A computer case/table for a laptop computer. When used as a case, the compact design allows for easy and convenient transport of a laptop computer from one location to another. Upon reaching the destination, the user may readily convert the case to a computer table on which the laptop computer can be placed for use. The case includes retractable, telescopic legs and a variety of computer accessories, such as a backup battery pack, and connectors for telephone and Internet access. An internal support system allows the laptop computer to rise in a forward tilted position from a stowed position to an upward position. Upon lifting of the case lid. This allows for the comfortable use of the computer, and promotes cooling of the rear portion of the computer, where heat tends to build up, by exposure to and promotion of the circulation of cooling environmental air.
Fig. 3
Fig. 4
Fig. 5
Fig. 6
Fig. 7
Fig. 14
BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

The present invention relates to article carriers and supports, and, more particularly, a combination computer case and computer table for a laptop computer.

[0002] 2. Description of the Related Art

The laptop computer has become a necessity for those who travel on business. There are many instances where it would be helpful to have a combination carrying case, docking station and platform, having a fold out table and lamp for ease of use of the laptop computer, but none is known to be available. It would also be desirable to provide a laptop computer case which, upon opening, automatically raises the computer and slants it forward for comfortable use and to provide for the rear of the laptop computer to be exposed to the outside atmospheric environment to allow for cooling air circulation, but none are known to be available.

[0003] U.S. Pat. No. 4,856,627, issued on Aug. 15, 1989, to Polatov describes a work briefcase and table system. The combination briefcase and table system includes a set of telescoping legs mounted on the underside of the briefcase. Projecting shelves can be extended from the briefcase to define a flat table.

[0004] U.S. Pat. No. 6,036,011, issued on Mar. 14, 2000, to DeCurtis et al. describes a carrying case for transporting a laptop computer and an associated mouse. The case has a lower base element provided with four pivoted and telescoping legs and a sliding shelf that acts as a mouse pad.

[0005] U.S. Pat. No. 5,226,540, issued Jul. 13, 1993, to Bradbury describes a carrying case for a portable work station having a personal computer, printer, and other peripherals. External controls allow the work station to be operated when the case is closed. The case includes an internal power source, an external DC power jack, and an external transceiver antenna jack, a phone connector, etc.


[0008] None of the above inventions and patents, taken either singularly or in combination, is seen to describe the instant invention as claimed. Thus, a computer case/table solving the aforementioned problems is desired.

SUMMARY OF THE INVENTION

[0011] The present invention is a combination computer case and computer table for a laptop computer. When used as a case, the compact design allows for easy and convenient transport of a laptop computer from one location to another. Upon reaching the destination, the user may readily convert the case to a computer table which, upon opening its lid, the laptop computer is raised and tilted forward for ease and comfortable access and to promote cooling air circulation near the rear of the case to avoid heat buildup. The case includes retractable, telescopic legs and a variety of computer accessories, such as a backup battery pack, and connectors for telephone and Internet access.

[0012] Accordingly, it is a principal object of the invention to provide a combination laptop computer case and table having a storable mouse board.

[0013] It is another object of the invention to provide a combination case/table as above, wherein the storable mouse board may be extended from an end, thereof, to serve as a handle while moving the case/table on retractable wheels.

[0014] It is a further object of the invention to provide a combination case/table as above, having telescoping legs, foldable into recesses for storage.

[0015] Still another object of the invention is to provide a combination case/table as above, having a printer support with articulated hangers, movable from a raised position when stored, and to a selectible lowered position for use.

[0016] Yet another object of the invention is to provide a combination case/table as above, having a storable front table, useful as a mouse board or for writing, etc.

[0017] Still another object of the invention is to provide a combination case/table as above, having a computer support which raises and tilts forward on tracks upon the opening and raising of the lid, thereof, thus avoiding heat buildup.

[0018] Yet another object of the invention is to provide a combination laptop computer case/table which is of such proportions as to be carried by a handle in the manner of a brief case.

[0019] Still another object of the invention is to provide a combination case/table having foldable telescoping legs and a storable front board useful as a mouse board, etc.

[0020] Yet another object of the invention is to provide a combination case/table having a bottom portion which can be lowered and tilted forward for access to stored papers, etc.

[0021] Still another object of the invention is to provide a combination case/table as above, having a computer support which raises and tilts forward on tracks upon the opening and raising of a lid, thereof.

[0022] Yet another object of the invention is to provide a case having a tilting computer support is useful in an automobile, and which has a D.C. connector to plug into an automobile cigarette lighter receptacle for access to electrical power.

[0023] It is an object of the invention to provide improved elements and arrangements thereof for the purposes described which is inexpensive, dependable and fully effective in accomplishing its intended purposes.

[0024] These and other objects of the present invention will become readily apparent upon further review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] FIG. 1 is an environmental, perspective view of a computer case/table according to the present invention in its transportable configuration.
FIG. 2 is an end view in elevation of the computer case/table of FIG. 1 in its fully deployed configuration.

FIG. 3 is a front view in elevation of the computer case/table of FIG. 1 having a front wall broken away.

FIG. 4 is a side view in elevation of the computer case/table of FIG. 3 having a side wall broken away.

FIG. 5 is a front view in elevation as in FIG. 3 having the printer deployed for use.

FIG. 6 is a side view in elevation as in FIG. 4 having the printer deployed for use.

FIG. 7 is a side view in elevation as in FIG. 6 illustrating an alternative embodiment of the invention wherein either a compact printer, or no printer at all is employed and the height of the computer case/table of FIG. 5 is adjustable in height.

FIG. 8 is a view in perspective of a computer positioning device, useful in each of the embodiments of the invention.

FIG. 9 is a front view in elevation of the computer case/table of FIG. 1, having adjustable legs deployed at differing heights to match an uneven resting surface and having a reading light deployed over the top surface, for use in a desk configuration.

FIG. 10 is a perspective view of another embodiment of the computer case/table of the invention, transportable as a brief case.

FIG. 11 is a view in perspective as in FIGS. 1 and 10 having a front and side broken away to illustrate the adjustable legs in their stored position.

FIG. 12 is a side view in elevation of the computer case/table of FIG. 10, comparable to the configuration of FIG. 8.

FIG. 13 is a broken away side view in elevation of the embodiment of FIG. 10 in a fully deployed configuration.

FIG. 14 is a front view in elevation of the embodiment of FIG. 10 illustrating the adjustable legs in a partially deployed configuration.

FIG. 15 is a side view in elevation of the embodiment of FIG. 10 having the end wall broken away, showing a configuration useful in an automobile.

Similar reference characters denote corresponding features consistently throughout the attached drawings. For the sake of clarity, not all views of an embodiment illustrate all elements, and variations in elements illustrated indicate their equivalence. Not all elements in all drawings of each embodiment are mentioned in each corresponding passage in the following “Detailed Description,” below.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is a case/table for a laptop computer. When used as a case, the compact design allows for easy and convenient transport of a laptop computer from one location to another. Upon reaching the destination, the user may readily convert the case to a table may be opened upward, moving the laptop computer upward in a forward tilting position, and so providing easy and comfortable access to the laptop computer mounted therein. The case includes retractable, telescopic legs and a variety of computer accessories, such as a backup battery pack, and connectors for telephone and Internet access.

Referring to FIGS. 1 and 2, there are shown, respectively, a perspective view of the closed case and a side view of a fully deployed embodiment of the invention wherein the computer case/table system includes a case (21) having case front wall (14), first end wall (16), second end wall (18), case bottom wall (20), and case upper wall (22). Case lid (24) covers computer case/table (12) and is kept in the closed position during transport by lid latches (26). Case handle (28) is useful for carrying the case (12). Case retractable mouse board (29) includes mouse board hand pull (30) and is deployable from case first end wall (16), and may be further extended and attached by means of mouse board extensions (31). Case back wall (32) is connected with lid (24) by a hinge (34), such as a piano hinge, and has retractable wheels (35) near its lower end which are stowed in the retracted position when deployed in the downward position are useful in towing the computer case/table (12). Mouse board hand pull (30) is useful as a handle when towing case/table (12) when mouse board (29) is extended by extension (31), and when wheels (35) are in the downward position.

More specifically, FIG. 2, there is shown the computer case/table (12) in a fully deployed configuration where printer support (38) for printer (B) and is supported by articulated hangers (39) at each of its four corners and comprise upper printer support arms (40), front upper printer support arms (42), rear lower printer support arms (44), front lower printer support arms (46), rear printer support arm connections (48), and front printer support arm connections (50). Printer support wheels (51) may be of the simple axle type as shown, or have swivel mountings or their equivalent. Printer support becomes part of case bottom wall (20) when retracted. Case/table (12) is supported by retractable telescoping legs (52), foldable into case bottom (20) on retractable leg pivots (54) and having upper telescoping leg portions (56), lower telescoping leg portions (58), and lower leg pads (60). A plurality of telescoping leg portions (58) may be employed to add additional height to the case/table (12).

Laptop computer A is held on laptop computer support (62) for use. Laptop computer support (62) is supported by rear computer support pins (64) and front computer support pins (66). These pins are free to travel in rear pin track (68) and front pin track (70), respectively, to allow laptop computer support (62) to rise in a forward-tilted position from a stowed position to an upward position for use. This allows for the comfortable use of the computer, and promotes cooling of the rear portion of the computer, where heat tends to build up, by exposure to and promotion of the circulation of cooling environmental air. Front latch (26) features front latch lock (74). Front mouse board (76) is retractable from case/table (12) and is useful for writing, using a computer mouse, or for other purposes.

Referring to FIG. 3, there is shown a front view of the computer case/table (12) having a front wall broken away and showing retractable telescoping legs (56) in their stored position. Printer support (38) and printer (B) are shown in their stored position. The computer A is also shown in its stored position.
Referring to FIG. 4, there is shown a side view of the computer case/table of computer case/table 12 having a side wall broken away. Printer support 38 and printer A are shown in their stored position. Printer support 62 and computer A are shown in their stored position. Rear computer support pins 64 and front computer support pins 66 are shown in rear pin tracks and front pin tracks respectively, in their stored position.

Referring to FIG. 5, there is shown a front view of computer case/table 12 as in FIG. 3 showing printer B and support 38 in a deployed position. As diagrammatically shown, printer B may be retained in a recess in support 38 so as to be secure during transport.

Referring to FIG. 6, there is shown a side view of computer case/table 12 as in FIG. 4, showing printer B and support 38 in their deployed position. In this configuration, the lid 24 may be opened and computer A deployed for use as in FIG. 2.

Referring to FIG. 7, there is shown a side view of computer case/table 12 as in FIG. 6, showing computer support 38 in a partially lowered position with printer support articulated hangers 39 folded inward so as to adjust the height of computer case/table 29. Wheels 51 may be attached at each of the four corners of printer support 38 for ease of movement. In this embodiment, if at all, a compact printer is used.

Referring to FIG. 8, there is shown a perspective view of a computer positioning device 79 attached to laptop computer support 62 and having fingers 80 for engaging laptop computer A.

Referring to FIG. 9, there is shown a front view of the computer case/table of FIG. 1 in a desk configuration, having adjustable legs 52 deployed at differing lengths to match the terrain. Upper leg portions 56 are supported by retractable leg pivots 54 in the four corners of case/table bottom 20. A lamp 82 is supported for use by articulated support 84 and is stowable in case/table 12. Solar charger 86, which acts as a shade an reflector for lamp 82, is connected with articulated lamp support 84 and solar power battery 88 to supplement electricity to operate lamp 32.

In operation, mouse board 29 and retractable wheels 35 are extended for easily transporting the computer case/table 12. To set up as a computer table, lock 74 is unlocked and latches 26 are opened, allowing lid 22 to be raised to its open position. Teleoping legs 52 are rotated and extended from retractable leg pivots 54. Printer support 38 is lowered on articulated printer support hangers 39. Upon raising lid 22, laptop computer A is raised by laptop computer support 62 by means of support pins 64 and 66 traveling in tracks 68 and 70. The front extendable board 76 may be pulled out from its stored position within case 12 for use as desired (see FIG. 10, below).

Computer case/table 12 may also be used as a table with the telescoping legs 52 in place and lid down. Teleoping legs 52 may be individually adjusted in length to allow the case 12 to be used as a table on uneven terrain. A lamp 82 and articulated lamp support 84 may be stowed in case/table 12 and attached to an end wall of said case/table 12 as desired.

Referring to FIG. 10, there is shown a perspective view of another embodiment of the invention as a computer case/table, transportable as a brief case, wherein computer case system 100 features computer case 112 having front case wall 114, case first end wall 116, case second end wall 118, case bottom wall 120, and case upper wall 122. Case upper wall 122 is part of case lid 124. Case lid 124 is maintained in a closed condition for carrying by lid latches 126. Case handle 128 is useful in carrying the closed case. Case 112 features a retractable mouse board 130 for use when the enclosed computer is in use. Lamp shade 182 of lamp 181 (not shown) is stored in first end wall 116, in recess 183, along with articulated folding lamp support 184 and secured by lamp latch 188. Also, accessibly stored is telephone plug and cable 190.

Referring to FIG. 11, there is shown a view as in FIGS. 1 and 10 above, having front and side walls broken away, illustrating telescoping legs 152 in their stored position, where is case back wall 132 is attached to case lid by case lid hinge 134 (see FIG. 13, below). Case 112 features retractable telescoping legs 152 having upper telescoping leg portions 156 attached to case 112 near case bottom wall 120 by retractable leg pivots 157. Lower telescoping leg portions 158 are slidably encased in upper telescoping leg portion 156, and there may be a plurality of concentric leg portions 158 as desired. Lower telescoping leg portion 158 ends in lower leg pad 160. Lower box 194 is optionally a part of the invention and is available to carry a compact printer or supplies as desired.

Referring to FIG. 12, there is shown a side view of the computer case/table similar to that of FIG. 8, above, wherein retractable telescoping legs 152 are rotated on their respective retractable leg pivots 157 to a standing position. Lid 124 remains closed for use as a desk top and lamp 181, having shade 182 is deployed by articulated support 184 for use from lamp storage compartment 183. (Note that lamp storage compartment 183 is shown on the opposite side of case 112 from FIG. 10 for illustration purposes.) Lamp shade 182 acts as a solar collector as in the embodiments of FIG. 1 and shown thereby. The corresponding solar battery is not shown in FIG. 12. Mouse board 130 is partially deployed for use as desired.

Referring to FIG. 13, there is shown a side view with the side of the embodiment of the computer case/table of FIG. 10 broken away, illustrating a fully deployed configuration wherein case/table 112 is supported by retractable telescoping legs 152 rotated from a horizontal stored position to a vertical position around retractable leg pivots 157 as discussed above.

Laptop computer A is held on laptop computer support 162. Laptop computer support 162 is supported by rear computer support pins 164 and front computer support pins 166. The pins 164 are free to travel in rear pin tracks 168. Front foldable support bracket 169 is divided by front support bracket swivel 170 allowing foldable bracket lower portion 171 to fold over foldable bracket upper portion 172, respectively, to allow laptop computer support 162 to rise in a forward tilted position from a stowed position to an upward position. This allows for the comfortable use of the computer, and promotes cooling of the rear portion of the computer, where heat tends to build up, by exposure to and promotion of the circulation of cooling environmental air. Front latch 126 features front latch lock 174. Front mouse board 176 is retractable from case/table 112 and is useful for writing, using a computer mouse, or for other purposes.
[0059] Case bottom wall 120 comprises a lowering storage bottom 195, rotatable on pins 196 near case back wall 132 and having front storage bottom pins 198 near the front, thereof, located on storage bottom tracks 210 such that storage bottom 195 is movable from a stowed position, level with bottom wall 120 of case 112 to a tilted open position, extending downward toward from case front wall 114. AC adapter 212, a DC backup battery 214, and telephone cable 190 are located on the interior of case end wall 118 and are accessible for connection to the outside of the case 112.

[0060] Referring to FIG. 14 there is shown a view of the embodiment of FIG. 10 illustrating the telescoping legs in a partially deployed configuration. Case 112 features lid 124 and latches 126. A left leg 152 is partially deployed by rotation about retractable leg pivot 157 with telescoping left leg 152 still retracted. Right leg 152 is shown in the fully extended vertical position, having fully rotated around leg pivot 157 and lower telescoping leg portions 158 extended such that lower leg pad 160 rests at the desired level. Telescoping legs 152 may be extended and differing length accommodate uneven terrain in a similar manner to the embodiment of FIG. 9.

[0061] Referring to FIG. 15, there is shown a side view of the embodiment of FIG. 10 having an end wall broken away, showing the configuration useful in an automobile. Computer case 112 is in the open position with lid 124 in the open position. Computer A is resting on computer support 162 in an upward, forward-tilted position, ready for use, having rear computer support pin 164 and front computer support pin 166 located in rear pin track 168 and rotatingly located on front foldable support bracket 169. Support bracket swivel 170 allows foldable bracket lower portion 171 to fold over foldable bracket upper portion 172. AC power converter 212 is connected to the automobile electrical system by means of cigarette lighter probe 218 connected by electrical wire 220. Power is stored in backup battery 214.

[0062] In operation, laptop computer case/table 112 may be carried as a brief case by handle 128. Lamp shade and solar collector 182, along with articulated lamp support 184 is stored in recess 183 of a side wall 116 or 118 of case/table 112 and is held in its stowed position by lamp latch 188. Telephone and Internet cable and connector 190 (a standard telephone plug, or coaxial cable as shown) is recessed in side wall 116 or 118 for connection of the computer A with appropriate utilities. Computer case/table 112 may be turned into a table by rotating telescoping legs 152 from their stowed position recessed in the bottom wall 120 of case/table 112 to their vertical position around retractable leg pivots 157 and adjusted for desired length to obtain a level table surface. An upgrade box 194 is attachable to the bottom wall 120 if desired, and is used as a cover for carrying computer related equipment and notes. By extending legs 152 while leaving the lid 124 closed and deploying lamp 181, with articulated lamp support 184, upper wall 122 of lid 124 serves as a desk or table top. Lid 124 may be opened after unlocking lock 174 of latch 126.

[0063] Upon raising lid 122, laptop computer A is raised by laptop computer support 162 by means of support pins 164 traveling in tracks 168, and support pins 166 rotating at the top of front foldable support bracket 169. Front mouse board 130 is retractable from case/table 112 and is useful for writing, using a computer mouse, or for other purposes. Storage bottom 195 may be lowered from a stored position in case bottom wall 120 to a tilted, open position by rotating it around pins 196 near case back wall 132. The front of storage bottom 195 is positioned by pins 198 located in storage bottom tracks 210. AC adapter 212, having DC backup battery 214, and telephone and Internet cable 190 are located on the interior of case end wall 118 and are accessible for connection to utilities outside of the case 112.

[0064] The laptop computer case/table 12 may be configured for use in an automobile by lifting the lid 124 exposing computer A for use and plugging automobile cigarette lighter probe connector 218 into a cigarette lighter connector to supply power to the power system.

[0065] It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

We claim:

1. A combination computer case and table for a laptop, palmtop, or similar compact computer comprising:

a) a computer case having a front wall, a rear wall, a first end wall, a second end wall, a bottom wall, and an openable lid serving as a top wall;
b) said computer case having a hinge on said rear wall connecting said rear wall with said lid and opposite to latches on said front wall for connecting said front wall to said lid;
c) means for supporting and lifting said computer positioned therein upon opening said lid, such that at least a rear portion of said computer is exposed to cooling environmental air; and
d) a mouse board slidably deployable from said first end wall.

2. A combination computer case and table according to claim 1, further comprising retractable wheels at the intersection of said second end wall, said bottom wall and said front wall such that said mouse board, when deployed, acts as a handle for easily moving said case when resting on said retractable wheels.

3. The combination computer case and table according to claim 1, further comprising telescoping legs, storable in recesses in said case and vertically insertable in recesses located at each of four corners of said bottom wall.

4. The combination computer case and table according to claim 1, wherein at least a portion of said bottom wall comprises a printer support, movable from a raised position wherein a printer is contained within said case, and a lowered position wherein said printer support is suspended from articulated hangers at each of four corners, thereof, such that said printer is available for use.

5. The combination computer case and table according to claim 4, wherein said articulated hangers comprise upper printer support arms attached to lower hanger support arms by arm connections which are so constructed as to allow inward bending of said printer support arms so as to adjust the height of said printer support, said printer support having wheels at each corner thereof to allow easy movement of said case and adjustment of its height.

6. The combination computer case and table according to claim 1, having a retractable mouse board mounted within said front wall and parallel to said bottom wall.
7. The combination computer case and table according to claim 1, said means of supporting and lifting said computer support comprising a support, connected by rear support pins and front support pins which travel in curved rear pin tracks and oppositely curved front pin tracks, respectively, said rear pin tracks being located on opposite ends of said case lid, said tracks being so located that when said case latches are opened and said case lid is opened around said led hinge, each of said support pins is movable from a lower end of said pin tracks to an upper end of said pin tracks, respectively, thus raising said computer support and said computer resting thereon, from a lower position within said case to an upper position at least partially above said case.

8. The combination computer case and table of claim 7, further comprising a computer positioning device located on the lower end of said computer support and having computer support fingers conforming to the shape of a laptop computer to maintain said computer in a desired position.

9. The combination computer case and table of claim 3, wherein said telescoping legs are adjustable to differing lengths to match the terrain, and further comprising a lamp and an articulated lamp support attachable to one of said first and said second end wall.

10. The combination computer case and table of claim 1, further comprising a handle, centrally mounted on said front wall, and wherein said combination computer case and table, when in its closed configuration, approximates the size and configuration of a standard brief case.

11. A combination computer case and table according to claim 10, further comprising a lamp connected with an articulated support and foldable into a recess in one of said first and second end walls and held in said recess by a latch when the lamp is not in use.

12. A combination computer case and table according to claim 10, further comprising a telephone cable connection recessed in one of said first and said second end walls.

13. A combination computer case and table according to claim 10, further comprising telescoping legs at each of the four corners of said combination computer case and table, each of which are stowable in a first position and rotatable around a retractable leg pivot to an upright position where said telescoping legs may be individually telescoped downward to a desired length, thus forming a table with said lid as the table surface.

14. The combination computer case and table according to claim 13, wherein said legs are stowable in individual recesses in the bottom wall of said combination computer case and table.

15. The combination computer case and table according to claim 10, wherein said means for supporting and lifting is connected by rear support pins and front support pins which travel in curved rear pin tracks and oppositely curved front pin tracks, respectively, said rear pin tracks being located on opposite ends of said case lid, said tracks being so located that when said case latches are opened and said case lid is pivoted around said lid hinge, each of said support pins is movable from a lower end of said pin tracks to an upper end of said pin tracks, respectively, thus raising said computer support and said computer resting thereon, from a lower position within said case to an upper position at least partially above said case.

16. The combination computer case and table of claim 15, wherein said rear pin tracks and said front pin tracks are so arranged that said computer support tilts forward toward said front wall of said case.

17. The combination computer case and table of claim 15, further comprising an AC adapter electrically connected with an automobile cigarette lighter probe connector with a probe connector wire, and a DC backup battery within said computer case.

18. The combination computer case and table of claim 10, wherein at least a portion of said bottom wall comprises a lowering storage bottom rotateable on pins located near the rear wall of said case and having pins near the front thereof located on storage bottom tracks such that said storage bottom is movable from a stowed position, level with the bottom wall of said case to a tilted open position, extending downward toward the front wall of said case.

19. The combination computer case and table of claim 10, further comprising an AC adapter, a DC backup battery, and telephone cable located within said case and accessible from the outside of said case.

20. A combination computer case and table according to claim 10, further comprising an optional box attached to said bottom side for carrying a printer and computer supplies as desired.