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MARAVILLA et al.(10) **Pub. No.: US 2012/0247983 A1**(43) **Pub. Date: Oct. 4, 2012**(54) **TABLET BAY AND BAG INCORPORATING
THE SAME****Publication Classification**(51) **Int. Cl.****B65D 33/04** (2006.01)**B65D 25/54** (2006.01)**B65D 25/04** (2006.01)**B65D 30/22** (2006.01)(52) **U.S. Cl. 206/216**

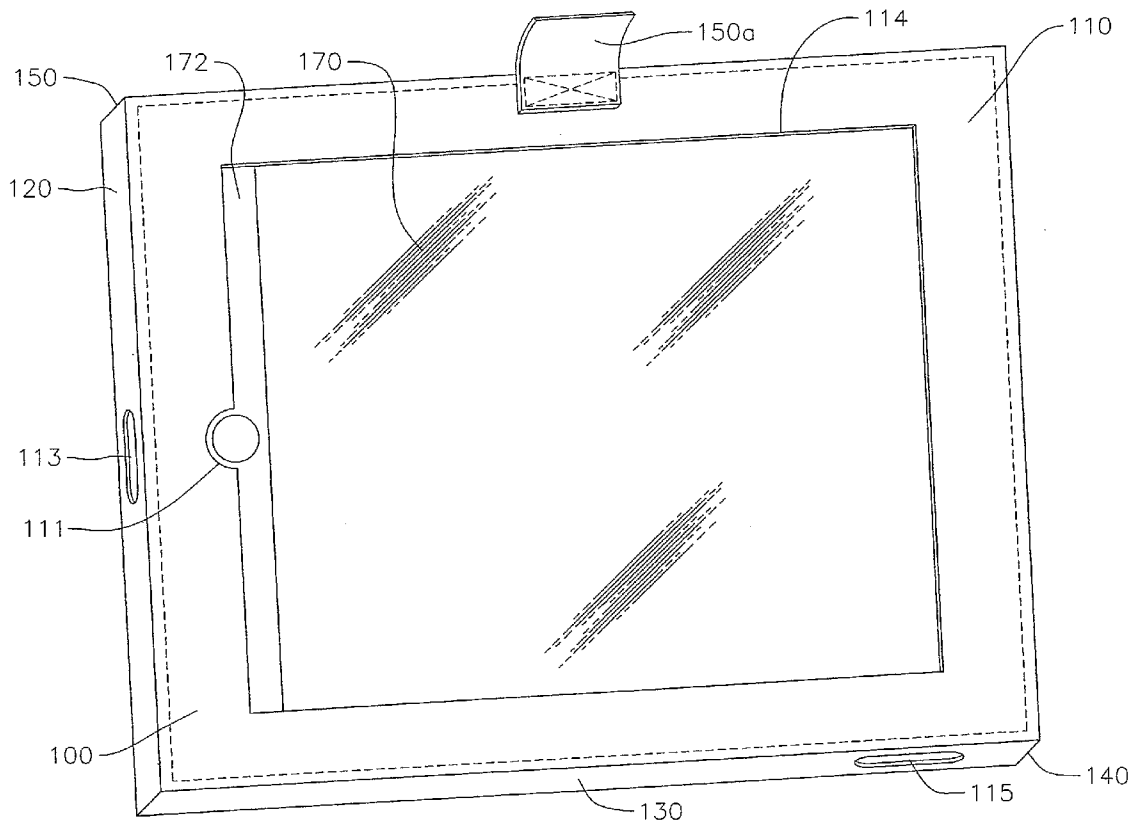
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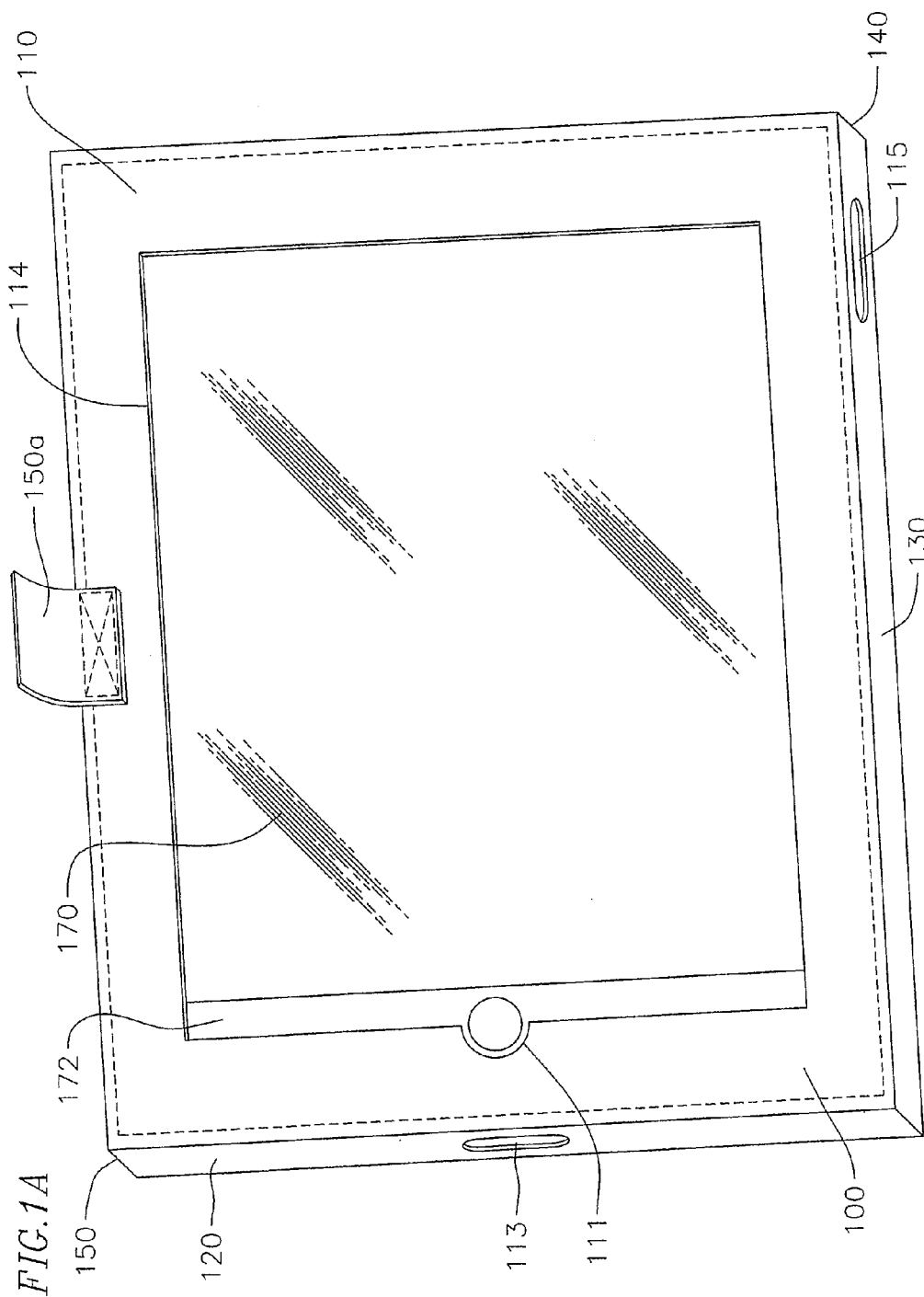
ABSTRACT

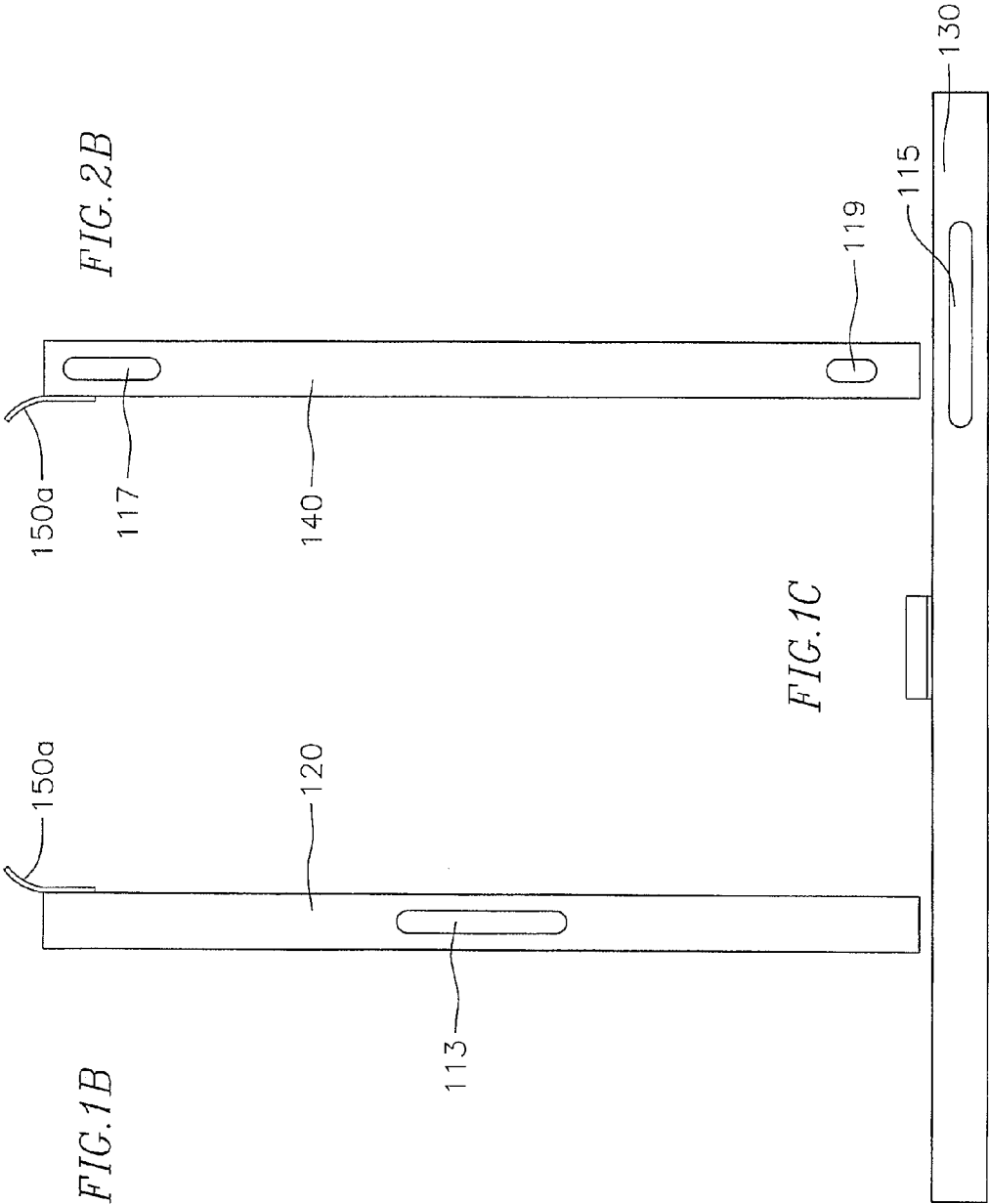
The present invention relates to a storage apparatus for stowing a device, and more particularly to a storage apparatus with a compartment that allows a user to operate a device while the device is stowed. In an embodiment, a compartment for stowing a tablet device includes a frame panel having an opening, the opening configured to expose a display screen of the tablet device when the tablet device is stowed, a plurality of side panels for retaining the tablet device in the compartment, and an open edge along a side of the compartment. The open edge is configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment.

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(60) Provisional application No. 61/516,332, filed on Mar. 31, 2011.







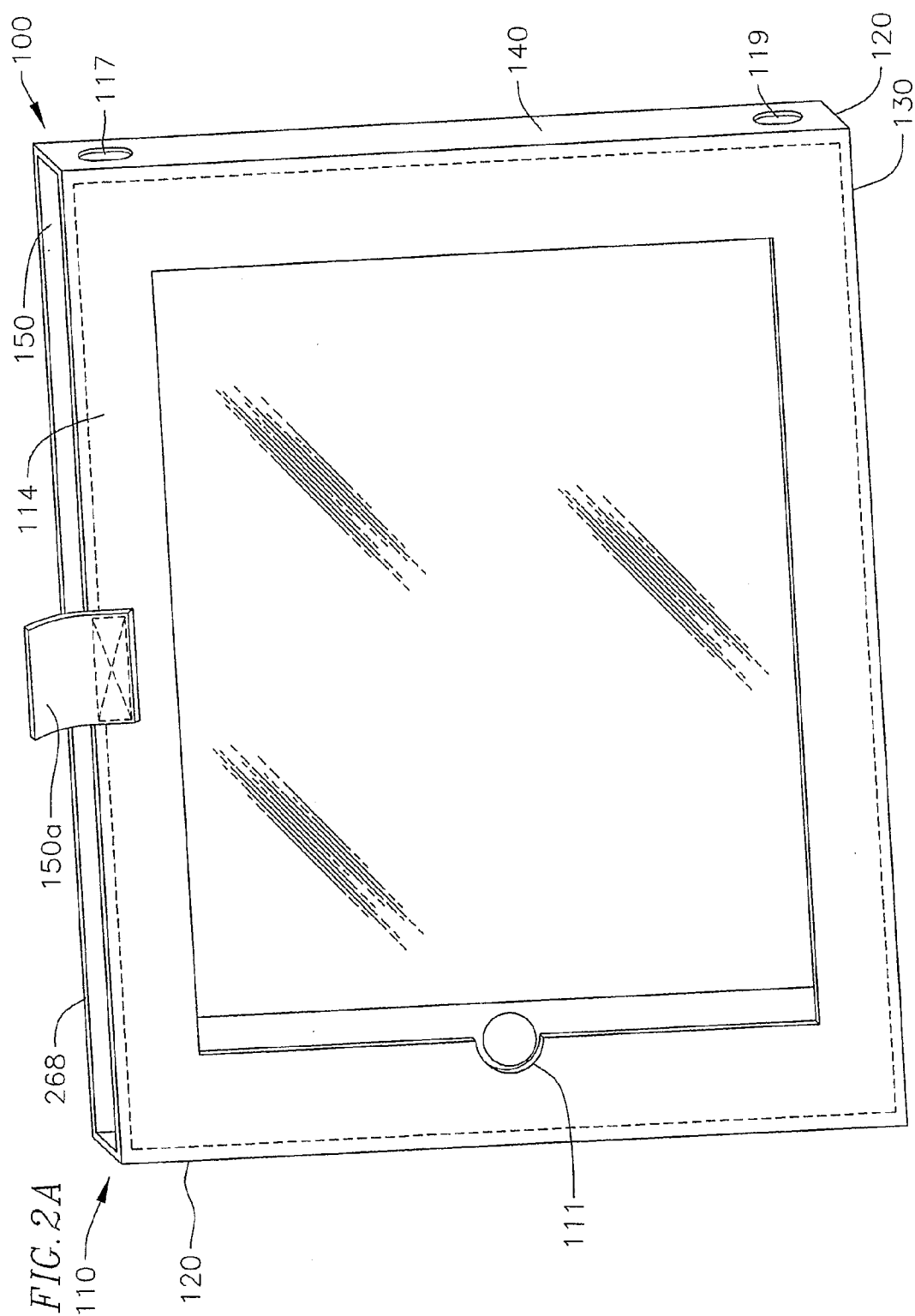
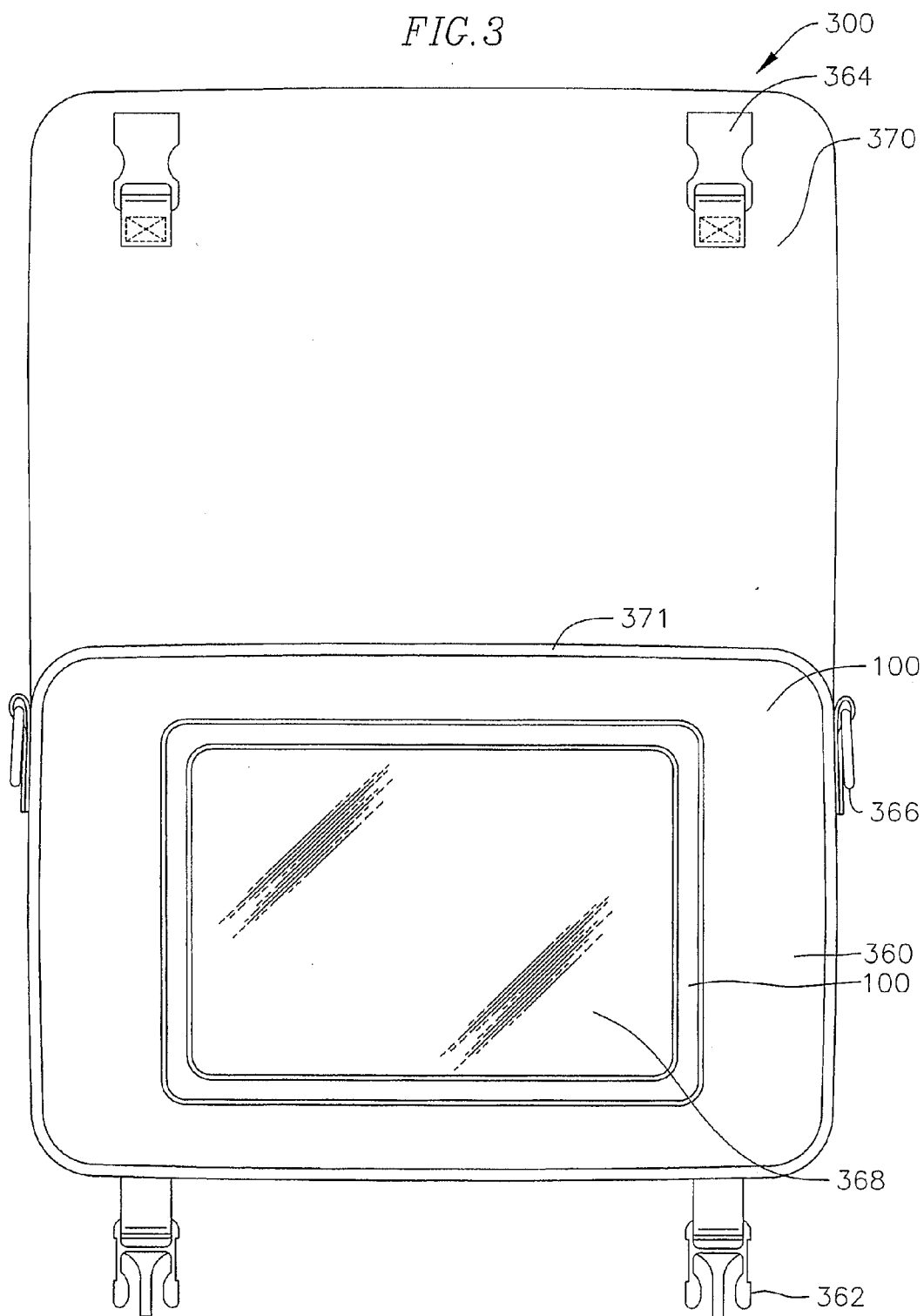
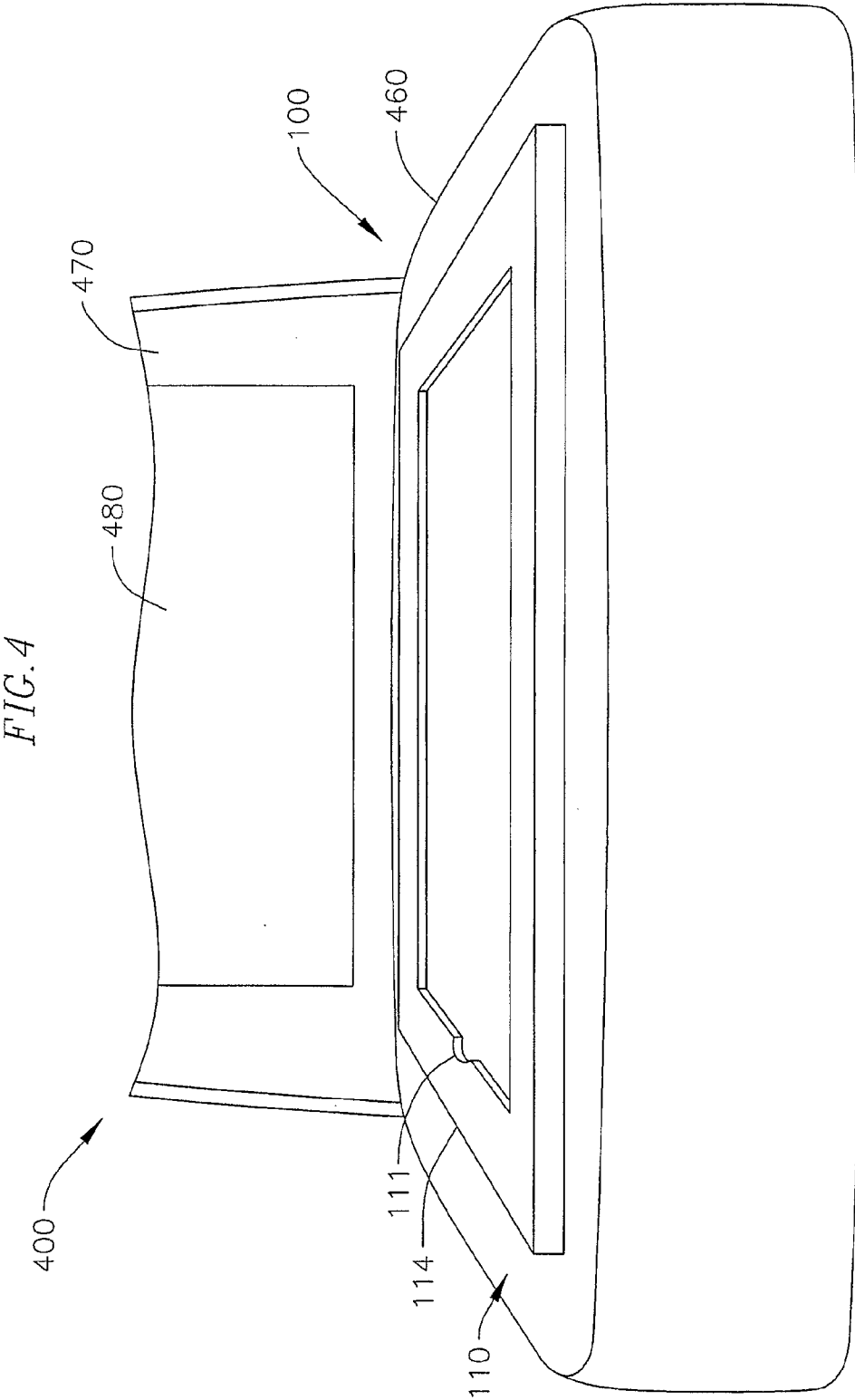


FIG. 3





TABLET BAY AND BAG INCORPORATING THE SAME

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is based upon and claims priority on U.S. Provisional Application No. 61/516,332, filed on Mar. 31, 2011, the contents of which are fully incorporated herein by reference.

FIELD

[0002] The present invention relates to a storage apparatus for stowing a device, and more particularly to a storage apparatus with a compartment that allows a user to operate a tablet device while the tablet device is stowed.

BACKGROUND

[0003] Portable electronic devices include devices such as tablet computers, communications devices, game consoles, audio players, and e-book readers, which are designed to be transported from one place to another. A portable electronic device generally includes a display screen and a user interface to allow a user to input commands and other information into the device. Many electronic devices employ a touch screen as the user interface, which enables users to input commands and other information by contacting the display screen of the device with the user's finger or a pen-like apparatus such as a stylus.

[0004] However, due to their portability, portable electronic devices are vulnerable to cracking, breaking, and other wear and tear caused by transport and usage. Therefore, various bags, cases, and sleeves have been designed to provide protection and storage for portable electronic devices. A disadvantage of many bags, cases, and sleeves is that they require users to first remove the portable electronic device from the bag, case, or sleeve before being able to operate it, which can be inconvenient and time-consuming. For example, a tablet device having a touch screen, such as an iPad® (iPad® is a registered trademark of Apple Inc.), is larger in size than other portable electronic devices such as a mobile phone or personal digital assistant. Consequently, it may be inconvenient and unwieldy to completely remove the tablet device in order to operate the device's touch screen. Additionally, the risk of breaking, scratching, or cracking the device increases when the tablet device is removed from the bag, case, or sleeve and operated outside of the bag, case, or sleeve.

[0005] Further, if the portable electronic device is smaller than the bag, case, or sleeve, it may not be securely held in place while being stowed, which could lead to further damage from the device being jostled around in the bag or case during transport. In addition, while a sleeve may allow the portable electronic device to be more securely stored, a user is still required to remove the device from the sleeve before being able to operate it. Moreover, sleeves are often fitted to the particular device for which they are designed, providing inadequate storage space for other items such as peripherals and components that may accompany the device.

[0006] Accordingly, there is a need for a storage apparatus that securely stows and protects a tablet device and allows a user to operate the tablet device while it is stowed.

SUMMARY

[0007] In an embodiment, a compartment for stowing a tablet device includes a frame panel having an opening, the

opening configured to expose a display screen of the tablet device when the tablet device is stowed, a plurality of side panels for retaining the tablet device in the compartment, and an open edge along a side of the compartment. The open edge is configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment.

[0008] In another embodiment, a storage apparatus includes a cavity for storing objects, the cavity having a plurality of outer walls, a compartment attached to an outer wall of the plurality of outer walls, and configured to stow a tablet device, and an outer flap configured to cover the compartment. The compartment includes a frame panel having an opening, the opening configured to expose a display screen of the tablet device when the tablet device is stowed, a plurality of side panels for retaining the tablet device in the compartment, and an open edge along a side of the compartment. The open edge is configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment.

[0009] In an exemplary embodiment, a tablet stowing device is provided. The device includes a bag, a frame panel defining an opening, a plurality of side panels coupling the frame panel to the bag defining a compartment, and an tablet insertion opening defined along a side of the compartment between the bag and the frame panel, the tablet insertion opening being configured for insertion of the tablet device into the compartment for stowing and removal of the tablet device from the compartment, wherein the frame panel opening is configured to expose a display screen of the tablet device when the tablet device is stowed in said compartment and for allowing the user to use the device while being stowed. In another exemplary embodiment, the frame panel has a cutout configured to expose a user interface element of the tablet device when stowed. In yet another exemplary embodiment, the cutout has a semi-circular shape. In a further exemplary embodiment, at least one side panel of the plurality of side panels has an aperture for exposing a port of the tablet device when stowed. In yet a further exemplary embodiment at least one side panel of the plurality of side panels has an aperture for exposing a user interface element of the tablet device when stowed. In one exemplary embodiment, the user interface element is a pushbutton. In another exemplary embodiment, the stowing device also includes a fastener proximate the tablet insertion opening for securing the tablet device in the compartment when stowed.

[0010] In a further exemplary embodiment, a storage apparatus is provided. The storage apparatus includes a container having a cavity for storing objects defined by a plurality of outer walls, and a compartment attached to an outer wall of the plurality of outer walls, and configured to stow a tablet device. The storage apparatus also includes an outer flap configured to cover the compartment. The compartment includes a frame panel having an opening, the opening configured to expose a display screen of the tablet device when the tablet device is stowed for allowing the user to use the tablet device while being stowed. The compartment also includes a plurality of side panels extending from the frame panel to the container such that the compartment is defined by the side walls, the outer wall and the frame panel, and an opening along a side of the compartment defined between the container and the frame panel, the opening being configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment. In yet a

further exemplary embodiment the storage apparatus further includes a protective surface on an inner surface of the outer flap, the protective surface corresponding to the opening of the frame panel, wherein the protective surface covers the opening of the frame panel when the outer flap is in a closed position. In another exemplary embodiment the storage apparatus also includes a fastener at the opening of the compartment for securing the tablet device in the compartment. With either of the aforementioned exemplary embodiments, the frame opening maybe rectangular in shape and similar in size to the display of the tablet device to be stowed. For example, for an iPad®, the opening should be about 9.5 inches in diagonal. In one exemplary embodiment, the frame opening is about 8.8 inches by about 6.5 inches. In an exemplary embodiment, the frame opening is at least 7 inches by at least 5.5 inches in dimension.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1A is a perspective view of a compartment according to an embodiment of the present invention, housing on Apple iPad®.

[0012] FIG. 1B is a side view of a side panel of the compartment of FIG. 1A.

[0013] FIG. 1C is a side view of another side panel of the compartment of FIG. 1A.

[0014] FIG. 2A is a perspective view of a compartment according to an embodiment of the present invention, housing on Apple iPad®.

[0015] FIG. 2B is a side view of a side panel of the compartment of FIG. 2A.

[0016] FIG. 3 is a top view of a storage apparatus including a compartment according to an embodiment of the present invention.

[0017] FIG. 4 shows a storage apparatus including a compartment according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0018] The present invention relates to a storage apparatus for stowing a device, and more particularly to a storage apparatus with a compartment that allows a user to operate a tablet device while the tablet device is stowed.

[0019] In one embodiment, a compartment for stowing a device includes a frame panel for exposing a display screen of a portable electronic device such as a tablet device. The frame panel may have one or more cutouts for exposing user interface elements of the device. The compartment includes a plurality of side panels having apertures for providing access to ports and pushbuttons of the device. In another embodiment, a storage apparatus includes a compartment for stowing a device and attached to an outer surface of a bag. The storage apparatus may include a protective surface to protect the device while the device is stowed. The storage apparatus may also serve as a support surface for the device while the device is being operated.

[0020] According to an embodiment of the present invention, a compartment has a shape for receiving and stowing a tablet device. FIG. 1A is a perspective view of a compartment according to an embodiment of the present invention. FIG. 1B is a side view of a side panel of the compartment of FIG. 1A. FIG. 1C is an opposite side panel of the compartment of FIG. 1A.

[0021] Referring to FIG. 1A, a compartment **100** has a rectangular shape for receiving a tablet device (e.g., an iPad®). The compartment **100** includes a frame panel **110** having an opening **114** that at least partially exposes a display touch screen **170** of the tablet device **172** and preferably includes the dimensions of the display touch screen. For example, when being used to stow an iPad®, the opening **114** is rectangular and has a diagonal dimension (i.e., a linear distance between opposite corners of the rectangular opening) of about 9.5 inches. In one exemplary embodiment, the opening **114** is at least 7 inches by at least 5.5 inches. In another exemplary embodiment, the frame opening is about 8.8 inches by 6.5 inches. The opening **114** permits a user to operate a touch screen of the device by contacting the display screen with the user's finger or a stylus. The frame panel **110** includes a border of material along the circumference of the opening **114**, such that the total area of the opening **114** is less than the total surface area of the tablet device **172**. The frame panel **110** holds the tablet device within the compartment **100**. In one embodiment, the frame panel is made of a rigid material that provides improved support and protection for the device.

[0022] The compartment **100** further includes side panels **120**, **130**, and **140** for retaining the tablet device within the compartment **100**. The side panels **120** and **140** are located opposite one another, and the side panel **130** is located between the side panels **120** and **140**. The side panels couple the front panel to a rear panel (not shown). An opening **150** is located opposite the side panel **130** and is open to permit insertion and removal of the tablet device into and out of the compartment **100**. The opening defined between a rear panel (not shown) and the front panel. A securing mechanism **150a** may be arranged over the opening **150** to secure the tablet device within the compartment **100**. In one embodiment, the securing mechanism **150a** is a hook-and-loop fastener such as a VELCRO® strip (VELCRO® is a registered trademark of Velcro Industries B.V.). In other embodiments, the securing mechanism **150a** may be a zipper, buckle, or magnetic snap. In one embodiment, the side panels **120**, **130**, and **140** are made of a flexible material that is capable of expanding or stretching to accommodate devices of various thicknesses.

[0023] In order to permit a user to operate the device and access all of the functions of the device, a compartment according to one exemplary embodiment has one or more apertures and/or cutouts corresponding to user interface elements (e.g., ports and pushbuttons) of the device.

[0024] Referring to FIGS. 1A to 1C, in one embodiment the compartment **100** is designed to stow an iPad®. Accordingly, the compartment **100** has a cutout **111** and apertures **113** and **115**. The cutout **111** is cut out from the frame panel **110** and has a rounded, semi-circular shape to expose a user interface element (e.g., a "home button") of the device. As shown in FIG. 1B, the side panel **120** has an aperture **113** for providing access to a port (e.g., a dock connector) of the tablet device, which permits the tablet device to be electrically connected to peripheral devices while the tablet device is stowed in the compartment **100**. In addition, as shown in FIG. 1C, the side panel **130** has an aperture **115** for providing access to pushbuttons (e.g., volume control buttons) of the device.

[0025] FIG. 2A is a perspective view of a compartment according to an exemplary embodiment of the present invention. FIG. 2B is a side view of a side panel of the compartment of FIG. 2A. As shown in FIGS. 2A and 2B, the compartment **100** further includes apertures **117** and **119** in the side panel

140. The aperture **117** provides access to a connection socket to permit an audio device (e.g., headphones) to be coupled to the tablet device while the device is stowed in the compartment **100**. The aperture **119** provides access to a pushbutton (e.g., a “hold button” or “sleep button”) of the device. In some embodiments, the compartment may include several cutouts and/or apertures. In other embodiments, the compartment may include only one cutout and/or only one aperture.

[0026] According to an exemplary embodiment, the location, dimensions, and shapes of the cutout and the apertures are designed to correspond to the location, dimensions, and shapes of the user interface elements of the stowed device. For example, in one embodiment, the aperture **113** is 30 mm wide to correspond to the size of the port on the tablet device, and is centrally located on the side panel **120** to be substantially aligned with the cutout **111** in the frame panel **110**. The aperture **115** is 38 mm wide to correspond to the size of the volume pushbuttons on the tablet device, and is positioned 26.5 mm from the edge of the adjacent side panel **140**, to be aligned with the volume pushbuttons. The aperture **117** is 16 mm wide to correspond to the size of the connection socket on the device, and is positioned 22 mm from the open edge **150** to be aligned with the connection socket. The aperture **119** is 16 mm wide to correspond to the size of the “hold button” on the device, and is positioned 16.5 mm from the edge of the side panel **130** to be aligned with the “hold button.”

[0027] However, the present invention is not limited thereto, and the apertures may have any dimensions suitable for permitting access to user interface elements of the stowed device.

[0028] The compartment **100** includes a rear panel **268** (FIG. 2A) **368** (shown in FIG. 3) or **468** (shown in FIG. 4) opposite the frame panel **110**. The rear panel **268**, **368** or **468** contacts the rear surface of the tablet device opposite the display screen. The rear panel may be made of a soft, padded material for supporting and protecting the rear surface of the tablet device. For example, in the embodiment shown in FIG. 4, the rear panel is made of a padded material or other material covered by felt. In other embodiments, as for example shown in FIGS. 3 and 4 the rear panel of the compartment is a surface of a bag, such that the surface of the bag directly contacts the rear surface of the tablet device. Such surface of the bag may be padded or covered with a soft material such as felt.

[0029] Further, a user of a tablet device may require additional storage space and may need a support surface upon which to rest the tablet device while operating the device. According to another exemplary embodiment, a storage apparatus includes a compartment attached to (or mounted on) a surface of a bag.

[0030] FIG. 3 is a top view of a storage apparatus including a compartment according to an embodiment of the present invention. In FIG. 3, a storage apparatus **300** includes an outer flap **370** and a compartment **100** attached or integrated with the bag. The bag has a cavity **371** for storing objects. The cavity is defined by a plurality of outer walls including an outer wall **360**. The compartment **100** may be attached to the outer wall **360**, for example by sewing or gluing the compartment **100** to the outer wall **360**.

[0031] In one embodiment, the compartment **100** may be removably attached to the outer wall **360**. The outer flap **370** may be moved in a first direction (e.g., lifted upward or flipped backward) to expose the compartment **100**, and may be moved in a second direction (e.g., folded downward or flipped forward) to cover the compartment **100** in a closed

position. In the embodiment shown in FIG. 3, the outer flap **370** covers both the outer wall **360** and the compartment **100** in the closed position. As such, in the closed position, the outer flap **370** protects the tablet device stowed in the compartment **100**. The inner surface of the outer flap **370** may be padded and/or covered with a soft material for protecting the display screen of the stowed tablet device.

[0032] In addition, the outer flap **370** can be moved from the closed position (e.g., by being lifted upward) and away from the compartment **100** to allow a user to access the compartment **100** in which the tablet device is stowed. For example, a user carrying the storage apparatus **300** of FIG. 3 on the user's shoulder can access and operate a tablet device stowed in the compartment **100**, while the storage apparatus is on the user's shoulder, by lifting the outer flap **370**.

[0033] The outer flap **370** can also be moved from the closed position (e.g., by being lifted upward) and away from the compartment **100**, such that it contacts an outer wall of the bag opposite the outer wall **360** of the bag. In such a configuration, the storage apparatus **300** may be used as a support surface for more stably and conveniently operating the tablet device stowed in the compartment **100**. The storage apparatus **300** may further include adjustable straps **362** attached to fasteners **364** such as plastic buckles, to securely hold the outer flap **370** in place when the fasteners **364** are engaged. The storage apparatus **300** may further include couplers such as D-rings **366** for coupling a shoulder strap to the storage apparatus **300**. In one embodiment, the storage apparatus **300** further includes pockets on the interior of the cavity **371** and on an outer wall of the cavity opposite the outer wall **360** having the compartment **100** attached thereto.

[0034] FIG. 4 shows a storage apparatus including a compartment according to an exemplary embodiment of the present invention. As shown in FIG. 4, in one embodiment a storage apparatus **400** further includes a protective surface **480** substantially corresponding to a compartment **100**. The protective surface **480** is arranged on an outer flap **470** to correspond to the location of the compartment **100** on an outer wall **460**. The protective surface **480** may have a size and shape that substantially corresponds to the size and shape of the compartment **100**. In one embodiment, the dimensions of the protective surface **480** correspond to the dimensions of the opening **114** of the frame panel **110** of the compartment **100**. However, the present invention is not limited thereto, and the protective surface **480** may have a size that is larger than the size of the opening **114** of the frame panel **110**. The protective surface **480** may be made of a soft, padded material to protect the display screen from scratching, cracking, or breaking. In one embodiment, the protective surface **480** is covered by felt.

[0035] As this invention has been described by way of exemplary embodiments, many modifications and variations will be apparent to those skilled in the art. Accordingly, it is to be understood that the invention described herein may be embodied other than as specifically described herein. For example, a compartment according to exemplary embodiments is not limited to a rectangular shape and may have any shape suitable for stowing a device. In addition, cutouts and/or apertures in side panels of the compartment may have any number of sizes and shapes, depending on the type of device being stowed. Further, the compartment may be attached to any type of bag suitable for stowing a device, such as a laptop case, briefcase, backpack, or purse.

[0036] Although the present invention has been described and illustrated in respect to exemplary embodiments, it is to

be understood that it is not to be so limited, since changes and modifications may be made therein which are within the full intended scope of this invention as hereinafter claimed.

What is claimed is:

1. A tablet stowing device, comprising:
a bag;
a frame panel having an opening;
a plurality of side panels coupling the frame panel to the bag defining said compartment; and
a tablet insertion opening along a side of the compartment, the tablet insertion opening being configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment, wherein the frame panel opening is configured to expose a display screen of the tablet device when the tablet device is stowed allowing a user to use the tablet device while being stowed.
2. The device of claim 1, wherein the frame panel has a cutout configured to expose a user interface element of the tablet device.
3. The device of claim 2, wherein the cutout has a semi-circle shape.
4. The device of claim 1, wherein at least one side panel of the plurality of side panels has an aperture for exposing a port of the tablet device.
5. The device of claim 1, wherein at least one side panel of the plurality of side panels has an aperture for exposing a user interface element of the tablet device.
6. The device of claim 5, wherein the user interface element is a pushbutton.
7. The device of claim 1, further comprising a fastener at the open edge for securing the tablet device in the compartment.
8. The device of claim 1, wherein the frame panel opening is at least 7.5 inches long by at least 5 inches wide.
9. The device of claim 1, wherein the frame panel opening is rectangular and has a diagonal dimension of about 9.5 inches.

10. A storage apparatus comprising:

a container for storing objects and having a plurality of outer walls defining a cavity therebetween for storing objects;

a compartment attached to an outer wall of the plurality of outer walls, and configured to stow a tablet device; and
an outer flap configured to cover the compartment,
wherein the compartment comprises:

a frame panel having an opening, the opening configured to expose a display screen of the tablet device when the tablet device is stowed allowing a user to use the tablet device while being stowed;

a plurality of side panels extending from the frame panel to the container, wherein the compartment is defined by said side walls, said outer wall and said frame panel; and

an opening defined along a side of the compartment between the container and the frame panel, the opening being configured for insertion of the tablet device into the compartment and removal of the tablet device from the compartment.

11. The storage apparatus of claim 10, further comprising a protective surface on the outer flap, the protective surface corresponding to the opening of the frame panel, wherein the protective surface covers the opening of the frame panel when the outer flap is in a closed position.

12. The storage apparatus of claim 10, further comprising a fastener at the open edge of the compartment for securing the tablet device in the compartment.

13. The storage apparatus of claim 10, wherein the frame panel opening is at least 7.5 inches long by at least 5 inches wide.

14. The storage apparatus of claim 10, wherein the frame panel opening is rectangular has a diagonal dimension of about 9.5 inches.

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