RECREATIONAL EQUIPMENT CARRIER

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ABSTRACT

A device for carrying equipment on a human back, the device comprises: a shell comprising a back designed to rest against a human back when the device is worn, a front opposite the back, a bottom, a left side and a right side; at least one shoulder strap; a strap designed to couple equipment to the front of the device; a first reinforcing panel coupled to the left side of the shell; a second reinforcing panel coupled to the right side of the shell; and a third reinforcing panel coupled to the front of the shell; wherein, the first, second and third reinforcing panels are designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.
Fig. 12
RECREATIONAL EQUIPMENT CARRIER
CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of prior application Ser. No. 13/486,100, filed on Jan. 1, 2012, which claims priority to U.S. Provisional Application No. 61/525,550, filed Aug. 19, 2011, and titled BACKPACK FOR VERTICALLY TRANSPORTING A SURFBOARD, the entire contents of which are hereby incorporated by reference.

BACKGROUND

[0002] Recreational boards and other equipment are conventionally carried and transported under the user’s arm, over the head, or strapped over the shoulder. Conventional methods of carrying and transporting a recreational board present several drawbacks.

[0003] Typically, carrying or transporting large items such as a recreational board encumbers the user’s hands and arms, thereby preventing the user from walking while carrying other equipment, riding a bicycle, or otherwise multitasking. Furthermore, the typically horizontal or diagonal position of the recreational board and its distance from the user’s center of gravity may each create a moment on the user’s back, arm, hand, or other muscles, thereby leading to rapid tension and fatigue. Additionally, carrying the recreational board in a horizontal or diagonal orientation encumbers the maneuverability of the user in close quarters and requires additional clearance for the recreational board. Furthermore, the board can be exposed to damage from nearby objects.

SUMMARY

[0004] According to at least one exemplary embodiment, a recreational board carrier is disclosed. The carrier can include a central portion, at least one longitudinal strap coupled to the central portion and extending therefrom, a coupler disposed at a distal end of the longitudinal strap, the coupler adapted to couple to a first end of a recreational board, a plurality of apertures defined in the longitudinal strap, and at least one carrying strap coupled to the central portion.

[0005] According to another exemplary embodiment, a recreational board carrier is disclosed. The carrier can include a central portion, at least one longitudinal retaining strap having a proximal end coupled to the central portion and a distal end extending away from the central portion, the distal end adapted to couple to a first end of a recreational board, and at least one carrying strap coupled to the central portion, wherein the at least one longitudinal retaining strap is adapted to encircle a portion of the recreational board substantially parallel the longitudinal axis of the recreational board.

[0006] Although the embodiments described herein may be used for carrying recreational boards and may be specifically adapted or adaptable to carry recreational boards, the embodiments described herein may also be used for carrying other types of equipment such as lawn chairs, skis, foldable chairs, umbrellas, beach equipment, skateboards or any other piece of equipment a person might want to take with them. Accordingly, in some of the embodiments described herein, a device for carrying equipment on a human back is disclosed. In one embodiment, the device comprises a shoulder strap designed to couple the device to the back of a human; a strap designed to couple the equipment to the device; and a spacer designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

[0007] In a preferred embodiment, the device for carrying equipment on a human back may be a backpack. In other embodiments, the device may be a harness, shoulder strap or other style of carrier.

[0008] In some embodiments, the spacer is hollow. In other embodiments, the spacer may be solid. One example is where the spacer is made of a solid piece of foam. In embodiments where the spacer is hollow, the spacer may include an opening designed to allow access to the interior of the spacer. In some of those embodiments, the spacer may include a fastener designed to allow the opening to be selectively closed.

[0009] In some embodiments, the strap spans from proximally near a bottom of the device to proximally near a top of the device. In other embodiments, the strap may span other areas of the device. In some embodiments the strap may be adaptable to specifically carry different kinds of equipment, such as a surfboard. In the preferred embodiment, a first end of the strap is affixed proximally near the bottom of the device and an opposite second end of the strap is configured to be fastenable to proximally near the top of the device.

[0010] In yet another aspect of the invention, a device for carrying equipment on a human back is disclosed. The device comprises: a shell comprising a back designed to rest against a human back when the device is worn, a front opposite the back, a bottom, a left side and a right side; at least one shoulder strap; a strap designed to couple equipment to the front of the device; a first reinforcing panel coupled to the left side of the shell; a second reinforcing panel coupled to the right side of the shell; and a third reinforcing panel coupled to the front of the shell; wherein, the first, second and third reinforcing panels are designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

[0011] In some embodiments that include reinforcing panels, the third reinforcing panel may extend to the bottom of the shell. In other embodiments, the first, second and third reinforcing panels are plastic.

[0012] In yet other embodiments, the back of the device comprises an opening designed to allow access to an interior of the shell. In some embodiments that include an opening, the opening may be configured to be selectively closed by a fastener. In embodiments where access to the interior is provided, the interior of the shell may comprise a plurality of compartments.

[0013] In a preferred embodiment, the device further includes a tightening mechanism designed to tighten the strap against the front of the device. In some embodiments that include a tightening mechanism, the mechanism may be a ladderlock.

[0014] In various different embodiments of the device for carrying equipment on a human back, different configurations of reinforcing panels may be used in combination with the shell. In some embodiments, reinforcing panels may only be coupled to the front of the device. In other embodiments, reinforcing panels may only be coupled to the sides of the device. In various embodiments, different configurations of reinforcing panels may be used as long as the reinforcing panels add structural rigidity to the device such that a gap is maintained between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.
BRIEF DESCRIPTION OF THE FIGURES

[0015] Advantages of embodiments of the present invention will be apparent from the following detailed description of the exemplary embodiments. The following detailed description should be considered in conjunction with the accompanying figures in which:

[0016] FIG. 1 is a rear view of a first exemplary embodiment of a recreational board carrier.

[0017] FIG. 2 is a front view of a first exemplary embodiment of a recreational board carrier.

[0018] FIG. 3 is a side view of a first exemplary embodiment of a recreational board carrier in use.

[0019] FIGS. 4a-4b are front and rear views of a first exemplary embodiment of a recreational board carrier in use.

[0020] FIG. 5 is a rear view of a second exemplary embodiment of a recreational board carrier.

[0021] FIGS. 6a-6b are a front view of a second exemplary embodiment of a recreational board carrier.

[0022] FIG. 7a is a cross-sectional schematic view of a second exemplary embodiment of a recreational board carrier.

[0023] FIG. 7b is a frontal schematic view of the interior of a second exemplary embodiment of a recreational board carrier.

[0024] FIGS. 8a-8d are views of a second exemplary embodiment of a recreational board carrier in use.

[0025] FIG. 9 is an isometric view of one embodiment of a device for carrying equipment on a human back.

[0026] FIG. 10 is an isometric view of one embodiment of a device for carrying equipment on a human back.

[0027] FIG. 11 is an isometric view of one embodiment of a device for carrying equipment on a human back with the back open.

[0028] FIG. 12 is an isometric view of a plurality of reinforcing panels that may be used to provide structural rigidity to a device for carrying equipment on a human back.

[0029] FIG. 13 is an isometric view of one embodiment of a device for carrying equipment on a human back with a lawn chair attached.

[0030] FIG. 14 is an isometric view of one embodiment of a device for carrying equipment on a human back.

DETAILED DESCRIPTION

[0031] Aspects of the invention are disclosed in the following description and related drawings directed to specific embodiments of the invention. Alternate embodiments may be devised without departing from the spirit or the scope of the invention. Additionally, well-known elements of exemplary embodiments of the invention will not be described in detail or will be omitted so as not to obscure the relevant details of the invention. Further, to facilitate an understanding of the description discussion of several terms used herein follows.

[0032] As used herein, the word “exemplary” means “serving as an example, instance or illustration.” The embodiments described herein are not limiting, but rather are exemplary only. It should be understood that the described embodiment are not necessarily be construed as preferred or advantageous over other embodiments. Moreover, the terms “embodiments of the invention”, “embodiments” or “invention” do not require that all embodiments of the invention include the discussed feature, advantage or mode of operation.

[0033] Embodiments disclosed herein describe carriers that can transport a surfboard, snowboard, or similar elongated recreational boards in a substantially vertical position, thereby allowing the user’s hands to be free while transporting the board. Embodiments disclosed herein may also be used to carry equipment other than recreational boards, such as lawn chairs, umbrellas or other equipment a person may be desirous of carrying. Embodiments of carriers disclosed herein can further allow the user to carry other equipment, ride a bicycle or other vehicle, or otherwise multitask while transporting the recreational board or other equipment. In a preferred embodiment, the recreational board may be securely strapped and carried behind the user’s back in a substantially vertical position, thereby allowing the user to maneuver in narrow spaces and diminishing the risk of damage to the board resulting from contact with objects at the sides of the user. Further, carrying the surfboard vertically against the user’s back may significantly reduce the discomfort caused by conventional methods of carrying a surfboard. By keeping most of the mass of the surfboard horizontally close to the center of gravity of the user, the moment induced on the user’s back, arm, hand or other muscles is diminished, thereby reducing tension and fatigue.

[0034] In addition to providing novel ways of carrying and transporting a surfboard or other equipment, the embodiments disclosed herein may allow the user to store additional equipment, thereby eliminating the need for additional straps or board bags.

[0035] FIGS. 1-4 show an exemplary embodiment of a recreational board carrier 100. The carrier may include a central portion 110, which may be coupled to a longitudinal strap 120 and a lateral strap 130. Central portion 110 may further include a pair of shoulder harnesses 112, a waist strap 114, and a chest strap 116. The shoulder harnesses 112, the waist belt 114 and the chest belt 116 may facilitate attaching the carrier to the user.

[0036] Central portion 110 may be a cushioned member having a depth, so as to provide clearance between a recreational board 10 and the body of the user when carrier 100 is worn. In some exemplary embodiments, central portion 110 may further include at least one storage compartment.

[0037] In the exemplary embodiment, the longitudinal strap 120 may be positioned along a central longitudinal axis of the carrier 100. A first end of the longitudinal strap 120 may extend from substantially the lower end of the central portion 110, while a second end of the longitudinal strap 120 may extend from substantially the upper end of the central portion 110. The first end of vertical strap 120 may each include a first adjustable loop 122, and the second end of vertical strap 120 may include a second adjustable loop 128. The diameters of adjustable loops 122, 128 may be adjusted using, for example, a slide & locking coupler, or using any other adjustable mechanism known in the art.

[0038] Vertical strap 120 may include at least one aperture 124, and may have a length that is designed to accommodate various surfboard sizes and user heights, and allow adjustment of the height of the surfboard relative to the user. Aperture 124 may have any desired shape, for example a rectangular shape, and may receive a fin 12 of a recreational board 10. The apertures 124 may further be reinforced, so as to receive an end of the recreational board 10. In some embodiments, apertures 124 may have a substantially diamond-like shape to facilitate reinforcement.
The longitudinal strap 120 may further be fitted with adjustment buckles 126. The adjustment buckles 126 may facilitate varying the length of the vertical strap 120. The lateral strap 130 may extend laterally from the central portion 110. Horizontal strap 130, waist strap 114, and chest strap 116 may be fastened using a set of conventional backpack buckles, hook-and-loop fasteners, or any other fastening method known in the art. Horizontal strap 130, the shoulder harnesses 112, waist strap 114, and chest strap 116 may be constructed from any material known in the art.

In operation, the user may place the recreational board on the central portion 110 of the carrier, and may encircle the longitudinal strap 120 around a first end 14 of the recreational board 10. The user may further place an end or a fin 12 of the recreational board within the at least one aperture 124. The user may then attach adjustable loop 122 to a second end 16 of the recreational board. Subsequently, the user may encircle the horizontal strap 130 around the recreational board, and may further attach adjustable loop 128 to the second end 16 of the recreational board, so as to facilitate stability. The carrier 100 may then be donned and secured to the user utilizing the shoulder harnesses 112, the waist belt 114 and the chest belt 116.

As explained above, in the preferred embodiment the vertical position of the recreational board may be adjusted with respect to the user. By providing a plurality of apertures 124, the user may select which aperture to use in accordance with the relative vertical position of the recreational board the user desires. The relative lengths of the vertical strap 120 may then be adjusted accordingly at adjustment buckles 126. By selecting an aperture closer to the central portion 110, the recreational board will be carried higher on the user’s back. In contrast, selecting an aperture 124 farther away from the central portion 110 will cause the recreational board to be carried lower on the user’s back. This same aperture 124 selection process and longitudinal strap 120 adjustment can be used to allow the same embodiment to carry recreational boards of varying lengths while still maintaining the center of gravity of the recreational board in a desired location relative to the user. Adjusting the vertical position of the recreational board relative to the user may also be advantageous to allow the user to better ride a bike, walk, climb or perform various other tasks while wearing a preferred embodiment with a recreational board attached.

FKOS, 5-8] show another exemplary embodiment of a recreational board carrier 200. Carrier 200 may include a backpack portion 202, which may be coupled to at least one lateral retaining strap 230. Backpack portion 202 may further include at least one lateral retaining strap 230, at least one waist strap 240, and a pair of shoulder straps 250. Waist and shoulder straps 240, 250 can facilitate coupling carrier 200 to a user such that backpack portion 202 is disposed substantially adjacent the back of the user when carrier 200 is worn. Retaining straps 220, 230 can facilitate coupling a recreational board 20 to carrier 200 such that the recreational board is oriented in a substantially vertical position when carrier 200 is worn. Furthermore, one or more of retaining straps 220, 230 may be decoupleable from backpack portion 202, and/or stowable within backpack portion 202 so as to allow carrier 202 to be used as a backpack when it is not desirable to transport a recreational board. In other embodiments, one or more of retaining straps 220, 230 may be permanently affixed to the backpack portion 202 but stowable within backpack portion 202.
received, thereby maintaining the retaining strap coupled to the wide section. Additionally, wide section 232 can include pockets 236, within which the at least one retaining strap 230 may be stored when not in use. Furthermore, when retaining straps 230 are not in use, wide sections 232 can be coupled to each other by means of fasteners, for example such as hook-and-loop fasteners, disposed on the surfaces thereof.

Portions of front face 206 and the surfaces of wide sections 232 that contact the recreational board can include a material 286 having increased grip and non-skid properties. An example of such a material can be the “Slip-Not Grip Fabric” manufactured by Eastex Products, Inc. However, any material having analogous functionality may be contemplated and provided as desired.

Carrier 200 can further include a first longitudinal retaining strap 220, as shown in FIG. 6a. First longitudinal strap 220 can be coupled to backpack portion 202 substantially at the lower end of the backpack portion. Furthermore, longitudinal retaining strap 220 can be disposed within a strap storage compartment 210, which may be disposed substantially at the bottom of backpack portion 202. The strap storage compartment 210 can be sized and shaped to allow longitudinal retaining strap 220 to be stored in the compartment, for example in a rolled up, folded, or other compact configuration, as shown in FIG. 7a. Strap storage compartment 210 can further include a closure 216, which may be a zipper or any other known closure.

The length of first longitudinal strap 220 can be sufficient so as to extend from backpack portion 202 around a lower end 22 of the recreational board 20, and across a portion of a surface of the recreational board 20, substantially as shown in FIGS. 8b-8c. Exemplary measurements for first longitudinal strap 220 can be about 8 feet in length, with a width of about 10 inches tapering to a width of about one inch at distal end 226.

At least one aperture 222 may be provided within first longitudinal strap 220. The at least one aperture 222 may extend along the longitudinal axis of strap 220, and may be sized and shaped to receive a tail or fin 26 of the recreational board 20. Aperture 222 may have any shape that enables carrier 200 to function as described herein, for example a rectangular shape. Aperture 222 may further be reinforced. To that end, a reinforcement strip 224 providing additional thickness and reinforcement may extend along the longitudinal axis of strap 220. Furthermore, any configuration that can facilitate reinforcement of aperture 222 can be contemplated and provided as desired.

Coupled to the distal end 226 of first longitudinal strap 220 may be a loop 260. Loop 260 may be sized and shaped to encircle an upper end 24 of a recreational board 20. Loop 260 may be coupled to first longitudinal strap 220 via an intermediate strap 262, the length of which may be adjustable, so as to adapt carrier 200 for recreational boards of various sizes. Exemplary measurements for loop 260 may be about 42 inches in length.

In some exemplary embodiments, carrier 200 can further include a second longitudinal retaining strap 228, as shown in FIG. 6b. Second longitudinal strap 228 can be coupled to backpack portion 202 substantially at the lower end of the backpack portion. Furthermore, second longitudinal retaining strap 228 can be disposed within a strap storage compartment 210, which may be disposed substantially at the bottom of backpack portion 202. The strap storage compartment can be sized and shaped to allow both longitudinal retaining straps 220, 228 to be stored in the compartment, for example in a rolled up, folded, or other compact configuration, as shown in FIG. 7. Strap storage compartment 210 can further include a closure 216, which may be a zipper or any other known closure.

Second longitudinal strap 228 can be adapted to carry any type of equipment. As just one example, longitudinal strap 228 may be adapted to carry recreational boards having a bifurcated end, for example a swallowtail surfboard. The length of strap 228 can be sufficient so as to extend from backpack portion 202, around a bifurcated end 28 of recreational board 20, and across a portion of a surface of the recreational board 20, substantially as shown in FIG. 8d. Furthermore, second strap 228 can have a width that allows strap 228 to be disposed within the bifurcated end 28 of recreational board 20. Exemplary measurements for second longitudinal strap 228 can be about 8 feet in length, with a width of about 1 inch.

Coupled to the distal end 229 of second longitudinal strap 228 may be an adjustable loop 260. Loop 260 may be sized and shaped to encircle an upper end 24 of a recreational board 20. Loop 260 may be coupled to second longitudinal strap 228 via an intermediate strap 262, the length of which may be adjustable, so as to adapt carrier 200 for recreational boards of various sizes. Exemplary measurements for loop 260 may be about 42 inches in length. Loop 260 may be adjustable using any desired structure, for example a slide adjuster, which can allow the user to vary the diameter of loop 260 so as to fit a desired size of a recreational board.

Carrier 200 may further include a hanging loop 272. Hanging loop 272 may be used to suspend carrier 200 from hooks, doorknobs, and so forth. Carrier 200 may also include a tensioning strap 270. Tensioning strap 270 may be coupled to backpack portion 202, for example substantially at the upper end of the backpack portion. For example, one end of tensioning strap 270 may be attached to hanging loop 272. A second end of tensioning strap 270 may be coupled to loop 260 when loop 260 is disposed around an upper end 24 of a recreational board 20. Tensioning strap 260 may be used if desired to maintain the upper end 24 of a large recreational board 20 in tensioned relation to carrier 200, thereby reducing the likelihood of movement of the upper end of the recreational board. However, it should be appreciated that carrier 200 may be used to carry a recreational board without the use of tensioning strap 270.

Backpack portion 202 can include a plurality of compartments therein, for example a strap storage compartment 210, a wet storage compartment 212, and a dry storage compartment 214. Wet storage compartment 212 and dry storage compartment 214 can facilitate separating wet items, such as wetsuits, from dry items carried within backpack portion 202. The compartments may include further include closures 216, which may be a zipper, a pull string, or any other known closure. Backpack portion 202 can further include external storage compartments, for example, pockets 218. Additional compartments, pockets, or any other known storage or object carrying structures may be contemplated and provided as desired.

It should be appreciated that the straps and loops 228, 230, 240, 250, 252, 260, 270, as well as the adjustable described above can include any desired coupling structures for fastening the straps. Such coupling structures can include buckles, clips, hook and loop fasteners, or any other known coupling structure that enables carrier 200 to function as
described herein. It should further be appreciated that the straps and loops 228, 230, 240, 250, 252, 260, 270 described above can include length adjusting structures for varying the lengths of the straps. Such length adjusting structures can include strap adjusters, tri-glide buckles, or any other known strap length adjusting structure that enables carrier 200 to function as described herein. The coupling structures and length adjusting structures may be provided as a unit, or independently on desired straps.

[0058] In some exemplary embodiments, rigidity and shape may be provided to backpack portion 202 by reinforcing member 280 and reinforcing panels 284. Reinforcing member 280 may be substantially U-shaped, and can extend along the perimeter of the interior of the backpack portion 202. Reinforcing member 280 can extend from a first side of the lower end of the interior of the backpack portion 202, across the upper end of the backpack portion, and down to a second side of the lower end of the backpack portion, as shown in Fig. 7b. Reinforcing member 280 can impart top-to-bottom rigidity to backpack portion 202, for example by preventing the upper end of the backpack portion from collapsing toward the bottom end. Furthermore, a portion of reinforcing member 280 can be exposed to the exterior, for example via a notch 282 disposed substantially at the upper end of carrier 200. An exemplary size for notch 282 may be about 1 inch square. This arrangement can provide a theft deterrence capability to carrier 200. For example, the user may affix a bike lock, chain, U-lock, or the like to the portion of reinforcing member 280 that is exposed within notch 282. If the reinforcing member 280 is cut so as to remove the lock, the integrity of backpack portion 202 can be compromised, thereby impeding the usability of carrier 200.

[0059] In some exemplary embodiments, front-to-back rigidity may be provided to backpack portion 202 by reinforcing panels 284, as shown in FIG. 7b. Reinforcing panels 284 may be disposed adjacent the side faces 208 of backpack portion 202 and may have substantially the same shape as side faces 208. Reinforcing panels 284 may be formed from any rigid material that allows carrier 200 to function as described herein.

[0060] It should further be appreciated that the components of carrier 200 may be formed from any known materials and coupled using any known methods that allow carrier 200 to function as described herein.

[0061] Referring now to FIGS. 8a-8d, in operation, a user may place carrier 200 in a convenient position, for example such that the rear face 204 of backpack portion 202 is adjacent a supporting surface such as the ground. The user may then place a recreational board 20 such that a first face 21 of the recreational board is disposed adjacent the front face 206 of backpack portion 202. Subsequently, the user may encircle a longitudinal strap 220 or 228 around a lower end 22 or 28 of the recreational board such that a portion of the strap is disposed proximate to a second face 23 of the recreational board. The user may then encircle loop 260 around an upper end 24 of the recreational board, and adjust the length of intermediate strap 260 such that loop 260, intermediate strap 262 and longitudinal strap 220 or 228 are substantially taut. The user may also encircle at least one lateral retaining strap 230 around recreational board 20 such that the at least one lateral retaining strap 230 is disposed proximate second face 23 of the recreational board, and adjust the length of the of at least one lateral retaining strap 230 such that strap 230 is taut. If desired, the user may also extend tensioning strap 270 between backpack portion 202 and loop 260, and adjust the length of the tensioning portion such that the strap 270 is taut.

[0062] When coupling a recreational board having a central fin 26 disposed on a surface of the board, the user may insert the fin 26 through one of the plurality of apertures 222 defined in longitudinal retaining strap 220. This can allow strap 220 to be disposed proximate the second surface 23 of the recreational board and reduce the likelihood of the fin 26 being bent or damaged due to the tension of strap 220. Furthermore, if a recreational board has a substantially pointed end, that end may also be received within a aperture 222 of first longitudinal retaining strap 220. If the recreational board has a substantially bifurcated end 28, second longitudinal strap 228 may be used in lieu of first longitudinal strap 220.

[0063] It should be appreciated that carrier 200 can allow the user to affix the recreational board at a variety of heights by choosing the location the length of strap 220/228 that encircles the lower end 22/28 of the recreational board. For example, if the lower end 22/28 of the recreational board is placed close to the end of strap 220/228 that is coupled to backpack portion 202, the recreational board may be substantially elevated when the carrier is worn. Conversely, if the lower end 22/28 of the recreational board is placed close to the distal end 226/229 of strap 220/228, the recreational board may be positioned closer to the ground when carrier 200 is worn. The length of loop 260 can then be adjusted accordingly. This variability can allow the user to select a comfortable elevation for the board, allowing carrier 200 to be used with boards of varying sizes and weights, and by users of varying heights, as well as providing desired clearances between the board and the environment, for example when riding a bicycle or walking through areas with ceilings.

[0064] After the recreational board 20 is fastened to carrier 200, the user may then carry the board with shoulder straps 250 to transport carrier 200 as a backpack. The user may also use shoulder straps 250 to carry the board, allowing carrier 200 to be used with boards of varying heights, as well as providing desired clearances between the board and the environment, for example when riding a bicycle or walking through areas with ceilings. The user may use the shoulder straps 250 with the lower end 22/28 of the recreational board adjacent the second face 23 of the recreational board.

[0065] Although the embodiments described above have primarily used a surfboard or other recreational board as an example of the object to be carried, the embodiments described herein may also be used to carry various types of other equipment such as lawn chairs, umbrellas, snowboards, skis, body boards, skate boards, or any other type of equipment the user is desirous of carrying. Moreover, a plurality of items may simultaneously be carried by the embodiments described herein including a plurality of recreational boards and/or a plurality of pieces of equipment.

[0066] FIG. 9 illustrates one example of an embodiment of a device 500 for carrying equipment on a human back. The device 500 may carry any type of equipment including, recreational boards, skis, lawn chairs, foldable chairs, umbrellas, beach equipment, skateboards or any other piece of equipment a person might want to take with them. Device 500 includes at least one shoulder strap 502. In the embodiment shown in FIG. 9, the device includes two shoulder straps 502 but in other embodiments, a single shoulder strap or multiple shoulder straps 502 may be used. Similar to other embodiments described herein, the device 500 may include waist straps or other straps (not shown) to secure the device 500 to a human back.
Device 500 comprises a back 506, a front 508, a right side 510, a left side 514 and a bottom 512. The embodiment of the device shown in FIG. 9 further comprises a strap 520. In a preferred embodiment, strap 520 is a longitudinal strap similar to strap 220. In the embodiment shown in FIG. 9, the strap 520 spans from a location proximal the bottom 512 of the device 500 to a location proximal the top of the device 500 along the front 508 of the device 500. Other configurations and attachment points for the strap 520 are possible in other embodiments. In the embodiment shown in FIG. 9, the strap 520 is affixed proximally near the bottom 512 of the device 500 and the opposite end of the strap 520 is configured to be fastenable to a location proximally near the top of the device 500.

In various embodiments, the strap 520 may fasten to the device 500 in any number of ways. For example the strap 520 may use a side release buckle, a snap hook, velcro, a snap, a buckle, a clip, a loop or any other type of fastener 522. In a preferred embodiment, the strap 520 includes a tightening mechanism 524 to allow the strap 520 to be tightened or cinched against the front 508 of the device 500. In some embodiments, like the one shown in FIG. 9, the strap 520 may simply fasten at the top of the device 500 by slipping through a loop and then threading back through the tightening mechanism 524. The tightening mechanism 524 may be a slide and locking coupler, trilide, ladderlock, buckle or any other tightening mechanism 524 for tightening or cinching straps 520.

In a preferred embodiment, the strap 520 is used for securing equipment to the device 500. In a preferred use, the equipment, or a portion thereof, is placed between the front 508 of the device 500 and the strap 520 and then the strap 520 is tightened to secure the equipment to the device 500. While the strap 520 may be used to secure lawn chairs, umbrellas or other equipment, it may also be used to secure a surfboard to the device as described above. In some embodiments, the strap 520 may be adaptable to fasten different kinds of equipment. For example, a loop 128 such as described in FIG. 1, may be attached to strap 520 to facilitate carrier a recreation board. Other types of specialized attachments are possible.

In addition to strap 520, device 500 may include other straps to help secure equipment to the front of the device 500. For example, as described above, in addition to strap 520, device 500 may include at least one horizontal strap to add additional stability along another axis. The additional straps may be permanently affixed to the device 500 or may be selectively attachable such that they may be added or removed depending on the equipment the user is trying to carry. Moreover, each of the straps may fold or roll up into a compartment within the device 500 such that they may be stored when not in use.

In a preferred embodiment, device 500 is a backpack or a device shaped and configured to be used as a backpack. Accordingly, device 500, particularly the shell 561 of device 500, may be made from many of the common materials used to make backpacks such as canvas, cloth, neoprene, plastic, rubber or any combination thereof. Conventional backpacks lack the structural rigidity to effectively allow them to carry equipment, especially heavy or bulky equipment. Accordingly, the embodiments disclosed herein include rigidity elements to allow them to more effectively carry equipment. As just one example, the embodiment of device 500 shown in FIG. 9 further comprises a spacer 504. Spacer 504 is designed to maintain a gap 530 between the back of the human and the equipment when the device 500 is being worn and the equipment is coupled to the device. Spacer 504 maintains the gap 530 by providing some structural rigidity to the device 500. The gap 530 maintained by the spacer 504 allows the equipment to be carried without interfering with the user of the device 500. The gap 530 may prevent the equipment from hitting the user's back, legs or other extremities while the user is carrying the equipment with the device 500.

In some embodiments, spacer 504 may be solid and in other embodiments, spacer 504 may be hollow. In some embodiments, spacer 504 may be made from a single piece construction while in other embodiments multiple individual components may be combined or assembled to form spacer 504. In different embodiments, spacer 504 may be made from numerous different types of materials. For example, spacer 504 may be made from foam, plastic, metal, rubber or any combination thereof. Spacer 504 may be constructed as a separate piece or may be integrated into the device 500.

In embodiments where spacer 503 is hollow, spacer 530 may comprise an opening designed to allow access to the interior of the spacer 530. A fastener may be provided so that the opening may be selectively opened and closed. To this end, the interior of spacer 530 may be used as a storage compartment. This storage compartment may be in addition to other storage compartments located within the device 500. One of the advantages of a storage compartment within spacer 530 is that the structural integrity created by spacer 530 may provide additional protection for any items placed within spacer 530.

Strap 520 in combination with spacer 530 are configured to provide the ability to secure and carry equipment externally to the device 500. However, similar to current backpacks and other bags, access to the interior of the device or compartments within the device may be provided through any number of associated openings and corresponding fasteners. As is well known in the art, backpacks may contain numerous external and internal compartments, pockets, or containers. In various different embodiments, fasteners used in conjunction with the device 500 may include zippers, velcro, buckles, snaps or any other commonly used fastener.

In some embodiments, structural rigidity may also be added to the back 506 of the device 500. As explained above and illustrated in FIGS. 6a and 6b, structural rigidity may be added with a reinforcing member 280 that is shaped similar to the back and spans the back of the device both horizontally and vertically. The reinforcing member 280 may be made of plastic, metal, rubber, foam, cardboard or any other material that can provide structural integrity. In embodiments that include an opening 532 on the back 506, structural integrity may be added to the back of the device by providing a reinforcing member 280 that runs around the edge of the back 506 of the device 500. The reinforcing member 280 may create a frame around the periphery of the back 506 of the device 500. The reinforcing member 280 may be a tube, pipe, rod or other similar structural member. The reinforcing member 280 may be completely rigid or may have some flexibility or spring like property. By providing the structural rigidity around the edge of the back of the device 500, the center portion of the back may be still used as an opening 532 for access to the interior of the device 500.

FIG. 10 illustrates yet another embodiment of a device 560 for carrying equipment on a human back. The embodiment 560 shown in FIG. 10 comprises a shell 561 and
is similar to the device shown in FIG. 9. However, instead of the spacer 504, structural rigidity is provided by a plurality of reinforcing panels. The embodiment shown in FIG. 10 includes reinforcing panel 562 in the front 508 of the device 560, reinforcing panel 564 in the right side 504 of the device 560 and reinforcing panel 566 (not shown but similar to 564) on the left side 514 of the device 560. The reinforcing panels are designed to provide structural rigidity to the shell 561 and, similar to the spacer 530, maintain a gap between the back of a human and the equipment when the device 560 is being worn and the equipment is coupled to the device.

In a preferred embodiment, the reinforcing panels 562, 564 and 566 are made of plastic. However, in other embodiments, the reinforcing panels 562, 564 and 566 may be made of rubber, cardboard, metal, foam, any material capable of providing rigidity or any combination thereof. In a preferred embodiment, the reinforcing panels 562, 564 and 566 may be stitched into the shell 561 of the device such that they form a structural frame. In other embodiments, other methods of integrating the reinforcing panels 562, 564 and 566 to the device 560 are possible. For example, the reinforcing panels 562, 564 and 566 may be attached by glue, Velcro, snaps, or any other method of attachment. In some embodiments, the reinforcing panels 562, 564 and 566 may be removable to allow the device 500 to be stored more easily or transformed into a more conventional backpack.

Similar to the embodiment 500, embodiment 560 includes a strap 520 and a tightening mechanism 524. In the embodiment 560 shown in FIG. 10, the strap spans from the bottom 512 of the device 560 to a position between the top and the middle of the front 508 of the device 500. In various different embodiments, the connection point for fastener 522 may be located different distances up the front 508 of the device 560. In other embodiments, the connection points of the strap 520 may be reversed such that the strap 520 is affixed to the top of the device and fastens to the device near the bottom 512. In yet other embodiments, the strap 520 may be fastened in both positions or affixed in both positions and utilize a tightening mechanism 524 to tighten or cinch the equipment to the front 508 of the device 560 without unfastening the strap 520. In yet other embodiments, multiple connection points or straps may be used. Generally, any configuration of straps and fastening points may be used as long as they provide a method to secure the equipment to the front of the device.

In a preferred embodiment, like the one shown in FIG. 10, the reinforcing panel 562 in the front 508 of the device 560 extends to the bottom 512 of the device. As may be seen in FIG. 10, the front 508 of the device 560 may curve into the bottom 512 to allow a single reinforcing panel 562 to transition from the front 508 to the bottom 512. In other embodiments, separate reinforcing panels may be used in the front 508 and the bottom 512 of the device 560. In some embodiments, reinforcing panels 564 and 566 in the sides of the device may be the only reinforcing panels used. In various different embodiments, various different combinations of reinforcing panels may be used as long as the reinforcing panels provide the structural rigidity to maintain a gap between the back of a human and the equipment when the device 560 is being worn and the equipment is coupled to the device 560.

FIG. 11 illustrates yet another embodiment of a device 570 for carrying equipment on a human back. In addition to conventional backpack openings, device 570 may also have an opening 532 on the back portion of the backpack to allow access to the interior through the back 506 of the device 570. In the preferred embodiment, opening 532 is secured by a zipper that runs around the edge of the opening 532. The opening 532 may run around the edge of the back 506 of the device 500 such that almost the entire back portion of the device may be unfastened and folded down to allow access to the interior of the device 500, as shown in FIG. 11. Similar to the embodiment shown in FIG. 10, the embodiment shown in FIG. 11 includes a reinforcing panel on the left side 566, a reinforcing panel in the front 562 that curves around and extends to the bottom 512, and a reinforcing panel in the right side (not shown).

FIG. 12 illustrates one configuration of a plurality of reinforcing panels that may be used with a device for carrying equipment on a human back. The front reinforcing panel 562, left side reinforcing panel 566 and right side reinforcing panel 564 may be used and attached to the shell 561 as explained above with respect to devices 560 and 570 in FIGS. 10 and 11. FIG. 12 illustrates how the front reinforcing panel 562 may curve around and cover the bottom 512 of the device in some embodiments. In other embodiments, the number of reinforcing panels as well as the size and shape of the reinforcing panel may be varied as long as the reinforcing panels provide enhanced structural rigidity to the device.

FIG. 13 illustrates an embodiment of a device 560 for carrying equipment on a human back with a lawn chair 700 attached to the front 508 under the strap 520. In operation, the strap 520 may be unfastened from fastener 522, the lawn chair 700 inserted between the front 508 of the device 560 and the strap 520, and then the fastener 522 reconnected. The strap 520 may then be tightened using tightening element 524 to secure the lawn chair 700 to the front 508 of the device 560. Instead of disconnecting fastener 522, the strap 520 may simply be loosened enough with the tightening element 524 to allow the lawn chair 700 to be placed between the strap 520 and the front 508 of the device 560. Once the lawn chair 700 is inserted, the strap 520 may be retightened using tightening mechanism 524. In other embodiments, tightening element 524 may be integrated into fastener 522 such that they are part of the same component.

A lawn chair 700 was used as an example with respect to FIG. 13, however, those skilled in the art will realize that any type of equipment may be carried using the same methods as described herein. In addition, strap 520 may be designed in various different configurations to specifically hold different equipment as explained with respect to a recreational board in previous embodiments. In some embodiments, strap 520 may be adaptable to allow for carrying different types of specialized equipment. For example, strap 520 may be easily adaptable to become like strap 220 in FIG. 6a and facilitate the carrying of a surfboard. Any number of attachments and clips may be used in combination with strap 520 to adapt it to carry any type of equipment. In addition, additional straps may also be used or attached depending on the specific equipment the user desires to carry. To this end, embodiments which are adaptable and configurable to specifically carry surfboards, lawn chairs and other beach equipment are provided.

FIG. 14 is an isometric view of one embodiment of a device 580 for carrying equipment on a human back. The embodiment shown in FIG. 14 is similar to the embodiment shown in FIG. 10 except for the way the strap 520 attaches and tightens to the device 580. The embodiment shown in FIG. 14...
comprises an additional strap 582 with a fastener and/or tightening device 524 attached. In operation, the strap 520 mates with the strap 582 and cinches or tightens down to secure an object against the front 508 of the device 580. Strap 582 may extend from an opening in the top of the device 580. Accordingly, strap 582 may be stowed inside the device 580 when not in use. Straps 520 and 582 may attach and be tightened using any of the fastening or tightening devices disclosed herein or known in the art. In a preferred embodiment, item 524 is a female snap clasp and strap 520 has a mating male snap clasp attached to its distal end to mate with female snap clasp 524. In such an embodiment, additional strap 582 and/or strap 520 may include tightening mechanisms to allow their length to be adjusted.

[0085] In some embodiments, strap 520 and/or strap 582 may also include padding on their interior surface to help protect any equipment that may be carried. In a preferred embodiment, strap 520 and/or strap 582 may include padding that is slideably adjustable along the length of the strap such that it may be positioned anywhere along the length of the strap. The slideably adjustable padding may be attached to the strap 582 or 520 by a slit or pair of slits, which allows strap 582 or 520 to pass through the slideably adjustable padding and allows the padding to slide along the length of the strap.

[0086] As shown in FIG. 6a with respect to strap 220, strap 520 may also be designed to be stored internally with respect to the device 560. A compartment with a fastener may be located on the device 560 such that strap 520 may be tucked or rolled away and stored inside the device 560. Storing strap 520 may be helpful to prevent strap 520 from getting tangled or catching on objects when device 520 is in use as a backpack but is not being used to carry equipment.

[0087] The foregoing description and accompanying figures illustrate the principles, preferred embodiments and modes of operation of the invention. However, the invention should not be construed as being limited to the particular embodiments discussed above. Additional variations of the embodiments discussed above will be appreciated by those skilled in the art.

[0088] Therefore, the above-described embodiments should be regarded as illustrative rather than restrictive. Accordingly, it should be appreciated that variations to those embodiments can be made by those skilled in the art without departing from the scope of the invention as defined by the following claims.

What is claimed is:

1. A device for carrying equipment on a human back comprising:
   a shoulder strap designed to couple the device to the back of a human;
   a strap designed to couple equipment to the device; and
   a spacer designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

2. The device of claim 1, wherein the device is a backpack.

3. The device of claim 1, wherein the spacer is hollow.

4. The device of claim 3, wherein the spacer includes an opening designed to allow access to the interior of the spacer.

5. The device of claim 4, wherein the spacer includes a fastener designed to allow the opening to be selectively closed.

6. The device of claim 1, wherein the strap spans from proximally near a bottom of the device to proximally near a top of the device.

7. The device of claim 6, wherein a first end of the strap is affixed proximally near the bottom of the device and an opposite second end of the strap is configured to be fastenable to proximally near the top of the device.

8. A device for carrying equipment on a human back comprising:
   a shell comprising a back designed to rest against a human back when the device is worn, a front opposite the back, a bottom, a left side and a right side;
   at least one shoulder strap;
   a strap designed to couple equipment to the front of the device;
   a first reinforcing panel coupled to the left side of the shell;
   a second reinforcing panel coupled to the right side of the shell; and
   a third reinforcing panel coupled to the front of the shell;
   wherein, the first, second and third reinforcing panels are designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

9. The device of claim 8, wherein the third reinforcing panel extends to the bottom of the shell.

10. The device of claim 8, wherein the first, second and third reinforcing panels are plastic.

11. The device of claim 8, wherein the back comprises an opening designed to allow access to an interior of the shell.

12. The device of claim 11, wherein the opening is configured to be selectively closed by a fastener.

13. The device of claim 8, wherein an interior of the shell comprises a plurality of compartments.

14. The device of claim 1, wherein the strap spans from proximally near a bottom of the device to proximally near a top of the device.

15. The device of claim 6, wherein a first end of the strap is affixed proximally near the bottom of the device and an opposite second end of the strap is configured to removable fasten to proximally near the top of the device.

16. The device of claim 8, wherein the device is a backpack.

17. The device of claim 8, further including a tightening mechanism designed to tighten the strap against the front of the device.

18. The device of claim 17, wherein the tightening mechanism is a ladderlock.

19. A device for carrying equipment on a human back comprising:
   a shell comprising a back designed to rest against a human back when the device is worn, a front opposite the back, a bottom, a left side and a right side;
   at least one shoulder strap;
   a strap designed to couple equipment to the front of the device; and
   a reinforcing panel coupled to the front of the shell;
   wherein, the reinforcing panel is designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

20. A device for carrying equipment on a human back comprising:
   a shell comprising a back designed to rest against a human back when the device is worn, a front opposite the back, a bottom, a left side and a right side;
   at least one shoulder strap;
   a strap designed to couple equipment to the front of the device;
a first reinforcing panel coupled to the left side of the shell;
and
a second reinforcing panel coupled to the right side of the shell;
wherein, the first and second reinforcing panels are
designed to maintain a gap between the back of the human and the equipment when the device is being worn and the equipment is coupled to the device.

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