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(54) **STRAPS CONTAINING ALIGNMENT
ELEMENTS FOR USE WITH CARRYING
DEVICES**

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(57) **ABSTRACT**

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Related U.S. Application Data

(63) Continuation-in-part of application No. 13/112,091,
filed on May 20, 2011, which is a continuation-in-part
of application No. 12/894,313, filed on Sep. 30, 2010.

New and non-obvious systems and devices are provided for
permitting decoration of the straps of carrying devices. These
systems and devices contain alignment elements that allow
for a user to optionally associate accessories with the devices.
When no accessory is associated with the device, the align-
ment element is not visible on the front side of the strap.

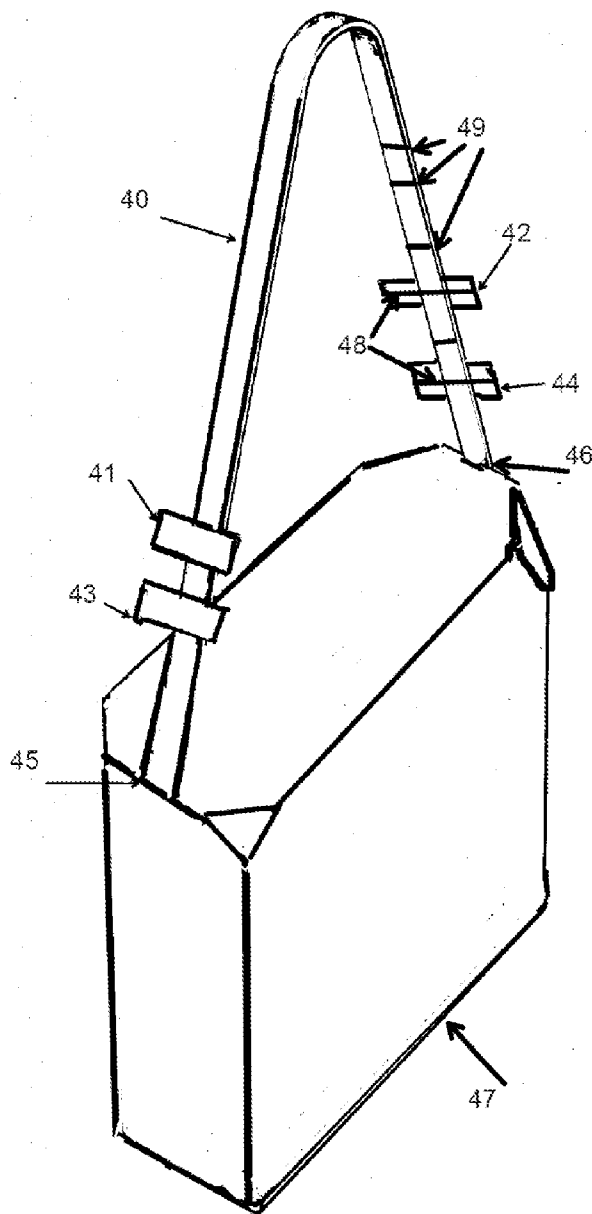


Figure 1

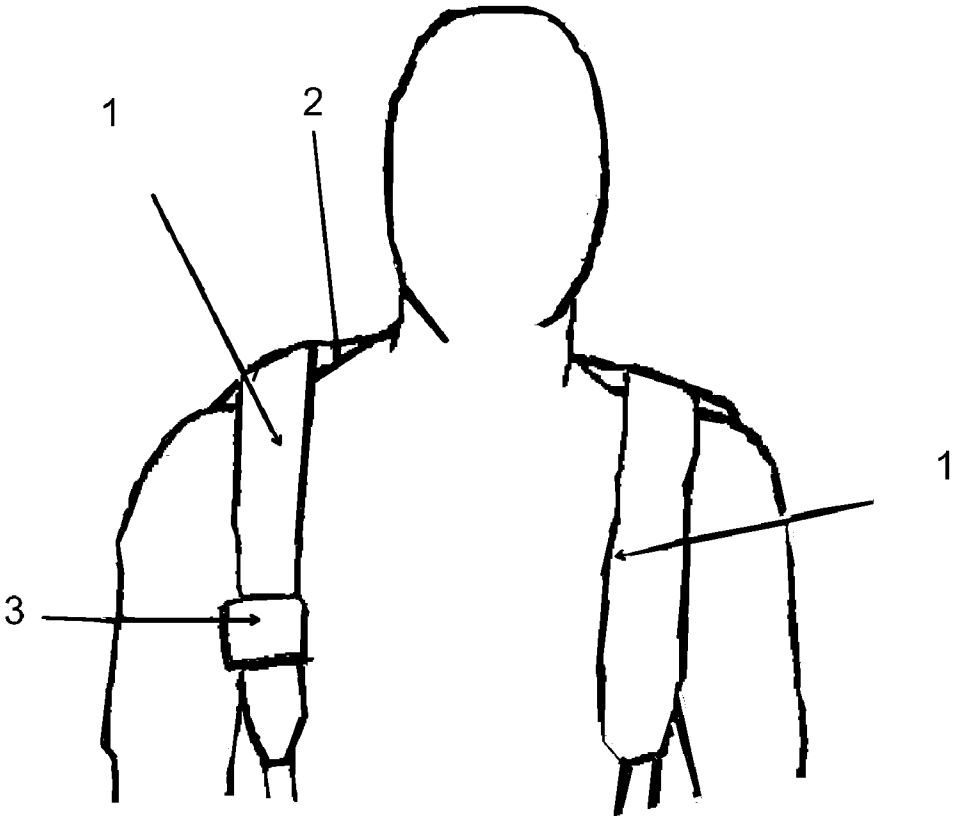


Figure 2

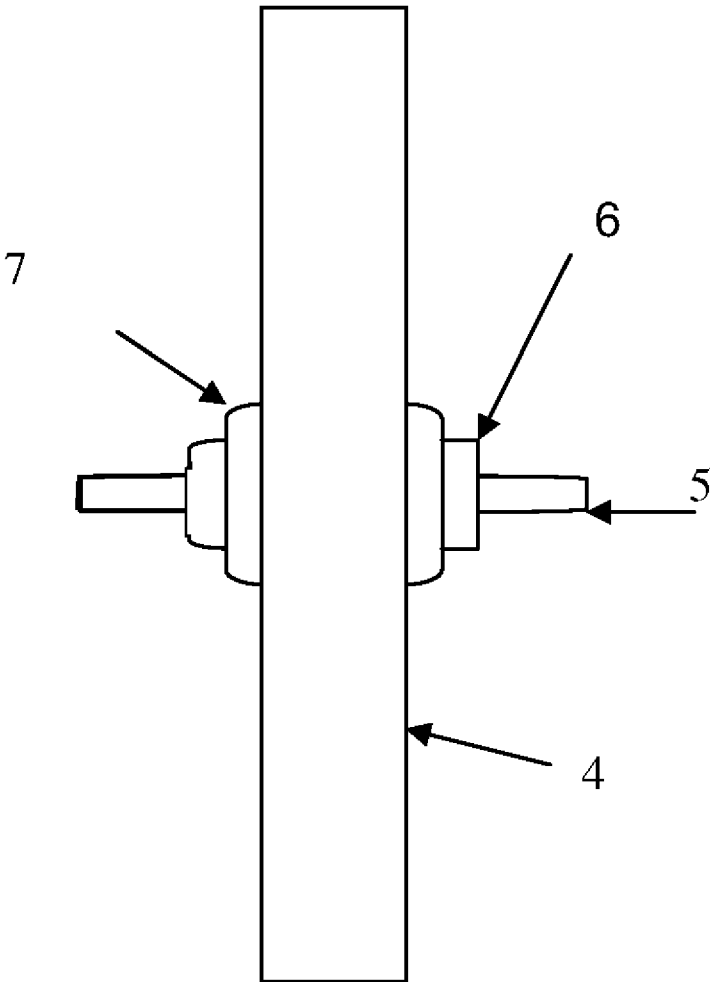


Figure 3

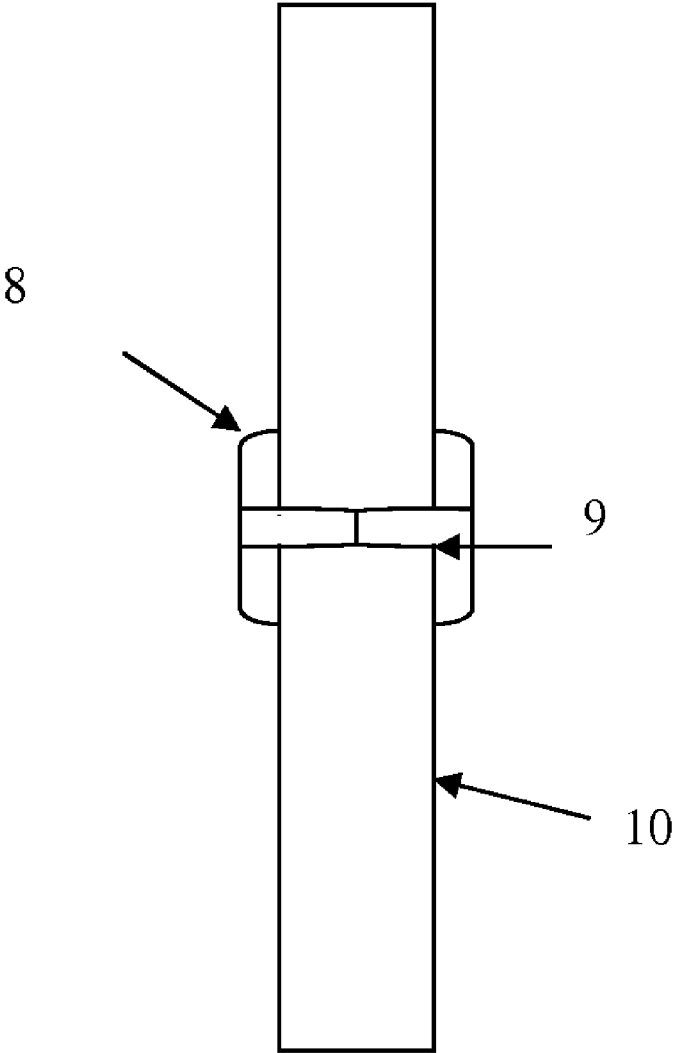


Figure 4

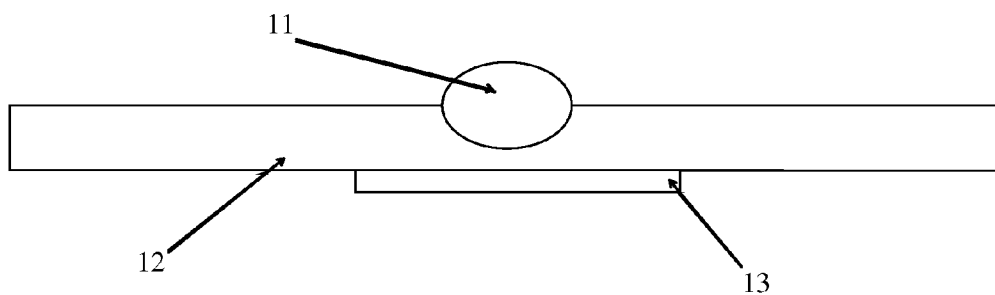


Figure 5

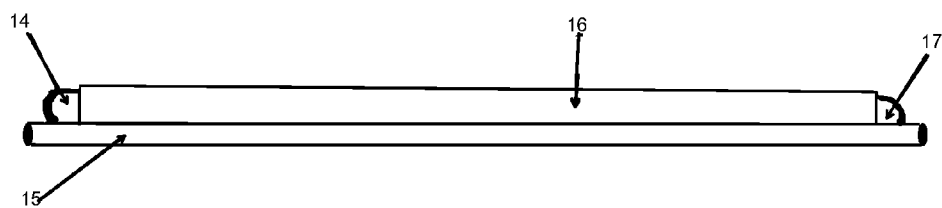


Figure 6

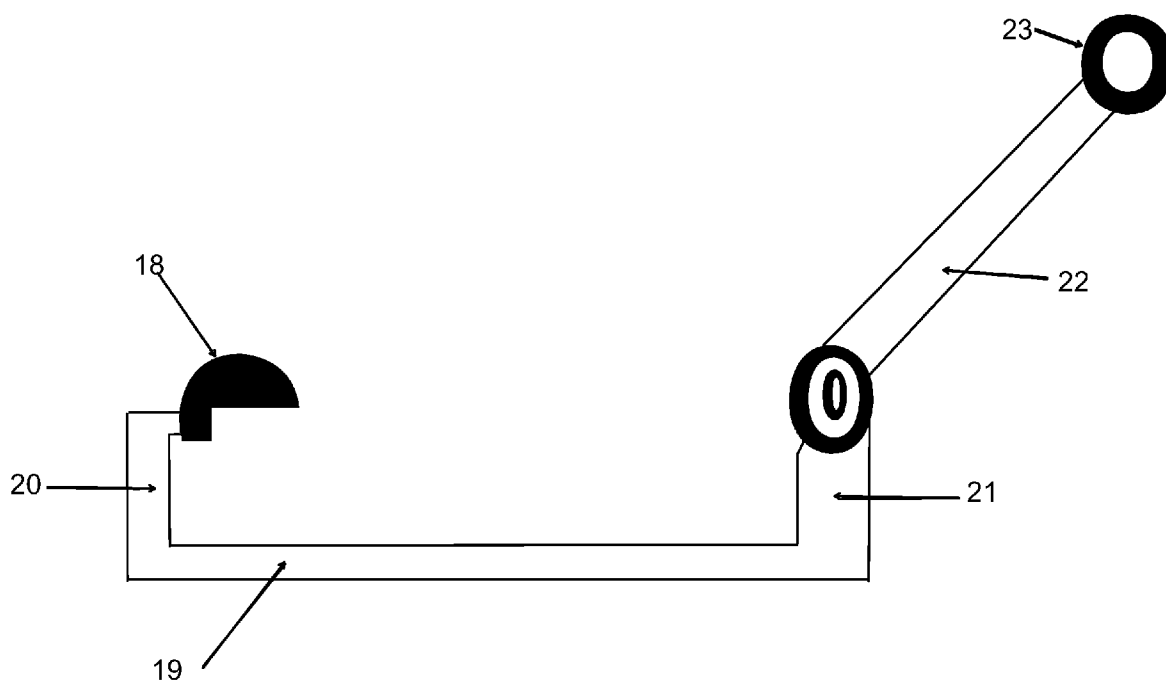
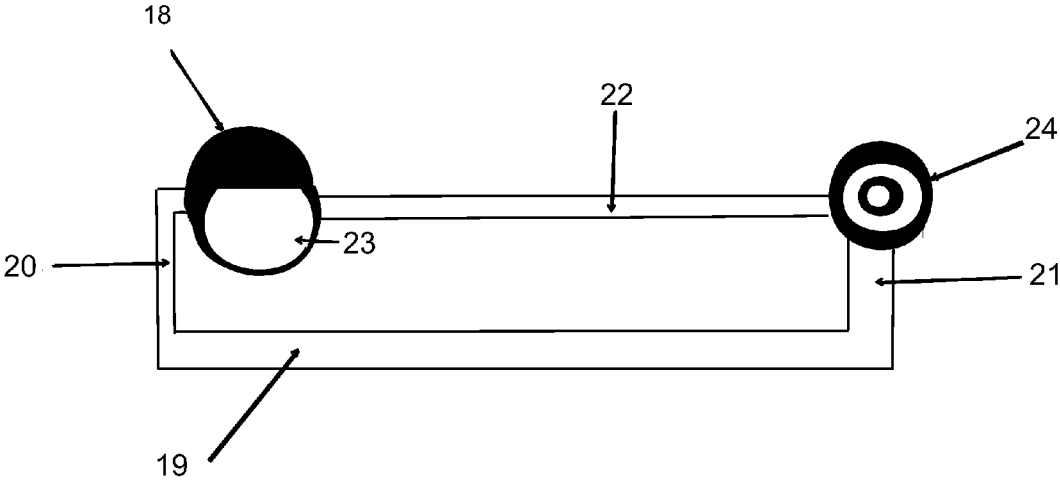


Figure 7



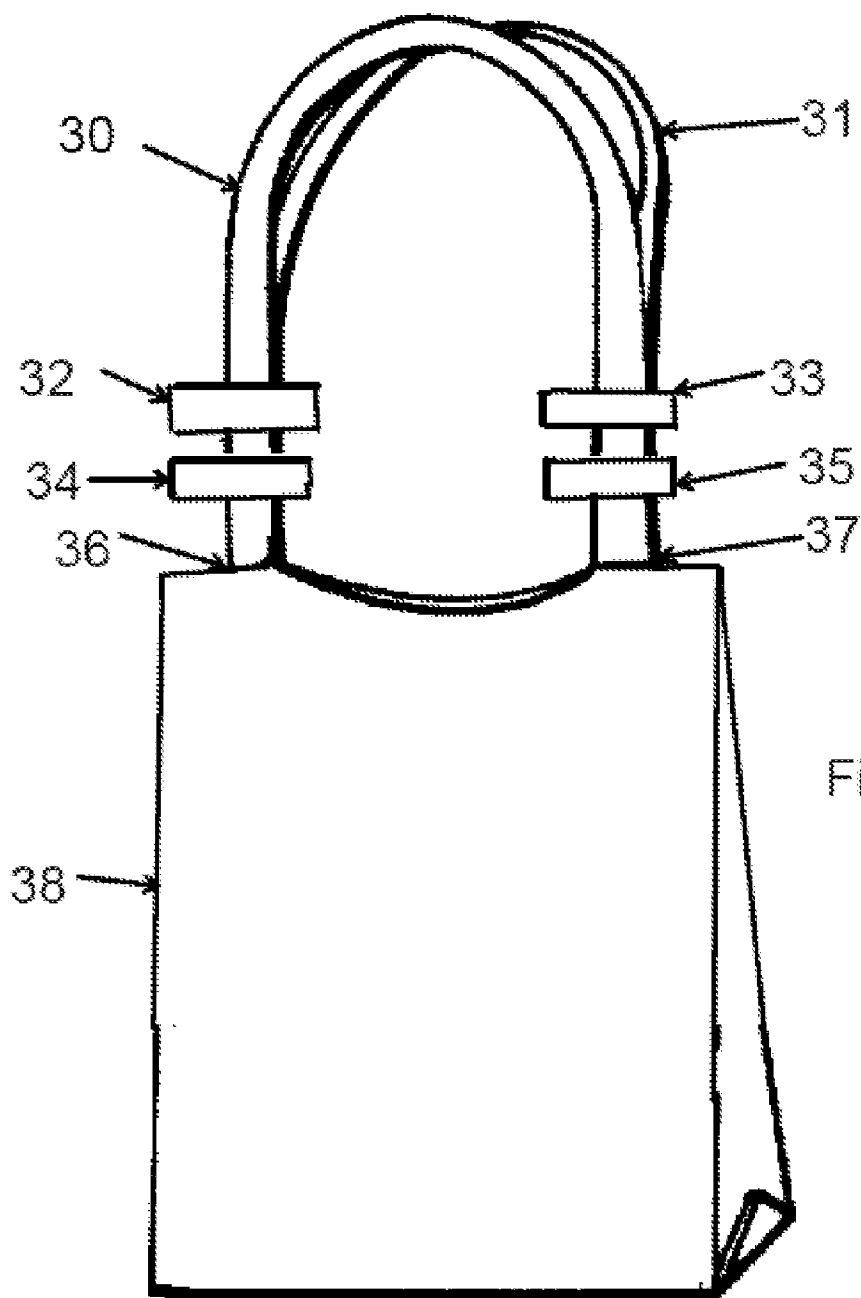
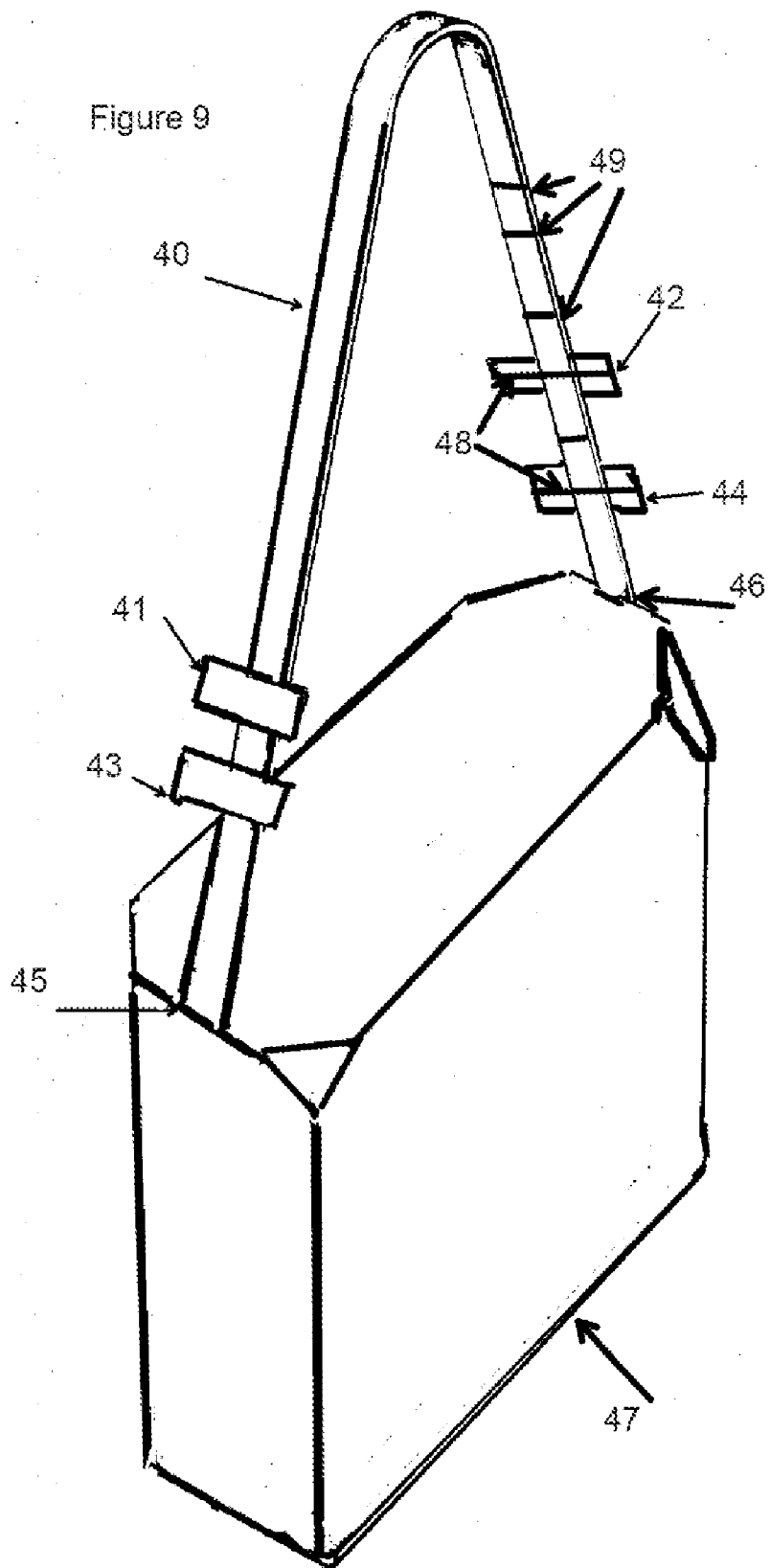


Figure 8



STRAPS CONTAINING ALIGNMENT ELEMENTS FOR USE WITH CARRYING DEVICES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. Ser. No. 13/112,091, filed May 20, 2011, which is a continuation-in-part of U.S. Ser. No. 12/894,313, filed Sep. 30, 2010. The disclosures of the priority applications are incorporated by reference into the instant specification

FIELD OF THE INVENTION

[0002] The present invention relates to carrying devices

BACKGROUND OF THE INVENTION

[0003] Men, woman and children frequently carry bags to work, to school, on vacation, to the park and on errands. Bags used for these purposes include but are not limited to backpacks, satchels, pocketbooks, handbags, tote bags, suitcases, briefcases, etc. and collectively may be referred to as carrying devices.

[0004] Because people retain and reuse their carrying devices for months if not years, they frequently spend a significant amount of time picking out the carrying devices that they believe are best for them. Among the factors that they may consider are the size, the comfort when carrying, the durability and the aesthetic look of the carrying device. With respect to aesthetics, persons may, for example, consider the shape of a carrying device, its color, its design and its texture.

[0005] Many persons will, however, find that over time they tire of carrying a bag that has an unchanged appearance. In order to accommodate these persons' desires to continue to use their carrying devices, while satisfying their desires to change the appearances of the devices, they may, for example, decide to dye a carrying device or otherwise change its color or change its design by for example, using permanent paints or markers. Unfortunately, these types of changes can be time consuming and expensive and are not easily performed with the frequency with which a person who likes to change how he or she expresses himself or herself would like. Other persons may sew patches on their bags. This may be an easier endeavor than coloring or painting the carrying device. However, this too has its limits, because the removal of patches can be time-consuming, and the act of sewing causes a person to put multiple holes in the carrying device, which may be undesirable.

[0006] Another known option is to pin ornaments to a carrying device. Children frequently do this, and when they do, they may use safety pins as mechanisms for attachment. However, as with sewing patches, at each attachment location at least one hole is placed in the carrying device. This can weaken the integrity of the carrying device. Moreover, typically these types of ornamentations are added to the bag portion of the device and in the case of backpacks are viewed by others as the wearer walks away, not as the wearer of the backpack approaches or is talking to another person.

[0007] Therefore, there exists a need for new ways for persons to express themselves on their carrying devices.

SUMMARY OF THE INVENTION

[0008] The present invention provides systems, devices and methods for decorating the straps of carrying devices.

[0009] According to a first embodiment, the present invention provides a carrying device comprising: (a) a bag; (b) a strap, wherein the strap is attached to the bag; and (c) an accessory, wherein the accessory may be reversibly associated with the strap and the accessory comprises, (i) a display element; and (ii) an attachment mechanism, wherein the attachment mechanism permits the accessory to be reversibly associated with the strap.

[0010] According to a second embodiment, the present invention provides a backpack comprising: (a) a bag; (b) a first strap and a second strap, wherein the first strap and the second strap are shoulder straps and are attached to the bag; and (c) an accessory, wherein the accessory may be reversibly associated with at least one of the first strap or the second strap and the accessory comprises, (i) a display element; and (ii) an attachment mechanism, wherein the attachment mechanism permits the accessory to be reversibly associated with at least one of the first strap or the second strap.

[0011] According to a third embodiment, the present invention provides a carrying device comprising: (a) a bag; and (b) a strap, wherein said strap is attached to the bag and the strap is attached to the bag at a first attachment location and at a second attachment location and the strap comprises a first alignment element and a second alignment element, wherein the first alignment element is located a first distance from the first attachment location and the second alignment element is located a second distance from the second attachment location, wherein the first distance and the second distance are substantially the same size. In some embodiments, the carrying device further comprises an accessory, wherein the accessory may be reversibly associated with said strap and said accessory comprises (i) a display element; and (ii) an attachment mechanism. In some embodiments, the attachment mechanism may be designed such that it is distinct from and need not be coupled to or thread any alignment element such as a hole or male or female receiving member on the strap. The strap may be designed such that it contains no holes or none are located in the vicinity of the alignment element or any holes that are present, are not associated with, coupled to and/or engaged by the accessory.

[0012] According to a fourth embodiment, the present invention provides a carrying device comprising: (a) a bag; and (b) a strap, wherein said strap is attached to said bag, wherein the strap comprises at least one alignment element, wherein said alignment element is not visible when a person looks at a front side of the strap. If the strap is for example part of a tote bag, then the alignment element may in some embodiments be visible (even when no accessory is used) from a first side that corresponds to the inner side of the strap, i.e., the side directed toward the bag or the person's body, when the carrying device is in use, but not be visible to a third party. Thus, by way of further example a set of two or more alignment elements (or three or more or four or more, etc.) may be located on each half of a strap and on the same side of the strap, but because the strap hangs over a person's shoulder, when the carrying device is in use, one of the sets of alignment elements may be oriented toward a user's chest or biceps, while the other set is oriented toward the user's back or triceps. This may render the alignment elements obstructed (partially or completely) from view when the bag is in use.

[0013] Any of the bags of the present invention may be used with or without the accessories of the present invention. Similarly, any of the accessories of the present invention may be used with or without the bags of the present invention.

[0014] Through the use of the present invention, a person who uses a carrying device may easily and efficiently provide ornamentation to the carrying device. This ornamentation may easily be changed without unnecessarily diminishing the integrity of the carrying device, which in turn will help to satisfy a person's desire to change how he or she expresses himself or herself through his or her carrying device.

BRIEF DESCRIPTION OF FIGURES

[0015] FIG. 1 is an illustration of how an accessory may be viewed when engaged with a strap of a backpack.

[0016] FIG. 2 is a representation of a strap of the present invention overlaid on an accessory with one type of attachment mechanism that is not engaged.

[0017] FIG. 3 is a representation of the strap and accessory of FIG. 2 as engaged.

[0018] FIG. 4 is a representation of the cross-section of a strap with an accessory with a different attachment mechanism engaged with it.

[0019] FIG. 5 is a representation of a strap with an accessory attached as viewed from a hypothetical end of the strap.

[0020] FIG. 6 is a representation of an accessory of the present invention with an attachment mechanism in the open position.

[0021] FIG. 7 is a representation of an accessory of the present invention with an attachment mechanism in the closed position.

[0022] FIG. 8 is a representation of tote bag with four accessories on the same strap

[0023] FIG. 9 is a representation of another tote bag with two accessories on each of two straps.

[0024] For illustrative purposes only and to enable a better view of the invention, the elements and components of the invention are not necessarily drawn to scale relative to each other.

DETAILED DESCRIPTION OF THE INVENTION

[0025] According to a first embodiment, the present invention is directed to a carrying device. The phrase "carrying device" refers to an apparatus or device that may be used to render the transport of items easier due to the items being placed in a cavity and one or more straps that may be held in a person's hand or laid across a person's shoulder or hung elsewhere to facilitate transport of the items therein or suspension of those items. Unless otherwise specified, the term "strap" includes an element that may be referred to as a "handle." Additionally, unless otherwise specified, the cavity forming portion of a carrying device may be referred to as a bag. The bag, in combination with a strap or straps may form an apparatus that is for example a backpack, a tote bag, a handbag, a pocketbook, a briefcase, a suitcase, a satchel, etc.

[0026] In some embodiments, the volume of the bag ranges from about 1000 cubic centimeters to about 1 cubic meter (1,000,000 cubic centimeters) or from about 5000 cubic centimeters to about 1,000,000 cubic centimeters or from about 10,000 cubic centimeters to about 500,000 cubic centimeters or from about 100,000 cubic centimeters to about 250,000 cubic centimeters or from about 250,000 cubic centimeters to about 750,000 cubic centimeters. The bag may be rigid, semi-rigid or soft and may, for example, comprise, consist essentially of or consist of one or more of organic or synthetic materials or combinations thereof, including but not limited to denim, cotton, canvas, wool, rayon, leather, nylon, plastic,

rubber, foam, metal, metal alloy or combinations thereof. Furthermore, in some embodiments, the bag has wheels associated with it.

[0027] The strap may be formed of one or more materials that have sufficient strength that a person may carry the contents of the bag by holding only the strap or straps. The ends of the strap may for example be attached to the bag through stitching. By way of non-limiting examples, the strap may be comprised of, consist essentially of or consist of one or more of organic or synthetic materials or combinations thereof, including but not limited to denim, cotton, canvas, wool, rayon, leather, nylon, plastic, rubber, foam, metal, metal alloy or combinations thereof. Furthermore, in some embodiments the strap contains a material that forms padding or cushioning over part or all of the strap, for example, over 100% of the strap, over at least 90% of the strap, over at least 80% of the strap, over at least 70% of the strap, over at least 60% of the strap, over at least 50% of the strap, over at least 40% of the strap, over at least 30% of the strap, over at least 20% of the strap, or over at least 10% of the strap. When less than the entire strap has padding, preferably the padded region corresponds at least in part to the area that lies over the points of highest likely stress, e.g., where the hands will rest, which is often in the middle area of a strap for a tote bag, or over the shoulder and/or chest areas for a backpack. The padding may be fixed to certain parts of the strap or moveable, e.g., by sliding it along the strap. In other embodiments, the aforementioned padding or cushioning is within the strap. When within the strap, the padding may run the whole length of the strap or there may be padding within at least 90% of the strap, within at least 80% of the strap, within at least 70% of the strap, within at least 60% of the strap, within at least 50% of the strap, within at least 40% of the strap, within at least 30% of the strap, within at least 20% of the strap, or within at least 10% of the strap. When within the strap, preferably, the padding does not move along the length of the strap.

[0028] Preferably a portion of the strap if not all of the strap along its thickness dimension is compressible, e.g., elastic or at least has shape memory so that if compressed and the force that causes the compression is removed, the compressed area of the strap returns to essentially its original size and shape. For example, in some embodiments, it will return to the same size and shape or within at least 80% of that size or within at least 90% of that size or within at least 95% of that size and to the same shape or essentially the same shape.

[0029] The size of the strap will in part depend on its intended use, and the size of the user. By way of non-limiting examples, in some embodiments, the length of a strap may be from about 20 cm to about 500 cm or from about 30 cm to about 400 cm or from about 50 cm to about 200 cm. In some embodiments, the width of the strap may for example be from about 2 cm to about 10 cm or from about 3 cm to about 8 cm or from about 4 cm to about 6 cm. In some embodiments, the thickness may be from about 1/2 of a millimeter to about 5 centimeters or from about 1 millimeter to about 5 centimeters or from about 2 millimeters to about 3 centimeters or from about 5 millimeters to about 2 centimeters. The aforementioned ranges are for the combined range of an individual strap as being used, regardless of whether the strap is a combination of materials. Furthermore, if the strap is adjustable, the overhang materials, i.e., those materials that are not being used to support the force of carrying the bag, are not included in the above ranges.

[0030] In many embodiments, there will be one to four straps. In some embodiments, there may be one strap, as is the case with many briefcases. In other embodiments, there may be two straps as is the case with many backpacks and tote bags. As persons of ordinary skill in the art will recognize, in many applications each strap is attached to the bag at two locations.

[0031] The carrying device may also comprise an accessory that may be reversibly associated with a strap. The phrase “reversibly associated” means that the accessory can be associated and disassociated from the strap without diminishing the integrity of the accessory or the strap and each can be reused with the other or reused with other straps or accessories, respectively. Furthermore, the term “associated” is used interchangeably with engaged and means that due to the force that one item exerts on another, two items will stay together as they are pulled or pushed through space.

[0032] The accessory, which in some embodiments may be used with or without the bag and strap of the present invention, comprises a display element and an attachment mechanism. The display element may, for example, be comprised of one or more of plastic, metal, and ceramic materials and combinations thereof and may contain words, symbols and/or pictures in two or three dimensions on a front side that form a decoration (also referred to as an ornamentation). In some embodiments, the display element is rigid.

[0033] By way of non-limiting examples, the words, symbols and/or pictures may include a name, geographic location, logo, pattern, picture, representation of a person, animal, thing, place or fictional character or combinations thereof. In some embodiments, the decoration is only on one side of the display element. That side may be referred to as the front face of the display element. When the accessory is associated with a strap, this face may be on the side that is opposite of the side of the display element that is closest to or contacts the strap. In some embodiments, the rear face is smooth. In some embodiments, the rear face of the display element is flat and/or rigid.

[0034] The display element may be any regular or irregular shape. In some embodiments, the display element is a three-dimensional rectangle, where the sides with the most surface area correspond to the front face and to the side opposite the front face, i.e., the rear face. In some embodiments, the length of the front face is from approximately 30% less than the width of the strap with which it will be associated to approximately 30% more than the width of the strap with which it will be associated or the length of the front face is from approximately 20% less than the width of the strap with which it will be associated to approximately 20% more than the width of the strap with which it will be associated or from approximately 10% less than the width of the strap with which it will be associated to approximately 10% more than the width of the strap with which it will be associated or from approximately 5% less than the width of the strap with which it will be associated to approximately 5% more than the width of the strap with which it will be associated or from approximately 3% less than the width of the strap with which it will be associated to approximately 3% more than the width of the strap with which it will be associated or from approximately the same as the width of the strap with which it will be associated to approximately 20% more than the width of the strap with which it will be associated or from approximately the same as the width of the strap with which it will be associated to approximately 10% more than the width of the

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[0035] When the display element is narrower than the total height of the accessory or shorter than the total length of the accessory, the attachment mechanism (or any connection between the display element and the attachment mechanism) may be visible to observers of the accessory when attached to a strap, which may be undesirable to many owners of carrying devices. Accordingly, in some embodiments, the attachment mechanism (and any connection structure if present) is designed so that it is smaller than the display element and/or not visible when the accessory is associated with a strap.

[0036] The height of the display element at its highest points, which is the dimension that runs parallel to the length of the strap, is in some embodiments from about ½ of a centimeter to about 5 centimeters or from about 1 cm to about 4 centimeters or from about 2 centimeters to about 3 centimeters.

[0037] The thickness of the display element at its thickest points is in some embodiments from about ½ of a millimeter to about 3 centimeters or from about 1 millimeter to about 1.5 centimeters or from about 5 millimeters to about 1.5 centimeters. Thickness of the display element is measured in the same direction as the thickness of the strap.

[0038] The accessory can be carried on the strap of a carrying device and therefore is preferably light weight. It may for example be comprised of, consist essentially of or consist of a light weight plastic or other polymer. In some embodiments, the display element is made of a plastic while the hardware of the attachment mechanism comprises, consists essentially of or consists of metal or a metal alloy.

[0039] As noted above, the accessory also contains an attachment mechanism. The attachment mechanism permits the accessory to be reversibly associated with the strap. There are many means by which the attachment mechanism may work. In some embodiments, the attachment mechanism works by a mechanism that does not require piercing of the strap, i.e., does not use a pin, needle or other sharp object to go into the body of the strap. In some embodiments, the attachment mechanism relies of exerting pressure on the thickness of the strap and compressing the strap. In some embodiments it relies only on this force. It may, in some embodiments, only exert a force in the dimension of the thickness of the strap. In these embodiments, the dimension of the distance defined by the length of the attachment mechanism, which corresponds to the dimension of the width of the strap with which it will be associated, is preferably as great as or greater than the width of the strap.

[0040] By way of a non-limiting example the attachment mechanism may rely on a ball and socket or clip mechanism that when engaged there is compression of the strap. The attachment mechanism may, for example, contain two parts that are attached to the rear face of the display element at or near the edges of the display element that are located at the ends of the length of the display element, which corresponds to the dimension that will run across the width of the strap when the accessory engages the strap. At one end, it may have a compression element and at the other end, it may have a receiving member. The compression element, when not

engaged by the receiving member may be able to be opened over a range that is at least 30 degrees, at least 45 degrees, at least 60 degrees, at least 75 degrees, at least 90 degrees, at least 105 degrees, at least 120 degrees, at least 135 degrees, at least 150 degrees, at least 165 degrees or 180 degrees from the plane of the back of the strap. The compression element may also comprise a hinge or other pivot mechanism that allows it to be attached to the display element and still have its free end move in space. By being able to open, the accessory can be associated with the strap without needing to be thread from an end of the length of a strap.

[0041] The compression element may also be able to move a few degrees (e.g., in some embodiments up to 20 degrees, up to 15 degrees, up to 10 degrees, or up to 5 degrees) in one or both directions relative to the width dimension of the accessory and along the length dimension of the strap to enable positioning of it in the receiving member. The receiving member may preferably be a concave structure that is attached to the opposite end of the rear face of the display element from the compression element. A portion of the cavity of the concave structure may be oriented toward the display element. Consequently, when the free end of the compression element is received by the cavity of the concave structure, the receiving member will prevent the compression element from moving away from the strap. However, the design will also allow for easy separation of those two parts by exertion of a small amount of force toward the display element and then toward either end of the length of the strap. Thus, in some embodiments the compression element is a male part and the receiving members is a female part.

[0042] In some embodiments, the compression element, may for example be approximately the same length as the front face of the display element or from about 70%-80% or about 80%-90% or about 90%-100% of that length and from about 25% to about 95% of the height of the rear face of the display element or from about 40% to about 85% of the height of the rear face of the display element or from about 50% to about 75% of the same height as the rear face of the display element. The compression element and the receiving member may be attached directly to the display element or through other elements such as side members. The side members, when there are two of them, may be referred to a first side member and a second side member, which may be located at opposite ends of the rear side of the display element. In some embodiments, they may be rigid structures that extend from the rear face of the display element and form an elongated U shape with the display element.

[0043] The accessory is designed such that when the compression element is engaged, the distance from the rear face of the display element to the compression element is less than the thickness of the strap when the strap is in an uncompressed shape. Accordingly, when engaging the receiving member, the compression element causes the portion of the strap that it crosses to be compressed. The force exerted by the compression element should be greater than intrinsic force of the material of the strap to resist compression. In some embodiments, the compression element when engaged with the receiving member causes compression of the portion of the strap with which it comes into contact to be compressed along its thickness by from about 5% to about 95% or from about 10% to about 80% or from about 15% to about 85% or from about 20% to about 80% or from about 25% to about 75% or from about 30% to about 70% or from about 35% to about 65% or from about 40% to about 60%. Thus, the attach-

ment mechanism by defining a space smaller than the thickness of the strap causes compression when the compression element is in engagement with the receiving member. In some embodiments, there are rigid side elements that by being rigid cause the size of this space to be fixed, i.e., the attachment mechanism does not need to rely on the use of springs or coils.

[0044] If the distance from the rear face of the display element to the top of the receiving member and compression element (the point farthest from the display element) is less than the thickness of the compressed strap, the accessory, when engaged will not protrude from the rear plane of the strap and in the case of a backpack strap will not contact the wearer's chest.

[0045] The portion of the strap beneath where the compression element contacts the strap is preferably compressible, i.e., it is made of a material that can be compressed. For example, this portion of the strap may comprise, consist essentially of or consist of rubber, foam, cotton, wool, coils, springs, leather, etc.

[0046] Another example of an attachment mechanism is a barrette clip. As with the aforementioned attachment mechanism, a barrette clip that is selected to apply sufficient force to compress a strap and to be of sufficient size to be attached to a strap, will when closed define a space that is smaller than the thickness of the strap when the strap is in an uncompressed state. Although in some embodiments it is preferable to use only an attachment mechanism that does not affect the integrity of the strap, the aforementioned attachment mechanisms can be used combination with or be substituted with mechanisms that do affect the integrity of the strap, e.g., a pin or needle.

[0047] In some embodiments, the accessory circumscribes all sides of a portion of the strap. Thus, when engaged with the strap, the accessory, through its component parts, may form an unbroken ring around the strap. The shape of the ring may be regular or irregular and may be substantially similar to the outer shape of a cross-section of a strap. In some embodiments, the unbroken ring is oriented perpendicular to or essentially perpendicular to the length dimension of the strap.

[0048] As persons of ordinary skill in the art will readily recognize, the strap may be a shoulder strap. In some embodiments, there may be two straps that are a first strap and a second strap. Both of these can, for example, be shoulder straps. A portion of the straps may be padded, and the accessory may be designed to circumscribe the padded or unpadded sections. The two shoulder straps can be designed to be worn on different shoulders of a user as in the case of a backpack or on the same shoulder of user as in the case of a tote bag.

[0049] The carrying device may comprise one accessory or a plurality of accessories. For example, the carrying device may have one accessory, two accessories, three accessories, four accessories, five accessories, six accessories, seven accessories, eight accessories, etc.

[0050] In some embodiments, the strap has one or more alignment elements. The alignment elements may, for example, be one or more horizontal lines or depressions (also referred to as recesses) in the rear side of the strap and/or the front side of the strap that can easily guide a user as to where to place an accessory so that it is displayed a desired distance from the top of the strap when the carrying device is in use, for example along a person's chest or a desired distance from the bag itself. Some straps may contain the alignment elements only on their rear sides i.e., one side that is not the side on

which the display element is intended to be placed. This may, particularly in the case of backpacks, enable a user to use the carrying device without accessories and not have the alignment elements be visible to other persons. In some embodiments, the alignment element is distinct from any attachment mechanism, whereas in other embodiments, it forms a complementary part of an attachment mechanism and can be used to receive an accessory. Additionally, in some embodiments, the alignment element can be configured so that it is not visible when looking at the front of the strap, and/or not visible when one looks at the sides of the strap. By way of example, it may be designed so as not to be hole that spans the thickness of the strap.

[0051] In some embodiments, a strap has from one to fifteen alignment elements, or from three to thirteen alignment elements or from five to ten alignment elements. In some embodiments, the strap has one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, or twenty alignment elements. In some embodiments, the alignment elements are preferably evenly spaced and may for example be spaced at a distance that permits two accessories to be attached to the strap in consecutive alignment elements. However, it is with the scope of the present invention to use accessories that are not only the same size or smaller in their height dimensions than the space between alignment elements, but also larger than those spaces in which case a plurality of accessories would be distributed with one more alignment elements associated with each of them. Additionally, when there are plurality of alignment elements, they may be evenly spaced but only exist over a portion of the strap that is smaller than the length of the entire strap.

[0052] When there is a plurality of straps, there may be alignment elements on each strap so that a user can easily align accessories on the two straps to create a more pleasing visual display. In some embodiments, accompanying the alignment elements are numbers or letters or other codes to enable a wearer to quickly determine which alignment elements on two or more straps will be on the same horizontal plane when the carrying device is in use. For example, the alignment elements on each strap may be numbered 1 to N where N equals the number of alignment elements. When the alignment elements are depressions, it may be advantageous for the thickness of the strap in the depressed area prior to compression by the accessory to be greater than the distance between the attachment mechanism and the rear of the display element when engaged so that the strap can be further compressed.

[0053] Additionally, in some embodiments, the alignment elements are not stitching or are distinguishable from stitching. In addition to comprising a depression or instead of comprising a depression, the alignment elements may comprise one or more of a change in color and a change in texture. Still further, it may be desirable so that when viewing one side of a strap, the alignment element is not visible even when so accessory is associated with it. For example when viewing the front of a strap, the alignment element may be hidden because it does not appear on the front of the strap and is not in a configuration that spans the entire thickness of the strap. The thickness of the strap is typically much smaller than the width of the strap, and as persons of ordinary skill in the art will appreciate, the alignment element may be configured such that none of it or some of it is visible when viewing the side of the strap.

[0054] Beneath the alignment elements in the strap may be a compressible material that has shape memory. In some embodiments, some or all of the portions of the strap in areas beneath alignment elements do not contain compressible materials or contain materials that are compressible to a lesser degree than those areas associated with the alignment elements. By way of non-limiting examples, the compressible portions of the strap that are located in the area in which the accessory will be affixed, e.g., beneath the alignment element, will comprise, consist of or consist essentially of foam, rubber, another elastic material, a spring, a coil, etc. Further, as persons of ordinary skill in the art will readily appreciate the carry devices can be associated with accessories in a manner that the accessories cover alignment elements or are placed adjacent to them such that an edge of an accessory is next to an alignment element but part or all of the alignment element is still visible when the accessory is associated with the strap.

[0055] As noted above, the present invention is not limited by the attachment mechanism. By way of further example, the accessory may be comprised of a material that may reversibly retain a plurality of shapes due to shape memory features of the material. The use of shape memory materials are well known to persons of ordinary skill in the art. When force is exerted on these materials they may be moved from one discrete position to a second discrete position or possible a third. Certain types of plastics may for example be used to construct these types of materials.

[0056] In one embodiment, the attachment mechanism comprises a first shape memory element and a second shape memory element, which are each compression elements. When each of the first shape memory element and the second shape memory elements are in first position they may for example be perpendicular to the rear face display element or in an orientation of from 90 degrees to 180 degrees from plane of the display element. When they are each in a second position, they may be parallel to the rear face of the display element or within less than 20 degrees deviation from being parallel to the display element or within less than 15 degrees deviation from being parallel to the display element or within less than 10 degrees deviation from being parallel to the display element or within less than 5 degrees deviation from being parallel to the display element or within less than 3 degrees deviation from being parallel to the display element. The second position is the position that the first and second shape memory elements are in when they compress the strap.

[0057] The first shape memory element and the second shape memory elements may each be attached to the display element by a side element (which may be referred to as a first side element and a second side element). The side elements may be rigid and form sides that will when in use run along the thickness dimension of the strap. The side elements may be designed such that they enable the shape memory elements when they engage the strap to cause compression of the strap. In some embodiments, the side elements span a distance from the display element to the attachment element that is same size as the thickness of the strap or up to 99% of the size of the thickness of the strap or up to 90% of the size of the thickness of the strap or up to 80% of the size of the thickness of the strap or up to 70% of the size of the thickness of the strap or up to 60% of the size of the thickness of the strap or up to 50% of the size of the thickness of the strap or between 50% and 90% of the size of the thickness of the strap or between 60% and 80% of the size of the thickness of the strap.

[0058] In another embodiment, the present invention is directed to a backpack comprising a bag, a first strap, a second strap, and an accessory. The first strap and the second strap are shoulder straps and are attached to the bag. The accessory may be reversibly associated with the first strap or the second strap. The accessory may comprise a display element and an attachment mechanism. The attachment mechanism permits the accessory to be reversibly associated with the first strap or the second strap. In the embodiment one or a plurality of accessories may be used and when a plurality is used, all may be on the first strap or some may be each strap.

[0059] The attachment mechanism may for example be any of the aforementioned attachment mechanism. When engaged, the accessory retains association with the strap by compressing the strap between the attachment mechanism and the display element. Preferably, the accessory does not pierce the first strap and does not pierce the second strap.

[0060] In other embodiments, the compression element may cause compression of the strap by using magnetic forces. For example, if the compression element is a rod attached to the display element by a hinge on one end, on the other end it may have a positive magnetic charge while the display element has a negative magnetic charge. (Alternatively, the rod may have a negative magnetic charge while the display element has a positive magnetic charge. Thus, they have opposite charges.) Magnetic forces can be used in combination with other mechanisms for forcing compression or independent of those mechanisms.

[0061] In some embodiments, the accessory is designed so as to minimize sharp, jagged, or rough edges on one or more of the front, side or rear. By minimizing these types of shapes, a person may reduce her risk of discomfort. For example, the rear of the attachment device may contain rounded or smooth sides so that as the accessory rests on a person's body, the person does not feel discomfort. It may also contain a cover that is smooth and/or soft. The cover may rest between the attachment mechanism and for example the chest of a user of the carrying device.

[0062] As noted above, in many embodiments it is desirable for the method of association of the strap and accessory to rely exclusively on compression forces. However, a person of ordinary skill in the art will readily recognize that in other embodiments, still other methods of engagement can be used in conjunction with or instead of the aforementioned attachment mechanisms. By way of non-limiting examples additional attachment mechanisms could employ latch and hook technologies or snap and fastener systems. However, for some persons the hardware that is associated with these systems is undesirable, because when an accessory is not in use, the hardware that is attached to the strap (e.g., a snap or fastener) is visible and/or can be felt by the persons carrying the carrying device when the device is in use. Thus, in some embodiments the system has an absence of hardware permanently affixed to the strap when the accessory is not in use.

[0063] Additionally, in some embodiments, the compression element lacks jagged edges or teeth. The absence of these features will in some embodiments enable a user to avoid compromising the integrity of the strap.

[0064] The invention may be further understood by reference to the accompanying figures. These figures are for illustrative purposes only and are not necessarily drawn to scale.

[0065] FIG. 1 shows a person wearing a backpack with two straps. The straps 1, allow for carrying of bag portion of the backpack 2. The display element of the accessory 3 is visible by other persons.

[0066] FIG. 2 shows a strap 4 (not to scale) and an accessory over which it is overlaid. Shown is the rear face of the display element 7. Attached to it is a side element 6 and first shape retention member 5. Both the side element and the first shape retention member may have shape retention properties that enable them to be moved between two or more discrete positions by the exertion of a force. By the exertion of a force in the opposite direction, being returned to a previous state. As shown in FIG. 2, the display element, the side elements and the shape retention elements are in the same plane.

[0067] FIG. 3 shows the strap 10 of FIG. 2 with the attachment element engaged. This view is from the rear side. Shown are the rear face of the display element 8 and the first shape retention member 9 folded over the strap, where it meets the second shape retention member. The side elements are not shown as they run perpendicular to the shape retention elements and connect the display elements and the shape retention elements.

[0068] FIG. 4 shows the cross-section of a strap 12 (with the length appearing horizontal) and the accessory, with the display element 13 and the attachment element 11 compressing the thickness of the strap. The side elements are omitted from the figure in order to illustrate the compression of the thickness.

[0069] FIG. 5 shows a hypothetical strap and accessory as if viewed from the end of the strap and the strap were not attached to a bag at that end. In this figure, the strap 16 is not as wide as the length of accessory with a display element 15. The attachment mechanism has a first end 14 that is located slightly away from the edge of the rear face of the display element. The second end of the attachment mechanism 17 is similarly located slightly away from the other end of the rear face of the display element. Note that in this figure, the portion of the attachment mechanism that compresses the strap is not visible because it has a compressing force that is strong enough to compress the portion of the strap that it touches to a thickness that is smaller than the combined thickness of the compression element and the compressed strap. Thus, the portion of the strap that is seen in the figure is closer to the viewer of the figure than the attachment mechanism.

[0070] FIG. 6 shows an accessory of the present invention in an open position. In order to illustrate the invention, the strap is not shown. The accessory is shown from a side view. Thus, the display element 19 appears at the bottom. Attached to it are two side elements 20, 21. Attached to side element 20 is a receiving member 18. Attached to the other side element is a compression element 22, which has a ball shape at its end 23. The compression element is shown open more than 90 degrees relative to the rear face of the display element. This will allow for ease of insertion of a strap.

[0071] FIG. 7 shows the same accessory as FIG. 6, with the display element 19 and the side elements 20 and 21 shown for reference. The hinge 24 has been rotated and the compression element 22 is now parallel to the display element 19. The ball end 23 of the compression element is engage by the receiving member 18 and thus will be retained in position.

[0072] When selecting an accessory for a strap, a consumer may of course choose a display element that enables the consumer to express herself as she wishes to be expressed. However, she should choose an accessory that will work

efficiently with the strap. This will be an accessory that has a space defined by the distance from the rear face of the display element to the compression member that is less than the thickness of the strap with which it is to be used over the desired region. Additionally, although the strap may have some resistance to compression, the resistance to compression of the strap should be less than the force with which the compression element is held in place by for example the receiving member.

[0073] According to another embodiment, the present invention is directed to devices that permit the display of multiple accessories at the same distance from the bag on the same strap, and/or across a plurality of straps. By way of example, these embodiments are particularly advantageous when being used in combination with tote bags or handbags, but may also be used in combination with any other bag that is now known or that comes to be known and that a person of ordinary skill in the art would appreciate at being of use in combination with the present invention.

[0074] When carrying out this embodiment, each of the one or more straps may be attached to the bag at attachment locations. For example, a strap, which may be referred to as a first strap even if only one strap is present may be attached to a bag at a first location and a second location. The first and second locations may for example be 1 to 12 inches apart or 2 to 10 inches apart or 4 to 6 inches apart and be located on the same or different sides of the bag. The strap may be continuous and thus there may be a midpoint between the strap ends that a user may place in her hand or over her shoulder that when placed in those locations, cause the bag to be substantially level. The strap may be attached to the bag through for example stitching or other sewing or adhesion mechanisms that are now known or that come to be known and that a person of ordinary skill in the art would appreciate as being of use in connection with the present invention.

[0075] A given strap may also contain a first alignment element and a second alignment element. The first alignment element may be located a first distance from the first attachment location and the second alignment element may be located a second distance from the second attachment location. If the first distance and the second distance are the same or substantially the same, then when the bag is carried at the midpoint of the strap, the alignment elements will be located at about the same height from the ground or from the bag. The distances may be considered to be substantially same if they are exactly the same or differ in an amount that is not readily apparent to typically viewer of the bag when in use or in some embodiments, are within $1/2$ of an inch or $1/4$ of an inch or $1/8$ of an inch or $1/16$ of an inch or $1/32$ of an inch of each other. These bags may be used with or without one or more of the accessories described above. If two accessories are used and one is located at the first alignment element and another is located at the second alignment element, then when in use they will be displayed on different halves of the same strap.

[0076] The strap may further comprise a third alignment element and a fourth alignment element, wherein the third alignment element is located a third distance from the first attachment location and the fourth alignment element is located a fourth distance from the fourth attachment element, wherein the third distance and the fourth distance are substantially the same size. Thus, there may be two or more alignment elements on each half of a strap. For example each half of the strap may have two, three, four, five, six, seven, eight, nine, ten, etc. alignment elements. In some embodiments for

each alignment element on one half of the strap there is a corresponding alignment element on the second half of the strap that is the same distance from the bag. It is also within the scope of the present invention to put alignment elements on only one half of the straps.

[0077] As with other embodiments, any two or more if not all of the alignment elements may be parallel to each other. For example, the first alignment element and the third alignment element may be parallel to each other. Alternatively or additionally, the second alignment element and the fourth alignment element are parallel to each other.

[0078] In some embodiments, the first alignment element and the second alignment element are each on only one side of the strap. Because the strap may appear essentially folded when in use, when alignment elements are on the same side of the strap they may both be on the inner side, which refers to the side oriented toward the bag and may also be referred to as the rear side. When there are additional alignment elements, they too may be located on the inner side of the strap.

[0079] When there are one or more accessories, in some embodiments, they each comprise an attachment mechanism. The attachment mechanism may comprise a compression element, wherein the strap is located between the compression element and the display element. In some embodiments in which an accessory is used, the alignment element is a recess (also referred to as a depression) and when the accessory is in use, the thickness of the strap in an area that is not located at one of the recesses is greater than or equal to the combined thickness of the strap at a location of a recess and the attachment mechanism at the location at which the attachment mechanism contacts the recess.

[0080] In some embodiments, the first alignment element and the second alignment element each comprise nicks on the left and right sides of the strap. When there are nicks, in some cases, the width of the strap at a location in the vicinity of the alignment element that does not contain the nicks is greater than or equal to the length of the accessory. Thus, in these cases, the strap width may be no greater over regions in which there are accessories than regions in which there are no accessories. The aforementioned design of nicks may also be used in combination with straps for backpacks and other bags.

[0081] When these embodiments are in use, one may use one or a plurality of accessories. If there are a plurality of accessories and a greater number of alignment elements than accessories that are being used at a given time, a user may choose to put a different number of each half of the strap or the same number on each half of the strap. Additionally, even when using the same number of accessories, the user may elect to affix them at the same or different distance from the attachment locations and thereby create a symmetrical or an asymmetrical look.

[0082] As persons of ordinary skill in the art are aware, many bags have two or more straps. When there are two straps, they may be referred to as a first strap and a second strap. In the second strap, there may be the same number or a different number of alignment elements as in the first strap as described above. Further, the second strap may be the same size or a different size than the first strap. For example, there may be a second strap that is attached to the bag at a third attachment location and at a fourth attachment location and the second strap comprises a fifth alignment element and a sixth alignment element, wherein the fifth alignment element is located a fifth distance from the third attachment location and the sixth alignment element is located a sixth distance

from the fourth attachment location, wherein the fifth distance and the sixth distance are approximately the same size. They may also be the same as the first distance and the second distance, i.e., the same as the distance from the first alignment element to the first attachment location and the same as the distance from the second alignment element to the second attachment location.

[0083] On the second strap, there may also be seventh and eighth alignment elements that are a seventh distance from the third attachment location and an eighth distance from a fourth attachment location, respectively. They may also be the same as the third distance and the fourth distance, i.e., the same as the distance from the third alignment element to the first attachment location and the same as the distance from the fourth alignment element to the second attachment location. Additionally, as with the first strap, there may be greater numbers of alignment elements on each half of that strap. For example there may be two straps, each with one, two, three, four, five, six, seven, eight, nine, ten, etc. alignment elements on each half of each strap for a total number of alignment elements being twice that on each strap, and in total, the bag having four times as many alignment elements.

[0084] When comparing the two straps, the alignment elements may be designed such that they allow for one or more sets of four accessories to be distributed among the two straps at approximately the same distance from the bags. As persons of ordinary skill in the art are aware, often when there are two straps, one strap may be associated with an upper left side of the bag and the other strap may be associated with an upper right side of the bag such that when in use, and any closure mechanisms are disengaged, by pulling on one strap in one direction and the other strap in the other direction, the bag will open.

[0085] FIG. 8 shows a tote bag with a bag section 38 and a first strap 30 and a second strap 31. The first strap is attached to the bag at a first attachment location 36 and at a second attachment location 37. On the first strap are first accessory 32, second accessory 33, third accessory 34, and fourth accessory 35. The first accessory and the second accessory are the same distance from the first attachment location and the second attachment location, respectively. Similarly, the third accessory and the fourth accessory are the same distance from the first attachment location and the second attachment location, respectively.

[0086] FIG. 9 shows another tote bag. The bag 47 is attached to a strap 40 at the first attachment location 45 and the second location 46. First accessory 41 and third accessory 43 are on the same half of the strap, whereas second accessory 42 and 44 are located on the other half of the strap. All accessories are oriented away from the bag and the first accessory and the second accessory are the same distance from the first attachment location and the second attachment location respectively. Similarly, the third accessory and the fourth accessory are the same distance from the first attachment location and the second attachment location respectively.

[0087] The figure also shows the compression elements 48 of the attachment mechanisms of the third and fourth accessories. The figure also shows alignment elements 49 that are not being associated with accessories.

[0088] Unless otherwise specified, any of the features of the various embodiments described herein can be used in conjunction with features described in connection with any other embodiments disclosed. Accordingly, features described in connection with the various or specific embodiments are not to be construed as not suitable in connection with other embodiments disclosed herein unless such exclusivity is explicitly stated or implicit from the context.

I claim:

1. A carrying device comprising:

- (a) a bag; and
- (b) a strap, wherein said strap is attached to said bag, wherein the strap comprises at least one alignment element, wherein said alignment element is not visible from a front side of the strap.

2. The carrying device of claim 1, wherein said bag is a tote bag or a backpack.

3. The carrying device of claim 1, wherein said strap comprises a plurality of alignment elements.

4. The carrying device of claim 3, wherein the alignment elements are parallel to each other.

5. The carrying device of claim 4, wherein there are at least three alignment elements.

6. The carrying device of claim 5, wherein the at least three alignment elements are evenly spaced.

7. The carrying device of claim 4, wherein the alignment element is only visible on the rear side of the strap.

8. The carrying device of claim 1, wherein the strap is a first strap and the carrying device further comprises a second strap, wherein the second strap comprises at least one alignment element, wherein said alignment element of the second strap is not visible from a front side of the second strap.

9. The carrying device of claim 8, wherein the first strap and the second strap each comprise at least three alignment elements.

10. The carrying device of claim 9, wherein the at least three alignment elements are evenly spaced.

11. The carrying device of claim 1, wherein the alignment element spans less than the width of a rear side of the strap.

12. The carrying device of claim 1, wherein the alignment element comprises a depression.

13. The carrying device of claim 1, wherein the strap is compressible beneath the alignment element.

14. The carrying device of claim 1, wherein the strap is a shoulder strap.

15. The carrying device of claim 6, wherein the first strap and the second strap are both shoulder straps.

16. The carrying device of claim 1, wherein the alignment element is substantially parallel to the width of the strap.

17. The carrying device of claim 1, wherein the alignment element does not span the thickness of the strap.

18. The carrying device of claim 1, wherein the strap has an absence of holes.

19. The carrying device of claim 12, wherein the strap is a shoulder strap.

20. The carrying device of claim 18 wherein the first strap and the second strap are both shoulder straps.

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