HARD-SIDED EXPANDABLE SUITCASE

Inventor: Haroon Sheikh, Weston, FL (US)
Assignee: Heys (USA), Inc., Weston, FL (US)
Appl. No.: 12/982,493
Filed: Dec. 30, 2010

Related U.S. Application Data
Provisional application No. 61/299,727, filed on Jan. 29, 2010.

Publication Classification
Int. Cl.
A45C 7/00 (2006.01)
A45C 5/03 (2006.01)
A45C 5/14 (2006.01)
A45C 13/00 (2006.01)

U.S. CL. 190/18 A; 190/103; 190/115; 190/119

ABSTRACT
A hard-sided suitcase may include two polycarbonate composite or other hard shells, and a polycarbonate composite or other expansion portion positioned between the two shells at approximately a midpoint of a depth of the suitcase. A carrying handle may be attached to the polycarbonate composite expansion portion. An opening zipper may connect at least one of the polycarbonate composite shells to the polycarbonate composite expansion portion and provide access to one or more storage compartments. An expansion zipper may connect the polycarbonate composite expansion portion and the other of the polycarbonate composite shells. The expansion zipper may have a flexible gusset. A reinforcement frame may be connected to the polycarbonate composite expansion portion such that the polycarbonate composite expansion portion can bear the weight of the hard-sided suitcase when lifted by the carrying handle. The reinforcement frame may be a honeycomb plastic frame and enclosed by a fabric material.
MANUFACTURE TWO HARD SHELLS 402

MANUFACTURE EXPANSION PORTION 404

MANUFACTURE AND ATTACH CARRYING HANDLE TO EXPANSION PORTION 406

MANUFACTURE AND ATTACH OPENING ZIPPER 408

MANUFACTURE AND ATTACH EXPANSION ZIPPER 410

MANUFACTURE AND ATTACH REINFORCEMENT FRAME 412

FIG. 4
HARD-SIDED EXPANDABLE SUITCASE
CROSS-REFERENCE TO RELATED APPLICATION AND PRIORITY


FIELD OF THE INVENTION

[0002] The present application relates to luggage, and more particularly to a hard-sided suitcase that is expandable.

BACKGROUND

[0003] Currently, consumers have a variety of different options when it comes to luggage for their personal belongings and/or other articles. For example, consumers can use suitcases, briefcases, computer cases, beauty cases, business cases, travel bags, and host of other types of cases. People often spend considerable resources to ensure that they have suitcases which are both durable and stylish. However, in addition to desiring a suitcase which is both durable and stylish, people also seek suitcases which provide a significant amount of storage space and compartments, without being cumbersome and unwieldy. Many available suitcases come in a variety of sizes which feature a plurality of pockets and storage compartments.

[0004] Soft-sided suitcases have been provided in expandable versions, however once a soft-sided suitcase has been expanded to fit in extra clothing and other belongings, it may not be possible to compress them back to their original size because of the stresses that this puts on the fabric that forms the suitcase. This means that the suitcase may have to be carried in the expanded state, which may mean that the suitcase no longer meets an airline size requirements, or that the carrying handles become offset with respect to the center of weight of the suitcase, making the case unwieldy to carry. However, hard-sided suitcases have generally been successfully expandable. Currently available hard-sided suitcases have thus often had to be provided in larger sizes to ensure larger storage capacities, which may result in a suitcase which may be inconveniently large for many consumers. Additionally, larger hard-sided suitcases may weigh an unacceptably high amount, even while empty, which can use up too much of an airline weight restriction amount for the luggage.

[0005] It is desirable to provide expandable hard-sided suitcases in novel configurations.

SUMMARY

[0006] A hard-sided suitcase may include a number of hard shells for forming a main storage compartments. An expansion portion, such as a polycarbonate composite expansion portion, may be positioned between two hard shells and may include a carrying handle. An opening zipper may connect one or both of the shells to the expansion portion and provide access to the main storage compartment. An expansion zipper or other zipper may connect the expansion portion with the two hard shells. A reinforcement frame may be connected to the expansion portion such that the expansion portion may bear the weight of the hard-sided suitcase when lifted by the carrying handle.

[0007] In one aspect, a hard-sided suitcase may be provided. The hard-sided suitcase may include two or more polycarbonate composite shells, and a polycarbonate composite or other expansion portion positioned between two shells at approximately a midpoint of a depth of the suitcase. At least one carrying handle may be attached to the polycarbonate composite expansion portion. An opening zipper may connect at least one of the polycarbonate composite shells to the polycarbonate composite expansion portion and provide access to the one or more storage compartments of the storage suitcase. An expansion zipper may connect the polycarbonate composite expansion portion and the other of the polycarbonate composite shells. The expansion zipper may include a flexible gusset. A reinforcement frame may be connected to the polycarbonate composite expansion portion such that the polycarbonate composite expansion portion may bear the weight of the hard-sided suitcase when lifted by the carrying handle.

[0008] In another aspect, a hard-sided suitcase may be provided. The hard-sided suitcase may include two hard shells configured to form a main storage compartment of the hard-sided suitcase; an expansion portion positioned between the two hard shells at approximately a midpoint of a depth of the hard-sided suitcase; and at least one carrying handle attached to the expansion portion. The hard-sided suitcase may further include an opening zipper connecting one of the two hard shells to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase, and an expansion zipper connecting the expansion portion and the other of the two hard shells. The expansion zipper may include a flexible gusset. The hard-sided suitcase may include a reinforcement frame connected to the expansion portion such that the expansion portion may bear the weight of the hard-sided suitcase when lifted by the carrying handle.

[0009] In another aspect, a hard-sided suitcase may be provided. The hard-sided suitcase may include a left hard shell and a right hard shell that together form a main storage compartment of the hard-sided suitcase; an expansion portion positioned between the left and right hard shells at approximately a midpoint of a depth of the suitcase; and at least one carrying handle attached to the expansion portion. The hard-sided suitcase may further include an opening zipper connecting the left hard shell to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase, and an expansion zipper connecting the expansion portion and the right hard shell. The expansion zipper may include a flexible gusset. The hard-sided suitcase may include a reinforcement frame connected to the expansion portion such that the expansion portion may be configured to bear the weight of the hard-sided suitcase when lifted by the carrying handle.

[0010] Advantages of the present invention will become more apparent to those skilled in the art from the following description of the preferred embodiments of the invention which have been shown and described by way of illustration. As will be realized, the invention is capable of other and different embodiments, and its details are capable of modification in various respects. Accordingly, the drawings and description are illustrative in nature and not restrictive.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] There are shown in the drawings arrangements which are presently discussed, it being understood, however,
that the invention is not limited to the precise arrangements and instrumentalities shown, wherein:

[0012] FIG. 1 depicts a hard-sided suitcase in a closed position featuring a honeycomb plastic frame according to another embodiment of the invention;

[0013] FIG. 2 depicts the hard-sided suitcase of FIG. 1 in an opened position;

[0014] FIG. 3 shows a plastic reinforcement frame according to the invention; and

[0015] FIG. 4 depicts a method manufacture and assembly of the hard-sided suitcase.

DETAILED DESCRIPTION OF THE INVENTION

[0016] The exemplary embodiments of the present disclosure are described with respect to a hard-sided suitcase for carrying and/or storing different types of articles. It should be understood by one of ordinary skill in the art that the exemplary embodiments of the present disclosure can be applied to other types of hard-sided suitcases. Referring to the drawings, an embodiment of a hard-sided suitcase 10 for storing articles is illustrated. Notably, the suitcase can comprise a variety of different types of luggage. For example, the suitcase can be a traditional suitcase, a briefcase, a laptop bag, a case, a computer bag, a business case, a travel bag, a beauty case, or a variety of other types of luggage. Of course, the aforementioned types of suitcases are merely for illustrative purposes and are not intended to limit the suitcase to the listed varieties.

[0017] The hard-sided suitcase 10 can include front, back, side, and top and bottom portions. The suitcase 10 can include two hard-sided shells 20, which can be utilized to form one or more storage compartments for the hard-sided suitcase 10. Outer portions of the hard-sided shells can form at least a portion of the front, back, sides, top and bottom portions. The inner portions of the hard-sided shells can be lined with various types of fabrics or other similar features and can include one or more pockets, which can be open and closed through zipper mechanisms or other mechanisms for opening and closing pockets. The two hard-sided shells can be utilized to form a primary compartment. One or more other hard-sided shells can be utilized to form secondary compartments as well.

[0018] Notably, the shells 20 can be comprised of a thermoplastic composition or other similar composition. In an embodiment, the shells can be comprised of a polycarbonate composition, which can include adding one or more other substances to the composition such as ABS plastic. The polycarbonate composition can enable the shells to be flexible, while maintaining a generally rigid form. When stressors are applied to the shells, the polycarbonate composition can allow the shells to absorb the impact from the stressors and cause the shells to flex to accommodate the stressors. After the stressors have been remove, the polycarbonate composition can enable the suitcase to return to its original shape.

[0019] The hard-sided shells 20 can be connectable to one another through the use of an opening zipper 30 or other fastening mechanism such as, but not limited to, snap fasteners, buttons, and buckles. Each side of the zipper 30 can include a plurality of metal or plastic teeth, which can be stitched or otherwise attached to corresponding pieces of fabric tape. The fabric tape can be comprised of ballistics nylon or other similar materials. One fabric tape can be stitched or otherwise fastened to an edge of one of the hard-sided shells and the other fabric tape can be fastened to an edge of another hard-sided shell. The zipper 30 can include one or more sliders 35, which can be configured to hold at least a portion of the plurality of teeth on each side of the zipper mechanism. Once the slider 35 is slid across the plurality of teeth, it can be utilized to connect the edges of the hard-sided shells together, which forms a seal for the storage compartments within the shells.

[0020] In one embodiment, the zipper 30 can be slid across the entire edges of the hard-sided shells 20. Such a configuration would allow the compartments to be entirely or almost entirely separated upon completely unzipping the edges from one another. However, in another embodiment, the suitcase can have a hinge 40, preferably along the bottom portion of the suitcase. The hinge can permanently connect at least a portion (such as the bottom portion) of the edges of the hard-sided shells together. The remaining portions of the edges that are not connected by the hinge can be connectable via the zipper mechanism. By utilizing the hinge, this can allow the hard-sided shells to remain at least partially connected to one another, particularly in the event that the zipper mechanism fails. In some arrangements, the hinge can be formed of a hard nylon, or plastic material.

[0021] The suitcase 10 can include one or more handles for carrying, pulling, pushing and/or lifting the suitcase. The handles can include a rigid, telescoping handle 50 which may have a push button lock. The telescoping handle 50 can be connected to a top portion or other portion of a hard-sided shell so as to allow for easy transportation of the suitcase. The handle can include trolley tubes, which can be extended through a portion of the hard-sided shell to which it is attached. This allows for additional structural support and allows the handle to undergo a greater amount of stress.

[0022] In one embodiment, the trolley tubes can be encased within the storage compartment into a protrusion along the backside of the hard-sided shell. The encasing can be performed laying a fabric, plastic, or other material across the trolley tubes so as to ensure the flat surface. Once the trolley tubes are encased, a flat surface can be created across the trolley tubes. This allows one to pack the compartment of the suitcase without having to pack around the trolley tubes, while also ensuring a more uniform compartment space. One or more carry handles 60 may also be included. For example, on a large suitcase two carry handles 60 may be provided, one on the top of the suitcase 10 and one on a side thereof.

[0023] The suitcase 10 can also be configured to include a plurality of wheels 70 for transporting the suitcase. In one configuration, two wheels 70 can be connected to a bottom portion of a hard-sided shell, preferably along the opposite ends of the bottom of the shell. In another configuration, another set of wheels can be connected to a bottom portion of another hard-sided shell so as to allow for four wheels positioned at the four ends of the bottom of the suitcase.

[0024] Any number of wheels and any position for placement of the wheels can be utilized as well. For example, one wheel can be placed on a bottom portion of one hard-sided shell and two wheels can be placed on a bottom portion of another hard-sided shell. Such a positioning allows for greater stability and for easier transportation of the suitcase 10. In an embodiment, the wheels can be plated with chrome or another similar material. Plating the wheels with chrome or other similar materials can enable the wheels to rotate along a variety of surfaces in a smooth and easy motion by minimizing friction and drag along the surfaces. In another embodiment, the wheels may be hub cap plated. The wheels
may be manufactured from rubber, nylon, plastic, metal, or other materials. The wheels may have packed or other types of bearings to facilitate rotation.

[0025] The suitcase 10 can be configured to have one or more expandable portions 80, which can be utilized to expand one or more storage compartments of the suitcase. The expansion portion 80 can comprise a fabric expansion gusset 84 and a polycarbonate composite expansion shell portion 86. The gusset 84 can be made of ballistic nylon or other similar materials, particularly materials which allow for flexibility. The expansion shell portion 86 can be connected to at least one of the hard-sided shells 20 at an edge of the shell 20. Notably, the expandable portion 80 can be secured in a non-expanded state by utilizing an expansion zipper 90 or other similar securing mechanism, which is connected between an edge of one shell 20 and the expansion shell portion 86 with the expansion gusset between the two sides of the zipper 90.

[0026] When an individual pulls a slider 95 to open the expansion zipper 90, the expandable portion expands so as to increase the storage capacity of the suitcase. For example, the expandable portion 80 may allow the storage capacity of the suitcase to be increased by 10-25%. If the individual would like to return the suitcase to its original size, the individual can close the zipper 90 using its slider mechanism 95, if necessary while applying force or sitting on one of the shells 20. This enables the two shells 20 to compress the contents of the suitcase down to a smaller size if desired, or the user can travel with the suitcase 10 in the expanded configuration.

[0027] The expansion shell portion 86 can include a honeycomb or other plastic frame portion 100, which can be positioned on an interior side of the expansion shell portion 86. The frame 100 can be screwed and/or riveted to the polycarbonate expansion shell portion 86, and can be covered with a nylon or other fabric lining so as to hide the frame from direct view. The frame portion 100 may provide additional strength to the expansion shell portion 86.

[0028] Notably, the expansion shell portion 86 is located at approximately the midpoint of the width of the suitcase 10, and supports at least one of the carry handles 60, preferably supporting two carry handles 60, one on the top of the suitcase and one on the side of the suitcase. This provides several advantages. First, the expandable portion 80 and the shell 20 to which it is attached form a deep receptacle for packing clothes into. This makes for easier packing and closing of the suitcase 10 than with a suitcase formed of two equally-sized shell portions. Second, the carry handles 60 can be provided at the midpoint of the suitcase, which makes for easier weight distribution and carrying of the suitcase. Such positioning of the handle allows an even-balanced, level lift of the suitcase when an individual decides to transport the suitcase. The frame portion 100 attached to the expansion shell portion 86 provides sufficient strength to prevent buckling of the expansion shell portion 86 as the weight of the suitcase is carried by the carry handle 60.

[0029] In an embodiment, the suitcase 100 can include a locking mechanism for preventing unauthorized access to one or more compartments of the suitcase. The locking mechanism can be a conventional lock and key mechanism, a combination lock, a key code lock, a radio frequency identification lock, or other types of locks. Additionally, the locking mechanism can be a biometric lock, which, for example, can be configured to read fingerprints or other physical identifiers.

[0030] In an embodiment, aluminum side frames can be attached to the outside of the suitcase 10, both for a decorative look and to protect the edges of the suitcase from knocks during transit. Other side frames may be used, including those made from other types of metal or other materials.

I. Exemplary Embodiments

[0031] In one embodiment, the hard-sided suitcase may include two hard shells configured to together form a main storage compartment of the hard-sided suitcase; an expansion portion positioned between the two hard shells at approximately a midpoint of a depth of the suitcase; and at least one carrying handle attached to the expansion portion. The hard-sided suitcase may further include an opening zipper connecting one of the two hard shells to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase, and an expansion zipper connecting the expansion portion and the other of the two hard shells. The expansion zipper may include a flexible gusset or other expandable portion. The hard-sided suitcase may include a reinforcement frame connected to the expansion portion such that the expansion portion may bear the weight of the hard-sided suitcase when lifted by the carrying handle. The reinforcement frame may be a honeycomb plastic frame that is enclosed by a fabric material. The reinforcement frame may be attached to the expansion portion to re-enforce the expansion portion during use.

[0032] In another embodiment, the hard-sided suitcase may include a left hard shell and a right hard shell configured to form a main storage compartment of the hard-sided suitcase; an expansion portion positioned between the left and right hard shells at approximately a midpoint of the depth of the suitcase; and at least one carrying handle attached to the expansion portion. The hard-sided suitcase may further include an opening zipper connecting the left hard shell to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase, and an expansion zipper connecting the expansion portion and the right hard shell. The hard-sided suitcase may include a reinforcement frame connected to the expansion portion such that the expansion portion may be configured to bear the weight of the hard-sided suitcase when lifted by the carrying handle.

[0033] The expansion zipper may include a flexible gusset or other expandable portion. The reinforcement frame may be a honeycomb plastic or other frame that is enclosed by a fabric material. The reinforcement frame may be screwed or riveted to the expansion portion and the expansion portion may be manufactured from a polycarbonate based composite or other material. The hard-sided suitcase may include a hinge between the left hard shell and the expansion portion to facilitate opening the hard-sided suitcase. The hard-sided suitcase may include wheels that may be hub cap plated. The left and right hard shells may be manufactured from a polycarbonate based or other material. The hard-sided suitcase may include additional, fewer, or alternate components, including those discuss elsewhere herein.

II. Exemplary Method of Manufacture and Assembly

[0034] FIG. 4 illustrates an exemplary method of manufacture and assembly of a hard-sided suitcase 400. The method 400 may include manufacturing two hard shells 402, manufacturing an expansion portion 404, manufacturing and attaching a carrying handle to the expansion portion 406, manufacturing and attaching an opening zipper 408, manufacturing and attaching an expansion zipper 410, and manu-
facturing and attaching a reinforcement frame 412. The method may include additional, fewer, or alternate actions.

[0035] The method 400 may include manufacturing two hard shells 402. The two hard shells may be configured to form a main storage compartment of the hard-sided suitcase. For instance, a right hard shell and a left hard shell, or a top hard shell and a bottom hard shell, may be manufactured to form a main storage compartment. The hard shells may be manufactured from ABS plastic, PVC, metal, plastic, forms of thermoplastic, polycarbonate, or any combination thereof or any combination of other plastics known in the art.

[0036] The hard shells may be smooth and configured to be devoid of sharp corners. The hard shells may retain their shape during use and/or when the suitcase is empty. In one embodiment, one of the hard shells is configured to be larger than the other, such as a top hard shell being smaller than a larger bottom hard shell. Alternatively, the two hard shells may be configured to have the same or substantially the same shape and/or storage capacity.

[0037] Either or both of the hard shells may have an embedded or otherwise attached locking mechanism for locking the hard shells together, and then unlocking the hard shells. The locking mechanism may be operated by manually entering a code, by key, by finger print reader, or other means.

[0038] The method 400 may include manufacturing an expansion portion 404. The expansion portion may be positioned between the two hard shells at approximately a midpoint of a depth of the suitcase. The expansion portion may be positioned at other locations with respect to the depth of the suitcase. The expansion portion may include a fabric portion and a shell portion. The fabric portion may be manufactured from flexible and/or soft material, such as nylon or other suitcase material. The shell portion may be manufactured from ABS plastic, PVC, metal, plastic, forms of thermoplastic, polycarbonate, or any combination thereof or any combination of other plastics known in the art.

[0039] The shell portion may have a width of between approximately 0.25 inches and approximately 3.0 inches. In one embodiment, the shell portion may have a width of between approximately 1.0 inch and approximately 2.0 inches. The shell portion may have a thickness of between approximately 0.1 and approximately 0.4 inches. Other widths and thicknesses may be used.

[0040] The method 400 may include manufacturing and attaching at least one carrying handle to the expansion portion 406. A carrying handle may be attached to the expansion portion, such as to the shell portion of the expansion portion. The carrying handle may be manufactured wholly or partially from ABS plastic, PVC, metal, plastic, forms of thermoplastic, polycarbonate, or any combination thereof or any combination of other plastics known in the art. The carrying handle may be riveted, screwed, or otherwise firmly attached to the shell portion and/or the expansion portion.

[0041] The method 400 may include manufacturing and attaching an opening zipper 408 to the hard-sided suitcase. The opening zipper may be an expandable or other zipper arrangement. The opening zipper may be stitched or otherwise attached to one or both of the hard shells. For example, the opening zipper may be stitched directly to one or both of the hard shells. Alternatively, the opening zipper may be stitched directly to one of the hard shells and directly or indirectly to the expansion portion. The zipper arrangement may be stitched directly to a frame or rim extended around the exterior of either or both of the hard shells and/or the expansion portion.

[0042] In one embodiment, the opening zipper may directly or indirectly connect one of the two hard shells to the expansion portion and provide access to the main storage compartment of the hard-sided suitcase. In another embodiment, the opening zipper arrangement may include an expandable zipper arrangement or gusset section that expands the size of the main storage container during use.

[0043] The method 400 may include manufacturing and attaching an expansion zipper 410 to the hard-sided suitcase. The expansion zipper may connect the expansion portion and the other of the two hard shells. The expansion zipper may be configured to have a flexible gusset or other flexible and/or expandable attachment.

[0044] The expandable zipper may be similar to the opening zipper, and may be stitched or otherwise attached to one or both of the hard shells. For example, the expandable zipper may be stitched directly to one or both of the hard shells. Alternatively, one side of the expandable zipper may be stitched directly or indirectly to one of the hard shells, and the other side of the expandable zipper may be stitched directly or indirectly to the expansion portion. The expandable zipper arrangement may be stitched directly to a frame or rim extended around the exterior of either or both of the hard shells and/or the expansion portion.

[0045] In one embodiment, the opening zipper may be located between a first hard shell and the expansion portion, and on the other hand, the expandable zipper may be located between the expansion portion and a second hard shell. Other configurations may be used, including those with additional, fewer, or alternate components.

[0046] The method 400 may include manufacturing and assembling a reinforcement frame 412 to re-enforce the expansion portion and/or the shell portion of the expansion portion. The reinforcement frame may be connected to the expansion portion such that the expansion portion is configured to bear the weight of the hard-sided suitcase when lifted by the carrying handle during use.

[0047] In one embodiment, the shell portion of the expansion portion may include a honeycomb or other plastic reinforcement frame portion. The honeycomb plastic reinforcement frame portion may be on an interior side of the shell portion. The reinforcement frame may be screwed, riveted, glued, bolted, or otherwise directly or indirectly attached to the shell portion.

[0048] The reinforcement frame may be approximately square or rectangular in shape. The reinforcement frame may be a frame extending around the exterior of the suitcase. The width of the reinforcement frame may be between approximately 0.25 inches and approximately 3.0 inches. In one embodiment, the reinforcement frame may have a width of between approximately 1.0 inch and approximately 2.0 inches. The width of the reinforcement frame may be the same or approximately the same as the shell portion.

[0049] The reinforcement frame may have a thickness of between approximately 0.1 and approximately 2.0 inches. In one embodiment, the reinforcement frame may have a thickness of between approximately 1.0 inch and approximately 2.0 inches. Thickness of the reinforcement frame may extend into the interior of the hard-sided suitcase. In one embodiment, the
width and the thickness of the reinforcement frame are the same or approximately the same. Other widths and thicknesses may be used.

[0050] The reinforcement frame may be covered with a nylon or other fabric lining so as to hide the frame from direct view. The fabric lining covering the reinforcement frame may have a zipper arrangement to facilitate assembly and the covering of the reinforcement frame with a fabric material. The reinforcement frame portion may provide additional strength to the shell portion, and in turn the expansion portion.

[0051] The arrangements described herein are intended to provide a general understanding of the structure of various embodiments, and they are not intended to serve as a complete description of all the elements and features of apparatus and systems that might make use of the structures described herein. Many other arrangements will be apparent to those of skill in the art upon reviewing the above description. Other arrangements may be utilized and derived therefrom, such that structural and logical substitutions and changes may be made without departing from the scope of this disclosure. Figures are also merely representational and may not be drawn to scale. Certain proportions thereof may be exaggerated, while others may be minimized. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

[0052] Thus, although specific arrangements have been illustrated and described herein, it should be appreciated that any arrangement calculated to achieve the same purpose may be substituted for the specific arrangement shown. This disclosure is intended to cover any and all adaptations or variations of various embodiments and arrangements of the invention. Combinations of the above arrangements, and other arrangements not specifically described herein, will be apparent to those of skill in the art upon reviewing the above description.

[0053] Therefore, it is intended that the disclosure not be limited to the particular arrangement(s) disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments and arrangements falling within the scope of the appended claims.

What is claimed is:

1. A hard-sided suitcase, the hard-sided suitcase comprising:
   - at least two polycarbonate composite shells for forming one or more storage compartments of the hard-sided suitcase;
   - a polycarbonate composite expansion portion positioned between the two polycarbonate composite shells at approximately a midpoint of a depth of the suitcase;
   - at least one carrying handle attached to the polycarbonate composite expansion portion;
   - an opening zipper connecting at least one of the polycarbonate composite shells to the polycarbonate composite expansion portion and providing access to the one or more storage compartments of the storage suitcase;
   - an expansion zipper connecting the polycarbonate composite expansion portion and the other of the polycarbonate composite shells, the expansion zipper provided with a flexible gusset therein; and
   - a reinforcement frame connected to the polycarbonate composite expansion portion such that the polycarbonate composite expansion portion can bear the weight of the hard-sided suitcase when lifted by the carrying handle.

2. The hard-sided suitcase of claim 1, the hard-sided suitcase further comprising a hinge between (a) one of the at least two polycarbonate composite shells for forming one or more storage compartments of the hard-sided suitcase, and (b) the polycarbonate composite expansion portion to facilitate opening the hard-suited suitcase.

3. The hard-sided suitcase of claim 1, wherein the reinforcement frame is a honeycomb plastic frame.

4. The hard-sided suitcase of claim 3, wherein the reinforcement frame is enclosed by a fabric material, and the reinforcement frame has a width of between approximately one inch and approximately two inches, and a thickness of between approximately one inch and approximately two inches.

5. The hard-sided suitcase of claim 3, wherein the reinforcement frame is screwed or riveted to the polycarbonate composite expansion portion.

6. The hard-sided suitcase of claim 1, the hard-sided suitcase further comprising wheels, the wheels being hub cap plated.

7. A hard-sided suitcase having a re-enforced expansion portion, the hard-sided suitcase comprising:
   - two hard shells configured to form a main storage compartment of the hard-sided suitcase;
   - an expansion portion positioned between the two hard shells at approximately a midpoint of a depth of the suitcase;
   - at least one carrying handle attached to the expansion portion;
   - an opening zipper connecting one of the two hard shells to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase;
   - an expansion zipper connecting the expansion portion and the other of the two hard shells, the expansion zipper configured to have a flexible gusset; and
   - a reinforcement frame connected to the expansion portion such that the expansion portion is configured to bear the weight of the hard-sided suitcase when lifted by the carrying handle.

8. The hard-sided suitcase of claim 7, wherein the reinforcement frame is directly interconnected to the expansion portion, the expansion portion being manufactured from a polycarbonate composite.

9. The hard-sided suitcase of claim 8, wherein the reinforcement frame is a honeycomb plastic frame.

10. The hard-sided suitcase of claim 9, wherein the reinforcement frame is enclosed by a fabric material, and the reinforcement frame has a thickness of at least approximately one inch extending into the interior of the hard-sided suitcase.

11. The hard-sided suitcase of claim 7, the hard-sided suitcase further comprising a hinge between one of the two hard shells and the expansion portion that facilitates opening the hard-sided suitcase.

12. The hard-sided suitcase of claim 7, the hard-sided suitcase further comprising wheels, the wheels being hub cap plated.

13. The hard-sided suitcase of claim 7, wherein the two hard shells are manufactured from a polycarbonate based material.

14. A hard-sided suitcase having a re-enforced expansion portion, the hard-sided suitcase comprising:
   - a left hard shell and a right hard shell configured to form a main storage compartment of the hard-sided suitcase;
an expansion portion positioned between the left and right hard shells at approximately a midpoint of a depth of the suitcase;
at least one carrying handle attached to the expansion portion;
an opening zipper connecting the left hard shell to the expansion portion and providing access to the main storage compartment of the hard-sided suitcase;
an expansion zipper connecting the expansion portion and the right hard shell; and
a reinforcement frame connected to the expansion portion such that the expansion portion is configured to bear the weight of the hard-sided suitcase when lifted by the carrying handle.

15. The hard-sided suitcase of claim 14, wherein the expansion zipper includes a flexible gusset.

16. The hard-sided suitcase of claim 14, wherein the reinforcement frame is a honeycomb plastic frame and is enclosed by a fabric material.

17. The hard-sided suitcase of claim 14, wherein the reinforcement frame is mechanically attached to the expansion portion, the expansion portion being manufactured from a polycarbonate based composite.

18. The hard-sided suitcase of claim 14, the hard-sided suitcase further comprising a hinge between the left hard shell and the expansion portion that facilitates opening the hard-sided suitcase.

19. The hard-sided suitcase of claim 14, wherein the reinforcement frame has a width of between approximately one inch and approximately two inches, and a thickness of between approximately one inch and approximately two inches.

20. The hard-sided suitcase of claim 14, wherein the left and right hard shells are manufactured from a polycarbonate based material.