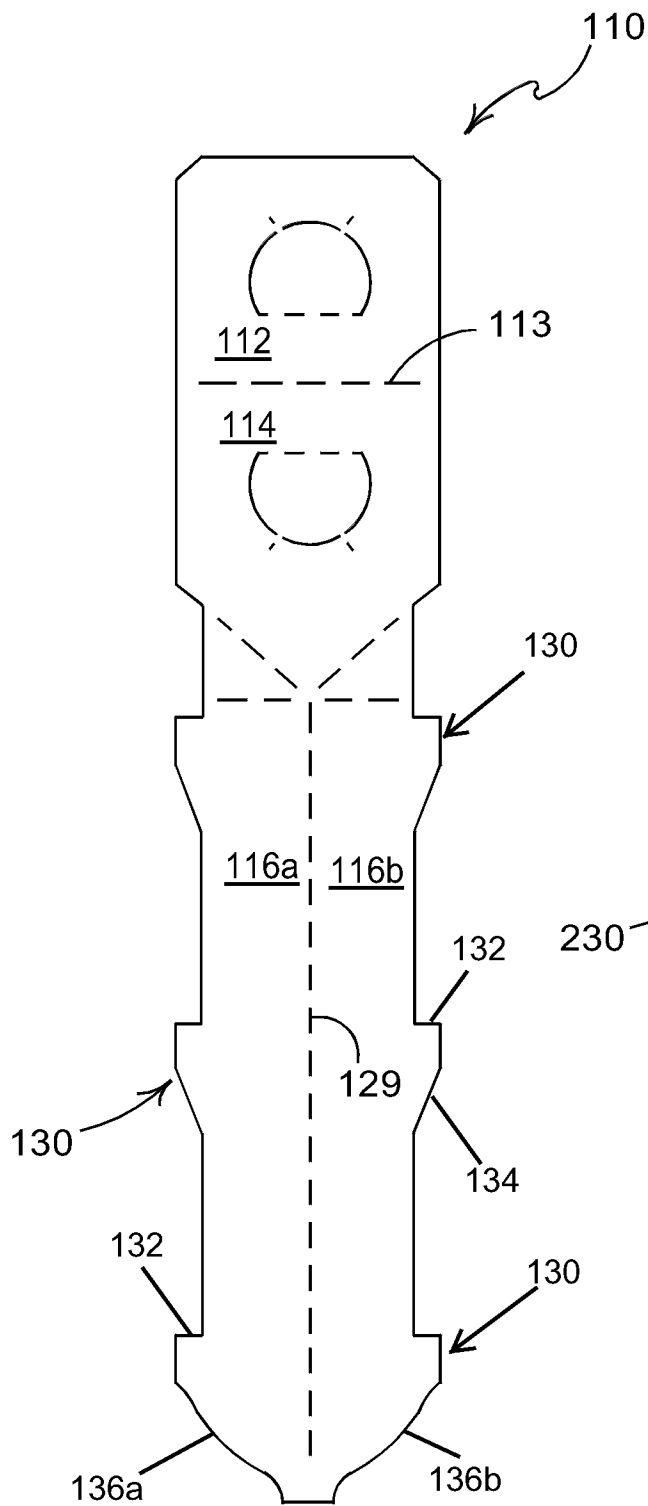


FIGURE 2

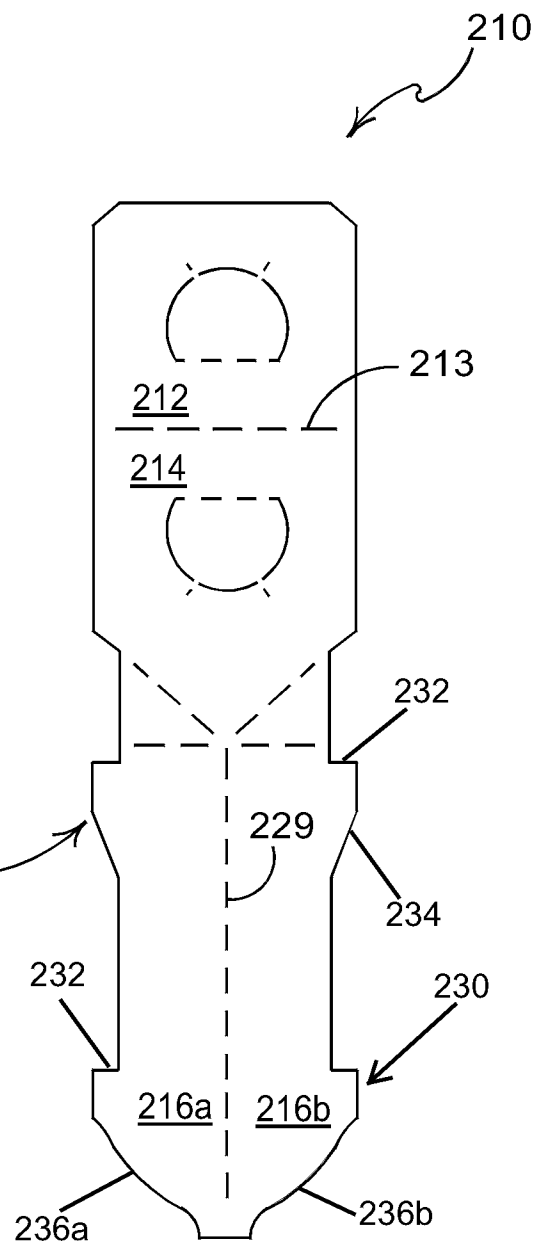


FIGURE 3

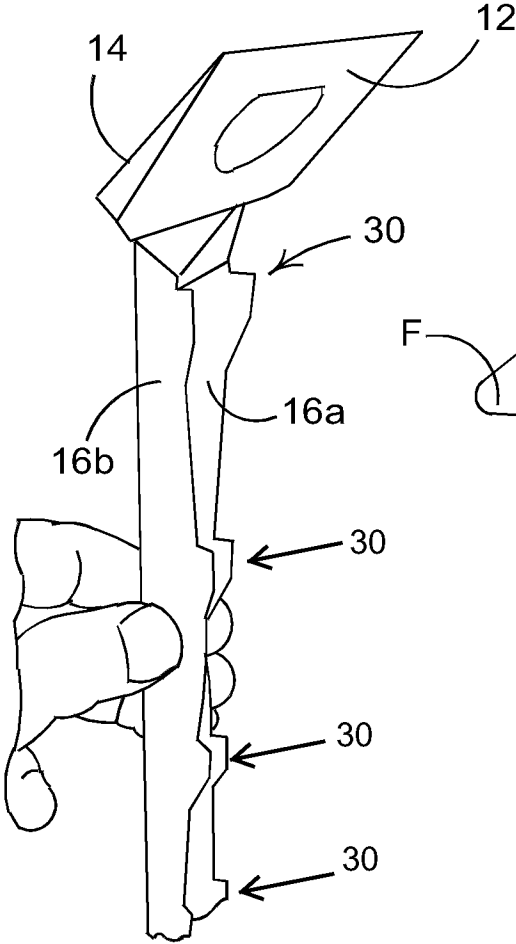


FIGURE 4

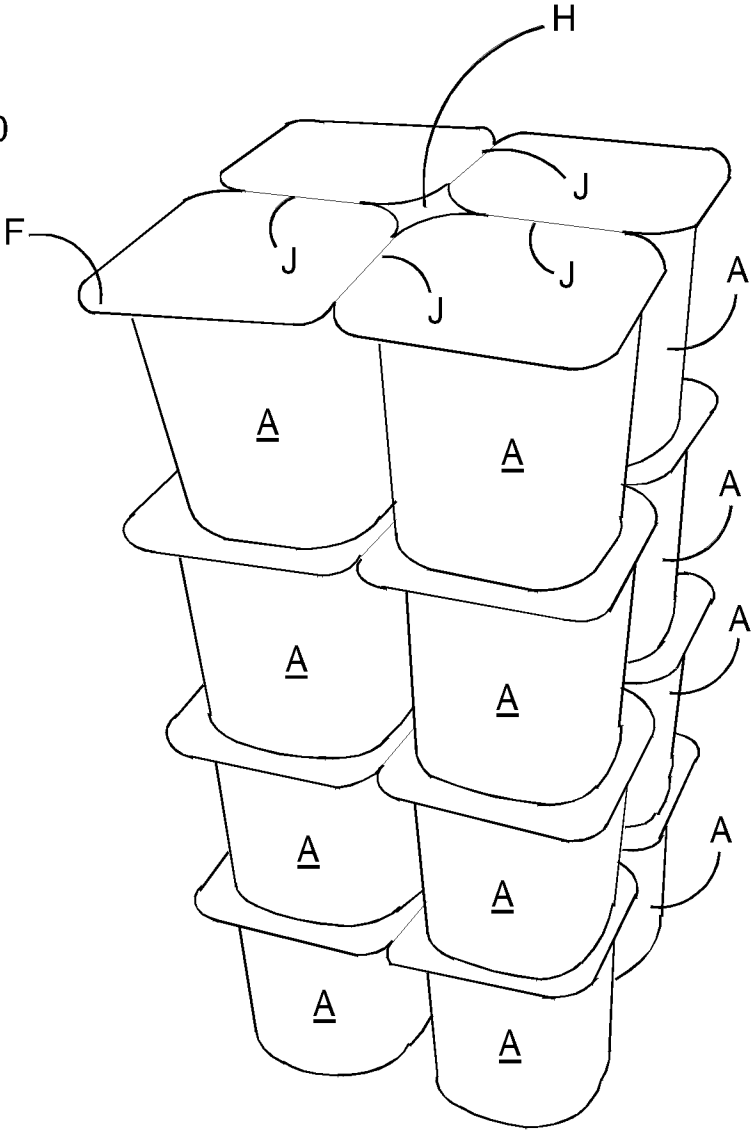


FIGURE 5

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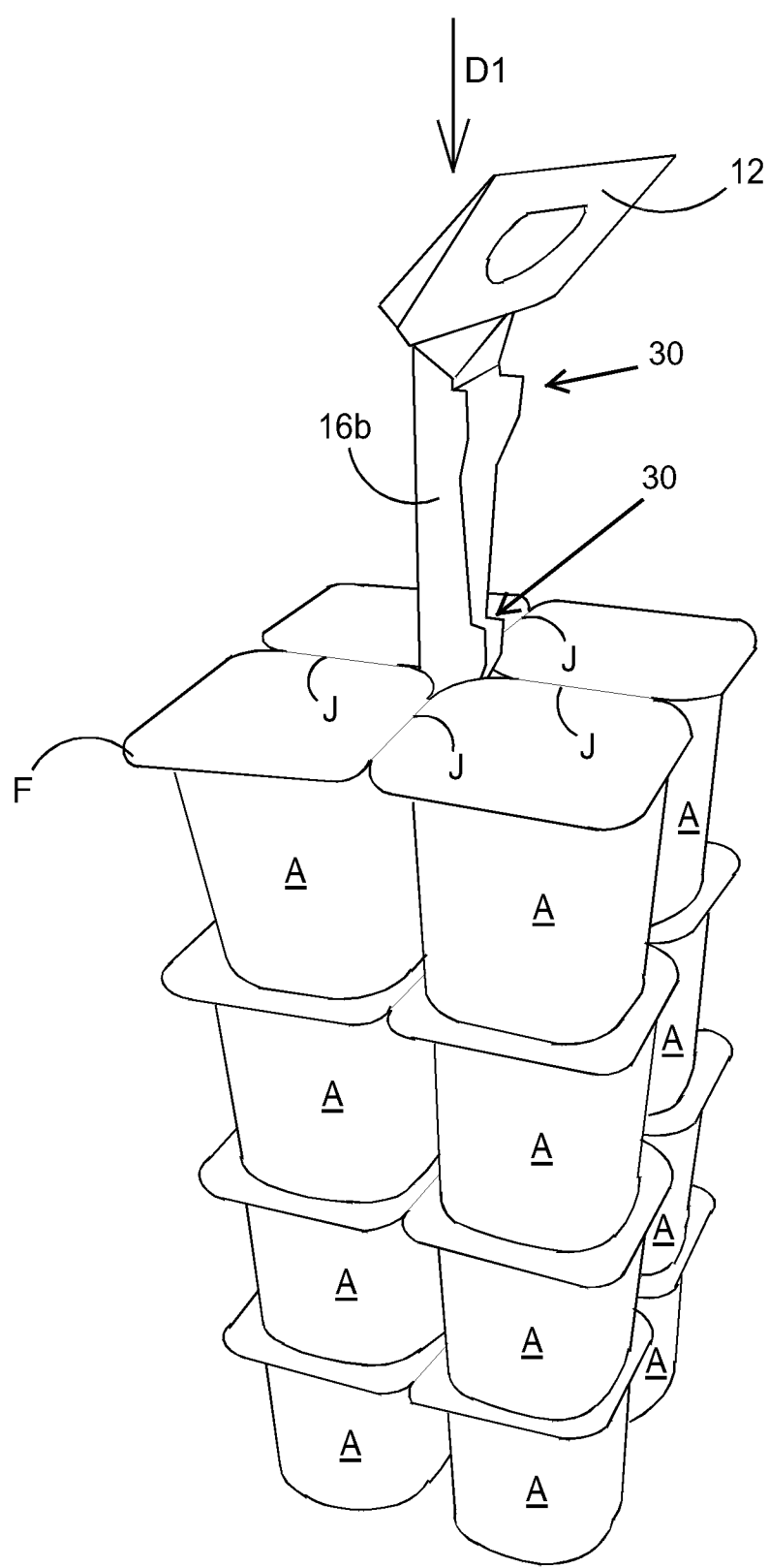


FIGURE 6

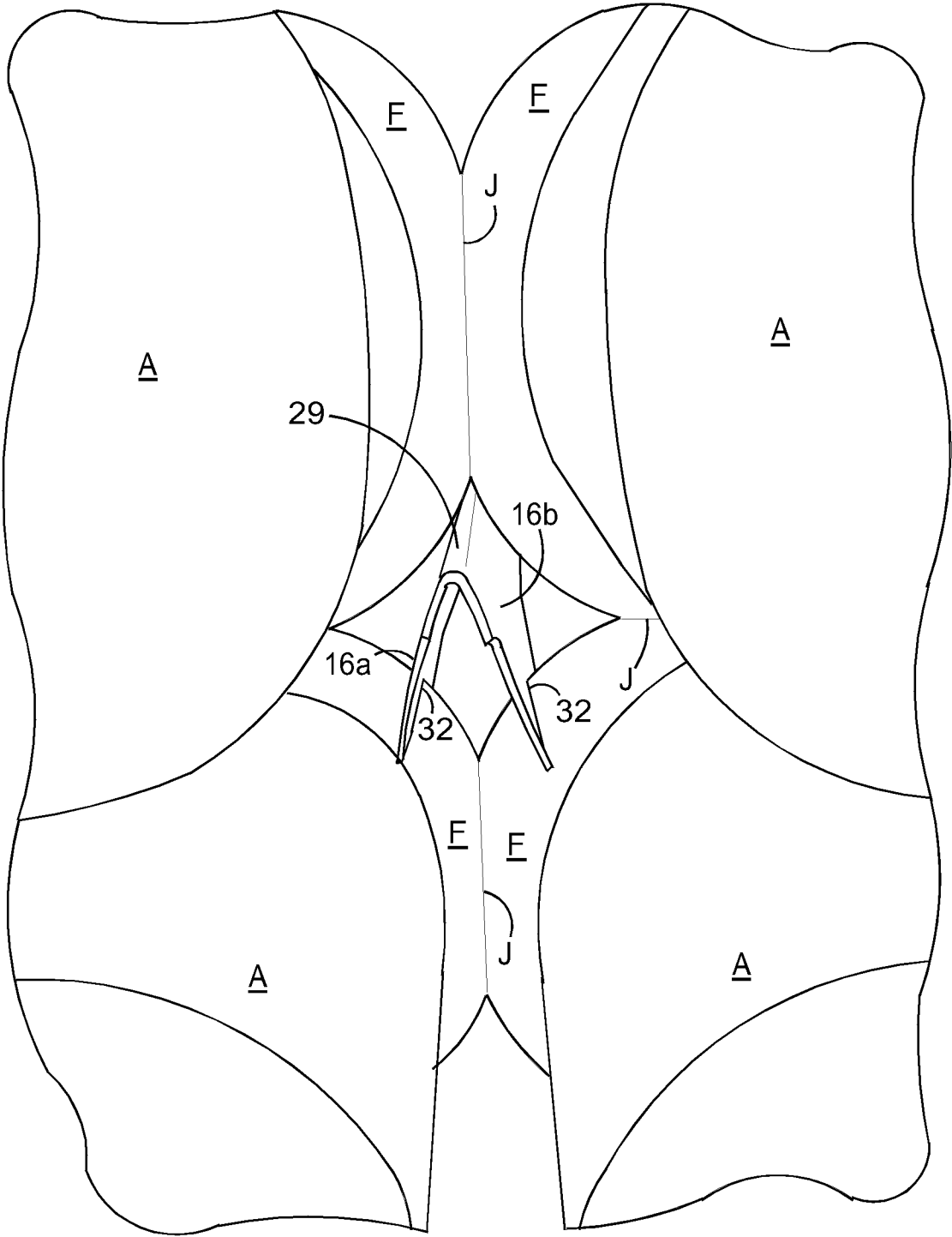


FIGURE 7

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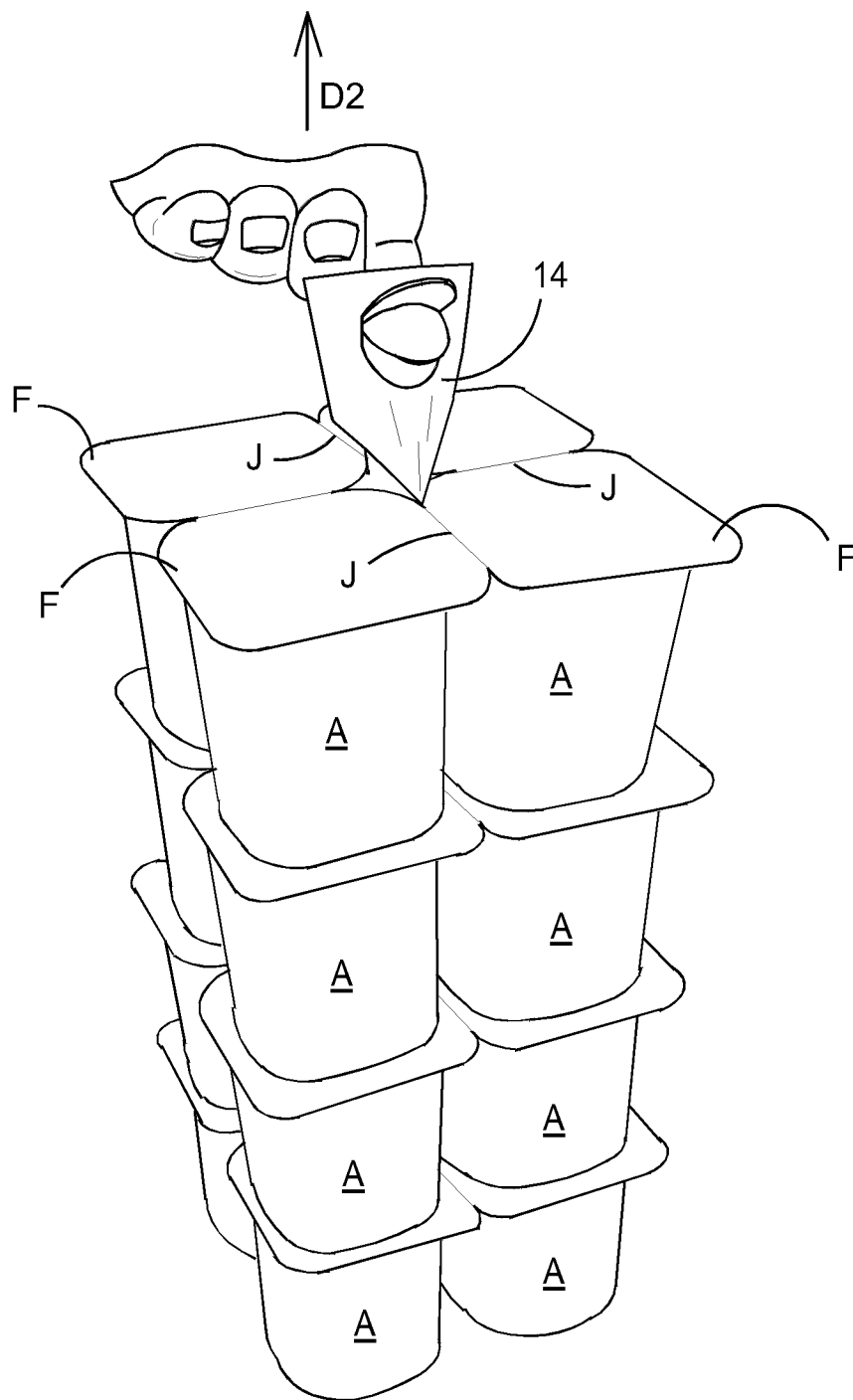


FIGURE 8

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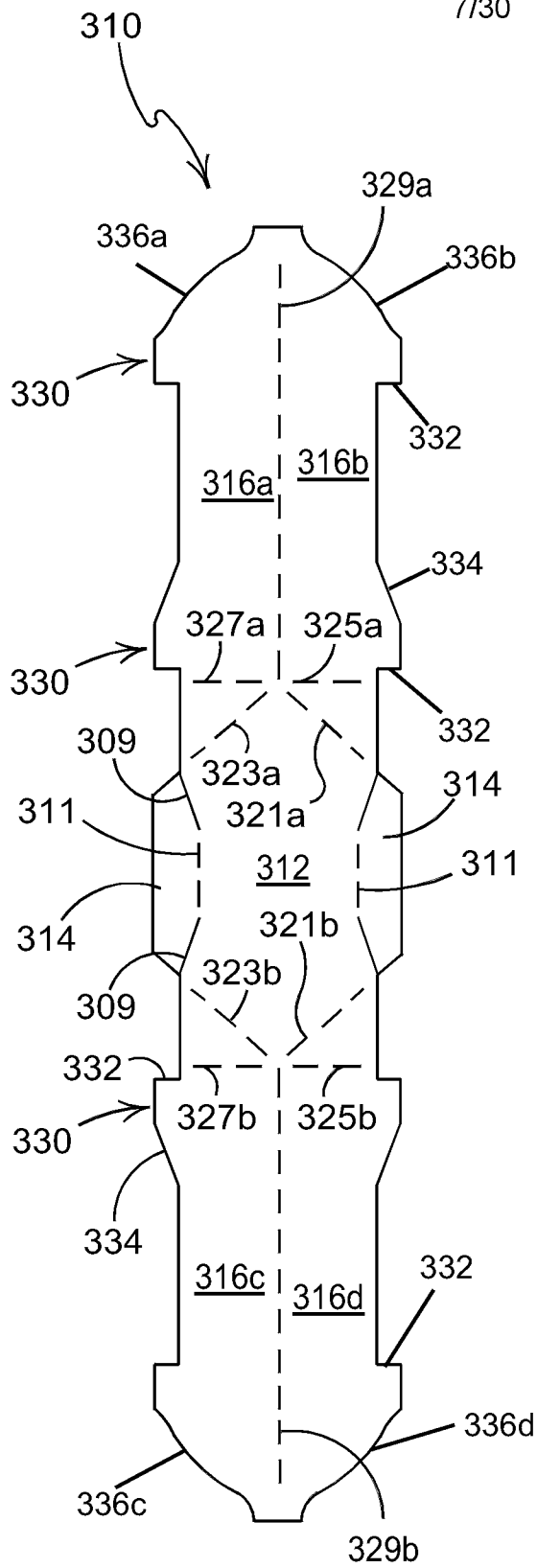


FIGURE 9

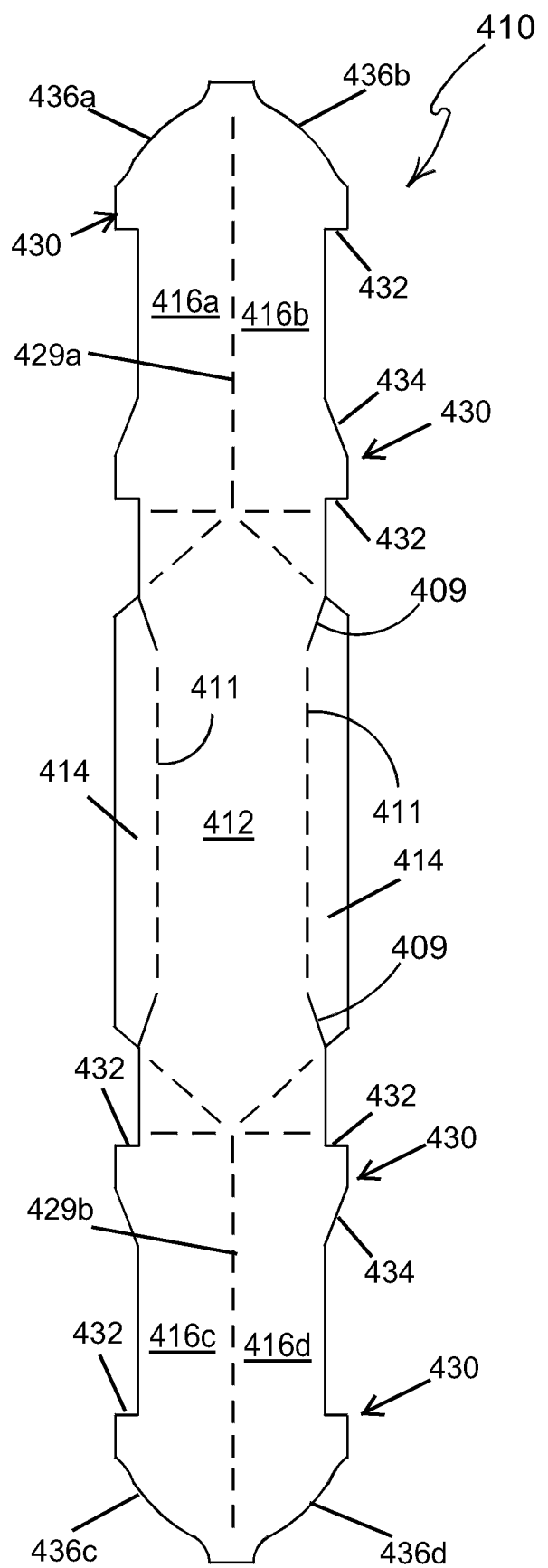


FIGURE 10

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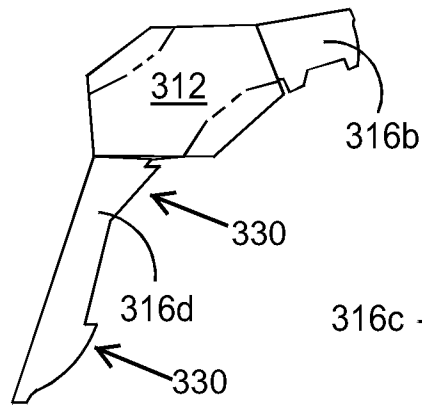


FIGURE 11

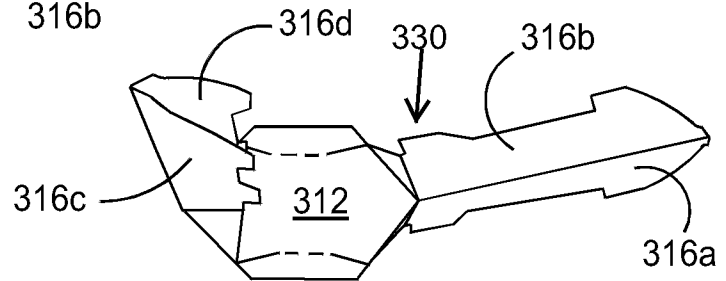


FIGURE 12

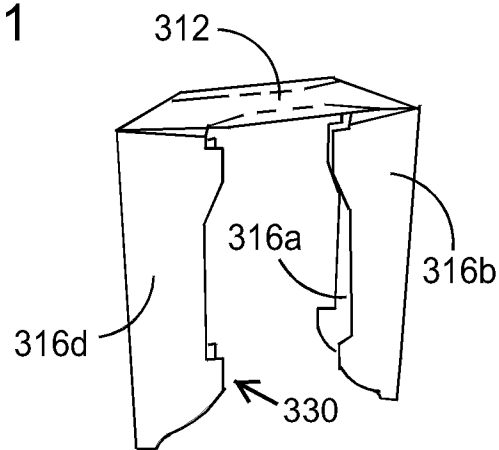


FIGURE 13

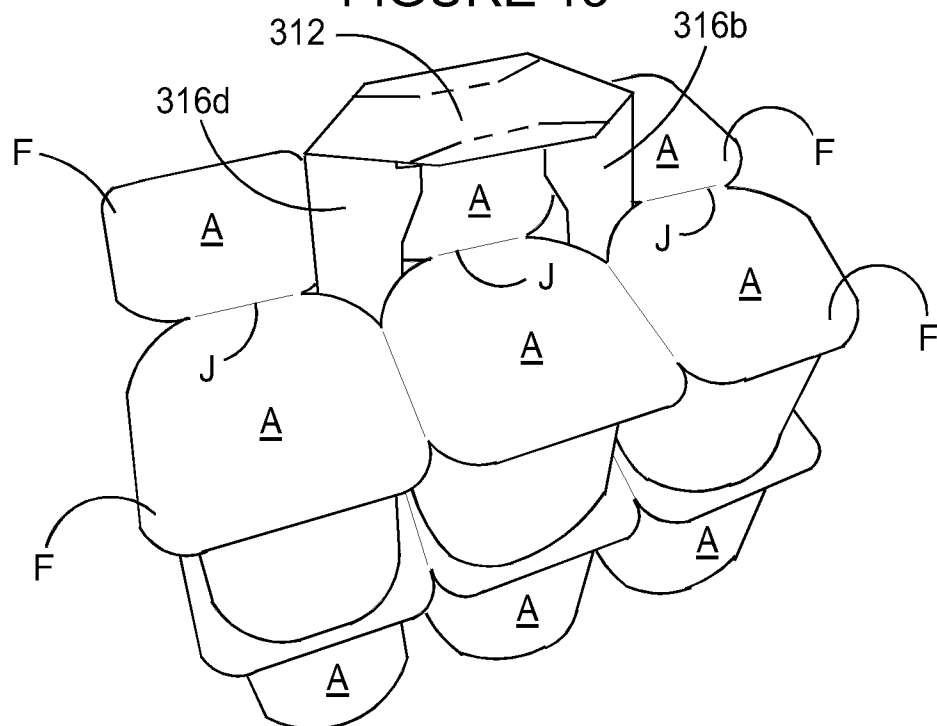


FIGURE 14

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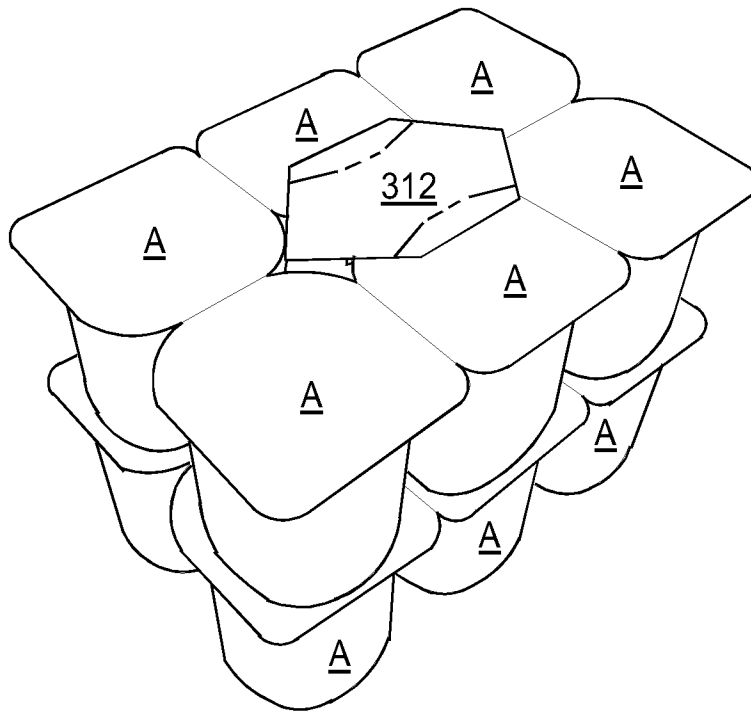


FIGURE 15

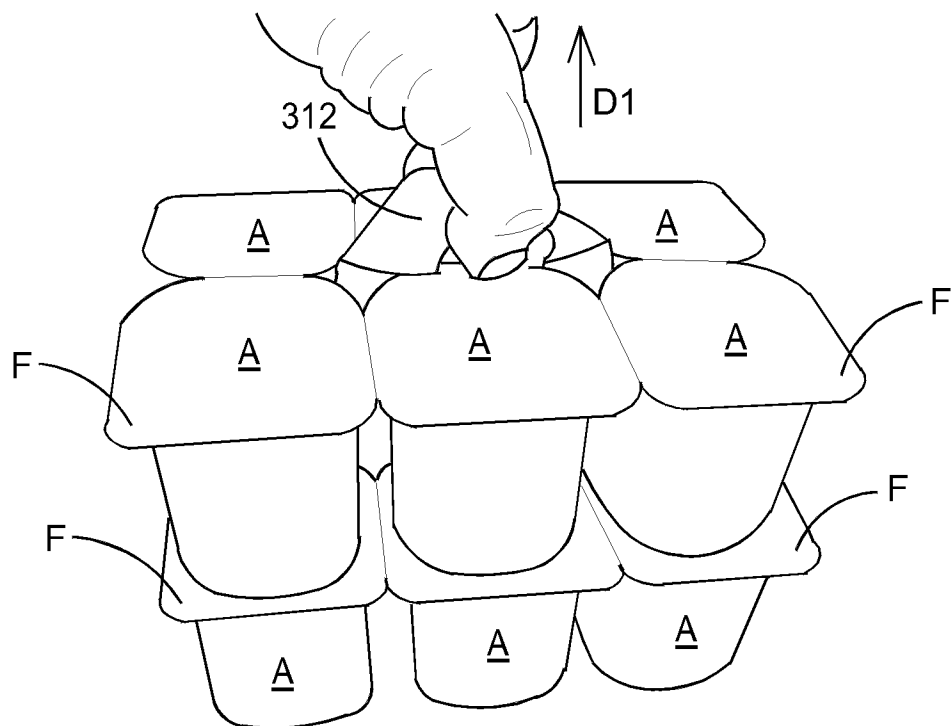


FIGURE 16

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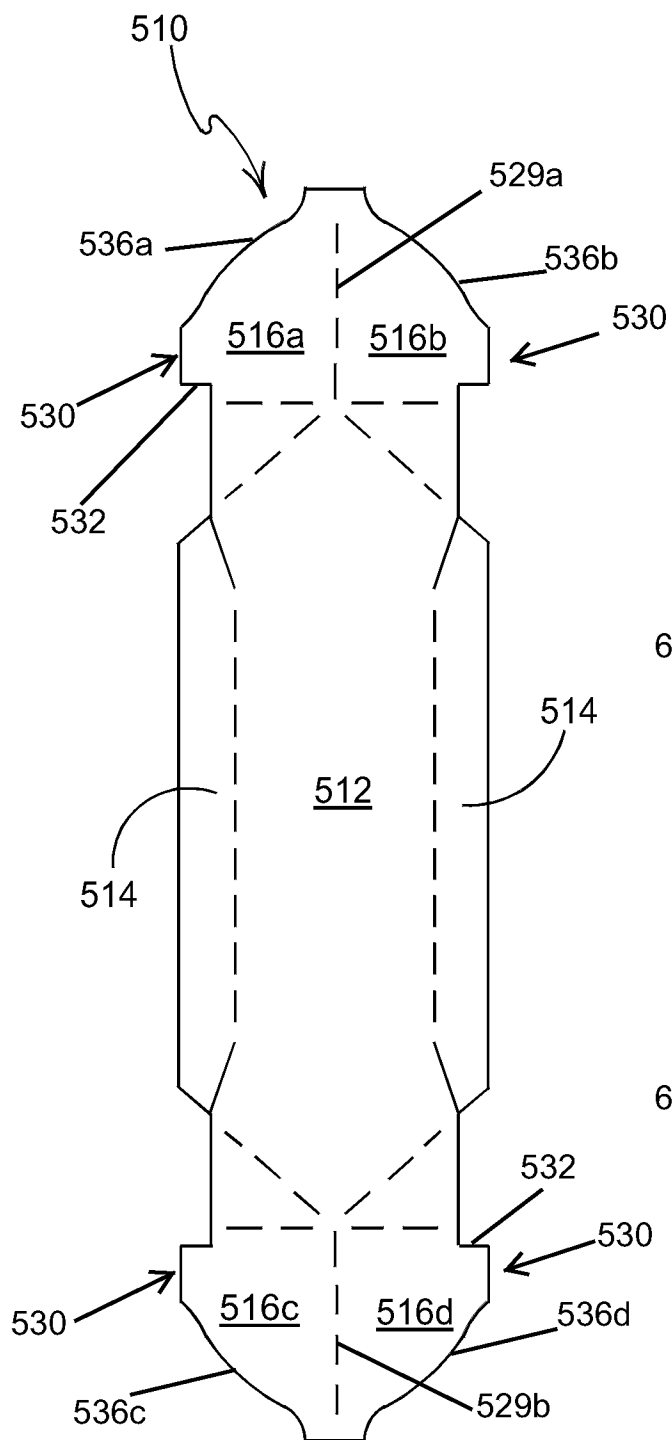


FIGURE 17

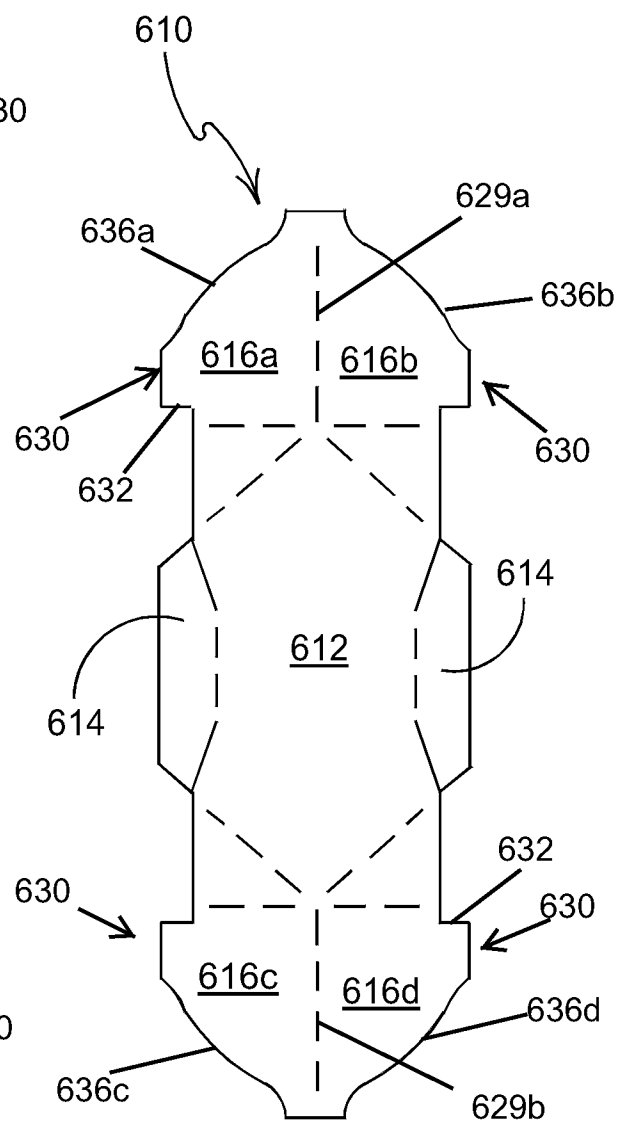


FIGURE 18

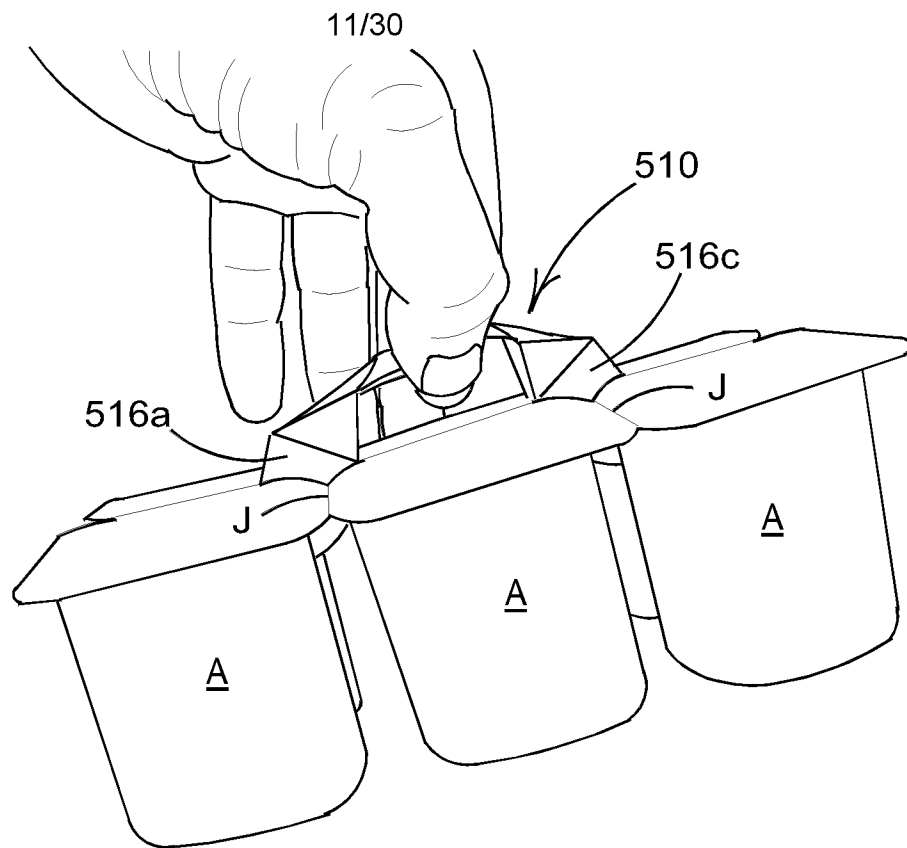


FIGURE 19

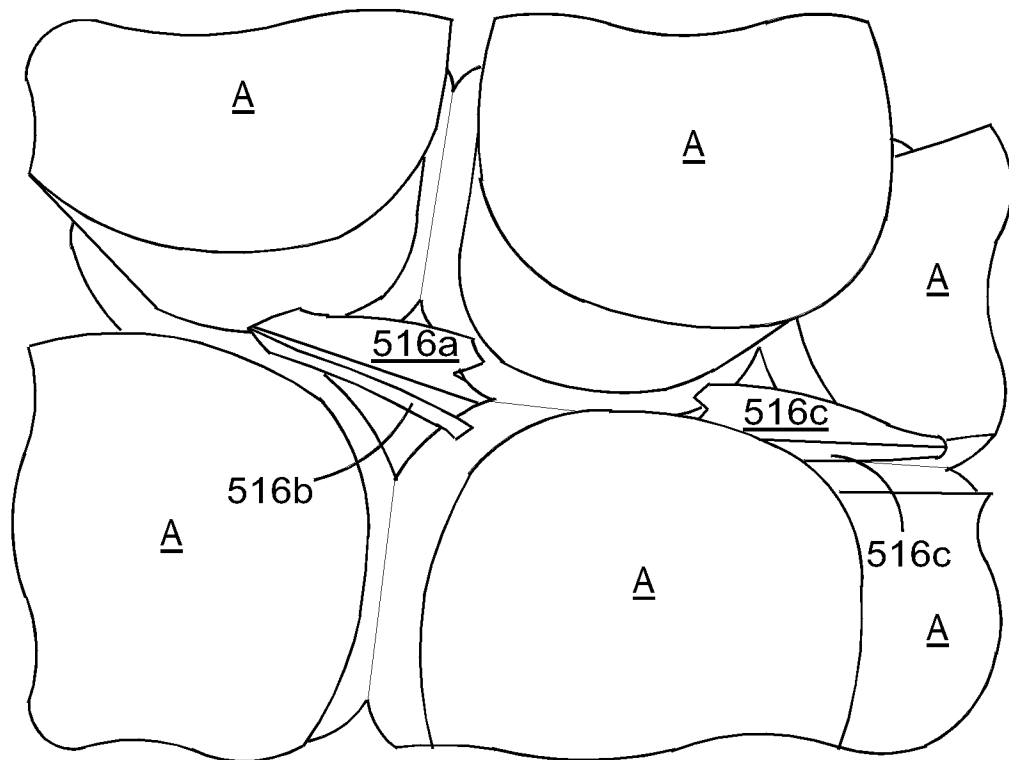


FIGURE 20

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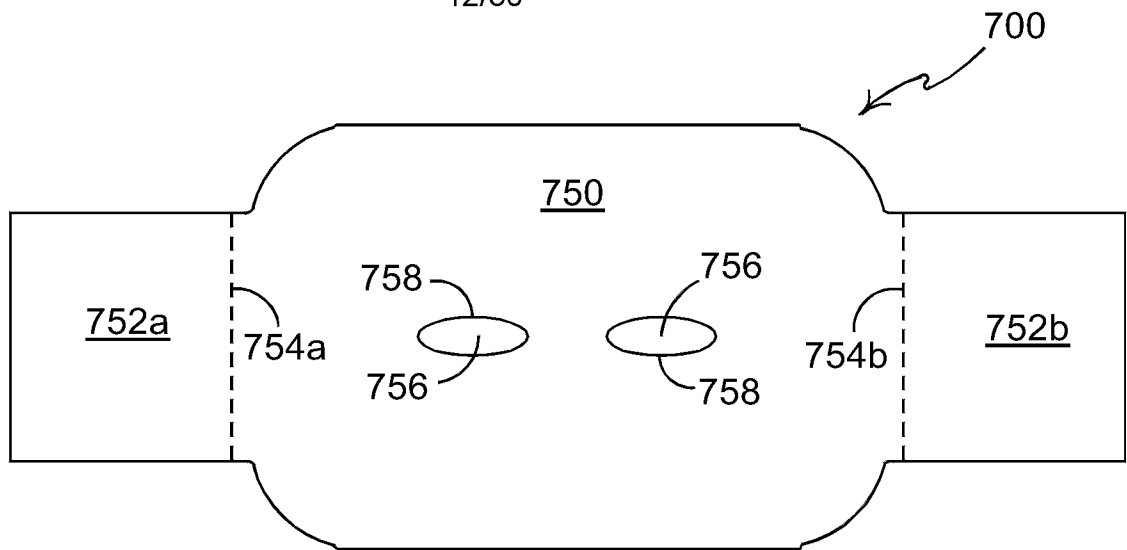


FIGURE 21

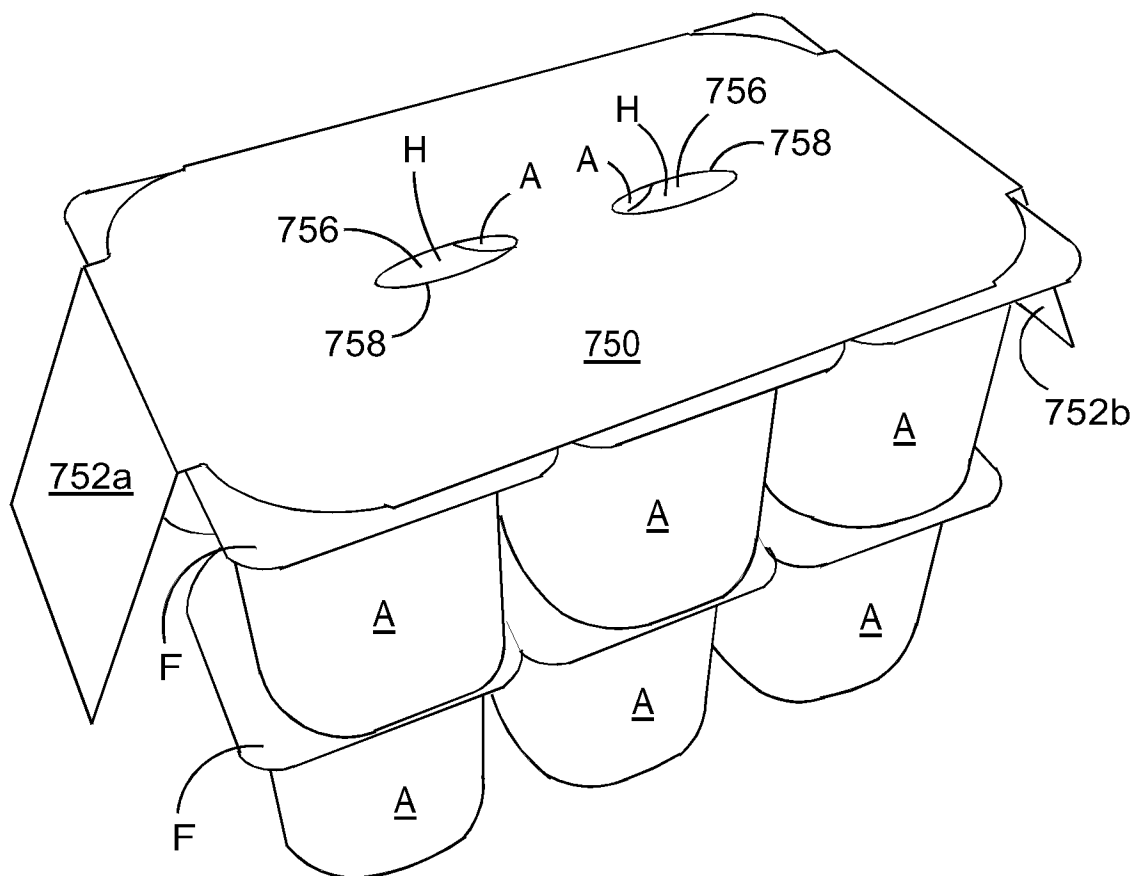


FIGURE 22

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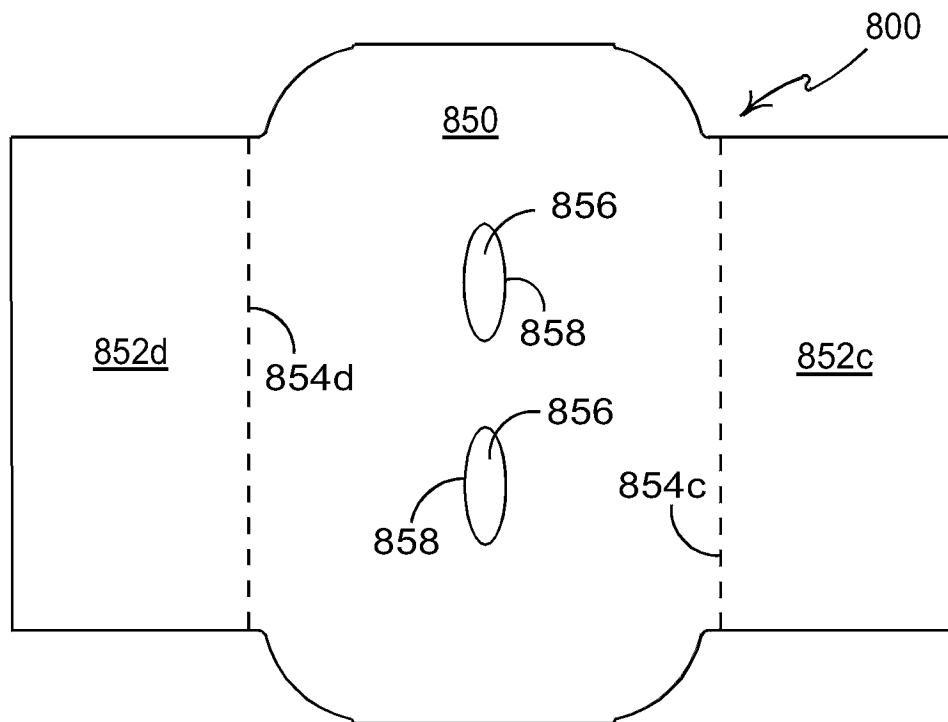


FIGURE 23

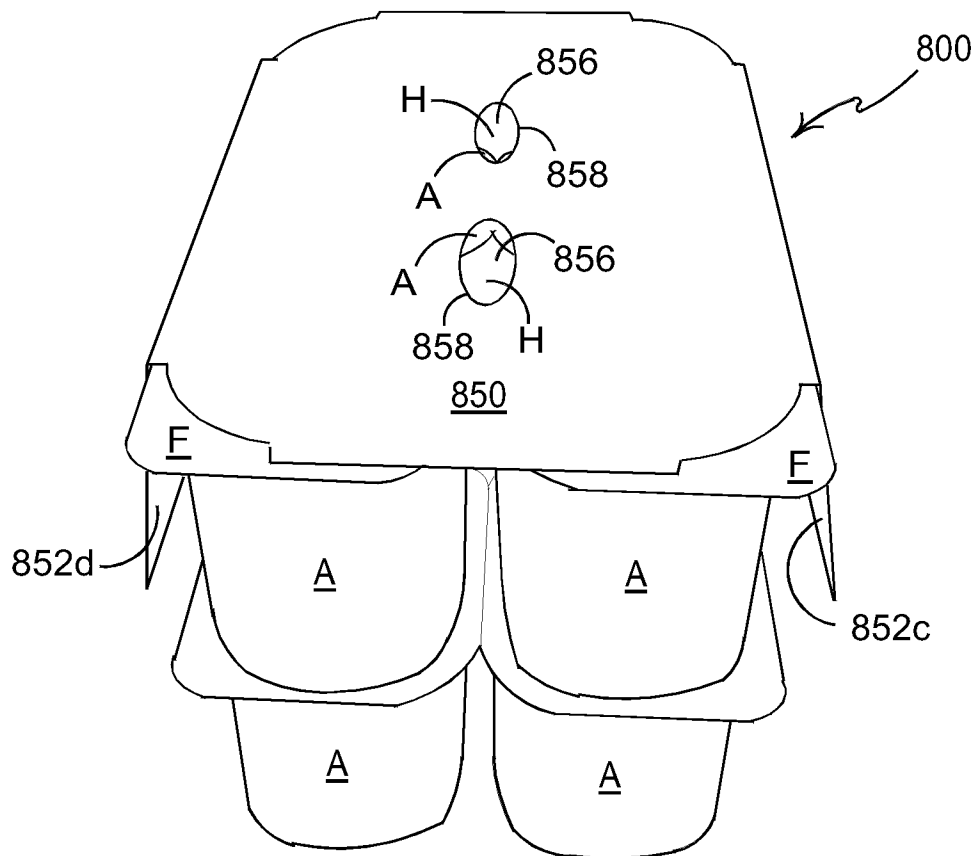


FIGURE 24

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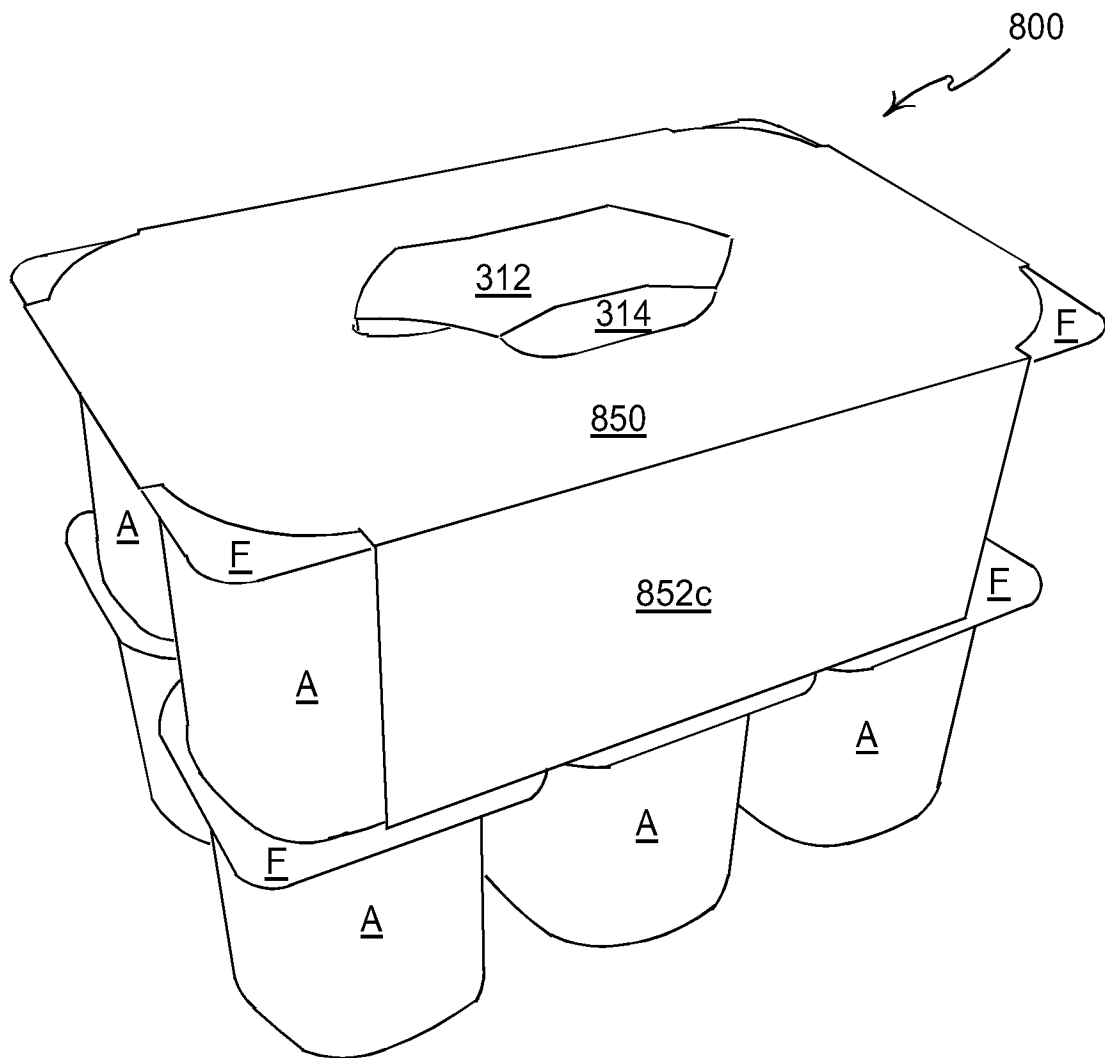


FIGURE 25

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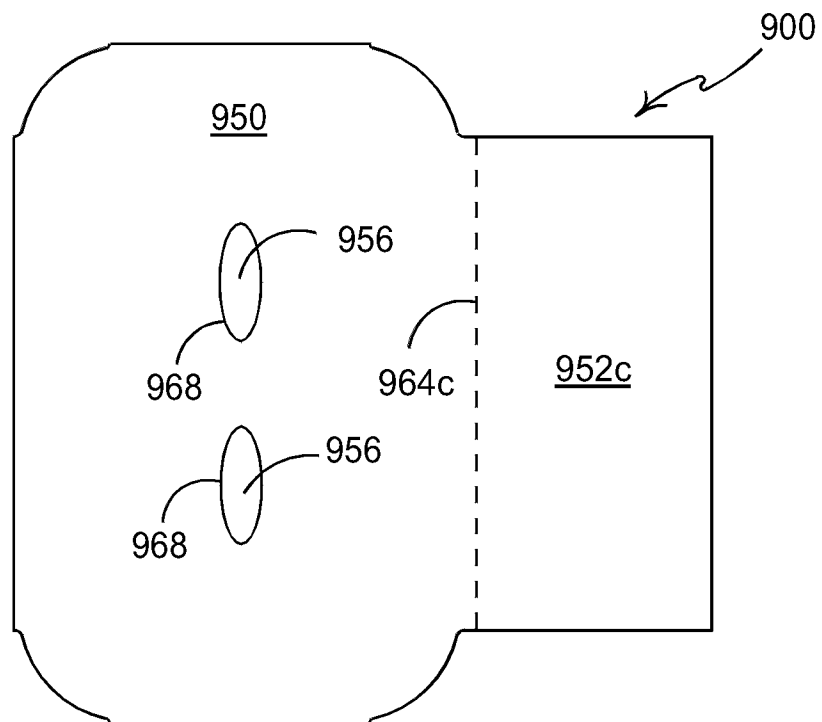


FIGURE 26

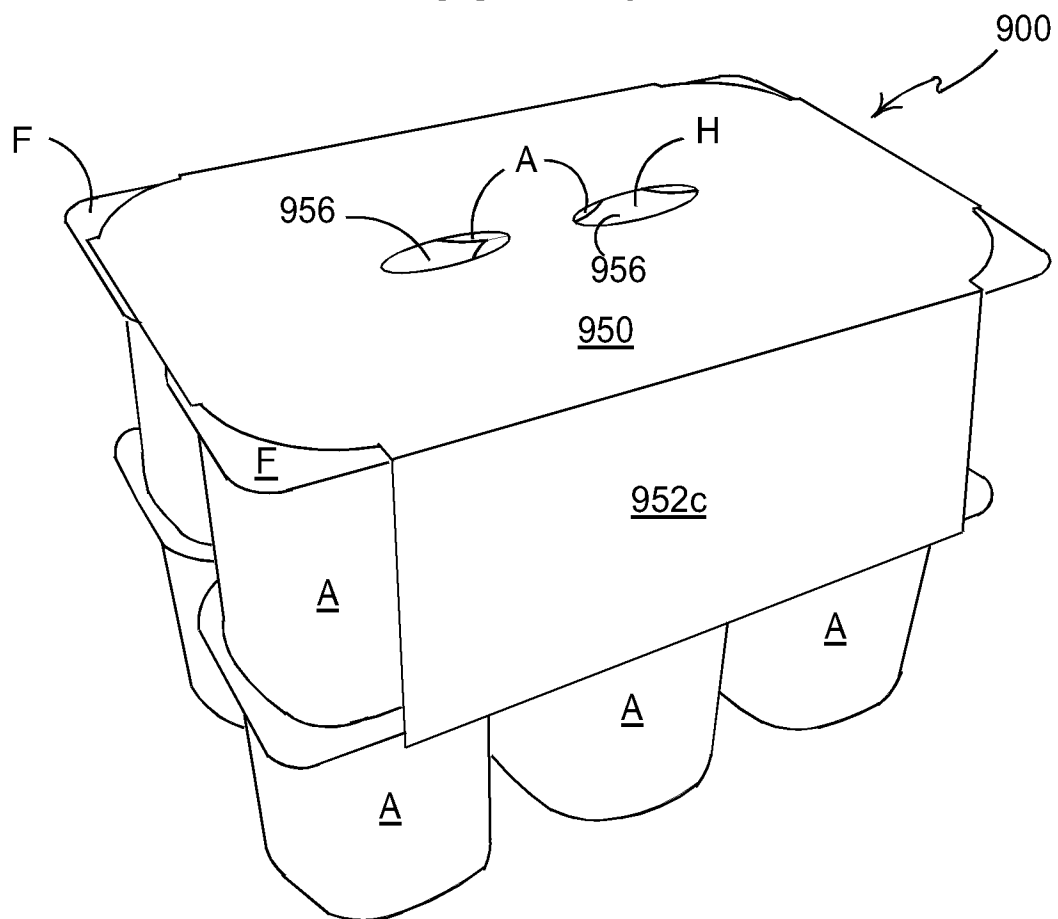


FIGURE 27

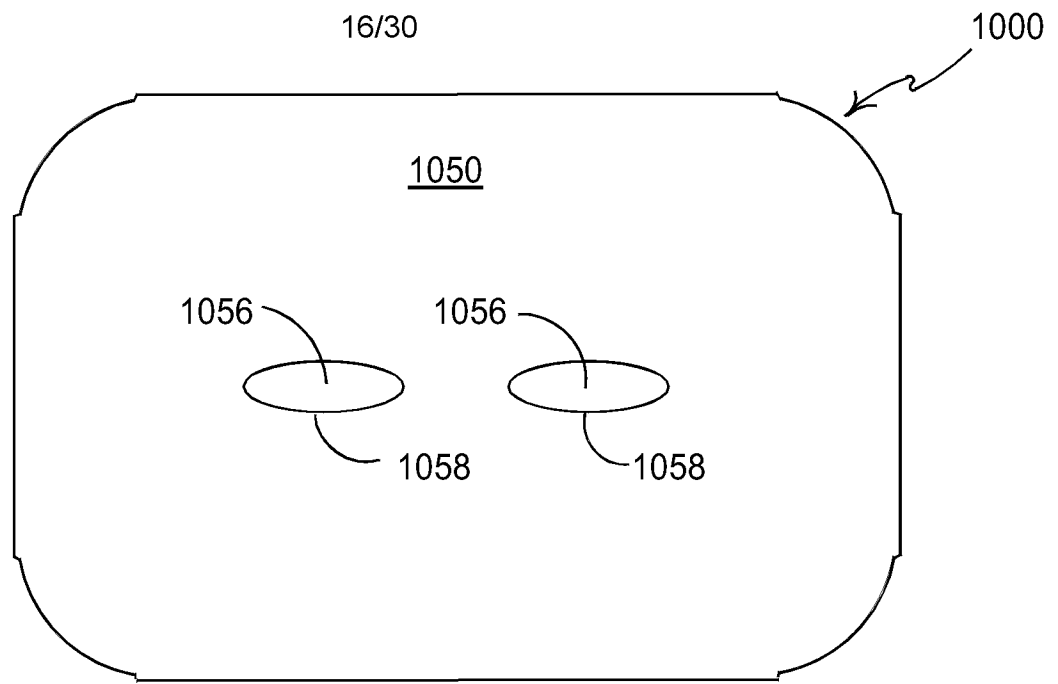


FIGURE 28

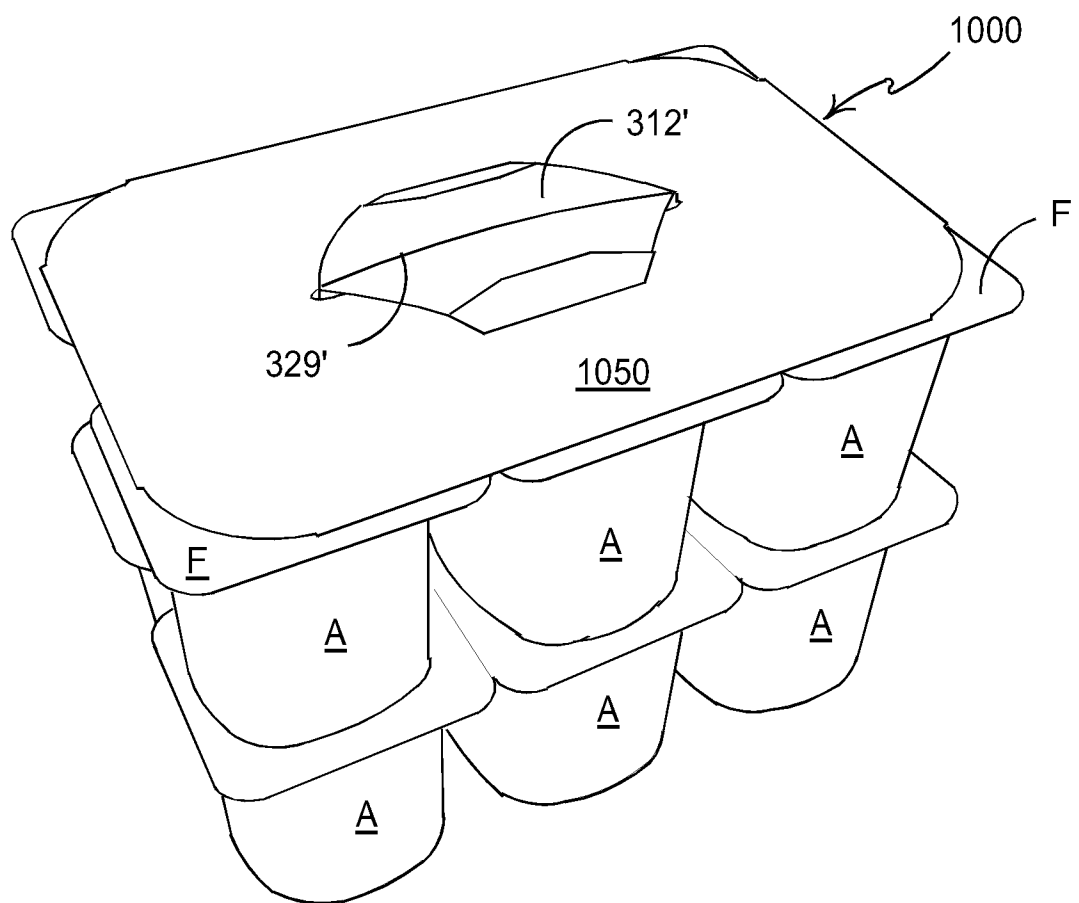


FIGURE 29

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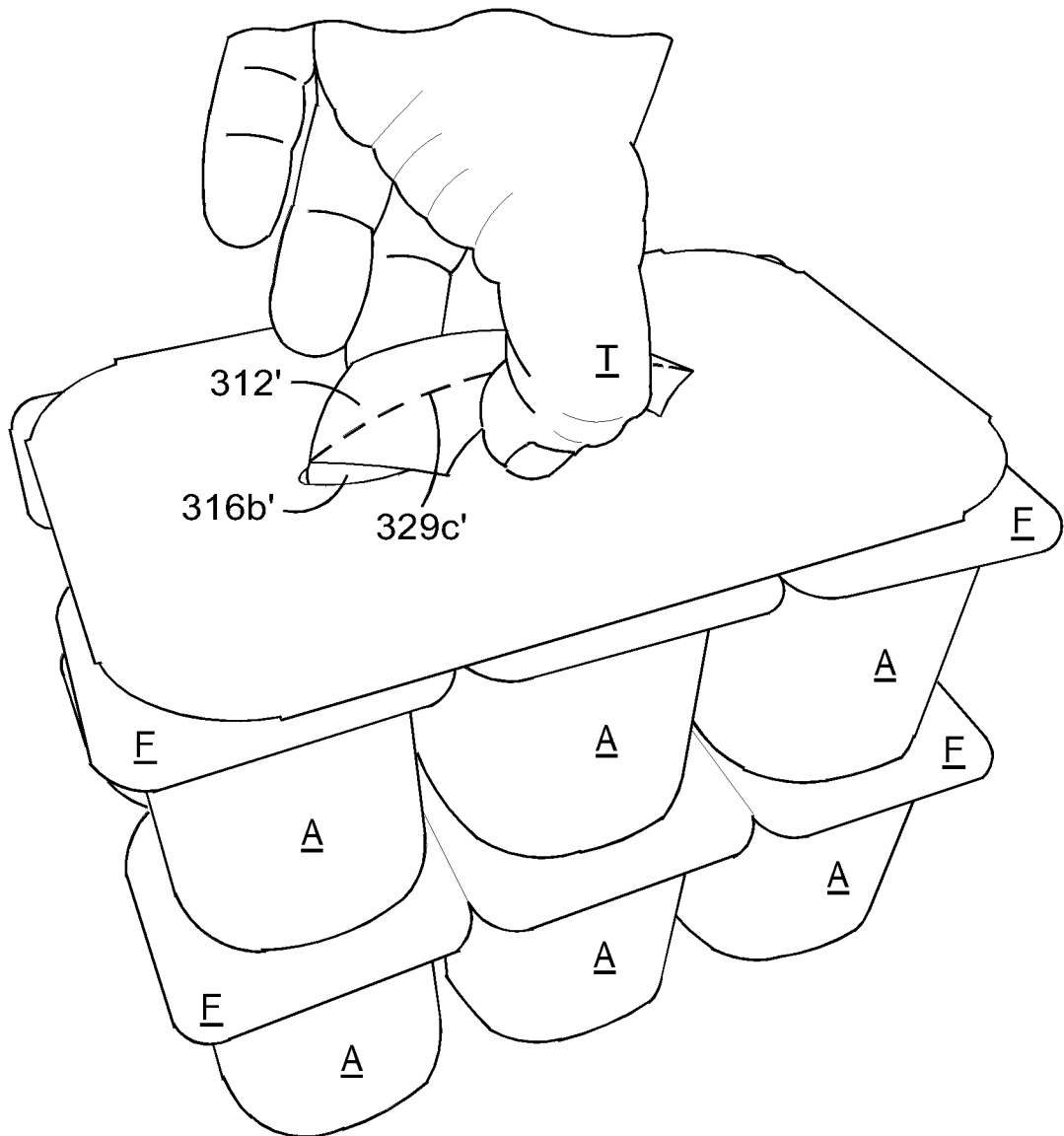


FIGURE 30

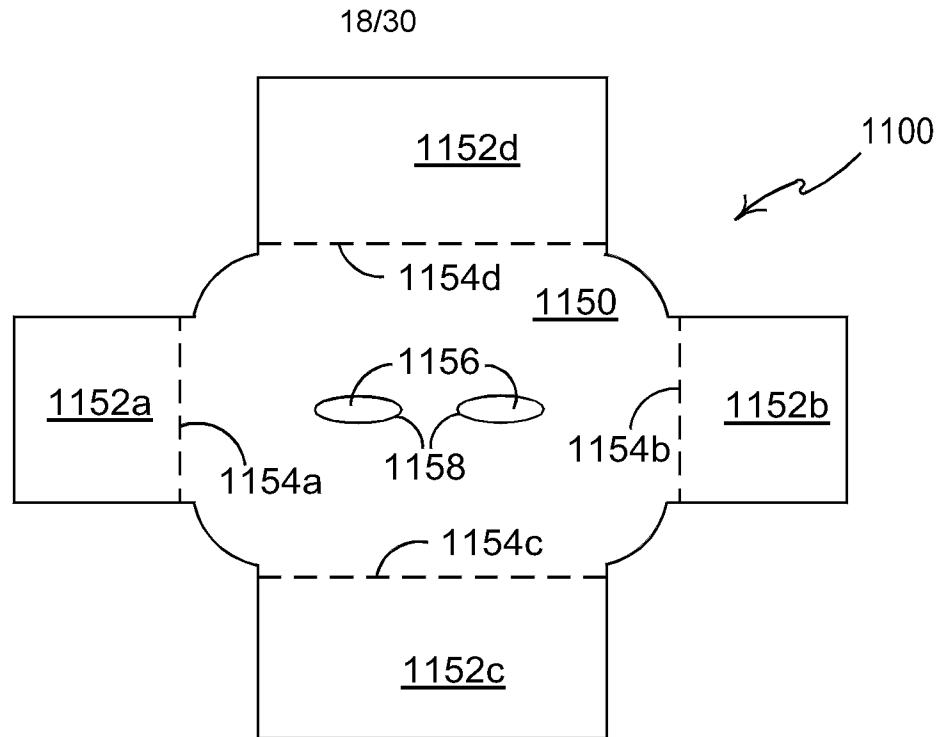


FIGURE 31

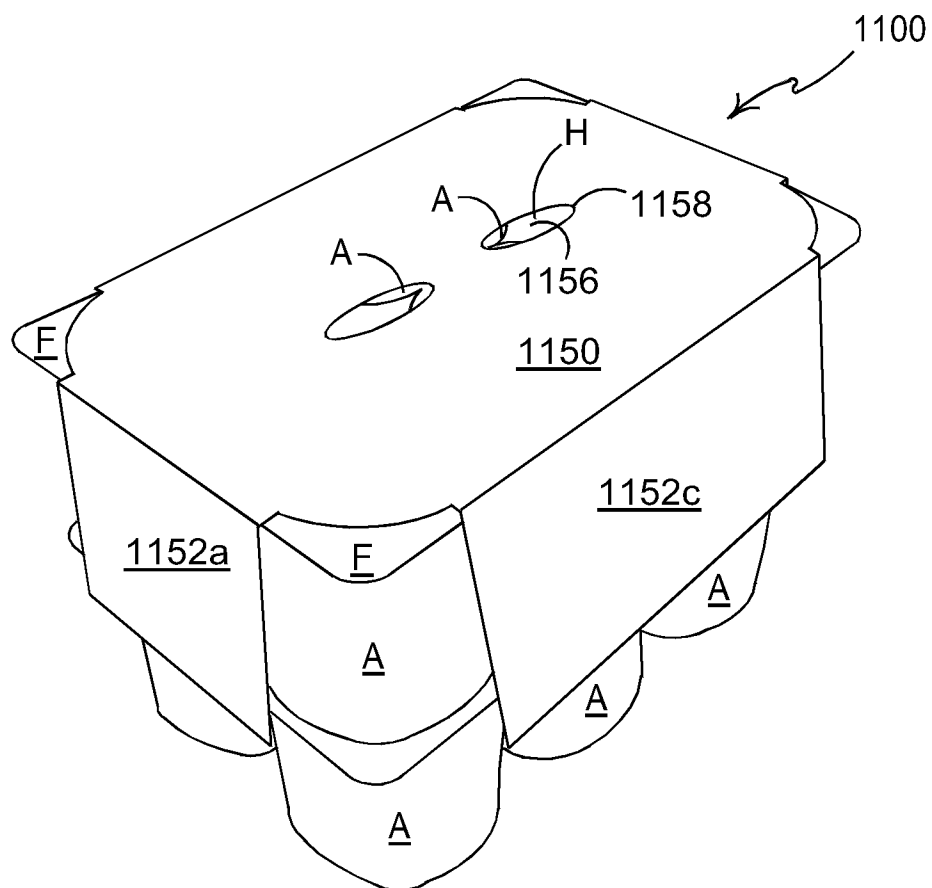
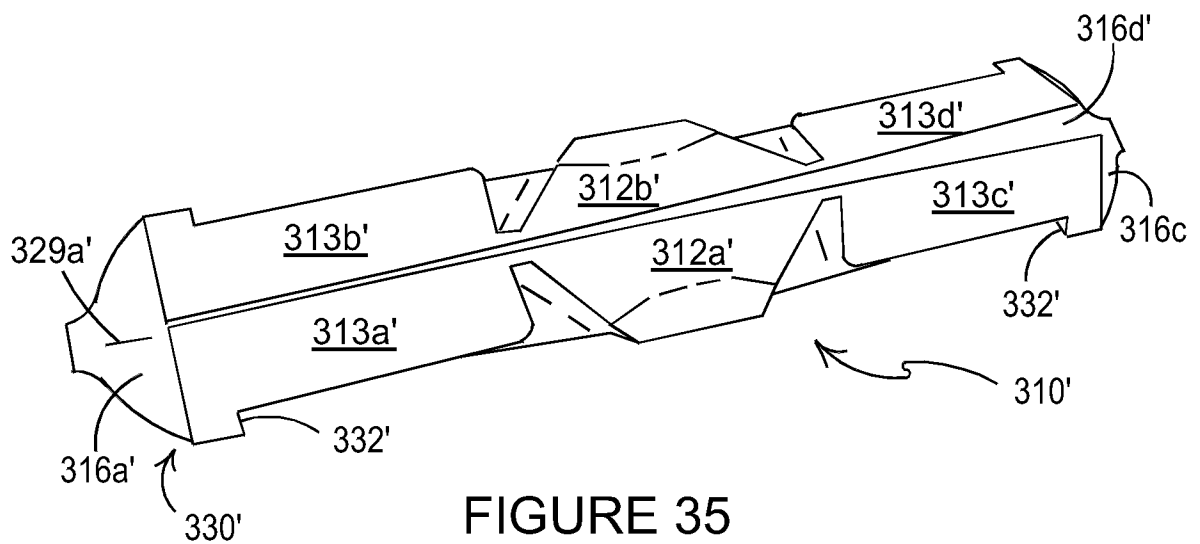
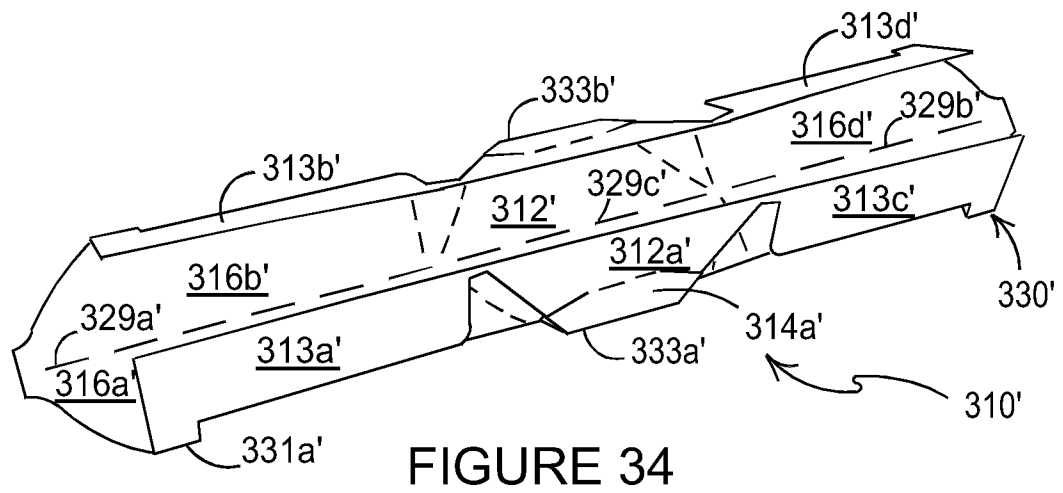
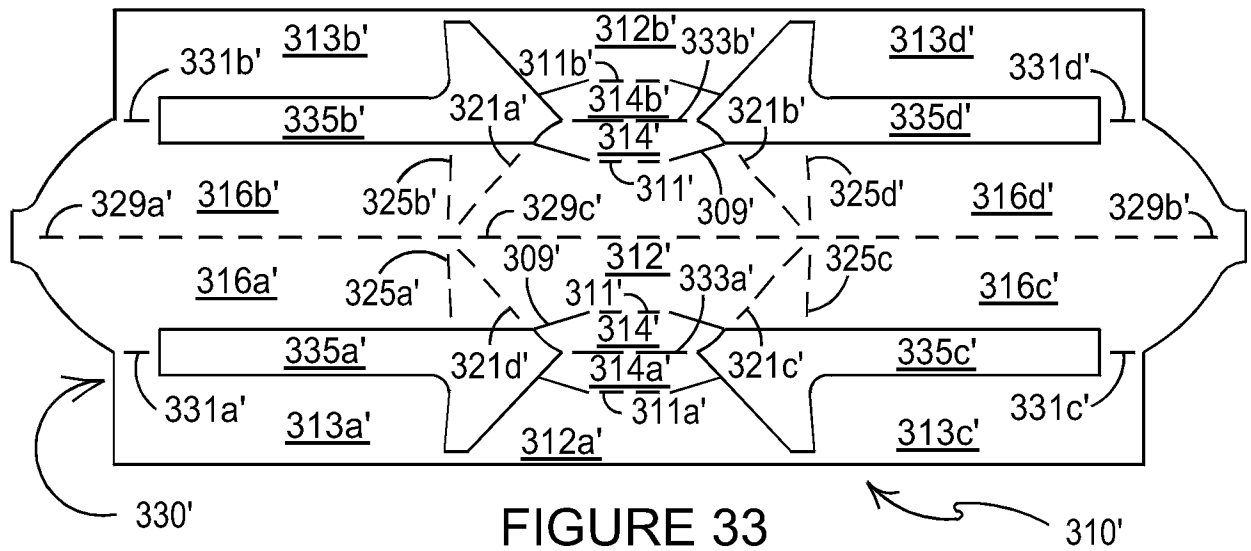


FIGURE 32

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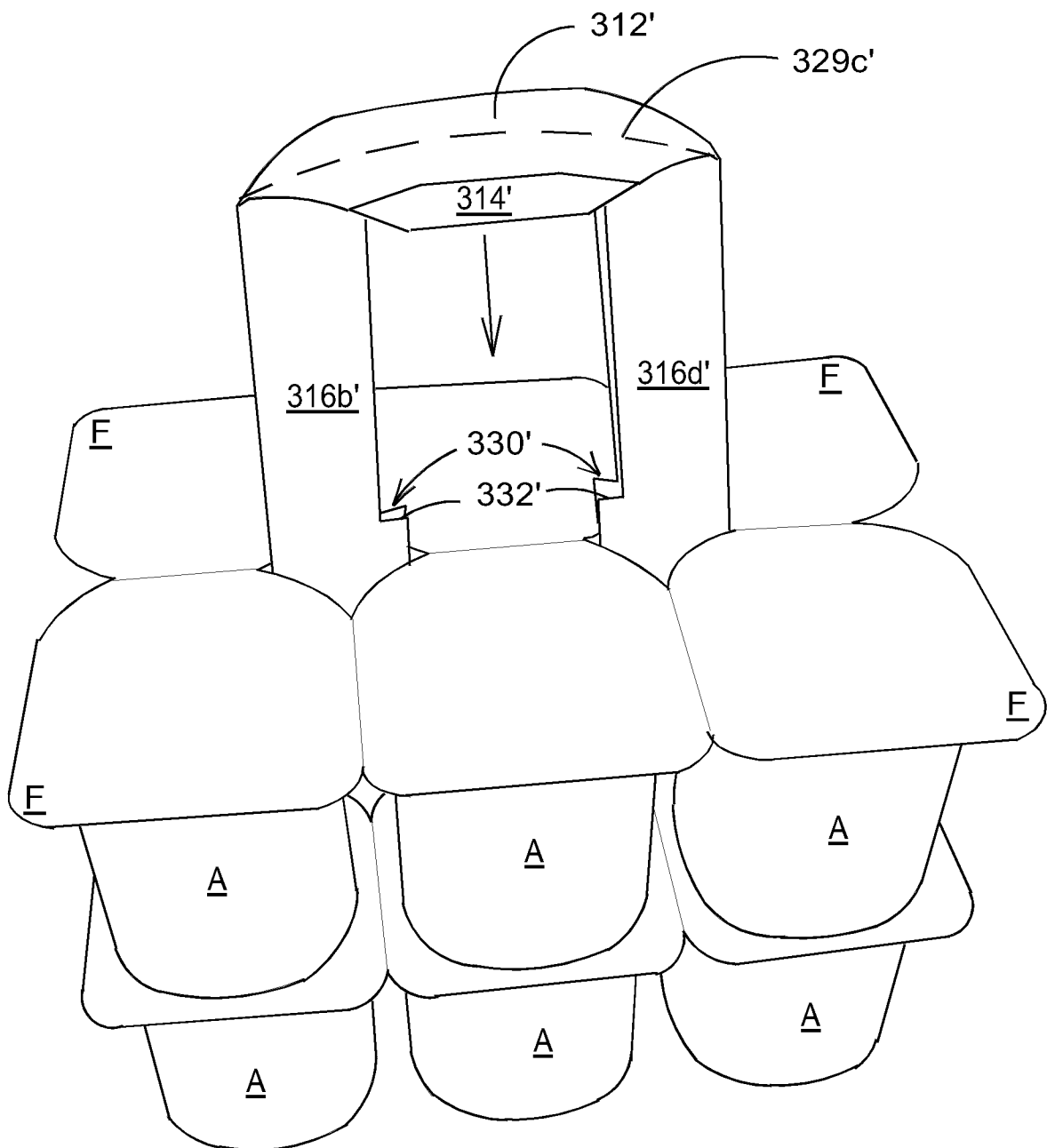


FIGURE 36

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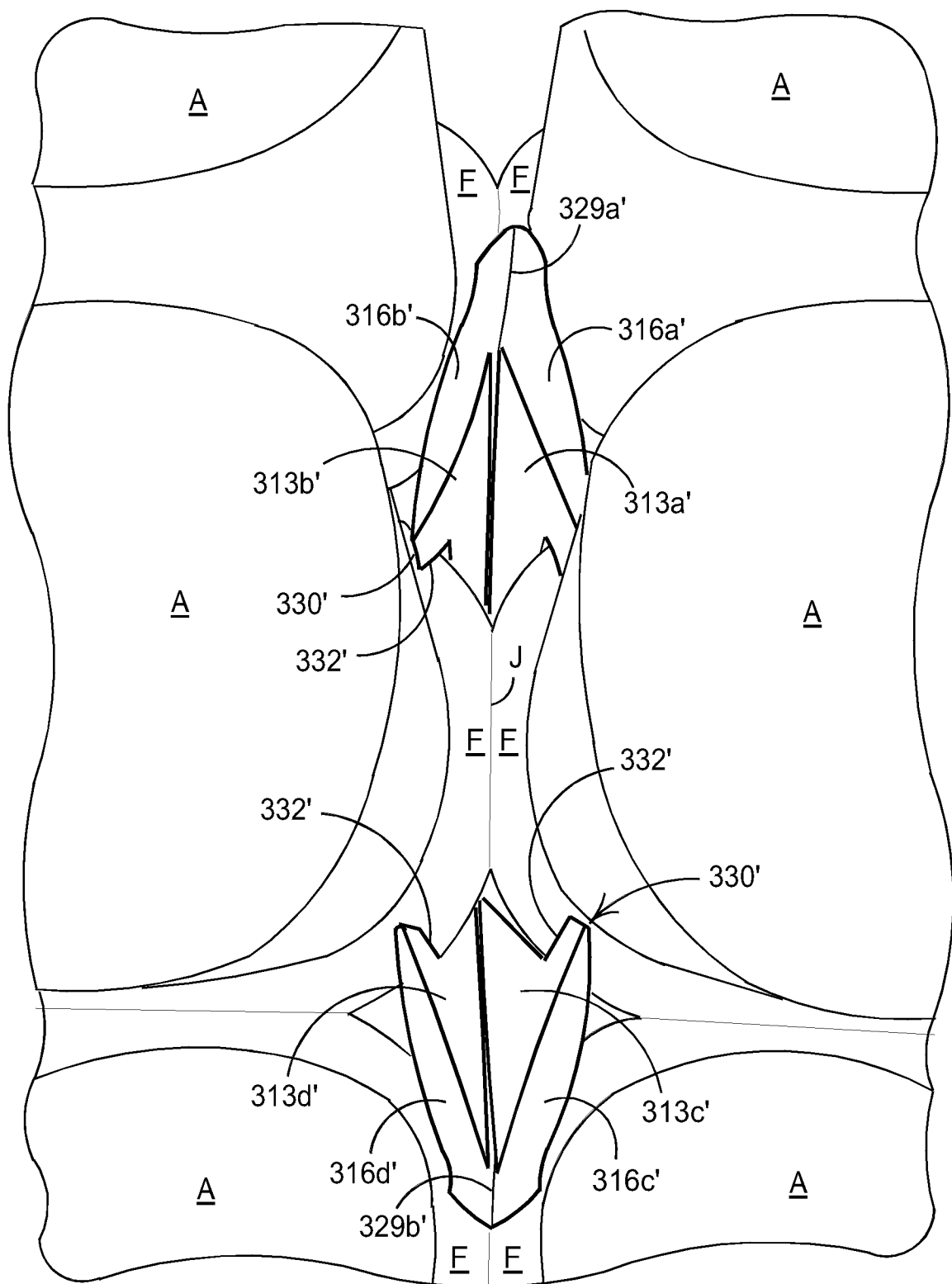


FIGURE 37

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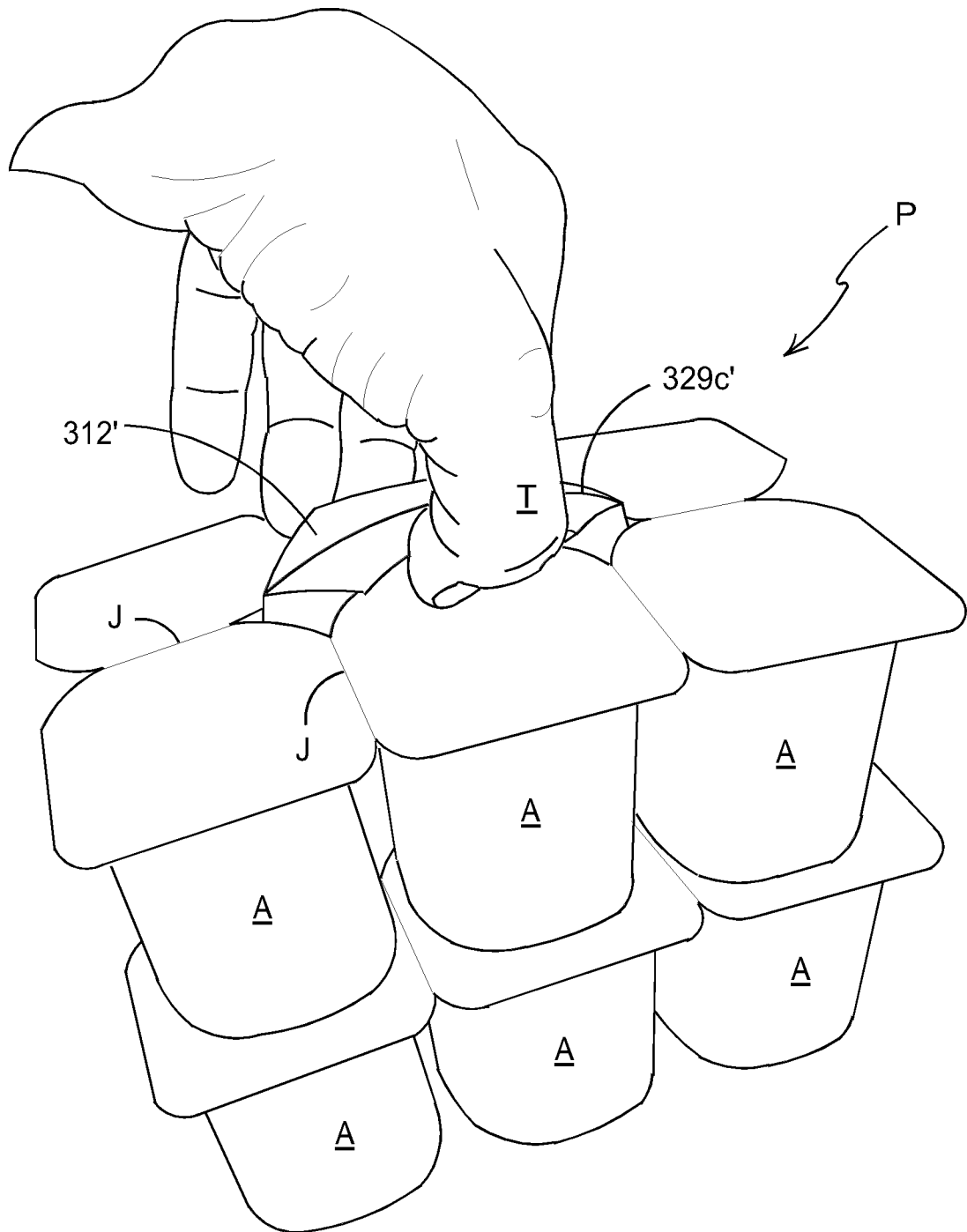


FIGURE 38

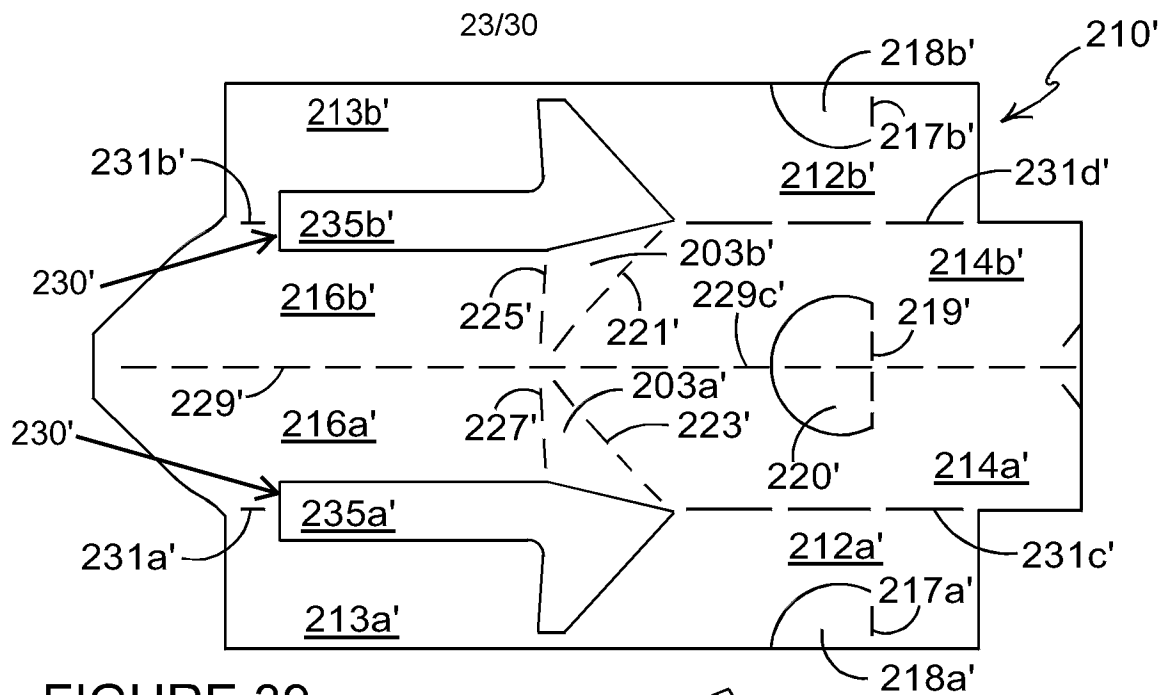


FIGURE 39

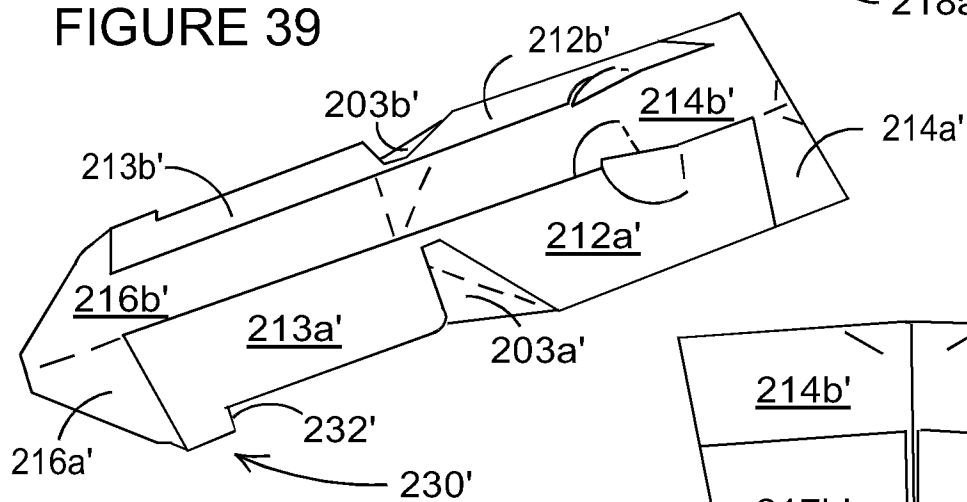
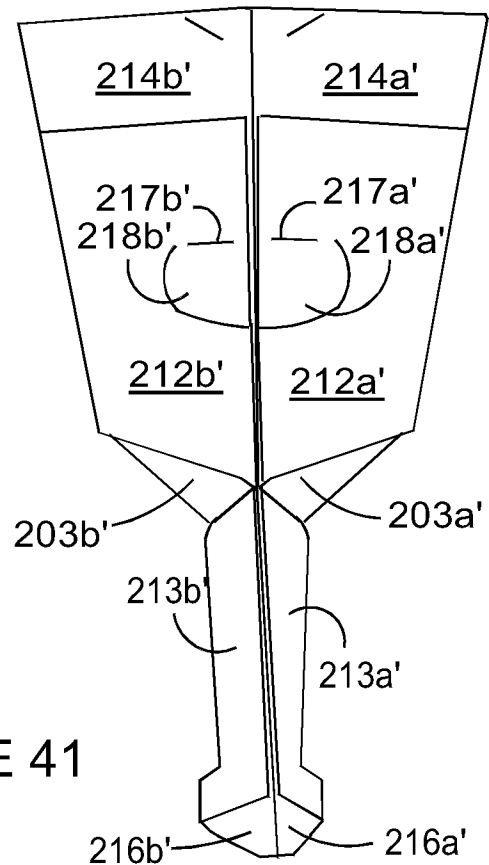


FIGURE 40

FIGURE 41



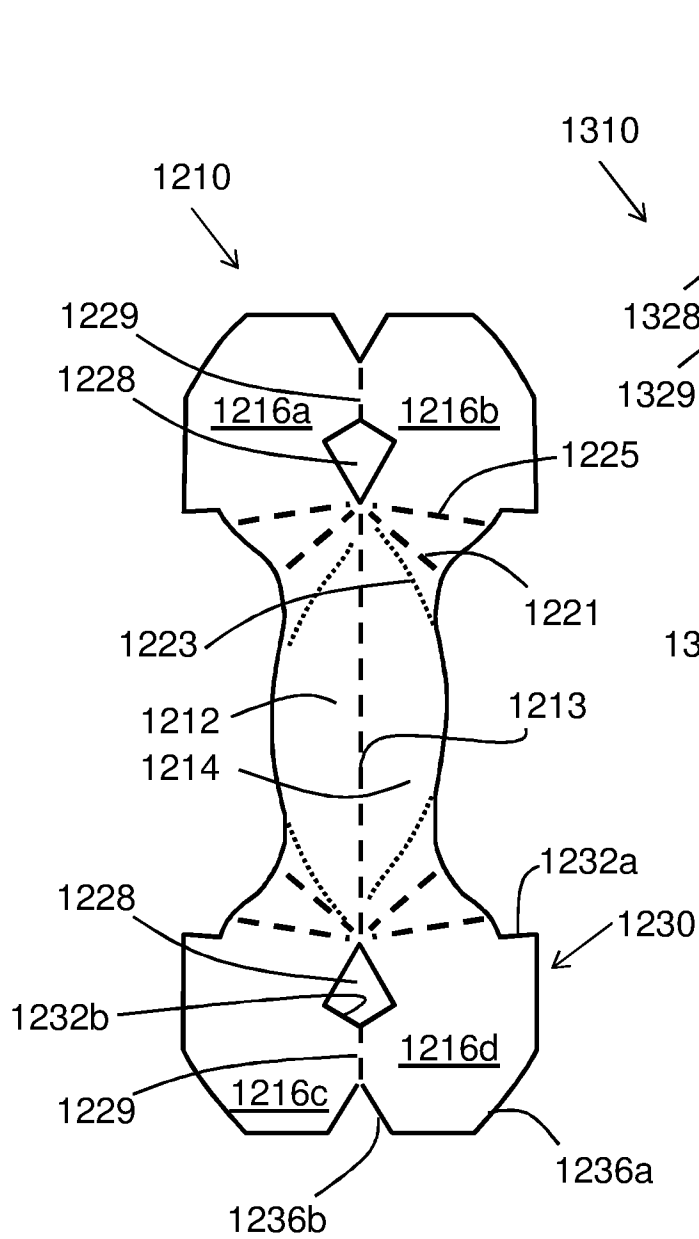


FIGURE 42

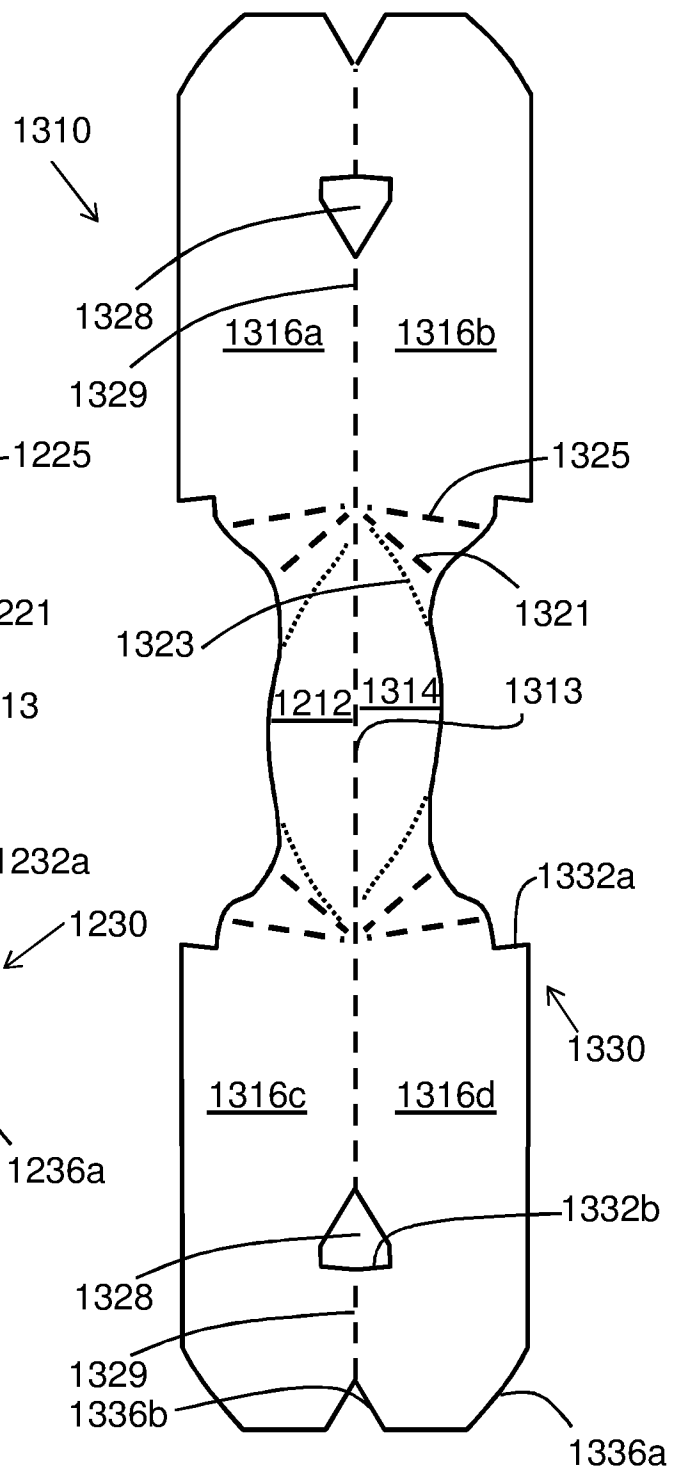
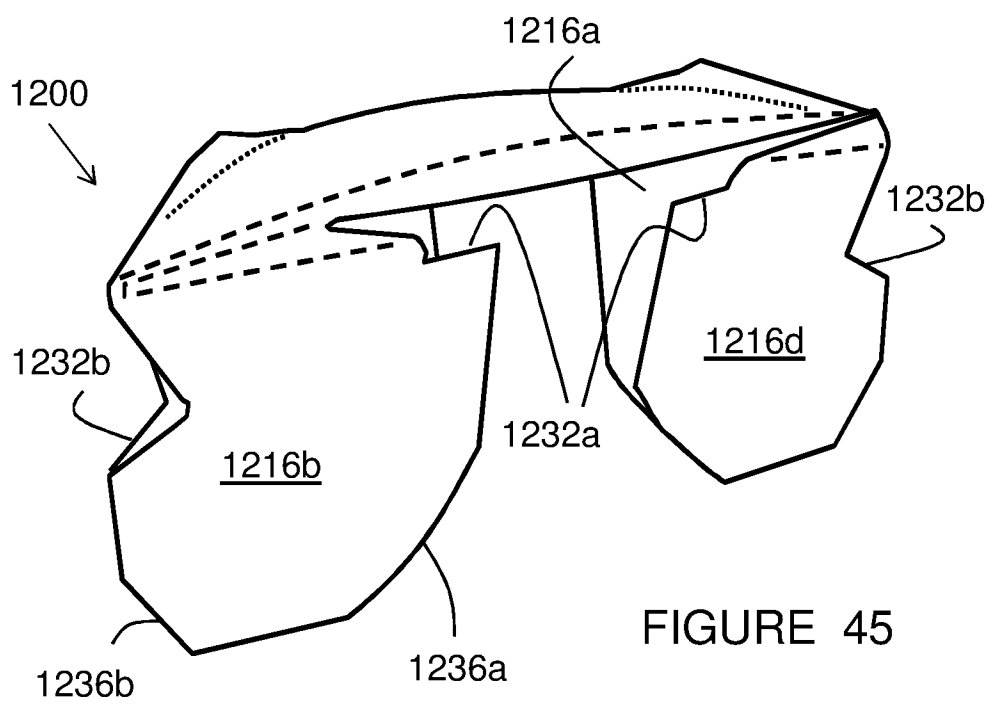
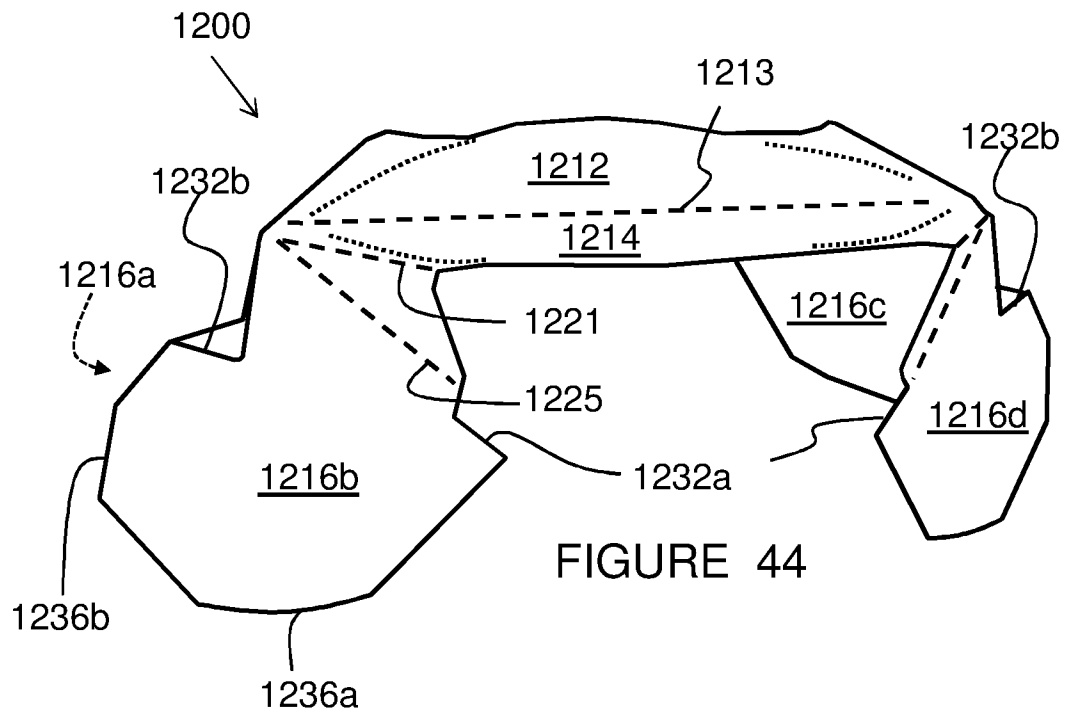
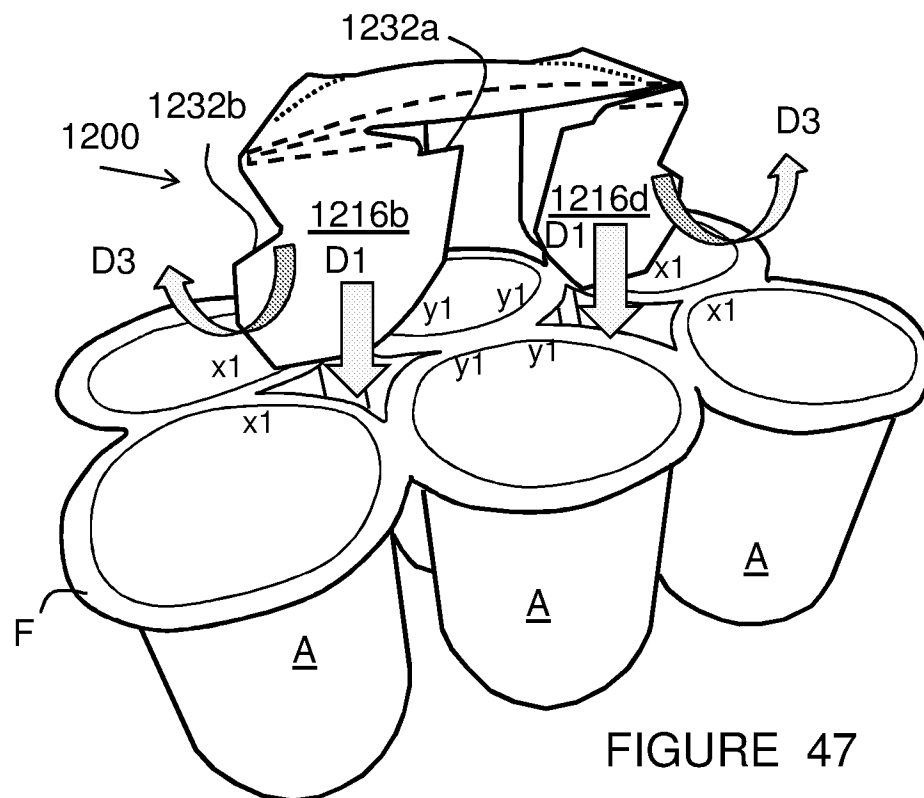
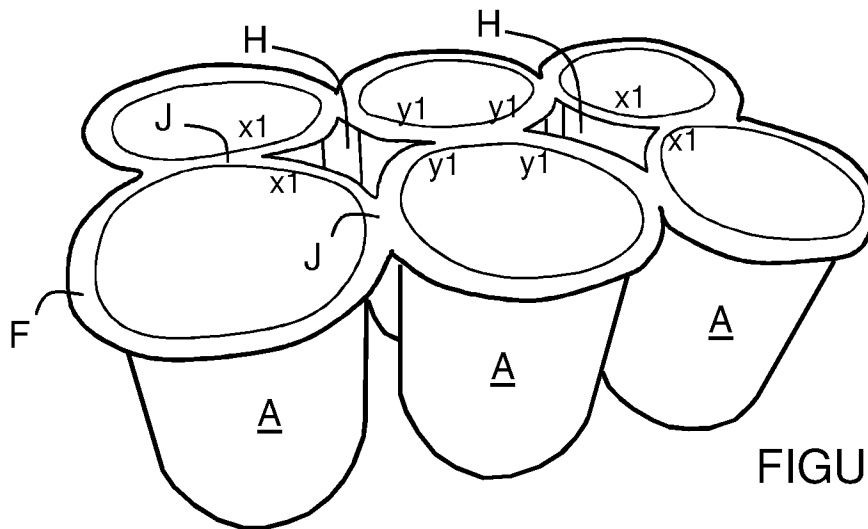


FIGURE 43





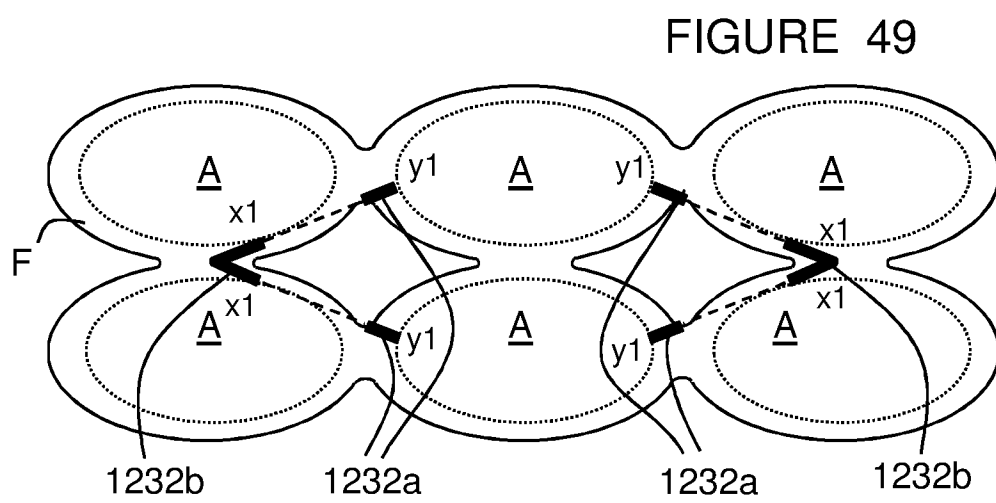
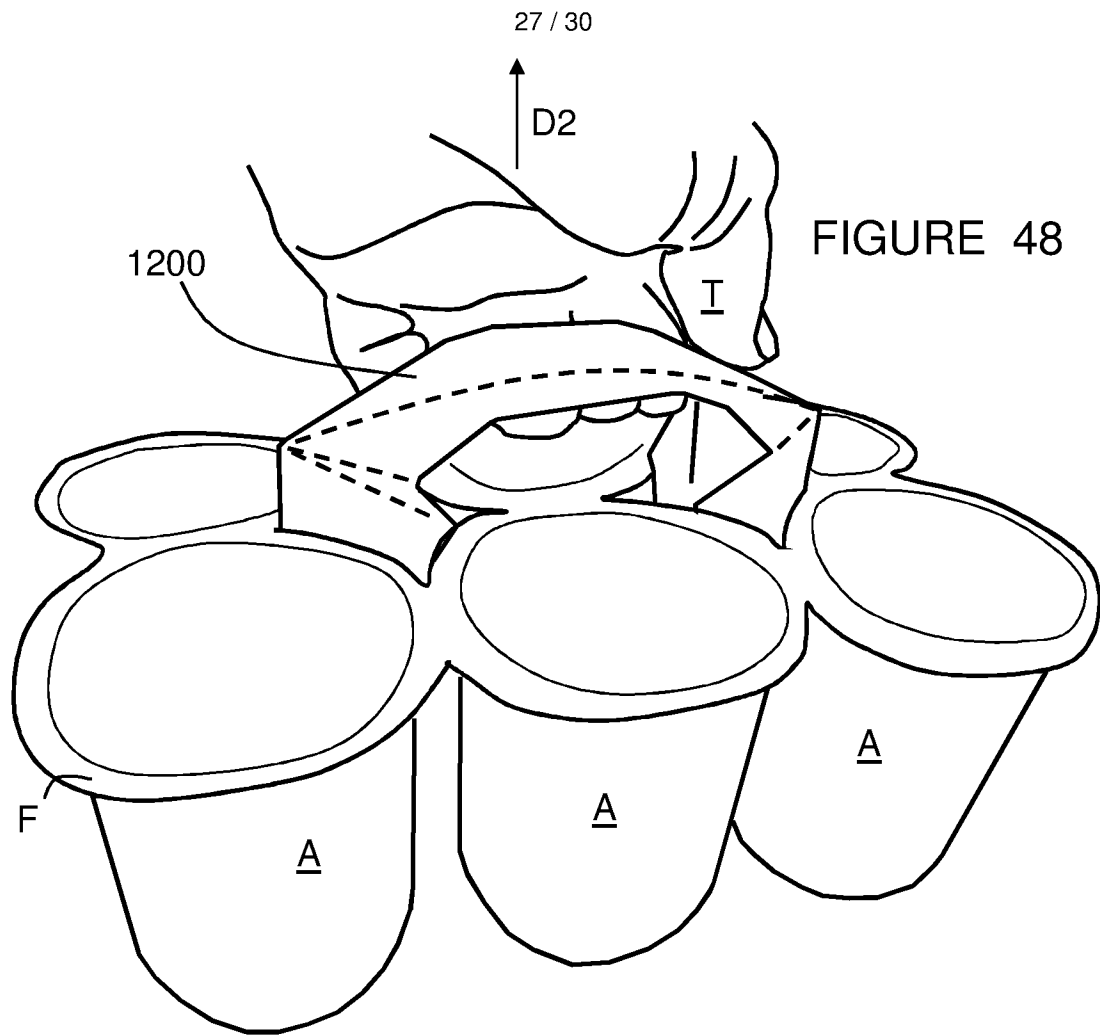


FIGURE 50

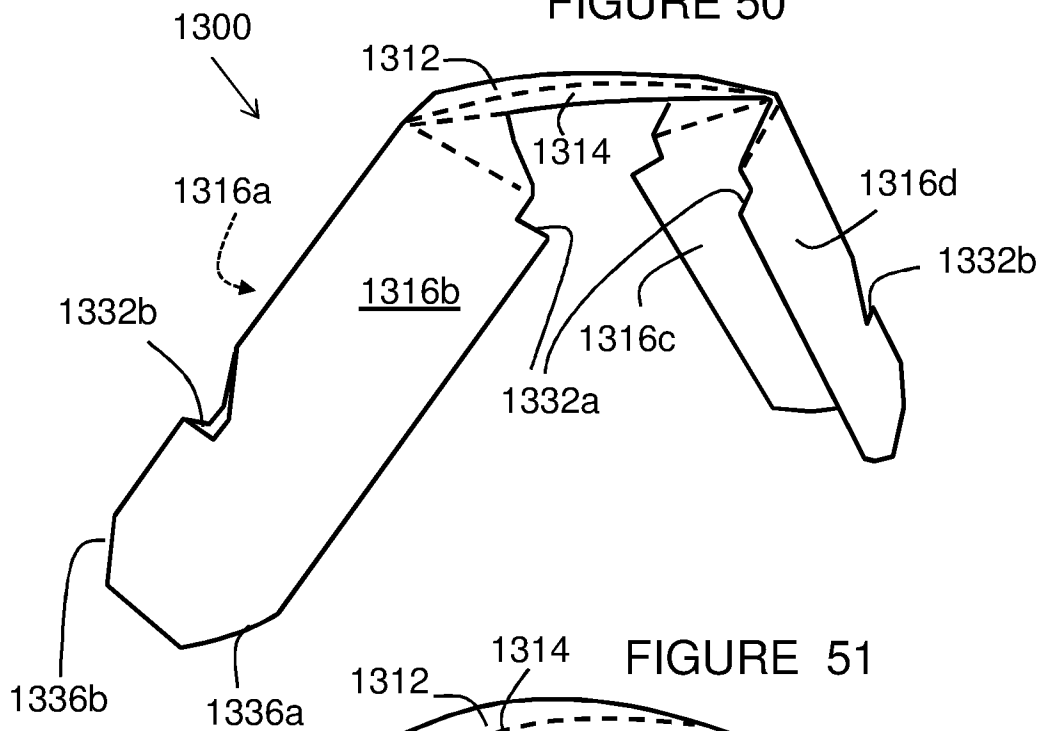
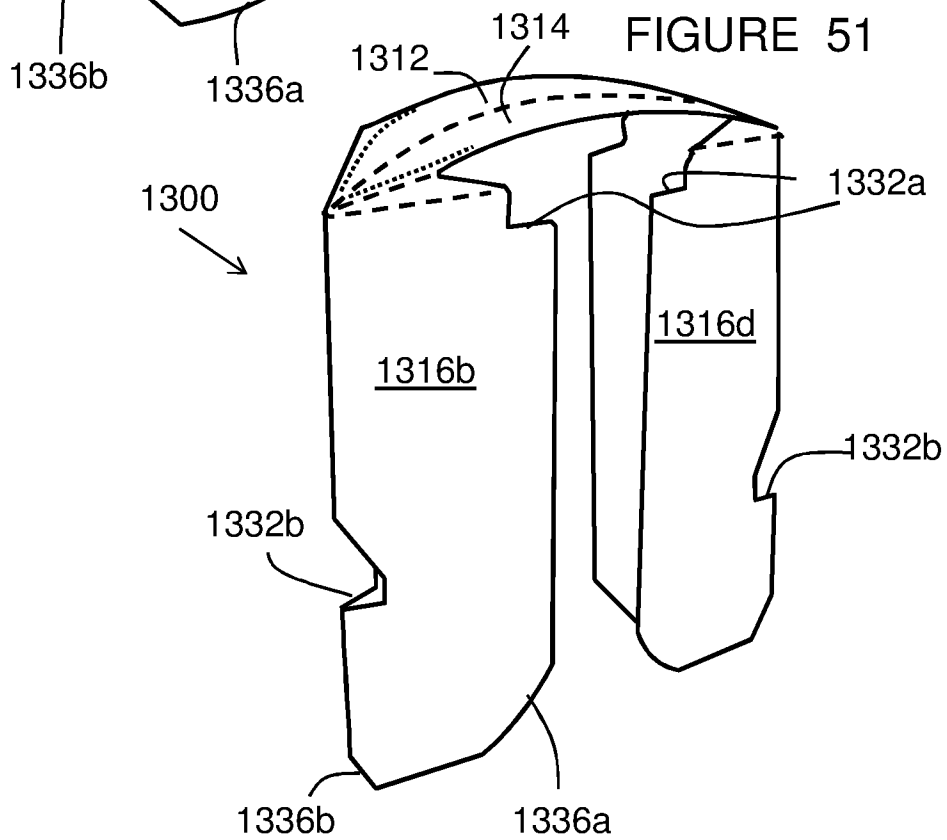


FIGURE 51



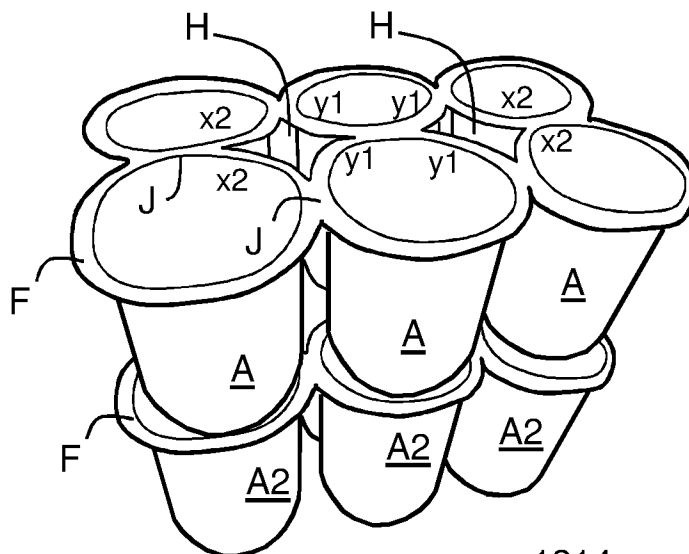


FIGURE 52

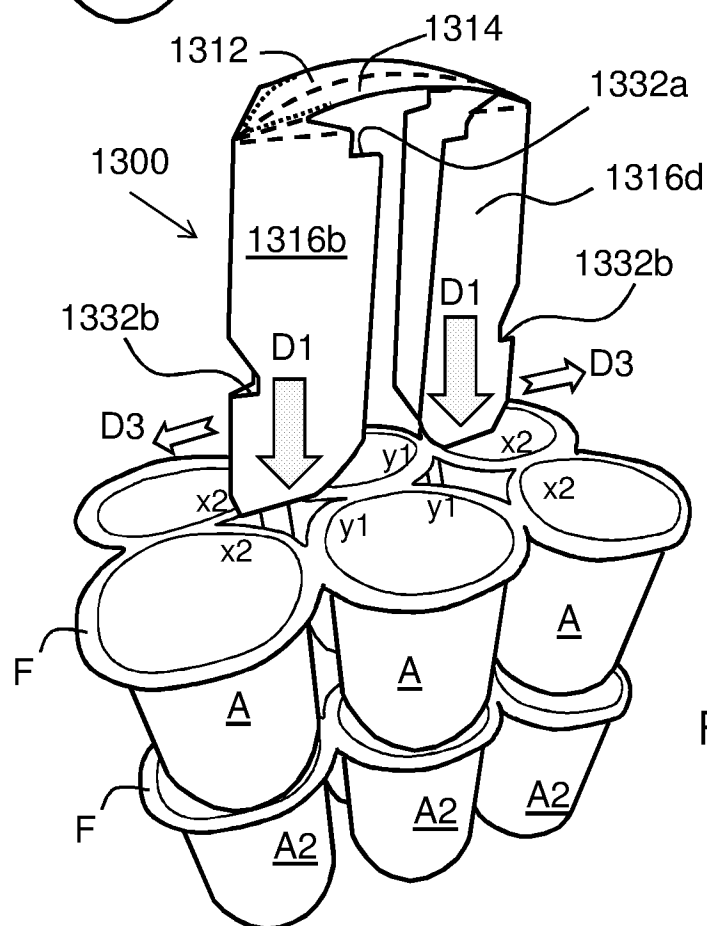
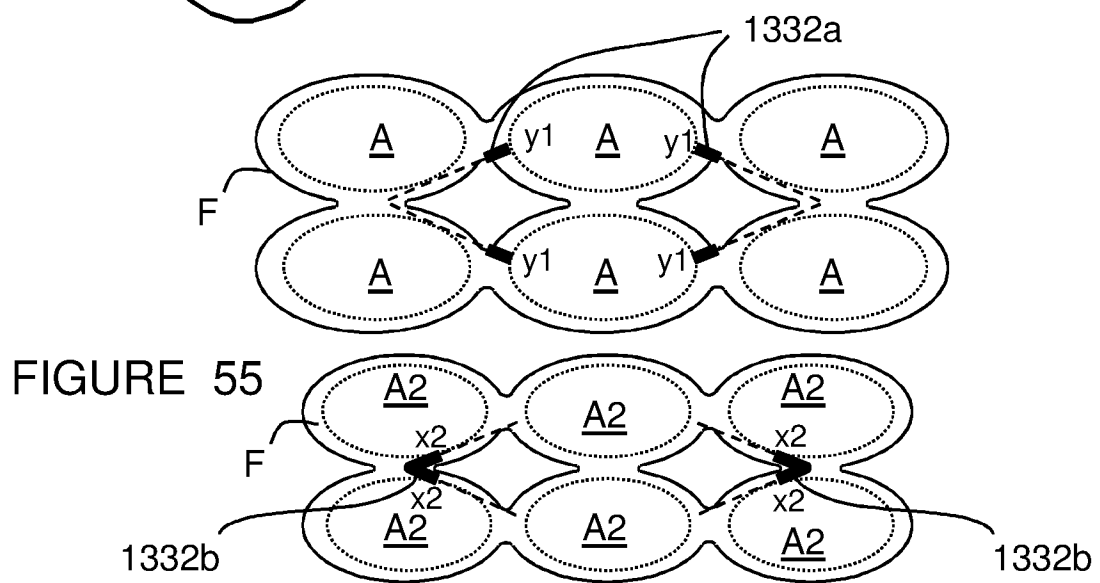
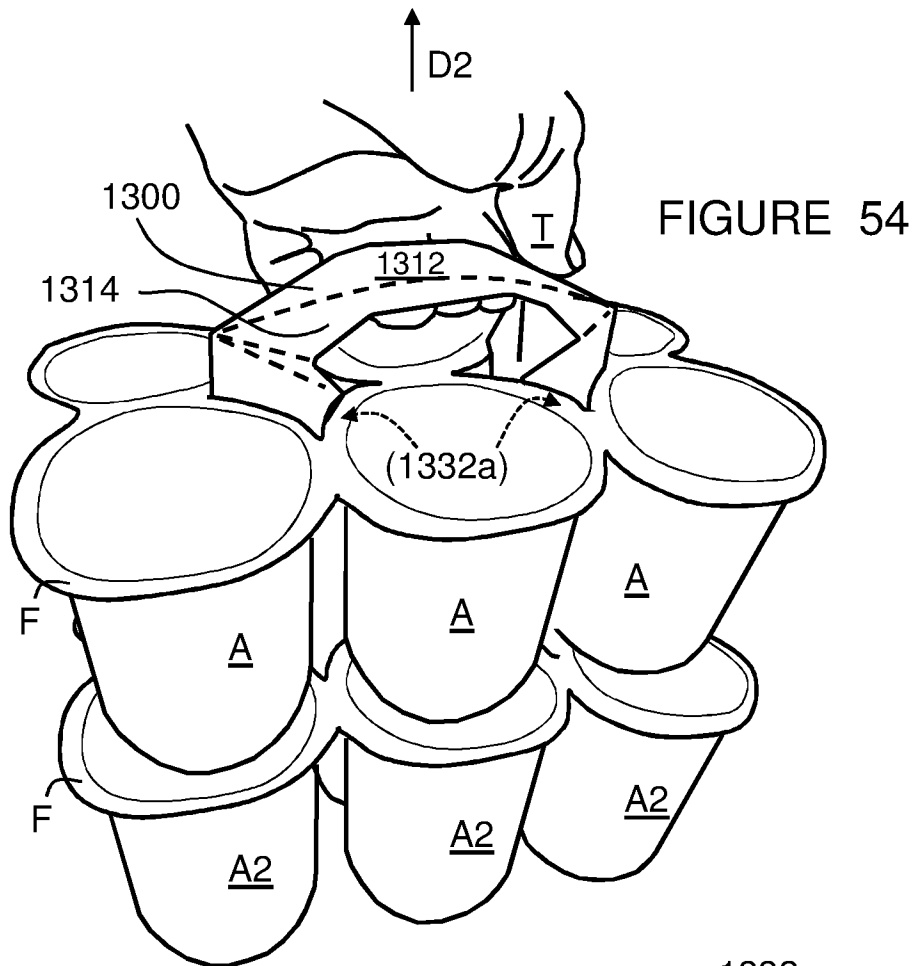


FIGURE 53

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2016/049377

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D21/02 A45F5/10 B65D71/44
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D A45F

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2014/109735 A1 (MEADWESTVACO PACKAGING SYSTEMS [US]; LEBRAS PHILIPPE [FR]; BLIN PATRIC) 17 July 2014 (2014-07-17) the whole document -----	1-35,37



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 October 2016

Date of mailing of the international search report

31/10/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Serrano Galarraga, J

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2016/049377

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 36
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 36

The subject matter of claim 36 is defined by reference to the description and drawings which is not allowed by the PCT (see rule 6.2 PCT). The claim does not define any clear structural features or limitations, consequently the scope of the claim is not clear (Art. 6 PCT) and a meaningful search is not possible (Art 17 PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2016/049377

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014109735 A1	17-07-2014	CN 105189304 A	23-12-2015
		EP 2943419 A1	18-11-2015
		US 2015344205 A1	03-12-2015
		WO 2014109735 A1	17-07-2014
