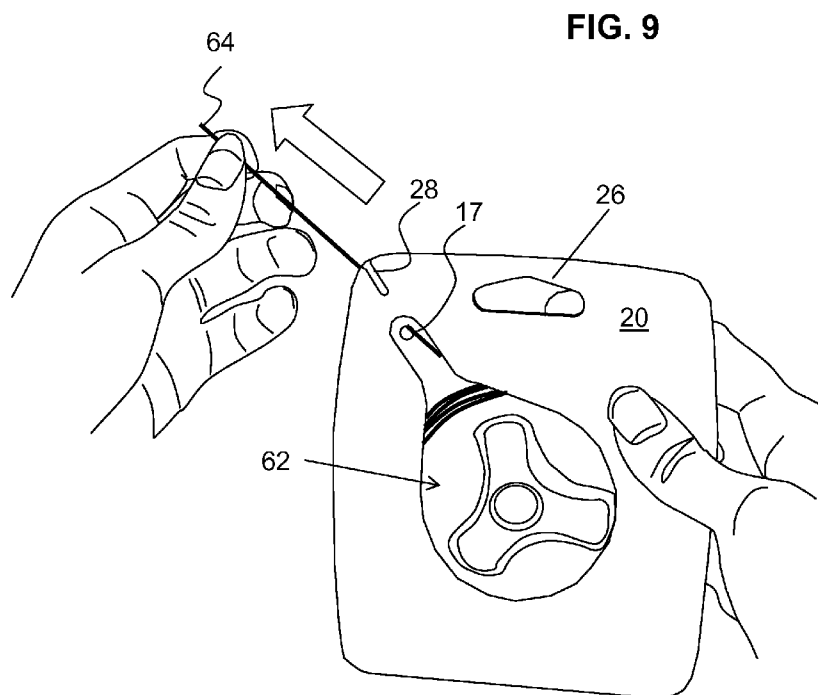




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[Continued on next page]

(54) Title: BLISTER PACKAGE FOR STRING-LIKE PRODUCT



(57) Abstract: A package is disclosed comprising an outer shell (30) and an inner spool (40) with features by which the spool (40) may be turned to unwind or rewind a string product. The shell and spool are held between front and back paperboard cards (10, 20).



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

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

BLISTER PACKAGE FOR STRING-LIKE PRODUCT

REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of priority under 35 U.S.C. §119(e) of United States provisional application serial number 61/677,565 filed on July 31, 2012 which is hereby incorporated by reference in its entirety.

BACKGROUND

[0002] The present application is directed to paperboard packages and, more particularly, packages with a reel structure for holding, dispensing, and rewinding a string or string-like product.

[0003] Manufacturers and retailers of consumer goods typically package their products in packages that display at least a portion of the product. 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.

[0004] Some blister packages may comprise a paperboard card and a blister. Especially when made with tear resistant paperboard, these packages can be quite secure and may require a tool such as a scissors or knife to open the package. Thus the secure structure of the packages may prevent in-store theft and tampering. However, after purchase, when the package has been cut to remove the product, the user may wish to still use the package around the house for occasionally storing the product.

[0005] In the case of a product such as fishing line, cables, wires, thread, string, and similar (e.g., "string-like" products), it may be desired to use the package to store the product between uses, or store excess product not yet used. If a package has been cut open, it often becomes unusable or difficult to use for future storage of the string-like products. Furthermore, if an unwanted product is returned to the retailer, the package may be damaged enough so that the retailer cannot sell it again (e.g. as discounted returned goods). It would be advantageous therefore to have a package for storing string-like products which, after opening, could still be useful for containing the product or a portion of the product.

[0006] The current application discloses a blister package that may be opened by moving or removing a portion of the package, after which a string-like product may either be unwound from the package, or wound back into the package. The package may include a card or cards attached to a two-piece blister made of an inner rotatable hub portion and an outer stationary shell portion.

SUMMARY

[0007] In one aspect a package is disclosed which comprises a first card and a second card comprised of sheet material and partly sealed together, and a case or blister having one or more peripheral flanges trapped between the cards. The blister may include an outer shell that is stationary and an inner hub that may be rotated relative to the shell, to unwind or rewind string product.

[0008] Other aspects of the disclosed packaging structures will become apparent from the following description and the accompanying drawings.

[0009] A two piece case such as a thermoform blister may be used, which may fit between two cards or between the halves of a one-piece hinged card. However, case or "blister" as used herein is meant to also encompass container structures made by injection molding, stamping, pressing, and other methods. The blister peripheral portions may include flanges that may be trapped between two cards. An outer or shell blister portion may include a flange that is sealed to at least one of the cards. An inner or hub blister portion may include at least one integral flange or at least one

paperboard flange, either of which may be substantially free from any permanent sealing to either card.

[0010] The hub may have a rewinding feature and the package may include a hole through which the string-like product may be removed or rewound, and a slit in which the end of the string-like product may be secured.

[0011] More particularly the package may include a front and back paperboard card, a blister outer shell and a blister inner hub with a one or more circular paperboard flanges sealed to the ends to create a 'spool' for a string-like product. The inner hub may include a depressed (or raised) feature such as a molded-in spoke which a consumer's fingers can catch to spin and rewind the string contents. The outward end of the string-like product may be secured to the inside of the shell, or to the hub, such as with tape or through a slit, or by various other methods. To assemble these components into a finished package, the hub portion with the product wound around it is dropped into the outer shell and the outer shell is then trap sealed between the front and back cards. The inner hub can spin freely inside the outer shell. The back card may include an area in the center which can be removed, for example by tearing along perforations, so that the hub may be accessed or removed from the package.

Alternately one or both cards may have a tear-away portion through which the outer end of the product may be accessed. Either front or back card may include a hole through which the end of the string-like product can be threaded for best positioning when winding and unwinding the product. To open the package/access the fishing line, the consumer first tears of this perforated area which may exposed the central section of the inner blister/spool, without exposing its periphery or flange. The flange may still be held in by the remaining part of the back card so that the inner blister can spin, but does not fall out of the package. Next, the consumer may take the end of the fishing line (possibly secured during shipping with tape or other method to the inner blister) and pull it to spin the inner blister and unwind the line for use.

Advantageously the line may be threaded through a small hole in either front or back card and then pulled to spool out the line from the reel. In order to rewind any excess line that has been pulled out/unwound, the consumer may use one or more molded-in depression in the inner blister to spin the line back onto the inner spool. There can

also be a cut in the paperboard card or cards which can be used to catch the end of the line to secure it.

[0012] The spoke feature of the hub can provide a unique visual detail that can be customized per the product brand. The packaging may be retained for the life of the product to provide protection, organization, continued branding for the customer, and convenience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIGS. 1A and 1B are plan views of cards for forming a package;

[0014] FIG. 2A and 2B are a plan view and cutaway perspective view of an outer blister or shell;

[0015] FIG. 2C and 2D are a plan view and cutaway perspective view of an inner blister or spool;

[0016] FIG. 3A and 3B are a plan view and cutaway perspective view of an alternative outer blister or shell;

[0017] FIG. 4A and 4B are a plan view and cutaway perspective view of an alternative outer blister or shell;

[0018] FIG. 4C and 4D are a plan view and cutaway perspective view of an alternative inner blister or spool;

[0019] FIGS. 5A-5C are perspective views showing an assembly of the inner blister or spool, containing a string product;

[0020] FIGS. 6A-6D are perspective views showing an assembly of the spool, outer shell, and cards into a package;

[0021] FIG. 7 is a perspective view of a step in opening the package;

[0022] FIG. 8 is a perspective view of a further step in opening the package;

[0023] FIG. 9 is a perspective view of a string product being removed from the package; and

[0024] FIG. 10 is a perspective view of the string product being rewound into the package.

DETAILED DESCRIPTION

[0025] As various embodiments of the security package are described, reference will be made to Figures 1-10. Certain parts of the packages are denoted by reference numerals. 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. Typically in these Figures, solid lines show edges, while dashed lines show fold areas or hidden or partially obscured features.

[0026] 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. In most cases the packages described here are 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.

[0027] This blister package disclosed here may be used to package a string-like product, allowing the product to be unwound or rewound. The package may include a front and back paperboard cards (or a single folded over card) which traps an inner and outer blister. The inner blister may form a spool to hold the string, and may rotate inside the package. The outer blister may form a shell and may be fixed in place on the package. An optional aperture may be provided in the outer blister or shell so that the inner blister may be rotated from the front of the package. An opening may be provided in the back card to also provide access to the string-like product and to allow the inner blister to be rotated from the back of the package.

[0028] FIG. 1A shows a plan view of certain parts of a package, including a front card 10 and back card 20 joined by fold line 15. An aperture 12 may be provided in the front card, to receive a blister as described below. The aperture may be circular or approximately circular. To may economical use of the card material, material otherwise waste in cutting the aperture 12 in front card 10 may instead be used to form flange 50 as a separate part, as best shown in FIG 1B. However, flange 50 is an optional part.

[0029] Hang holes 16, 26 may be provided on one or both cards. Front card 10 may have a thread exit hole 17 and a thread catch slit 18, while back card 20 may have a pass-through slot 28 approximately coincident with the thread catch slit 18 in the final package. Back card 20 may have a perforated line 22 defining a removable area 25 that may have a tear tab 24 at a convenient location, such as proximate to the pass-through slot 28.

[0030] Although front card 10 and back card 20 may be provided separately as a single piece as shown in FIG. 1, they may also be provided as a two or more pieces. If provided in a single piece, shows the cards joined top to bottom as in FIG. 1A, or side-by-side (not shown) or in other suitable arrangements.

[0031] The cards may be made of a sheet material such as paperboard, or of a tear-resistant paperboard such as MeadWestvaco NATRALOCK®. The cards may be similar in size and shape, for example both being rectangular as shown in FIG. 1A. The overall shape of the cards may be rectangular as shown, or any desired shape. The front and back cards may differ in size and shape, for example, the upper region of either card may be shorter than the upper region of the other card. This might be done for example to save material. If a hang hole is desired, a single ply hang hole may be sufficient and may be provided either as hang hole 16 in front card 10 (if the upper region of back card 20 is shortened), or hang hole 26 in back card 20 (if the upper region of front card 10 is shortened).

[0032] The package may further include a blister structure with an outer blister or shell 30 (see FIG. 2A-2B) and inner blister or spool 40 (see FIG. 2C-2D). The outer shell 30 may include a peripheral flange 32, a side wall 34, and a top wall 36. An

optional depression 38 may be provided in the top wall. The inner blister or spool 40 may include a peripheral flange 42, a side wall 44, and a top wall 46. Formed in the top wall 46 may be a depressed area 48, which may for example take the form of three cusps or spokes 48A. The depressed area 38 of the outer blister may fit into the depressed area 48 of the inner blister, acting as a hub or guide for the inner blister. Such a hub may act as a guide and / or center for the inner blister within the outer blister, and therefore may allow the inner blister to rotate more smoothly.

[0033] An alternative outer blister or shell 30A is shown in FIG. 3A-3B and may include a peripheral flange 32, a side wall 34, and a top wall 36. An optional opening 39 may be provided in the top wall. When used with the inner blister 40 shown in FIG. 2C, some areas of the top wall 46 of inner blister 40 may be raised and may protrude through optional opening 39 in top wall 36 of outer blister 30. Alternately or in addition, a user may access the inner blister 'spokes' through opening 39 and thereby turn the inner blister.

[0034] The blister structure may take a large variety of forms. Another example is shown in FIGS. 4A-4D. The outer blister or shell 31 shown here may lack the opening previously shown in top wall 36. Instead and optionally, a logo may be formed into top wall 36. However, a depression (as shown in FIG. 2A) for example to serve as a hub for the inner blister, or an opening (as shown in FIG. 3A) may optionally be provided in the top wall 37. The inner blister or spool 41 as shown here may have a differently shaped center area, for example having a linear-shaped depressed area 49 in top wall 46.

[0035] FIGS. 5A-5C show steps in forming a filled spool 62. As shown in FIG. 5A, the flange 50 and inner blister 40 may each have shaped complementary features such as the spoke shape discussed earlier. The shaped features of the inner blister 40 may protrude through, or be accessible through, opening 52 in flange 50. Other than these shaped features, the flange 50 and the inner blister top wall 46 may be relatively flat and may be joined together in facing arrangement by using adhesive, heat sealing, or other method. Before or after joining flange 50 onto inner blister 40, a string product 60 may be wound onto the inner blister 40. This results in filled spool 62.

[0036] The outer blister 30 and inner blister 40 may be made with common thermoform plastics such as PVC or APET but may also include a recycled material such as RPET or a biodegradable material such as PLA. However other materials including other plastics or paperboard may also be used. Besides thermoforming, the case or blister may be formed by injection molding or other manufacturing methods.

[0037] Filled spool 62 may now be placed inside outer blister 30 which may then be sandwiched between front card 10 and back card 20 to form a securely closed package. As shown in FIG. 6A, filled spool 62 may first be placed upon back card 20. As shown in FIG. 6B, outer blister 30 may then be placed over the filled spool 62, with flange 32 in contact with back card 20. As shown in FIG. 6C, front card 10 may then be folded upward into contact with back card 20.

[0038] FIG. 6D shows the finished package. Outer blister 30 extends through opening 12 in the front card 10, and outer blister flange 32 is sandwiched between front card 10 and back card 20. The cards may be joined together by heat sealing, RF (radio frequency) sealing, ultrasonic sealing, adhesive, staples or other mechanical devices, or other methods. Heat and pressure may be used in heat sealing. Sealing may be done on most of the facing surfaces of the front and back cards or sealing may be done to less than the entire facing surfaces, for example only around the outer perimeter of the card, and/or along the perimeter of flange 32.

[0039] FIG. 7 shows a step in opening the package. As seen from the view of back card 20, tear tab 24 may be grasped by a user and pulled to start a tear along perforation 22. The user may remove only enough material to get access to the edge of the filled spool 62, or as shown in FIG. 8, may remove the entire tear-away portion 25 defined by perforation 22. This would reveal the filled spool 62. The end 64 of the string product may be retained during shipping (or later storage) by a slit 66 in the filled spool.

[0040] The user may now thread the end 64 of the string product through exit hole 17 in front card 10, and then withdraw the string product neatly from the package as shown in FIG. 9.

[0041] Finally, as shown in FIG. 10, excess string product may be rewound onto the filled spool 62 by the user's twisting on the spoke structure of the inner blister, either by access through the opening in back card 20, or (if provided) by twisting the spoke structure through the opening 38 in the outer blister or shell 30. The 62 end of the string product may then be secured by passing it through slit 18 in front card 10. This slit 18 may align with the slot 28 in back card 20.

[0042] It will be noted that the package has multiple layers including two layers over much of the front and back cards, and three layers at the blister flange 32. The front card 10 or back card 20 may be embossed to provide extra clearance for flange 32. For example front card 10 may be embossed around aperture 12 to provide extra clearance for the thickness of outer blister flange 32.

[0043] The front card 10 and back card 20 may be formed of a sheet material such as paperboard, which may be made of or coated with materials to increase its strength. An example of such a sheet material is NATRALOCK® paperboard made by MeadWestvaco Corporation. The sheet material may have a heat sealable coating, for example to allow a heat seal to be created between the front card 10 and back card 20. Alternately, other forms of adhesive may be used to seal these cards together. It should be noted that the use of tear resistant materials, and/or in more than one layer, help to improve the tamper- and theft-resistance of the package.

[0044] The features described in this application may be used alone or in combination with other package 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.

[0045] 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.

[0046] 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.

[0047] 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.

[0048] It is to be understood that certain packages may be one continuous piece of material, and other packages may comprise two or more pieces of material. It is to be understood that a package may be heat sealed even where a heat sealed surface is in contact with a non-heat sealable surface. It is to be understood that in such a situation such an adhesion will strengthen the package, though it may not strengthen it as much as heat sealing between two heat sealable surfaces.

[0049] It is to be understood that a variety of features may be used on any of these package designs as determined by manufacturing preferences. One or more reinforcing layers of paperboard or other material may be placed between layers of a package, for example between the front and back cards of a card-type package, for example at the hang hole location, as described in PCT/US08/066517. Although various aspects of the disclosed blister packaging structures have been shown and described, modifications may occur to those skilled in the art upon reading the specification.

CLAIMS

1. A package comprising:

a first card and a second card comprised of sheet material, the first and second cards at least partly attached together to form a two-ply structure;

a spool comprising

a formed plastic shell with an axis of rotation and having a first flange;

an outer shell fitting over the spool, the outer shell comprising:

a second flange that is held between the first and second cards, and

a shell body extending through a first opening in the front card;

wherein the spool may be rotated by a force applied through a second opening in the package.
2. The package of claim 1, wherein the second opening is in the outer shell.
3. The package of claim 1, wherein the second opening is in the first card.
4. The package of claim 3, wherein the second opening is formed by removing a perforated area of the second card.
5. The package of claim 4, wherein the spool is still retained between the first and second card after the perforated area is removed.
6. The package of claim 1, wherein the force is a torque applied to a shaped feature on the spool.
7. The package of claim 1, wherein at least one of the first card and second card is embossed to provide clearance for the first flange.
8. The package of claim 1, wherein at least one of the cards comprises a tear-resistant paper or paperboard.

9. The package of claim 1, wherein the spool or shell comprises RPET or PLA.
10. The package of claim 1, wherein the outer blister comprises a depressed area extending toward the inner blister and forming a hub or guide for the inner blister.

1 / 10

FIG. 1A

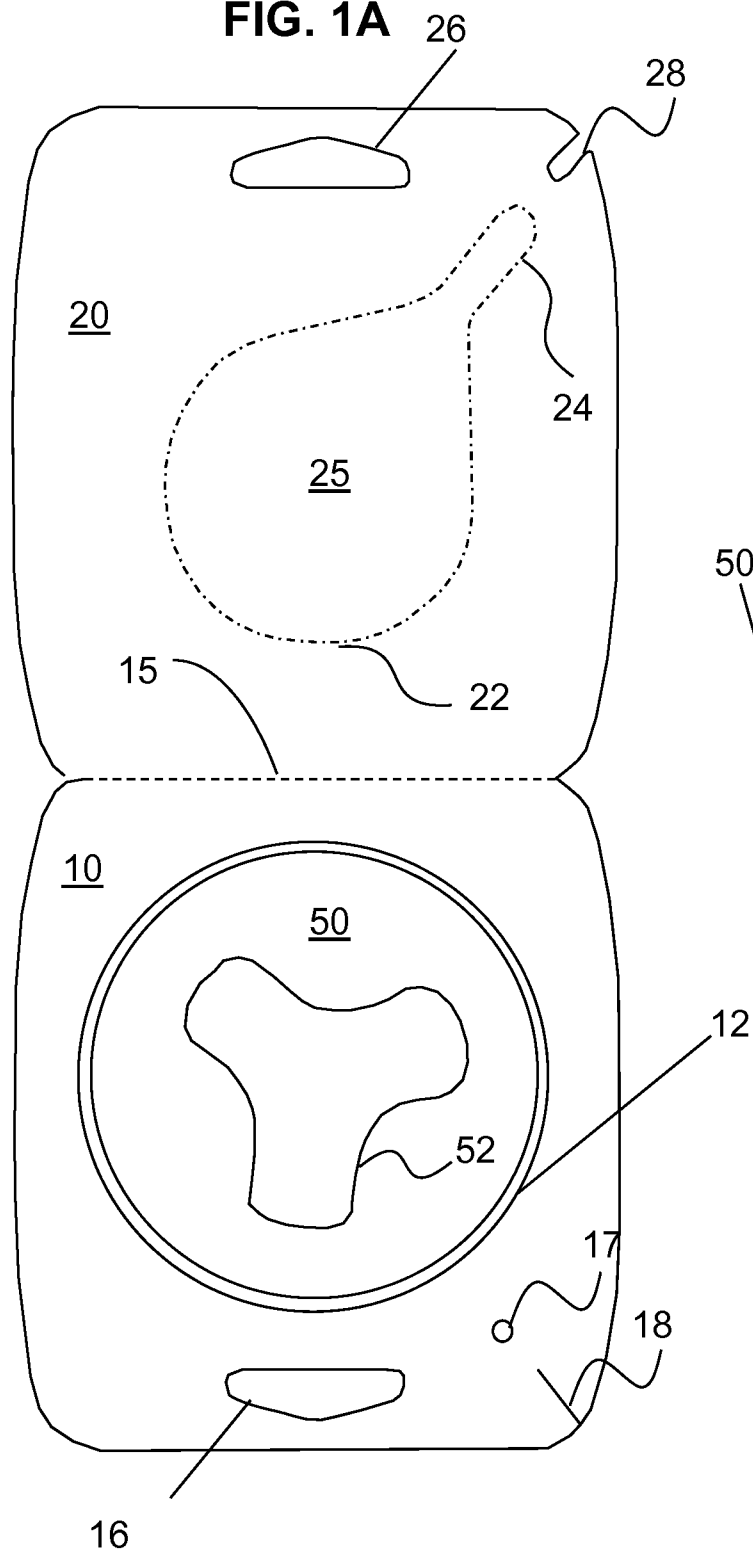
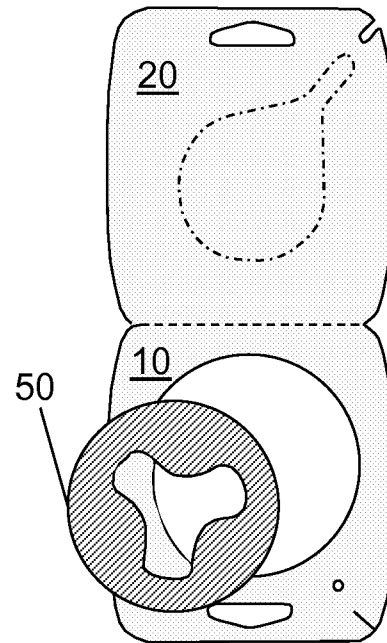


FIG. 1B



2 / 10

FIG. 2A

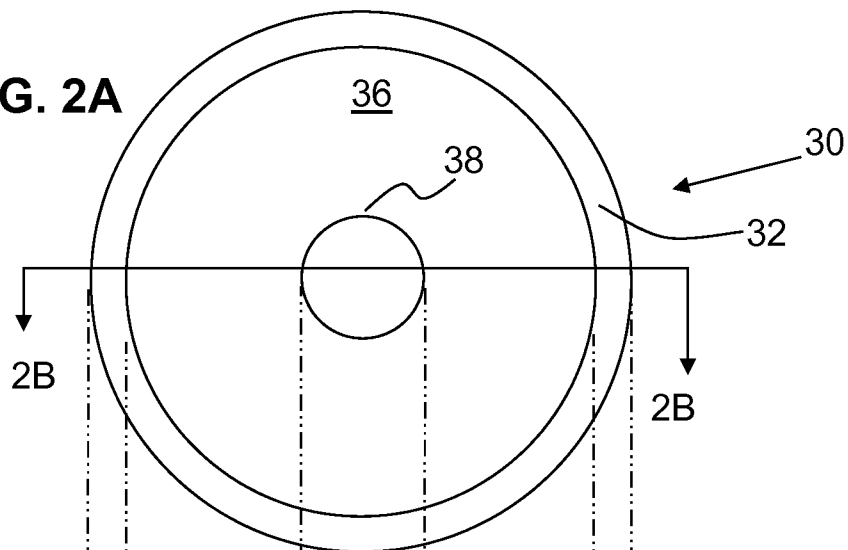


FIG. 2B

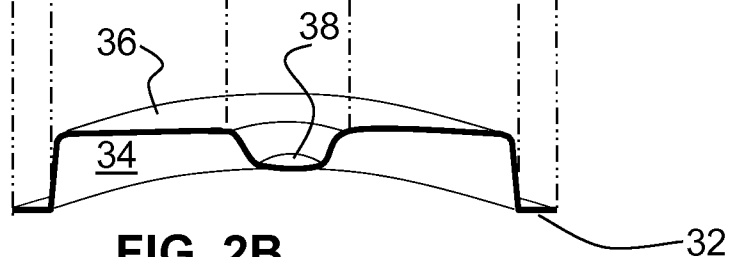


FIG. 2C

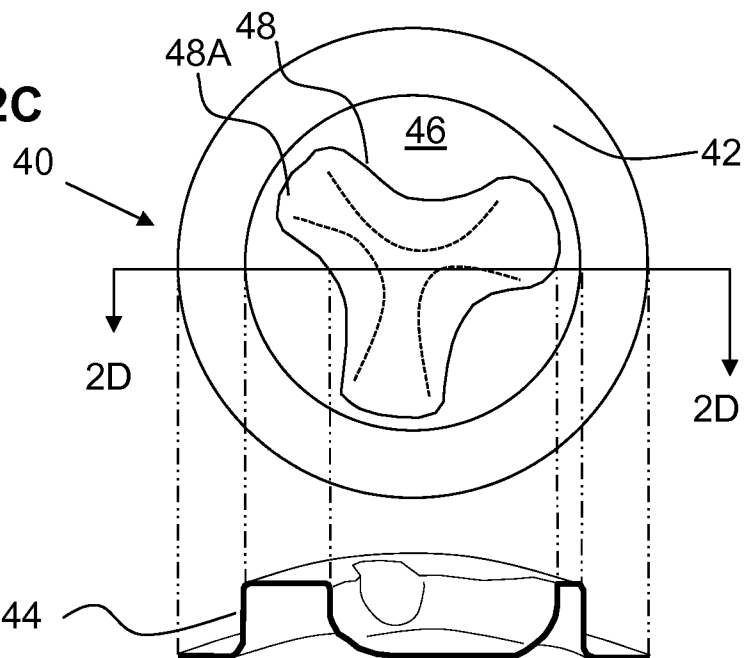
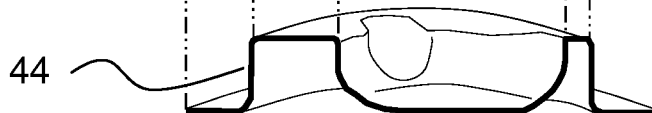
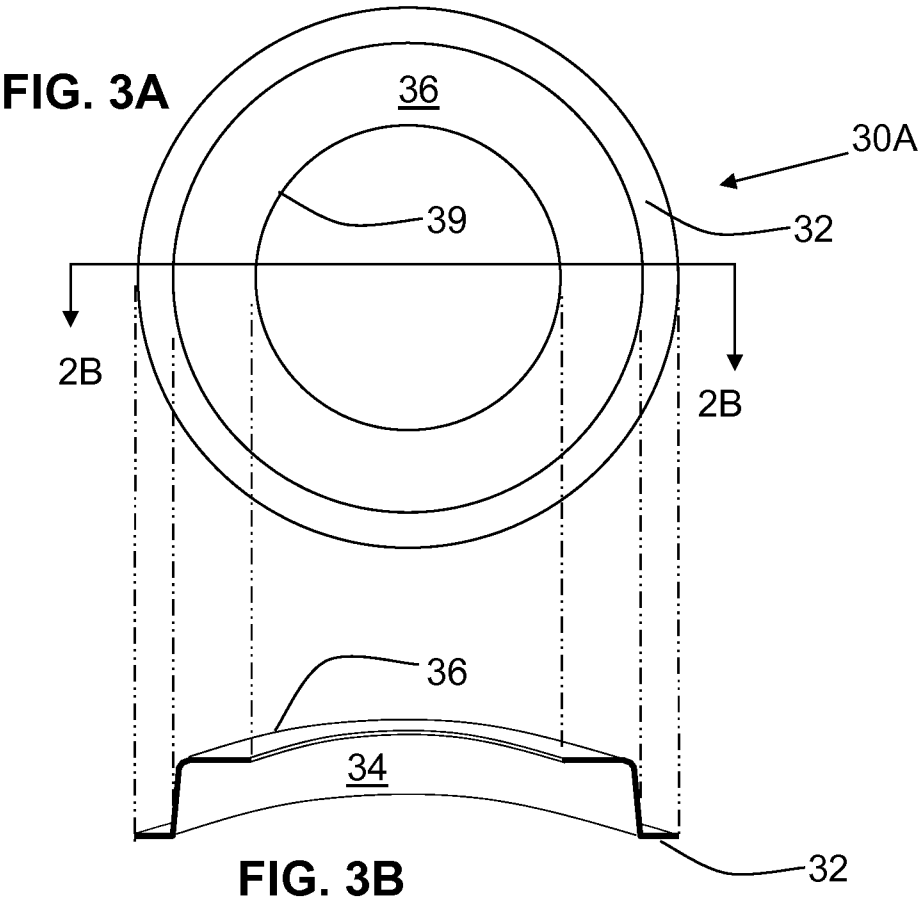


FIG. 2D





4 / 10

FIG. 4A

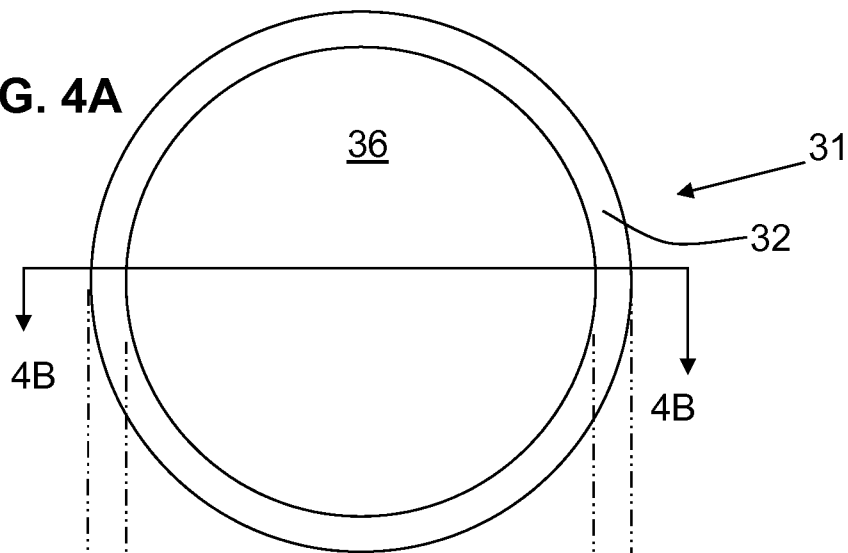


FIG. 4B

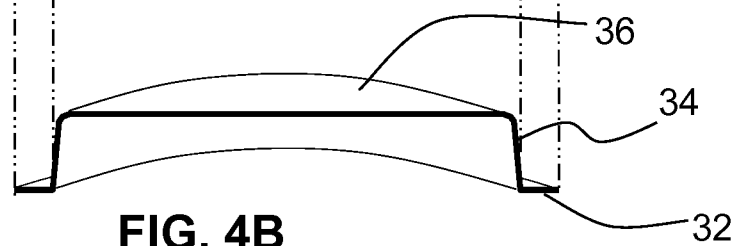
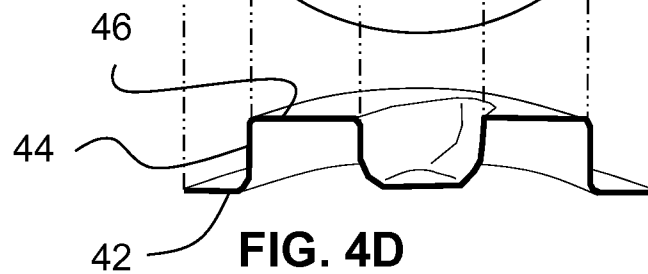
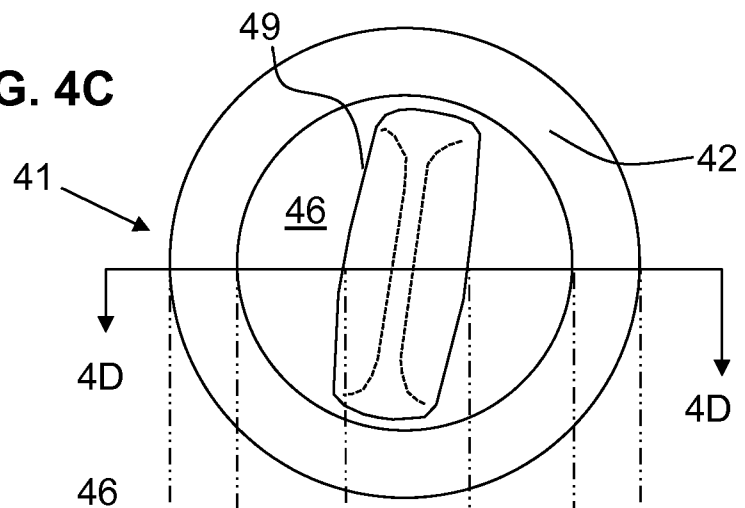


FIG. 4C



5 / 10

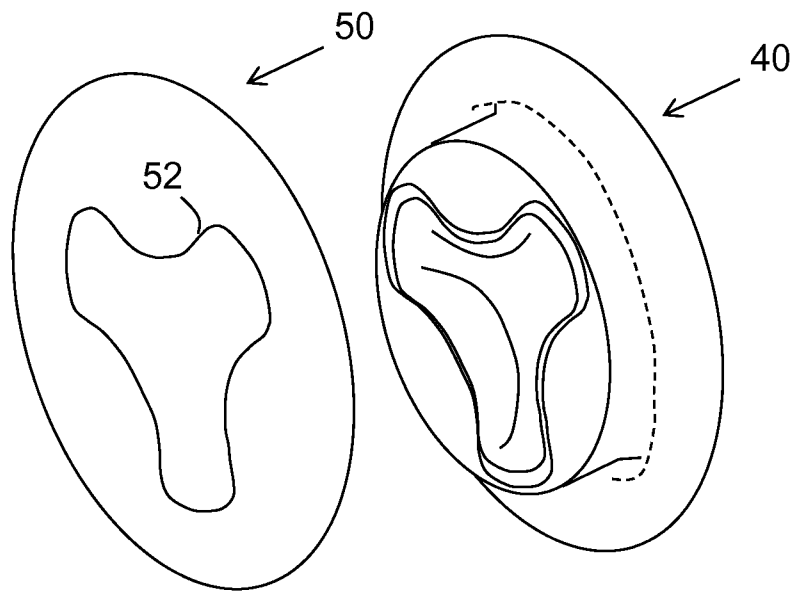


FIG. 5A

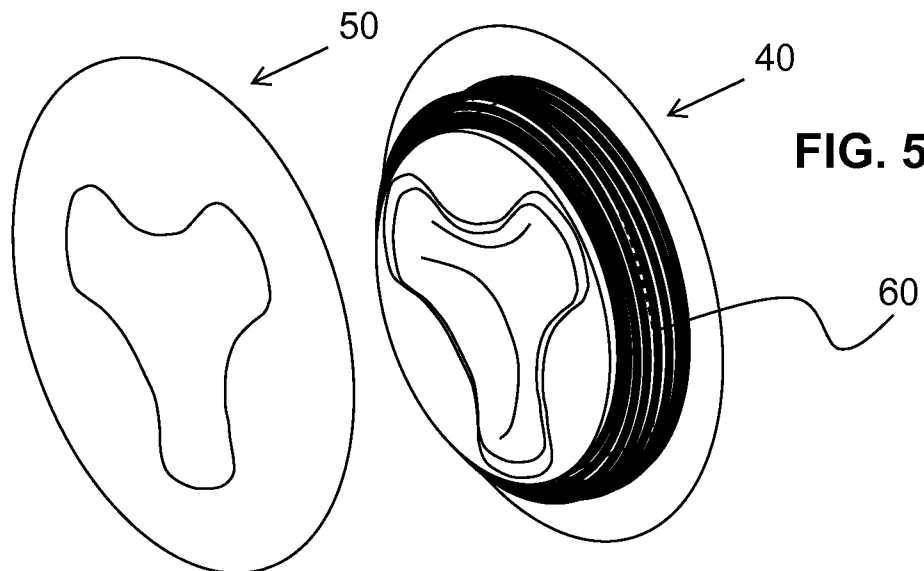


FIG. 5B

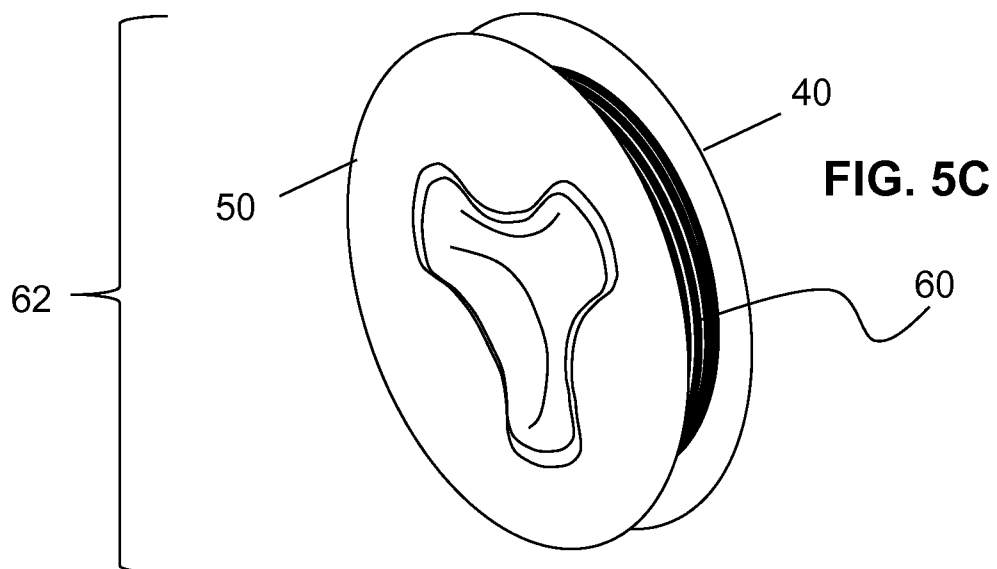


FIG. 5C

FIG. 6A

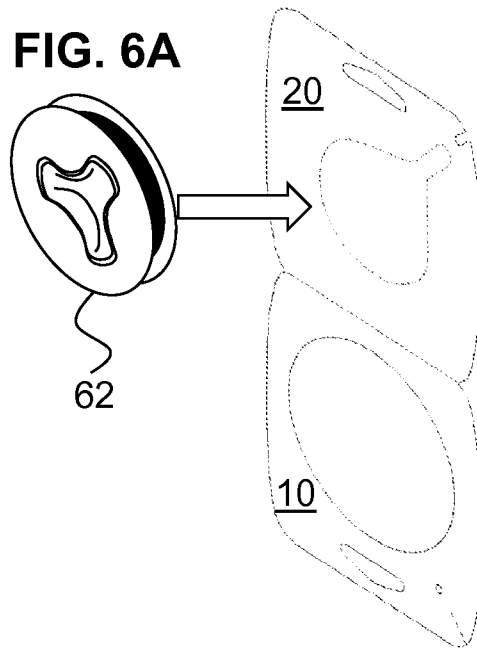


FIG. 6B

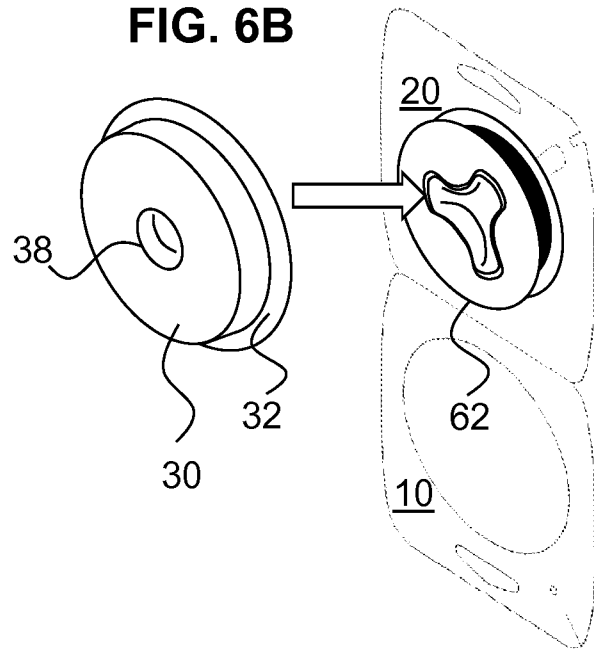


FIG. 6C

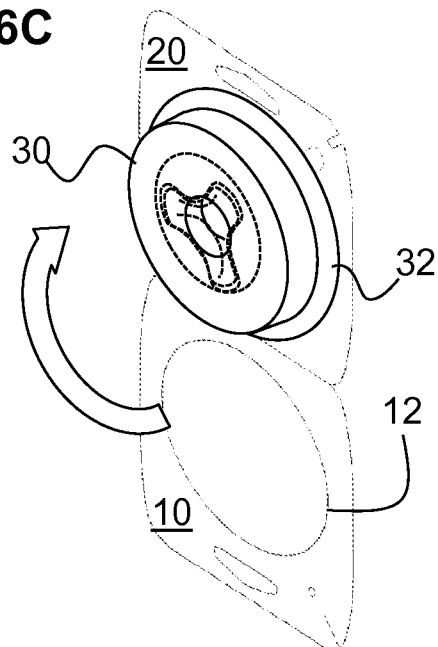


FIG. 6D

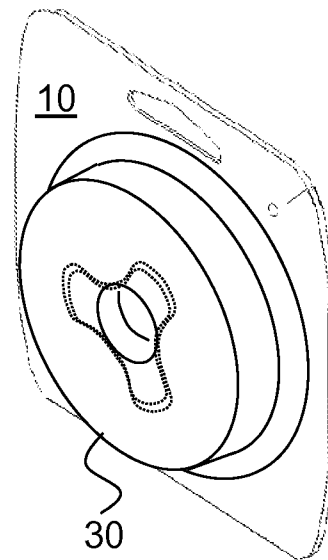


FIG. 7

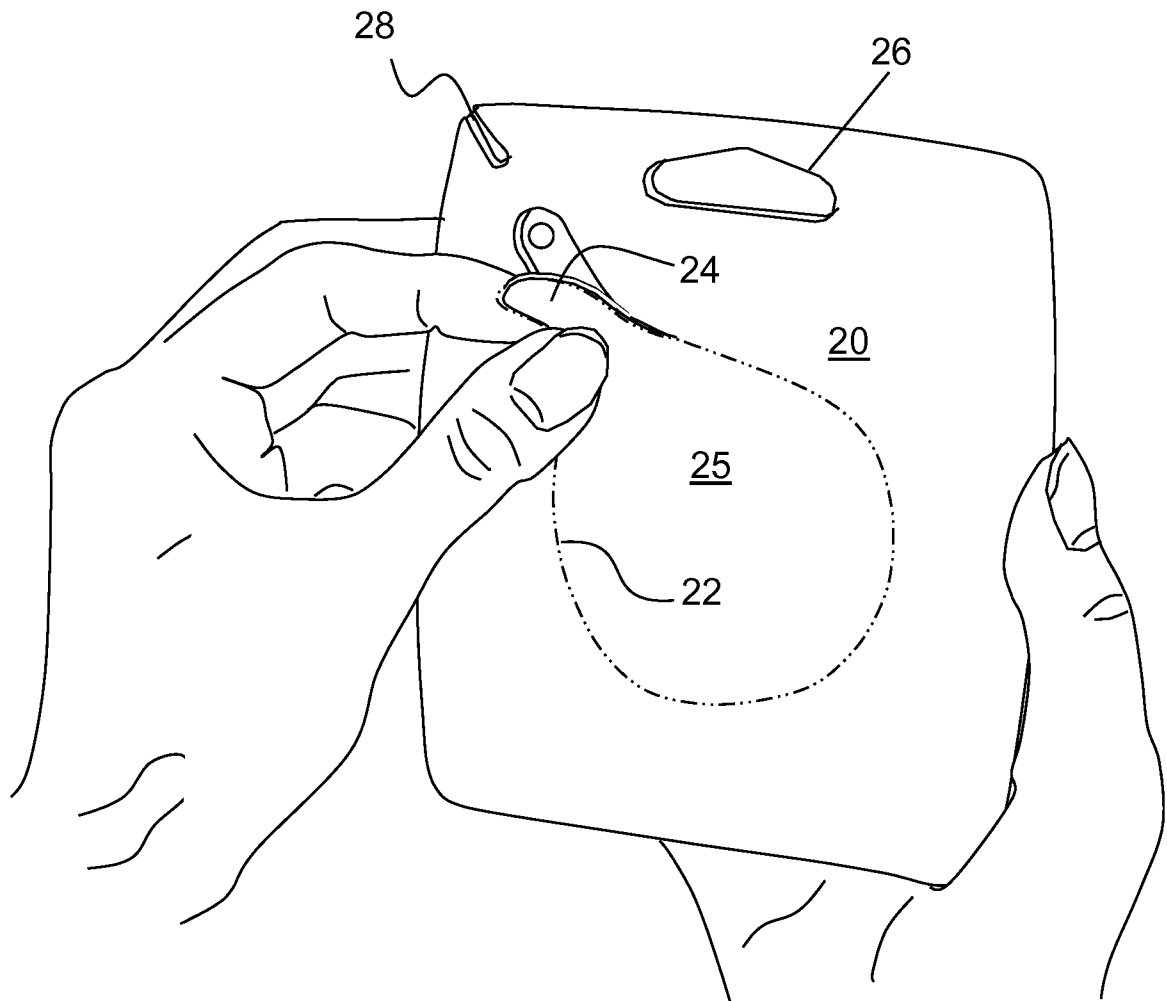


FIG. 8

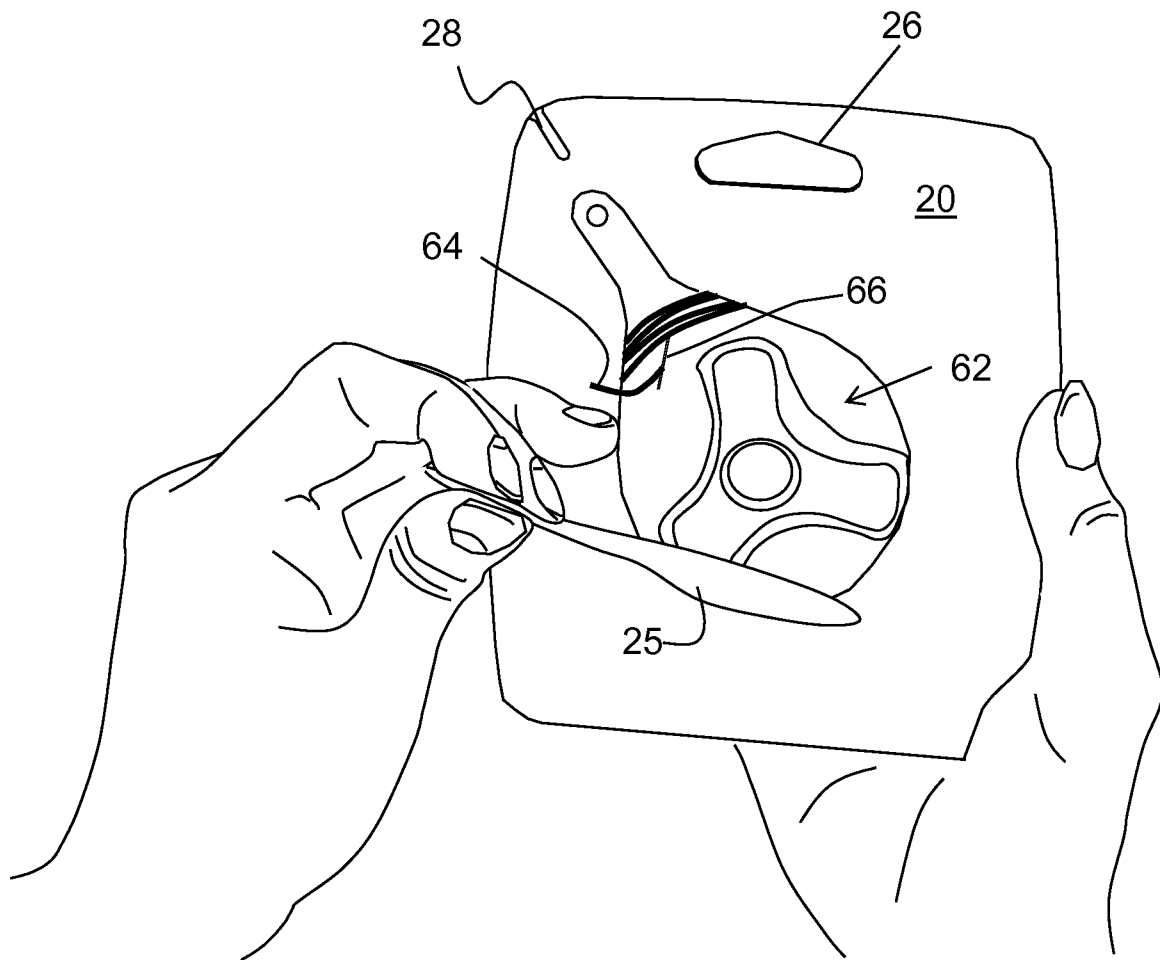
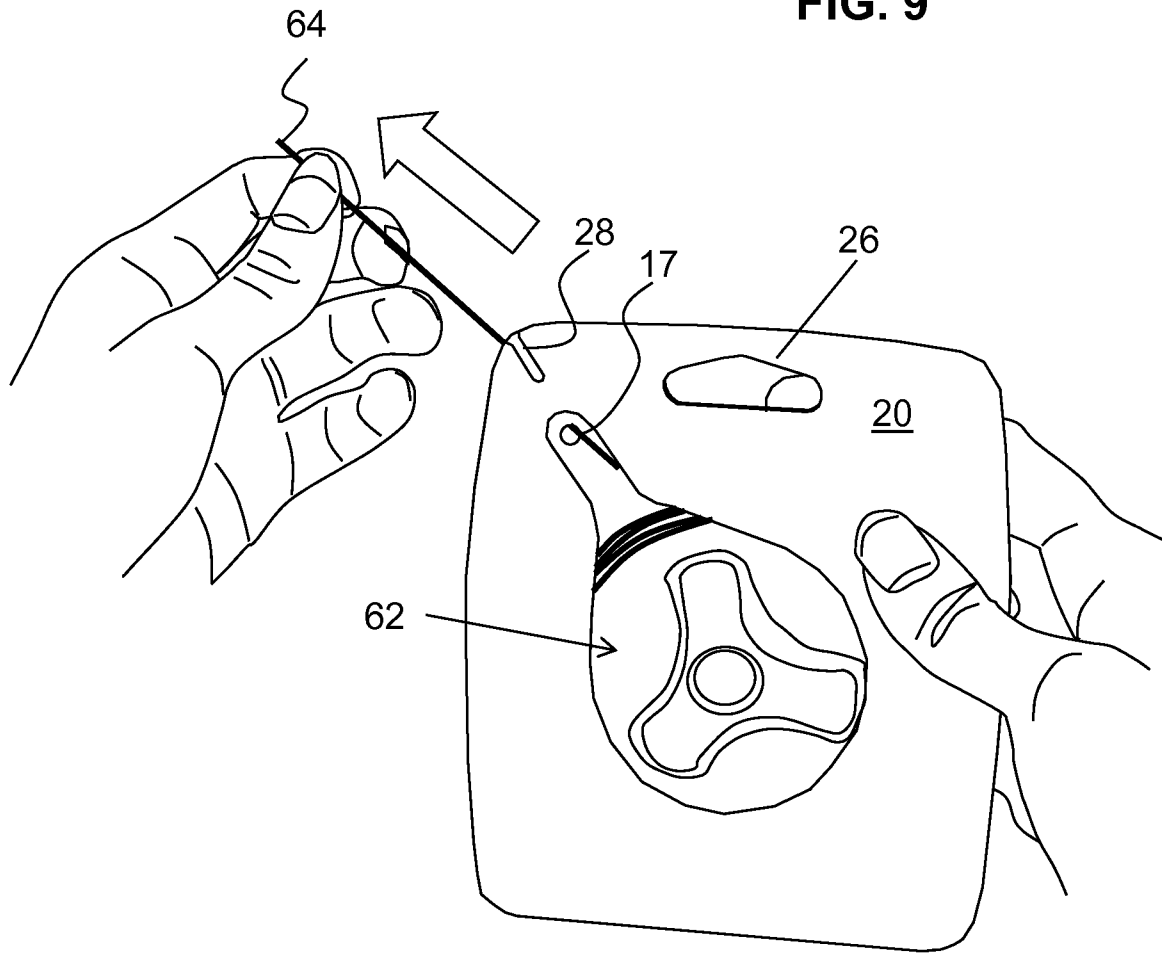
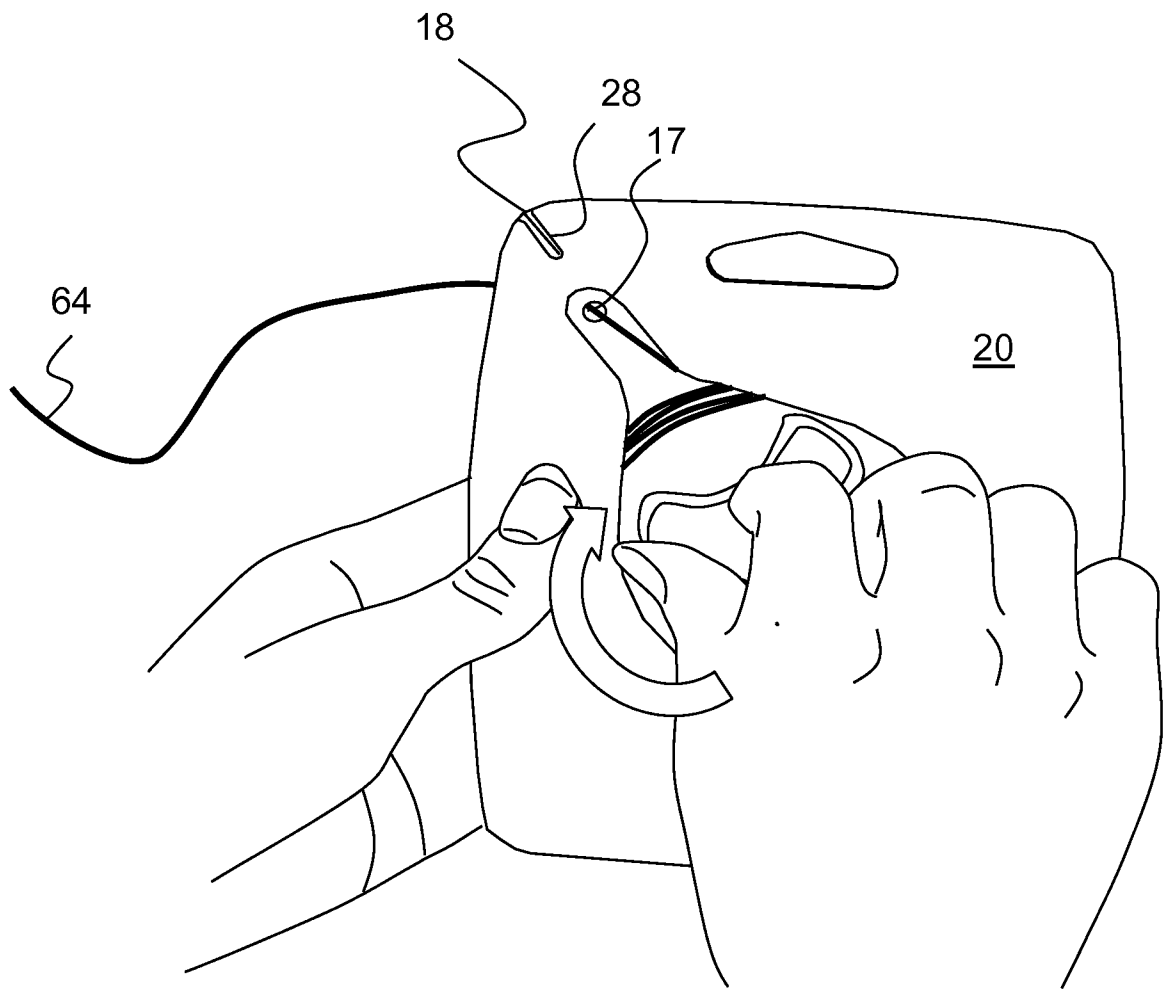


FIG. 9



10 / 10

FIG. 10



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/051360

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D75/36 B65D75/52 B65D85/04
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 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.
A	FR 2 730 395 A1 (VELFOR PLAST SA [FR]) 14 August 1996 (1996-08-14) the whole document	1-10
A	----- US 3 754 643 A (FOSTER R) 28 August 1973 (1973-08-28) the whole document	1-10
A	----- US 6 109 005 A (FOGLE JOHN R [US]) 29 August 2000 (2000-08-29) the whole document	1-10



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

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

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

27 September 2013

Date of mailing of the international search report

08/10/2013

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Information on patent family members

International application No

PCT/US2013/051360

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2730395	A1	14-08-1996	NONE
US 3754643	A	28-08-1973	NONE
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		AU 742426 B2	03-01-2002
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		DE 60007040 T2	16-09-2004
		EP 1076007 A1	14-02-2001
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