The present invention relates to a carrying case capable of housing the computer during use. A flap arranged in the front wall of the carrying case may be opened whereby the computer is revealed and ready for use. The openable flap in the front wall is hinged to the lower part of the front wall, whereby said flap is capable of being opened to an opening angle in a range between 0 degree and 175 degree and capable of keeping said opening angle or a smaller angle when the opening force is removed. Thereby the flap cannot fall to a position behind the computer taking up extra space. Preferably the flap is provided with closing means whereby the flap will close automatically when an opening force is removed from the flap. In use the computer top part may be opened to reveal the keys and the display is arranged in the angle suitable for the actual user, whereby the flap is opened to a position having a substantially identical opening angle not falling to a table behind the computer.
Fig. 3

11b  20
16  17
  7
  11a
14

11b
22
13
15
6
5
CARRYING CASE FOR A COMPUTER

BACKGROUND

[0001] Since the proliferation of notebook computers or laptop computers that are easily carried and employed during travelling cases or bags for the purpose of carrying the computers have been developed.

[0002] Due to the efficient size of the computer, it is often preferred that the computer is capable of being employed during travelling, such as in a train or on a flight. This requires unloading the computer unless it is possible to use the computer while having it in the case. Some of the cases are constructed so the front panel is joined to the top and the side of the case by means of a continuous zipper. Thereby access to the computer compartment is obtained by unzipping the zipper, and the loading of the computer may be accomplished by placing the computer in the compartment and zipper the zipper. It has been found that it is possible to use the computer during storage in the case by opening the front wall totally. However thereby the computer and case will inevitably occupy a space double of the computer case itself, since the back side will be resting on e.g. a table housing the computer, and the front side will be falling to the table behind the computer.

SUMMARY OF THE INVENTION

[0003] Accordingly, there is a need for a carrying case for a computer, wherein said carrying case provides access for working with the computer while requiring lesser space than by previous cases.

[0004] Thus, the present invention relates to a carrying case

[0005] having opposing front and back walls having upper and lower parts, side walls and a bottom wall connected to the front and back walls, said walls defining at least one compartment,

[0006] optionally a top wall connected to at least one of said front or back walls,

[0007] said front wall comprising an opening providing access by a user for using the computer, when the computer is contained in the case,

[0008] said opening being provided by an openable flap in the front wall being hinged to the lower part of the front wall, whereby said flap is capable of being opened to an opening angle in a range between 0 degree and 175 degree and capable of keeping said opening angle or a smaller angle when an opening force is removed.

[0009] By the term opening force is meant any force capable of keeping the flap open, such as the pressure of a hand or of the computer top part.

[0010] The carrying case according to the present invention is thereby capable of housing the computer during use. The computer top part may be opened to reveal the keys or keyboard and the display is arranged in the angle suitable for the actual user, whereby the flap is opened to a position having a substantially identical opening angle not falling to the table behind the computer.

DRAWINGS

[0011] FIG. 1 showing the carrying case from the front.
[0012] FIG. 2 showing the carrying case from the back.
[0013] FIG. 3 showing the carrying case in a position having the openable flap opened for access to the computer compartment.
[0014] FIG. 4 showing the case of FIG. 3 having a computer embedded in the case.
[0015] FIG. 5 showing an alternative embodiment wherein the openable flap comprises a pocket.
[0016] FIG. 6 showing the case of FIG. 5 being open to reveal the computer compartment.

DETAILED DESCRIPTION OF THE INVENTION

[0017] The case according to the invention may have any suitable size to fit the computer and optional further equipment for the computer.

[0018] The openable flap is preferably connected to the front wall, such as by means of zippers, preferably two zippers aligned with the edge connecting the front wall with each side wall. The zippers are preferably continuous from the upper edge of the front wall to the lower edge of the front wall.

[0019] The flap is preferably capable of being opened to the same degree that the computer top part is capable of opening. The flap must be opened at least to a position in which the computer top part is positioned during normal use of the computer. The opening angle is preferably in a range between 0 and 150 degrees, such as in a range between 0 and 145 degrees. The opening angle is defined so that 0 degrees corresponds to the closed position of the flap, and 90 degrees corresponds to a vertical position when the computer is in use on a horizontal support.

[0020] In a preferred embodiment the flap closes automatically when the computer top part is closed after ended use. This may be obtained by providing the flap with closing means.

[0021] The closing means may be any suitable means building up a tension when the flap is opened, whereby the tension is the force closing the flap when the opening force is removed, i.e. a closing tension. In determining the closing function of the closing means the case is arranged lying on the back wall on a horizontal support such as a table. The flap is forced open to such a degree that the angle between the flap and horizontal, i.e. the opening angle, is more than 90 degrees, and then the opening force is removed. The flap will then return to the closed position within a reasonable time period. The closing means is preferably capable of closing the flap from an opening angle of at least 100 degrees, more preferably from an opening angle of at least 120 degrees.

[0022] In a preferred embodiment the closing means is constituted by at least one zipper, said zipper connecting a side of the flap to the front wall. Preferably the zipper is arranged parallel with the side edge of the front wall, and preferably two zippers are provided, one in each side of the flap. A tension is build up in the bottom end of the
zipper, when the zipper is unzipped and the flap is forced open. This tension is forcing the flap to return to a closed position when no opening force is applied to the flap.

[0023] In another embodiment the flap is connected to the lower part of the front wall by a hinging seam. By the term “hinging seam” is meant a seam connecting the flap to another part of the case allowing the flap to be moved about an axis along said hinging seam. In a preferred embodiment the hinging seam is constructed so that a tension is build up in the seam when the flap is opened. A closing tension is build up in said hinging seam when the flap is forced open. In a variation of this embodiment the bottom wall is curved whereby a part of the bottom wall is curved so that it may be seen from the front. In this embodiment the flap is connected to the bottom wall by a hinging seam at the edge of the front wall, and the closing tension is build up in said hinging seam when the flap is forced open.

[0024] In a third embodiment a combination of zippers and a hinging seam is used to provided the carrying case with a closing means.

[0025] In a fourth embodiment the closing means is at least one spring arranged so that a tension is build up in the spring when the flap is forced open.

[0026] In a fifth embodiment the closing means is at least one piece of elastic material, one end of said material being attached to the flap during use whereas the other end is attached elsewhere, so that a tension is build up in the elastic material when the flap is forced open. For example the other end of the elastic material may be attached to the bottom part of the case.

[0027] In a sixth embodiment the closing means may comprise a pumping means comparable to a door stopper, said pumping means being properly arranged in the case to close the flap when the opening force is removed.

[0028] Also the closing means may comprise combinations of the closing means discussed herein or any other closing means suitable for the purpose.

[0029] In use the opening force is preferably the top part of the computer comprising the display. These top parts have a mechanism for allowing the top part to remain in any predetermined position. It is of course preferred that the closing means of the flap does not force the computer top part to close.

[0030] The flap may be provided with a pocket, such as a pocket arranged on the outwards side of the flap. In a preferred embodiment the size of the pocket corresponds to the size of the flap. Furthermore, the pocket may be provided with side walls, such as side walls capable of unfolding in a pleat-like manner.

[0031] During use of the computer when housed in the carrying case it is preferred that a wrist support is provided. Said wrist support may be an elevation or raised platform in the inner side of the top wall, said top wall being flattened during use of the computer.

[0032] In another embodiment the wrist support is constituted by the top wall itself, said top wall being capable of folding whereby the wrist is supported on the folded top wall. To secure the top wall in the folded position a securing means may be provided in the case for receiving the closure means of the top wall.

[0033] The flap material is preferably sufficiently stiff to allow the flap to attain any opening angle without falling or bending to a table behind the computer. Thus, the flap material may be a semi-rigid or a rigid material. In a preferred embodiment the material is a rubberized PVC sponge textile or genuine leather, preferably having a thickness in the range of 1.0-2.0 mm.

[0034] The other walls of the carrying case may be of any suitable material, it is however preferred that all outer walls of the case are made of identical material. The carrying case is preferably also provided with an inner lining, such as a polyester knitting cloth with PVC backing.

[0035] To increase the rigidity of the walls a stiffer material may be provided between the outer material and the inner lining, such as a fiber board, for example a fib r board having a thickness in the range of 0.5-0.4 mm, preferably in the range of 3.0 mm.

[0036] The side walls may be connected to the other walls through a connecting part, whereby said side walls become extendable due to a flexibility of the connecting parts, either because the connecting parts are made by resilient material, or because the connecting parts are capable of unfolding in a pleat-like manner.

[0037] The carrying case may be constructed having a single compartment being the computer compartment, whereby the inner side of the back wall constitutes the computer compartment floor. In a preferred embodiment the case is divided by at least one dividing panel into at least two compartments. The computer compartment will then be the compartment towards the front wall and the floor of the computer compartment is then constituted by a dividing panel.

[0038] The computer compartment floor is preferably provided with a friction part, such as a friction mat, whereby the computer is not sliding in the compartment during use of the computer.

[0039] A plurality of pockets may be provided in the carrying case for various computer accessories. In particular it is preferred to arrange at least one pocket on the inner side of the flap, such as a pocket capable of housing diskettes and/or CD-ROMs. The latter pocket is preferably an expandable pocket having more compartments.

[0040] For facilitating the transport of the carrying case a carrying strap or handle may be arranged on the case. It is preferred that the strap is a depressable strap.

[0041] Furthermore, the carrying case may be provided with any suitable shock absorbing means for absorbing impacts and the like to the case, so that the computer inside the case is protected.

[0042] The construction of the case may be carried out in a variety of forms and shapes, of which an example is shown in the drawings.

[0043] Turning to the Figures, the carrying case is shown in FIG. 1, wherein 1 denotes the case having a front wall 2 and a back wall 3, side walls 5 and a bottom wall 4, said walls defining at least one compartment. Furthermore, the case is provided with a top wall 6 connected throughout its length to back wall 3 and being provided with a closure means 13 for securing the top wall 6 to front wall 2. In FIG.
1. The case is provided with a carrying strap 9, said strap being depressible whereby a part of the strap is sliding into the top wall 6 through holes 10.

2. The bottom wall 4 is curved, and the lower part of the side walls 5 has a corresponding curve.

3. The front wall 2 provides access to the computer compartment by means of openable flap 7. In FIG. 1 the flap is connected to the bottom part the front wall 2 at the edge 8 connecting the front wall 2 to the bottom wall 4. The flap 7 being a part of the front wall is connected to the rest of the front wall 2 by means of zippers 11 aligned with the edge connecting the front wall 2 with each side wall 5. The zippers are continuous from the upper edge of the front wall 2 to the lower edge of the front wall 2.

4. In FIG. 2 the case is seen in perspective from the back wall. In FIG. 2 it is easily seen that the bottom wall 4 is curved, and furthermore that the bottom wall 4 is connected to the back wall 3 throughout the length of both, being connected at the edge 21. In FIG. 3 the opened case is shown whereby the computer compartment 18 is accessed. The zippers 11a, 11b are fully unzipped and the flap 7 is shown in an open position. The arrows are indicating that the flap will automatically close if no opening force is keeping the flap open. The closing tension is exerted by the zippers 11a and 11b and the hinging seam (not shown) in combination.

5. The flap 7 is provided with two pockets 16, one of the being provided with a closure flap 17.

6. The floor 22 of the computer compartment 18 may be comprised of the inner back wall optionally provided with a linent. In another embodiment a panel dividing the case into two compartments, one being the computer compartment, is forming the floor 22 of the computer compartment 18.

7. The floor 22 may be provided with frictionless mats 14 arranged for a suitable grip of the computer, whereby the computer is not sliding in the compartment during use. The size of the mats are not crucial for the invention, it is however often necessary that at least both side edges of the computer is secured.

8. In use the top wall 6 may be used as a wrist support. In one embodiment the wrist support is arranged in the top wall 6, shown by 15, whereby the top wall is opened and lying flat during use of the computer.

9. In FIG. 4 the carrying case 1 of FIG. 3 is shown having a computer 23 embedded therein. The computer top part 24 is opened to reveal the display 26 and the keys 25. The computer top part 24 is exerting an opening force to the flap 7.

10. The top wall 6 is folded and secured by means of closure means 13 to function as a wrist support during use of the computer 23.

11. An alternative embodiment of the invention is shown wherein the openable flap comprises a pocket, wherein 1 denotes the case having a front wall 2 and a back wall 3, side walls 5 and a bottom wall 4, said walls defining at least one compartment. The case is provided with a carrying strap 9 as well as connections 28 for a carrying strip to be attached, when the case is to be carried on the shoulder.

The front wall 2 is provided with a full length pocket 27, said pocket comprising a front wall and side walls 30, the side walls 30 being capable of unfolding in a pleat-like manner. The back wall is also provided with a full length pocket 32, said pocket comprising a back wall and side walls 31, the side walls 31 being capable of unfolding in a pleat-like manner. Furthermore, the case is provided with a top wall 6 connected throughout its length to back wall of the pocket 32 through seam 29. The bottom wall 4 is curved, and the lower part of the side walls 5 has a corresponding curve.

12. The front wall 2 provides access to the computer compartment by opening zipper 11, thereby disengaging front wall 2 with its pocket from the side walls 5 of the case. The zippers 11 are continuous from the upper edge of the front wall 2 to the lower edge of the front wall 2. The front wall 2 with pocket 27 corresponds to the flap 7 of the case 1 in FIG. 1.

13. In FIG. 6 the case of FIG. 5 is shown open to reveal the computer compartment 18. The zippers 11a, 11b are fully unzipped and the flap 7 is shown in an open position. The arrows are indicating that the flap will automatically close if no opening force is keeping the flap open. The closing tension is exerted by the zippers 11a and 11b. The front wall 2 comprises a full length pocket 27 having side walls 30.

14. In use the top wall 6 may be used as a wrist support. In one embodiment the wrist support is arranged in the top wall 6, shown by 15, whereby the top wall is opened and lying flat during use of the computer.

1. A carrying case for a computer comprising

opposing front and back walls having upper and lower parts, side walls and a bottom wall connected to the front and back walls, said walls defining at least one compartment

optionally a top wall connected to at least one of said front or back walls,

said front wall comprising an opening providing access by a user for using the computer, when the computer is contained in the case,

said opening being provided by an openable flap in the front wall being hinged to the lower part of the front wall, whereby said flap is capable of being opened to an opening angle in a range between 0 degree and 175 degree and capable of keeping said opening angle or a smaller angle when the opening force is removed.

2. The carrying case according to claim 1, wherein said flap is adapted to close automatically when the case is arranged horizontally on the back wall unless kept open by an opening force.

3. The carrying case according to claim 1 or 2, wherein said case is provided with closing means for automatically closing the flap.

4. The carrying case according to any of the preceding

claims, wherein the top wall is connected to the upper part of the back wall and being provided with a closure means for securing the top wall to the front wall.
5. The carrying case according to any of the preceding claims, wherein the top wall is adapted to function as a wrist support when not secured to the front wall.

6. The carrying case according to claim 5, wherein a securing means is arranged in the case to receive the closure means of the top wall, when the top wall is in a position to function as a wrist support.

7. The carrying case according to any of the preceding claims, wherein said flap is connected to the front wall by means of at least one zipper.

8. The carrying case according to any of the preceding claims, wherein said bottom wall is curved, and said side walls each comprises a correspondingly curved lower part.

9. The carrying case according to claim 7 or 8, wherein the zipper is arranged in the front wall so that the end of the zipper is the closing means thereby providing the flap with an automatic closing mechanism.

10. The carrying case according to claim 7, 8 or 9, wherein the zipper is aligned with the edge connecting the front wall with the side walls.

11. The carrying case according to claim 7, 8, 9 or 10, wherein the zipper is extending from an upper edge of the front wall to a lower edge of the front wall.

12. The carrying case according to any of the preceding claims, wherein the walls are semi-rigid.

13. The carrying case according to any of the preceding claims, said case comprising at least one carrying strap.

14. The carrying case according to claim 13, wherein said carrying strap is depressible into the top wall.

15. The carrying case according to any of the preceding claims, wherein the side walls are extendable.

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