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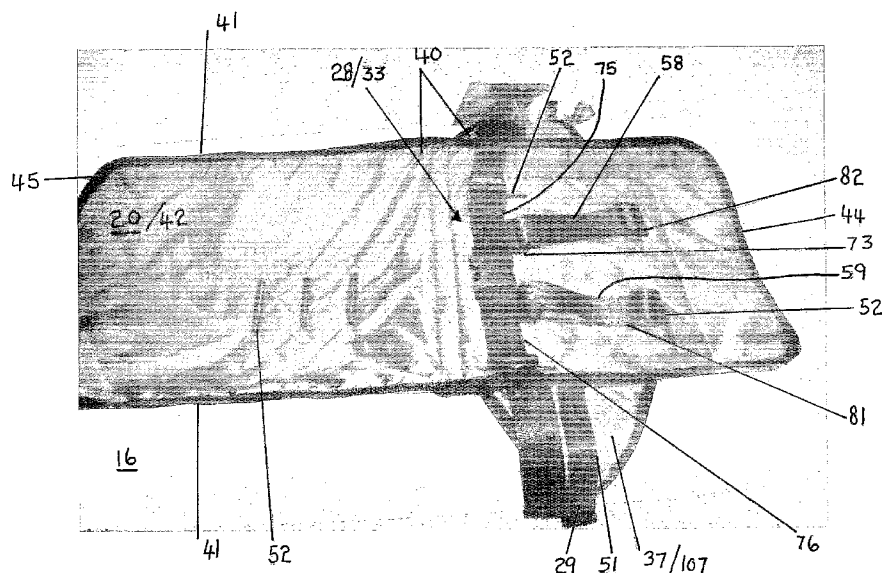


FIG. 8

(57) Abstract: This invention relates to a support apparatus (15) for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support (16) that provides support for an infant or animal in a recumbent or upright position. The support apparatus (15) includes a resilient body region support (21), restraining means (28) associated with said body region support for restraining an infant or animal, attachment means (29), carrying means (40), and a cover (20) that is adapted to maintain the body region support in its preferred position.

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A Support Apparatus

This invention relates to a support apparatus.

This invention relates to a support apparatus for supporting a human or animal in a preferred position such that selected task or manipulation may be performed on the human or animal.

This invention has particular, but not exclusive application to support apparatus for supporting an infant. For example, apparatus for lifting an infant, carrying an infant, nursing an infant, changing the nappy of an infant, supporting an infant while sleeping in a supine position, supporting an infant in an upright seated position, and supporting an infant in water. However, it will be appreciated that the invention, possibly with some modifications, may be used to provide support for any age of human or species of animal.

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

The term "animal" used herein is to be taken to include small animal domestic pets such as cats and dogs, and small primates such as a monkey unless the context clearly requires otherwise.

The term "caregiver" used herein is to be taken to include parents and other caregivers in relation to an infant, and owners or caregivers in relation to an animal.

Caregivers of infants routinely have to struggle with the everyday concerns associated with raising an infant such as providing a familiar, safe and secure environment as well as dealing with rapid infant growth development phases and the associated advances in the infant's mobility and independence. There is often a need to restrain an infant to assist with supporting the infant in a certain position, or to restrain

the infant for safety purposes. Infants with chronic disabilities often require lifelong care and support similar to that required to care for a normal infant, with comfort and hygiene consideration a priority, especially with the disabled infant requiring ongoing restraint. There are numerous support devices on the market to assist with these care tasks including nappy change units, high chairs, cots, prams, floatation devices, bouncer seats, disability restraints, etc. One of the big issues with today's infant caregivers is that they have such busy and mobile lifestyles, with many infants being cared for by someone other than their primary caregiver, and away from the infant's home, due to both primary caregivers working for an income. The situation is also relevant to the caregiver of a disabled infant that often requires hospitalisation or respite care stays. The situation of having to either transport the various support devices required for the care and safety of the infant to the other caregiver, or having to purchase multiples of commonly used pieces of equipment. Another issue is the bulkiness of these support devices which makes them difficult to transport for short journeys away from the home. There are many compact versions of the above support devices for infant care including portable cots, compact high chairs and feeding aids [soft textile restraints that fit most dining table chairs], infant nappy change mats, etc., but the compactness often come with the compromise in restraint system and/or stability quality. There is also still the problem of having to carry numerous devices to ensure the wellbeing, safety, hygiene and comfort of the infant is met.

) Aviation travel involving infants has increased with the cheaper airfares but the limitations on baggage allowance, and the awkwardness of carrying all the necessary infant care devices, including strollers, car safety seats, portable cots,

has increased the demand for more compact devices. Some designers have developed multipurpose devices that combine a nappy change restraint, feeding aid, and trolley restraint in one compact unit but these still have the problem of restraint system deficiencies such as ill-fitting harness system, limitations in the configuration of device restraint systems which limits how or what the device can be safely secured to, and/or do not have a single action, quick release mechanism for releasing the restraint system to free the infant in an emergency.

Hospital and medical facilities where infants are treated are often required to restrain infants for procedures such as radiography or extensive dressing changes, or to counteract body spasms from seizures and the like. The nature of the various medical procedures, and the medical conditions being treated, requires sturdy, easy to use and release restraint systems.

Other deficiencies are in relation to hygiene and the inability of many support devices to be disassembled for washing, or decontamination of the whole device. The inability to remove and replace damaged individual components is also a problem.

Another concern is that the support devices that have inefficient support structures, either being of rigid construction or too flexible, may contribute to accidents, such as, a rigid support structure may not always fit into/conform to the public infant care devices such as rigid recessed nappy change units in restrooms or on airlines therefore increasing the risk that the infant is not lying flat in the recess of the public infant care device leading to discomfort of the infant and/or potential falls. Support devices that have a very flexible support structure may fit the above public infant care devices but they have their

limitations in that they provide minimal resistance to the infant who is trying to roll over.

It is common practice to use the cheapest materials available for construction of support structures in infant care products, these materials, such as ply woods, soft PVC coated cardboards and hard PVC sheeting, have limitations in their strength, in particular breaking point, and hygiene. Caregivers of late have also become aware of the potential health hazards associated with commonly used materials in infant care products and the issue of leaching of toxic fumes from PVC and some foam products - this has led to an increase in the demand to minimise the use of these types of materials in the construction of infant care product, or if used due to lack of alternatives, to ensure the material used is the highest and safest quality.

When it comes to support devices for animals the need is greatest in the veterinary and animal research fields.

Often an animal is required to be restrained on a suitable surface in a certain position for manipulations, surgical or radiographic procedures, or for control of resistance and aggression while procedures are undertaken. A dedicated assistant is often required to be available to help position an animal while the professional staff member concentrates on the tasks above. Often when attending to after-hours emergencies the professional does not have the luxury of an assistant and must rely on the assistance of the animal's owner to restrain the animal - this practice has its own safety and practical issues and limitations.

Restraints and supports including ropes, fabric strips, tape and cushions are often used to position an animal for manipulations and procedures on a suitable surface, with sheets, blankets, mats, towels, etc., being used for comfort

and a hygienic barrier between the animal and a support surface, but the limitation is that these have to be secured and unsecured a number of times in situations, such as, the animal is being transferred from surgery to radiographic exam and back again in complex surgical procedures - this is very time consuming and may require multiple handling of the animal. The unsecured comfort barriers such as mats etc also pose a problem with stability as they usually bunch up and slide when the animal moves or is moved. The varying sizes of animal species, procedures, and the requirements for hygiene in veterinary practice means that any restraint system employed ideally should be available in a variety of sizes and /or adjustable, provide comfort, be easily disinfected, and have quick release capabilities for restraints, and easily secured comfort barriers.

For both infant care and animal care there is always a risk to the caregiver and, animal or infant, of injury if an infant or animal is not restrained adequately or the support device they are using has limitation that make handling of the infant or animal awkward.

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

The term "body region" used herein is to be taken to include the anatomical region of the infant or animal that is to be restrained unless the context clearly requires otherwise.

The term "crotch strap" used herein is to be taken to include any strap, band, or panel of material capable of being attached to the body region support, and / or a cover of a body region support, and used to position or restrain an

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infant or animal, or part of an infant or animal's body, other than the straps used to restrain the shoulders and the torso region of an infant or animal.

5 With the foregoing in view, this invention in one aspect relates to a support apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support that provides support
6 for an infant or animal in a recumbent or upright position, said support apparatus including:

 a resilient body region support that is capable of supporting the infant's or animal's body region;

5 restraining means attached to said body region support for restraining an infant or animal;

 attachment means for attaching said body region support to a suitable surface,

6 carrying means operatively associated with said body region support for lifting and/or carrying said body region support.

 In another aspect this invention relates to a support
7 apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support that provides support for an infant or animal in a recumbent or upright position, said support
8 apparatus including:

 a resilient body region support that is capable of supporting the infant's or animal's body region;

restraining means attached to said body region support for restraining an infant or animal;

attachment means for attaching said body region support
5 to a suitable surface,

carrying means operatively associated with said body region support for lifting and/or carrying said body region support;

a cover that is adapted to maintain the body region
0 support in its preferred position and provide a cushioned surface that provides a barrier between the infant or animal and the suitable surface.

The support may be a structure and wherein the structure may include a planar surface that is capable of supporting the
5 support apparatus and one or more supports that depend from the top portion. Further, the supports may permit the selective raising and stabilising of the top portion to a suitable height for use with the support apparatus.

However, it will be appreciated that water may be a suitable
10 support when the support apparatus is being used in a water environment, such as in hydrotherapy and the like. Additionally, the support may be capable of supporting the support apparatus in either a horizontal or vertical attitude, and wherein the top portion may have contours to provide
25 support via a recessed area or channel.

The support may further include suitable attachment capabilities to attaching a body region support thereto.

The body region support may be manufactured from any
30 suitable material. For example, the body region support may be constructed from various plastics materials. However, it is preferred that the body region support is manufactured from a polycarbonate material.

The body region 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 in allowing the flow of fluid when support apparatus is used to support an infant or animal in an environment such as water. For example, the body region support may include a plurality of apertures formed therein, in addition to apertures formed to receive a strap of a restraining means.

The body region support may be of unitary construction. Alternatively, the body region support may be constructed from a plurality of components and wherein the 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.

Preferably the body region support is generally constructed from a thin sheet of a polycarbonate material.

The body region support may include an upper face and a lower face separated by a top portion, a bottom portion and opposing side portions and wherein the shape and dimensions are preferably suitable to meet the needs of the purpose the body region support has been chosen for. For example body region support may be rectangular in shape, and is wider than the width of the body region being restrained.

The lower face of the body region support may have non-slip capabilities. For example, the bottom portion may include one or more non-slip surfaces that are intended to frictionally engage the support. Alternatively the bottom portion may include one or more projections that are intended

to mechanically engage the support, including by way of example, in interlocking engagement.

The body region support may also include at least one strap opening formed in each of the side portions and/or a top end portion, said strap opening being adapted to receive at least a strap of a restraining means. Further the strap openings may be slotted openings or they may resemble a wide groove.

Preferably the body region support includes at least one pair of opposing strap openings formed in opposing side portions of the body region support, said strap openings being adapted to receive at least a strap of a restraining means.

The restraining means may be detachable from said body region support.

Preferably restraining means may be flexible. For example, the restraining means may be constructed primarily from flexible materials and may include fasteners that are suitable for restraining an infant or animal.

The restraining means may include one or more straps or bands that are adapted to pass over the infant or animal and which may be used to secure the infant or animal to the body region support, such as a harness. The straps or bands of the restraining means may be connected to one another 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 body region support over the infant or animal's torso region, each of said waist straps having a waist strap free end portion and wherein said waist strap free end portions are releasably

connected using a suitable fastener, and a pair of opposing shoulder straps that each extend from opposite sides of said body region support over a respective one of the infant's or animal's shoulders, each of said shoulder straps having a shoulder strap free end portion that is connected to each respective waist strap, and a crotch strap that is adapted to pass between the infant or animal's legs, or over any part of the lower region of an animal, said crotch strap having two crotch strap free end portions, the first crotch strap free end portion having a suitable mechanism for engagement into the body region support and / or the cover, and the other crotch strap free end portion having a fastener or strap configuration suitable for attachment to one or more of the other straps. The first crotch strap free end portion preferably includes an anchor, such as a flat anchoring plate with an aperture suitable to receive a restraining strap.

In another embodiment the restraining means may include a restraint vest that includes a vest shaped stretch fabric panel made of a soft fabric that is suitable to restrain a body region of an animal or infant. The stretch fabric panel may be attached to restraining straps which may be releasably attached to anchoring means that are able to be engaged with the body region support. The stretch fabric panel may include one or more pockets capable of receiving or restraining an object. The stretch fabric panel may also include one or more apertures for receiving an object. Preferably the pockets and/or apertures may include fasteners suitable to close the open end of said pocket or aperture. Suitable fasteners may be a zipper, drawstring or hook and loop fastener such as Velcro®.

A pocket of a restraining means may be constructed in such a way that it may receive the body of an infant or animal

and would preferably have a securing means such as opposing shoulder tabs or straps that releasably attach to the pocket to hold the infant or animal in position while supported and restrained on the fabric panel, said pocket also
5 having a fastening means such as a zipper down the midline for easy access to the infant.

The attachment means may include one or more straps or
10 bands for attaching the support apparatus to the support. The attachment means may further include one or more buckles or fasteners. In addition, the attachment means may be detachable from support apparatus.

The carrying means may include one or more straps or bands
15 that are attached to the support apparatus including one or more straps or bands of the attachment means. Further, like the attachment means, the carrying means may be secured using one or more buckles or fasteners.

In addition, the carrying means may be detachable from the
20 support apparatus.

In other embodiments the carrying means may include one or more portions of the body region support that a person may grasp hold of, such as opposing side portions of the body region support. Alternatively the carrying means may include
25 one or more finger apertures formed in the body region support through which a user may extend their fingers so that they may grasp hold of the body region support.

The carrying means may include a band or strap that passes from one side of the body region support to an opposing
30 side. The band or strap may serve as a sling.

Preferably the carrying means straps and bands are manufactured from a soft textile material.

The cover may be adapted to maintain the body region support in its preferred position and provide a cushioned surface that provides a barrier between the infant or animal and the support. The cover may include a plurality of apertures formed therein to receive one or more straps of the restraining means. Preferably the strap openings are slits or apertures, such as slotted apertures, and wherein the strap openings in both the body region support and the cover are aligned. The cover may include a top layer and a bottom layer of fabric. In addition, the cover may include a plurality of pockets for receiving or housing various items, including additional support articles, heating or cooling means, and therapy devices.

A further addition may be the attachment of hook and loop fasteners to an outer surface of the cover for attachment of accessories thereto. For example, the accessory may be one or more raised cushions suitable for providing additional support to any region of the infant or animal's body, including a cushion suitable for providing lateral head support.

In one embodiment the cover may be constructed of a padded textile suitable for use in water. For example, the cover may be made of a neoprene material that is capable of providing additional floatation when support apparatus is being used in a water environment.

In another embodiment the cover may be constructed so it can be quickly disengaged from the body region support without detaching the restraining means of a support apparatus. For example, the cover may be constructed of a single layer of suitable material with the apertures for receiving a strap of a restraining means being modified to receive a strap of a restraining means from the side of the support apparatus through slits constructed in opposing longitudinal side edges. The slits would be reinforced to prevent longitudinal and

lateral movement of the cover. A suitable reinforcing means may be a stiffening member made of a suitable material, such as single piece of thin polycarbonate, attached to the underside of the cover in a suitable position to reinforce
5 slits in the cover. Said reinforcing means would be wide enough to spread from the outer edge of a strap opening formed in the body region support, for receiving a strap of a restraining means, to the outer edge of the opposing strap opening in the body region support.

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

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Fig. 1 is a pictorial view of a an infant resting on a bed while being supported by a support apparatus which is constructed in accordance with the present invention and wherein support apparatus includes restraining means which itself includes a crotch strap;

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Fig. 2 is a pictorial view of an infant being supported on a nappy change mat while being supported on the support apparatus as illustrated in figure 1 but wherein the crotch strap of a restraining means has been excluded;

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Fig. 3 is a pictorial view of an infant supported in an upright position while supported in the support apparatus illustrated in figure 1, said support apparatus being securely attached to a chair;

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Fig. 4 is a pictorial view of an infant supported in an inclined position while supported in a support apparatus illustrated in figure 1, said support apparatus being securely attached to a pillow;

Fig. 5 is a view from above of a resilient body region

support and restraining means, minus a crotch strap, which is constructed in accordance with the present invention;

Fig. 6 is a pictorial view of the crotch strap of the restraining means of the support apparatus illustrated in figure 1, included is a drawing of an anchor plate;

Fig. 7 is a pictorial view of an anchor used to releasably attach the restraining means to an aperture of a the resilient body region support and/ or a cover of the support apparatus illustrated in figure 1;

Fig. 8 is a pictorial view of the support apparatus showing an upper portion or top side of cover, the restraining means and the attachment means of the support apparatus which is attached to a nappy change mat as illustrated in figure 2;

Fig. 9 is a pictorial view of the lower portion or underside of the cover, including a pocket for receiving the resilient body region support;

Fig. 10 is a pictorial view of the attachment means of the support apparatus as illustrated in fig 3;

Fig. 11 is a pictorial view of an animal being supported on the resilient body region support of the support apparatus as previously shown in figure 1, but wherein another form of a restraining means, a vest restraint, is used and the support apparatus does not include the cover;

Fig. 12 is a pictorial view of an animal being supported on the support apparatus while receiving thermal therapy from a heating device placed between an upper surface of the support apparatus and the animal;

Fig. 13 is a top view of another form of restraining means for the support apparatus, said restraining means having apertures and pockets capable of receiving

objects;

Fig. 14 is a top view of another form of restraining means for the support apparatus, said restraining means having a pocket capable of receiving a small infant.

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Figures 1 to 4 show a support apparatus 15 for securing an infant while sleeping on a bed, as shown in figure 1; for restraining an infant on a nappy change mat 16, as shown in figure 2; for supporting an infant while seated on a chair 17, as shown in figure 3; and for supporting an infant in an inclined position on a pillow 18, as shown in figure 4.

Figures 11 and 12 show a support apparatus 15 for securing an animal in a recumbent position on a table surface 19 as shown in figure 11, said support apparatus 15 not having a cover 20; and for securing an animal in a position to receive thermal therapy, as shown in figure 12.

The support apparatus 15 includes a resilient body region support 21, comprising of a single rectangular support member 22 that is manufactured from a thin sheet of polycarbonate material which is approximately 2 mm thick.

The support member 22 as shown in figure 5 has an upper face 23 and lower face 24 separated by two opposing longitudinal side edge portions 25 and two opposing top and bottom edge portions 26 and 27 respectively.

The body region support 21 also includes a plurality of openings 30 formed in the support member 22 suitable for receiving at least a strap of a restraining means 28 or attachment means 29. The openings include an opening 30 formed in each of the longitudinal side edges and the top edge 22, as well as a plurality of apertures 32 for receiving a strap of a restraint means 28. In addition there is provided a plurality of ventilation apertures 35 spread over the support member 22, and opposing finger apertures 36 located in side

edge portions 25.

The support apparatus 15 also includes a cover 20 and attachment means 29 as shown in figures 8 to 10, with figure 5 11 showing the restraining strap 39 of attachment means 29 of a support apparatus 15 in use without a cover 20. The cover 20 is used to provide a barrier between the body region support 21 and the infant 88 or animal 89, as well as being used for assistance with the positioning the body region support 21, as 0 shown in figure 9.

The attachment means 29 includes opposing side flaps 37, side release buckle fastener 38 and a restraining strap 39. Figure 11 shows restraining strap 39 engaged with finger 5 apertures 36 and side edge opening 30 formed in the body region support 21 of a support apparatus 15.

The attachment means 29 shown in figures 8 to 11 can also be utilised as a carrying means 40, as can the side edge portions 41, of the cover 20 of the support apparatus 15.

20 The cover 20 includes an upper surface 42 and a lower surface 43 separated by a top edge portion 44, a bottom edge portion 45, and two opposing longitudinal side edge portions 41, The cover also includes two opposing triangularly shaped, outwardly extending, side flaps 37 as shown in figure 8.

25 Each side flap 37 has a fixed end portion 46 that is attached to an adjacent longitudinal side edge portion 41, and a free end portion 47. The side flaps 37 each include a female member 48 of a side release buckle fastener 38 which is attached to the free end 47 as shown in figures 1 and 9.

30 A restraining strap 39 has two opposing free end portions 50 and a male member 49 of a side release buckle faster 38 that is attached to each free end portion. The male member 49 engages the female member 48 of a side flap 37. Each side flap

37 also has a strip of webbing 51 that is sewn to an upper surface 107 to form a guide suitable for receiving a strap 39 of the attachment means 29 or restraining means 28.

The upper surface 42 of the cover 20 has a plurality of opposing apertures 52 that are adapted to receive a strap of the restraining means 28. Ideally the upper surface 42 and lower surface 43 would also include a plurality of fastening means, such as hook and loop fasteners, for positioning and attachment of accessories thereto, such as blankets, cushions, or monitoring devices, to the upper surface 42 or lower surface 43 of cover 20.

The lower surface 43 of the cover 20 includes a pocket 54 for receiving the body region support 21. The pocket 54 has a hook and loop fastening means 53 to close the pocket 54 and hold the body region support 21 in place therein.

In another application the cover may not have a pocket 54 instead the cover may have slits 108 in the opposing longitudinal side edges where the shoulder straps would normally be aligned. The restraining strap apertures would be reinforced to allow the aligned positioning of cover on the body region support. A suitable reinforcement would be at least one thin polycarbonate stiffening member attached to the lower surface of said cover which allows for the receiving of a strap of a restraining means entering from opposing side edges into slits constructed in the opposing side edges of said cover and the stiffening member.

It will be appreciated that the passing of the restraining straps 58 and 59 through the aligned slits inhibits longitudinal and lateral movement of the cover relative to the body region support. Further, the choice of slits as opposed to apertures enables the user to quickly and easily detach and replace a cover at will. This is believed to be particularly important, and desirable, in commercial

situations where multi client use of the support apparatus requires an efficient process for patient hygiene.

The cover 20 also includes a top edge portion 44 and an
5 opposing bottom edge portion 45, and wherein both edge portions include a tab 55 that is adapted to receive a restraining strap 39 of an attachment means of cover 20. The tab 55 of the top edge portion 44 of the cover 20 is shown in figure 10 while tab 55 on the bottom edge portion 45 is only
0 visible as external stitching in figure 3. Both tabs 55 are of a web like material.

The restraining means 28, for restraining an infant 88 or animal 89 to the support apparatus 15 generally would be in
5 the form of a restraint harness 33 consisting of a configuration of straps, and fasteners as shown in figures 1 to 5, said straps being constructed of a web like material. A more complex form of restraining means for more specific restraint needs is a vest-like restraint 34 as shown in
10 figures 11 and 14. Figure 13 and 14 show a vest-like restraint 34 including at least one pocket 96. Figure 13 shows a combination of apertures and pockets for receiving an object.

The restraining means 28 shown in figure 5 shows a harness 33 form of restraint comprising a pair of opposing
25 waist straps 56 and 57, and a pair of opposing shoulder straps 58 and 59.

Each opposing waist strap 56 and 57 consists of two straps 60 and 62, and 61 and 63 respectively.

Each strap 60, 61, 62 and 63 has two free end portions.
30 Free end portions 64 and 65 (not seen clearly in fig 5) of straps 60 and 61 are each attached to an anchoring mechanism 72 as shown in figure 7. Opposing free end portions 66 and 67 of straps 60 and 61 respectively are releaseably connected to

a Ladder-loc® adjustment fastener 74 that is attached to free end portions 68 and 69 of straps 62 and 63 respectively.

Straps 62 and 63 of waist straps 56 and 57 respectively
5 each have two opposing free end portions 68 and 70, and 69 and 71 respectively. Free end portions 68 and 69 of straps 62 and 63 each have a Ladder-loc® adjustment fastener 74 attached thereto. Free end portions 70 and 71 of straps 62 and 63 respectively each have a member of a side release buckle 38
10 attached thereto. Free end portion 70 includes the female member 48 of a side release buckle 38 that is attached thereto while the free end portion 71 includes an opposing male member 49 of a side release buckle 38 which is attached thereto.

Straps 62 and 63 of waist straps 56 and 57 respectively
15 have a top edge 75 and 76 respectively, and attached to said to edge is a "D" ring buckles 73 for receiving the opposing shoulder straps 58 and 59 respectively of the harness 33, as shown in figure 8.

The opposing shoulder straps 58 and 59 each comprise of a
20 single strap with a free end portion 77 and 78 respectively [view in fig 5 obstructed by the straps of 58 and 59 but a representative of a restraining strap 79 and anchoring means configuration is shown in fig 7] which has anchoring mechanism 72 attached. The other end of shoulder straps 58 and 59 has a
25 free end portion 80 and 81 respectively for attachment of a Tri-glide® adjustment fastener 82. Shoulder straps 58 and 59 engage a Tri-glide® fastener 82 each on to themselves to form a loop that is engaged with the "D" ring buckle 73 on respective shoulder straps 58 and 59 to engage with top edges
30 75 and 76 respectively at the free end regions 70 and 71 of straps 62 and 63 respectively.

The restraining means 28 also includes a crotch strap 83 shown in figure 6 having a strap 84 made of web like material

with opposing free end portions 85 and 86. Free end portion 85 is attached to a Tri-glide buckle 82 and is engaged with strap 84 to form a loop of a crotch strap 83. Free end portion 86 is attached to an anchoring mechanism 72. The anchoring mechanism 72 of the crotch strap 83 can engage with either or both the body region support 21 or cover 20. When crotch strap 83 is engaged in an aperture 52 of cover 20, and independent of body region support 21, it requires the addition of a an anchoring plate 87 to provide reinforcement to aperture 52. The anchoring plate 87 is of a rectangular shape being larger than an anchoring mechanism 72 with an aperture formed in the centre region capable of receiving an anchoring mechanism 72. The anchoring plate 87 is made of a thin sheet of polycarbonate about 1-2 mm in thickness. Said anchoring plate 87 is fitted to crotch strap 83 by passing the anchoring mechanism 72 through the anchoring plate 87 and engaging the anchoring mechanism 72 into the anchoring plate 87 before passing the loop of the crotch strap free end portion 85 through an aperture 52 of the underside of cover 20, said anchoring plate 87 being sandwiched between anchoring mechanism 72 and the lower surface 43 of cover 20.

The vest-like restraint 34 form of a restraining means 28 consists of a five point shaped fabric panel 90 [herein called fabric panel] made of a stretch material and configured with opposing shoulder region tabs 91 and 92 at the top of fabric panel 90, opposing waist region tabs 93 and 94 to the opposing sides of the fabric panel and a crotch region tab 95 at the base of the fabric panel 90. Each of the shoulder region tabs 91 and 92, waist region tabs 93 and 94 and crotch region tab 95 of the fabric panel 90 of a vest-like restraint 34 have a Ladder-loc® buckle 74 adjustable fastener attached. The vest-like restraint 34 form of a restraining means 28 is shown in figures 11 to 14.

In figure 13 the vest- like restraint 34 is shown having a plurality of pockets 96 and apertures 97 suitable for receiving an object.

The pockets 96 in the fabric panel 90 of the vest-like
5 restraint 34 shown in figure 13 are attached to the fabric panel 90 by stitching. Each pocket 96 is affixed to the fabric panel 90 by stitching any three of the four sides of the pocket 96 while leaving the fourth side 98 open with said fourth side 98 having a hook and loop fastening means to close
1) each pocket 96 to secure an object in said pocket 96. It will be appreciated that any number of fastening means could be used to secure the fourth side 98 of a pocket 96.

The apertures 97 in the fabric panel 90 of the vest-like
5 restraint 34 shown in figure 13 are cut into the fabric panel 90 and reinforced with stitching.

The pocket 96 on the fabric panel 90 on vest-like restraint 34 of a restraining means 28 as shown in figure 14 has been adapted to receive an infant 88. The pocket 96 is
1) affixed to the fabric panel 90 by stitching the edges of the pocket 96 to fabric panel 90 while leaving an opening in the top end of the pocket. Pocket 96 has a two-way zip fastener 100 running down the midline the length of pocket 96. There are two opposing shoulder straps 101 and 102 attached to
5 fabric panel 90 at shoulder region tabs 91 and 92 consisting of a fixed end 103 and a free end 104. Fixed ends 103 are affixed to each of shoulder region tabs 91 and 92 and free ends 104 are releasably secured to the outer surface of pocket 96 by a hook and loop fastening means such as Velcro®.
1) Shoulder straps 101 and 102 being constructed of the same fabric as the pocket 96.

To use the support apparatus 15 in its preferred embodiment as shown in figure 1 the body region support 21 has

to be placed in the pocket 54 of cover 20 and the restraint harness 33 of restraining means 28 has to be attached.

To place the body region support 21 in cover 20 it is necessary to unfasten the hook and loop fastener 53 of pocket 54 on the lower surface 43 of cover 20. Hold the bottom edge 27 of the body region support 21 and feed it into pocket 54 with top edge 26 going in first.

Lay out the restraint means 28 of restraint harness 33 ensuring the left and right side of harness 33 are connected by the side release buckle fastening means 38 that connects waist straps 56 and 57. The ladder-loc buckle fasteners 74 of waist straps 56 and 57 should be facing up.

To attach the harness 33 of restraint means 28 place one hand into the pocket 54, under the body region support 21, and find a strap opening 32 in the left hand top quarter of the body region support 21. With the other hand feed the anchoring mechanism 72 of the left shoulder strap 58 of restraint harness 33 into a corresponding aperture 52 of cover 20 situated in the left hand region of cover 20 and then into a corresponding strap opening 22 of the body region support 21. Repeat the process for the right shoulder strap 59, left waist strap 56, right waist strap 57, and crotch strap 83, each being engaged into their respective region and corresponding strap openings 22 of the body region support 21.

Once harness 33 has been fully engaged with the cover 20 and the body region support 21 attach the support apparatus 15 to a support by engaging the male member 49 of a side release buckle 38 of a restraining strap 39 of an attachment means 29 into a female member 48 of an attachment means 29, the pass the restraining strap 39 under the support and attach the opposing male member 49 of a side release buckle 38 into the opposing female member 48 of the opposing attachment means 29. Fasten the support apparatus 15 to the support by adjusting

the opposing free end portions 50 of the restraining strap 39 of the attachment means 29 of said support apparatus 15.

To secure an infant 88 on the support apparatus 15, disengage the side release buckle 38 connecting waist straps 56 and 57 and place the infant 88 onto the support apparatus 15. Place shoulder straps 58 and 59 over each respective shoulder of the infant 88 and bring the crotch strap 83 up between the infant's 88 legs and pass the female member 48 of the side release buckle 38 attached to waist strap 57 into crotch strap loop 84 and fasten to the opposing male member 49 of the side release buckle 38. Adjust ladder loc buckles 74 on waist straps 56 and 57 and/or Tri-glide buckles 82 on shoulder straps 58 and 59, and crotch strap 83 to ensure a snug fit.

Place the infant's pacifier or a toy into the activity pouch 105 attached to support apparatus 15 by lanyard 106 and give to infant as a distraction when restrained on support apparatus 15.

When a sleeping infant is left restrained in the support apparatus 15, as shown in figures 1 and 4, the infant is not able to roll on to their side because of the combination of width of the body region support 21, secure fit of the restraining means 28 and the security of the attachment means 29. Consequently, it is believed that use of the support apparatus 15 may reduce the number of fall accidents attributed to unrestrained infant left sleeping on beds and other supports.

There are generally the same needs for an animal as there is for an infant with wellbeing, safety, hygiene and comfort all consideration when choosing support devices. As with infants,

the more familiar environment animals are exposed to the more relaxed they are, so any support device should be able to provide some level of familiarity, even if it is only the ability to provide a cover, with their own scent / body smells, to complement a support device.

For familiarisation and hygiene purposes it would be an advantage in the veterinary environment if a cover of a restraining device could be assigned to an individual animal and used as a bedding support in the housing environment of the animal and then transferable to be used with a support apparatus for other procedures requiring restraint or positioning, for this purpose a quick release type of cover would be most convenient to reduce the need of disengaging the restraining means from the body support region when multiple animals are being treated in succession.

It will of course be realised that the above, and the accompanying photographs and drawings, have been given only by way of example of the present invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as herein described.

Claims defining the invention.

1. A support apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support that provides support for an infant or animal in a recumbent or upright position, said support apparatus including:

a resilient body region support that is capable of supporting the infant's or animal's body region;

restraining means attached to said body region support for restraining an infant or animal;

attachment means for attaching said body region support to a suitable surface,

carrying means operatively associated with said body region support for lifting and/or carrying said body region support.

2. A support apparatus as claimed in claim 1, wherein there is provided a cover that is adapted to maintain the body region support in its preferred position and provide a cushioned surface that provides a barrier between the infant or animal and the suitable surface.

3. A support apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support that provides support for an infant or animal in a recumbent or upright position, said support apparatus including:

a resilient body region support that is capable of

supporting the infant's or animal's body region;

a cover that is adapted to maintain the body region support in its preferred position and provide a cushioned surface that provides a barrier between the infant or animal and the suitable surface.

restraining means attached to said cover for restraining an infant or animal;

attachment means for attaching said cover to a suitable surface,

carrying means operatively associated with said cover for lifting and/or carrying said cover

4. A support apparatus as claimed in claim 1, wherein said body region support includes an upper face and a lower face separated by a top portion, a bottom portion and opposing side portions wherein said body region support has apertures formed therein.

5. A support apparatus as claimed in claim 4, wherein said body region support has generally opposing side portions and at least one slotted opening formed in each side portion that is capable of receiving the strap of a restraining means.

6. A support apparatus as claimed in claim 2 or claim 3, wherein said cover has generally opposing side portions and at least one slotted opening formed in each side portion that is capable of receiving the strap of a restraining means.

7. A support apparatus as claimed in claim 6, wherein said cover includes an upper face and a lower face separated by a top portion, a bottom portion and opposing side portions and wherein said cover has apertures formed therein which are

capable of receiving a strap of the restraining means.

8. A support apparatus as claimed in any one of claims 2,3,6, or 7, wherein said cover has one or more pockets and / or attachment points.

9. A 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 body of an infant or animal and which may be used to secure the infant or animal to the body region support.

10. A support apparatus as claimed in any one of the preceding claims, wherein said restraining means are panels of a suitable fabric and constructed in a pocket like configuration and that said restraining means are capable of receiving the body of an infant or animal.

11. A support apparatus as claimed in claim 10, wherein said restraining means straps or bands or fabric panels may be operatively connected using buckles and / or fasteners.

12. A support apparatus as claimed in any one of the preceding claims, wherein said restraining means are detachable.

13. A support apparatus as claimed in any one of the preceding claims, wherein said attachment means includes one or more straps or bands, said straps or bands may be operatively connected using buckles and / or fasteners.

14. A support apparatus as claimed in any one of the preceding claims, wherein said attachment means are capable of attaching to an anchoring point.

15. A support apparatus as claimed in any one of the preceding claims, wherein said carrying means includes one or more straps or bands. Said straps or bands may be operatively connected using buckles and / or fasteners.

AMENDED CLAIMS

**received by the International Bureau on 05 December 2008
(05.12.2008)**

1. A support apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is
5 capable of providing support for the infant or animal while supported on a suitable support that provides support for an infant or animal in a recumbent or upright position, said support apparatus including:

10 a resilient body region support that is capable of supporting the infant's or animal's body region;

restraining means attached to said body region support for restraining an infant or animal;

15 attachment means for attaching said body region support to the support surface,

20 carrying means operatively associated with said body region support for lifting and/or carrying said body region support when supporting an infant or animal,

25 characterized in that said body region support has at least one aperture formed therein and that said restraining means has an end portion that is capable of functioning as an anchoring means, said end portion passing through said aperture and engages with a portion of said body region support that surrounds said aperture.

30 2. A support apparatus as claimed in claim 1, wherein there is provided a cover that is adapted to maintain said body region support in its preferred position and provide a

cushioned surface that provides a barrier between the infant or animal and the suitable surface.

3. A support apparatus for supporting an infant or animal while carrying or handling the infant or animal and which is capable of providing support for the infant or animal while supported on a suitable support that provides support for an infant or animal in a recumbent or upright position, said support apparatus including:

a resilient body region support that is capable of supporting the infant's or animal's body region;

a cover that is adapted to maintain the body region support in its preferred position and provide a cushioned surface that provides a barrier between the infant or animal and the suitable surface, said cover having at least one opening formed therein;

restraining means for restraining an infant or animal;
attachment means for attaching said cover to the suitable surface,

carrying means operatively associated with said cover for lifting and/or carrying said cover when supporting the infant or animal

characterized in that said body region support has at least one aperture formed therein and that said restraining means has an end portion that is capable of functioning as an anchoring means, said end portion passing through said opening in said cover and then through said aperture in said body region support whereby the said end portion engages with a portion of said body region support that surrounds said aperture.

4. A support apparatus as claimed in any one
5 of the preceding claims, wherein said body region support
includes an upper face and a lower face separated by a top
portion, a bottom portion and opposing side portions wherein
said body region support has apertures formed therein.

10 5. A support apparatus as claimed in claim 4, wherein
said body region support has generally opposing side portions
and at least one slotted opening formed in each side portion
that is capable of receiving the strap of a restraining means.

15 6. A support apparatus as claimed in claim 2 or claim 3,
wherein said cover has generally opposing side portions and at
least one slotted opening formed in each side portion that is
capable of receiving the strap of a restraining means.

20 7. A support apparatus as claimed in claim 6, wherein
said cover includes an upper face and a lower face separated
by a top portion, a bottom portion and opposing side portions
and wherein said cover has apertures formed therein which are
capable of receiving a strap of the restraining means.

25 8. A support apparatus as claimed in any one of claims
2,3,6, or 7, wherein said cover has one or more pockets and /
or attachment points.

30 9. A 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 body
of an infant or animal and which may be used to secure the

infant or animal to the body region support.

10. A support apparatus as claimed in any one of the preceding claims, wherein said restraining means are panels of
5 a suitable fabric and constructed in a pocket like configuration and that said restraining means are capable of receiving the body of an infant or animal.

11. A support apparatus as claimed in claim 10, wherein
10 said restraining means may be operatively connected using buckles and / or fasteners.

12. A support apparatus as claimed in any one of the
15 preceding claims, wherein said attachment means includes one or more straps or bands, and said straps or bands are operatively connected using buckles and / or fasteners.

13. A support apparatus as claimed in any one of the
20 preceding claims, wherein said attachment means is capable of attaching to an anchoring point.

14. A support apparatus as claimed in any one of the preceding claims, wherein said carrying means includes one
25 or more straps or bands, and said straps or bands are operatively connected using buckles and / or fasteners.

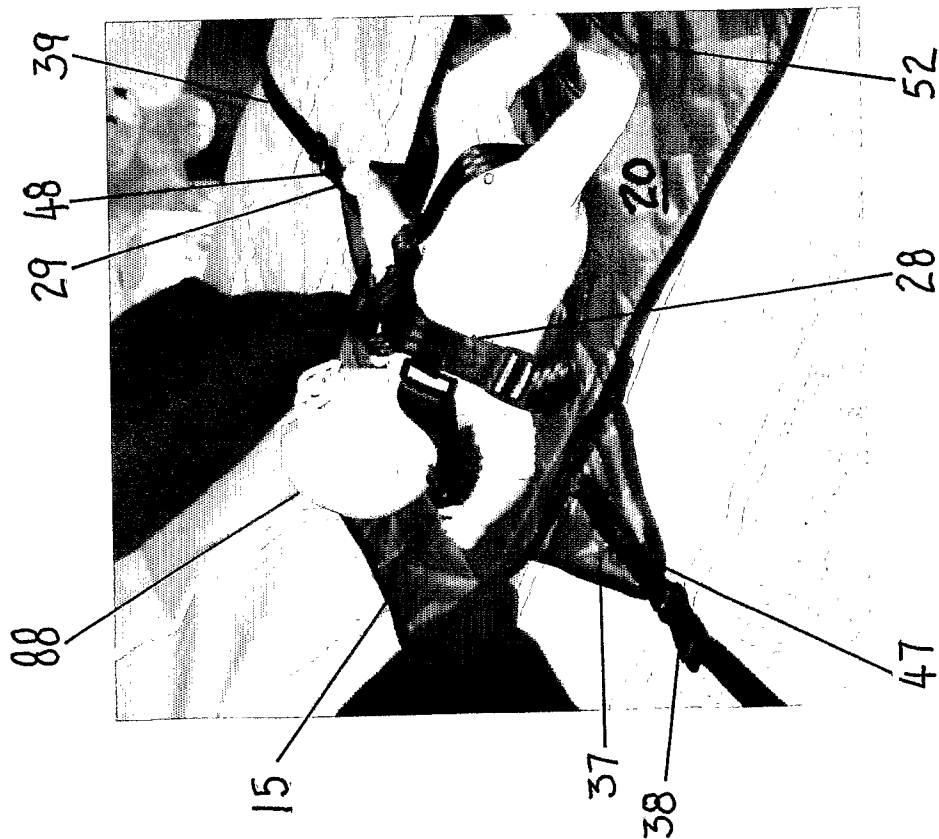


FIG. 1

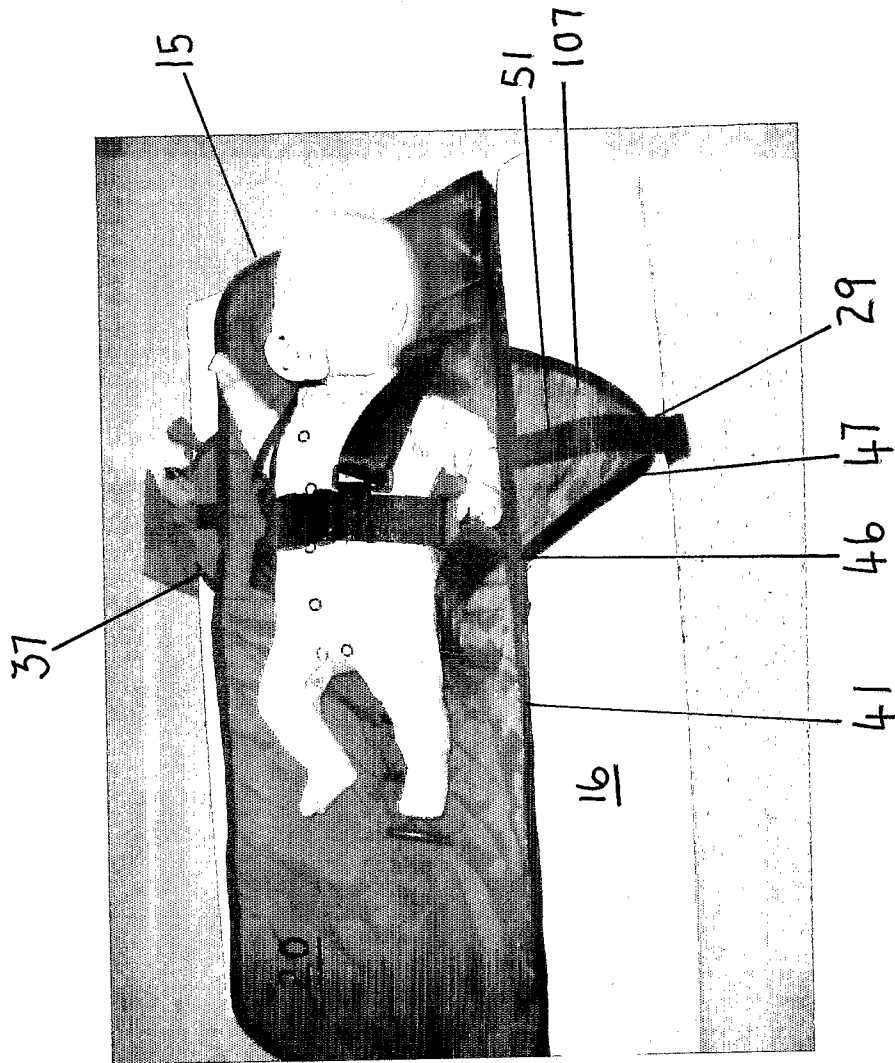


FIG. 2

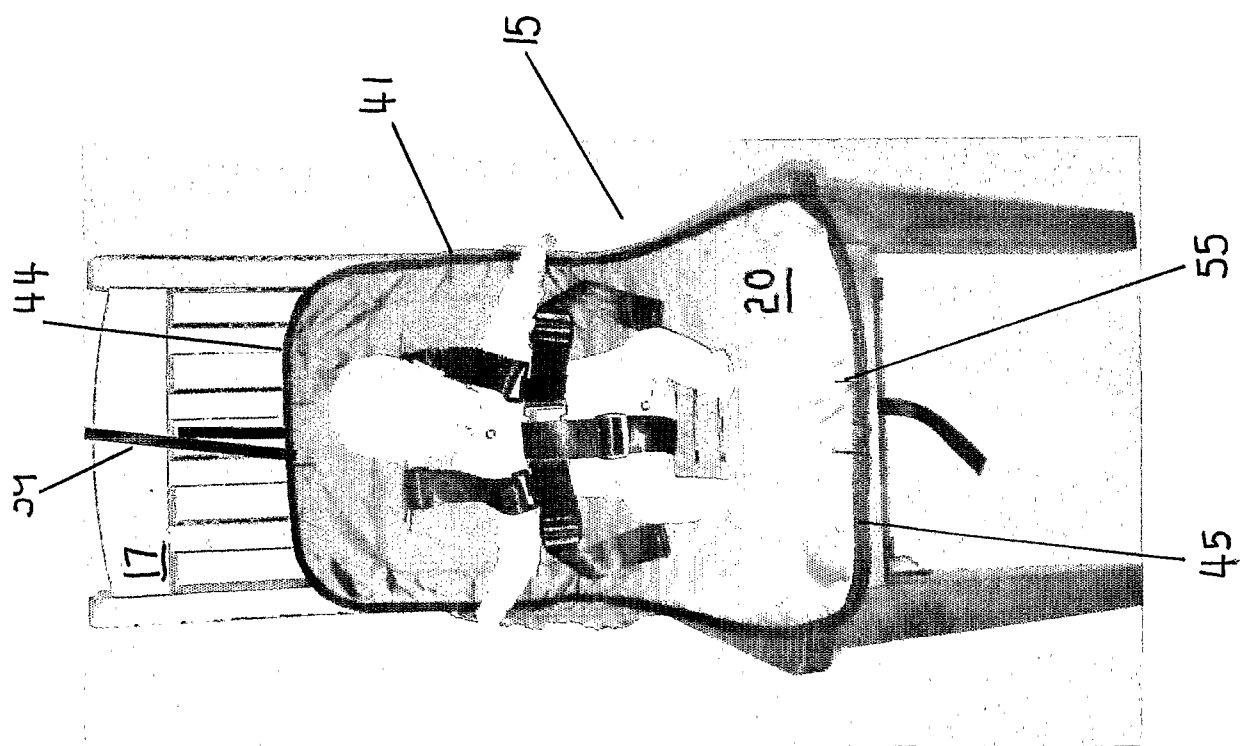


FIG. 3

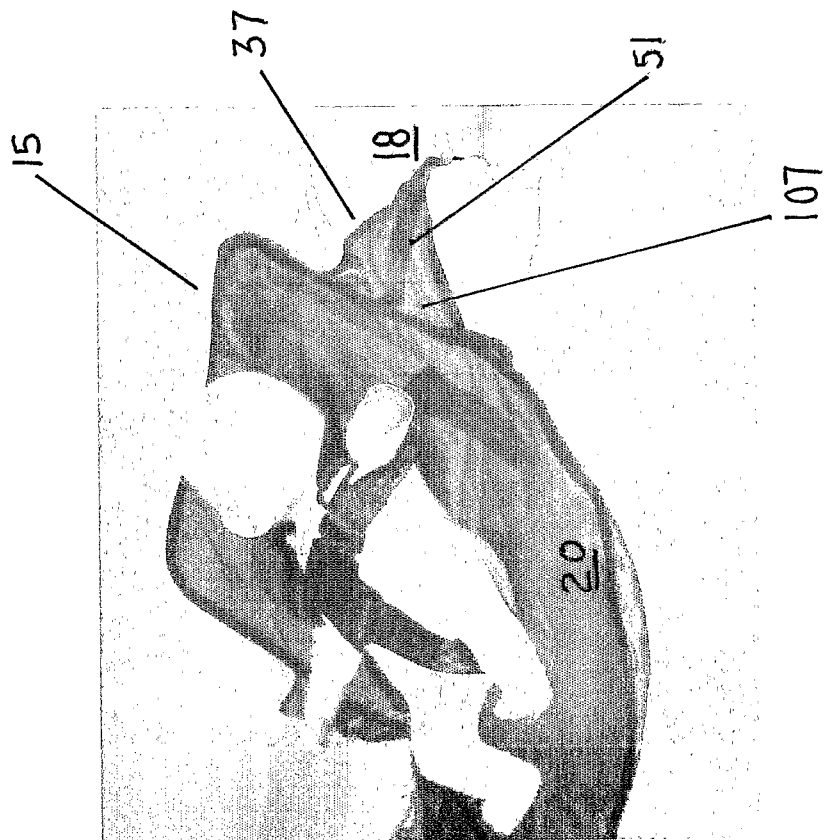


FIG. 4

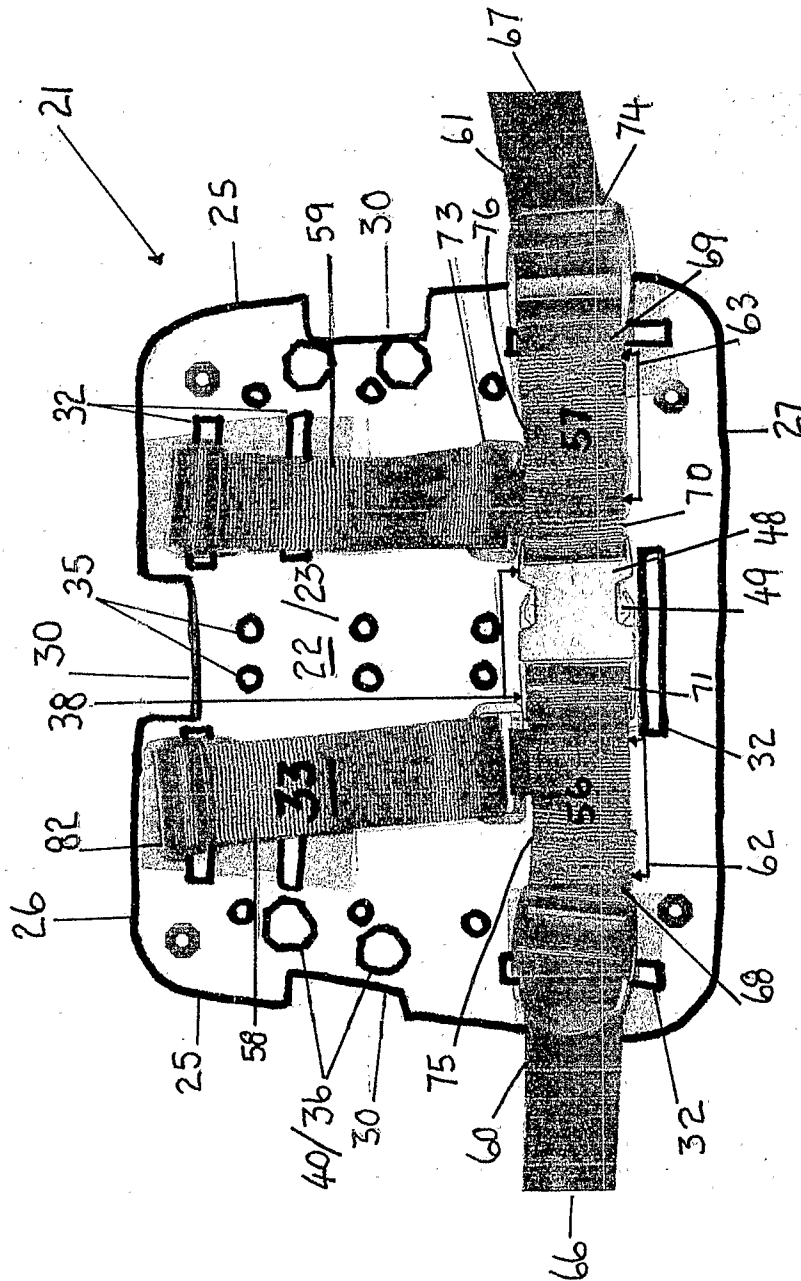
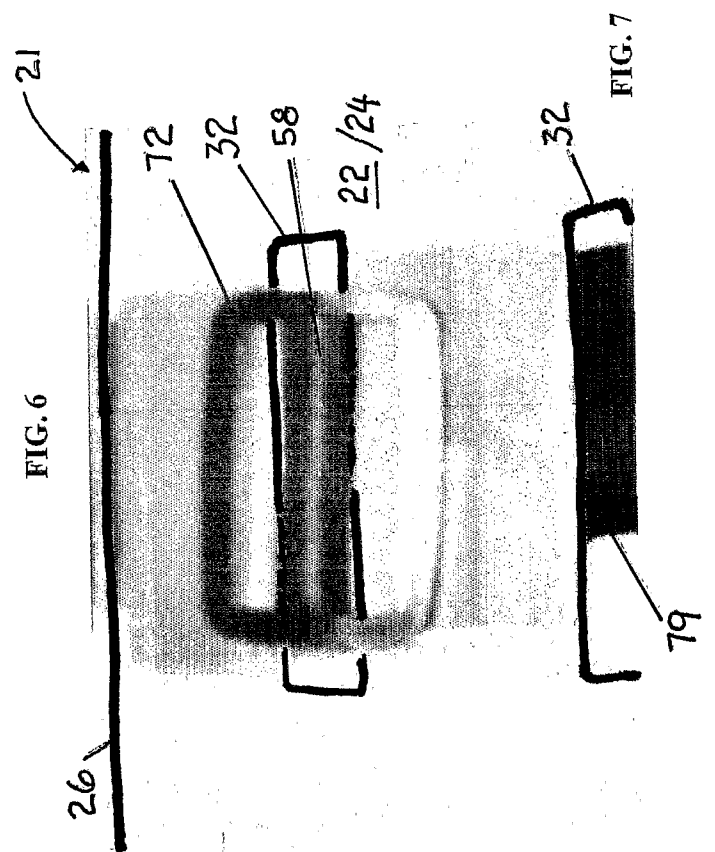


FIG. 5



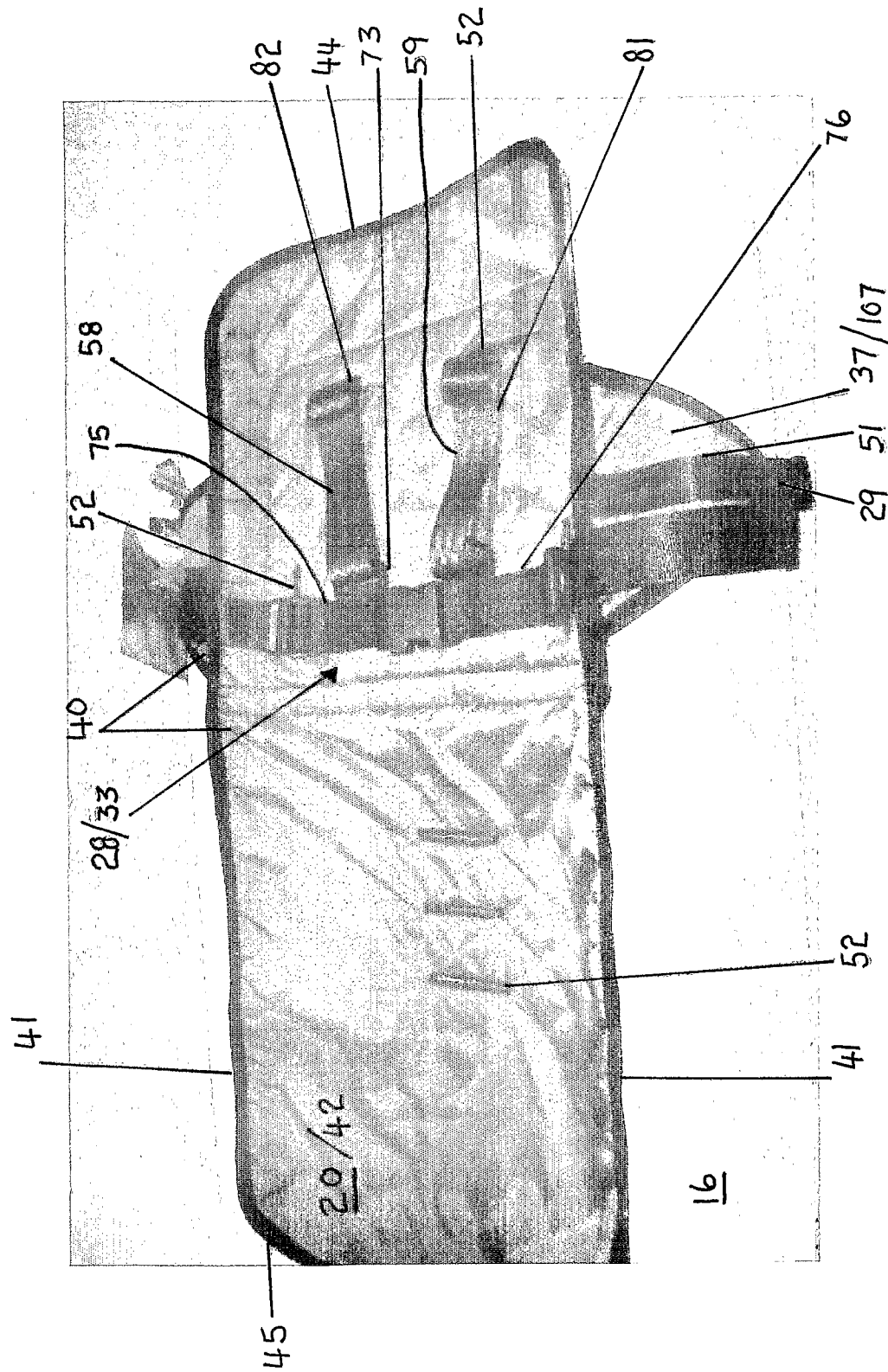


FIG. 8

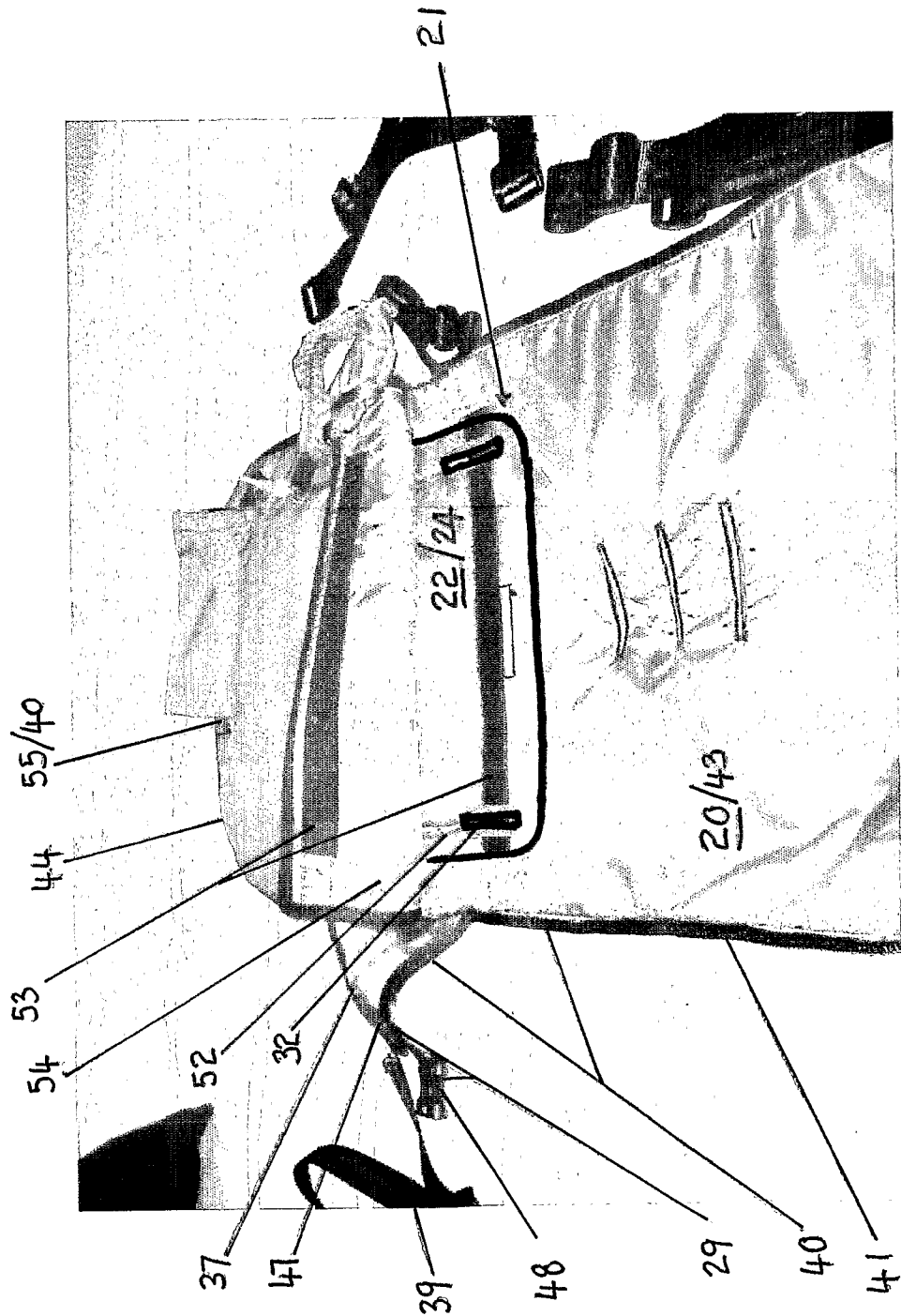


FIG. 9

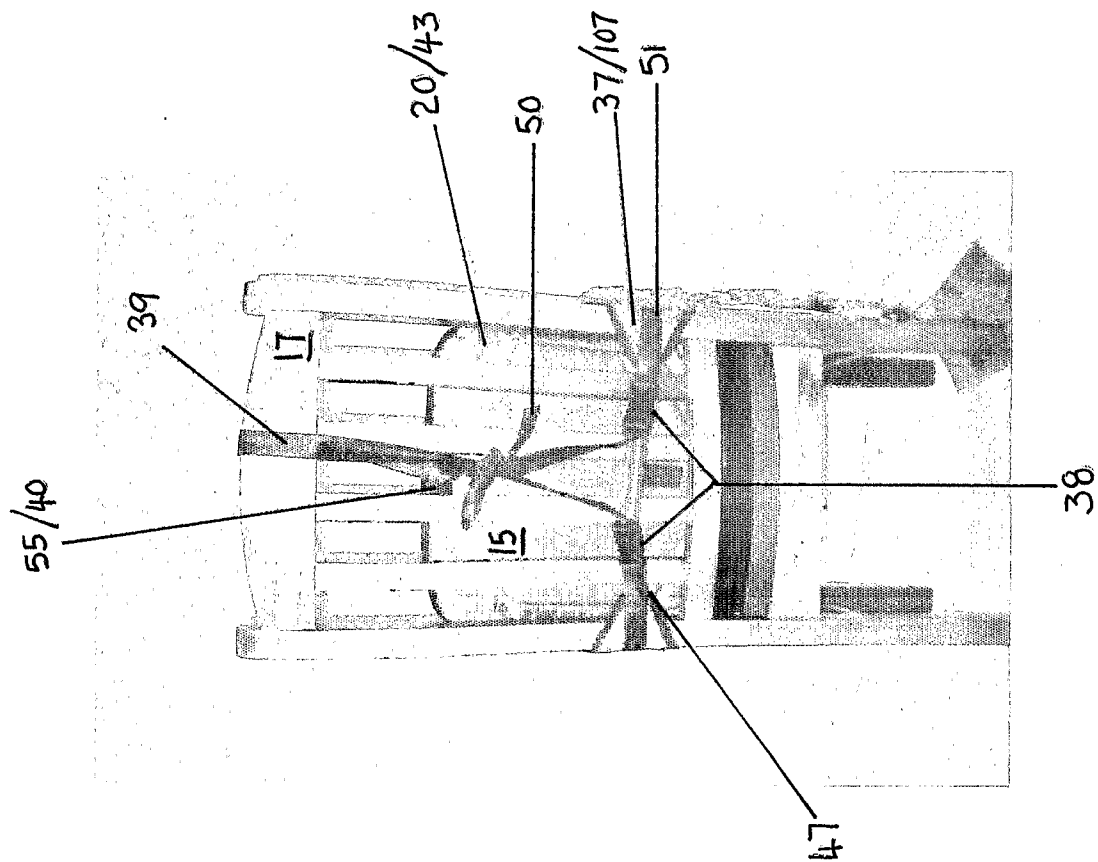


FIG. 10

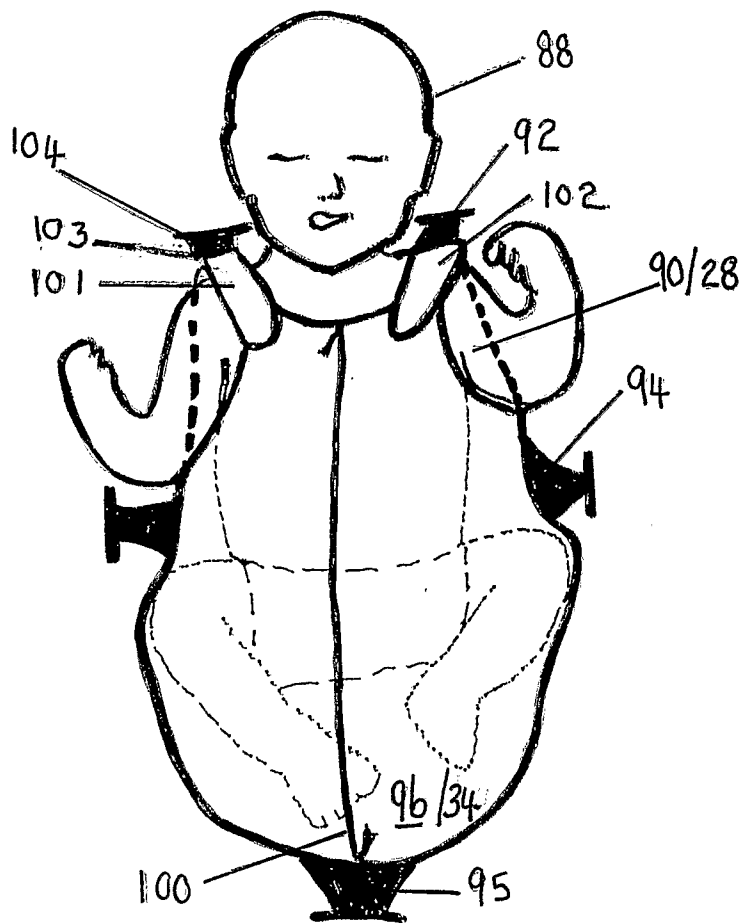


FIG. 14

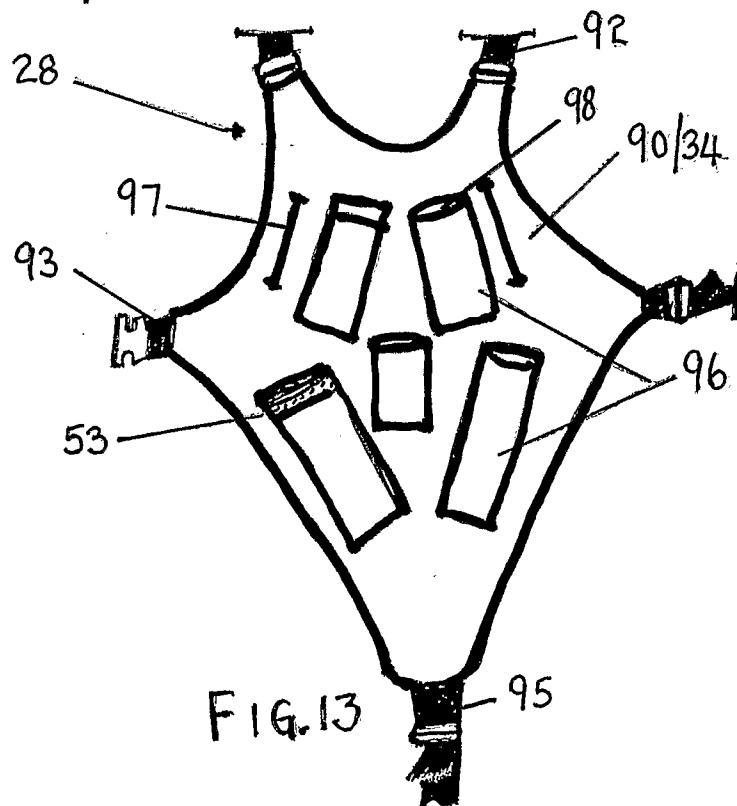
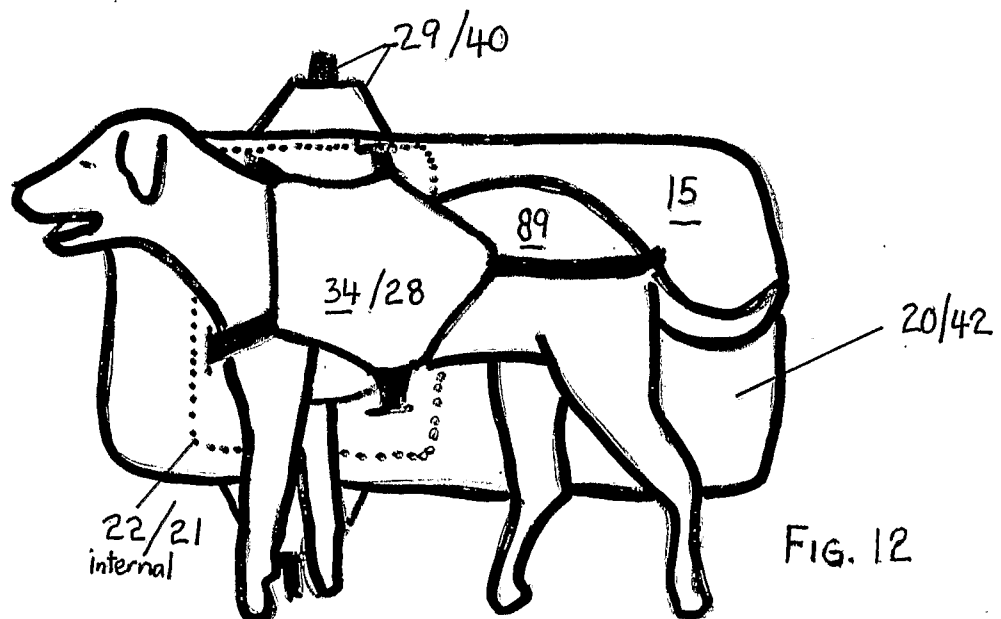
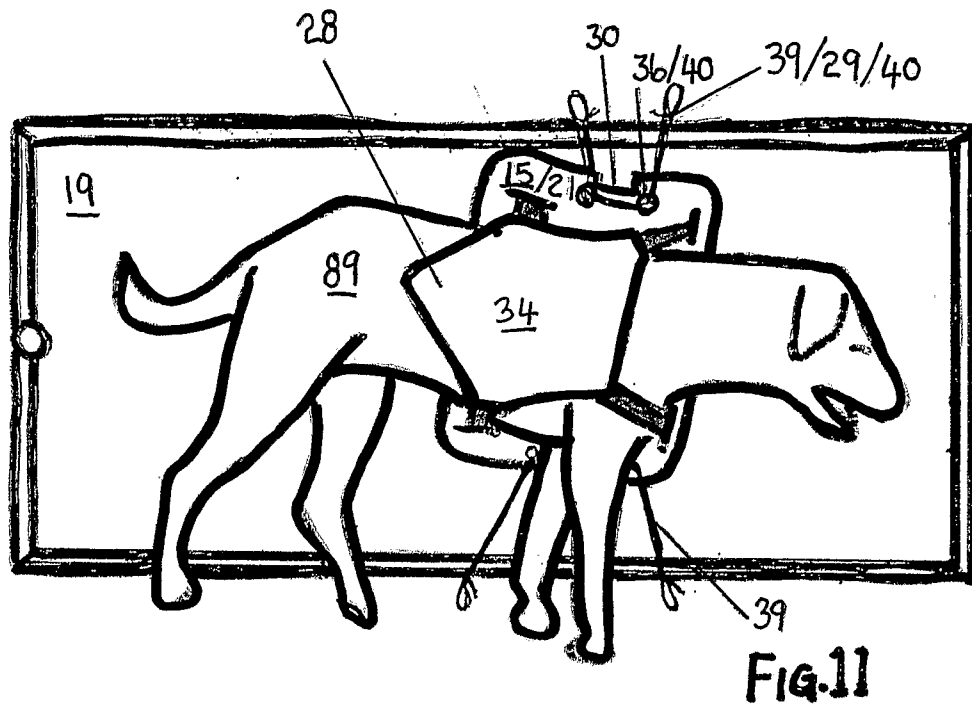


FIG. 13



INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2008/001053

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

A47D 15/00 (2006.01)*A01K 29/00* (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)

Wpi, epodoc: harness, vest, strap, band, carrier, infant, baby, animal, dog, cat, handle and similar terms,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6224152 B1 (HUGHES et. al.) 1 May 2001 Figs 3 and 4	1-9, 12-15
X	US 6402251 B1 (STOLL) 11 June 2002 Fig 2a to 2c	1, 9, 13-15
A	US 5927576 A (NIELSEN) 27 July 1999	



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" 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
02 October 2008

Date of mailing of the international search report

21 OCT 2008

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2008/001053

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	6224152	NONE			
US	6402251	EP 1429644	US 6616242	US 7021719	
		US 7140692	US 2004104616	US 2005088030	
		US 2006138851	WO 03026463		
US	5927576	DE 29617217U	DK 9600260U	FR 2746282	
		GB 2311205			
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					