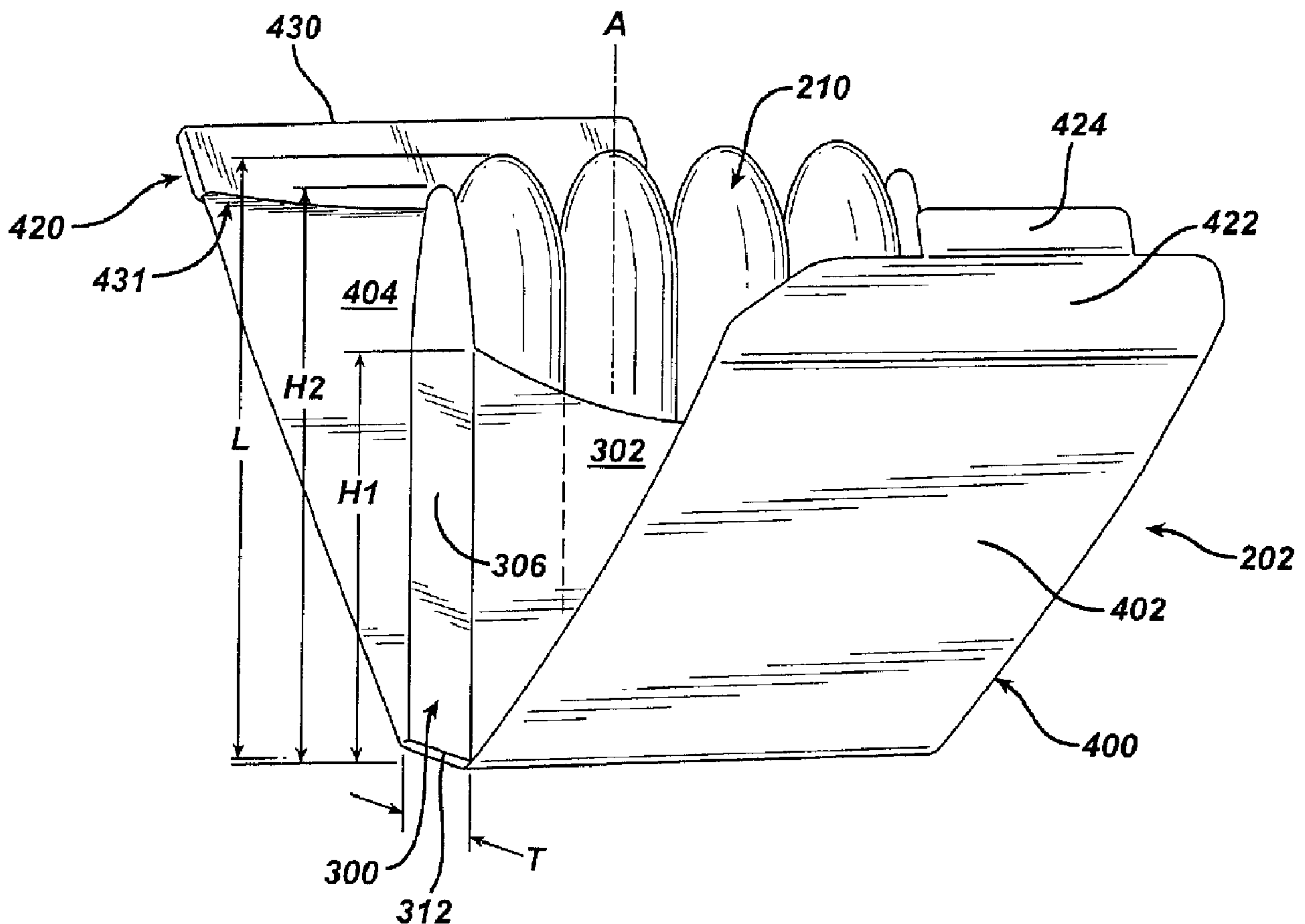




(22) **Date de dépôt/Filing Date:** 2010/07/14
 (41) **Mise à la disp. pub./Open to Public Insp.:** 2011/01/29
 (45) **Date de délivrance/Issue Date:** 2017/07/04
 (30) **Priorité/Priority:** 2009/07/29 (US61/229,561)

(51) **Cl.Int./Int.Cl.** **A61F 13/84** (2006.01),
A45C 11/00 (2006.01), **B65D 81/00** (2006.01),
B65D 85/08 (2006.01), **A61F 13/20** (2006.01)
 (72) **Inventeurs/Inventors:**
 FRANCIS, DAVID, AU;
 BRACKENREG, SCOTT, AU
 (73) **Propriétaire/Owner:**
 MCNEIL-PPC, INC., US
 (74) **Agent:** SMART & BIGGAR

(54) **Titre :** EMBALLAGE EFFILE DESTINE A L'ENTREPOSAGE D'ARTICLES
 (54) **Title:** TAPERED PACKAGING FOR STORING ARTICLES



(57) **Abrégé/Abstract:**

A plurality of small packages, each for approximately a day's supply of tampons, are provided in an outer carrier box. The tampons in the small packages may be provided in a single row, and may be individually adhered to the bottom of the package. Each small

(57) Abrégé(suite)/Abstract(continued):

package may be tapered to facilitate insertion of the individual package into a small space, such as a pocket, for discrete storage or carrying. The individual package may be formed with an inner box covered by an outer sleeve movable, like a flap, from the inner box to permit ready access to the contents of the inner box. A closure is provided that is resistant to inadvertent opening. The closure may be specifically configured for a tapered end of a tapered package. The closure may conceal the engaging elements thereof from view to inhibit inadvertent opening of the closure. If desired, a feedback feature, such as an auditory or tactile cue, may be provided by the closure to cue the user that the closure is securely closing the package.

ABSTRACT OF THE INVENTION

A plurality of small packages, each for approximately a day's supply of tampons, are provided in an outer carrier box. The tampons in the small packages may be provided in a single row, and may be individually adhered to the bottom of the package. Each small package may be tapered to facilitate insertion of the individual package into a small space, such as a pocket, for discrete storage or carrying. The individual package may be formed with an inner box covered by an outer sleeve movable, like a flap, from the inner box to permit ready access to the contents of the inner box. A closure is provided that is resistant to inadvertent opening. The closure may be specifically configured for a tapered end of a tapered package. The closure may conceal the engaging elements thereof from view to inhibit inadvertent opening of the closure. If desired, a feedback feature, such as an auditory or tactile cue, may be provided by the closure to cue the user that the closure is securely closing the package.

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TAPERED PACKAGING FOR STORING ARTICLESFIELD OF THE INVENTION

[0001] The present invention relates to packaging for articles such as tampons. More particularly, the present invention relates to a portable package for tampons which may be readily stowed and carried in a purse or pocket or in another discreet manner. The present invention additionally relates to a portable package permitting ready removal of the contents thereof, yet also permitting the package to be stowed readily in a small space. The present invention also relates to improvements to tapered packages. The present invention further relates to a closure for a package, such as, but not limited to, a tapered package.

BACKGROUND OF THE INVENTION

10 [0002] Packages for the storage and transportation of feminine hygiene articles for personal use are known. They have become increasingly popular as women are spending more time away from home and find it convenient to carry a small stock of their favorite personal hygiene articles with them. In particular, women like to carry a single day's supply of feminine hygiene articles in their purses, brief cases, satchels, and clothing pockets. Unfortunately, once a woman deposits the filled package in her purse, she often forgets about the package until a need arises. Often the package falls into the bottom of a purse and is exposed to dirt, loose coins, pens, and other miscellaneous paraphernalia. Sometimes the package is crushed, causing it to open on its own. This allows debris to enter into the package and/or the individual feminine hygiene articles to disengage from the package and to become unusable due to contamination or distortion. For this reason, such packages should be sturdy and discreet while also having the ability to keep the inner contents free from contamination. The package should also have a closure that ensures that the package remains closed and the feminine hygiene articles remain securely contained in the package during shifting of the various other contents within the purse.

25 [0003] Another issue related to carrying feminine hygiene packages within a purse or pocket can be noise. In some packages, especially digital tampon packages, once a tampon is removed, the remaining tampons have a certain degree of freedom to move or to rattle around within the package. This often results in noise being generated when the purse or clothing undergoes movement or shifting.

30 [0004] Many women, while maintaining their privacy as to their menstrual state, enjoy carrying accessories, such as purses, that are sleek and aesthetically pleasing. Some purses have open or zippered compartments on the sides. These compartments typically are pocket-like and are intended to be flat. It is not unusual for women to place loose or

packages of feminine hygiene articles in these compartments. It is particularly desirable that the feminine hygiene articles do not bulge in the accessories in which they are contained so that they do not impair the overall image of such accessories. Having a small package that contains multiple feminine hygiene articles and that is suitable to be placed
5 within the flat-like confines of a purse compartment requires that the package be designed such that the overall shape minimizes the package volume. Additionally, it is particularly beneficial to have a package that is shaped to facilitate insertion in a small space for stowage.

[0005] While discretion is important, the ability of the woman to retrieve the feminine
10 hygiene article easily must not be compromised by the small size of the package. One way to achieve access to the inner contents of a package is to incorporate a reclosable lid or flap. Depending on the configuration of the lid, the resultant package may become bulky in size and shape. Bulky packages often result in bulges when carried in a pocket or a purse side compartment. Additionally, it is also important that the woman, whether in the privacy of a
15 private or public bathroom, be able to remove, easily and without much manipulation of the package, a single feminine hygiene product such as a tampon without the fear of dropping the entire contents of the package.

[0006] Occasionally, the individual or packaged articles fall out from the purse when
20 the woman tries to retrieve objects from the purse or compartment, resulting in embarrassing situations, especially among mixed company. Therefore, it would be desirable to have a discreet package that also assures that the individual feminine hygiene articles do not inadvertently fall out.

[0007] Various closures for small packages are known in the art to permit ready
25 opening to access the contents of the package, and also to permit reclosing of the package. Because a small package may be placed in a tight space, it is particularly desirable to provide a closure that resists inadvertent opening upon removal of the package from the tight space. This is particularly the case with packages for feminine hygiene articles, to prevent the contents from falling out upon removal of the package.

SUMMARY OF THE INVENTION

30 [0008] There is therefore a need for a package for storing feminine hygiene articles that holds tampons securely in place while maintaining them in a clean environment. In accordance with the principles of the present invention, a single day's supply of feminine hygiene articles is provided in a ready-made package of tampons containing and ready for a woman to carry with her in a discreet manner throughout her day out of her house. A
35 plurality of such packages preferably is provided in an outer retail pack in which multiple

such day packs are contained. The purchaser simply needs to remove one of the ready-made day packs for a day's use, without any need to remove a given number of tampons for the day and to place them in a separate container. Thus, in accordance with one aspect of the present invention, a day's supply of tampons is provided in a small pack that has been
5 pre-packaged for ready removal from a master carton and stowage for use when needed.

[0009] In accordance with another aspect of the present invention, tampons are provided in a package slim enough to be stowed in a tight or narrow space, such as a small purse or in a pocket. For instance, tampons may be arranged in a single row in a disposable package. The tampons may be removed along their longitudinal axes. The resulting
10 package may be readily stowed in a small space and the tampons may be removed without the need for a lot of space to open the package (as is the case with existing clamshell type cases for tampons). The tampons may be adhered to the base of the package. It will be appreciated that the arrangement of tampons in a single row in a package, formation of a package so that tampons are removed along their longitudinal axes, and/or adherence of
15 tampons to the base of the package in which they are contained are all features that are beneficial to a day pack formed in accordance with the principles of the present invention, but which may also be beneficial in other tampon packages.

[0010] In accordance with a related aspect of the present invention, the outer contour of the tampon package may be configured to be slim with a tapered end. As such, the package
20 may be readily inserted into a small space so that the package may be carried discreetly. Such tapering can be achieved in any of a variety of manners. For instance, the top ends of opposite walls of the package can be directly coupled together to result in the desired tapering of the package. Moreover, the closure of the package should be easy to open when desired, but sturdy enough or otherwise formed so that it is resistant to opening upon
25 insertion into its stowage location, during stowage, or upon removal from its stowage location. It is also helpful to the user if a cue is given once the package is securely closed. This cue may be a slight clicking noise or a tactile sensation that the user's fingers detect.

[0011] Individual day packs formed in accordance with the principles of the present invention may have further beneficial characteristics that may be applied to packagings
30 other than such day packs and packagings for items other than tampons. For instance, to facilitate removal of a tampon along its longitudinal axis, a day pack may be formed with an inner box in which the tampons are arranged, and with an outer sleeve forming a front flap and a back flap covering the inner box and the tampons therein. Either or both flaps may be moved away to reveal the inner box and to permit removal of a tampon from an end of the
35 inner box in a direction along the longitudinal axis of the tampon. Such package has

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benefits independent of its usage for packaging tampons. For instance, a package formed with an inner box and outer sleeve in accordance with the principles of the present invention permits such package to be tapered to fit into a small space. The flaps formed by the outer sleeve may be directly coupled together to achieve the desired tapered configuration.

- 5 [0012] In accordance with yet another aspect of the present invention, a closure is provided with various unique features. For instance, a closure formed in accordance with the principles of the present invention may be formed such that it may be used on a tapered package. If a package is tapered, the closure often is even more susceptible to inadvertent opening upon removal of the package, or even mere manipulation of the package in its storage
10 location. Such closure may have various beneficial features that may be applied to packages other than tapered ones. One such feature is the provision of a covering element that covers the engaging elements of the closure. Thus, even if the package is stowed in a tight space, removal of the package should not disengage the engaging elements of its closure because a covering element covers and protects the engaging elements from inadvertent opening.
- 15 Another feature of the closure that is particularly beneficial when provided in conjunction with a closure with a covering element (though beneficial without such covering element) is a closure that provides feedback, such as a cue, to the user when engaged and closed. The feedback may be a tactile and/or auditory cue generated upon engaging the engaging elements of the closure to close the package.
- 20 [0012a] According to an embodiment, there is provided a tapered package comprising: a front wall, a back wall spaced apart from said front wall, first and second side walls spaced apart from each other and extending between said front and back walls, and a bottom wall extending between bottom ends of said front wall, said back wall, and said first and second
25 side walls; wherein top ends of said front wall and said back wall are coupled together such that said package has a tapered shape when viewed from a side; and a closure maintaining said front wall and said back wall together to close said package, said closure comprising (a) engaging elements coupling said front wall and said back wall together, and (b) a cover element covering said engaging elements from view, wherein said closure cover element is in the form of a band extending around and encircling said top ends of said front wall and said

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back wall to hold said top ends of said front wall and said back wall together to close said tapered package.

[0013] These and other features and advantages of the present invention will be readily apparent from the following detailed description of the invention, the scope of the
5 invention being set out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The detailed description will be better understood in conjunction with the accompanying drawings, wherein like reference characters represent like elements, as follows:

[0015] FIGURE 1 is a perspective view of an exemplary retail pack of individual
10 packages each containing a day's supply of tampons in accordance with the principles of the present invention;

[0016] FIGURE 2 is a partially cutaway perspective view of a package containing a day's supply of tampons in accordance with the principles of the present invention;

[0017] FIGURE 3 is a perspective view of an exemplary tapered package in
15 accordance with the principles of the present invention;

[0018] FIGURE 4 is a perspective view of the package of FIGURE 3 in an open configuration;

[0019] FIGURE 5 is a plan view of an exemplary blank that may be used to form the inner box illustrated in FIGURE 4; and

[0020] FIGURE 6 is a plan view of an exemplary blank that may be used to form the outer sleeve illustrated in FIGURE 5.

5 DETAILED DESCRIPTION OF THE INVENTION

[0021] In accordance with the principles of the present invention, a package is formed for convenient and ready portability as well as ease of use. It will be appreciated that separate and independent aspects of the present invention are described herein. Such aspects, at least alone, have unique benefits, and, although may enhance one another, need
10 not be provided in conjunction with one another. In other words, each aspect of the present invention has unique individual benefits and thus may be provided without any, or with only one, or with some but not all, or with all of the other aspects disclosed herein.

[0022] Referring to FIGURE 1 of the drawings, a retail package of tampons **100** formed in accordance with one aspect of the present invention is sold containing a plurality of
15 smaller packages **102**. Each of the smaller packages **102** is sized to contain a limited number of tampons and thus is more portable than the entire retail package. The number of tampons contained within smaller package **102** may be selected to satisfy any of a variety of an individual's needs for carrying tampons. One common need for a small package of tampons is a desire to carry a number of tampons outside the home, sufficient for a day's
20 use such that the entire retail package (containing several days' supply) need not be taken along. In accordance with the principles of the present invention, smaller package **102** may be sized and shaped to carry a day's supply and thus is conveniently referenced herein as a "day pack" **102**. Preferably, day pack **102** is sized, shaped, and configured to be carried readily in a purse or pocket. It will be appreciated that although the principles of the
25 present invention are described in conjunction with packaging for tampons, such principles may be applied to packages for other articles.

[0023] The number of tampons to be contained within day pack **102** preferably is preferably selected based on one or more of the following factors: the need of a typical user in a typical time frame in which a typical user is away from home (such as 12-18 hours), the
30 ultimate desired size of day pack **102**, the absorbency level of the tampons (higher absorbency tampons typically having a larger thickness or diameter and thus taking up more space than lower absorbency tampons). For instance, day pack **102** may be sized to hold no more than four or five tampons, and preferably no more than four tampons. Such size not only accommodates the typical user's needs for a day, but also permits ready and discreet
35 stowage of day pack **102** in a purse or even in a pants pocket.

[0024] Although carrying cases for tampons (such as for a day's supply of tampons) have been known in the art, day pack **102** is unique in that only a day's supply of tampons is prepackaged and sold in day pack **102**. Thus, there is no need to locate a carrying case, remove the desired number of tampons, and place them in the carrying case, because day
5 pack **102** already is pre-packaged and sold to contain the typical number of tampons needed by a user during the day while away from home. A plurality of day packs **102** may be provided in a single master box or outer box or retail box or carrier or retail pack **104** (all such terms referring to the box the consumer sees on the retail display space, such as a shelf, and which has sealed therein the complete number of tampons for retail purchase;
10 such box hereinafter referenced as "retail pack" for the sake of simplicity without intent to limit). As such, instead of simply providing a given number of tampons in the outer retail packaging, retail pack **104** provides several individual day packs **102**, each prepackaged for a single day, for convenience. Thus, a user simply needs to take a day pack **102** from retail pack **104** to have sufficient tampons for the day, without the need to remove tampons from
15 the retail box and transfer such tampons to a separate carrying case. Preferably, day pack **102** is formed to be disposable for complete user convenience. More preferably, day pack **102** is formed of a thin material to reduce its size, as well as to reduce waste (upon disposal once the tampons therein have all been used). Most preferably, the material is biodegradable.

20 [0025] If desired, retail pack **104** may have at least one open side **106** so that the day packs **102** therein may be viewed. A user may thus readily see the unique packaging of tampons within retail pack **104**. Moreover, if day pack **102** has a unique shape (such as a tapered shape, as embodied in day pack **102** of FIGURES 3 and 4 described in further detail below), such unique shape may be readily viewed through open side **106**.

25 [0026] Because it is typically desirable for a portable package or holder or case for tampons to be discreet, and capable of being stowed in a small space (such as in a purse, a compartment of a purse or other larger item, or a pocket), it may be desirable for day pack **102** to be as slim as possible. For instance, tampons **110** to be held in day pack **102** may be aligned in a single row with their longitudinal axes **A** parallel to one another and
30 substantially perpendicular to the bottom wall or base **120** of day pack **102**. Such arrangement minimizes the thickness **T** of day pack **102**, as may appreciated with reference to the exemplary open day pack **102** illustrated in FIGURE 2. Thus, according to one aspect of the present invention, a day pack **102** for tampons is sized and configured to contain only a single row of no more than four or five, and preferably four, tampons **110**.

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[0027] Provision of tampons in only a single row in a disposable package such as day pack **102** may provide the further benefit of reducing the possibility or likelihood that the tampons will be crushed as tampons are removed from day pack **102**. This is so because if thickness **T** of day pack **102** is great enough for only a single tampon, then the tampons within day pack **102** may shift laterally
5 along width **W** of day pack **102**, but cannot bunch along thickness **T**. Thus, with only one degree of motion, shifting of the tampons in day pack **102** is reduced and the tampons have a reduced likelihood of becoming crushed against one another than if the tampons could shift in further directions against one another. This aspect of the invention is particularly beneficial if the tampons within day pack **102** are the digital type and thus do not benefit from the protection against crushing afforded by an
10 applicator.

[0028] In accordance with yet a further aspect of the present invention, tampons may be maintained in their positions within day pack **102** through the use of a light adhesive or wax. Since, as illustrated in the exemplary embodiment of FIGURE 2, tampons that are digitally inserted may have a somewhat domed, curved or otherwise bullet-shaped leading insertion end **112**, it is preferable to
15 utilize adhesive along the flatter withdrawal end **114** to adhere such end to the base **120** of day pack **102**. Any known material used for releasably securing and/or adhering a light-weight, wrapped article to a packaging material (such as cardboard or paperboard) may be used. For example, wax or glue dots may be used, as these types of adhesives do not form permanent bonds between the wrapper material surrounding the tampon (e.g., such as the wrapper materials disclosed in WO 2004/080362, published
20 September 23, 2004) and most materials commonly used to form the package. The adhesive preferably is selected to have any or all of the following properties: does not dry out readily, holds the tampons securely, permits ready removal of the tampons when intentionally pulled from day pack **102**. Such adhesive may be useful in keeping the tampons in place to reduce shifting further, thereby further reducing the likelihood of tampons remaining in day pack **102** from being crushed as tampons are
25 removed from day pack **102**. Reduction of shifting of tampons **110** within day pack **102** is also desirable to reduce any noise (such as rattling) that may be generated as tampons shift within day pack **102** and against one another and the interior of day pack **102**. Moreover, such adhesive may be beneficial in maintaining tampons within day pack **102** so they do not unintentionally fall out of day pack **102**. Preferably, the degree of adhesion is sufficient to maintain tampons **110** within day pack
30 **102** in a substantially upright position (so the tampons **110** do not tilt or lean against one another if one or more have been removed from day pack **102** already), yet to permit

ready intentional removal of a tampon **110**, such as by twisting and pulling the tampon. A tampon **110** thus may be removed along its longitudinal axis A.

[0029] The slim configuration of day pack **102** is further enhanced when a relatively thin material is used to form day pack **102**. Preferably, the material is selected so that it does not significantly contribute to thickness **T** of day pack **102** and thickness **T** is not much greater than the thickness of the tampons within day pack **102**. Additionally, the material preferably also is sturdy enough to protect the tampons within day pack **102** from damage, deformation, moisture, and contamination, etc., yet lightweight enough not to affect significantly the weight, bulk, portability, etc. of day pack **102**. Preferably, the material is readily crushable once emptied of its contents and preferably biodegradable and / or readily recyclable. An exemplary material from which day pack **102** may be formed is paperboard. The paperboard may be selected to deform more readily than cardboard to facilitate use of day pack **102**. Paperboard having a thickness of approximately 0.35mm has been found to be satisfactory and to achieve the desired sturdiness without adding significantly to the thickness of day pack **102**.

[0030] Day pack **102** may be formed of a material that imparts day pack **102** with a clearly defined shape that is maintained independently of the contents of day pack **102**, and thus maintains the original configuration of day pack **102**. However, it will be appreciated that more flexible paperboard, or other more flexible materials that conform to the shape of the contents of the pack may be used instead without detracting from the features of the present invention (such as the provision of only one day's supply in a package). For instance, a plastic material may be used that also imparts water impermeability. Such plastic may be a flexible liquid impermeable material currently known in the art for forming pouches or sanitary absorbent article overwrap, thus forming a soft-sided package. For example, the material is preferably made from a thin plastic film or a nonwoven film which is made liquid-impermeable through coating or treatment with a liquid-resistant material. It will be appreciated that the use of a thin material is beneficial for the formation of a small package of tampons containing a day's supply, regardless of whether the package contains a single row or another configuration of tampons therein. The material selected may permit further beneficial features in accordance with the principles of the present invention described below.

[0031] If paperboard is used to form day pack **102**, such paperboard may be formed or selected to be resistant to moisture. For instance, a coated paperboard, such as those available and known to those of ordinary skill in the art, may be used. One example of a coating material is celloglaze, a general term used for biaxially-oriented polypropylene

films, which are one type of thin plastic films. Other manners of achieving moisture protection could be coating the paperboard with varnish via a printing process. A single material is preferred but not critical to the invention.

[0032] As may be appreciated from the above descriptions of different independent aspects of the present invention, such as the size of the day pack to hold not more than four or five (more preferably four) tampons, the slim shape of the day pack, and the use of a thin material for forming the day pack, a desirable characteristic of a day pack formed in accordance with principles of the present invention is the provision of a tampon package that may readily be inserted into a small space, such as a pocket or a small purse or a small compartment in another article (such as a compartment of a purse). In accordance with another independent aspect of the present invention, a day pack may have at least one side or end or edge (referenced herein as an “end” for the sake of convenience and without intent to limit) that is tapered. Such tapering provides various independent benefits, such as facilitating insertion of the day pack into a pocket or otherwise tight space and distinguishing one end from the others so a user may determine the orientation of the day pack tactilely and without the need to look at the day pack or even pull out the day pack from her purse. As illustrated with reference to FIGURE 3, at least one end of exemplary day pack **202**, such as top end **204**, may be narrower than the other ends, such as by tapering such end. Such tapering facilitates insertion of day pack **202** into a tight space with tapered top end **204** as a leading insertion end. The tapering permits initial insertion of day pack **202** into the tight space and gradual widening of the tight space to receive the full thickness **T** of day pack **202** and thus the thickness of the tampons within day pack **202**. It will be appreciated that the taper may be selected to follow the typical domed, curved, or otherwise bullet-shape of the top of a tampon (particularly a digital tampon), such as exemplary tampon **210** shown in FIGURE 4 (which Figure illustrates day pack **202** in an open configuration). Such tapering provides the added benefit of reducing material used to form day pack **202** (by following the shape of the contents of day pack **202**, less material is used to form day pack **202** than used for a squared-off or flat top). Moreover, such tapering further reduces the possibility of crushing the contents of day pack **202** and day pack **202** itself because of the reduction of empty space between day pack **202** and the tampons therein.

[0033] One manner of forming a day pack **202** to have a tapered end **204** yet to permit ready and easy access to the contents therein is illustrated in FIGURE 4. Exemplary day pack **202** of FIGURE 4 is formed with an inner box **300** and an outer sleeve **400**, exemplary blanks for which are illustrated in FIGURES 5 and 6, respectively, and will be described in

further detail below. It is noted that directional references such “top,” “bottom,” “front,” “back”, and “side” do not limit the respective walls or panels to such orientation, but merely serve to distinguish these walls or panels in FIGURES 3-6 from one another. It will be appreciated that the benefits of an inner box and outer sleeve arrangement are independent of the potential of tapering the package resulting from an inner box and outer sleeve arrangement, as will become apparent. Accordingly, the concept of tapering need not be applied to packaging utilizing an inner box **300** and outer sleeve **400**.

[0034] Referring to FIGURE 4, exemplary inner box **300** is formed to have at least one wall that extends only partially along the length **L** of a tampon **210** to be contained therein. As may further be appreciated with reference to both FIGURES 4 and 5, it is particularly convenient (though not essential) to provide two walls, such as front wall **302** and back wall **304** (hidden from view by tampon **210**), with maximum heights **H1** shorter than length **L** of tampon **210**. The provision of at least one wall of inner box **300** with a height shorter than the length **L** of tampon **210** therein permits ready grasping of tampon **210** for easy removal from inner box **300**. Side walls **306** of inner box **300** need not be shorter than tampons **210**. In the embodiment of FIGURE 4, side walls **306** may have a height **H2** extending at least or almost the entire length of tampon **210**. If desired, side walls **306** may be shaped to follow the cross-sectional shape of tampons **210** such that when day pack **202** is closed (as in FIGURE 3), tampons **210** are substantially completely covered by side walls **306**, thereby protecting tampons **210** from damage or contamination, and also hiding tampons **210** from view.

[0035] Because the top portions of tampons **210** are exposed above at least one wall of inner box **300** in the embodiment of FIGURE 4, the walls of inner box **300** need not be manipulated or otherwise altered in order to remove a tampon (as would be the case if the tampons were completely enclosed by the side walls of inner box **300**, in which case a user would have to insert her fingers within inner box **300** and between a tampon and the inner surface of at least two of the side walls or between tampons or between a wall and a tampon to grasp and to remove a tampon). Thus, inner box **300** may be sized and dimensioned to follow closely and to conform to the row of tampons **210** to be contained therein, thereby reducing the material required to form inner box **300** and reducing the likelihood of shifting of tampons **210** therein (because almost no extra space is provided). Tampons **210** may be securely held within day pack **202** by virtue of a tight tolerance with inner box **300**, and tampons **210** thereby may be inhibited if not prevented from falling out of inner box **300** unintentionally. Thus, although formation of a package with an inner box **300** covered by an outer sleeve **400** facilitates formation of a tapered end of the package, such arrangement

also permits reduced deformation of the package upon removal of tampons **210** as well as reduction of packaging materials regardless of whether the package has a tapered end.

[0036] An exemplary blank **300'** for forming inner box **300** of FIGURE 4 is illustrated in FIGURE 5. Front panel **302'** and back panel **304'**, respectively forming front wall **302** and back wall **304** of inner box **300** of FIGURE 4, are shorter than side panels **306'a** and **306'b**. Respective top edges **303'** and **305'** of front wall **302'** and back wall **304'** are arcuate, but may be any other shape instead, including straight. Side panels **306'a** and **306'b** have arched upper edges **307'** to follow the shape of a tampon **210** to be contained within the inner box **300** to be formed from blank **300'**. However, upper edges **307'** may be shaped in any other desired manner, including squared off (such as if day pack **202** is not formed with a tapered end **204**). To form the enclosing walls of inner box **300** (the walls enclosing tampons **210** with respect to which tampon longitudinal axes **A** are preferably held substantially parallel), panels **306'a**, **302'**, **306'b**, and **304'** of blank **300'** are folded along respective fold lines **311'**, **313'**, and **315'**, and side connecting panel **316'** is folded along fold line **317'** and coupled to the inner-facing (tampon-facing) surface of side panel **306'a**. In addition, bottom panels **312'a** and **312'b** are folded along fold lines **323'** and **325'**, respectively, and are laid over each other (the specific arrangement of which panel is above the other is not critical) to form a bottom wall **312** of inner box **300**.

[0037] As may be appreciated, it is desirable to protect tampons **210** to be contained within inner box **300** of exemplary day pack **202** from damage, deformation, moisture, contamination, etc. As noted above, by having inner box **300** reflect the shape of tampon **210** to be contained therein, tampons **210** are held securely in place and thereby are protected from being compressed against one another. Additionally, the inner box shape can protect the contained tampons **210** from coming into contact with dirt, dust, debris, and other contaminants as the edges of inner box **300**, front panel **402**, and back panel **404** closely abut and leave little room for contaminants to enter. In the exemplary embodiments of FIGURES 4 and 5, outer sleeve **400** covers the portion of tampons **210** exposed above the shorter front wall **302** (and, optionally shorter back wall **304**) of inner box **300**. If, as in the exemplary embodiment of FIGURES 4 and 5, side walls **306** extend substantially the full height of tampons **210**, then outer sleeve **400** together with side walls **306** enclose and protect tampons **210** within inner box **300**.

[0038] In accordance with one aspect of the present invention at least front wall **402**, and optionally back wall **404** as well, of outer sleeve **400** may function as a flap that selectively covers the exposed portions of tampons **210** and may be moved away from inner

box **300** to permit ready and easy removal of a tampon **210** from inner box **300**. Such flap may be sized, dimensioned, and otherwise configured to facilitate one-handed manipulation so a user may open day pack **202**, remove a tampon therefrom, and close day pack **202** with one hand, and even while day pack **202** remains in the user's purse or pocket (or other
5 stowage location). Formation of front wall **402** and back wall **404** as flaps also facilitates the formation of the above-noted tapered end **204**. However, a standard squared off top end, optionally with a hinged lid or other type of access to inner box **300**, may be provided instead, if desired.

[0039] An exemplary blank **400'** for forming outer sleeve **400** of FIGURE 4 is
10 illustrated in FIGURE 6. For the sake of convenience, which will become apparent with respect to further descriptions of outer sleeve blank **400'** below, outer sleeve blank **400'** will be described with reference to FIGURE 6 as having its outer surface shown (the inner surface, which faces inner box **300** in FIGURE 4, being on the other side of outer sleeve
15 blank **400'** not visible in FIGURE 6). Front panel **402'** is folded along front fold line **403'** with respect to bottom panel **412'** and back panel **404'** is folded along back fold line **405'** with respect to bottom panel **412'** (both front panel **402'** and back panel **404'** being folded in a direction into the page bearing FIGURE 6) to form front wall **402** and back wall **404** of
20 outer sleeve **400**, as illustrated in FIGURE 4. Bottom wall **312** of inner box **300** preferably is coupled to the inner surface of bottom panel **412'** to situate outer sleeve **400** properly over inner box **300** to cover and to close over tampons **210** within inner box **300**. If desired, outer sleeve **400** may be secured over and to inner box **300**, such as by adhesive.

[0040] Outer sleeve **400** may be formed in any desired manner to contribute to the external appearance of day pack **202**. In accordance with one aspect of the invention noted above, the formation of day pack **202** from an inner box **300** and an outer sleeve **400**
25 permits day pack **202** to be readily formed with at least one tapered end **204** to facilitate insertion of day pack **202** into a confined space. An exemplary embodiment of a tapered day pack **202** with a tapered end **204** is illustrated FIGURES 3, 4, and 6. Nonetheless, it will be appreciated that the formation of day pack **202** from an inner box **300** and an outer sleeve **400** provides independent benefits such that a day pack so formed need not have a
30 tapered end to provide unique benefits. For instance, formation of day pack **202** from an inner box **300** and an outer sleeve **400** provides the ability to form as small a package as possible with relatively sturdy yet flexible material, and the ability for the tampons to extend above a portion of the packaging so a tampon may be removed without deforming the packaging.

[0041] It is generally desirable to maintain a day pack formed in accordance with the principles of the present invention in a closed configuration to cover and to protect the tampons held therein, as well as to prevent the tampons from falling out. The exemplary day pack **202** of FIGURES 3 and 4 is provided with a closure **420** that includes a cover element that covers and protects the actual engaging elements of the closure so that the engaging elements cannot be inadvertently disengaged from one another, such as upon stowage of day pack **202** or removal of day pack **202** from stowage or simply while day pack **202** is in its stowed location. Exemplary closure **420** of FIGURES 3 and 4 has a cover element resembling a band encircling and holding together the top ends of front wall **402** and back wall **404** of outer sleeve **400** (such as flat against each other) and covering the closure elements. However, it will be appreciated that other closures for a tapered end of a package may be used instead, whether or not resembling a band, holding walls **402** and **404** flat against each other, or otherwise. It is further noted that although closure **420** is formed and provided in a manner that permits outer sleeve **400** to maintain the taper at tapered end **204**, various of the benefits provided by closure **420** are independent of closure **420** permitting and / or maintaining the taper of a tapered package, as will be appreciated with reference to the following more detailed description of exemplary closure **420**.

[0042] The exemplary outer sleeve blank **400'** of FIGURE 6 illustrates panels that may be used to form closure **420** with several unique features and benefits. As described above, outer sleeve blank panels **402'**, **412'** and **404'** are folded to form an outer sleeve **400** as in FIGURES 4 and 5. As such, closure flap **422**, formed from closure flap panel **422'**, is oriented at the top end of front wall **402** with a closure tab **424**, formed from closure tab panel **424'**, extending therefrom (in the case of the exemplary embodiment of FIGURE 6, from a free edge of closure flap panel **422'**). Covering closure panel **432'** is folded towards the inner surface (on the other side of the surface shown in FIGURE 6) of outer sleeve blank **400'** and with respect to closure panel **436'** along fold lines **433'a** and **433'b** to cover closure slot **438** within closure panel **436'** at the top end of back wall **404**, for reasons that will become apparent. The provision of two fold lines **433'a** and **433'b** allows covering closure panel **432'** to be spaced sufficiently from closure panel **436'** to form a receiving channel **431** therebetween (see FIGURE 4) that is wide enough to receive closure flap **422** and closure tab **424**. After covering closure panel **432'** has been folded with respect to closure panel **436'**, side closure panel **434'a** is folded with respect to covering closure panel **432'** along fold lines **435'a** and **435'b** towards the outer surface of back panel **404'**. Similarly, side closure panel **434'b** is folded with respect to covering closure panel **432'**

along fold lines **437'a** and **437'b** and towards the outer surface of back panel **404'**. Once again, the provision of a pair of fold lines **435'a** and **435'b** and **437'a** and **437'b** allows covering closure panel **432'** to be spaced from closure panel **436'** to form receiving channel **431** therebetween. Side closure panels **434'a** and **434'b** are laid over each other
5 (the order being immaterial) to secure closure panels **432'**, **434'a**, and **434'b** in place to form a closure band **430** encircling closure slot **438**. As will be appreciated, to close exemplary day pack **202**, closure flap **422** is inserted into receiving channel **431** within closure band **430**, and closure tab **424** is inserted into closure slot **438**. Closure flap panel **422'** is slightly folded along fold line **421'** with respect to front panel **402'** and closure panel **436'** is
10 slightly folded along fold line **435'** so that closure flap panel **422'** and closure panel **436'** are laid substantially flat against each other, thereby maintaining the taper of tapered end **204** of day pack **202**. Moreover, the folding of side closure panels **434'a** and **434'b** over each other and over the outer surface of closure panel **436'**, and the folding of covering closure panel **432'** over the inner surface of closure panel **436'** results in a multi-layered region at
15 the tapered section **204** of day pack **202**. Such multiple layers add strength to tapered section **204**, which otherwise would be far more flexible and potentially subject to bending and possible damage, particularly in an embodiment in which tapered section **204** extends above the tampons **210** (or other articles to be contained in a package such as day pack **202**) and thus is not strengthened or reinforced by the material of tampons **210**.

20 [0043] There are several manners in which closure **420** may serve to inhibit unintended opening of day pack **202**. As indicated above, receiving channel **431** is sized to permit insertion of closure flap **422** and closure tab **424** therein. The size of receiving channel **431** may be selected to maintain closure flap **422** securely therein. For instance, closure flap **422** and closure tab **424** may be slid into receiving channel **431** along closure
25 panel **436'** (given the narrowness of receiving channel **431**) to insert closure tab **424** into closure slot **438**. If desired, receiving channel **431** may be sized to maintain closure flap **422** in close contact with closure panel **436'**. Closure side panels **434'a** and **434'b**, once folded to cover the outer surface of closure panel **436'**, serve as a retaining panel to retain closure tab **424** in closure slot **438**, such as by preventing closure tab **424** from being caught
30 on another object and dislodged from slot **438**. Alternatively or additionally, receiving channel **431** may be sized to cause closure tab **424** to fold towards the inner surface of closure flap **422** upon insertion into receiving channel **431**. As such, closure tab **424** takes on a configuration reminiscent of a fish hook or barb so that closure tab **424** can be hooked readily into closure slot **438**. Closure band **430** may be configured to hold closure flap **422**

in place within receiving channel **431** so that closure tab **424** likewise remains in place within closure slot **438** and does not inadvertently come out of closure slot **438**. If desired, side closure panels **434'a** and **434'b** may be formed and folded with respect to closure panel **436'** to maintain closure tab **424** hooked within closure slot **438**. For instance, side closure

5 panels **434'a** and **434'b** may help to catch closure tab **424** in closure slot **438** by holding closure tab **424** in the folded over position, hooked into closure slot **438**. Also, side closure panels **434'a** and **434'b** cover the outer surface of closure slot **438** from which closure tab **424** extends so that closure tab **424** cannot catch on anything and inadvertently be unhooked and dislodged from closure slot **438**.

10 [0044] An additional feature that closure **420** may provide is a cue or feedback feature that confirms that closure **420** is securely closed. Such feedback is particularly desirable if the engaging elements of closure **420** are hidden by a cover element such as closure band **430**. In particular, the arrangement of side closure panels **434'a** and **434'b** with respect to closure panel **436'** and closure slot **438** permits closure tab **424** to be held in close

15 contact with side closure panels **434'a** and **434'b** and closure panel **436'** upon insertion of closure tab **424** into closure slot **438**. Such close contact not only helps to keep closure tab **424** in place within closure slot **438**, but may also provide feedback to the user confirming secure closing of closure **420**. Such feedback may be tactile, as a result of the close fit of closure tab **424** within closure slot **438** and between side closure band panels

20 **434'a** and **434'b** and closure panel **436'**. Preferably, the feedback is audible as well, such as a small click confirming closure tab **424** is securely held in place within closure slot **438**. In an embodiment in which closure flap **422** and closure tab **424** are slid into receiving channel **431**, the feedback indicates when closure flap **422** and closure tab **424** have been slid sufficiently with respect to closure panel **436'**.

25 [0045] The provision of a feedback cue to the user that day pack **202** has been properly closed is considered to be a desirable feature for tampon packaging. In particular, in accordance with the principles of the present invention, such feedback is provided on a disposable packaging for carrying a day's supply of tampons. Thus, a relatively inexpensive package for only a day's supply of tampons provides the user with feedback

30 confirming such package has been properly closed so that the user is assured the contents will not inadvertently spill out.

[0046] It will be appreciated that although the above-described closure **420** is described as being formed in a paperboard package, other materials may be used. Moreover, the above-described closure **420** has several beneficial features, including, without limitation,

easy opening, resistance to inadvertent opening, sturdiness, feedback to confirm proper closure, and a taper that facilitates insertion into a tight space. Any or several or all of the features of exemplary closure **420** may be provided by a closure formed in accordance with the principles of the present invention. It will further be appreciated that the closure of the present invention may be applied to packages or cartons other than the day pack of the present invention.

[0047] It will be appreciated that various features of above-described day packs **102** and **202**, such as, without limitation, a flap that folds away from an inner box, an inner box with a cutaway to facilitate removal of articles therefrom, a closure with its engaging element hidden from view and/or inadvertent access, a closure with a locking tab, and a closure with a feedback feature, may be applied to packages of various shapes and/or sizes, such features not necessarily being limited to packages for tampons or even packages with tapered ends. Various principles of the package of the present invention need not be limited to packaging specifically designed for tampons. Likewise, a package with a tapered end may be beneficial for holding articles other than tampons, and a closure maintaining a tapered end of a package may be applied to any type of package.

[0048] It will further be appreciated that the various characteristics of the present invention described above need not be implemented by using all of the above-described inventive features. The various above-described features need not be used in conjunction with each other and are independently beneficial and thus may be used independently or in any combination thereof. For instance, provision of a day pack sized to hold no more than four or five, and preferably four, tampons independently results in a small package of tampons without the further need to align the four or five tampons in a single row. Thus, the shape and configuration of a day pack formed in accordance with the principles of the present invention to contain only a single row of tampons is not essential to the basic concept of a prepackaged day's supply of tampons. Likewise, the configuration of a day pack to hold a single row of tampons independently results in a package that is easy to fit into a small space, without the need for the additional feature of a tapered end of the package. Furthermore, the convenience of day pack **102** is independent of the material and shape of day pack **102**. Finally, a tampon package that provides feedback to the user confirming proper closure of the package need not have the other package features described herein.

[0049] While the foregoing description and drawings represent exemplary embodiments of the present invention, it will be understood that various additions, modifications and substitutions may be made therein without departing from the spirit and scope of the present

invention. In particular, it will be clear to those skilled in the art that the present invention may be embodied in other specific forms, structures, arrangements, proportions, and with other elements, materials, and components, without departing from the spirit or essential characteristics thereof. One skilled in the art will appreciate that the invention may be used
5 with many modifications of structure, arrangement, proportions, materials, and components and otherwise, used in the practice of the invention, which are particularly adapted to specific environments and operative requirements without departing from the principles of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated
10 by the appended claims, and not limited to the foregoing description.

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CLAIMS:

1. A tapered package comprising:

a front wall, a back wall spaced apart from said front wall, first and second side walls spaced apart from each other and extending between said front and back walls, and a
5 bottom wall extending between bottom ends of said front wall, said back wall, and said first and second side walls; wherein top ends of said front wall and said back wall are coupled together such that said package has a tapered shape when viewed from a side; and a closure maintaining said front wall and said back wall together to close said package, said closure comprising (a) engaging elements coupling said front wall and said back wall together, and
10 (b) a cover element covering said engaging elements from view, wherein said closure cover element is in the form of a band extending around and encircling said top ends of said front wall and said back wall to hold said top ends of said front wall and said back wall together to close said tapered package.

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Title: Packaging
Inventor: David Francis, et al.

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FIG. 1

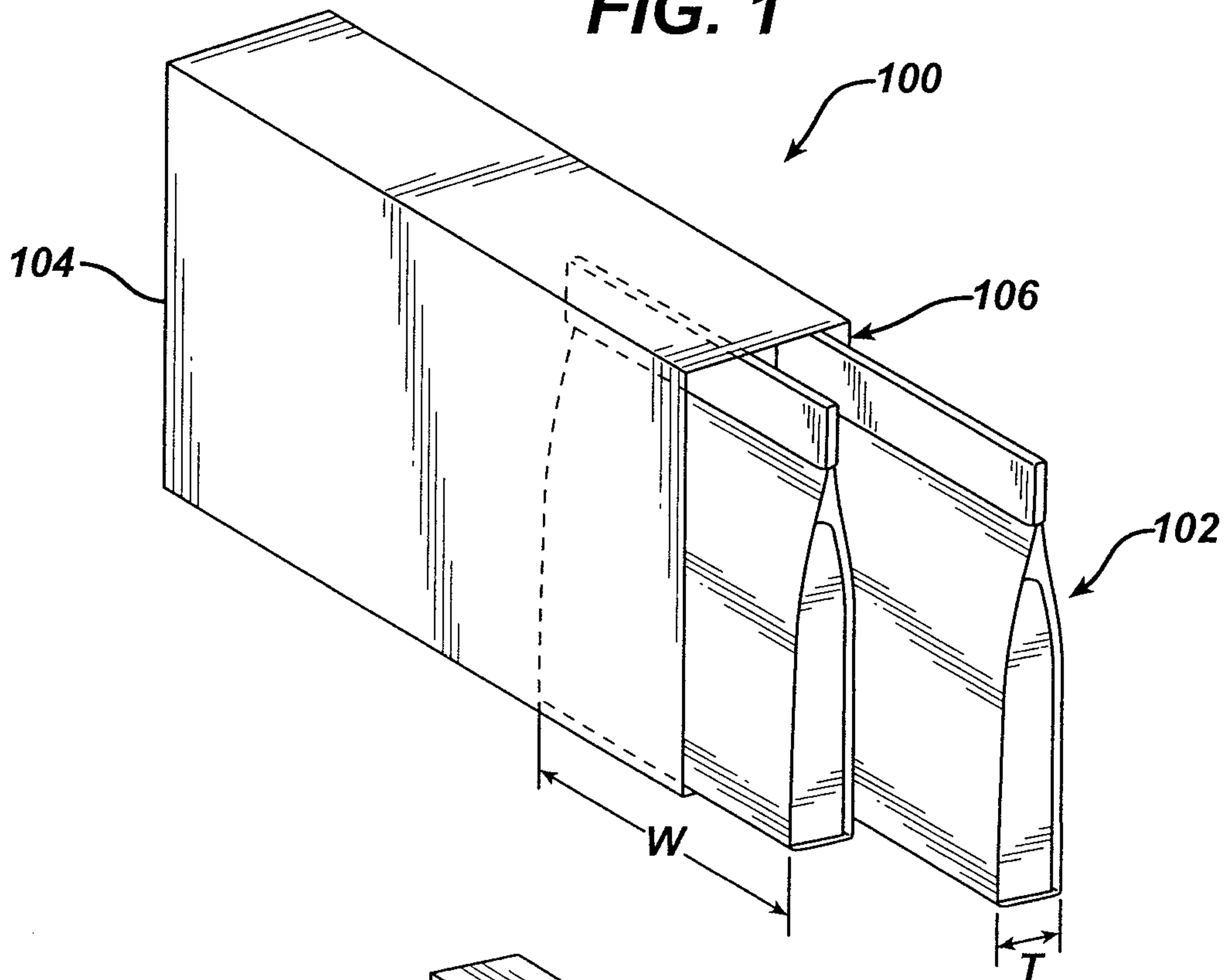
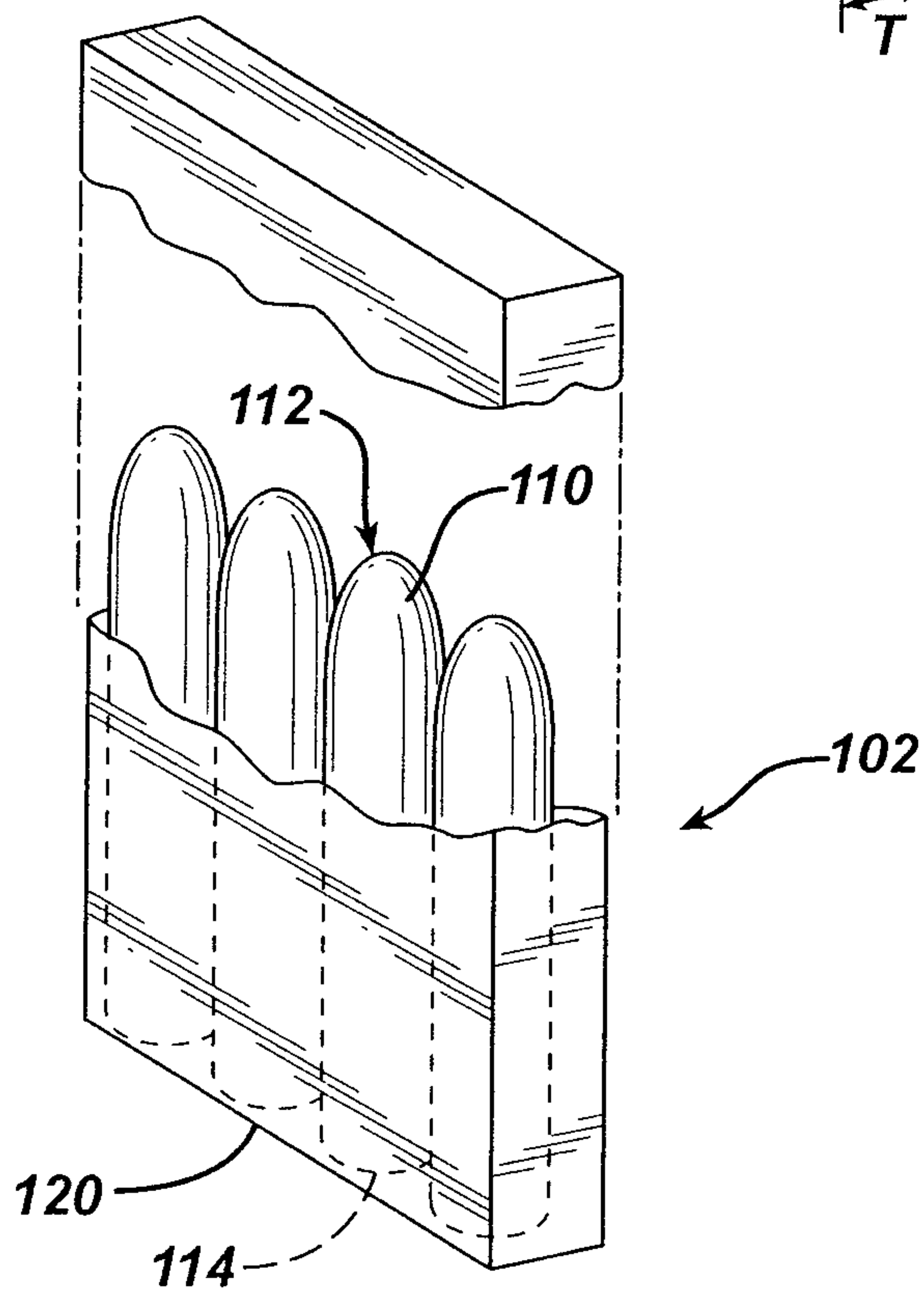


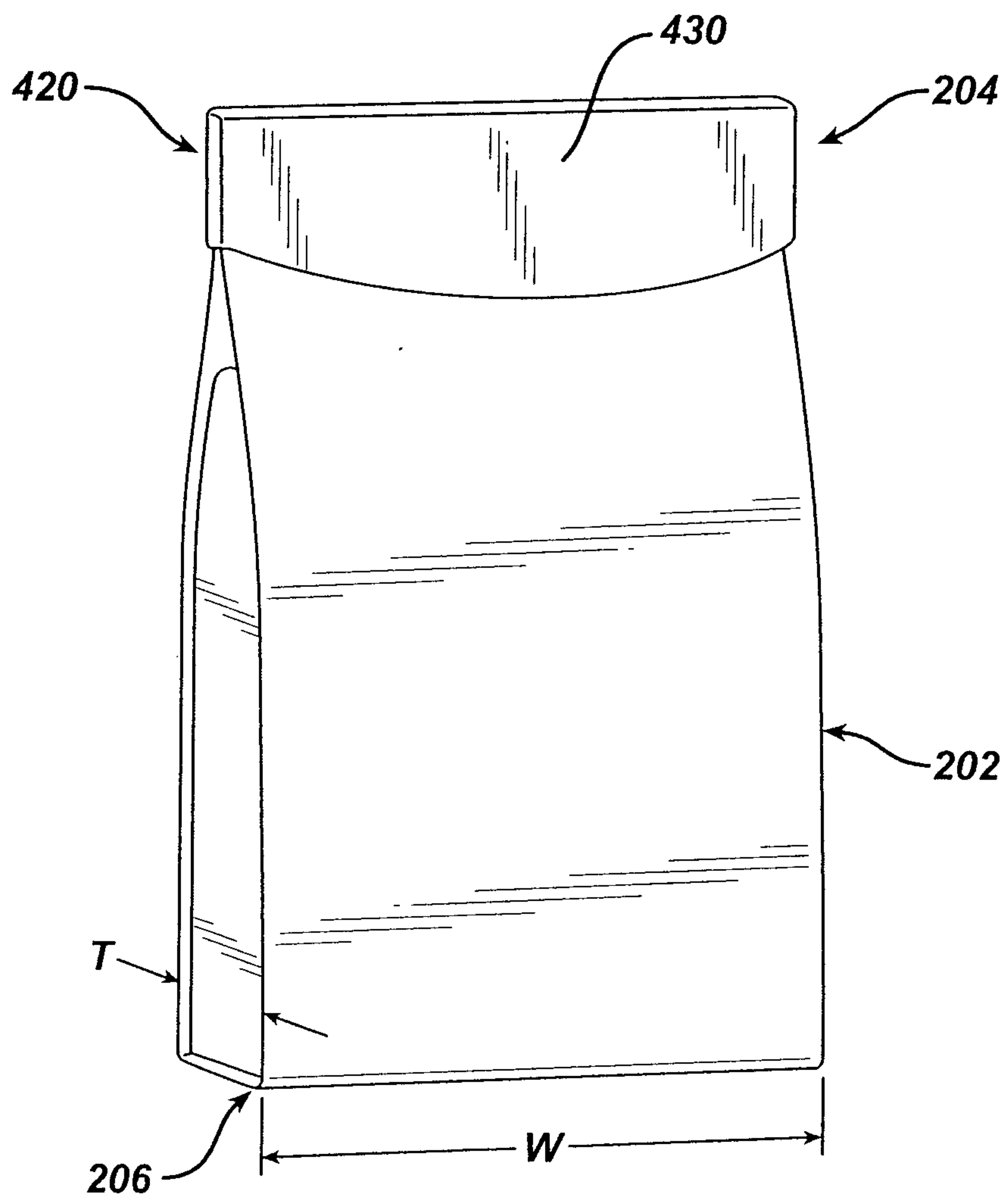
FIG. 2



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Title: Packaging
Inventor: David Francis, et al.

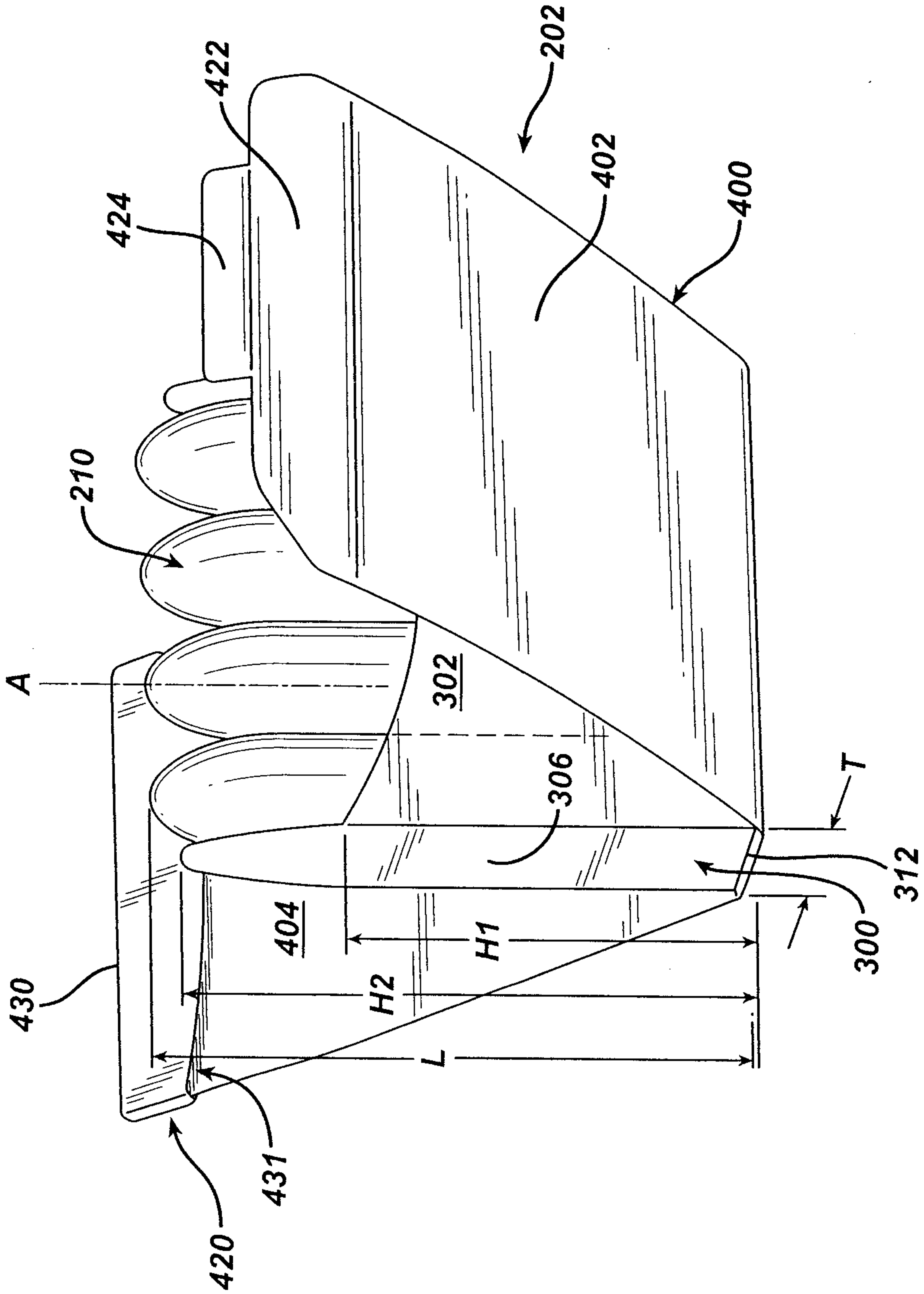
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FIG. 3



Docket No.: PPC5289USPSP
Title: Packaging
Inventor: David Francis, et al.

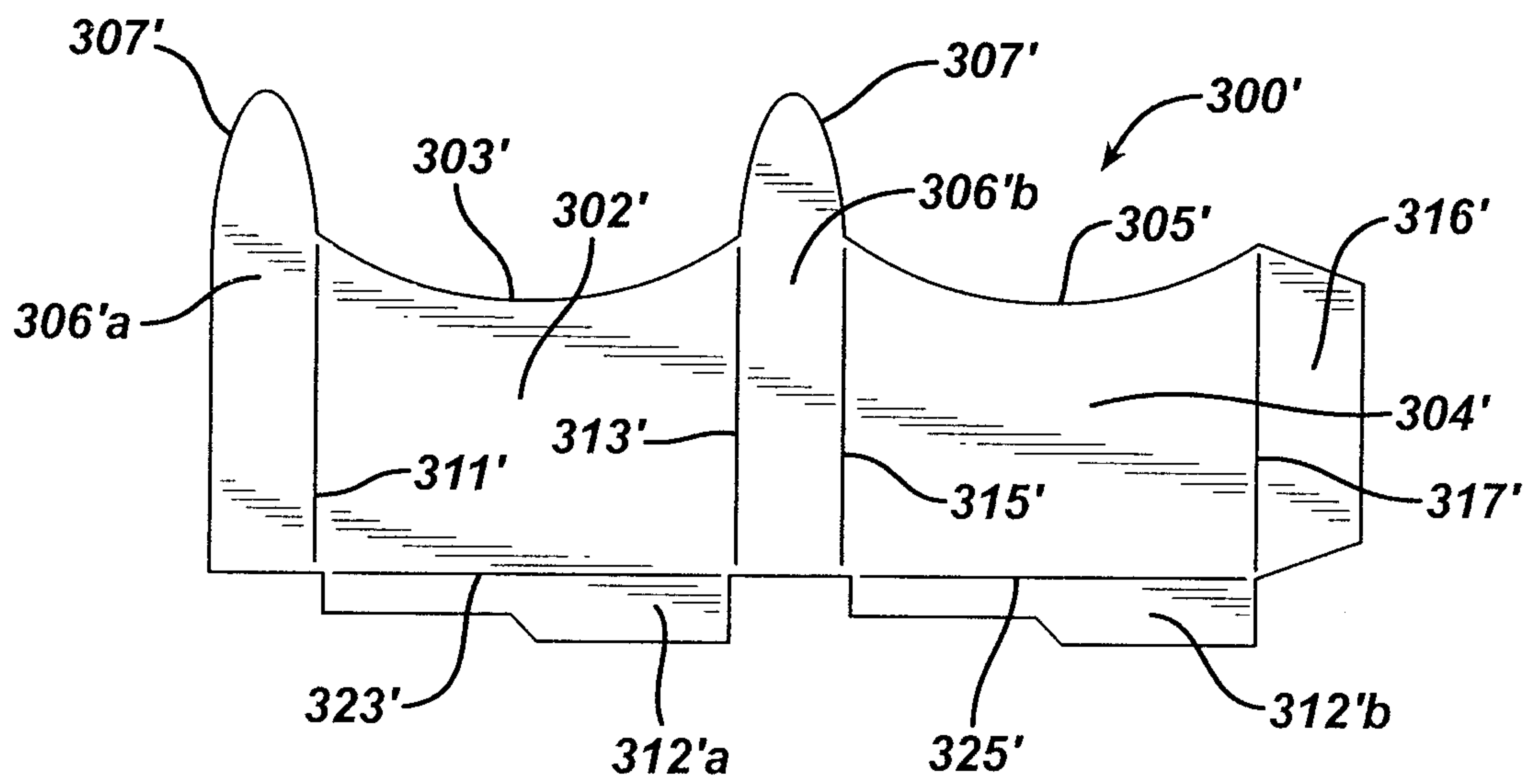
FIG. 4



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FIG. 5



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FIG. 6

