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(54) **COMBINATION COVER AND STAND FOR AN ELECTRONIC DEVICE**

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(57) **ABSTRACT**

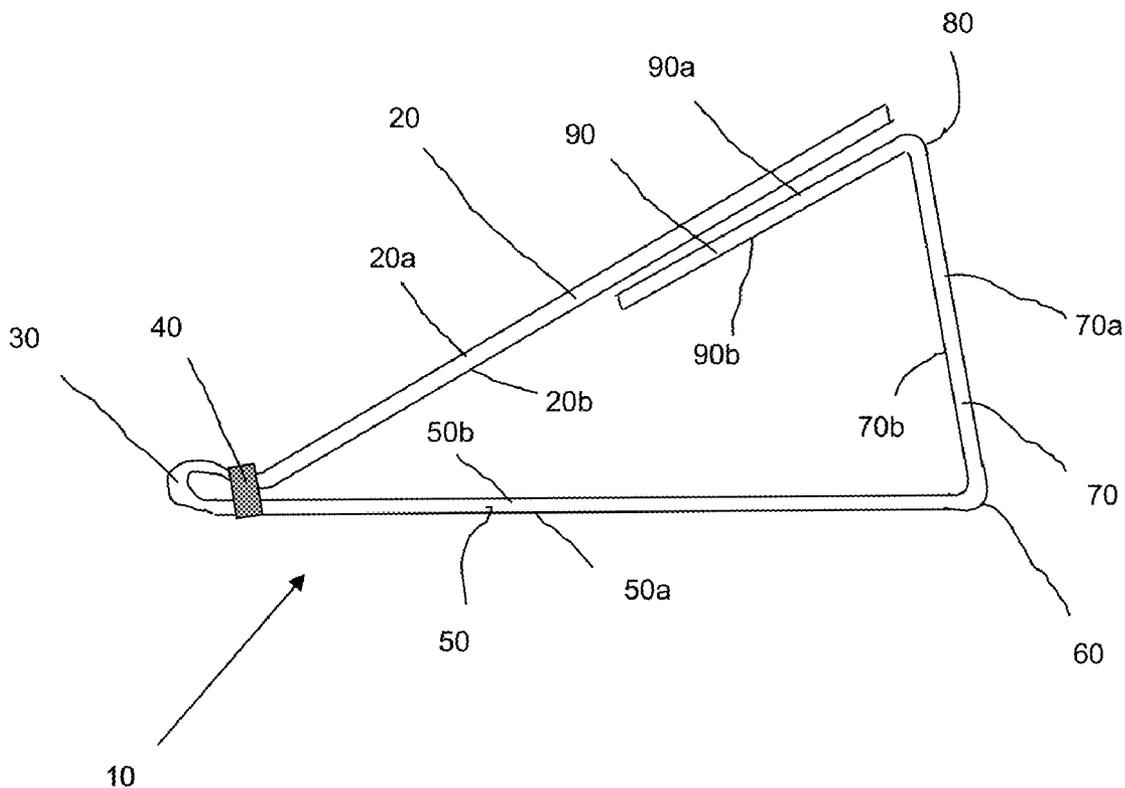
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A cover for an electronic device than can be folded into an easel stand to support the device. The cover includes four rigid panels that are connected by flexible portions that allow folding front or back. The electronic device is secured to a first of the rigid panels by a securing device. A durable elastic band is provided on an interior side of one of the rigid panels and is used to secure at least two of the rigid panels together when the cover is in either the closed or folded easel configurations. Magnets are embedded in two of the rigid panels to securely and detachably couple these two panels when the cover is folded in the easel configuration.

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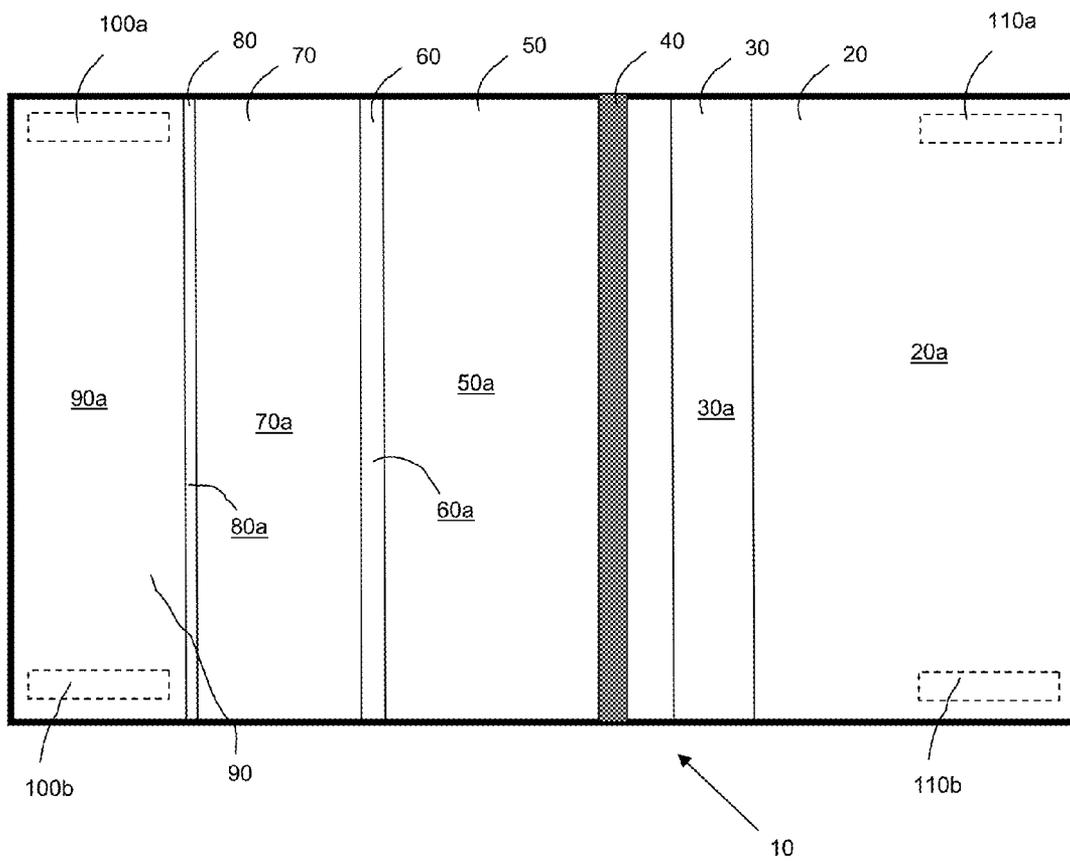


FIGURE 1

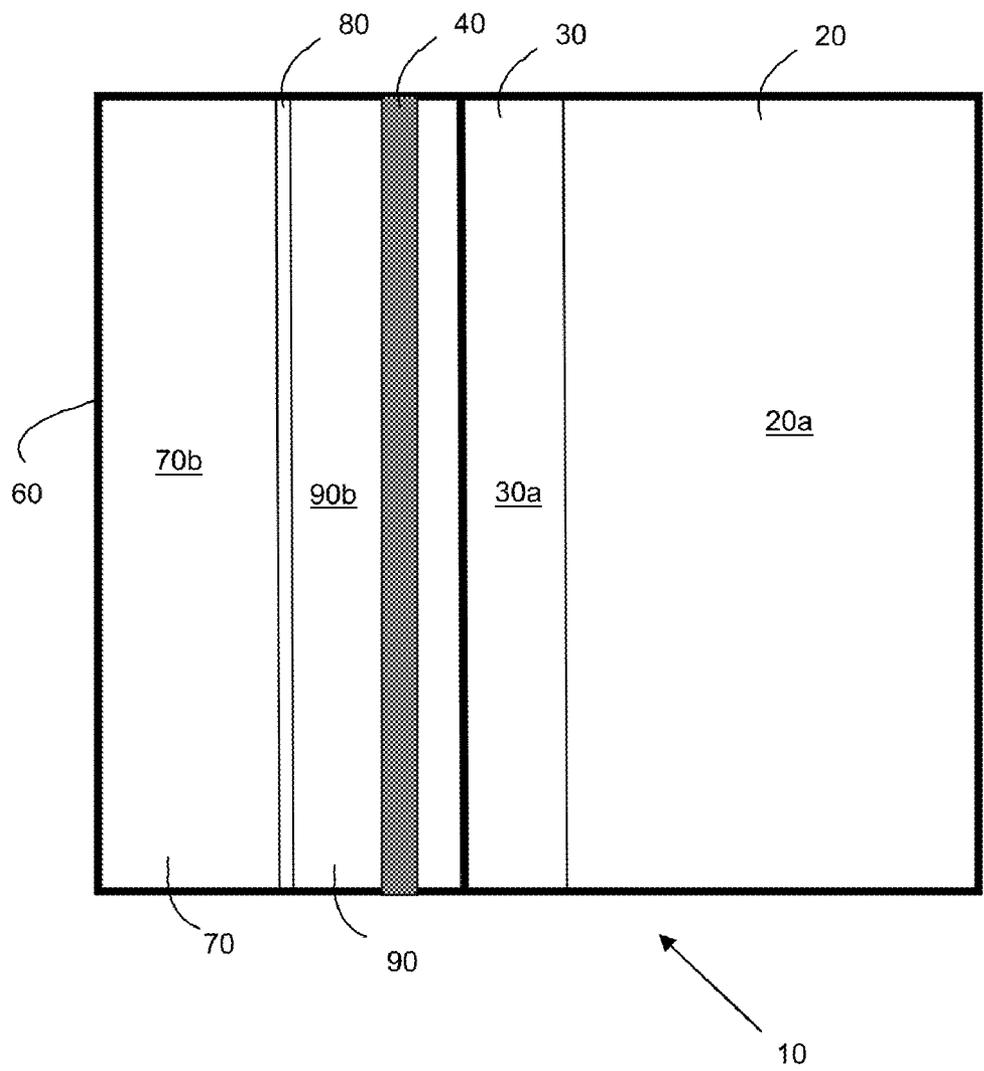


FIGURE 2

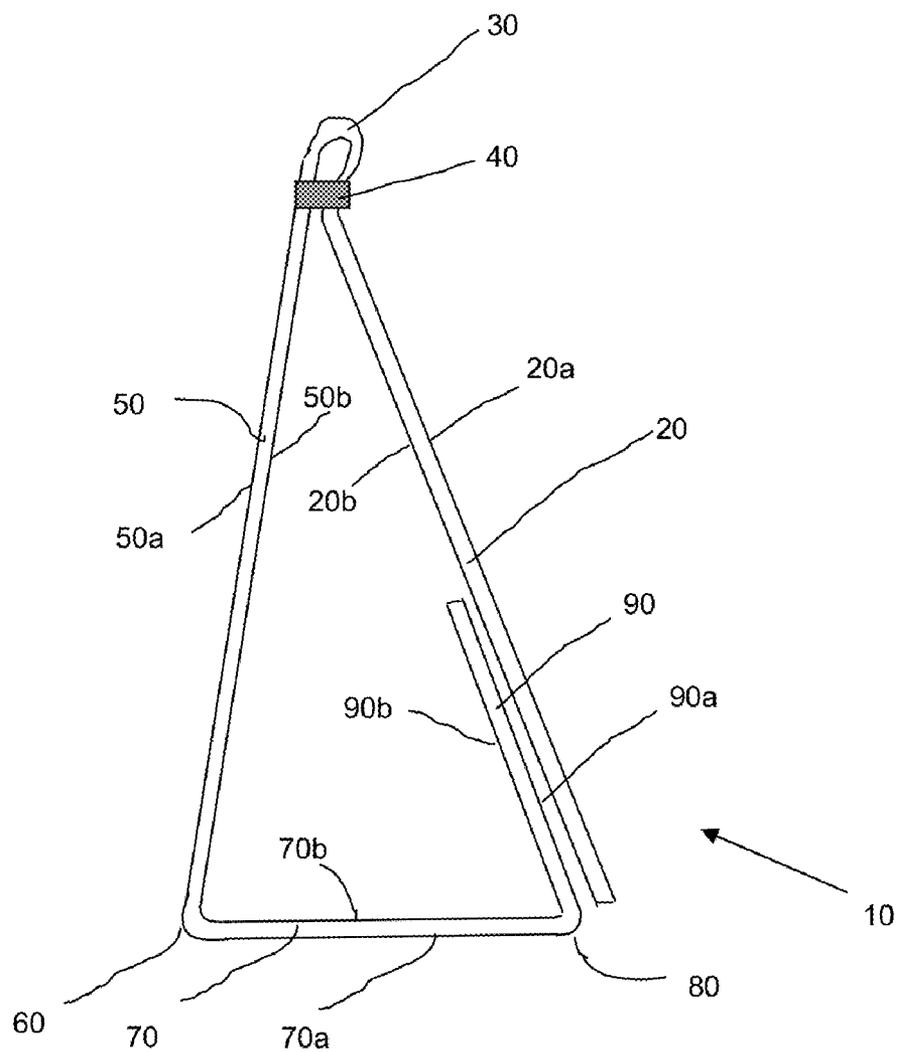


FIGURE 3

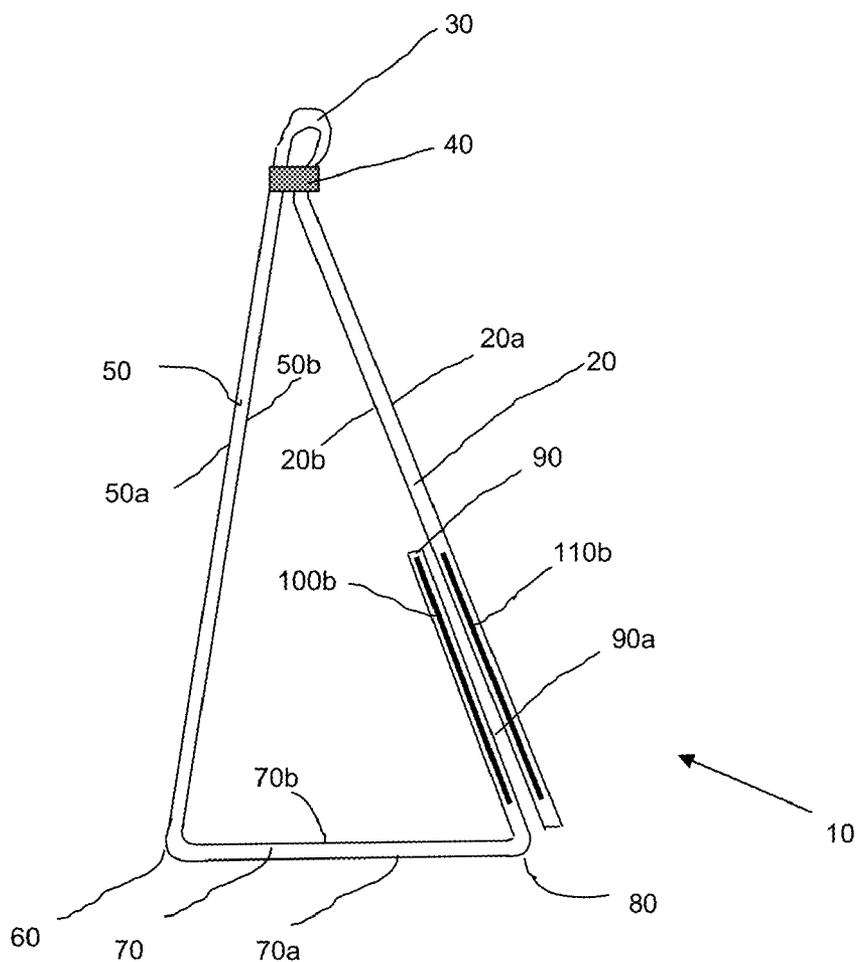


FIGURE 4

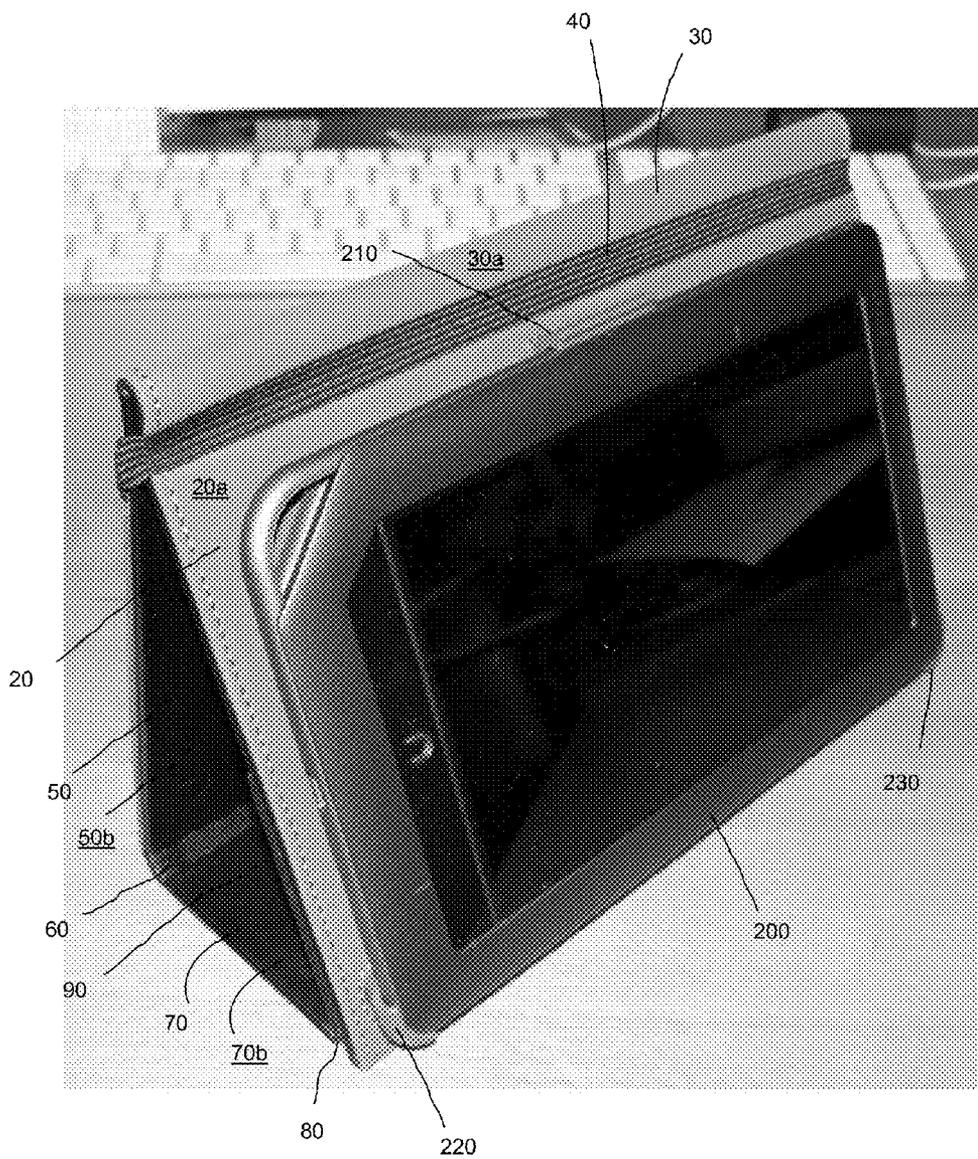


FIGURE 5

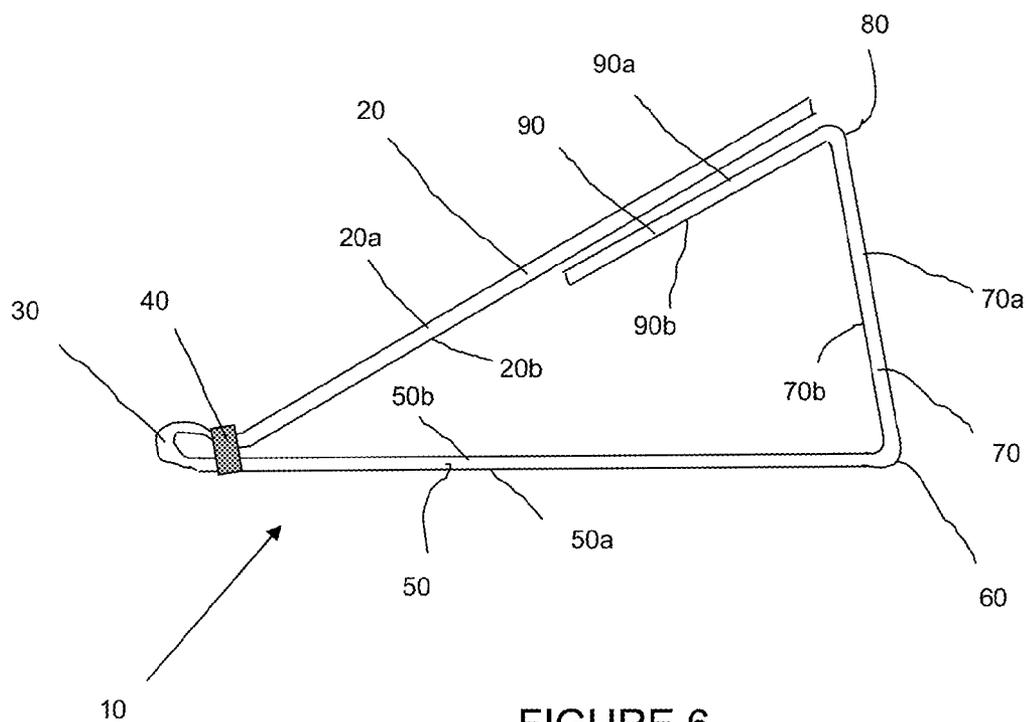


FIGURE 6



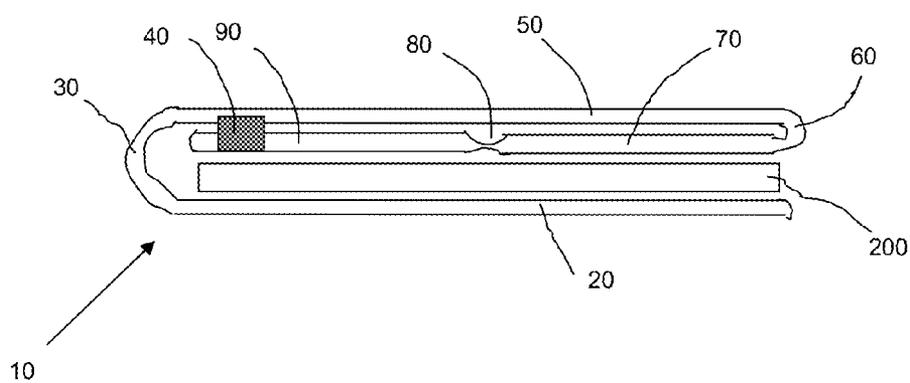


FIGURE 8

**COMBINATION COVER AND STAND FOR AN ELECTRONIC DEVICE**

**FIELD OF THE INVENTION**

[0001] The present invention generally relates to covers for electronic devices, and more particularly to covers for electronic devices that can also act as a stand or easel for hands-free viewing of the device.

**BACKGROUND OF THE INVENTION**

[0002] With the advent of “electronic paper” and new liquid crystal display (LCD) technology that allows easy reading of electronic documents in varying light conditions with limited power, electronic book or tablet devices such as the Barnes & Noble Nook® have hit the mainstream. The technology has quickly evolved to very thin, portable devices that have long battery life and built in communication such as cellular and wireless. Many people are beginning to use these devices like they would ordinary books, magazines, or newspapers, carrying them in briefcases or beach bags like they would an ordinary paper periodical or book.

[0003] There are many types of book or device covers that offer different levels of flexibility or levels of convenience in providing functionality as a cover for the device as well as acting as a stand or easel for hands-free viewing of the device. These existing apparatuses tend to be cumbersome, complex, or have a linear usage. The prior art attempts to address such functionality in many ways. Past devices include bookstands that have pocket or pouches on either side of the stand to receive articles. Others fold along middle portions with stand supports formed thereon. However, the prior art fails to provide folding supports with multiple sections that fold and align in reverse positions so as to convert between an open position in which the device stand can be positioned in multiple viewing positions, and a closed position in which the support panels are closed in such a way as to allow the now reversed folded stand to be used as a device cover.

**SUMMARY OF THE INVENTION**

[0004] The combination cover and easel of the present invention incorporates specific design elements that make it different from any other protective cover. The cover includes four rigid panels connected by flexible portions that allow folding front or back. The electronic device is secured to a first of the rigid panels by one of any number of securing devices. The first rigid panel is slightly larger than the horizontal and vertical dimensions of the electronic device. The first panel is connected to a second of the rigid panels by a first of the flexible portions. The first flexible portion has a width that is slightly larger than the thickness of the electronic device in order to accommodate the electronic device when the cover is in a closed position. The second rigid panel is approximately the same size as the first rigid panel to provide protection to the electronic device when the cover is closed and to provide rigid support to the cover when it is functioning as a stand or easel. A third rigid panel is connected to the second rigid panel by a second flexible portion. The third rigid portion has the same vertical dimension, but half of the horizontal dimension as the first and second rigid panels. The second flexible portion has a width that is less than the width of the first flexible portion. Finally, a fourth rigid portion is connected to the third rigid portion by a third flexible portion. The fourth rigid portion is approximately the same size as the

third rigid portion. The third flexible portion is approximately the same size as the second flexible portion.

[0005] In a preferred embodiment, a durable elastic band is provided on an interior side of the second rigid panel, in proximity to the first flexible portion. The elastic band is provided to help secure the third and fourth rigid panels when not in use in the easel configuration. The elastic band also secures the first and second rigid panels, in the area of the first flexible portion, when the cover is being used as easel.

[0006] In a further preferred embodiment, magnets are embedded in the first and fourth rigid portions to securely couple these two portions when the cover is folded in the easel configuration.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0007] For the purposes of illustrating the present invention, there is shown in the drawings a form which is presently preferred, it being understood however, that the invention is not limited to the precise form shown by the drawing in which:

[0008] FIG. 1 is a plan view of an interior of the cover in a completely unfolded configuration;

[0009] FIG. 2 is a plan view of the cover in a partially folded configuration;

[0010] FIG. 3 is a side view of the cover folded in a first easel configuration;

[0011] FIG. 4 is a cross section of the side view of the cover folded in the first easel configuration, illustrating the imbedded magnets;

[0012] FIG. 5 is a perspective view of the cover folded in the first easel configuration with an electronic device mounted thereon;

[0013] FIG. 6 is a side view of the cover folded in a second easel configuration;

[0014] FIG. 7 is a perspective view of the cover folded in the second easel configuration with the electronic device mounted thereon; and

[0015] FIG. 8 is a top view of the cover in a completely folded position with the electronic device contained therein.

**DETAILED DESCRIPTION OF THE INVENTION**

[0016] FIG. 1 illustrates the interior of the cover 10 of the present invention in a completely unfolded configuration. The cover 10 includes four rigid panels 20, 50, 70 and 90. The panels 20, 50, 70 and 90 preferably have a core of a rigid material such as cardboard, paper or plastic. Panel 20 is the main panel to which the electronic device can be mounted (as illustrated in FIG. 5). The mounting of the electronic device to the panel 20 can be accomplished by many different securing devices, such as the one shown in FIG. 5. In a preferred embodiment, panel 20 is more rigid than any of the other panels as it must stably support the device. This additional rigidity can be provided by the securing device. In a preferred embodiment, panel 20 has a width of approximately 14 cm and a height of approximately 21 cm, slightly larger than the dimensions of the electronic device that is to be held in the cover 10.

[0017] The interior surface 20a of panel 20, as well as all of the other interior surfaces 30a, 50a, 60a, 70a, 80a and 90a is covered by a soft cover material such as cloth or leather. As this interior cover material is observable to the user, it is preferably a decorative material. Similarly, the exterior surface of the cover 10 is covered by an exterior cover material as

leather or vinyl, or other suitably durable material. As the exterior cover material is observable to the user, it is preferably a decorative material. The exterior cover can be decorated with other decorative features.

[0018] Rigid panel 20 is connected to rigid panel 50 by flexible portion 30. Rigid panel 50 is preferably the same size as rigid panel 20. As illustrated in FIG. 8, panels 20 and 80 provide a seamless cover to protect both sides of an electronic device 200 that is mounted in the cover 10. Flexible portion 30 acts as a hinge between the two panels and is preferably formed by the interior cover material that is attached to the exterior cover material by any suitable means such as gluing or sewing. The width of the flexible portion 30 is such that the cover 10 can accommodate the device 200 between the two panels 20 and 50 when the cover is in the completely folded position (as illustrated in FIG. 8). In a preferred embodiment, this width is 2.5 cm.

[0019] Panel 50 is connected to panel 70 by flexible portion 60. As with flexible portion 30, flexible portion 60 is formed by connecting the interior and exterior cover material. Flexible portion 60 is narrower than flexible portion 30 as it does not have to accommodate the device 200, but must merely hinge the two panels 50 and 70 to form the easel configurations of the cover 10. In a preferred embodiment, flexible portion 60 is 1 cm wide.

[0020] Rigid panels 70 and 90 are approximately half of the width of panels 30 and 50. As shown in FIGS. 2 and 8, this width of panels 70 and 90 is necessary so that panels 70 and 90 together are approximately the same size of either panel 30 or 50. In a preferred embodiment, panels 70 and 90 are 6.4 cm wide.

[0021] Panel 70 is connected to panel 90 by flexible portion 80. As with flexible portions 30 and 60, flexible portion 80 is formed by connecting the interior and exterior cover material. Flexible portion 80 is preferably narrower than flexible portions 30 and 60. In a preferred embodiment, flexible portion 60 is 0.5 cm wide.

[0022] As further explained below in connection with FIG. 4, panel 20 contains magnets 110a and 110b embedded therein, while panel 90 contains embedded magnets 100a and 100b. As further explained below in connection with FIGS. 2 and 3, a durable elastic band 40 is provided on the interior side 50a of rigid panel 50.

[0023] FIG. 2 illustrates cover 10 in a partially folded cover configuration. In this configuration, cover 10 acts as a traditional book cover, enabling the user to hold the electronic device 200 with two hands like a traditional paper book or magazine. In this configuration panels 70 and 90 have been folded over panel 50, hinged at flexible portion 60. The exterior surfaces 90b, 70b of these panels are now visible to the user of the electronic device. Durable elastic band 40 is stretched over panel 90 in order to secure panels 70 and 90 to panel 50. Band 40 thus creates a stable cover which can easily be handled by the user.

[0024] FIG. 3 illustrates the cover 10 folded in a first easel configuration. As seen in this Figure, the large panels 20 and 50 have been folded back at flexible portion 30, flexible portion 30 acting as a hinge. Panel 70 is folded from panel 50 at flexible portion 60. In this easel configuration, panel 70 acts as the base for the cover 10. Interior surface 70a of panel 70 is placed in contact with the surface on which the cover 10 is placed, e.g., a desk or tabletop. End panel 90 is folded from panel 70 at flexible portion 80 at the same angle as main panel 20. End panel 90 is cooperatively coupled to main panel 20.

[0025] As illustrated in FIG. 4, in a preferred embodiment, the cooperative coupling between end panel 90 and main panel 20 is accomplished with magnets 100a, 100b and 110a, 110b. Although only magnet 100b and 110b are illustrated in this Figure, it is appreciated that complimentary magnets 100a and 110a serve to couple the opposite sides of panels 90 and 20. Magnet 100b (100a) in panel 90 is attracted by magnet 110b (110a) in panel 20, thus detachably securing panel 90 to panel 20. Although in the preferred embodiment illustrated in FIGS. 4 and 1, the magnets 100a, b and 110a, b are formed as rectangular strips imbedded in the edges of panels 90 and 20, it will be appreciated by those skilled in the art that other shapes (e.g., circular, oval . . . ), number (e.g., 1, 3, 4 . . . ) and placement (e.g., top, corners . . . ) of the magnets 100a, b and 110a, b is within the scope of the present invention as long as the function of securely and detachably coupling panel 90 to panel 20. Care must be taken to ensure that the placement and strength of the magnets does not interfere with the operation of the electronic device.

[0026] As further appreciated by those skilled in the art, panel 90 can be secured to panel 20 by other mechanical mechanisms such as snaps or Velcro™. However, the embodiment of embedded magnets is preferred as it provides all of the functionality of securing the panels 20, 90 while not altering the esthetic, ornamental design of the exterior surfaces of the cover 10.

[0027] As previously described, flexible portion 30 has a width that is larger than the other flexible portions 60, 80 in order to accommodate the electronic device in the closed configuration of the cover 10 (see FIG. 8). This enlarged width creates some instability between panels 50 and 20 in the easel configuration. Accordingly, the durable elastic strap 40 can be stretched around the flexible portion 30 near the positions where the flexible portion 30 connects to panel 20. Flexible portion 30 thus serves to securely couple the ends of panels 50 and 20 along their entire edges.

[0028] FIG. 5 illustrates the cover 10 folded in the first easel configuration with the electronic device 200 mounted on panel 20. As can be readily appreciated, the user can easily use and view the electronic device 200 in a hands-free manner when the cover 200 is configured as an easel. This Figure further illustrates one mechanism for attaching the electronic device 200 to panel 20 of the cover 10. The securing mechanism illustrated in FIG. 5 is a three point mechanism. A first clip 210 detachably attaches to a long side of electronic device 200, while two other clips 220, 230 attach to opposing corners of electronic device 200. In a preferred embodiment, the securing mechanism is embedded in panel 20 such that only clips 210-230 protrude from the interior surface 20a of panel 20. In this preferred embodiment, the securing mechanism has a structure (not shown) connecting clips 210-230 that provides additional stability and rigidity to panel 20 for supporting electronic device 200. As appreciated by those skilled in the art, other securing mechanisms can be used with the cover of the present invention such as a four point mechanism (at the four corners), snaps or Velcro™.

[0029] FIGS. 6 and 7 illustrate a second way in which the cover 10 that has been folded in the easel configuration can be employed by the user. In this use, the folded cover 10 has been tipped on its side from the configuration illustrated in FIGS. 3-5. In this use, larger panel 50 acts as the base for easel cover 10. Interior surface 50a of panel 50 is placed in contact with the supporting surface, e.g., a table top. As seen by comparing the use illustrated in FIGS. 3-5, the use shown in FIGS. 6 and

7 provides shallower viewing angle of the screen on electronic device 200. However, due to the larger surface area of panel 50 (in relation to panel 70), the use in FIGS. 6 and 7 provides a more stable configuration. This can be important if the user is required to operate the electronic device 200 while the cover is in the easel configuration, e.g., press buttons or make swipes on the screen on the electronic device 200. Although not shown in these Figures, it is understood that the magnets 100a, b and 110a, b in panels 90 and 20 serve to secure these two panels in this use of cover 10.

[0030] As previously described, FIG. 8 is a top view of the cover 10 in a completely folded position with the electronic device 200 contained therein. In this configuration, the electronic device 200 is protected by the cover 10 and can be safely carried or stowed, e.g., in a briefcase or purse. In this closed configuration, panels 90 and 70 are secured to panel 50 by elastic strap 40. Although panels 70 and 90 are coupled by flexible portion 80, there is sufficient rigidity in the combination of panel 90, flexible portion 80 and panel 70 to enable strap 40 to secure these panels to panel 50 in a parallel position without any hinging of flexible portion 80.

[0031] Although the present invention has been described in relation to particular embodiments thereof, many other variations and other uses will be apparent to those skilled in the art. It is preferred, therefore, that the present invention be limited not by the specific disclosure herein, but only by the gist and scope of the disclosure.

We claim:

1. A cover for an electronic device comprising:
  - a first rigid panel capable of receiving the electronic device;
  - a second rigid panel, the second rigid panel being substantially the same size as the first rigid panel;
  - a first flexible portion, the first flexible portion connecting the first and second rigid panels;
  - a third rigid portion, the third rigid portion having a width that is less than a width of the first and second rigid portions;
  - a second flexible portion, the second flexible portion connecting the second and third rigid portions;
  - a fourth rigid portion, the fourth rigid panel being substantially the same size as the third rigid panel; and
  - a third flexible portion connecting the third and fourth rigid panels.
2. The cover according to claim 1, further comprising:
  - a securing mechanism, the securing mechanism capable of securing the electronic device to the first rigid panel.
3. The cover according to claim 2, wherein the securing mechanism is embedded in the first rigid panel.
4. The cover according to claim 1, wherein the cover is folded in an easel configuration, the flexible portions acting as hinges between respective rigid portions, the cover further comprising:
  - a coupling mechanism, the coupling mechanism detachably coupling the fourth and the first rigid panels.
5. The cover according to claim 4, wherein the coupling mechanism further comprises a plurality of magnets.
6. The cover according to claim 5, wherein the coupling mechanism further comprises:
  - at least one first magnet embedded in the fourth rigid panel; and
  - at least one second magnet embedded in the first rigid panel, wherein the least one first magnet and the least

one second magnet cooperate to detachably couple the first and fourth rigid panels.

7. The cover according to claim 5, wherein the coupling mechanism further comprises:

- a first plurality of magnets embedded in the fourth rigid panel; and

- a second plurality of magnets embedded in the first rigid panel, wherein the first plurality of magnets and the second plurality of magnets cooperate to detachably couple the first and fourth rigid panels.

8. The cover according to claim 1, further comprising:

- an elastic band coupled to the second rigid panel, wherein the elastic band is capable of securing at least two of the rigid panels together when the cover is folded.

9. The cover according to claim 8, wherein when the cover is folded in an easel configuration, the elastic band securing the first and second rigid panels together in an area proximate to the first flexible portion.

10. The cover according to claim 8, wherein when the cover is folded in a closed configuration, the elastic band securing the third and fourth rigid panels to the second rigid panel.

11. The cover according to claim 1, wherein when the cover is folded in an easel configuration, the second rigid panel acts as base in contact with a supporting surface.

12. The cover according to claim 1, wherein when the cover is folded in an easel configuration, the third rigid panel acts as base in contact with a supporting surface.

13. The cover according to claim 1, wherein first flexible portion has a width sufficient to separate the first and second rigid panels in a closed configuration of the cover so as to accommodate the electronic device between the first and second rigid panels.

14. A cover for an electronic device comprising:

- a plurality of rigid panels, a first one of the plurality of rigid panels capable of receiving the electronic device;

- a plurality of flexible portions, each of the plurality of flexible portions respectively connecting two of the plurality of rigid panels;

- an elastic band coupled to a second one of the plurality of rigid panels, the elastic band capable of securing at least two of the plurality of rigid panels together.

15. The cover according to claim 14, further comprising:
 

- an interior cover material covering interior surfaces of the plurality of rigid panels; and

- an exterior cover material covering exterior surfaces of the plurality of rigid panels, wherein the plurality of flexible portions comprise the interior and exterior materials coupled together.

16. The cover according to claim 14, wherein a first pair of the plurality of rigid panels is a first size, and a second pair of the plurality of rigid panels are a second size.

17. The cover according to claim 16, wherein the second size is approximately half of the first size.

18. A cover for an electronic device comprising:

- a plurality of rigid panels, a first one of the plurality of rigid panels capable of receiving the electronic device;

- a plurality of flexible portions, each of the plurality of flexible portions respectively connecting two of the plurality of rigid panels;

- at least one first magnet disposed in a first one of the plurality of rigid panels; and

at least one second magnet disposed in a second one of the plurality of rigid panels,

wherein the at least one first magnet and the at least one second magnet cooperate to detachably couple two of the plurality of rigid panels.

**19.** The cover according to claim **18**, wherein the at least one first and second magnets detachably couple the two of the plurality of rigid panels when the cover is folded in an easel configuration.

**20.** The cover according to claim **18**, further comprising: an interior cover material covering interior surfaces of the plurality of rigid panels; and an exterior cover material covering exterior surfaces of the plurality of rigid panels, wherein the plurality of flexible portions comprise the interior and exterior materials coupled together.

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