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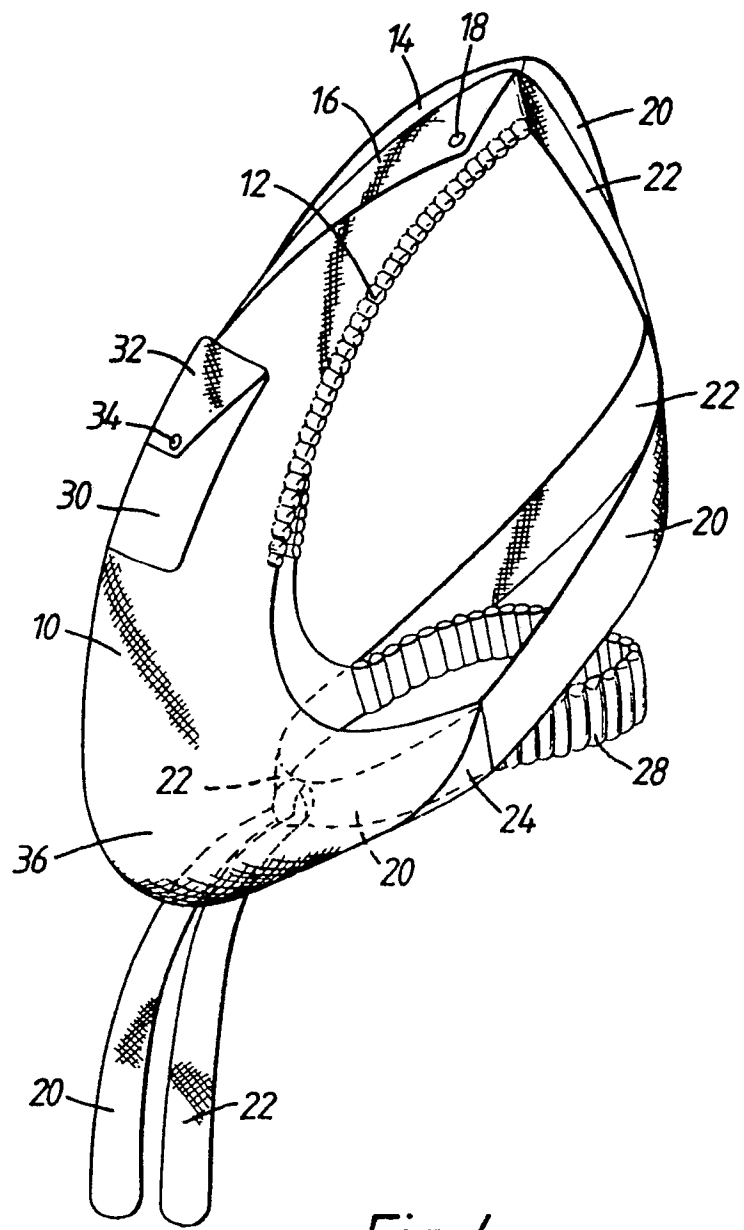
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(54) **Infant carrier.**

(57) An infant carrier comprises an apron to be supported from an adult's shoulders, in which the apron (10) has an upper and a lower edge, restraining loops (24, 26) and two support straps (20, 22), the restraining loops (24, 26) being secured to the lower edge of the apron (10), wherein the support straps (20, 22) are each secured at one end to the upper edge of the apron (10) and are disposed to pass one over each shoulder and through one or more of the restraining loops (24, 26) so as to form the apron (10) into a pouch (36) to hold the infant.

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*Fig.4.*

## INFANT CARRIER

This invention relates to a carrier for an infant. It is particularly concerned with a carrier suitable for use with pre-walking infants which combines a high degree of support and restraint for the infant while giving freedom of movement to the adult wearing the carrier.

A wide variety of practices and devices have been adopted over the years for carrying a pre-walking infant. The need for both good infant support and restraint combined with high adult mobility continues to bring forward new versions. For example there has been recent renewed interest in baby slings which allow the baby to be carried in a lying position. Greater mobility brought about by the wide range of transport systems now commonly available and the need to visit such places as out-of-town shopping centres rather than the local shops makes it necessary for the carrying device to give a level of support and security which reassures the parent that the chosen activity can be undertaken without risk to the infant. The greater walking distances often involved in large modern shopping centres have also increased the need for the carrying device to be comfortable to wear for the adult. A further aspect of the increased adult mobility is that feeding time for a suckling infant frequently arrives while away from home, making it desirable for the mother to be able to breast-feed in a private manner while in a public place.

The present invention arose from the need to provide a carrier which combines these desirable features.

According to the invention there is provided an infant carrier which comprises an apron to be supported from an adult's shoulders, in which the apron has an upper and a lower edge, restraining loops and two support straps, the restraining loops being secured to the lower edge of the apron, wherein the support straps are each secured at one end to the upper edge of the apron and are disposed to pass one over each shoulder and through one or more of the loops on the lower edge of the apron so as to form the apron into a pouch to hold the infant.

The infant carrier of the invention offers several advantages over previous types of carrier. The disposition of the apron, support straps and loops allows easy adjustment of the height of the pouch to a level which gives maximum comfort to both the infant and the adult wearing the carrier. The carrier is easy to put on and take off, either with the infant already in position or when empty. The infant is held firmly in place, giving the adult free hands to perform housework and shopping etc while carrying the infant. One useful feature of the invention is that the carrier can be worn with the pouch either at the front or at the back of the adult. A small infant (typically up to six months of age) can lie flat in the carrier and benefit from the increased

comfort of this position and from the reassuring body warmth of the person wearing the carrier in general an infant in a lying position is best carried with the pouch to the front of the adult. Larger infants can be carried in an upright disposition, and in general this is most convenient with the pouch on the adult's back.

A particular advantage of the invention is that the carrier can be worn on the chest by a nursing mother in such a position that the infant can be breast-fed in public with the apron front concealing the breast from view and thus avoiding embarrassment for the mother. When worn in this position the carrier also allows the infant to be located so that it can hear the heart-beat of the mother, which is believed to have a soothing and calming effect on the infant.

In their simplest form the support straps pass through the loops and are then tied together behind the pouch. For many purposes this is the preferred means of securing them. It offers the advantage of presenting no protruding fastening means such as buckles or buttons to cause discomfort to the infant. Such alternative fastening means can however be provided if the joining point between the straps is located away from a position in which the infant can contact it.

The support straps are preferably aligned so as to extend from respectively the upper left and right hand corners of the apron to loops at respectively its lower right and left hand corners, so as to pass over the shoulders, across each other and around the body of the adult. Alternatively one strap can extend from the upper left hand corner of the apron to a loop at its lower left hand corner and the other strap can similarly extend between the right hand corners. In this alternative non-crossover configuration the straps are however preferably linked together by a binding portion to be located on the side of the adult's body opposite from the apron. The use of such crossover or linked straps is advantageous in keeping the carrier firmly in position relative to the adult's body.

The carrier preferably also has a waist-band extending between the lower corners of the apron so as to pass around the side of the adult's waist opposite from the side contacted by the lower edge of the apron, i.e. the waist-band passes around the adult's back if the apron is worn on the adult's front. The waist-band also helps in holding the carrier in position. It is preferably of one-piece elasticated construction and preferably permanently secured to both corners.

The sides of the apron are preferably elasticated along most or all of their length so as to assist in keeping the apron and pouch snugly aligned with the adult's body.

The apron preferably has a fastenable central opening extending downwards from the upper edge through part of its height. The opening facilitates

insertion and removal of the infant. The fastening means can be for example a zip, buttons or popper studs. A relatively deep opening is generally preferred but should be provided with a restraining portion at its lower end to ensure that it does not inadvertently open to an extent that would permit the infant to fall out of the carrier. The opening can if desired be combined with one or more closeable lapel portions to give additional protection for the infant against the elements.

The carrier can conveniently include a pocket on the front of the apron. In one preferred version of the invention the pocket also serves as the restraining portion for the front opening as discussed above. The pocket can include a closing flap which can be fitted with a securing zip, popper stud(s) or button(s).

The pouch is preferably fitted with a resilient cushion, for example of rubber or plastic foam in a fabric cover, for the added comfort of the infant. The cover is preferably removable for washing. The cushion can either be loose-laid in the pouch or secured therein by such means as poppers, buttons or Velcro attachments.

The apron should be made of a strong, flexible, air-permeable material. Suitable materials include canvas, denim and corduroy. The securing straps and belts can be of the same or different material but preferably have reinforcing welts along their length. The loops can either be formed of such a fabric material but alternatively can be constructed of metal or plastic. In one preferred arrangement the loops form part of a waist-band secured to the lower edge of the apron. The apron can if desired have a lining of a soft fabric to ensure the infant's comfort. The cover for any pouch cushion can conveniently be of the same material as the lining. All the materials of the carrier should preferably be washable.

Carriers according to the invention are especially suitable for babies and small infants. They are easy to put on and take off and provide an extremely high degree of support and thus comfort for the infant and the adult.

The invention is described below with reference to the accompanying drawings, in which :

Figures 1 and 2 are general views of the front of one version of carrier according to the invention and laid out on a flat surface ;

Figure 3 is a frontal view, on a slightly larger scale, of the carrier of Figures 1 and 2, in its "as worn" configuration ;

Figure 4 is a side view of the Figures 1-3 carrier also in its "as worn" configuration.

The illustrated carrier comprises an apron 10 with elasticated sides 12 and a front opening 14. The sides of the opening 14 are formed as closeable lapels 16 and are illustrated in the position in which they are held back by popper studs 18. The lower end of the opening 14 is held together by popper studs 15. Support

port straps 20 and 22 are attached to respectively the upper left- and right-hand corners of the apron 10. The straps 20 and 22 are shown in Figure 1 extending away from the apron 10, in Figure 2 in position before the carrier is put on by the adult and in Figures 3 & 4 in position as worn and tied together.

At its lower edge the apron 10 includes elongated loops 24 and 26 through which the straps respectively 20 and 22 are to be passed. The lower corners of the apron 10 are attached to an elasticated waistband 28 arranged to pass around the adult (see Figure 4).

A pocket 30 is provided on the front of the apron 10. The opening 14 extends downwards behind the pocket 30. A closeable flap 32 fitted with securing popper studs 34 covers the top of the pocket 30. The pocket 30 also serves as a restraint for the opening 14.

In its "as worn" position (Figures 3 & 4) the lower edge of the apron 10 is pulled upwards by the straps 20 & 22 to form a pouch 36 into which an infant can be placed. A foam cushion 38 (shown in outline in Figure 3) is located in the pouch 36 to support the infant.

In using the carrier it will usually be most convenient for the adult to place the infant in the pouch 36 after putting on the carrier. With or without the infant in place, the carrier is put on over the head of the adult, the waistband 28 is pulled into position around the waist and the straps 20 & 22 are drawn together and tied behind the pouch 36. Removal of the carrier is a simple reversal of this procedure.

## Claims

1. An infant carrier which comprises an apron to be supported from an adult's shoulders, in which the apron has an upper and a lower edge, restraining loops and two support straps, the restraining loops being secured to the lower edge of the apron, wherein the support straps (20, 22) are each secured at one end to the upper edge of the apron (10) and are disposed to pass one over each shoulder and through one or more of the restraining loops (24, 26) so as to form the apron (10) into a pouch (36) to hold the infant.
2. An infant carrier as claimed in claim 1, in which the support straps pass through the loops so that they can be tied together behind the pouch.
3. An infant carrier as claimed in claim 2, in which the support straps are aligned so as to extend from respectively the upper left and right hand corners of the apron to loops at respectively its lower right and left hand corners.
4. An infant carrier as claimed in claim 2, in which one support strap extends in a non-crossover

configuration from the upper left hand corner of the apron to a loop at its lower left hand corner and the other strap similarly extends between the right hand corners.

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5. An infant carrier as claimed in claim 4, in which the straps are linked together by a binding portion to be located on the side of the adult's body opposite from the apron.

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6. An infant carrier as claimed in any preceding claim, in which the loops form part of a waist-band secured to the lower edge of the apron.

7. An infant carrier as claimed in any preceding claim, which also has a waist-band extending between the lower corners of the apron so as to pass around the side of the adult's waist opposite from the side contacted by the lower edge of the apron.

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8. An infant carrier as claimed in claim 7, in which the waist-band is of one-piece elasticated construction and is permanently secured to both corners.

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9. An infant carrier as claimed in any preceding claim, in which the sides of the apron are elasticated along most or all of their length so as to assist in keeping the apron and pouch snugly aligned with the adult's body.

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10. An infant carrier as claimed in any preceding claim, in which the apron has a fastenable central opening extending downwards from the upper edge through part of its height.

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11. An infant carrier as claimed in claim 10, having a deep opening with a restraining portion at its lower end.

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12. An infant carrier as claimed in claim 10 or claim 11, in which the opening is combined with one or more closeable lapel portions.

13. An infant carrier as claimed in any preceding claim, which includes a pocket on the front of the apron.

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14. An infant carrier as claimed in any preceding claim, in which the pouch is fitted with a resilient cushion.

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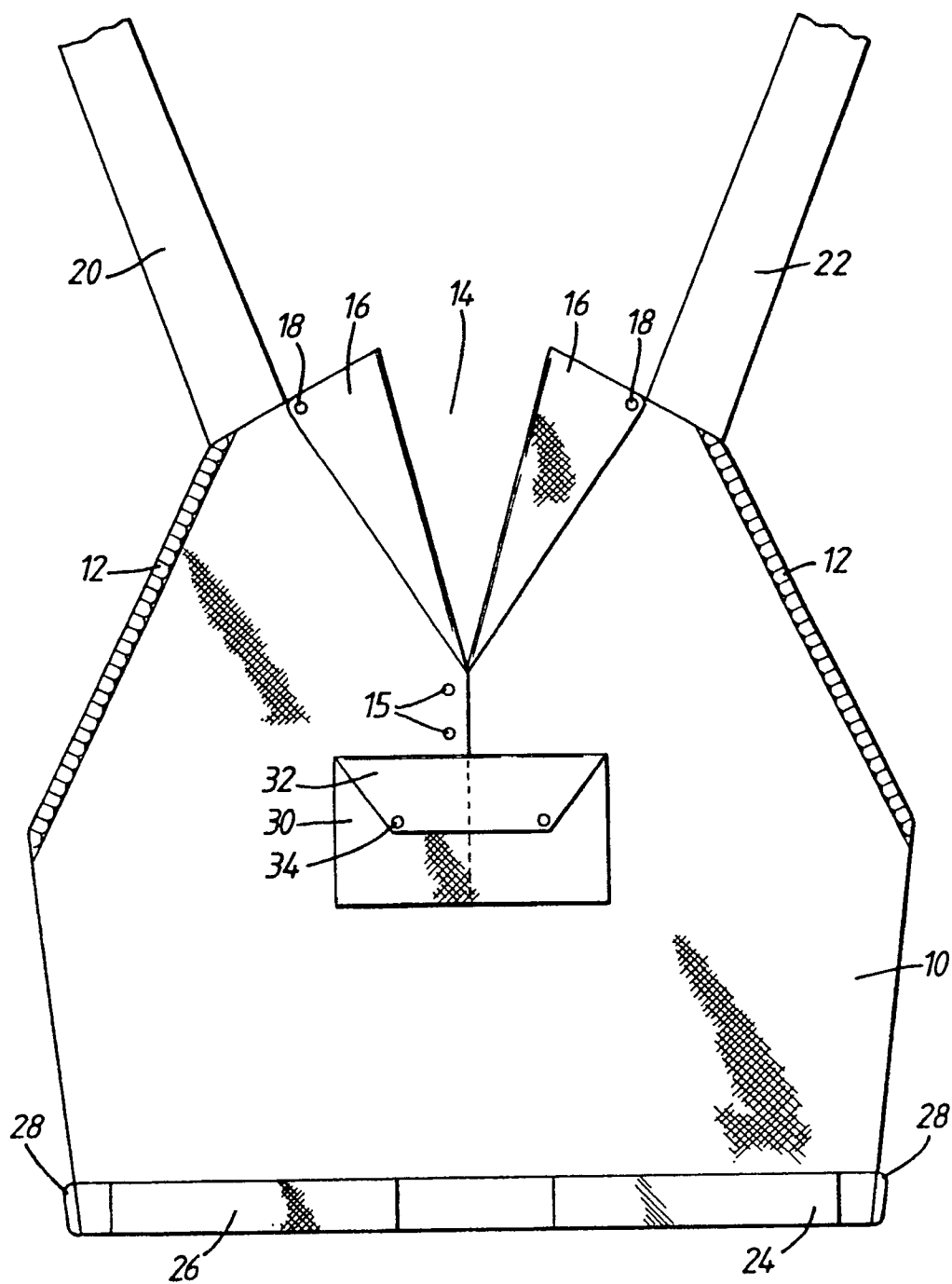


Fig.1.

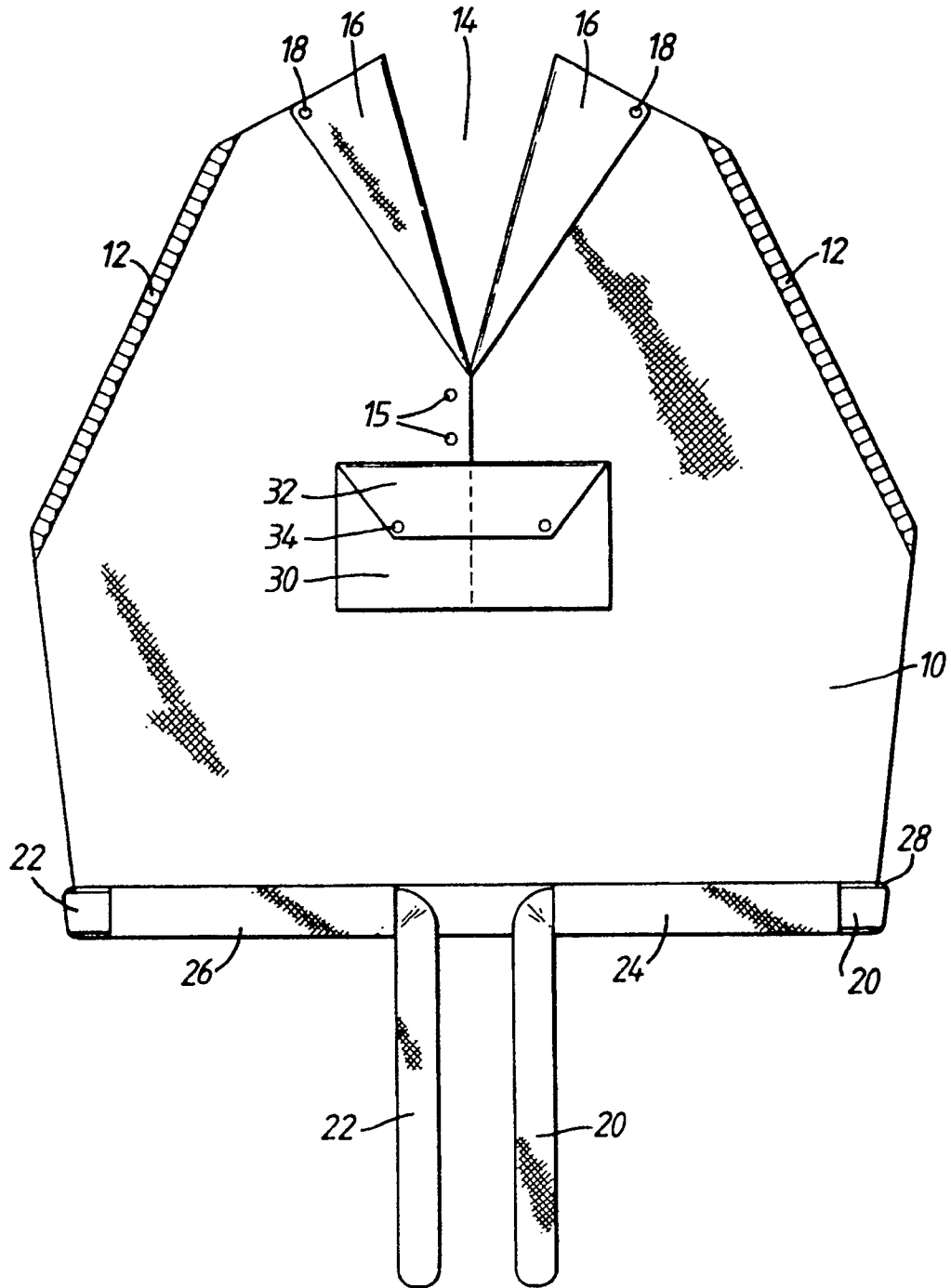


Fig.2.

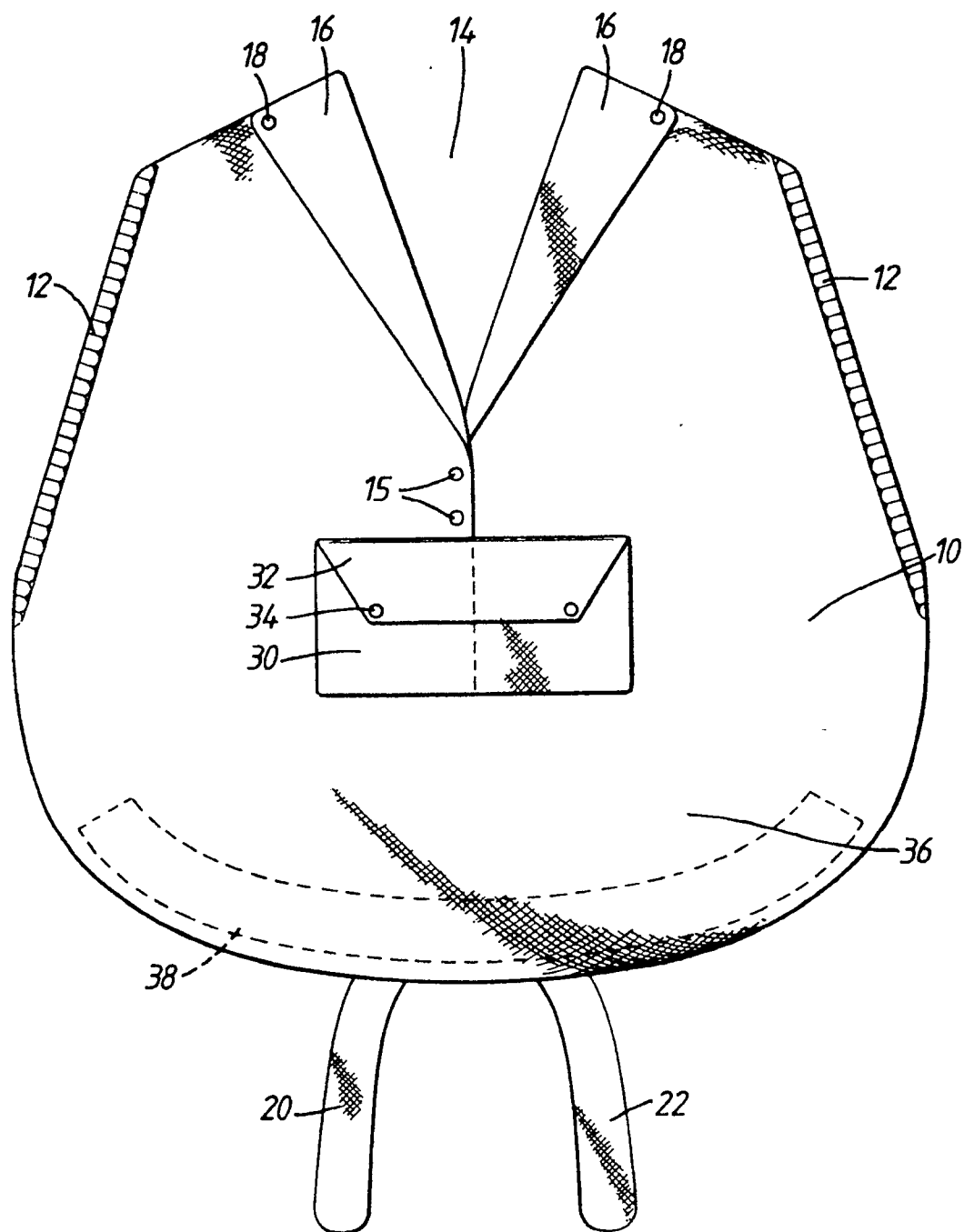


Fig.3.



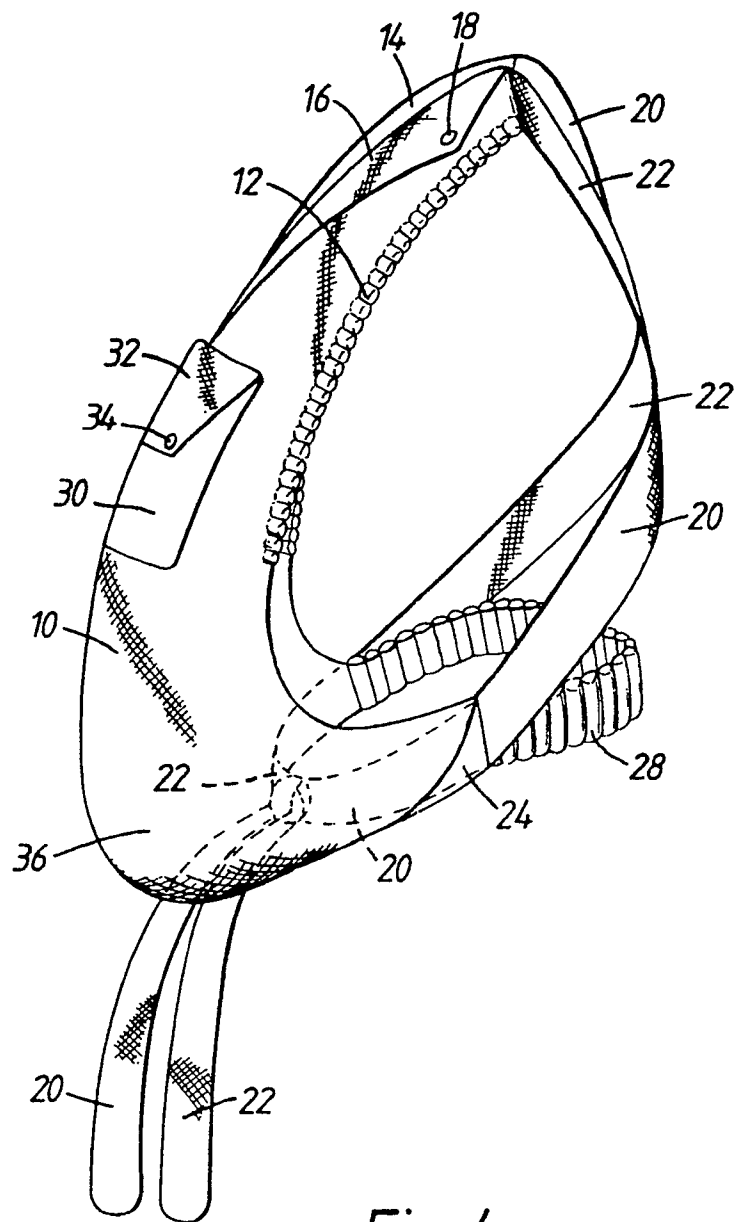


Fig.4.



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# EUROPEAN SEARCH REPORT

Application Number

EP 91 30 0176

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                     |                                                                                       |                                                                                                                                                                                                                                                                                       |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Category                                                                                                                                                                                                                | Citation of document with indication, where appropriate, of relevant passages         | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
| A                                                                                                                                                                                                                       | US-A-4 492 326 (STORM)<br>* column 2, line 21 - line 68; figures *<br>---             | 1,3,6                                                                                                                                                                                                                                                                                 | A47D13/02                                     |
| A                                                                                                                                                                                                                       | US-A-4 139 131 (HATHAWAY)<br>* column 3, line 53 - column 5, line 4; figures *<br>--- | 1,2,3                                                                                                                                                                                                                                                                                 |                                               |
| A                                                                                                                                                                                                                       | US-A-4 579 264 (NAPOLITANO)<br>---                                                    |                                                                                                                                                                                                                                                                                       |                                               |
| A                                                                                                                                                                                                                       | US-A-4 467 945 (SCHAAPVELD)<br>---                                                    |                                                                                                                                                                                                                                                                                       |                                               |
| A                                                                                                                                                                                                                       | US-A-4 428 514 (ELF)<br>---                                                           |                                                                                                                                                                                                                                                                                       |                                               |
| A                                                                                                                                                                                                                       | EP-A-87 063 (SNUGLI)<br>-----                                                         |                                                                                                                                                                                                                                                                                       |                                               |
| The present search report has been drawn up for all claims                                                                                                                                                              |                                                                                       |                                                                                                                                                                                                                                                                                       | TECHNICAL FIELDS SEARCHED (Int. Cl.5)         |
|                                                                                                                                                                                                                         |                                                                                       |                                                                                                                                                                                                                                                                                       | A47D                                          |
| Place of search                                                                                                                                                                                                         | Date of completion of the search                                                      | Examiner                                                                                                                                                                                                                                                                              |                                               |
| THE HAGUE                                                                                                                                                                                                               | 17 APRIL 1991                                                                         | VANDEVONDELE J.                                                                                                                                                                                                                                                                       |                                               |
| CATEGORY OF CITED DOCUMENTS                                                                                                                                                                                             |                                                                                       | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                               |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                       |                                                                                                                                                                                                                                                                                       |                                               |

EPO FORM 1503 (12.82 (P0401))