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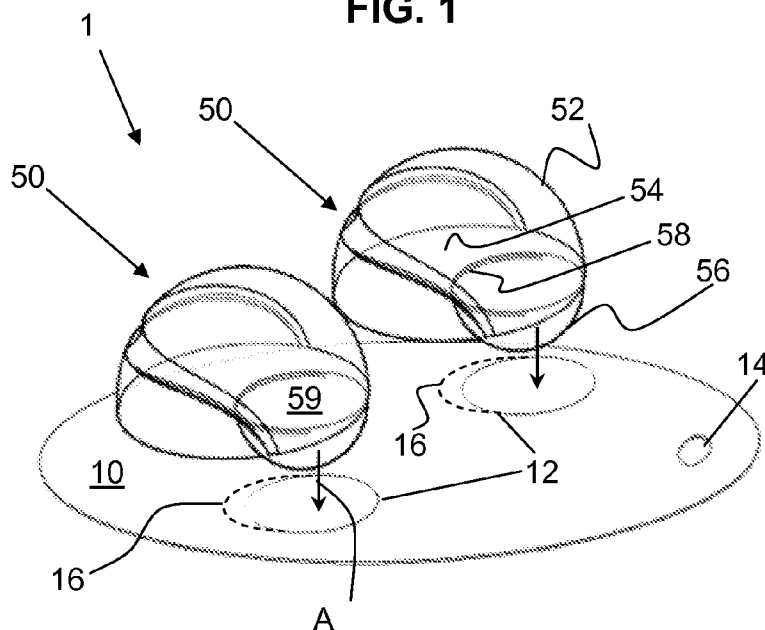
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[Continued on next page]

(54) Title: PAPER BOARD SECURITY PACKAGE WITH LOCKING NOTCH

FIG. 1



(57) Abstract: Paperboard security packages are disclosed wherein a case (56) or blister is contained between two cards (10, 20) and held in place by a retaining feature such as a notch (58) in the case or blister.



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Patent Application

PAPER BOARD SECURITY PACKAGE WITH LOCKING NOTCH

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of priority under 35 U.S.C. §119(e) of United States provisional application serial number 61/438,520 filed on February 1, 2011 which is hereby incorporated by reference in its entirety.

BACKGROUND

[0002] The present application is directed to security packages and, more particularly, to a paperboard security card holding a container or case by way of a notch, slot or groove in the case. In one embodiment the package is a security card/package predominantly formed from paper board.

[0003] The design involves one or more paperboard cards and a case or blister (acrylic for example) having a continuous form including a larger part and a smaller part. The case has a notch, slot or groove such that when the smaller part is lowered through a corresponding small aperture in the paperboard card, the case may then be slid sideways (parallel to the card) so that the notch receives a portion of the perimeter of the small aperture, locking the case onto the small aperture, in the sense that the case cannot be moved upward relative to the card (that is, in a direction perpendicular to the card). A second card with an aperture corresponding in size to the larger part of the case may then be positioned over the larger part, and the two cards sealed together trapping the case so that it cannot any longer slide sideways, which means the notch cannot move out of the smaller aperture; thus the entire case is locked into the card. Such a structure eliminates the need for a disposable case, so that a reusable case may be used which includes a special feature (such as the notch) to secure the case to the card or cards. . After the package is purchased, the consumer may remove the case from the card and then use the case separately, or recycle the case separately from the card. Thus the new package is beneficial from both an aesthetic and an environmental standpoint.

[0004] In one embodiment, a package is disclosed which includes a first card with a first aperture, a second card with a second aperture, and a case with a first and second portion, the case having a retaining feature to engage at least one of the first and second cards, while the case first portion protrudes outward from one surface of the cards and the second portion protrudes outward from the other surface of the cards.

[0005] In some embodiments the retaining feature may be a slot, slit, or groove in the case and may receive or engage a locking portion of at least one of the first and second cards.

[0006] Manufacturers and retailers of consumer goods, such as pharmaceuticals, electronics, health and beauty products and the like, typically package their products in tamper resistant security packages. For example, many consumer goods are packaged in blister or clamshell packages formed by positioning a consumer good in a flanged blister made from various polymeric and/or paperboard materials and sealing the flanged blister between two paperboard substrates. Consumers have voiced disapproval of such packages because of the difficulty of opening the same and the potential for being cut on a rough edge especially of plastic blisters. Packages may therefore be made based largely on paperboard, for example, NATRALOCK packages. Packaging made primarily of paperboard is more sustainable than packaging made from petroleum-based plastics. The paperboard used in such packages may be tear-resistant as described in commonly assigned US Patent No. 7,144,635.

[0007] When a plastic blister is used with a card-based package, the blister often has a flange that is adhered to the card, or has a trapped between layers of card. After opening the package, the flanged blister may be of limited use for containing the product, in which case it may be recycled. However for recycling it is sometimes advantageous to separate the blister and card, but with a flanged blister, at least portions of the flange may remain trapped in the card, or adhered to the card. It would be useful to have a security package that has utilizes a case that is easily and cleanly separable from the card, and possibly reusable after opening.

SUMMARY

[0008] In one aspect, a package is disclosed which includes a first card with a first aperture, a second card with a second aperture, and a case with a first and second portion, the case having a retaining feature to engage at least one of the first and second cards, while the case first portion protrudes outward from one surface of the cards and the second portion protrudes outward from the other surface of the cards. The retaining feature may be a slot, slit, or groove in the case and may receive or engage a locking portion of at least one of the first and second cards.

[0009] Other aspects of the disclosed packaging structures will become apparent from the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective view of certain parts of an exemplary package;

[0011] FIG. 2 shows a perspective view of a step in the assembly of the package of FIG. 1;

[0012] FIG. 3 shows a perspective view of another step in the assembly of the package;

[0013] FIG. 4 show a perspective view of the resulting, finished package;

[0014] FIGs. 5A - 5F show perspective view of some alternative designs of cards for forming packages;

[0015] FIGs. 6 - 7 show perspective views of alternative package designs;

[0016] FIG. 8A shows a perspective view of part of another package, and;

[0017] FIGs. 8B – 8C show cross section views of the package of FIG. 8A.

DETAILED DESCRIPTION

[0018] Reference will be made to FIGURES 1 - 8 which show various embodiments of paperboard security packages. Where there is more than one of the same feature,

sometimes only one will be denoted by a reference numeral. If different packages have a common feature, it may only be described one time. Similar features are sometimes denoted by the same numeral even if not identical. Where assembly steps are described, these steps are exemplary and are not to be limiting as to the sequence of operations used to arrive at the final package. Also, directions such as up, down, top, bottom, front, back, etc. are used for convenience in describing the package and are not meant to be limiting. The packages described may be made of one or several blanks (that is, the cut sheet parts from which the package components are made by folding and other steps). However, it should be understood that certain unitary blanks may be provided instead as more than one part, and certain blanks may be combined into single blanks, while still arriving at the same finished package.

[0019] The packages as shown do not all contain product items, however, it will be understood that the package can contain a variety of items. The packages as shown utilize rounded cards, but the cards may be any desired shape. The cases as shown include a smaller lower portion in the form of a rounded or hemispherical shape, and a large upper portion also in the form of a rounded or hemispherical shape. However, it should be understood that the shape and size of the two portions may be adjusted according to manufacturing preference. While the examples show two cases of equal size and shape, it should be understood that the number of cases, and their individual sizes and shapes, may be chosen according to manufacturing preference.

[0020] FIG. 1 shows a perspective view of certain exploded parts of a package 1 including a first card 10 and two cases 50. First card 10 may include lesser apertures 12 and hang hole 14. Each case 50 may include a first or larger portion 52 and a second or smaller portion 56, and larger portion 52 may be bounded by a floor 54 which may be planar. It may be useful for at least a portion of the floor 54 to be planar, so that it may rest in contact with first card 10 and lend stability to the package. Smaller portion 56 may intersect floor 54 at which intersection there may be a through-hole 59 between the larger portion 52 and the smaller portion 56. A retaining feature, such as notch 58, may be provided in the smaller portion 56 where it intersects floor 54. For example this retaining feature such as notch 58 may be formed as a cut or molded groove into smaller portion 56. Notch 58 may extend around a part of the through-hole 59, for

example around about half the perimeter of the smaller portion 56. The depth of notch 58, that is the radial distance of the notch into the smaller portion 56, may be chosen according to manufacturing preference. A deeper notch may hold the case 50 more securely in the finished package. The extent of notch 58 around the perimeter may also influence how well the case is held in the finished package. As a first step in assembling package 1, the cases 50 may be lowered onto card 10 as indicated by arrows A so that the smaller portions 56 enter apertures 12. Contiguous with each lesser aperture 12 is shown a locking portion 16 whose purpose will be further explained below.

[0021] FIG. 2 shows a perspective view of the package from below, with the cases 50 having been moved sideways across card 10 as indicated by arrows B, such that notch 58 receives or engages locking portion 16. Such movement may be part of a packaging process accomplished manually or with the help of automated equipment. The locking portion 16 thus received into notch 58 holds case 50 so that it cannot easily be separated from card 10, without case 50 first being moved back in the reverse of direction arrow B to unseat the notch 58 from card 10, that is, to clear the locking portion 16 from the notch 58. In other words, with the locking portion 16 thus received into notch 58, the case 50 cannot be moved in a direction perpendicular to the surface of the cards.

[0022] FIG. 3 shows a perspective view of package 1, once again from above. A second card 20 with larger apertures 22 may now be lowered (as indicated by arrow C) into facing contact with first card 10, with the larger apertures 22 receiving the larger portions 52 of cases 50. Thus the package has a first outer surface (for example a “back” surface outward of first card 10, through which part of the case such as smaller portion 56 may protrude) and a second outer surface (for example a “front” surface outward of second card 20, through which part of the case such as larger portion 52 may protrude). The larger apertures 22 may be sized and shaped to exactly match the perimeter of larger portions 52 where they intersect or contact first card 10. Alternately the larger apertures 22 may be sized and shaped to contact at least one or more points of the larger portions 52 to prevent case 50 from moving in the reverse direction of arrow B (Fig. 2), and thus, prevent the notch 58 from releasing from first card 10. In other words, the larger apertures 22 having been lowered or placed onto the perimeter of

larger portions 52, the cases 50 cannot then be moved parallel to the surface of cards 10, 20. After second card 20 is lowered into contact with first card 10, the two cards may be joined together by heat sealing, adhesives, staples, or other means to secure the cards together. A hang hole 24 may be provided on second card 20 and may align with hang hole 14 on first card 10.

[0023] Fig. 4 shows a perspective view from above of finished package 1. The locking portions 16 of first card 10 are shown again here. The locking portions 16, which extend into the notches 58, prevent cases 50 from being lifted away from the package. The second card 20, sealed to the lower card 10, prevent the cases from moving sideways to clear the notches 58. In the example shown in Figs. 1-4, the larger apertures 22 both extend to or beyond the edges of second card 20. However, the larger apertures 22 may alternatively be completely within second card 20.

[0024] To open package 1, a portion or all of the first card 10 or second card 20 may be removed so that cases 50 may be removed or detached from the cards. The package may be designed so that even after the cases have been removed, they may still be repositioned onto one or both cards, for example to provide easier storage (e.g. on hang hole 14), or make the cases easier to locate (e.g. as part of the larger package).

[0025] Figs. 1-4 show the package without any contents. Of course the cases 50 may contain a product or products. The cases may be sized and shaped for specific products, or may be sized and shaped to accommodate a variety of products. While the case as shown in Figs. 1-4 includes a larger portion and a smaller portion, the portions may also be equal-sized. While the case as shown in Figs. 1-4 includes two hemispherical portions, the portions may be other shapes, and the two portions may each be a different shape, with the apertures in the cards suitably sized and shaped to receive the case.

[0026] Figs. 5A – 5F show some alternative card designs for forming the package. The case or cases that would be held between the cards are not shown in Figs. 5A-5F. These are just examples and there are many other designs that may be utilized. Fig. 5A shows the first card 10 and second card 20 as depicted in the examples of Figs. 1-4. The cards and their apertures are generally round or oval in shape and the separate

cards are brought together by a translational movement indicated by arrow C. Fig. 5B shows an alternative design where the first card 10B and second card 20B are made of a single piece of material, and are joined by a crease or fold line 15. After inserting the cases, the cards are brought together by a folding motion as indicated by arrow D. It should be noted that while the design of Fig. 5C includes only a single fold between the first and second cards, there may be more than one fold, and additional portions of material, between the first and second cards. Fig. 5C shows a similar design where the first card 10C and second card 20C are made of a single piece of material joined by a fold line 15 at a different location. Fig. 5D shows a design where rectangular cards 10D, 20D are used with rectangular apertures, as may be useful for rectangular or cubical cases. Fig. 5E shows a design where rectangular cards 10E, 20E are used with circular apertures, as may be useful for rounded, ovate, or hemispherical cases. Fig. 5F shows a design where rectangular cards 10F, 20F are used which have a circular larger aperture and a rectangular smaller aperture, which may be useful for cases having a rounded larger portion and a rectangular or cubical lower portion. Other combinations of card shapes and aperture shapes may be useful with other case designs.

[0027] FIG. 6 shows a perspective view of exploded parts of another package that is similar in some ways to the package of FIG. 1. Again a notch 58 may be provided to receive locking portion 16 of the first card 10. In a similar manner, a second notch 59 may be provided to receive locking portion 26 of the second card 20. After lowering second card 20 over the cases, second card 20 could then be slid sideways to engage the second notches, after which the cards could be joined together by adhesive, heat seal, or other means.

[0028] Instead of the translational (side to side) movement of the case relative to one or both cards to cause locking portions 16, 26 to be received into notches 58, 59, other movements may be utilized.

[0029] FIG. 7 shows a perspective view of an alternative method of locking the cases onto the package. Tabs 17 may be provided on apertures 12. These tabs may be attached to first card 10 by a fold or crease 18. For example the tabs 17 may be folded

slightly upward to engage notch 58 as the case is lowered onto first card 10. Then second card 20 may be added to the package as described previously.

[0030] FIG. 8A shows a perspective view of an alternative type of case 60 that may be locked onto the package by rotation. In this example case 60 is spherical, and may have recesses 62, and notches 68. The notches 68 may, for example, extend into the recesses 62. FIG. 8B shows a cross section of case 60 about its “equator” and FIG. 8C shows a plan view of a first or lower card 10 with aperture 12 and a second or upper card 20 with aperture 22. The apertures may have inward protrusions 13, 23 respectively.

[0031] The aperture 12 with protrusions 13 may be sized and shaped to receive the cross section of the case 60 as it appears in FIG. 8B. Therefore, the inward protrusions 13 may fit into the recesses 62. Once the case 60 is thus seated in aperture 12, the case may be rotated 45 degrees so that inward protrusions 13 seat into notches 68, securing case 60 from being moved perpendicular to the first card 10. Next, second card 20 may be lowered over case 60, so that the upper part of case 60 is received into aperture 22, which is possible because the protrusions 23 are positioned to align with the new position of recesses 62 after rotation of the cases. The cards may then be joined together by heat sealing, adhesive, or other means. The second card 20 thereby engages the case to prevent it from rotating, while the protrusions 13 prevent the case from being lifted away from the package.

[0032] The shapes of case 60 and cards 10, 20 in FIGs. 8A-8C are for example only. There are many combinations of cases and cards that may likewise be combined with a rotational motion to secure the case and card or cards together. For example, the case may have a rectangular cross section or other shape cross section that may be rotated into one or both cards.

[0033] The material used for the cards may be coated on one or both surfaces. For example, one surface may have a graphics-receptive coating, while the opposite surface may have a coating for heat sealing and/or tear resistance. It may sometimes be desirable to have the graphic-receptive surfaces of the cards to face outwards on the finished package, while the tear-resistant or heat-seal surfaces may face inwards. If

more than one card are formed from a single blank, for example hingedly joined together, the blank may be designed so as to place the respective surfaces on the desired outward or inward orientation in the finished package.

[0034] The packages here may comprise paperboard or plastic, and may be opaque, translucent, or transparent. While several of the packages have been shown as oval or circular cards holding a case with two combined hemispherical shapes, it should be understood that other shapes of cards and cases may be used to form similar packages.

[0035] The features described for various packages herein may be alone or in combination with other described features. It is to be understood that a variety of materials may be used to form these packages. However, for sustainability purposes, a paperboard based material may be used and for improved theft deterrence a tear resistant paperboard may be used. Package materials may include tear-proof materials such as DURAFOLD paperboard, tear-resistant materials such as NATRALOCK paperboard, as well as other types of paperboard or plastic materials. The packages may be made of one or more layers of material, including but not limited to one, two, three or more layers of material. Different parts of the packages may comprise different materials and/or different numbers of layers.

[0036] Packages made of tear-resistant material may be difficult to open without first initiating a tear, which can often most readily be done by using a knife or scissors. However, a package may be provided with a pre-cut tear initiation point, such as a perforation or a notch cut into the tear-resistant material, for example near its periphery. In such a case, to avoid unauthorized opening of the package before it is sold, a security tag may be used to cover up the tear initiation point. Use of a security device to cover a tear initiation point is also described in U.S. Provisional Application 61/025,102 filed on January 31, 2008 and in International Application PCT/US09/32321 filed on January 29, 2009, both of which are herein incorporated by reference in their respective entireties.

[0037] The packages disclosed herein may be comprised mostly of paperboard, for example as described in International Application PCT/US08/051245. The paperboard used in such packages may be tear-resistant as described in commonly assigned US

Patent No. 7,144,635. However, the packages disclosed herein may also comprise plastic materials.

[0038] The packages disclosed herein may be made from one or several blanks (that is, the cut sheet parts from which the package components are made by folding and other steps). However, it should be understood that certain unitary blanks may be provided instead as more than one part, and certain blanks may be combined into single blanks, while still arriving at the same finished package.

[0039] Where more than one blank is used, the blanks may be assembled in various stages, including assembling a unitary blank into a package, assembling separate blanks and then joining them to form a package, and joining two or more blanks together, for example by heat sealing, gluing, mechanical fastening, or otherwise and then forming the combined blanks into the package.

[0040] Portions of the packages may be made of one, two, or more layers of material. It is to be understood that additional layers of material may be used based on manufacturing preferences. Portions of certain cards may be folded over or around the portions of other cards, creating multiple layers of material.

CLAIMS

1. A package for holding an item, the package comprising :

a first card comprising a first aperture;

a second card comprising a second aperture; and

a case comprising a first portion, a second portion, and a retaining feature to engage at least one of the first and second cards;

wherein said first and second cards are in facing contact with one another and together have a first outer surface and a second outer surface,

wherein the case first portion protrudes outward from one of said first and second outer surface and the case second portion protrudes outward from the other of said first and second outer surface.
2. The package of claim 1, wherein the retaining feature is a slot, slit, or groove in the case.
3. The package of claim 2, wherein the retaining feature receives or engages a locking portion of at least one of the first and second cards.
4. The package of claim 4, wherein the retaining feature having received or engaged the locking portion, the case is prevented from moving apart from the cards in a direction perpendicular to the first surface.
5. The package of claim 1, wherein at least one of the first and second apertures

engages the case and prevents the case from moving in a direction parallel to the first surface.

6. The package of claim 1, wherein the first and second card are made from separate pieces of material.

7. The package of claim 1, wherein the first and second card are made from a single piece of material.

8. The package of claim 7, wherein the first and second card are connected by a single fold line.

9. The package of claim 7, wherein the first and second card are connected by a plurality of fold lines and one or more additional portions of material.

10. The package of claim 1, wherein at least one of said first and second card comprise paperboard.

11. The package of claim 1, wherein at least one of said first and second card are formed of a tear resistant material.

FIG. 1

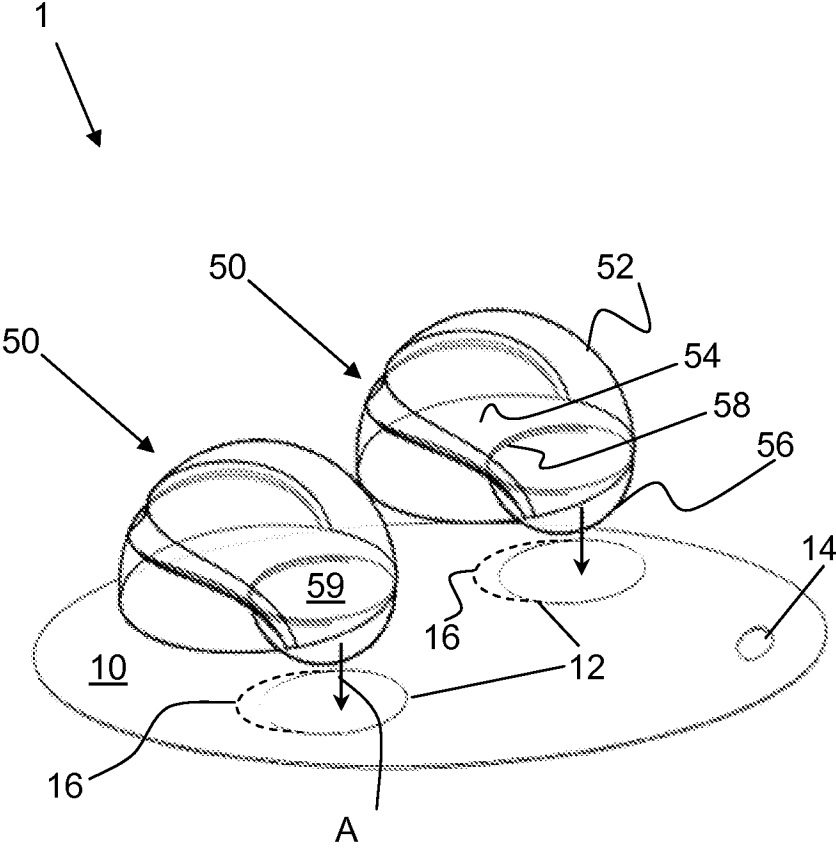


FIG. 2

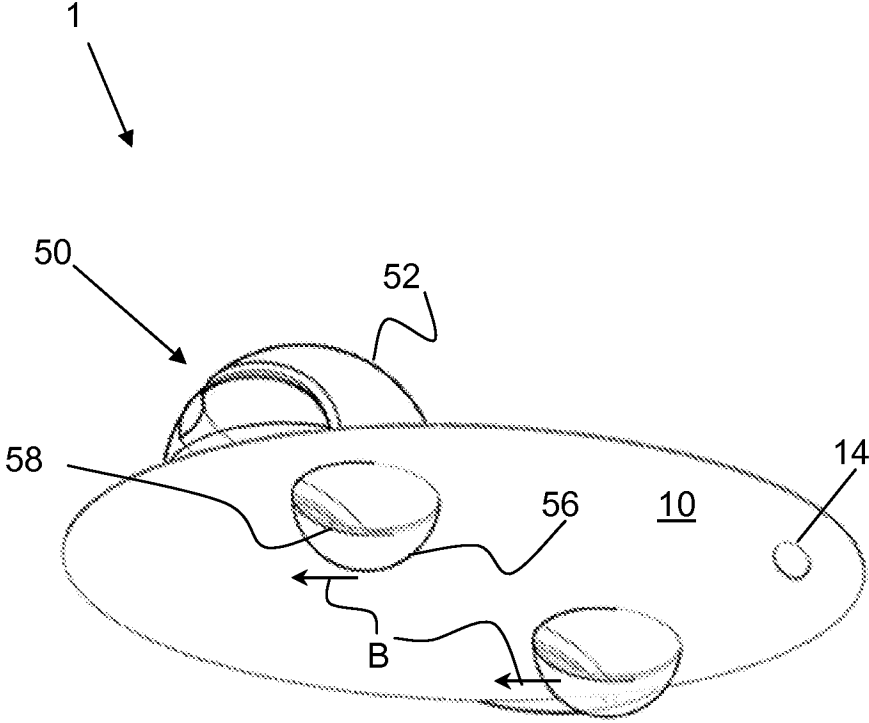
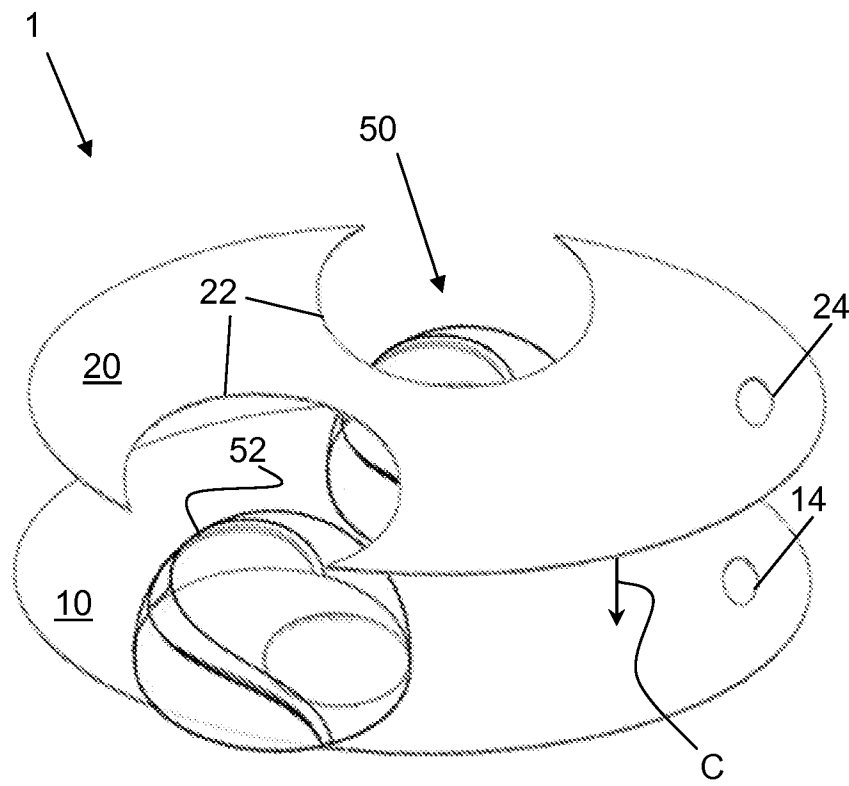
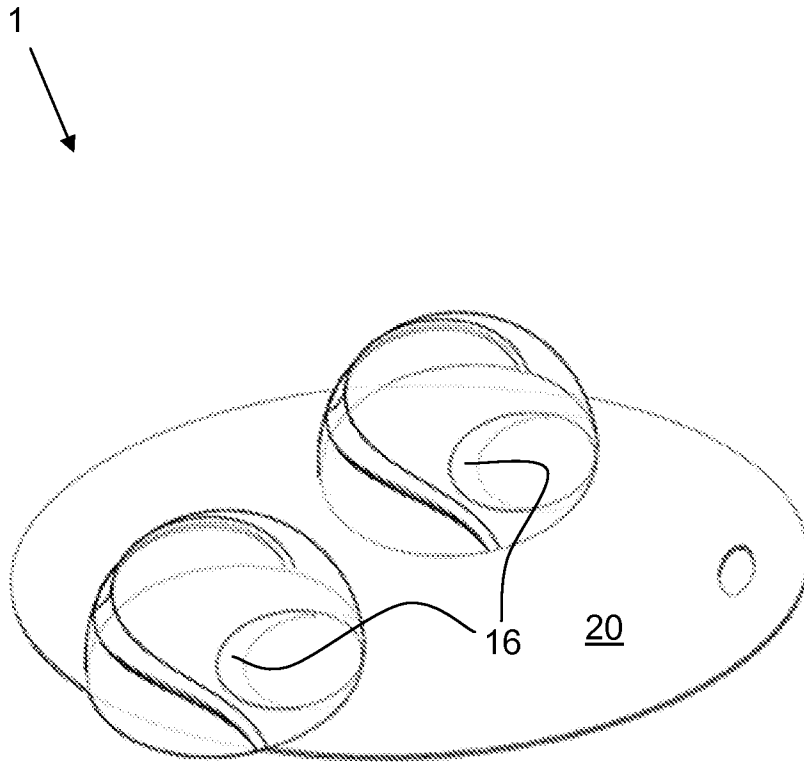


FIG. 3



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FIG. 4



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FIG. 5A

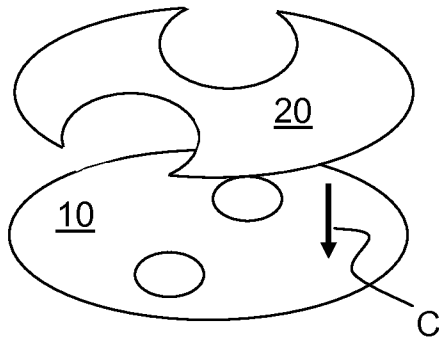


FIG. 5B

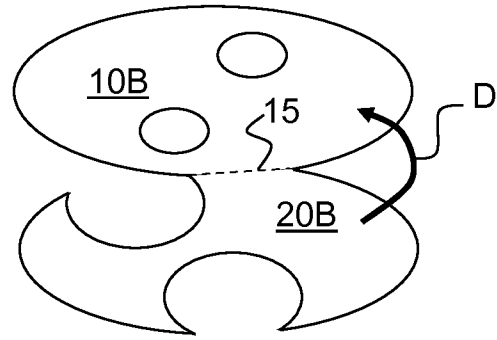


FIG. 5C

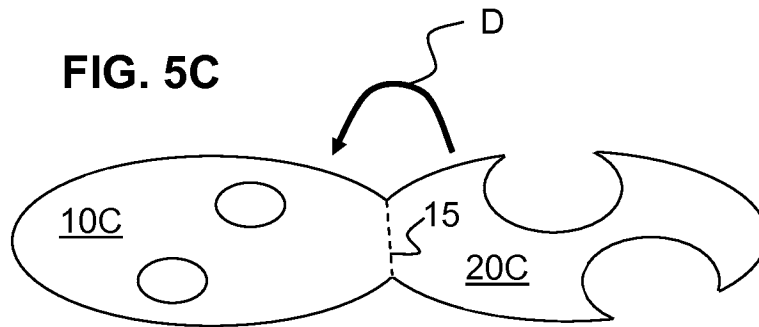


FIG. 5D

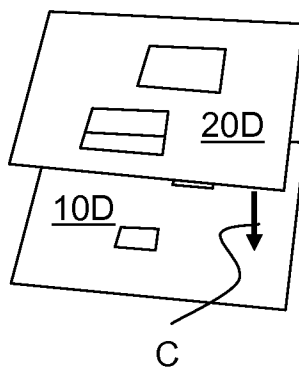


FIG. 5E

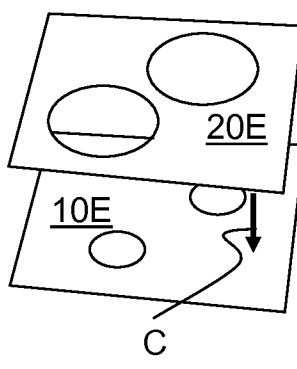
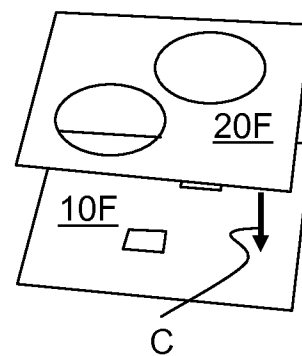
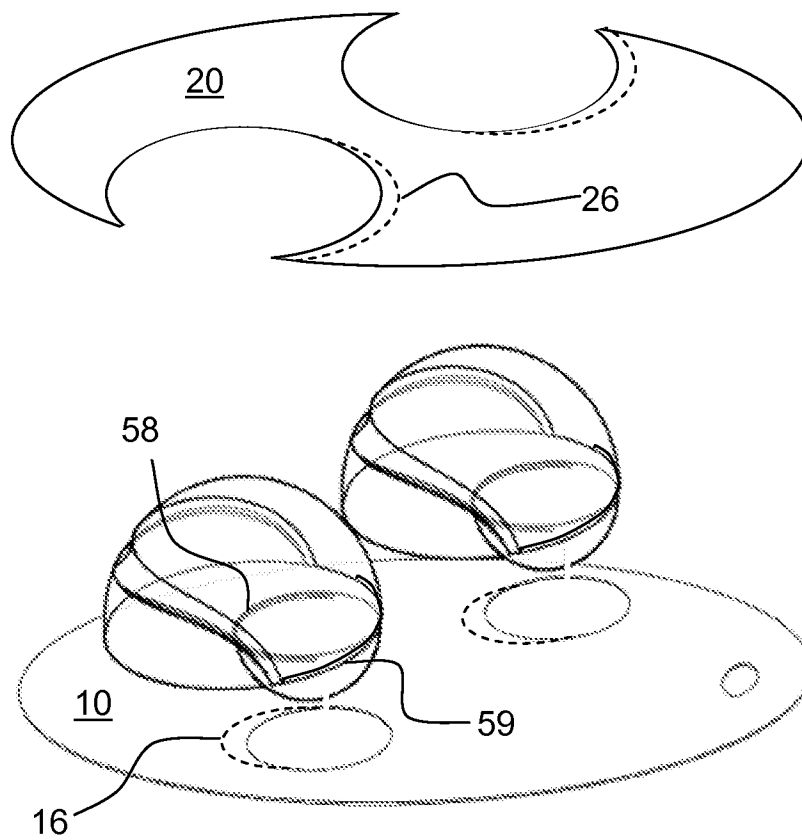


FIG. 5F



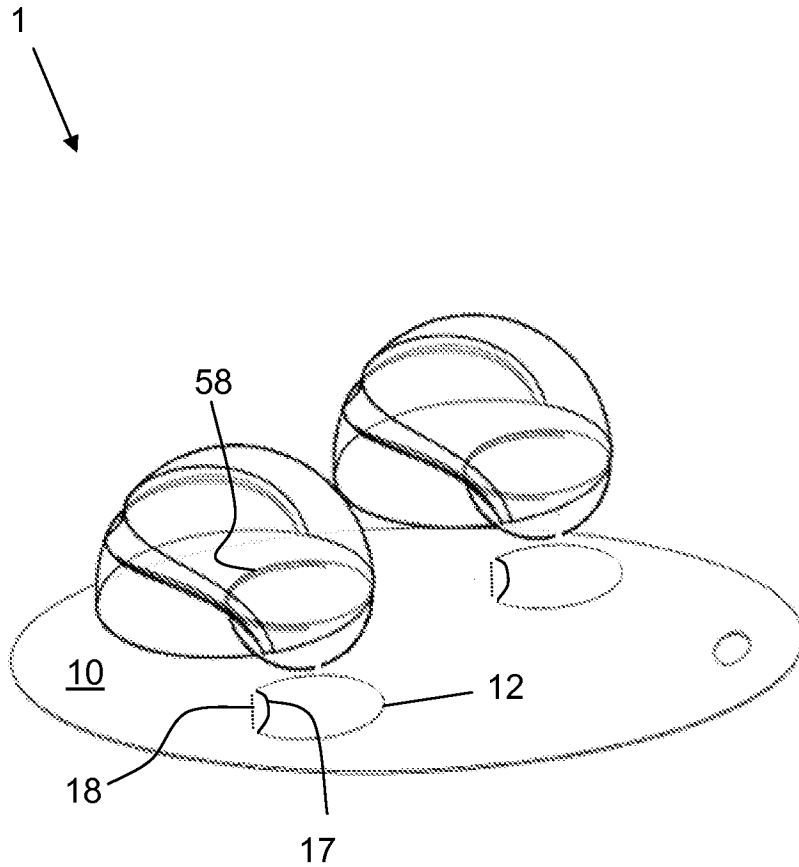
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FIG. 6



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FIG. 7



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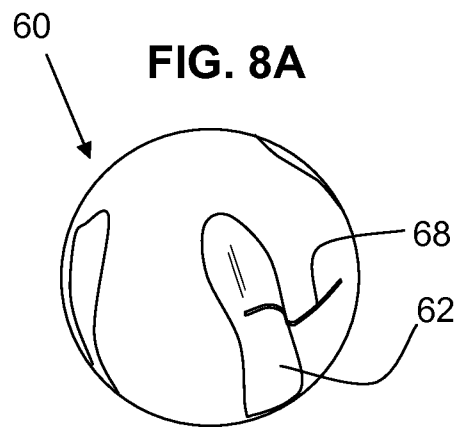


FIG. 8B

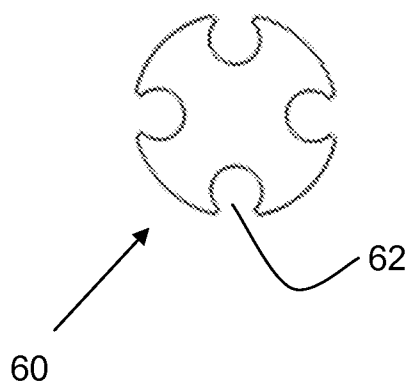
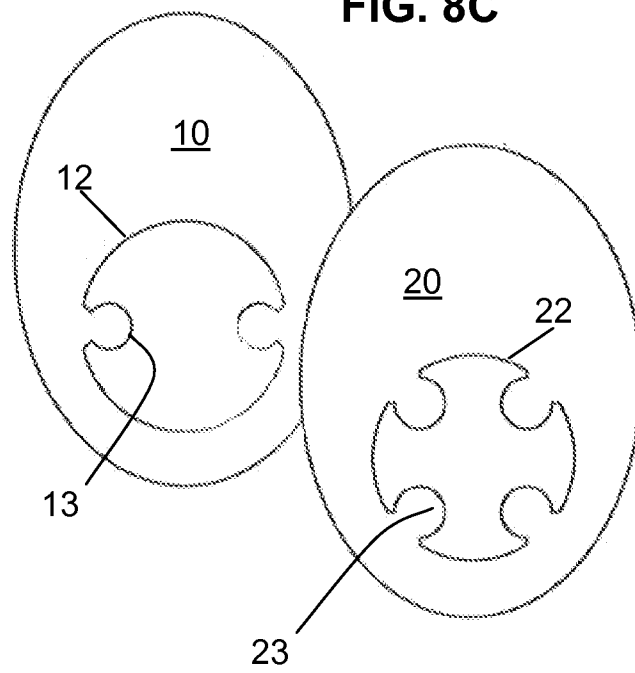


FIG. 8C



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/022202

A. CLASSIFICATION OF SUBJECT MATTER

INV. B65D67/00 B65D75/30 B65D73/00
ADD.

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

B. FIELDS SEARCHED

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

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

Electronic data base consulted during the international search (name of data base and, where practical, 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	US 2007/187273 A1 (GROSSKOPF GLENN A [US]) 16 August 2007 (2007-08-16)	1,5-11
A	paragraphs [0056], [0058]; figure 5 -----	2-4
X	WO 2010/068593 A2 (MEADWESTVACO CORP [US]; BAILEY RYAN A [US]) 17 June 2010 (2010-06-17)	1,5-11
A	paragraphs [0047], [0063]; figures 4A, 8A -----	2-4
X	US 4 120 400 A (KOTYUK BERNARD) 17 October 1978 (1978-10-17) column 5, lines 3-51; figures 1, 2 -----	1-11



Further documents are listed in the continuation of Box C.



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