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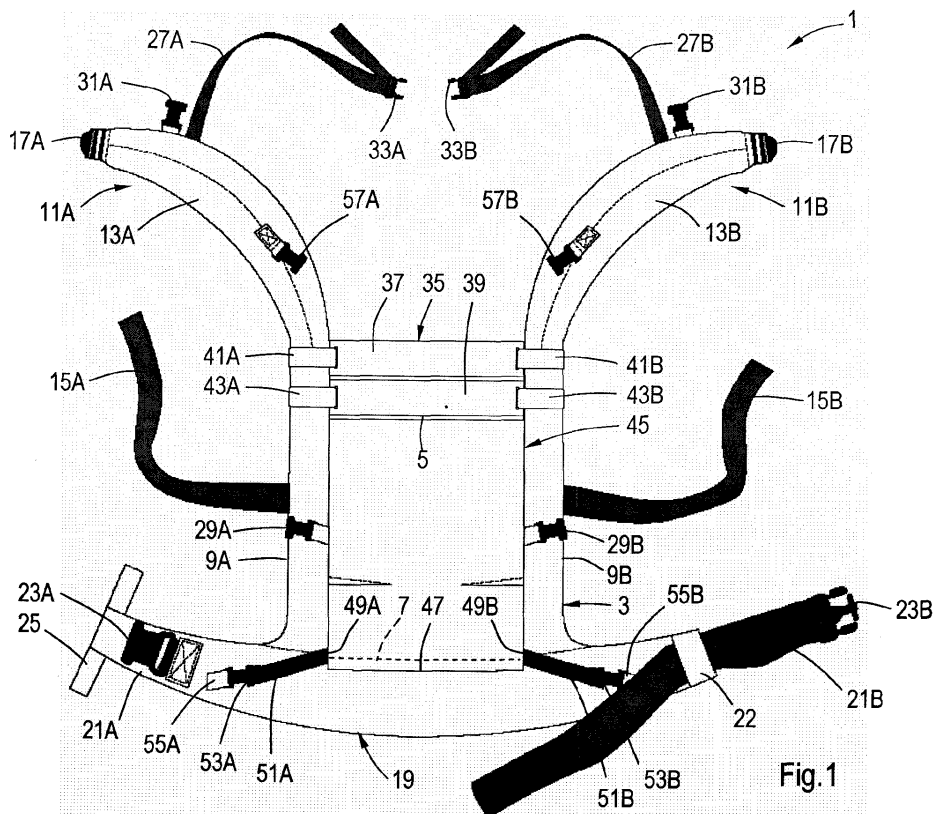
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(54) **Child carrier**

(57) A child carrier (1) is provided comprising a main body (3) and left and right shoulder straps (11A, 11B) connected with left and right sides (9A, 9B) of the main body, respectively. The child carrier is characterised by a left cross strap (27A) connected with the left side of the main body and/or the left shoulder strap, and a right cross strap (27B) connected with the right side of the main body

and/or the right shoulder strap, wherein the left side of the main body and/or the left shoulder strap comprise at least one left fastener (29A, 31A) and the right side of the main body and/or the right shoulder strap comprise at least one right fastener (29B, 31B), respectively, for fastening the right and left cross straps (27B, 27A) to a left and a right fastener (29A, 31A; 29B, 31B), respectively.



Description

[0001] The present disclosure relates to a child carrier comprising a main body and left and right shoulder straps connected with the left and right sides of the main body, respectively. Such child carriers are known in the art for carrying a child in front or on the back of a wearer of the carrier, e.g. a parent.

[0002] For instance, WO 2005/025383 and US 7,322,498 disclose a child carrier, which includes a main panel having generally a rectangular shape. The bottom edge of the main panel is joined to the top edge of a padded waistband and the bottom edge of a head-restraining panel is joined to the top edge of the main panel. Shoulder straps are connected to the main panel and are conjoined by a chest strap that is slidably mounted upon each shoulder strap. Adjustable restraining straps are connected to the chest strap and to the head-restraining panel. The chest strap comprises an adjustable buckle to facilitate entering and exiting the carrier harness.

[0003] The chest strap serves to secure the shoulder straps against slipping off the shoulders and to suit the weight of (the child in) the carrier over the wearer's torso.

[0004] EP 1 159 044 discloses an infant carrier which has an infant carrier main body having a pair of shoulder belts to be mounted around the shoulders of a user, and a vertical holding seat to be mounted on the infant carrier main body so as to hold an infant in a vertical holding condition. The backsides of the pair of the shoulder belts are provided with curves in directions that they approach each other, and joining means, in particular a buckle, for joining together the shoulder belts is provided at the vertex positions of the curves.

[0005] The chest strap of WO 2005/025383 and US 7,322,498 and the buckle of EP 1 159 044 serve to secure the shoulder straps against slipping off the shoulders and to suit the weight of (the child in) the carrier over the wearer's torso. Child carriers of the general types disclosed by these documents are available from different vendors. A drawback of such prior art carriers is that the chest strap or joining means are difficult to near impossible to close and/or open by a wearer behind his/her back in case the child is carried in front of the wearer, yet such carrying position is preferred for very young children, e.g. babies and infants. Generally, the wearer needs assistance for closing the chest strap or buckle in such case. Leaving the chest strap or buckle open in such case is no acceptable alternative, since that poses the serious risk that the shoulder straps slide off the wearer's shoulders, in particular when the wearer reaches forward or downward.

[0006] It is noted that a different category of baby carriers exist, which are characterised by having a front portion for carrying a baby and shoulder straps that cross each other behind the wearer's back. However, such baby carriers require various buckles to close the harness of the shoulder band e.g. as disclosed in US 5,732,861 or EP 1 616 510, and/or are difficult to put on and/or pull

off. Furthermore, such baby carriers are unsuitable or at least uncomfortable for use with elder (larger) children and are unsuitable to be worn with the child on the back of the wearer.

[0007] Consequently, there is desire for an improved child carrier, in particular for a carrier for young or very young children like babies, infants, and/or toddlers, possibly also for young children up to about five years.

[0008] To that end, a child carrier of the above-mentioned type is provided which is characterised by a left cross strap connected with the left side of the main body and/or the left shoulder strap, and a right cross strap connected with the right side of the main body and/or the right shoulder strap, wherein the left side of the main body and/or the left shoulder strap comprise at least one left fastener and the right side of the main body and/or the right shoulder strap comprise at least one right fastener, respectively, for fastening the right and left cross straps to a left and a right fastener, respectively.

[0009] The main body serves for carrying (the body or the behind of) the child. Such child carrier facilitates putting on / pulling off and wearing the child carrier like a rucksack with each arm through one shoulder strap and while having the main body and the child as a front carrier or a back carrier like a rucksack, or with the main body and the child on the back of the wearer's body. The cross straps, when fastened to the left and right fasteners, may generally cross and allow securing the shoulder bands against slipping off the shoulders. Also, the shape and/or weight distribution of the child carrier may be adjusted to suit the wearer's body. Crossing cross band facilitate even distribution of the weight over just a single band, obviating sliding arrangements as in WO 2005/025383 and US 7,322,498. In addition, having two bands is securer than one.

[0010] Further, providing cross bands and separate fasteners therefor provides significantly increased flexibility in the manner and position of fastening and/or undoing the shoulder band securing arrangement provided by the cross bands compared to a single chest strap or buckle.

[0011] In particular, left and right fasteners may be attached to or near the main body, and the cross straps may be configured such that, when the main body is carried on one side of the wearer's body, the cross straps are fastenable to the left and right fasteners substantially on that one side of the wearer's body while crossing each other on an opposite side of the wearer's body.

[0012] Thus, when carrying the child in front of the wearer's body, the carrier can be secured against falling due to the shoulder bands slipping off the shoulders by simple fastening of the cross bands on or near the front side of the wearer's body, thus in perfect reach of the wearer. Assistance for fastening the cross straps is not required. The position of the left and right fasteners may be chosen such that the cross straps are also generally easy in reach when the child is carried on the back and the cross straps are crossed in front of the wearer.

[0013] Compared to a baby carrier with only crossing shoulder bands, the carrier provided herein is significantly easier to put on than and it is not required to rely on buckles for the structural integrity of the carrier.

[0014] When the left and right fasteners are attached to the main body of the carrier, the cross straps may assist in pulling the main body relatively tightly against the body of the wearer. A tighter main body may facilitate carrying a baby or small infant.

[0015] The carrier may comprise plural left and right fasteners for fastening the right and left cross straps, respectively, in different crossing arrangements. This facilitates adapting the carrier to different wearers and/or methods of wearing. In particular, two sets of left and right fasteners may be provided, one set particularly arranged for carrying the child in front of the wearer and a second set particularly arranged for carrying the child on the back of the wearer.

[0016] The child carrier may further comprise a waist strap to ease the load off the wearer's shoulders and shift it to the waist or pelvic region. It should be noted that in such child carrier, the shoulder bands would slip off the shoulders more easily than when pressed down onto the shoulders by the full weight of the child. A securing arrangement as provided by the cross bands may therefore be considered a must in such carrier.

[0017] Advantageously, a length of at least one of the shoulder straps, the cross straps and the waist strap is adjustable. Thus, the shape of the carrier may be adapted to suit different wearers and/or different and/or growing children.

[0018] At least one of the shoulder straps and the waist strap may be openable and closable with a fastener to facilitate putting on / pulling off and/or change the wearing position of the carrier.

[0019] The child carrier may comprise a head support attached, preferably detachably attached, to the main body for supporting the head of a child carried in the child carrier, in particular for a baby incapable of raising its head or for a sleeping child. The head support may be padded and/or cushion-like. A detachable head support facilitates cleaning and/or removal when not needed.

[0020] When attached to the main body, such head support may advantageously be partly or wholly foldable downward, preferably in one or more predetermined amounts, wherein the child carrier comprises one or more fasteners to hold the support in an unfolded state and in one or more such partially folded-down states. This facilitates adapting the carrier to the size of the carried child and/or its needs and interests, e.g. when it wants to look around over the carrier and/or for feeding the child when carried.

[0021] At least when the child carrier is worn by a wearer, at least a portion of the head support may be adjustable for shaping the head support. E.g., a strap may be provided which allows pulling a portion of the head support tighter to the wearer to support the head of a sleeping child or a baby incapable of raising its head, or rather to

release the head support to give the child (more) freedom to move the head.

[0022] The child carrier may comprise a head cover for at least partly covering the head of a child carried in the child carrier, wherein the head cover is attached, preferably detachably, to the main body, and wherein the head cover, when attached to the main body, comprises left and right free top sides which are fastenable with fasteners to the left and right shoulder straps and/or the left and right cross straps above an upper edge of the main body and, if present, above the head support. Such head cover allows supporting and/or protecting the head of the child, in particular a relatively large child whose head is above the upper edge of the main body. Such head cover may protect against weather influences, like sun, wind, rain etc. and may be used to support the head of a sleeping child. A detachable head cover facilitates cleaning and/or removal when not needed.

[0023] The head cover may be attached, preferably detachably, to the main body below an upper edge thereof and/or, if present, below the head support. In such case, the head cover does not interfere with the upper edge of the main body and/or head support, which may be of different materials.

[0024] The left and right free top sides of the head cover may be fastenable with fasteners to the main body below the upper edge of the main body. In such child carrier, the head cover may be stored without it hanging loose and/or flapping about. A storage space may be provided wherein the head cover may be stored, e.g. in folded and/or rolled-up fashion. The storage space may be in the head support with the head cover material forming padding for the head support. However, the fasteners may be arranged such that the head cover, fastened to the fasteners, is maintained substantially against and/or conforming with the main body. This allows the head cover to be neatly stored without forming a bulge of folded and/or rolled-up material, and possible deformation and/or an irreproducible shape of the head support is prevented.

[0025] In an embodiment, the main body and the waist strap comprise a unitary piece of fabric. It is also possible that the main body and the head support and/or the head cover, when present, comprise a unitary piece of fabric. Thus, a continuous shape and strength may be provided throughout the unitary piece of fabric and possible detachment or tearing of a seam joining two portions is prevented. Such child carrier may therefore be more robust than stitched-together child carriers may. Further, manufacturing costs may be reduced.

[0026] Advantageously, one or more fasteners comprise buckles and/or hook-and-loop type fasteners, commonly referred to as Velcro® but available from many different sources and with different brand names. In particular, fasteners for the optional head support may be hook-and-loop type fasteners, since these allow deformation and prevent hard objects near the child's head. Buckles may be preferred for closing the shoulder straps

and/or cross straps. Buckles may be secured with one or more hook-and-loop type fasteners. An optional waistband may be closable with hook-and-loop type to prevent (local pressure of) a hard buckle and to conform to the wearer's body. This may in particular be relevant when the child carrier is worn by a pregnant woman.

[0027] These and other aspects will be more explained below with further details and benefits with reference to the drawings showing an embodiment of the invention by way of example.

[0028] It is noted that the drawings are schematic, not necessarily to scale and that details that are not required for understanding the present invention may have been omitted. The terms "upward", "downward", "below", "above", and the like relate to the embodiments as oriented in normal use and as shown in the drawings, unless otherwise specified.

Fig. 1 shows a child carrier;

Fig. 2A indicates a way of fastening shoulder straps and cross straps of the child carrier of Fig. 1;

Figs. 2B-2C indicate carrying a child in the carrier in front of a wearer with the cross straps fastened according to Fig. 2A;

Fig. 3A indicates another way of fastening shoulder straps and cross straps of the child carrier of Fig. 1; Figs. 3B-3C indicate carrying a child in the carrier on the back of a wearer with the cross straps fastened according to Fig. 3A;

Fig. 4 indicates partly folding down the head support of the child carrier of Fig. 1;

Figs. 5A-5C indicate use of a head cover of the child carrier of Fig. 1.

Fig. 1 is a plan view of a folded-out child carrier 1 comprising a main body 3, which is generally rectangular or trapezoidal, having an upper side 5, a lower side 7, a left side 9A and a right side 9B opposite each other.

[0029] The child carrier 1 comprises a left shoulder strap 11A and a right shoulder strap 11B, each comprising an upper portion 13A, 13B, and a lower portion 15A, 15B, respectively, which are connectable with each other with releasable fasteners 17A, 17B, respectively, so that the shoulder straps 11A, 11B may be opened (as shown in Fig. 1) and closed. The fasteners 17A, 17B here are of a type allowing adjustment of the length of the shoulder straps 11A, 11B when fastened. At least the upper portions 13A, 13B of the shoulder straps 11A, 11B may be padded to increase wearer comfort.

[0030] The child carrier 1 comprises an adjustable waist band 19 having left and right waist band portions 21A, 21B, respectively, connectable with each other with a releasable fastener in the form of a two-part snap-buckle 23A, 23B and a hook-and-loop type fastener 25 on the left waist band portion 21A. The hook-and-loop type fastener 25 may be wrapped around the right waistband portion 21B when the buckle 23 is closed to secure the

waistband 19 against opening if the buckle 23 becomes (unintentionally) undone. The position of the buckle 23 on the right waistband portion 21B is adjustable, allowing length adjustment of the waistband 19 to a wearer's girth.

A free end portion of the right waistband portion 21B may be held by a loop 22 or any other fastener to prevent it from dangling loose.

[0031] The child carrier 1 further comprises a left cross strap 27A attached to (the upper portion 13A of) the left shoulder strap 11A and a right cross strap 27B attached to (the upper portion 13B of) the left shoulder strap 11B. Further, on the left and right sides 9A, 9B of the main body 3 first left and right fasteners 29A, 29B and on (the upper portions 13A, 13B of) the left and right shoulder straps 11A, 11B second left and right fasteners 31A, 31B are attached. The left and right cross straps 27A, 27B have free ends, which are fastenable to the right and left first and second fasteners 29A-31B with matching fasteners 33A, 33B. Here, the fasteners 29A-33B are matching portions of snap-buckles. The positions of the fasteners 33A, 33B on the cross straps 27A, 27B are adjustable, allowing length adjustment of the cross bands 27A, 27B.

[0032] The child carrier 1 further comprises a head support 35, attached to the main body 3. The head support 35 here comprises two portions 37, 39, each releasably fastened to the left and right shoulder straps 11A, 11B with left and right hook-and-loop type fasteners 41A, 41B and 43A, 43B, respectively.

[0033] The child carrier 1 further comprises a head cover 45 attached to the main body 3. The head cover 45 has a generally rectangular or trapezoidal shape with a free end 47 remote from the main body 3, providing left and right free top sides 49A, 49B to which left and right head cover straps 51A, 51B and left and right head cover fasteners 53A, 53B are attached. The left and right head cover fasteners 53A, 53B are fastenable to matching left and right fasteners 55A, 55B (see Fig. 1) to hold and maintain the head cover 45 substantially parallel against the main body 3. The left and right head cover fasteners 53A, 53B are also fastenable to further matching left and right fasteners 57A, 57B on the left and right upper shoulder band portions 13A, 13B, respectively (see below).

[0034] The main body 3 provides the main carrying portion of the carrier 1 and may be provided with one or more pleats, seams, insets, adjusters etc. for providing a comfortable shape for the child to be carried. At least the main body 3 may comprise padding or insulation for comfort of the child. The main body 4 and the waistband 19 here comprise several unitary pieces of fabric to forming layers of integrated main body and waistband material, which may extend into the upper shoulder strap portions 13A, 13B and/or the head support 35.

[0035] Figs. 2A-5C indicate different options for use of the child carrier. In Fig. 2A is indicated that the upper and lower portions 13A, 15A and 13B, 15B, respectively, of the shoulder bands 11A, 11B, may be interconnected (dashed arrows 1A, 1B). It also indicates that the left cross band 27A may be fastened to the right fastener 29B on

the main body 3 and that the right cross band 27B may be fastened to the left fastener 27A on the main body 3, so that the left and right cross bands 27A, 27B cross each other (dashed arrows IIA, IIB). Figs. 2B and 2C are sketches indicating in left side view (Fig. 2B) and front view (Fig. 2C) an adult 59 carrying a child 61 in front of the adults body in the child carrier 1 arranged according to Fig. 2A. In such wearing position, the child 61 may face the adult 59, which is a preferred position for carrying a baby. Older children may face forward and overlook the main body 3 and/or the head support 35. It will be clear from Figs. 2A-2C that the cross straps 27A, 27B are easily fastened to the fasteners 29A, 29B on the front side of the main body and thus in front of the wearer 59. By adjusting the cross straps, the carrier can be adjusted to the wearer's body and the curvature of the main body 3 holding the child may be adjusted flatter or more curved. The main portion of the weight of the carrier 1 and the child 61 is supported by the waist strap 19 and the shoulder straps 11A, 11B, so that the cross straps 27A, 27B may be relatively narrow. However, one or more portions of the cross straps may be padded to reduce or avoid local pressure on the wearer's back, in particular when (s)he is leaning forward.

[0036] In Fig. 3A is indicated, similar to Fig. 2A, that the upper and lower portions 13A, 15A and 13B, 15B, respectively, of the shoulder bands 11A, 11B, may be interconnected (dashed arrows IA, IB). It also indicates that the left cross band 27A may be fastened to the right fastener 31B on the right shoulder strap 11B and that the right cross band 27B may be fastened to the fastener 31A on the left shoulder strap 11A, so that the left and right cross bands 27A, 27B cross each other (dashed arrows IIIA, IIIB). Figs. 3B and 3C are, similar to Figs. 2A, 2B, sketches indicating in left side view (Fig. 3B) and front view (Fig. 3C) an adult 59 carrying a child 61 on the back of the adults body in the child carrier 1 arranged according to Fig. 3A. Such wearing position is a preferred position for carrying an older infant, a toddler or an older child since the balance and posture of the adult may be maintained more easily and the child 61 may look over the shoulder of the adult 59. It will be clear from Figs. 3A-3C that the cross straps 27A, 27B are easily fastened to the fasteners 31A, 31B on the front side of the main body and thus in front of the wearer 59.

[0037] Fig. 4 shows folding downward the upper portion 37 of the head support 35, for which the left and right upper head support fasteners 41A, 41B are first undone. Likewise, the lower head support portion 39 may be folded down as well. To maintain the upper portions 37 down and parallel to the lower portion 39, one or more fasteners, e.g. a pushing button and/or hook-and-loop type fasteners may be provided on the carrier, e.g. one portion (e.g. loops) on the upper portion 37 and another portion (e.g. hooks) on the lower portion 39. Alternatively and indicated here, the lower head support fasteners 43A, 34B may be used to fasten the upper head support portion 37 as well. In different embodiments, the head sup-

port portions may be provided with eyelets or slits through which cords or and/or straps may be fed. In case the left and right upper and/or head support fasteners 41A-43B are adjustable, a cup-shape may be provided for gently holding the head of the carried child. Conversely, the head support may be pulled taut to support the head e.g. to prevent shaking and to spare the neck muscles of the child.

[0038] Figs. 5A-5C indicate, similar to Figs. 2A-3C use of the head cover 45. In Fig. 5A is indicated that the left and left and right head cover fasteners 53A, 53B, which are provided at the ends of the right head cover straps 51A, 51B, may be undone from the lower left and right fasteners 55A, 55B on the waist band 19 of the child carrier 1, and that they may be fastened on the upper left and right fasteners 57A, 57B provided on the left and right upper shoulder band portions 13A, 13B (dashed arrows VA-VB). Thus, the head cover 45 may be pulled from a storage position in which the head cover 45 lies against the main body 3 (Figs. 5A-5B) to a position in which at least part of the head of the child 61 is covered (Fig. 5C). The latter position is also possible with the child 61 carried in front of the wearer 59 (cf. Figs. 2A-2C). The straps 51A, 51B may be adjustable to adjust the shape and/or any tension in the head portion 45.

[0039] The invention is not restricted to the above-described embodiments, which can be varied in a number of ways within the scope of the claims. For instance more, less, and/or differently positioned fasteners may be provided. Further, the child carrier may comprise one or more pockets.

[0040] The main body may be shaped differently, e.g. more trapezoidal. The child carrier may comprise a rigid frame and/or one or more (arrangements for containing) inserts or extensions, e.g. to adapt the carrier to smaller or larger children.

[0041] The cross straps need not cross each other.

[0042] Elements and aspects discussed for or in relation with a particular embodiment may be suitably combined with elements and aspects of other embodiments, unless explicitly stated otherwise.

Claims

1. A child carrier (1) comprising a main body (3) and left and right shoulder straps (11A, 11B) connected with left and right sides (9A, 9B) of the main body, respectively,
characterised by
a left cross strap (27A) connected with the left side of the main body and/or the left shoulder strap, and a right cross strap (27B) connected with the right side of the main body and/or the right shoulder strap, wherein the left side of the main body and/or the left shoulder strap comprise at least one left fastener (29A, 31A) and the right side of the main body and/or the right shoulder strap comprise at least one right

fastener (29B, 31B), respectively, for fastening the right and left cross straps (27B, 27A) to a left and a right fastener, respectively.

2. The child carrier (1) according to claim 1, wherein left and right fasteners (29A, 29B) are attached to or near the main body (3), and the left and right cross straps (27A, 27B) are configured such that, when the main body is carried on one side of the body of the wearer (59), the cross straps are fastenable to the left and right fasteners substantially on that one side of the body of the wearer while crossing each other on an opposite side of the body of the wearer. 5
3. The child carrier (1) according to any one of the preceding claims, comprising plural left fasteners (29A, 31A) and plural right fasteners (29B, 31B) for fastening the right and left cross straps (27B, 27A), respectively, in different arrangements. 10
4. The child carrier (1) according to any one of the preceding claims, further comprising a waist strap (19). 15
5. The child carrier (1) according to any one of the preceding claims, wherein a length of at least one of the shoulder straps (11A, 11B), the cross straps (27A, 27B) and the waist strap (19) is adjustable. 20
6. The child carrier (1) according to any one of the preceding claims, wherein at least one of the shoulder straps (11A, 11B) and the waist strap (19) is openable and closable with a fastener (17A, 17B; 23A, 23B, 25). 25
7. The child carrier (1) according to any one of the preceding claims, comprising a head support (35) attached, preferably detachably, to the main body (3) for supporting the head of a child (61) carried in the child carrier. 30
8. The child carrier (1) according to claim 7, wherein the head support (35) is partly or wholly foldable downward, preferably in one or more predetermined portions (37, 39), and wherein the child carrier comprises one or more fasteners (41A, 41B, 43A, 43B) to hold the support in an unfolded state and in one or more such partially folded-down states. 35
9. The child carrier (1) according to any one of the preceding claims 7-8 wherein, at least when the child carrier is worn by a wearer (59), at least a portion of the head support (35) is adjustable for shaping the head support. 40
10. The child carrier (1) according to any one of the preceding claims, comprising a head cover (45) for at least partly covering the head of a child (61) carried in the child carrier, 45

wherein the head cover is attached, preferably detachably, to the main body (3), and wherein the head cover, when attached to the main body, comprises left and right free top sides (49A, 49B) which are fastenable with fasteners (53A, 57B; 53B, 57B) to the left and right shoulder straps (11A, 11B) and/or the left and right cross straps (27A, 27B) above an upper edge of the main body and in case of a child carrier according to any one of the preceding claims 7-9, above the head support (35).

11. The child carrier (1) according to claim 10, wherein the head cover (45) is attached, preferably detachably, to the main body (3) below an upper edge thereof and/or, in case of a child carrier according to any one of the preceding claims 7-9, below the head support (35). 50
12. The child carrier (1) according to any one of the preceding claims 10-11, wherein the left and right free top sides (49A, 49B) of the head cover (45) are fastenable with fasteners (53A, 55A; 53B, 55B) to the main body below the upper edge of the main body and/or the waist strap (19) in case of a child carrier according to any one of the preceding claims 4-11, preferably such that the head cover, thus fastened, is maintained substantially against and/or conforming with the main body. 55
13. The child carrier (1) according to any one of the preceding claims 4-12, wherein the main body (3) and the waist strap (19) comprise a unitary piece of fabric.
14. The child carrier (1) according to any one of the preceding claims 7-13, wherein the main body (3) and the head support (35) and/or the head cover (45), in case of a child carrier according to any one of the preceding claims 10-13, comprise a unitary piece of fabric.
15. The child carrier (1) according to any one of the preceding claims, wherein one or more fasteners (17A, 17B, 23A, 23B, 25, 29A, 29B, 31A, 31B, 33A, 33B, 41A, 41B, 43A, 43B, 51A, 51B, 53A, 53B, 55A, 55B, 57A, 57B) comprise buckles and/or hook-and-loop type fasteners.

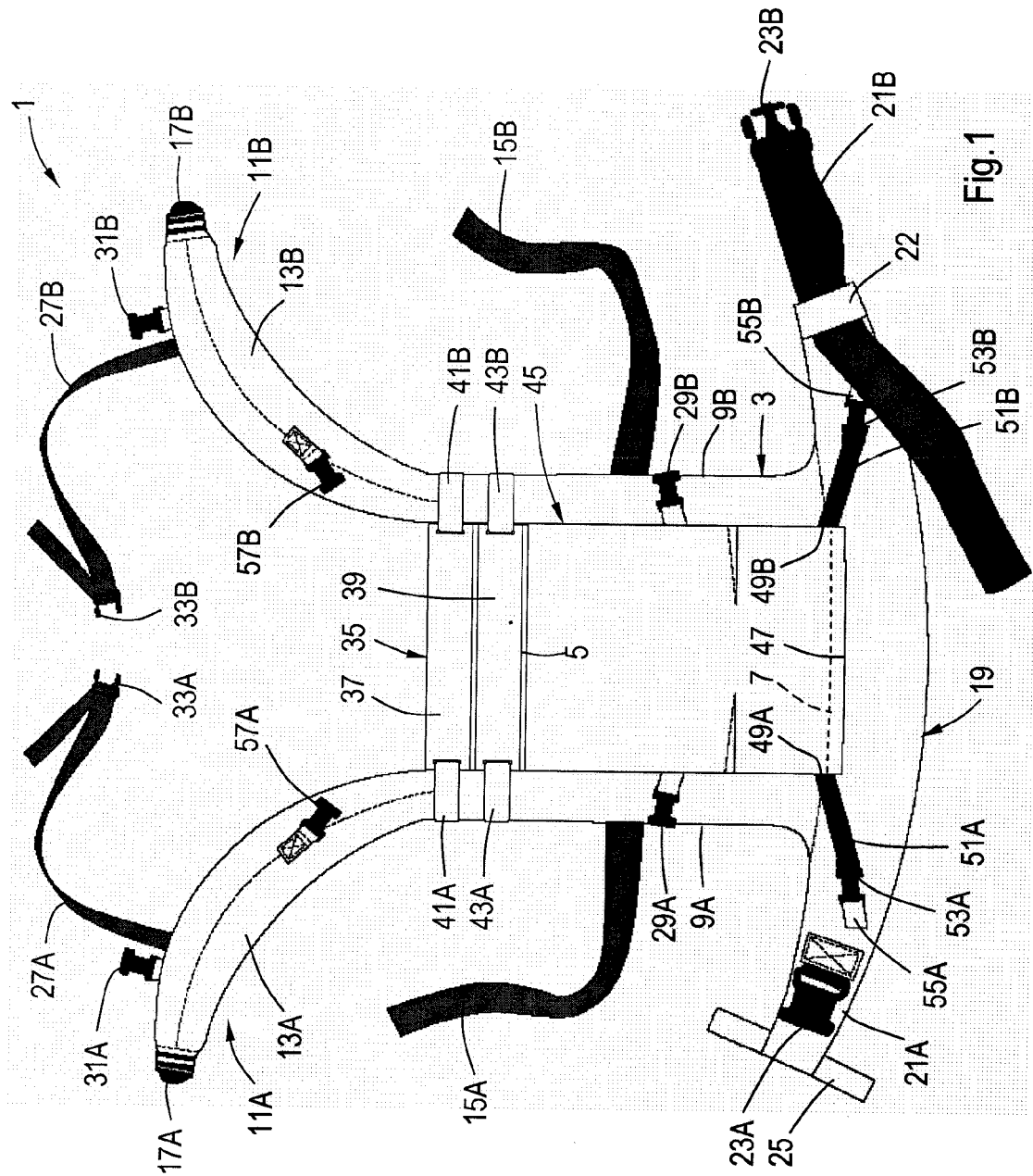
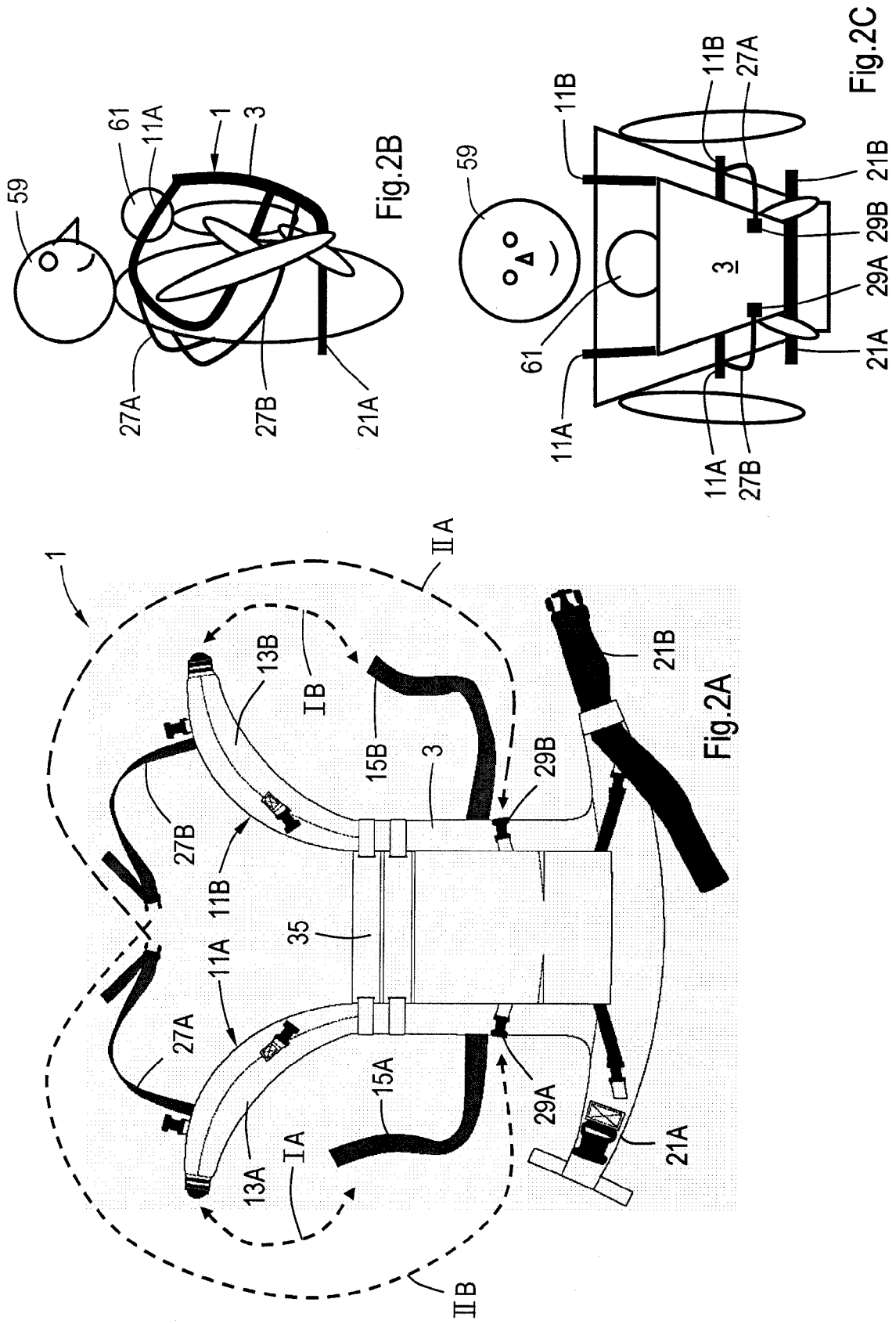
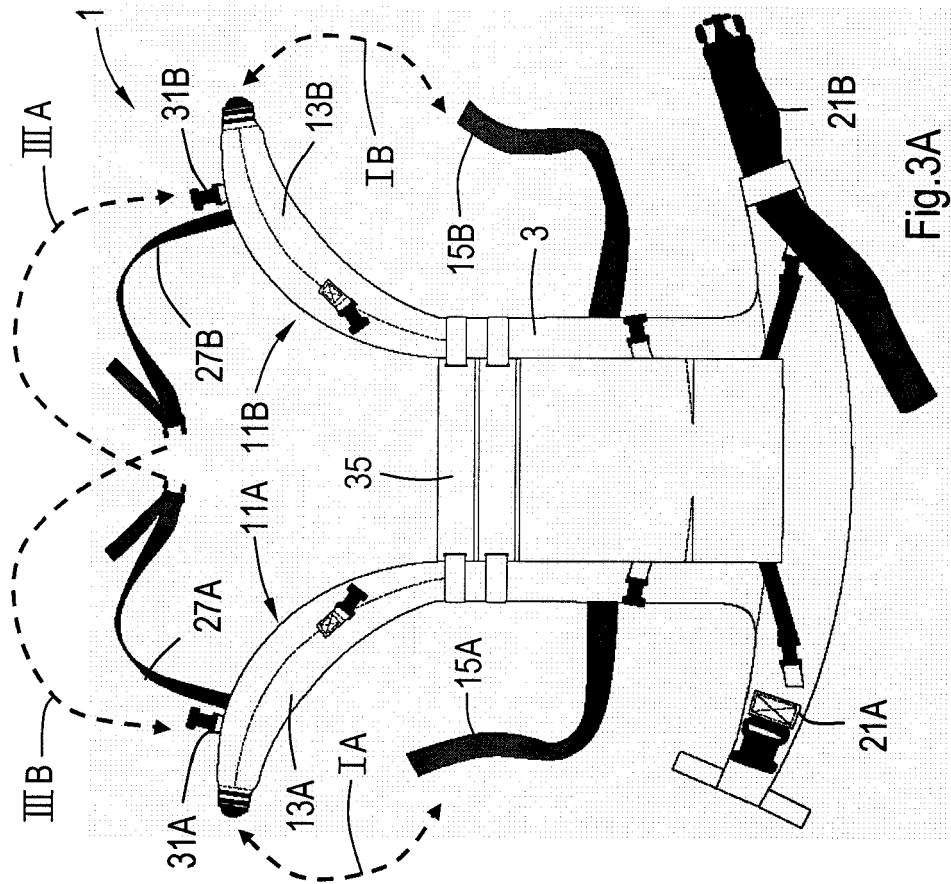
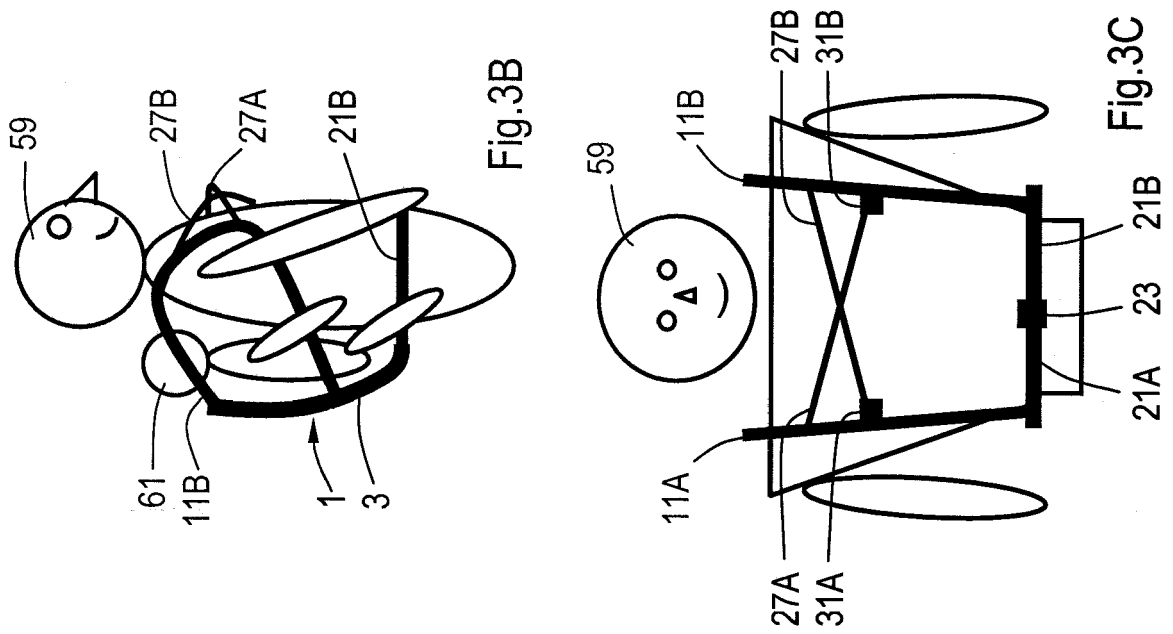
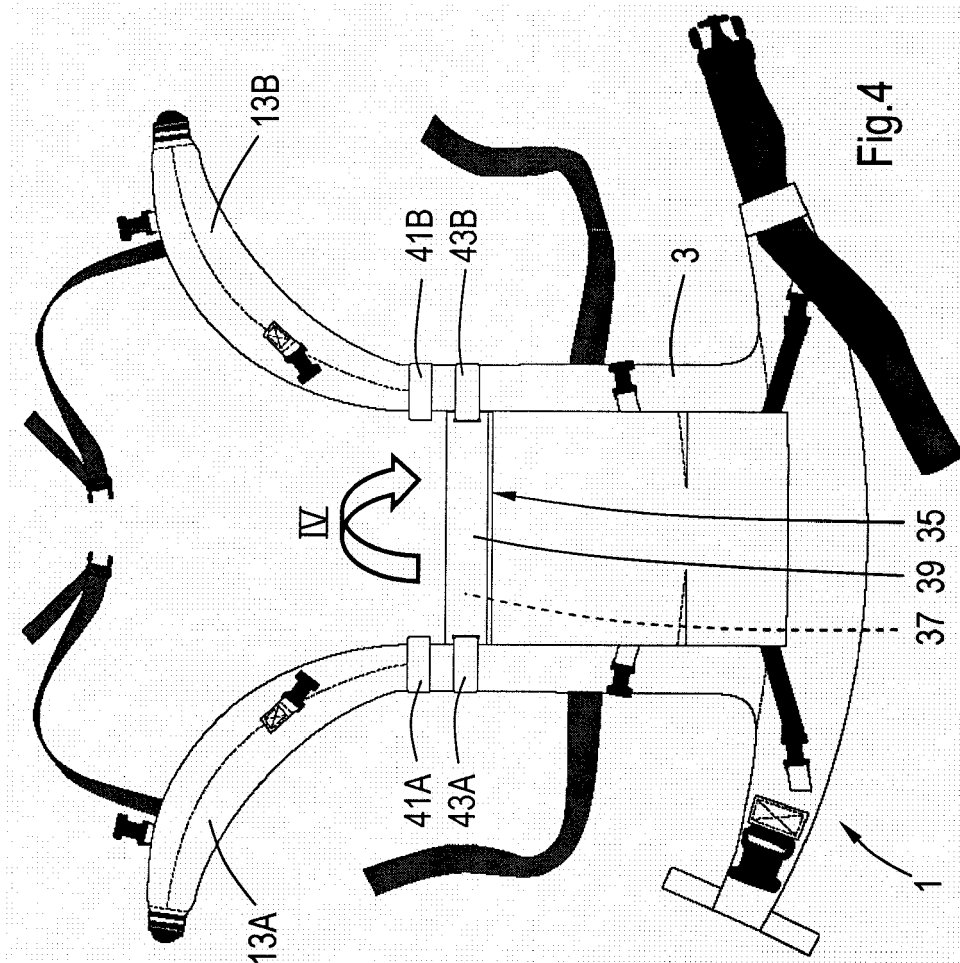
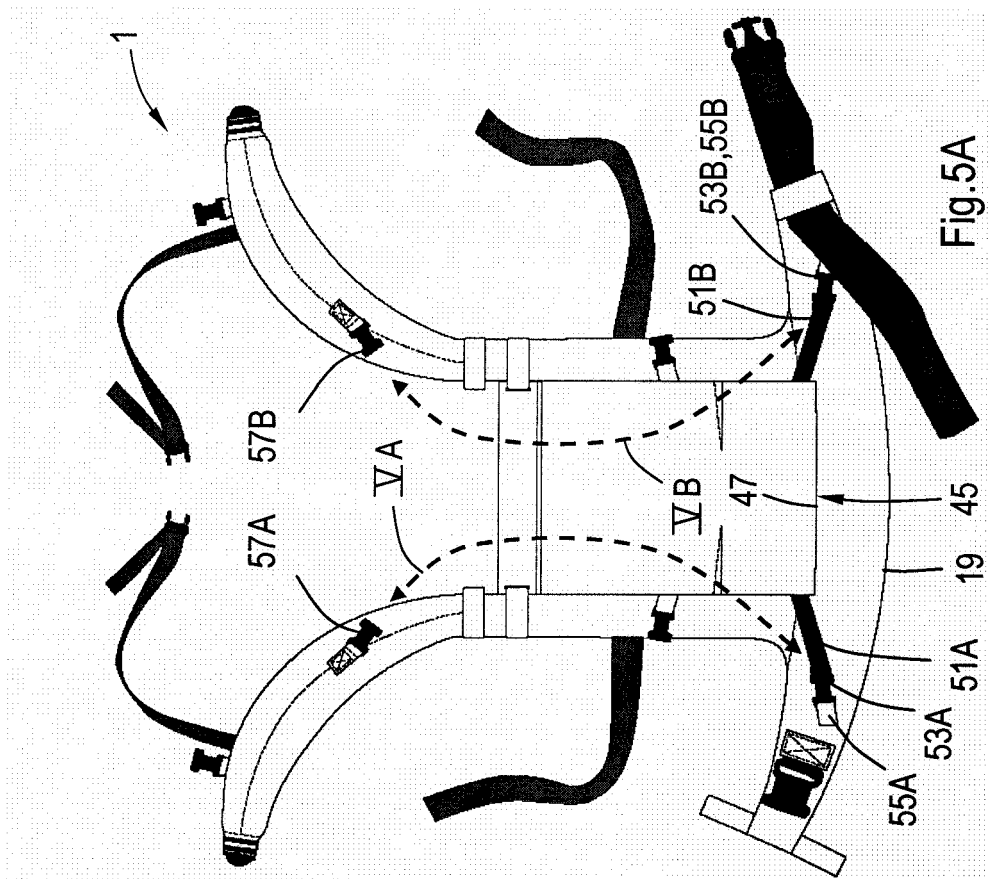
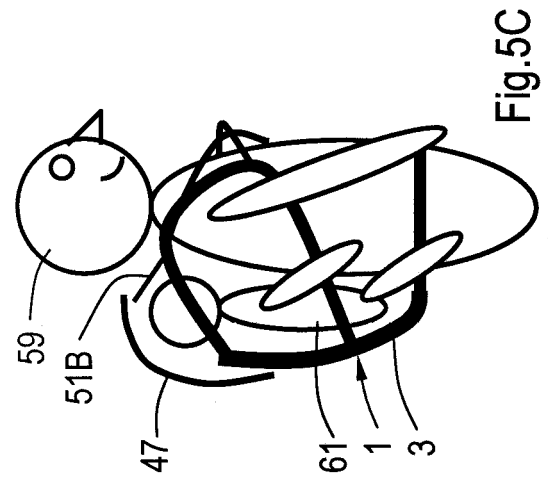
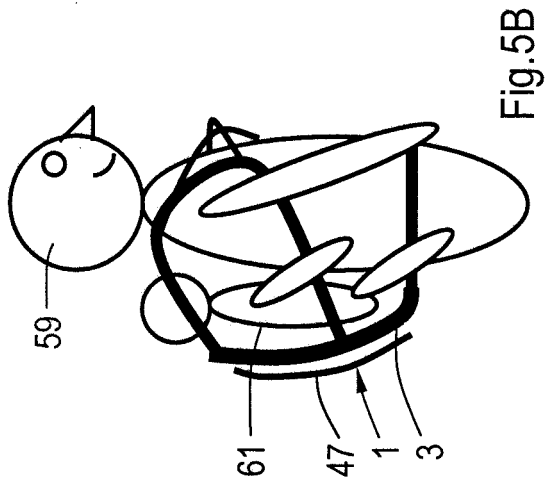


Fig. 1











EUROPEAN SEARCH REPORT

Application Number
EP 10 19 4790

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,D	US 7 322 498 B2 (FROST KARIN A) 29 January 2008 (2008-01-29) * figure 4 *	1	INV. A47D13/02
A	DE 20 2007 006204 U1 (SCHACHTNER PETRA) 4 September 2008 (2008-09-04) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 31 March 2011	Examiner Reichhardt, Otto
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