CHILD CARRIER WITH REMOVABLE LINER

A pack is securable to a person for carrying a child. The pack includes a harness, a support enclosure, and a removable liner. The removable liner is secured to the support enclosure and has peripheral edges and tabs extending from at least portions of the edges. The tabs extend over the edge of the support enclosure along the leg and arm openings of the closure and along the top of the enclosure near the position for the child’s head. The tabs overlap the exterior of the enclosure and lie adjacent an outer face of the closure. Fasteners secure the tabs to the exterior of the support enclosure away from pressure or rubbing contact of the child.
CHILD CARRIER WITH REMOVABLE LINER

FIELD OF THE INVENTION

[0001] This invention relates generally to packs that may be worn on the front or back of a user and, more specifically, to child carrier packs for safely and conveniently carrying a child.

BACKGROUND OF THE INVENTION

[0002] Child carrier packs have been available for some time to help adults carry infants and small children. Typically, the packs are configured with a harness and child support seat for carrying a child proximate either the chest or back of the adult. The harness extends over the shoulders of the wearer. Some versions also include a waist belt. The seat into which the child is situated typically encircles the child to avoid the likelihood that the child should fall out. The extent of support and securement for the child may increase with smaller children and infants. Thus, the seat may be an enclosure around at least the torso of the child with the child's head, legs, and arms extending out from the enclosure.

[0003] As the child comes into extensive contact with the enclosure, pack liners have been used in some instances. Such liners allow for the laundering of a portion of the pack that may become soiled by the child. To increase the comfort to the child, some liners are padded. Nevertheless, the child may come into contact with the other portions of the carrier or with fasteners, edges, or other carrier components that may be uncomfortable or become soiled. Enclosure edges near the child's head, legs, or arms may chafe the child. Such edges will also be a prime location to become dirty.

SUMMARY OF THE INVENTION

[0004] The child carrier of the present invention includes a removable liner. The removable liner of the present invention includes the advantage of having extension tabs that fold around the edges of the child-support enclosure. The tabs are secured to the exterior face of the enclosure. Thus, a removable liner is provided that is washable separate from the main carrier body. The liner covers portions of the carrier body that are most likely to become dirty and areas to provide a more comfortable interface for the child being carried with a softer, padded material. Situating fasteners on the outer face of the enclosure helps secure the liner to the periphery of the enclosure interior, in desired locations, and avoids the fasteners bearing against the weight of the child or chafing against the child's body.

[0005] The present invention provides a child carrier for a person to wear on their body—either the person's front or back. The carrier includes a harness, a shell, and a liner. The harness has straps adapted to be worn by the person. The shell is coupled to the harness. The shell includes a seat and an upwardly extending support enclosure. The enclosure has peripheral edges, an interior face, and an exterior face. The liner is removably coupled to the shell. The liner and the shell make up the carrier body. The liner includes at least one periphery portion matching some peripheral edges of the shell. The liner has tabs extending from periphery portions. The tabs fold over peripheral edges of the shell to lie adjacent the exterior face of the shell.

[0006] In the preferred embodiment, the fasteners are fixed to the tabs. The fasteners are releasably securable to the shell. In one aspect of the invention, the fasteners secure to the exterior of the shell. Releasable fasteners securable between the shell and the harness are also provided in one embodiment of the invention. The shell includes sleeves within which at least a portion of the releasable fasteners are secured. The sleeves protect the child from full contact with the releasable fasteners. Releasable fasteners, such as hook-and-loop fasteners, may also be provided between the liner and the interior face of the shell.

[0007] In one aspect of the invention, the harness includes two shoulder straps each having two ends. Both ends are secured to the seat of the enclosure. One of the straps has a releasable buckle proximate the seat for separating the strap from the seat.

[0008] In a further aspect of the invention, the upwardly extending support enclosure includes lower arms securable to the harness. The lower arms form leg holes between the seat and the lower periphery of the lower arms. At least one of the tabs extends over the edge of the shell in the area of at least a portion of each of the recesses. In a further aspect of the invention, the fasteners are secured to at least one of the tabs, the fasteners being securable to the shell.

[0009] In accordance with additional aspects of the invention, a pack is provided that may be donned by a person for carrying a child. The pack includes a harness, a support enclosure, and a removable liner. The harness has at least one strap extendable over the shoulder of the person. The strap has a first end and a second end. The support enclosure secures the child. The support enclosure includes an upper support panel and a seat. The upper support panel has lower right and left arms with releasable fasteners proximate the ends of the arms. The releasable fasteners are securable to the harness. The upper support has a peripheral edge. The seat extends from the upper support. It is secured to at least one strap. The seat has a peripheral edge and forms leg openings between the seat and the lower right and left arms. The removable liner is secured to the support structure. The removable liner has peripheral edges and tabs extending from at least portions of those edges. At least one of the tabs extends over the edge of the upper support panel along each of the leg openings and lies adjacent to the outer face of the support enclosure.

[0010] In a further aspect of the invention, the support enclosure includes a head panel extending above the lower arms. The head panel has right and left upper arms securable to the harness. The region between the upper arms and the lower arms forms child arm openings. The liner includes tabs extending over an edge of the upper enclosure in the region of the child arm openings. Preferably, the tabs overlap the exterior of the support closure and include fasteners for securement to the exterior of the support enclosure.

[0011] As may be appreciated from the foregoing summary, the invention provides a comfortable pack that is easy to use and clean. The liner stays in place, protects the pack edges from becoming soiled and protects the child from the more rigid supporting enclosure edges. The fastener placement on the exterior of the enclosure also adds to comfort of the child and maintains the placement of the liner until removal is desired.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Preferred and alternative embodiments of the present invention are described in detail below with reference to the following drawings.
FIG. 1 is a perspective view of a child carrier of the present invention in use;
FIG. 2 is a front-elevational view of the carrier of the present invention;
FIG. 3 is a rear-elevational view of the carrier of FIG. 2;
FIG. 4 is a side-elevational view of the carrier of FIG. 2;
FIG. 5 is a view of the carrier with the enclosure unclipped from the upper portion of the harness and folded out;
FIG. 6a is a view similar to FIG. 5, but with the liner removed; and
FIG. 6b is a view of the liner separate from the carrier.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention provides an improved child carrier with a removable liner. The liner includes extension tabs that fold over the edge of the carrier child enclosure with fasteners on the tabs to secure to the exterior of the enclosure. The carrier thus provides a secure and comfortable location for a child that may be easily cleaned.

FIG. 1 illustrates carrier 10 in use. Note in this example, that the child is facing the adult. However, depending on the age and strength of the child, the child may be reversed to face forward with a top flap of the carrier folded over to allow enhanced movement by the child. The carrier may also be adapted for use on the back on the adult.

Carrier 10 includes a carrier body 12 and a harness 14. Carrier body 12 encircles the child such that the child’s torso is substantially enclosed with legs and arms extending from openings in the carrier body 12. The child’s head also extends upwardly from the carrier and may be at least partially supported by carrier body 12. Harness 14 is fixedly secured to a seat portion of the carrier body and is preferably clipped to an upper portion of the carrier body with removable fasteners. A harness 14 extends over the shoulders, chest, and back of the user. Harness 14 preferably crosses the back of the user to ensure carrier body 12 rides securely while the adult user is walking and engaging in other activities.

As illustrated in the figures, carrier body 12 includes a shell 16 and a liner 18 coupled to the shell. Most of liner 18 is positioned on the interior of shell 16. Thus, liner 18 provides a comfortable interface for the child held within carrier body 12. Carrier body 12 may be slightly rigid or at least semi-rigid to provide adequate support for the child within carrier 10. Liner 18 is constructed with a soft foam material nested between two layers of fabric or other flexible material and is much less rigid than shell 16. This allows shell 16 to provide the superior support, while liner 18 provides superior comfort with the added feature of removability for cleaning or replacement.

Harness 14 includes a first strap 20 and a second strap 22 extending from the seat of shell 16. The straps 20, 22 cross one another after they extend over the shoulders of the user. Their lower ends are also secured to shell 16. A rear panel 24 is provided where straps 20 and 22 cross to help maintain the proper orientation of straps 20 and 22. Rear panel 24 is preferably somewhat diamond shaped, but may be square, triangular, or of another shape to interface with the straps and help maintain the orientation of one strap relative to the other. This also helps hold the straps on the user’s back and shoulders with the proper placement for a comfortable and safe carry. Rear panel 24 is preferably constructed of two layers of material stitched together peripherally with slits near the edges through which the straps are routed (see FIG. 3).

First strap 20 and second strap 22 have first and second ends. First strap first end 26 is preferably fixedly secured to the left side of shell 16 by stitching. First end 26 extends upwardly and outwardly, such that it can extend over the shoulder of the wearer and down the back. First strap first end 26 extends through rear panel 24 and is secured to a strap adjustment coupler 29. First strap second end 28 is looped through strap adjustment coupler 29 on one end and fixedly secured to shell 16 on the other. A portion of first strap second end 28 hangs from strap adjustment coupler 29 to be tugged by the user to adjust the fit of first strap 20. First strap second end 28 also includes an intermediate first strap side buckle 30 that may be disengaged to allow ease of donning the carrier. The user simply disengages buckle 30, slides his or her head and left arm into place, then secures buckle 30 under the right arm. Side buckle 30 includes a male portion 30a and a female portion 30b that are easily clipped together to complete the loop of first strap 20 to shell 16.

First strap first end 26 is preferably constructed of polyester felt, leather, and nylon for an outer enclosure, with a foam material nested there between for increased comfort. First end 26 is somewhat more rigid than second end 28. Second end 28 is preferably constructed of cotton webbing material, but alternatively may be of nylon webbing. It is, therefore, more flexible while still providing excellent tensile strength. The webbing material of second end 28 is well adapted to being used in adjustment coupler 29. Second end 28 preferably includes an end piece, either of folded strap material or separate material secured to the strap to prevent accidental exit of the strap through adjustment coupler 29.

Second strap 22 is constructed and configured in a similar manner to first strap 20, except that side buckle 30 is omitted on second strap 22 in the preferred embodiment. Thus, second strap 22 includes a second strap first end 32 and a second strap second end 34. The two portions are coupled with a strap adjustment coupler 29. Second strap 22 also forms a closed loop in conjunction with shell 16 along the chest, over the shoulder, down the back, and to the side of the user.

As best seen in FIG. 5, carrier body includes a seat 36 having a seat flap 38, lower arms 40 and upper arms 42. In the coupled configuration for carrier use in holding a child, seat 36 is the lower-most portion of carrier body 12. A large portion of the weight of the child is held by seat 36. As seen in FIG. 1, the legs of the child extend out of carrier body 12 on either side of seat 36. The rear portion of seat 36 extends into seat flap 38—a portion that tapers slightly wider to connect with first and second straps 20, 22.

Opposite from seat flap 38, carrier body 12 tapers outwardly even wider to form lower arms 40. Lower arms 40 are configured to extend around the sides of the child being carried above the legs of the child. If the child is a small infant, the child’s arms may nest inside lower arms 40; whereas if the child is larger the child’s arms may extend over lower arms 40. In some embodiments, even small infants may have their arms extend out over lower arms 40. Arm recesses 44 are created between lower arms 40 and upper arms 42. Arm recesses 44 also create a narrowed portion 46 in carrier body 12. This narrowed portion creates a natural fold line, such that
upper arms 42 may be folded down adjacent to lower arms 40 for children that do not require head support. This may be especially beneficial if the child is facing away from the adult carrying them—back to chest instead of chest to chest.

[0030] Carrier body 12 is preferably further coupled to harness 14 with four buckles: lower buckles 48 coupling lower arms 40 and upper buckles 50 coupling upper arms 42. Each of buckles 48 and 50 preferably includes a main portion 48a, 50a secured to first and second straps 20, 22, and a female end 48b, 50b secured to upper or lower arms 40, 42. In placing the child, the harness may be secured to the adult with carrier body 12 having buckles 48 and 50 uncoupled. In this configuration, carrier body may be laid on a table or held by the adult while the child is held in place by the adult. The lower and upper buckles 48, 50 are then secured. Upper buckles 48 preferably include an adjustment strap to tighten the carrier to the harness to fit as needed.

[0031] As discussed above, upper and lower buckle female ends 48b, 50b are secured to upper and lower arms 40, 42, respectively. The securement of the female ends of the upper buckles 50b is substantially within upper sleeves on the ends of the upper arms 42, whereas the securement of the female ends of the lower buckles 48b is substantially within lower sleeves on the lower arms 40. The sleeves are formed from the ends of the upper and lower arms. They provide a smooth interface to the child to reduce any rubbing or irritating chafing. The sleeves are created by securing the buckles between layers of material or within a sleeve of material with only small portions of the buckles exposed. Cutouts 60, 62 are preferably provided in upper sleeves 52 to allow access to press the buckles for release from female portions 50b. In alternate embodiments, the sleeve material is soft enough that cutouts are not necessary to press the buckle for release. In the preferred embodiment, lower sleeves do not cover quite as much of lower buckles 48, such that they can be opened without cutouts. In alternate embodiments, lower sleeves 54 substantially cover lower buckles 48.

[0032] In another feature of the preferred embodiment that aids in adjusting the fit of carrier body 12 to small infants, buttons 56 and button tabs 58 are provided. Buttons 56 are secured to the edge of carrier body 12 below lower arms 40. They are preferably secured to liner 18, but may alternatively be secured to shell 16. Button tabs 58 are secured to the edges of tabs 36 and 38. Securing buttons 56 to the button holes 60 of tabs 58 creates a smaller leg opening and a more snug fit of seat 36 to the small infant.

[0033] FIGS. 5 and 6 also illustrate the details of liner 18 and its attachment to shell 16 of carrier body 12. Liner 18 generally has a shape complementary to shell 16, as it mates thereto with various fasteners. FIG. 5 illustrates carrier 10 with upper and lower arms 42, 40 detached from harness 14 and folded out flat, away from straps 20, 22. In this view, liner 18 substantially covers the inside surface of shell 16 and follows the outer edges thereof for the same basic shape, such that the inner surface of carrier body 12 is comfortable and padded. The outer face 66 of the liner is shown.

[0034] FIG. 6a illustrates carrier body 12 without liner 18 attached. FIG. 6b shows the liner from attachment face 64 that faces shell 16 and attaches thereto. Note the hook-and-loop fasteners 76 that are secured to the extremities of liner 18 and shell 16. Preferably, the hook portion of the hook-and-loop fastener is secured to the shell, while the loop (softer portion) is secured to the liner. Hook fasteners are secured to the seat 36 and seat flair 38 regions, to the outer ends of the upper and lower arms 42, 40, and on the upper portion between the upper arms. Corresponding loop fasteners are found on the liner.

[0035] Liner 18 also includes extensions in the form of tabs that fold at the edges of liner 18 for a more comfortable and secure attachment of liner 18 to shell 16. An upper tab 68 extends along the upper periphery of liner 18 between the ends of upper arms 42. This provides a comfortable interface for the child along the top of the carrier body. It also protects shell 16 from becoming soiled in this region. Four tab fasteners 74 are preferably provided in the form of female snap portions that interface with complementary male snap portions on the exterior surface of shell 16. These fasteners are thus secured away from rubbing contact with the child and they are not in a direct area of contact that supports the weight of the child in carrier 10.

[0036] Arm tabs 70 are also provided along at least a portion of arm recesses 44. In the preferred embodiment, arm tabs 70 extend along an upper portion of arm recesses 44. Alternatively they may also extend along the lower portion. Similar to upper tabs, they are secured with tab fasteners 74 to the exterior of shell 16.

[0037] Leg tabs 72 are secured along the top of the leg opening in a like manner. They may also be secured along more of the opening in alternate embodiments.

[0038] All tabs share the advantages of covering an edge, making a more comfortable carrier 10, and protecting portions of shell 16 from becoming soiled. Positioning the tab fasteners on the external surface of the shell furthers these purposes and provides a more secure fit of liner 18 over shell 16.

[0039] While the preferred embodiment of the invention has been illustrated and described, as noted above, many changes can be made without departing from the spirit and scope of the invention. For example, different fasteners, other than snaps may be used in securing the tabs to the outside of the shell. The extent of the tabs may be increased, both in the length and portion of the periphery along with they extend and in the width and overlap with the exterior of the shell. The liner may further extend onto a portion of the harness to increase child comfort where contact may be made. Alternate materials may be used for most parts of the carrier. Accordingly, the scope of the invention is not limited by the disclosure of the preferred embodiment. Instead, the invention should be determined entirely by reference to the claims that follow.

1. A child carrier for a person to wear on their body to carry a child, the carrier comprising:
   a. a harness having straps adapted to be worn by the person;
   b. a shell coupled to said harness, said shell having a seat and
   c. an upwardly extending support enclosure, said enclosure
   d. having peripheral edges, an interior face, and an
   e. exterior face; and
   f. a liner removably coupled to said shell, said liner including
   g. at least some periphery portions matching some peripheral
   h. edges of said shell, said liner having tabs extending from
   i. periphery portions, said tabs folding over peripheral
   j. edges of said shell to lie adjacent the exterior face of
   k. said shell.

2. The child carrier of claim 1, further comprising fasteners on said tabs secureable to said shell.

3. The child carrier of claim 2, wherein said fasteners secure to the exterior of said shell.
4. The child carrier of claim 3, further comprising releasable fasteners securable between said shell and said harness, said shell having sleeves within which at least a portion of said releasable fasteners are secured, said sleeves protecting the child from full contact with said releasable fasteners.

5. The child carrier of claim 4, further comprising releasable fasteners between said liner and the interior face of said shell.

6. The child carrier of claim 3, wherein said harness includes two shoulder straps having two ends and secured at both ends to said seat, one of said straps having a releasable buckle proximate said seat for separating said strap from said seat.

7. The child carrier of claim 1, further comprising releasable fasteners securable between said shell and said harness, said shell having sleeves within which at least a portion of said releasable fasteners are secured, said sleeves protecting the child from full contact with said releasable fasteners.

8. The child carrier of claim 7, further comprising releasable fasteners between said liner and the interior face of said shell.

9. The child carrier of claim 1, wherein said upwardly extending support enclosure includes lower arms securable to said harness, said lower arms forming leg holes between said seat and said lower arms, at least one of said tabs extending over the edge of said shell in the area of at least a portion of the leg holes.

10. The child carrier of claim 9, wherein said upwardly extending support enclosure further includes upper arms securable to said harness above said lower arms, said recesses being formed between said upper arms and said lower arms through which a child’s arms may extend, at least one of said tabs extending over the edge of said shell in the area of at least a portion of the recesses.

11. The child carrier of claim 10, further comprising fasteners secured to at least one of said tabs, said fasteners being securable to said shell.

12. A pack securable to a person for carrying a child, the pack comprising:

a. a harness having at least one strap for extending over the shoulder of the person, said strap having a first end and a second end;

b. a support enclosure for securing the child, said support enclosure comprising:

i. an upper support panel having lower right and left arms coupled to said harness, said upper support having a peripheral edge; and

ii. a seat extending from said upper support and secured to said seat having a peripheral edge and forming leg openings between said seat and said lower right and left arms; and

iii. a removable liner secured to said support enclosure, said removable liner having peripheral edges and tabs extending from at least portions of said edges, at least one of said tabs extending over the edge of said upper support panel along each of the leg openings and lying adjacent an outer face of said support enclosure.

13. The pack of claim 12, wherein said support enclosure further comprises a head panel extending above said lower arms, said head panel having right and left upper arms securable to said harness, a region between said upper arms and said lower arms forming child arm openings, wherein said liner includes tabs extending over an edge of said support enclosure in the region of said child arm openings.

14. The pack of claim 13, wherein said tabs overlap the exterior of said support enclosure and include fasteners for securement to the exterior of said support enclosure.

15. The pack of claim 12, wherein said tabs overlap the exterior of said support enclosure and at least some of said tabs include fasteners for securement to the exterior of said support enclosure.

16. The pack of claim 12, wherein said upper support panel includes releasable fasteners proximate the ends of said arms that are securable to said harness.

17. A pack securable to a person for carrying a child, the pack comprising:

a. a harness having at least one strap for extending over the shoulder of the person, said strap having a first end and a second end;

b. a support enclosure for securing the child, said support enclosure comprising:

i. an upper support panel having a peripheral edge and lower right and left arms with releasable fasteners proximate the ends of said arms that are securable to said harness, wherein said support panel further comprises a head panel extending above said lower arms, said head panel having right and left upper arms securable to said harness, a region between said upper arms and said lower arms forming child arm openings; and

ii. a seat extending from said upper support and secured to said at least one strap, said seat having a peripheral edge and forming leg openings between said seat and said lower right and left arms; and

iii. a removable liner secured to said support enclosure, said removable liner having peripheral edges and tabs extending from at least portions of said edges, at least one of said tabs extending over the edge of said support enclosure along each of the leg openings, at least one of said tabs extending over an edge of said support enclosure in the region of said child arm openings, and at least one of said tabs extending over a top edge of said head panel, and wherein said tabs overlap the exterior of said support enclosure and lie adjacent an outer face of said support, and at least one of said tabs includes a fastener for securement to the exterior of said support enclosure.

18. The pack of claim 17, wherein each of said tabs includes a snap fastener securable to an exterior surface of said support enclosure.

19. The pack of claim 18, further comprising a fastener situated between said liner and an interior face of said support enclosure.

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