US 20060289318A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0289318 A1**

GELARDI et al. (43) **Pub. Date: Dec. 28, 2006**

(54) **CLOSABLE PACKAGE FOR RETAINING MULTIPLE DISCS IN POUCH-TYPE HOLDERS OR DISC-RECEIVING TRAYS**

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(21) Appl. No.: **11/424,820**

(22) Filed: **Jun. 16, 2006**

Related U.S. Application Data

(60) Provisional application No. 60/691,356, filed on Jun. 17, 2005. Provisional application No. 60/693,563, filed on Jun. 24, 2005. Provisional application No. 60/694,421, filed on Jun. 27, 2005.

Publication Classification

(51) **Int. Cl.**
B65D 85/30 (2006.01)
B65D 85/57 (2006.01)

(52) **U.S. Cl.** **206/308.1**; 206/303; 206/311

(57) **ABSTRACT**

Packages are disclosed for storing multiple disc-like recording media in trays having optional pouch-type holders, and with means for retaining the media within the trays.

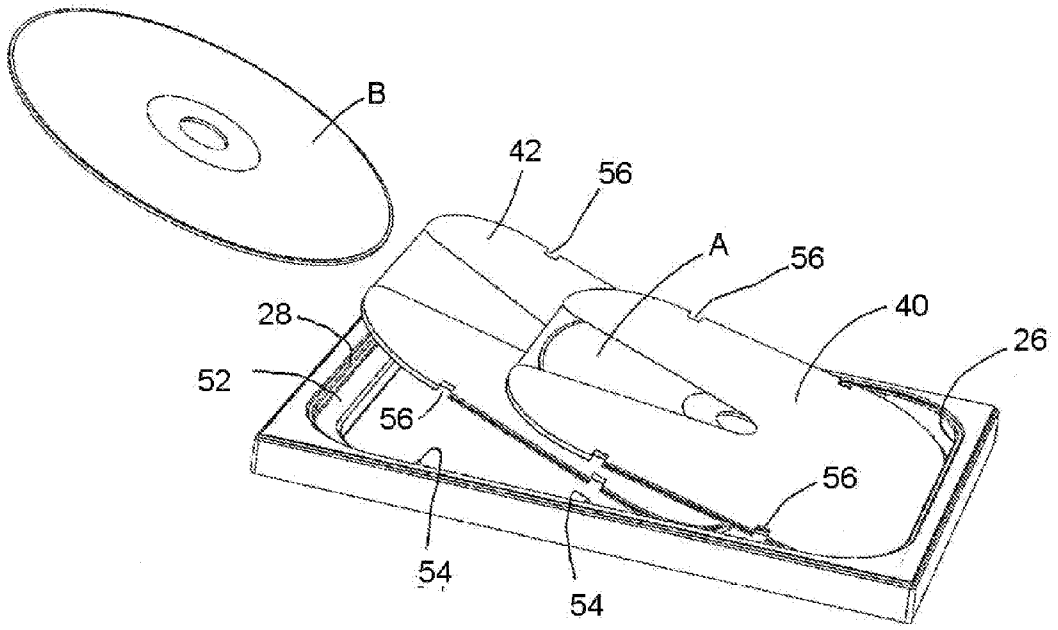

FIG. 1

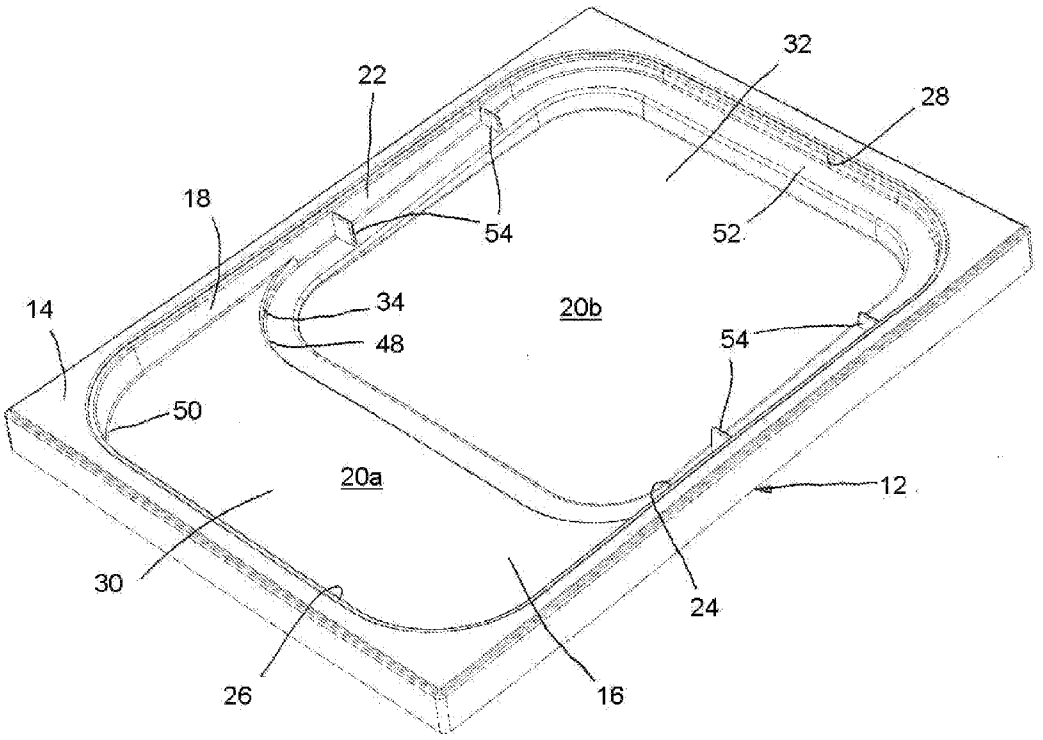

FIG. 2

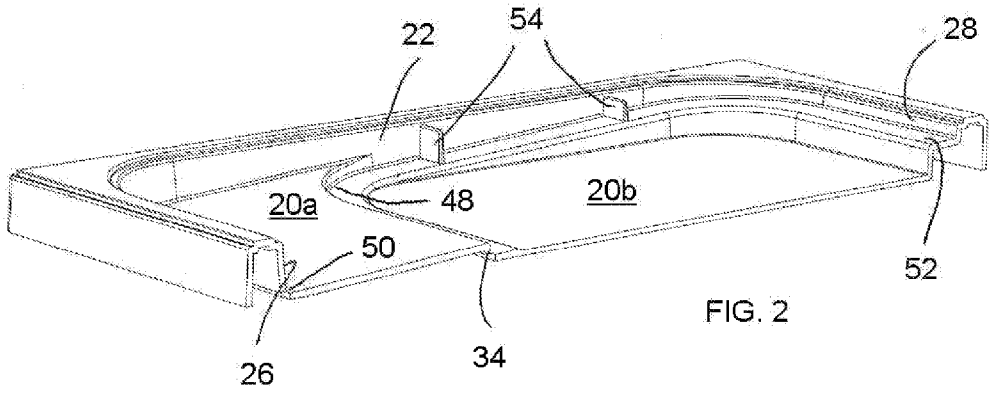

FIG. 2

FIG. 3

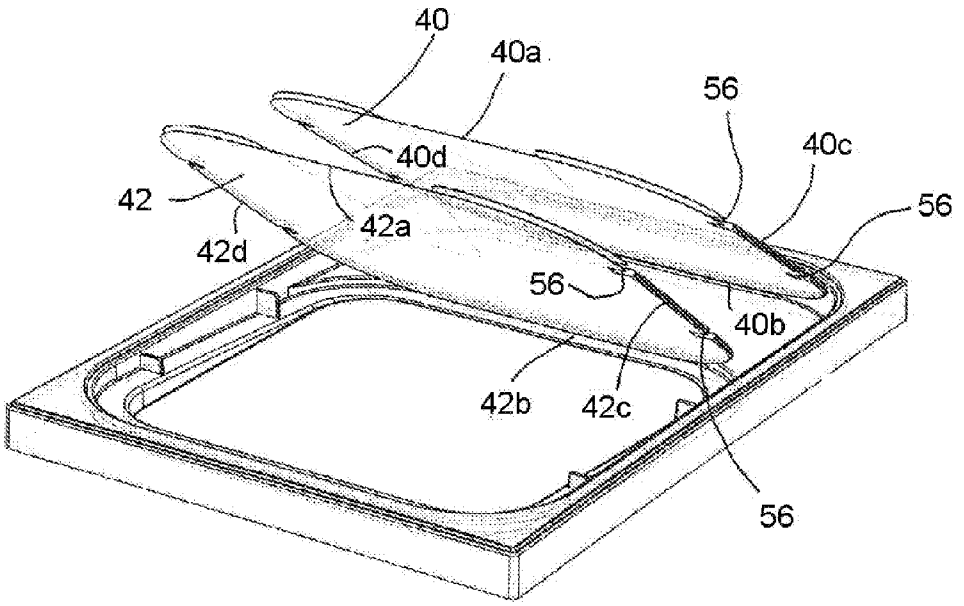

FIG. 4

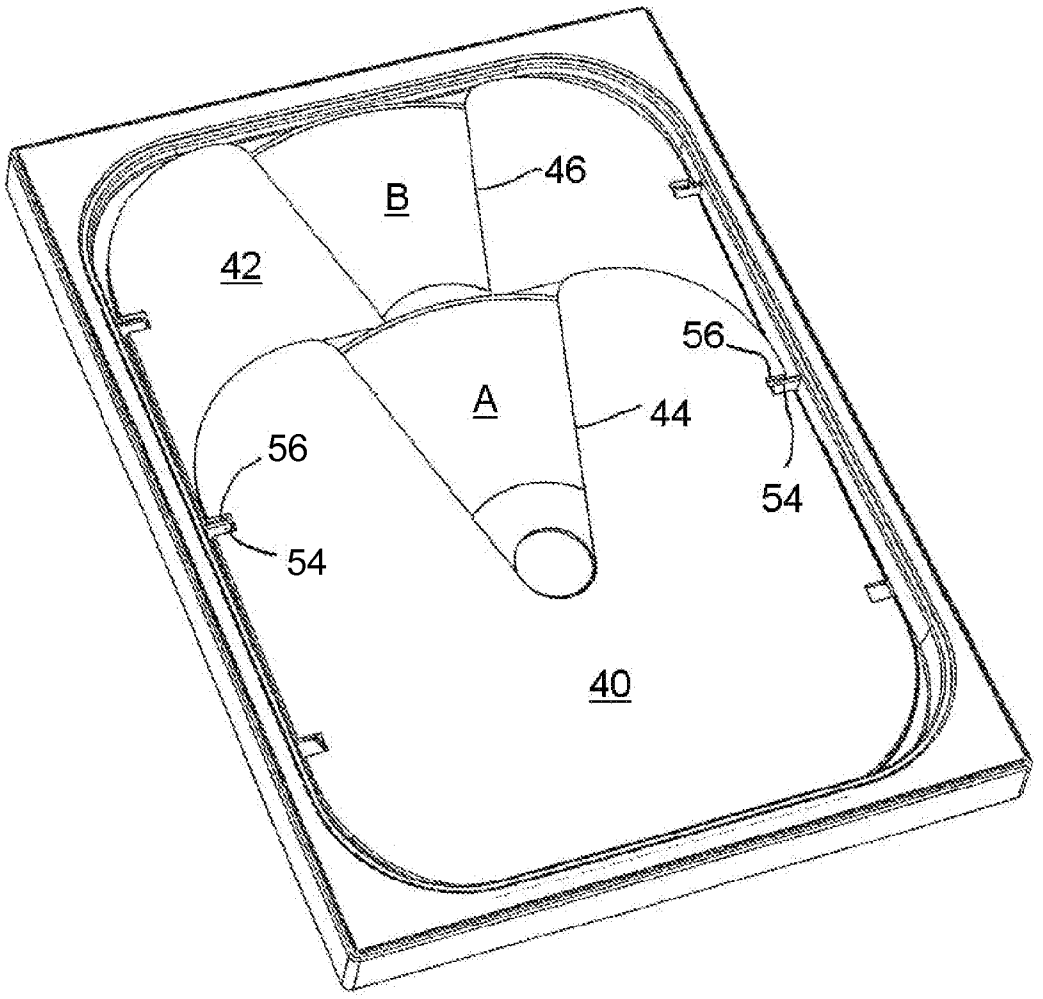

FIG. 5

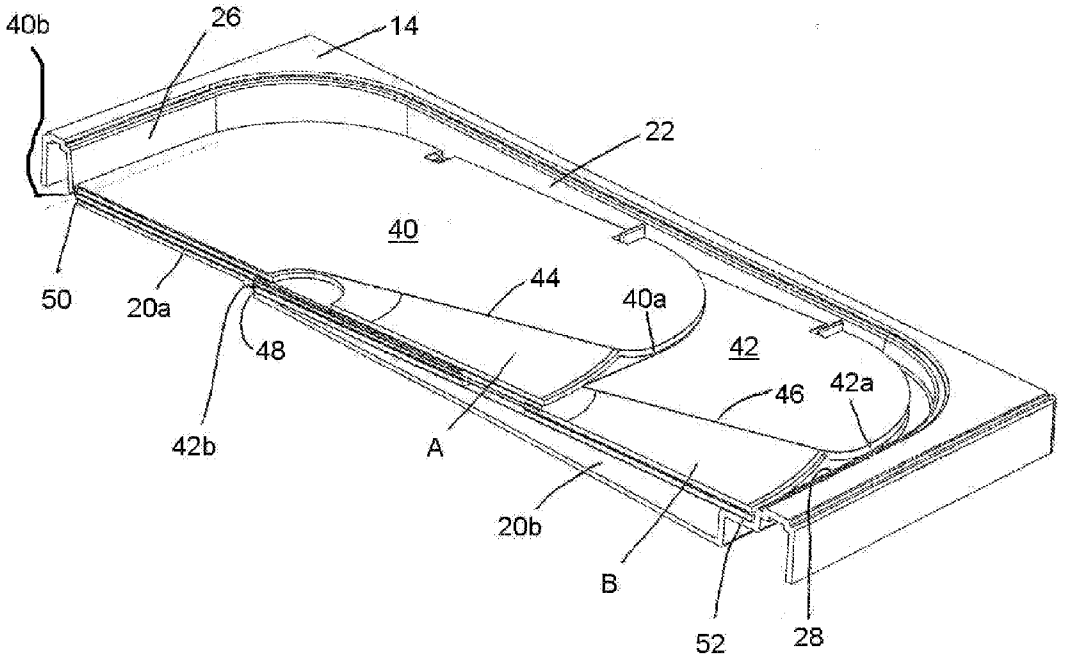

FIG. 6

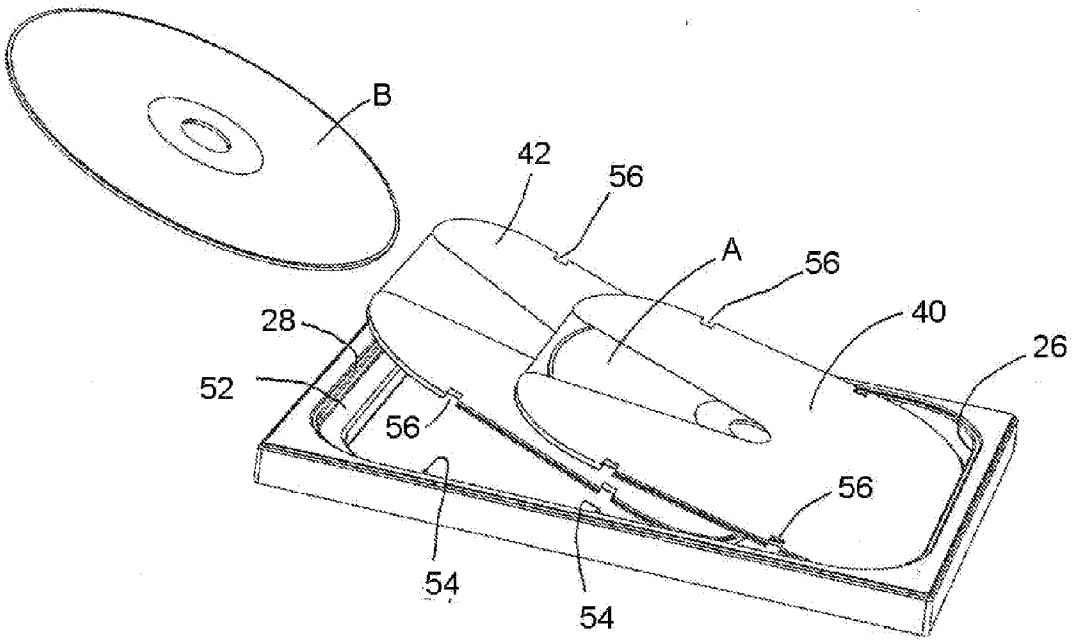

FIG. 7

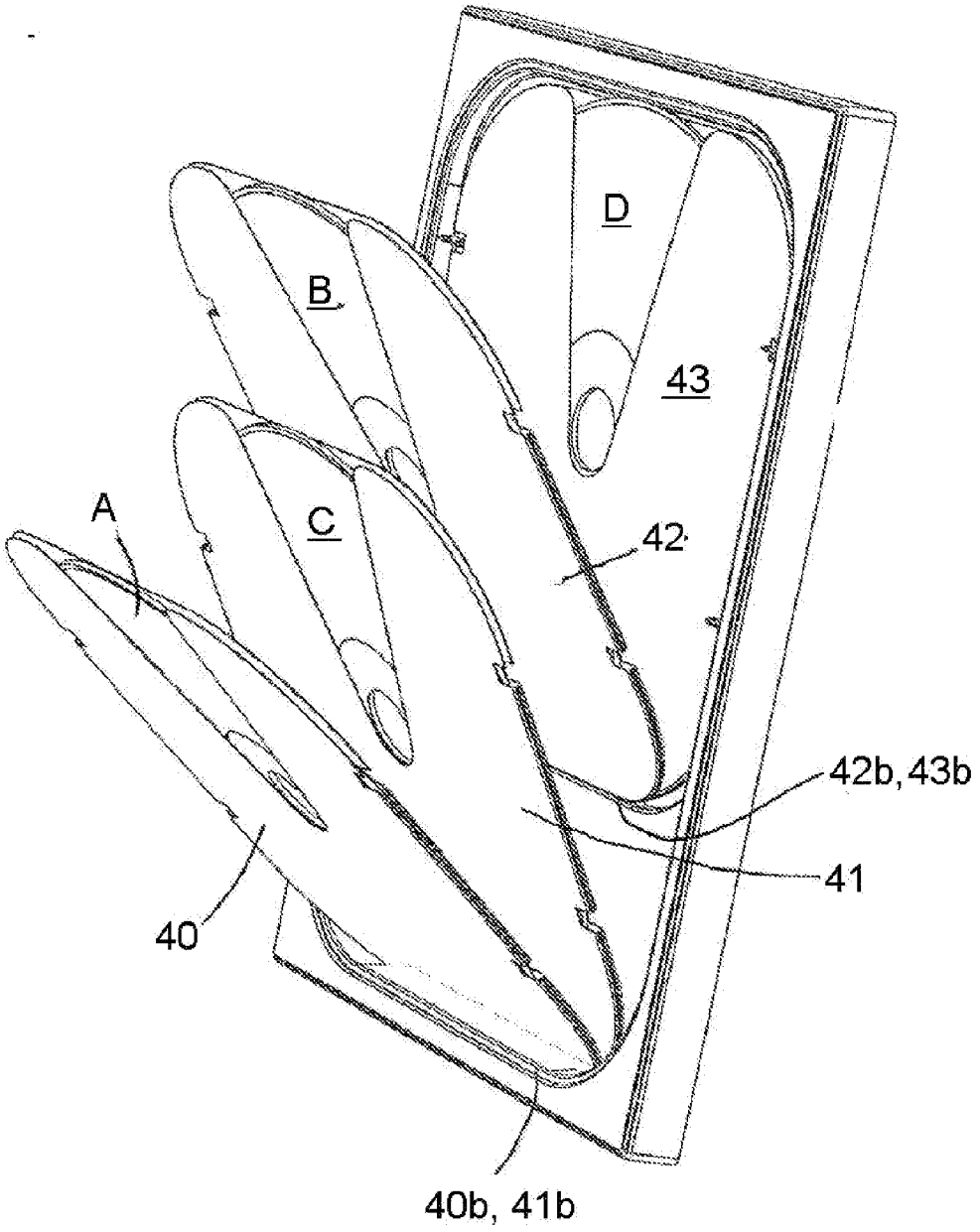

FIG. 8

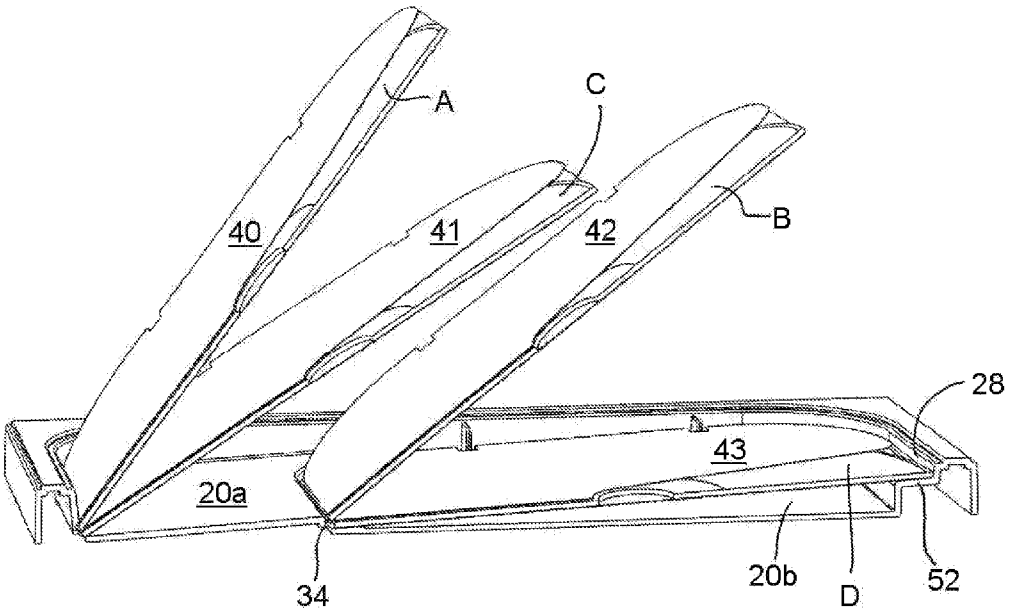

FIG. 9

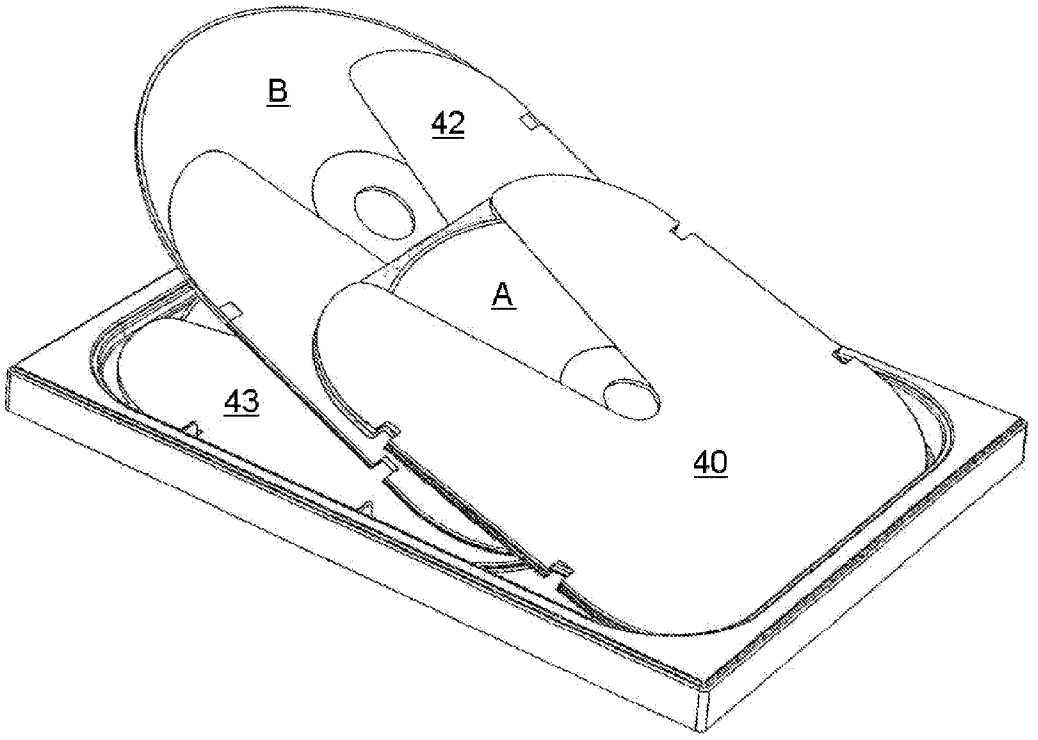

FIG. 10

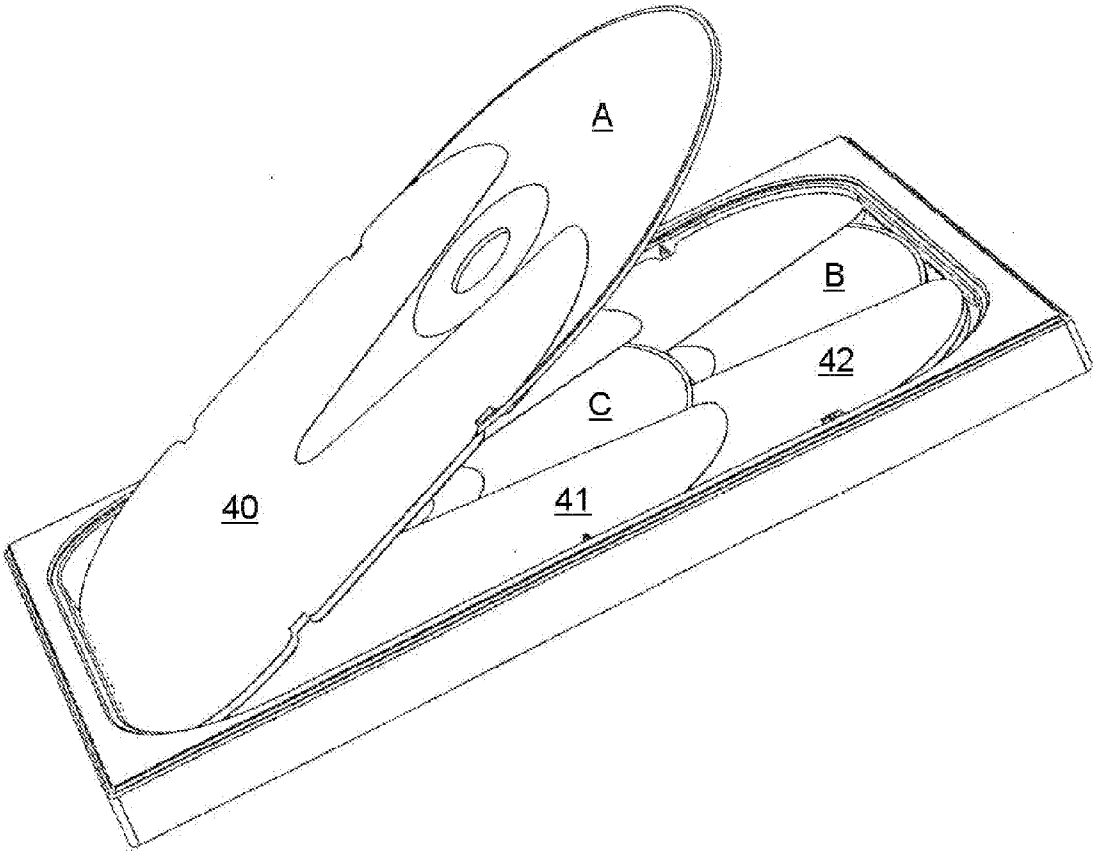

FIG. 11

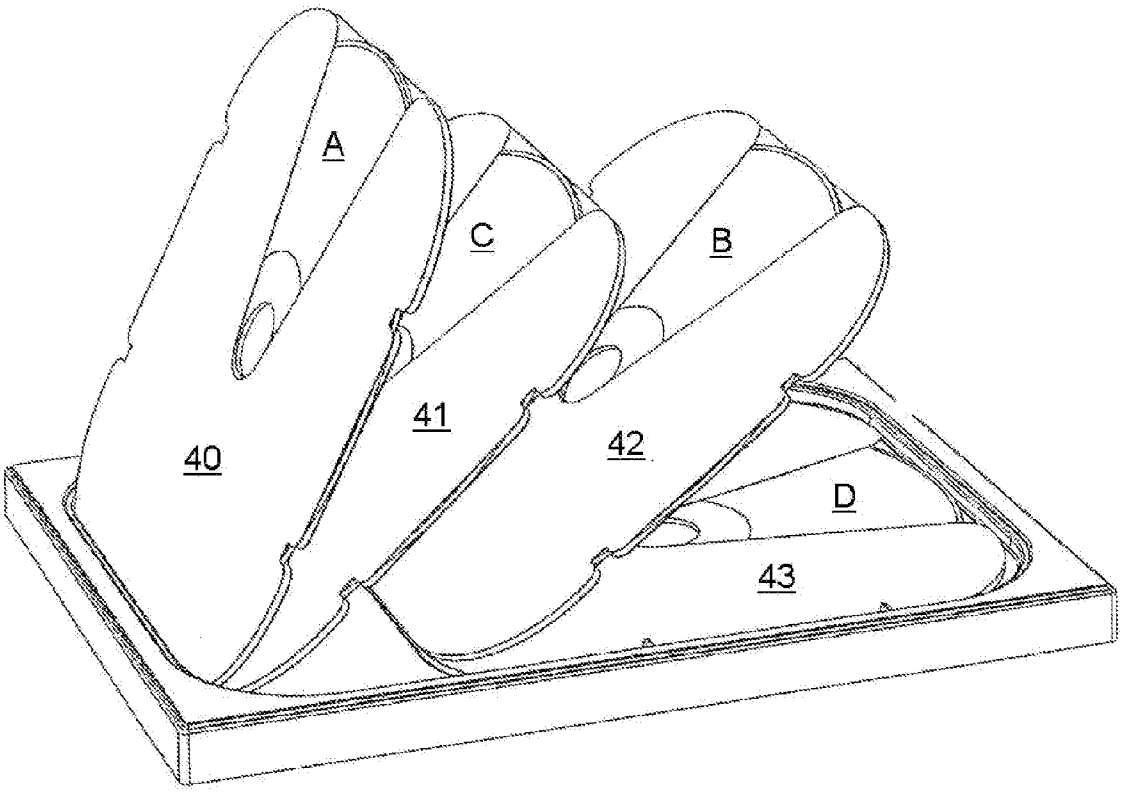

FIG. 12

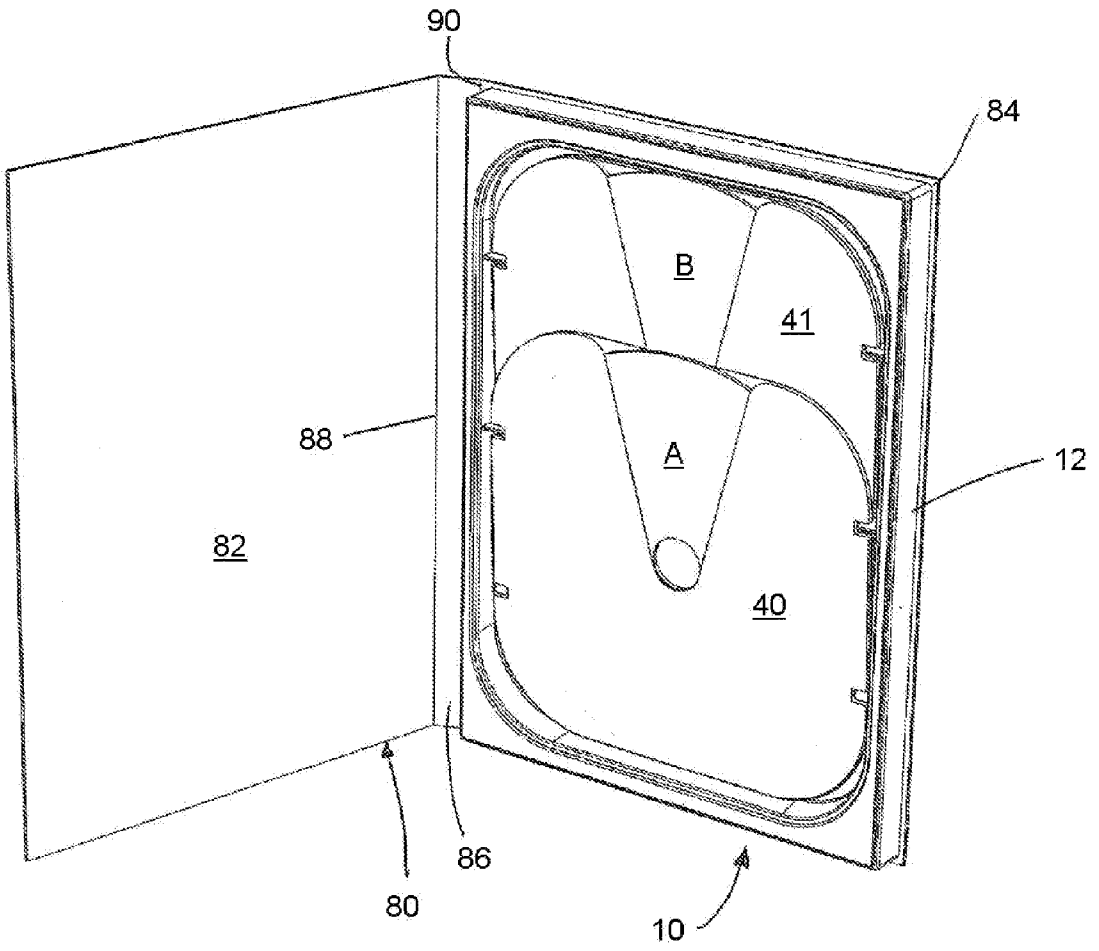

FIG. 13

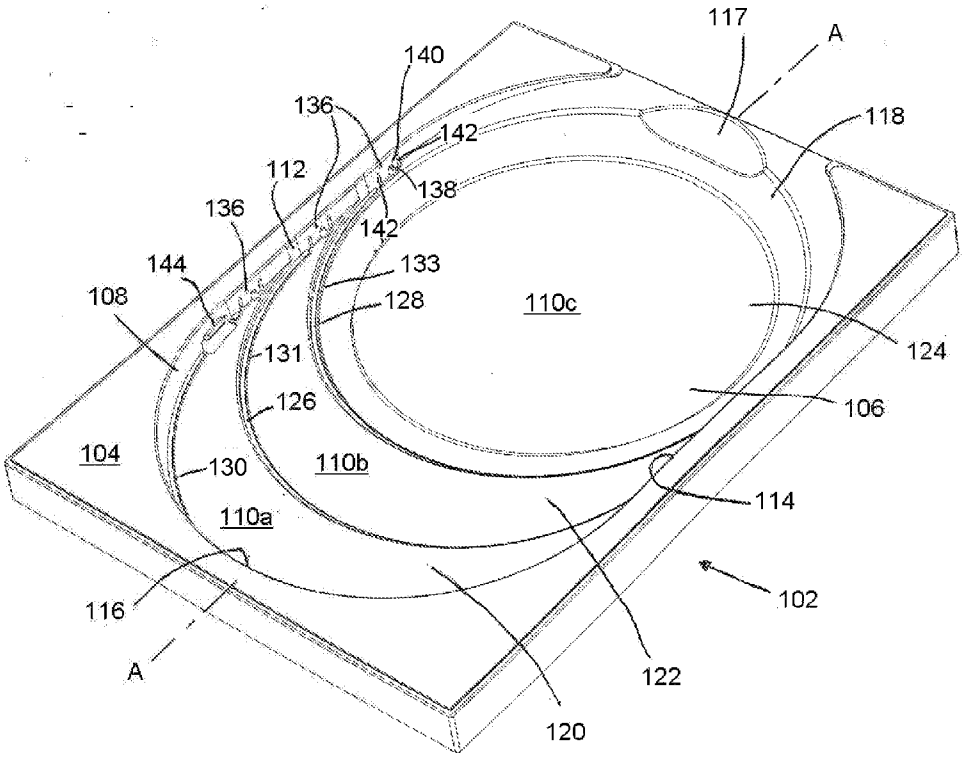
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FIG. 14

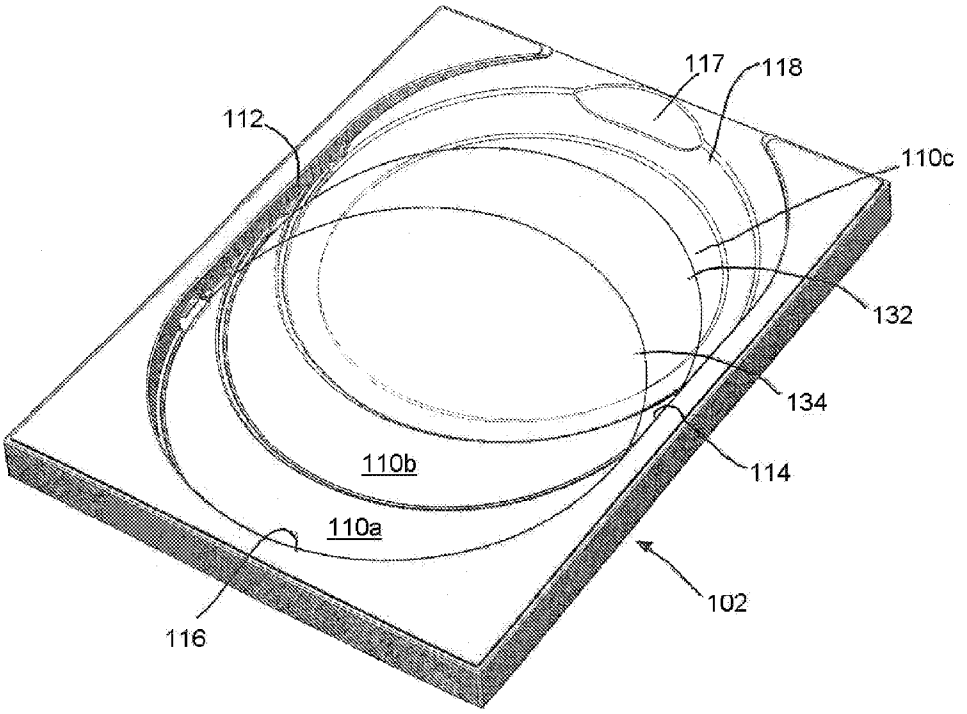

FIG. 15

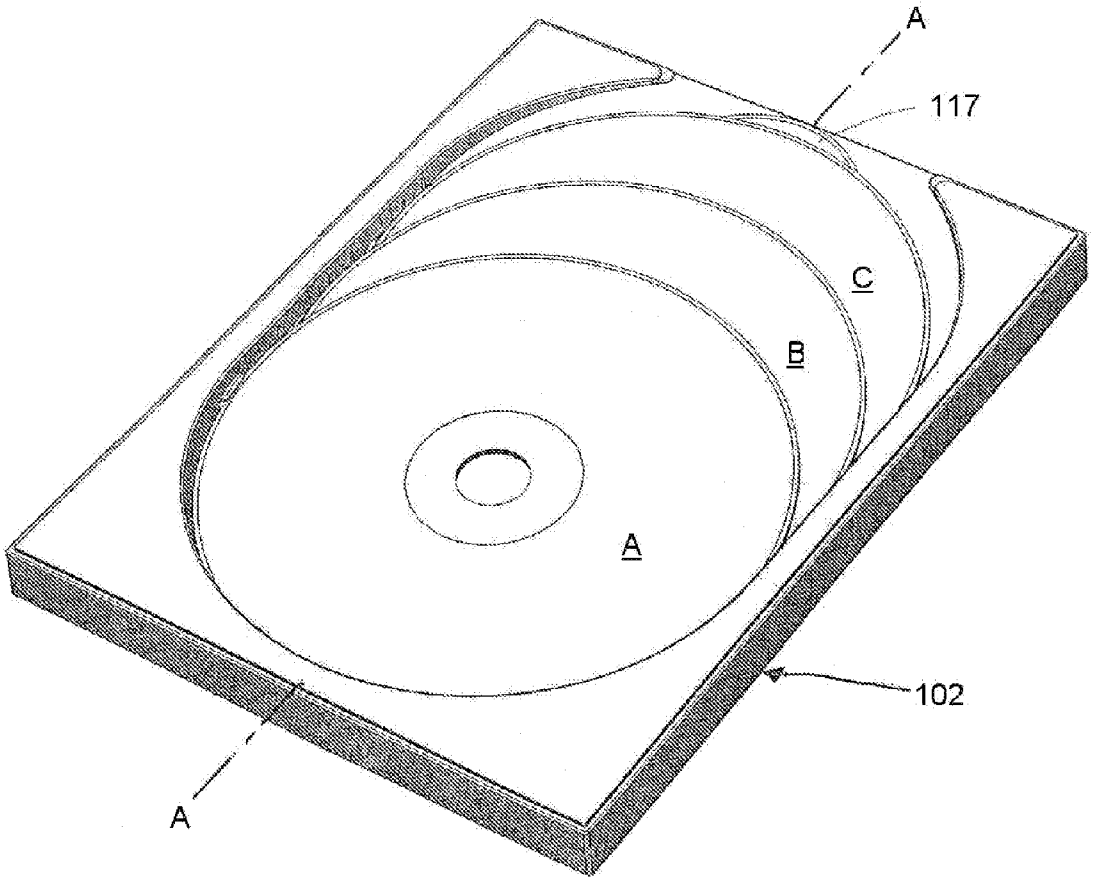

FIG. 16

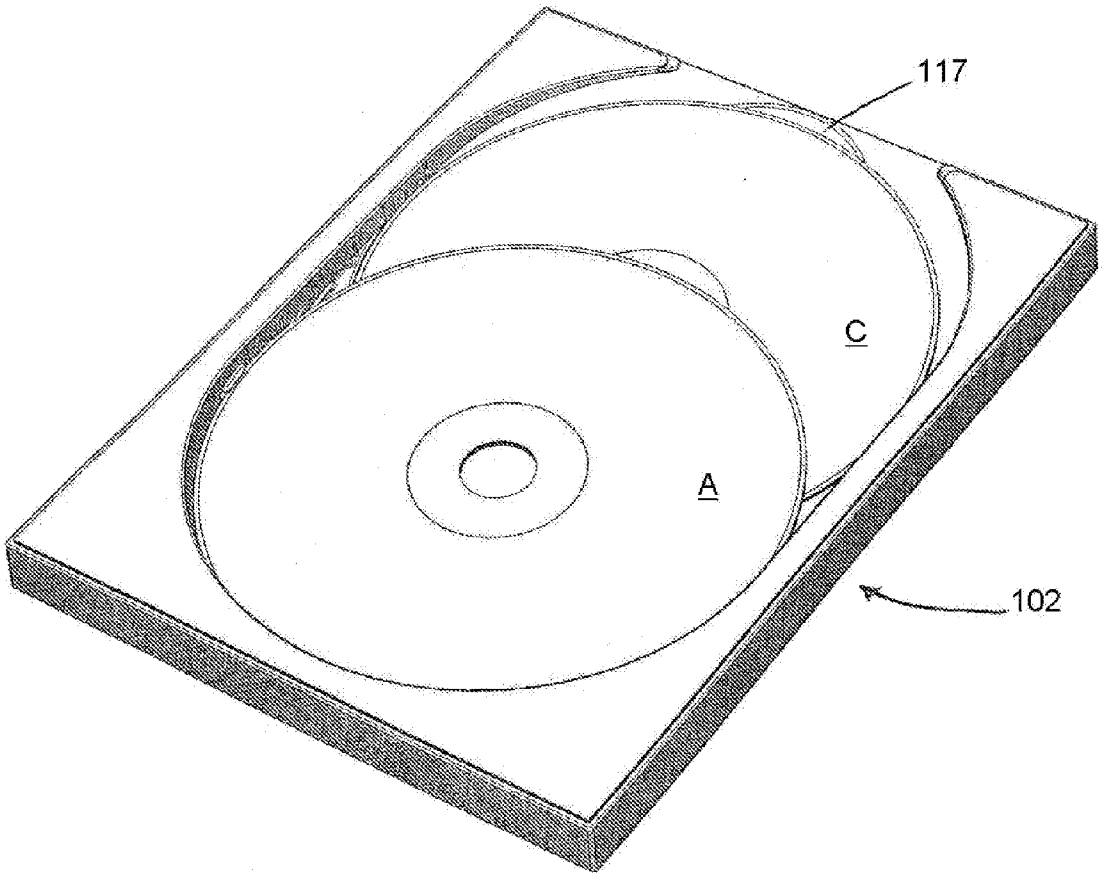

FIG. 17

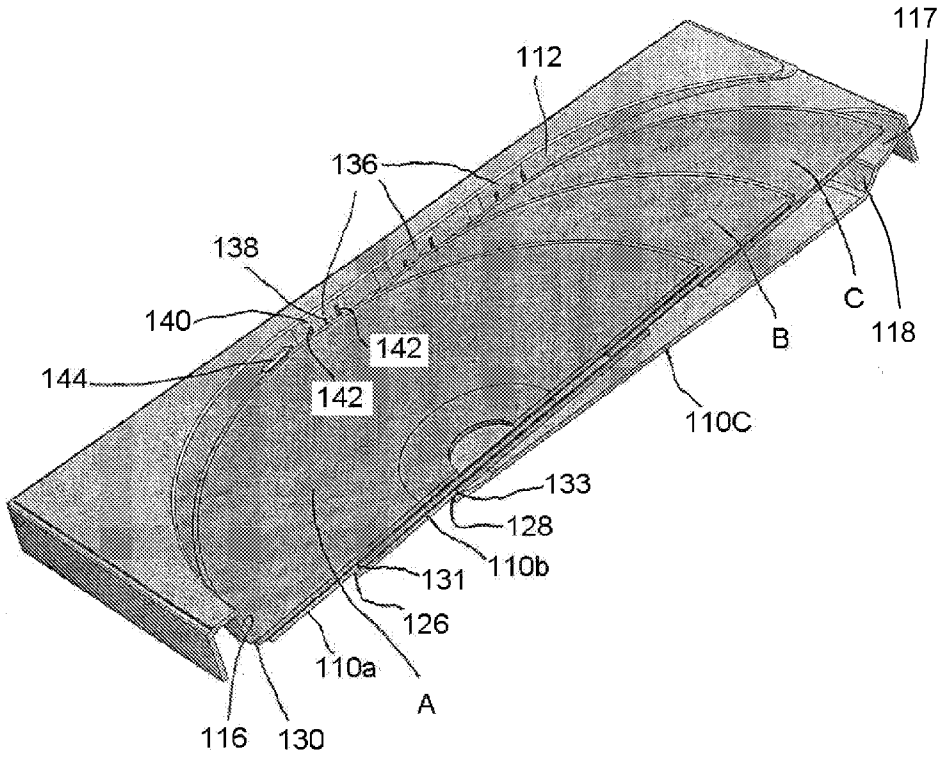
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FIG. 18

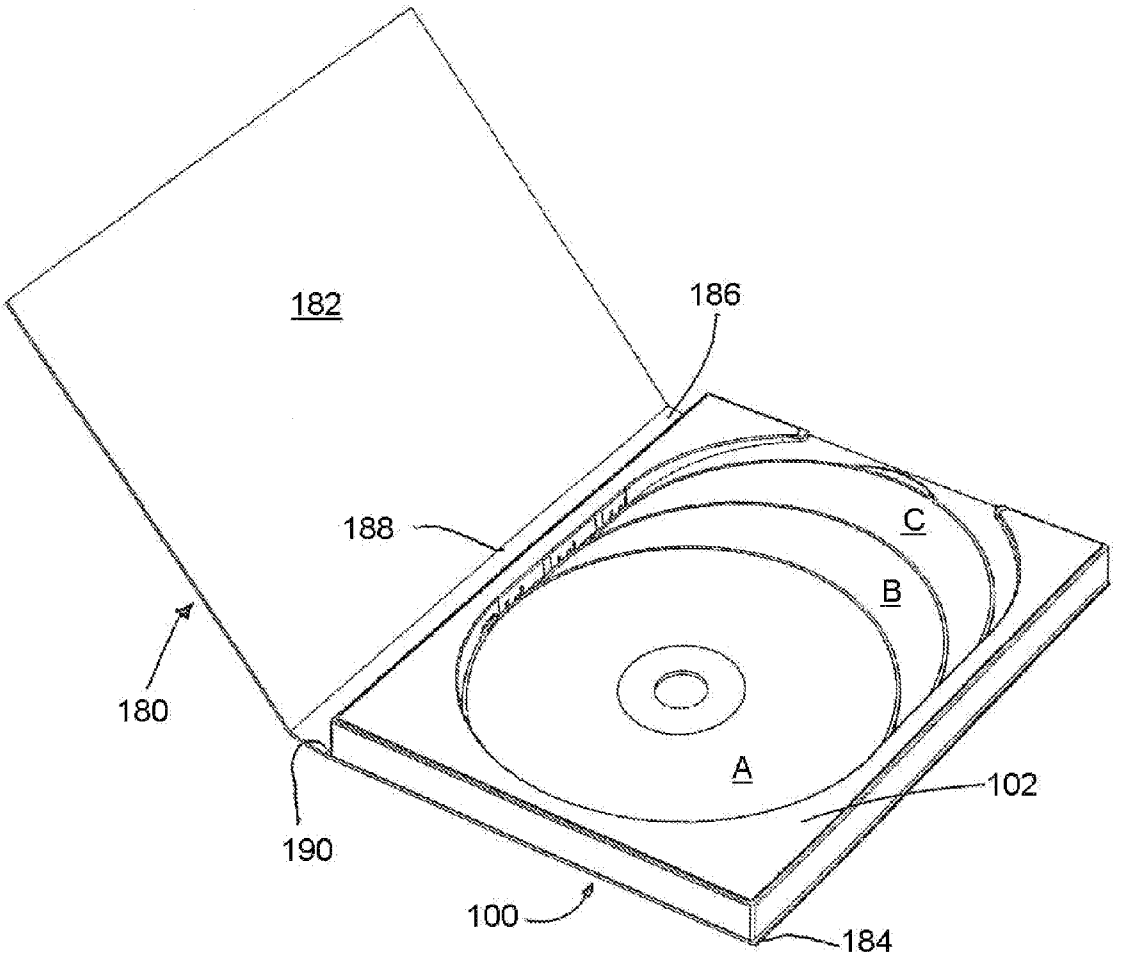

FIG. 19

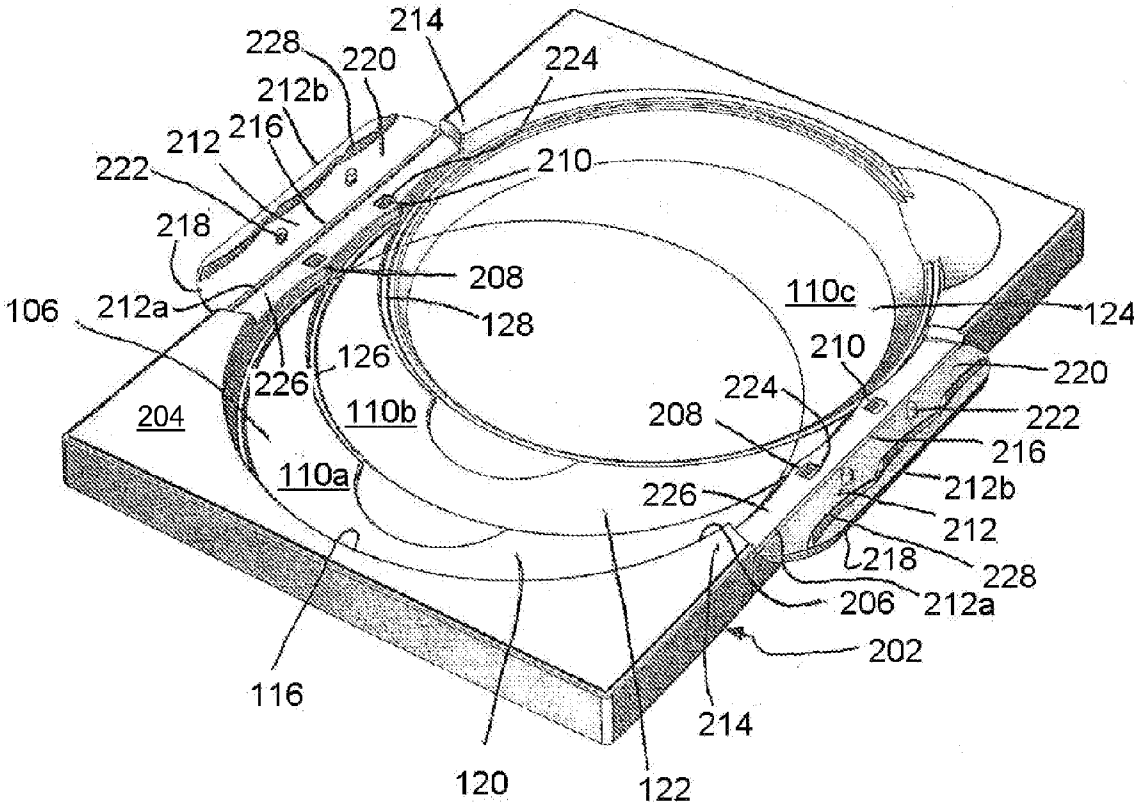
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FIG. 20

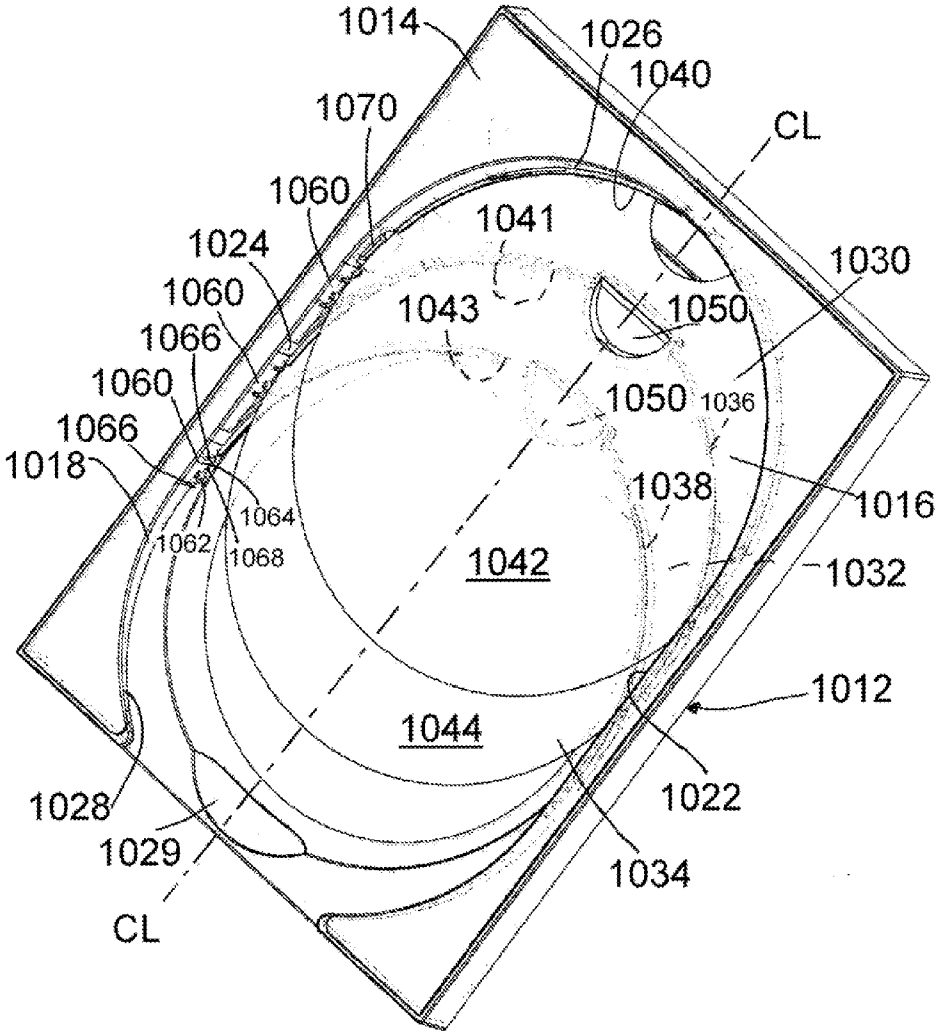
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FIG. 21

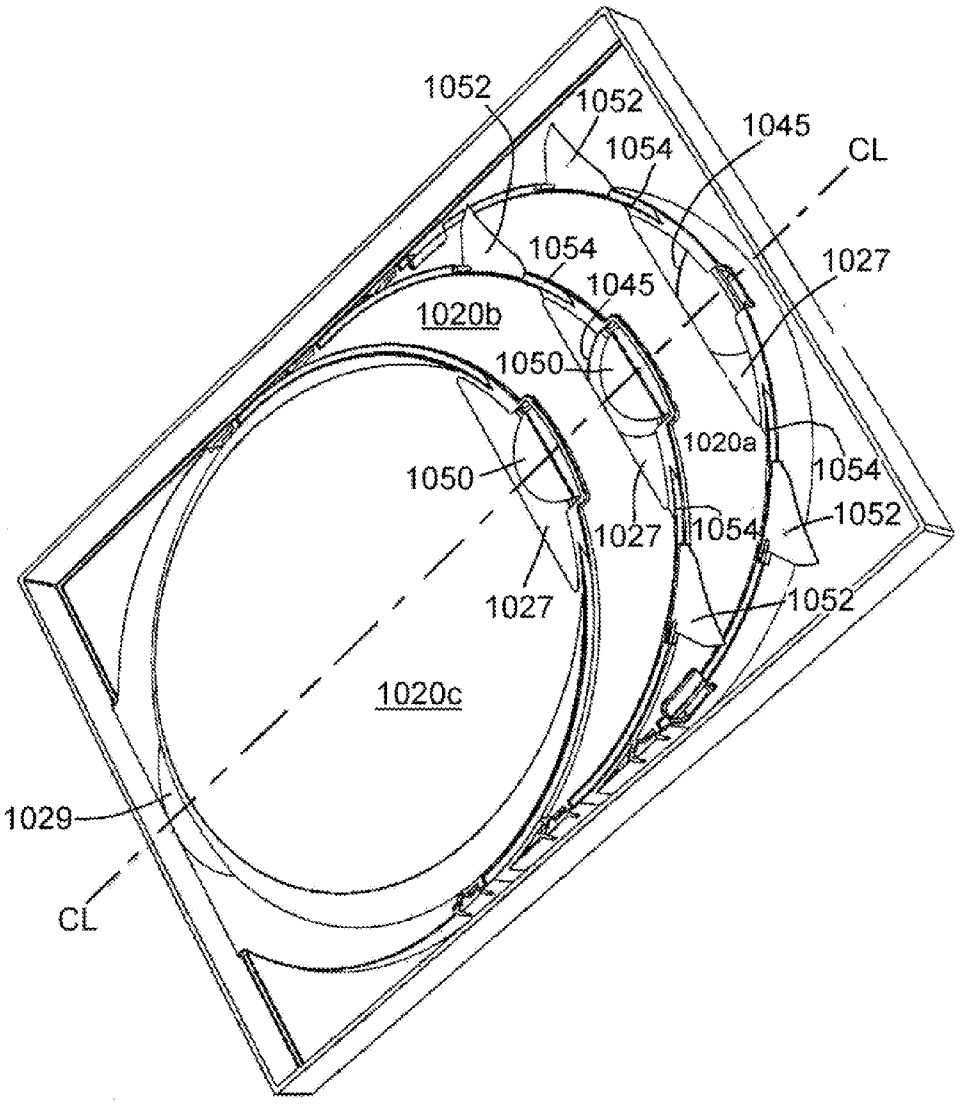
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FIG. 22

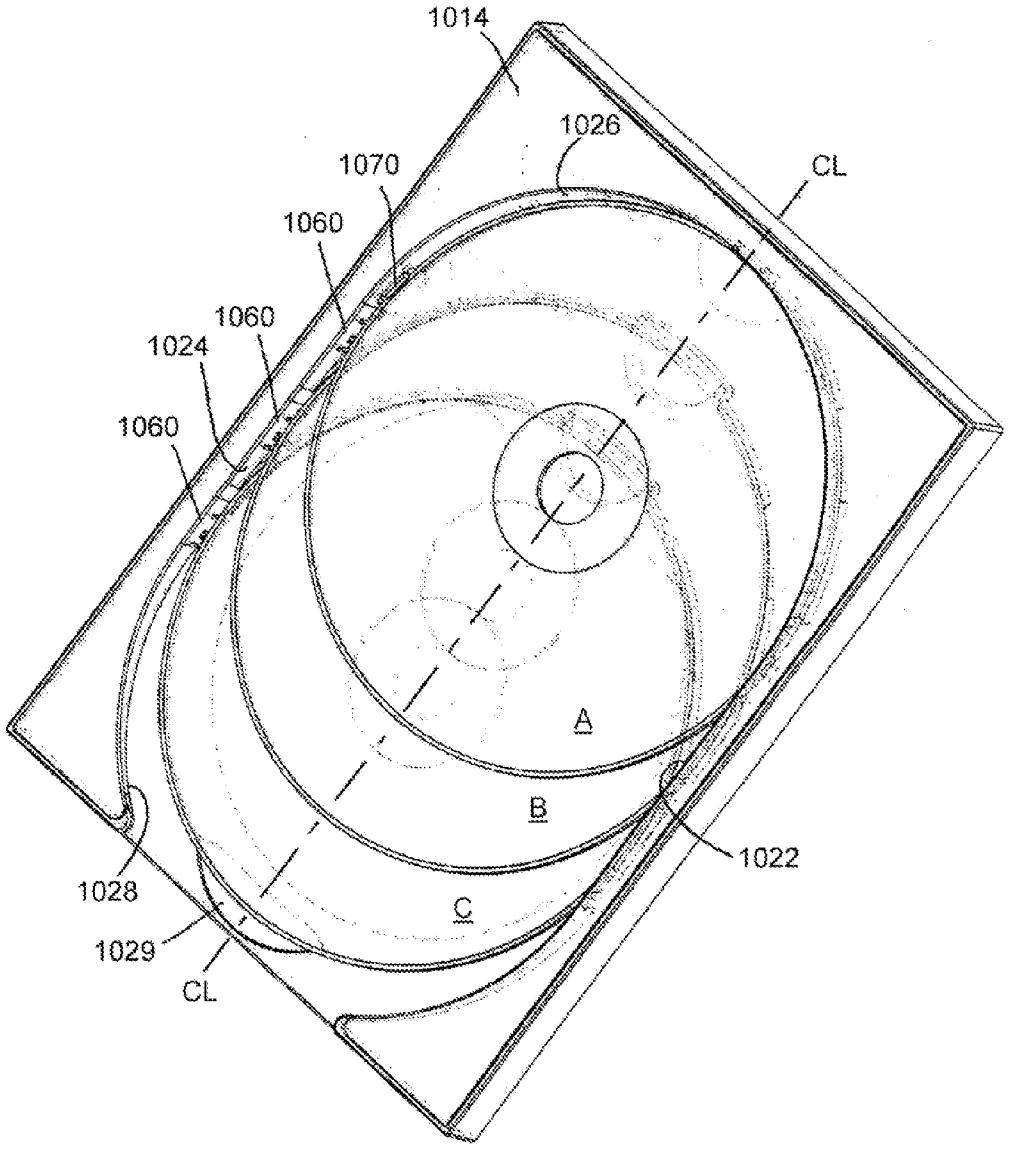
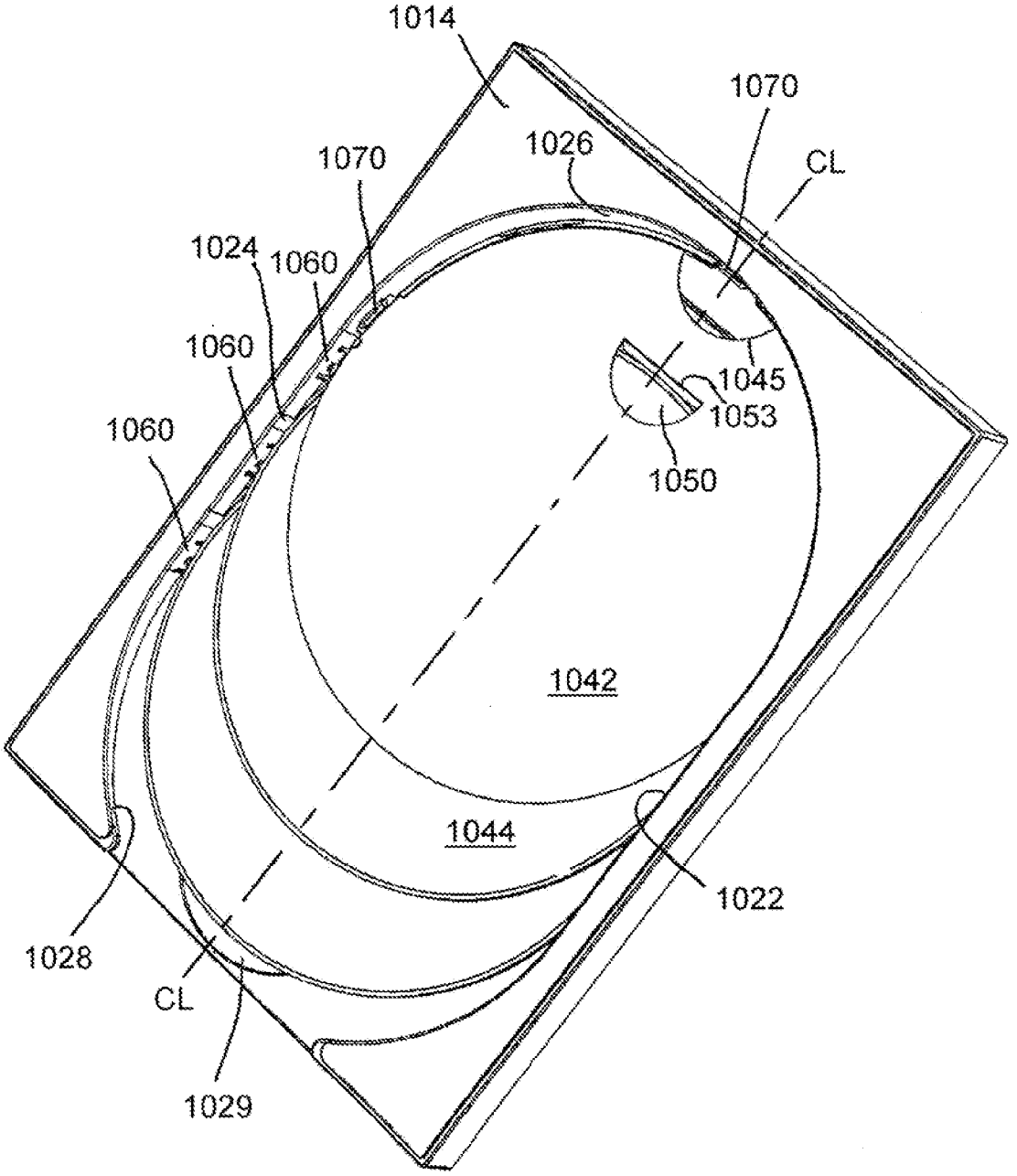


FIG. 23


1014
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CL
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FIG. 24

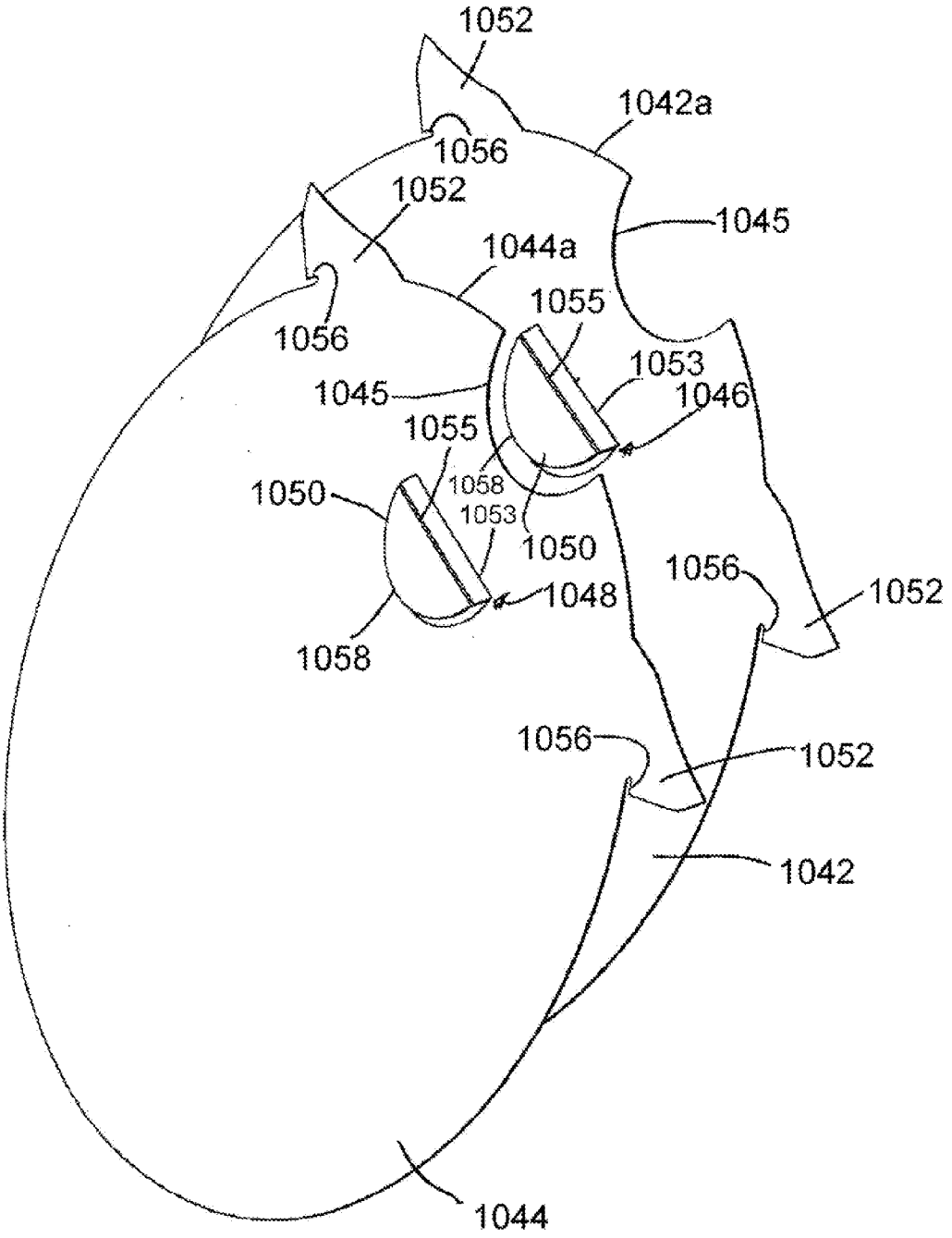
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FIG. 25

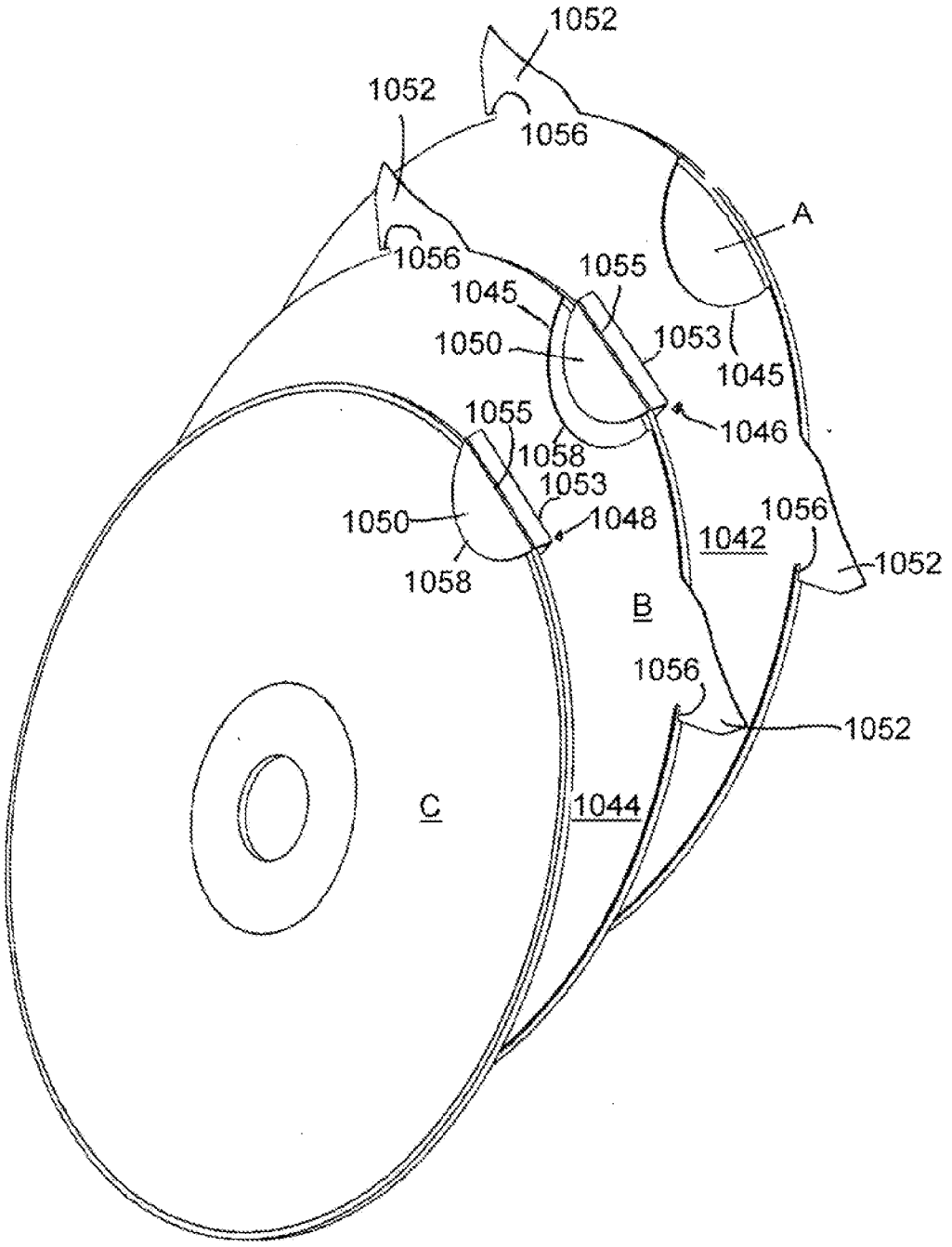
1052
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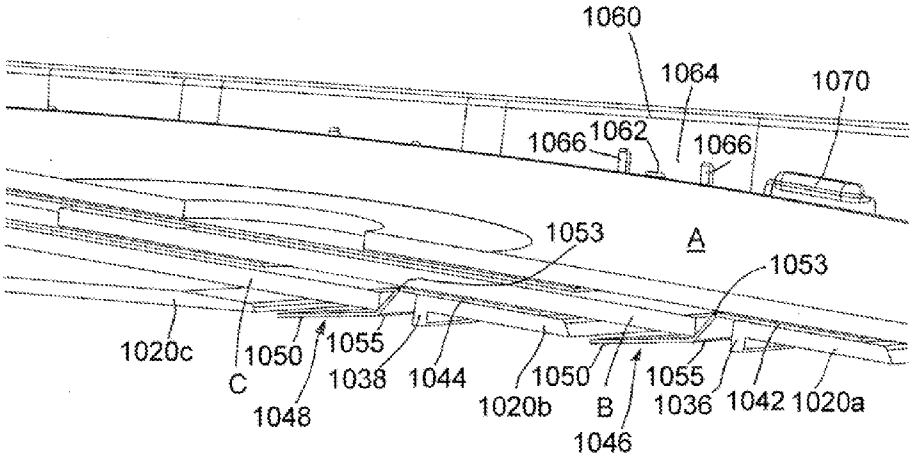
FIG. 26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A
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FIG. 27

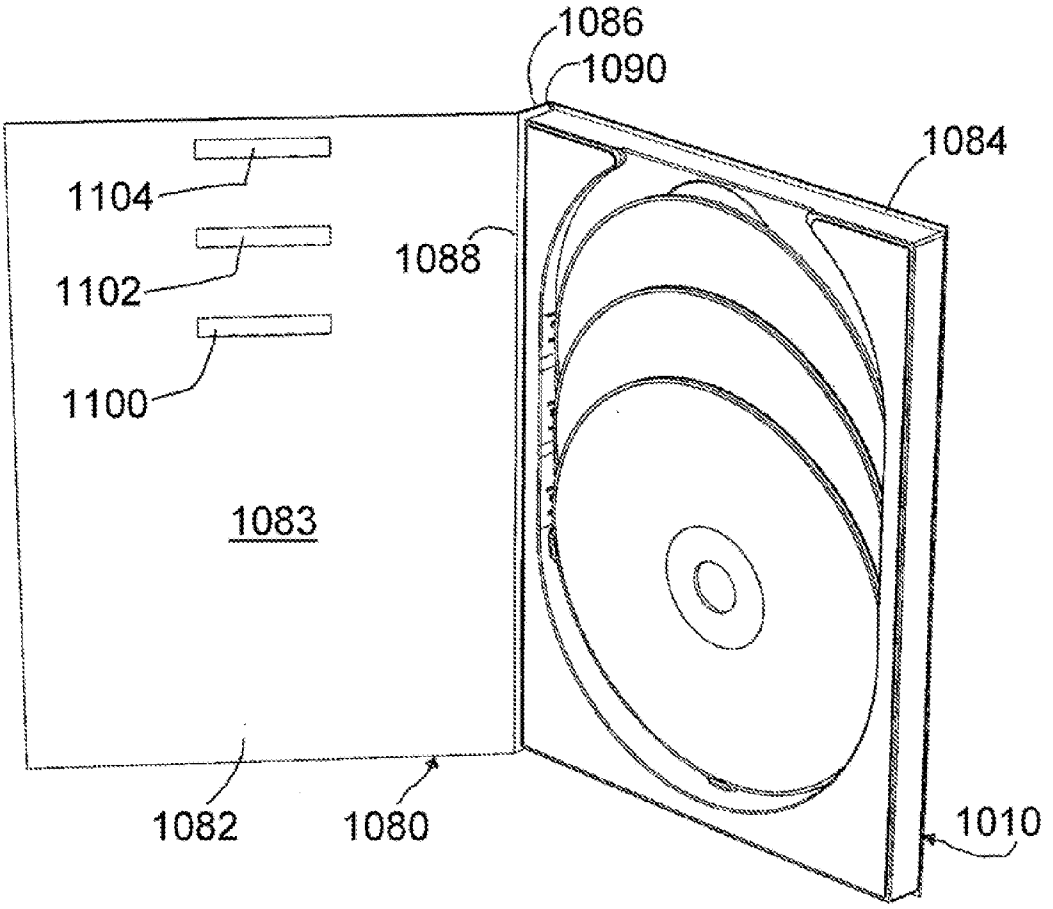

FIG. 28

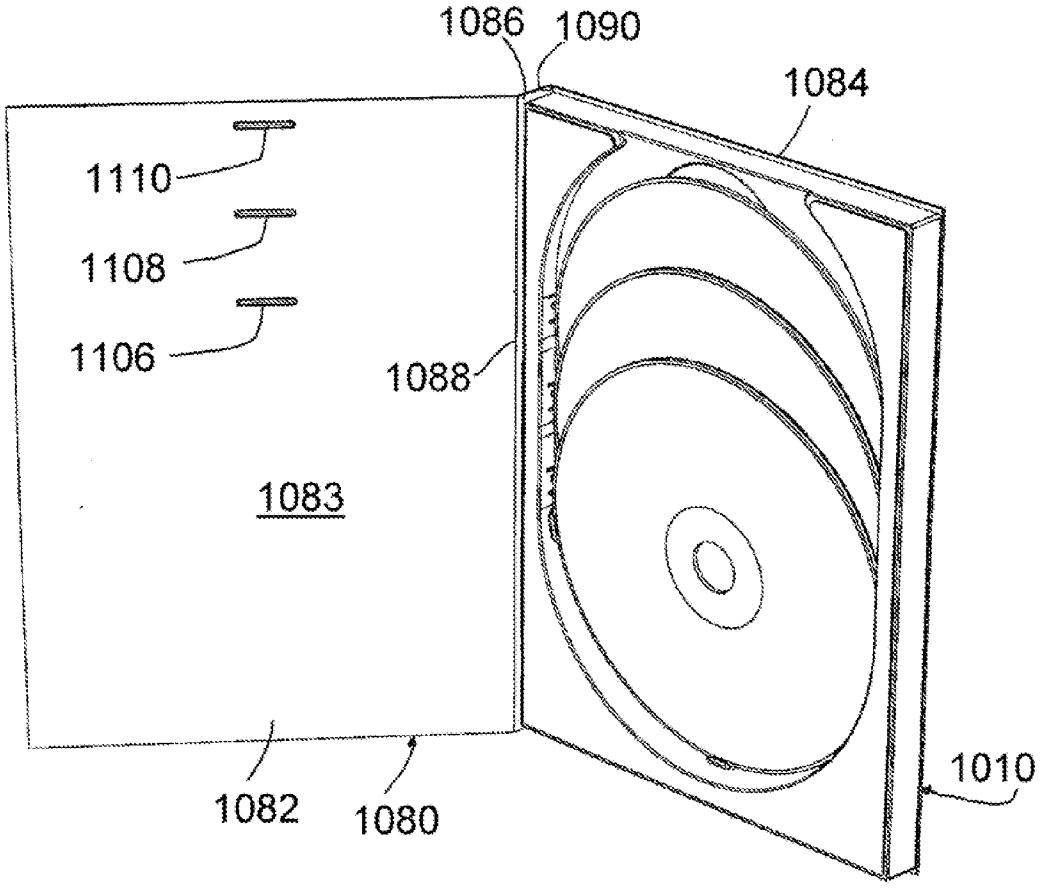

FIG. 29

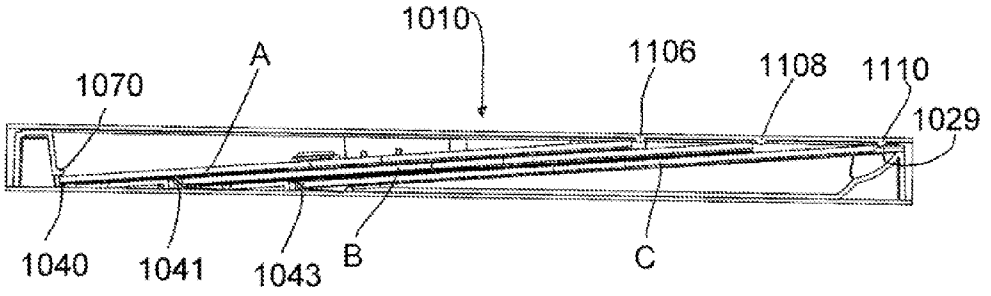

FIG. 30

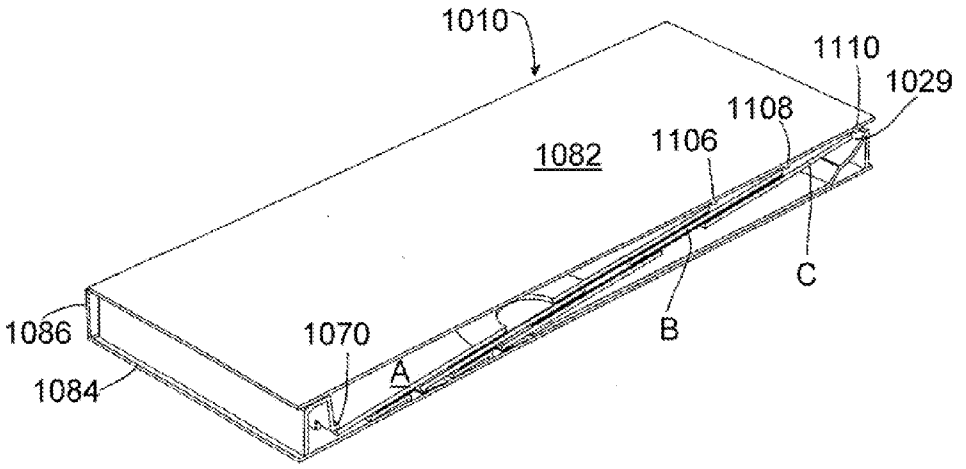

FIG. 31

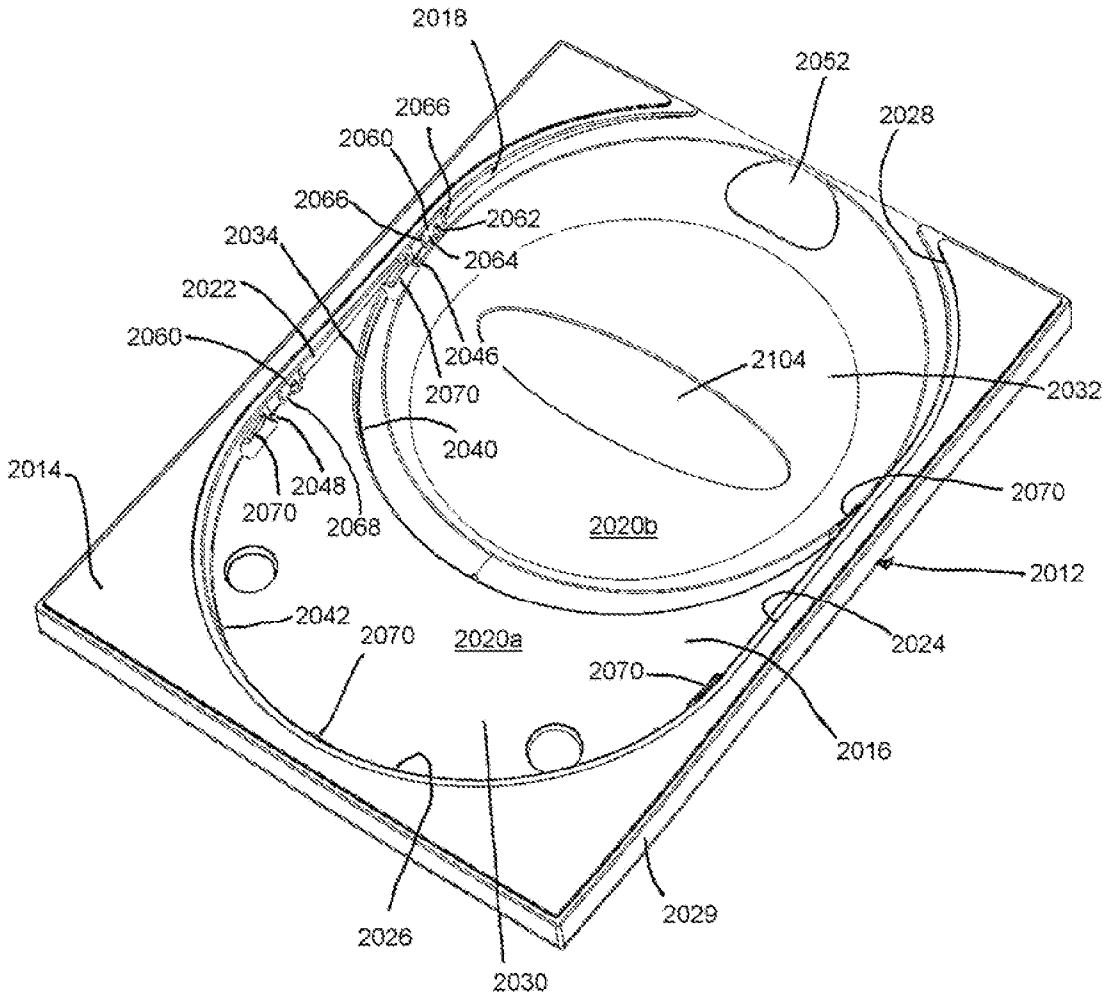
2018
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FIG. 32

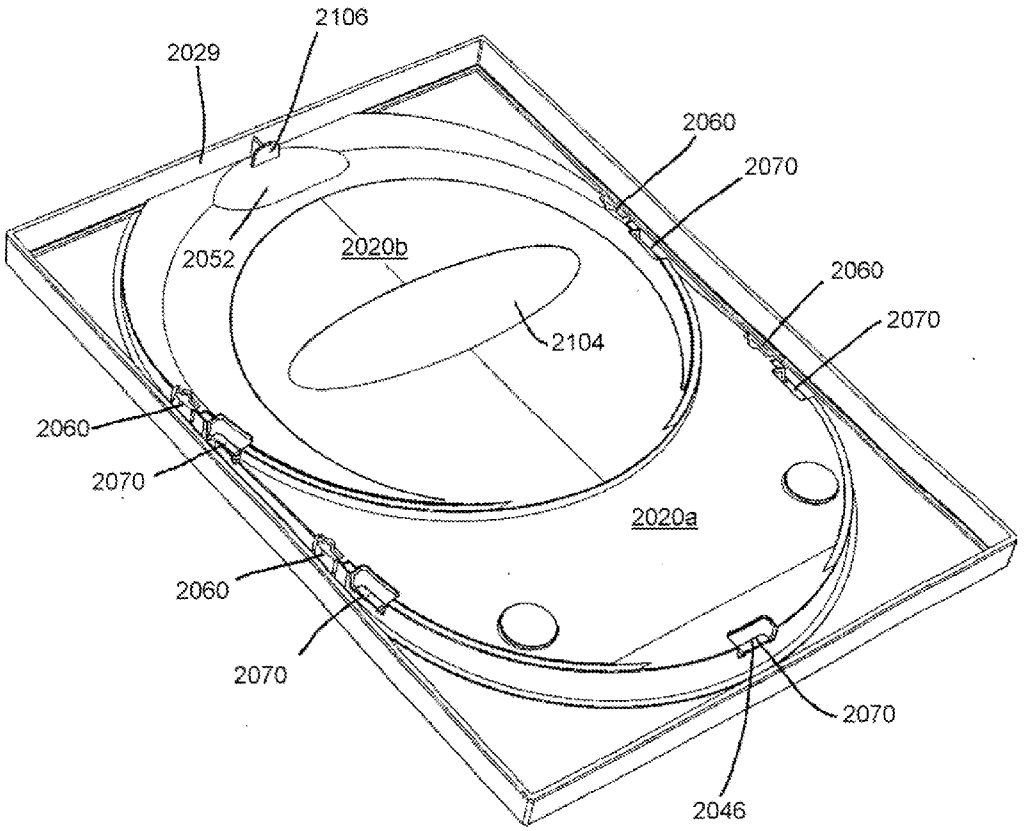
2106
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FIG. 33

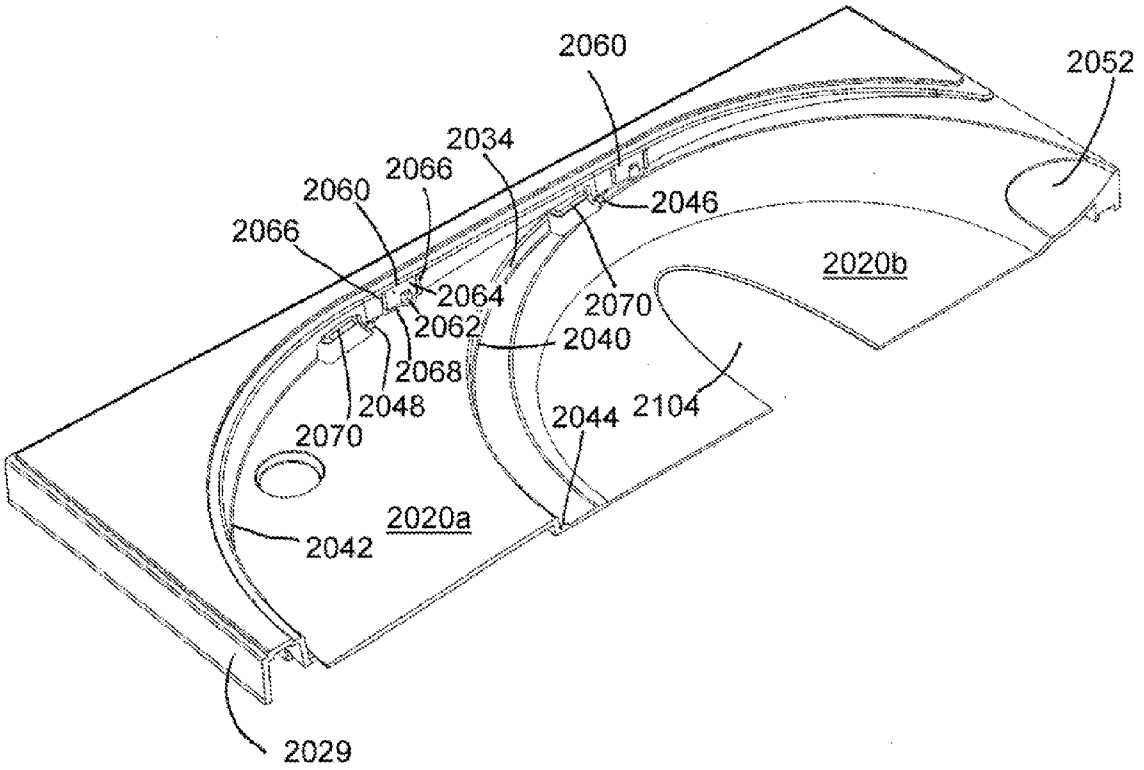
2060
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FIG. 34

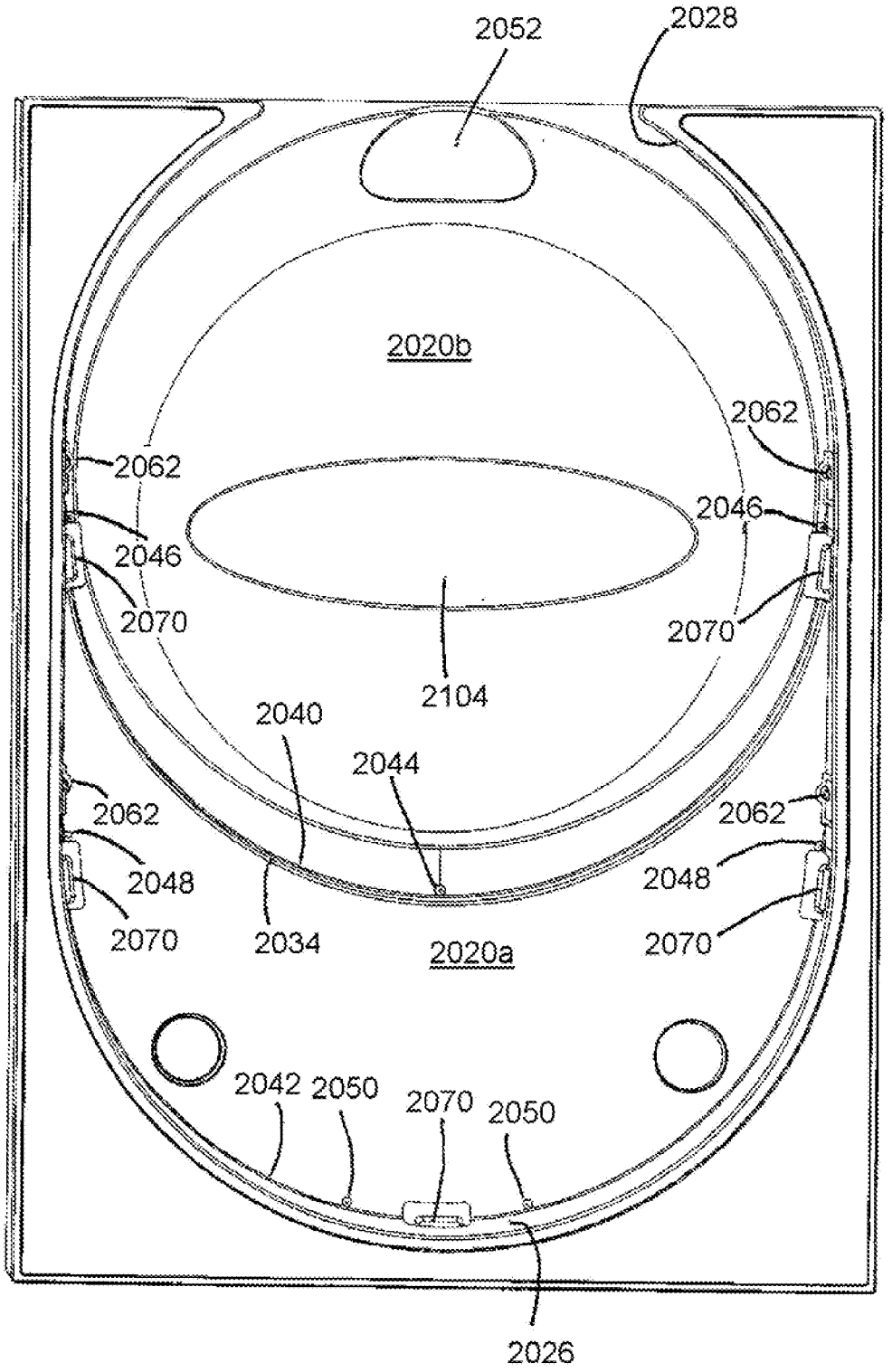
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FIG. 35

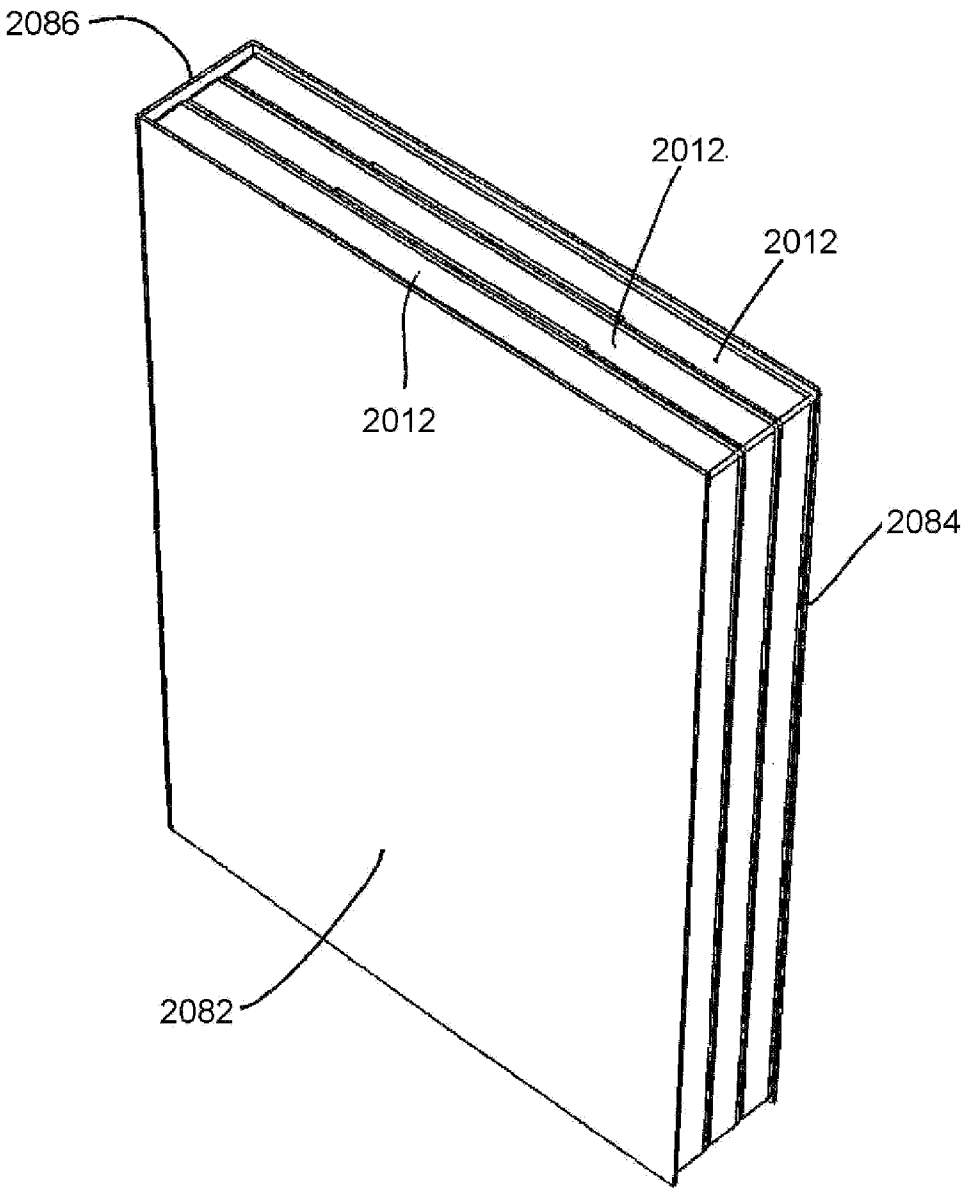

FIG. 36

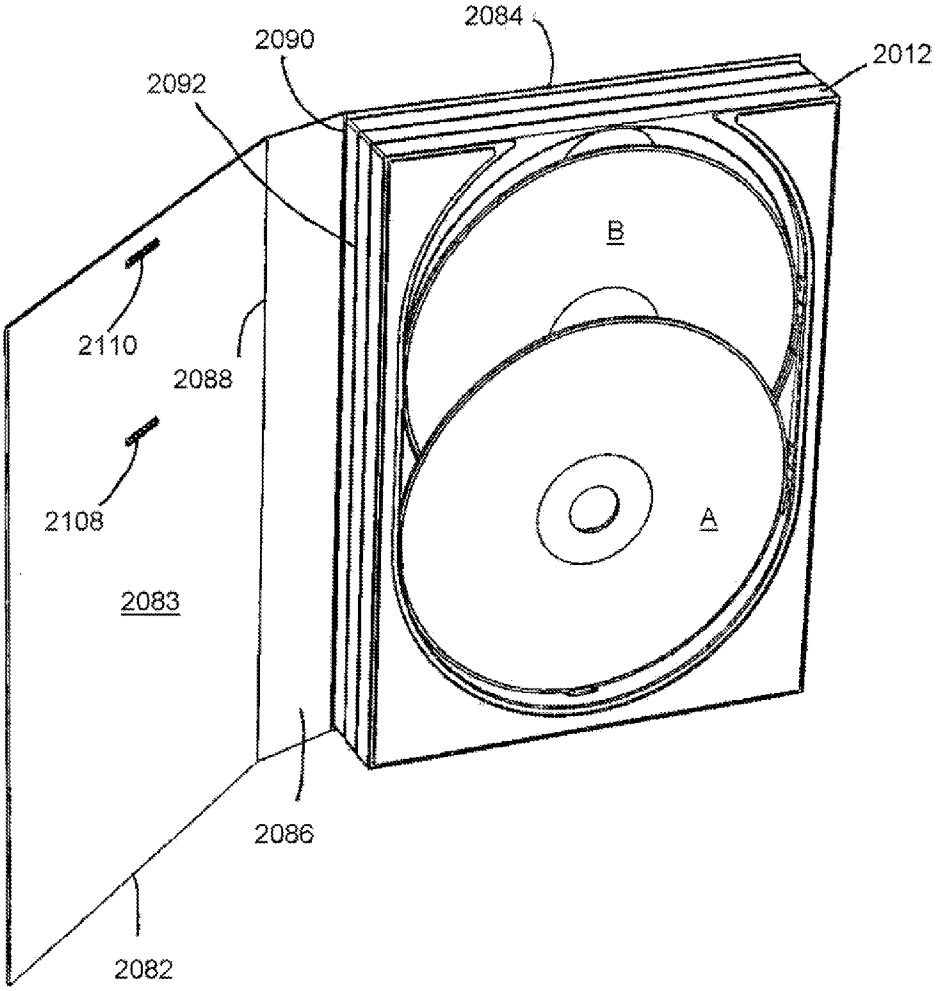

FIG. 37

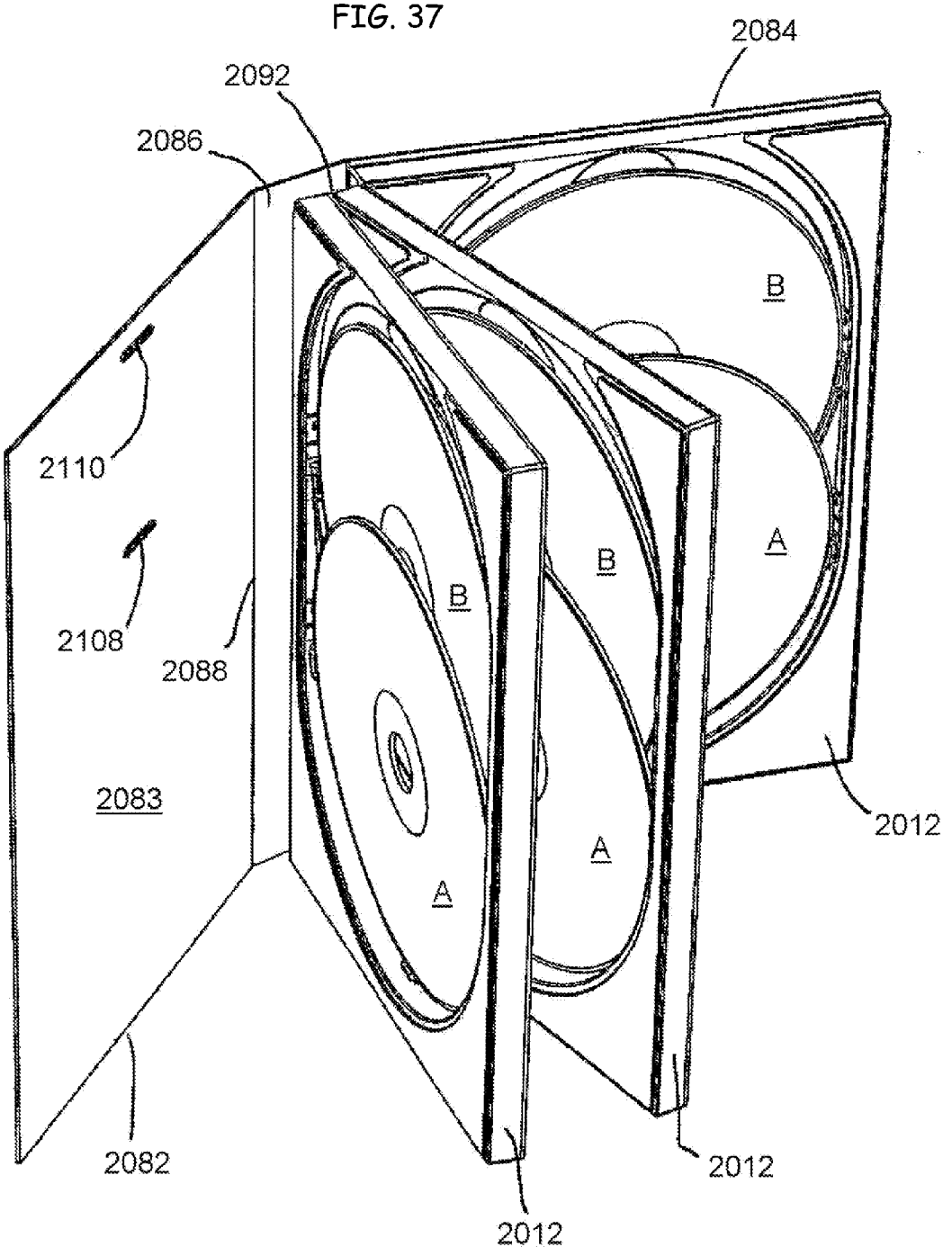
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FIG. 38

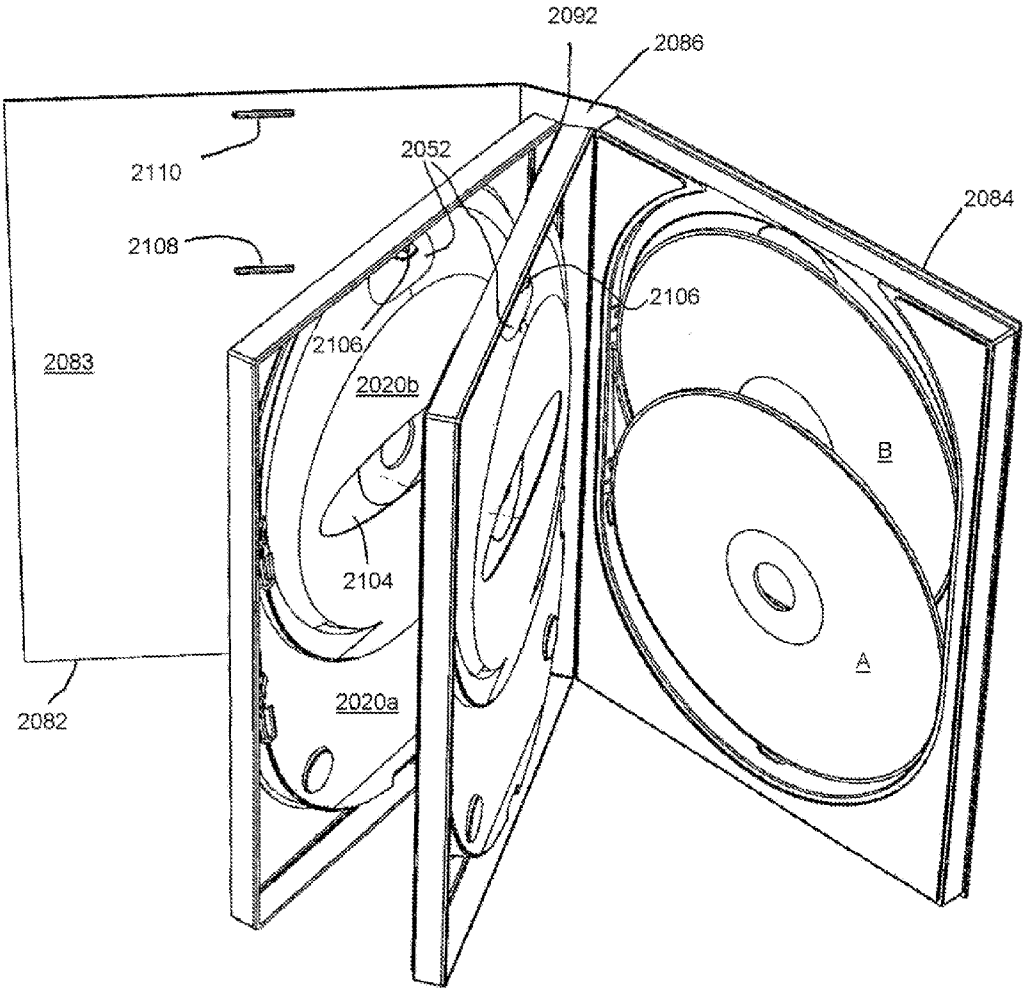
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FIG. 39

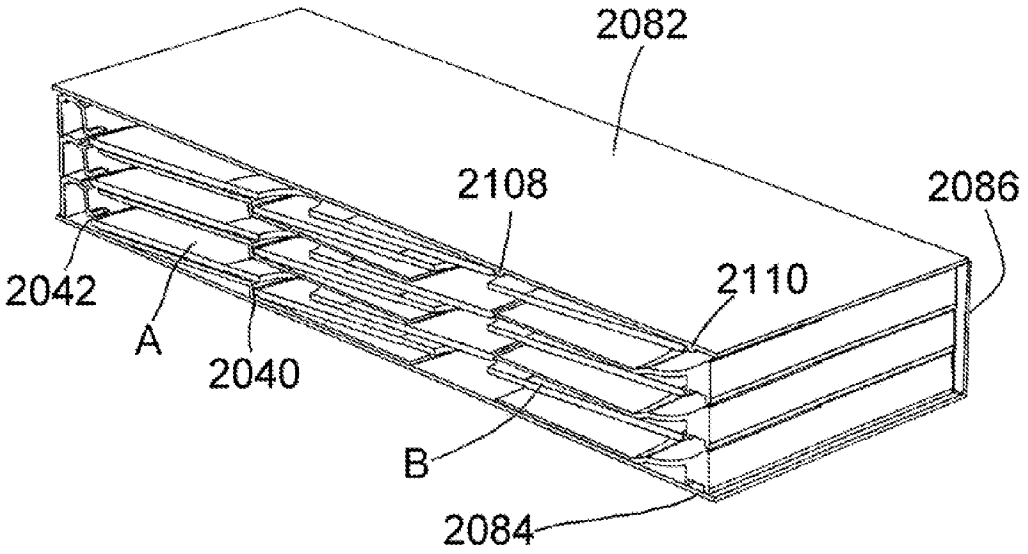


FIG. 40

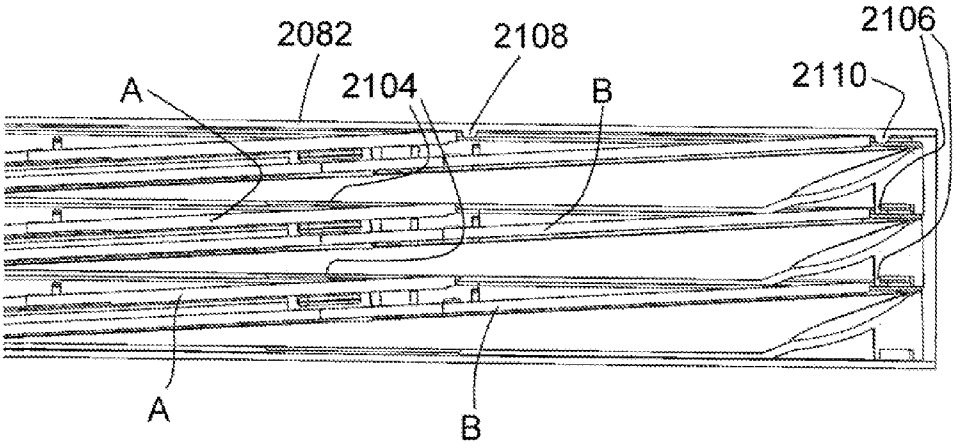


FIG. 41

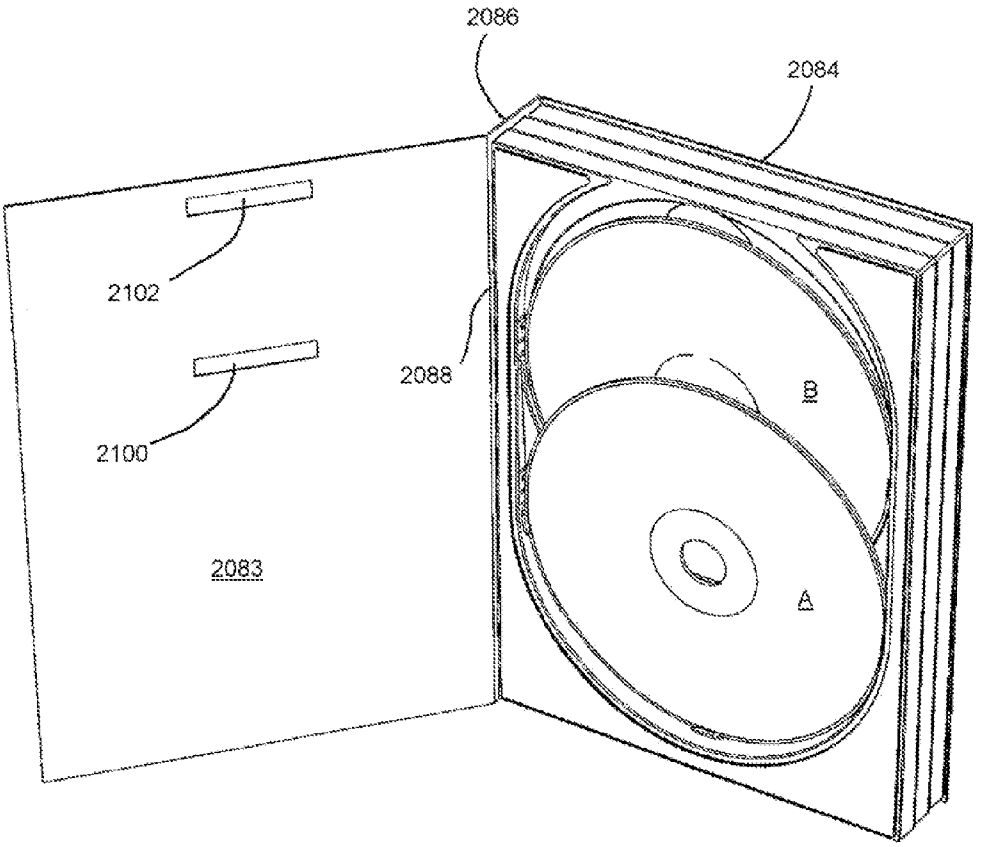


FIG. 42

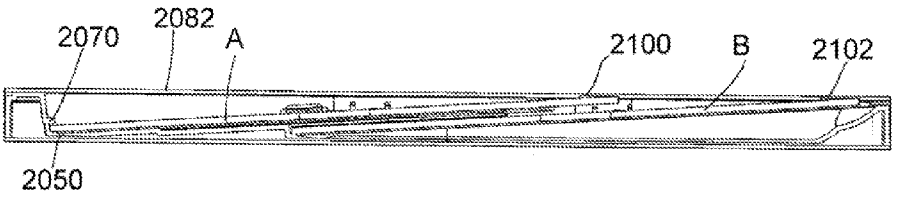


FIG. 43

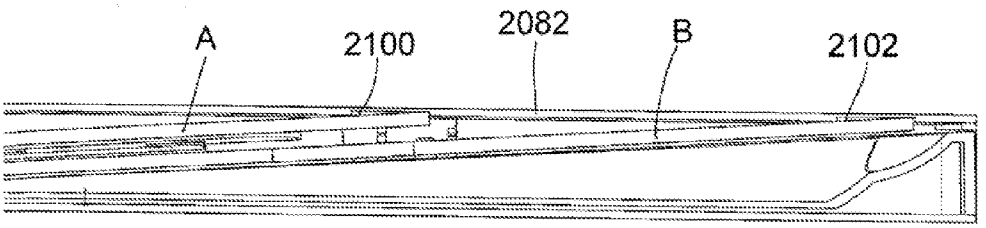


FIG. 44

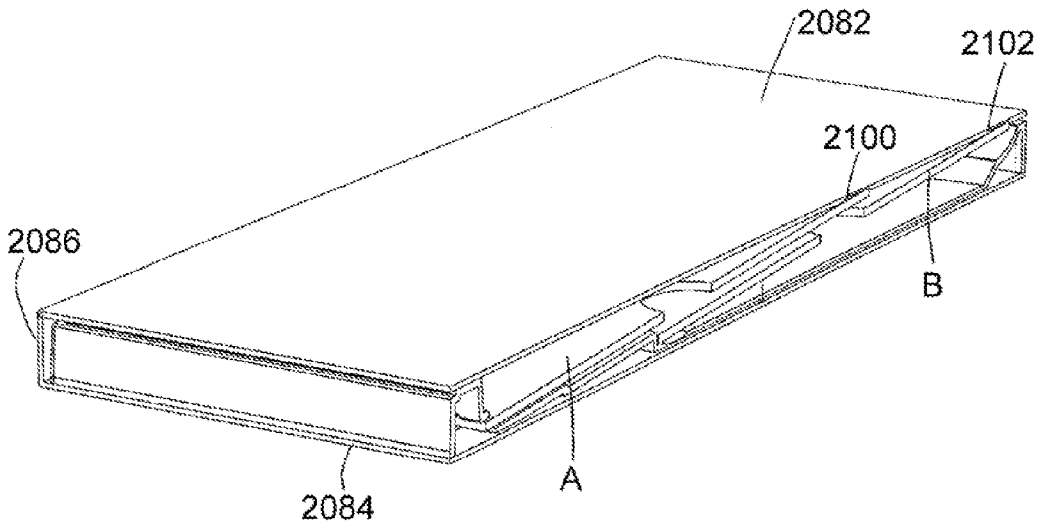
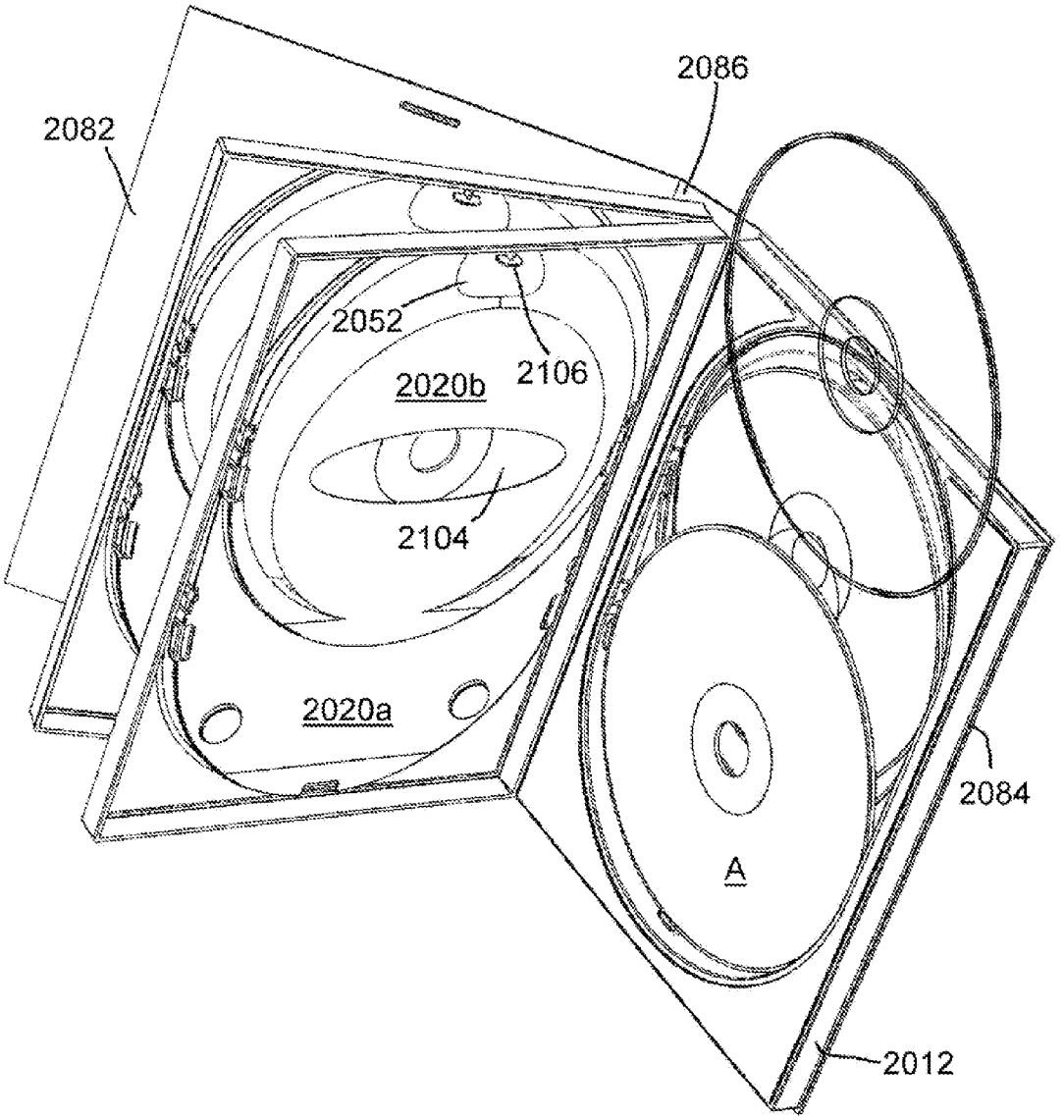


FIG. 45



CLOSABLE PACKAGE FOR RETAINING MULTIPLE DISCS IN POUCH-TYPE HOLDERS OR DISC-RECEIVING TRAYS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of priority under 35 U.S.C. § 119(e) of provisional application Ser. Nos. 60/691,356, filed on Jun. 17, 2005, 60/693,563, filed on Jun. 24, 2005, and 60/694,421, filed on Jun. 27, 2005.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates generally to a package for storing multiple disc-like recording media and, more particularly, to a closable package comprising at least one plastic tray supporting multiple discs, optionally in pouch-type holders and locking means for retaining the discs in the tray(s).

[0004] 2. Description of the Prior Art

[0005] Various types of planar discs are in use at the present time to record and store information which is to be retrieved by various means, such as by optical or magnetic means. Typical of such discs are compact discs in which information is digitally recorded by use of a laser beam and then read optically by a laser beam. Such discs are used to record audio information, such as musical renditions, video information such as visual images and digital information for use as read only and other memories for use in various applications, such as computer applications. In most instances, at the present time, such discs are sold with information already recorded thereon. In other applications, such discs are sold in blank form and are used by the customer to record information thereon. In the latter case, for example, optical discs are sold for use as computer storage media and are used in hard disc storage systems. As used herein, the term compact disc, CD or disc is intended to encompass all such discs and disc-shaped packaging, e.g., for pharmaceuticals or cosmetics, whatever their size, for all known or proposed uses.

[0006] Compact discs containing laser recorded information are typically packaged in injection molded plastic enclosures designed to hold one or more CDs for protecting the discs during storage and shipment. Enclosures commonly used at the present time, such as the well known "jewel box," comprise a three piece assembly consisting of a base or bottom element, an insert or tray in the base/bottom element for positioning and supporting the disc in the base/bottom element, e.g., by a center projection (commonly referred to as a "rosette") which engages the periphery of the aperture in the center of the disc, and a lid or cover which is hinged to the base/bottom element and is closed thereon after the disc is mounted therein on the tray. Other enclosures utilize only two pieces, omit the tray, and position and support the disc via the center projection directly on the base/bottom element. The enclosure is, typically, at least partially transparent and graphics relating to the disc and containing trademark and sales promotional information are usually inserted in such a manner as to be visible through the enclosure.

[0007] Except for the printed matter inserted therein, the "jewel box" is entirely plastic. For this reason, as well as because the typical jewel box requires three separately injection molded elements which must be manually assembled, the use of this type of enclosure is relatively expensive. Moreover, the use of such an enclosure is believed to be ecologically unacceptable by many because the plastic is non-biodegradable and, in view of the huge volume of such enclosures in use today, the disposal of these enclosures poses either a real or potential environmental problem. One solution to both of these problems has been the development of hybrid packages comprising both paper board and plastic components. These hybrid packages provide a CD package which is suitable and attractive for display, sale and storage of compact discs, yet which is both simple and inexpensive to manufacture.

[0008] For example, U.S. Pat. No. 4,709,812—Kosterka discloses a compact disc package formed from a prescored, preprinted unitary blank and at least one injection molded plastic compact disc holder or tray adhesively adhered to one segment of the blank, the blank being adapted to fold along fold lines to position a blank segment over the top of the disc holder to sandwich it, in book style, between the segment to which it is adhered and the overlying segment.

[0009] When it is desired to have a disc package house multiple discs, it has become common to form a book like package having opposite panels connected by a spine panel and to adhesively or mechanically adhere an injection molded plastic disc holder or tray to each of the facing panels. In this manner, when the book is closed, the trays seat upon one another in face-to-face relationship. Typically the height of upstanding peripheral rims around at least a portion of at least one of the trays limits the thickness of the book when the book is in the closed position to assure that the discs on the panels do not contact each other. The problem with this sort of arrangement is that the thickness of each tray doubles the thickness of the package as compared to a package containing only a single disc holder. Such a double thickness package occupies more retail space than is desirable and is wasteful of plastic material. More recently, only a single plastic tray has been used which is capable of receiving a plurality of discs. This type of package is illustrated in U.S. Pat. No. 5,743,390—Pozzoli, which discloses a plastic tray having first and second accommodation regions, each region capable of receiving up to two discs.

[0010] Efforts to date directed at plastic trays used in hybrid packaging which are capable of receiving more than two discs suffer from one or more shortcomings which make the resulting CD packaging unsatisfactory. This is because prior art hybrid packaging is, typically, either uneconomical to manufacture and/or is expensive to transport, store and display in retail stores. Accordingly, there remains a need for a simple, inexpensive to manufacture, inexpensive to ship and display multiple-disc hybrid CD package which is reliable for use over the long term.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] **FIG. 1** is a top perspective view, of an improved tray of a CD package of the present invention, with disc-receiving pouches not shown.

[0012] **FIG. 2** is a perspective view of the improved tray of **FIG. 1** taken along a vertical plane passing longitudinally through the tray.

[0013] **FIG. 3** is a top perspective view of the improved tray of **FIG. 1** showing two disc-receiving pouches pivoted to form acute angles with the floor of the tray.

[0014] **FIG. 4** is a top perspective view of the improved tray of **FIG. 1** with two disc-containing pouches lying in their rest positions in the tray.

[0015] **FIG. 5** is another perspective view of the improved tray of **FIG. 1**, including two disc-containing pouches lying in their rest positions in the tray, taken along a vertical plane passing longitudinally through the tray.

[0016] **FIG. 6** is top perspective view of the tray of **FIG. 1**, with two pouches pivoted to form acute angles with the floor of the tray, one pouch containing a disc and the other having a disc ready for insertion therein.

[0017] **FIG. 7** is a top perspective view of the tray of **FIG. 1** containing four disc-receiving pouches, three of which have been pivoted from their rest positions.

[0018] **FIG. 8** is a perspective view of the tray of **FIG. 7** taken along a vertical plane passing longitudinally through the tray.

[0019] **FIG. 9** is another top perspective view of the tray of **FIG. 7** containing four disc-containing pouches.

[0020] **FIG. 10** is still another top perspective view of the tray of **FIG. 7** containing four disc-containing pouches, the uppermost of which is pivoted to form an acute angle with the floor of the tray.

[0021] **FIG. 11** is yet another top perspective view of the tray of **FIG. 7** containing four disc-containing pouches.

[0022] **FIG. 12** is a perspective view of the improved tray of **FIG. 1** mounted on one panel of a book-like package.

[0023] **FIG. 13** is a top perspective view of another embodiment of the tray of the present invention.

[0024] **FIG. 14** is another top perspective view of the tray of **FIG. 13** including disc separator sheets.

[0025] **FIG. 15** is another top perspective view of the tray of **FIG. 13** containing three discs arranged spaced apart in the longitudinal direction and overlapping.

[0026] **FIG. 16** is another top perspective view of the tray of **FIG. 13** containing two discs arranged spaced apart in the longitudinal direction and overlapping.

[0027] **FIG. 17** is a perspective view of the improved tray of **FIG. 13** taken along a vertical plane passing longitudinally through the tray.

[0028] **FIG. 18** is a perspective view of the improved tray of **FIG. 13** mounted on one panel of a book-like package.

[0029] **FIG. 19** is a top perspective view of another embodiment of the improved tray of **FIG. 13** which utilizes pivotable latching wings to prevent unwanted axial movement of the discs out of the tray.

[0030] **FIG. 20** is a top perspective view of an improved tray of another package of the present invention.

[0031] **FIG. 21** is a bottom perspective view of the improved tray of **FIG. 20**.

[0032] **FIG. 22** is a top perspective view of the tray of **FIG. 20** having discs A, B and C stored therein.

[0033] **FIG. 23** is another perspective view of the improved tray of **FIG. 20**.

[0034] **FIG. 24** is a bottom perspective view of the sheet separators forming part of the pouch-type disc holders of the tray shown in **FIG. 21**.

[0035] **FIG. 25** is a bottom perspective view of the tray of the sheet separators shown in **FIG. 24** interleaved between discs A, B and C.

[0036] **FIG. 26** is a partial perspective view of the tray of **FIG. 20** taken along a vertical plane passing longitudinally through the tray.

[0037] **FIG. 27** is a perspective view of a package of the present invention with the cover panel open and three discs stored in the tray of **FIG. 20** and showing one form of cover locking means for the discs in the tray.

[0038] **FIG. 28** is a perspective view of a package of the present invention with the cover panel open and three discs stored in the tray of **FIG. 20** and showing another form of cover locking means for the discs in the tray.

[0039] **FIG. 29** is a perspective view of the package of **FIG. 28** in the closed position taken along the longitudinal center line of the tray.

[0040] **FIG. 30** is a top perspective view of the package of **FIG. 28** taken along a vertical plane passing longitudinally through the package.

[0041] **FIG. 31** is a top perspective view of an improved tray of another package of the present invention.

[0042] **FIG. 32** is a bottom perspective view of the improved tray of **FIG. 31**.

[0043] **FIG. 33** is a top perspective view of the tray of **FIG. 31** taken along a vertical plane passing longitudinally through the tray.

[0044] **FIG. 34** is a top plan view of the tray of **FIG. 31**.

[0045] **FIG. 35** is a perspective view of a package of the present invention in the closed position, comprising a stack of the improved trays of **FIG. 31** enclosed on three sides by paperboard cover and base panels connected by a spine panel.

[0046] **FIG. 36** is a top perspective view of the package of **FIG. 34** with the cover panel open and two discs stored in the uppermost tray and showing one form of cover locking means for the discs in the top tray.

[0047] **FIG. 37** is a perspective view of the package of **FIG. 36** with the cover panel and the trays fanned out showing discs mounted in the trays.

[0048] **FIG. 38** is a perspective view of the package of **FIG. 36** showing the undersides of two of the trays.

[0049] **FIG. 39** is a perspective view of the package of **FIG. 36** taken along a vertical plane passing longitudinally through the package.

[0050] **FIG. 40** is an enlarged perspective view of one side of the package as viewed in **FIG. 39**.

[0051] **FIG. 41** is a top perspective view of the package of **FIG. 34** with the cover panel open and two discs stored in

the uppermost tray and showing another form of cover locking means for the discs in the top tray.

[0052] **FIG. 42** is a sectional view through the centerline of a single tray embodiment of the package of the present invention.

[0053] **FIG. 43** is an enlarged sectional view of one side of the package as viewed in **FIG. 42**.

[0054] **FIG. 44** is a top perspective view of a single tray embodiment of the package of the present invention taken along a vertical plane passing longitudinally through the package.

[0055] **FIG. 45** is a perspective view showing how a disc may be inserted or removed from one tray within the package of **FIG. 36**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0056] A preferred embodiment of the present invention is illustrated in **FIGS. 1-11**, in which there is shown a tray for an improved CD package **10** for housing two or more discs. The package comprises a planar tray **12** which is generally rectangular, elongate and flat and includes an upper planar surface **14** having an elongate, generally rectangular-shaped recess **16** formed therein along substantially its entire width and length. The recess **16** defines a disc receiving housing which has a peripheral wall **18** extending between a housing floor **20***a*, **20***b* and the upper planar surface **14** of the tray **12**. The housing peripheral wall **18** comprises two elongate, longitudinally extending walls **22**, **24** and two transverse walls **26**, **28** connecting with the longitudinal walls. In a two-disc embodiment of the package, shown in **FIGS. 1-6**, circular discs A, B are supported in their rest positions in respective oblique planes relative to the housing floor **20***a*, **20***b* in each of two receiving areas **30**, **32** with disc A partially overlapping disc B and aligned along the longitudinal direction of the tray to form a row. Tray **12** has a first disc receiving area **30** formed therein extending from one transverse peripheral wall **26** toward the median portion of the tray **12**, including floor portion **20***a*, and a second disc receiving area **32** which is depressed from the first disc receiving area **30** by virtue of a transversely extending downward step **34** in the floor positioned between and generally parallel to the transverse peripheral walls **26**, **28**. The length of floor **20***b* between the step **34** and the opposite transverse peripheral wall **28** represents the second disc receiving area **32** and is approximately the diameter of a disc.

[0057] The discs are supported within the tray **12** in a uniformly spaced apart in the longitudinal direction arrangement. As can be seen in **FIG. 3**, each disc is received within a pouch **40**, **42**, preferably formed of transparent plastic material, which comprises two generally rectangular plastic sheets sealed along three sides and open only at one transverse end **40***a*, **42***a*. Desirably, a V-shaped notch **44**, **46** is formed in the upper sheet of each plastic pouch **40**, **42** communicating with the open transverse end **40***a*, **42***a* to facilitate grasping a disc which is in the pouch for purposes of removal. Each disc A, B is housed within a pouch **40**, **42** and, as can be seen in **FIG. 5**, one lower peripheral edge **42***b* of the pouch **42** containing disc B is hingedly connected in the corner **48** defined between the step **34** and the floor **20***b*, and extends obliquely upward, relative to the floor **20***b*, in the longitudinal direction with its upper peripheral edge substantially flush with the upper planar surface **14** of the tray **12** and adjacent the opposite transverse wall **28**. Disc A rests upon the previous disc B and is spaced longitudinally therefrom along the housing with the lower peripheral edge **40***b* of its pouch **40** hingedly connected in the corner **50** defined between the one transverse peripheral wall **26** and the floor **20***a* and the upper peripheral edge of the pouch resting on the previous disc B. Thus, disc A is supported obliquely above its underlying floor element **20***a*, and the discs are not parallel.

[0058] A support means is provided to maintain disc B in an oblique position. The support means comprises a relatively short wall portion **52**, which may be inclined downwardly from the top of the opposite peripheral transverse wall **28** into the recess **16**. Thus disc B is supported in an oblique plane above floor portion **20***b* between the upper peripheral edge of the wall portion and the corner **48** defined between the step **34** and the floor portion **20***b*. The disc A partially overlaps and rests upon the immediately preceding disc B. The extent of the overlap between adjacent discs depends on the number of discs spaced along the housing and the length of the housing.

[0059] The lower peripheral edges **40***b*, **42***b* of the pouches are hingedly connected to the corners **48**, **50** in which they rest to allow the pouches to pivot about the corner to facilitate disc removal. Tabs **54** extend into the recess **16** from the longitudinal peripheral walls **22**, **24** into contact with the edges of the discs A, B at positions between the center of each disc and the edge thereof nearest the pouch opening **40***a*, **42***a* to prevent longitudinal sliding motion of the discs A, B when the pouches **40**, **42** lie in their rest positions within the tray **12**. Notches **56** are formed in the pouch walls **40***c*, **40***d*, **42***c*, **42***d* to accommodate the tabs **54**. In order to remove a disc from a pouch, the pouch is pivoted upwardly about its lower peripheral edge **40***b*, **42***b* until the disc is sufficiently raised from the immediately preceding disc and sufficiently out of tray **12** that it can be easily grasped at the V-notch and slid out of the pouch in a direction parallel to the pouch walls **40***c*, **40***d*, **42***c*, **42***d*.

[0060] In a four-disc embodiment, shown in **FIGS. 7-11**, the structure of tray **12** remains the same as in the two-disc embodiment. Therefore, like parts are represented by like reference numerals. The only difference is that in the four-disc embodiment, there are two pouches **40**, **41** and **42**, **43** hingedly connected along their lower peripheral edges **40***b*, **41***b* and **42***b*, **43***b* within each of the corners **48**, **50**, respectively. In this configuration, the discs A, C in each of the pouches **40**, **41** and the discs B, D in each of the pouches **42**, **43** are coaxial with one another when the pouches lie in their rest positions in tray **12**. At the same time, coaxial discs A, C partially overlie coaxial discs B, D when the pouches lie in their rest positions in tray **12**. In an alternative form of the invention, not shown, only two pouches are needed and each is two-sided and can hold two discs arranged coaxially with respect to each other. Each disc is received on one side of the two sided plastic pouch, which comprises, in one form, three generally rectangular plastic sheets sealed along three sides and open only at the upper transverse side. Discs are inserted into the two openings along the upper peripheral edge of each of the pouches on either side or both sides of the center sheet. Desirably, a V-shaped notch is formed in

each of the outer sheets of each plastic pouch, communicating with the open transverse side, to facilitate grasping a disc in the pouch for purposes of its removal from the pouch. It will, of course, be appreciated, that the four-disc embodiment of this invention can be used for storing three discs as well, e.g., by omitting one of the pouches in the four pouch embodiment or by leaving one pouch pocket empty in the two-sided pouch embodiment.

[0061] The paper board **80** of **FIG. 12** comprises a plurality of paper panels which are desirably formed from a presized, pre-printed unitary blank. In one embodiment of the invention, the blank includes two panels **82**, **84** onto either of which the plastic tray **12** is adhesively or mechanically attached, separated by a spine panel **86**. Fold lines **88**, **90** separate panels **82**, **84**, respectively, from spine panel **86** and allow the panels to be pivoted between package open and package closed positions. The panels may be single ply although, in some instances, it may be desirable for one or both of these panels to be two or multiple ply.

[0062] Another embodiment of the present invention is illustrated in **FIGS. 13-18**, in which there is shown another improved CD package **100** for housing two or more discs. The package comprises a planar tray **102** which is generally rectangular, elongate and flat and includes an upper planar surface **104** having an elongate, generally rectangular-shaped, with arcuate end portions, recess **106** formed therein along substantially its entire width and length. The recess defines a disc receiving housing which has a peripheral wall **108** extending between a housing floor **110***a*, **110***b*, **100***c* and the upper planar surface **104** of the tray **102**. The housing peripheral wall **108** comprises two elongate, longitudinally extending walls **112**, **114** and two arcuate end walls **116**, **118** connecting with the longitudinal walls. Desirably, the arcuate end walls are generally semi-circular and have a diameter slightly larger than the diameter of a disc. In one embodiment of the package, circular discs A, B, C are supported in their rest positions in respective oblique planes relative to the housing floor **110***a*, **110***b*, **110***c* in each of three receiving areas **120**, **122**, **124** with disc A partially overlapping disc B and disc B partially overlapping disc C, with the discs aligned along the longitudinal direction of the tray to form a row.

[0063] Tray **102** has a first disc receiving area **120** formed therein extending from one arcuate end wall **116** toward the median portion of the tray **102**, including floor portion **110***a*, a second disc receiving area **122** which is depressed from the first disc receiving area **120** by virtue of an arcuate semi-circular downward step **126** in the floor positioned between the arcuate end walls **116**, **118**, and generally parallel to arcuate end wall **116**, including floor portion **110***b*, and a third disc receiving area **124** which is depressed from the second disc receiving area **122** by virtue of an arcuate semi-circular downward step **128** in the floor positioned between step **126** and arcuate end wall **118**, and generally parallel to arcuate end wall **116**, including floor portion **110***c*. The length of floor **110***c* between the step **128** and the opposite arcuate end wall **118** represents the third disc receiving area **124** and is approximately the diameter of a disc.

[0064] The discs are supported within the tray **102** in a uniformly spaced apart in the longitudinal direction arrangement. Each disc A, B, C is received within its respective disc receiving area **120**, **122**, **124** with the lower peripheral edge of the disc supported, respectively, in one of the corner **130** between the arcuate end wall **116** and floor portion **110***a* and corners **131** and **133**, between the steps **126**, **128** and floor portions **110***b*, **110***c*, respectively. The discs extend obliquely upward, relative to the floor portions **110***a*, **110***b*, **110***c*, in the longitudinal direction with their upper peripheral edges substantially flush with the upper planar surface **104** of the tray **102**. Disc C has its lower peripheral edge supported in corner **133** and its upper peripheral edge supported along the upper peripheral edge of arcuate wall portion **118**. A support means is provided to maintain disc C in an oblique position. The support means comprises a relatively short wall portion **117**, which, desirably, is inclined downwardly from the top of the arcuate end wall **118** into the recess **106**. Disc B has its lower peripheral edge supported in corner **131** and its upper peripheral edge rests upon the previous disc C, with disc B spaced longitudinally from disc C along the housing. Disc A has its lower peripheral edge supported in the corner **130** defined between the arcuate end wall **116** and floor portion **110***a* and its upper peripheral edge resting on the previous disc B, with disc A spaced longitudinally from disc B along the housing. Thus, each of discs A, B, C is supported obliquely above its underlying floor element **110***a*, **110***b*, **110***c*, and the discs are not parallel. The extent of the overlap between adjacent discs depends on the number of discs spaced along the housing and the length of the housing.

[0065] Plastic separator sheets **132**, **134** (see **FIG. 14**) are affixed, desirably with adhesive, to the upper surfaces of floor portions **110***a*, **110***b* and extend therefrom toward arcuate end wall **118** a sufficient distance to completely separate disc B from disc C and disc A from disc B. In a preferred design, the separator sheets are generally circular in shape and approximate the dimensions of a disc in order that separator sheets **132**, **134** are coextensive with discs B and C in tray **102**. Separator sheet **132** defines with the underlying floor portion **110***c* a pouch-like enclosure for receiving disc C therein. Likewise, separator sheet **134** defines with separator sheet **132** a pouch-like enclosure for receiving disc B therein. Disc A overlies separator sheet **134**. The discs are insertable into and removable from tray **102** by sliding in the oblique direction corresponding with their rest positions in the tray. Thus disc C may be removed by sliding it over inclined wall portion **117**, which desirably is inclined at substantially the same oblique angle as disc C in the tray, in a direction toward arcuate end wall **118**. In this manner, disc C may be slid from its oblique rest position out from under separation sheet **132** by exerting an obliquely-directed removal force to the disc without lifting the disc. In like manner, disc B may be slid out from between separator sheet **132**, **134** and disc A may be slid out from on top of separator sheet **134**. It is noteworthy that the discs must be slid out of their respective pouch-like enclosures (discs B, C) or along separator sheet **134** (disc A) before they can be moved axially.

[0066] In order to prevent inadvertent sliding of the discs out of tray **102**, three side wall detents **136** extend into the recess **106** from each of the longitudinal peripheral walls **112**, **114** into contact with the edges of the discs A, B, C at positions between the center of each disc and the edge thereof nearest arcuate end wall **118**. Each of the detents **136** comprises a tab **138** projecting into the recess **106** from an adjacent segment **140** of the peripheral longitudinal wall

112, 114. The wall segment 140 is defined by a pair of longitudinally spaced apart vertical slits 142 in the peripheral wall which extend from the floor 110*a*, 110*b*, 110*c* upwardly toward the planar surface 104. The slits 142 separate the segment 140 from the remainder of the peripheral wall, allowing the segment 140 to flex toward and away from the recess 106 independent of the remainder of the peripheral wall. When no obliquely-directed removal force is applied to a disc, the pressure of the disc against the tab 138 is insufficient to cause the wall segment 140 to flex inwardly away from the recess 106 and the discs are positively retained against sliding movement. However, under the influence of an obliquely directed disc removal force, the force of the disc against tab 138 causes wall segment 140 to deflect away from the recess 106, allowing the disc to be slidingly removed from tray 102. In order to prevent the discs from inadvertently moving in an axial direction, circumferentially spaced apart horizontal projections 144 extend from the arcuate end wall 116 inwardly into recess 106. Desirably, the projections are positioned a small distance above floor portion 110*a* and are equally spaced about the arcuate end wall 116. When disc A is inserted into tray 102, its lower peripheral edge and adjacent side edges are positioned in corner 130 below the projections 144 and its upper peripheral edge rests on separator sheet 134 above the next adjacent disc. The projections 144 bear against the upper surface of disc A around its periphery in order to retain disc A and any disc(s) underlying disc A against axial movement in the tray 102.

[0067] In an alternative embodiment, not shown, inadvertent sliding movement of the discs out of tray 102 can be prevented without use of sidewall detents 136, by enlarging each of separator sheets 132, 134 and including a pair of raised yieldable dimples on each sheet positioned longitudinally to contact the edges of discs A and B between the center of each disc and the edge thereof nearest arcuate end wall 118. The dimples are positioned transversely such that one dimple contacts each disc edge on opposite sides of the longitudinal axis A-A of tray 102. When no obliquely-directed removal force is applied to a disc, the pressure of the disc against the dimples is insufficient to cause the dimples to yield and depress inwardly into separator sheets 132, 134 and the discs are positively retained against sliding movement. However, under the influence of an obliquely directed disc removal force, the force of the disc against the dimples causes the dimples to deflect downwardly into separator sheets 132, 134, allowing the disc to be slidingly removed from tray 102.

[0068] The paper board 180 illustrated in FIG. 18 comprises a plurality of paper panels which are desirably formed from a presized, pre-printed unitary blank. In one embodiment of the invention, the blank includes two panels 182, 184 onto either of which the plastic tray 102 is adhesively or mechanically attached, separated by a spine panel 186. Fold lines 188, 190 separate panels 182, 184, respectively, from spine panel 186 and allow the panels to be pivoted between package open and package closed positions. The panels may be single ply although, in some instances, it may be desirable for one or both of these panels to be two or multiple ply.

[0069] Referring to FIG. 19 there is illustrated another embodiment of the improved tray of FIG. 13. Therefore, like parts are represented by like reference numerals. In this embodiment, inadvertent sliding movement of the discs in the tray 202 is avoided by extending the arcuate semicircular downward steps 126, 128 upward into the longitudinal peripheral walls to form arcuately stepped longitudinal peripheral walls 204, 206. It will be appreciated that the intersection of the arcuate end wall 116 and the upward extension of arcuate step 126 defines a step 208 which extends inwardly from each of the peripheral longitudinal walls 204, 206 into recess 106. Likewise the intersection of the upward extension of arcuate step 126 and the upward extension of arcuate step 128 defines a step 210 which extends inwardly from each of the peripheral longitudinal walls 204, 206 into recess 106. With discs A, B, C seated in tray 202, when no obliquely-directed removal force is applied to a disc, the pressure of the disc edges against the steps 208, 210 is insufficient to allow the discs to slide in tray 202. However, under the influence of an obliquely directed disc removal force, the force of the disc edges against steps 208, 210 causes either the steps to yield or the disc to override the steps, allowing the disc to be slidingly removed from tray 202.

[0070] Whether the stepped peripheral longitudinal wall concept of FIG. 19 is employed or another means, such as is described herein, is utilized to prevent unwanted sliding motion, unwanted axial movement of the discs out of tray 202 is prevented by a pair of elongate locking wings 212 mounted for pivotal movement between an open position, shown in FIG. 19, and a closed position wherein one peripheral edge of the locking wings 212 overlie the discs in tray 202. Desirably, each locking wing 212 includes one longitudinal edge 212*a* which is pivotably supported by tray 102 and an opposite longitudinal edge 212*b* which overlies the discs in tray 202 to prevent axial movement thereof. The planar surface 204 of tray 202 is annular with respect to recess 106 and includes longitudinally extending planar surface portions 214. In one form of the invention, each locking wing 212 comprises a flap formed from the longitudinally extending planar surface portion 214, which flap desirably pivots about the outer longitudinal peripheral edge of longitudinally extending planar surface portion 214, for example, via a living hinge 216. In the closed position, the top surfaces 218 of the locking wings 212 are substantially flush with the planar surface 204 and the free longitudinal edge 212*b* of the locking wings, opposite to the living hinge edge 212*a*, overlies the discs A, B, C, preventing their axial movement. The surfaces 220 of the locking wings 212 which face the discs in the closed position include a pair of male protrusions 222 which positively engage female apertures 224, as by a snap engagement, formed in the recessed upwardly facing surface 226 of the longitudinally extending planar surface portion 214 from which the flap was formed. Additionally, a flange 228 profiled to correspond to the profile of the longitudinal peripheral walls projects from surfaces 220 into the recess 106. In instances where the longitudinal peripheral walls are not profiled to prevent sliding movement of the discs, the profiled flange, in the closed position, will seat in the recess between the longitudinal peripheral walls and the disc edges with the steps on the flange profile contacting the disc edges to prevent sliding movement of the discs.

[0071] Further embodiments of the present invention are illustrated in FIGS. 20-30, in which there is shown an improved CD package 1010 for housing three discs. The package comprises a planar tray 1012 which is generally rectangular, elongate and flat and includes an upper planar

surface **1014** having an elongate, generally rectangular-shaped, with arcuate end portions, recess **1016** formed therein along substantially its entire width and length. The recess defines a disc receiving housing which has a peripheral wall **1018** extending between a housing floor **1020***a*, **1020***b*, **1020***c* and the upper planar surface **1014** of the tray **1012**. The housing peripheral wall **1018** comprises two elongate, longitudinally extending walls **1022**, **1024** and two arcuate end walls **1026**, **1028** connecting with the longitudinal walls. Desirably, the arcuate end walls are generally semi-circular and have a diameter slightly larger than the diameter of a disc. In one embodiment of the package, circular discs A, B, C are supported in their rest positions in respective oblique planes relative to the housing floor **1020***a*, **1020***b*, **1020***c* in each of three receiving areas **1030**, **1032**, **1034** with disc A partially overlapping disc B and disc B partially overlapping disc C, with the discs aligned along the longitudinal direction of the tray to form a row.

[**0072**] Tray **1012** has a first disc receiving area **1030** formed therein extending from one arcuate end wall **1026** toward the median portion of the tray **1012**, including floor portion **1020***a*, a second disc receiving area **1032** which is depressed from the first disc receiving area **1030** by virtue of an arcuate semi-circular downward step **1036** in the floor positioned between the arcuate end walls **1026**, **1028**, and generally parallel to arcuate end wall **1026**, including floor portion **1020***b*, and a third disc receiving area **1034** which is depressed from the second disc receiving area **1032** by virtue of an arcuate semi-circular downward step **1038** in the floor positioned between step **1036** and arcuate end wall **1028**, and generally parallel to arcuate end wall **1026**, including floor portion **1020***c*. The length of floor **1020***c* between the step **1038** and the opposite arcuate end wall **1028** represents the third disc receiving area **1034** and is approximately the diameter of a disc. Each of the floor portions **1020***a*, **1020***b*, **1020***c* defines a generally triangularly shaped aperture **1027** therein which is bisected by the longitudinal centerline of the tray CL-CL, includes two legs extending generally along arcuate wall portion **1026** or arcuate steps **1036**, **1038**, respectively, and a base extending perpendicular to the centerline of the tray and interconnecting the ends of the legs.

[**0073**] The discs are supported within the tray **1012** in a uniformly spaced apart in the longitudinal direction arrangement. Each disc A, B, C is received within its respective disc receiving area **1030**, **1032**, **1034** with the lower peripheral edge of the disc supported, respectively, in one of the corner **1040** between the arcuate end wall **1026** and floor portion **1020***a* and corners **1041** and **1043**, between the steps **1036**, **1038** and floor portions **1020***b*, **1020***c*, respectively. The discs extend obliquely upward, relative to the floor portions **1020***a*, **1020***b*, **1020***c*, in the longitudinal direction. Disc C has its lower peripheral edge supported in corner **1043** and its upper peripheral edge supported along the upper peripheral edge of arcuate wall portion **1028**. A support means is provided to maintain disc C in an oblique position. The support means comprises a relatively short wall portion **1029**, which, desirably, is inclined downwardly from the top of the arcuate end wall **1028** into the recess **1016**. Disc B has its lower peripheral edge supported in corner **1041** and its upper peripheral edge rests upon the previous disc C, with disc B spaced longitudinally from disc C along the tray. Disc A has its lower peripheral edge supported in the corner **1040** defined between the arcuate end wall **1026** and floor portion **1020***a* and its upper peripheral edge resting on the previous disc B, with disc A spaced longitudinally from disc B along the tray. Thus, each of discs A, B, C is supported obliquely above its underlying floor element **1020***a*, **1020***b*, **1020***c*, and the discs are not parallel. The extent of the overlap between adjacent discs depends on the number of discs spaced along the housing and the length of the housing.

[**0074**] Separator sheets **1042**, **1044** (see **FIGS. 24 and 25**), which are preferably formed from plastic but may also be formed from paper, extend from arcuate end wall **1026** and from step **1036**, respectively, toward arcuate end wall **1028** a sufficient distance to completely separate disc A from disc B and disc B from disc C, respectively. In a preferred design, the separator sheets are generally circular in shape, approximately the diameter of a disc but are longer than the diameter of a disc by the length of floor **1020***a* and **1020***b*, which are desirably the same length. In addition, separator sheets **1042**, **1044** have an arcuate upper peripheral edge corresponding to arcuate end wall **1026** and arcuate step **1036**. This permits separator sheet **1042** to be positioned in tray **1012** on floor portion **1020***a* with one end adjacent arcuate end wall **1026**, yet be of sufficient length to be coextensive with disc B. In similar manner, separator sheet **1044** is positioned in tray **1012** on floor portion **1020***b* with one end adjacent step **1036**, yet is of sufficient length to be coextensive with disc C in tray **1012**. Each of separator sheets **1042**, **1044** includes an arcuate cut-out **1045** formed in its upper periphery **1042***a*, **1044***a*, which is adjacent arcuate end wall **1026** and step **1036**, respectively, when the sheets are positioned on floor portions **1020***a*, **1020***b*. The separator sheets **1042**, **1044** each also include a pair of sideways extending ears **1052**, desirably, positioned on opposite sides of cut out **1045** and at equiangular distances of about 20° to 90° therefrom. Ears **1052** extend through slots **1054** in arcuate end wall **1026** and step **1036** and include an undercut portion **1056** to engage a wall at the end of each slot **1054** for mechanically locking the separator sheets **1042**, **1044** in position on floors **1020***a*, **1020***b*. Each separator sheet **1042**, **1044** has an opening flap feature **1046**, **1048** incorporated therein. One example of a desirable opening flap feature **1046**, **1048**, is formed by cutting through the separator sheet along a semi circle to define a generally arcuate flap **1050** (or through the separator sheet along three perpendicular sides to define a generally rectangular flap) such that a flap is formed in the sheets which is pivotable about a fold line **1053**. Flap **1050** is formed in separator sheets **1042**, **1044** at a position which corresponds with apertures **1027** in floor portions **1020***b*, **1020***c* so that, with the separator sheets in position against respective end wall **1026** and step **1034**, flap **1050** on each sheet extends downwardly into and through apertures **1027**. Desirably flap **1050** includes an intermediate fold line **1055** parallel to fold line **1053** and spaced between fold line **1053** and the free end **1058** of flap **1050** to permit flap **1050** to be folded along fold line **1055** so that the portion of flap **1050** between fold line **1055** and its free end **1058** generally underlies the floor of tray **1012** with the free end **1058** pointed generally toward arcuate end wall **1028**. The distance between fold lines **1053**, **1055** must be at least as long as the height of steps **1036**, **1038**.

[**0075**] Referring to **FIG. 26**, separator sheet **1044** defines with the underlying floor portion **1020***c* a pouch-like enclosure for receiving disc C therein with the lower peripheral edge of disc C in contact with flap **1050**. Likewise, separator

sheet **1042** defines with separator sheet **1044** a pouch-like enclosure for receiving disc B therein with the lower peripheral edge of disc B in contact with flap **1050**. Disc A overlies separator sheet **1042**. Separator sheet arcuate cut outs **1045** in a lower separator sheet, for example separator sheet **1044**, allows flap **1050** of upper separator sheet **1042** to be pressed through aperture **1027** in floor portion **1020***b* without interference from separator sheet **1044**.

[**0076**] The discs are insertable into and removable from tray **1012** by sliding in the oblique direction corresponding with their rest positions in the tray. Thus disc C may be removed by sliding it over inclined wall portion **1029**, which desirably is inclined at substantially the same oblique angle as disc C in the tray, in a direction toward arcuate end wall **1028**. In this manner, disc C may be slid from its oblique rest position out from under separation sheet **1044** by exerting an obliquely-directed removal force to the disc without lifting the disc. In like manner, disc B may be slid out from between separator sheet **1042**, **1044** and disc A may be slid out from on top of separator sheet **1042**. It is noteworthy that the discs must be slid out of their respective pouch-like enclosures (discs B, C) or along separator sheet **1134** (disc A) at least about 10 mm before they can be moved axially. Flaps **1050** prevent discs B, C from inadvertently sliding over floor portions **1020***a*, **1020***b*, respectively.

[**0077**] In order to prevent inadvertent sliding of the discs out of tray **1012**, a side wall detents **1060** extends into the recess **1016** from each of the opposite longitudinal peripheral walls **1022**, **1024** in each of disc receiving areas **1030**, **1032**, **1034**. The detents **1060** contact the edges of the discs A, B, C at longitudinal positions between the center of each disc and the peripheral edge thereof nearest arcuate end wall **1028**. Each of the detents **1060** comprises a tab **1062** projecting into the recess **1016** into contact with discs A, B, C from an adjacent depending segment **1064** of the peripheral longitudinal wall **1022**, **1024**. The wall segment **1064** is defined by a pair of longitudinally spaced apart vertical slits **1066** in the peripheral wall which extend from the floor **1020***a*, **1020***b* upwardly toward the planar surface **1014** and a horizontal slit **1068** separating the wall segment **1064** from floor **1020***a*, **1020***b*. The slits **1066** separate the segment **1064** from the remainder of the peripheral wall and, together with the slit **1068**, allow the depending segment **1064** to flex toward and away from the recess **1016** independent of the remainder of the peripheral wall. When no obliquely-directed removal force is applied to a disc, the pressure of the disc against the tab **1062** is insufficient to cause the wall segment **1064** to flex inwardly away from the recess **1016** and the discs are positively retained against sliding movement. However, under the influence of an obliquely directed disc removal force, the force of the disc against tabs **1062** causes wall segment **1064** to deflect away from the recess **1016**, allowing the disc to be slidingly removed from tray **1012**.

[**0078**] In order to prevent the discs from inadvertently moving in an axial direction, circumferentially spaced apart horizontal projections **1070** overlie and bear against the upper surface of disc A at its peripheral edges. Desirably, three horizontal projections **1070** overlie and bear against the upper surface of disc A at its peripheral edges and extend from the arcuate end wall **1026** inwardly into recess **1016**. The projections **1070** are positioned a small distance above floor portion **1020***a* and are equally spaced, preferably at approximately 90° intervals, about the arcuate end wall **1026**. Desirably, end wall projection **1070** is positioned at the intersection of arcuate end wall **1026** and the centerline CL-CL of tray **1012** and the side wall projections **1070** are positioned at equal circumferential distances on either side of end wall projection **1070** and angularly spaced about 90° therefrom. When disc A is inserted into tray **1012**, its lower peripheral edge and adjacent side edges are positioned in corner **1040** below the projections **1070** and its upper peripheral edge rests on disc B. The projections **1070** bear against the upper surface of disc A around its periphery in order to retain disc A against axial movement in the tray **1012**. Since disc A is the uppermost disc, retaining it against axial movement also prevents axial movement of discs B, C, which underlie disc A.

[**0079**] The discs are insertable into and removable from tray **1012** by sliding in the oblique direction corresponding with their orientations in the tray. Thus disc C may be removed by sliding it over inclined wall portion **1029** of arcuate end wall **1028**, which desirably is inclined at substantially the same oblique angle as disc C in the tray, in a direction toward arcuate end wall **1028**. Disc C may be slid from its oblique position in tray **1012** by exerting an obliquely-directed removal force to the disc without lifting the disc. In like manner, discs A, B may be slid out from their position in tray **1012**. It is noteworthy that the discs must be slid at least 10 mm out of tray **1012** before they can be moved axially. It will be apparent that any of discs A, B, C can be slidably removed from tray **1012** without need for removing the other of the discs.

[**0080**] The package enclosure **1080** of **FIGS. 27-30**, which preferably is formed from paper board but also may be formed from plastic, comprises a plurality of paper panels which are desirably formed from a presized, pre-printed unitary blank. In one embodiment of the invention, the blank includes two panels **1082**, **1084** onto either of which a plastic tray **1012** is adhesively or mechanically attached separated by a spine panel **1086**. Fold lines **1088**, **1090** separate panels **1082**, **1084**, respectively, from spine panel **1086** and allow the panels to be pivoted between package open (**FIG. 27, 28**) and package closed (**FIG. 29, 30**) positions. The panels, if paper, may be single ply although, in some instances, it may be desirable for one or both of these panels to be two or multiple ply. Appropriate latching means (not shown), which are well known in the field, may be used if it is desired to latch the package **1010** in the closed position.

[**0081**] In one embodiment, discs A ,B, C are positioned in tray **1012** such that their upper peripheral edges are at substantially the same height and trays **1012** are dimensioned in such a manner that the upper peripheral edges of discs A, B, C project a small distance above planar surface **1014**. This facilitates locking the discs in the tray during storage, shipping and handling. Referring to **FIG. 27**, cover **1082** of paperboard **1080** locks discs A, B in the tray **1012** by providing three vertically spaced apart pockets **1100**, **1102**, **1104** in the inward facing panel **1083** of cover **1082**, which pockets **1100**, **1102**, **1104** are positioned and oriented to receive the upper peripheral edges of discs A, B, C respectively, protruding above the planar surface **1014** of tray **1012**. In this manner, discs A, B, C are locked between the corners **1040**, **1041**, **1043** supporting the lower periph-

eral edges of the discs and pockets **1100**, **1102**, **1104** in cover panel **1083** supporting the upper peripheral edges of the discs.

[**0082**] In another embodiment, shown in **FIGS. 28-30**, trays **1012** are dimensioned in such a manner that the upper peripheral edges of discs A and B are substantially flush with planar surface **1014**. In this embodiment, cover **1082** of paperboard **1080** locks discs A, B, C in the tray **1012** by providing cover mounted features which project from panel **1083** of cover **1082** into recess **1016** proximate the upper peripheral edges of discs A, B, C. These cover mounted features may be three vertically spaced apart ribs **1106**, **1108**, **1110** positioned and oriented to abut or proximately abut the upper peripheral edges of discs A, B, C or other cover mounted or cover embossed features which project from panel **1083** into recess **1016** to lock discs A, B, C in tray **1012**.

[**0083**] The discs A, B, C in a single tray **1012** are locked in place when cover **1082** is closed. The opening of the cover **1082** releases the discs in tray **1012**. The reverse is true when closing package **1010**. As the cover is closed, the discs in the tray **1012** are once again locked in position. The discs are securely held in the tray **1012**, but not locked therein, when the user can directly view and touch the discs in a facing tray.

[**0084**] Still additional preferred embodiments of the present invention are illustrated in **FIGS. 31-45**, in which there is shown an improved CD package **2010** for housing two discs. Referring to **FIGS. 31-34**, the package comprises a planar tray **2012** which is generally rectangular, elongate and flat and includes an upper planar surface **2014** having an elongate, generally rectangular-shaped, with arcuate end portions, recess **2016** formed therein along substantially its entire width and length. The recess **2016** defines a disc receiving housing which has a peripheral wall **2018** extending between a housing floor **2020***a*, **2020***b* and the upper planar surface **2014** of the tray **2012**. The housing peripheral wall **2018** comprises two elongate, longitudinally extending walls **2022**, **2024** and two arcuate end walls **2026**, **2028** connecting with the longitudinal walls. Desirably, the arcuate end walls are generally semi-circular and have a diameter slightly larger than the diameter of a disc. A flange or skirt **2029** depends from the periphery of planar surface **2014** with the lower edges of skirt **2029** generally flush with the lowermost floor **2020***b*.

[**0085**] In the two-disc embodiment of the tray, shown in **FIGS. 31-45**, circular discs A, B are supported in their rest positions in respective oblique planes relative to the housing floor **2020***a*, **2020***b* in each of two receiving areas **2030**, **2032** with disc A partially overlapping disc B and aligned along the longitudinal direction of the tray to form a row. Tray **2012** has a first disc receiving area **2030** formed therein extending from one peripheral arcuate end wall **2026** toward the median portion of the tray **2012**, including floor portion **2020***a*, and a second disc receiving area **2032** which is depressed from the first disc receiving area **2030** by virtue of an arcuate semi-circular downward step **2034** in the floor positioned between the arcuate end walls **2026**, **2028**, and generally parallel to arcuate end wall **2026**. The length of floor **2020***b* between the step **2034** and the opposite peripheral arcuate end wall **2028** represents the second disc receiving area **2032** and is approximately the diameter of a disc.

[**0086**] The discs are supported within the tray **2012** in a uniformly spaced apart in the longitudinal direction arrangement. As can be seen in **FIGS. 39 and 42**, one lower peripheral edge of disc B is supported in the corner **2040** defined between the step **2034** and the floor **2020***b*, and extends obliquely upward, relative to the floor **2020***b*, in the longitudinal direction with its upper peripheral edge adjacent the opposite transverse wall **2028**. The lower peripheral edge of disc B rests on nub **2044** which protrudes upwardly from floor **2020***b* and into recess **2016** from a location on step **2034** where step **2034** intersects the centerline CL-CL of tray **2012**. The right and left side peripheral edges of disc B rest on nubs **2046** which protrude upwardly from floor **2020***b* and into recess **2016** from locations on the peripheral wall which are, desirably, equiangularly spaced on either side of nub **2044**, preferably by about 90°. To create the oblique orientation of disc B relative to floor **2020***b*, nub **2044** protrudes a smaller distance above floor **2020***b* than do nubs **2046**, which desirably are the same height. Disc A is, desirably, supported generally parallel to disc B and is spaced longitudinally therefrom along the housing with the lower peripheral edge of disc A supported in the corner **2042** defined between the one peripheral arcuate end wall **2026** and the floor **2020***a*. The right and left side peripheral edges of disc A rest on nubs **2048** which protrude upwardly from floor **2020***a* and into recess **2016** from locations on the peripheral wall, which are equiangularly spaced, desirably by about 90°, from nubs **2050**. Nubs **2050** protrude upwardly from floor **2020***a* and into recess **2016** from locations on arcuate end wall **2026** and are spaced apart on opposite sides of end projection **2070**, as will be described more fully hereinafter. To create the oblique orientation of disc A relative to floor **2020***a*, nubs **2050**, which are the same height, protrude a smaller distance above floor **2020***a* than do nubs **2046**, which desirably are the same height. Thus, disc A is supported obliquely above its underlying floor element **2020***a*, the discs are generally parallel and disc A partially overlaps disc B with the extent of the overlap between adjacent discs depending on the number of discs spaced along the housing and the length of the housing.

[**0087**] In order to prevent inadvertent sliding of the discs out of tray **2012**, two side wall detents **2060** extend into the recess **2016** from each of the opposite longitudinal peripheral walls **2022**, **2024** in each of disc receiving areas **2030**, **2032**. The detents **2060** contact the edges of the discs A, B at longitudinal positions between the center of each disc and the peripheral edge thereof nearest arcuate end wall **2028**. Each of the detents **2060** comprises a tab **2062** projecting into the recess **2016** into contact with discs A, B from an adjacent depending segment **2064** of the peripheral longitudinal wall **2022**, **2024**. The wall segment **2064** is defined by a pair of longitudinally spaced apart vertical slits **2066** in the peripheral wall which extend from the floor **2020***a*, **2020***b* upwardly toward the planar surface **2014** and a horizontal slit **2068** separating the wall segment **2064** from floor **2020***a*, **2020***b*. The slits **2066** separate the segment **2064** from the remainder of the peripheral wall and, together with the slit **2068**, allow the depending segment **2064** to flex toward and away from the recess **2016** independent of the remainder of the peripheral wall. When no obliquely-directed removal force is applied to a disc, the pressure of the disc against the tab **2062** is insufficient to cause the wall segment **2064** to flex inwardly away from the recess **2016** and the discs are positively retained against sliding move-

ment. However, under the influence of an obliquely directed disc removal force, the force of the disc against tabs **2062** causes wall segment **2064** to deflect away from the recess **2016**, allowing the disc to be slidingly removed from tray **2012**.

[**0088**] In order to prevent the discs from inadvertently moving in an axial direction, circumferentially spaced apart horizontal projections **2070** overlie and bear against the upper surface of discs A, B at their peripheral edges. Desirably, three horizontal projections **2070** overlie and bear against the upper surface of disc A at its peripheral edges and extend from the arcuate end wall **2026** inwardly into recess **2016**. The projections **2070** are positioned a small distance above floor portion **2020***a* and are equally spaced, preferably at approximately 90° intervals, about the arcuate end wall **2026**. Desirably, end wall projection **2070** is positioned at the intersection of arcuate end wall **2026** and the centerline CL-CL of tray **2012** and the side wall projections **2070** are positioned at equal circumferential distances on either side of end wall projection **2070** and angularly spaced about 90° therefrom. When disc A is inserted into tray **2012**, its lower peripheral edge and adjacent side edges are positioned in corner **2042** on nubs **2050** below the projections **2070** and its side edges rest on nubs **2048** to space disc A from disc B and orient it generally parallel thereto. The projections **2070** bear against the upper surface of disc A around its periphery in order to retain disc A against axial movement in the tray **2012**. In like manner, two horizontal projections **2070** desirably overlie and bear against the upper surface of disc B at its peripheral edges and extend from opposite longitudinal walls **2022**, **2024** inwardly into recess **2016**. When disc B is inserted into tray **2012**, its lower peripheral edge is positioned in corner **2040** on nub **2044** with its side edges resting on nubs **2046** and below the projections **2070**. The projections **2070** bear against the upper surface of disc B at its side edges in order to retain disc B against axial movement in the tray **2012**.

[**0089**] Referring to **FIG. 45**, the discs are insertable into and removable from tray **2012** by sliding in the oblique direction corresponding with their orientations in the tray. Thus disc B may be removed by sliding it over inclined wall portion **2052** of arcuate end wall **2028**, which desirably is inclined at substantially the same oblique angle as disc B in the tray, in a direction toward arcuate end wall **2028**. Disc B may be slid from its oblique position in tray **2012** by exerting an obliquely-directed removal force to the disc without lifting the disc. In like manner, disc A may be slid out from its position in tray **2012**. It is noteworthy that the discs must be slid at least 5 mm, preferably at least 10 mm, out of tray **2012** to clear overlying projections **2070** before they can be moved axially. It will be apparent that either of discs A, B can be slidably removed from tray **2012** without need for removing the other of the discs.

[**0090**] The paper board **2080** of **FIGS. 35-45** comprises a plurality of paper panels which are desirably formed from a presized, pre-printed unitary blank. In one embodiment of the invention, the blank includes two panels **2082**, **2084** onto either of which a plastic tray **2012** (with, optionally, additional plastic trays stacked thereon, as will be described more fully hereinafter), is adhesively or mechanically attached, separated by a spine panel **2086**. Fold lines **2088**, **2090** separate panels **2082**, **2084**, respectively, from spine panel **2086** and allow the panels to be pivoted between package open (**FIG. 36**) and package closed (**FIG. 35**) positions. The panels may be single ply although, in some instances, it may be desirable for one or both of these panels to be two or multiple ply. Appropriate latching means (not shown), which are well known in the field, may be used if it is desired to latch the package **2010** in the closed position.

[**0091**] The trays **2012** may be used singly or arranged in a stack together with the paperboard **2080** to form the package of the present invention. Most preferably, a single tray **2012** or bottom tray of a stack of trays **2012** is adhesively adhered to panels **2084** serving as the base panel with the other panel **2082** serving as the cover panel. As shown in **FIGS. 35-41**, when the trays are arranged in a stack, they are hinged to each other by a flexible hinge member **2092** that is affixed to one side of the stack of trays, such as along one of the longitudinal edges. The hinged member **2092** may be fabricated, as is well known, from a suitable material, such as a styrene-based film or tape, polyethylene, polypropylene, or the like. For example, the hinge member **2092** may be fabricated from a strip of commercially available poly tape. The hinge member **2092** must be flexible enough to allow the stack of trays to be opened and closed freely, as by pivoting the upper tray, and each succeeding tray, in order, about the flexible hinge. In addition, the hinge member **2092** must be strong enough to prevent premature failure of the hinge member or separation of the hinge member from trays in the stack. The hinge member **2092** may be affixed to the trays using an adhesive, or using a mechanical technique, including techniques using ultrasound or heat.

[**0092**] In one embodiment, discs A and B are positioned in tray **2012** such that their upper peripheral edges are at substantially the same height and trays **2012** are dimensioned in such a manner that the upper peripheral edges of discs A and B project a small distance above planar surface **2014**. This facilitates locking the discs in the tray during storage, shipping and handling. Referring to **FIGS. 41-44**, cover **2082** of paperboard **2080** locks discs A, B in the single tray or uppermost tray in a stack by providing a pair of pockets **2100**, **2102** in the inward facing panel **2083** of cover **2082**, which pockets **2100**, **2102** are positioned and oriented to receive the upper peripheral edges of discs A, B, respectively, protruding above the planar surface **2014** of tray **2012**. In this manner, discs A, B are locked between the corners **2040**, **2042** supporting the lower peripheral edges of the discs and pockets **2100**, **2102** in cover panel **2083** supporting the upper peripheral edges of the discs.

[**0093**] In another embodiment, shown in **FIGS. 36-40**, trays **2012** are dimensioned in such a manner that the upper peripheral edges of discs A and B are substantially flush with planar surface **2014**. In this embodiment, cover **2082** of paperboard **2080** locks discs A, B in the single tray or uppermost tray in a stack by providing cover mounted features which project from panel **2083** of cover **2082** into recess **2016** proximate the upper peripheral edges of discs A, B. These cover mounted features may be ribs **2108**, **2110** positioned and oriented to abut or proximately abut the upper peripheral edges of discs A, B, or other cover mounted or cover embossed features which project from panel **2083** into recess **2016** to lock discs A, B in tray **2012**.

[**0094**] When trays **2012** are arranged in a stack, the discs in the upper tray are locked in position by cover **2082** and

the discs in each lower tray are locked in position by the tray immediately above. To accomplish this, each tray **2012** includes a transversely elongate, desirably, generally oval shaped, aperture **2104** extending through floor **2020***b*. The aperture **2104** is positioned and oriented in floor **2020***b* to receive the upper peripheral edge of disc A which protrudes above the planar surface of the immediately lower tray in the stack. In addition, each tray **2012** includes a rib **2106** (see **FIG. 32**) which depends from the underside of floor **2020***b* of the tray at about the area of inclined wall portion **2052** and is adjacent peripheral skirt **2029**. The upper peripheral edge of disc B projecting from the immediately lower tray in the stack abuts, and is locked into position, by rib **2106**. In this manner, discs A, B in a tray **2012** are locked in position between the corners **2040**, **2042** supporting the lower peripheral edges of the discs and aperture **2104** and rib **2106**, respectively, constraining the upper peripheral edges of the discs.

[**0095**] The discs A, B in a single tray or the top tray in a stack are locked in place when cover **2082** is closed. Discs A, B in other than the top tray in a stack of trays are locked in place when the package **2010** is in the closed position with each tray in a stack adjacent to the trays above and below it. The opening of the cover **2082** releases the discs in the top tray and pivoting the trays in the stack about hinge member **2092** releases, in turn, the discs in each tray. The reverse is true when closing package **2010**. As the stack is re-established and the cover is closed, the discs in the trays are once again locked in position. The discs are securely held in the tray **2012**, but not locked therein, when the user can directly view and touch the discs in a facing tray.

[**0096**] While the present invention has been described in terms of specific embodiments thereof, it will be understood that no limitations are intended thereby to the details of construction or design, the present invention contemplating and including any novel feature or novel combination of features which are herein disclosed.

We claim:

1. An apparatus for holding an information storage medium, comprising:

a base portion defining a volume, said base portion including a receiving area adapted to receive an information storage medium contained within a pouch having a periphery,

wherein said pouch is hingedly connected along a first edge of its periphery to said base portion, said pouch comprising an opening at another edge of said periphery for receiving said information storage medium and containing it within said pouch.

2. The apparatus of claim 1, wherein said base portion comprises a tab for engaging said pouch in said receiving area, the tab being received in a notch formed on one edge of said periphery of said pouch.

3. The apparatus of claim 2, wherein said tab restricts movement of the pouch when said pouch is received in the receiving area.

4. The apparatus of claim 1, wherein said base portion includes a receiving area that is adapted to receive more than one pouch, at least two of said pouches being hingedly connected to the base portion at the same location.

5. The apparatus of claim 1, wherein said base portion includes a receiving area that is adapted to receive more than one pouch, at least one of said pouches being hingedly connected to the base portion at a location different from the location of hinged connection of at least one other pouch.

6. The apparatus of claim 5, wherein said at least one pouch hingedly connected to said base portion at a location different from the location of hinged connection of said at least one other pouch, and said at least one other pouch, are in parallel non-contacting relationship when contained within said volume of the base portion.

7. The apparatus of claim 1, wherein said pouch is adapted to receive one information storage medium.

8. The apparatus of claim 1, wherein said pouch is adapted to receive more than one information storage medium.

9. The apparatus of claim 1, further comprising a cover hingedly connected to said base portion.

10. The apparatus of claim 9, wherein said cover comprises paperboard.

11. An apparatus for holding an information storage medium, comprising:

a base portion defining a volume, said base portion including a receiving area defining a periphery and adapted to receive an information storage medium, said information storage medium being slidably removable from said receiving area,

wherein said receiving area comprises a flexible detent formed along said periphery to limit sliding movement of the information storage medium in said receiving area.

12. The apparatus of claim 11, wherein the information storage medium is a disk and the receiving area is adapted to receive more than one disk.

13. The apparatus of claim 12, wherein the disks are received in a partially overlapping configuration.

14. The apparatus of claim 11, said base portion further including a projection formed thereon, said projection partially extending over a portion of an upper surface of the information storage medium received in said receiving area, such that said projection prevents movement of said information storage medium in an axial direction.

15. The apparatus of claim 11, further comprising a sheet attached to said base portion, said sheet partially covering said information storage medium received in said receiving area.

16. The apparatus of claim 11, further comprising a cover hingedly attached to said base portion.

17. The apparatus of claim 16, wherein said cover comprises paperboard.

18. An apparatus for holding a disk, comprising:

a base portion defining a volume, said base portion including a receiving area defining a periphery and adapted to receive a disk, said disk being slidably removable from said receiving area,

wherein said periphery of said receiving area is adapted to prevent sliding movement of the disk.

19. The apparatus of claim 18, wherein said base portion further includes a hingedly attached flap, said flap movable to a closed position in which the flap partially extends over a portion of the disk, and

wherein said flap in said closed position restricts axial movement of said disk from said receiving area.

20. The apparatus of claim 19, wherein the receiving area of said base portion is adapted to receive more than one disk, and wherein each disk is partially overlapped by at least one other disk.

21. The apparatus of claim 20, wherein the hingedly attached flap in a closed position partially extends over a portion of each disk and restricts axial movement of the disks from the receiving area.

22. The apparatus of claim 18, further comprising a cover.

23. The apparatus of claim 22, wherein said cover comprises paperboard.

24. An apparatus for holding more than one disk, comprising:

a base portion defining a volume, said base portion including a receiving area defining a periphery and adapted to receive more than one disk in a partially overlapping configuration in which each disk is disposed at an angle relative to the plane of said base portion, said disks being slidably removable from said receiving area,

said apparatus further comprising more than one sheet attached to said base portion, wherein each sheet partially covers a corresponding one of the disks received in said receiving area.

25. The apparatus of claim 24, further comprising a flap formed in each sheet for preventing sliding movement of a corresponding disk in the receiving area.

26. The apparatus of claim 24, said base portion further comprising arcuate end walls,

each of said sheets comprising ears extending from opposite sides of an upper peripheral portion of the sheet, said ears engaging said arcuate end walls such that the sheet is locked in position in the base portion.

27. The apparatus of claim 25, wherein said receiving area comprises a flexible detent formed along said periphery to further limit sliding movement of the disk in said receiving area.

28. The apparatus of claim 27, said base portion further including a projection formed thereon, said projection partially extending over a portion of an upper surface of the disks received in said receiving area, such that said projection prevents movement of said disks in an axial direction.

29. The apparatus of claim 24, further comprising a cover hingedly attached to said base portion.

30. The apparatus of claim 29, wherein said cover includes vertically spaced apart elements formed in an inward-facing panel of said cover, said vertically spaced apart elements disposed at positions corresponding to upper peripheral edges of said disks in the receiving area.

31. The apparatus of claim 30, wherein said vertically spaced apart elements comprise pockets for receiving corresponding upper peripheral edges of said disks when the cover is closed.

32. The apparatus of claim 30, wherein said vertically spaced apart elements comprise ribs, said ribs engaging corresponding upper peripheral edges of said disks when the cover is closed.

33. The apparatus of claim 30, wherein said cover comprises paperboard.

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