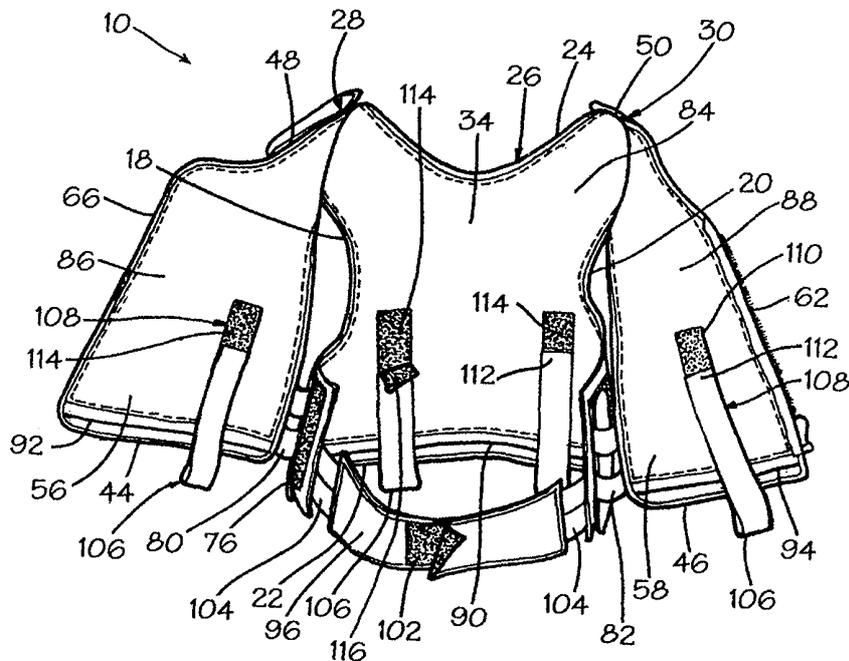




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(54) Title: A GARMENT



(57) Abstract
A waistcoat (10) for use as part of a police or military uniform has a plurality of load-carrying loops (106) associated with the lower hem for distributing the weight of a carried load, such as an equipment belt, around the hem. The waistcoat also includes pouches (84, 86, 88) adapted to receive, in use, at least one protective member such as a plate of ballistic body armour, and a waist belt (96) for partially supporting the weight of the garment at the wearer's waist.

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A Garment

The present invention relates to a garment. In particular, the present invention relates to a garment, for example a waistcoat, for use as part of a police or
5 military uniform.

According to a first aspect of the present invention there is provided a garment for a wearer's upper body, the garment having an in use lower hem which, when the garment
10 is worn, substantially surrounds the wearer's body, the garment having load-carrying means associated with the lower hem for distributing the weight of a carried load around the hem.

15 Preferably, the load-carrying means comprises at least one loop. More preferably, the load-carrying means comprises a plurality of loops spaced-apart around the lower hem. Further preferably, said garment includes a
20 plurality of retaining means, each being adapted to receive, in use, a protective member. Preferably, the garment is a waistcoat comprising a rear panel and two front panels, the front panels being releasably securable to one another by fastening means.

25 According to a second aspect of the invention there is provided a garment for a wearer's upper body, the garment comprising support means for releasably embracing

the wearer's torso so that the torso supports at least part of the weight of the garment. Preferably, the support means is a support belt for embracing the wearer's waist area.

5

According to a third aspect of the invention, there is provided a garment comprising a fastening interface at which the garment is releasably fastenable between an open and a closed state; and means for retaining a protective member between the garment and a wearer's body wherein the retaining means is so arranged that the protective member extends across the fastening interface when the garment is in the closed state.

15 Preferably, the garment is a waistcoat comprising a rear panel and two front panels, the front panels being releasably securable to one another along the fastening interface, one of said front panels incorporating the retaining means.

20

Preferably, the retaining means is dimensioned and arranged so that the protective member, in use and with the garment in the closed state, covers substantially the entire front of the wearer's torso. Preferably, the retaining means is a pouch provided on said one front panel. Preferably, said other front panel is provided with means for receiving the retaining means, and therefore the protective member.

25

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

5 **Figure 1** is a perspective view of a garment according to first and second aspects of the invention;

Figure 2 is a side perspective view of the garment of Figure 1;

10

Figure 3 is a front perspective view of the garment of Figure 1 in an open state;

15 **Figure 4** is a perspective view of a garment according to a third aspect of the invention; and

Figure 5 is a perspective view of the garment of Figure 4 in an open state.

20 Referring now to the drawings, there is shown a garment according to the invention in the form of a waistcoat generally indicated at 10. The waistcoat 10 includes, as viewed in the drawings, a rear panel 12, a front left panel 14 and a front right panel 16.

25

The rear panel 12 is defined by left and right hems 18 and 20, a lower hem 22 and an upper hem 24. The upper hem 24 comprises a neck region 26 located between left and

right shoulder regions 28 and 30 (Figure 3). The rear panel 12 has an external face 32 and an internal face 34.

The front left panel 14 and the front right panel 16 are each defined by respective left hems 36, 38, respective right hems 40, 42, respective lower hems 44, 46 and respective upper hems 48, 50 (not visible in Figure 1). The front left and front right panels 14, 16 have respective external faces 52, 54 and respective internal faces 56, 58 (not visible in Figure 1). The upper hem 48 of the front left panel 14 is joined to the left shoulder region 28 of the rear panel 12. Similarly, the upper hem 50 of the front right panel 16 is joined to the right shoulder region 30 of the rear panel 12. The panels 12, 14, 16 are joined so that their respective internal faces 34, 56, 58 are, in use, located on the inside of the waistcoat 10.

Typically, the waistcoat 10 is formed from nylon or the like material.

First fastening means in the form of a zip or slide fastener 60 comprises a male strip 62 and a female strip 64. The male and female strips 62, 64 are fixed to the front right and front left panels 16, 14, respectively. The male and female strips 62, 64 run substantially parallel to the left hem 38 of the front right panel 16 and to the right hem 40 of the front left panel 14 respectively. The front left and front right panels 14, 16

are thus releasably fastenable to one another along their right and left hems 40, 38 respectively. The waistcoat 10 is operable between an open state, in which the slide fastener 60 is not fastened, and a closed state, in which
5 the slide fastener 60 is fastened (not illustrated).

A substantially rectangular slide fastener guard 66 is fixed to the right hem 40 of the front left panel 14 adjacent the female strip 64 of the slide fastener 60. The
10 guard 66 is so dimensioned and arranged that, when the waistcoat 10 is in the closed state, the guard 66 is located inside the waistcoat 10 under the slide fastener 60.

15 Second fastening means in the form of first and second adjustable side fasteners 68, 70 comprise respective male fastening panels 72, 74 and respective female fastening panels 76, 78. The female panels 76, 78 are located on the external face 32 of the rear panel 12
20 adjacent the bottom hem 22 and adjacent the left hem 18 and the right hem 20 of the rear panel 12 respectively.

The male panels 72, 74 are connected to the front left panel 14 and the front right panel 16 respectively by
25 a respective pair of straps 80, 82 which are preferably elasticated. The male panels 72, 74 are located adjacent the left hem 36 and the right hem 42, respectively, and adjacent the respective lower hems 44, 46 of the front left and front right panels 14, 16. The male and female

fastening panels 72, 74, 76, 78 are releasably fastenable to one another and may be formed from conventional fastening means such as Velcro (Trade Mark) hook and loop panels or male/female stud fasteners.

5

The left hem 36 of the front left panel 14 and the right hem 42 of the front right panel 16 are thus fastenable to the left hem 18 and right hem 20 respectively of the rear panel 12.

10

Referring now in particular to Figure 3, retaining means in the form of a rear pouch 84, a front left pouch 86 and a front right pouch 88 (indicated in Figure 3 in broken outline) are formed within the rear panel 12, the front left panel 14 and the front right panel 16 respectively. Each pouch 84, 86, 88 substantially conforms to the shape and size of the respective panel 12, 14, 16 in which it is formed.

20

Each pouch 84, 86, 88 has a respective mouth 90, 92, 94 formed in the respective internal face 34, 56, 58 of its respective panel 12, 14, 16, adjacent and substantially parallel to the respective bottom hem 22, 44, 46. Each pouch 84, 86, 88 is adapted to receive and retain, in use, a protective member (not shown) in the form of, for example, a protective plate or protective flexible panel. For example, each protective plate or panel may be ballistic body armour or stab-resistant body armour.

25

Support means in the form of a support belt 96 is fixed between the left hem 18 and the right hem 20 of the rear panel 12 adjacent the bottom hem 22. A releasable fastener 102 is located near the midpoint of the support belt 96. The support belt 96 is preferably provided with two resilient or elasticated portions 104. The support belt 96 is adapted and arranged for engagement around a wearer's waist (not shown).

10

The waistcoat 10 includes load-carrying means in the form of a plurality of mutually spaced-apart loops 106. Each loop 106 comprises an elongate strip 108 having a first end 110 and a second end 112. Each elongate strip 108 is fixed to the respective internal face of the rear panel 12, the front left panel 14 or the front right panel 16, and extends substantially perpendicular to the respective bottom hem 22, 44, 46. Typically, two strips 108 are fixed to the rear panel 12 and one strip 108 is fixed to each of the front left and front right panels 14, 16 respectively. Each strip 108 is preferably arranged so that substantially half the length of the strip 108 extends beyond the hem of the waistcoat when fully stretched.

25

A male fastening member, for example a loop pad 114, is fixed to the first end 110 of each strip 108. A reciprocating female fastening member, for example a hook

pad 116, is located adjacent the second end 112 of the strip 108.

In use, the hook pad 116 of each strip 108 is
5 fastened to its associated loop pad 114 to form a loop 106. Each loop 106 may be formed in a projecting state (as shown in Figure 3), in which the hook pad 116 is fastened to the loop pad 114 off-set from the first end 110 so that the loop 106 projects beyond the respective
10 lower hem 22, 44, 46 of the panel 12, 14, 16 to which it is fixed.

Alternatively, each loop 106 may be formed in a retracted state, in which the hook pad 116 is fastened to
15 the loop pad 114 adjacent the first end 110 so that the loop 106 does not project beyond its associated bottom hem 22, 44, 46.

The fastener 102, the loop pad 114 and the hook pad
20 116 may be formed from Velcro (Trade Mark) or the like material. It will be appreciated, however, that other conventional fastening means, such as a buckle, may be used.

25 In use, a wearer (not shown) dons the waistcoat 10 in conventional manner and fastens the support belt 96 about his waist. The resilient portions 104 ensure that the wearer's waist is securely engaged by the support belt 96. The wearer fastens the slide fastener 60 and adjusts the

first and second side fasteners 68, 70 so that the waistcoat 10 fits snugly around the wearer's torso. This is the closed state of the waistcoat 10. In the closed state, the support belt 96 is located inside the waistcoat 10 adjacent the front left and front right panels 14, 16.

If the wearer intends to carry, on the loops 106, a load such as an equipment belt (not shown), then the wearer configures the loops 106 in the projecting state shown in the drawings, threads the equipment belt through each of the loops 106 and fastens the equipment belt in conventional manner. The equipment belt is thus suspended below the waistcoat 10. The weight of the equipment belt is therefore, in use, distributed amongst the loops 106 around the lower hem of the garment. In particular, a first part of the weight is associated with the loops 106 connected to the rear panel 12 and a second part of the weight is associated with the loops 106 connected to the front left and right panels 14, 16. If the wearer does not intend to carry an equipment belt, the loops 106 are configured in the retracted state (not shown).

The waistcoat 10 may carry a total load comprising the protective members (not shown), housed within the pouches 84, 86, 88, and the equipment belt, carried by the loops 106. The total load can be considered as having a first portion and a second portion. The first portion comprises the protective member housed in the rear pouch 84 and the first part of the weight of the equipment belt.

The second portion comprises the protective members housed within the front left and front right panels 14, 16 and the second part of the weight of the equipment belt.

5 In use, the total load is distributed between the wearer's waist and shoulders (not shown). In particular, the first total load portion is supported primarily by the wearer's waist, via the support belt 96, and the second total load portion is supported primarily
10 by the wearer's shoulders.

The distribution of the total load between more than one portion of the wearer's body reduces the likelihood that any one particular portion of the body is strained or
15 injured.

It will be appreciated that the support belt 96 may, in alternative embodiments, be adapted and arranged to engage any region of a wearer's torso, for example the
20 chest, from which a load can comfortably be supported. More than one support belt 96 may also be provided.

It will further be appreciated that the size and shape of the waistcoat 10 may be adapted to suit either a
25 male or a female wearer.

Referring now to Figures 4 and 5, there is shown an embodiment of a garment, indicated at 210, according to a third aspect of the invention. The garment 210 is similar

in construction to the garment 10 and like numerals have been used to indicate like parts.

The front right panel 16 is provided with retaining
5 means in the form of a pouch 288 (indicated in broken
outline). The pouch 288 is formed in the, in use,
internal face 258 of the panel 16 and extends beyond the
male strip 62 of the fastener 60. The pouch 288 is shaped
and dimensioned to substantially conform to the shape and
10 dimensions of the front of a wearer's torso (not shown)
i.e. to cover substantially the entire chest and abdominal
area.

The front left panel 14 does not, in the illustrated
15 embodiment, have a pouch for carrying a protective member
of its own but rather is provided with means for receiving
and retaining the pouch 288. The receiving and retaining
means takes the form of a pocket 289 formed in the
internal surface 56 of the front left panel 14.

20

In use, a wearer dons the garment 210 and fastens the
front panels 14, 16 together using the fastener 60,
ensuring that the pouch 288 is tucked into the pocket 289.
In this closed state, the pouch 288 covers substantially
25 the entire area of the front right panel 16 and the front
left panel 14 and, importantly, extends across, or
overlaps with, the fastener 60 - i.e. extends across the
fastening interface - between the fastener and the
wearer's body. Thus, with a protective member (not shown)

inserted in the pouch 288, substantially the entire front of the wearer's torso is covered by the single protective member.

5 By having the pouch 288 arranged, in use, behind the fastening interface, the vulnerability of the wearer to bullet or knife attacks in which the bullet/blade is incident in the area of the fastening interface is reduced. If the bullet/blade impinges upon the fastening
10 interface either normally or obliquely, it is still deflected by the protective member. There are no spaces, or regions of abutment of two separate protective members at, or adjacent, the fastening interface through which the bullet/blade can reach the wearer.

15

 It will be appreciated that the arrangement whereby the retaining means, and therefore in use the protective member, overlaps with the fastening interface and beyond is not limited to application at the front panels of a
20 waistcoat. Equally, such an arrangement can be employed at any fastening interface of a garment, for example, at the side(s) or at the rear. The arrangement can also be used in garments for the lower body, for example, protective leggings.

25

 The invention is not limited to the embodiments described herein which may be modified or varied without departing from the scope of the invention.

CLAIMS

1. A garment for a wearer's upper body, the garment having an in use lower hem which, when the garment is worn, substantially surrounds the wearer's body, the garment having load-carrying means associated with the lower hem for distributing the weight of a carried load around the hem.
2. A garment as claimed in claim 1, wherein the load-carrying means comprises at least one loop.
3. A garment as claimed in claim 2, wherein the load-carrying means comprises a plurality of loops spaced-apart around the lower hem.
4. A garment as claimed in claim 3, wherein the loops are adjustable so that they may project downwardly below the lower hem or be retracted above the lower hem.
5. A garment as claimed in any one of claims 1 to 4, wherein said garment includes retaining means adapted to receive, in use, at least one protective member.
6. A garment as claimed in any one of claims 1 to 5, wherein the garment is a waistcoat comprising a rear panel and two front panels, the front panels being releasably securable to one another by fastening means.
7. A garment as claimed in claim 6 when dependent on claim 5, wherein the retaining means is so arranged that when the garment is in the closed state the protective member extends across the fastening interface between the front panels.

8. A garment as claimed in any preceding claim,
further comprising support means for releasably
embracing the wearer's torso so that a part of the torso
5 other than the shoulders supports at least part of the
weight of the garment.
9. A garment as claimed in claim 8, wherein the
support means comprises a support belt for embracing the
10 wearer's waist area.
10. A garment for a wearer's upper body, the garment
comprising support means for releasably embracing the
wearer's torso so that a part of the torso other than
15 the shoulders supports at least part of the weight of
the garment.
11. A garment as claimed in claim 10, wherein the
support means is a support belt for embracing the
20 wearer's waist area.
12. A garment comprising a fastening interface at which
the garment is releasably fastenable between an open and
a closed state, and means for retaining a protective
25 member between the garment and a wearer's body, wherein
the retaining means is so arranged that the protective
member extends across the fastening interface when the
garment is in the closed state.
- 30 13. A garment as claimed in claim 12, wherein the
garment is a waistcoat comprising a rear panel and two
front panels, the front panels being releasably
securable to one another along the fastening interface,

one of said front panels incorporating the retaining means.

14. A garment as claimed in claim 13, wherein the
5 retaining means is dimensioned and arranged so that the protective member, in use and with the garment in the closed state, covers substantially the entire front of the wearer's torso.

10 15. A garment as claimed in claim 14, wherein the retaining means is a pouch provided on said one front panel.

16. A garment as claimed in claim 15, wherein said
15 other front panel is provided with means for receiving the retaining means, and therefore the protective member.

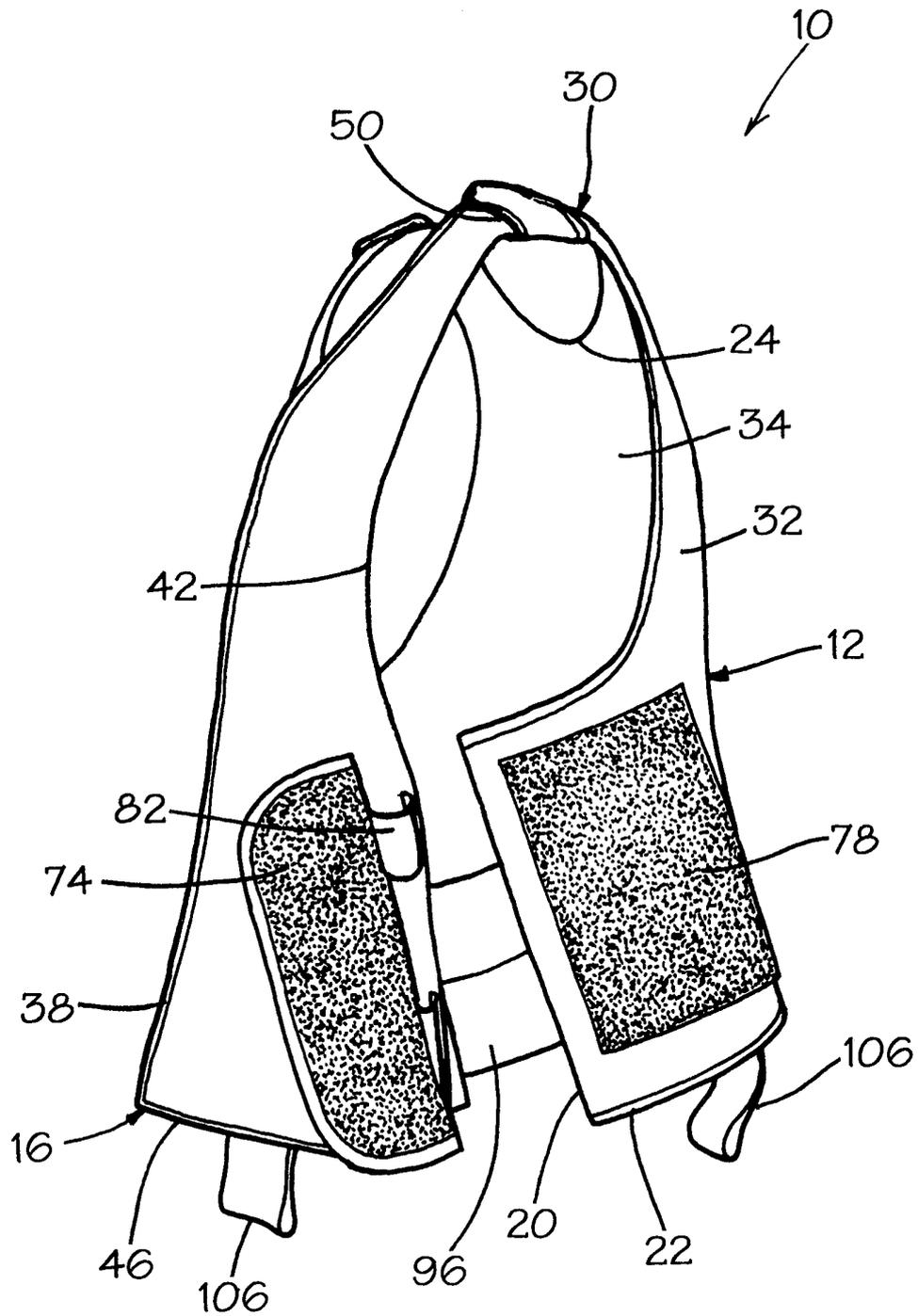


FIG 2

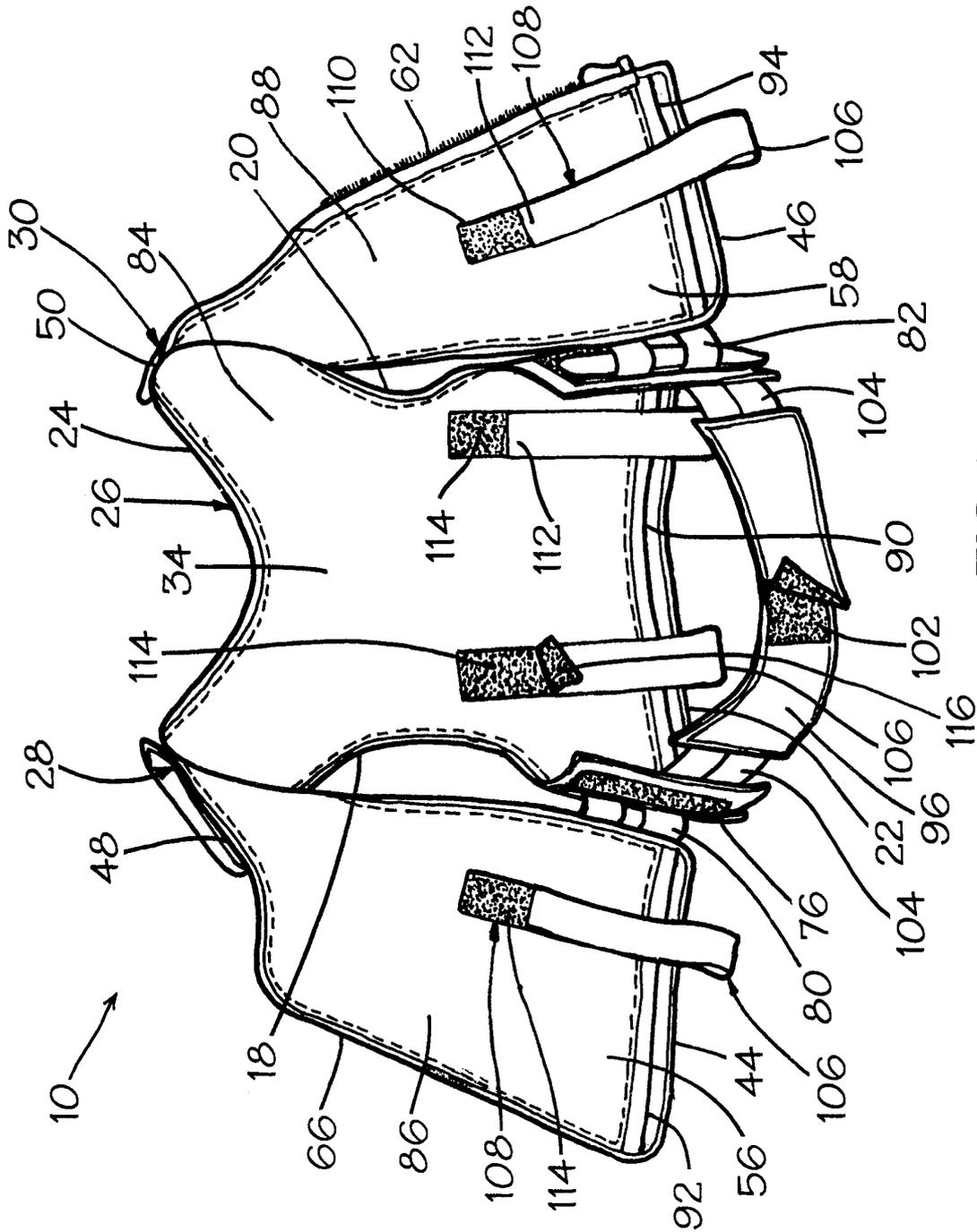


FIG 3

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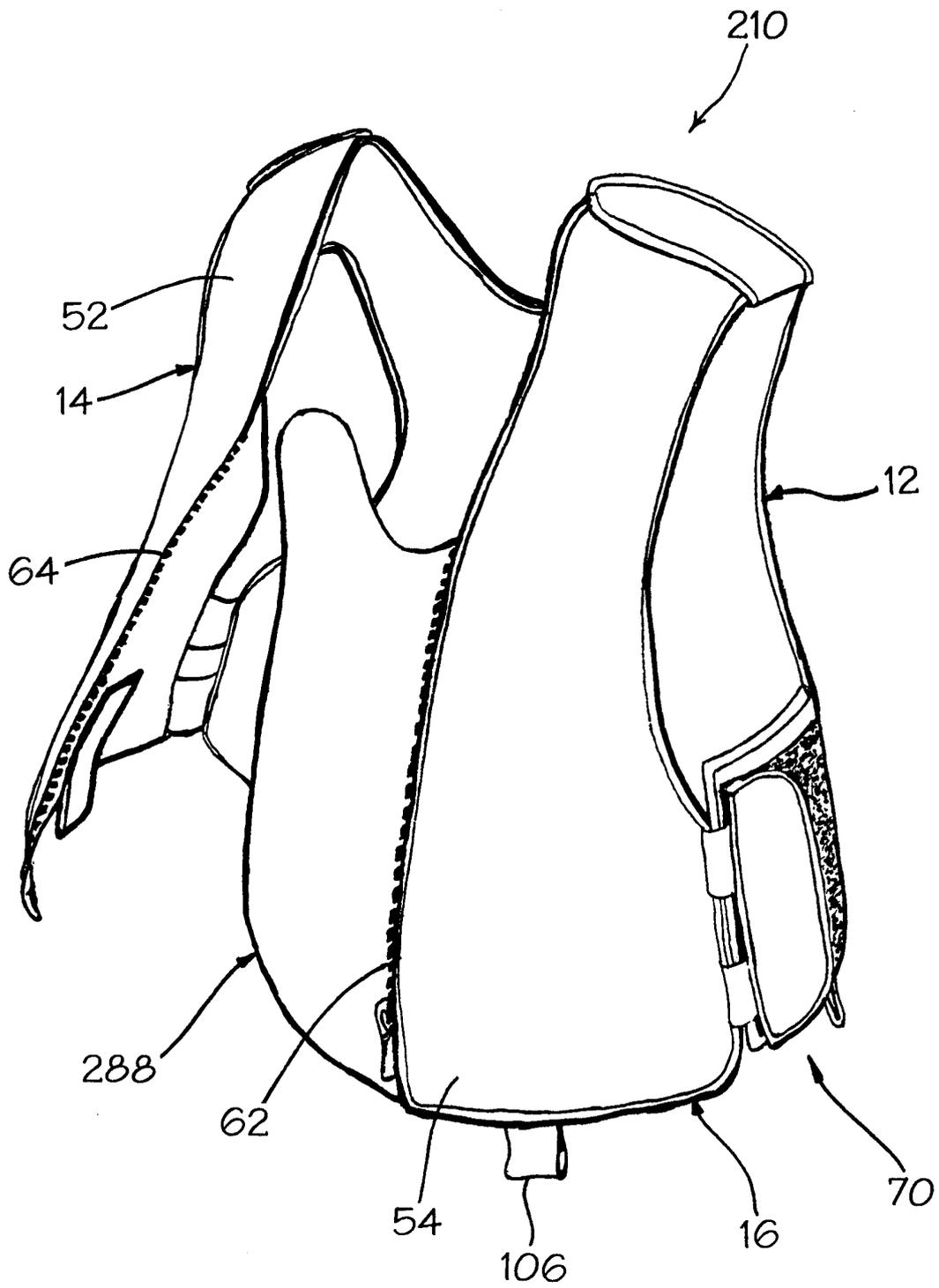


FIG 4

