WEIGHT-BALANCED MODULAR CARRYING APPARATUS

Inventor: Shanley Giglio, Wauwatosa, WI (US)

Correspondence Address:
ABSOLUTE TECHNOLOGY LAW GROUP LLC
135 W. WELLS ST., SUITE 518
MILWAUKEE, WI 53203 (US)

Appl. No.: 12/794,892
Filed: Jun. 7, 2010

The present invention is a modular carrying apparatus for personal items and baby supplies that includes a plurality of separately attachable weight-balanced storage components which allow the apparatus to be carried with a shoulder strap.
### FIG. 5a

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (lbs)</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base (tote)</td>
<td>15</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Handbag</td>
<td>2</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Computer Bag</td>
<td>15</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Diaper bag</td>
<td>12.5</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Portfolio</td>
<td>5</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Weight (lbs)</strong></td>
<td><strong>49.5</strong></td>
<td><strong>17</strong></td>
<td><strong>17.5</strong></td>
</tr>
<tr>
<td><strong>Ratio (R:L)</strong></td>
<td></td>
<td><strong>1</strong></td>
<td><strong>1.03</strong></td>
</tr>
</tbody>
</table>

### FIG. 5b

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (lbs)</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base (tote)</td>
<td>15</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Handbag</td>
<td>2</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Computer Bag</td>
<td>15</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Diaper bag</td>
<td>12.5</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Portfolio</td>
<td>5</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Weight (lbs)</strong></td>
<td><strong>49.5</strong></td>
<td><strong>7</strong></td>
<td><strong>27.5</strong></td>
</tr>
<tr>
<td><strong>Ratio (R:L)</strong></td>
<td></td>
<td><strong>1</strong></td>
<td><strong>3.93</strong></td>
</tr>
</tbody>
</table>
WEIGHT-BALANCED MODULAR CARRYING APPARATUS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. 61/185,113 filed on Jun. 8, 2009.

FIELD OF INVENTION

[0002] The present invention relates to the field of carrying devices, in particular to a convertible carrying device which allows modular components to be stably attached and weight-balanced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] FIG. 1 illustrates an exemplary embodiment of a modular carrying apparatus in the closed position.
[0004] FIG. 2 illustrates an exemplary embodiment of a modular carrying apparatus in the open position.
[0005] FIG. 3 illustrates a perspective view of an exemplary embodiment of a modular carrying apparatus in the closed position.
[0006] FIG. 4 illustrates an exploded view of an exemplary embodiment of a modular carrying apparatus.
[0007] FIG. 5 illustrates an exemplary embodiment of a weight-balanced modular carrying apparatus.
[0008] FIG. 6 illustrates an exemplary embodiment of an unbalanced modular carrying apparatus.

GLOSSARY

[0009] As used herein, the term “modular carrying apparatus” refers to a device with selectively attachable weight-balanced storage components having storage functionality.
[0010] As used herein, the term “weight-balanced storage component” refers to an apparatus, case or compartment included within a modular carrying apparatus that may be selectively attached, detached, and removed, and which is adapted for the carrying and organizing of items. A weight-balanced storage component may be attached or secured with magnets, hook-and-eye fabric, hooks, snaps, closures, cords, clips, clasps, ties, zippers, or any other securing apparatus known in the art.
[0011] As used herein, the term “geometrically conformed” means multiple components that look like a single component. For example, a component may be geometrically conformed through means including, but not limited to the use of concealed attachment means, coordinating fabrics, and styling.
[0012] As used herein, the term “concealed” means disguised, hidden or not easily seen.
[0013] As used herein, the term “weight-balanced component” refers to a component capable of being adjusted to evenly balance or stabilize the weight of one or more weight-balanced storage components using a predetermined ratio which may or may not take into account the weight of the expected contents.
[0014] As used herein, the term “weight-balancing strap component” refers to a strap capable of balancing weight by being repositioned, lengthened, shortened, weighted or reinforced by the use of modular strap components.
[0015] As used herein, the term “weight-balancing ratio” refers to the ratio of weight of one weight-balanced storage component to another weight-balanced storage component.
[0016] As used herein, the term “base component” refers to the weight-balanced storage component against which weight is computed.
[0017] As used herein, the term “expected contents” refers to the items that are anticipated to be carried in a weight-balanced storage component.
[0018] Background
[0019] The global market for handbags, purses, briefcases, and diaper bags and other carrying accessories is in excess of 2 billion dollars per year, with high profit margins in niche and specialty fashion markets. In addition to fashion-motivated buying decisions, purchasers are motivated by functionality, i.e., convenient organizational and functional features.
[0020] Designers have focused on functionality in the past, but have yet to come up with a bag that has unlimited functionality and for which functionality can be easily altered, e.g., from a purse to a diaper bag.
[0021] Currently each type of accessory (e.g., a handbag and a diaper bag) is designed so that each device offers limited, traditional functionality. Women must carry multiple handbags, diaper bags, pet carriers and briefcases to make a coordinated fashion and functional choice.
[0022] It is desirable to have a fashionable item which combines the functionality of one or more carrying apparatuses (e.g., handbags, purses, briefcases, pet carrying devices and diaper bags) and which has structural components which allow the bag to be functionally altered.
[0023] It is further desirable to have components that can be securely attached and provide the balanced weight and stability of a single function bag.
[0024] It is further desirable to have a system of modular components that can be economically produced and modified for varying consumer tastes.

SUMMARY OF THE INVENTION

[0025] The present invention is a modular carrying apparatus for personal items and baby supplies that includes a plurality of separately attachable weight-balanced storage components which allow the apparatus to be carried with a shoulder strap or handle(s).
[0026] The apparatus utilizes a secure system of securing means and may take into account the expected weight of the contents of each storage component so that the apparatus is sufficiently weight-balanced and secure for ready transport. The securing means allow components to be easily attached and detached in seconds, and in some embodiments, with one hand. In addition, it is not necessary that a user see the attachment means in order to operate them.
[0027] As components are attached, the modular carrying apparatus retains its appearance as an integrated, singly-constructed unit. A strap(s) may be added or positioned as necessary to enhance the functionality of the apparatus and to stabilize and balance the weight of the modular carrying components.
[0028] In various embodiments, the modular apparatus may be placed upright on floors and counters and hung on hooks to be adapted for use in restrooms and other public environments. In various embodiments, the weight-balanced storage components of the modular carrying apparatus can be selectively attached and detached for use as a purse, diaper
bag and/or briefcase, and various components may increase the functionality or vary the appearance of the modular carrying apparatus.

DETAILED DESCRIPTION OF INVENTION

[0029] For the purpose of promoting an understanding of the present invention, references are made in the text to exemplary embodiments of a weight-balanced modular carrying apparatus, only some of which are described herein. It should be understood that no limitations on the scope of the invention are intended by describing these exemplary embodiments. One of ordinary skill in the art will readily appreciate that alternate but functionally equivalent designs, materials, and components may be used. The inclusion of additional elements may be deemed readily apparent and obvious to one of ordinary skill in the art. Specific elements disclosed herein are not to be interpreted as limiting, but rather as a basis for the claims and as a representative basis for teaching one of ordinary skill in the art to employ the present invention.

[0030] It should be understood that the drawings are not necessarily to scale; instead, emphasis has been placed upon illustrating the principles of the invention. In addition, in the embodiments depicted herein, like reference numerals in the various drawings refer to identical or near identical structural elements.

[0031] Moreover, the terms “substantially” or “approximately” as used herein may be applied to modify any quantitative representation that could permissibly vary without resulting in a change in the basic function to which it is related.

[0032] FIG. 1 is an exemplary system for modular carrying apparatus 100 that includes purse component 50 and childcare component 70. In the embodiment shown, both childcare component 70 and purse component 50 are in the closed position. In various embodiments, components may be of various weights having a relative ratio to one another, and may further include weight-balancing strap components which may be adjusted to balance the weight as weight-balanced storage components are selectively added and removed. Weight-balancing strap components may balance weight by being repositioned, lengthened, shortened, weighted or reinforced by the use of modular strap components which may be added for length and/or leverage.

[0033] Weight-balanced storage components may be selected based on their weight-balancing ratio, and are placed in a pre-designated position alongside a base component to balance the modular carrying apparatus.

[0034] In various embodiments, weight-balanced storage components may be constructed of leather, fabric, linen, wool, plastic, paper, rubber, resin, synthetic materials and combinations thereof and be comprised of materials and colors which blend and give the appearance of a structurally integrated carrying apparatus and may be of the same or dissimilar materials to achieve an aesthetic effect when attached. Various weight-balanced storage components of the modular carrying apparatus 100 may be sold, selected and or marketed separately.

[0035] In the embodiment shown in FIG. 1, purse component 50 is integrally and selectively attached to childcare component 70 by two or more hook and loop securing components 55a, 55b placed near the top of childcare component 70 at approximate opposite ends.

[0036] In the embodiment shown, hook 55a is attached on the external (outer surface) of childcare component 70 using a seam, pocket apertures, bolts, rivets or other means of attachment. Loop attachments 55b are fixedly attached to opposite upper ends of purse component 50 or a strap secured to purse component 50. Loop attachments 55b can be split rings that have an opening, claw hooks, carabiners, ring-type structures, or any other metal or plastic attachment means known in the art. In alternative embodiments, hook 55a and loop attachment 55b may be placed on alternate system components or in different positions. In still other embodiments, modular carrying apparatus 100 may have more, fewer or differently shaped or configured hook 55a and loop attachment 55b components or alternate means of temporary or permanent structural attachment.

[0037] In an exemplary embodiment, purse component 50 and childcare component 70 have concealed securing components 55a, 55b. For example, magnets (e.g., neodymium) may be used to secure purse component 50 and childcare component 70 together providing the appearance of a geometrically conformed modular carrying apparatus 100. Modular carrying apparatus 100 may further include concealment components (e.g., flaps or seams) add to the appearance of modular carrying apparatus 100.

[0038] It is contemplated that hook 55a and loop attachment 55b components (or such alternate structural components that may be used) allow purse component 50, childcare component 70, laptop component, pet carrier component and all other components to be selectively attached and detached in a secure manner involving limited manipulation and as few user steps as possible.

[0039] In an exemplary embodiment, each individual carrying component (e.g., purse component 50 and childcare component 70) is weight-balanced based on its intended items. In addition, carrying components may include sub-compartments for holding and securing specifically identified items (e.g., a baby bottle, diapers, a cell phone, a laptop) and the carrying components may be weight-balanced based on the intended specifically identified items.

[0040] In various embodiments, at least one of the selected carrying components that make up modular carrying apparatus 100 has a weight-balancing strap or handle(s) with an attachment component (e.g., loop members) that evenly balances and stabilizes the weight of one or more components and their contents. In addition, the straps of one or more modular carrying components may be selectively attached, detached, stowed, or length-adjusted when other modular carrying components are attached to allow for a more fashionable appearance.

[0041] Also shown in FIG. 1 are optional structural components 16a, 16b, 16c and 16d, which cause modular carrying apparatus 100 to stand upright when placed on the floor or ground. In the embodiment shown, structural components 16a, 16b, 16c and 16d are made of plastic. In other embodiments, structural components 16a, 16b, 16c and 16d are made of metal, rubber or any other material capable of stabilizing modular carrying apparatus 100 in the upright position.

[0042] FIG. 2 illustrates a further embodiment of an exemplary system for modular carrying apparatus 100 that includes purse component 50 and childcare component 70. In the embodiment shown, childcare component 70 is in the open position and sides 7a and 7b are separated to reveal the contents of childcare component 70. Sides 7a and 7b may be joined with zippers, chains, clasps, tie, hinges, fabric, magnets, or any other selective closure devices known in the art.
FIG. 2 further illustrates a plurality of removable “activity components” 25, 27, 29 and 31 which secure supplies for various childcare activities (e.g., bottle feeding, solid food feeding, playing, reading, nursing, photographing, note-taking, cleaning, changing). In the embodiment shown, activity components 25, 27, 29 and 31 are made of a transparent or semi-transparent material to allow the contents to be visible. In the embodiment shown, activity components 25, 27, 29 and 31 are secured in a closed position using zippers, but in other embodiments they may be secured in a closed position using magnetic closures, hooks, snaps, magnets and/or hook and eye fabric.

Also shown in FIG. 2 is diaper mat 34, which is adapted to be folded, and which is secured by diaper mat securing device 36. In the embodiment shown, diaper mat securing device 36 is a strap, but in other embodiments can be a pocket structure, clip, tie, hook-and-eye fabric attachment or any other device known in the art for attaching or securing diaper mat 34. In various embodiments, modular carrying apparatus 100 further includes diaper dispenser 38, which allows one-handed removal of diapers.

The embodiment shown in FIG. 2 further illustrates wipe dispenser receptacle 44, a receptacle or compartment adapted to fit a baby wipe dispenser and which allows the wipes to be dispensed without requiring the baby wipe dispenser to be removed from modular carrying apparatus 100. In the embodiment shown, wipe dispenser receptacle 44 is a pocket structure which allows a dispenser to be inserted and which further allows the wipes to be dispensed without requiring the baby wipe dispenser to be removed from modular carrying apparatus 100.

In various embodiments, modular carrying apparatus 100 may open fully along sides 7a and 7b, or may partially open (along sides and/or along top). Zippers, hooks, snaps, hook-and-eye fabric, ties, cords or any closure device known in the art may be used to secure sides 7a and 7b together. Additionally, sides 7a and 7b may be secured with a combination of devices, or with an additional adjoining panel component. In still other embodiments, sides 7a and 7b may be partially opened and secured in a position that allows modular carrying apparatus 100 to be stabilized in an upright manner while partially open.

FIG. 3 illustrates a perspective view of an exemplary embodiment of modular carrying apparatus 100 with child-care component 70 and purse component 50 in the closed position.

FIG. 4 illustrates an exploded view of an exemplary embodiment of modular carrying apparatus 100.

FIG. 5a illustrates an exemplary embodiment of a weight-balanced modular carrying apparatus. In various other embodiments, a smaller or larger number of weight-balanced storage components are used and/or the weight of the weight-balanced storage components may vary.

FIG. 5b illustrates an exemplary embodiment of an unbalanced modular carrying apparatus. In various other embodiments, a smaller or larger number of weight-balanced storage components are used and/or the weight of the weight-balanced storage components may vary.

Various embodiments of modular carrying apparatus 100 may be adapted to be manipulated with one hand (e.g., snaps, zippers, spring loaded clasps and other easily manipulated closure means known in the art).

One or more outer pockets (not shown) may also be included in various embodiments of modular carrying apparatus 100. Outer pockets may be used for diapers, bottles, cameras, electronic devices, medication, keys, and other devices or items.

Modular carrying apparatus 100 may be constructed so that the weight of an attached weight-balanced storage component (e.g., purse component) will not cause modular carrying apparatus 100 to topple or tip forward.

In alternative embodiments, a laptop component, a pet carrier component, a briefcase, a portfolio, a handbag, a tote or any other carrying accessory known in the art may be substituted for child-care component 70.

Other embodiments of modular carrying apparatus 100 may include washable and/or wipeable interior and exterior components.

In various embodiments, modular carrying apparatus 100 may include interior and exterior pockets that are insulated for storage of hot or cold items or padded to hold destructible items (e.g., a laptop).

It is contemplated that structural mounting components may be added to extend various embodiments of modular carrying apparatus 100 in an open or closed position. For example, hooks may be added for mounting modular carrying apparatus 100 on a changing table. Other embodiments may include hooks or structures for suspending modular carrying apparatus 100 on a stroller or shoulder.

Still other embodiments may be adapted to accommodate the weight of multiple modular components and their contents. For example, gel-filled or padded weight-balancing straps may be utilized.

Other novel features of modular carrying apparatus 100 and system disclosed herein may include the following:

- integrated appearance of components so modular carrying apparatus 100 can be adapted for a variety of settings;
- a novel system of attaching and detaching components (e.g., magnets, specially configured clasps, and attachment devices);
- the ability of modular carrying apparatus 100 to stand independently on an even surface;
- the ability to suspend modular carrying apparatus 100 by a strap or hook from a changing table or stroller without dispersing the contents and to make diaper changing supplies easily accessible;
- independent and detachable modules designed to be very quickly attached to and detached from each other with magnets, simple snaps, clips, etc.;
- use of gel-filled or other straps designed for carrying excess weight;
- design of modular carrying apparatus 100 so contents can be accessed by users with only one free hand or while carrying a child; and
- removable nature of components which are adapted for selective attachment both inside and outside of the apparatus.

What is claimed is:
1. A modular carrying apparatus comprised of:
   at least one weight-balanced storage component, each of said at least one weight-balanced components having a pre-determined weight ratio relative to a base component; and
   at least one weight-balancing strap component.
2. The apparatus of claim 1 wherein said weight ratio is calculated based on the weight of an empty weight-balanced storage component.
3. The apparatus of claim 1 wherein said weight ratio is calculated based on the weight of a weight-balanced storage component and expected contents.

4. The apparatus of claim 1 wherein said at least one weight-balancing strap component is selected from a group consisting of a strap, loop, attachment, tab, seam, weighted member, filled member, and protuberance.

5. The apparatus of claim 1 wherein a combination of said weight-balanced storage components is selected based on their weight-balancing ratio.

6. The apparatus of claim 1 wherein said at least one weight-balanced storage component is selected from a group consisting of a purse, a handbag, a diaper bag, a camera bag, a briefcase, a computer bag, an electronic device carrier, a portfolio, a wallet, a tote bag, a pet carrier, and an accessory case.

7. The apparatus of claim 1 wherein each of said at least one weight-balanced storage component is assigned a relative weight ratio based on an estimated weight of expected contents.

8. The apparatus of claim 1 wherein attachment points of said at least one weight-balanced storage component and said base component are concealed to give said apparatus a geometrically conformed appearance.

9. The apparatus of claim 1 wherein said weight-balanced storage components are secured to said base component by a plurality of magnets.

10. The apparatus of claim 1 which includes a frame component to which said base component is secured.

11. The apparatus of claim 10 which further includes at least one weight-balanced storage component.

12. A system for creating a weight-balanced modular carrying apparatus comprised of:

a. at least one weight-balanced storage component, each of said at least one weight-balanced components having a pre-determined weight ratio relative to said base component; and

b. at least one weight-balancing strap component;

wherein said base component and said at least one weight-balancing storage component further include attachment for points for attaching said at least one weight-balancing storage component to said base component.

13. The system of claim 12 wherein said weight ratio is calculated based on the weight of an empty weight-balanced storage component.

14. The system of claim 12 wherein said weight ratio is calculated based on the weight of a weight-balanced storage component and expected contents.

15. The system of claim 12 wherein said at least one weight-balancing strap component is selected from a group consisting of a strap, loop, attachment, tab, seam, weighted member, filled member, and protuberance.

16. The system of claim 12 wherein a combination of said weight-balanced storage components is selected based on their weight-balancing ratio.

17. The system of claim 12 wherein said at least one weight-balanced storage component is selected from a group consisting of a purse, a handbag, a diaper bag, a camera bag, a briefcase, a computer bag, an electronic device carrier, a portfolio, a wallet, a tote bag, a pet carrier, and an accessory case.

18. The system of claim 12 wherein each of said at least one weight-balanced storage components is assigned a relative weight ratio based on an estimated weight of expected contents.

19. The system of claim 12 wherein said attachment points of said at least one weight-balanced storage component and said base component are concealed to give said apparatus a geometrically conformed appearance.

* * * * *