



US 20120023798A1

(19) **United States**
(12) **Patent Application Publication**
Seidler

(10) **Pub. No.: US 2012/0023798 A1**
(43) **Pub. Date: Feb. 2, 2012**

(54) **MODULAR DISPLAY DEVICE**

Publication Classification

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(51) **Int. Cl.**
A47G 1/06 (2006.01)

(21) Appl. No.: **13/016,789**

(52) **U.S. Cl.** **40/711; 40/735**

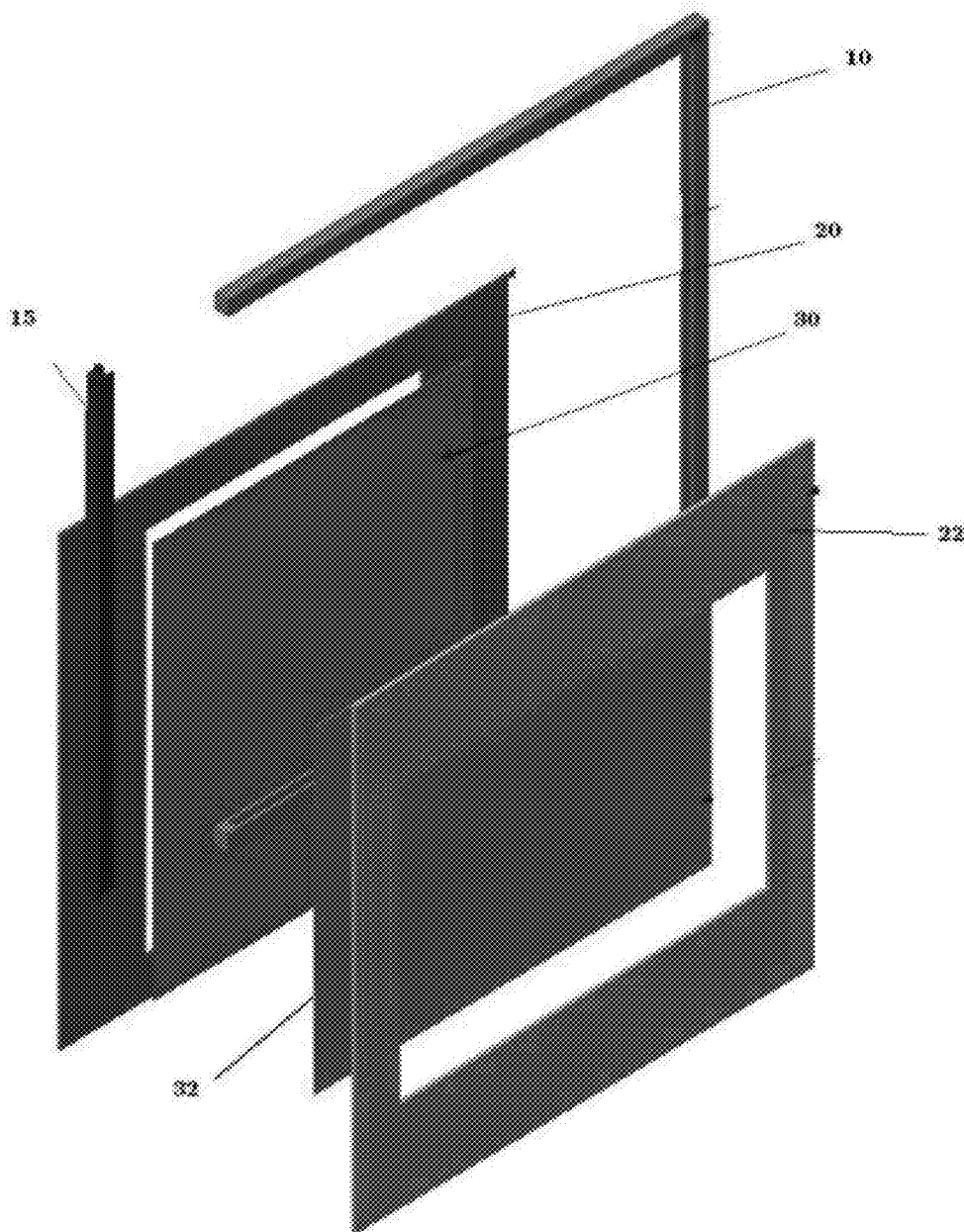
(22) Filed: **Jan. 28, 2011**

(57) **ABSTRACT**

Related U.S. Application Data

(60) Provisional application No. 61/299,621, filed on Jan. 29, 2010.

A display device including a display frame, a first mounting member that displays a first object, and a second mounting member that displays a second object, each of the first and second mounting members being disposed within the display frame in one of at least two different configurations.



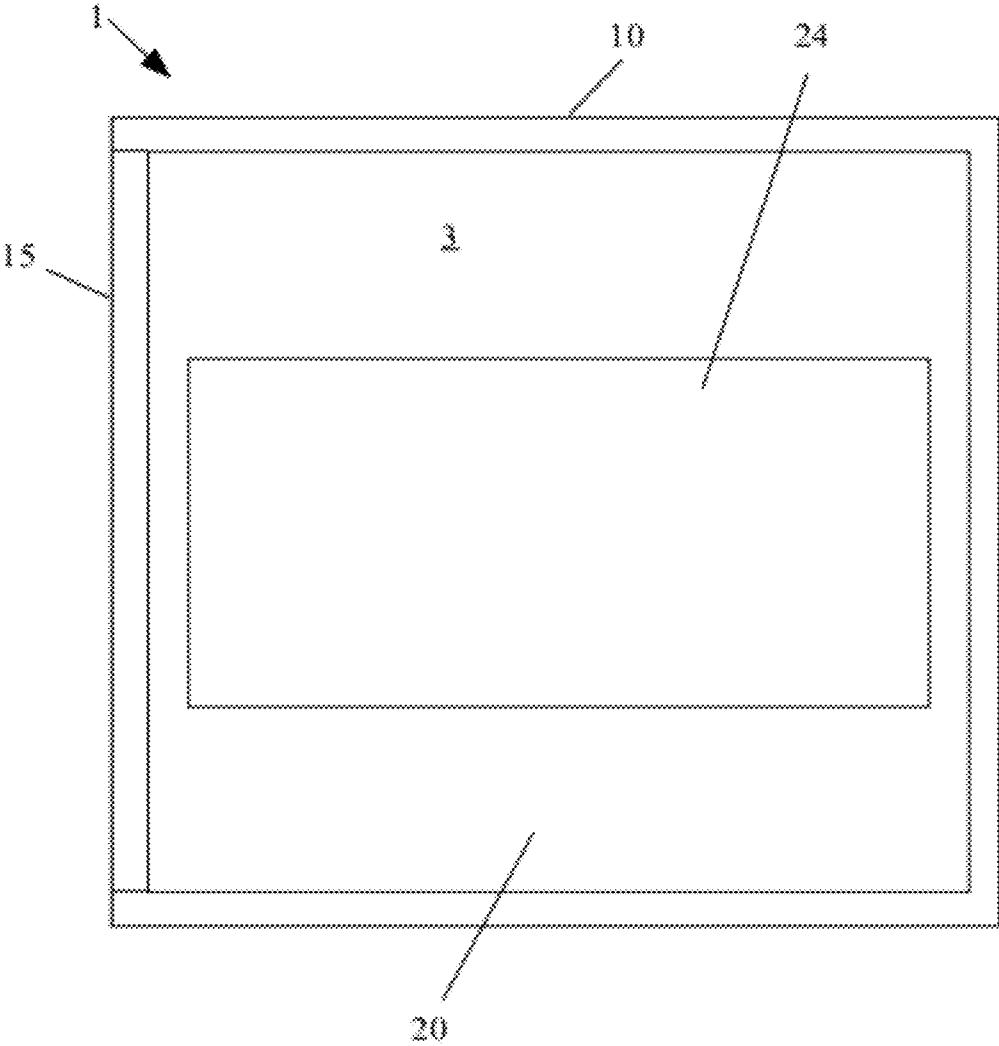


FIG. 1A

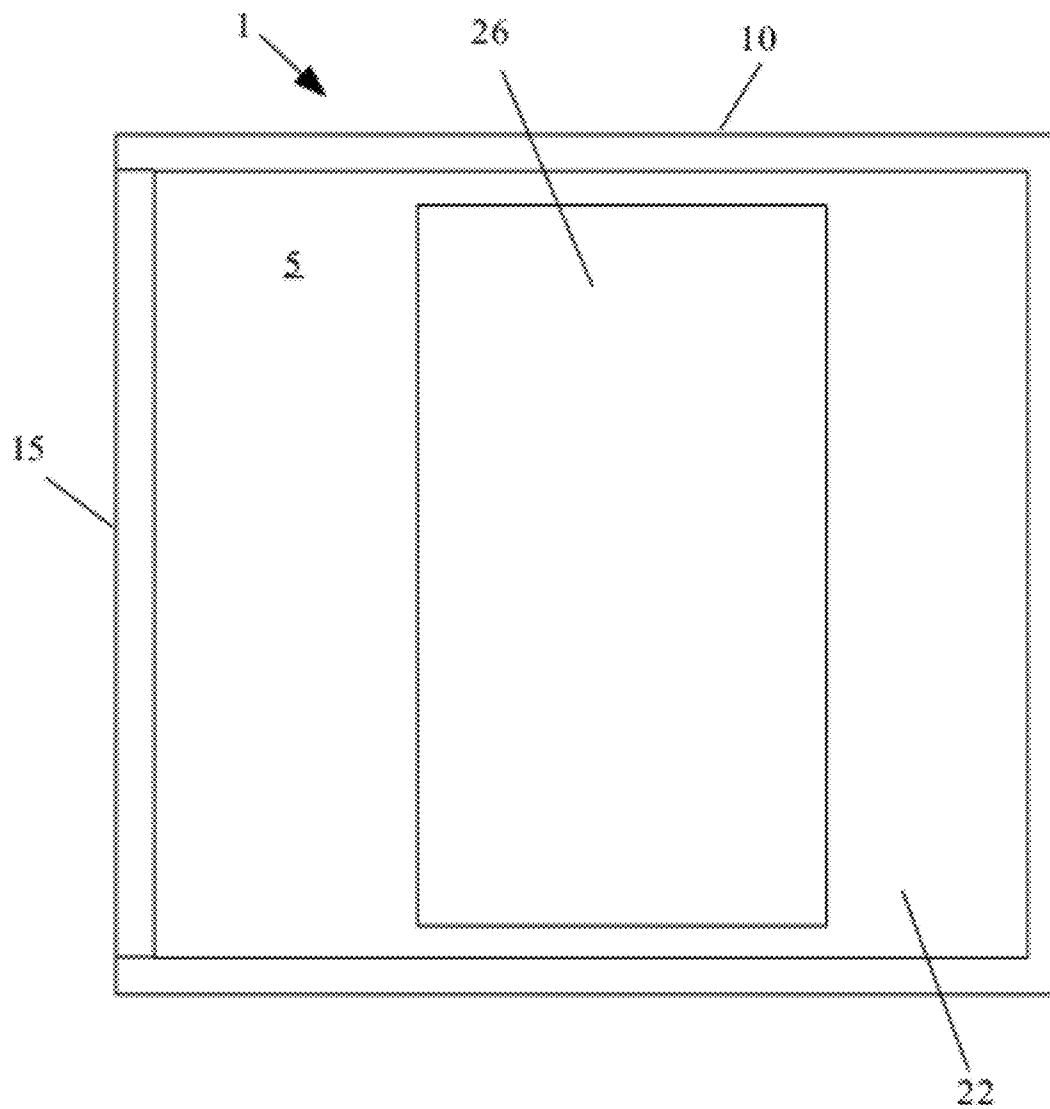


FIG. 1B

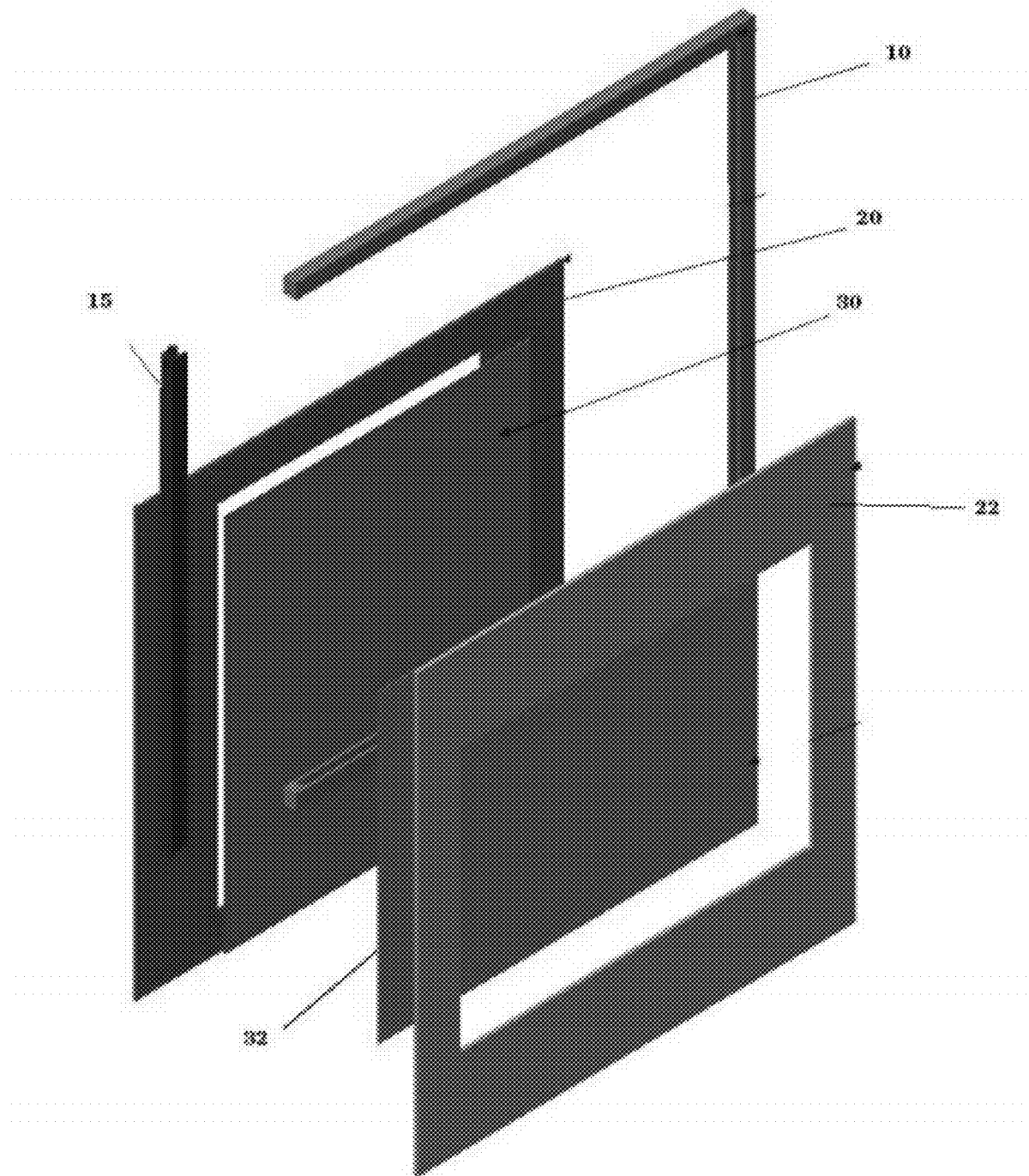


FIG. 2

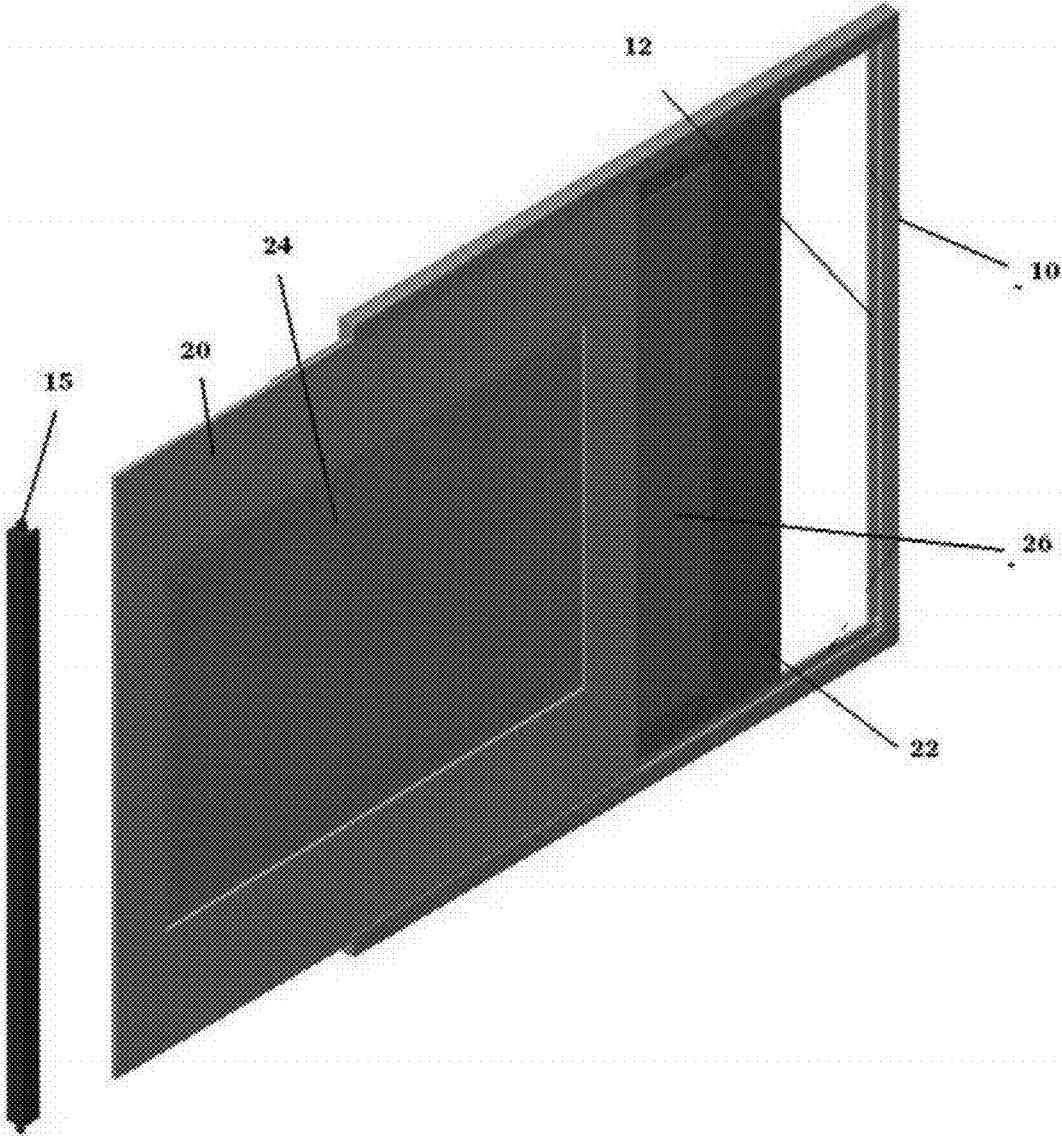


FIG. 3

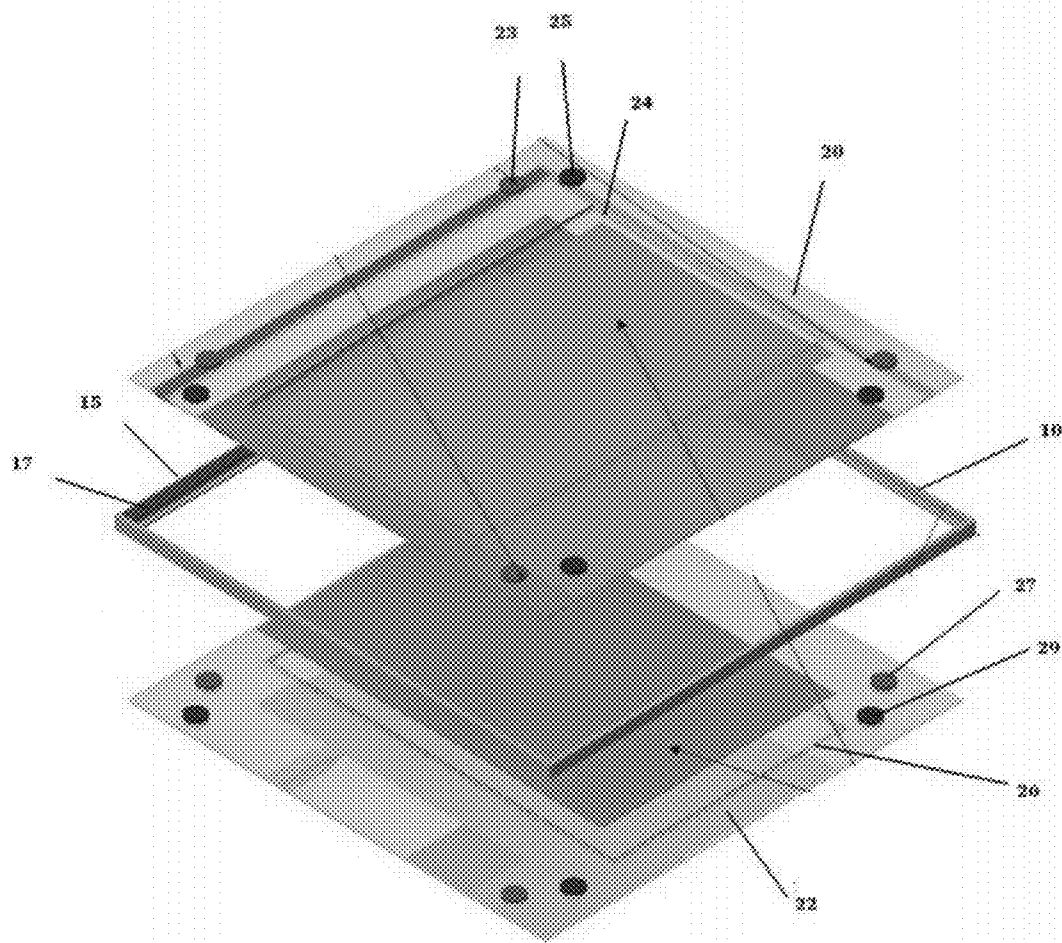


FIG. 4

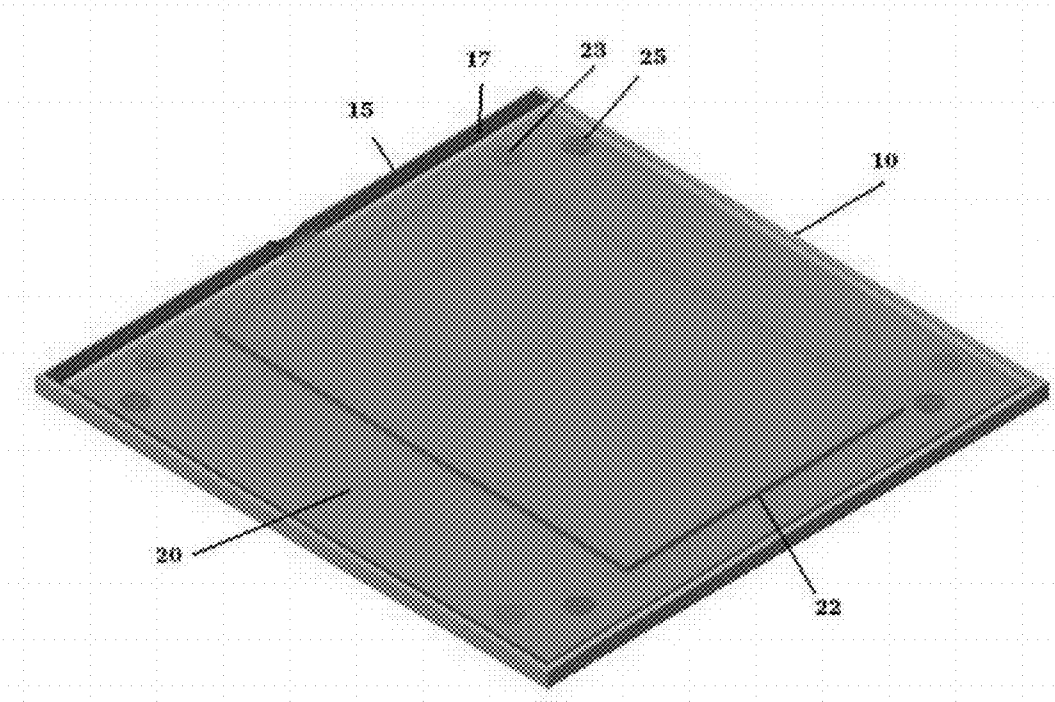


FIG. 5

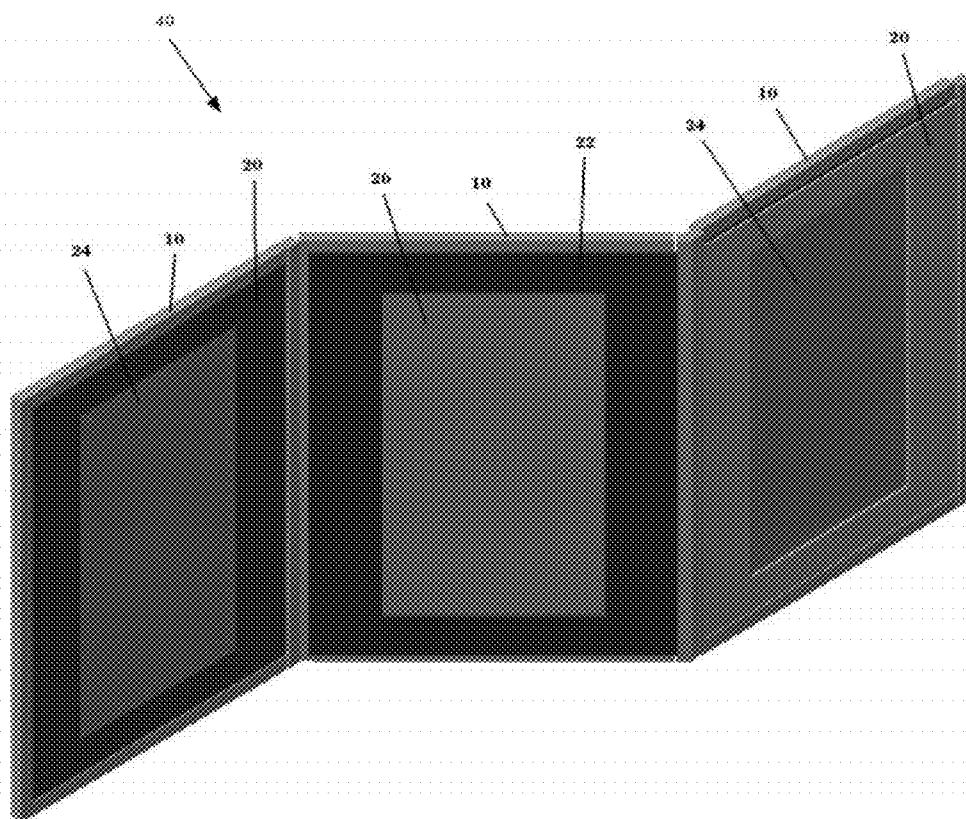


FIG. 6

MODULAR DISPLAY DEVICE

RELATED APPLICATIONS

[0001] This application is a non-provisional of U.S. Provisional Patent Application 61/229,621, filed Jan. 29, 2010, the contents of which are incorporated herein by reference in their entirety.

TECHNICAL FIELD

[0002] The present invention relates to display devices, and in particular to display devices that can be releasably attached to one another to provide a modular display system.

BACKGROUND

[0003] Display devices, such as, for example, photo frames, compact disc holders, and other such devices for holding and displaying various items such as stamps, advertising products, coins, a clock, or LCD temperature displays are usually stand-alone items, and if available in modular form, often requires a number of mechanical steps to engage or disengage the display device from an adjacent display device. For example, in the case of adding a photo to a photo album, one must either insert the photo into a sleeve of a photo album page, or add another page to the album that will hold the photo. This task is often more time-consuming than expected, since the photo must be aligned with other photos on the album page or the added page must be mechanically fastened to the other pages.

[0004] Accordingly, there is a need for a modular display device system that allows for quick and easy addition or removal of objects for display and individual display devices.

SUMMARY OF THE INVENTION

[0005] A display device according to an exemplary embodiment of the present invention comprises: a display frame; a first mounting member that displays a first object; and a second mounting member that displays a second object, each of the first and second mounting members being disposed within the display frame in one of at least two different configurations.

[0006] In at least one embodiment, each of the first and second mounting members comprises a display window.

[0007] In at least one embodiment, the display window is rectangular so that the at least two different configurations comprise a landscape configuration and a portrait configuration.

[0008] In at least one embodiment, the display frame comprises a door that allows for insertion of the first and second mounting members into the display frame and removal of the first and second mounting members from the display frame.

[0009] In at least one embodiment, the first and second mounting members overlap one another within the display frame so that the first mounting member display the first object from one side of the display device and the second mounting member displays the second object from an opposite side of the display device.

[0010] In at least one embodiment, the display frame comprises at least one groove, and the first and second mounting members are disposed within the at least one groove.

[0011] In at least one embodiment, each of the first and second mounting members comprises magnets so that the first mounting member and the second mounting member are

attached to one another within the display frame by the magnetic attraction between the magnets.

[0012] In at least one embodiment, the display frame comprises a magnetizable element that is magnetically attracted to the magnets of the first and second mounting members.

[0013] In at least one embodiment, the display frame comprises one or more magnetic elements so that any number of identical display frames may be releasably attached together in a variety of configurations by the magnetic attraction between the magnetic elements to form a modular display device.

[0014] In at least one embodiment, the first and second mounting members differ from one another in terms of at least one of color, texture and material.

[0015] In at least one embodiment, each of the first and second mounting members comprises a raised portion for displaying the first and second objects, respectively.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Various exemplary embodiments of this invention will be described in detail, with reference to the following figures, wherein:

[0017] FIGS. 1A and 1B are plan views of a display device according to an exemplary embodiment of the present invention;

[0018] FIG. 2 is an exploded perspective view of the display device of FIG. 1 according to an exemplary embodiment of the present invention;

[0019] FIG. 3 is a perspective view showing the display device of FIG. 1 partially constructed according to an exemplary embodiment of the present invention;

[0020] FIG. 4 is an exploded perspective view of the display device of FIG. 1 according to an exemplary embodiment of the present invention;

[0021] FIG. 5 is a perspective view of the display device of FIG. 1 according to an exemplary embodiment of the present invention; and

[0022] FIG. 6 is a modular display device according to an exemplary embodiment of the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0023] The present invention relates to a modular display including a display frame and one or more mounting members disposed within the display frame. The mounting members may be removed from the display frame and replaced back into the display frame in various configurations so as to display objects of varying shapes and orientations. The display frame may include one or more magnets, so that a plurality of such display frames may be pivotally attached to one another to form a modular system. The display may be suitable for displaying a variety of objects, such as, for example, photographs, baseball cards, stamps, etc.

[0024] FIGS. 1A and 1B show two configurations of a magnetic modular display, generally designated by reference number 1, according to an exemplary embodiment of the present invention. In FIG. 1A, a first side 3 of the display 1 is shown facing upwards, and in FIG. 1B, a second side 5 of the display 1 is shown facing upwards. The display 1 includes an outer display frame 10 disposed around first and second mounting members 20, 22. The first and second mounting member 20, 22 may be disposed within the display frame 10 so as to overlap one another. The mounting members 20, 22

are preferably at least partially opaque and square-shaped, and includes rectangular-shaped windows 24, 26, respectively, for displaying photographs or other objects for display. The mounting members 20, 22 may be of any color and texture, and may be made of any suitable materials, such as, for example, cardboard, paper or plastic. In the configuration shown in FIG. 1A, the mounting member 20 is positioned within the display frame 10 so that the window 24 is suitable for displaying an object in a landscape view. In the configuration shown in FIG. 1B, the mounting member 22 is positioned within the display frame 10 so that the window 26 is suitable for displaying an object in a portrait view. The display frame 10 may include a display frame door 15 that can be opened to allow for removal of the mounting members 20, 22 from the display frame 10 and re-insertion of the mounting members 20, 22 in preferred configurations. The display frame door 15 may operate using any suitable construction known in the art, such as, for example, a hinge and snap-fit construction.

[0025] FIG. 2 is an exploded perspective view of the display 1, showing the relative positions of the first and second mounting members 20, 22 within the display frame 10. Within the display frame 10, the first and second mounting members 20, 22 may be appropriately positioned so as to display an object either in a portrait view or a landscape view. For example, in FIG. 2, the first mounting member 20 is configured to display an object, which is in this case may be a first photograph 30, in a landscape view, while the second mounting member 22 is configured to display an object, which is in this case may be a second photograph 32, in a portrait view. It should be appreciated that the first and second mounting members 20, 22 may be inserted into the display frame 10 in any combination of configurations, such as, for example, both in landscape or portrait view, or one in landscape and the other in portrait. The display frame door 15 and/or other components of the display frame 10 may include magnets (now shown) so that a modular display system according to an exemplary embodiment of the present invention may be made up of multiple displays including such magnets, where the displays are pivotally attached to one another by the magnets. For example, the display frame 10 may have a construction similar to that described in U.S. patent application Ser. No. 12/546,503, entitled "Magnetic Album", filed Aug. 24, 2009, the contents of which are incorporated herein by reference in their entirety.

[0026] The first and second mounting members 20, 22 may be held within the display frame 10 by any suitable fixing mechanism. For example, as shown in FIG. 3, the display frame 10 may include grooves 12 into which the edges of the first and second mounting members 20, 22 may be inserted. In this case, after photographs or other objects for display are mounted within the first and second mounting members 20, 22, the display frame door 15 may be opened, and the first and second mounting members 20, 22 may be slid into the grooves 12 for constructing the display 1.

[0027] Alternatively, or in addition to the grooves 12, the first and second mounting members 20, 22 may be held within the display frame 10 using magnetic elements. For example, as shown in FIG. 4, the corner portions of each of the first and second mounting members 20, 22 may include pairs of magnets 23, 25 and 27, 29, respectively, so that when the first and second mounting members 20, 22 are disposed on top of one another within the display frame 10, they are held together by the magnetic attraction between the pairs of magnets 23, 25

and 27, 29. In this regard, one magnet 23, 27 of each of the pairs of magnets 23, 25 and 27, 29 may have its north pole oriented in one direction, and the other magnet 25, 29 of each of the pairs of magnets 23, 25 and 27, 29 may have its north pole oriented in the opposite direction, so that no matter how the first and second mounting members 20, 22 are configured (e.g. in portrait or landscape configuration), when the first and second mounting members 20, 22 are overlapped and aligned with one another, the pairs of magnets 23, 25 and 27, 29 are magnetically attracted to one another. One or more portions of the display frame 10 may include a magnetizable element 17 to assist in holding the first and second mounting members 20, 22 within the display frame 10. In other exemplary embodiments of the present invention, rather than magnets, the display may include other types of elements to attach the mounting members to one another, such as, for example, adhesive or hook-and-loop fasteners.

[0028] FIG. 5 is a perspective view of the display 1 of FIG. 4 fully assembled, with the first mounting member 20 oriented upwards. As shown in FIG. 6, any number of displays 1 may be attached together in a variety of configurations to form a modular display 40. In this regard, as mentioned previously, the display frame 10 may include magnetic elements so that they can be releasably attached to one another and easily configured to a variety of orientations relative to one another. For example, the displays 1 may be stacked on top of one another or arranged side by side.

[0029] Rather than including planar windows as in the previously described embodiments, the first and second mounting members 20, 22 may include raised portions for mounting of an object for display. The raised portions may be rectangular shaped, so that the mounting members may be appropriately configured to selectively display the object in either a portrait view or a landscape view.

[0030] Now that the preferred embodiments of the present invention have been shown and described in detail, various modifications and improvements thereon will become readily apparent to those skilled in the art. Accordingly, the spirit and scope of the present invention is to be construed broadly and not limited by the foregoing specification.

What is claimed is:

1. A display device, comprising:
 - a display frame;
 - a first mounting member that displays a first object; and
 - a second mounting member that displays a second object, each of the first and second mounting members being disposed within the display frame in one of at least two different configurations.
2. The display device of claim 1, wherein each of the first and second mounting members comprises a display window.
3. The display device of claim 2, wherein the display window is rectangular so that the at least two different configurations comprise a landscape configuration and a portrait configuration.
4. The display device of claim 1, wherein the display frame comprises a door that allows for insertion of the first and second mounting members into the display frame and removal of the first and second mounting members from the display frame.
5. The display device of claim 1, wherein the first and second mounting members overlap one another within the display frame so that the first mounting member display the first object from one side of the display device and the second

mounting member displays the second object from an opposite side of the display device.

6. The display device of claim 1, wherein the display frame comprises at least one groove, and the first and second mounting members are disposed within the at least one groove.

7. The display device of claim 1, wherein each of the first and second mounting members comprise magnets so that the first mounting member and the second mounting member are attached to one another within the display frame by the magnetic attraction between the magnets.

8. The display device of claim 7, wherein the display frame comprises a magnetizable element that is magnetically attracted to the magnets of the first and second mounting members.

9. The display device of claim 1, wherein the display frame comprises one or more magnetic elements so that any number of identical display frames may be releasably attached together in a variety of configurations by the magnetic attraction between the magnetic elements to form a modular display device.

10. The display device of claim 1, wherein the first and second mounting members differ from one another in terms of at least one of color, texture and material.

11. The display device of claim 1, wherein each of the first and second mounting members comprises a raised portion for displaying the first and second objects, respectively.

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