



US 20140201879A1

(19) **United States**

(12) **Patent Application Publication**
Seuk et al.

(10) **Pub. No.: US 2014/0201879 A1**

(43) **Pub. Date: Jul. 24, 2014**

(54) **BALLISTIC SIDE PLATE CARRIER FOR BODY ARMOR**

Publication Classification

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(51) **Int. Cl.**
F41H 1/02 (2006.01)

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(52) **U.S. Cl.**
CPC *F41H 1/02* (2013.01)
USPC *2/2.5*

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(57) **ABSTRACT**

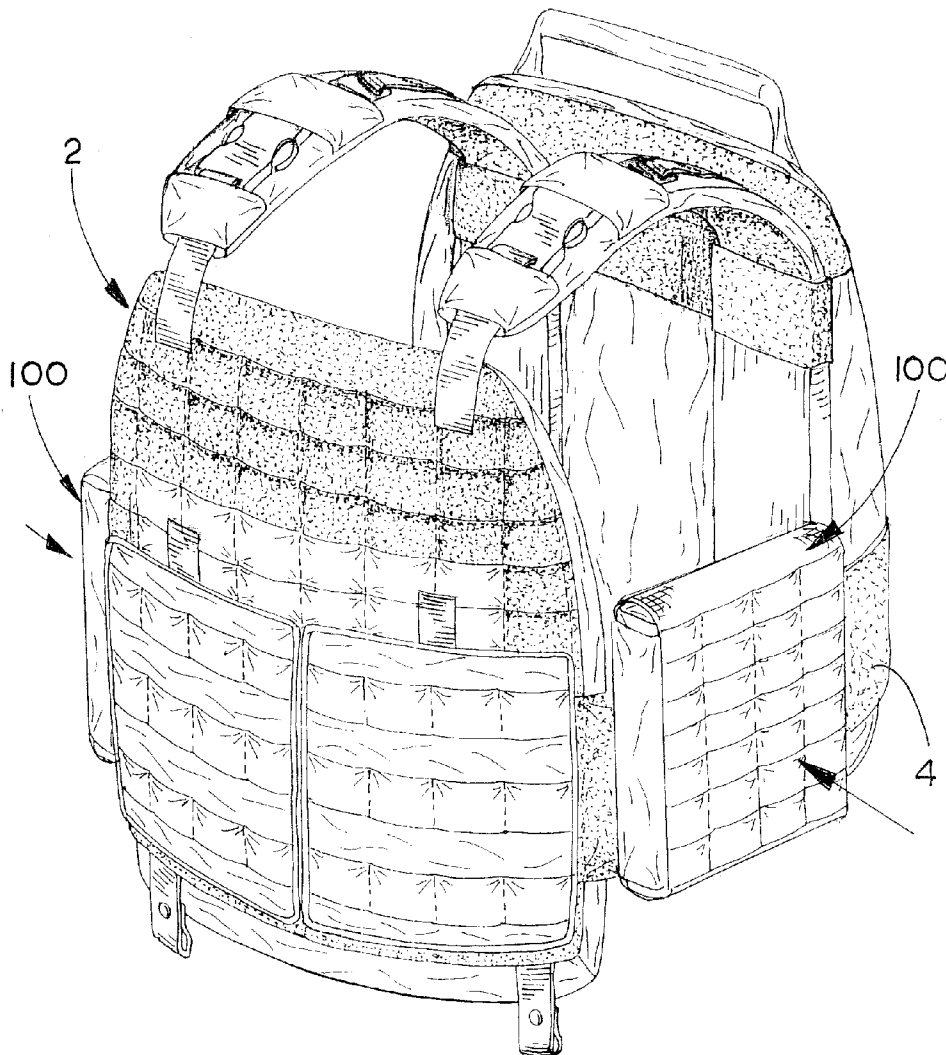
(21) Appl. No.: **13/968,343**

A detachable side plate carrier for use with articles that support ballistic body armor plates. The side plate carrier uses a fold-over/wrap-around” design to accommodate ballistic side plates of various sizes and dimensions and can support those side plates in either a vertical or horizontal orientation. The side plate carrier is constructed for durable fabrics sewn in a cruciform shape forming side, top and bottom flaps that can be folded and wrapped around a ballistic side plate. The flaps are held together using hook and loop fasteners on opposite sides of each flap.

(22) Filed: **Aug. 15, 2013**

Related U.S. Application Data

(60) Provisional application No. 61/684,449, filed on Aug. 17, 2012.



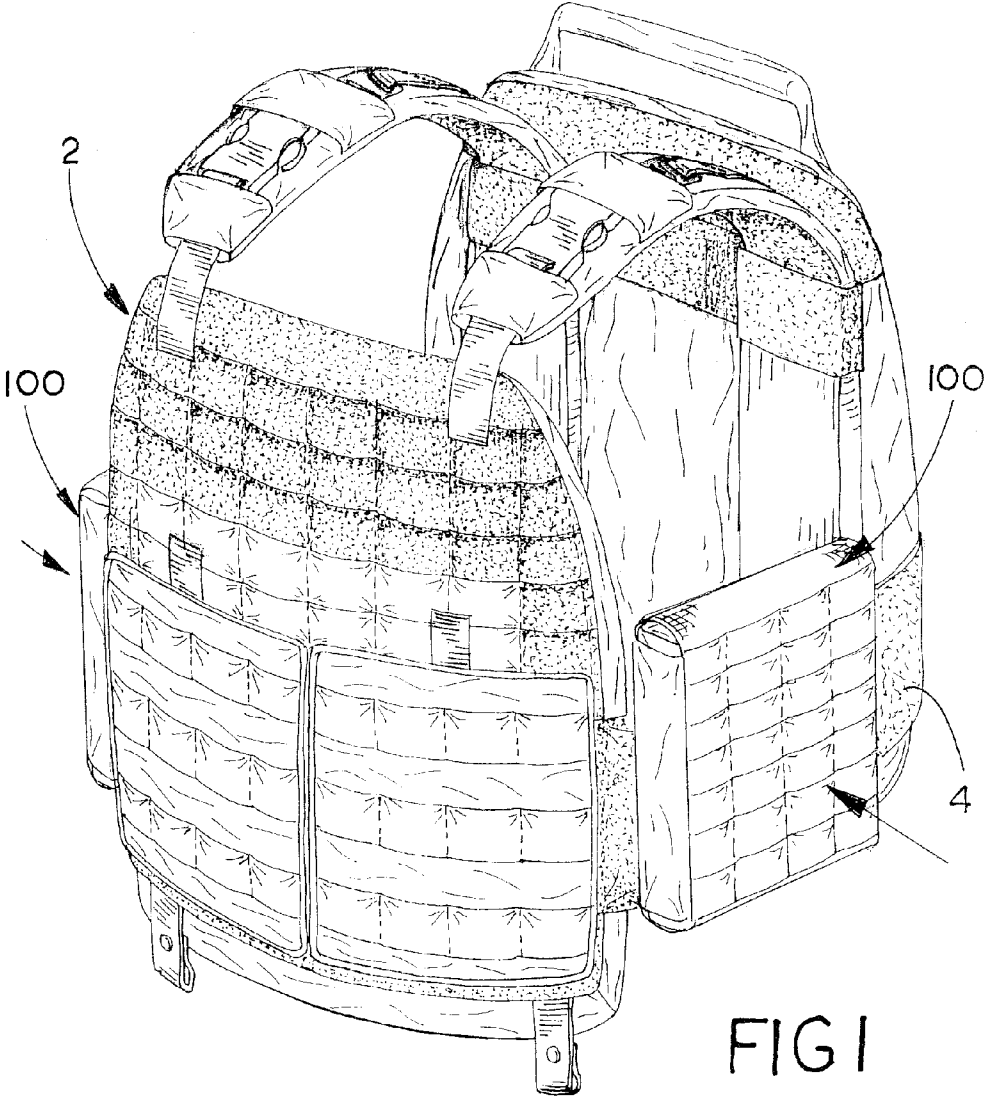


FIG 1

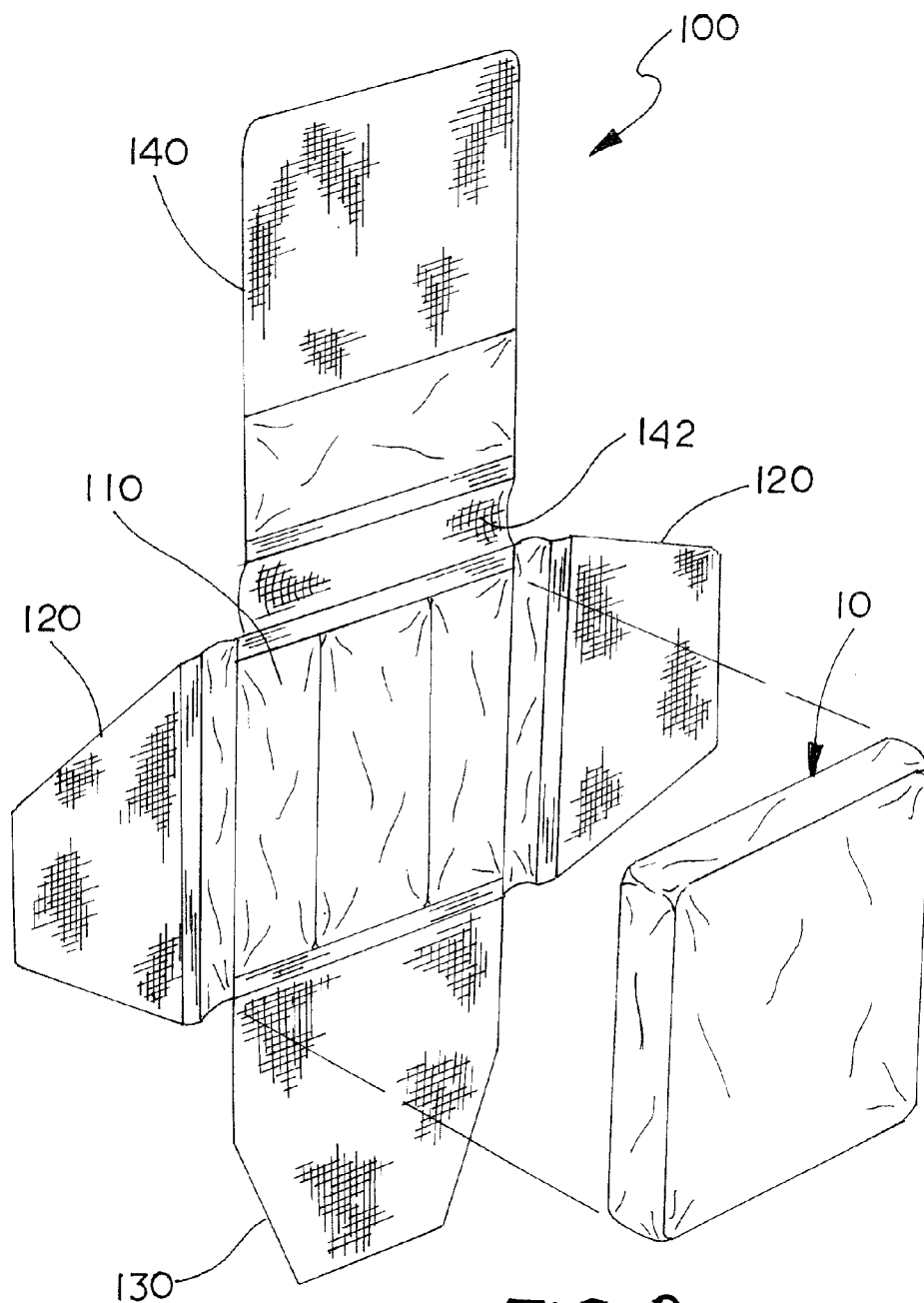


FIG. 2

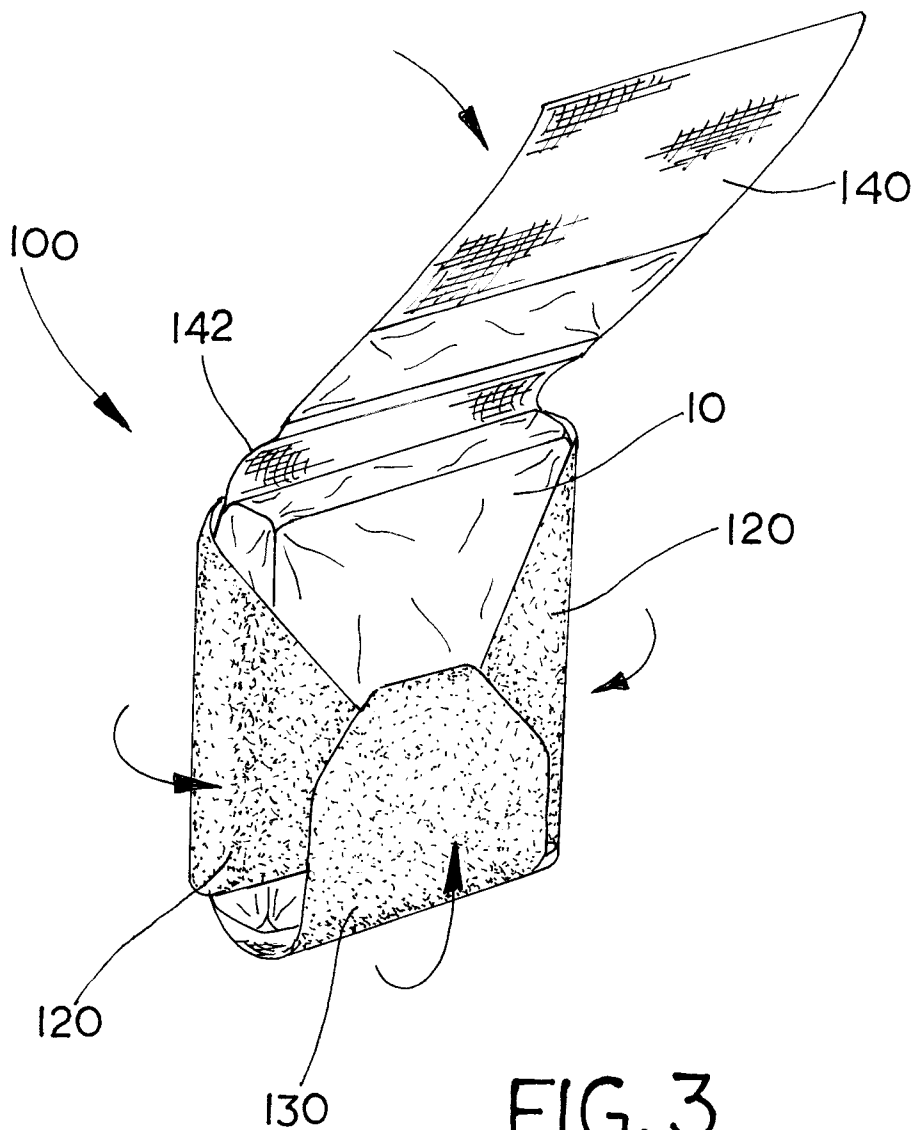


FIG. 3

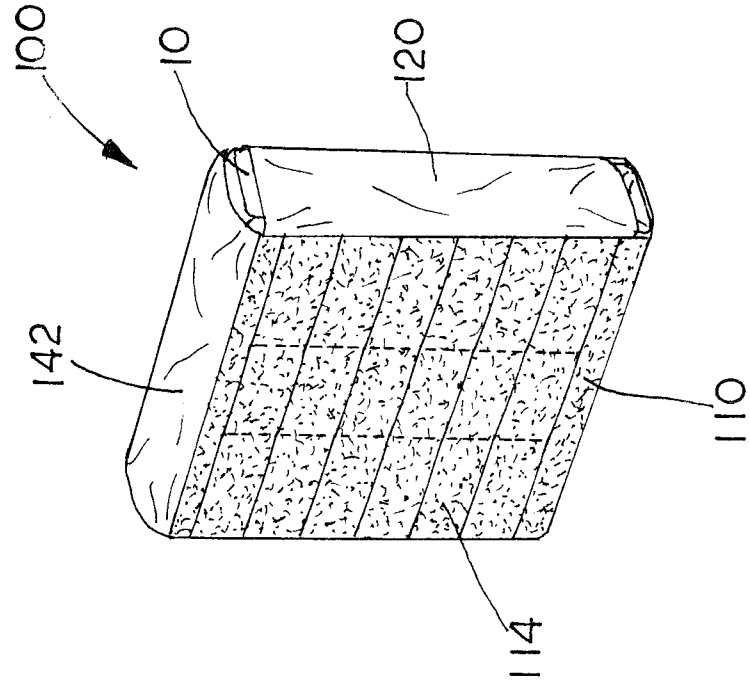


FIG. 5

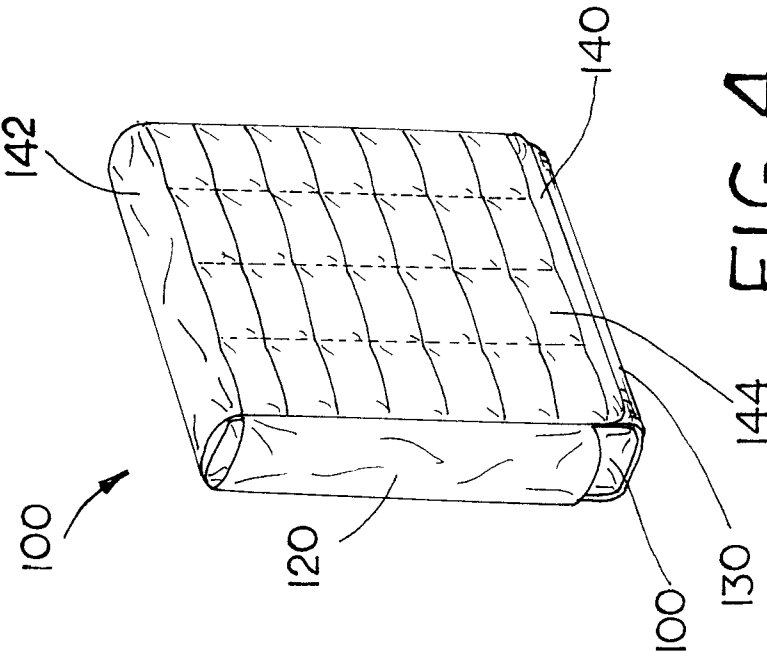


FIG. 4

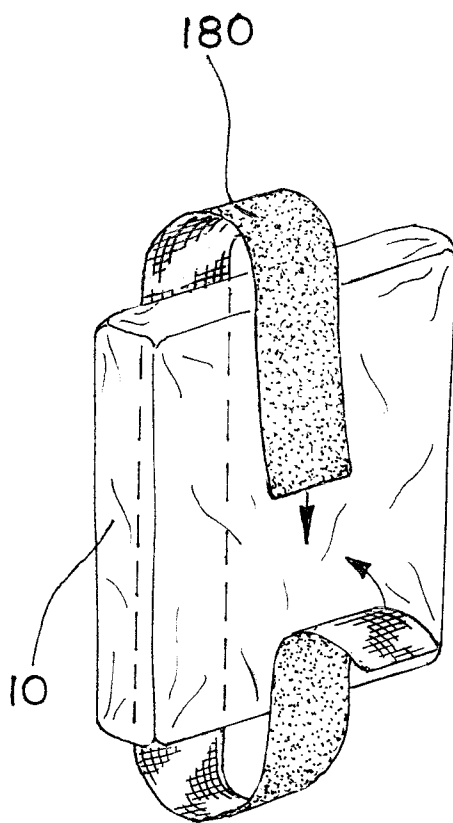


FIG. 6

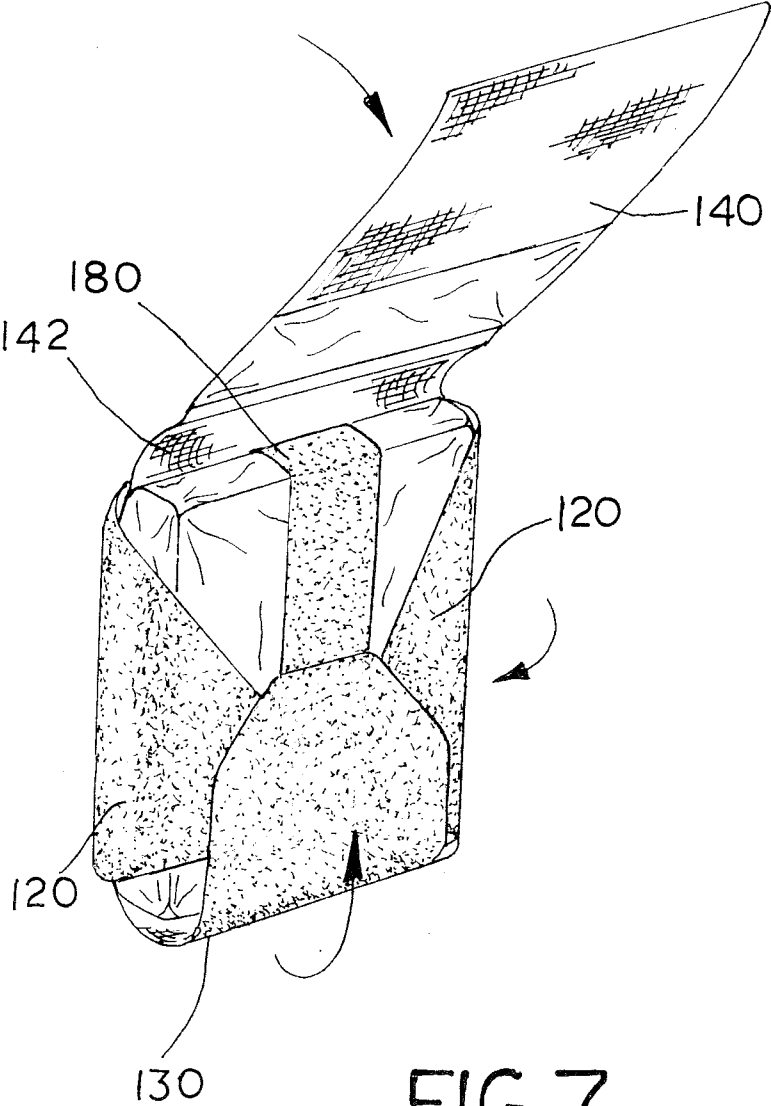


FIG.7

BALLISTIC SIDE PLATE CARRIER FOR BODY ARMOR

[0001] This application claims priority from co-pending U.S. Provisional Patent Application Ser. No. 61/648,449 filed on Aug. 17, 2012.

[0002] This invention relates to body armor and in particular, a ballistic side plate carrier for body armor, chest rigs, packs and similar articles.

BACKGROUND AND SUMMARY OF THE INVENTION

[0003] Body armor and particularly “plate carriers” are well known in the military and law enforcement communities. Plate carriers are garments that support rigid ballistic armor plates and/or flexible ballistic armor inserts within internal pockets or pouches of the carrier. The plate carrier is generally comprised of front and back panel sections connected by shoulder straps and a waist strap or cummerbund.

[0004] Body armor and plate carriers can also be fitted with smaller ballistic side plates and inserts. Ballistic side plates and inserts are often carried in internal pockets or detachable carrier pouches affixed to the sides of body armor or the cummerbunds of plate carriers. Ballistic side plates are typically manufactured in three common sizes, namely 6"×6", 6"×8", 7"×8". Heretofore, no conventional side plate carriers, whether internal pockets and detachable carriers, have been able to securely support ballistic side plates of different sizes and in different orientations. Some side plate carriers are designed and dimensioned to accommodate a particular size of ballistic plate. Other side plate carriers are dimensioned to accommodate the largest ballistic plate, thereby allowing small plates to be carried, but freely shift about within the carrier. In addition, these side plate carriers only allow the plates to be supported in one orientation, either vertically or horizontally, thereby limiting the ballistic coverage of the plates with respect to the wearer.

[0005] The present invention provides a detachable side plate carrier for use with any article that supports ballistic body armor. The side plate carrier of this invention uses a “fold-over/wrap-around” design to accommodate ballistic side plates of various sizes and dimensions and can support those side plates in either a vertical or horizontal orientation. The side plate carrier of this invention is constructed of durable fabrics sewn in a cruciform shape forming side, top and bottom flaps that can be folded and wrapped around a ballistic side plate. The flaps are held together using hook and loop fasteners on opposite sides of each flap.

[0006] Various advantages of the present invention will become apparent from the following description of an embodiment of the invention with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The drawings illustrate an embodiment of the present invention, in which:

[0008] FIG. 1 is a perspective view of an embodiment of the side plate carrier of this invention mounted to a conventional body armor plate carrier;

[0009] FIG. 2 is a perspective view of the side plate carrier of FIG. 1, which is shown unfolded adjacent a conventional ballistic side plate;

[0010] FIG. 3 is a perspective view of the side plate carrier of FIG. 1 partially wrapped around the ballistic side plate;

[0011] FIG. 4 is a front perspective view of the side plate carrier of FIG. 1 enclosing the ballistic side plate;

[0012] FIG. 5 is a rear perspective view of the side plate carrier of FIG. 1 enclosing the ballistic side plate;

[0013] FIG. 6 is a perspective view of the adjustment strap partially wrapped around the ballistic side plate; and

[0014] FIG. 7 is a front perspective view of the side plate carrier of FIG. 1 enclosing the ballistic side plate over the adjustment strap.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Referring now to the drawings, FIGS. 1-7 illustrate an embodiment of the ballistic side plate carrier of the present invention, which is designated generally as reference numeral 100. Side plate carrier 100 is intended to support a ballistic side plate 10 on the cummerbund 4 of a conventional ballistic plate carrier 2 or on any other type of article which may incorporate ballistic body armor, such as on chest rigs, plate carriers, back packs and the like. Side plate carrier 100 uses a “fold-over/wrap-around” configuration that allows it to support ballistic side plates of varying dimensions and in various orientations.

[0016] Generally, the body of side ballistic plate carrier 100 is constructed of various durable and light weight fabrics, materials and fasteners, which resist tears, abrasions and scuffs, and using conventional garment construction methods, which are readily known in the art and will not be described in detail herein. Typically, the body of the side plate carrier 100 is sewn from nylon fabrics using hook and loop fasteners to detachably hold the carrier body around ballistic plate 10. Other suitable natural or synthetic clothes or fabrics and fasteners and closures may be employed as desired within the teachings of this invention.

[0017] As shown, the body of side plate carrier 100 has a cruciform shape formed by a rectangular back section 110, a pair of opposed trapezoidal side flaps 120, a trapezoidal bottom flap 130 and a rectangular top flap 140. Side flaps 120, bottom flap 130 and top flap 140 fold and wrap around ballistic plate 10 to secure it in place. Back section 110 is constructed of a thin nylon fabric, such as Cordura® from INVISTA. The dimensions of back section 110 are selected to accommodate the various sizes of ballistic plates 10 (approximately 9"×7.5" in width and height).

[0018] As shown, side flaps 120 and bottom flap 130 are trapezoidal in shape to minimize weight and bulk. Side flaps 120 and bottom flap 130 are generally constructed of Velcro® One-Wrap® fabric, which integrates the hook feature on one side and the loop feature on the other side of a single sheet of fabric. This particular fabric material is used to minimize the weight and bulk of carrier 100; however, conventional two piece fabric hook-and-loop fasteners, or other fastening mechanisms may be employed in alternative embodiments as desired. The inside surface of each flap has the hook feature while the outside surface of each flap has the looped feature. Side flaps 120 and bottom flap 130 fold and wrap around the ballistic plate 10 and join together by hook and loop features of the opposed overlying surfaces.

[0019] Similar to back section 110, top flap 140 is constructed of a rectangular section of a thin nylon fabric, such as Cordura® from INVISTA. Top flap 140 also includes a section of elastic material 142 that extends the width of the top flap, which connects the top flap to back section 110. The

inside of top flap 140 is covered with hook material, which engages with the loop material of flaps 120 and 130.

[0020] The outside of back section 110 and top flap 140 are covered in PALS (Pouch Attachment Ladder System) webbing 114, 144 to be MOLLE (MODular Lightweight Load-carrying Equipment) compatible. PALS webbing consists of horizontal rows of heavy-duty 1" nylon webbing. The type, placement and arrangement of the PALS webbing may vary. In addition, some of the PALS webbing may be formed from hook and loop webbing so that hook and loop attachments may be directly mounted to the surface of the carrier sections. PALS webbing 114 on back section 110 allows carrier 100 to be mounted to a MOLLE compatible ballistic vest, plate carrier or cummerbund thereof, using polymer MALICE Clips® from Tactical Tailor (not shown) or similar MOLLE fasteners. Similarly, PALS webbing 144 on front flap 140 allows other MOLLE compatible pouches and accessories to be attached directly to carrier 100. Alternatively, the outside of back section 110 and top flap 140 may be covered in hook and loop material, snaps or any other suitable attachment means for affixing the desired support article.

[0021] As shown in FIGS. 1-3, side plate carrier 100 securely supports a single ballistic plate 10. Flaps 120, 130 and 140 fold over and wrap around ballistic side plate 10 to securely hold the plate within carrier 100. Typically to properly enclose the plate within the carrier 100, side flaps 120 are first folded over one another, followed by folding bottom flap 130 up over side flaps 120 and then by pulling top flap 140 tightly down and over the bottom flap and side flaps. The flaps are held together by the engagement of their overlapping hook and loop fasteners. Pressing top flap 140 against bottom flap 130 and side flaps 120 ensures a secure engagement of the overlapping flaps' hook and loop material. It should be noted that when top flap 140 is pulled tightly over and pressed securely against flaps 120 and 130, elastic section 142 in top flap 140 is stretched to provide a tension force that tightly secures the plate within the carrier body preventing any shift of the plate within the carrier. Once the ballistic plate is secured within carrier 100, the carrier can be mounted to cummerbund 4 (FIG. 1) or to the side of a conventional ballistic armor vest or plate carrier (not shown) using Malice clips or other MOLLE compatible fasteners.

[0022] FIGS. 6 and 7 illustrate side plate carrier 100 used with an internal adjustment strap 180 for supporting smaller ballistic plates, such as 6"x6" plates. Strap 180 prevents ballistic plates that are smaller in any dimension than back section 110 from shifting about within the carrier. Strap 180 consists of a thin strip of of Velcro® One-Wrap® fabric, which is wrapped vertically around ballistic plate 10. As shown, the ends of strap 180 overlap and secure together around plate 10. When side plate carrier 100 is folded over and wrapped around ballistic plate 10, side flaps 120, bottom flap 130 and top flap 140 fold over and securely engage lap strap 180, which prevents any movement of the smaller ballistic plate.

[0023] The fold-over flaps 120, 130 and 140 fold over and wrap around a single ballistic side plate for a secure custom fit within the carrier. The fold over/wrap around design of the carrier body creates a "one size fits all" side ballistic plate carrier. The fold over/wrap around design allows the side plate carrier to accommodate all sizes of ballistic side plates,

as well as allowing the ballistic side plate to be oriented either vertically or horizontally, as desired. The elastic section incorporated into the top flap provides sufficient tension to securely hold and support the ballistic side plate within the carrier, thereby preventing any plate shift with the carrier. The use of the One-Wrap hook and loop material minimizes the bulk of the carrier. The use of PALS and Malice clip interfaces allows for the widest range of placement options on any article that supports ballistic armor plates.

[0024] The embodiments of the present invention herein described and illustrated are not intended to be exhaustive or to limit the invention to the precise form disclosed. They are presented to explain the invention so that others skilled in the art might utilize its teachings. The embodiment of the present invention may be modified within the scope of the following claims.

I claim:

- 1. A ballistic plate carrier comprising:
 - a flat fabric body adapted to fold over and wrap around a ballistic side plate,
 - the body having a back section, a pair of opposite side flaps affixed to opposed side edges of the rear section, a bottom flap affixed to the bottom edge of the rear section and a top flap affixed to a top edge of the rear section,
 - each of the bottom flap, the top flap and the pair of side flaps having means for securely detachably connecting together the bottom flap, the top flap and the pair of side flaps when overlying each other to securely hold the ballistic side plate within the carrier body.
- 2. The carrier of claim 1 wherein the rear section is rectangular.
- 3. The Carrier of claim 1 wherein the top flap includes an elastic section for allowing the top flap to be restrictively drawn around and over the ballistic plate when the top flap is secured to the bottom flap and the pair of side flaps.
- 4. The Carrier of claim 1 wherein the pair of side flaps is trapezoidal.
- 5. The carrier of claim 1 wherein the bottom flap is trapezoidal.
- 6. The carrier of claim 1 wherein the pair of side flaps have hook and loop material on opposed sides thereof, the hook and loop material constitutes a part of the means for detachably connecting together the bottom flap, top flap and the pair of side flaps.
- 7. A ballistic plate carrier comprising:
 - an elongated strap adapted to fold around a ballistic side plate, the strap having opposed ends connectable to one another; and
 - a flat fabric body adapted to fold over and wrap around a ballistic side plate over the strap, the body having a back section, a pair of opposite side flaps affixed to opposed side edges of the rear section, a bottom flap affixed to the bottom edge of the rear section and a top flap affixed to a top edge of the rear section,
 - each of the strap, the bottom flap, the top flap and the pair of side flaps having means for detachably connecting together the strap, the bottom flap, the top flap and the pair of side flaps when overlying each other to securely hold the ballistic side plate within the carrier body.

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