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(54) **INFANT ROLLING PREVENTION BACK PANEL TO PROMOTE CRAWLING**

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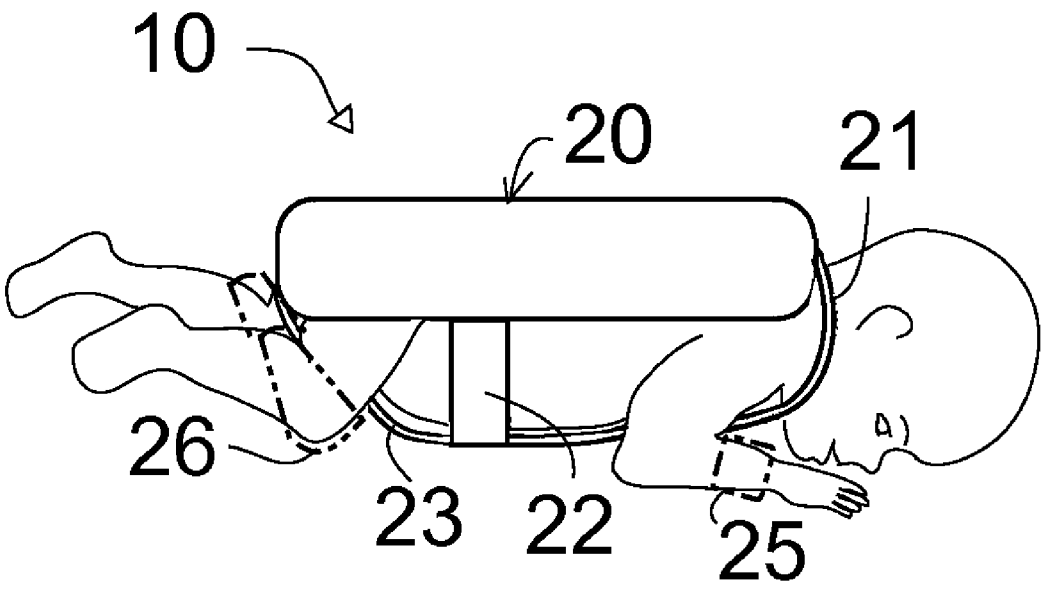
(57) **ABSTRACT**

A rigid fabric covered foam back panel attaches to a back of an infant by straps wrapped around the infant and secured together in front or to a front panel. The back panel is wider than the body of the infant and extends down the full length of the torso to prevent the infant from rolling over from a prone position and thereby encourage the infant to crawl. A chest and belly pad is attached to a front of the infant to encourage the use of legs as well as arms in crawling. Arm and knee pads provide friction to enhance crawling.



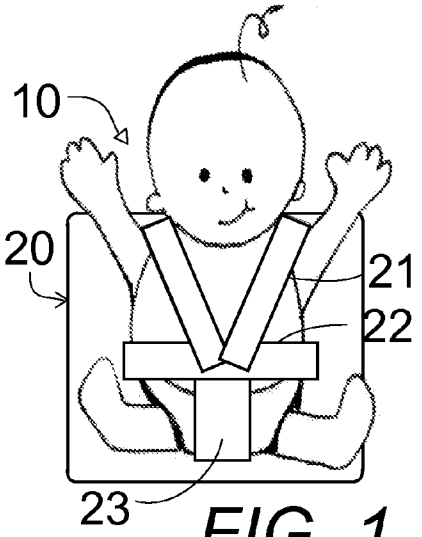


FIG. 1

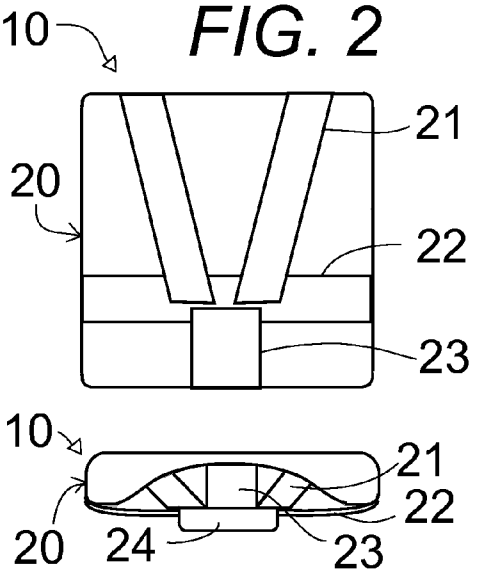


FIG. 2

FIG. 3

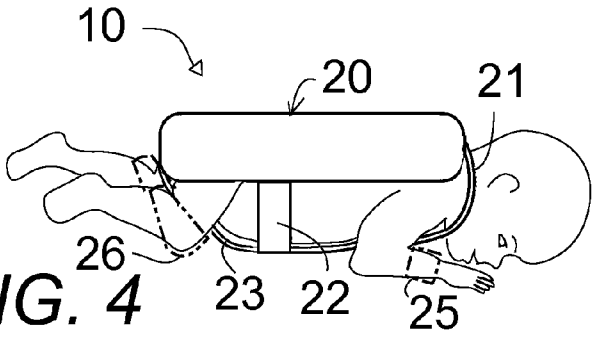


FIG. 4

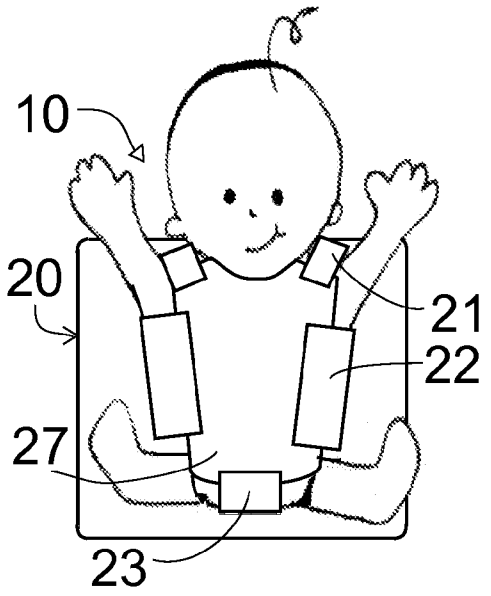


FIG. 5

FIG. 6

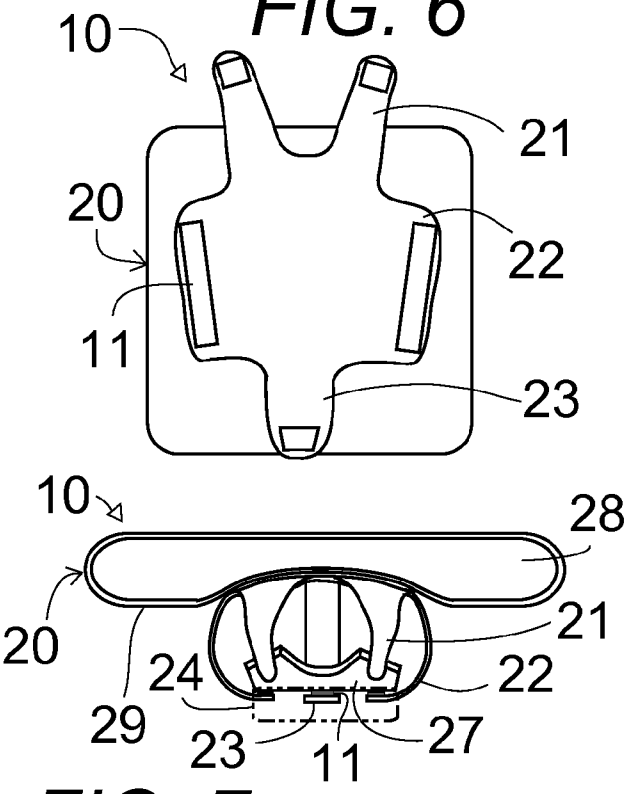


FIG. 7

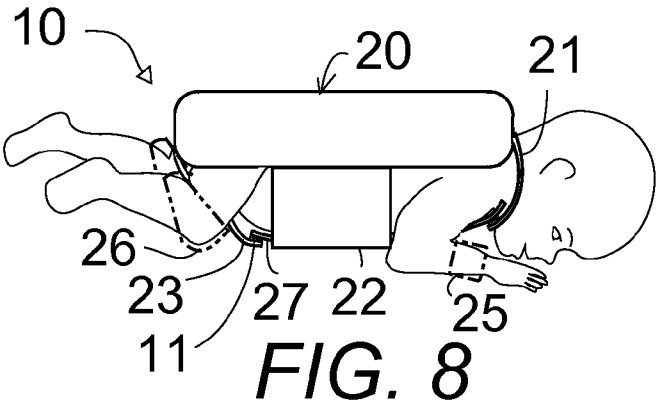


FIG. 8

INFANT ROLLING PREVENTION BACK PANEL TO PROMOTE CRAWLING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable.

THE NAMES OF THE PARTIES TO A JOINT RESEARCH OR DEVELOPMENT

[0003] Not Applicable.

BACKGROUND OF THE INVENTION

[0004] 1. Field of the Invention

[0005] The present invention relates to infant rolling prevention devices and in particular to an infant rolling prevention and crawling promotion back panel lightweight device that fits the infant much like a backpack which has a rigid foam core wider than the infant covered by soft fabric, such as a multi-directional nylon SPANDEX® back panel and a terry cloth backed nylon NEOPRENE® chest/front panel, and held in place on the infant by a system of straps with mating hook and loop fastener closures, the device being wider than the body of the infant and extending down the full length of the torso to prevent the infant from rolling over from a prone (face down) position and thereby encourage the infant to crawl.

[0006] 2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 1.98

[0007] It is widely accepted that for normal development, children need to learn how to crawl before they learn how to walk. Some children, both those with some physical or mental impairment and those without such issues, learn to roll in order to get around and then eventually learn to walk but skip crawling altogether, leading to developmental problems. Most prior art infant movement restriction devices are extraneous surrounding the infant and not attached to the infant, and hence do not encourage crawling or any other movement. Some prior art devices are uncomfortable and potentially dangerous.

[0008] U.S. Patent application #20080256713, published Oct. 23, 2008 by Rozema et al., shows a roll restricting device including: a support member, wherein the support member is configured to surround at least a portion of an individual, and further wherein the support member includes an outer surface, and an inner surface; a roll restriction member, wherein the roll restriction member substantially precludes an infant from rolling over; and optionally one or more roll restriction member fastener(s), wherein the one or more restriction member fastener(s) releasably secures the roll restriction member to the support member.

[0009] U.S. Pat. No. 6,357,444, issued Mar. 19, 2002 to Parker, puts forth an apparatus for limiting body motion as a patient lies down includes a pad shaped to prevent the patient from rolling over the pad. The pad is shaped so that it projects outwardly 3 inches or more from the patient when attached to the human body. The base of the pad contacts the patient's skin or sleep clothes. The pad has sidewalls which make an angle of greater than approximately 35° degrees with respect to the base. A removable, washable covering is placed on the pad. An attachment mechanism associated with the pad and the covering attach the pad and cover to the human body. The attachment mechanism can be a hook-and-loop fastener, a sports bra type device, a series of straps, a series of snaps, or a series of hooks. In each instance, the pad can be positioned at several positions on the body, including positions to the right or left of the patient's medial plane. More than one pad can also be used to limit the body motion of a patient. One can be positioned on the posterior side of a patient and another can be positioned on an anterior side of a patient. In this way, the patient motion may be limited to lying on one side rather than discouraging rest while in the supine position.

[0010] U.S. Pat. No. 132,500, issued Oct. 22, 1872 to Sullivan, concerns a back wedge shaped pad with straps wrapping around the front of the body to prevent a sleeper from rolling onto the sleeper's back.

[0011] U.S. Pat. No. 5,193,238, issued Feb. 16, 1993 to Clute, discloses a support pillow in two detachable main sections, each section having an elongated right triangular wedge-shaped resilient foam member each covered with fabric with a portion of the fabric extending outward to define a flexible rectangular panel. The top surface of one rectangular panel, and the bottom surface of the other rectangular panel are affixed with elongated hook and loop fastening strips which allow adjustable overlapping affixment of the two rectangular panels one to another, thereby allowing affixing together of the two main sections of the pillow. When affixed together, the two sections of the support pillow define an open-ended and open-top channel with the rectangular panels and fabric covered foam members providing a roll-preventing flat bottom, and the fabric covered foam members additionally defining two spaced apart vertically oriented side walls of the channel. The hook and loop attachment of the two rectangular panels provides for adjustability in the distance between vertical side walls of the channel. An infant may be placed on its side, on top of the overlapped rectangular panels with the vertical side walls of the support pillow positioned snugly against the chest and back of the infant, with the infant's torso within the channel. The infant's head extends out one open end of the channel, and his legs extend out the outer oppositely disposed open end of the channel. The support pillow assists in stabilizing and maintaining the infant comfortably in a lateral sleeping position.

[0012] U.S. Pat. No. 5,347,669, issued Sep. 20, 1994 to Neviaser et al., indicates a double wedge pillow and strap device to retain an infant positioned on its side between two pads to restrain its movement during rest time or sleeping. A strap passed around the infant and under the arms maintains the infant's position with respect to the pads. In one embodiment, a diaper-like holding device is secured to the infant and the pads attached thereto. In another embodiment, the pads are positioned on a support member and the infant is positioned on its side between the pads.

[0013] U.S. Pat. No. 5,261,134 issued Nov. 16, 1993 to Matthews, claims a portable pillow for support of an infant, toddler or young child. The upper and lower surfaces are rounded, resulting in a generally tubular shape, tapered at the ends and curved in an oval so that the tapered ends engage one another when the pillow is not in use. The pillow is generally concave with respect to a vertical axis of symmetry, and since the left and right sides are symmetrical, the infant body is provided with sufficient pressure and vertebral support that he or she is prevented from rolling over when placed in the center well of the device. The pillow also provides anatomically correct support along the vertebral column of a toddler or

young child. This support is accomplished by firm, resilient padding and thus minimizes vertebral strain for all ages.

[0014] U.S. Pat. No. 5,182,828, issued Feb. 2, 1993 to Alivisatos, provides a machine washable wedge shaped support structure formed from a fabric envelope loosely filled with lightweight, preferably polystyrene, beads which shape it. The fabric may have a non-skid surface to resist sliding in use. The wedge conforms to a patient's or infant's body. When compressed, the fabric envelope and beads lock into a roll-preventing support structure. One alternate version has a stabilizing panel extending from the pointed end of the wedge on which a patient lies. Another version has a connecting panel between two opposing triangular shaped wedges. It provides roll preventing support for a pregnant woman and doubles as an anti-roll pad for infants.

[0015] U.S. Pat. No. 5,245,719, issued Sep. 21, 1993 to Ott, shows an inflatable support for a human torso which has the general form of a catamaran, and which provides a tunnel extending longitudinally of the support within which additional supporting members can be confined, whereby to provide for adjustability of the support in dependence on the requirements of the user.

[0016] U.S. Pat. No. 7,641,283, issued Jan. 5, 2010 to Rumack, describes an insert for protecting the breathing airway of an infant conforms to the incline angle of an infant seat, such as a car seat, high chair, stroller, or jogger. Preferably the insert is hinged so it can be used in an infant seat or laid flat for use on a changing table or other flat surface. In use, two side rolls contact the infant to prevent it from moving sideways. A bottom roll prevents slouching in the seat and supports the infant's legs when laid flat. Preferably, the bottom roll is removable so the insert may be used with larger infants who do not need the provided support. An adjustable shoulder roll extends between the side rolls and can be moved up or down for proper placement behind the infant's shoulders. The shoulder roll compensates for the infant's rearward-elongated head, keeping it in a natural position to avoid compromising the airway. The rolls are preferably made of memory foam and covered by machine-washable fabric.

[0017] U.S. Patent application #20100066138, published Mar. 18, 2010 by Rumack, provides a child positioning insert including a frame with a first column and a second column, where the first and second columns are positioned vertically. The first column has a first guide and the second column has a second guide, where the first and second guides extend along a portion of the length of each column. A shoulder roll connects to the frame via the first column and the second column, so that the shoulder roll is perpendicular to the first column and the second column. The shoulder roll has a backing that connects to the first guide and to the second guide such that the backing can move vertically along the first and second guides. A head support member connects to the frame in a position above the frame and above the shoulder roll, so that the head support member includes a first support member to substantially prevent lateral motion of a person's head in a first direction and a second support member to substantially prevent lateral motion of the person's head in a second direction.

[0018] What is needed is a safe comfortable light weight roll prevention device worn by an infant to prevent rolling and encourage crawling.

BRIEF SUMMARY OF THE INVENTION

[0019] An object of the present invention is to provide a fabric covering stiff lightweight foam panel worn on the back of an infant as a safe and comfortable easy-to-put-on light weight roll prevention device worn by an infant to prevent rolling and encourage crawling.

[0020] In brief, a lightweight device fits the infant much like a backpack which has a rigid Styrofoam core and is held into place with a system of straps with mating hook and loop fastener closures, the straps attached together or to a front panel on the front of the infant. The device is wider than the infant's body and extends beyond the infant's sides to prevent the infant from rolling over from a prone (face down) position. Without the option of rolling over the infant is thus encouraged to crawl.

[0021] Arm and leg grip pads may be worn to improve traction and thus further encouraging the infant to crawl.

[0022] If the infant at this point only crawls forward by pulling with his or her arms a removable chest/belly pad of different thickness for height requirement can be added to encourage the infant to bring the knees forward and under the body in order to move in a full crawl with both arms and legs.

[0023] The flat shape of the back of the device makes putting it on the infant easy. The device is laid on its back on a flat surface and the infant is then placed on the device face up. The straps are then closed around the front of the infant and the infant is placed prone (face down) on a suitable surface with the device now firmly attached. Since the weight of the infant is on the front of the device, the use of mating hook and loop fasteners provide for maximum comfort for the infant without hard fasteners which might irritate.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0024] These and other details of the present invention will be described in connection with the accompanying drawings, which are furnished only by way of illustration and not in limitation of the invention, and in which drawings:

[0025] FIG. **1** is a front plan view of one embodiment of the infant rolling prevention and crawling promotion back panel device of the present invention mounted on the back of an infant with the infant in a lying position on the infant's back;

[0026] FIG. **2** is a front elevational view of the infant rolling prevention and crawling promotion back panel device of FIG. **1**;

[0027] FIG. **3** is a top end view of the infant rolling prevention and crawling promotion back panel device of FIG. **1** showing an additional chest/belly pad mounted on the front straps;

[0028] FIG. **4** is a side elevational view of the infant rolling prevention and crawling promotion back panel device of FIG. **1** mounted on the back of an infant with the infant in a crawling position;

[0029] FIG. **5** is a front plan view of another embodiment of the infant rolling prevention and crawling promotion back panel device of the present invention mounted on the back of the infant and a front panel mounted on the front of the infant with the infant in a lying position on the infant's back;

[0030] FIG. **6** is a front elevational view of the infant rolling prevention and crawling promotion back panel device of FIG. **5** showing an attached fabric with the straps to connect to the front panel;

[0031] FIG. **7** is a top end view of the infant rolling prevention and crawling promotion back panel and front panel device of FIG. **5** showing an additional optional chest/belly pad mounted on the front panel and straps;

[0032] FIG. **8** is a side elevational view of the infant rolling prevention and crawling promotion back panel device of FIG. **5** mounted on the back of the infant and the front panel on the front of the infant with the infant in a crawling position.

DETAILED DESCRIPTION OF THE INVENTION

[0033] In FIGS. **1-8**, a rolling prevention device **10** worn on the back of an infant promotes crawling in infants.

[0034] A rigid roll prevention back panel **20** is worn on a back of an infant, as shown in FIGS. **1** and **4**. An additional soft front panel **27** for receiving the attaching straps **21**, **22**, and **23** is shown in FIGS. **5**, **7**, and **8**. The back panel **20** extends beyond the sides, shoulders, and arms of the infant to prevent the infant from rolling sideways to encourage crawling rather than rolling as a means of translational movement by the infant. The rigid panel is fabricated of a light weight rigid foam rectangular planar structure covered by a fabric.

[0035] A plurality of straps including a pair of shoulder straps **21**, a waist strap **22**, and a crotch strap **23**, extending from the rigid panel **20** around the infant and secured together in the front of the infant preferably by mating hook and look fasteners, for attaching the rigid panel to the back of an infant and alternately, the straps attach to a front panel **27** in FIGS. **5**, **7**, and **8**, to create a vest-like garment which does not move around on the body of the infant. The plurality of straps **21**, **22**, and **23** wrap around the infant and attach together in front of the infant so that an infant may be placed back down on the rigid panel **20** positioned on a horizontal surface with the infant face up and the plurality of straps **21**, **22**, and **23** wrapped around the infant and removably attach together or to a front panel **27** on the front of the infant. When the infant wearing the rigid panel **20** is placed faced down an a horizontal surface, as shown in FIGS. **4** and **8**, the infant cannot roll over, but the infant can crawl for translational movement on the horizontal surface.

[0036] In FIGS. **3** and **7**, in cases when an infant is moving by using only the arms, a removable chest and belly covering pad **24** may be attached to the straps **21**, **22**, and **23** and front panel **27** in front of the infant to encourage the infant to bring the knees forward and under the body in order to move in a full crawl with both arms and legs.

[0037] Arm grip pads **25** and knee grip pads **26** may also be worn on the arms and legs of the infant to improve traction and further encourage the infant to crawl, as shown in FIGS. **4** and **8**.

[0038] The rolling prevention device **10** of the present invention provides the lightweight back rigid roll prevention panel **20**, which fits the infant much like a backpack and which has a rigid foam core covered by soft fabric, such as a multi-directional nylon SPANDEX® back panel and preferably a terry cloth backed nylon NEOPRENE® chest/front panel **27**, both held in place on the infant by a system of straps **21**, **22**, and **23** with mating hook and loop fastener closures, the device being wider than the body of the infant and extending down the full length of the torso to prevent the infant from rolling over from a prone (face down) position and thereby encourage the infant to crawl.

[0039] In use, the lightweight roll prevention panel **20** fits the infant much like a backpack which has a rigid foam core covered by soft fabric and is held into place with a system of straps **21**, **22**, and **23** attached together or to a front panel **27** in front of the infant preferably with mating hook and loop fastener closures. Since the weight of the infant is on the front of the device, the use of mating hook and loop fasteners provide for maximum comfort for the infant without hard fasteners which might irritate. The roll prevention panel **20** is wider than the infant's body and extends down at least the length of the torso to prevent the infant from rolling over from a prone (face down) position, as shown in FIGS. **4** and **8**. Without the option of rolling over the infant is thus encouraged to crawl.

[0040] Arm grip pads **25** and knee grip pads **26** may be worn to improve traction and thus further encouraging the infant to crawl.

[0041] If the infant only moves forward by pulling with his or her arms a removable chest/belly pad **24** can be added to encourage the infant to bring the knees forward and under the body in order to move in a full crawl with both arms and legs.

[0042] The flat shape of the back of the roll prevention panel **20** makes putting it on the infant easy. The roll prevention panel **20** is laid on its back with the straps up on a flat surface and the infant is then placed on the device face up. The straps are then closed around the front of the infant and the infant is placed prone (face down) on a suitable surface with the device now firmly attached, as shown in FIGS. **4** and **8**.

[0043] It is understood that the preceding description is given merely by way of illustration and not in limitation of the invention and that various modifications may be made thereto without departing from the spirit of the invention as claimed.

What is claimed is:

1. A rolling prevention device to promote crawling in infants, the device comprising:

a rigid roll prevention rigid panel worn on a back of an infant, the panel extending beyond the sides, shoulders, and arms of the infant to prevent the infant from rolling sideways to encourage crawling rather than rolling as a means of translational movement by the infant, the rigid panel comprising a light weight rigid foam rectangular planar structure covered by a fabric;

a plurality of straps extending from the rigid panel for attaching the rigid panel to a back of an infant, the plurality of straps wrapping around the infant and attaching together in a front of the infant so that an infant is placed back down on the rigid panel positioned on a horizontal surface with the infant face up and the plurality of straps wrapped around the infant and removably attach to a front of the infant so that when the infant wearing the rigid panel is placed faced down an a horizontal surface, the infant cannot roll over, but the infant can crawl for translational movement on the horizontal surface.

2. The device of claim **1** further comprising a soft front panel to receive the plurality of straps and form a vest-like garment.

3. The device of claim **1** wherein the plurality of straps are attached by mating hook and loop fasteners.

4. The device of claim **1** further comprising a removable chest and belly covering pad attached to the straps in front of the infant to encourage the infant to bring the knees forward and under the body in order to move in a full crawl with both arms and legs.

5. The device of claim **1** further comprising arm grip pads and knee grip pads worn on the arms and knees of the infant to improve traction and further encourage the infant to crawl.

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