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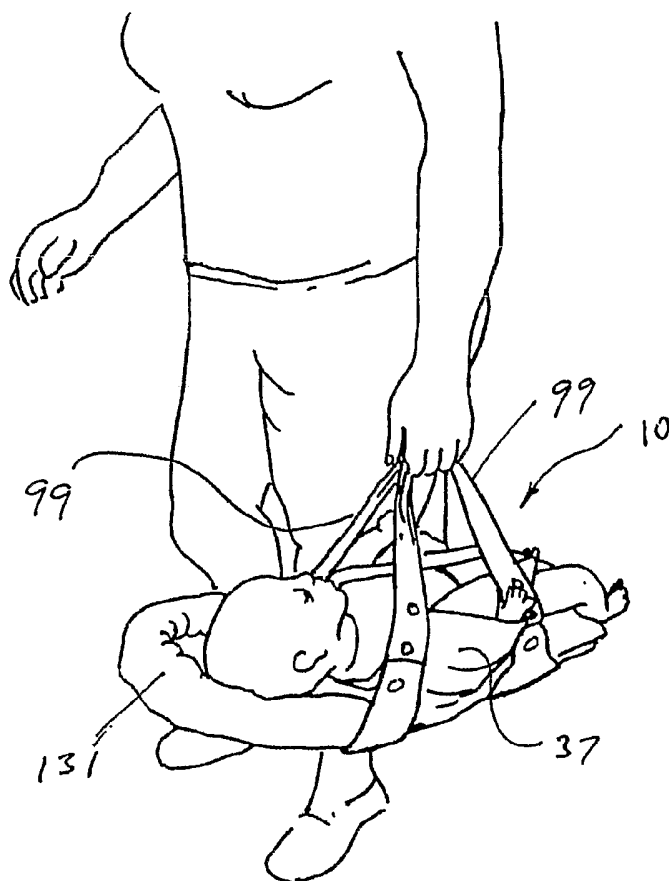
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(54) Title: A PORTABLE INFANT SUPPORT APPARATUS



(57) Abstract: This invention relates to a portable infant support apparatus (10) for supporting an infant's head and torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a motor vehicle child safety seat (11) of the type that includes a seat body having a recess that is adapted to receive an infant or child in a recumbent position. The infant support apparatus (10) includes a resilient head and torso support (12), restraining means (50) associated with said head and torso support (12) for restraining the infant, and carrying means in the form of two opposing handles (99).



— with amended claims

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A Portable Infant Support Apparatus

This invention relates to a portable infant support apparatus.

5 This invention has particular, but not exclusive application to portable apparatus for supporting an infant. For example, apparatus for lifting an infant, carrying an infant, nursing an infant, supporting an infant while sleeping in a supine position, and a baby capsule, (infant restraint), or a child's motor
10 vehicle safety seat, (child restraint system for a motor vehicle). However, it will be appreciated that the invention, possibly with some modifications, may be used to provide support for a small child.

The term "infant" used herein is to be taken to include a
15 small child unless the context clearly requires otherwise.

Many mothers suffer back related complaints, such as backache, resulting from the process of giving birth, including epidural analgesia and/or excessive straining during the expulsive phase of labour. For some, the problems caused by an
20 aching back may resolve itself within weeks of delivery. For others, the pain may last for many months or even years.

To prevent back injuries and to manage existing back complaints it has been suggested that mothers bend at the hips and the knees instead of bending their backs or performing tasks
25 in a stooped position. Further it has been suggested that mothers avoid twisting their backs and that they not lift at arms length.

During the early years of a child's life many of the activities associated with their care involve lifting and/or
30 carrying. For example, babies are constantly lifted and carried: into and out of cots, highchairs, baths, baby capsules for the car, laps, shopping trolleys, prams, from and onto the floor and change tables, carried until they have settled, been burped, gone to sleep, they are nursed and when cuddled. While performing
35 many of these activities, mothers find it difficult not to bend their backs, twist their backs or lift at arms length,

particularly if the child can only lie and the mother must lean over them so as to reach all parts of the child's body.

Most child safety seats include a seat body made from a moulded plastics material having a recess, that is often partially covered with a padded cushion, which is adapted to receive a resting child in a generally recumbent position. The seat body typically includes a seat support portion having a base surface that is adapted to rest on a vehicle seat cushion and a back support portion having a back support surface that in use may, depending on the orientation of the child safety seat, rest against a cushioned back rest of the vehicle seat.

Typically the child is restrained within the confines of the seat body by a harness that includes a pair of shoulder straps, a pair of waist straps and a pair of crotch straps that pass between the child's legs.

In order to place an infant or a child who is not capable of walking unaided in a safety seat, a person is invariably required, while standing beside an open doorway of the motor vehicle and holding the infant or child at arms length, both twist and bend his or her back. This combination of physical activity is most undesirable and should be avoided wherever possible and is particularly hazardous for mothers who have recently given birth.

The process of removing an infant or young child from a safety seat is also quite dangerous to the health and well being of the person charged with same and involves the person lifting the infant or child at arms length and both bending and twisting their back.

Further, it is commonly believed that the motion of a moving motor vehicle has a tendency to put infants and young children to sleep. Consequently, in the past many parents out of frustration have taken an infant or small child for a ride in a motor vehicle in the hope that the motion of the car will put the infant or child to sleep. However, it has also been observed that the awkward stance of the person while lifting the infant or child

from the car seat and/or the placement of the person's hands around the infant or child's body can wake the infant or child, possibly with a fright. As a consequence it may be difficult to get the infant or child to settle and to fall asleep again.

5 It has also been observed that some persons choose to leave a sleeping infant or child in a motor vehicle child safety seat rather than risk waking the infant or child while attempting to remove the infant or child from the motor vehicle. Such practices can be quite dangerous for the infant or child. For
10 example, the infant or child may be abducted from the motor vehicle while the person is absent.

It has also been observed that the temperature inside a motor vehicle that is exposed to the sun can rise quite rapidly, particularly if the windows are wound up. An infant or child
15 left in a motor vehicle for even a small length of time is in danger of suffering from heat stress and may die as a consequence of same. For this reason laws have been introduced to protect against infants and children being left alone in motor vehicles.

Sudden Infant Death Syndrome, ("SIDS"), is not a disease.
20 It is a term that is used when referring to the sudden, unexplained death of a baby who seems well, or almost well, and whose death can't even be explained by a post-mortem examination.

Babies have died from SIDS at all times of the day and night, in cots, prams, car seats, bassinets and even in the parent's
25 arms. Most of the babies that are attributed to have died from SIDS have been under six months of age and research has shown that more babies die during the winter months than during the summer months.

Although the cause of SIDS is still a mystery, research
30 suggests that the chances that a baby will die from SIDS is less if the baby sleeps on its back. The risk of SIDS is increased if the baby is permitted to sleep on its tummy.

Until recently, parents were advised to sleep babies on their backs or their sides. However a baby that is sleeping on
35 its side may roll on to its tummy.

Osteogenesis imperfecta, "OI", is a genetic bone disorder that is often referred to by its more common name of, brittle bone disease. People with OI do not produce enough good quality collagen to produce healthy, strong bones. Collagen is an important protein and without sufficient good quality collagen a person's bones will be weak and easily broken.

Infants who have OI must be handled carefully otherwise their weak bones may be easily broken. Infants who have OI may also develop curvature of the spine. The inventor is not aware of any suitable apparatus that parents may use to handle infants who have OI.

Achondroplasia is an inherited disorder of bone growth. Although achondroplasia literally means, "without cartilage formation", in this disorder the problem is not in forming cartilage but in converting it to bone, particularly in the long bones of the arms and legs.

All persons who are afflicted with achondroplasia are short. The average height of an adult male with achondroplasia is 131 cm, and the average height for adult females is 124 cm. A person with achondroplasia has an average sized trunk, short arms and legs with disproportionately short upper arms and thighs, a slightly enlarged head, and a prominent forehead. The person's fingers are short, and the ring finger and middle finger may diverge, giving the hand a three-pronged appearance.

Because the head is usually large, care needs to be taken when handling infants who are afflicted with achondroplasia that the airway is not obstructed by the forward inclination of the infant's head.

The inventor is not aware of any suitable apparatus that parents may use to hold and/or carry infants and young children who have achondroplasia.

It is an object of the present invention to provide a portable infant support apparatus that ameliorates at least some of the deficiencies of the prior art.

With the foregoing in view, this invention in one aspect

relates to a portable infant support apparatus for supporting an infant's head and torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a motor vehicle child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position, said portable infant support apparatus including:

a resilient head and torso support that is capable of supporting the infant's head and torso;

restraining means attached to said head and torso support for restraining the infant, and

carrying means operatively associated with said head and torso support for carrying said head and torso support.

Typically the motor vehicle child safety seat will include a child safety seat harness comprising one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess. Preferably the head and torso support includes opposing side portions and at least one strap opening formed in each of said side portions, said strap opening being adapted to receive at least a strap of the child safety seat harness. Preferably the strap openings are slits cut into an edge portion of each side portion.

In still yet another embodiment, this invention relates to a portable infant support apparatus for supporting an infant's head and torso which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having generally opposing side portions and at least one strap opening formed in each side portion that is adapted to receive at least a

strap of the harness, and

restraining means attached to said head and torso support for restraining the infant.

Preferably the strap openings are slits cut into an edge
5 portion of each side portion. Preferably the head and torso support is resilient. Preferably the head and torso support includes carrying means for carrying said head and torso support.

In another aspect, this invention relates to a portable infant support apparatus for supporting an infant's head and
10 torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising one or more straps
15 attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having
20 generally opposing side portions and at least one strap opening formed in each side portion that is adapted to receive at least a strap of the harness;

restraining means attached to said head and torso support for restraining the infant, and

25 carrying means operatively associated with said head and torso support for carrying said head and torso support.

The head and torso support may be manufactured from any suitable material. For example, the head and torso support may be constructed from various metal and/or plastics materials.
30 However, it is preferred that the head and torso support is manufactured from a polycarbonate material.

The head and torso support may be of unitary construction. Alternatively, the head and torso support may be constructed from a plurality of head and torso components and wherein the
35 individual components may be operatively connected together using

a suitable fastening means. Further, the chosen fastening means may permit a certain amount of movement of the components relative to one another.

5 Preferably the head and torso support is generally elongate and includes three components constructed from a thin sheet of a polycarbonate material. Further, it is preferred that the head and torso support includes a cover that is adapted to maintain the various components in their preferred operative relationship.

10 The head and torso support may include one or more apertures formed therein for ventilation and/or to assist the infant to breath. The apertures may also be of some assistance when cleaning the head and torso support. For example, the polycarbonate head and back support may include a plurality of apertures formed therein.

15 The head and torso support preferably includes an upper surface and an opposing lower surface, and wherein the shape of the upper surface may compliment specific parts of the infant's body that it is intended to support. For example, the head and torso support may include one or more raised portions and/or one
20 or more recesses. Preferably the head and torso support includes a raised portion that is adapted to partially surround an infant's head and inhibit lateral movement of the infant's head relative to the head and torso support.

The head and torso support may also include one or more
25 cushions that are adapted to overlay all or selected parts of the head and torso support. Preferably the cushion and/or selected cushions are removable for cleaning purposes and/or so that they may be replaced by one or more cushions of a different size, shape or other characteristic. Similarly, the position of
30 selected cushions on the head and torso support may be adjustable. For example, the head and torso support may include a cover and a detachable head cushion attached thereto that is adapted to wrap about and provide support for an infant's head and wherein there is provided a plurality of locations on the
35 cover to which the head cushion may be attached.

It will be appreciated that the detachable cushion or cushions may be attached to the cover using a variety of means including fasteners such as press studs and hook and loop fasteners. However, it is preferred that the detachable cushion or cushions are attached to the cover using buttons and button holes.

The strap openings may be slits or apertures, such as slotted apertures, formed in the head and torso support and/or any cover or cushion that is adapted to cover the head and torso support and wherein selected openings formed in both the head and torso support and the cover or cushion are preferably aligned. Further, there may be provided one or more sets of openings and wherein each set of openings corresponds to a particular preferred location of the head and torso support on the motor vehicle child safety seat.

The openings formed in the cover and/or cushion may also serve as a means of locating the cover or cushion on the head and torso support and as a means of preventing significant movement of the cover or cushion relative to the head and torso support when a strap or band extends through aligned openings in the head and torso support and the cover or cushion.

The restraining means may include one or more straps or bands that are adapted to pass over the infant and which may be used to secure the infant to the head and torso support, including a harness. The straps or bands may be secured about the infant's body using one or more buckles or fasteners.

Preferably the restraining means includes:

a pair of opposing waist straps that each extend from opposite sides of said head and torso support over the infant's waist, each of said waist straps having a waist strap free end portion and wherein said waist strap free end portions in use are arranged adjacent one another on the infant's waist;

a crotch strap that is adapted to pass between the infant's legs and over the infant's abdomen, said crotch strap having a crotch strap free end portion that in use is adapted to at least

partially overlay the two waist strap free end portions and which is capable of being releasably connected to said two waist strap free end portions using a suitable fastener, and

a pair of opposing shoulder straps that each extend from opposite sides of said head and torso support over a respective one of the infant's shoulders, each of said shoulder straps having a shoulder strap free end portion that is capable of releasable connection to said crotch strap end portion using a suitable fastener.

Preferably hook and loop fasteners are used to connect the waist strap free end portions to the crotch strap and the shoulder strap free end portions to the crotch strap.

The carrying means may include one or more portions of the head and torso support that enable a person to grasp, such as opposing side portions of the head and torso support. Alternatively the carrying means may include one or more handle apertures formed in the head and torso support through which a user may extend their fingers so that they may grasp hold of a portion of the head and torso support surrounding the handle aperture.

The carrying means may also include a band or strap that passes from one side of the head and back support to another opposing side. The band or strap may further serve as a sling.

However, it is preferred that the carrying means includes a pair of handles, each attached to an opposing longitudinal side portion of the head and torso support. Preferably the handles are each attached to the head and torso support on either side of the centre of gravity of the head and torso support when loaded.

Further, each handle may include a leading portion and a trailing portion, each attached to a side portion of the head and torso support and connected by an intermediate gripping portion, and wherein the leading portion may, in some embodiments, be attached to the longitudinal side of the head and torso support adjacent that part of said head and torso support that supports the infant's head so as to provide additional support for same.

Preferably the handles are manufactured from a soft textile material and wherein, in some embodiments, the handles and the head and torso support may be detachable.

5 In still yet another embodiment, this invention relates to a portable infant support apparatus for supporting an infant's head and torso while the infant sleeps, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, and

10 restraining means attached to said head and torso support for restraining the infant, characterised in that the width of said head and torso support is wider than the width of the infant's body when supported in a generally longitudinal attitude on said head and torso support.

15 Preferably the head and torso support and the restraining means is of the type generally as previously described above. The head and torso support may also include carrying means of the type previously described above.

20 In still yet another aspect, this invention relates to a support apparatus for supporting an infant's head and torso, said support apparatus including:

a head and torso support for supporting the infant's head and torso, and

25 restraining means attached to said head and torso support for restraining the infant, said restraining means including:

a pair of opposing waist straps that each extend from opposite sides of said head and torso support over the infant's waist, each of said waist straps having a waist strap free end portion;

30 a crotch strap that is adapted to pass between the infant's legs and over the infant's abdomen, said crotch strap having a crotch strap free end portion that in use is adapted to at least partially overlies the connected waist strap end portions and which is capable of being releasably connected to one or both of
35 said waist strap end portions using hook and loop fasteners, and

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a pair of opposing shoulder straps that each extend from opposite sides of said head and torso support over a respective one of the infant's shoulders, each of said shoulder straps having a shoulder strap free end portion that is capable of
5 releasable connection to said crotch strap end portion using hook and loop fasteners.

The support apparatus may include a pram, bassinet, motor vehicle child safety seat, swing. Preferably the support apparatus is a portable infant support apparatus of the type
10 described above.

In still yet another embodiment, this invention relates to a liner or cushion for use in conjunction with a portable infant support apparatus of the type herein before described, said cushion being both separate from and adapted to overlay a head
15 and torso support of said portable infant support apparatus, said cushion including:

a head portion that is adapted to provide support for an infant's head, and

a torso portion that is adapted to provide support for the
20 infant's torso.

Preferably the cushion includes opposing longitudinal side edge portions in which there are formed at least one opening that is adapted to receive a strap of a harness or similar restraining means associated with the head and torso support. Preferably the
25 opening is reinforced by suitable reinforcing means. This may include a stiffening member in which there is formed a corresponding opening and wherein the stiffening member may be located between outer layers of the cushion.

In order that this invention may be more easily understood, a preferred embodiment will now be described with reference to
30 the accompanying drawings, in which:

Fig. 1 is a pictorial view of a person holding an infant that is supported in a persons's arms by a portable infant support apparatus which is constructed in accordance with
35 the present invention;

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Fig. 2 is a pictorial view of a person carrying an infant that is supported by the portable infant support apparatus illustrated in figure 1;

Fig. 3 is a pictorial view of an infant resting on the portable infant support apparatus illustrated in figure 1, said portable infant support apparatus being located in a recess of a motor vehicle child safety seat;

Fig. 4 is an exploded view from above of the portable infant support apparatus illustrated in figure 1;

Fig. 5 is a pictorial view of an infant resting in a supine position on the portable infant support apparatus illustrated in figure 1;

Fig. 6 is a pictorial view from below of the portable infant support apparatus illustrated in figure 1;

Fig. 7 is a pictorial view of an infant resting in a supine position on the portable infant support apparatus illustrated in figure 1, and wherein there is also shown a lower limb cover that is constructed in accordance with the present invention, said cover being releasably attached to said portable infant support apparatus;

Fig. 8 is a pictorial view from one end of the lower limb cover illustrated in figure 7;

Fig. 9 is a pictorial view from an opposite end of the lower limb cover illustrated in figure 7;

Fig. 10 is a pictorial view of a cushion constructed in accordance with the present invention;

Fig. 11 is a pictorial view of another cushion that is constructed in accordance with the present invention, and

Fig. 12 is a view from above of a head and back support that is constructed in accordance with the present invention.

Figures 1 to 7 show a portable infant support apparatus 10 for nursing an infant as shown in figure 1; for carrying an infant as shown in figure 2; for supporting an infant while seated in a motor vehicle child safety seat 11 as shown in figure 3, and for supporting an infant while sleeping on a bed or such

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like as shown in figure 5.

The portable infant support apparatus 10 includes a resilient head and torso support 12 comprising three pieces 13, 14 and 15 that are each manufactured from a thin sheet of polycarbonate material which is approximately 3 mm thick.

The first or main piece 13 includes a large, rectangularly shaped, lower portion 16 having two opposing longitudinal side edges and opposing top and bottom edges. The main piece 13 also includes a rectangularly shaped, centrally located, stem 17 that extends from the top edge in a longitudinal direction.

The second piece 14 is rectangularly shaped and extends laterally across the stem midway between its two ends.

The third piece 15 is also rectangularly shaped and extends laterally across an upper portion of the stem.

The three pieces that make up the head and torso support 12 are sandwiched between top and bottom layers of padding, not shown, such as a suitable upholstery material. The opposing layers of padding are sewn closely together around the periphery of the head and back support 12 which permits some movement of the three pieces relative to one another while maintaining them in their preferred operative arrangement.

The portable infant support apparatus 10 also includes a cover 30 that is manufactured from a fabric material, such as a cotton material, and which includes a top layer 32 and a bottom layer 33. The cover 30 is adapted to envelop the head and torso support 12, which is shrouded in padding, said cover 30 comprising a circular shaped head portion 34 and a rectangularly shaped body portion 35.

The body portion 35 includes two opposing longitudinal edge portions 36 and two rectangularly shaped, outwardly extending, side flaps 37 each having a fixed end portion 38 that is attached to an adjacent longitudinal edge portion 36. The side flaps 37 each include a top lateral side edge portion 40 and a bottom lateral side edge portion 41.

The cover 30 also includes an upper pair of shoulder strap

slits 42 and 43 and a lower pair of shoulder strap slits 44 and 45.

5 The portable infant support apparatus 10 also includes restraining means 50, attached to the cover 30, for restraining the infant.

10 The restraining means 50 includes a pair of opposing waist straps 51 and 52, each having a fixed end portion 53 and 54 respectively, shown in dotted outline in figure 6. The fixed end portions 53 and 54 are each sewn to the bottom layer 33 of the cover 30.

15 The waist straps 51 and 52 each also have a free end portion 55 and 56 respectively. The free end portion 55 includes an inner face 57 and an outer face 58 to which there is attached a mounting strip 59 comprising a plurality of either hook or loop devices of the type that are commonly used in the construction of hook and loop fasteners which are sold under the trade mark "VELCRO".

20 The free end portion 56 has an outer face 60 and an inner face 61. Attached to the outer face 60 is a mounting strip 63 comprising a plurality of hook or loop devices that are attached thereto.

25 The restraining means 50 also includes a crotch strap 70 having a fixed end 71, shown in dotted outline, that is sewn to the bottom layer 33 of the cover 30. The crotch strap 70 has an enlarged free end portion 69 having an inner face 72 and an outer face 73.

30 Attached to the inner face 72 is a "T" shaped mounting 74 comprising a plurality of hook or loop devices that are adapted to releasably engage the complementary hook or loop devices of the mounting strips 59 and 63.

The outer face 73 includes two mounting strips 75 and 76 respectively, each having a plurality of hook or loop devices.

35 The restraining means 50 also includes a pair of opposing shoulder straps 80 and 81, each having a fixed end portion 82 and 83 respectively that is sewn to the bottom layer 33 of the cover

30.

The shoulder straps 80 and 81 each also have a free end portion 84 and 85 respectively. The free end portion 84 includes an inner face 86 and an outer face 87, and a mounting strip 88, comprising a plurality of either hook or loop devices, that is attached to said inner face 86. The hook and loop devices of the mounting strip 88 are adapted to releasably engage the complimentary hook or loop devices of the mounting strip 76.

The free end portion 85 includes an inner face 89 and an outer face 90, and a mounting strip 91, comprising a plurality of either hook or loop devices, that is attached to said inner face 89. The hook and loop devices of the mounting strip 91 are adapted to releasably engage the complimentary hook or loop devices of the mounting strip 75.

The bottom layer 33 of the cover 30 also includes two adjacent shoulder strap loops 92 and 93. In use, the shoulder strap 80 may be threaded through one or both of the shoulder strap loops 92 and 93.

The bottom layer 33 of the cover 30 also includes two adjacent shoulder strap loops 94 and 95. In use, the shoulder strap 81 may be threaded through one or both of the shoulder strap loops 94 and 95.

The cover 30 also includes two opposing handles 99 that are formed from a strip of web like material 100 having opposed end portions 101 and 102, shown in dotted outline, that are sewn together. The end portions 101 and 102 are retained within an open ended sleeve 103 having tapered end portions 104, and a mid portion 105 that is sewn to the bottom layer 33 of the cover 30.

The end portions 104 each overlie a respective one of the shoulder strap loops 93 and 95 which may be revealed by folding back the covering end portion 104 if desired, as shown in figure 6.

Similarly the mid portion 106 of the strip of web like material 100 is retained within an open ended sleeve 107 having tapered end portions 108. The sleeve 107 is sewn to the bottom

layer 33 of the cover 30.

The top lateral side edge portion 40 of each side flap 37 may be releasably connected to an adjacent portion of one of the handles 99 using a plurality of snap fasteners 109.

Similarly, the bottom lateral side edge portion 41 of each side flap 37 may be releasably connected to an adjacent portion of one of the handles 99 using a plurality of snap fasteners 110.

The portable infant support apparatus 10 also includes a cushion or insert 120 having a rectangularly shaped cushion body portion 121 and a substantially circular shaped cushion head portion 122.

The head portion 122 is connected to the body portion 121 by an intermediate stem 123 and is separated from the body portion 121 by two opposing, laterally extending shoulder strap slits 124 and 125.

The cushion 120 includes a layer of padding, such as a quilted polyester material that is sandwiched between a front layer 127 and a back layer of a cotton drill material. The cushion 120 also includes a layer of PVC lined terry toweling located beneath the front layer 127 and which overlays a lower portion of the padding.

The front layer 127 of the head portion 122 includes a plurality button hole mounting apertures 130 formed therein that are evenly spaced around the periphery of the head portion.

The cushion 120 also includes a sausage like head restraint 131 comprising a generally cylindrically shaped cover 132 that is filled with a suitable padding material. Attached to the back side of the cover 132 are a plurality of buttons 133, the buttons each being adapted to releasably engage a respective one of the

mounting apertures 130.

The front layer 127 of the head portion 122 also includes two opposing button hole mounting apertures 134 that are spaced closer to the middle of the head portion 122.

The body portion 121 includes a lower edge portion 135 in which there is formed a crotch strap recess 136.

A cushion or insert 220, which is similar in both shape and construction to the cushion 120 but intended to be used in respect of smaller infants, is shown in figure 10. The cushion 220 includes a rectangularly shaped cushion body portion 221 and a substantially circular shaped cushion head portion 222.

The head portion 222 is connected to the body portion 221 by an intermediate stem 223 and is separated from the body portion 221 by two opposing, laterally extending shoulder strap slits 224 and 225.

The cushion 220 includes a layer of padding, such as a quilted polyester material that is sandwiched between a front layer 227 and a back layer of a cotton drill material. The cushion 220 also includes a layer of PVC lined terry toweling located beneath the front layer 227 and which overlays a lower portion of the padding.

The front layer 227 of the head portion 222 includes a plurality of button hole mounting apertures 230 formed therein that are evenly spaced around the periphery of the head portion.

The cushion 220 also includes a sausage like head restraint, not shown, comprising a generally cylindrically shaped cover that is filled with a suitable padding material. Attached to the back

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side of the cover are a plurality of buttons, the buttons each being adapted to releasably engage a respective one of the plurality of mounting apertures 230.

The portable infant support apparatus 10, as previously stated, may be used to provide support for an infant 9 during nursing, and may be used to carry the infant or provide additional support for the infant while seated in a motor vehicle
5 child safety seat 11.

Before assembling the portable infant support apparatus 10, the user must first select a cushion 120 or 220 that will best suit the size of the infant. Having done this, the cushion 120 or 220 may in turn be placed on the top layer 32 of the head and
10 torso support 12.

In the case of the cushion 120, the strap 81 is threaded through loops 94 and 95, and through the aligned slits 42 and 124. Similarly, the strap 80 is threaded through loops 92 and 93, and through the aligned apertures 43 and 125.

15 In the case of the smaller cushion 220, the strap 81 is threaded through loop 94 and through aligned slits 42 and 224. Similarly, the strap 80 is threaded through loop 92 and through aligned slits 43 and 225.

It will be appreciated that the passing of the straps
20 through the aligned slits inhibits longitudinal movement of the cushion 120 or 220 relative to the head and torso support 12. Further, the choice of slits as opposed to apertures enables the user to quickly and easily detach and replace cushions at will. This is believed to be particularly important as there will often

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be occasions when the cushion will be soiled through use and wherein the replacement of the soiled cushion with a clean dry cushion would be desirable.

The infant 9 may be releasably secured to the portable
5 infant support apparatus 10 using the restraining means 50. More specifically, the two waist straps may be placed over the infant=s waist so that the free end portions 55 and 56 are adjacent one another.

Then the crotch strap may be passed between the infant=s
10 legs so that the free end portion 69 overlies the free end portions 55 and 56, said free end portion 69 and the end portions 55 and 56 being releasably connected together by the engagement of the hook or loop devices of the mounting 74 with the complimentary hook or loop devices of the mounting strips 59 and
15 63.

The shoulder straps 80 and 81 are then passed over the infant=s shoulders so that the end portions 84 and 85 overlie the end portion 69 of the crotch strap, the end portions 84 and 85 being releasably secured to the crotch strap by the engagement of
20 the hook or loop devices 75 and 76 with the complimentary hook or loop devices of mounting strips 91 and 88 respectively.

It will be appreciated that the location of a mid portion the crotch strap 70 in the recess 136 will inhibit longitudinal movement of the cover 30 relative to the head and torso support
25 12.

By grasping the handles 99, the user may carry the infant in a manner as shown in figure 2. Further, it will be appreciated

20

that the 37, when attached to the handles 99, prevent the infant's arms from flapping about and give the baby a sense of being held closely. The flaps 37 also assist in keeping the infant warm.

5 Figure 3 shows an infant resting on a portable infant support apparatus 10 that is itself being supported by a motor vehicle child safety seat 11. The child safety seat 11 includes a seat body 301 having a recess formed therein that is adapted to receive an infant. The child safety seat 11 also includes a
10 safety seat harness 303 comprising a pair of shoulder straps 304, a pair of waist straps 305 and a pair of crotch straps 306. Each of the straps has a free end portion and wherein the free end portions are releasably connected together by a quick releasing buckle.

15 Because the head and torso support 12 is resilient, the shape of the head and torso support 12 will generally conform to that of the recess of the child safety seat.

When an infant that is retained within a portable infant support apparatus 10 is placed in a child safety seat, the safety
20 seat harness 303 may be used to retain the child in the seat, as shown in dotted outline in figure 3. In particular, shoulder strap 304a is threaded through aligned slits 42 and 224, while shoulder strap 304b is threaded through aligned slits 43 and 225.

In the event that the infant falls asleep, the sleeping
25 infant may be lifted out of the child safety seat using the handles 99.

It will be appreciated that using the handles 99 of the

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portable infant support apparatus to remove the infant from the child safety seat obviates the need for the user to bend and twist their back while using both arms to support the infant.

When a sleeping infant is left restrained in the portable infant support apparatus 10, as shown in figure 7, the baby is not able to roll on to their side because of the width of the head and torso support 12. Consequently, it is believed that use of the portable infant support apparatus 10 may reduce the number of deaths attributed to Sudden Infant Death Syndrome.

Figure 7 shows a generally rectangularly shaped sheet that may be used to cover the infant's legs in particular and to protect them from the harmful effects of exposure to the sun. The sheet is releaseably secured to the head and torso support 12 by a plurality of press studs 321 that are adapted to engage complimentary studs 322 on the head and torso support.

Figures 8 and 9 show a cover 330 that includes a front wall 331 and an opposing rear wall 332 that are separated by two opposing side walls 333. The cover is adapted to envelop the infant's legs and lower body and may be used to help keep the infant warm.

The rear wall includes an upper peripheral edge portion 334 comprising two flaps 335 each having a plurality of press studs 336 that are adapted to engage respective press studs 337 on the rear of the head and torso support 12. Further, it will be noted that the crotch strap 70 may pass between the two flaps 335.

The front wall 331 includes two laterally extending flaps 338 that may be releasably attached to the head and torso support

12 using a plurality of press studs 339 that are adapted to
engage complementary studs 322 on the head and torso support.

It will be appreciated that use of the portable infant
support apparatus 10 to handle an infant afflicted with
5 osteogenesis imperfecta will reduce physical contact with the
infant and accordingly the likelihood that the infant will suffer
an injury must also be lower.

Similarly, it is believed that use of the portable infant
support apparatus to handle infants who have achondroplasia will
10 reduce the risk that the inclination of the infant's head will
obstruct the infant's airway.

It will of course be realised that the above has been given
only by way of example of the present invention and that all such
modifications and variations thereto as would be apparent to
15 persons skilled in the art are deemed to fall within the broad
scope and ambit of the invention as herein defined in the
appended claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A portable infant support apparatus for supporting an infant's head and torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a motor vehicle child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position, said portable infant support apparatus including:
 - 5 a resilient head and torso support that is capable of supporting the infant's head and torso;
 - restraining means attached to said head and torso support for restraining the infant, and
 - carrying means operatively associated with said head and torso support for carrying said head and torso support.
2. A portable infant support apparatus as claimed in claim 1, wherein said head and torso support has generally opposing side portions and at least one strap opening formed in each side portion that is adaptable to receive at least a strap of a harness associated with the child safety seat.
3. A portable infant support apparatus for supporting an infant's head and back which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:
 - 25 a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having generally opposing side portions and at least one strap opening formed in each side portion that is adapted to

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receive at least a strap of the harness, and
restraining means attached to said head and torso support
for restraining the infant.

- 5 4. A portable infant support apparatus as claimed in claim 2,
wherein said head and torso support is resilient.
- 10 5. A portable infant support apparatus for supporting an
infant's head and back while carrying or handling the
infant and which is capable of providing support for the
infant while seated in a child safety seat of the type that
includes a seat body having a recess that is adapted to
receive an infant or child in a generally recumbent
position and a harness comprising one or more straps
15 attached to opposite sides of the child safety seat for
selectively holding the infant or child in the recess, said
infant support apparatus including:
a head and torso support that is capable of supporting the
infant's head and torso, said head and torso support having
20 generally opposing side portions and at least one strap
opening formed in each side portion that is adapted to
receive at least a strap of the harness;
restraining means attached to said head and torso support
for restraining the infant, and
25 carrying means operatively associated with said head and
torso support for carrying said head and torso support.
- 30 6. A portable infant support apparatus as claimed in any one
of claims 2-5, wherein said strap openings are slits formed
in an edge portion of each of said side portions.
- 35 7. A portable infant support apparatus as claimed in any one
of the preceding claims, wherein said head and torso
support is constructed from a plurality of individual
components that are operatively connected together in a

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manner that permits some movement of said components relative to one another.

8. A portable infant support apparatus as claimed in claim 7,
5 wherein said head and torso support includes a cover and wherein said components are maintained in their operative relationship by said cover.
9. A portable infant support apparatus as claimed in any one
10 of the preceding claims, wherein said head and torso support may include one or more apertures formed therein.
10. A portable infant support apparatus as claimed in any one
15 of claims 2-9, wherein said head and torso support includes at least 2 sets of openings and wherein each set of openings corresponds to a particular preferred location of said head and torso support on the child safety seat.
- 20 11. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said head and torso support includes an upper surface and an opposing lower surface, and wherein the shape of the upper surface compliments shapes of specific parts of the infant's body
25 that it is intended to support.
12. A portable infant support apparatus as claimed in claim 11,
30 wherein the shape of said upper surface is, at least in part, defined by one or more cushions.
13. A portable infant support apparatus as claimed in claim 11 or claim 12, wherein said head and torso support includes a raised portion that is adapted to partially surround an

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infant's head and inhibit lateral movement of the infant's head relative to the head and torso support.

14. A portable infant support apparatus as claimed in claim 13,
5 wherein said raised portion is a detachable head cushion.
15. A portable infant support apparatus as claimed in claim 14,
wherein said head and torso support includes multiple
attachment points to which said head cushion may be
10 selectively attached and wherein by selecting particular
attachment points the position of the said head cushion
relative to said head and torso support may be selectively
varied.
- 15 16. A portable infant support apparatus as claimed in any one
of claims 11-15, wherein said upper surface of said head
and torso support is an upper surface of a removable liner
that is adapted to overlies said head and torso support.
- 20 17. A portable infant support apparatus as claimed in any one
of the preceding claims, wherein said restraining means
includes, one or more straps or bands that are adapted to
pass over the infant and which may be used to secure the
infant to the head and torso support.
- 25 18. A portable infant support apparatus as claimed in claim 17,
wherein said restraining means includes: a pair of
opposing waist straps that each extend from opposite sides
of said head and torso support over the infant's waist,
30 each of said waist straps having a waist strap free end
portion and wherein said waist strap free end portions in
use are arranged adjacent one another on the infant's
waist;
a crotch strap that is adapted to pass between the infant's
35 legs and over the infant's abdomen, said crotch strap

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having a crotch strap free end portion that in use is adapted to at least partially overlay the two waist strap free end portions and which is capable of being releasably connected to said two waist strap free end portions using a suitable fastener, and

a pair of opposing shoulder straps that each extend from opposite sides of said head and torso support over a respective one of the infant's shoulders, each of said shoulder straps having a shoulder strap free end portion that is capable of releasable connection to said crotch strap end portion using a suitable fastener.

carrying means operatively associated with said head and torso support for carrying said head and torso support.

19. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said carry means includes 2 opposing handles.

20. A portable infant support apparatus as claimed in claim 19, wherein said handles are attached to an opposing longitudinal side portion of the head and back support.

21. A portable infant support apparatus as claimed in claim 20, wherein said handles are each attached to the head and torso support on either side of the centre of gravity of the head and torso support when loaded.

22. A portable infant support apparatus as claimed in claim 21, wherein each handle may include a leading portion and a trailing portion, each attached to a side portion of the head and back support and connected by an intermediate gripping portion, and wherein the leading portion is attached to the longitudinal side of the head and back support adjacent that part of said head and back support

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that supports the infant's head so as to provide additional support for same.

23. A portable infant support apparatus for supporting an
5 infant's head and torso while the infant sleeps, said
infant support apparatus including:
a head and torso support that is capable of supporting the
infant's head and torso, and
restraining means attached to said head and torso support
10 for restraining the infant, characterised in that the width
of said head and torso support is wider than the width of
the infant's body when supported in a generally longitudinal
attitude on said head and torso support.
- 15 24. A portable infant support apparatus as claimed in claim 23,
wherein there is provided carrying means associated with
said head and torso support.
- 20 25. A support apparatus for supporting an infant's head and
torso, said support apparatus including:
a head and torso support for supporting the infant's head
and torso, and
restraining means attached to said head and torso support
for restraining the infant, said restraining means
25 including:
a pair of opposing waist straps that each extend from
opposite sides of said head and torso support over the
infant's waist, each of said waist straps having a waist
strap free end portion;
30 a crotch strap that is adapted to pass between the infant's
legs and over the infant's abdomen, said crotch strap
having a crotch strap free end portion that in use is
adapted to at least partially overlie the connected waste
strap end portions and which is capable of being releasably
35 connected to one or both of said waist strap end portions

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using hook and loop fasteners, and
a pair of opposing shoulder straps that each extend from
opposite sides of said head and torso support over a
respective one of the infant's shoulders, each of said
5 shoulder straps having a shoulder strap free end portion
that is capable of releasable connection to said crotch
strap end portion using hook and loop fasteners.

- 10 26. A liner or cushion for use in conjunction with a portable
infant support apparatus of the type claimed in any one of
claims 1-25 herein before described, said cushion being
both separate from and adapted to overlay a head and torso
support of said portable infant support apparatus, said
cushion including:
15 a head portion that is adapted to provide support for an
infant's head, and
a torso portion that is adapted to provide support for the
infant's torso.
- 20 27. A liner or cushion as claimed in claim 26, wherein said
cushion includes opposing longitudinal side edge portions in
which there are formed at least one opening that is adapted
to receive a strap of a harness or similar restraining means
associated with the head and torso support.
- 25 28. A liner or cushion as claimed in claim 27, wherein said
opening is reinforced by suitable reinforcing means.
- 30 29. A liner or cushion as claimed in claim 28, wherein there is
provided a stiffening member located between outer layers of
said cushion and wherein said stiffening member provides
reinforcement for said opening.

AMENDED CLAIMS
received by the International Bureau on 09 June 2006 (09.06.06)

- 5 1. A portable infant support apparatus that is capable of supporting a head and torso of an infant that is lying substantially flat on his or her back when used to carry or handle said infant and which is also capable of providing support for the infant while seated in a motor vehicle child safety seat of the type that includes a
10 seat body having a recess that is adapted to receive an infant or child in a generally recumbent position, said portable infant support apparatus including:
a resilient head and torso support that is capable of supporting the infant's head and torso;
15 restraining means attached to said head and torso support for restraining the infant including at least one restraining member that is capable of being placed across a portion of the infant's body; and
carrying means operatively associated with said head and
20 torso support for carrying said head and torso support.
- 25 2. A portable infant support apparatus as claimed in claim 1, wherein said head and torso support has generally opposing side portions and at least one slotted opening formed in each side portion that is adaptable to receive at least a strap of a harness associated with the child safety seat.
- 30 3. A portable infant support apparatus for supporting an infant's head and torso which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising

one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having generally opposing side portions and at least one slotted opening formed in each side portion that is adapted to receive at least a strap of the harness; and restraining means attached to said head and torso support for restraining the infant including at least one restraining member that is capable of being placed across a portion of the infant's body.

4. A portable infant support apparatus as claimed in claim 2, wherein said head and torso support is resilient.

5. A portable infant support apparatus for supporting an infant's head and torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having generally opposing side portions and at least one slotted opening formed in each side portion that is adapted to receive at least a strap of the harness;

restraining means attached to said head and torso support for restraining the infant including at least one restraining member that is capable of being placed across a portion of the infant's body; and carrying means operatively associated with said head and torso support for carrying said head and torso support.

6. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said head and torso support is constructed from a plurality of individual components that are operatively connected together in a manner that permits some movement of said components relative to one another.

7. A portable infant support apparatus as claimed in claim 6, wherein said head and torso support includes a cover and wherein said components are maintained in their operative relationship by said cover.

8. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said head and torso support may include one or more apertures formed therein.

9. A portable infant support apparatus as claimed in any one of claims 2-8, wherein said head and torso support includes at least two sets of slotted openings and wherein each set of slotted openings corresponds to a particular preferred location of said head and torso support on the child safety seat.

10. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said head and torso

support includes an upper surface and an opposing lower surface, and wherein the shape of the upper surface complements shapes of specific parts of the infant's body that it is intended to support.

11. A portable infant support apparatus as claimed in claim 10, wherein the shape of said upper surface is, at least in part, defined by one or more cushions.

12. A portable infant support apparatus as claimed in claim 10 or claim 11, wherein said head and torso support includes a raised portion that is adapted to partially surround an infant's head and inhibit lateral movement of the infant's head relative to the head and torso support.

13. A portable infant support apparatus as claimed in claim 12, wherein said raised portion is a detachable head cushion.

14. A portable infant support apparatus as claimed in claim 13, wherein said head and torso support includes multiple attachment points to which said head cushion may be selectively attached and wherein by selecting particular attachment points the position of the said head cushion relative to said head and torso support may be selectively varied.

15. A portable infant support apparatus as claimed in any one of claims 10-14, wherein said upper surface of said head and torso support is an upper surface of a removable liner that is adapted to overlies said head and torso support.

16. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said restraining means
5 includes, one or more straps or bands that are adapted to pass over the infant and which may be used to secure the infant to the head and torso support.

17. A portable infant support apparatus as claimed in claim
10 16, wherein said restraining means includes:

a pair of opposing waist straps that each extend from opposite sides of said head and torso support over the infant's waist, each of said waist straps having a waist strap free end portion and wherein said waist strap free
15 end portions in use are arranged adjacent one another on the infant's waist;

a crotch strap that is adapted to pass between the infant's legs and over the infant's abdomen, said crotch strap having a crotch strap free end portion that in use
20 is adapted to at least partially overlay the two waist strap free end portions and which is capable of being releasably connected to said two waist strap free end portions using a suitable fastener; and

a pair of opposing shoulder straps that each extend from
25 opposite sides of said head and torso support over a respective one of the infant's shoulders, each of said shoulder straps having a shoulder strap free end portion that is capable of releasable connection to said crotch strap end portion using a suitable fastener.

30 18. A portable infant support apparatus as claimed in any one of the preceding claims, wherein said carry means includes two opposing handles.

19. A portable infant support apparatus as claimed in claim
18, wherein said handles are attached to an opposing
5 longitudinal side portion of the head and torso support.
20. A portable infant support apparatus as claimed in claim
19, wherein said handles are each attached to the head
and torso support on either side of the centre of gravity
10 of the head and torso support when loaded.
21. A portable infant support apparatus as claimed in claim
20, wherein each handle may include a leading portion and
a trailing portion, each attached to a side portion of
15 the head and torso support and connected by an
intermediate gripping portion, and wherein the leading
portion is attached to the longitudinal side of the head
and torso support adjacent that part of said head and
torso support that supports the infant's head so as to
20 provide additional support for same.
22. A support apparatus for supporting an infant's head and
torso, said support apparatus including:
a head and torso support for supporting the infant's head
25 and torso; and
restraining means attached to said head and torso support
for restraining the infant, said restraining means
including:
a pair of opposing waist straps that each extend from
30 opposite sides of said head and torso support over the
infant's waist, each of said waist straps having a waist
strap free end portion;

a crotch strap that is adapted to pass between the infant's legs and over the infant's abdomen, said crotch strap having a crotch strap free end portion that in use is adapted to at least partially overlie the connected waist strap end portions and which is capable of being releasably connected to one or both of said waist strap end portions using hook and loop fasteners; and
a pair of opposing shoulder straps that each extend from opposite sides of said head and torso support over a respective one of the infant's shoulders, each of said shoulder straps having a shoulder strap free end portion that is capable of releasable connection to said crotch strap end portion using hook and loop fasteners.

23. A liner or cushion for use in conjunction with a portable infant support apparatus of the type claimed in any one of claims 1-22, said cushion being both separate from and adapted to overlay a head and torso support of said portable infant support apparatus, said cushion including:

a head portion that is adapted to provide support for an infant's head; and

a torso portion that is adapted to provide support for the infant's torso, and two opposing longitudinal side edge portions in which there are formed at least one slotted opening that is adapted to receive a restraining member of the restraining means associated with the head and torso support.

24. A liner or cushion as claimed in claim 23, wherein said slotted opening is reinforced by suitable reinforcing means.

25. A liner or cushion as claimed in claim 24, wherein there
is provided a stiffening member located between outer
5 layers of said cushion and wherein said stiffening member
provides reinforcement for said slotted opening.
26. A portable infant support apparatus for supporting an
infant's head and torso while carrying or handling the
10 infant and which is capable of providing support for the
infant while seated in a motor vehicle child safety seat
of the type that includes a seat body having a recess
that is adapted to receive an infant or child in a
generally recumbent position, said portable infant
15 support apparatus including:
a resilient head and torso support that is capable of
supporting the infant's head and torso;
restraining means attached to said head and torso support
for restraining the infant; and
20 carrying means operatively associated with said head and
torso support for carrying said head and torso support.
27. A portable infant support apparatus for supporting an
infant's head and torso which is capable of providing
25 support for the infant while seated in a child safety
seat of the type that includes a seat body having a
recess that is adapted to receive an infant or child in a
generally recumbent position and a harness comprising one
or more straps attached to opposite sides of the child
30 safety seat for selectively holding the infant or child
in the recess, said infant support apparatus including:
a head and torso support that is capable of supporting
the infant's head and torso, said head and torso support

having generally opposing side portions and at least one strap opening formed in each side portion that is adapted to receive at least a strap of the harness; and restraining means attached to said head and torso support for restraining the infant.

28. A portable infant support apparatus for supporting an infant's head and torso while carrying or handling the infant and which is capable of providing support for the infant while seated in a child safety seat of the type that includes a seat body having a recess that is adapted to receive an infant or child in a generally recumbent position and a harness comprising one or more straps attached to opposite sides of the child safety seat for selectively holding the infant or child in the recess, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso, said head and torso support having generally opposing side portions and at least one strap opening formed in each side portion that is adapted to receive at least a strap of the harness;

restraining means attached to said head and torso support for restraining the infant; and

carrying means operatively associated with said head and torso support for carrying said head and torso support.

29. A portable infant support apparatus for supporting an infant's head and torso while the infant sleeps, said infant support apparatus including:

a head and torso support that is capable of supporting the infant's head and torso; and

restraining means attached to said head and torso support for restraining the infant, characterised in that the width of said head and torso support is wider than the width of the infant's body when supported in a generally longitudinal attitude on said head and torso support.

30. A liner or cushion including:

a head portion that is adapted to provide support for an infant's head;

a torso portion that is adapted to provide support for that infant's torso, and two opposing longitudinal side edge portions in which there are formed at least one slotted opening.



FIG. 1

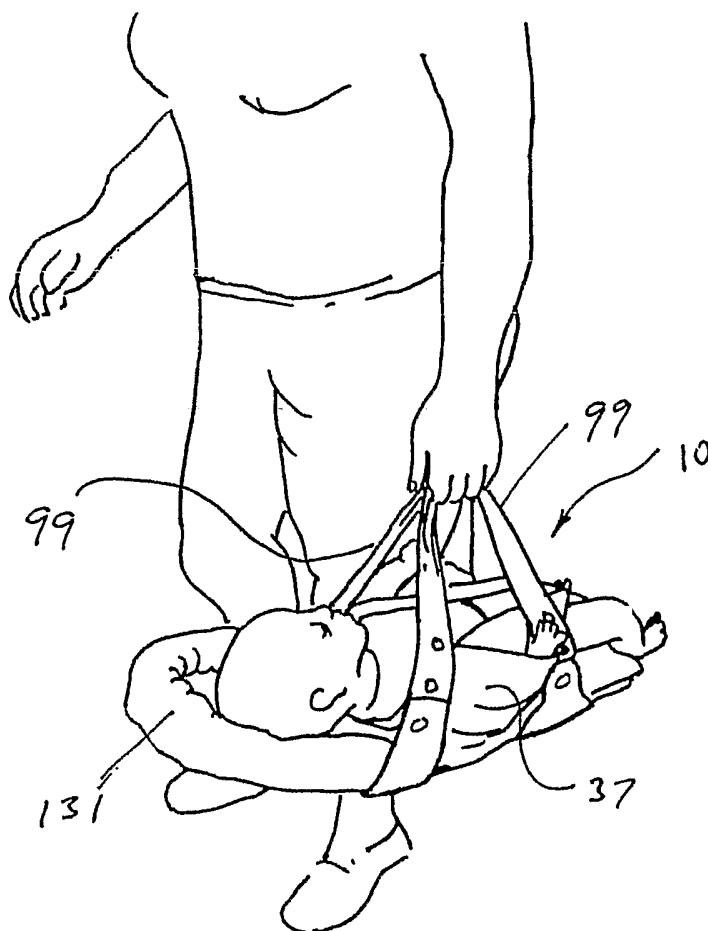


FIG. 2

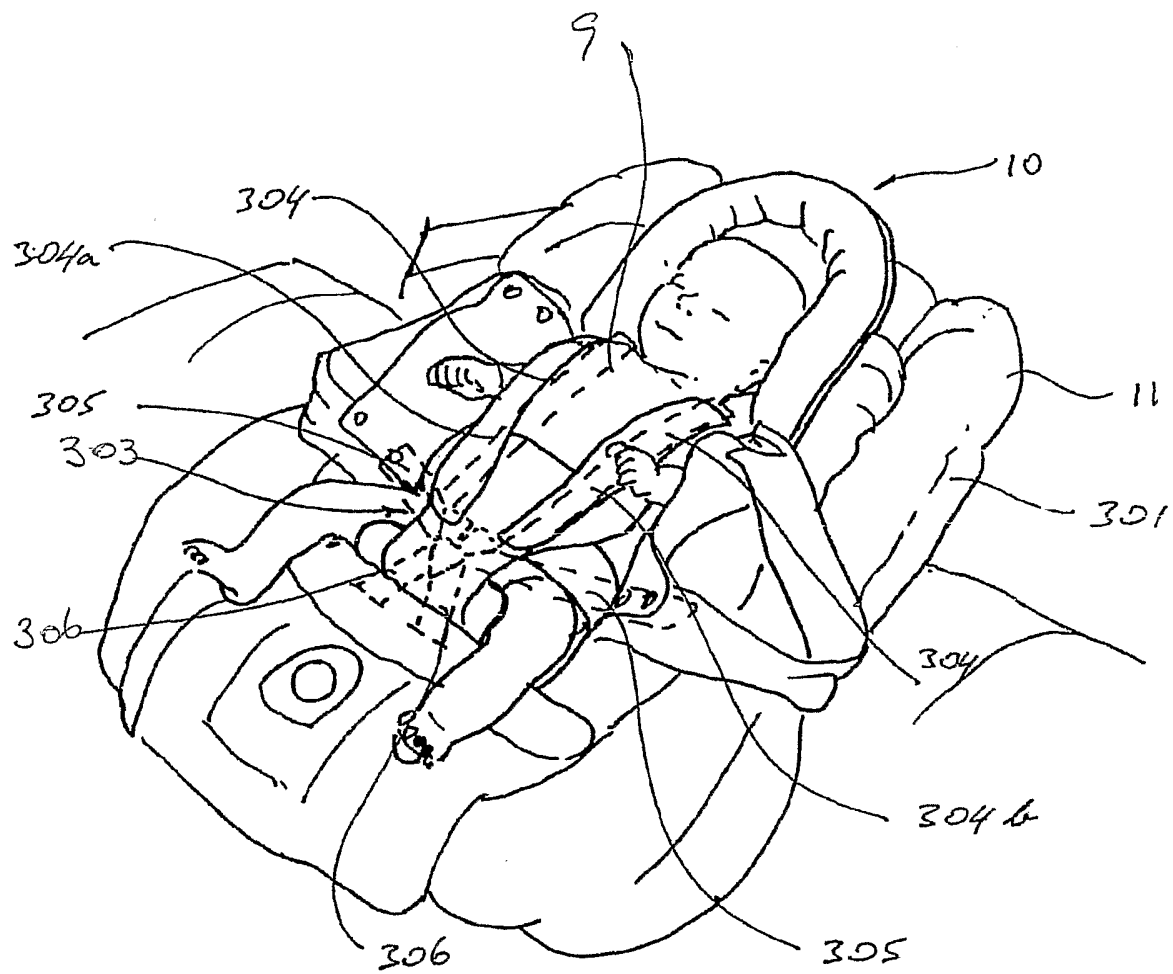
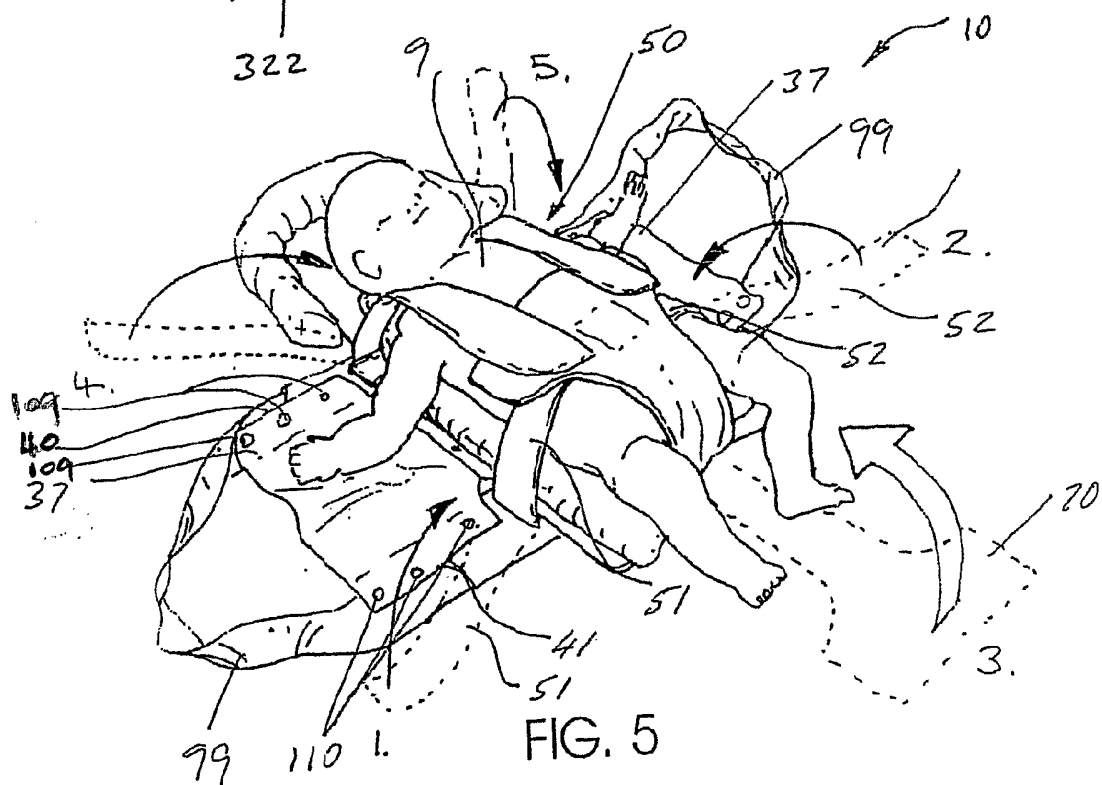
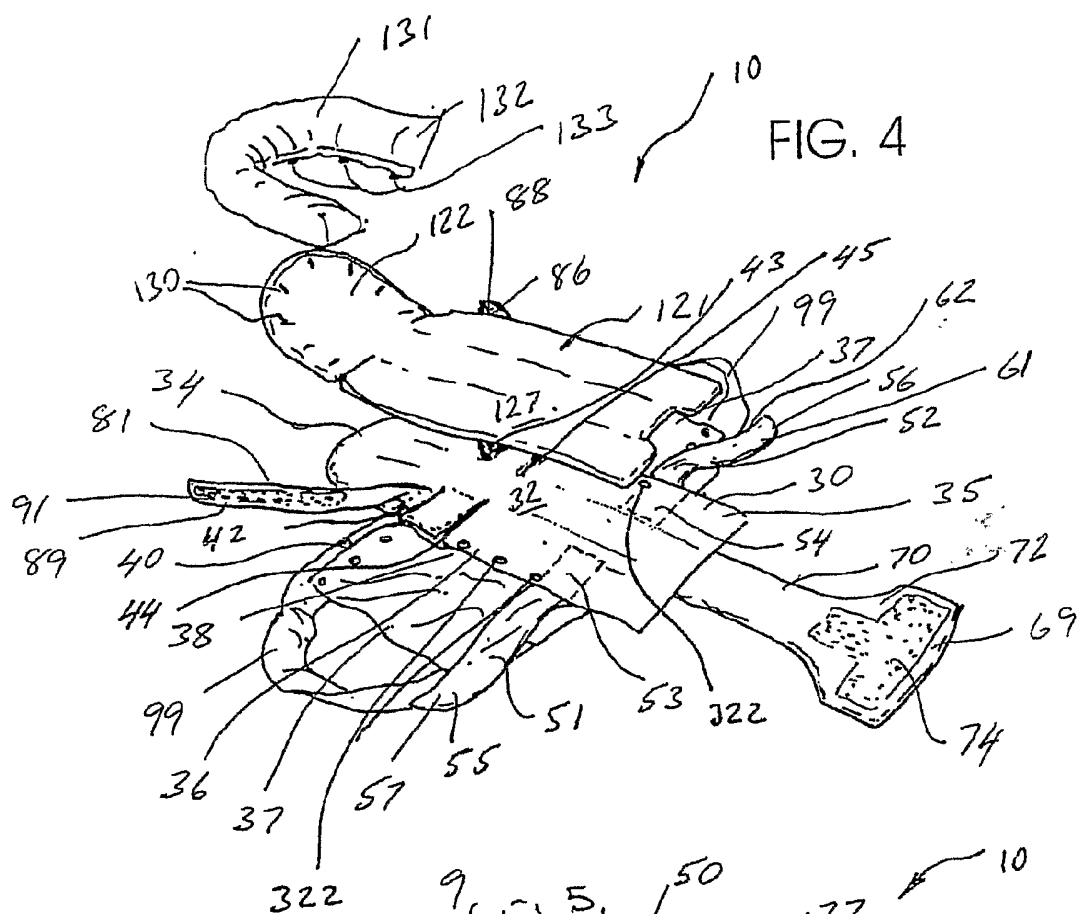
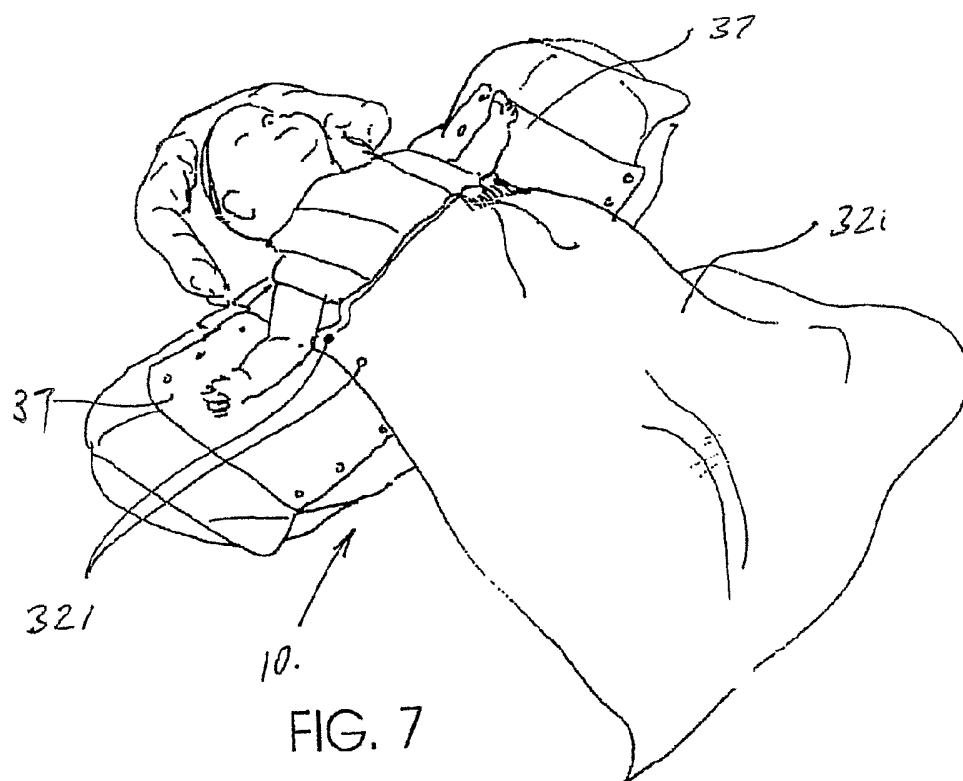
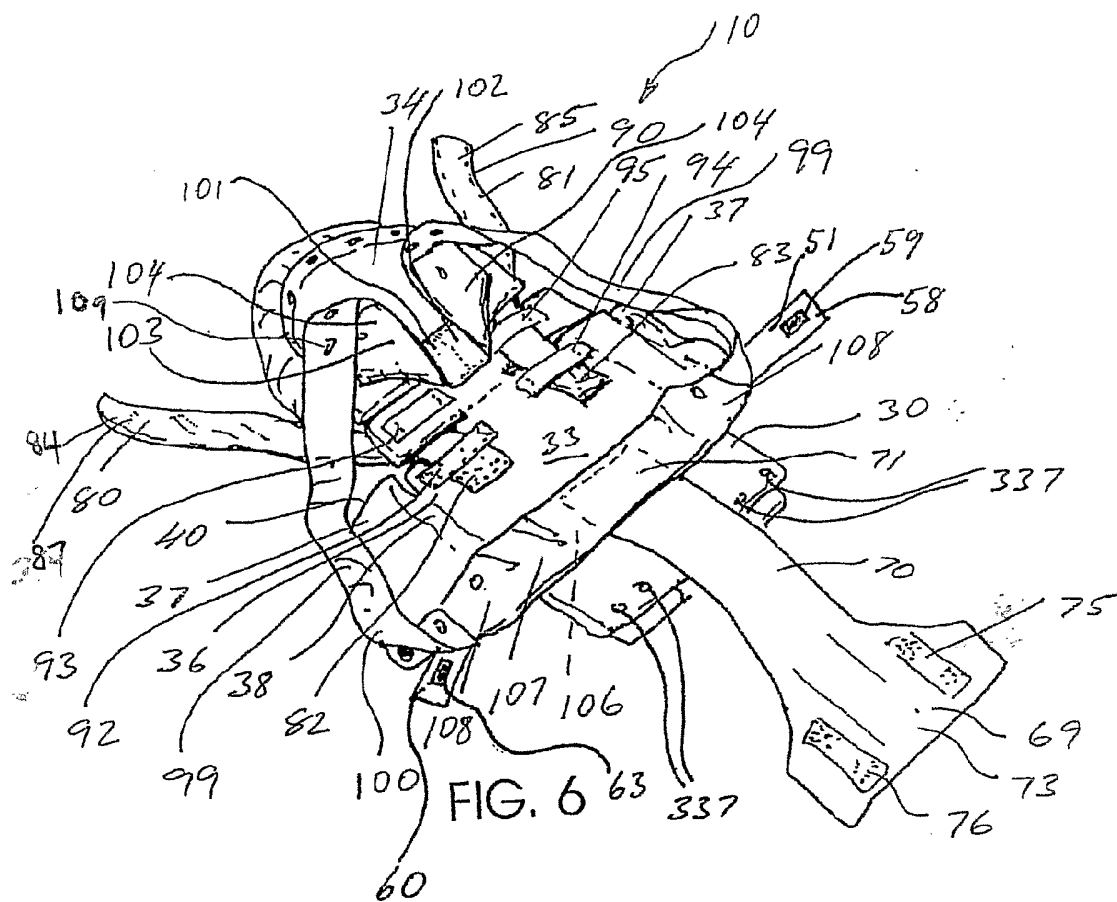


FIG. 3





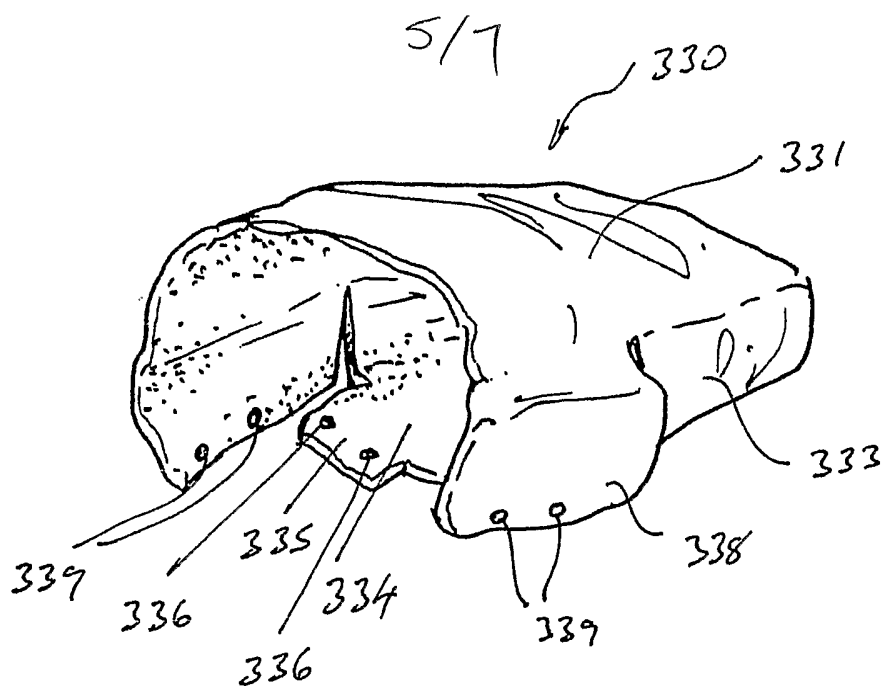


FIG. 8

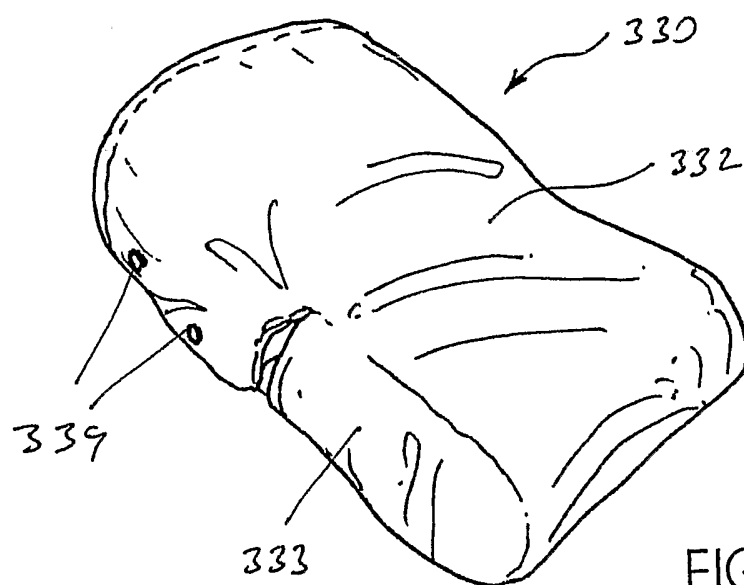


FIG. 9

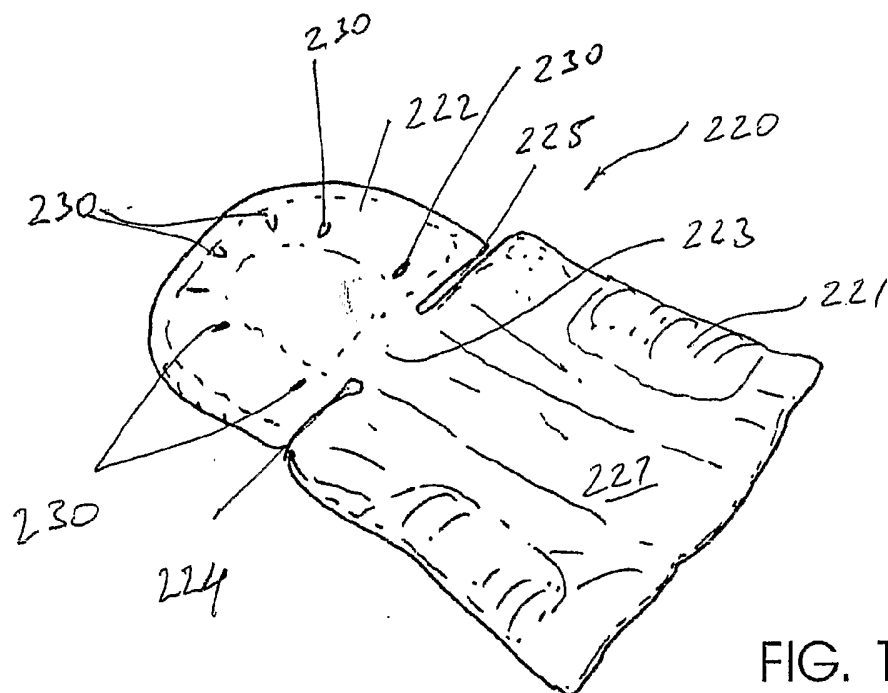


FIG. 10

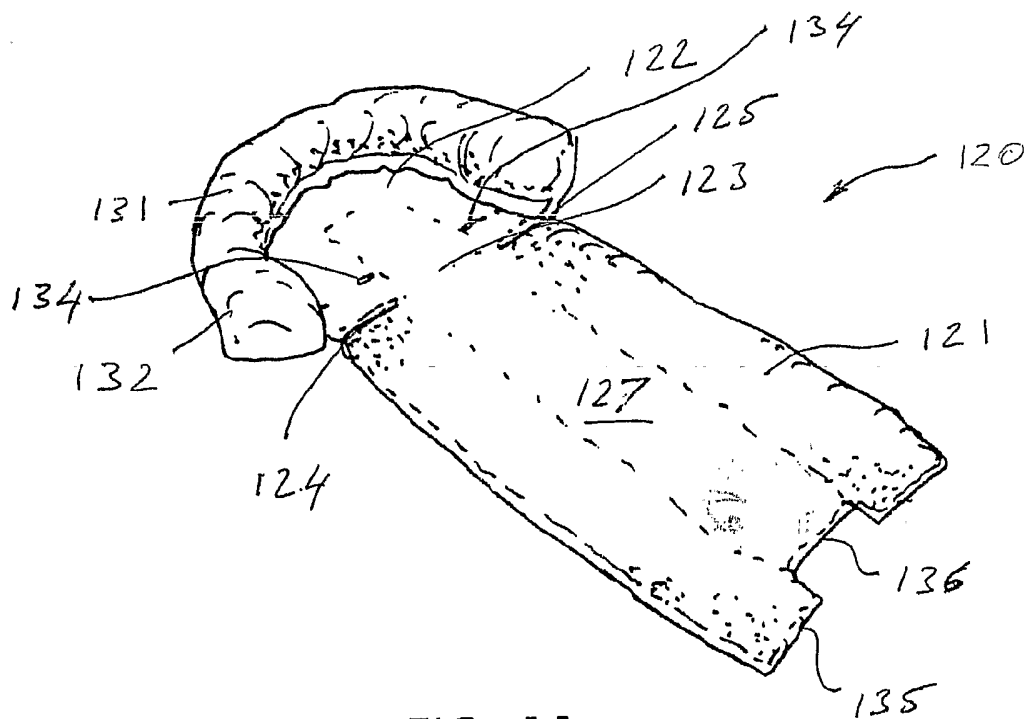


FIG. 11

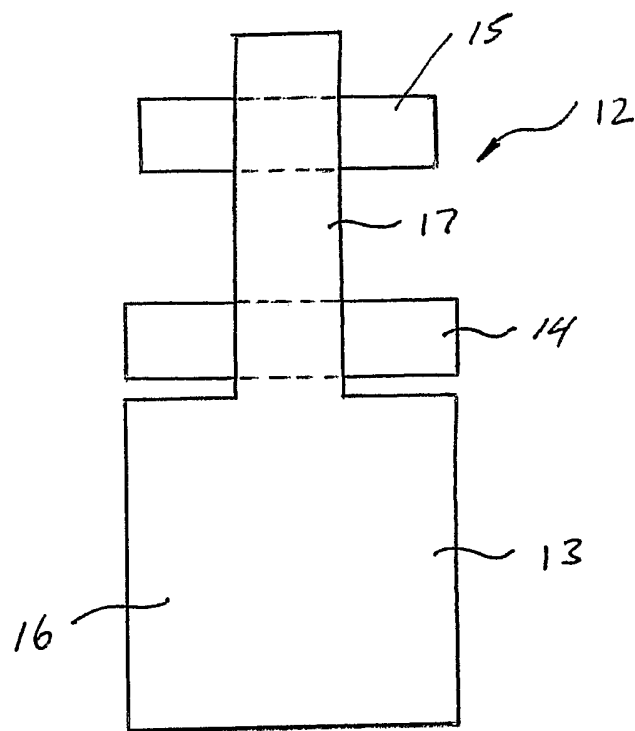


FIG. 12.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000293

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. **A47D 13/02** (2006.01)**A47D 13/08** (2006.01)**B60N 2/26** (2006.01)**A47D 7/00** (2006.01)**A47D 15/00** (2006.01)**B60N 2/28** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: IPC Marks as above + Keywords (Portable, Carry, Support, Rest, Retain, Surround, Resilient, Elastic, Fabric, Safety)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5916089 A (IVE) 29 June 1999 Figures	1-29
X	US 6012189 A (DUDLEY) 11 January 2000 Figures	26-29
A		1-25
X	EP 1175858 A (HTS, HANS TORGERSEN & SONN A/S) 30 January 2002 Abstract, Figures	1-29
X	US 3968911 A (HAAS) 13 July 1976 Figures	23-24
A		1-22, 25-29
X	US 6179383 B (OCHI) 30 January 2001 Figures	1-29



Further documents are listed in the continuation of Box C



See patent family annex

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

04 April 2006

Date of mailing of the international search report

7 APR 2006

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000293

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are two inventions::

Continued on a supplemental sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000293

Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: III

1. Independent Claims 1, 3, 5, 23, 25 are directed to a portable infant support apparatus for supporting an infant's head ,torso etc. for providing support to the infant while seated in a motor vehicle child safety seat . This is considered to comprise a "first special technical feature.

2. Independent Claim 26 is directed to a cushion for use (suitable for use) in conjunction with a portable infant support device as claimed in any of the abovementioned claims said cushion being separate from the aforesaid portable infant support apparatus and includes a head portion and a torso portion adapted to provide support for the infant's head and torso respectively. Thus, any cushion of suitable size *per se* is suitable for use with the apparatus and takes away the novelty and inventive step of Claim 26 *a priori*. Further claim 26 is also not novel and lacks an inventive step when compared with US 5916089 A (IVE) 29 June 1999 EP 1175858 A (HTS HANS TORGERSEN & SONN A/S) 30 January 2002 *a posteriori*.

Since the abovementioned group of claims do not share either of the technical features identified, a "technical relationship" between the inventions as defined in PCT rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2006/000293

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member	
US	5916089	NONE	
US	6012189	NONE	
EP	1175858	NO	20003859
US	3968911		
US	6179383	EP	1080984 JP 2001146123
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.			
END OF ANNEX			