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(54) **PACKAGING FOR MULTIPLE MEDIA DISCS AND METHODS FOR MAKING SAME**

KAPSELUNG FÜR MEHRFACH-MEDIA-PLATTEN UND VERFAHREN ZU IHRER HERSTELLUNG

EMBALLAGE POUR DE NOMBREUX DISQUES ET PROCEDES DE FABRICATION ASSOCIES

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates generally to improvements to product packaging, and more particularly to advantageous aspects of packaging for holding multiple media discs and methods for making same.

Description of the Prior Art

[0002] Numerous packages have been developed for holding media discs. The basic media disc package is the so-called "jewel case," which typically includes a tray for holding a media disc, and a hinged cover that snaps into place over the tray. Jewel cases have been developed to hold two media discs. One such jewel case includes a two-sided central tray that receives a media disc on each side. Another jewel case provides for two media discs to be stacked, one on top of each other, in the same tray. However, neither of these designs is entirely satisfactory for a number of reasons, including ease of use and esthetic appearance. Further, it is becoming increasingly common for media discs to be packaged in sets having more than two discs.

[0003] In US H1954H, a package is provided that incorporates a stack of media disc holding trays secured to one another using elasticated cords threaded through apertures in each tray, proximate the hinge edge, the stack then is secured to a jacket.

[0004] In CH 677 8370, a stack of media-disc holding trays, each requiring an integral hinge between a storage panel and a spine panel, are mounted by securing each respective spine panel one to the next. The stack is bound by an outer covering and inserted into a further casing for protection.

[0005] However, in both of the instances above, there is no provision for a package of multiple media-disc holding trays, that can be mounted in a stack using an inexpensive, reliable and durable hinge means, that is then mounted on a panel of a jacket for protection of the package and in so doing allowing opening of said jacket without imposing a force upon the media-disc tray stack.

[0006] There is thus a need for easy-to-use, esthetically appealing packaging for holding multiple media discs that can be manufactured at an acceptably low cost.

SUMMARY OF THE INVENTION

[0007] The invention comprises subject matter according to the independent claims 1, 21, 28 and 30. A first construction comprises a package (10) for holding media discs which package comprises a stack of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (44), and the hinged edge faces of the trays in the stack being aligned with each other, so that all the hinged edge faces of the stack are substantially flush, and a single flexible hinge and connecting member (22) permanently affixed to all the hinged edge faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays together one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces.

[0008] Preferably, the package further includes a jacket and is closed by folding the jacket around the stack of trays.

[0009] Furthermore, the stack of trays may be attached to the jacket (20) only at a single tray mounted onto an interior panel of the jacket.

[0010] Preferably, the jacket (20) includes a front interior panel, a rear interior panel, and a spine and the stack of trays is mounted to the rear interior panel.

[0011] Preferably, the hinge edges (44) and hinge member (22) are proximate to the spine.

[0012] Alternatively the hinge edges (44) and hinge member (22) are distal from the spine.

[0013] As a further possibility, the hinge edges (44) and hinge member (22) are positioned in transverse relationship to the spine of the jacket.

[0014] Preferably, a bottom panel of the stack is mounted to the rear interior panel.

[0015] A further option includes a slip case (120) that closely fits around the stack of trays and jacket when they are folded into a closed configuration.

[0016] In another optional construction fastening means (330) are included for holding the package closed.

[0017] In yet another optional construction the jacket includes a plurality of panels that wrap around the stack of trays, the jacket further including a flap (326) extending from a first panel that attaches to a second panel to hold the package closed.

[0018] Preferably, a first fastening element (330a) is mounted to the flap and a second, mating fastening element (330b) is mounted to the second panel which may, optionally, snap together, and comprises a hook-and-loop fastening system or magnets

[0019] Alternatively, the package (10) may include a band that fits closely around the package to hold it closed. The band may be an elastic band that loops around opposite corners of the package to hold it closed.

[0020] Preferably, any of the aforementioned constructions allow the hinged edge faces of an adjacent pair of trays can be hinged from a closed position in which the hinged edge faces are substantially flush to an open position in which the hinged edge faces are juxtaposed.

[0021] Preferably, wherein each tray is lidless and the contents of each lidless tray is tangibly exposed when the stack is fanned out.

[0022] As an alternative to the package including a jacket, the package (10) may include a carrier into which the stack of trays is inserted.

[0023] A separate aspect of the invention comprises a method for manufacturing a package, comprising:

(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (44), the hinged edges faces being aligned with each other, so that all the hinged edge faces of the stack are substantially flush;
(b) affixing a single flexible hinge and connecting member (22) to the hinged edges faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces; and
(c) mounting the stack of trays onto an interior panel of a jacket, the jacket folding around the stack of trays to close the package.

[0024] Step (c) of the method may optionally include mounting the stack of trays onto the interior panel of the jacket with the hinge edges and hinge member proximate to a spine of the jacket.

[0025] Optionally, step (c) includes mounting the stack of trays onto the interior panel of the jacket with the hinge edges and hinge member distal from a spine of the jacket.

[0026] Step (c) of the method may also include mounting a bottom tray in the stack to the interior panel of the jacket.

[0027] Step (c) may further include providing fastening means for holding the package closed.

[0028] In some cases, in step (c) the jacket includes a plurality of panels that wrap around the stack of trays, the jacket further including a flap extending from a first panel that attaches to a second panel to hold the package closed.

[0029] The method may further include the additional step (d) of fitting a band around the package to hold it closed.

[0030] Optionally, another method may further include the step (d) of looping an elastic band around opposite corners of the package to hold it closed.

[0031] Another aspect of the invention comprises a method for manufacturing a package, comprising;(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (44), the hinged edges faces being aligned with each other, so that all the hinged edge faces of the stack are substantially flush.

(b) affixing a single flexible hinge and connecting member (22) to the hinged edges faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinge member hinging the trays one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces; and
(c) cutting the hinge material between the trays at regular intervals to create separate hinge assemblies having a desired number of trays.

[0032] Optionally, yet another method may comprise the steps of:

(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (44), the hinged edges being aligned with each other, so that all the hinged edge faces of the stack are substantially flush;
(b) advancing the stack of disc-holding trays and causing a single flexible hinge and connecting member (22) to be affixed to the hinged edges faces one at a time in sequence, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces;
(c) cutting the hinge material between the trays at regular intervals to produce hinge assemblies having the desired number of tray.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] Embodiments of the invention will now be described by way of example with reference to the accompanying drawings, in which:

Fig. 1 shows a perspective view of a package for holding media discs according to a first aspect of the invention,
Fig. 2 shows an exploded perspective view of the package shown in Fig. 1,
Fig. 3 shows a perspective view of the package shown in Fig. 1 illustrating the placement of a media disc into the package,
Fig. 4 shows a perspective view of the package shown in Fig. 1, with a media disc seated in a disc-holding tray in the package,
Fig. 5 shows a perspective view of the package shown in Fig. 1 in a closed configuration,
Fig. 6 shows an end view of the package shown in Fig. 1, with the disc-holding trays fanned into an open position,
Fig. 7 shows a perspective view of the package shown in Fig. 1, with the disc-holding trays fanned into an open position,
Fig. 8 shows a perspective view of the package shown in Fig. 1, with the disc-holding trays fanned into an open position, and with the package stood on one end,

Fig. 9 shows a perspective view of a single disc-holding tray suitable for use in accordance with an aspect of the invention,
Fig. 10 shows a plan view of the interior surface of a jacket suitable for use in accordance with an aspect of the invention,
Fig. 11 shows a perspective view of a package for holding media discs in accordance with a further aspect of the invention,
Fig. 12 shows a perspective view of the package shown in Fig. 11 and a slip case,
Fig. 13 shows a perspective view of the package shown in Fig. 11 partially slid into the slip case,
Figs. 14 and 15 show alternative perspective views of a hinged tray assembly in accordance with an aspect of the invention,
Fig. 16 shows a perspective view of a hinged tray assembly and a hinge member in accordance with an aspect of the invention,
Fig. 17 shows a perspective view of a stack of trays and a swath of hinge material in accordance with a further aspect of the invention,
Fig. 18 shows a perspective view of the stack and swath shown in Fig. 17, with the swath affixed to the stack of trays,
Fig. 19 shows a perspective view of the stack and swath shown in Fig. 18, with lines marked for cutting the swath,
Fig. 20 shows the stack and swath shown in Fig. 19, separated into individual hinge assemblies,
Fig. 21 shows a diagram of a binding machine according to a further aspect of the invention,
Fig. 22 shows a flowchart illustrating a method for making a media package according to an aspect of the invention,
Figs. 23-26 show perspective views of packages according to aspects of the present invention in which matter has been printed onto the jackets,
Fig. 27 shows a perspective view of a package according to a further aspect of the invention, wherein the package includes fastening means for holding the package closed,
Figs. 27A and 27B show side views of a fastening arrangement suitable for use in a package such as the one shown in Fig. 27,and
Figs. 28-30 show perspective views of packages according to further aspects of the invention, wherein there are provided alternative fastening means for holding the packages closed.

DETAILED DESCRIPTION

[0034] As used herein, the term "media disc" refers to a compact disc (CD), digital video disc (DVD), or other disc or disc-shaped media item that is used to store analog or digital information.

[0035] Fig. 1 shows a perspective view, and Fig. 2 shows an exploded perspective view, of a media package 10 according to a first aspect of the invention. The media package 10 includes a plurality of disc-holding trays 12, 14, 16 and 18 that are arranged in a stack. As shown in Fig. 2, the trays are hinged to each other by a flexible hinge member 22 that is affixed to one side of the stack of trays. In one embodiment, the stack of trays is mounted onto an interior panel of an outer jacket 20. Alternatively, the stack of trays may be inserted into an open-ended sleeve or other carrier.

[0036] The hinge member 22 is fabricated from a suitable material, such as a styrene-based film or tape, polyethylene, polypropylene, or the like. The hinge member 22 may be fabricated, for example, from a strip of commercially available poly tape. The hinge member 22 must be flexible enough to allow the package 10 to be opened and closed freely, but must be strong enough to prevent premature failure of the hinge member or separation of the tray stack from the jacket 20. The hinge member may be affixed to the trays using an adhesive, or using a mechanical technique, including techniques using ultrasound or heat. In addition, the stack of trays 12, 14, 16 and 18 may be hinged in a number of different configurations In the package 10 shown in Fig. 1, the hinge member 22 is positioned proximate to the spine of the jacket 20, in a parallel relationship with the folds in the jacket 20. However, it would also be possible to position the hinge member 22 distal from the spine of the jacket 20, or in a transverse relationship with the folds in the jacket 20.

[0037] Each tray in the package 10 includes a cavity 24 for receiving a media disc. Figs. 3 and 4 are perspective views of the package 10 shown in Figs. 1 and 2, illustrating the placement of a media disc 26 into the cavity 24 in the top tray 12. As shown in Fig. 3, media discs commonly include a central spindle hole 28. As described below, the spindle hole 28 can be used to help hold the disc in position in a tray. In Fig. 4, the media disc 26 has been seated in the cavity 24.

[0038] Fig. 5 shows a perspective view of the package 10 shown in Fig. 1 in a closed configuration, with the jacket 20 folded around the stack of trays 12, 14, 16 and 18. As shown in Fig. 5, the result is a compact boxlike structure.

[0039] Fig. 6 shows an end view of the package 10 in an open configuration. The jacket 20 has been opened, and the trays 12, 14, 16 and 18 have been fanned apart from each other, anchored by the hinge member 22. Fig. 7 shows a perspective view of the open package 10. Fig. 8 shows that, when the trays have been fanned into an open position, the package 10 can be stood upright. The package may be stood on end, for example, to display the package 10 and its contents in a retail environment.

[0040] Fig. 9 shows a perspective view of a tray 30 that is suitable for use in a media package according to the present invention. The tray 30 includes a central cavity 32 that is shaped to closely receive a media disc. At the center of the cavity 32, a hub 34 is shaped and positioned to closely fit within a media disc's central spindle hole 28

when the disc is seated in the cavity 32. The hub 34 includes a small locking tab 36 which engages the rim of the media disc's central spindle hole to prevent the disc from accidentally becoming disengaged from the cavity 32. The hub 34 further includes a release button 38, which, when depressed, causes the locking tab 36 to retract, thereby allowing the media disc to be removed from the cavity 32. The tray 30 further includes four indentations 40 which are provided to provide access to a user's fingers to facilitate the removal of a disk from the cavity 32. In addition, the tray includes a region 42 for receiving labeling information. Information may be molded directly within this region 42, or may be printed onto a separate sheet of paper or plastic and then affixed in the region 42.

[0041] The tray 30 includes an edge 44, referred to herein as a "hinge edge," that is used to hinge the tray 30 to other trays. The hinge edge 44 is positioned such that when a plurality of trays are stacked on top of each other, the hinge edges 44 are lined up with each other to receive a hinge member, such as the hinge member 22 shown in Fig. 2.

[0042] The style, shape, and dimensions of the tray 30, including the number of indentations therein and the design and shape of the hub 34, may be varied and are not limited in any way by this disclosure. The tray 30 may suitably be fabricated from a plastic material that has been injection molded. Suitable materials for the tray include polystyrene and polypropylene. If desired, the tray 30 can be fabricated from a clear material, such as crystal styrene. The use of a clear material may be desirable from an esthetic point of view. Further, the use of a transparent material for the trays allows a user of the package to quickly determine whether any of the trays are empty.

[0043] Fig. 10 shows a plan view of a jacket 50 suitable for use in some embodiments of the media package 10. Fig. 10 shows the interior side of the jacket 50. Prior to the addition of any text, graphics, and the like to the jacket 50, the exterior side of the jacket 50 is substantially identical in appearance to the interior side. According to one aspect of the invention, the jacket 50 is shaped such that it can be folded around a stack of trays mounted into the jacket 50 to form a boxlike package. The jacket may be fabricated from paper, paperboard, cardboard, plastic, or other suitable material. According to a further aspect of the invention, the jacket is fabricated from a material that is suitable for a high-speed printing process. As shown in Fig. 10, the jacket includes a pair of crease lines 52 and 54, which are used to fold the jacket 50 cleanly around a stack of trays mounted into the jacket. The crease lines 52 and 54 divide the jacket 50 into three sections: a front interior panel 56, a spine 58, and a rear interior panel 60. On the exterior side of the jacket 50 (not shown), the crease lines 52 and 54 further define a front exterior panel on the other side of the front interior panel 58, and

a rear exterior panel on the other side of the rear interior panel 60. Thus, the jacket 50 shown in Fig. 10 is referred to as a "four-panel" design. It would be possible to include additional panels by increasing the length of the jacket 10 and providing additional creases, as needed. For example, the jacket 50 shown in Fig. 10 may be modified to incorporate a "six-panel" design.

[0044] The creases 52 and 54 may be introduced into the jacket using a number of different techniques. For example, if the jacket is fabricated from paperboard or cardboard, the creases can be introduced by pressing a scoring blade into the jacket. If the jacket is fabricated from plastic, the creases may be formed using an electron beam or other suitable technique.

[0045] It should be noted that the shape of the jacket may be modified. For example, it may be desirable to include cutout regions in the jacket. Further, it may be desirable for portions of the jacket to extend beyond the perimeter of the stack of trays.

[0046] Fig. 11 shows a perspective view of a media package 100 according to a further aspect of the invention, in which the stack of trays is hinged away from the spine of the jacket. There are certain differences between this location of the hinge and the location of the hinge shown in Fig.1. First, depending on how the package is used, the location of the hinge away from the spine of the jacket may result in less strain on the package as it is unfolded. Second, hinging the trays to the outside of the jacket allows the inside front panel of the jacket to remain visible as the trays are fanned open. Thus, if informational content is printed on the inside front panel, this informational content will continue to be visible as each tray is fanned out. Further, if the package is opened for display, the location of the hinge along an outside edge of the jacket allows more of the package interior to be displayed. In other embodiments (not shown), the hinge edge may be located along the top edge of the jacket, such that the stack of trays may be opened by folding upward and outward.

[0047] As shown in Figs. 12 and 13, the media package 100 shown in Fig. 11 may be advantageously combined with a slip case 120 that is shaped to closely receive the closed package 100. As shown in Figs. 12 and 13, the slip case 120 includes an open side 122 that allows the closed package 100 to be slid into the slip case 120.

[0048] Figs. 14 and 15 show alternative perspective views of a tray assembly 140 that may be used in a media package according to aspects of the invention. According to a further aspect of the invention, hinged tray assemblies 140 are constructed separately from the jackets. Fig. 16 illustrates a technique for manufacturing a single hinged tray assembly 150. According to this technique, a selected number of trays 151, 152, 153 and 154 is stacked into a desired configuration. The trays include hinge edges 155, 156, 157 and 158 that are lined up in the stack for receiving a hinging member 159. As mentioned above, the hinging member 159 may suitably be implemented using tape, a film, or other material that, on the one hand, is flexible enough to allow the trays to hinge freely with respect to each other while, on the other hand,

is sufficiently strong to prevent the hinging member from splitting apart along the hinge lines. The hinging member may be affixed to the hinging surface in any of a number of ways, including using an adhesive, a heat-based technique, or other bonding techniques. The hinging member may be suitably provided on a roll that is unwound and cut, as desired.

[0049] Figs. 17 through 20 illustrate a technique for fabricating a plurality of hinged assemblies simultaneously. As shown in Fig. 17, according to this technique, a plurality of trays 160 is arranged side by side so that their hinge edges are in alignment. The number of trays is a multiple of the number of trays in each hinged assembly in the finished package.

[0050] A swath of hinge material 162 is then prepared, having dimensions corresponding to the size of the combined hinge edges. As shown in Fig. 18, the swath of hinge material 162 is then affixed onto the hinge edges of the trays 160 to form an integral unit 170. As shown in Fig. 19, the swath of hinge material is then cut between trays at regular intervals 171, 172, 173 and 174, each interval including the desired number of trays. As shown in Fig. 20, individual hinged assemblies 175, 176, 177, 178 and 179 are then separated. The hinged assemblies are then mounted into jackets, as described above. The swath of hinge material may be cut, for example, in a single stroke using a bar having cutting blades mounted thereon. Of course, the cuts may also be made one at a time.

[0051] Fig. 21 shows another technique for fabricating hinged assemblies in accordance with a further aspect of the invention. According to this aspect of the invention, trays 201 are fed into a binding machine 200. The trays are fed into the machine such that their hinge edges are lined up with each other to receive a hinging material 202. This can be done, for example, by providing a fixture for holding the trays. As the trays are advanced through the machine, the machine automatically applies hinge material 202 to the hinge edges of the trays. A blade 204, or other cutting device, automatically cuts the hinge material 22 between trays to produce hinged assemblies 206 having the desired number of trays.

[0052] Fig. 22 shows a flowchart illustrating a method 250 for making a media package according to an aspect of the invention. In step 252, a set of disc-holding trays is arranged into a stack. The trays each have a hinge edge, and these hinge edges are lined up in the stack. In step 254, a hinging material is affixed to the hinge edges to hinge the trays together. In step 256, the hinging material is cut between trays to produce individual hinge assemblies having a desired number of trays. In step 258, the hinge assemblies are mounted into a jacket to form the finished package. The jacket may be fabricated to include text, graphics, or other esthetic or informational components. It is contemplated that a high-speed printing technique may be used in the fabrication of the jackets.

[0053] Figs. 23 through 26 show perspective views of packages 260, 270, 280 and 290 according to aspects of the present invention, in which matter has been printed onto the jackets.

[0054] Further aspects of the invention are directed to packages including structures for holding the packages closed. Fig. 27 shows a perspective view of a package 310, in which a stack of four trays 312, 314, 316 and 318 is hingeably mounted inside a jacket comprising a front panel 320, a spine panel 322, and a back panel 324. It will be seen that the package 310 further includes a wraparound panel 326 extending from the back panel 324, and a wraparound flap 328 extending from the wraparound panel 326.

[0055] The wraparound panel 326 and wraparound flap 328 are positioned and shaped to fold closely around the stack of trays 312-318 and the jacket front panel 320. The flap 328 is provided with a fastener 330 for removably attaching the flap 328 to the front panel 320. The fastener 330 may be implemented using a snap with a first mating element mounted to the inner surface of the flap 328 and a second mating element mounted to the front panel 320. Alternatively, the fastener 330 may be implemented using a pair of hook-and-loop fasteners, magnets, or the like, between the inner surface of the flap 328 and the front panel 320.

[0056] The wraparound panel 326 and the wraparound flap 328 may suitably be fabricated from the same sheet of material as the other jacket panels 320, 322 and 324. As described above, suitable materials include paperboard, cardboard, plastic, and the like. The wraparound panel 326 and wraparound flap 328 may be scored to facilitate their folding around the stack of trays 312-318.

[0057] In the Fig. 27 package 310, the stack of trays 312-318 are hinged at the spine panel 322. The wraparound panel 326 is located opposite the spine panel 322, and thus prevents the stack of trays 312-318 from being fanned open when the flap 328 is attached to the front panel 320. If desired, one or more additional wraparound panels and flaps may be provided, which wrap around either the top edge or the bottom edge of the stack of trays 312-318, or around both the top and bottom edges of the stack of trays 312-318.

[0058] Figs. 27A and 28B show side views of a fastening arrangement suitable for use with a package such as the one shown in Fig. 27. As shown in Fig. 27A, the fastening arrangement includes an upper fastening element 330a mounted into the wraparound flap 328. A ball-shaped nub 332 projects downward from the upper fastening element 330a. The fastening arrangement further includes a lower fastening element 330b mounted into the front panel 320. The lower fastening element 330b includes a cavity 334 that is shaped to closely receive the nub 332 projecting downward from the upper fastening element 330a. The upper and lower fastening elements 330a and 330b are positioned with respect to each other on the wraparound flap 328 and the front panel 320 such that when the package 310 is closed up, the fastening elements 330a and 330b line up with each other.

[0059] As shown in Fig. 27A, the mouth of the cavity

334 has a diameter that is slightly smaller than the diameter of the nub 332. The lower fastening element 334 is fabricated from a slightly deformable material that allows the nub 332 to be forced through the mouth of the cavity 334. The nub 332 and cavity 334 are dimensioned to allow the two fastening elements 330a and 330b to be snapped securely together, while also allowing them to be readily unsnapped. The fastening elements 330a and 330b may be suitably fabricated, for example, from a hard plastic or similar material.

[0060] Fig. 28 shows a perspective view of a package 410 including an alternative closing arrangement. The package 410 includes a stack of trays 412, 414, 416 and 418 that are hingeably mounted to each other at one edge. The stack of trays 412-418 is mounted into a jacket including a front panel 420, a spine panel 422, and a rear panel 424. Specifically, the bottom surface of the bottom tray 418 in the stack is mounted to the inner surface of the rear panel 424.

[0061] The jacket further includes a wraparound panel 426 and a wraparound flap 428 that are positioned and shaped to fold closely around the stack of trays. The wraparound flap 428 includes a pair of fasteners 430 and 432 that attach to mating fasteners 434 and 436 mounted to the outer surface of the rear panel 424. The fasteners 430-436 may be implemented using snaps, hook-and-loop fasteners, magnets, or the like.

[0062] If magnets are used for the fasteners 430-436, it may be desirable to conceal the magnets for esthetic reasons. This concealment may be accomplished in a number of ways. For example, if the jacket panels are fabricated from paperboard, the magnets may be concealed by gluing them between layers of paperboard. Also, it would be possible to conceal the magnets by using thin sheets of material that are glued over the magnets.

[0063] The wraparound panel 426 and wraparound flap 428 may suitably be fabricated from the same sheet of material as the other jacket panels. As shown in Fig. 28, a first score line 438 separates the wraparound panel 426 from the front panel 420, and a second score line 440 separates the wraparound flap 428 from the wraparound panel 426. The two score lines 438 and 440 facilitate the folding of the wraparound panel 426 and flap 428 around the stack of trays 412-418.

[0064] Fig. 29 shows a perspective view of a package 510 including another closing arrangement. The package 510 includes a stack of trays 512, 514, 516 and 518 that are hingeably mounted to each other inside a jacket 520. The package 510 is held closed by a "belly band" 522 that fits closely around the "waist" of the package 510. The belly band 522 may be suitably fabricated from a strip of plastic, paper, paperboard, cardboard, or the like. The strip is scored and folded, and then the two ends of the strip are attached to each other to form a band. The band is shaped such that it may be slipped over one end of the package 510 and then slid into position to hold the package 510 closed. The package 510 would then be opened by sliding the band 522 off the package 510. If the band 522 is fabricated from paper, the band 522 may simply be torn off the package 510. If desired, the band 522 may be provided with printed matter, such as text or graphics.

[0065] It would also be possible to form a band 522 from a strip having ends that are removably attached to each other using, for example, a snap, hook-and-loop fasteners, magnets, or the like. In that case, the package 510 would be closed by wrapping the two ends of the strap around the package 510 and then attaching the two ends together. The package 510 would then be opened by detaching the two ends from each other.

[0066] Fig. 30 shows a perspective view of a package 610 including another closing arrangement. The package 610 includes a stack of trays 612, 614, 616 and 618 that are hingeably mounted to each other inside a jacket 620. The package 610 is held closed by an elastic band having first and second ends 622 and 624 that loop around opposite corners of the package 610. In order to help the elastic band ends 622 and 624 maintain their position on the package 610, suitably positioned notches 626 may be cut into the jacket 620. As shown in Fig. 30, the notches 626 may extend across the trays 612-618.

Claims

1. A package (10) for holding media discs which package comprises a stack of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge (44) face, and the hinged edge faces of the trays in the stack being aligned with each other, so that all the hinged edge faces of the stack are substantially flush, and a single flexible hinge and connecting member (22) permanently affixed to all the hinged edge faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays together one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces.

2. A package (10) as claimed in claim 1, wherein the package further includes a jacket (20) and being closed by folding the jacket around the stack of trays.

3. A package (10) as claimed in claim 2, wherein the stack of trays is attached to the jacket (20) only at a single tray mounted onto an interior panel of the jacket.

4. The package as claimed in any of the preceding claims, wherein the jacket (20) includes a front interior panel, a rear interior panel, and a spine, the stack of trays being mounted to the rear interior panel

5. The package (10) of claim 4 wherein the hinge edges (44) and hinge member (22) are proximate to the spine.

6. The package (10) of claim 4, wherein the hinge edges (44) and hinge member (22) are distal from the spine.

7. The package (10) of claim 4, wherein the hinge edges (44) and hinge member (22) are positioned in transverse relationship to the spine of the jacket.

8. The package (10) of any of claims 4 to 7, wherein a bottom panel of the stack is mounted to the rear interior panel.

9. The package (10) of any of claims 2 to 8 further including a slip case (120) that closely fits around the stack of trays and jacket when they are folded into a closed configuration.

10. The package (10) of any of claims 2 to 9 further including fastening means (330) for holding the package closed.

11. The package (10) of any of claims 2 to 10, wherein the jacket includes a plurality of panels that wrap around the stack of trays, the jacket further including a flap (326) extending from a first panel that attaches to a second panel to hold the package closed.

12. The package (10) of claim 11, further including a first fastening element (330a) mounted to the flap and a second, mating fastening element (330b) mounted to the second panel.

13. The package (10) of claim 12, wherein the first (330a) and second (330b) fastening elements snap together.

14. The package (10) of claim 12, wherein the first and second fastening elements comprise a hook-and-loop fastening system.

15. The package (10) of claim 12, wherein the first and second fastening element comprises magnets (430 to 436).

16. The package (10) of any of claims 2 to 8 further including a band that fits closely around the package to hold it closed.

17. The package (10) of any of claims 2 to 8 further including an elastic band that loops around opposite corners of the package to hold it closed.

18. The package (10) according to any of the preceding claims further including a carrier into which the stack of trays is interested.

19. The package (10) according to any of the preceding claims, wherein the hinged edge faces of an adjacent pair of trays can be hinged from a closed position in which the hinged edge faces are substantially flush to an open position in which adjacent hinged edge faces are juxtaposed.

20. The package according to any of the preceding claims, wherein each tray is lidless and the contents of each lidless tray is tangibly exposed when the stack is fanned out.

21. A method for manufacturing a package, comprising:

(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (44), the hinged edge faces being aligned with each other, so that all the hinged edge faces of the stack are substantially flush;
(b) affixing a single flexible hinge and connecting member (22) to the hinged edge faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces.
(c) mounting the stack of trays onto an interior panel of a jacket, the jacket folding around the stack of trays to close the package.

22. The method of claim 21, wherein step (c) includes mounting the stack of trays onto the interior panel of the jacket with the hinge edges and hinge member proximate to a spine of the jacket.

23. The method of claim 21, wherein step (c) includes mounting the stack of trays onto the interior panel of the jacket with the hinge edges and hinge member distal from a spine of the jacket.

24. The method of claim 21, wherein step (c) includes mounting a bottom tray in the stack to the interior panel of the jacket.

25. The method of claim 21, wherein step (c) includes providing fastening means for holding the package closed.

26. The method of claim 21, wherein in step (c) the jacket includes a plurality of panels that wrap around the stack of trays, the jacket further including a flap extending from a first panel that attaches to a second panel to hold the package closed.

27. The method of claim 21, further including:

(d) fitting a band around the package to hold it closed.

28. The method of claim 21, further including:

(d) looping an elastic band around opposite corners of the package to hold it closed.

29. A method for manufacturing a package, comprising:

(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinged edge face (144), the hinged edge faces being aligned with each other, so that all the hinged edge faces of the stack are substantially flush;
(b) affixing a single flexible hinge and connecting member to the hinge edge faces, the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of hinged edge faces, and hinging the trays one to the next so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces.
(c) cutting the hinge material between the trays at regular intervals to create separate hinge assemblies, having a desired number of trays

30. A method for manufacturing a package, comprising:

(a) stacking a set of disc-holding trays (30), each tray in the stack having, of itself, a hinge edge face (44), the hinged edge faces being aligned with each other, so that all the hinged edge faces of the stack are substantially flush;
(b) advancing the stack of disc-holding trays and causing a single flexible hinge and connecting member (22) to be affixed to the hinge edge faces one at a time in sequence; the flexible hinge and connecting member being disposed in a plane substantially containing and connecting the flush stack of the hinged edge faces, and hinging the trays one to the next, so that they can be fanned out by flexing the flexible hinge and connecting member along planes which pass between each adjacent pair of hinged edge faces.
(c) cutting the hinge material between the trays at regular intervals to produce hinge assemblies having the desired number of trays.

Patentansprüche

1. Verpackung zum Halten von Datenscheiben, wobei die Verpackung einen Stapel von scheibenhaltenden Ablagen umfasst, wobei jede Ablage in dem Stapel selbst eine gelenkig angebrachte Kantenseite aufweist und die gelenkig angebrachten Kantenseiten der Ablagen in dem Stapel mit einander ausgerichtet sind, so dass alle gelenkig angebrachten Kantenseiten des Stapels im wesentlich bündig sind, sowie ein einzelnes biegsames Gelenk- und Verbindungselement, das permanent an alle gelenkig angebrachten Kantenseiten befestigt ist, wobei das biegsame Gelenk- und Verbindungselement in einer Ebene angeordnet ist, die im wesentlichen den bündigen Stapel der gelenkig angebrachten Kantenseiten enthält und verbindet, und die Ablagen eine mit der nächsten gelenkig miteinander verbindet, so dass diese ausgefächert werden können, indem das biegsame Gelenk- und Verbindungselement entlang von Ebenen gebogen wird, die zwischen jedem benachbarten Paar von gelenkig angebrachten Kantenseiten verlaufen.

2. Verpackung nach Anspruch 1, wobei die Verpakkung ferner eine Hülle umfasst und geschlossen wird, indem die Hülle um den Stapel von Ablagen gefaltet wird.

3. Verpackung nach Anspruch 2, wobei der Stapel von Ablagen lediglich an einer einzigen Ablage an die Hülle (20) angebracht ist, die an einer Innenwandfläche der Hülle angebracht ist.

4. Verpackung nach einem der vorhergehenden Ansprüche, wobei die Hülle eine vordere Innenwandfläche, eine hintere Innenwandfläche und ein Rückgrat umfasst, wobei der Stapel von Ablagen an der hinteren Innenwandfläche angebracht ist.

5. Verpackung nach Anspruch 4, wobei die gelenkig angebrachten Kanten und das Gelenkelement sich in der Nähe des Rückgrats befinden.

6. Verpackung nach Anspruch 4, wobei die gelenkig angebrachten Kanten und das Gelenkelement distal von dem Rückgrat angeordnet sind.

7. Verpackung nach Anspruch 4, wobei die gelenkig angebrachten Kanten und das Gelenkelement in quer verlaufender Beziehung zu dem Rückgrat der Hülle angeordnet sind.

8. Verpackung nach einem der Ansprüche 4 bis 7, wobei eine Bodenwandfläche des Stapels an die hintere Innenwandfläche angebracht ist.

9. Verpackung nach einem der Ansprüche 2 bis 8, wobei die Verpackung ferner einen Gleitbehälter umfasst, der schmiegsam um den Stapel von Ablagen und die Hülle passt, wenn diese in einen geschlos-

senen Zustand gefaltet sind.

10. Verpackung nach einem der Ansprüche 2 bis 9, wobei die Verpackung ferner Befestigungsmittel umfasst, um die Verpackung verschlossen zu halten.

11. Verpackung nach einem der Ansprüche 2 bis 10, wobei die Hülle eine Vielzahl von Wandflächen umfasst, die sich um den Stapel von Ablagen wickeln, wobei die Hülle ferner eine Klappe umfasst, die sich von einer ersten Wandfläche erstreckt, die an einer zweiten Wandfläche angebracht ist, um die Verpakkung verschlossen zu halten.

12. Verpackung nach Anspruch 11, wobei die Verpakkung ferner ein erstes Befestigungselement umfasst, das an die Klappe angebracht ist, sowie ein zweites, zusammenpassendes Befestigungselement, das an die zweite Wandfläche angebracht ist.

13. Verpackung nach Anspruch 12, wobei das erste und das zweite Befestigungselement ineinander einschnappen.

14. Verpackung nach Anspruch 12, wobei das erste und das zweite Befestigungsmittel ein Haken- und Schlaufen-Befestigungssystem umfassen.

15. Verpackung nach Anspruch 12, wobei das erste und das zweite Befestigungselement Magneten umfasst.

16. Verpackung nach einem der Ansprüche 2 bis 8, wobei die Verpackung ferner ein Band umfasst, das schmiegsam um die Verpackung passt, um diese verschlossen zu halten.

17. Verpackung nach einem der Ansprüche 2 bis 8, wobei die Verpackung ferner ein elastisches Band umfasst, das über gegenüberliegende Ecken der Verpackung in einer Schleife verläuft, um diese verschlossen zu halten.

18. Verpackung nach einem der vorhergehenden Ansprüche, wobei die Verpackung ferner einen Träger umfasst, in den der Stapel von Ablagen eingebracht ist.

19. Verpackung nach einem der vorhergehenden Ansprüche, wobei die gelenkig angebrachten Kantenseiten eines benachbarten Paares von Ablagen gelenkig von einer geschlossenen Position, in der die gelenkig angebrachten Kantenseiten im wesentlichen bündig sind, in eine offene Position bewegt werden, in der die gelenkig angebrachten Kantenseiten rittlings angeordnet sind.

20. Verpackung nach einem der vorhergehenden Ansprüche, wobei jede Ablage deckellos ist und der Inhalt jeder deckellosen Ablage greifbar freigelegt ist, wenn der Stapel ausgefächert ist.

21. Verfahren zum Herstellen einer Verpackung, umfassend:

(a) Stapeln eines Satzes von scheibenhaltenden Ablagen (30), wobei jede Ablage in dem Stapel selbst eine gelenkig angebrachte Kantenseite (44) aufweist, wobei die gelenkig angebrachten Kantenseiten mit einander ausgerichtet sind, so dass alle gelenkig angebrachten Kantenseiten des Stapels im wesentlichen bündig sind,
(b) Befestigen eines einzelnen biegsamen Gelenk- und Verbindungselements (22) an den gelenkig angebrachten Kantenseiten, wobei das biegsame Gelenk- und Verbindungselement in einer Ebene angeordnet ist, die im wesentlichen den bündigen Stapel von gelenkig angebrachten Kantenseiten enthält und verbindet, und Verbinden der Ablagen einer mit der nächsten auf eine gelenkige Art und Weise, so dass diese ausgefächert werden können, indem das biegsame Gelenk- und Verbindungselement entlang von Ebenen gebogen wird, die zwischen jedem benachbarten Paar von gelenkig angebrachten Kantenseiten hindurchlaufen, und
(c) Anbringen des Stapels von Ablagen auf eine innere Wandfläche einer Hülle, wobei die Hülle um den Stapel von Ablagen gefaltet wird, um die Verpackung zu verschließen.

22. Verfahren nach Anspruch 21, wobei Schritt (c) das Anbringen des Stapels von Ablagen auf die innere Wandfläche der Hülle umfasst, wobei sich die gelenkig angebrachten Kanten und das Gelenkelement in der Nähe eines Rückgrats der Hülle befinden.

23. Verfahren nach Anspruch 21, wobei Schritt (c) das Anbringen des Stapels von Ablagen auf die innere Wandfläche der Hülle umfasst, wobei sich die gelenkig angebrachten Kanten und das Gelenkelement distal von einem Rückgrat der Hülle befinden.

24. Verfahren nach Anspruch 21, wobei Schritt (c) das Anbringen einer Bodenablage in dem Stapel an die innere Wandfläche der Hülle umfasst.

25. Verfahren nach Anspruch 21, wobei Schritt (c) das Bereitstellen von Befestigungsmitteln umfasst, um die Verpackung verschlossen zu halten.

26. Verfahren nach Anspruch 21, wobei bei Schritt (c) die Hülle eine Vielzahl von Wandflächen umfasst, die sich um den Stapel von Ablagen wickeln, wobei

die Hülle ferner eine Klappe umfasst, die sich von einer ersten Wandfläche erstreckt, die an einer zweiten Wandfläche befestigt ist, um die Verpackung verschlossen zu halten.

27. Verfahren nach Anspruch 21, wobei das Verfahren ferner umfasst:

(d) Anpassen eines Bandes um die Verpackung, um diese verschlossen zu halten.

28. Verfahren nach Anspruch 21, wobei das Verfahren ferner umfasst:

(d) Führen eines elastischen Bandes um gegenüberliegende Ecken der Verpackung in einer Schleife, um diese verschlossen zu halten.

29. Verfahren zum Herstellen einer Verpackung, umfassend:

(a) Stapeln eines Satzes von scheibenhaltenden Ablagen (30), wobei jede Ablage in dem Stapel selbst eine gelenkig angebrachte Kantenseite (44) aufweist, wobei die gelenkig angebrachten Kantenseiten mit einander ausgerichtet sind, so dass alle gelenkig angebrachten Kantenseiten des Stapels im wesentlichen bündig sind,
(b) Befestigen eines einzelnen biegsamen Gelenk- und Verbindungselements (22) an den gelenkig angebrachten Kantenseiten, wobei das biegsame Gelenk- und Verbindungselement in einer Ebene angeordnet ist, die im wesentlichen den bündigen Stapel von gelenkig angebrachten Kantenseiten enthält und verbindet, und Verbinden der Ablagen einer mit der nächsten auf eine gelenkige Art und Weise, so dass diese ausgefächert werden können, indem das biegsame Gelenk- und Verbindungselement entlang von Ebenen gebogen wird, die zwischen jedem benachbarten Paar von gelenkig angebrachten Kantenseiten hindurchlaufen, und
(c) Schneiden des Gelenkmaterials zwischen den Ablagen in gleichförmigen Abständen, um separate Gelenkanordnungen mit einer gewünschten Anzahl von Ablagen herzustellen.

30. Verfahren zum Herstellen einer Verpackung, umfassend:

(a) Stapeln eines Satzes von scheibenhaltenden Ablagen (30), wobei jede Ablage in dem Stapel selbst eine gelenkig angebrachte Kantenseite (44) aufweist, wobei die gelenkig angebrachten Kantenseiten mit einander ausgerichtet sind, so dass alle gelenkig angebrachten Kantenseiten des Stapels im wesentlichen bündig sind,
(b) Vorrücken des Stapels von scheibenhaltenden Ablagen und Bewirken, dass ein einzelnes biegsames Gelenk- und Verbindungselement (22) der Reihe nach jeweils einzeln an den gelenkig angebrachten Kantenseiten befestigt wird, wobei das biegsame Gelenk- und Verbindungselement in einer Ebene angeordnet ist, die im wesentlichen den bündigen Stapel von gelenkig angebrachten Kantenseiten enthält und verbindet, und Verbinden der Ablagen einer mit der nächsten auf eine gelenkige Art und Weise, so dass diese ausgefächert werden können, indem das biegsame Gelenk- und Verbindungselement entlang der Ebenen gebogen wird, die zwischen jedem benachbarten Paar von gelenkig angebrachten Kantenseiten hindurchlaufen, und
(c) Schneiden des Gelenkmaterials zwischen den Ablagen in gleichförmigen Abständen, um separate Gelenkanordnungen mit der gewünschten Anzahl von Ablagen herzustellen.

Revendications

1. Emballage destiné à retenir des disques média, lequel emballage comprend une pile de plateaux porte-disque, chaque plateau dans la pile ayant, en lui-même, une face formant bord articulé, et les faces formant bord articulé des plateaux dans la pile étant alignées les unes sur les autres de sorte que toutes les faces formant bord articulé de la pile soient sensiblement de même niveau, et une seule charnière flexible et élément de jonction étant fixée de manière permanente à toutes les faces formant bord articulé, la charnière flexible et élément de jonction étant disposée sur un plan contenant et reliant sensiblement la pile de faces formant bord articulé de même niveau, et articulant les plateaux les uns aux autres de sorte à ce qu'ils puissent être déployés en recourbant la charnière flexible et élément de jonction le long de plans qui passent entre chaque paire adjacente de faces formant bord articulé.

2. Emballage selon la revendication 1, dans lequel l'emballage comprend en outre une pochette et est fermé en repliant la pochette autour de la pile de plateaux.

3. Emballage selon la revendication 2, dans lequel la pile de plateaux n'est fixée à la pochette (20) qu'au niveau d'un seul plateau monté sur un panneau intérieur de la pochette.

4. Emballage selon l'une quelconque des revendications précédentes, dans lequel la pochette comprend un panneau intérieur avant, un panneau inté-

rieur arrière, et un dos, la pile de plateaux étant montée sur le panneau intérieur arrière.

5. Emballage selon la revendication 4, dans lequel les bords articulés et l'élément d'articulation sont à proximité du dos.

6. Emballage selon la revendication 4, dans lequel les bords articulés et l'élément d'articulation sont éloignés du dos.

7. Emballage selon la revendication 4, dans lequel les bords articulés et l'élément d'articulation sont positionnés de manière transversale par rapport au dos de la pochette.

8. Emballage selon l'une quelconque des revendications 4 à 7, dans lequel un panneau inférieur de la pile est monté sur le panneau intérieur arrière.

9. Emballage selon l'une quelconque des revendications 2 à 8, comprenant en outre un étui qui s'adapte de manière serrée autour de la pile de plateaux et de la pochette lorsqu'ils sont repliés en une configuration fermée.

10. Emballage selon l'une quelconque des revendications 2 à 9, comprenant en outre des moyens de fixation pour maintenir l'emballage fermé.

11. Emballage selon l'une quelconque des revendications 2 à 10, dans lequel la pochette comprend une pluralité de panneaux qui entourent la pile de plateaux, la pochette comprenant en outre un rabat s'étendant depuis un premier panneau, qui s'attache a un second panneau pour maintenir l'emballage fermé.

12. Emballage selon la revendication 11, comprenant en outre un élément de fixation monté sur le rabat et un second élément de fixation correspondant monté sur le premier panneau.

13. Emballage selon la revendication 12, dans lequel le premier et le second élément de fixation s'emboîtent l'un dans l'autre par pression.

14. Emballage selon la revendication 12, dans lequel le premier et le second élément de fixation comprennent un système de fixation à fermeture auto-agrippante.

15. Emballage selon la revendication 12, dans lequel le premier et le second élément de fixation comprennent des aimants.

16. Emballage selon l'une quelconque des revendications 2 à 8, comprenant en outre une bande qui s'adapte de manière serrée autour de l'emballage pour le maintenir fermé.

17. Emballage selon l'une quelconque des revendications 2 à 8, comprenant en outre une bande élastique qui forme une boucle autour des coins opposés de l'emballage pour le maintenir fermé.

18. Emballage selon l'une quelconque des revendications précédentes, comprenant en outre un support dans lequel est introduite la pile de plateaux.

19. Emballage selon l'une quelconque des revendications précédentes, dans lequel les faces formant bord articulé d'une paire adjacente de plateaux, peuvent être articulées depuis une position fermée dans laquelle les faces formant bord articulé sont sensiblement de même niveau, jusqu'à une position ouverte dans laquelle les faces formant bord articulé sont juxtaposées.

20. Emballage selon l'une quelconque des revendications précédentes, dans lequel chaque plateau est découvert et le contenu de chaque plateau découvert est sensiblement exposé lorsque la pile est déployée.

21. Procédé de fabrication d'un emballage, comprenant les étapes consistant à :

(a) empiler un jeu de plateaux porte-disque (30), chaque plateau de la pile ayant, en lui-même, une face formant bord articulé (44), les faces formant bord articulé étant alignées les unes sur les autres, de sorte à ce que toutes les faces formant bord articulé de la pile soient sensiblement de même niveau ;
(b) fixer une seule charnière flexible et élément de jonction (22) aux faces formant bord articulé, la charnière flexible et élément de jonction étant disposée sur un plan contenant et reliant sensiblement la pile de faces formant bord articulé de même niveau, et articulant les plateaux les uns aux autres de sorte à ce qu'ils puissent être déployés en recourbant la charnière flexible et élément de jonction le long de plans qui passent entre chaque paire adjacente de faces formant bord articulé ; et
(c) monter la pile de plateaux sur un panneau intérieur d'une pochette, la pochette se repliant autour de la pie de plateaux pour fermer l'emballage.

22. Procédé selon la revendication 21, dans lequel l'étape (c) comprend l'étape consistant à monter la pile de plateaux sur le panneau intérieur de la pochette avec les bords articulés et l'élément d'articulation situés à proximité d'un dos de la pochette.

23. Procédé selon la revendication 21, dans lequel l'étape (c) comprend l'étape consistant à monter la pile de plateaux sur le panneau intérieur de la pochette avec les bords articulés et l'élément d'articulation situés à l'écart d'un dos de la pochette.

24. Procédé selon la revendication 21, dans lequel l'étape (c) comprend l'étape consistant à monter un plateau inférieur dans la pile sur le plateau intérieur de la pochette.

25. Procédé selon la revendication 21, dans lequel l'étape (c) comprend l'étape consistant à apporter des moyens de fixation pour maintenir l'emballage fermé.

26. Procédé selon la revendication 21, dans lequel au cours de l'étape (c) la pochette comprend une pluralité de panneaux qui entourent la pile de plateaux, la pochette comprenant en outre un rabat s'étendant depuis un premier panneau, qui s'attache a un second panneau pour maintenir l'emballage fermé.

27. Procédé selon la revendication 21, comprenant en outre l'étape consistant à :

(d) adapter une bande autour de l'emballage pour le maintenir fermé.

28. Procédé selon la revendication 21 comprenant en outre l'étape consistant à :

(d) passer une bande élastique en boucle autour de coins opposés de l'emballage pour le maintenir fermé.

29. Procédé de fabrication d'un emballage, comprenant les étapes consistant à :

(a) empiler un jeu de plateaux porte-disque (30), chaque plateau de la pile ayant, en lui-même, une face formant bord articulé (44), les faces formant bord articulé étant alignées les unes sur les autres, de sorte à ce que toutes les faces formant bord articulé de la pile soient sensiblement de même niveau ;
(b) fixer une seule charnière flexible et élément de jonction (22) aux faces formant bord articulé, la charnière flexible et élément de jonction étant disposée sur un plan contenant et reliant sensiblement la pile de faces formant bord articulé de même niveau, et articulant les plateaux les uns aux autres de sorte à ce qu'ils puissent être déployés en recourbant la charnière flexible et élément de jonction le long de plans qui passent entre chaque paire adjacente de faces formant bord articulé ; et
(c) découper le matériau d'articulation entre les plateaux à des intervalles réguliers pour créer des ensembles articulés distincts ayant un nombre voulu de plateaux.

30. Procédé de fabrication d'un emballage, comprenant les étapes consistant à :

(a) empiler un jeu de plateaux porte-disque (30), chaque plateau de la pile ayant, en lui-même, une face formant bord articulé (44), les faces formant bord articulé étant alignées les unes sur les autres, de sorte à ce que toutes les faces formant bord articulé de la pile soient sensiblement de même niveau ;
(b) faire avancer la pile de plateaux porte-disque et amener une seule charnière flexible et élément de jonction (22) à être fixés aux faces formant bord flexible l'un après l'autre, en séquence, la charnière flexible et élément de connexion étant disposés sur un plan contenant et reliant sensiblement la pile de faces formant bord articulé de même niveau, et articulant les plateaux les uns aux autres de sorte à ce qu'ils puissent être déployés en recourbant la charnière flexible et élément de jonction le long de plans qui passent entre chaque paire adjacente de faces formant bord articulé ;
(c) découper le matériau d'articulation entre les plateaux à des intervalles réguliers pour créer des ensembles articulés distincts ayant un nombre voulu de plateaux.

FIG. 1

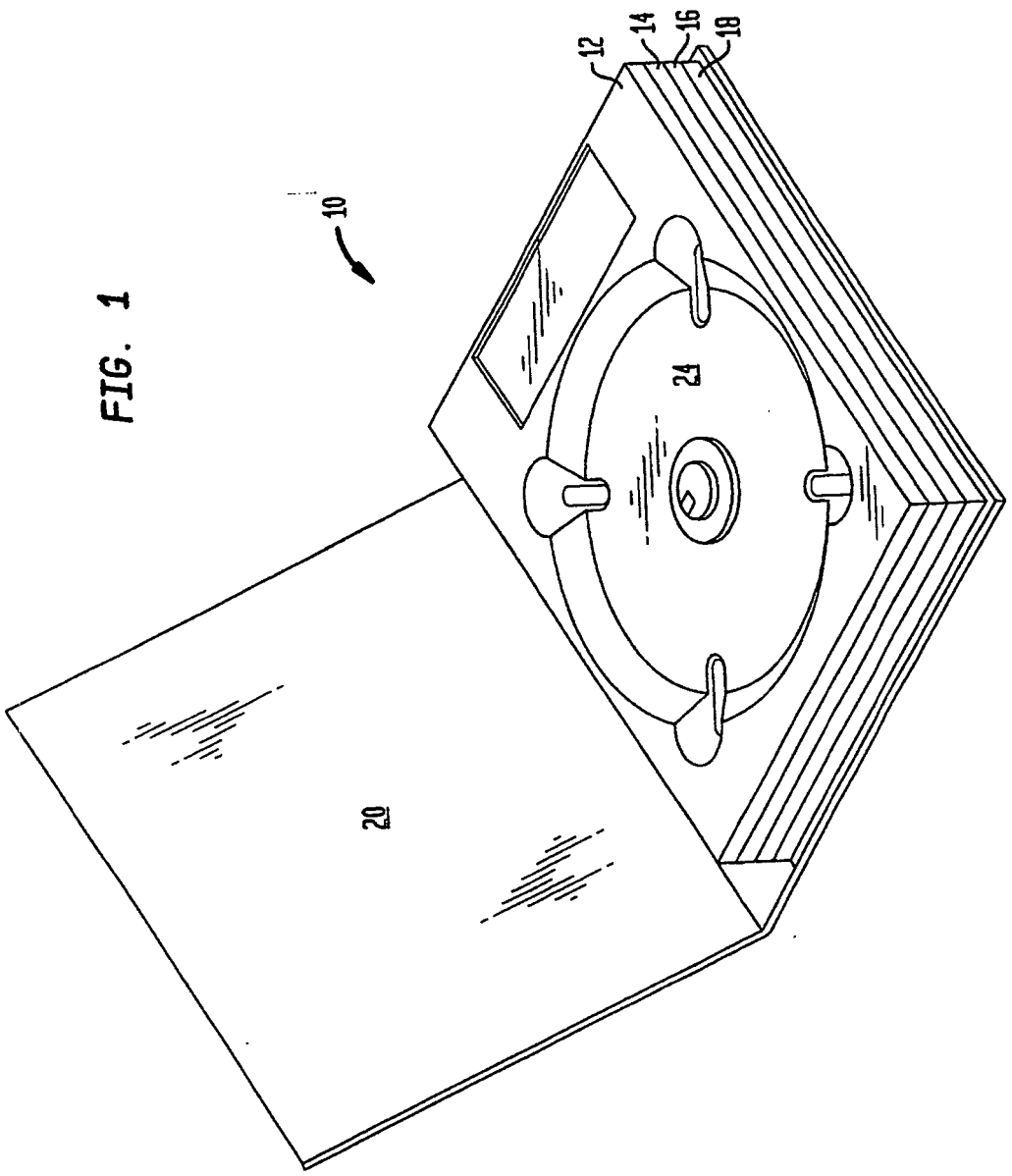


FIG. 2

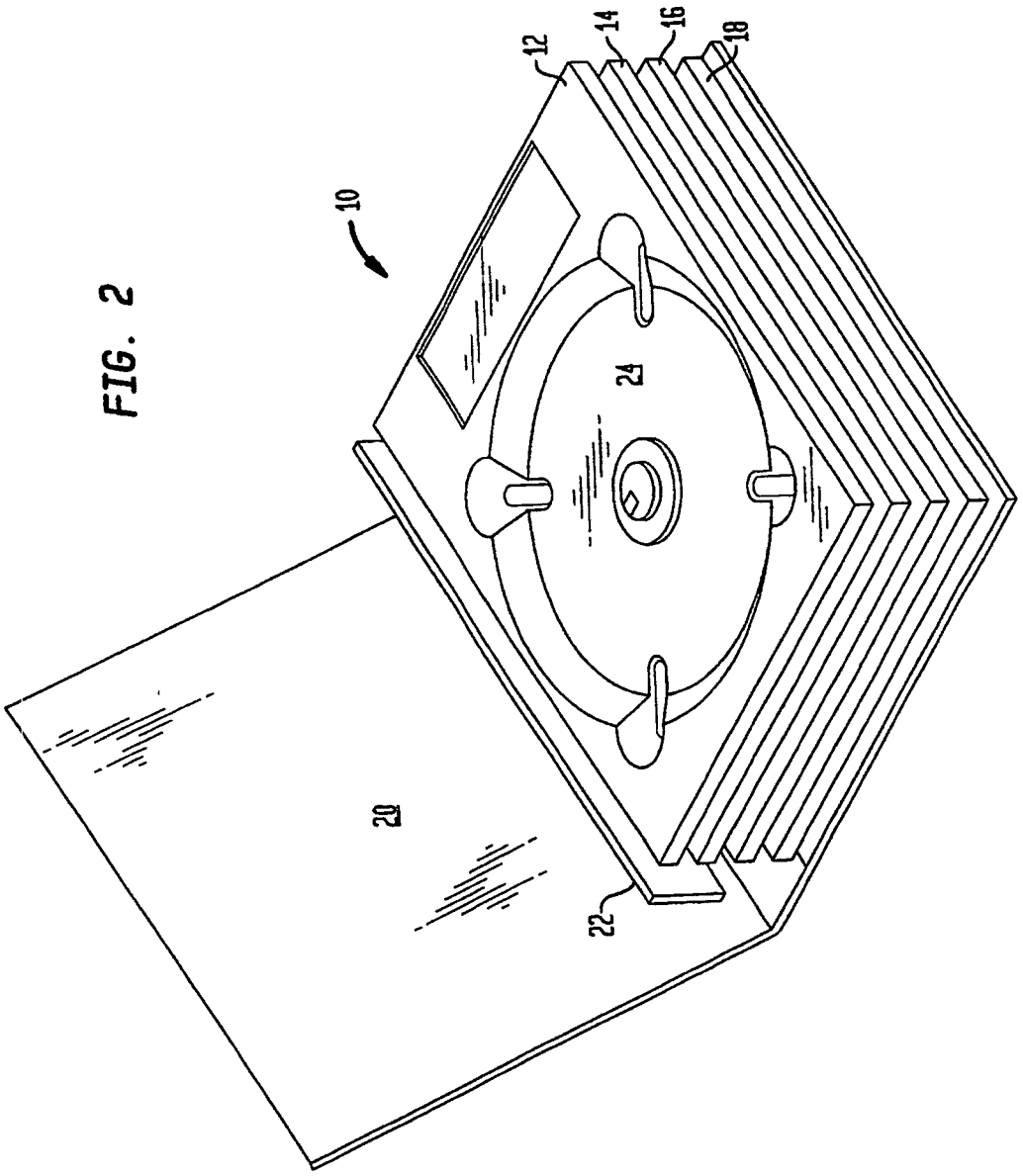


FIG. 3

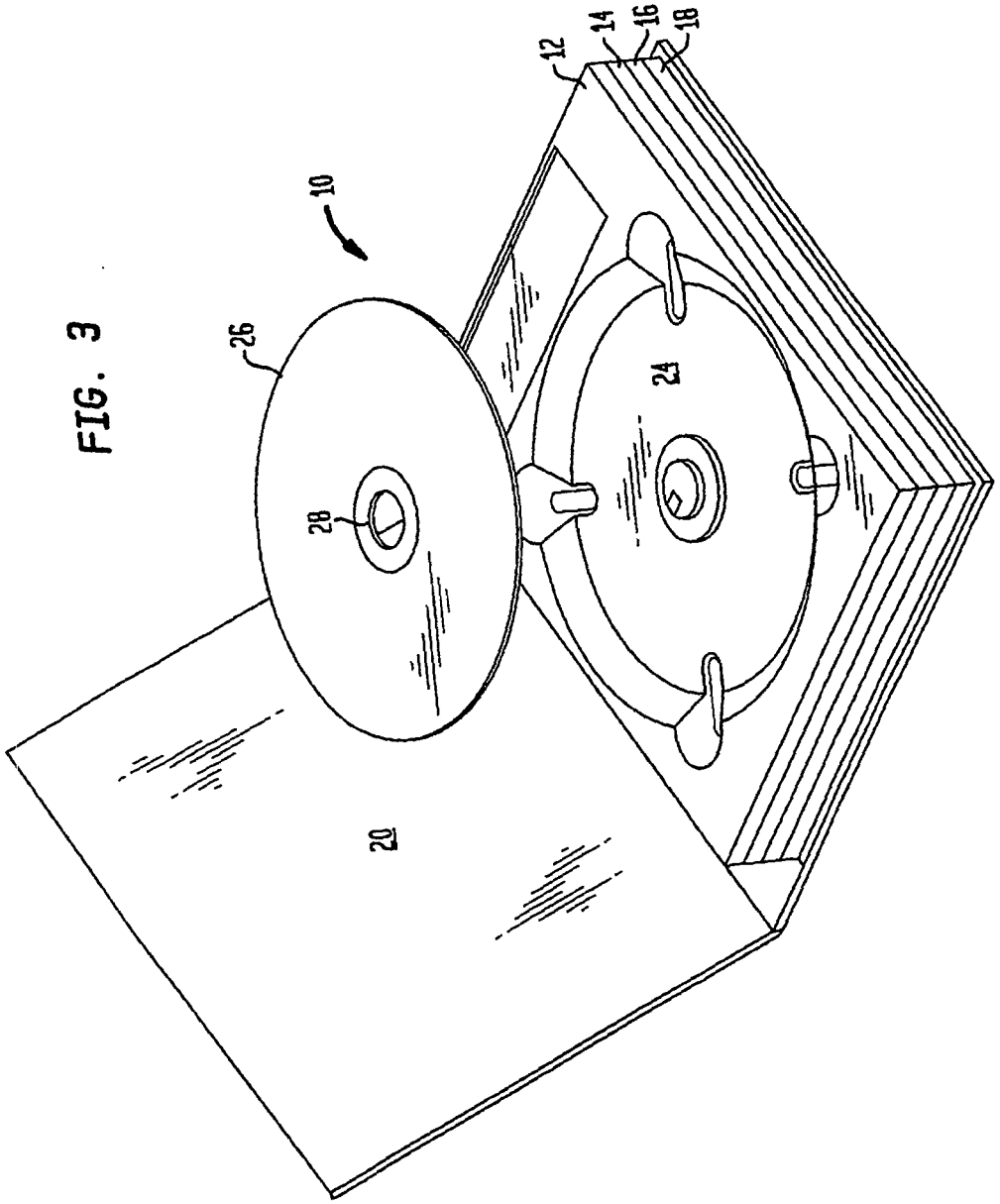


FIG. 4

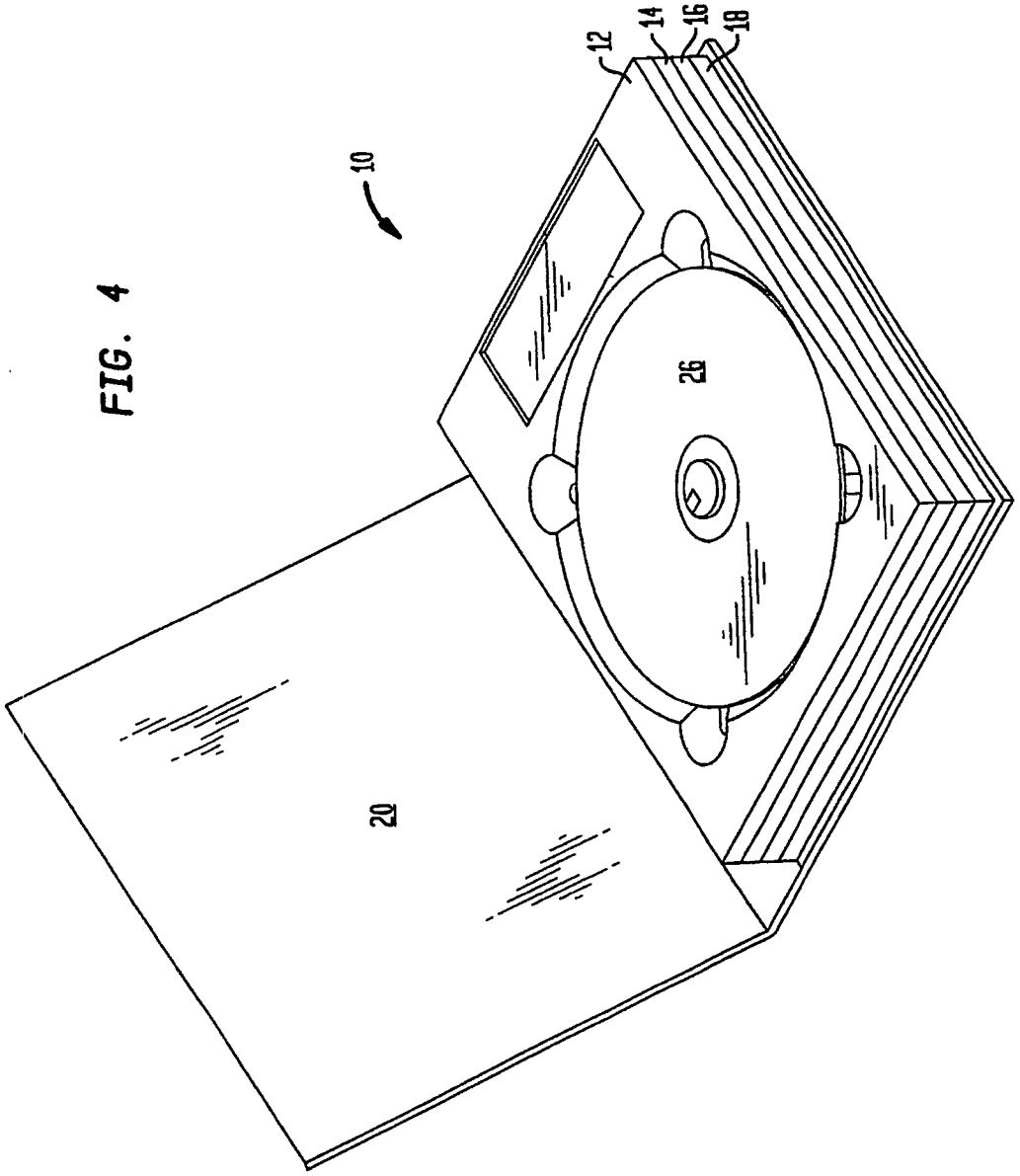


FIG. 5

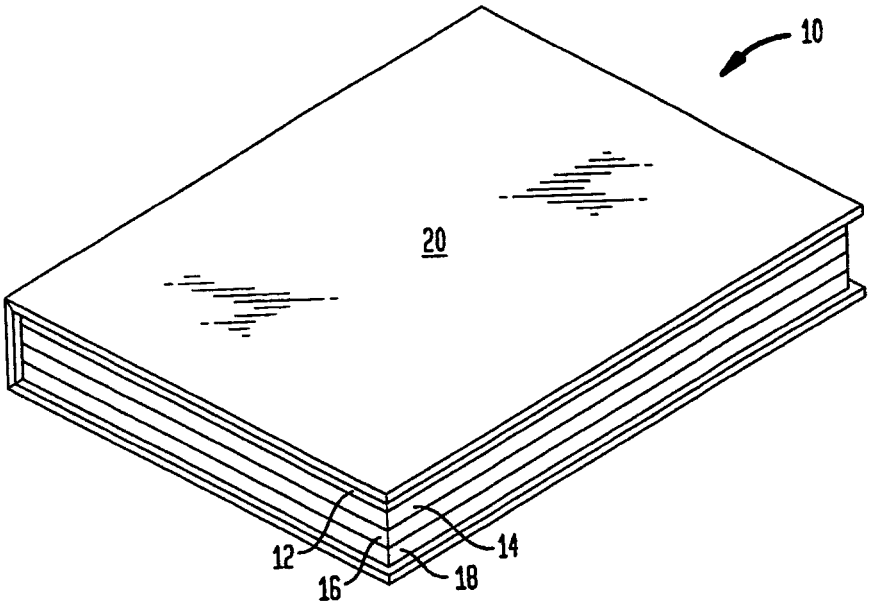


FIG. 6

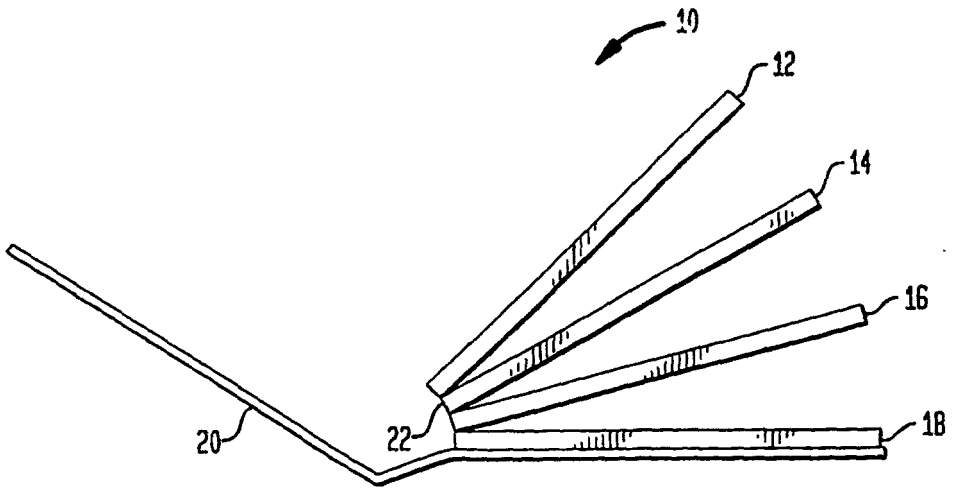


FIG. 7

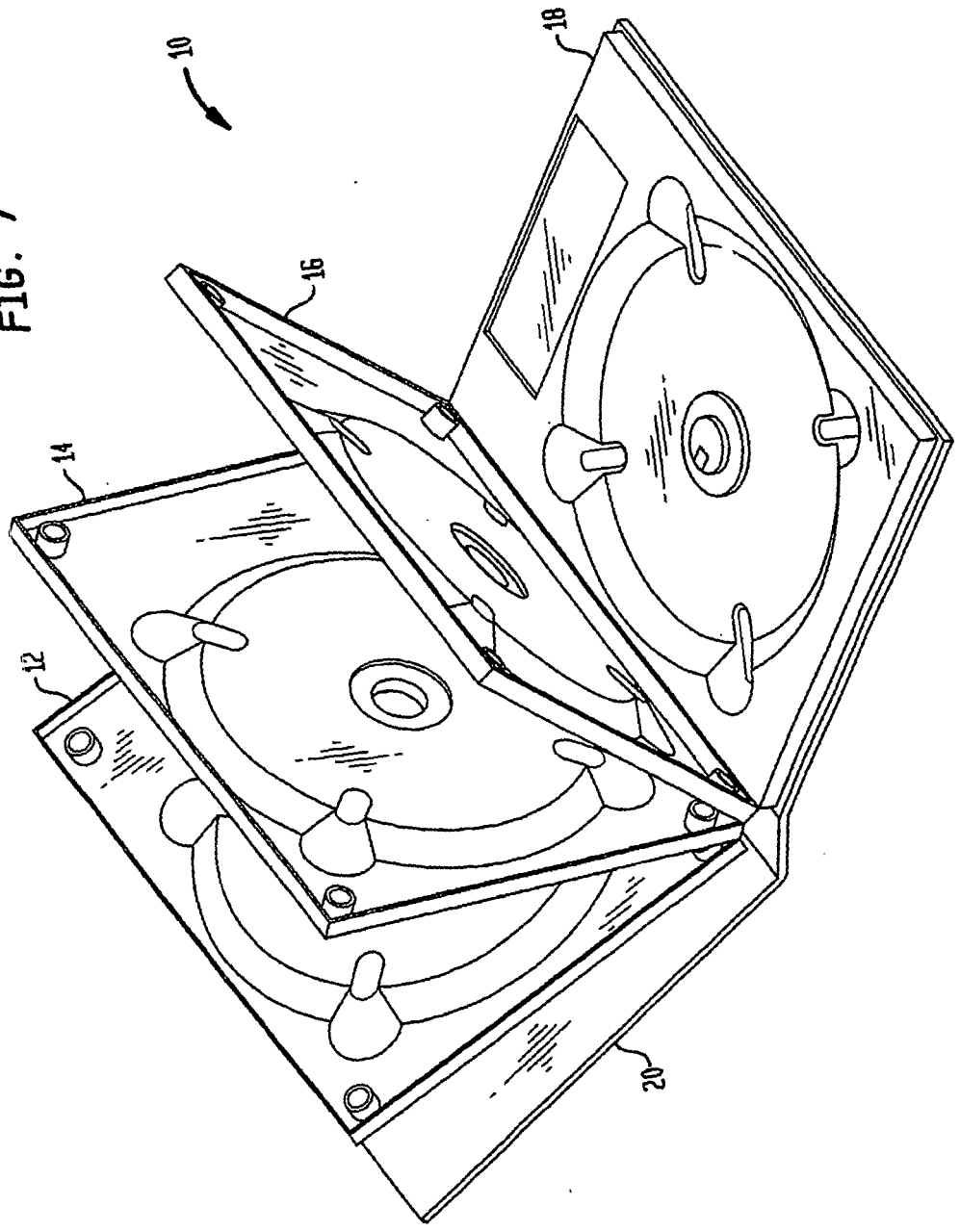
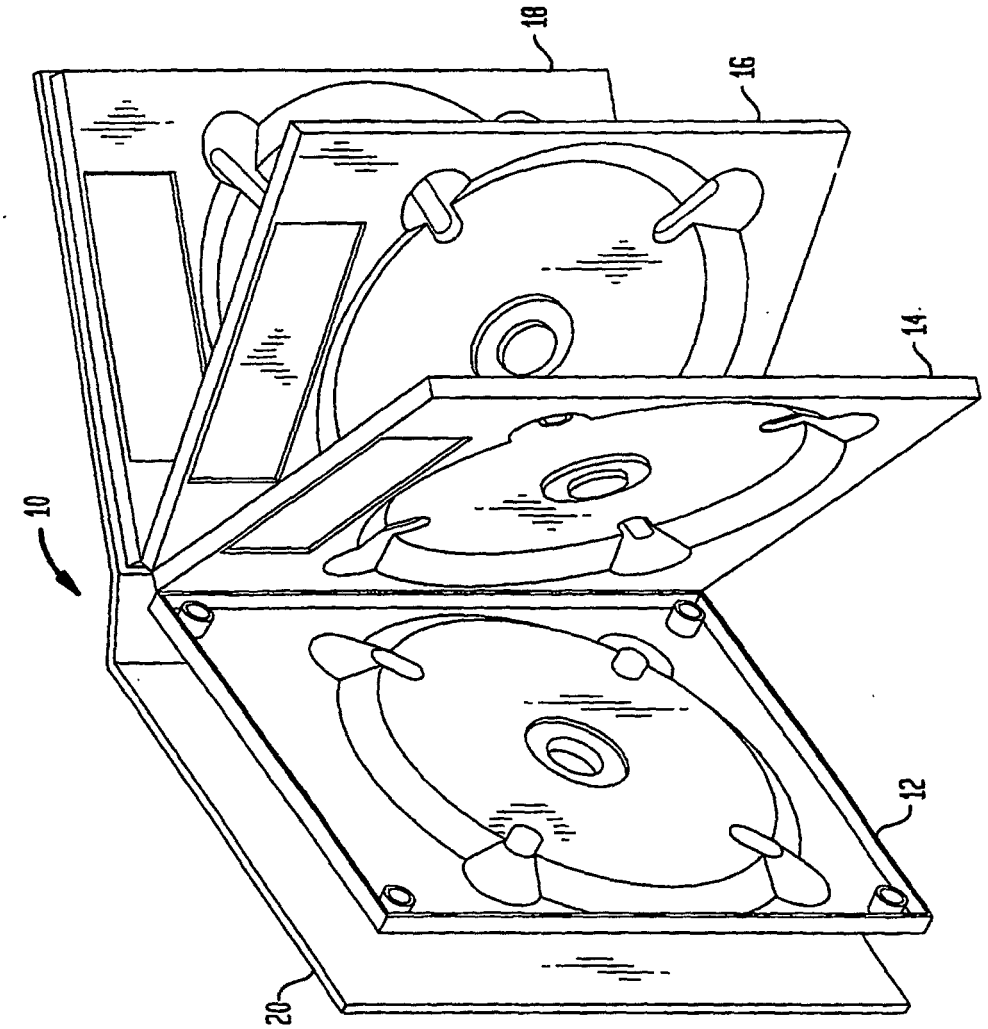


FIG. 8



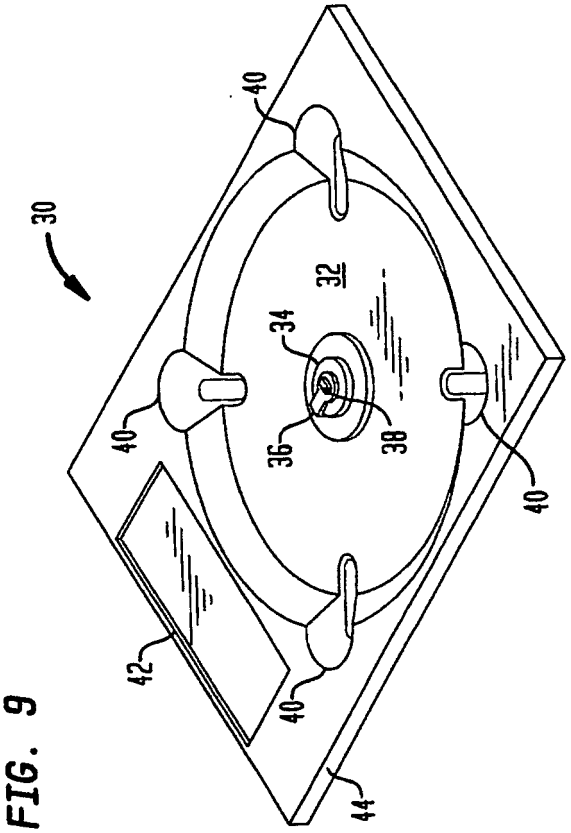


FIG. 9

FIG. 10

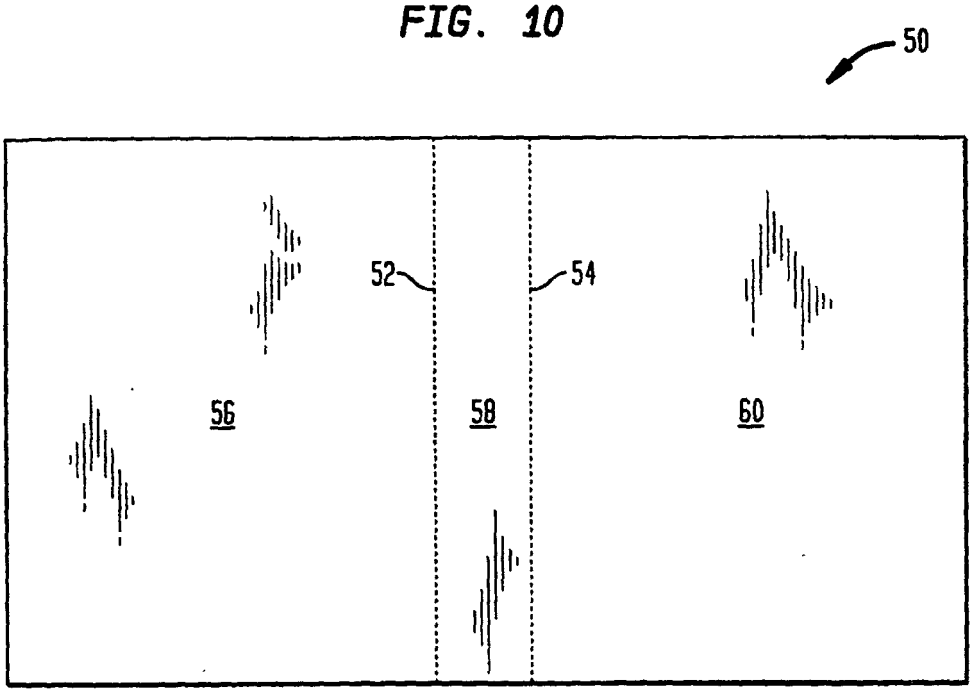


FIG. 11

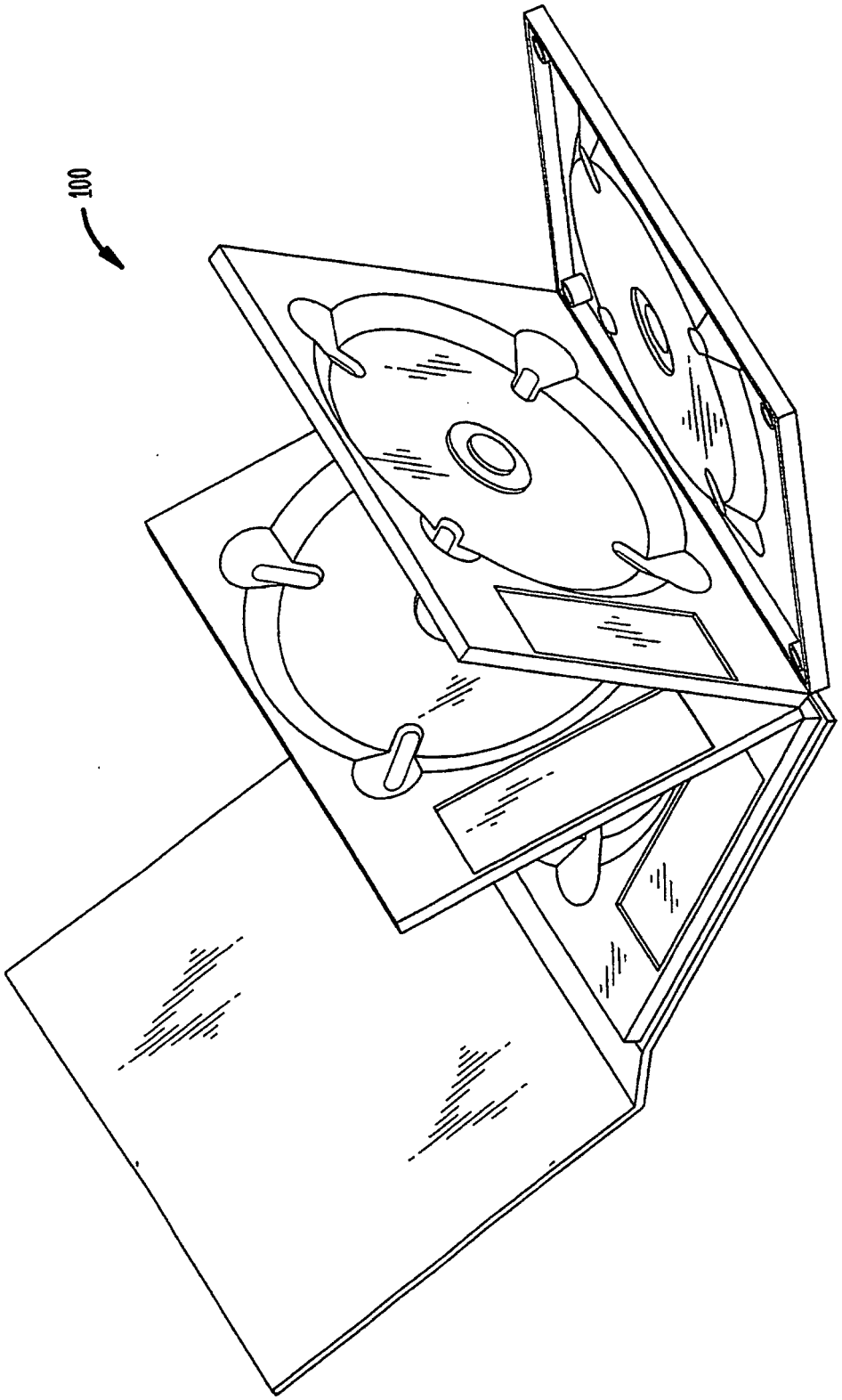


FIG. 12

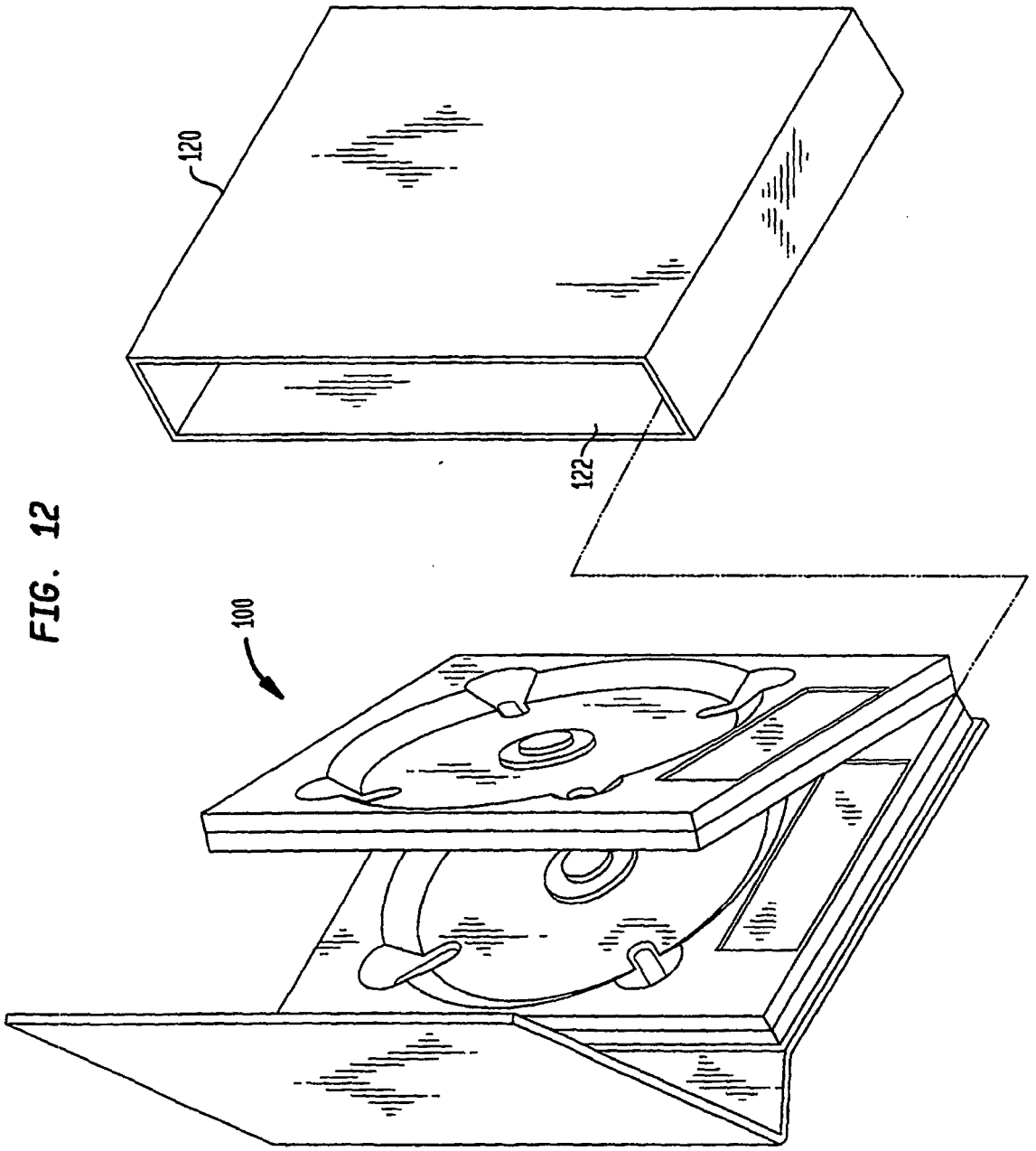


FIG. 13

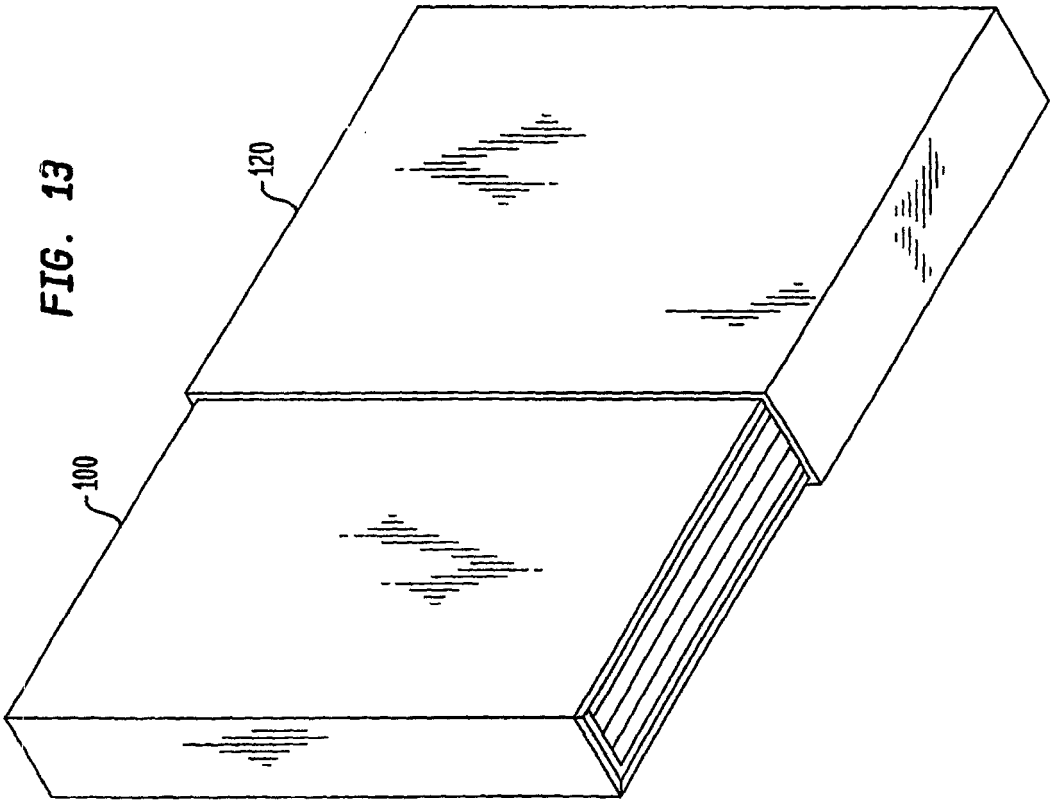


FIG. 15

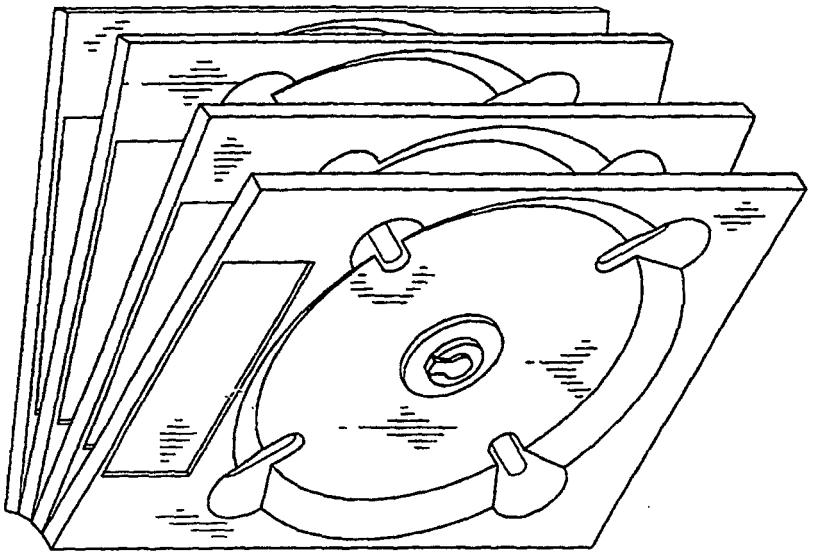
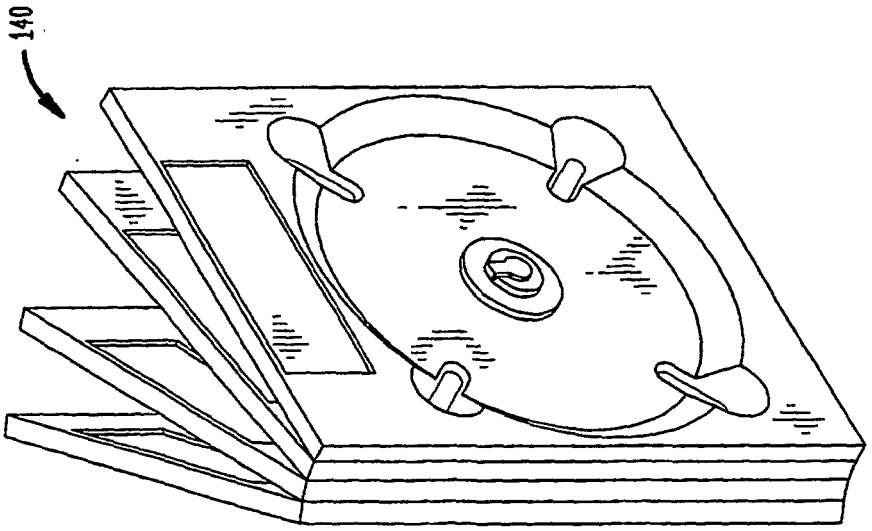


FIG. 14



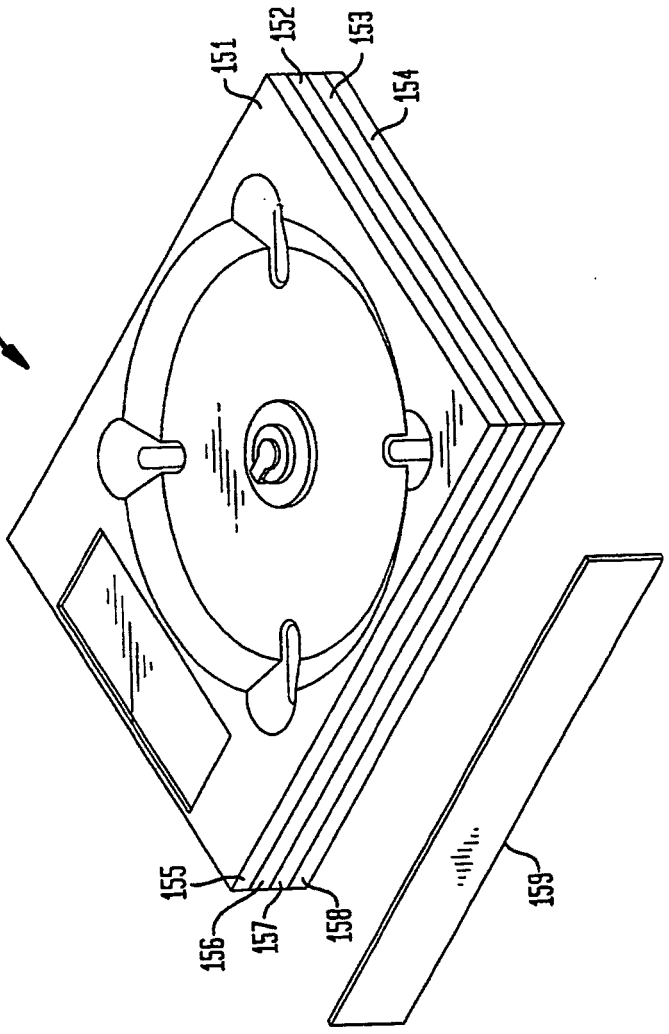


FIG. 16

FIG. 17

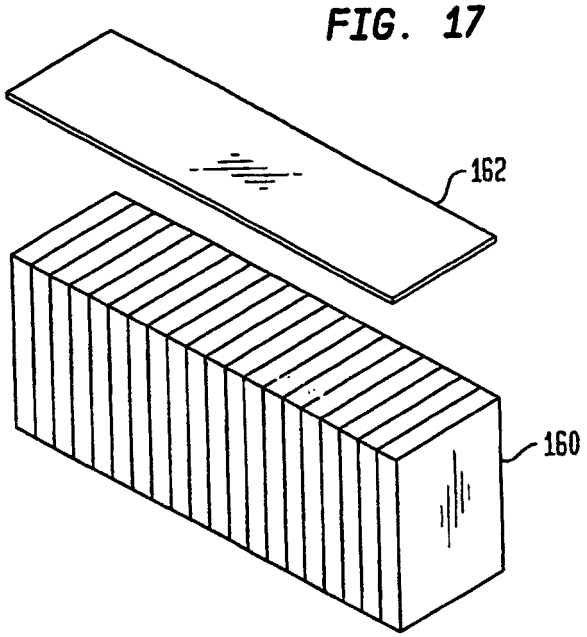


FIG. 18

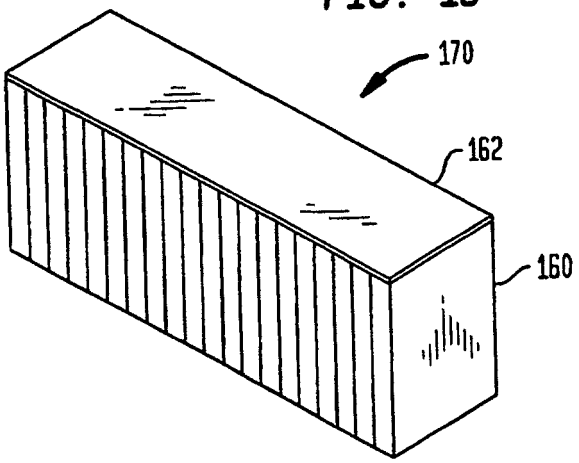


FIG. 19

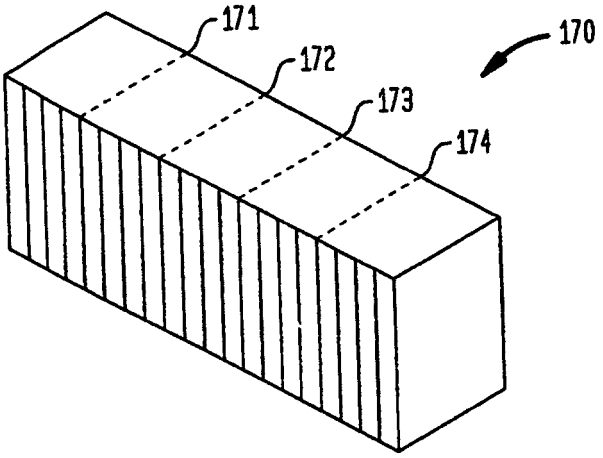


FIG. 20

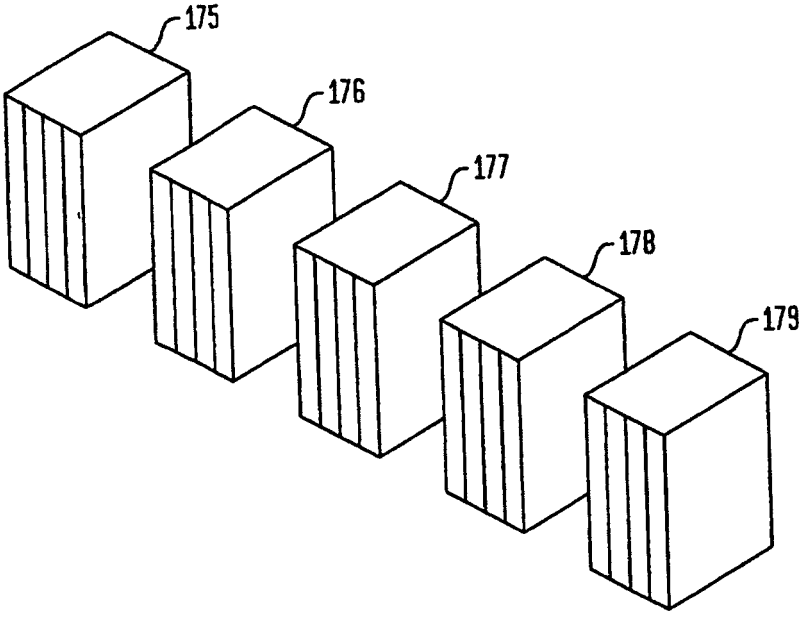


FIG. 21

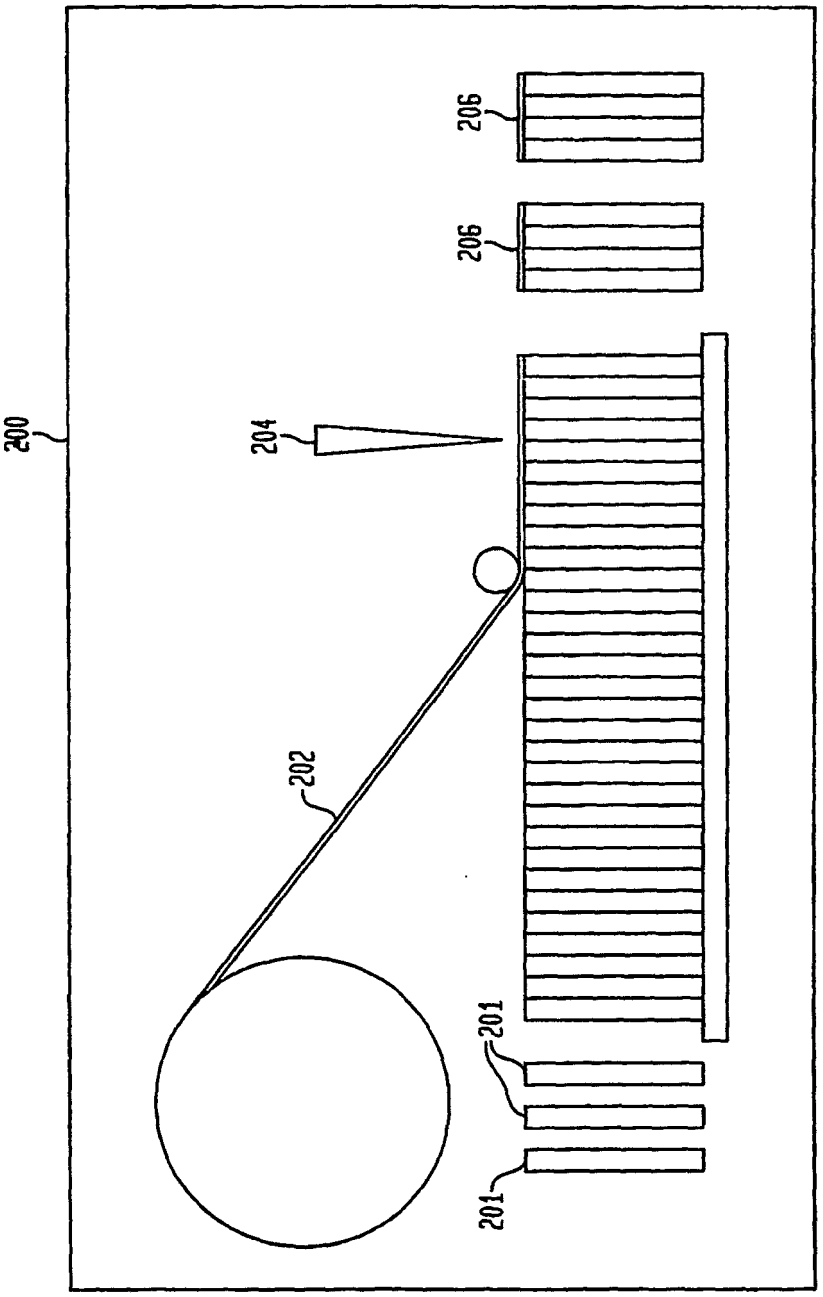


FIG. 22

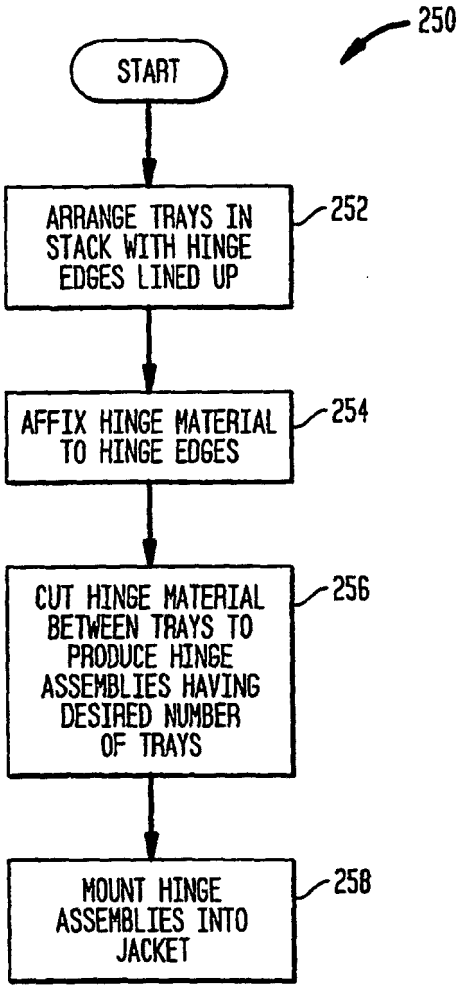

250
START
ARRANGE TRAYS IN STACK WITH HINGE EDGES LINED UP
252
AFFIX HINGE MATERIAL TO HINGE EDGES
254
CUT HINGE MATERIAL BETWEEN TRAYS TO PRODUCE HINGE ASSEMBLIES HAVING DESIRED NUMBER OF TRAYS
256
MOUNT HINGE ASSEMBLIES INTO JACKET
258

FIG. 23

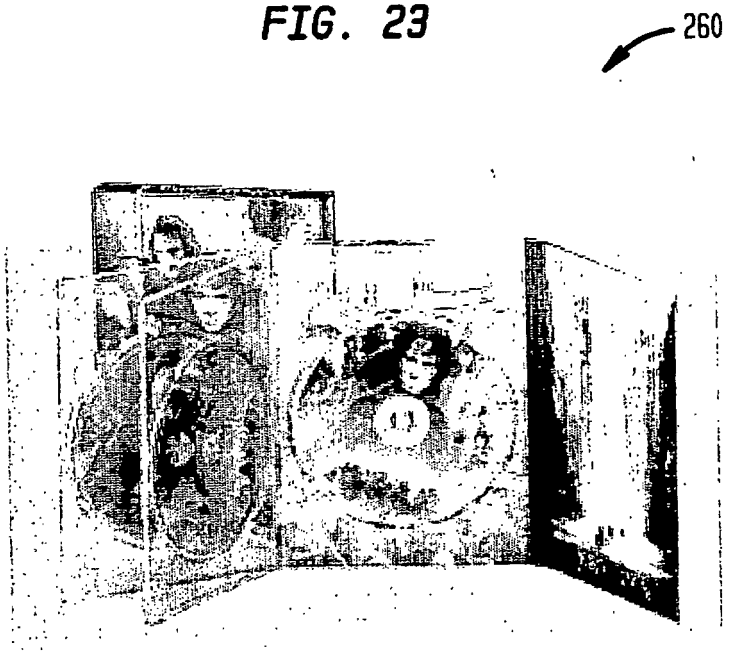


FIG. 24

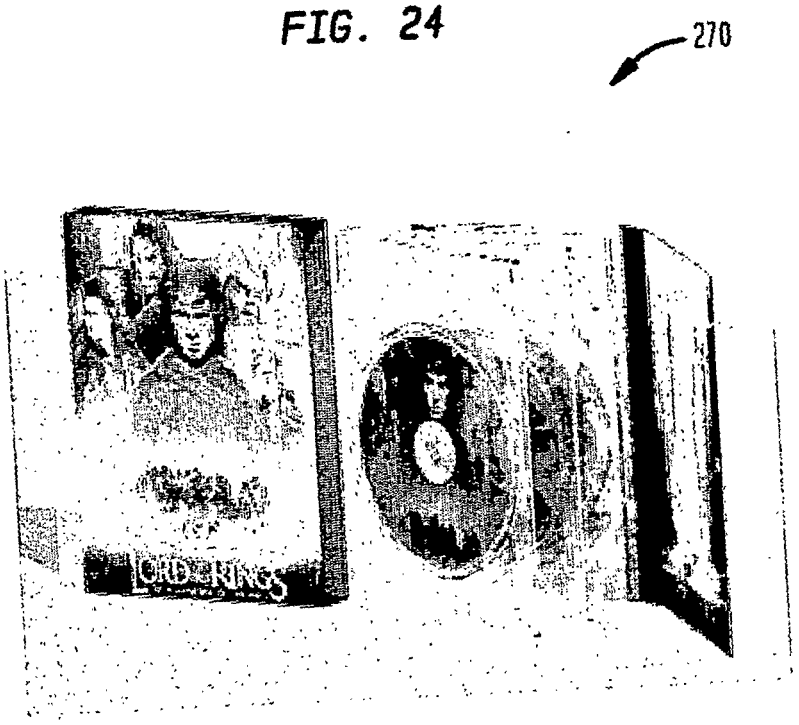


FIG. 25

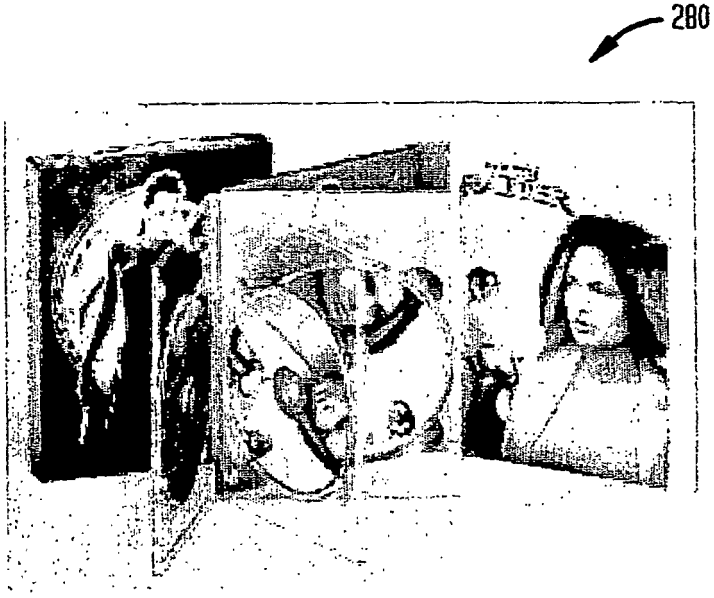


FIG. 26

FIG. 27

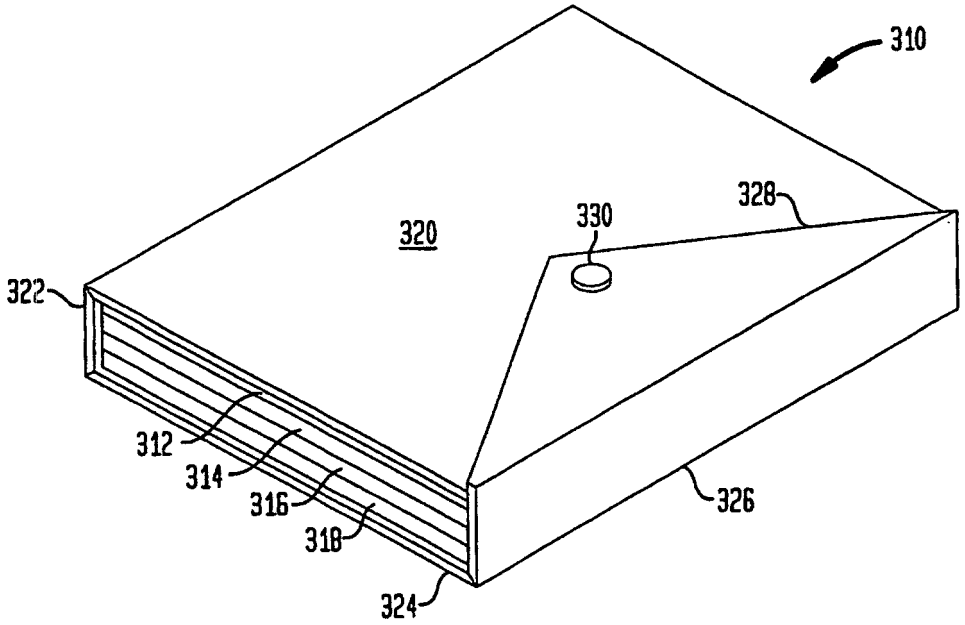


FIG. 27A

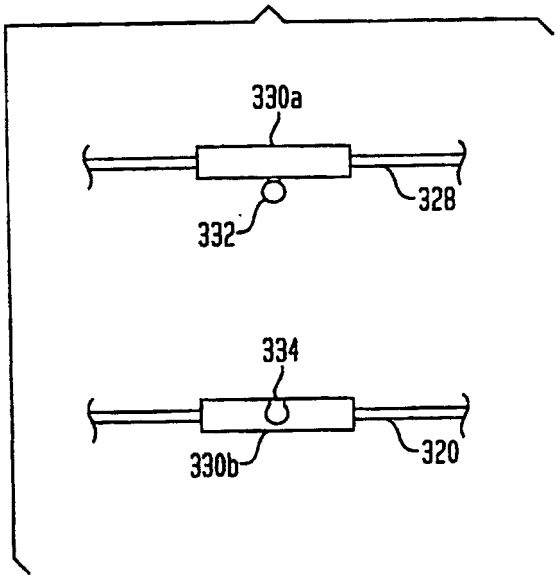


FIG. 27B

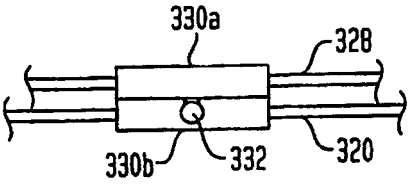


FIG. 28

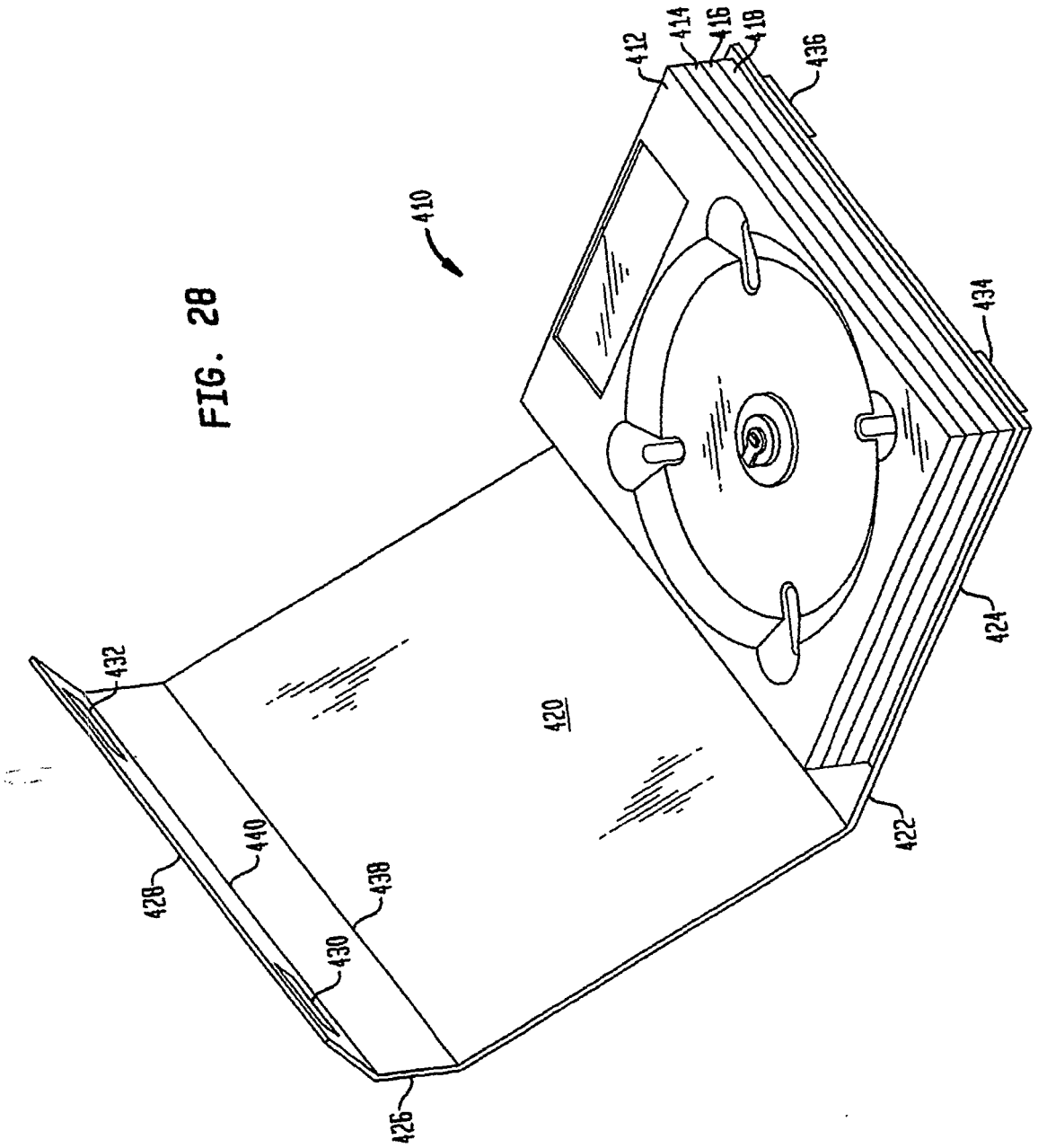


FIG. 29

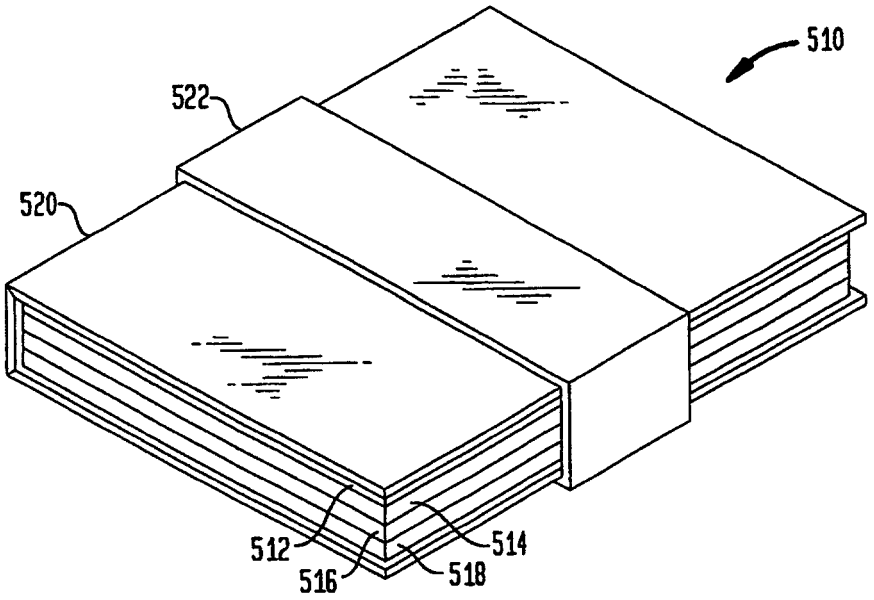


FIG. 30