Apparatus and methods for protecting an information recording device.
PROTECTIVE COVER AND APPARATUS INCLUDING THE SAME

BACKGROUND OF THE INVENTIONS

[0001] 1. Field of Inventions

[0002] The present inventions relate generally to hand-held manual entry information recording devices and to devices that protect information recording devices while the user is recording information.

[0003] 2. Description of the Related Art

[0004] A wide variety of occupations and activities require people to use hand-held information recording devices (also referred to herein as “information recording devices”) to read, record and/or store information. Clipboards, which are commonly used to secure and support paper and preprinted forms, are one example of a non-electronic information recording device that is widely used. Emergency medical technicians (“EMTs”), for example, often manually record information about a patient on a multi-sheet carbon form with a ball-point pen while the form is supported on a clipboard. Athletic coaches also commonly carry clipboards so that they can take notes during a game or practice session. With respect to electronic information recording devices, such as tablet PCs and hand-held data collection and storage devices, the information may be entered using a keyboard, stylus or touch sensitive screen. Such electronic information recording devices are frequently used by meter readers, parking and traffic enforcement officers, law enforcement officers, and factory, delivery and maritime personnel.

[0005] The present inventor has determined that ambient conditions, both indoors and outdoors, can lead to a number of difficulties for people using information recording devices. Rain, sleet, wind, snow, hail, splashes, splatters, etc. can hinder the information recording process and/or damage the information recording device and, if present, the paper or other recording media carried thereon. In the exemplary case of EMTs, the aforementioned forms are frequently filled out at outdoor accident cites during inclement weather. Not only is it difficult fill out such a form in then rain or snow, the associated moisture can damage the form and, should the EMT who is filling out the form be needed to assist with treatment, the clipboard and form may have to be left unprotected or stuffed under the EMTs clothing.

SUMMARY OF THE INVENTIONS

[0006] A cover in accordance with a present invention includes a substantially transparent top panel as well as bottom, side and end panels. The side and end panels are movable between a collapsed orientation and an expanded orientation where the distance between the top and bottom panels is such that the information recording device and a user’s hand may be placed within an internal storage region. An apparatus in accordance with one embodiment of a present invention includes such a cover and an information recording device.

[0007] Such inventions are advantageous for a variety of reasons. For example, the cover may be used to protect an information recording device from the elements while the user is recording information. The cover may also be used to protect the information recording device when it is not in use.

[0008] The above described and many other features of the present inventions will become apparent as the inventions become better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Detailed descriptions of exemplary embodiments of the inventions will be made with reference to the accompanying drawings.

[0010] FIG. 1 is a front perspective view of a cover in accordance with one embodiment of a present invention in a collapsed and closed orientation.

[0011] FIG. 2 is a front perspective view of the cover illustrated in FIG. 1 in an expanded orientation.

[0012] FIG. 3 is a rear perspective view of the cover illustrated in FIG. 1 in the collapsed and closed orientation.

[0013] FIG. 4 is a rear perspective view of the cover illustrated in FIG. 1 in a collapsed and partially open orientation.

[0014] FIG. 5 is a front perspective view of the cover illustrated in FIG. 1 in an expanded orientation, in combination with a clipboard, in accordance with one embodiment of a present invention.

[0015] FIG. 6 is a section view of a portion of the cover and clipboard combination illustrated in FIG. 5.

[0016] FIG. 7 is a front perspective view of the cover and clipboard combination illustrated in FIG. 5 in use.

[0017] FIG. 8 is a front perspective view of the cover and clipboard combination illustrated in FIG. 5 in a collapsed and closed orientation.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

[0018] The following is a detailed description of the best presently known modes of carrying out the inventions. This description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the inventions. The present inventions are also applicable to a wide variety of information recording devices. One particularly relevant example of such an information recording device is a clipboard and, accordingly, the illustrated embodiments of the present inventions are discussed primarily in the context of clipboards. The present inventions are not, however, limited to clipboards and may be used in combination with, or include, other information recording devices that currently exist, or are yet to be developed. For example, the present inventions are applicable to tablet PCs and hand-held data collection and storage devices.

[0019] As illustrated for example in FIGS. 1 and 2, a cover in accordance with one embodiment of a present invention includes a top panel 102, a bottom panel 104, two side panels 106, a rear end panel (or “rear panel”) 108 and a flap 110. The panels 102-108 are positioned relative to one another such that the cover 100 defines a closed structure with a front end opening (“or front opening”) 112 and a storage region 114 therein for an information recording device. The flap 110 is adjacent to the front opening 112. The side and rear panels 106 and 108 are provided with creases.
116 that allow the cover to be consistently moved from the collapsed orientation illustrated in FIG. 1, to the expanded orientation illustrated in FIG. 2, and back. Turning to FIGS. 3 and 4, a stop member 118 is also provided at the front opening 112. The exemplary cover 100 is also provided with a closure mechanism 120 that secures a portion of the interior surface 122 of the flap 110 to the exterior surface 124 of the bottom panel 104. Each of the above-described aspects of the exemplary cover 100 is discussed in greater detail below.

[0020] Generally speaking, the exemplary cover 100 preferably has an overall rigidity that allows the cover to maintain the shape illustrated in FIG. 2 after being unfolded. Although the side panels 106 may deflect slightly at the front opening 112 because there is no panel for support, as there is at the end of the cover 100 defined by the rear panel 108, the user’s forearm (or hand in the case of covers for smaller devices) will prop up the cover near the opening as is discussed below with reference to FIG. 7. It should also be noted that the overall rigidity of the exemplary cover 100 is low enough to allow the cover to be additionally folded, beyond the collapsed orientation illustrated in FIG. 1, for storage in a glove compartment, tool box, or other small space. For example, the cover 100 may be folded one or more times about the X-axis. The cover 100 is also weatherproof in that the materials selected for the panels 102-108 and flap 110 do not allow moisture to pass through the panels and flap.

[0021] The clipboard, electronic data collection and storage device, or other information recording device that is located within the storage region 114 will be viewed primarily through the top panel 102. As such, the top panel 102 should be at least substantially transparent, i.e., have a degree of transparency that allows the user to readily observe the information recording device and record information thereon, and is preferably clear. In the case of a clipboard, for example, the level of transparency should be sufficient to allow the user to read a printed form and/or write information onto the form. Although the present inventions are not limited to any particular materials and thicknesses, suitable materials for the top panel 102 include clear waterproof plastics such as clear vinyl and other polyvinyl chloride materials that are about 0.005 inch thick.

[0022] The bottom panel 104, on the other hand, need not be transparent because it will typically be under the information recording device stored within the cover 100. Thus, although a bottom panel could be transparent if desired, the exemplary bottom panel 104 is substantially opaque and is colored (e.g., blue) so that it can be readily distinguished from the top panel 102. Colored material also provides an aesthetic benefit in that scratches are less visible on colored material than on clear material. Although the present inventions are not limited to any particular materials or thicknesses, suitable materials for the bottom panel 104 include waterproof plastics such as vinyl and other polyvinyl chloride materials that are about 0.005 to 0.010 inch thick.

[0023] The level of transparency of the side and rear panels 106 and 108 will typically depend on the intended application of the cover. The exemplary cover 100 is provided with semi-opaque, textured side and rear panels 106 and 108. The texture of both of the side panels 106 and the rear panel 108, which is a function of surface discontinuities on the side and rear panels, prevents the information recording device within the storage region 114 from being observed through the side and rear panels. This aspect of the exemplary cover 100 is especially important in those situations where the information being recorded is confidential (e.g., the medical and personal data recorded by an EMT). However, the texturing of the semi-opaque side and rear panels 106 and 108 will preferably be such that sufficient light passes therethrough to facilitate observation of the information recording device through the top panel 102 and to prevent excessive shadowing within the storage region 114. The uneven surface associated with the texturing also prevents the portions of the side and rear panels 106 and 108 on opposite sides of the creases 116 from sticking to one another, and from sticking to the top and bottom panels 102 and 104, when the cover 100 is collapsed in the manner illustrated in FIG. 1 for storage. If desired, the semi-opacity of the side and rear panels may be provided in other ways, such as using colored materials.

[0024] It should be noted that there may be instances where side and rear panels which are at least substantially transparent (and, preferably, clear) are desired. In those situations where the user prefers that other people be able to see the data recorded on the information recording device from a variety of positions relative to the user, substantially transparent side and rear panels 106 and 108 may be provided. A clipboard being used by an athletic coach is one example of such a situation.

[0025] Whether semi-opaque or at least substantially transparent, the side and rear panels 106 and 108 also perform the function of holding the cover 100 in the expanded orientation illustrated in FIG. 2. To that end, the side and rear panels 106 and 108 in the illustrated embodiment are at least rigid enough to maintain the cover 100 in the open orientation when the user expands the cover. The side and rear panels 106 and 108 (as well as the top and bottom panels) should also be flexible enough to allow the cover 100 to be folded for storage. As such, the side panels 106 may deflect slightly at the front opening 112 because there is no panel for support, as there is at the end of the cover 100 defined by the rear panel 108. However, as noted above, the user’s forearm (or hand in the case of covers for smaller devices) will prop up the cover 100 near the opening 112. Although the present inventions are not limited to any particular materials or thicknesses, suitable materials for the side and rear panels 106 and 108 include waterproof plastics such as vinyl, other polyvinyl chloride materials, that is about 0.005 to 0.010 inch thick. Also, in the illustrated embodiment, the side and rear panels 106 and 108 together define a unitary structure that is bent at the side/rear panel intersections during assembly. Separate panels that are secured to one another during assembly may, alternatively, be employed. In either case, the creases 116 may be formed by scoring or other suitable methods.

[0026] The flap 110 serves a number of purposes. During use, the flap 110 prevents rain, snow, etc. from gaining access into the storage region 114 while information is being recorded, as discussed with reference to FIG. 7 below. The flap 100 may also be used to close the opening 112 when the cover 100 is in the collapsed orientation, as discussed below with reference to FIG. 8. The top panel 102 and flap 110 may be a unitary structure (as shown), with the line of demarcation between the two being at the longitudinal ends of the
side panels 106, or may be separate structural elements that are secured to one another. Because the flap 110 is not
directly secured to (or supported by) the side members 106,
the flap 110 will hang in the manner illustrated in FIG. 2
when the cover 100 is open and not in use.

[0027] Turning to FIG. 6, the stop member 118 prevents
the exemplary clipboard 300, or other information recording
device, from sliding out of the cover 100. The exemplary
stop member 118 includes a rigid L-shaped support 126
that is carried at the end of the bottom panel 104 adjacent to
the opening 112. The support 126 extends parallel to the edge of
the bottom panel 104 that is coextensive with the opening
112 and may simply be glued, or otherwise mechanically
attached, to the inner surface of bottom panel. In the
illustrated embodiment, the support 126 is located within a
pocket that is created by folding a portion of the bottom
panel 104 around the support 126 and then securing the free
end 128 of the bottom panel to another portion of the bottom
panel at a weld 130. The lateral edges of the portion of the
bottom panel 104 around the support 126 are also sealed
during the assembly process, which is discussed below.
Suitable materials for the support 126 include plastics and
metals.

[0028] It should also be noted that the flexibility of the
bottom panel 104 and the rigidity of the L-shaped support
126 create a hinge area 132 (FIG. 6) that extends along the
weld 130. The hinge area 132 allows the user to pivot the
stop member 118 relative to the bottom panel 104 while
placing an information storage device into the cover 100 or
removing it therefrom.

[0029] As illustrated for example in FIGS. 3 and 4, and
although the present inventions are not limited to any
particular closure mechanism, the exemplary closure mecha-
nism 120 consists of a pair of hook and loop fasteners 134a
and 134b that are respectively carried on the interior surface
122 of the flap 110 to the exterior surface 124 of the bottom
panel 104. Hook and loop fastener material is commonly
sold under the trade name Velcro®. In order to allow the
cover 100 to accommodate information recording devices of
varying thicknesses while the flap 110 is secured to the
bottom panel 104, the fastener 134a is an elongate strip. The
fastener 134b, which can be secured at any location along
the length of the fastener 134a, is circular in shape. The
fastener 134b may, alternatively, also be an elongate strip.
Other exemplary closure mechanisms include buttons,
snaps, and any other suitable instrumentality.

[0030] Covers in accordance with the present inventions
may be any size and shape that is suitable for the intended
application. The exemplary cover 100 is configured to be
used in combination with a conventional clipboard and to
allow an adult person to position their hand within the
storage region 114 and write on blank paper or forms carried
on the clipboard with a conventionally sized ball-point pen.
A typical clipboard is about 12.5 inches long, about 8.75
inches wide, and about 0.125 inch thick. To that end, when
in the expanded state, the exemplary cover 100 defines an
overall rectangular shape that is about 6.5 inches high, about
9 inches wide and about 13 inches long (measured from the
rear panel 108 to the opening 112). The flap 110 is about 5
inches long. The stop member 118 is about 0.875 inch by
about 0.875 inch and has a length that is substantially the
same as the width of the cover, i.e. about 9 inches.

[0031] The exemplary cover 100 may be assembled in any
suitable manner. In those instances where the cover is
formed from a plurality of panels, as is the case in the
illustrated embodiment, the top and bottom panels 102 and
104 may be welded (e.g. RF welded) to the side and rear
panels 106 and 108.

[0032] As illustrated for example in FIG. 5, an information
recording assembly 200 includes the exemplary cover 100
and the aforementioned clipboard 300 within the storage
region 114. The clipboard 300, which is carrying a form 302,
is prevented from sliding out of the cover 100, which is in
the expanded state, by the stop member 118. Turning to FIG.
7, the dimensions of the cover 100 and clipboard 300 insure
that there is sufficient room for a user to insert his or her
hand, while holding a pen in a normal writing position, and
write information onto the form 302. The flap 110 will also
rest upon the user’s arm while the user is writing. So
positioned, the flap 110 will prevent rain, snow, etc. moving
in the direction generally indicated by arrow A from entering
the cover 100 by way of the opening 112 and damaging the
form 302 or otherwise interfering with the information
recording process.

[0033] Turning to FIG. 8, the cover 100 may be collapsed
with the clipboard 300 and form 302 therein. The flap 110
may also be secured to the exterior surface of the bottom
panel 104 with the closure mechanism 120 in order to seal
the cover and prevent moisture from entering the storage
region 114. Should a person filling out the exemplary form
302 in inclement weather need to move on to another task
(e.g. an EMT who is called on to help with treatment), the
cover 100 can be easily collapsed and sealed with the
clipboard 300 or other information recording device stored
therein.

[0034] It should also be noted that, in the context of
storing an information recording device within a cover, the
term "collapsed" includes those situations where the cover
may not be completely collapsed because of the thickness of
the information storage device. For example, some clip-
boards are relatively thick because they include a form
storage compartment. As noted above with reference to
FIGS. 3 and 4, the closure mechanism 120 is configured to
accommodate variations in information storage device
thickness.

[0035] In the exemplary assembly 200, the cover 100 and
clipboard 300 are not connected to one another so that the
clipboard can be readily removed from the cover. Other
implementations may be configured such that the clipboard
(or other information recording device) is temporarily/re-
moveably secured within the cover, through the use Velcro®
other suitable instrumentality, or such that the clipboard
(or other information recording device) is permanently
secured to, and within, the cover.

[0036] Although the inventions disclosed herein have
been described in terms of the preferred embodiments
above, numerous modifications and/or additions to the
above-described preferred embodiments would be readily
apparent to one skilled in the art. By way of example, but
not limitation, the inventions include any combination of the
elements from the various species and embodiments
disclosed in the specification that are not already described.
It is intended that the scope of the present inventions extend to
all such modifications and/or additions and that the scope of the present inventions is limited solely by the claims set forth below.

We claim:

1. A cover for use with an information recording device, the cover comprising:
   a substantially transparent top panel;
   a bottom panel; and
   first and second side panels and an end panel between the top and bottom panels;
   the top, bottom and side panels together defining an end opening and an internal storage region;
   the side and end panels being movable between a collapsed orientation where the top panel is adjacent to the bottom panel and an expanded orientation where the distance between the top and bottom panels is such that the information recording device and a user’s hand may be placed within the internal storage region.
2. A cover as claimed in claim 1, wherein the bottom panel is substantially opaque.
3. A cover as claimed in claim 1, wherein the bottom panel is colored.
4. A cover as claimed in claim 1, wherein at least one of the side and rear panels is texturized.
5. A cover as claimed in claim 1, wherein at least one of the side and rear panel is semi-opaque.
6. A cover as claimed in claim 1, wherein the side panels and the rear panel are sufficiently rigid to maintain the cover in the expanded orientation.
7. A cover as claimed in claim 1, wherein the side panels and the rear panel include respective creases about which the side panels and the rear panel fold when the side panels and the rear panel move from the expanded orientation to the collapsed orientation.
8. A cover as claimed in claim 1, further comprising:
   a flap extending from the top panel.
9. A cover as claimed in claim 8, further comprising:
   a closure mechanism adapted to releasably secure a portion of the flap to a portion of the bottom panel.
10. A cover as claimed in claim 1, further comprising:
    an end stop associated with bottom panel and positioned adjacent to the end opening.
11. A cover as claimed in claim 10, wherein the end stop is substantially rigid.
12. An apparatus, comprising:
    an information recording device; and
    a cover including a substantially transparent top panel, a bottom panel, and first and second side panels and an end panel between the top and bottom panels;
    the top, bottom and side panels together defining an end opening and an internal storage region;
    the side and end panels being movable between a collapsed orientation where the top panel is adjacent to the bottom panel and an expanded orientation where the distance between the top and bottom panels is such that the information recording device and a user’s hand may be placed within the internal storage region.
13. An apparatus as claimed in claim 12, wherein the bottom panel is substantially opaque.
14. An apparatus as claimed in claim 12, wherein the bottom panel is colored.
15. An apparatus as claimed in claim 12, wherein at least one of the side and rear panels is texturized.
16. An apparatus as claimed in claim 12, wherein at least one of the side and rear panel is semi-opaque.
17. An apparatus as claimed in claim 12, wherein the side panels and the rear panel are sufficiently rigid to maintain the cover in the expanded orientation.
18. An apparatus as claimed in claim 12, wherein the side panels and the rear panel include respective creases about which the side panels and the rear panel fold when the side panels and the rear panel move from the expanded orientation to the collapsed orientation.
19. An apparatus as claimed in claim 12, further comprising:
   a flap extending from the top panel.
20. An apparatus as claimed in claim 19, further comprising:
   a closure mechanism adapted to releasably secure a portion of the flap to a portion of the bottom panel.
21. An apparatus as claimed in claim 12, further comprising:
    an end stop associated with bottom panel and positioned adjacent to the end opening.
22. An apparatus as claimed in claim 21, wherein the end stop is substantially rigid.
23. An apparatus as claimed in claim 12, wherein the information recording device comprises a clipboard.
24. A method, comprising the steps of:
    expanding a cover including a substantially transparent top panel, a bottom panel, and first and second side panels and an end panel between the top and bottom panels; and
    positioning a information recording device within the cover.
25. A method as claimed in claim 24, the expanding step is performed prior to the positioning step.
26. A method as claimed in claim 24, further comprising the step of:
    collapsing the cover with the information recording device positioned within the cover.
27. A method as claimed in claim 26, wherein the cover defines an opening, the method further comprising the step of:
    closing the opening with a flap.

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