(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 992 257 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.11.2008 Bulletin 2008/47

(51) Int Cl.:
A47D 13/02 *(2006.01)*

(21) Application number: **08156223.3**

(22) Date of filing: **15.05.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **15.05.2007 US 749067**

(71) Applicant: **Infantino, LLC**
San Diego, CA 92121 (US)

(72) Inventors:
- **Parness, Michael A.**
  San Diego, CA 92121 (US)
- **Miller, Jessica A.**
  La Mesa, CA 91941 (US)

(74) Representative: **Gervasi, Gemma**
Notarbartolo & Gervasi GmbH
Bavariaring 21
80336 München (DE)

(54) **Reversible infant carrier**

(57) A reversible infant carrier adaptable for selectively carrying the infant in the front or the back of the wearer with proper back and abdomen support includes an anterior support panel and a posterior support panel linked thereto. There is further provided a pair of adjustable shoulder harnesses attached to the anterior support panel, and a support belt slidably extendible through the anterior support panel including a lumbar support pad and an abdomen support sleeve.

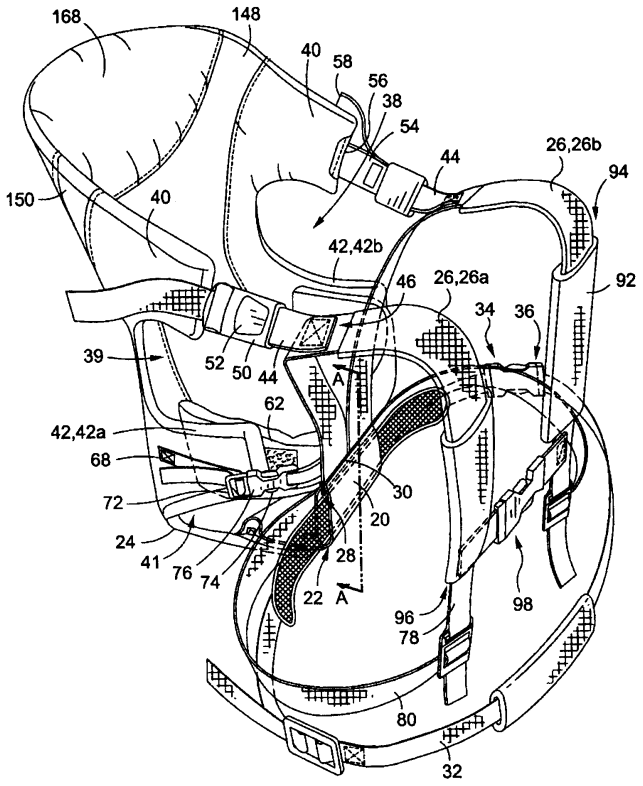

Fig. 4

EP 1 992 257 A1

Description

BACKGROUND OF THE INVENTION

1. Technical Field

[0001] The present disclosure relates generally to carrying and support devices. More particularly, the present disclosure relates to shoulder harness devices for on-the-body carry of infants and small children. The present disclosure further relates to reversible infant carriers adaptable for carrying the infant on the front side or the back side of the wearer.

2. Related Art

[0002] It is common practice for parents and other caregivers to carry infants and toddlers, and there is a variety of well-known devices suitable to this end. Such infant-carrying devices include carriages, strollers, pushchairs, and car seats, which are separate units particularly configured for holding the infant or toddler independent of the parent/caregiver adult. The adult, in turn, holds and transports the device with handles and other attachments thereof. Alternatively, there are devices known in the art configured to be worn by the adult for on-the-body carrying of the infant or toddler, including slings, wraps, pouches, and backpack-like shoulder strap devices.

[0003] Historically, the practice of carrying infants and toddlers on the body of the parent/caregiver is more prevalent in traditional cultures, and indeed, most basic slings and wraps are derivations of long-established designs originating therefrom. Earlier, in industrialized cultures, it was deemed to be detrimental to the development of the child to experience too much physical contact with the parents or caregivers. Thus, carrying infants and toddlers in a manner that would entail the same is relatively uncommon in such cultures. However, these views are increasingly being challenged on the basis that there are numerous developmental benefits to the child. Additionally, there are immediate benefits to the parent/caregiver, including the freedom to use both hands while monitoring and caring for the child being carried. Thus, care may be provided to other children simultaneously, strain and fatigue on the arms, back, and shoulders may be reduced, and household chores may be completed while monitoring the child. Moreover, cumbersome and bulky strollers need not be deployed in potentially dangerous places such as crowded city sidewalks and public transportation systems. Therefore, on-the-body carrying of children is growing in popularity.

[0004] As explained above, there are a number of basic configurations for infant carriers suitable for on-the-body carry, including slings, wraps, and shoulder strap carriers. Though simpler in construction, slings and wraps are not as popular as infant carriers that incorporate shoulder straps, due in part to the difficulty associated with proper wear. Among infant carriers with shoulder straps, there are those with frames fashioned after conventional backpacks. Accordingly, such framed carriers typically support the child on the back of the wearer. Also, there are frameless or soft-sided carriers that support the child on the front or chest of the wearer such as that contemplated in U.S. Pat. No. 6,763,983 to Norman, as well as those that support the child on the hip of the wearer such as that contemplated in U.S. Pat. No. 5,813,580 to Fair.

[0005] There are a number of positions and orientations in which the child may be carried, each being appropriate for different circumstances. For example, where there is a need for increased monitoring, the child may be carried on the front of, and facing backwards to, the parent or caregiver. Further, while frolicking about, completing errands, or otherwise participating in activity that takes the child out of the home, a greater degree of interaction with the surrounding environment may be offered by carrying the child in the front of, and facing forward along the same perspective as, the parent or caregiver. However, due to increased exposure to hazards considering that the body of the parent/caregiver does not shield the child, it may be inappropriate in certain circumstances to carry the child in the front.

[0006] Unfortunately, existing infant carriers are lacking in a number of different respects, namely, the capability of interchangeably carrying the child in the front as well as the back in a desired orientation. The level of discomfort experienced by those who utilize wearable infant carriers also represents yet another deficiency, in that there is placed a substantial load on the abdomen and back of the wearer with insufficient support. Improper weight distribution puts a strain on the shoulders, and may lead to serious injury. Instead of experiencing a sudden injury, inadequate lower back and abdomen support may develop into or exacerbate chronic medical conditions. Along theses lines, discomfort to the child may result from an inadequate fit with the carrier. Though large differences in the size of infants and toddlers may be accounted for by carriers of incrementally larger sizes, conventional infant carriers cannot be adjusted for minor shape and size differences. This may result in chafing, strain, and discomfort, or worse, such as suffocation, or abnormal development of muscle and bone structures.

[0007] Accordingly, there is a need in the art for an improved infant carrier that can be switched to carry the child between a number of positions and orientations. Additionally, there is a need for an infant carrier that provides proper support and comfort to the wearer and the child, which can be appropriately converted in accordance with each such positions and orientations. There is also a need in the art for an infant carrier having minor dimensional adjustments that accommodate varying body shapes and sizes.

BRIEF SUMMARY OF THE INVENTION

[0008] According to one embodiment of the present

invention, there is provided a reversible infant carrying apparatus that is adapted to support an infant or toddler on an adult wearer. The carrying apparatus in accordance with such an embodiment includes an anterior support panel with a lateral sleeve. Furthermore, there is a posterior support panel that is linked to the anterior support panel. There are a pair of shoulder harnesses, with each defining opposed ends that are attached to the anterior support panel to define a loop relationship. Each shoulder harness is also engageable to the posterior support panel. Further included in the infant carrying apparatus is a support belt that is slidably extended through the lateral sleeve, with the support belt defining a first connector end engageable to an opposed second connector end. Thus, a looped configuration about the abdomen and back of the wearer is maintained. That the support is slidably extended achieves proper support for the wearer when carrying the infant in the front or the back. The anterior support panel, the posterior support panel, and the pair of shoulder harnesses collectively define a compartment within which the infant is supported.

[0009] The present invention will be best understood by reference to the following detailed description when read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] These and other features and advantages of the various embodiments disclosed herein will be better understood with respect to the following description and drawings, in which:

FIG. 1 is a rear perspective view of an infant carrier constructed in accordance with one embodiment of the present invention, the infant carrier holding an infant and being worn on the back of an adult;

FIG. 2 is a perspective view of the infant carrier being worn on the front of the adult with the infant facing backwards toward the adult;

FIG. 3 is a perspective view of the infant carrier being worn on the front of the adult with the infant facing forwards;

FIG. 4 is a detailed perspective view of the infant carrier including an anterior support panel, a posterior support panel, shoulder harnesses, and a support belt in accordance with an embodiment of the present invention;

FIG. 5 is a side plan view of the infant carrier showing the configuration of a head support extension and a body support extension in relation to the shoulder harness;

FIG. 6 is a front plan view of the infant carrier showing the attachment of the left and right shoulder harnesses including primary and secondary segments thereof;

FIG. 7 is a perspective view showing details of the support belt including a lumbar support pad and a tubular abdomen support sleeve;

FIG. 8 is a side cross-sectional view of a portion of the anterior support panel and the posterior support panel taken along axis A-A of FIG. 4 with an adjustable length coupling strip that links the two in a first configuration;

FIG. 9 is a side cross-sectional view of the adjustable length coupling strip taken along axis A-A of FIG. 4 in a second configuration;

FIG. 10 is a bottom plan view of the adjustable length coupling strip in the second configuration; and

FIG. 11 is a rear plan view of the infant carrier in accordance with an embodiment of the present invention.

[0011] Common reference numerals are used throughout the drawings and the detailed description to indicate the same elements.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The detailed description set forth below in connection with the appended drawings is intended as a description of the presently preferred embodiment of the invention, and is not intended to represent the only form in which the present invention may be constructed or utilized. The description sets forth the functions of the invention in connection with the illustrated embodiment. It is to be understood, however, that the same or equivalent functions may be accomplished by different embodiments that are also intended to be encompassed within the scope of the invention. It is further understood that the use of relational terms such as first and second, top and bottom, and the like are used solely to distinguish one from another entity without necessarily requiring or implying any actual such relationship or order between such entities.

[0013] With reference to FIG. 1, an infant carrier 10 in accordance with one embodiment of the present invention is shown being worn by an adult 12, and carrying an infant 14. The adult 12 is understood to be a parent or other like caregiver, though it will be appreciated that the specific identity of the adult 12 has no particular significance to the present invention. Generally, it is to be understood that the adult 12 is a mature human capable of wearing the infant carrier 10 and bearing the weight of the infant 14 supported thereby, and the term wearer may also be used to refer to the same. Along these lines, it is understood that while particular reference will be made to the infant 14, this is by way of exemplary simplification only, and not of limitation. It is contemplated that small children from newborns to toddlers may also be supported by the infant carrier 10. Accordingly, when referring to the infant carrier 10, it is understood that such reference name is not intended to limit the carrying capabilities to strictly infants (children about a year old).

[0014] There are a number of positions and orientations in which the infant 14 may be carried with the infant

carrier 10. As shown in FIG. 1, the infant carrier 10 may be worn such that the infant 14 is positioned on a back 16 of the adult 12 as shown in FIG. 1. This style of wear is referred to herein as back carry. Additionally, as shown in FIG. 2, the infant carrier 10 may be worn such that the infant 14 is positioned on the front or abdomen 18 of the adult 12, referred to herein as front carry. In accordance with one embodiment of the present invention, the infant carrier 10 is configured in a manner that may be switched between front carry and back carry as will be described in further detail below. As indicated above, it is contemplated that the infant carrier 10 may support a range of children from newborns, infants, to toddlers. Though the particular age of the child is inconsequential, it is to be understood that in the front carry position, the infant carrier 10 may support a child of approximately 7 to 26 lbs., while in the back carry position, the infant carrier 10 may support a child of up to 36 lbs. In addition to providing front and back carry capabilities, the infant carrier 10 is contemplated as being able to support the infant 14 in the back-facing orientation as shown in FIG. 2, as well as the front-facing orientation as shown in FIG. 3. As described in the background above, the back-facing orientation allows the adult 12 to easily monitor infant 14 during, for example, sleeping or eating times. On the other hand, the front-facing orientation may facilitate a greater degree of interaction with the environment. Further details relating to switching between such orientations will be described in further detail below.

[0015] Referring to FIGS. 4 and 5, the infant carrier 10 according to one embodiment of the present invention has an anterior support panel 20 that includes a lateral sleeve 22. Additionally, the infant carrier 10 includes a posterior support panel 24 that is linked to the anterior support panel 20. There is also included a pair of shoulder harnesses 26, specifically, a left shoulder harness 26a and a right shoulder harness 26b. Each of the opposed ends 28, 30 of the shoulder harnesses 26 terminate at the anterior support panel 20, and defines a loop relationship. Unless otherwise noted, in subsequent references to sub-elements of features provided in pairs such as the shoulder harnesses 26, such sub-elements are understood to be included in both instances of that feature. By way of example only, the foregoing opposed ends 28, 30 are understood to be present in both the left shoulder harness 26a and the right shoulder harness 26b. In addition to the linkage points of the opposed ends 28, 30, the shoulder harnesses 26 are engageable to the posterior support panel 24. As an additional modality for support for the adult 12, the infant carrier 10 includes a support belt 32 slidably extended through the lateral sleeve 22. Generally, the support belt 32 serves as a safety and counterbalance to the shoulder harnesses 26 to ensure that the weight of the infant 14 is distributed equally along the back 16 of the adult 12. The support belt 32 defines a first connector end 34 engageable to an opposed second connector end 36 to maintain a looped configuration about the abdomen 18 and the back 16 of the adult 12. Generally, the anterior support panel 20, the posterior support panel 24, and the pair of shoulder harnesses 26 collectively define a compartment 38, within which the infant 14 is supported.

[0016] With further particularity, the posterior support panel 24 includes a pair of head support extensions 40, as well as a pair of first body support extensions 42. As shown in FIG. 4, the posterior support panel 24 is generally flat, with the head support extensions 40 and the first body support extensions 42 being bent almost perpendicularly to the flat portion so that it may be directly coupled to the respective one of the shoulder harnesses 26.

[0017] Referring additionally to FIG. 5, the shoulder harness 26 has affixed thereto a first head support linkage strap 44 having a proximal end 46 that is permanently sewn on to the shoulder harness 26, and a distal end 48 coupled to a female connector 50. The female connector 50 is receptive to a male connector 52, which is coupled to a second head support linkage strap 54 that defines a proximal end 56 and an opposed distal end 58. The proximal end 56 is attached to the head support extension 40, and the remainder of the second head support linkage strap 54 is threaded through a bracket 60. In this regard, the length between the head support extension 40 and the shoulder harness 26 may be adjusted as desired, subject to the limits of available slack. It will be appreciated by those having ordinary skill in the art that the female connector 50 and the male connector 52 may be any one of known selectively engageable connector types.

[0018] With regard to the linkage of the first body support extension 42 to the shoulder harness 26, fixed to the shoulder harness 26 is a second body support extension 62 that is configured for secured attachment to the first body support extension 42. The second body support extension 62 is shaped and positioned along the shoulder harness 26 to be overlapping the first body support extension 42. Generally, it is contemplated that the first and second body support extensions 42, 62 are to be removably attached using conventional hook and loop connectors. By way of example, the first body support extension 42 may have a first strip 64 comprised of a plurality of miniature hooks, while the second body support extension 62 may have a second strip 66 comprised of a plurality of miniature loops. As will be appreciated by those having ordinary skill in the art, the miniature hooks become embedded within the miniature loops, thereby holding the first strip 64 and the second strip 66 together, as well as any other structure attached to the same. Since the first strip 64 and the second strip 66 have a vast overlapping area, the amalgamated width of the first body support extension 42 and the second body support extension 62 may be greatly varied. In combination with the adjustable head support extension 40 and the first and second body support extensions 42, 62, varying sizes of the infant 12 may be fitted within the confines of the compartment 38. The compartment 38 is understood to in-

clude an infant arm passage 39 defined by the head support extensions 40 and the first and second body support extensions 42, 44. An infant leg passage 41 is defined by the first and second body support extensions 42, 44 the anterior support panel 20, and a portion of the posterior support panel 24 between the first body support extension 42 and the anterior support panel 20.

[0019] An additional modality for reinforcing the coupling of the posterior support panel 24 to the shoulder harness 26 is provided in accordance with one embodiment of the present invention. More particularly, there is a first auxiliary body support strap 68 fixed to the first body support extension 42, and a second auxiliary body support strap 70 fixed to the second body support extension 62. The first auxiliary body support strap 68 is threaded through a buckle portion 72 of a male connector 74, while the second auxiliary body support strap 70 is linked to a female connector 76, which is configured to releasably engage the male connector 74. Thus, it is understood that first and second auxiliary body support straps 68, 70 prevents the link between the first body support extension 42 and the second body support extension 62 from coming undone, thereby enhancing the security of the infant carrier 10.

[0020] As indicated above, both ends 28, 30 of the shoulder harness 26 are fixed to the anterior support panel 24. With additional reference to the back plan view of FIG. 6, the shoulder harness 26 is understood to be comprised of a primary segment 78 associated with the end 30, and a secondary segment 80 associated with the end 28. The anterior support panel 20 is generally rectangular in shape and defines a top edge 82, an opposed bottom edge 84, a left side edge 86, and an opposed right side edge 86. It is contemplated that the end 30 of the primary segment 78 is attached to the anterior support panel 20 by way of the top edge 82, and the end 28 of the secondary segment 80 is attached to the anterior support panel 20 by way of the left and right side edges 86, 88. Although the primary segment 78 is illustrated as being substantially perpendicular to the secondary segment 80 with respect to the attachment to the anterior support panel 20, it will be appreciated by those having ordinary skill in the art that the primary segment 78 may be disposed at any desired angle relative to the secondary segment 80. Relatedly, the left shoulder harness 26a may be positioned on the anterior support panel 30 in an angular offset relative to the right shoulder harness 26b, such that the shoulder harnesses 26 define a converging v-shaped configuration. It is contemplated that such v-shaped configuration reduces the likelihood of the infant 14 choking between the shoulder harnesses 26, considering that the junction 27 therebetween is substantially lower than the normal positioning of the head of the infant 14. As best illustrated in FIG. 4, the primary segment 78 has attached thereto the first head support linkage strap 44, as well as the second body support extension 62 and the second auxiliary body support strap 70. The secondary segment 80 is adjustably coupled to the primary segment 78 with a threaded buckle 90. Thus, the length of the secondary segment 80 relative to the primary segment 78 may be modified to account for various sizes of the body of the adult 12.

[0021] Each of the shoulder harnesses 26 includes a tubular shoulder pad sleeve 92 that is selectively positionable along the primary segment 78. The tubular shoulder pad sleeve 92 is defined by an open top end 94 and an opposed open bottom end 96, and is fitted over the shoulder harness 26 in a sliding relationship. In this regard, it is understood that the opening of the tubular shoulder pad sleeve 92 is slightly greater than the width of the shoulder harness 26. It is contemplated that the interior core of the tubular shoulder pad sleeve 92 is comprised of a sponge-like cushioning material. In one embodiment of the present invention, the cushioning material is memory foam, and is understood to conform to the shape of the shoulders 19 of the adult 12 and distribute the load evenly along the entirety of the tubular shoulder pad sleeve 26. The outer fabric of the tubular should pad sleeve 26 may be a breathable, mesh-like material for added comfort to the adult 12. The shoulder pad sleeve 26 is axially rotatable about the shoulder harness 26 to provide cushioning in front carry and back carry, where only a half of the shoulder pad sleeve 26 is provided with the cushioning material.

[0022] The primary segment 78 of the shoulder harness 26 further includes a selectively engageable cross connector 98 that links the left shoulder harness 26a and the right shoulder harness 26b for a more secure attachment of the infant carrier 10 to the adult 12. Like the other linking straps described above, the cross connector 98 is comprised of a first strap segment 100 having an end permanently affixed to the left shoulder harness 26a, and a second strap segment 102 with an end permanently fixed to the right shoulder harness 26b. The first strap segment 100 is threaded into a male connector 104 including a threaded buckle portion 106. Thus, the first strap segment 100 and the male connector 104 may extend and thus define various distances between the left and right shoulder harnesses 26a, 26b. The second strap segment 102 is attached to a female connector 108, which is configured to receive the male connector 104 in a releasably engaged relationship.

[0023] With reference to FIG. 7, further details pertaining to the support belt 32 will be described. According to one embodiment of the present invention, the support belt 32 is comprised of a first segment 110 linked to a second segment 112 with a length adjustment buckle 114. More particularly, the first segment 110 defines a proximal end 116 coupled to the length adjustment buckle 114, and an opposed distal end 118 coupled to the first connector end 34 or female connector. The second segment 112 similarly defines a proximal end 120 and an opposed distal end 122 coupled to the second connector end 36 or male connector. By varying the length of a slack portion 111 of the first segment 110, the length of such first segment 110 is accordingly adjusted, result-

ing in a corresponding adjustment to the overall length of the support belt 32. As indicated above, the anterior support panel 20 includes the lateral sleeve 22, through which the support belt 32 is slidably extended. In this regard, it is contemplated that both the first segment 110 and the second segment 112 are slidably extendable through the lateral sleeve 22.

[0024] In accordance with an embodiment of the present invention, there is a lumbar support pad 124 permanently affixed to the support belt 32. The lumbar support pad 124 is defined by a generally straight middle portion 126 and opposed outer portions 128 and 130. Furthermore, it is contemplated that the opposed outer portions 128, 130 are flexibly angled to conform to the side fringes of the back 16 of the adult 12. Along these lines, the straight middle portion 126 is contemplated to support the flat, middle section of the back 16 of the adult 12. The opposed outer portions 128, 130 are segregated from the straight middle portion 126 by vertical stitching 129, 131 respectively, which more readily permits bending of the same. As shown in FIG. 7, it is understood that the lumbar support pad 124 is also slidably engageable to the lateral sleeve 22 of the anterior support panel 20. The lumbar support pad 124 may have various padding or cushioning material along the lines of those included in the tubular shoulder pad sleeve 92 described above.

[0025] The support belt 32, and in particular, the second segment 112 thereof, further includes a tubular abdomen support sleeve 132 selectively positionable between the proximal end 120 and the distal end 122. It is understood that the core of the tubular abdomen support sleeve 132 is likewise comprised of padding material. The tubular abdomen support sleeve 132 is understood to be slidably engageable to the lateral sleeve 22 of the anterior support panel 20.

[0026] With reference to FIGS. 1 and 2, the contemplated use of the support belt 32, and in particular, the lumbar support pad 124 and the abdomen support sleeve 132 will be described. In the back carry style illustrated in FIG. 1, the lumbar support pad 124 is centered within the lateral sleeve 22. The back 16 of the adult 12 is supported by the lumbar support pad 124. Positioned arcuately opposite of the lumbar support pad 124 and along the support belt 32 is the abdomen support sleeve 132 (not shown). Thus, equal weight distribution between the lumbar support pad 124, the abdomen support sleeve 132, and the tubular shoulder pad sleeves 92 is achieved. Similarly, in the front carry style illustrated in FIG. 2, the lumbar support pad 124 (not shown) remains positioned on the back 16 of the adult 12, and the abdomen support sleeve 132 also remains positioned on the abdomen 18 of the adult 12. It is noted that while the relative positioning of the lumbar support pad 124 and the abdomen support sleeve 132 with respect to the adult 12 has not changed, the position of the anterior support panel 20 has. In this regard, the slidable engagement of the support belt 32, along with the lumbar support pad 124 and the tubular abdomen support sleeve 132, to the lateral sleeve 22 allows for the same to be revolved about the anterior support panel 20. Thus, in both front and back carry styles, the back 16 and the abdomen 18 of the adult 12 are properly supported. When it is desired to remove the infant carrier 10, the second connector end 36 or male connector is disengaged from the first connector end 34 or female connector.

[0027] As indicated above, the infant leg passage 41 is defined by a portion of the posterior support panel 24 between the first body support extension 42 and the anterior support panel 20. This portion may also be referred to as a seat portion, considering that the pelvis of the infant 14 is supported thereby. With reference to FIGS. 8, 9, and 10, such seat portion may include an adjustable length coupling strip 134 that links the anterior support panel 20 to the posterior support panel 24. More particularly, the coupling strip 134 is defined by a proximal end 136 that is fixed to the anterior support panel 20, and a distal end 138 fixed to the posterior support panel 24. A proximal end portion includes a first element 140 of an interlocking adjustment fastener 142, and a distal end portion includes a second element 141 of the same. According to one embodiment, the interlocking adjustment fastener 142 is a zipper, where the first element 140 is a first row of teeth and the second element 141 is a second row of teeth configured to join with the first row of teeth. By joining the first and second elements 140, 141, the length of the coupling strip 134 is reduced by a length 1 therebetween. Thus, infants 14 having variously sized pelvic structures may all be properly supported without discomfort in the infant carrier 10. The proximal end portion also includes a first element 144 of an interlocking auxiliary fastener 146. Furthermore, the distal end portion includes a second element 145 of the same. In one embodiment, the interlocking auxiliary fastener 146 is a frictionally retained snap button. It is contemplated that the interlocking auxiliary fastener 146 supplements the retention of the first element 140 to the second element 141 of the interlocking adjustment fastener 142.

[0028] As shown in FIG. 4, the posterior support panel 24 defines an inner surface 148 and an opposed outer surface 150. It is envisioned that portions of the inner surface 148 and the outer surface 150 are fabricated from a breathable, mesh-like material. Referring to FIG. 11, the posterior support panel 24 also defines an intermediate section 152 between the head support extensions 40 and the first body support extensions 42. The intermediate section 152 further defines a first edge 154 and an opposed second edge 156. Further adjustability of the width of the posterior support panel 24 to accommodate infants 14 of varying sizes is provided by a first cinching strap 158 and a second cinching strap 160. The first cinching strap 158 is disposed toward the first edge 154 of the intermediate section 152, and includes a first interlocking fastener element 162. The second cinching strap 160 is disposed opposite the first edge 154 and toward the second edge 156 of the intermediate section 152. The second cinching strap 160 includes more than

one second interlocking fastener elements 164 arranged in a spaced relationship, which are selectively engageable to the first interlocking fastener element 162. By locking with the various ones of the second interlocking fastener elements 162, the first and second edges 154, 156 are pulled toward the center, thereby reducing the width of the intermediate section 152.

[0029] As best shown in FIG. 11, the outer surface 150 includes a pocket 166, the open end of which may be selectively closed through the use of a zipper, button, or other closure mechanism. Various parenting items are intended to be carried in the pocket, though any other suitably sized item may be stored therein.

[0030] Referring to FIGS. 4 and 11, the posterior support panel 24 further includes a combination head support and bib portion 168. On the outer surface 150 of the same, the intermediate section 152 includes a first fastener element 170 that is engageable to a second fastener element 172 on the combination head support and bib portion 168. As shown in FIG. 3, the combination head support and bib portion 168 is envisioned as being folded over, such that the first fastener element 170 is interlocked with the second fastener element 172. Thus, what would otherwise be an obstruction to the line of sight of the infant 14 is removed in the front carry, forward-facing orientation. It is contemplated that the abdomen 18 of the adult 12 supports the head of the infant 14 in this instance. On the other hand, in the back carry as shown in FIG. 1 and the forward carry, backward-facing orientation as shown in FIG. 2, the combination head support and bib portion 168 is disengaged from the intermediate section 152 to support the resting head of the infant 14.

[0031] The particulars shown herein are by way of example and for purposes of illustrative discussion of the embodiments of the present invention only and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the present invention. In this regard, no attempt is made to show structural details of the present invention in more detail than is necessary for the fundamental understanding of the present invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the present invention may be embodied in practice.

Claims

1. A reversible infant carrying apparatus comprising:

an anterior support panel including a lateral sleeve;
a posterior support panel linked to the anterior support panel;
a pair of shoulder harnesses each defining opposed ends both attached to the anterior support panel to define a loop relationship, each shoulder harness being engageable to the posterior support panel; and
a support belt slidably extended through the lateral sleeve, the support belt defining a first connector end engageable to an opposed second connector end to maintain a looped configuration about the abdomen and back of a wearer;

wherein the anterior support panel, the posterior support panel, and the pair of shoulder harnesses collectively define a compartment within which an infant is supported, the compartment being alternately positionable on the abdomen and the back of the wearer.

2. The apparatus of Claim 1, wherein:

the posterior support panel includes a pair of head support extensions and a pair of first body support extensions; and
each of the shoulder harnesses include a second body support extension engageable to a one of the pair of first body support extensions and a head support linkage strap engageable to a one of the pair of head support extensions.

3. The apparatus of Claim 2, wherein the pair of first and second body support extensions are engageable to each other with hook and loop connectors; preferably further comprising:

a pair of first auxiliary body support straps each attached to a one of the pair of first body support extensions; and
a pair of second auxiliary body support straps each attached to a one of the pair of second body support extensions;

wherein each of the first auxiliary body support straps are removably engageable to a corresponding one of the second auxiliary body support straps.

4. The apparatus of Claim 2, wherein the head support linkage straps are defined by a first segment attached to the shoulder harness and including a female connector, and a second segment attached to the head support extension and including a male connector removably engageable to the female connector.

5. The apparatus of Claim 2, wherein each of the shoulder harnesses includes:

a primary segment including the second body support extension and the head support linkage strap; and
a secondary segment adjustably coupled to the primary segment with a buckle.

6. The apparatus of Claim 5, wherein the primary segments of a left one and a right one of the pair of shoulder harnesses are arranged in a v-shaped relationship and converging upon the anterior support panel.

7. The apparatus of Claim 5, further comprising:

first and second elongate, tubular shoulder pad sleeve selectively positionable along the primary segment of a respective one of the pair of shoulder harnesses and axially rotatable thereabout, the tubular shoulder pad having a cushioning material; or
a selectively engageable cross connector linking the primary segments of a left one and a right one of the pair of shoulder harnesses.

8. The apparatus of Claim 1, further comprising a lumbar support pad affixed to the support belt, the lumbar support pad being slidably engaged to the lateral sleeve of the anterior support panel; preferably the lumbar support pad includes a straight middle portion, and opposed outer portions angled to conform to the back of the wearer.

9. The apparatus of Claim 1, further comprising a lumbar support pad affixed to the support belt, the lumbar support pad being slidably engaged to the lateral sleeve of the anterior support panel wherein the support belt is defined by a first segment to which the lumbar support pad is affixed, and a second segment having a first end coupled to the first segment with a threaded adjustable buckle and a second end coupled to the first segment with a locking connector; preferably further comprising a tubular abdomen support sleeve selectively positionable along the second segment of the support belt between the first end and the second end thereof, the tubular abdoment support sleeve being sized and configured for slidable engagement within the lateral sleeve of the anterior support panel.

10. The apparatus of Claim 1, further comprising:

an adjustable length coupling strip linking the anterior support panel and the posterior support panel.

11. The apparatus of Claim 10, wherein:

the coupling strip is defined by a proximal end fixed to the anterior support panel and a distal end fixed to the posterior support panel;
a proximal end portion includes a first element of an interlocking adjustment fastener and a first element of an interlocking auxiliary fastener;
a distal end portion includes a second element of the interlocking adjustment fastener engageable to the first element of the interlocking adjustment fastener, and a second element of the interlocking auxiliary fastener engageable to the first element of the interlocking auxiliary fastener;
the length of the coupling strip being reduced by the length between otherwise disengaged first and second elements of the interlocking adjustment fastener upon engaging the first element of the interlocking adjustment fastener to the second element of the interlocking adjustment fastener.

12. The apparatus of Claim 2, wherein the posterior support panel further defines:

an inner surface and an opposed outer surface; and
an intermediate section between the head support extensions and the first body support extensions, the intermediate section having a left edge and an opposed right edge.

13. The apparatus of Claim 12, further comprising:

a first cinching strap disposed in proximity to the left edge of the intermediate section on the outer surface and including a first interlocking fastener element;
a second cinching strap disposed in proximity to the right edge of the intermediate section on the outer surface, the second cinching strap including a plurality of second interlocking fastener elements arranged in a spaced relationship;

wherein the first interlocking fastener element is selectively engageable to any one of the plurality of the second interlocking fastener elements to reduce the width between the left edge and the right edge.

14. The apparatus of Claim 12, wherein the outer surface of the posterior support panel includes a storage pocket.

15. The apparatus of Claim 12, wherein the posterior support panel further defines a combination head support and bib portion separate from the intermediate section, the combination head support and bib portion being selectively attachable to the intermediate section.

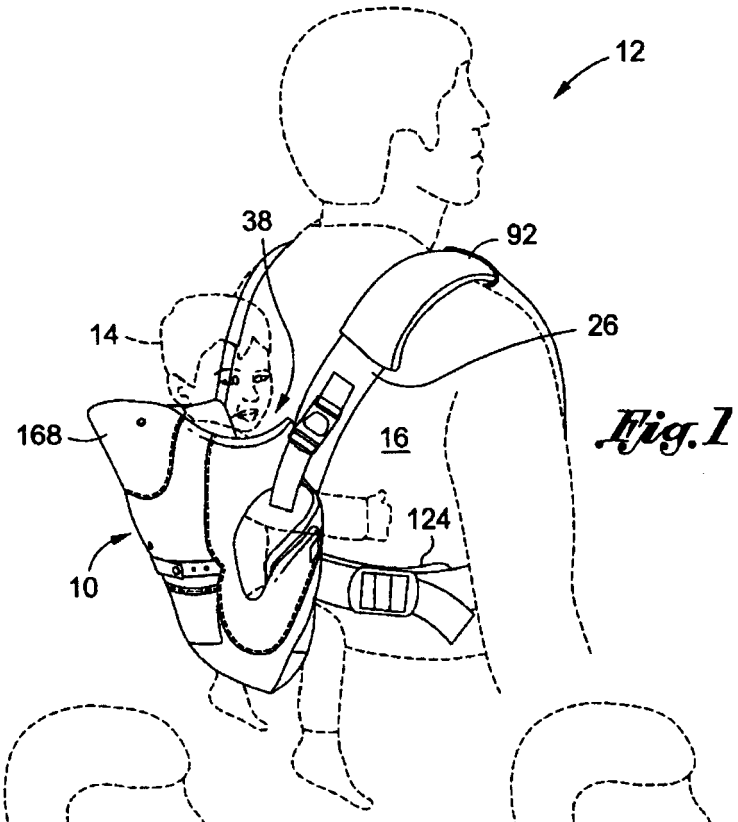

Fig. 1

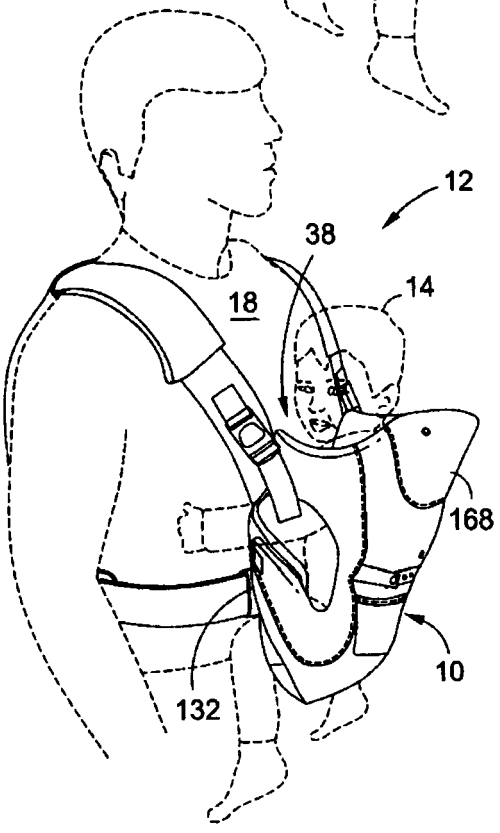

Fig. 2

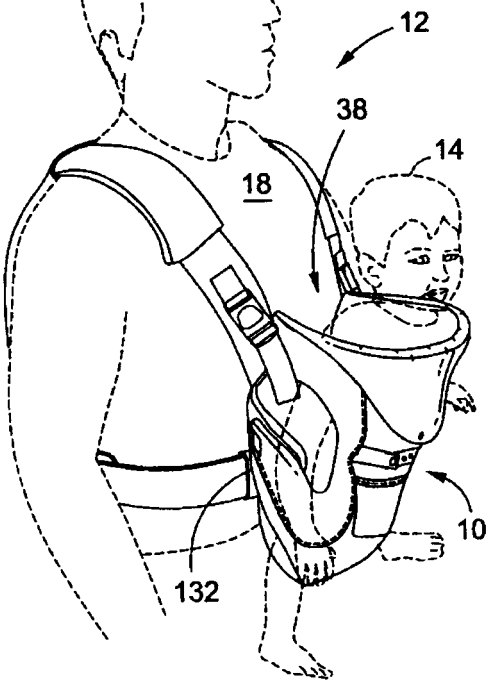

Fig. 3

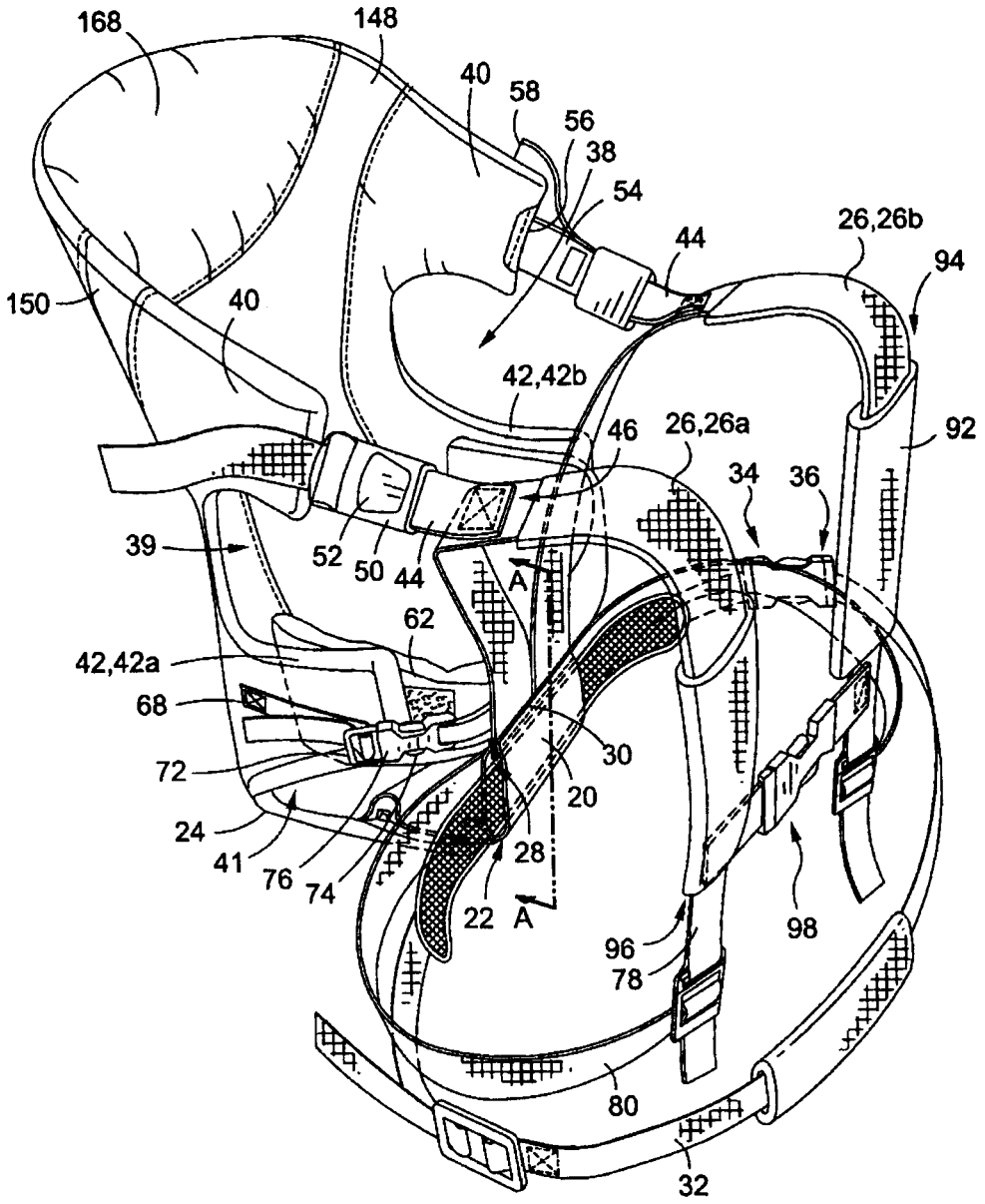
168
148
40
58
56
38
54
44
26,26b
94
150
40
42,42b
46
26,26a
92
34
36
39
52
50
44
A
62
42,42a
68
72
24
41
76
74
30
20
28
22
A
96
78
98
80
32

Fig. 4

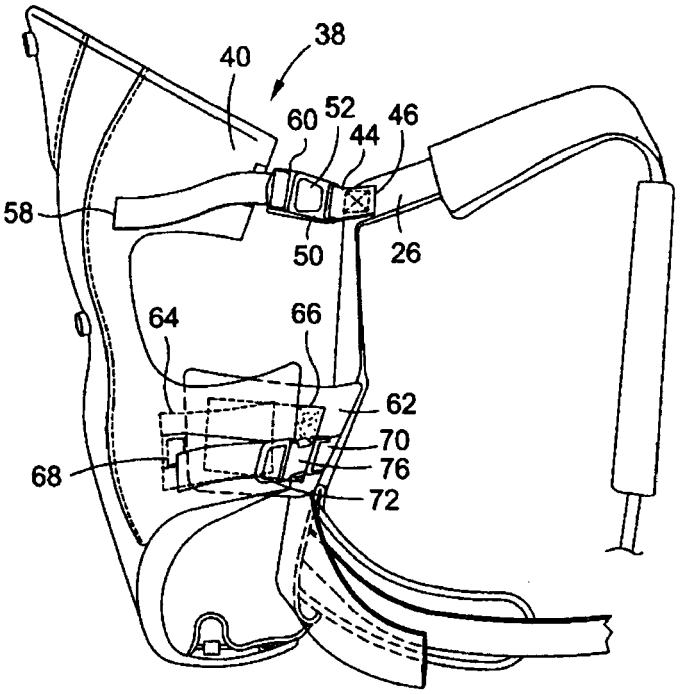
38
40
60
52
44
46
58
50
26
64
66
62
70
68
76
72

Fig.5

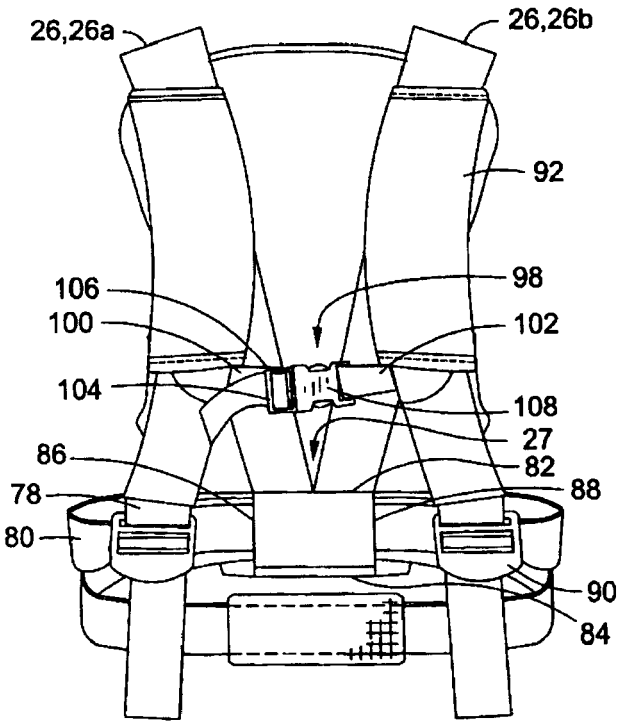
26,26a
26,26b
92
106
98
100
102
104
108
27
86
82
78
88
80
90
84

Fig.6

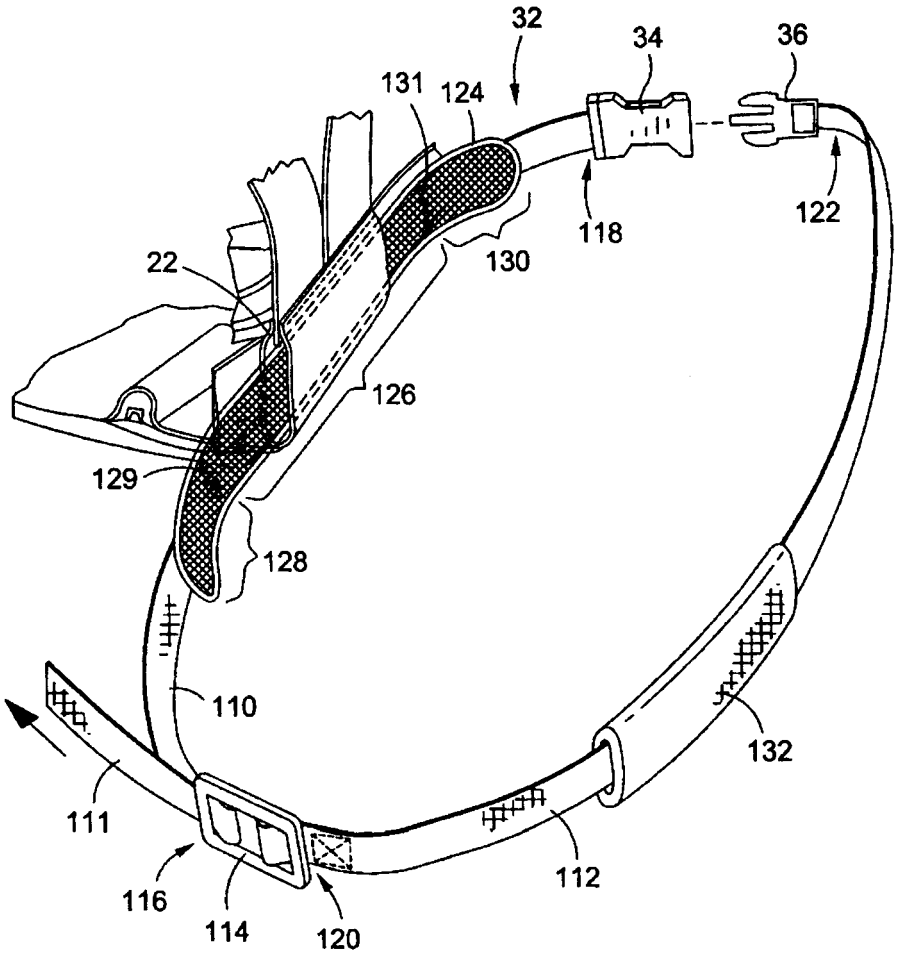
32
34
36
131
124
118
122
22
130
126
129
128
110
132
111
112
116
114
120

Fig. 7

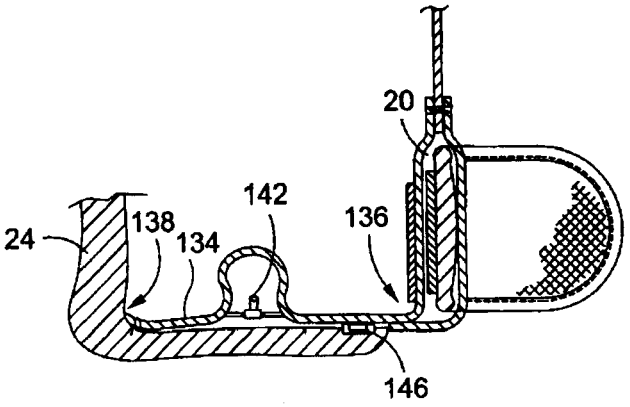

Fig. 8

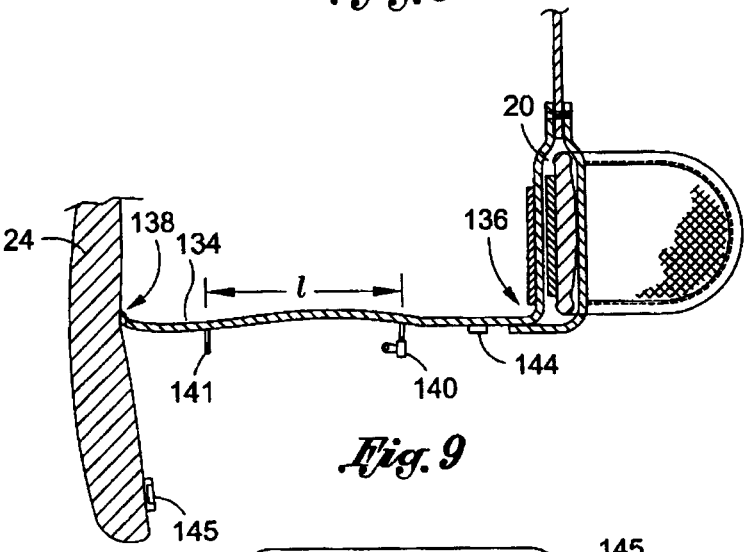

Fig. 9

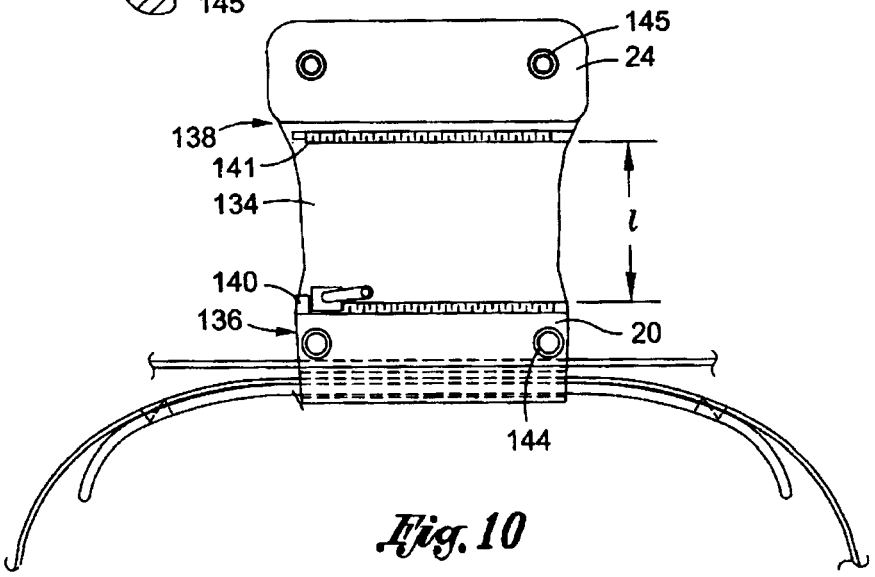

Fig. 10

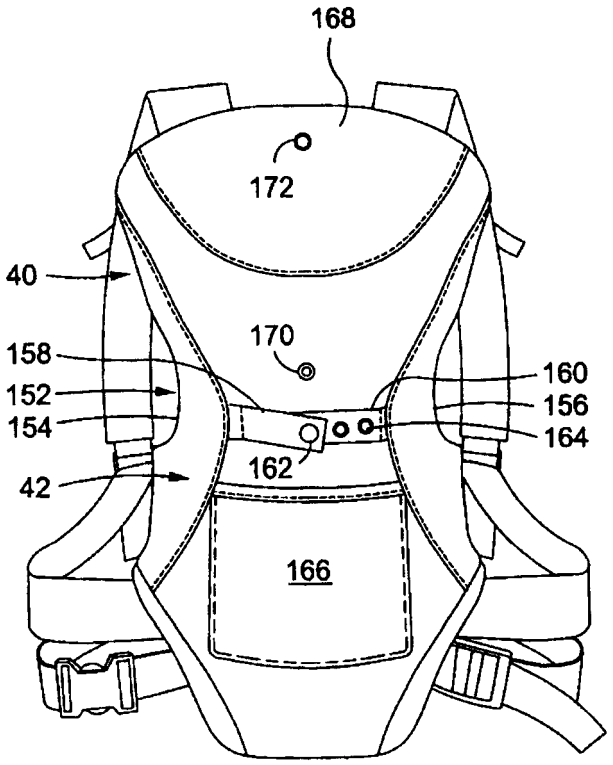

Fig. 11

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 08 15 6223

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2004/149790 A1 (KASSAI KENZOU ET AL) 5 August 2004 (2004-08-05) * figures 19-22 *	1-15	INV. A47D13/02
A	US 5 361 952 A (GOLD NANCY) 8 November 1994 (1994-11-08) * figure 3 *	1	
A	US 4 986 458 A (LINDAY LINDA A [US]) 22 January 1991 (1991-01-22) * figure 2 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	29 August 2008	Reichhardt, Otto

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 15 6223

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-08-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004149790 A1	05-08-2004	JP 2004236736 A	26-08-2004
US 5361952 A	08-11-1994	NONE	
US 4986458 A	22-01-1991	NONE	

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 6763983 B, Norman **[0004]**
- US 5813580 A, Fair **[0004]**