HOLDING FOR AN ELECTRONIC DEVICE

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ABSTRACT
A holder for an electronic device comprises a clip, a hub and a plurality of arms. The hub is removably engaged with the clip. The plurality of arms extends from the hub, each arm having a proximal end connected to the hub and a distal end having a pocket shaped to receive a corner of the electronic device. Each pocket may be shaped to substantially surround the corresponding received corner. The holder may comprise four arms extending radially from the hub such that the arms form an X shape. The arms may be semi-rigid. The clip may further comprise a swivel connector, such that the hub is engaged with the clip via the swivel connector.
HOLDER FOR AN ELECTRONIC DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. Design application Ser. No. 29/250,338, filed Nov. 10, 2006, the contents of which are incorporated herein in its entirety.

FIELD OF THE INVENTION

[0002] This invention relates generally to holders for electronic devices, and, more particularly, to a swiveling, removable holder that is lightweight and not bulky yet capable of securely holding and protecting the device.

BACKGROUND OF THE INVENTION

[0003] Cellphones and other portable electronic devices, including email/text messaging devices (e.g., g Blackberry™ and portable media players (e.g., iPod™), are widely used. Many users carry their devices with them at all times, resulting in a great demand for holders that facilitate the carrying of the devices, often clipped to the user's belt, waistband, purse strap, etc. The wide variety of different devices (i.e., different models, sizes, and configurations), as well as the different user preferences, has resulted in the development of many different types of holders.

[0004] One known type of holder for portable electronic devices comprises a case constructed of a soft, flexible material such as leather or vinyl. Such a case may fully enclose the device, or may have openings at the keypad, speaker, and/or the microphone. Such a case may have a clip, and may be permanently or removably attached to the clip. If the case is permanently attached to the clip, the user typically must remove the device from the case or remove the clip from the user's belt, etc. in order to use the device. It may be difficult and awkward to remove the device from the case or to remove the clip from the user's belt, and, once removed, the device is no longer protected from damage. If the case is removably attached to the clip, the user typically detaches the case from the clip in order to use the device. Unfortunately, the soft material provides little, if any, protection from damage if the device is dropped by the user.

BRIEF SUMMARY OF THE INVENTION

[0006] The present invention overcomes the above-noted and other shortcomings of the prior art by providing a novel and improved holder for portable electronic devices that is lightweight and not bulky, yet capable of securely holding and protecting the device. In one embodiment of the invention, a holder for an electronic device comprises a clip, a hub and a plurality of arms. The hub is removably engaged with the clip. The plurality of arms extends from the hub, each arm having a proximal end connected to the hub and a distal end having a pocket shaped to receive a corner of the electronic device. Each pocket may be shaped to substantially surround the corresponding received corner.

[0007] In one embodiment, the holder comprises four arms extending radially from the hub such that the arms form an X shape. In an alternative embodiment, the holder comprises three arms, and the pocket of one arm is shaped to receive two corners of the electronic device.

[0008] The arms may be semi-rigid. The clip may further comprise a swivel connector, such that the hub is engaged with the clip via the swivel connector. The clip may further comprise a retracted protrusion and the hub may define a hole for receiving the protrusion, such that the protrusion, in a non-retracted state, maintains the hub and clip in engagement, and such that retraction of the protrusion allows disengagement of the hub and clip. The hub may comprise two parallel ridges extending laterally, and the clip may comprise two parallel channels adapted to slidably receive the ridges.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0009] Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

[0010] FIG. 1 is a perspective view of a holder for an electronic device, in accordance with one embodiment of the present invention;

[0011] FIG. 2 is a perspective view of the holder of FIG. 1, with a cell phone being held;

[0012] FIG. 3 is a perspective view of the holder of FIG. 1, with the clip portion rotated 90 degrees;

[0013] FIG. 4 is a front view of the holder of FIG. 1;

[0014] FIG. 5 is a side view of the holder of FIG. 1;

[0015] FIG. 6 is a perspective view of the holder of FIG. 1 with the holding mechanism separated from the clip;

[0016] FIG. 7 is a rear perspective view of the holder of FIG. 1 with the holding mechanism separated from the clip; and

[0017] FIG. 8 is a perspective view of a holder for an electronic device, in accordance with an alternative embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the
embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

[0019] Referring now to FIG. 1, a perspective view of a holder 10 for an electronic device is illustrated, in accordance with one embodiment of the present invention. The holder 10 comprises a clip 12, a hub 14, and four arms 16. The arms extend outwardly from the hub. The arms may be substantially planar with each other and with the hub, or the arms may be angled slightly away from the clip, as seen in FIG. 5. Each arm has a proximal end 18 connected to the hub and a distal end 20. The distal ends 20 each have a pocket 22 that is shaped to receive a corner of the electronic device. The hub, arms, and pockets will be referred collectively herein as the holding mechanism of the holder. As can be seen in FIG. 2, a cell phone 24 or other portable electronic device (e.g., email/text messaging device or portable media player) may be secured in the holder 10 by placing each of the corners of the device within the pocket of an arm of the holder. A device is typically placed into the holder by (1) holding the device at an angle to the holder; (2) inserting one end (e.g., the bottom) of the device into the pockets of two of the arms; (3) flexing the other two arms backward (i.e., away from the device and toward the clip); (4) inserting the other end of the device into the pockets of the backward-flexed arms; and (5) releasing the backward-flexed arms to allow them to return to their original, natural position. As the device is inserted in the holder by flexing two of the arms backward, the arms are typically semi-rigid. As used herein, the term semi-rigid may be defined structurally as flexing upon the application of force to the distal end of an arm and returning to the original, unflexed position upon release of the applied force. A semi-rigid arm will typically flex less than about 90 degrees from an unflexed position when force is applied. The term semi-rigid may also be defined functionally as being flexible enough to permit the arms to bend enough to enable the device to be inserted and rigid enough to return to the original position and to securely hold the device in place. If the arms are too rigid they may break when being flexed to insert the device. If the arms are too flexible they may not securely hold the device. The arms are typically constructed of a semi-rigid material. For example, in one embodiment the arms and hub may be constructed from a polymer (e.g., high density polyethylene). In such an embodiment, the arms (including the pockets) and hub would typically be constructed as a single piece, such as via injection molding. In an alternative embodiment, the arms may be constructed from any semi-rigid metal, such as sheet metal. In such an embodiment, the arms (not including the pockets) and the hub would be constructed as a single piece, such as via die-cutting and stamping. The pockets may be formed by plastic injection molding around the distal end of each metal arm. In another alternative embodiment, the arms may be constructed from a metal wire that has a large enough diameter to be semi-rigid and strong enough to securely hold the electronic device. In such an embodiment, the pockets may be formed by plastic injection molding around the distal end of each wire arm and the hub may be formed by plastic injection molding around the proximal ends of all the wire arms.

[0020] These portable electronic devices generally have a cuboid or rectangular parallelepiped shape (i.e., a closed box having three pairs of rectangular faces placed opposite each other and joined at right angles to each other, thereby forming four corners with each corner having four surfaces), although devices having other shapes may be accommodated by alternative embodiments of the present invention. To accommodate such cuboid-shaped devices, the holder may comprise four arms extending radially from the hub such that the arms form an X shape, as seen in FIGS. 1-7. The size, shape, and orientation of the arms and pockets will typically correspond to a specific model or models of electronic device such that the specific device fits snugly in the holder. For example, the angles at which the arms contact the hub will vary depending on whether the device is generally rectangular or square, and, if rectangular, depending on the ratio of the long and short sides of the device. Further, the length of the arms will vary depending on the length and width of the device, while the size of the pockets will vary depending on at least the depth or thickness of the device. The size and shape of the hub may vary as well. For example, the hub may be substantially square (as seen in FIG. 4), rectangular, circular, oval, triangular, or any other appropriate shape.

[0021] Each pocket may be shaped to substantially surround the corresponding received corner. For example, each cup may be four-sided such that at least a portion of each cup contacts and covers at least a portion of each surface of the corresponding received corner, thereby securely restraining the device and providing protection for the device. Because at least a portion of each surface of each corner of the device is covered and protected by the pockets, if the device is dropped onto a surface the holder will contact the surface rather than any part of the device contacting the surface. These devices typically have rounded corners and edges, and therefore, as can be seen in FIG. 1, the inside of the pockets have a corresponding rounded shape to conform to the shape of the received corners.

[0022] The clip may further comprise a swivel connector 26, such that the hub is engaged with the clip via the swivel connector. The swivel connector enables the holding mechanism, and the electronic device secured by the holding mechanism, to rotate 360 degrees into any position desired by a user. FIG. 3 is a perspective view of the holder of FIG. 1 with the clip portion rotated 90 degrees. The clip may be used to attach the holder to a user’s belt, waistband, purse strap, etc.

[0023] The hub is removable engaged with the swivel connector portion of the clip, thereby enabling the user to detach the device (still secured within the holding mechanism) for use. FIGS. 6 and 7 are, respectively, front and rear perspective views of the holder of FIG. 1 with the holding mechanism separated from the clip. The hub may comprise a pair of parallel ridges 30 extending laterally from each side of the hub, and the clip may comprise two parallel channels 32 that slidably receive the ridges. The swivel clip may comprise a retractable pin or protrusion 34 and the hub may define a hole 36 for receiving the protrusion when the hub and clip are in engagement. The protrusion, in a non-retracted state, maintains the hub and clip in engagement. Retraction of the protrusion allows disengagement of the hub and clip. The swivel clip comprises a button 38 which causes the protrusion to retract when the button is pushed by a user. The internal mechanism by which pushing the button causes retraction of the protrusion may be any suitable mechanism known to one skilled in the art.

[0024] Referring now to FIG. 8, a perspective view of a holder 40 for an electronic device is illustrated, in accordance with an alternative embodiment of the present invention. In
this alternative embodiment, the holder comprises three arms. The top arms 16 are similar to those of the holder of FIG. 1, in that the pocket of each arm is sized and shaped to receive one corner of the electronic device. The pocket of the bottom arm 42 is sized and shaped to receive two corners (i.e., the bottom end) of the electronic device.

Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

That which is claimed:

1. A holder for an electronic device, the holder comprising: a hub removably engaged with the clip; and a plurality of arms extending from the hub, each arm having a proximal end connected to the hub and a distal end having a pocket shaped to receive a corner of the electronic device.

2. The holder of claim 1, wherein each pocket is shaped to substantially surround the corresponding received corner.

3. The holder of claim 1, wherein the holder comprises four arms extending radially from the hub such that the arms form an X shape.

4. The holder of claim 1, wherein the holder comprises three arms, and wherein the pocket of one arm is shaped to receive two corners of the electronic device.

5. The holder of claim 1, wherein the arms are semi-rigid.

6. The holder of claim 1, wherein the clip further comprises a swivel connector, and wherein the hub is engaged with the clip via the swivel connector.

7. The holder of claim 6, wherein the clip further comprises a retractable protrusion and wherein the hub defines a hole for receiving the protrusion, such that the protrusion, in a non-retracted state, maintains the hub and clip in engagement, and such that retraction of the protrusion allows disengagement of the hub and clip.

8. The holder of claim 6, wherein the hub comprises two parallel ridges extending laterally, and wherein the clip comprises two parallel channels adapted to slidably receive the ridges.

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