

Description

[0001] This invention relates to a cover for a body armour plate.

[0002] It is known to form a breastplate resistant to ballistic impacts from ceramic material. One particular known ballistic protective plate comprises a layer of sintered silicon carbide edged with a urethane trim, and a layer of polyethylene having an ultra-high modulus of elasticity.

[0003] A significant disadvantage of such a ceramic plate is that if the plate is dropped such that its ceramic layer contacts a hard surface such as concrete, the plate cracks and cannot then be reissued.

[0004] Accordingly, it is known to provide a fabric pocket into which the plate can be placed, the pocket having a foam-faced insert for protecting the plate.

[0005] It is an aim of the invention to provide a protective cover which is more robust and/ or more convenient than the known fabric pocket.

[0006] Accordingly, the invention provides a removable cover for a body armour plate, the cover including a sheet of strong fabric intended to face away from the plate, and an inner, foamed layer intended to face the plate, the cover being surrounded by an endless resilient edging for surrounding a periphery of the plate so as to retain the cover in place on the plate.

[0007] The plate can easily be removed from the cover of the invention and inspected for damage.

[0008] The strong fabric layer may form a spall shield. In one embodiment, the strong fabric is nylon, such as "ballistic" nylon.

[0009] The foamed layer may for example be of high-density, closed cell polyethylene foam.

[0010] The edging may comprise an elastomeric moulding and may include a part arranged substantially perpendicular to the fabric and foamed layers so as to extend transverse to the plate and a further part connected to the substantially-perpendicularly-arranged part and arranged to face a side of the plate opposite a side faced by the foamed layer. The edging may be of a synthetic thermoplastic elastomer such as polyurethane.

[0011] A particular embodiment of the invention will now be described, by way of example only and with reference to the accompanying drawings, in which:

[0012] Figure 1 is a sectional view of a cover according to the invention and a body armour plate;

[0013] Figure 2 is a sectional view of the cover of Figure 1 in place on the plate;

[0014] Figure 3 is a rear view of the cover of Figure 1 in place on the plate; and

[0015] Figure 4 is a section taken along the line A-A of Figure 3.

[0016] Figure 1 shows a known ballistic protective plate 1 comprising an outer layer of sintered silicon carbide 2 edged with a urethane trim 3, and an inner layer of ultra-high modulus polyethylene 4. The plate may optionally have a backing layer (not shown) of strong fabric

such as nylon.

[0017] A cover 5 according to the invention comprises a spall cover 6 of ballistic nylon bonded to a foamed layer 7 of high-density, closed cell polyethylene foam such as Plastazote ®. An elastomeric edging 8, moulded from polyurethane, is either stitched or bonded to the spall cover 6. The edging 8 has a part 9 extending transverse to the spall cover 6 and foamed layer 7 and then a further, re-entrant part 10 extending parallel to the spall cover and foamed layer.

[0018] Figures 2, 3 and 4 show the cover 5 in place on the plate 1. The plate 1 is inserted into the cover 5 by pulling the edging 8 around the periphery of the plate 1 and the edging 8 then retains the cover 5 snugly in place.

[0019] The foamed layer 7 of the cover 5 prevents cracking of the plate if the latter is dropped from waist height on to a hard surface such as concrete. The plate can easily be removed from the cover 5 and inspected for damage. An inspection record can be attached, e.g. sewn or glued, to the cover or the plate to record the dates of inspections and the identity of the user.

[0020] The invention provides a protective cover which is more robust than prior art covers and can travel with an armour plate throughout its life.

Claims

1. A removable cover for a body armour plate (1), the cover including a sheet (6) of strong fabric intended to face away from the plate, and an inner, foamed layer (7) intended to face the plate, the cover being surrounded by an endless resilient edging (8) for surrounding a periphery of the plate (1) so as to retain the cover in place on the plate.
2. A cover according to claim 1, wherein the strong fabric layer (6) forms a spall shield.
3. A cover according to claim 2, wherein the strong fabric (6) is nylon.
4. A cover according to claim 1, 2 or 3, wherein the foamed layer (7) is of high-density, closed cell polyethylene foam.
5. A cover according to any preceding claim, wherein the edging (8) comprises an elastomeric moulding.
6. A cover according to claim 5, wherein the edging (8) is of a synthetic thermoplastic elastomer.
7. A cover according to claim 6, wherein the edging (8) is of polyurethane.
8. A cover according to any preceding claim, wherein the edging (8) includes a part (9) arranged substantially perpendicular to the fabric (6) and foamed (7)

layers so as to extend transverse to the plate (1) and a further part (10) connected to the substantially-perpendicularly-arranged part (9) and arranged to face a side of the plate opposite a side faced by the foamed layer (7).

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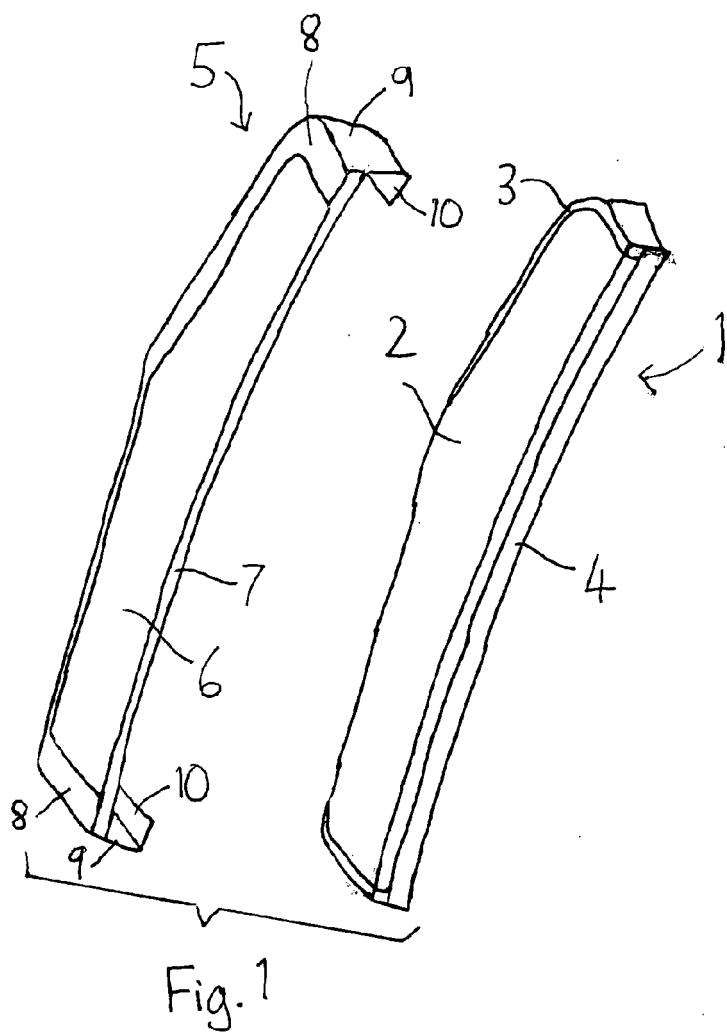
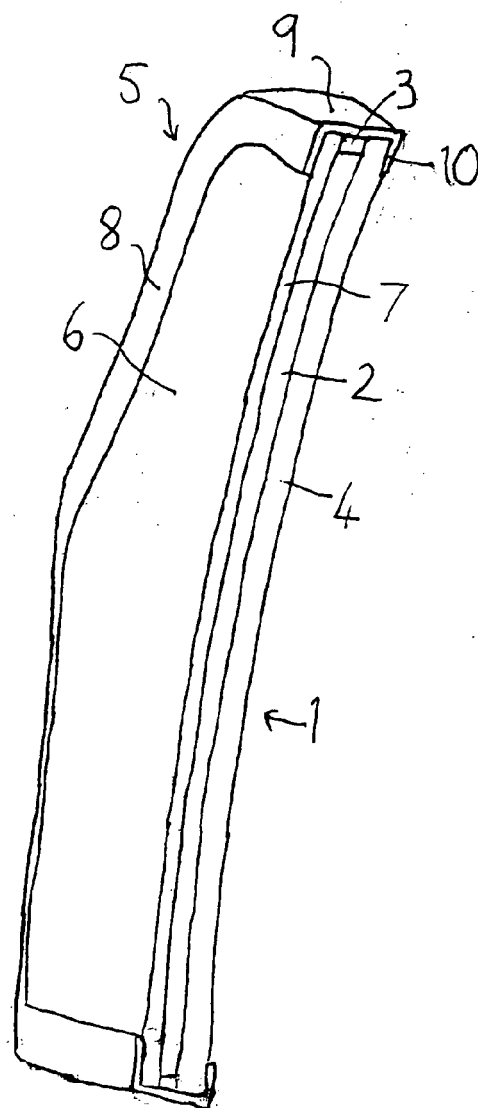
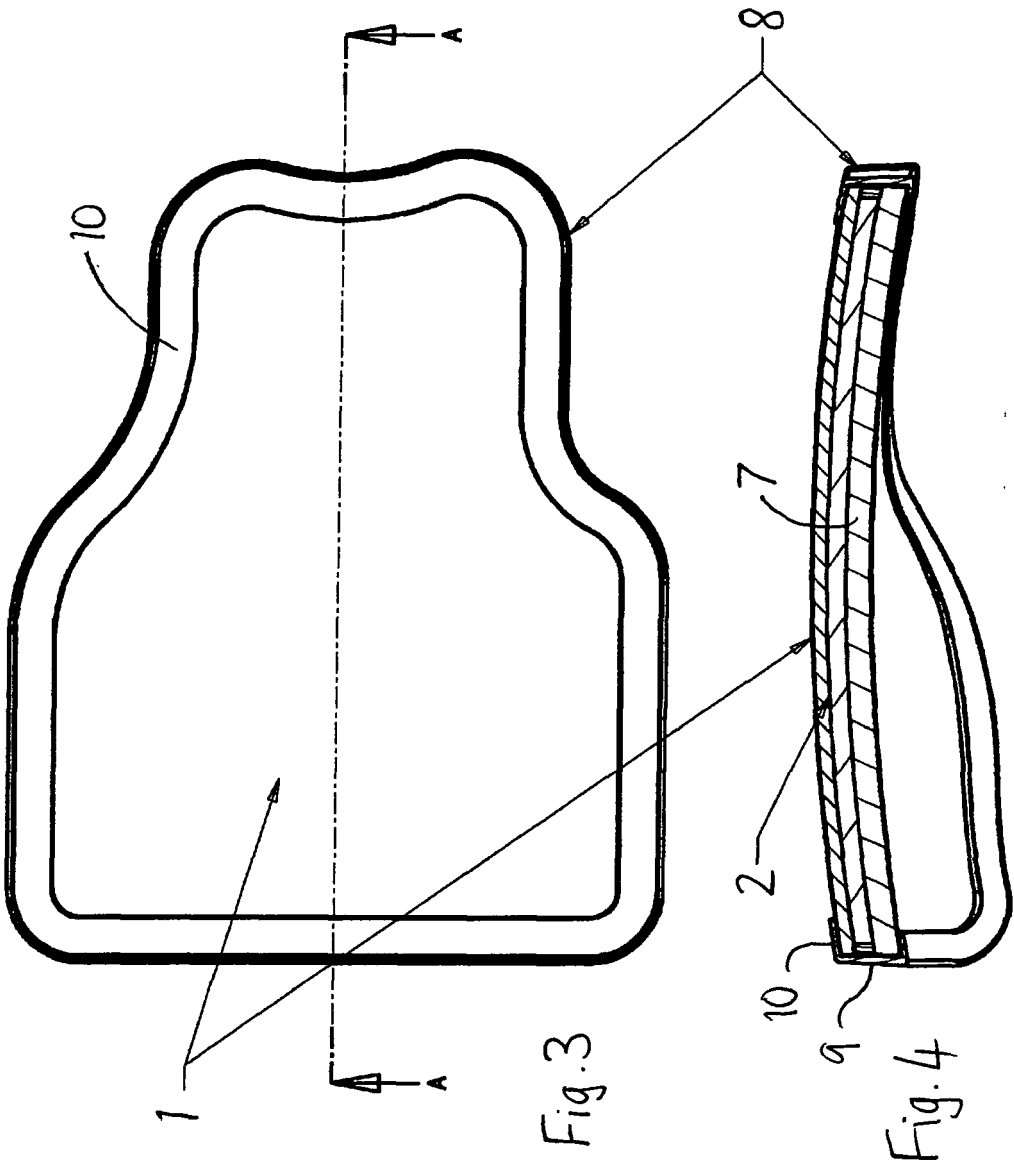


Fig. 2







DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 3 873 998 A (NORRIS LONNIE H ET AL) 1 April 1975 (1975-04-01) * column 1, line 35 - line 57 * * column 2, line 2 - line 23 * * column 3, line 38 - column 4, line 38 * * figures *	1-4	INV. F41H1/02 F41H5/04
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			TECHNICAL FIELDS SEARCHED (IPC)
			F41H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 April 2007	Examiner Vermander, Wim
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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