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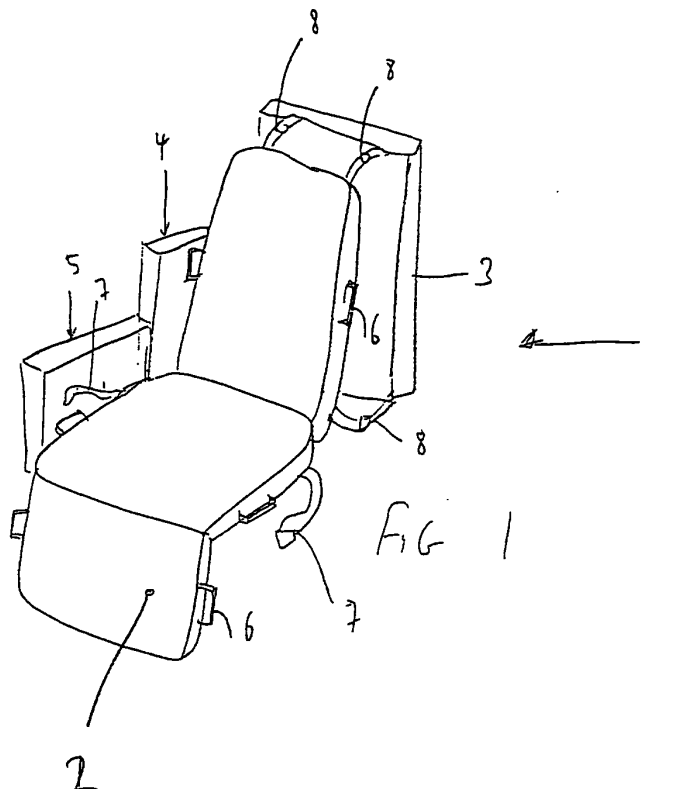
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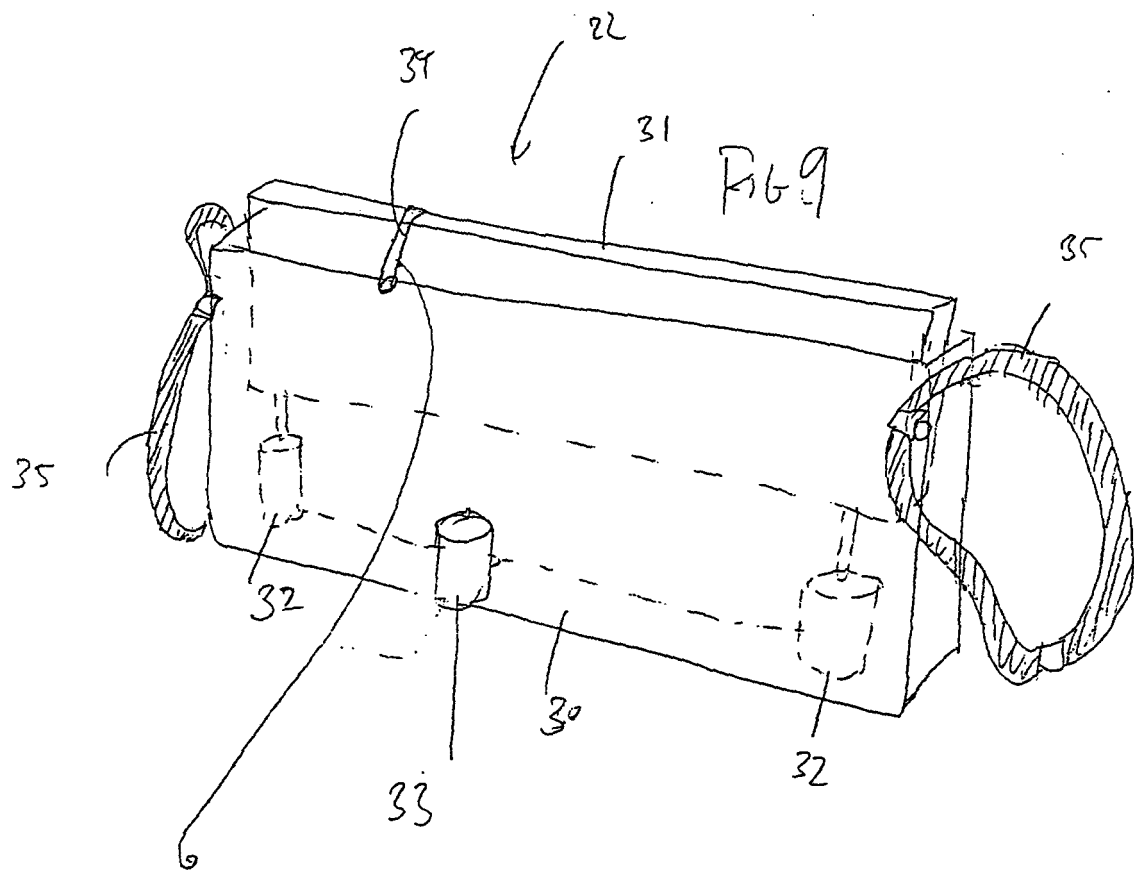
(54) **Personal armour system**

(57) The present invention provides a personal armour system, for example a seat armour kit (1), comprising a plurality of armour components (2,3,4,5). Each component is configured for selective use in a plurality of different roles, for example being for use in different types of vehicle and also in buildings or aircraft.

The body 2 provides a vehicle seat armour component that can also be used as a stretcher.

There is also provided an armour component (31) for use in a vehicle which armour component is movable from a first position in which it does not obscure a part of the view from the vehicle to a second position in which it can protect an occupant.





Description

[0001] The present invention relates to a personal armour system.

[0002] It is well known to provide personal armour in the form of armour components which are specifically designed to be worn about the body to protect against knife, splinter or ballistic attack.

[0003] It is also well known to design vehicles which include armour protection for protecting the vehicle and its occupants against various types of weapon, for example small arms fire and splinters. The armour remains fixed to the vehicle and cannot be used in different roles.

[0004] The present inventor has realised that there is a need for a personal armour system which can be used in a number of different roles, for example for providing protection for occupants of a vehicle and for providing ballistic shields for field positions. Such a multirole personal armour system can be used and reused wherever personnel have a need for ballistic or splinter protection

[0005] Accordingly, in a first aspect, the present invention provides a personal armour system, comprising a plurality of armour components, each being configured for selective use in a plurality of different roles.

[0006] Two of the different roles may comprise the roles of seat armour component and stretcher. The provision of a single armour component which can fulfil both these roles is inventive in its own right and, in a second aspect, there is provided a vehicle seat armour component that can also be used as a stretcher.

[0007] The present inventor has further realised that there is a need for an armour component for a vehicle that can be stored in a position when it is not required so that it does not interfere with vision out of the vehicle.

[0008] Accordingly, in a third aspect, there is provided an armour component for use in a vehicle which armour component is movable from a first position in which it does not obscure a part of the view from the vehicle to a second position in which it can protect an occupant.

[0009] Preferred and/or optional features of the invention will be described further below.

ARMOUR SYSTEM

[0010] The present invention provides an armour system. The system may exist in a number of forms.

[0011] It is particularly preferred that the armour system comprises a kit comprising a plurality of armour components. In this way, the kit can be stored or transported in a simple manner and then deployed in a selected role as required.

[0012] The kit can be a standard issue kit, comprising a predetermined set of armour components. Such a standard issue kit can be issued to personnel, stored by them and used when required.

[0013] There may be different types of kit, for example a basic kit comprising a first set of armour components, as described below, and an additional kit for providing

more armour components.

[0014] The kit may comprise a number of different types of component, as will be described further below. At least some, and preferably all, of the armour components are multirole armour components.

[0015] The user may employ all of the components in a selected role or the user may choose components which are suitable for the selected role or kind of threat to which personnel will be exposed. In this manner, a particularly flexible system can be provided.

[0016] The system of the present invention can be used by a number of different types of personnel including soldiers, special forces, police and security agents and private security personnel.

[0017] The vehicle seat armour component of the second aspect of the invention and the extendable armour component of the third aspect of the invention may each form a component of the system of the first aspect of the invention.

ARMOUR MATERIAL

[0018] The present invention may employ any suitable type of armour material. The armour material may be selected from armoured metal, for example armoured steel, or synthetic polymeric armour, for example a polymer composite. The synthetic polymeric armour may comprise components selected from KEVLAR (RTM) fibres, aramid fibres, nylon fibres, glass fibre etc. The armour material may comprise Dyneema (RTM).

[0019] The armour components may be designed so that they can provide armour protection against specified forms of attack. For example, the armour components may provide protection from splinters, for example due to grenades, artillery fire, mines or other explosive devices. The armour components may provide protection against a specified calibre of small arms fire, for example NATO standard 7.62mm x 51mm, 7.62 x 39mm AK47, 9mm parabellum, 5.56mm sS109 or any other selected small arms ammunition. The armour may provide protection against blast and fragmentation, for example at a level of V50>500m/s for 1.1g FSP, according to STAN-AG 2920. It may comprise for example a blanket material. The skilled person will be able to select designs of material for providing protection required.

ROLES OF ARMOUR COMPONENTS

[0020] At least some armour components of the system of the present invention are configured so that they can be used in a plurality of different roles. Preferably, they can be used in at least two different roles and preferably more.

[0021] The different roles may be selected from:

Personal body armour

Armour for a vehicle, such as a road vehicle, water

vehicle or aircraft such as a helicopter. For example, the armour component may be deployed as armour for a seat of a vehicle or aircraft to protect an occupant of the seat.

Armour for a part of a building where personnel rest or operate, such as armour for a bed, bunk or seat.

Field protection.

Protected sleeping space.

Portable shield

Carrying device, for example a stretcher

[0022] An armour component for use in the system of the invention may be able to fulfil at least two and preferably more of these roles.

CONFIGURING ARMOUR COMPONENTS FOR DIFFERENT ROLES

[0023] In order to allow armour components to be used in different roles, they may be provided with features selected from the following;

[0024] Fixings — the armour components may comprise fixings for engaging other structures. For example, they may be configured to engage other armour components. They may be configured to engage a framework. The framework may be provided as a component of the armour system. The framework may comprise a pre-existing structure, such as a seat (for example vehicle seat) or bed. Such a pre existing framework is particularly useful, as it can provide a rigid framework, onto which armour components may be fitted and which allows the armour components themselves to be simple in design. Fixings which have a variable component allow armour components to be fixed to different types of structure, for example seats of different types of vehicle. Armour components are preferably configured so that they can be placed in the passenger or goods carrying space of a vehicle.

[0025] Preferably, a plurality of different types of armour component each have compatible fixings, for example, clips. Preferably, a plurality of different armour components (or components of the same type) may be interchangeably connected in different configurations. Preferably, two or more may be connected together.

[0026] Carrying devices, such as handles, straps (for example back pack straps or shoulder straps) or slings, for example stretcher handles or shield handles.

[0027] The armour system of the present invention preferably includes at least one strap kit. Preferably, the strap kit is engageable with a plurality of different types of armour component. The strap kit may be adjustable in size and/or configuration. The strap may have one, two or more fixings for engaging armour components.

[0028] Shape, weight and size — armour components which have a size and weight which allow them to be man portable can be easily applied in a variety of roles. The weight may be in the range 3kg to 20kg, more preferably 5kg to 15 kg and most preferably 5kg to 12kg.

[0029] An armour component may be of a size so that it can be inserted into a conventional form of portable equipment to provide a shield. For example, an armour component may be installed into a brief case, suit carrier or other component which may be carried around. This is particularly suitable for covert operations.

[0030] Flexibility — some types of armour material have a certain amount of flexibility. This can allow them to be flexed to conform with different shapes of surface, for example seat surface. Flexing lines may be built in to the armour component to make flexing easier.

SEAT ARMOUR KIT

[0031] It is particularly preferred that the armour system comprises components which can be engaged with a seat (for example a seat of a vehicle) to provide protection for the occupant of the seat.

[0032] The armour components preferably comprise at least:

- A seat base armour component,
- A seat back armour component, and
- At least one seat side armour component.

[0033] These armour components can, when fixed to a seat, provide the occupant with protection from behind, from below and from at least one side. For example in a road vehicle seat, the seat side component can be mounted on the side facing a vehicle door.

[0034] An additional seat side armour component may be provided to protect the other side of the seat.

[0035] The seat base armour component may comprise a first part for resting on the sitting part of the seat and a second component for resting in a position to protect the occupant's legs. The first and second parts may be separate, integral or movably connected to one another.

[0036] The seat base and seat back armour components may be integral. They may be connected to one another at a fold line. They may each be formed from a flexible armour material.

[0037] The seat side armour component may comprise a first seat side component for protecting an occupant's thigh and leg side and a second seat side armour component for protecting an occupant's trunk.

[0038] A seat armour kit having these components can be employed for seat protection in many different types of vehicle and aircraft and also, with the components disassembled in many different roles.

VEHICLE ARMOUR KIT

[0039] An armour system which is adapted for providing armour protection for a vehicle may comprise armour components selected from the following:

floor armour component;
 seat base armour component;
 leg armour component;
 seat side armour component;
 seat back armour component;
 head rest armour component;
 window fragmentation protection;
 sun visor armour component;
 window armour component;
 neck rest armour component;
 head protection plate component;
 vehicle side protection armour component; and
 rear seat protection armour component

[0040] The seat base armour component, leg armour component, seat side armour component and seat back armour component may be as described above for the seat armour kit.

[0041] Preferred features of the abovementioned on the components are as follows:

Floor armour component — preferably the floor armour component comprises an armour component for protection against blast and fragmentation, for example from explosive devices. A conventional blast and fragmentation blanket material may be used. The blanket material may be constructed to a suitable size for fitting onto floor sections of vehicles. The floor armour component may be covered in a hard wearing canvas. It may be engageable with at least one seat armour component

Seat or seat back armour component — this may comprise a protected seat cover or a structure for mounting on a seat back, or both. Preferably, it is designed so that it does not interfere with movement of the seat, for example the seat back or position. There may be separate designs of seat armour component for front seats and rear seats. The seat or back armour component may be configured to act selectively as a neck rest protector. A separate neck rest protector may be provided to protect the neck area.

Leg or Body side armour component — preferably, there is an armour component for mounting in the vehicle adjacent a side of an occupant's body, for example adjacent the leg, trunk and/or thigh of an occupant. The body side armour component may comprise a set of armour component parts, which in use are mounted on one another, to the vehicle seat or to the vehicle door.

[0042] Leg side armour components are preferably interchangeable with body side armour components. The leg or body side armour components may be interchangeably used for the left or right side.

[0043] If suitable fixings are provided, these components may be placed in one of up to eight different positions.

Window fragmentation protection — a commercially available plastic film for adhesion to windows may be provided, to arrest glass fragments in case of fracture.

Window armour component — in order to provide uninterrupted vision, the window armour component may comprise a mesh or grid material or a transparent material, for example a polymeric sheet such as polycarbonate. A window armour component may be used which has a first position, in which it is in a position in which it does not obstruct the window and a second position in which it rests adjacent a window. Means may be provided for moving the window armour component from the first position to the second position. For example, a rapid reaction system may be provided for flipping the window armour component into position either upon operation by an occupant of the vehicle or automatically in case of danger.

Headrest armour component — an armour component may be provided which can be mounted on the front or rear of a headrest. The kit may comprise different sizes of headrest armour component, for use in vehicles of different size or for different threat types.

Sun visor armour component — an armour component may be mounted behind or in front of the flip down sun visor.

Rear seat protection armour component

[0044] A panel of size approximately equal to a vehicle rear seat size may be provided to give protection from the rear. Preferably, it can also be used as a separate ballistic shield. Preferably, fixings or straps are provided for mounting the rear seat armour component in a variety of positions, for example including across the rear seat, suspended between solid objects or connected to other armour components.

Vehicle Side protection armour component

[0045] At least one side protection armour component may be provided. It may be constructed in a similar manner to the rear seat armour component and be provided with fixings or straps in a similar way. Hinged fixings can be provided, for allowing the side protection armour component to open with a vehicle door.

COVERT DESIGN

[0046] Typically, at least some of the armour components are designed so that they are not recognisable as armour components.

[0047] The armour components may be stored in a first position in which they are not visible and moved in case of danger to a second position in which they can protect an occupant.

[0048] Armour components may be covered in material resembling normal vehicle fittings. In this way, the armour component may be made to look like conventional internal fittings of a vehicle. For example, they may comprise conventional seat cover materials

FITTINGS

[0049] In order to allow armour components of the present invention to be fitted to a framework such as a vehicle interior, they may comprise suitable fittings. The fittings may be selected from:

- a) adhesive fittings; armour components may comprise adhesive portions which will stick to parts of the vehicle interior. Preferably, the fittings may be removed and refitted if necessary.
- b) touch and hold fastenings, for example VELCRO (RTM). This may be for engaging fabric coverings of a seat, vehicle interior or another armour component.
- c) mechanical fittings to the framework - for example; armour components may comprise means for engaging mechanical fittings formed in a vehicle. For example, there may be means for engaging with seat belt fittings.
- d) adjustable grips or straps. These may for example allow an armour component to fit a wide variety of different types of vehicle or vehicle structure. The armour component may comprise at least one adjustable strap for passing around the vehicle structure or a grip for gripping onto a vehicle structure or to other armour components.

[0050] The armour components of the invention may be configured for mounting in the passenger or goods carrying space of a vehicle for example, in the driving compartment, passenger compartment, boot, van body or other internal space of the vehicle.

SECOND ASPECT OF THE INVENTION

[0051] The vehicle seat armour component of the second aspect of the invention may have any of the features set out above, particularly relating to the armour material, other roles, configuration for other roles and covert design.

[0052] The vehicle seat armour component of the second aspect of the invention is suitably a rigid rear seat armour component or a front seat armour component. In

order to allow it to act as a stretcher, it preferably comprises at least two and preferably at least four handles.

THIRD ASPECT OF THE INVENTION

[0053] The third aspect of the invention provides an armour component for use in a vehicle which armour component is movable from a first position in which it does not obscure a part of the view from the vehicle to a second position in which it can protect an occupant.

[0054] It may form a part of a vehicle armour system according to the invention.

[0055] It may be suitably mounted on the rear seat of a passenger carrying vehicle.

[0056] The armour component preferably comprises armour material as set out above, being preferably able to withstand a specified calibre of small arms fire, for example NATO standard 7.62mm x 51mm, 7.62 x 39mm AK47, 9mm parabellum, 5.56mm sS109 or any other selected small arms ammunition.

[0057] It may have any suitable size, being preferably of a size sufficient to extend across the rear windscreen of conventional designs of passenger carrying vehicle. It may have a width in the range 50cm-150cm, more preferably 80 -120 cm.

[0058] The armour component may be mounted in a frame. It may be slidably mounted in the frame between the two positions. Means may be provide for moving the armour component. For example, a mechanical spring, hydraulic or pneumatic pressure system or pyrotechnic system (for example of the type used to operate vehicle air bags) may be used. Means may be provide for urging the armour component from its first to its second position, a latch being provide to prevent the armour component moving until the latch is released. The latch may be operable by mechanical means, for example a ripcord or string, or electronically. A safety device for the latch may be provided to prevent accidental operation of the latch when there is no threat.

[0059] The present invention will be further described by way of example only with reference to the accompanying drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0060]

Figure 1 is a schematic view of an armour system comprising a seat armour kit.

Figure 2 is a schematic view of the seat armour component laid out

Figure 3 is a schematic view of the seat armour component folded.

Figure 4 is a schematic cross sections through a conventional passenger carrying vehicle comprising ar-

moured components of the system of the invention.

Figure 5 is a sketch isometric view of a headrest protector in place.

Figure 6 is a sketch isometric view of a combined front seat back armour component and seat armour component.

Figure 7 is a sketch view of a first embodiment of rear seat armour component.

Figure 8 is a sketch view of a suit carrier enclosing an armour component according to the present invention.

Figure 9 is a sketch view of a rear window flip-up armour component.

Figure 10 is a sketch view of a second embodiment of rear seat armour component.

DETAILED DESCRIPTION OF THE DRAWINGS

[0061] Figure 1 shows a schematic view of an armour system comprising a seat armour kit 1.

[0062] It comprises an integral body 2 which comprises a leg armour component, seat base armour component and seat back armour component, joined to one another at folds lines. The body 2 is formed of a relatively flexible blast resistant armour blanket material (described further below). The body 2 can be fied to fit a wide variety of different seat designs in a variety of different locations for example in a building or in a vehicle.

[0063] The kit 1 further comprises an additional seat back armour component 3 made of a relatively stiff ballistic armour material (described further below), to provide protection against splinter and bullets.

[0064] There is a seat side armour component formed of a body side armour unit 4 and a thigh and leg side armour unit 5.

[0065] These components are each provided with a plurality of clips and straps to allow them to be placed in up to eight different positions.

[0066] The body 2 can be fixed to a seat by straps 7. Straps 7 are configured to be of variable length so that they can be fixed around different types of seat. The body 2 is connectable by variable buckled straps 8 to the additional seat back armour component 3 so that they enclose and are fixed to a seat back. The body side armour unit 4 and thigh and leg side armour unit 5 are each fixable by engagement of touch and hold fastenings, such as VELCRO (RTM) for engaging fabric covers of the seat or the body 2.

[0067] Finally, the body 2 is provided with handles 6. These allow the body 2 to be lifted at six points so that the body can be used as a stretcher, as shown in figure 2.

[0068] The body 2 can be folded over completely as

shown in figure 3. This can double the local armour thickness, providing additional armour protection.

[0069] Where there is sufficient space under a seat, the additional armour component may be selectively fixed under the seat to the seat base portion of the body 2. This is particularly useful for example in helicopters where fire may be received from below.

[0070] Figure 4 shows a sketch cross-section through a conventional passenger carrying road vehicle 9. Conventional details, such as the structure, the engine and the controls are not shown, as they are completely conventional in design. It can be seen that the vehicle comprises a driver position 10, a rear seat position 11 and a boot 12. Vehicle 9 comprises a pair of front seats, of which one is visible. It comprises a seat portion 13 and a back portion 14 together with a headrest. The rear seat 15 comprises a continuous sea, continuous seat back and head rests of which one 16 is visible.

[0071] The armour system of the present invention, when used in armouring a vehicle comprises the following elements, which have been placed in position.

[0072] There is a floor armour component comprising a blast and fragmentation protection blanket 17. This comprises a rectangular sheet of blast or fragmentation resistant material whose specification will be described further below. The sheet is stretched between the front portion of the foot well and a space underneath the front seats. Similarly, floor armour components comprising blankets 18 and 19 are placed in position in the rear foot well and underneath the rear seat.

[0073] The front seat comprises a seat armour kit as shown in figures 1 to 3. On top of the front seat, there is a front seat armour component comprising the body 2, together with the additional seat back armour component 3 located on the rear of the front seat. The body side armour unit 4 and a thigh and leg side armour unit 5 can be seen in position next to the front seat. There is also a headrest armour component 20.

[0074] A rear seat armour component 23 is mounted in contact with the rear seat back.

[0075] A sun visor protector 22 is placed in contact with a sun visor.

[0076] The armour specifications of the armour components will be described further below.

[0077] Window armour components comprising oblong panels 21 of transparent or grid material are provided, stuck to the windows by mechanical fixings in addition to conventional suction fixings.

[0078] Further armour components may be included, which are not shown, for example a headrest protector on the headrest 16 of the rear seat 15, leg and thigh protectors adjacent the rear seat 15 and anti splinter film of a conventional type applied to the windows of the vehicle.

[0079] The vehicle 9 could also be provided with a smaller number of armour components selected from the kit of armour components of the system of the present invention according to the threat to be encountered. It

should be noted that each of the armour components conforms very closely to the inside structures of the vehicle. Further, the armour components may be provided with covers which resemble conventional vehicle furniture, so that the presence of the armour components is not readily detectable.

[0080] The specifications of the armour components are as follows:

The armour blankets 17, 18 and 19 may each provide fragmentation and blast protection up and including the level of V50 > 600m/s for 1.1-gram FSP (STAN-AG 2920). They may be composed of any suitable material, for example, aramid fibres woven and stitched together with a water resistant PVC cover. Each blanket 17, 18, and 19 may have a square or rectangular shape, having a length in the range 40-100cm and the width in the range 30-70cm.

[0081] Armour components may each comprise suitable types of ballistic armour, for example aramid woven fibres stitched together. They may be coated with a water resistant covering or comfort in use. Extra covers may be selected from foam covering for comfort, canvas to provide a hardwearing exterior and covers resembling conventional vehicle interior finish.

[0082] A seat and leg armour component is most likely to encounter blast and fragmentation ammunitions and accordingly should be able to resist them. For example, it may provide protection up to and including the level of V50 > 500ms for 1.1 gm FSP according to STANAG 2920. This material may be used to form the body 2 of figure 1.

[0083] Armour components which are located higher up in the vehicle suitably provide small arms ballistic protection up to and including 7.62 X 51mm NATO ball and AK47 7.62 x 39fmm msc. This is particularly the case for additional seat back armour component 3, body side armour unit 4 and thigh and leg side armour unit 5, head rest armour component, sun visor armour component, rear seat armour component. They are suitably constructed from Dyneema (trade mark). These armour components may be further provided with adjustable straps for connection to other armour components and/or to vehicle furniture. They may be covered with padded commercial seat covers.

[0084] Suitable component sizes are as follows:

body side armour unit,— 15cm x 40 cm (1.4 kg)
thigh and leg side armour unit—44cm x 35 cm (2.5 kg)
additional seat back armour component 40 x 45 cm (4.0 kg)
Head rest protector — 22cm x 13 cms (0.87 kg)
Sun visor protector — 22cm x 13cm (0.87 kg)
Rear seat protector — 100 cm x 50 cm (11.5 kg)
Seat base armour — 54 x 77mm
Head rest protector — 22 x 30mm
Neck rest protector — 22 x 13mm

[0085] All of these items are designed to be very rapidly fitted into the vehicle, taking from two -20 minutes and preferably from 5-15 minutes to fit.

[0086] Additional features of the armour components will be described further below.

[0087] Anti splinter film of commercially available type may be used and applied to vehicle windows to hold glass splinter in place in case of attack or in case occupants have to return fire through windows of the vehicle.

[0088] A window armour component may comprise a mesh or a transparent component, for example a 10mm thick polycarbonate sheet mounted in conventional mesh sunshade.

[0089] The window armour component may include conventional windows suckers for fitting, though additional mechanical fittings may be required to support the additional weight of the armour component.

[0090] Figure 5 shows a sketch of the headrest protecting position. It comprises a pair of adjustable webbing straps 23 of conventional design which will allow a single design of head rest protector 15 to be attached to many conventional head rests. When in place, a covering material may be applied so that the head rest protector is not visible

[0091] Figure 6 shows the additional seat armour component 3 which is connected by adjustable straps 8 to a front seat armour component 2. It can be seen that a pocket 25 can be integrally formed with a covering material of the armour component for storage of weapons, first aid kit etc.

[0092] Figure 7 is a sketch view showing a first embodiment of rear seat armour component 23. It comprises straps 26 of various designs for allowing it to be fitted to a wide of range of commercial car seat designs. For example, it may be fitted to the front of a seat or, particularly in the case of trucks or 4 by 4 vehicles, to the rear of the seats.

[0093] The armour component is also provided with carrying handles 27 which allow the component to be used as a stretcher.

[0094] Figure 8 shows how an armour component, for example the rear seat armour component or folded body 2 can be held within a conventional suit carrier 29. In this way it can be readily carried around to act as a ballistic shield but is not immediately apparent to an outside observer,

[0095] Figure 9 shows the rear window flip armour component. It comprises a steel frame 30 which has a hollow interior within which an armour component 31 is slidably mounted. The armour component 31 is shown in a retracted position in which it does not project very far from the frame 30. In this position, it can be placed on the rear seat of a vehicle so that it does not obscure vision through the rear windscreen. A pair of pneumatic cylinders 32 are provided, each being configured to propel the armour component 31 from the stored position shown in figure 6 to an extended position in which it extends across the rear window. A cylinder 33 comprising

a reservoir of compressed gas is provided. Compressed gas from the cylinder acts on pistons in the cylinders to urge them upwards. A latch 34 is provided which, in a latching position, prevents the armour component being driven upwards. The latch may be released, for example by a string, whereupon the armour component is very rapidly pushed by the compressed gas acting on pistons on the cylinders to an extended position in which it rests adjacent a rear window of a vehicle, to protect occupants from attack from the rear. The distance by which the armour component projects in its extended position may be variable. The armour component is preferably driven so that it contacts the vehicle roof and jams against it so that the whole structure is firmly held even when impacted by munitions.

[0096] The flip up rear window protector 22 further includes straps 35 for allowing the apparatus to be fitted to a rear bulkhead or rear seats of a vehicle.

[0097] The armour component 31 is preferably of dimensions 91cm by 41cm and preferably weighs around 13kg.

[0098] Preferably, armour components according to the present invention are configured so that they do not obscure vision or the opportunity to fire through the windows of the vehicle. For example the window armour component may be removed if necessary to open the field of vision or fire.

[0099] The armour components shown in the vehicle 9 of figure 4 are preferably supplied in the form of a kit of parts.

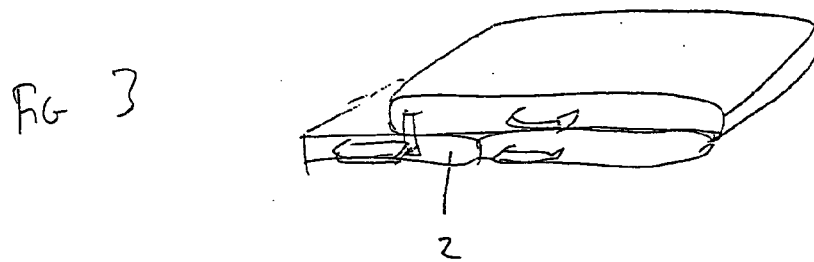
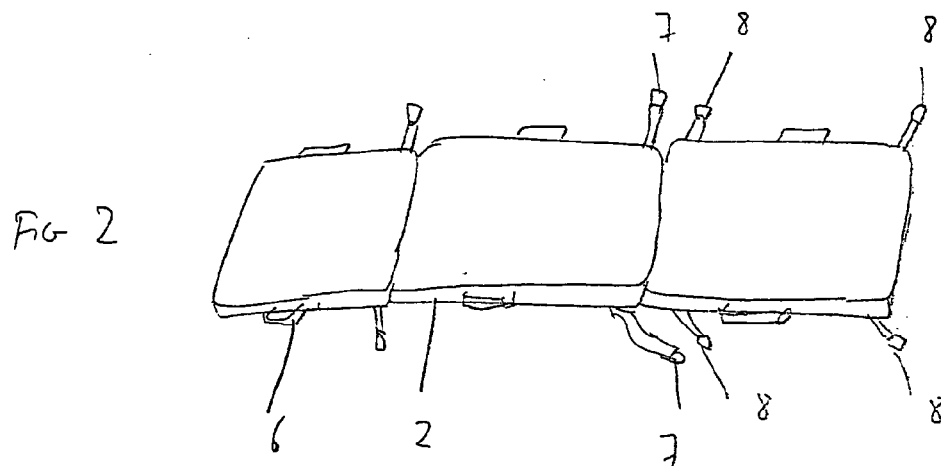
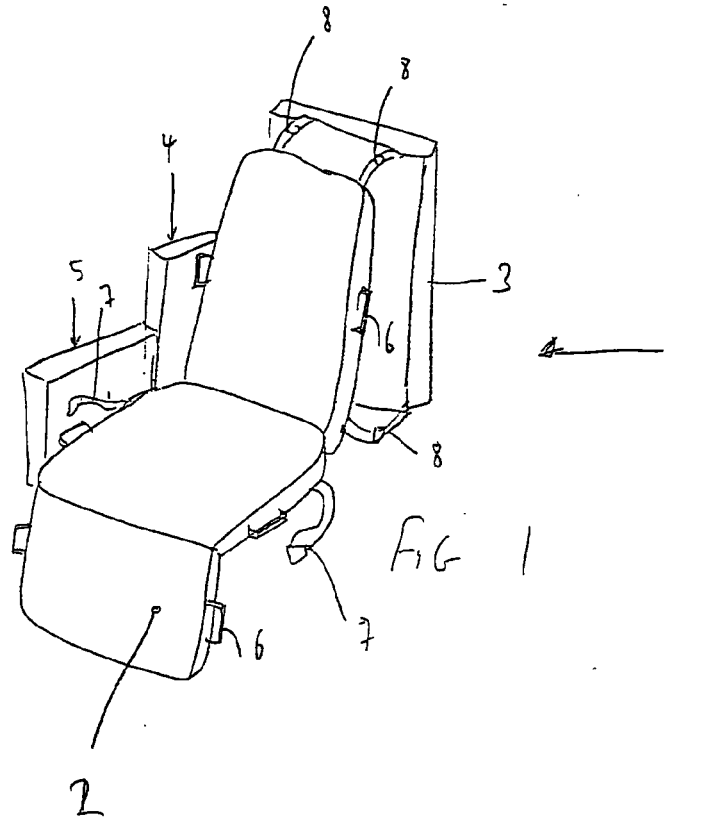
[0100] Figure 10 shows a second embodiment of rear seat armour component 36. It is similar to the one shown in Figure 7 and comprises similar straps 26 and carrying handles 27 which allow the component to be used as a stretcher. There are additional clips 37 for engaging parts of a vehicle, straps or other armour components (including other rear seat armour components 36), and a detachable carrying bar 38, which is engageable with additional handles 39.

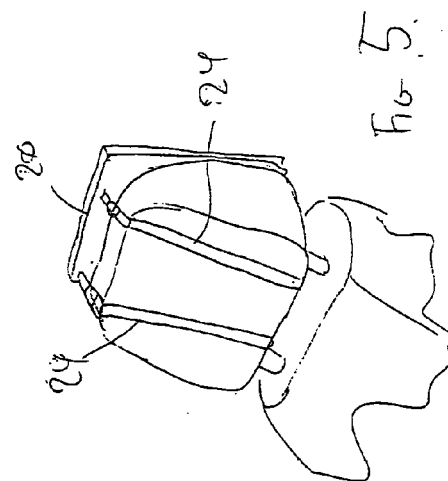
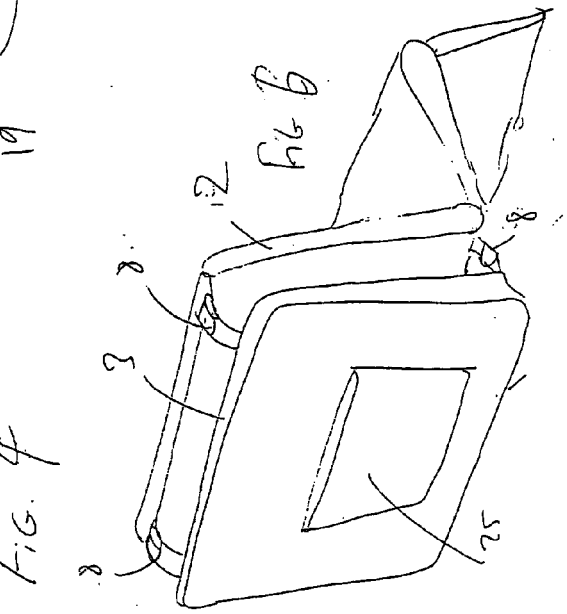
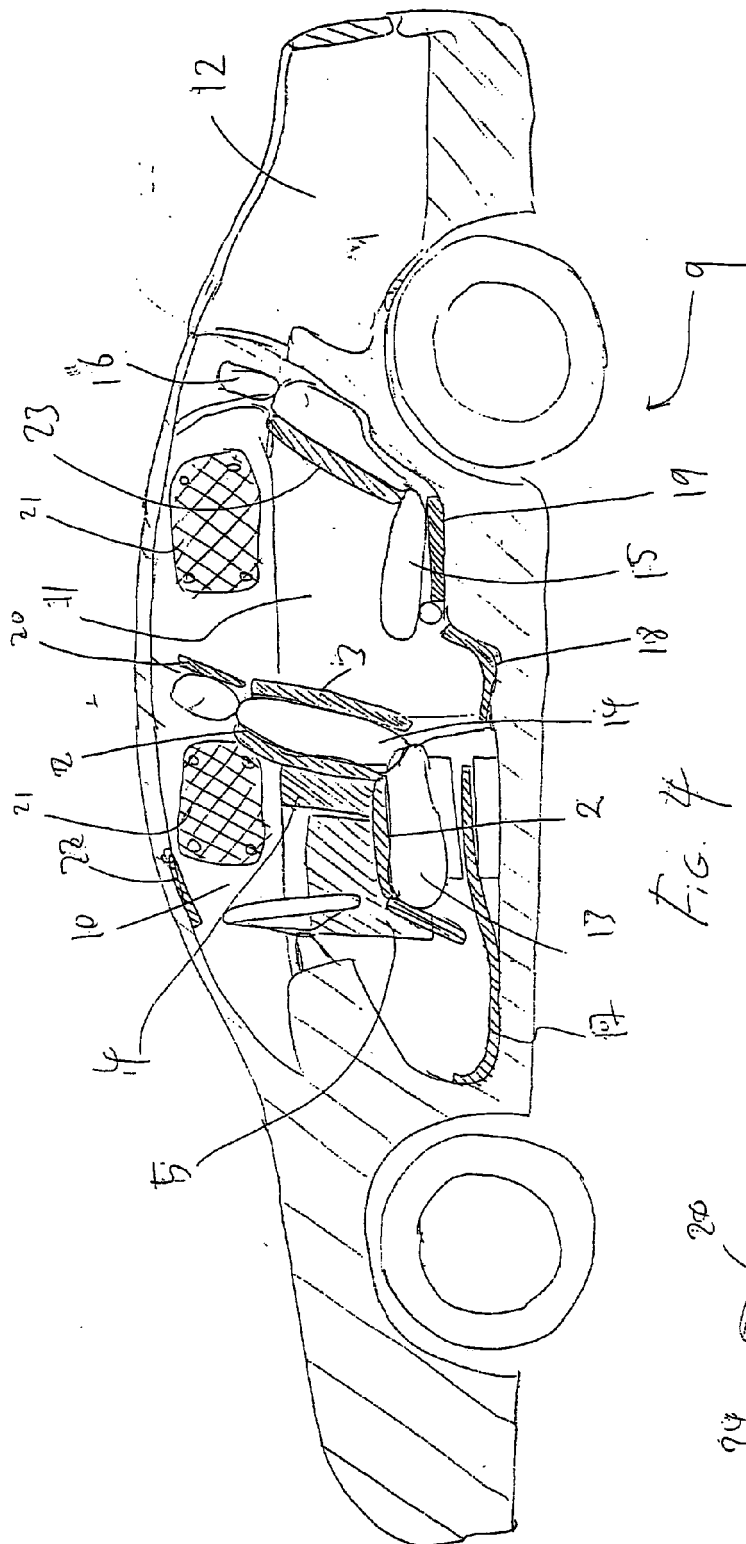
[0101] The present invention has been described above purely by way of example and modifications can be made within the spirit of invention, which extends to equivalents of the features described. The invention also consists in any individual features described or implicit herein or shown or implicit in the drawings or any combination of any such features or any generalisation of any such features or combination.

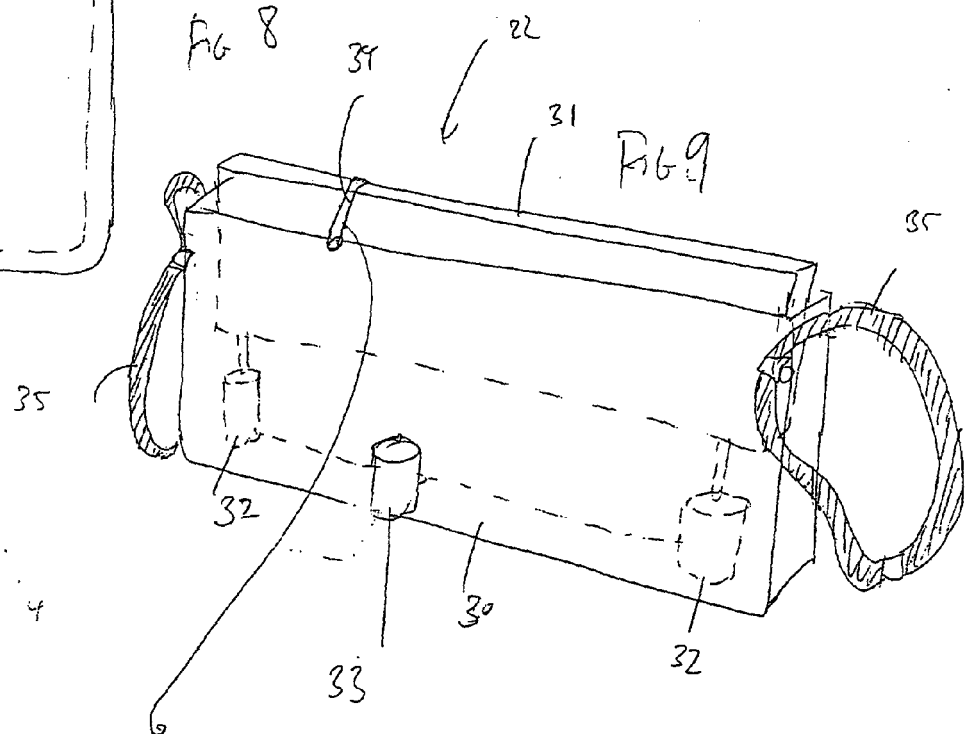
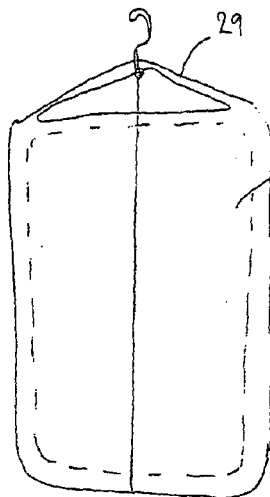
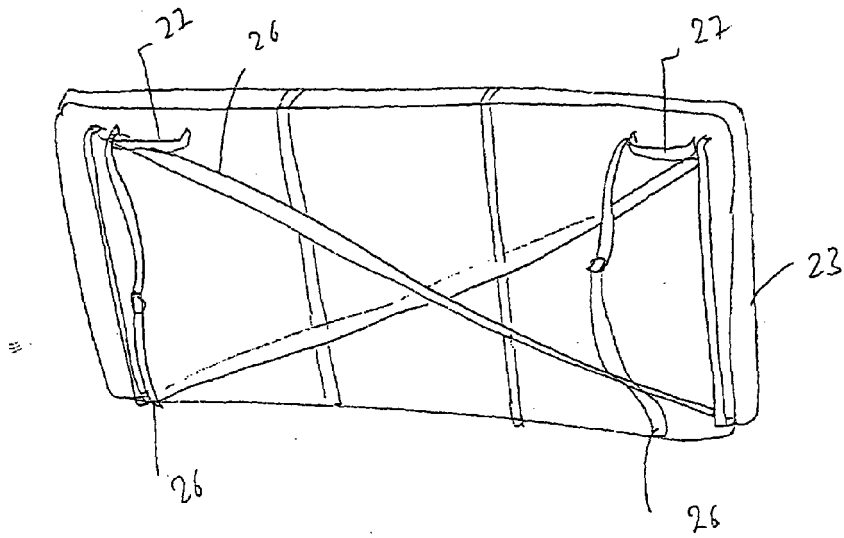
Claims

1. A personal armour system, comprising a plurality of armour components, each being configured for selective use in a plurality of different roles.
2. A personal armour system according to Claim 1, comprising a kit comprising a plurality of armour components.

3. A personal armour system according to Claim 1, wherein the armour components may be used in roles selected from at least two of personal body armour, armour for a vehicle, armour for a part of a building where personnel rest or operate, field protection, sleeping space protection, portable shield and carrying device
4. A personal armour system according to claim 1, comprising components which can be engaged with a seat to provide protection for the occupant of the seat.
5. A personal armour system according to Claim 4, comprising at least:
 - a seat base armour component,
 - a seat back armour component, and
 - at least one seat side armour component.
6. A personal armour system according to claim 1, being for armouring a vehicle.
7. A personal armour system according to Claim 6, comprising armour components selected from:
 - floor armour component;
 - a seat base armour component,
 - a seat back armour component,
 - at least one seat side armour component;
 - head rest armour component;
 - window fragmentation protection;
 - sun visor armour component;
 - window armour component;
 - neck rest armour component;
 - head protection plate component;
 - vehicle side protection armour component; and
 - rear seat protection armour component
8. An armour system according to claim 1, wherein at least some of the armour components are designed so that they are not recognisable as armour components.
9. An armour system according to claim 1, wherein at least one armour component can be used as an armoured shield or a stretcher.
10. A vehicle seat armour component that can also be used as a stretcher.
11. An armour component for use in a vehicle, which armour component is movable from a first position in which it does not obscure a part of the view from the vehicle to a second position in which it can protect an occupant.







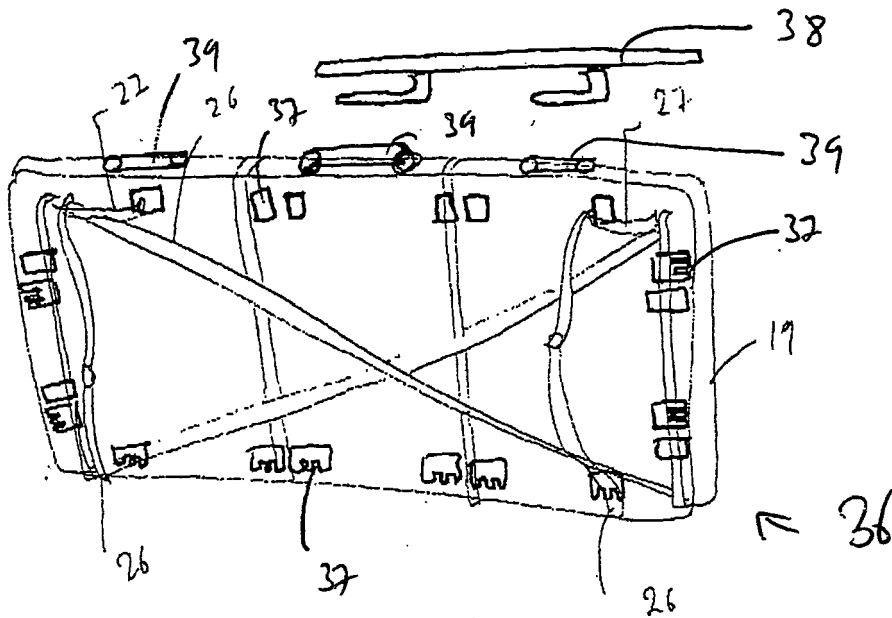


Fig. 10



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 05 25 7809

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 March 2006	Examiner Gex-Collet, A-L
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