A disc and information article sleeve is provided for allowing safe storage of discs and/or information articles. The sleeve may include a multiple interface connector to permit the sleeve to connect with a plurality of different secondary storage devices, such as a disc wallet. The sleeve may also include a disc access opening formed on a wall of the sleeve and an information article access opening along a different edge of the sleeve. The sleeve also may include a disc retention tab to allow for one-step insertion or removal of a disc from the sleeve. The sleeve may be designed to include two disc access openings and multiple sleeves may be incorporated together onto one page of sleeves.
DISC AND INFORMATION ARTICLE SLEEVE

FIELD OF THE INVENTION

[0001] The invention relates generally to storage units for housing digital media, such as compact discs. More specifically, the invention relates to a storage device for simple removal of a disc and connection to multiple types of secondary storage devices.

BACKGROUND OF THE INVENTION

[0002] The advancement of the computer industry has impacted both industry and society immensely. Today, the computer industry is a multi-billion dollar business machine, with advancements in speed, technology, size, and cost everyday. One area of advancement is in storage units and capacity for media and multimedia information.

[0003] The early years in the computer industry found magnetic tapes as a means for storing information. Advancements in technology led to the 5¼-inch floppy disc, which soon lead to the 3½-inch floppies. Eventually, optical technology led to the compact disc and digital video disc, or digital versatile disc. Information of various type, whether audio, video, data, or multimedia can be stored in these various storage devices.

[0004] Today, two of the primary means of information storage are the compact disc (CD) and the digital video disc (DVD). These two forms of information storage have become a staple in both the computer and music/entertainment industries. The reasons are clear. The data storage capacity of a CD and DVD is much larger than compared to other technologies. Today, much of the software that is sold is only available on CD, DVD, or other similar media forms. Alternative media forms such as the floppy disk, videocassette recorder tapes and audiocassettes are being phased out by many manufactures or listed as an additional feature to the standard model.

[0005] The actual operating surface of CDs, DVDs and other similar forms of information storage is susceptible to damage from contact with oil from a fingerprint, dust particles, and scratches to its surface to name a few. One type of protective device is the jewel case design that opens like a book. However, these protective devices are bulky and rigid. Another type of protective device is the conventional CD sleeve with an interface that allows the sleeve to be held in a secondary storage device. For example, CD wallets can hold a number of CD sleeves together by a holding system, such as a two-ring binder. Conventional CD sleeves are manufactured to permit connection with only one type of holding system, as shown in FIGS. 1A, a rod-based interface 101, and 1B, a hole binder-based interface 121. One disadvantage with the conventional CD sleeve is the fact that one cannot easily detach the sleeve from one type of secondary holding system and reattach into a completely different type of secondary holding system.

[0006] Further, conventional CD sleeves, such as shown in FIG. 1B, can have a pocket/interior compartment on one face 123 for a CD and a second pocket/interior compartment on an opposite face 125 for either another CD or some piece of information, i.e., a CD insert. For example, individuals that purchase a new CD of music can place the CD in one pocket and the song list in the second pocket on the back of the sleeve. As shown in FIG. 1B, these conventional sleeves have both access openings to the pockets along the same peripheral edge of the CD sleeve. However, when attempting to load discs and information articles with conventional disc/disk loading equipment, the disc loading machine has been known to errantly insert the disc into the pocket designed for the information article 125, or further still will insert both the CD and the information article into the same pocket 123 or 125. This requires more time and money spent in quality control to ensure proper packaging.

[0007] Moreover, conventional CD loading equipment often fails to properly open a CD sleeve port/interior compartment for insertion of a disc. Conventional equipment will open a sleeve pocket by use of a suction system that grabs and retracts to widen the opening of the pocket. Conventional CD sleeves may be found to work properly with one disc loading manufacturer's equipment, but not with another. Each disc-loading manufacturer incorporates a different method for opening a CD sleeve by suction.

[0008] Still further, some CD sleeves have security features to protect from loss of or damage to a CD. One feature to prevent loss of a CD has been to make the pocket access opening at the top of the sleeve. However, with a large enough jolt and/or prolonged insertion and removal, a CD can possibly fall out of such a sleeve. As shown in FIG. 1C, another feature has been the use of a large flap 141 that spans substantially the entire width of the CD sleeve 100 and over the entire access opening 143. This large flap must be tucked into the interior compartment of the CD sleeve 100. The large flap is intended to help secure the CD in the sleeve and protect against the CD sliding back toward the access opening. However, such a large flap has disadvantages in that it does not allow for easy insertion by an automated disc loading machine or one step removal or insertion by an individual. During insertion, the large flap must to be folded over once a CD has been inserted into the sleeve.

BRIEF SUMMARY OF THE INVENTION

[0009] To overcome limitations in the prior art described above, and to overcome other limitations that will be apparent upon reading and understanding the present specification, the present invention is directed to a disc and information article sleeve that standardizes a disc sleeve for multiple applications. The invention involves a cost-effective disc sleeve solution that will help alleviate many of the problems associated with disc insertion machines and protection of discs from damage.

[0010] A first aspect of the invention provides a multiple interface connector to permit a single CD sleeve to connect with a plurality of different holding systems/secondary storage devices. An interface connector, whether affixed to or incorporated within a disc sleeve, has multiple precut interfaces allowing a user to detach a CD sleeve from one type of secondary storage device and attach to a completely different type of secondary storage device. Alternatively, the connector can include multiple perforated sections allowing a user to modify the connection to permit connection with a particular secondary holding system.

[0011] Another aspect of the invention provides a second access opening to an interior compartment/pocket along or immediately adjacent to a different edge of a disc sleeve than a disc access opening. This aspect of the invention can be
arranged to accommodate an information article or even a second optical disc, CD or DVD.

[0012] In yet another aspect of the invention, a disc access opening is provided that facilitates automated disc insertion by a multitude of disc loading manufacturers. This aspect includes a flexible disc retention tab positioned near the center of the access opening to allow for easy one-step removal/insertion of a disc while still protecting the disc from falling out of the disc sleeve.

[0013] In some embodiments, the disc sleeve can be arranged with multiple disc sleeves onto a single sheet of disc sleeves. Other features and advantages of the present invention will become readily apparent in view of the following detailed description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] A more complete understanding of the present invention and the advantages thereof may be acquired by referring to the following description in consideration of the accompanying drawings, in which like reference numbers indicate like features, and wherein:

[0015] FIG. 1A illustrates a conventional CD sleeve with a rail-based interface connection;

[0016] FIG. 1B illustrates a conventional CD sleeve with a two-ring binder-based interface connection and two pockets along a same edge;

[0017] FIG. 1C illustrates a conventional CD sleeve with a large flap extending substantially along an entire edge;

[0018] FIG. 2A illustrates a perspective view of a disc sleeve with a multiple interface connector, a disc access opening immediately adjacent to a horizontal edge, and an information article access opening along a vertical edge according to one or more aspects of the invention;

[0019] FIG. 2B illustrates a cross section of the disc sleeve in FIG. 2A;

[0020] FIG. 3A illustrates a connecting member to a sleeve with multiple perforated sections to permit connection to various secondary holding systems according to one or more aspects of the invention;

[0021] FIG. 3B illustrates a connecting member to a sleeve with multiple interface configurations to permit connection with various secondary holding systems according to one or more aspects of the invention;

[0022] FIG. 4 illustrates a front view of the disc sleeve with a generally T-shaped groove and disc retention tab according to one or more aspects of the invention;

[0023] FIG. 5 illustrates a front view of the disc sleeve, shown with a CD or DVD contained therein in phantom form according to one or more aspects of the invention;

[0024] FIGS. 6A-6D illustrate alternative configurations of the disc retention tab according to one or more aspects of the invention;

[0025] FIG. 7A illustrates a perspective view of the disc sleeve, shown with a CD or DVD contained therein in phantom form prior to removal of the CD or DVD according to one or more aspects of the invention;

[0026] FIG. 7B illustrates a perspective view of the disc sleeve, shown with a CD or DVD contained therein in phantom form during removal from the disc sleeve according to one or more aspects of the invention;

[0027] FIG. 8 illustrates a perspective view of the disc sleeve, shown with the information article access opening along a vertical edge and the disc access opening, shown in phantom form, immediately adjacent to a horizontal edge of the disc sleeve according to one or more aspects of the invention;

[0028] FIG. 8B illustrates a perspective view of the disc sleeve, shown with a disc access opening, shown in phantom form, immediately adjacent to a horizontal edge of the disc sleeve and a second disc access opening immediately adjacent to a vertical edge of the disc sleeve according to one or more aspects of the invention;

[0029] FIG. 8C illustrates a cross section of FIG. 8B;

[0030] FIG. 8D illustrates a cross section of FIG. 8B;

[0031] FIG. 9 illustrates a perspective view of a dual insertion with a disc being inserted through a disc access opening into an interior compartment immediately adjacent to a horizontal edge of the disc sleeve and an information article being inserted through an information article access opening into an interior compartment along a vertical edge according to one or more aspects of the invention;

[0032] FIG. 10A illustrates a sheet of two disc sleeves according to one or more aspects of the invention;

[0033] FIG. 10B illustrates a sheet of two disc sleeves according to one or more aspects of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0034] In the following description of the various embodiments, reference is made to the accompanying drawings, which form a part hereof, and in which is shown by way of illustration various embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural and functional modifications may be made without departing from the scope of the present invention.

[0035] It should be noted by those skilled in the art that the term “disk” has come to define an information storage medium utilizing magnetic technology. Further, the term “disk” has come to define an information storage medium utilizing optical technology. For the purposes of disclosing this invention, the term “disk” will be used to generally comprise the known technologies of magnetic storage, optical storage, a combination of the two, and any other similar flat information storage medium.

[0036] With reference to FIG. 2A, an improved sleeve for detachably storing CD/DVDs and accompanying information articles into a secondary storage device is shown. For purposes of describing the present invention, FIG. 2A will represent what will be defined as the front of the CD sleeve. Terms oriented toward a back, bottom, or such will be referenced in relation to the front on the CD sleeve as shown in FIG. 2A. FIG. 2A shows the front of a disc sleeve 200 with a multiple interface connector 220 affixed along a side of the body 210 of the CD sleeve. The disc sleeve 200 can
be substantially rectangular in shape and the disc sleeve body 210 and walls of the disc sleeve 200 may be substantially rectangular in shape. Further, shown is a disc access opening 240 providing access into an interior compartment on the front of the CD sleeve immediately adjacent to a horizontal edge 245 at the top of the CD sleeve. An information article access opening 260 (exaggerated in FIG. 2) providing access into another interior compartment on the back of the CD sleeve is located along a vertical edge 265 at the side of the CD sleeve on an opposite side of the disc sleeve body 210 from the interface connector 220. The information article access opening 260 along a vertical edge 265 at the side of the CD sleeve is along a different edge than the disc access opening 240, and in this embodiment is located on an edge 90° displaced from the disc access opening 240. This prevents mistakenly loading discs into the information article access opening 260 during automated processes as opposed to having both access openings for the front and back interior compartments configured to the top of the CD sleeve. The multiple interface connector 220 permits interface to a variety of secondary storage devices. In addition, the generally L-shaped disc access opening 240 is positioned to facilitate automated disc insertion into an interior compartment while still protecting the disc from damage. Further, for purposes of this invention, the term “at” will be used to generally comprise “immediately adjacent to” and “along.” Therefore, as described herein, an information article access opening 260 is “along” a vertical edge 265 could be “immediately adjacent to” a vertical edge 265.

[0039] In FIG. 2B, a cross section view of FIG. 2A is shown. The disc sleeve 200 comprises a front wall and back wall, as well as a divider. The front wall and divider are affixed to form a front compartment. The back wall and divider are affixed to form a back compartment. Further, as illustrated in FIG. 2B, the disc access opening 240 is shown immediately adjacent to the top of the CD sleeve 200.

[0040] Referring to FIGS. 3A and 3B, two types of multiple interface connectors are shown. In FIG. 3A, a multiple interface connector 310 is shown. Connector 310 can be a separate piece from the body of the disc sleeve that is affixed to the remainder of the disc sleeve by adhesive or RF welding or any other suitable technique. Connector 310 could also be an integral extension of the disc sleeve itself and not a separate piece affixed to the remainder of the disc sleeve. As shown in FIG. 3A, connector 310 is perforated to form an interface to connect with a variety of secondary storage devices. Elements 312, 314, and 316 represent a pair of perforated sections that could be removed (i.e., punched out) to form an interface to connect with a two-ring binder-based secondary storage device. Similarly, elements 314 represent a pair of perforated sections that could be removed to form an interface to connect with two rings of a three-ring binder-based secondary storage device and thus have a different spacing. Elements 316 represent a pair of perforated sections that could be removed to form an interface to connect with an inverted L-shaped rail-based secondary storage device. Removal of any of elements 312, 314, and 316 can be accomplished by punching or cutting out the perforated sections. The perforations and the perforated sections 312, 314, and 316 permit manual removal of the sections 312, 314, and 316 to connect with the desired secondary storage device. Other similar methods of removal could be employed.

[0039] In FIG. 3B, a multiple interface connector 350 is shown. As with connector 310 in FIG. 3A, connector 350 can be a separate piece from the body of the disc sleeve that is affixed to the disc sleeve by adhesive, welding, etc. Connector 350 could also be an integral extension of the disc sleeve itself or a separate element affixed to the remainder of the disc sleeve. In one embodiment of the invention, connector 350 is precut with through holes to form an interface to connect with a variety of secondary storage devices. Elements 352 represent a pair of openings that form an interface to connect with a two-ring binder-based secondary storage device. Similarly, elements 354 represent a pair of openings that form an interface to connect with an inverted L-shaped rail-based secondary storage device. Still further, any combination of the multiple interfaces described above could be employed into a connector. For example, a manufacturer could have the two- and three-ring style perforated sections already punched out while leaving the inverted L-shaped style still in a perforated condition. For purposes of the present invention, the term “binder spine interface elements” includes perforated sections, precut openings, and combinations of the perforated sections and precut openings.

[0040] Software manufacturing companies may have various forms of disc sleeves that would have to be manufactured to permit connection with the various styles of secondary disc sleeve storage devices. By standardizing a disc sleeve to permit multiple interface types to connect to it, the overall cost in disc sleeve procurement and inventory will be decreased. A software manufacturer will only need to maintain one type of disc sleeve to accommodate various holding systems. Further, a standard design would allow for better quality control and easier conversion from CD based software technology to DVD based software technology. This also reduces the inventory level at the retailer level for CD sleeves sold by retailers as the retailer would only need to stock one product instead of three, for example.

[0041] With reference to FIG. 4, one or more aspects of the invention are shown in the disc access opening 420 of the disc sleeve 400. Although not shown in this figure, the multiple interface connector 310 or 350 or some combination thereof would preferably be affixed to or incorporated therein. The disc access opening 420 is a precut access opening in the front 410 of the CD sleeve 400, positioned in the form of a generally T-shaped groove, with a disc retention tab 425. The disc access opening 420 is positioned to allow for easy insertion of a disc by a disc-loading machine into an interior compartment 440. The position of the groove and the disc retention tab 425 allow for suction systems of disc loading machines to more easily insert discs into an interior compartment 440 of a sleeve 400. The disc retention tab 425 allows for easy insertion of a disc by a variety of manufacturers' disc-loading equipment.

[0042] FIG. 5 illustrates the disc sleeve in which a disc, CD/DVD or other similar optical storage medium, 530 rests inside of an interior compartment/pocket 510 of the disc sleeve 500. Portions of the disc 530 are shown by reference element 530a in phantom form to represent the portions of the disc resting underneath the front wall 560. The disc 530 can be removed and reinserted into the front interior compartment 510 through the disc access opening 550 at the top
of the disc sleeve 500. The disc retention tab 570 is positioned to allow for easy one-step removal or insertion of a disc 530 while maintaining security in the fact that the disc 530 will not accidentally or inadvertently fall out of the front interior compartment 510 of the disc sleeve 500. The disc retention tab 570 is flexible to allow for easy insertion and removal of a disc 530, while rigid enough to withstand the weight of the disc 530 pushing against a horizontal edge 590 at the top of the disc sleeve 500 when the disc sleeve 500 is typically being moved or transported.

[0043] FIGS. 6A-6D illustrate alternative configurations of the disc retention tab 570 as part of the disc access opening 550 as shown in FIG. 5. FIGS. 6A-6D illustrate alternative disc retention tabs 570a-570d in the form of a single arc tab 570a, a dual arc tab 570b, a trapezoidal tab 570c, and a rectangular tab 570d. Other shapes for the tab 570 could also be used, depending on the aesthetic appearance of a user or manufacturer may intend.

[0044] FIGS. 7A and 7B illustrate the one-step removal process. In the prior art as shown in FIG. 1C, a user would be forced to first, pull out the large flap that has been stuck into the front interior compartment/pocket of the disc sleeve, and second, fold back the large flap to allow for removal/insertion of a disc from the front pocket. As shown in FIGS. 7A and 7B, the position of the disc retention tab allows for a one-step removal/insertion. FIG. 7A illustrates a perspective view of a disc sleeve 700 prior to removal of a CD/DVD 710. The disc access opening 730 and the disc retention tab 750 hold the disc 710 in place, preventing the disc 710 from falling out of the front interior compartment 770 of the disc sleeve 700. The disc retention tab 750 extends downward into the top of the generally T-shaped groove preferably extending in the range of 3 to 7 mm in height. Further, the disc retention tab 750 has a preferably width in the range of 18 to 40 mm. The disc access opening 730 is positioned on the front of the disc sleeve 700 so that the disc access opening 730 generally has the shape of a “T” with a centered concave recess at its top edge. The generally T-shaped disc access opening 750 includes a cross channel 772, generally running in a direction from the top to the bottom of the disc sleeve with a preferably width in the range of 118 to 122 mm, and a stem channel 774, running in a direction perpendicular to the direction of the cross channel 772, with a preferable height in the range of 63 to 69 mm. The generally T-shaped opening has a preferable height of approximately 5 mm near the ends of the cross channel 772, and a maximum preferable width of approximately 19 mm near the top end of the stem channel 774. The bottom of the concave recess is preferably positioned approximately 13 mm from the top of the disc sleeve 700. However, it is recognized that other dimensions and ranges would also function appropriately and the invention is not hereby limited to such dimensions and ranges.

[0045] FIG. 7B illustrates a perspective view of the disc sleeve 700 during removal of the disc 710 from the front interior compartment 770 through the disc access opening 730. In one embodiment of the invention, the disc retention tab 750 is positioned so that the tab 750 need not be pulled out from the front interior compartment 770 to fold back the tab 750. A user can remove the disc 710 from the disc sleeve 700 in one step by folding the disc retention tab 750 over the back side of the disc sleeve 700. Because the CD sleeve 700 can be composed of highly flexible material, the one step of folding the disc retention tab 750 over the back side of the disc sleeve 700 is much easier. Other positions for the disc retention tab 750 could allow for other methods of insertion or removal from the disc sleeve 700.

[0046] The back of the disc sleeve 400 is shown in FIGS. 8A and 8B. FIG. 8A illustrates an information article access opening 840 at a vertical edge at the side of the disc sleeve 400 and the disc access opening 420 immediately adjacent to a horizontal edge on the front of the disc sleeve 400. A divider 880 may separate the two sides, wall 410 and wall 890, of the disc sleeve 400. Preferably, the disc sleeve 400 comprises the two separate walls, 410 and 890, and the divider 880. The information article access opening 840 permits a machine or user to load an information article, such as a song pamphlet for a CD, into a back interior compartment 850 of the disc sleeve 400. License agreements for software, chapter index information for movies, and user specified information are just some others types of information that can be inserted into a back interior compartment 850 through the information article access opening 840. Further, as shown in FIG. 8B, a second generally T-shaped disc access opening 820, similar to the disc access opening 420, and a second disc retention tab 825, similar to the disc retention tab 425, could be positioned on wall 890 in lieu of the information article access opening 840. Therefore, software that requires two discs to load or movies that require two discs to hold the multimedia data can both be securely held in one disc sleeve. In this example, a disc loading machine can insert a software disc 1 into the first disc access opening and a software disc 2 into a second disc access opening without a potential problem that the wrong disc is loaded into the wrong disc access opening. Because the disc access openings are positioned along different edges and on opposite faces of a disc sleeve, a disc-loading machine can easily insert discs and/or information articles simultaneously.

[0047] In FIGS. 8C and 8D, cross section views of FIG. 8B are shown. The disc sleeve 400 comprises a front wall and back wall, as well as a divider. The front wall and divider are affixed to form a front compartment. The back wall and the divider are affixed to form a back compartment. As illustrated in FIG. 8C, the cross channel of the disc access opening 420 is shown immediately adjacent to the top of the CD sleeve 400, while the stem channel of the second disc access opening 820 is shown near the middle of the disc sleeve 400. In FIG. 8D, the stem channel of the disc access opening 420 is shown, while the stem channel of the second disc access opening 820 is shown.

[0048] FIG. 9 illustrates dual insertion of a disc and an information article by a disc-loading machine. For a disc sleeve 900, an information article 910 is inserted into an interior compartment, on the rear of the disc sleeve 900, through an information article access opening 920 on a side of the disc sleeve 900. This insertion is done laterally as indicated by arrow 915. Simultaneously, a disc 930 is inserted into another interior compartment through a disc access opening 940 immediately adjacent to a different edge and on the front of the disc sleeve 900. This insertion is done vertically as indicated by arrow 935. Because the two access openings, 920 and 940, are positioned in this fashion, and insertion is performed in two different directions, and preferably along or immediately adjacent to two different axes, a disc loading machine can easily insert a disc 930 and
information article 910 into a disc sleeve 900 without the problems associated with a machine loading a disc and an information article into the same access opening. This helps to reduce the costs associated with quality control.

[0049] The invention may be embodied in a number of combinations from those described above. For example, the disc access opening may be immediately adjacent to a vertical edge while the information article access opening is at a horizontal edge at the top of the disc sleeve. Further, the disc access opening may be immediately adjacent to a first horizontal edge, such as the edge at the top of the disc sleeve, while the information article access opening may be at a second horizontal edge located at the bottom of the disc sleeve. In addition, the invention may embody multiple sleeves incorporated onto one page of sleeves. FIGS. 10A and 10B illustrate examples where disc sleeves 1010 and 1020 reside on a same disc sleeve page 1000. In FIG. 10A, a disc sleeve page 1000 is shown with two disc sleeves, 1010 and 1080, incorporated therein. Disc sleeves 1010 and 1080 each have a disc access opening 1020a and 1020b, disc retention tab 1025a and 1025b, and front interior compartment 1040a and 1040b. Disc sleeve 1010 has a disc access opening 1020a immediately adjacent to the top of the disc sleeve page 1000, while disc sleeve 1020b has a disc access opening 1025b immediately adjacent to the bottom of the disc sleeve page 1010. Further, a connector 1050 is shown comprising perforated sections that can be removed to allow interface to a three-ring binder style and inverted L-shaped style secondary storage device. The connector 1050 is shown by example and is not limited to the interface connections shown therein. Although not shown in this example, disc sleeve page 1000 could include a plurality of information article access openings or more disc access openings on the back of the disc sleeves 1010 and 1080.

[0050] Referring now to FIG. 110b, a disc sleeve page 1000 is shown with two disc sleeves, 1010 and 1080, incorporated therein. Disc sleeves 1010 and 1080 each have a disc access opening 1020a and 1020b, disc retention tab 1025a and 1025b, and front interior compartment 1040a and 1040b. Disc sleeve 1010 has a disc access opening 1020a immediately adjacent to the top of the disc sleeve page 1000, while disc sleeve 1020b has a disc access opening 1025b immediately adjacent to a side of the disc sleeve page 1010 displaced from the top of the disc sleeve page 1000 by approximately 90°. Further, a connector 1050 is shown comprising perforated sections that can be removed to allow interface to a three-ring binder style and inverted L-shaped style secondary storage device. The connector 1050 is shown by example and is not limited to the interface connections shown therein. Although not shown in this example, disc sleeve page 1000 could include a plurality of information article access openings or more disc access openings on the back of the disc sleeves 1010 and 1080. Multiple combinations can be arranged to allow for more than two access openings. Further, the access opening locations along certain planes can be modified to position one disc access opening immediately adjacent to a horizontal edge and another disc access opening immediately adjacent to a vertical edge. Combinations and number of access openings are not limited by the examples.

[0051] The walls, divider, and connector can comprise a plurality of materials. Preferably, the front and back walls and the divider of the disc sleeve comprise polypropylene. Further, the connector preferably comprises a micron satin spine strip, which is ultrasonically welded to the disc sleeve. Again, the disc sleeve can comprise many different types of materials.

[0052] Although not shown in the accompanying drawings, each edge of the disc sleeve may be welded together or affixed by adhesive or similar technique. A technique to affix the walls and divider of the disc sleeve together could include a combination of welding and adhesive. Generally, the front wall and divider and the back wall and divider form the front and back interior compartments respectively. Preferably, the edges of the front wall and divider are affixed around the entire peripheral edges. To accommodate an information article access opening, the edges of the back wall and divider are affixed around the entire peripheral edge, except a portion along one side of the disc sleeve. In the case of a second disc access opening, the edges of the back wall and divider are affixed around the entire peripheral edges. Further, the walls of the disc sleeve or the divider and a wall could be formed from one piece of material that is folded to create an edge for one side of the disc sleeve. The invention is not so limited to three separate independent pieces to comprise the front and back walls and the divider.

[0053] While the invention has been described with respect to specific examples including presently preferred modes of the invention, those skilled in the art will appreciate that there are numerous variations and permutations of the above described invention. Thus, the spirit and scope of the invention should be construed broadly as set forth in the appended claims.

We claim:

1. A flat disc storage sleeve comprising:

   a first storage compartment defined in part by a front wall;

   a generally T-shaped opening formed in the front wall;

   and

   a disc retention tab configured to assist in the retention of a disc located within the first storage compartment.

2. The flat storage sleeve of claim 1, further comprising:

   a second storage compartment defined in part by a back wall;

   a divider located between the front and back walls to form the first and second compartments; and

   an access opening into the second storage compartment, wherein the T-shaped opening permits loading of a disc into the first storage compartment in a first direction and the access opening permits loading of an article in the second storage compartment in a second direction different from the first direction.

3. The flat storage sleeve of claim 2, wherein the second direction is perpendicular to the first direction.

4. The flat storage sleeve of claim 2, wherein the access opening into the second storage compartment is a generally T-shaped opening formed in the back wall to assist in retention of a disc loaded within the second storage compartment.

5. The flat storage sleeve of claim 2, further comprising a connector, wherein the connector includes at least two pairs of binder spine interface elements to connect with at least two different secondary storage devices.
6. The flat storage sleeve of claim 5, wherein the at least two pairs of binder spine interface elements includes a pair of circular elements and a pair of L-shaped elements.

7. The flat storage sleeve of claim 5, wherein the connector is a separate element from the front or back walls or the divider and is affixed to each of the front and back walls and divider.

8. The flat storage sleeve of claim 5, wherein the connector is an integral extension of the front and back walls.

9. The flat storage sleeve of claim 5, wherein the connector is perforated to form the at least two pairs of binder spine interface elements.

10. The flat storage sleeve of claim 5, wherein the at least two pairs of binder spine interface elements are precut openings.

11. The flat storage sleeve of claim 1, wherein the generally T-shaped opening is a precut groove.

12. The flat storage sleeve of claim 11, wherein the disc retention tab is positioned above a center of a position of the generally T-shaped opening where a cross channel and a stem channel of the precut groove intersect.

13. The flat storage sleeve of claim 12, wherein the disc retention tab is integrally formed in the first wall.

14. The flat storage sleeve of claim 1, wherein the disc retention tab is in a shape of one of: an arc, a dual arc, a trapezoid, and a rectangle.

15. The flat storage sleeve of claim 1, wherein the disc retention tab is positioned to partially cover an article being stored in the first storage compartment.

16. The flat storage sleeve of claim 12, wherein the cross channel runs a substantial width of the front wall and the stem channel runs a partial length of the front wall.

17. The flat storage sleeve of claim 12, wherein the disc retention tab extends 3 to 7mm from a top edge of the cross channel.

18. The flat storage sleeve of claim 1, wherein the front and back walls and the dividers are substantially rectangular in shape.

19. The flat storage sleeve of claim 1, further comprising:

a first storage compartment defined in part by a front wall;

a second storage compartment defined in part by a back wall;

a divider located between the front and back walls to form the first and second compartments; and

an access opening into the second storage compartment, wherein the T-shaped opening permits loading of a disc into the first storage compartment in a first direction and the access opening permits loading of an article in the second storage compartment in a second direction different from the first direction.

20. A flat disc storage sleeve comprising:

a first storage compartment defined in part by a front wall;

a generally T-shaped opening formed in the front wall;

a second storage compartment defined in part by a back wall;

a divider located between the front and back walls to form the first and second compartments; and

an access opening into the second storage compartment, wherein the T-shaped opening permits loading of a disc into the first storage compartment in a first direction and the access opening permits loading of an article in the second storage compartment in a second direction different from the first direction.

21. The flat disc storage sleeve of claim 20, wherein the access opening into the second storage compartment is a second generally T-shaped opening formed in the back wall to assist in retention of a disc loaded within the second storage compartment.

22. The flat disc storage sleeve of claim 20, further comprising a connector, wherein the connector includes at least two pairs of binder spine interface elements to connect with at least two different secondary storage devices.

23. The flat disc storage sleeve of claim 20, wherein the generally T-shaped opening comprises a cross channel and a stem channel that is perpendicular to the cross channel.

24. A flat disc storage sleeve comprising:

a first storage compartment defined in part by a front wall;

a second storage compartment defined in part by a back wall;

a divider located between the front and back walls to form the first and second compartments; and

an access opening into the second storage compartment, wherein the connector includes at least two pairs of binder spine interface elements to connect with at least two different secondary storage devices.

25. The flat disc storage sleeve of claim 24, wherein the access opening into the second storage compartment is a second generally T-shaped opening formed in the back wall to assist in retention of a disc loaded within the second storage compartment.

26. The flat disc storage sleeve of claim 24, wherein the at least two pairs of binder spine interface elements comprise a pair of circular elements and a pair of L-shaped elements.

27. The flat disc storage sleeve of claim 24, wherein the generally T-shaped opening comprises a cross channel and a stem channel that is perpendicular to the cross channel.

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