



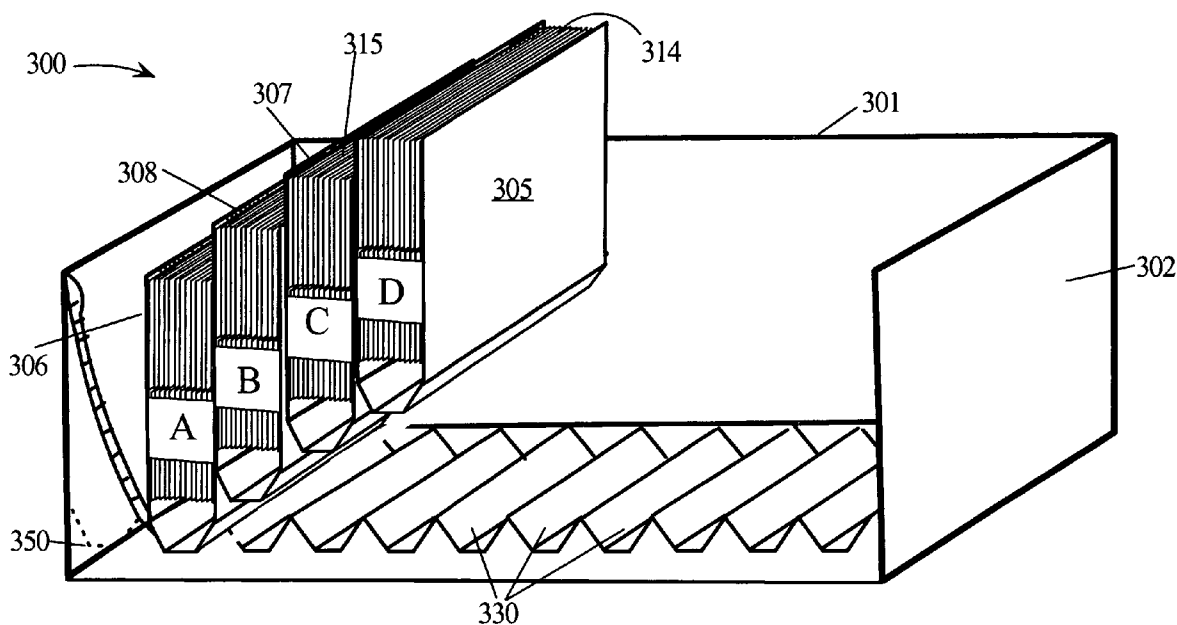
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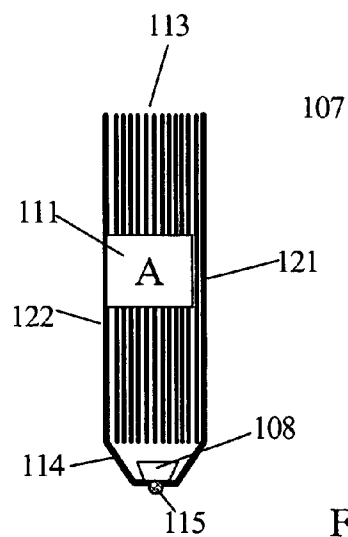
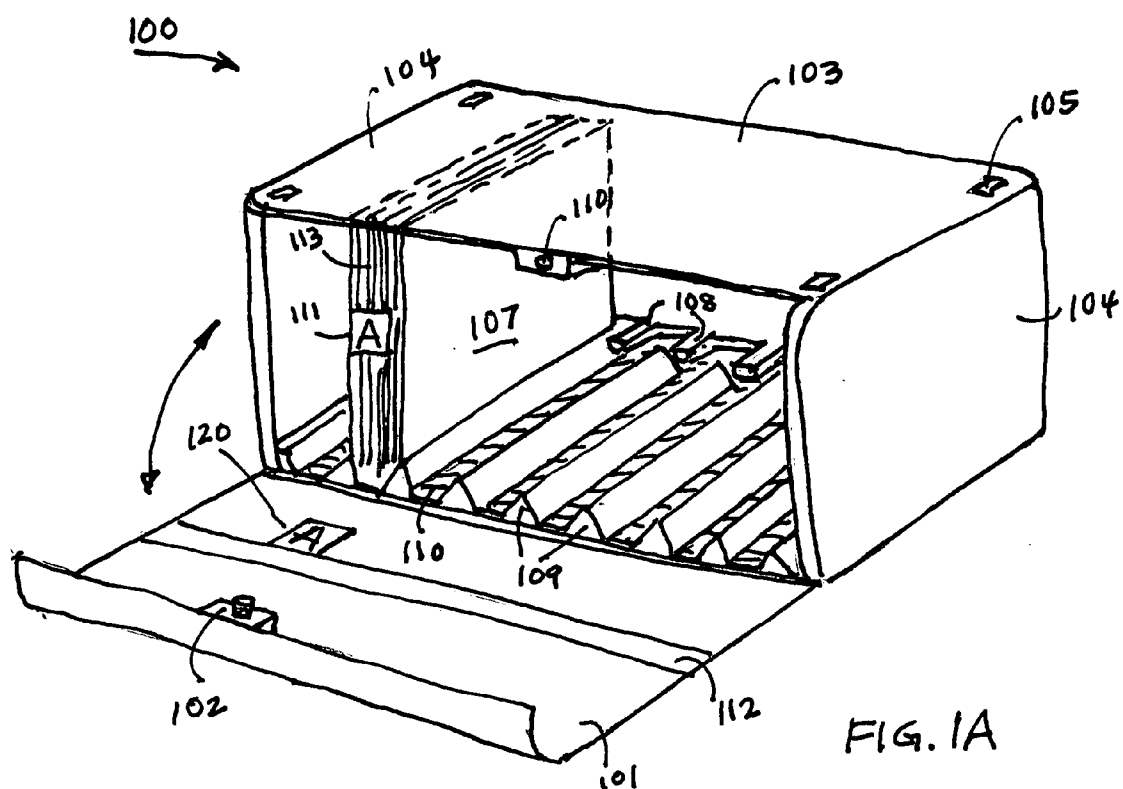
(19) **United States**(12) **Patent Application Publication**
Frankeny(10) **Pub. No.: US 2005/0109647 A1**(43) **Pub. Date: May 26, 2005**(54) **STORAGE SYSTEM FOR STORING,
ACCESSING AND TRANSPORTING PLANAR
MEDIA****Publication Classification**(51) **Int. Cl.⁷** **B65D 85/57**(52) **U.S. Cl.** **206/308.1; 211/40; 312/9.1**(76) **Inventor: Richard F. Frankeny, Cedar Park, TX
(US)**

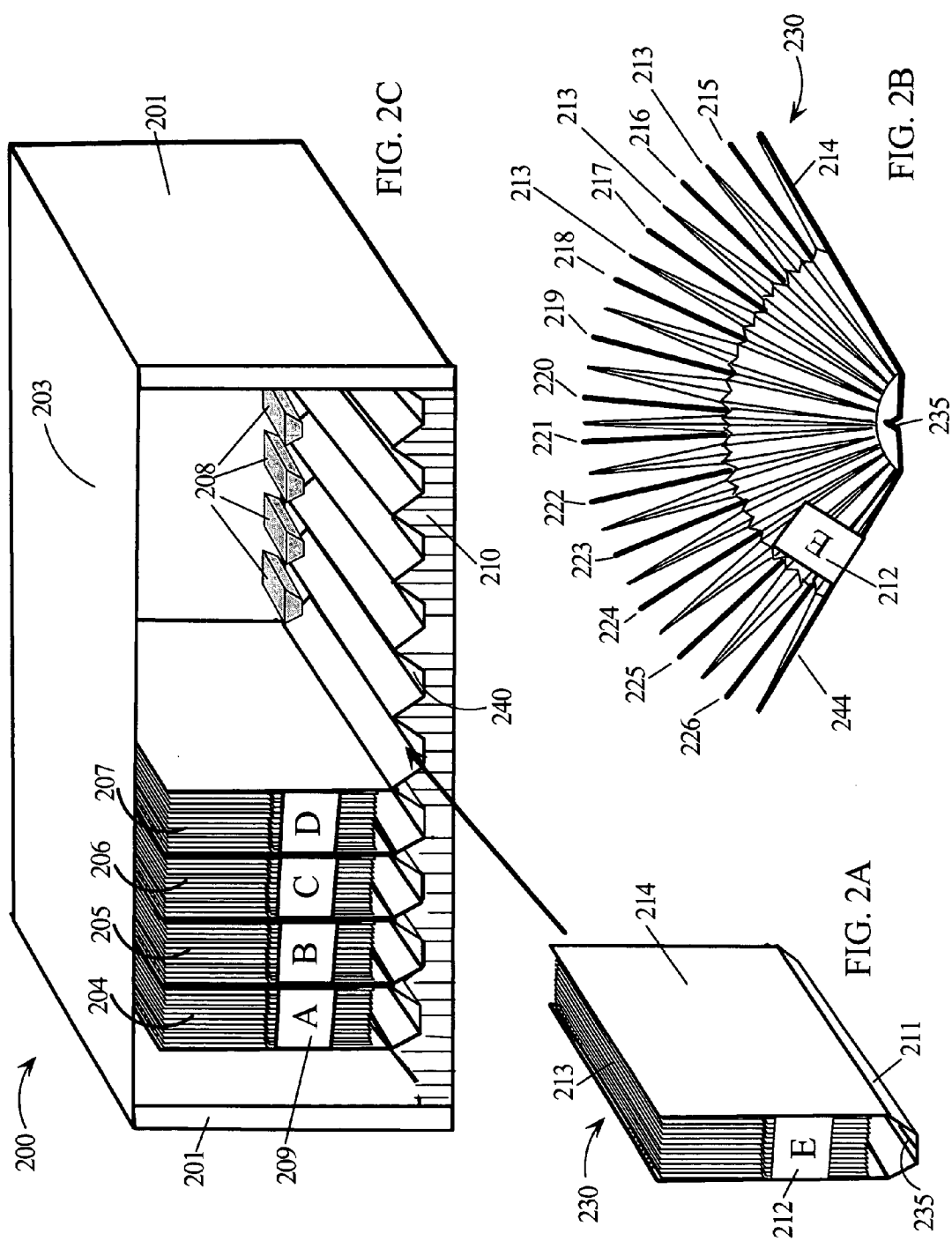
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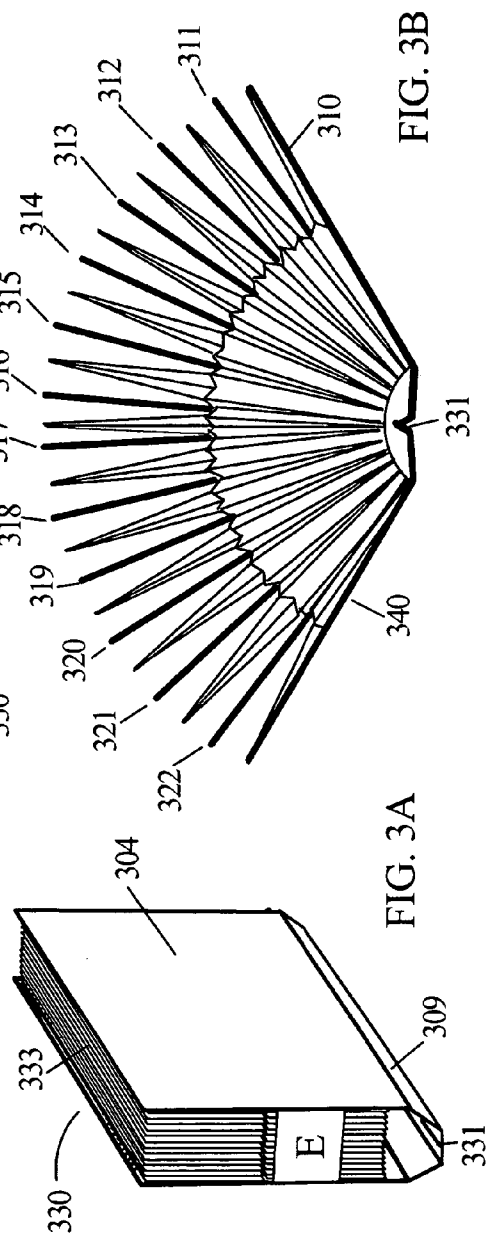
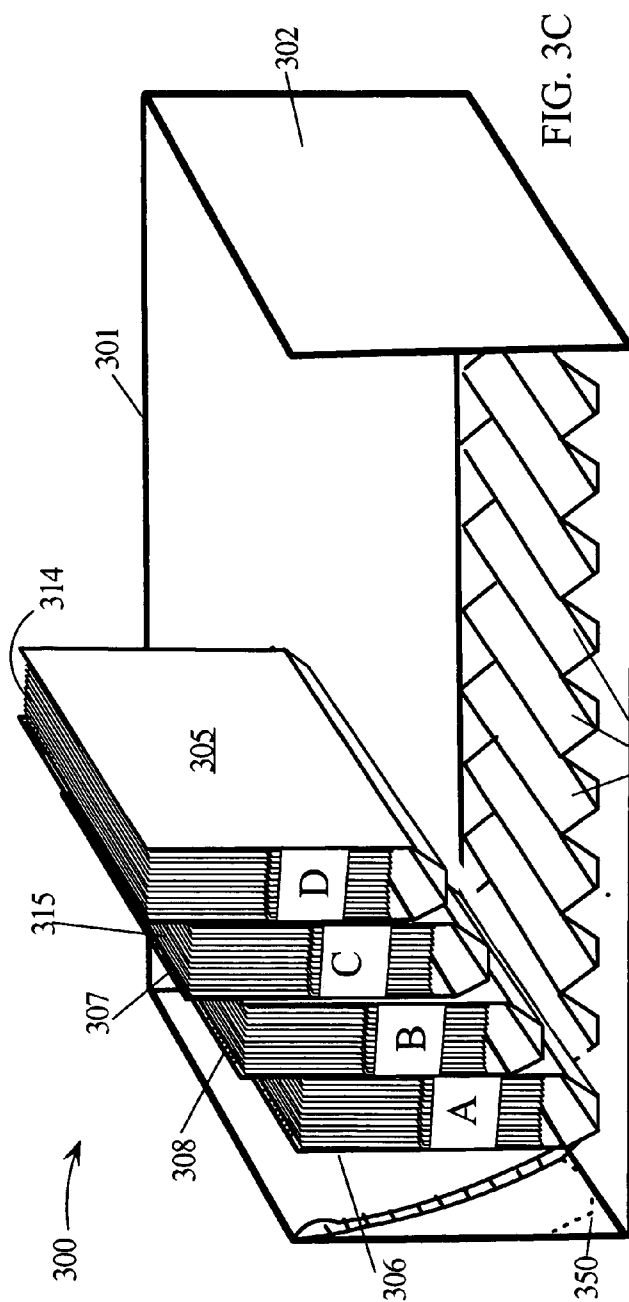
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DALLAS, TX 75201 (US)**(21) **Appl. No.: 10/996,110**(22) **Filed: Nov. 23, 2004****Related U.S. Application Data**(60) **Provisional application No. 60/524,608, filed on Nov.
24, 2003.**(57) **ABSTRACT**

A storage system comprises multiple units with combined features for storing, transporting and accessing planar media. The system comprises a container (library unit), modules, and a transport case. The module has expandable linked pockets for separating and protecting planar media elements. The modules allow a library of the planar media to be partitioned and stored into identifiable units. The container has particular features for guiding modules into parallel locations and retaining the modules in a substantially upright and closed position. Each container is configured to accept a plurality of the modules for storage. Removed modules may be fanned open in an accordion fashion exposing stored media for access. The modules are adapted to operate stand alone and adapted for inserting into and coupling to the covers of the transport case such that opening the transport case in-turn fans open the module allowing access for media retrieval or storage.









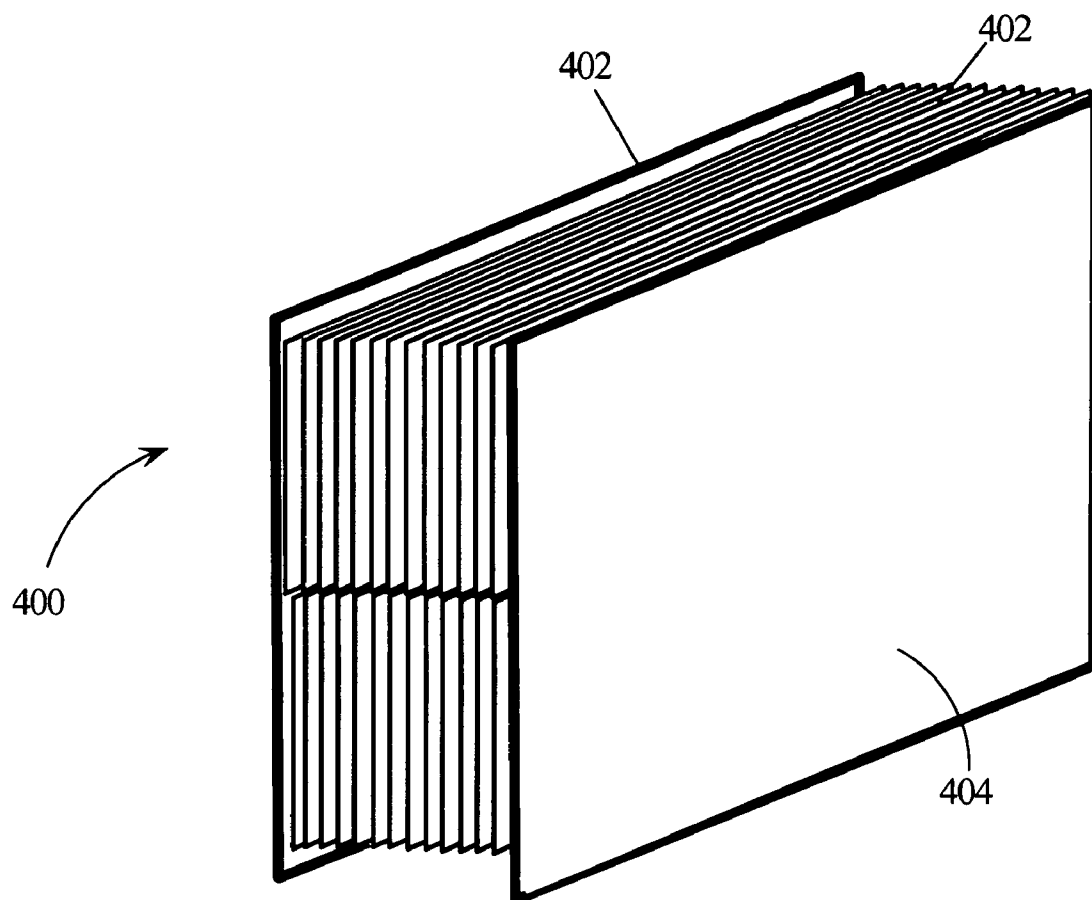


FIG. 4

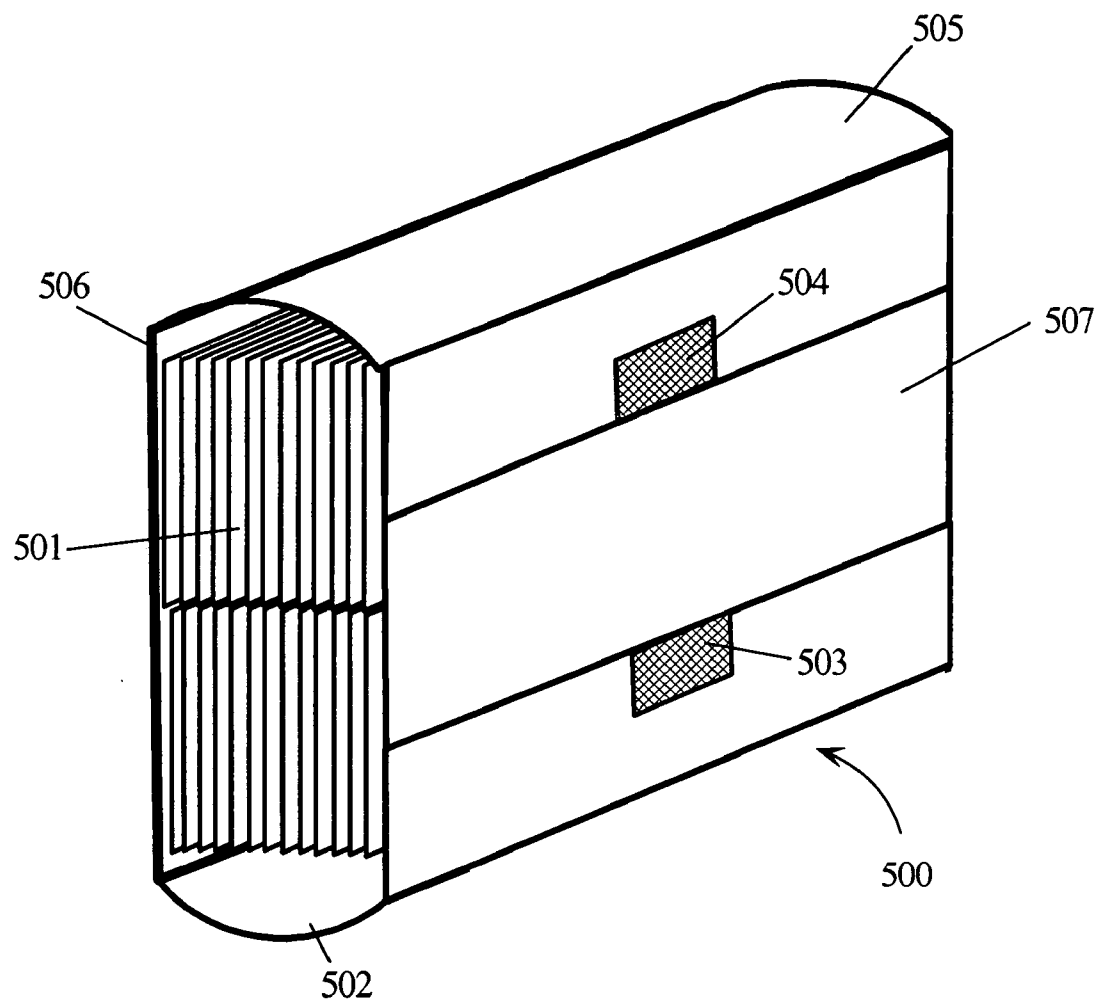


FIG. 5

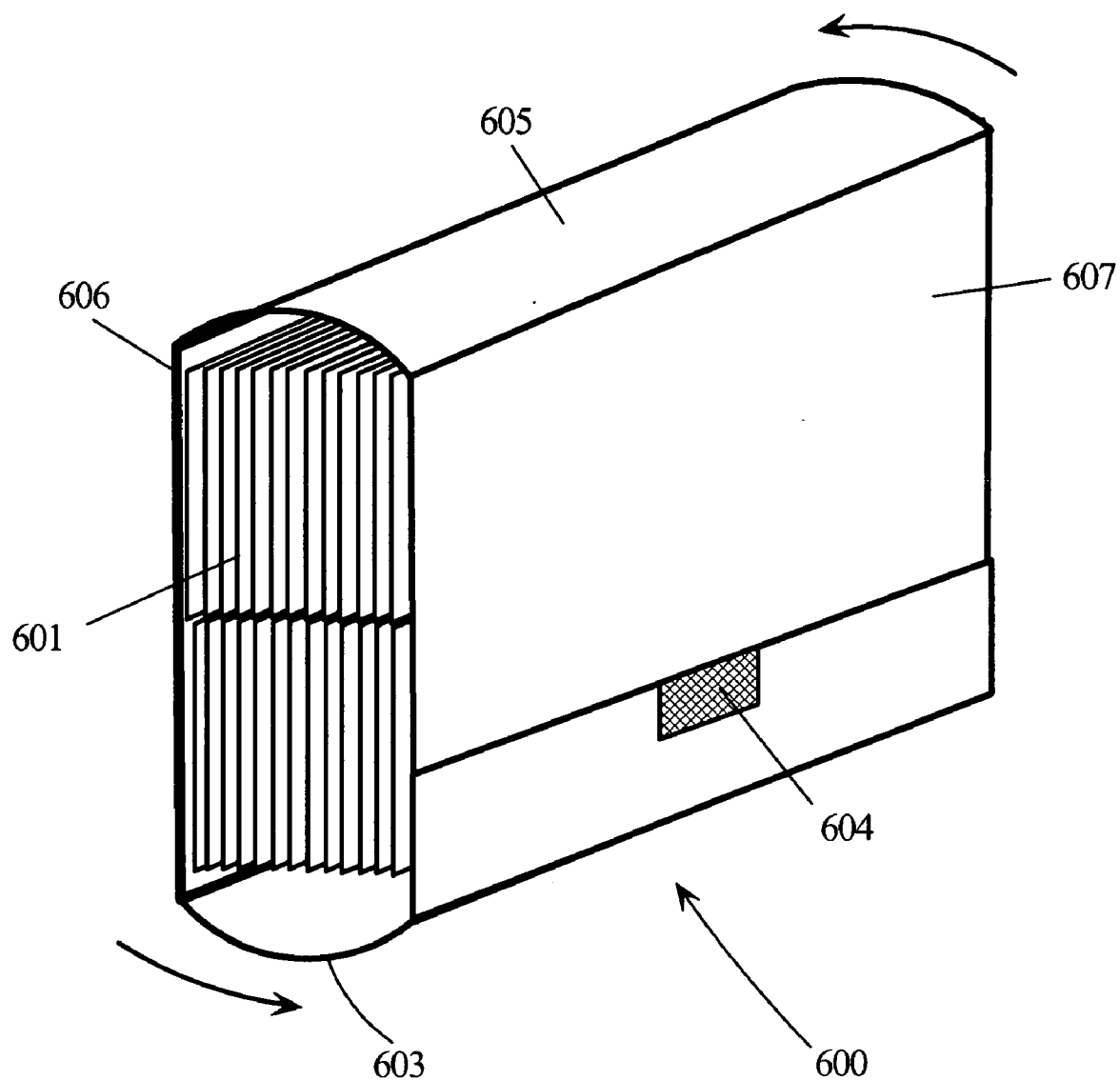
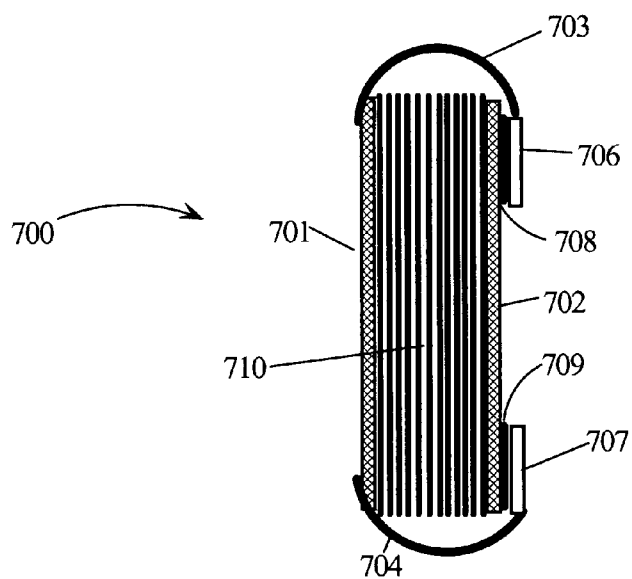
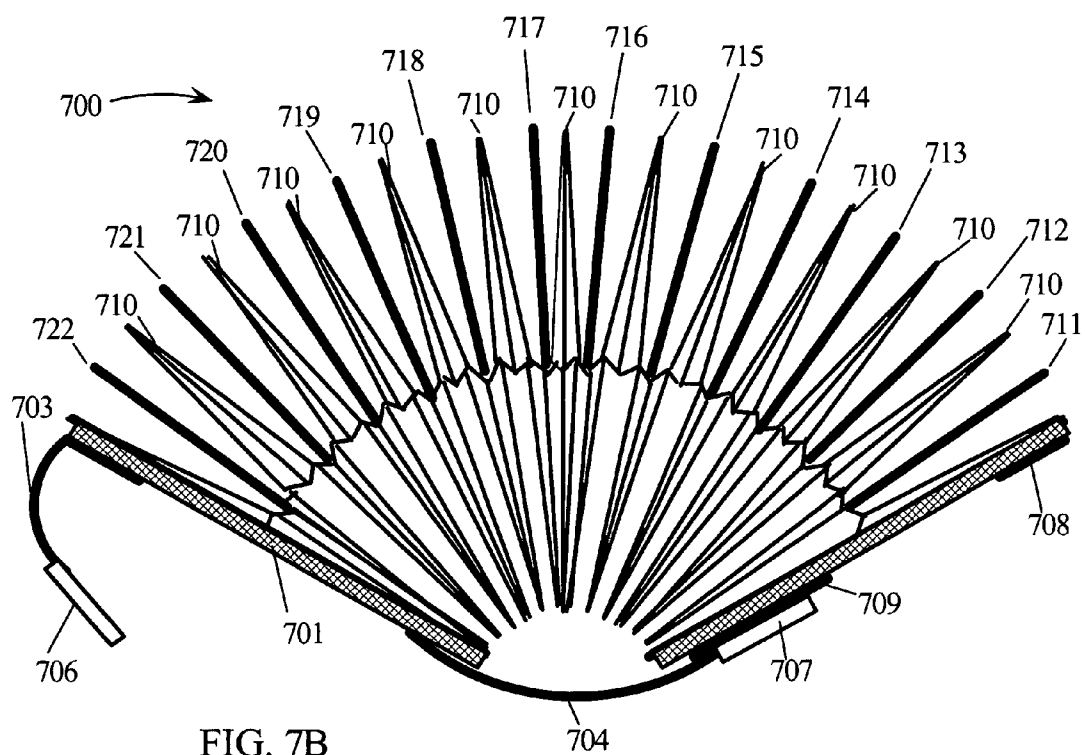


FIG. 6



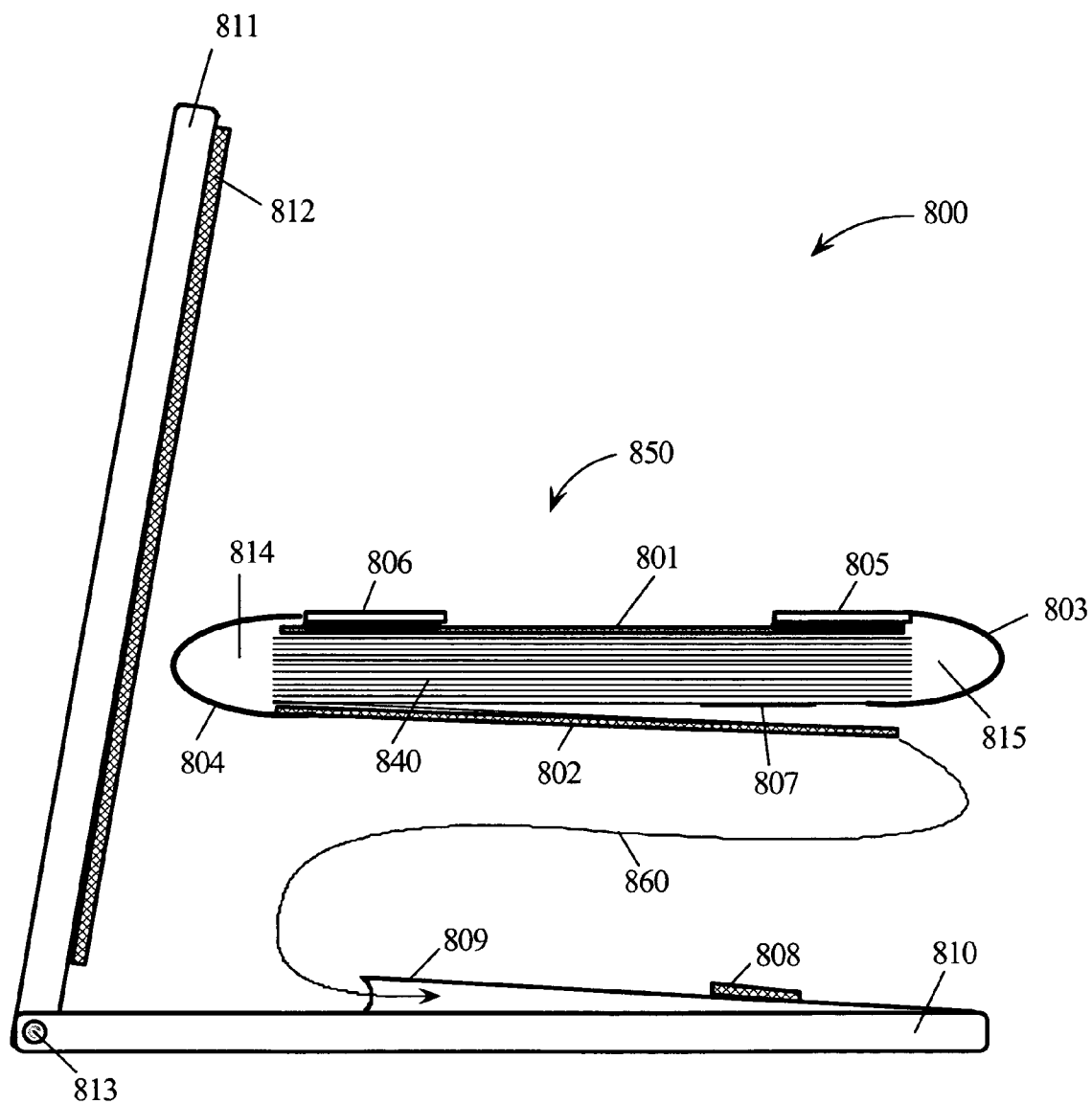


FIG. 8A

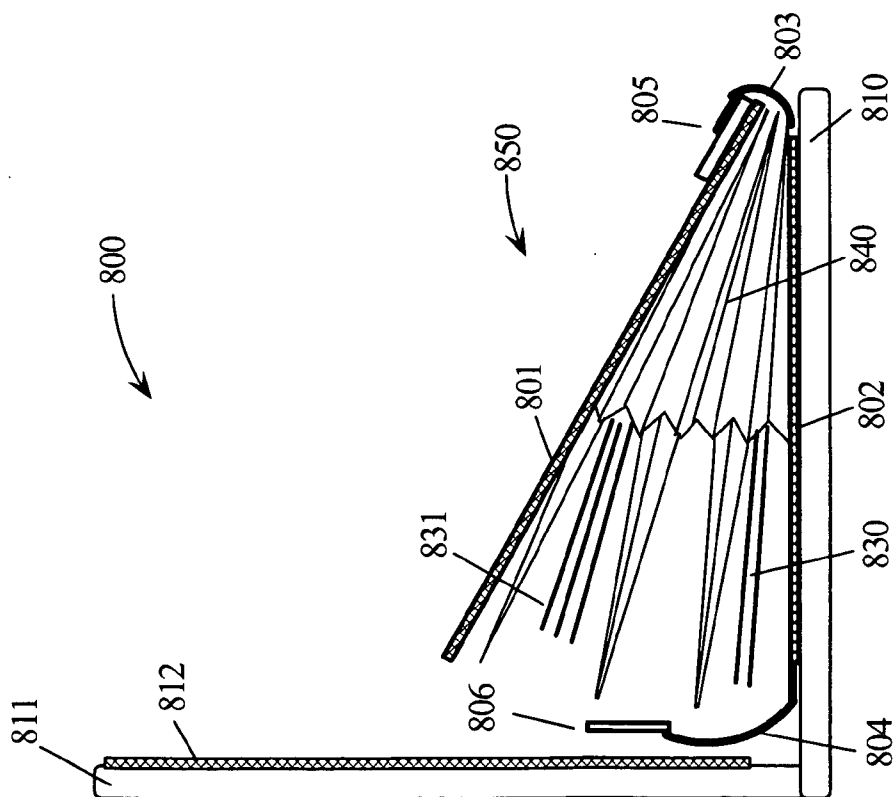


FIG. 8B

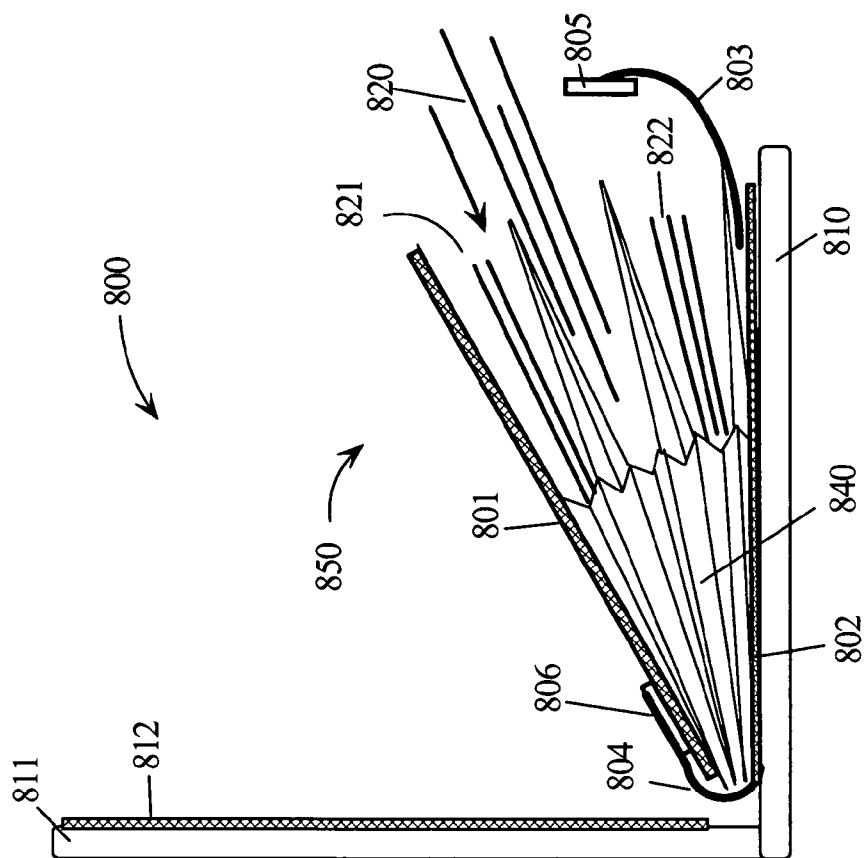


FIG. 8C

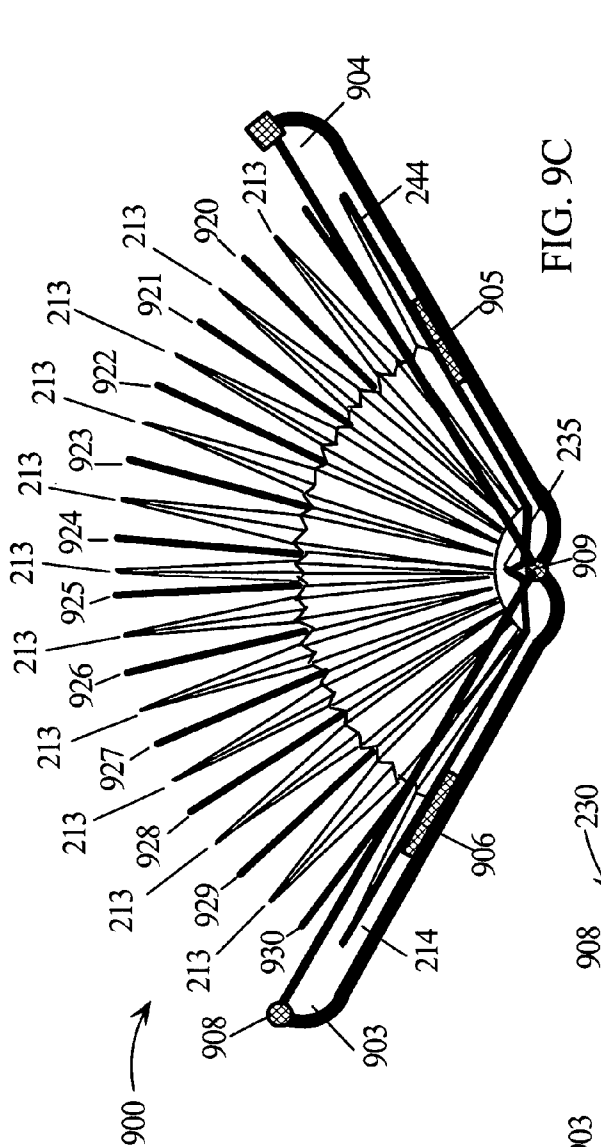


FIG. 9C

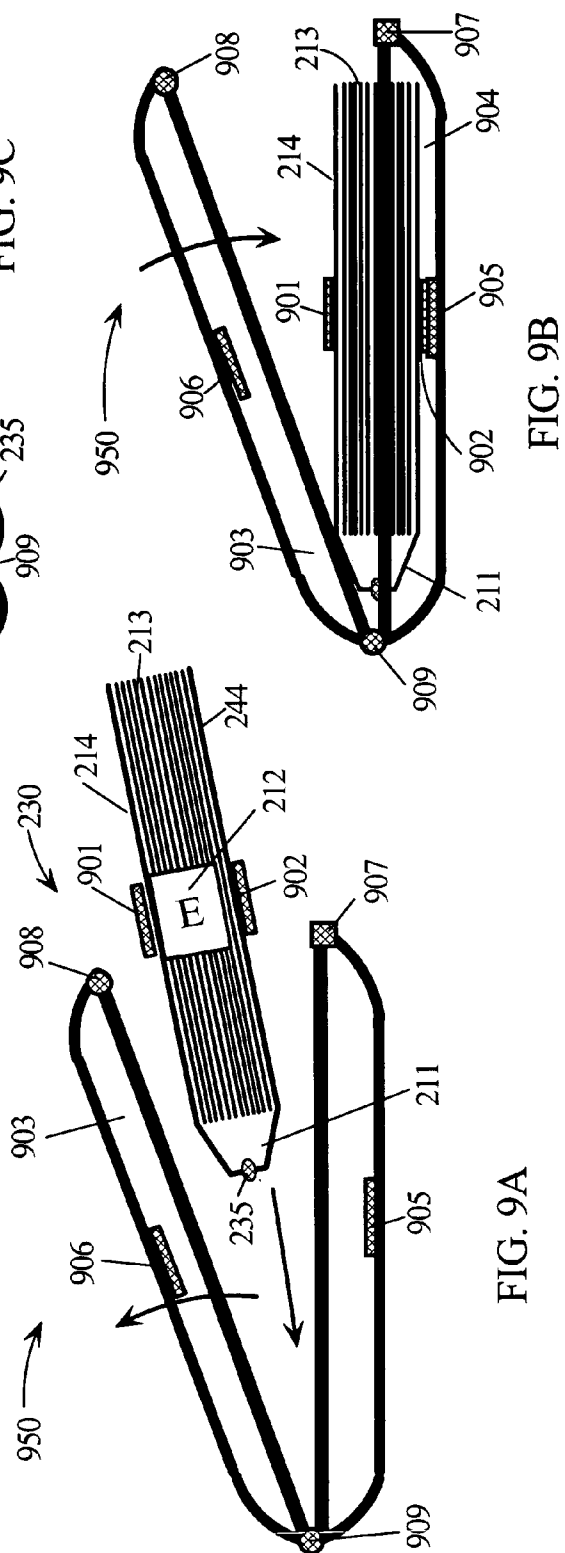


FIG. 9A

FIG. 9B

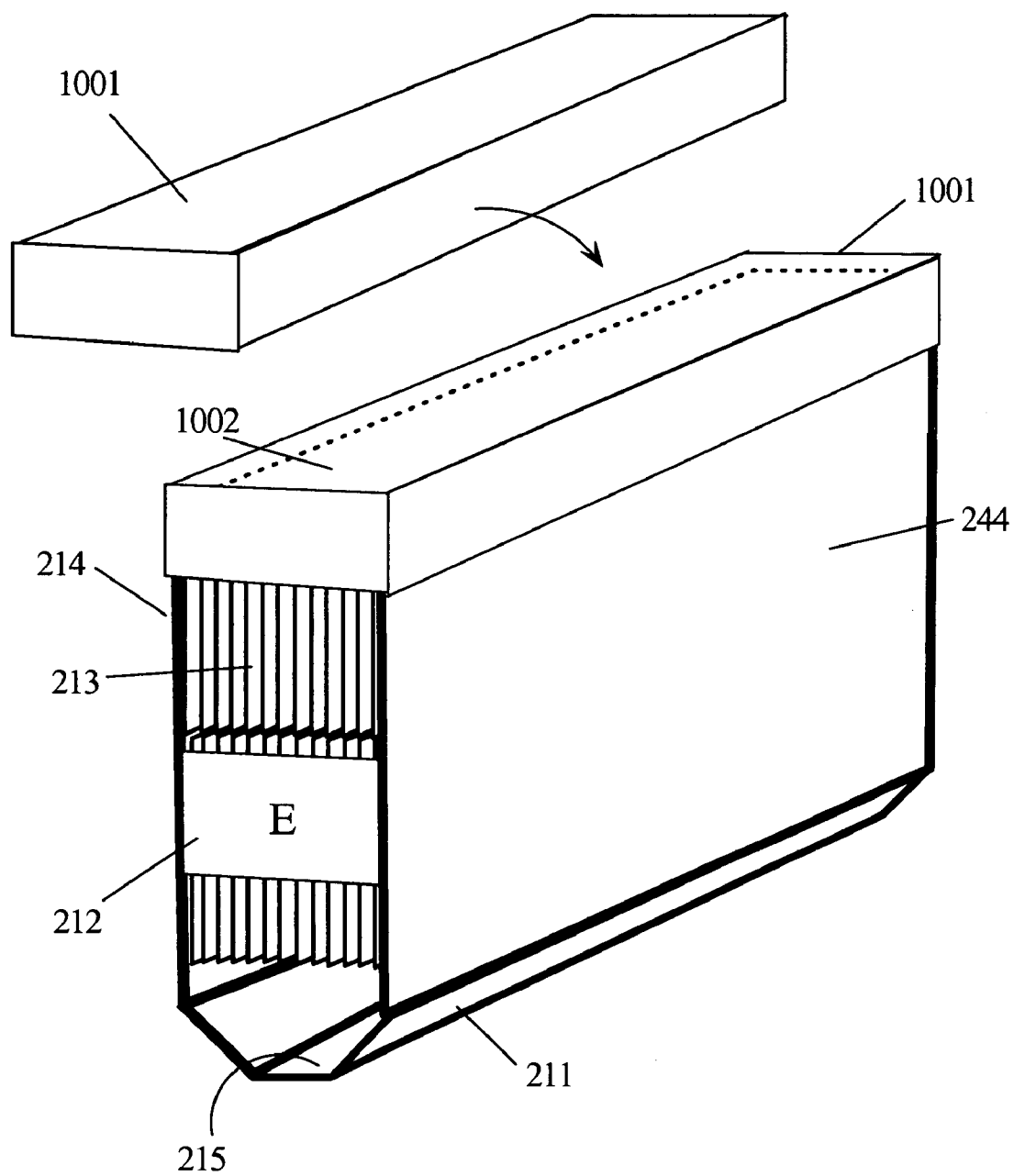


FIG. 10

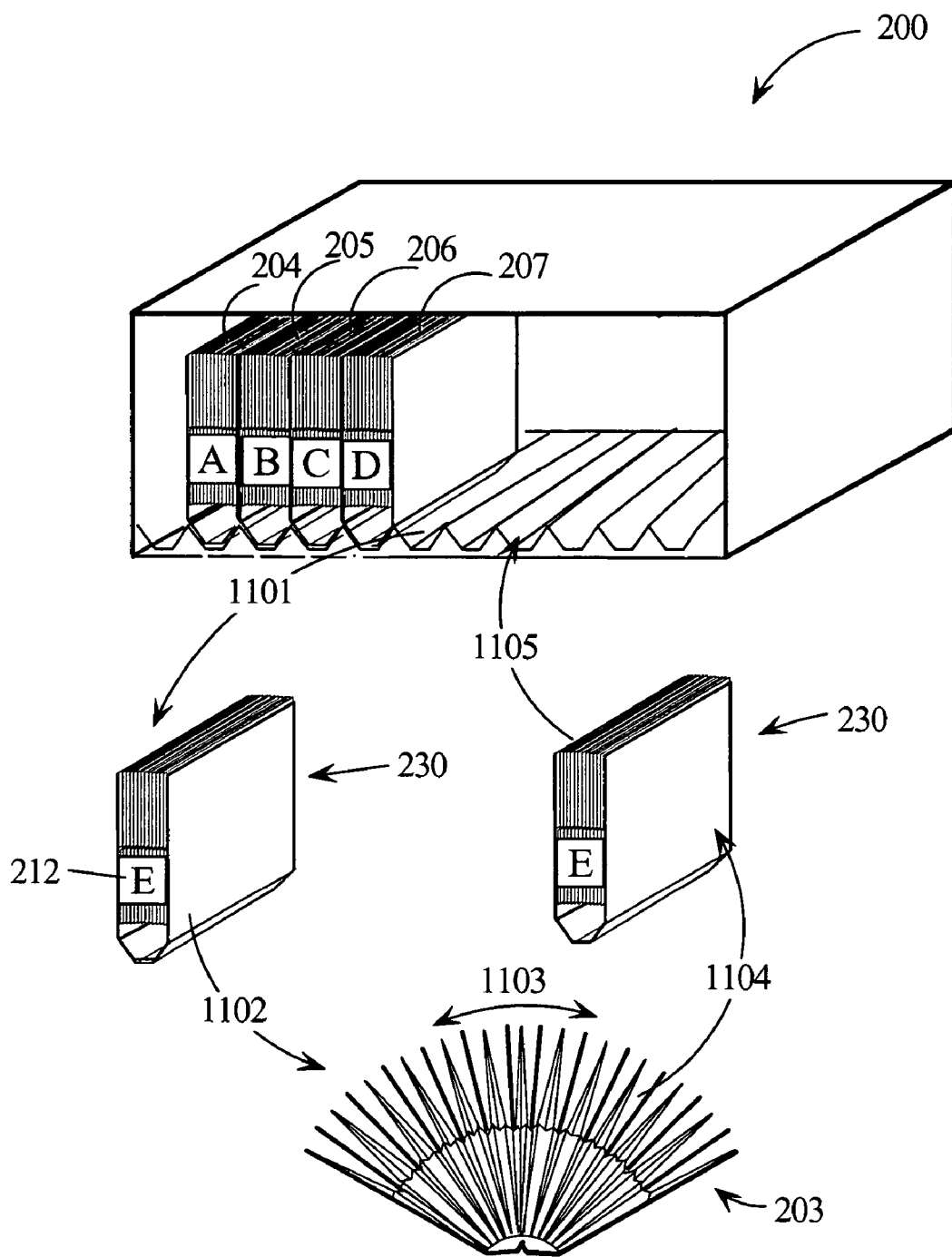


FIG. 11

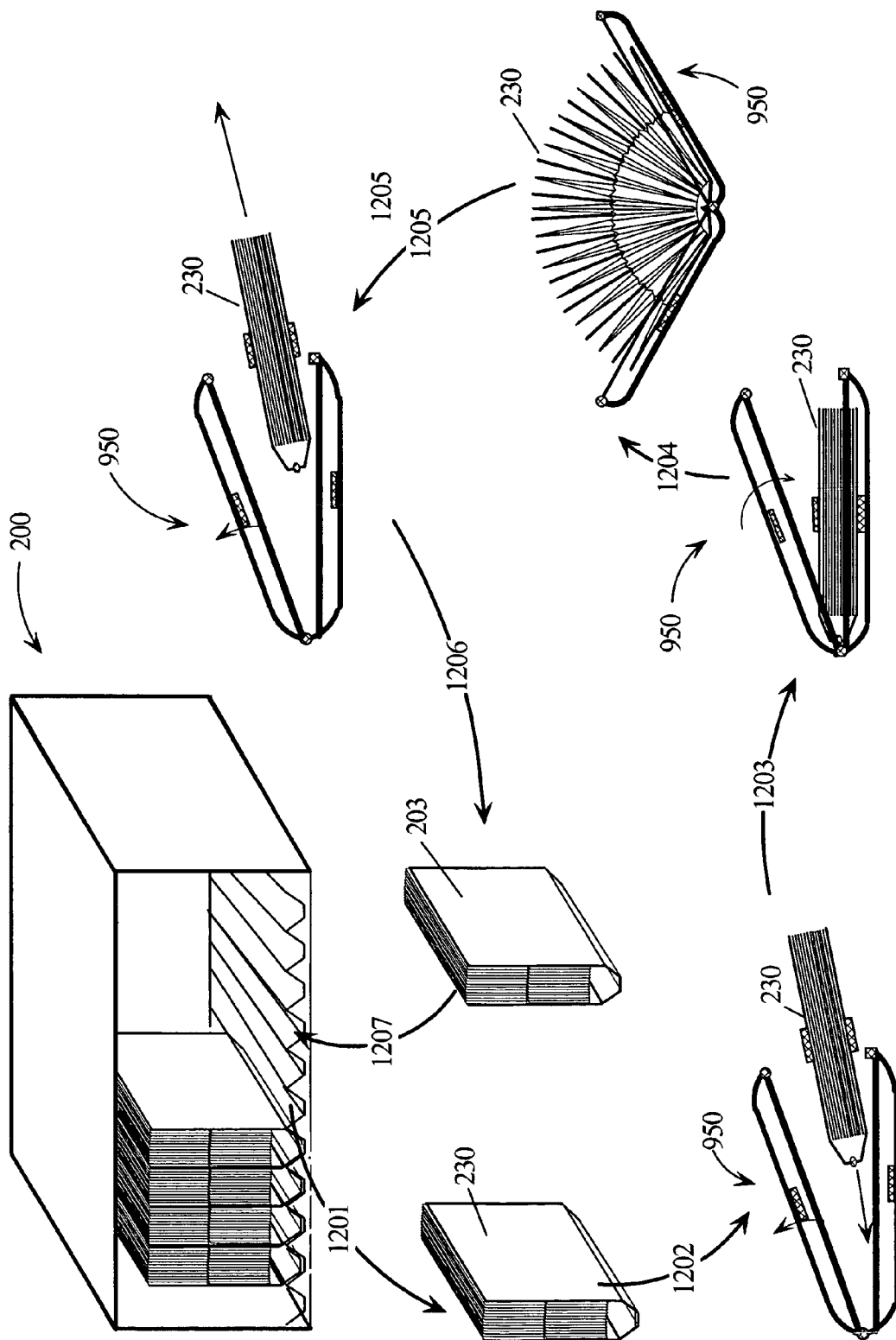


FIG. 12

STORAGE SYSTEM FOR STORING, ACCESSING AND TRANSPORTING PLANAR MEDIA

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application is related to the commonly owned copending U.S. Provisional Patent Application Ser. No. 60/524,608, "Storage System for Storing, Accessing and Transporting Planar Media," filed Nov. 24, 2003, and claims the benefit of its earlier filing date under 35 U.S.C. § 119(e).

TECHNICAL FIELD

[0002] The present invention relates in general to systems for storing, retrieving, and transporting planar media comprising paper documents, business cards, credit cards, compact disks (CDs) and digital versatile disks (DVDs).

BACKGROUND INFORMATION

[0003] "Planar media" means media for storing information on a two dimensional plane surface in a human or machine readable form, wherein the dimension of the plane surface is substantially larger than a thickness dimension of the media, such as CDs, DVDs, sheets of printed material, and plastic cards having magnetic strips. For example, compact disks (CDs) are a popular planar media for storing audio information in machine readable form. Likewise digital versatile disks (DVDs) are a popular planar media for storing audio and video information in machine readable form. Typewriter or notebook paper may be used to record written or printed letters to store and convey information in human or in some cases machine readable form. Since individuals may accumulate large amounts of these planar media elements, devices have been developed to store the planar media and to provide means for indexing and accessing the planar media. For paper planar media or documents, file folders, hanging files, note books, etc. have been developed to aid in storing, finding, and accessing paper documents. Likewise, units have been developed for storing individual CDs and DVDs, for example, the "jewel" case that is used to store and to distribute CDs. Jewel cases are units that have a hinged side and a side that latches so that stored CDs may be protected while allowing the case to be opened for access. Jewel cases are difficult to open and take up considerable space when used to store a single CD. Special units have been developed to store large numbers of CDs in jewel cases. Units have also been developed to store large numbers of individual CDs in slots, sleeves, etc. Portable units have also been developed wherein an individual can place a series of CDs, taken from their library of CDs, into the portable unit to transport them safely for use at location remote from their library. While there is a proliferation of storage units for individual there has been no systems approach for organizing, transporting and storing CDs and DVDs. Likewise there has been no systems approach for storing the general class of planar media including other elements such as paper, credit cards, business cards, recipe cards, etc.

[0004] There is, therefore, a need for a system for storing, accessing and transporting planar media wherein the system has features for permanent storage, temporary transport, and features for secure transport of the planar media while retaining the functions of easy location, access, and storage.

SUMMARY OF THE INVENTION

[0005] A module for storing planar media contains a plurality of series linked pockets. The pockets are arranged so that when one pocket is separated from the other the linking pulls the next pocket causing the pockets to fan open allowing access to the openings of the pockets for media access and storage. In one embodiment, material is Z-folded forming folded and non-folded edges. The pockets are formed by coupling adjacent the non-folded edges together to within a distance "X" from the center line halfway between the folded edges to form the sides of the linked pockets so that each pocket has a common planar side with each adjacent pocket. In this embodiment, the linked pockets are separable but do not expand when the pockets are separated. The linked pockets have bilateral pocket openings which may be used for single sided or bilateral storage. The same feature that forms the bilateral (separable and non-expanding) pockets causes the pockets to be linked.

[0006] In another embodiment, material is again Z-folded forming folded and non-folded edges. The pockets are formed by coupling adjacent of the non-folded edges together to the center line halfway between the folded edges to form the sides of the linked pockets so that each pocket has a common planar side with each adjacent pocket. In this embodiment, the linked pockets are separable but do not expand when the pockets are separated. Additionally, slots are added extending orthogonal from each joined non-folded side towards the other joined non-folded side halfway between the folded sides. In this embodiment, the pockets so formed are separable and expand when the pockets are separated. Again, the linked pockets have bilateral pocket openings which may be used for singled sided or bilateral storage. The same feature that forms the bilateral (separable and expanding) pockets causes the pockets to be linked

[0007] In either case, the two end pockets have their outside planar surface coupled to an inside surface of the stiff planer side of the module. The module thus has two stiff planar sections that may be rectangular or circular in shape with bottom, top, and two side edges. The two stiff planar sections may be hingedly coupled along the bottom edges forming a hinged side (bottom) of the module. The hinge may be realized with a fixed hinge, a hinge/latch, or a flap that covers pocket openings on one side while be flexible enough to act as a hinge. When the two top edges (opposing the bottom edges) are moved away from each other, the hinging action of the bottom side causes the module to fan open the linked pockets such that their pocket openings are accessible for storing and retrieving planar media. When the two top edges are moved towards each other, the linked pockets stack (with or without stored planar media) together such that the module attains a minimum thickness. The module has features that allow at least two of the side edges of the stiff planar sections to couple for temporarily holding the module in a closed position. In one embodiment, the module has a cap that fits over the top edges of the module when closed and secures to a portion of at least one of the stiff planar sections. This allows the module to be used for short term transport of the media while preventing planar media from inadvertently sliding from the pocket opening. In another embodiment, the outside surfaces of the stiff planar sections have attachment features that allow them to be temporarily attached to the inside surfaces of a transport case. The transport case is of a clam shell design with at least

two of its edges hingedly coupled. The module fits inside of the transport case so that the attachment features couple to the inside surfaces of the shell of the transport case. The transport case has latching features that allow the clam shell to be held closed protecting the planar media in the module. When the transport case is opened, the clam shell (which is attached to the module) opens the module so that the linked pockets are fanned open for planar media access. The system has a container (library unit) for long term storage and access of the modules and thus the planar media stored in the modules. For rectangular modules, the container has a substantially rectangular cross-section having two sides sections, a back section, a bottom section, a top section and a front section that is hingedly coupled to the bottom section to allow access. The front section operates as a door and may also have a latching feature for retaining the door in the closed position. When the door is opened, modules stored in the container may be removed and fanned open to access stored planar media. Other embodiments of the present invention may use a module and linked pockets with a substantially circular profile to fit circular planar media such as CDs and DVDs. In this embodiment, the container may also have a cylindrical cross-section.

[0008] The bottom of each the modules has a guiding feature. The bottom of the container has a corresponding mating feature that allows the modules to be guided into the container to insure that placement of the modules in a desired position in the container is repeatable. The mating features in the container define identifiable locations for module placement. The container additionally has retaining features along the back section that couples to a module placed in one of the identifiable locations. The retaining features hold a so coupled module in a substantially vertical and upright position and keeps the stiff planar sections of the module from hinging open. Thus the container alone may keep a single stored module in an upright, closed position when inserted and retained. In one embodiment, the stiff planar sections of the module are hingedly coupled with a living hinge and the bottom of the module is configured in the shape of a "V" having sloped portions and a flat bottom portion at the tip of the "V" for placing the living hinge and providing a flat surface for the bottom of the module. In this embodiment, the bottom of the container has a corresponding "V" shaped slot extending from the front side to the back side of the container. In this manner, the modules may be stacked parallel and upright in the container with no additional space between modules required to retain the modules in a vertical position. The combination of the V shaped slot and the corresponding V shaped bottom of the modules allow one or all of the modules to be placed in an identifiable location, retained in an upright position, and held closed for storage without requiring a latch on the modules.

[0009] In one embodiment, the container also has storage features that allow the individual V shaped slots to be identified with a label which has one side visible when the door is opened and another side when the door is closed. The door has a window that allows a portion of the stored modules to be viewed when the door is closed. Likewise, the modules have label features that allow individual modules to be labeled for identification. In this manner, a module may be labeled the same as a mating slot for organization of groups of stored planar media. The modules stack in the container with little or no space between modules. To facilitate module removal from the container, the modules

may have an addition finger hold feature that allows a module to be grasped from the front when it is stored between adjacent modules for easy removal from the container.

[0010] Embodiments of the present invention may store a variety of planar media including CDs, DVDs, notebook paper, typewritten paper, business cards, index cards, legal papers, etc. The container has features that allow multiple containers to be stacked for increased storage. Since the door is hingedly coupled to the bottom section the door opens away from the modules and no additional space is needed above the container and the modules are clearly exposed for access.

[0011] In another embodiment, the modules have guiding features on the side edges of the stiff planar section that allow the modules to be guided into mating features in the container that has a top section that opens. In this embodiment the container may be placed in a drawer that is best accessed from the top. The modules may then be guided into the container in this embodiment with the guiding features and the pocket openings face upwards such that stored planar media will not slip from the pocket when accessing and storing the modules in the container. Since the features are on the side edges of the modules, they do not interfere with the pocket openings in any way when storing and accessing planar media. In this embodiment, the features that allow a module to be grasped for removal from the container are placed on the top edges of the module. Once the module is partially extracted, the stiff planar sides may be grasped further for removing the module from the container. The container mating features for guiding the module also hold the module in a closed position a stored module with no adjacent modules will not fan open keeping the modules upright and closed. In other embodiments, the container has a handle that is recessed allowing the container to be easily transported.

[0012] In yet another embodiment, the modules may have features that allow them to hang from parallel rails placed in a top loading container like a drawer. In this embodiment, the modules may be free open allowing the linked pockets to expand and separate for medial access much like a Pendaflex® hanging files. However, this embodiment of the present invention allows a module to have multiple pockets for organizing planar media. For example, a module may have 12 pockets, one for each month, where the module stores a year's worth of receipts. Multiple modules covering multiple years may be placed in a single container (drawer). Likewise, the modules may be closed, latched and placed in a long term storage unit for safe keeping.

[0013] The foregoing has outlined rather broadly the features and technical advantages of the present invention in order that the detailed description of the invention that follows may be better understood. Additional features and advantages of the invention will be described hereinafter which form the subject of the claims of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

[0015] **FIGS. 1A and 1B** illustrate one embodiment of the present invention with front access to modules stored in the container;

[0016] **FIGS. 2A, 2B and 2C** illustrates another embodiment of the present invention with front access to modules stored in the container;

[0017] **FIGS. 3A, 3B and 3C** illustrate one embodiment of the present invention with top access to modules stored in the container;

[0018] **FIG. 4** illustrates a module for storing planar media according to one embodiment of the present invention;

[0019] **FIG. 5** illustrates another module for storing planar media using the bi-lateral features of linked pockets with two flaps for securing the bi-lateral pocket openings that are retained to the same stiff planar side of a module;

[0020] **FIG. 6** illustrates another module for storing planar media using the bi-lateral features of linked pockets with two flaps for securing the bi-lateral pocket openings that are retained to opposing stiff planar sides of a module;

[0021] **FIG. 7A** illustrates the module of **FIG. 5** with both flaps secured to the same stiff planar side of the module;

[0022] **FIG. 7B** with one flap acting as a hinge when secured to the stiff planar module side and the other flap released allowing one set of bi-lateral pockets to be fanned open for planar media access;

[0023] **FIG. 8A** illustrates how a module for bi-lateral storage of planar paper media is inserted into a particular transport unit;

[0024] **FIG. 8B** illustrates the module of **FIG. 8A** opened in one direction while retained in the particular transport unit;

[0025] **FIG. 8C** illustrates the module of **FIG. 8A** opened in the opposite direction while retained in the particular transport unit;

[0026] **FIG. 9A** illustrates the module of **FIG. 2A** adapted so its sides coupled being inserted into a mating transport unit;

[0027] **FIG. 9B** illustrates the module of **9A** partially secured in the mating transport unit of **FIG. 9A**;

[0028] **FIG. 9C** illustrates the module fully attached into the mating transport unit of **FIG. 9A** and fanned open by opening the covers of the transport unit allowing planar media to be stored or accessed;

[0029] **FIG. 10** illustrates a module for storing planar media with a lid that fits over and secures the module for transport;

[0030] **FIG. 11** illustrates the system aspects of embodiments of the present invention with a container and a module in various stages of removal, fanning open for access to stored planar media, and returning the module to the container for storage.

[0031] **FIG. 12** illustrates the system aspects of embodiments of the present invention with a container and a module in various stages of removal, placement in a transport unit, fanning open for access to stored planar media, removal of

the module from the transport case, and returning the module to the container for storage.

DETAILED DESCRIPTION

[0032] In the following description, numerous specific details are set forth to provide a thorough understanding of the present invention. However, it will be obvious to those skilled in the art that the present invention may be practiced without such specific details. In other instances, well-known mechanisms may be shown in block diagram form in order not to obscure the present invention in unnecessary detail. For the most part, details concerning materials, processes and the like have been omitted inasmuch as such details are not necessary to obtain a complete understanding of the present invention and are within the skills of persons of ordinary skill in the relevant art.

[0033] “Planar media” means media for storing information on a two dimensional plane surface in a human or machine readable form, wherein the dimension of the plane surface is substantially larger than a thickness dimension of the media, such as CDs, DVDs, sheets of printed material, and plastic cards having magnetic strips.

[0034] Refer now to the drawings wherein depicted elements are not necessarily shown to scale and wherein like or similar elements are designated by the same reference numeral through the several views.

[0035] **FIG. 1A** illustrates a container **100** and a module **107** for storing, accessing and transporting planar media according to embodiments of the present invention. Container **100** has sides **104**, top **103** and a door **101** for securing stored modules. The bottom of container **100** has exemplary features **109** and **110** for guiding module **107** when it is inserted for storage. One of the features **108**, along the back of container **100**, engage module **107** holding it closed and in an upright position. Module **107** has a plurality of linked pockets **113** for storing planar media. Module **107** also has a feature **111** that is used to identify module **107** as well as providing a finger hold from sliding module **107** forward and out of container **100** for access. Top **103** has features **105** that engage mating features on the bottom of another container (not shown) for stacking of containers **100**. Door **101** has a latch part **102** that engages mating latch part **110** for securing door **101** closed. Door **101** also has a transparent section **112** that allows feature **111** of stored modules (e.g., module **107**) to be viewed when the door **101** is closed. Door **101** also has a feature **120** that identifies which module (e.g., module **107**) that a user desires stored in a particular location.

[0036] **FIG. 1B** is an edge view of module **107**. Linked pockets **113** are encased with stiffened cover sides **121** and **122** such that the module has a known thickness with or without stored media. This allows module **107** to have the same size whether it is full or empty of planar media. Feature **111** is shown with the optional label “A.” Feature **111** allows a user to put any desired label, space allowing, on module **107** for identification. In one embodiment, feature **111** is a piece coupled to stiffened cover side **122** and extending to stiffened cover side **121**. An additional element (not shown) may be added to side **121** such that a user can cause feature **111** to couple to and retain side **121** preventing module **107** from opening. Module **107** has feature **114** (“V” shaped) that allows module **107** to mate with detail **109** and **110** of

features to guide module 107 into container 100. In one embodiment, module 107 has a “living” hinge 115 that allows stiffened cover sides 121 and 122 to rotate about living hinge when module 107 is opened. Feature 108 of container 100 is shown engaged with module 107. Feature 108 prevents module 107 from opening when inserted in container 100 by preventing the hinge from moving upwards as the cover sides 121 and 122 try to rotate around hinge 115.

[0037] FIG. 2C illustrates another container 200 according to embodiments of the present invention. Container 200 has sides 201, top 203 and bottom section 210 with exemplary feature 240 for guiding modules into container 200. Container 200 has four modules 204-207 inserted for storage. Module 204 has exemplary feature 209 used for identification of module 204. Container 200 also has features 208 in the back for coupling to and retaining modules (e.g., modules 204-207) upright and closed when inserted.

[0038] Exemplary module 230 with linked pockets 213 is shown in FIG. 2A with an arrow indicating that module 230 is to be directed to one of the features (e.g., feature 240) for guiding it into container 200. The features 211 of module 230 fit in slot feature 240. Since features 208 engage and secure inserted modules, the stiffened cover sides (e.g., 214) act to separate one module from another. No additional retaining walls are needed in container 200. A hinge 235 allows module 230 to be fanned open exposing stored media.

[0039] FIG. 2B illustrates module 230 fanned open by rotating stiffened cover sides 214 around a living hinge 235. (Other hinging methods may be used and still be within the scope of the present invention). When exemplary module 230 is fanned open, the linked pockets acquire a regular pattern as each pocket is attached to the next adjacent pocket and a planar surface of the two end pockets are coupled to stiffened cover sides 214 and 244. Various portions of linked pockets 213 are labeled as 213 in FIG. 2B to distinguish the linked pockets from stored planar media. Planar media elements 215-226 are shown stored in a corresponding linked pocket. Various linked pockets may be used in embodiments of the present invention. Linked pockets are sometimes called accordion pockets indicating their similarity to the portions of the accordion instrument. Some linked or accordion pockets expand and separate when fanned open (e.g., U.S. Pat. No. 6,419,082) and some accordion pockets separate but do not expand appreciably (e.g., U.S. Pat. No. 5,682,992). Other linked pockets may be designed and still be within the scope of the present invention. Feature 212, used to label module 230, is shown as it moves with cover side 244 as module 230 is fanned open. Planar media 215-226 are retrieved by moving them in a radial direction relative to the arc formed by the edges of the pockets 213 in illustration of FIG. 2B. Because of this, feature 212 does not interfere with storing or accessing planar media from module 230. Living hinge 235 is shown pivoted in an upward direction when module 230 is fully fanned open in FIG. 2B. When a closed module (e.g., module 230) is inserted in a container (e.g., 200) according to embodiments of the present invention, features 208 fit over and press downward against living hinge 215. Since the hinge 215 cannot pivot upward, module 230 cannot open and is held in a closed, upright position when inserted in container 200 even if module has no latching element of the edges laterally opposing hinge 235.

[0040] FIG. 3C illustrates another container 300 according to embodiments of the present invention. Modules 305-308 are shown in various stages of insertion in container 300. Container 300 has sides 302, a back 301, and a bottom 303. In this embodiment, container 300 is much like a file drawer. Each module 305-308 would be guided into a slot in container 300. Exemplary linked or accordion pockets 314 and 315 are only identified for modules 305 and 307, respectively.

[0041] In FIG. 3A, exemplary module 330 is shown with linked pockets 333 and one of its stiffened cover sides 304. Module 330 has bottom feature 309 for conforming to mating features 303 in the bottom section. In another embodiment, container 300 has slots in back 301 and front 350 for guiding an individual module into container 300. In this embodiment, the modules (e.g., module 330) is like a file folder used for planar media.

[0042] FIG. 3B illustrates module 330 fanned open for accessing stored planar media. Portions of the linked pockets are identified as 333 in FIG. 3B. Planar media elements 311-322 are shown stored in individual linked pockets 321. Modules (e.g., 330) according to embodiments of the present invention may fan open 180° with sides 310 and 340 resting on a surface or living hinge 331 may be designed to limit module 330 from fanning open beyond an angle less than 180°. Other hinge types may be used for hinge 331 and are considered within the scope of the present invention.

[0043] FIG. 4 illustrates a module 400 according to embodiments of the present invention where a series of linked pockets 401 are sandwiched between stiffened cover sides 402 and 404. Since some linked pocket designs allow bi-lateral access to pockets (e.g., U.S. Pat. No. 5,682,992 and U.S. Pat. No. 6,419,082) module 400 may be used to store planar media bilaterally.

[0044] FIG. 5 illustrates a module 500 according to embodiments of the present invention with a series of linked pockets 501 between stiffened cover sides 506 and 507. In this embodiment, retaining flaps 505 and 502 are attached to stiffened cover side 506. Flaps 505 and 502 may be then folded over and attached to stiffened cover side 507 with retaining elements 504 and 503. In this manner, any stored planar media in linked pockets 501 may be secured.

[0045] FIG. 6 illustrates a module 600 according to embodiments of the present invention with a series of linked pockets 601 between stiffened cover sides 606 and 607. In this embodiment retaining flaps 602 and 605 are attached to stiffened cover sides 606 and 607 respectively. Flaps 605 and 602 may be then folded over in opposing directions and attached to stiffened cover sides 606 and 607 with retaining elements 604 and 603 (not shown). In this manner, any stored planar media in linked pockets 601 may be secured within module 600.

[0046] FIGS. 7A and 7B illustrate a module 700 both opened and closed. FIG. 7A illustrates module 700 in a closed orientation. Linked pockets 710 are coupled to stiffened cover sides 701 and 702. Flaps 703 and 704 are used to secure stored planar media 711-722. Flap 703 has a feature 706 that allows flap 703 to be secured to element 708 over one opening in linked pockets 710. Likewise flap 704 has feature 707 that allows flap 704 to be secured to element 709.

[0047] FIG. 7B illustrates module 700 fanned open when flap 703 is released from feature 708. Since flap 704 is flexible it acts as a hinge allowing linked pockets 710 to fan open. In a like manner, flap 703 may be secured and flap 704 opened allowing bi-lateral access to linked pockets 710. In this illustration, planar media 712-722 are each shown in individual linked pockets.

[0048] FIG. 8A illustrates a transport unit 800 and a corresponding module 850 adapted for insertion into transport unit 800. In this embodiment transport unit 800 is similar to a notebook that has sides 810 and 811 coupled with hinge 813. Transport module 800 may have a note pad 812 as well as a sleeve 809 normally used for storing papers. Transport unit 800 is modified with an attachment element 808 for coupling to a mating element 807 on module 850. Module 850 has linked pockets 840 attached to stiffened cover sides 801 and 802. Mating element 807 and flap 803 are attached inside the first pocket of linked pockets 840. In this manner, stiffened cover side 802 may be inserted into sleeve 809 as shown by the arrow 860. When this is done attachment element 808 may be brought into contact with mating element 807 (for example these could be Velcro pads). Module 850 is retained in transport unit 800 in this manner, but may be removed for storing in a container (e.g., container 200). Flap 804 is attached to the outside of stiffened cover side 802. Flaps 803 and 804 may be folded over openings 814 and 815 in linked pockets 840 respectively. Flaps 803 and 804 are coupled to stiffened cover side 801 with elements 805 and 806 respectively.

[0049] FIG. 8B illustrates module 850 opened by releasing element 806 from stiffened cover side 801. This allows linked pockets 840 to be fanned open in one direction and exemplary planar media 831 and 830 to be accessed. Flap 803 attached with element 805 acts as a hinge in this situation.

[0050] FIG. 8C illustrates module 850 opened by releasing element 805 from stiffened cover side 801. This allows linked pockets 840 to be fanned open in the opposite direction and exemplary planar media 820-822 to be accessed. Flap 804 is attached with element 806 and acts as a hinge in this situation.

[0051] FIG. 9A illustrates the exemplary module 230 illustrated in FIG. 2 to be inserted into a transport unit 950 according to embodiments of the present invention. Module 230 has linked pockets 213 coupled to stiffened cover sides 214 and 244. Stiffened cover sides 214 and 244 are coupled at one end with feature 211 and hinge 235. Feature 212 is used to identify module 230. Attachment elements 901 and 902 are coupled to mating elements 906 and 905 on stiffened cover sides 214 and 244, respectively. Transport unit 950 is a clam shell design with cover sections 903 and 904 (which are shown transparent) coupled at one end with hinge 909 and at the other end with latch elements 907 and 908. When latch elements 907 and 908 are opened, cover sections 903 and 904 pivot about hinge 909 to open. Cover section 903 has a mating element 906 for attachment element 901 and cover section 904 has mating element 905 for attachment element 902. These attachment and mating elements may be Velcro® elements or magnetic elements. Attachment elements 901 and 902 and mating elements 905 and 906 are meant to couple in such a way that they are secure but may be separated allowing module 230 to be removed from transport unit 950.

[0052] FIG. 9B illustrates transport unit 950 with module 230 inserted and coupled with attachment element 902 and mating element 905. Attachment element 902 and mating element 906 are in position to complete the action of receiving and attaching to module 230. When cover section 903 is rotated closed, attachment element 901 will couple to mating element 906. If latch elements 907 and 908 are engaged, transport unit 950 is ready to use with module 230 to transport stored planar media 920-930 (see FIG. 9C).

[0053] FIG. 9C illustrates transport unit 950 fanned open by rotating cover sections 903 and 904 about hinge 909. Since the stiffened cover sides 214 and 244 are coupled to cover sections 903 and 904, as transport unit 950 is opened module 230 likewise fans open spreading linked pockets 213 and exposing stored planar media 920-930. Living hinge 235 is shown pivoting above hinge 909.

[0054] FIG. 10 illustrates another embodiment of the present invention with a cap 1001 for fitting over the opening 1002 (shown dotted) of module 230. Module 230 has stiffened cover sides 214 and 244 coupled at one end with feature 211 and hinge 235. Linked pockets 213 are shown in this view. Cap 1001 has features (not shown) for coupling to one or both of the stiffened cover sides 214 and 244 such that it is removable but secure preventing planar media from inadvertent extraction from linked pockets 213. In this manner, modules may be removed from a container (e.g. 100 or 200), secured with a cap 1001 and transported without stored planar media being inadvertently extracted from linked pockets 213.

[0055] FIG. 11 illustrates the system aspects of the present invention. Planar media (not labeled) are stored in modules (e.g., module 230). The modules are indexed and stored in a container 200 with features that allow the modules to be aligned and guided into slots and corresponding features that hold individual modules upright and closed. A module 230 may be removed in step 1101 using feature 212 (See FIG. 2). Then in step 1102 module 230 is fanned open so that the linked or accordion pockets separate exposing planar media stored in individual pockets. In 1103, when the linked pockets are fanned open, planar media may be added or removed from the linked pockets. When the user is finished accessing planar media, then in step 1104 module 230 is closed and returned to container 200 for long term storage.

[0056] FIG. 12 further illustrates the system aspect of the present invention. Container 200 stores multiple modules (e.g., module 230). In step 1201, module 230 is removed from container 200. In step 1202, module 230 is inserted into transport unit 950. In step 1203, the stiffened cover sides of module 230 are attached to the cover sections of transport unit 950. In step 1204, the cover sections of transport unit 950 are rotated apart while fanning open module 230 separating the linked pockets 213 of module 230 exposing store planar media. In step 1205, module 230 is removed from transport unit 950 and in step 1206 module 230 is returned to container 200 for long term storage.

[0057] The above detailed description describes a system for storing, accessing, and transporting planar media. Each embodiment employs a module with linked pockets that may be fanned open to access planar media from one side or bi-laterally (from pockets formed in both sides). The modules have features that may be used to identify individual modules, used to aid in extracting a module from a con-

tainer, or used to couple to the adjacent side for holding the module closed. A transport unit is uniquely adapted to receive one of the modules with linked pockets and coupled to its stiffened cover sides such that when the transport unit is opened it correspondingly fans open a stored module exposing stored planar media. The modules may then be removed from a transport unit and placed back in a container (e.g., 100) with features for guiding a module to a desired location for coupling to features that hold an inserted module in an upright and closed position. Users may label and identify individual modules with selected media. These modules may then be transported without removing stored media. The synergism of the modules and the transport units allow the transport units to fan open the modules for media access. Likewise the modules are designed to fan open when removed from a container for easy identification and access of stored media. Any planar media, CDs, DVDs, credit cards, paper, business cards, etc. may be used with embodiments of the present invention. The modules may be made in sizes that fit the media to be stored. In one embodiment of the present invention, the container, module and the transport units are designed for a circular media like CDs and DVDs. The indexing of the modules and the containers allow a user to label modules and store CDs alphabetically by title, artist or type of content. In another embodiment, the planar media may be typewriter paper and the linked pockets are sized to hold the paper. In this embodiment, the modules are similar to file folders except each module acts like an expanding file for storing single or multiple pieces of paper in each linked pocket. The modules (expanding file folders) may be stored in a drawer much like Pendaflex® files. The transport unit in this case may be a folding notebook adapted to receive and retain a file folder module. The file folder modules may be flaps that fold over the file openings for securing stored media. When secured with flaps, the file folder modules may be transported as such or placed into a transport unit for further security and convenience.

[0058] The present invention and its advantages have been described in detail, it should be understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A storage system for planar media comprising:

a plurality of modules each having opposing first and second cover sides with top and bottom edges and first and second side edges and a plurality of series linked pockets disposed between the first and second cover sides of each module with a planar side of a first pocket of the linked pockets coupled to the first cover side and a planar side of a last pocket of the linked pockets coupled to the second cover side, wherein each of the linked pockets is fanned open when the top edges of the first and second cover sides are rotated apart and the bottom edges of the first and second cover sides are rotated together thus exposing the top pocket openings of the linked pockets for access; and

a library unit (container) having a plurality of first features for receiving and guiding the plurality of the modules into essentially a parallel alignment and a second

feature, corresponding to each first feature, for coupling to and retaining each of the plurality of modules in the parallel alignment.

2. The system of claim 1 further comprising a transport case having opposing first and second covers with latch coupled latch edges and laterally opposing and hingedly coupled hinge edges, the transport case adapted to receive at least one of the plurality of modules as a received module such that the first cover side of the received module couples to the first cover of the transport case and the second cover side of the module couples to the second cover of the transport case, wherein the linked pockets of the received module are fanned open when the transport case is opened by pivoting the first and second covers about the hinged edge.

3. The system of claim 1, wherein each module has a first module feature for engaging a selected first feature of the library unit so the module is guided into contact with a selected second feature of the library unit corresponding to the selected first feature of the library unit.

4. The system of claim 3, wherein each module has a second module feature that couples to the selected second feature of the library unit when a particular module is guided by the selected first feature into the library unit, thereby holding the particular module as a retained module in a substantially vertical and upright orientation.

5. The system of claim 4, wherein coupling the selected second feature of the library unit to the second module feature holds the retained module in a closed position with the first and second cover sides substantially parallel to each other.

6. The system of claim 1 wherein the first and second cover sides of a first module of the plurality of modules are hingedly coupled along its bottom edges.

7. The system of claim 6, wherein the first module has a latch for holding the first and second cover sides together along the top edges of the first and second cover sides.

8. The system of claim 1, wherein the first and second cover sides of a first module of the plurality of modules are hingedly coupled along their top edges with a first hinge/latch and hingedly coupled with a second hinge/latch along their bottom edges with a second hinge/latch.

9. The system of claim 8, wherein the linked pockets of the first module comprise bilateral pockets with a first set of pocket openings at the top edge of the first and second cover sides and a laterally opposing second set of pocket openings at the bottom edge of the first and second cover sides.

10. The system of claim 8, wherein rotating the first and second cover sides of the first module about the first hinge/latch fans opens access to the second pocket openings when the first hinge/latch is latched closed and rotating the first and second cover sides about the second hinge/latch fans opens access to the first pocket openings when the second hinge/latch is latched closed.

11. The system of claim 3, wherein the first module feature of each of the plurality of module comprises an angled edge extension of the first cover side at the bottom edge directed toward the second cover side at the bottom edge, an angled edge extension of the second cover side directed toward the first cover side, and an extension of the angled edge extension of the first cover side orthogonal to the first cover side that hingedly couples to an extension of the angled edge extension of the second cover side orthogo-

nal to the second cover side, thus forming a “V” shaped taper with a flat section as the first module feature.

12. The system of claim 11, wherein each of the first features are “V” shaped and configured to receive the “V” shaped taper of the first module feature.

13. The system of claim 12, wherein adjacent of the first features of the library unit terminate in a line where an arm of the “V” shape of one first feature joins the arm of the “V” of an second adjacent feature, thereby allowing inserted modules to be retained vertical and upright in the library unit with substantially no required separating space.

14. The system of claim 1, wherein the library unit is enclosed with first and second side sections, a back section and a top section thereby forming an enclosed library unit with only an opening area for accessing the plurality modules placed in the library unit for storage.

15. The system of claim 14, wherein the opening area is covered with a door that is hingedly coupled to the library unit, the door having an open position exposing the opening area for accessing stored modules of the plurality of modules and a closed position for securing the stored modules within the library unit.

16. The system of claim 15, wherein the door is hingedly coupled the bottom section the library unit and has a latch coupled to the top section for latching the door the closed position.

17. The system of claim 2, wherein a means for hingedly coupling the first and second covers of the transport case forming the hinged edge and latching the latch edges comprises a zipper having a first zipper part coupled to the first cover and a mating second zipper part coupled to the second cover.

18. The system of claim 1, wherein each of the plurality of modules has an extraction feature for aiding in extracting each stored module from the library unit that is stored between adjacent modules.

19. The system of claim 1, wherein each of the plurality of modules has a label feature on at least one edge for visual identification.

20. The system of claim 19, wherein the library unit has a storage feature for visually identifying each first feature of the library unit.

21. The system of claim 19, wherein a label feature of a first module matches a storage feature of the library unit indicating a storage location reserved for the first module.

22. The system of claim 21, wherein a portion of the door of the library unit is clear allowing the label feature of a stored module to be viewed without opening the door.

23. The system of claim 1, wherein the linked pockets comprise pockets formed by Z folding a width of fabric thus forming overlaying fabric planes between folded edges and non-folded edges, wherein adjacent of the non-folded edges of one fabric plane are joined to non-folded edges of an adjacent fabric plane forming sides of the linked pockets.

24. The system of claim 23, wherein the linked pockets are non-expanding linked pockets with laterally opposing pocket openings that primarily separate when fanned open for access.

25. The system of claim 23, wherein the linked pockets have a slot extending a slot distance orthogonal to and toward an opposing non-folded edge thus forming expanding linked pockets with laterally opposing pocket openings that expand and separate when fanned open.

26. The system of claim 2, wherein the first and second cover sides of the received module each has a first attachment element of an attachment system comprising mating first and second attachment elements.

27. The system of claim 26, wherein the first and second covers of the transport case each have the second attachment element of the attachment system and the first and second cover sides of the module in turn couple to the first and second covers of the transport case, respectively, when the corresponding first attachment element engages and couples to the corresponding second attachment element.

28. The system of claim 27, wherein the attachment system comprises a hook and loop system or a magnetic system.

29. A storage system for planar media comprising:

a plurality of modules each having opposing first and second cover sides with top and bottom edges and first and second side edges and a plurality of series linked pockets disposed between the first and second cover sides of each module with a planar side of a first pocket of the linked pockets coupled to the first cover side and a planar side of a last pocket of the linked pockets coupled to the second cover side, wherein each of the linked pockets is fanned open when the top edges of the first and second cover sides are rotated apart and the bottom edges of the first and second cover sides are rotated together thus exposing the top pocket openings of the linked pockets for access; and

a transport case having opposing first and second covers with open edges and laterally opposing and hingedly coupled hinge edges, the transport case adapted to receive at least one of the plurality of modules as a received module such that one of first and second cover sides of the received module couples to the first cover of the transport case.

30. The system of claim 29, wherein the transport case is a notebook folder having a sleeve for storing paper planar media that couples to one of the first and second sides of the received module.

31. The system of claim 30, wherein the first module has a first flap with a first end fixedly coupled to the first module and a second end which is temporarily attached to the second cover side of the first module, the first flap securing planar media stored in linked pockets of the first module.

32. The storage system of claim 29 further comprising a library unit (container) having a plurality of first features for receiving and guiding the plurality of modules into essentially a parallel alignment within the library unit.

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