FUNCTIONAL PROTECTIVE COVER FOR PORTABLE AUDIO AND VIDEO DEVICES

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ABSTRACT

Described herein is a protective cover composed of a semi-rigid wrap that adheres to a handheld audio and/or video device. The cover preserves the integrity of the design of the handheld device as well as allows the end-user to operate the device without removing the cover.
FIG. 9

FIG. 10
FUNCTIONAL PROTECTIVE COVER FOR PORTABLE AUDIO AND VIDEO DEVICES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority upon U.S. provisional application Ser. Nos. 60/933,707, filed Jun. 8, 2007, and 61/025,865, filed Feb. 4, 2008. These applications are hereby incorporated by reference in their entireties for all of their teachings.

BACKGROUND

[0002] With the emergence of portable audio and video devices such as cell phones, MP3 players, and digital cameras, there is a growing need to protect these devices. A variety of covers and protective cases are available. Most covers are designed to remain on the device while in use. There are several disadvantages with this approach. First, the covers are often bulky. Additionally, the covers do not adequately protect the screen. At best, the screen is protected by a separate clear sticker with adhesive, or a thin slick clear plastic sheet that is held between the surface of the screen and the cover. Finally, the covers may not provide adequate protection when the device is exposed to undesirable conditions (e.g., rain, physical contact). What is needed is a protective cover for a portable audio or video device that permits the end-user to use the device without removing the cover. The cover should also preserve the aesthetic properties of the device as well.

SUMMARY

[0003] Described herein is a protective cover composed of a semi-rigid wrap that adheres to itself and/or the device. The cover preserves the integrity of the design of the handheld device. The cover is a single ply cover that wraps around the device. The cover is not an assembly of materials or parts. It provides surface protection and shock absorbency. In certain devices, the cover permits full function of touch screen push buttons, clickwheels, and other manual controls; thus, the end-user can operate the device without removing the cover. The covers described herein are easy to remove and apply to the device, and they do not require the use of adhesives or solvents such as alcohol.

[0004] The advantages of the invention will be set forth in part in the description which follows, and in part will be obvious from the description, or may be learned by practice of the aspects described below. The advantages described below will be realized and attained by means of the elements and combinations particularly pointed out in the appended claims. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate several aspects described below. Like numbers represent the same elements throughout the figures.

[0006] FIG. 1 shows a cover of the present invention for applying to an iPod.

[0007] FIG. 2 shows a cover of the present invention with lines or creases for aligning an iPod in the center of the cover.

[0008] FIGS. 3-5 show the steps for applying a cover of the present invention to an iPod.

[0009] FIG. 6 shows the top-view of the folded cover of the present invention.

[0010] FIG. 7 shows an iPod wrapped with a cover of the present invention.

[0011] FIG. 8 shows a cover of the present invention with a plurality of holes to be positioned over the earphone of an iPhone.

[0012] FIGS. 9-12 show the steps for applying a cover of the present invention to an iPhone.

[0013] FIG. 13 shows an iPhone wrapped with a cover of the present invention.

[0014] FIG. 14 shows the steps for applying a cover of the present invention to a cell phone.

[0015] FIGS. 15-18 show the steps for applying a cover of the present invention to a cell phone.

[0016] FIG. 19 shows a cell phone wrapped with a cover of the present invention.

[0017] FIG. 20 shows a cover of the present invention for applying to a digital camera.

[0018] FIGS. 21 and 22 show a digital camera wrapped with a cover of the present invention.

DETAILED DESCRIPTION

[0019] Before the present device and/or methods are disclosed and described, it is to be understood that the aspects described below are not limited to specific devices or methods, or uses as such may, of course, vary. It is also to be understood that the terminology used herein is for the purpose of describing particular aspects only and is not intended to be limiting.

[0020] It must be noted that, as used in the specification and the appended claims, the singular forms “a,” “an” and “the” include plural referents unless the context clearly dictates otherwise. Thus, for example, reference to “a polymer” includes one or more polymers.

[0021] Described herein are protective covers for handheld devices. In general, the protective cover is composed of a flat, smooth, transparent, semi-rigid, slightly flexible film with dimensions suitable for wrapping around the device. For example, when the device is an iPod, the protective cover is a film having a length sufficient to wrap around the girth of the device and then overlap in back of the device so that the overlapping portion does not extend past the sides of device, and a width that equals or slightly exceeds the height of device. Exemplary shapes and designs of the protective cover are shown in FIGS. 1-22.

[0022] The material is slightly flexible so that the material grips the smooth surface of the device and adheres to the device. Additionally, the material can adhere to itself. Thus, the protective cover can be designed so that the ends of the protective cover overlap and adhere to one another. The adhesion of the material to itself and the device secures the device within the protective cover. Thus, the use of snaps, Velcro, adhesives, solvents, and other securing means is not necessary when using the protective covers described herein. The protective covers provide good shock absorbency, which is important due to the fact that handheld devices are generally exposed to a variety of undesirable conditions.

[0023] In addition to protecting the handheld device, the protective cover permits the user to operate the device while the protective cover is secured to the device. In general, the protective cover is composed of a material that is thin and...
smooth, which allows the user-interface of the device to be fully functional. Thus, the thickness of the material is selected so that buttons and other command functions on the device are sensitive to the touch by the end-user. The material can be translucent or transparent depending upon the selection of the handheld device. In devices where a video screen is present, the material is preferably transparent.

[0024] The protective cover is composed of a semi-rigid material. The term “semi-rigid” is defined herein as the ability of the cover to maintain its shape. For example, a semi-rigid material is substantially resistant to wrinkling or creasing. The semi-rigid material is durable and resistant to tearing. The semi-rigid material can be composed of a variety of different polymers. In one aspect, the material includes a polyester, a cellulose acetate, high density polyethylene, polypropylene, or polyvinyl chloride. In another aspect, the material is transparent marine grade polyvinyl chloride. The thickness of the material can vary depending upon the material selected and the device to be protected. In one aspect, the material has a thickness greater than 4 gauge. In another aspect, the material has a thickness of 4 gauge, 6 gauge, 8 gauge, 10 gauge, 12 gauge, 14 gauge, 16 gauge, 18 gauge, 20 gauge, 22 gauge, 24 gauge, 26 gauge, 28 gauge, 30 gauge, 32 gauge, 34 gauge, 36 gauge, 38 gauge, or 40 gauge. In another aspect, the material can be polyvinyl chloride having a thickness of 15 gauge to 25 gauge, or 20 gauge.

[0025] Other properties of the material include tensile strength, elongation, tear strength, and heat shrinkage. In one aspect, the material is polyvinyl chloride having as tensile strength of 2,500 to 3,500 psi as measured by ASTM-D-882. In another aspect, the material has an elongation of 200 to 300% as measured by ASTM-D-882. In another further aspect, the material has a tear strength of 300 to 400 lbs/in as measured by ASTM-D-1004. In another aspect, the material has a heat shrinkage of -10 to 5% as measured by ASTM-D-1004. In one aspect, the material can be VERILON® clear vinyl.

[0026] The material can be cut into a variety of different shapes and sizes using techniques known in the art. For example, the material can be shaped and sized by die cutting techniques. It is also contemplated that material can be embossed or debossed with product information at the time of die cutting to simplify production. The material used for the protective cover can be colorless or tinted with a variety of different colors.

[0027] FIGS. 1-22 show several embodiments of the present invention. FIGS. 1-7 show cover 1 and its application to an iPod. FIG. 1 shows cover 1 fully extended in the absence of the device. Although the shape of the cover 1 is that of a ghost, the cover 1 can be cut into a variety of different designs and shapes. FIGS. 3-6 show sequentially how the cover is applied to an iPod. In general, cover 1 is laid on a flat surface (e.g., a table or the palm of the user’s hand). The iPod 2 is next placed in the center of cover 1 (FIG. 3), where the iPod is laid face down on top of the cover 1. Although the iPod does not have to be perfectly centered with cover 1, it is desirable so that the iPod will be fully covered by the cover. In certain aspects, the cover 1 can be marked with lines or creases to help the user align the iPod with the cover. This optional feature is depicted in FIG. 2 by dashed lines 6-9. The iPod is also positioned such that the iPod does not extend past the edge of cover 1. In certain aspects, the cover extends past the upper and lower edges of the iPod to ensure that the edges are protected. With the iPod positioned face down on cover 1, the backside 3 of the iPod is exposed (FIG. 3).

[0028] By placing the iPod on the cover, flaps 4 and 5 are created (FIG. 3). Referring to FIGS. 4 and 5, flap 4 is folded over the backside 3 of the iPod so that flap 4 is in contact with the backside of the iPod. Due to the material of the cover, the flap 4 self-adheres to the backside of the iPod without the need of additional adhesives. Although the material of the backside of the iPod is generally metallic, the material of the cover can also adhere to other materials such as, for example, plastic or glass. FIG. 4 shows the flap 4 folded over and self-adhered to the backside of the iPod. After flap 4 has been adhered to the backside of the iPod, flap 5 is folded over the iPod such that flap 5 comes into contact with flap 4. This is depicted in FIGS. 5 and 6. Flap 5 adheres to flap 4 without the need of any adhesives. The order of folding the flaps is not critical. Thus, flap 5 can be folded over the iPod first followed by flap 4.

[0029] FIG. 7 shows an iPod with the cover 1 applied to it. As shown in FIG. 7, the cover extends beyond the upper and lower edges of the iPod (60 and 61, respectively) to protect the edges of the iPod. However, it is contemplated that the height 62 of the cover can be varied as needed. With the cover affixed to the iPod, openings 63 and 64 are created at the top and bottom of the iPod, respectively. The openings permit easy access to any of the iPod’s ports, switches or connectors. With the cover in place, the control wheel 65 can be used as if the cover were not present. The screen 66 is clearly visible due to the fact that the material of the cover is transparent.

[0030] Similar to the iPod, the covers described herein can also be used to protect cell phones such as, for example, an iPhone. FIGS. 8-13 depict this embodiment. Referring to FIG. 8, cover 80 is similar in design to cover 1 in FIG. 1 with the exception of the plurality of holes 81 in cover 80. The holes are designed to be placed over the earphone of the iPhone. Although not shown in FIG. 8, additional holes can be positioned in cover 80 for the microphone as well as the viewing lens for the digital camera. The number, position, and design of the holes can vary.

[0031] FIGS. 9-13 show the cover 80 applied to an iPhone 90. The process is identical to that as described above for iPod with one significant difference. Referring to FIG. 9, the earphone of the iPhone (not shown) is aligned with holes 81. In addition to ensuring that the iPhone can be used properly, the holes 81 help align and center the iPhone 90 with cover 80 without the use of any markers or creases. Once the iPhone 90 is positioned on the cover 80, flaps 100 and 101 can be folded over the iPhone in a manner as described above for the iPhone (FIGS. 10-12). Once again, the backside of the iPhone is completely wrapped by the cover (FIG. 12).

[0032] FIG. 13 shows the front-view of the iPhone wrapped by cover 80. Holes 81 are positioned over the earphone. Touchscreen 91 is clearly visible through cover 80. Additionally, touchscreen 91 is fully functional as if no cover was present on the iPhone. Similar to the iPod, the top and bottom of the iPhone are exposed so that ports, switches or connectors are readily accessible. Although an iPhone is depicted in FIGS. 9-13, the protective cover can be applied to an iPod touch in a similar manner.

[0033] The covers described herein can be designed to protect cell phones having a variety of different shapes and sizes. FIGS. 14-20 depict a cover described herein applied to a cell phone. Referring to FIG. 14, cover 140 has a number of different openings. Opening 141 is where the antenna is inserted. Opening 142 provides access to the keypad of the phone, and opening 143 provides access to the space key of
the keypad. Opening 144 provides access to the control wheel, while opening 145 is a port or jack. It is contemplated that the number, size, and position of the openings in the cover 140 can vary depending upon the make and model of the cell phone.

[0034] FIGS. 15-19 show the cover 140 applied to cell phone 150. Referring to FIG. 15, antenna 151 is inserted in opening 141 followed by laying the cell phone face-down on cover 140. The keypad and space button of the cell phone (not shown in FIG. 15), will line up with openings 142 and 143, respectively. Referring to FIGS. 16-18, once the cell phone 150 is positioned over cover 140, flaps 147 and 148 are folded over the cell phone in a manner described above. In the case of flap 148, openings 144 and 145 of cover 140 are aligned with control wheel 152 and port 153, respectively, of cell phone 150. Once cover 140 has been affixed to cell phone 150, the keypad 154 and space key 156 are accessible and not covered by cover 140 (FIG. 19). Screen 158 is covered by cover 140 and readily visible through cover 140.

[0035] The covers described above are intended to be applied to a device such that the device can function with the cover in place. In certain aspects, the covers described herein can be placed on a device to protect the device and when it is time to use the device, the cover can be removed. FIGS. 20-22 depict such an embodiment. FIG. 20 shows cover 200 and FIGS. 21 and 22 show cover 200 applied to digital camera 210. The size and shape of cover 200 can vary depending upon the camera or other device that is selected.

[0036] Various modifications and variations can be made to the devices described herein. Other aspects of the devices described herein will be apparent from consideration of the specification and practice of the devices disclosed herein. It is intended that the specification and examples be considered as exemplary.

What is claimed:
1. A protective cover for a handheld audio or video device comprising a flexible, transparent material, wherein the cover is designed to wrap around the device and adhere to the device.
2. The protective cover of claim 1, wherein the device comprises a cell phone, a MP3 player, or a digital camera.
3. The protective cover of claim 1, wherein the device comprises an iPod, an iPhone, or an iPod touch.
4. The protective cover of claim 1, wherein the material comprises a polyester, a cellulose acetate, high density polyethylene, or polypropylene.
5. The protective cover of claim 1, wherein the material comprises polyvinyl chloride.
6. The protective cover of claim 1, wherein the material comprises a thickness of 5 gauge to 40 gauge.
7. The protective cover of claim 1, wherein the material comprises polyvinyl chloride comprising a 15 gauge to 25 gauge.
8. The protective cover of claim 6, wherein the material comprises polyvinyl chloride comprising a thickness of 20 gauge.
9. The protective cover of claim 1, wherein the cover comprises a plurality of holes that are positioned over an audio component of the device.
10. The protective cover of claim 1, wherein the cover comprises an opening for receiving an antenna.
11. The protective cover of claim 1, wherein the cover consists essentially of a flexible, transparent material, wherein the cover is designed to wrap around the device and adhere to the device.

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