A portable luggage device includes a case, and spaced apart telescoping sections carried by the case that are extendable between a retracted position and an extended position. An inner handle is coupled to exposed ends of the telescoping sections. An outer handle encloses the inner handle, and support arms are coupled to the outer handle for supporting a laptop computer. The outer handle is rotatable with respect to the inner handle between a stowed position defined by the support arms aligned with the telescoping sections, and a deployed position defined by the support arms extending outwards from the telescoping sections.
TRAVEL LUGGAGE WITH A LAPTOP COMPUTER MOUNT

RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application Ser. No. 61/146,769 filed Jan. 23, 2009, the entire contents of which are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to luggage, and more particularly, to roll around luggage with a laptop computer mount for supporting a laptop computer.

BACKGROUND OF THE INVENTION

[0003] Laptop computers and similar devices allow travelers, for example, to perform computer related tasks while traveling. Problems typically arise when the traveler is not able to find an adequate work surface for the laptop computer. As a result, the traveler uses their knees as support. This tends to become uncomfortable over an extended period of time. Moreover, it becomes difficult for the traveler to move around.

[0004] Additionally, for the sake of convenience, an increasing number of travelers are using roll around luggage, wherein a laptop computer can be carried therein. Roll around luggage includes a pair of wheels along one edge of the luggage, and a pull handle. The pull handle has an extended position for pulling the luggage, and a retracted position when the luggage is not used or is stowed away.

[0005] Consequently, roll around luggage has been provided that includes a laptop computer mount for supporting a laptop computer. For example, U.S. Pat. No. 5,961,134 discloses roll around luggage with a pull handle used for supporting a laptop computer. The pull handle has a retracted position and an extended position, and comprises a pair of spaced apart extension members and a cross member coupled across exposed ends of the extension members. The pull handle further comprises a pair of spaced apart support arms that are pivotally attached to the spaced apart extension members used for supporting a laptop computer.

[0006] U.S. Pat. No. 5,437,367 also discloses roll around luggage with a pull handle used for supporting a laptop computer. The extendable handle includes a handle grip for providing support to a removable platform. The removable platform may be stored within an auxiliary compartment within the luggage, and is removed for engagement with the extendable handle. The removable platform engages the handle and grip to allow the platform to stay suspended from an opening in the handle for providing a mount for supporting a laptop computer.

[0007] Despite the above referenced patents in which roll around luggage provides a laptop computer mount for supporting a laptop computer, they are relatively labor intensive to open. For example, the '134 patent requires a top compartment cover to first be opened, then operation of an unlocking mechanism before the handle can be extended, operation of a cylinder lock to set the handle at a desired height, and operation of a computer tray cylinder lock to lock the computer tray into place once it is deployed. In the '367 patent, the first and second shell halves of the luggage are opened to obtain the removable platform so that the removable platform can then be positioned into the opening in the handle.

SUMMARY OF THE INVENTION

[0008] In view of the foregoing background, an object of the present invention is to provide a laptop computer mount for roll around luggage that is relatively straightforward to operate for providing support for a laptop computer.

[0009] This and other objects, features, and advantages in accordance with the present invention are provided by a portable luggage device comprising a case having a bottom end, a top end, and first and second pairs of spaced apart walls extending between the bottom and top ends. A pair of spaced apart telescoping sections may be carried by the case and movable between a retracted position and an extended position. An inner handle may be coupled to exposed ends of the pair of spaced apart telescoping sections.

[0010] An outer handle may enclose the inner handle, and a pair of spaced apart support arms may be coupled to the outer handle for supporting a laptop computer. The outer handle may be rotatable with respect to the inner handle between a stowed position defined by the pair of spaced apart support arms being aligned with the pair of spaced apart telescoping sections, and a deployed position defined by the pair of spaced apart support arms extending outwards from the pair of spaced apart telescoping sections. By the user executing a couple of straightforward steps, the portable luggage device can be easily configured to create a desk space to support a laptop computer.

[0011] The portable luggage device may further comprise a locking mechanism carried by the inner handle for locking the outer handle in the stowed and deployed positions. The outer handle may include first and second spaced apart openings. A first button may be within the first opening that is in contact with the locking mechanism when the outer handle is rotated in the stowed position. A second button may be within the second opening that is in contact with the locking mechanism when the outer handle is rotated in the deployed position.

[0012] The locking mechanism may comprise a spring-activated locking mechanism, and wherein rotation of the outer handle between the stowed and deployed positions is initiated by pressing the first or second button that is in contact with the spring-activated locking mechanism. The outer handle may have a curved inner surface between the first and second buttons so that as the outer handle is rotated the spring-activated locking mechanism slides along the inner surface until contacting the first or second button that was not in contact with the spring-activated locking mechanism.

[0013] The outer handle may comprise a first button retaining area and a second button retaining area so that as the outer handle is rotated between the stowed and deployed positions, the first and second buttons remain in their respective retaining area.

[0014] The pair of spaced apart support arms may extend outwards from the pair of spaced apart telescoping sections within a range of about 75 to 100 degrees. The first and second spaced apart openings in the outer handle may be spaced within a range of about 90 to 95 degrees apart.

[0015] The locking mechanism may contact the exposed ends of the pair of spaced apart telescoping sections for initiating movement between the retracted and extended positions. The pair of spaced apart telescoping sections may be positioned between the pair of spaced apart support arms. The
portable luggage device may further comprise a pair or spaced apart wheels carried by the case adjacent the bottom end thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 is a perspective view of a portable luggage device in a travel mode in accordance with the present invention.

[0017] FIG. 2 is a perspective view of a portable luggage device in a carry mode in accordance with the present invention.

[0018] FIG. 3 is a perspective view of the portable luggage device shown in FIG. 2 with the support arms in a deployed position.

[0019] FIG. 4 is a perspective view of the portable luggage device shown in FIG. 3 with the support arms supporting a laptop computer.

[0020] FIG. 5 is a perspective view of the outer handle, the telescoping sections and the support arms without the case in accordance with the present invention.

[0021] FIG. 6 is an exploded perspective view of the outer and inner handles, telescoping sections and support arms without the case in accordance with the present invention.

[0022] FIG. 7 is a perspective view of an actuator that is part of a locking mechanism in accordance with the present invention.

[0023] FIGS. 8 and 9 are perspective top and bottom views of an inner handle in accordance with the present invention.

[0024] FIGS. 10 and 11 are perspective top and bottom views of an upper half of the outer handle in accordance with the present invention.

[0025] FIGS. 12 and 13 are perspective top and bottom views of a lower half of the outer handle in accordance with the present invention.

[0026] FIGS. 14 and 15 are perspective top and bottom views of a button in accordance with the present invention.

[0027] FIG. 16 is a perspective view of another embodiment of the support arm in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028] The present invention will now 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, and prime notations are used to indicate similar elements in alternative embodiments.

[0029] Referring initially to FIGS. 1-4, the illustrated portable luggage device 10 comprises a case 12 having a bottom end, a top end, and first and second pairs of spaced apart walls extending between the bottom and top ends. Telescoping sections 14 are carried by the case 12 adjacent the top end and are extendable between a retracted position and an extended position. Spaced apart wheels 16 are carried by the case 12 adjacent the bottom end. When the telescoping sections 14 are in the retracted position as shown in FIG. 1, the portable luggage device 10 is in a travel mode, i.e., it is to be stowed away. When the telescoping sections 14 are in the extended position as shown in FIG. 2, the portable luggage device 10 is in a carry mode, i.e., it is to be wheeled around.

[0030] The portable luggage device 10 can easily be configured to create a desk space when needed. The portable luggage device 10 includes an inner handle coupled to exposed ends of the telescoping sections 14, and an outer handle 24 enclosing the inner handle. Discussion of the inner handle is provided in greater detail below.

[0031] Spaced apart support arms 26 are coupled to the outer handle 24 for creating the desk space. The outer handle 24 is rotatable with respect to the inner handle and the telescoping sections 14 between a stowed position defined by the support arms 26 being aligned with the telescoping sections as shown in FIG. 2, and a deployed position defined by the support arms 24 extending outwards from the inner handle and the telescoping sections 14 as shown in FIG. 3. By the user executing a couple of straightforward steps, the portable luggage device 10 can be configured to create a desk space when needed.

[0032] The desk space may be used to support a laptop computer 30 as shown in FIG. 4, for example. Even though the desk space is described for supporting a laptop computer, other items may be supported in lieu of a computer, such as a notebook, for example. An example length of the support arms 26 is about 12 inches. Of course this length can vary depending on the intended application, as readily appreciated by those skilled in the art. Although the illustrated support handles 26 are on the outside of the telescoping sections 14, they may be placed between the telescoping sections in other embodiments.

[0033] Referring now to FIGS. 5 and 6, the outer and inner handles 22 and 24, the telescoping sections 14 and the support arms 26 without the case 12 will now be discussed in greater detail. The telescoping sections 14 may also be made out of metal, such as aluminum, for example. The inner handle 22 is coupled to exposed ends of the telescoping sections 14. Screws 38 or other fastening devices are used to secure the inner handle 22 to the telescoping sections 14. The inner handle 22 does not rotate, but travels up and down between with the telescoping sections 14 between the retracted position and the extended position.

[0034] The outer handle 24 encloses the inner handle 22. The outer handle 24 includes an upper half 24(1) and a lower half 24(2) that are joined together. The inner and outer handles 22, 24 may be made out of plastic, for example. In this case, the upper and lower halves 24(1), 24(2) of the outer handle 24 are joined together by welding, i.e., heat sealing, as readily appreciated by those skilled in the art. Alternatively, fastening devices such as screws may be used to secure the two halves 24(1), 24(2) together.

[0035] The support arms 26 are coupled to the lower half 24(2) of the outer handle 24 using screws or other fastening devices. The support arms 26 may be made out of plastic or metal. The metal may be aluminum, for example.

[0036] The outer handle 24 and support arms 26 are rotatable with respect to the inner handle 22 and telescoping sections 14. The rotation is between a stowed position defined by the support arms 26 being aligned with the telescoping sections 14, and a deployed position defined by the support arms 26 extending outwards from the telescoping sections 14. The deployed position provides the desired desk space for supporting a laptop computer 30, for example. The range of
rotation of the support arms may be within 75 to 100 degrees, with a preferred rotation being about 90 to 95 degrees.

0037] A spring activated locking mechanism is used for locking the outer handle 24 in the stowed and deployed positions. The spring activated locking mechanism includes an actuator 40 that extends into an elongated slotted opening 42 in the inner handle 22. Springs or similar tension producing devices are not shown, but are positioned within the slotted opening 42 so that the actuator 40 provides tension away from the inner handle and towards the outer handle 24.

0038] In a resting position, lower edges 44 of the actuator 40 contacts the upper surfaces of the telescoping sections 14. The outer handle 24 includes first and second spaced apart openings 50 and 52. A first button 60 is within the first opening 50 that is aligned with the upper edge 46 of the actuator 40 when the outer handle is rotated in the stowed position. A second button 62 is within the second opening 52 that is aligned with the upper edge 46 of the actuator 40 when the outer handle 24 is rotated in the deployed position.

0039] Both of the first and second buttons 60, 62 rotate when the outer handle 24 rotates. As illustrated in FIG. 5, the support arms 26 are in the stowed position. In the stowed position, the first button 60 is aligned with the upper edge 46 of the actuator 40. Pressure by the locking mechanism on the first button 60 into the first opening 50 is what locks the support arms 26 in the stowed position.

0040] To move the support arms 26 from the stowed position to the deployed position, the first button 60 is pressed, which in turn pushes down against the actuator 40. This allows the outer handle 26 to be rotated with the first button 60 until the second button 62 is aligned with the upper edge 46 of the actuator 40. At this point, the second button 62 is locked into place by the pressure exerted by the upper edge 46 of the actuator 40, as illustrated in FIG. 4. As with the first button 60, pressure by the locking mechanism on the second button 62 into the second opening 52 is what locks the support arms 26 in the deployed position.

0041] A more detailed view of the actuator 40 is provided in FIG. 7. The actuator 40 may be made out of plastic or metal. The metal may be aluminum, for example. The lower edges 44 and a lowest edge 45 of the actuator 40 are positioned in the elongated slotted opening 42 in the inner handle 22. The actuator 40 includes a pair of spaced apart protrusions 47 for engaging an underside of the outer handle 24 when the support arms 26 are locked in either the stowed or deployed positions. The actuator 40 is shaped so that the springs push against the lowest edge 45 of the actuator 40 while the extensions 51 are able to contact the exposed ends of the telescoping sections 14.

0042] The inner handle 22 is configured as a drum with an axle 23 extending outwards from each end, as shown in FIGS. 8 and 9. The elongated slotted opening 42 extends into the inner drum 22. The opening 42 is shaped to receive the extensions 51 from the actuator 40 as well as the lowest edge 45.

0043] As the actuator 40 is pressed downwards by either the first or second buttons 60 and 62, the spring tension associated with the actuator within the slotted opening 42 gives way so that the lower edges 44 contact the telescoping sections 14. This advantageously allows the telescoping sections 14 to be unlocked or released so that they can be moved between the retracted or extended position. The telescoping sections 14 may operate on a ball bearing type release, as readily appreciated by those skilled in the art.

0044] The underside of the inner handle 22 includes openings for receiving the ends of the telescoping sections 14. Screws 38 or other fastening devices are used to secure the inner handle 22 to the telescoping sections 14.

0045] The outer handle 24 will now be discussed in greater detail. Perspective top and bottom views of the upper half 24(1) of the outer handle 24 is provided in FIGS. 10 and 11. Perspective top and bottom views of the lower half 24(2) of the outer handle 24 is provided in FIGS. 12 and 13.

0046] When the inner handle 22 is positioned within the upper and lower halves 24(1), 24(2) of the outer handle 24, the axle 23 extending outwards from each end of the inner handle 22 is positioned within the grooves 67 in the upper half 24(1) and in grooves 69 in the lower half 24(2). In other words, the outer handle 24 rotates about axles 23 of the inner handle 22.

0047] The support arms 26 are positioned through the openings 61 in the lower half 24(2) of the outer handle 24, and extend into the openings 63 within the underside of the upper half 24(1) of the outer handle 24. When the outer handle 24 rotates, then the support arms rotate accordingly. Rotation of the support arms 26 with respect to the telescoping sections 14 is within 75 to 100 degrees, as noted above, with a preferred rotation being about 90 to 95 degrees. The actual degree of rotation can be changed based on positioning of the first and second openings 50, 52 for the first and second buttons 60, 62.

0048] The lower half 24(2) of the outer handle 24 includes slots 65 to allow room for the telescoping sections 14 during rotation. The underside of the upper half 24(1) of the outer handle 24 includes ridges 71. The first or second button 60, 62 that is engaging the actuator 40 is depressed so that the upper surface 64 thereof is below the inside surface of the upper half 24(1) of the outer handle. This allows the handle 24 to be rotated. The size and shape of the upper surface 64 of the first and second buttons 60, 62 correspond to the size and shape of the first and second openings 50, 52 in the outer handle 24. During the rotation, the button 60 or 62 slides over the ridges 71. FIGS. 14 and 15 are perspective top and bottom views of one of the buttons 60. The buttons 60, 62 are identical and may be formed out of rubber or plastic, for example.

0049] In another embodiment, the support arms 26 rotate independently from one another. In addition, the support arms 26 may rotate while the outer drum 24 remains stationary. In this embodiment, separate locking mechanisms would be required, one for each arm 26. The support arms would be connected at the ends of the outer drum 24.

0050] In yet another embodiment, the support arms 26 are replaceable should they become broken. As illustrated in FIG. 16, the support arm 26 comprises a first section 90' that remains attached to the outer handle 24, and a second section 92' that detachably engages the first section. The second section 92' includes a tip that extends into the first section 90'. The second section 92' is released from the first section 90' by pressing on the retention release 94'. A retention release may also be positioned on the opposite side.

0051] To keep the laptop computer 30 from slipping off the support arms 26, the outer edges of each support arm includes a lip 96' that allows the computer to rest there against.

0052] In addition, the case 12 includes a pair of spaced apart support bars for providing support and balance when the support arms 26 are supporting the laptop computer 30. Although not illustrated, the support bars may be integrated into the fabric of the case 12, and attach between the base and the backside of the case. Consequently, the support bars are
on the outer edges of the luggage and also provide protection for items in the luggage. Opposite the pair of spaced apart wheels at the base of the luggage is a pair of spaced apart base supports. The base supports are typically polyurethane.

[0053] Many modifications and other embodiments of the invention will come to the mind of one skilled in the art having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is understood that the invention is not to be limited to the specific embodiments disclosed, and that modifications and embodiments are intended to be included within the scope of the appended claims.

That which is claimed is:
1. A portable luggage device comprising:
   a case having a bottom end, a top end, and first and second pairs of spaced apart walls extending between the bottom and top ends;
   a pair of spaced apart telescoping sections carried by said case and movable between a retracted position and an extended position;
   an inner handle coupled to exposed ends of said pair of spaced apart telescoping sections;
   an outer handle enclosing said inner handle; and
   a pair of spaced apart support arms coupled to said outer handle for supporting a laptop computer;
   said outer handle being rotatable with respect to said inner handle between a stowed position defined by said pair of spaced apart support arms being aligned with said pair of spaced apart telescoping sections, and a deployed position defined by said pair of spaced apart support arms extending outwards from said pair of spaced apart telescoping sections.
2. The portable luggage device according to claim 1 further comprising a locking mechanism carried by said inner handle for locking said outer handle in the stowed and deployed positions.
3. The portable luggage device according to claim 2 wherein said outer handle includes first and second spaced apart openings, and comprises:
   a first button within the first opening that is in contact with said locking mechanism when said outer handle is rotated in the stowed position; and
   a second button within the second opening that is in contact with said locking mechanism when said outer handle is rotated in the deployed position.
4. The portable luggage device according to claim 3 wherein said locking mechanism comprises a spring-activated locking mechanism; and wherein rotation of said outer handle between the stowed and deployed positions is initiated by pressing said first or second button that is in contact with said spring-activated locking mechanism.
5. The portable luggage device according to claim 4 wherein said outer handle has a curved inner surface between said first and second buttons so that as said outer handle is rotated said spring-activated locking mechanism slides along the inner surface until contacting said first or second button that was not in contact with said spring-activated locking mechanism.
6. The portable luggage device according to claim 3 wherein said outer handle comprises a first button retaining area and a second button retaining area so that as said outer handle is rotated between the stowed and deployed positions, said first and second buttons remain in their respective retaining areas.
7. The portable luggage device according to claim 2 wherein the first and second spaced apart openings in said outer handle are spaced about 90 degrees apart.
8. The portable luggage device according to claim 2 wherein said locking mechanism contacts the exposed ends of said pair of spaced apart telescoping sections for initiating movement between the retracted and extended positions.
9. The portable luggage device according to claim 1 wherein said pair of spaced apart telescoping sections is positioned between said pair of spaced apart support arms.
10. The portable luggage device according to claim 1 further comprising a pair or spaced apart wheels carried by said case adjacent the bottom end thereof.
11. The portable luggage device according to claim 1 wherein said support arms extend outwards from said pair of spaced apart telescoping sections within a range of about 75 to 100 degrees.
12. The portable luggage device according to claim 1 wherein said support arms rotate at a same time between the stowed and deployed positions.
13. A luggage device comprising:
   a case;
   a pair of spaced apart telescoping sections carried by said case and movable between a retracted position and an extended position;
   an inner handle coupled to ends of said pair of spaced apart telescoping sections;
   an outer handle enclosing said inner handle;
   a pair of spaced apart support arms coupled to said outer handle;
   said outer handle being rotatable with respect to said inner handle between a stowed position defined by said pair of spaced apart support arms being aligned with said pair of spaced apart telescoping sections, and a deployed position defined by said pair of spaced apart support arms extending outwards from said pair of spaced apart telescoping sections; and
   a locking mechanism carried by said inner handle for locking said outer handle in the stowed and deployed positions.
14. The luggage device according to claim 13 wherein said outer handle includes first and second spaced apart openings, and comprises:
   a first button within the first opening that is in contact with said locking mechanism when said outer handle is rotated in the stowed position; and
   a second button within the second opening that is in contact with said locking mechanism when said outer handle is rotated in the deployed position.
15. The luggage device according to claim 14 wherein said locking mechanism comprises a spring-activated locking mechanism; and wherein rotation of said outer handle between the stowed and deployed positions is initiated by pressing said first or second button that is in contact with said spring-activated locking mechanism.
16. The luggage device according to claim 15 wherein said outer handle has a curved inner surface between said first and second buttons so that as said outer handle is rotated said spring-activated locking mechanism slides along the inner surface until contacting said first or second button that was not in contact with said spring-activated locking mechanism.
17. The luggage device according to claim 14 wherein said outer handle comprises a first button retaining area and a second button retaining area so that as said outer handle is...
rotated between the stowed and deployed positions, said first and second buttons remain in their respective retaining area.

18. The luggage device according to claim 14 wherein the first and second spaced apart openings in said outer handle are spaced about 90 degrees apart.

19. The luggage device according to claim 13 wherein said locking mechanism contacts the exposed ends of said pair of spaced apart telescoping sections for initiating movement between the retracted and extended positions.

20. The luggage device according to claim 13 further comprising a pair or spaced apart wheels carried by said case.

21. The luggage device according to claim 13 wherein said pair of spaced apart support arms extend outwards from said pair of spaced apart telescoping sections within a range of about 75 to 100 degrees.

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