Shoulder straps (2) and side straps (8) for securing a body armor vest (1) to the torso of a wearer. The shoulder straps and side straps are constructed out of a breathable pliable material having elastomeric qualities and shaped to ergonomically conform to the shape of a human body. The shoulder straps go over a wearer’s shoulders and have curved middle portions (7) to conform around a wearer’s neck. The side straps go around the sides of a wearer’s torso. The side straps are substantially Y-shaped having and have curved middle portions to provide additional comfort to a wearer. The side straps are also reversible so that a wearer may have a single end (9) attached to a front panel (12) of the body armor vest and a double end (10) attached to a rear panel (13) of the vest or vice-versa depending on the wearer’s preference and body type.
FIG. 1

FIG. 2
ERGONOMIC STRAPS FOR BODY ARMOR VESTS

BACKGROUND OF THE INVENTION

This invention relates to body armor vests and more particularly, straps for securing a body armor vest around a torso of a wearer that are breathable and ergonomically shaped to increase the comfort and mobility of a wearer. Body armor, such as concealable bullet proof vests, are used by police, security workers, and military personnel for personal protection from gun shots, stabbing, and so forth. It is important that body armor provide the maximum amount of coverage possible on a wearer's body while not inhibiting the movement of the wearer. It is also important that body armor be comfortable as possible to wear. Currently, bullet proof vests have a front section and a back section secured to a wearer's torso with strait nylon straps attached to the vest with clips and/or hook and loop fasteners. These straps are not stretchable and do not provide any give in the vest and thus, can limit the mobility of a wearer. Although there are currently straps constructed out of material having elastomeric qualities, such straps are not breathable and the shapes of the straps do not ergonomically conform to the shape of a human body. Further, these straps have only one fastening piece on each end that sometimes requires the user to over-tighten the straps to ensure the vest is secure.

Therefore, a need exists for ergonomic straps for body armor vests that have elastomeric qualities, are breathable and ergonomically shaped to increase the comfort and mobility of a wearer.

The relevant prior art includes the following references:

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SUMMARY OF THE INVENTION

The primary object of the present invention is to provide straps for body armor vests that are ergonomically shaped. Another object of the present invention is to provide straps for body armor vests that are breathable. A further object of the present invention is to provide straps for body armor vests that increase the mobility of a wearer. Another object of the present invention is to provide straps for body armor vests that allow for the quick release of a body armor vest. A further object of the present invention is to provide straps for body armor vests that increase the comfort of a wearer. Another object of the present invention is to provide straps for body armor vests that allow for a greater range of motion for a wearer. The present invention fulfills the above and other objects by providing a set of four straps used for securing a body armor vest to the torso of a wearer. The straps are constructed out of a breathable pliable material having elastomeric qualities, such as neoprene, and shaped to ergonomically conform to the shape of a human body and provide a greater range of motion. Two of the straps are shoulder straps that go over a wearer's shoulders and are curved to conform around a wearer's neck and provide a greater range of motion. The other two straps are side straps that go around the sides of a wearer's torso. The side straps are substantially Y-shaped having three attachment points and are curved to provide additional comfort and a greater range of motion to a wearer. The side straps are also reversible so that a wearer may have the single end attached to the front of the vest and the double end attached to the back of the vest or vice-versa depending on the wearer's preference. The Y-shape and multiple attachment points allow the straps to be attached to concealable body armor vests in a variety of different manners, thereby allowing the side straps to be adapted to different body types.

The above and other objects, features and advantages of the present invention should become even more readily apparent to those skilled in the art upon a reading of the following detailed description in conjunction with the drawings wherein there is shown and described illustrative embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the following detailed description, reference will be made to the attached drawings in which:

FIG. 1 is a planar view of an inner surface of a shoulder strap of the present invention;
FIG. 2 is a planar view of an inner surface of a side strap of the present invention;
FIG. 3 is a front view of a body armor vest having shoulder straps and side straps of the present invention attached thereto;
FIG. 4 is a side view of a body armor vest having shoulder straps and side straps of the present invention attached thereto; and
FIG. 5 is a top view of a body armor vest having shoulder straps and side straps attached thereto.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

For purposes of describing the preferred embodiment, the terminology used in reference to the numbered accessories in the drawings is as follows:

1. shoulder strap
2. shoulder strap end
3. inner surface
4. outer surface
5. attachment points
6. fastening means
7. curved middle portion
With reference to FIG. 1, a planar view of an inner surface 3 of a shoulder strap 1 of the present invention is shown. The shoulder strap 1 is preferably made out of a breathable pliable material having elastomeric qualities, such as neoprene. The shoulder strap 1 has two ends 2, an inner surface 3 and an outer surface 4. Attachment points 5 are located on the ends 2 of the shoulder strap 1. A fastening means 6, such as a hook and loop fastener, is located on an inner surface 3 of the shoulder strap 1 at the attachment points 5. A pair of shoulder straps 1 are worn over a wearer’s shoulders and attach to a front panel 12 and a rear panel 13 of a body armor vest via the fastening means 6, as further illustrated in FIGS. 3 and 4. A curved middle portion 7 of the shoulder strap 1 is shaped to conform around a wearer’s neck while being worn.

Referring to FIG. 2, a planar view of an inner surface 3 of a side strap 8 of the present invention is shown. The side strap 8 is preferably made out of a pliable material, such as neoprene, and has an inner surface 3 and an outer surface 4. Although the side strap 8 of the present invention includes a strap having single ends 9 like the shoulder strap 1 illustrated and described above in FIG. 1, the preferred side strap 8 of the present invention is substantially Y-shaped having a single end 9 with an attachment point 5 and a double end 10 with two attachment points 5. Fastening means 6, such as hook and loop fasteners, are located on an inner surface of the side strap 8 at the attachment points 5. A pair of side straps 8 are worn around the sides of a wearer’s torso and attach to a front panel and a rear panel of a body armor vest via the fastening means 6, as further illustrated in FIGS. 3 and 4. Curved middle portions 7 of the side strap 8 are shaped to conform around a wearer’s torso while being worn.

Referring to FIG. 3, a front view of a body armor vest 11 having shoulder straps 1 and side straps 8 attached thereto is shown. The shoulder straps 1 are worn over a wearer’s shoulders and attach to a front panel 12 and a rear panel 13 at attachment points 5 located on the body armor vest 11. The shoulder straps 1 are attached to the body armor vest 11 via a fastening means 6, such as a hook and loop fastener. The side straps 8 are Y-shaped having a single end 9 with an attachment point 5 and a double end 10 with two attachment points 5. The side straps 8 are also reversible so that a wearer may have the double end 10 attached to the front panel 12 and the single end 9 attached to the rear panel 13, as shown here, or the double end 10 attached to the rear panel 13 of the vest and the single end 9 attached to the front panel 12, as shown in FIG. 4, depending on the wearer’s preference and body type.

Referring to FIG. 4, a side view of a body armor vest 1 having shoulder straps 1 and side straps 8 attached thereto is shown. The shoulder straps 1 are worn over a wearer’s shoulders and attach to a front panel 12 and a rear panel 13 of the body armor vest 11 at attachment points 5 located on the body armor vest 11 and the shoulder straps 1. The shoulder straps 1 are attached to the body armor vest 11 via a fastening means 6, such as a hook and loop fastener. The side strap 8 is Y-shaped having a single end 9 with an attachment point 5 and a double end 10 with two attachment points 5. The side straps 8 are worn around the sides of a wearer’s torso and attach to the front panel 12 and a rear panel 13 at attachment points 5 via the fastening means 6. The side straps 8 are also reversible so that a wearer may have the double end 10 attached to the front panel 12 and the single end 9 attached to the rear panel 13, as shown here, or the double end 10 attached to the rear panel 13 of the vest and the single end 9 attached to the front panel 12, as shown in FIG. 4, depending on the wearer’s preference and body type.

Finally referring to FIG. 5, a top view of a body armor vest 1 having shoulder straps 1 and side straps 8 attached thereto is shown. The shoulder straps 1 are worn over a wearer’s shoulders and attach to a front panel 12 and a rear panel 13 of a body armor vest 11 at attachment points 5 located on the body armor vest 11 and the shoulder straps 1. The shoulder straps 1 are attached to the body armor vest 11 via a fastening means 6, such as a hook and loop fastener. A curved middle portion 7 of the shoulder straps 1 is shaped to conform around a wearer’s neck while being worn. The side straps 8 are worn around the sides of a wearer’s torso and attach to the front panel 12 and a rear panel 13 at attachment points 5 via the fastening means 6.

It is to be understood that while a preferred embodiment of the invention is illustrated, it is not to be limited to the specific form or arrangement of parts herein described and shown. It will be apparent to those skilled in the art that various changes may be made without departing from the scope of the invention and the invention is not be considered limited to what is shown and described in the specification and drawings.

Having thus described my invention, I claim:

1. A strap for a body armor vest having a front panel, a rear panel and fastening means for the strap to connect said front and rear panel, said strap comprising:
   an inner surface;
   an outer surface;
   at least two ends;
   at least one attachment point on each of the at least two ends located on the inner surface;
   at least one curved middle portion located between the at least two ends; and
   at least one fastening means located on the at least one attachment point for attaching the strap to a body armor vest.

2. The strap for a body armor vest of claim 1 wherein:
   the at least two ends comprise a single end and a double end.

3. The strap for a body armor vest of claim 1 wherein:
   said fastening means is a hook and loop fastener.

4. The strap for a body armor vest of claim 2 wherein:
   said fastening means is a hook and loop fastener.

5. The strap for a body armor vest of claim 1 wherein:
   said strap is made of a pliable elastomeric material.

6. The strap for a body armor vest of claim 2 wherein:
   said strap is made of a breathable material.
8. The strap for a body armor vest of claim 2 wherein: said strap is made of a breathable material.
9. The strap for a body armor vest of claim 1 wherein: said strap is made of neoprene.
10. The strap for a body armor vest of claim 2 wherein: said strap is made of neoprene.
11. The strap for a body armor vest of claim 1 wherein: said strap is substantially Y-shaped.
12. The strap for a body armor vest of claim 2 wherein: said strap is substantially Y-shaped.
13. A strap for a body armor vest having a front panel, a rear panel and fastening means for the strap to connect said front and rear panel, said strap comprising:
   an inner surface;
   an outer surface;
   single end and a double end;
   at least one attachment point on each of the at least two ends located on the inner surface;
   at least one curved middle portion located between the single end and a double end; and
   at least one fastening means located on the at least one attachment point for attaching the strap to a body armor vest.
14. The strap for a body armor vest of claim 13 wherein: said fastening means is a hook and loop fastener.
15. The strap for a body armor vest of claim 13 wherein: said strap is made of a pliable elastomeric material.
16. The strap for a body armor vest of claim 13 wherein: said strap is made of a breathable material.
17. The strap for a body armor vest of claim 13 wherein: said strap is made of neoprene.
18. The strap for a body armor vest of claim 13 wherein: said strap is substantially Y-shaped.

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