A two-piece system for use with a child carrier or backpack. One piece is a hand-held mirror unit 10 having at least one reflective, or mirrored surface and at least two pieces of hook and loop material, one piece being placed above the mirror, and the other below. The second piece is an attachment strap assembly 12. The mirror unit 10 has smooth, rounded edges for comfort, and also has a notched or indented area on the edge for ergonomic efficiency in removing the mirror unit 10 from the attachment strap 12. The outer-facing side of the mirror housing 32 may be coated with a reflective paint to provide for safety in low-light conditions where vehicular traffic may be present. The attachment strap 12 has an outward-facing side made entirely of loop fastener 14. It has two strap ends 16, 18 which wrap around the backpack shoulder strap to provide for a custom fit on any backpack regardless of the dimensions of the shoulder strap. The inward-facing side of the attachment strap 12 has a rubberized material component to assure it stays in place on the backpack’s shoulder strap.
REARVIEW MIRROR FOR CHILD CARRIER OR BACKPACK

BACKGROUND

[0001] 1. Field of Invention

[0002] This invention relates to the field of rear-view safety mirrors, specifically to a mirror designed for use on a backpack-style child carrier or backpack, for viewing the child in the backpack or objects behind you.

[0003] 2. Description of Prior Art

[0004] When transporting a child in a child carrier, it is impossible to visually monitor the child, as the child is positioned directly behind your head, out of your field of vision. For the person wearing the child carrier, there are few ways to check on the child, none of them very convenient. The person wearing the backpack usually resorts to one of the following methods to monitor the child: asking someone nearby, walking by a plate glass window, carrying a small mirror in a pocket, or removing the child carrier to view the child. None of these methods is a permanent solution to this problem which is inherent in the design and function of child carriers.

[0005] The manufacturers of backpack-style child carriers historically have not addressed the issue of how to monitor a child when the child is in the carrier. However, this problem has recently been addressed by several inventors. The retractable reflective device in U.S. Pat. No. 5,768,041 to Rudolph Dec. 18, 1996 discloses a paddle-shaped mirror attached by a retractable cord to a strap which attaches to the backpack’s shoulder strap. The invention harbors a child safety issue: the 12” to 16” optimal length retractable cord cited in the specification. A cord of this length is a potential strangulation hazard when used around small children. Growin’ Like A Weed’s (TM) Baby Safety Mirror (TM) Patent Pending consists of a small mirror mounted by hook fastener to an attachment strap made of Velcro OneWrap (TM). Due to the inherently small mirror area, it is hard to keep the mirror angled precisely to view the child while maintaining forward momentum. In addition, the small rectangular mirror is difficult to hold in your hand, especially if you have large hands. The attachment strap has a short useful life span, due to the limited number of times the strap is rated for attachment and detachment from its partner Velcro (TM). The attachment strap also can slip down the backpack strap quite easily, as the inward-facing side is made of the hard loop material. Lastly, the attachment strap is quite narrow and offers only a limited attachment area, so that the user needs to be quite precise when reattaching the mirror.

[0006] Another child carrier safety mirror currently being marketed consists of a mirror permanently mounted on an ‘arm’ similar to truck rear-view mirrors. This solution is fairly cumbersome for the wearer and contains a potentially dangerous rod element.

OBJECTS & ADVANTAGES

[0007] Accordingly, several objects and advantages of the rearview mirror for child carrier or backpack described herein are:

[0008] a) An easily detached hand-held mirror unit which is easy to angle properly to get a good view of the child in the child backpack.

[0009] b) A mirror which is large enough to get a good view of the child in the carrier, yet compact enough to be lightweight and economical.

[0010] c) A mirror unit which attaches snugly to the attachment strap assembly when not in use by using a long-life hook fastener both above and below the mirror surface, and a large area of loop fastener on the attachment strap as the means of interconnection.

[0011] d) An ergonomic design of the mirror housing unit which is symmetrical and comfortable for use by both left- and right-handed persons.

[0012] e) Reflective safety paint or tape on the outward-facing side of the mirror housing which provides added safety in low-light conditions when vehicular traffic may be present.

[0013] f) A rubberized edge on the mirror unit which provides a good grip in wet or sweaty conditions.

[0014] g) An attachment strap which is lined with a rubberized thread or other material which assures the strap stays in position on the backpack shoulder strap.

[0015] h) An attachment strap which has two separate strap ends to assure a custom fit on any backpack shoulder strap, regardless of width, thickness, or tapering in the shoulder strap design.

[0016] i) An attachment strap which can be moved easily from the backpack’s left shoulder strap to the backpack’s right shoulder strap, depending on the handedness (left or right) or preference of the user.

[0017] Further objects and advantages are to provide a means to see a child in a child carrier which is simple to use and inexpensive to manufacture, and which can also be used as a rearward viewing device on standard backpacks. Still further objects and advantages will become apparent from a consideration of the ensuing description and drawings.

DRAWING FIGURES

[0018] In the drawings, closely related figures have the same number but different alphabetic suffixes.

[0019] FIG. 1 shows the rearview mirror for child carrier or backpack in use.

[0020] FIG. 2a shows the outer (outward-facing) side of the attachment strap assembly.

[0021] FIG. 2b shows a cross-section of the backpack shoulder strap with the attachment strap assembly attached.

[0022] FIG. 3a shows the inner (inward-facing) side of the mirror unit in exploded view.

[0023] FIG. 3b shows the outer (outward-facing) side of the mirror unit.

REFERENCE NUMERALS IN DRAWINGS

[0024] 10 Hand-held mirror unit

[0025] 12 Attachment strap assembly

[0026] 14 Loop fastener

[0027] 16 Loop fastener straps
The preferred embodiment of an attachment strap is shown in FIGS. 2a and 2b. FIG. 2a shows a view of the outward-facing side of an attachment strap assembly 12. On the outward-facing side of attachment strap 12 is a rectangular (9 cm x 10 cm) piece of loop fastener 14. Sewn, ultrasonically welded, or otherwise attached are two loop fastener straps 16 and two hook fastener straps 18. Straps 16, 18 are attached at the top and bottom of loop fastener 14 and extend horizontally from loop fastener 14. Sewn to the underside of loop fastener 14 is a same-size piece of backing material 20 which provides stiffness.

FIG. 2b is a cross-section of backpack shoulder strap 30 with attachment strap 12 in place. Rubberized coating on backing material 20 helps prevent attachment strap 12 from slipping down backpack shoulder strap 30. The two separate strap attachment ends provide for a customized fit of attachment strap 12 to the many different backpack shoulder strap sizes that are presently in use.

The preferred embodiment of a hand-held mirror unit 10 is shown in FIGS. 3a and 3b. FIG. 3a is a mirror housing 32 approximately 3 mm (5/32") thick has a recess for reflective material 36, or mirror, in its inner surface. A mirror 38, approximately 1.5 mm (1/16") thick and preferably made of an unbreakable, sheet-type material such as acrylic or polycarbonate, is glued or otherwise fastened into recess 36. Above and below mirror 38, two strips of hook fastener 40, 42 are glued or otherwise attached. The preferred embodiment of mirror housing 32 is in the shape of a heart approximately 9 cm (3 1/2") high by 8 cm (3") wide. This allows for a relatively large piece of mirror 38 to be glued or otherwise permanently attached into recess 36 on mirror housing 32. Mirror housing 32 is preferably made of a durable plastic such as ABS or polycarbonate, but alternatively could be made of metal, wood, or any other unbreakable, sheet-type material.

Mirror 38, which is cut to fit recess 36 on mirror housing 32 should be made of an unbreakable material such as acrylic or polycarbonate. If polycarbonate is used, it should be coated to provide a scratchproof surface. Mirror 38 could also be polished steel, or a reflective film that is formed directly into mirror housing 32 by well-known industrial plastics processes.

As seen in FIG. 3b, mirror housing 32 can be further enhanced by molding a rubberized material on its outer edge 46, providing for a better grip, especially in situations where the user's hand may be wet or sweaty. Additionally, reflective safety paint 48 can be applied to the outer side of mirror housing 32 to provide a safety measure in low-light conditions when vehicular traffic is present.

OPERATION—FIGS. 1 to 3b

In FIG. 2b, attachment strap 12 is attached to the left or right shoulder strap of the child carrier by positioning loop fastener 14 facing outward, and wrapping strap ends 16, 18 around backpack shoulder strap 30. Hook fastener straps 18 are attached to loop fastener straps 16 on inner side of attachment strap 12. Mirror unit 10 is attached to the attachment strap 12 by pressing hook fastener 40, 42 to loop fastener 14 to create an interconnection bond.

In use as seen in FIG. 1, the user detaches mirror unit 10 by putting his/her finger into v notch 34 of mirror housing 32 and pulling hook 14 and loop fasteners 40, 42 apart. The user holds mirror unit 10 up over his/her shoulder, angled to the back so that the child is visible in the mirror. After viewing the child, mirror unit 10 is reattached by pressing mirror unit 10, mirror side in, onto attachment strap 12.

Since mirror housing 32 is bilaterally symmetrical, attachment strap 12 can be used on either the left backpack shoulder strap (for right-handed users) or the right backpack shoulder strap (for left-handed users), and v notch 34 will function ergonomically for both preferences.

SUMMARY, RAMIFICATIONS, AND SCOPE OF INVENTION

Thus the reader will see that the rearview mirror for child carriers or backpacks described herein provides a highly reliable, lightweight, yet economical device that can be used on any child carrier on the market.

While my above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one preferred embodiment thereof. Many other variations are possible. For example, the attachment strap, rather than having rubberized threads to keep it from slipping down the backpack shoulder strap, could be lined entirely with a rubberized material, which would provide the same benefit. In another variation, backpack shoulder straps could have a large area of loop fastener sewn directly into the straps by the manufacturer, making the need for an attachment strap unnecessary altogether.

The preferred shape of mirror unit 10 is one which is ergonomically designed for quick and easy detachment with natural finger grip areas inherent in the design, such as the heart-shape shown in the preferred embodiment. The mirror housing can be made in a variety of shapes both whimsical and utilitarian (e.g. a star, a moon, animals). Selection of a different shape or size for the mirror unit 10 would be applicable for an assembly made for use on a child's backpack.

The preferred interconnection means of the attachment strap and the mirror unit is by hook and loop fastener; however, a variety of other materials could be used. These materials could include magnets, a pressure loaded mecha-
nism such as is used in camera lens caps, a simple clip, a snap, or hook and eye assembly.

[0051] Accordingly, the scope of the invention should not be determined by the embodiment(s) illustrated, but by the appended claims and their legal equivalents.

I claim:

1. A two-piece apparatus designed for use in combination with a baby backpack, child carrier, or backpack, comprising:

   (a) a fully detachable hand-held mirror unit having at least one reflective surface to allow viewing behind the user

   (b) an interconnection means for attaching said hand-held mirror unit to said baby backpack, child carrier, or backpack when not in use.

2. A two-piece apparatus designed for use in combination with a baby backpack, child carrier, or backpack, comprising:

   (a) a fully detachable hand-held mirror unit having at least one reflective surface to allow viewing behind the user

   (b) an interconnection means for attaching said hand-held mirror unit to said baby backpack, child carrier, or backpack when not in use.

   (c) wherein said reflective surface is made of acrylic or polycarbonate

4. A two-piece apparatus designed for use in combination with a baby backpack, child carrier, or backpack, comprising:

   (a) a fully detachable hand-held mirror unit having at least one reflective surface to allow viewing behind the user

   (b) an interconnection means for attaching said hand-held mirror unit to said baby backpack, child carrier, or backpack when not in use.

   (c) wherein the attachment mechanism is a strap which encircles said backpack shoulder strap and fastens by using hook and loop fastener.

5. A two-piece apparatus designed for use in combination with a baby backpack, child carrier, or backpack, comprising:

   (a) a fully detachable hand-held mirror unit having at least one reflective surface to allow viewing behind the user

   (b) an interconnection means for attaching said hand-held mirror unit to said baby backpack, child carrier, or backpack when not in use.

   (c) wherein said interconnection means is hook or loop fastener incorporated directly by sewing or other means into the backpack shoulder strap as an integral part of the shoulder strap design.

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