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(54) Adjustable cut resistant protective garment and kit therefore

(57) The present invention relates in a first aspect to a protective garment manufactured from a cut and/or slash resistant fabric, wherein the protective garment is locally provided with two or more attachment elements on zones in need of protection, which attachment elements are suitable for removably attaching a stab resistant protective pad to the protective garment. In a second aspect, the present invention relates to a kit of a protective garment with one or more stab resistant protective pads.

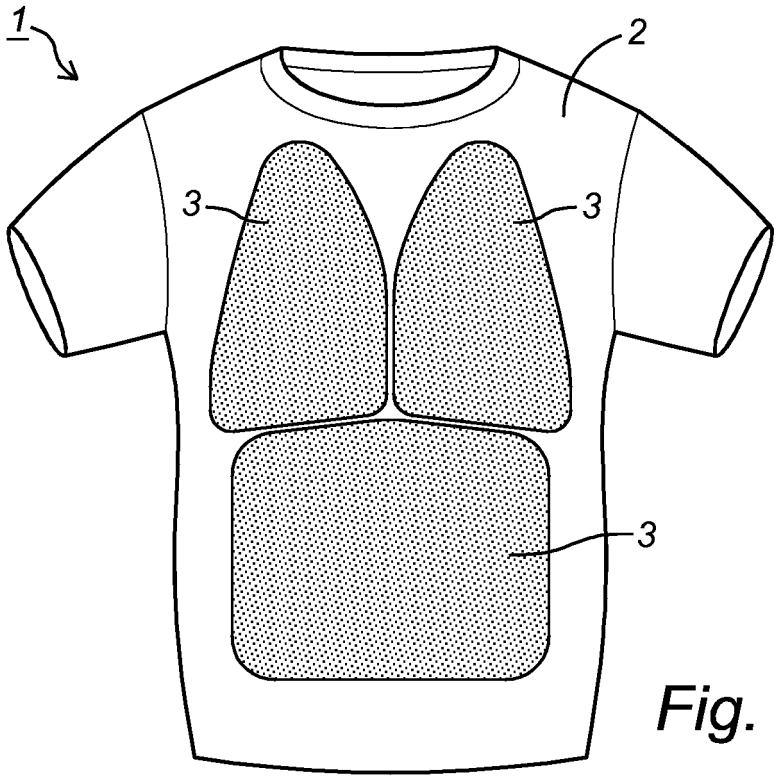


Fig. 6a

EP 2 873 336 A1

Description

TECHNICAL FIELD

[0001] The present invention relates in a first aspect to a protective garment manufactured from a cut and/or slash resistant fabric, wherein the protective garment is locally provided with two or more attachment elements on zones in need of protection, which attachment elements are suitable for removably attaching a stab resistant protective pad to the protective garment. In a second aspect, the present invention relates to a kit of a protective garment with one or more stab resistant protective pads.

BACKGROUND

[0002] Employees of security companies, emergency services, police services, but also staff on public transport such as train or bus, have more and more need for sufficient protective clothing, which is suitable to guard them against criminal acts of third parties such as cutting, slashing or stabbing with the use of a sharp object such as, for example, a knife.

[0003] For example, document US 2011/0167545 A1 from the state of the art discloses a stab resistant fabric known for protective clothing. Similar to ballistic protection clothing or so-called body armor, the protection is often conferred by large, solid and heavy plates or panels, which make it difficult for a user to be able to wear this during a full day's work. Examples thereof are given in documents US 6,453,791 B1 and US 2011/0131694 A1.

[0004] It is known that cut , slash and/or stab resistant clothing is uncomfortable to wear. There is a need for improved comfort, along with a sufficiently large cut, slash and/or stab protection.

[0005] The present invention has an improved cut resistant protective garment, as defined by claim 1, as an object which provides a solution for the aforementioned disadvantages.

SUMMARY OF THE INVENTION

[0006] The invention relates in particular to a protective garment manufactured from a cut resistant fabric, wherein the protective garment is locally provided with two or more attachment elements on zones in need of protection, which attachment elements are suitable for removably attaching a stab resistant protective pad to the protective garment.

[0007] This allows for an adjustability of the protective garment to optionally additionally protect zones in need of protection, by attaching or not attaching stab resistant protective pads thereto. Depending on the desire of the wearer, the degree of cut resistant, slash resistant and/or stab resistant protection in said zones in need of protection can therefore be set up in modular form. In this way, there is also the possibility, depending on the need for comfort (e.g. because of weight), as a protection to adjust the garment. This also provides a diversification of more and less zones to be protected for a protective garment.

[0008] In a second aspect, the invention relates to a kit of a protective garment with one or more stab resistant protective pads.

[0009] Further preferred embodiments are elaborated in the dependent claims.

DESCRIPTION OF THE FIGURES

[0010]

Figure 1 and 2 schematically show a cross-sectional view of respectively an empty pocket and a pocket provided with a stab resistant protective pad, according to a preferred embodiment of the invention.

Figure 3 schematically depicts a cross-sectional view of an empty, closed pocket of a protective garment, according to a preferred embodiment of the invention.

In Figures 4 and 5 are shown respectively a front and rear view of a T-shirt on a wearer, according to a preferred embodiment of the invention.

Figure 6 shows a front and rear view of a T-shirt with short sleeves, according to a preferred embodiment of the invention.

Figure 7 shows a front and rear view of a T-shirt with short sleeves provided with a neck protection, according to a preferred embodiment of the invention.

Figure 8 shows a front and rear view of a T-shirt with long sleeves, according to a preferred embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0011] "A", "an" and "the" refer in this document to both the singular and the plural, unless the context clearly implies otherwise. For example, "a pouch" means one or more than one pouch.

[0012] The terms "comprise", "comprising", "consist of", "consisting of", "provided with", "include", "including", "contain", "containing", "encompass", "encompassing" are synonyms and are inclusive or open terms which indicate the presence of what follows, and which do not exclude or prevent the presence of other components, characteristics, elements, members, steps, known from or disclosed in the prior art.

[0013] Citation of the numerical intervals by endpoints comprises all integers, fractions, and/or real numbers between the endpoints, including these endpoints.

[0014] Unless defined otherwise, all terms used in the description of the invention, including technical and sci-

entific terms, have the meaning as they are commonly understood by the skilled person in the technical field of the invention.

[0015] With the term "cut resistant", referred to in the present invention, is meant that the material provides an adequate protection against cutting actions with sharp objects such as knives. Preferably, the material meets the performance level 5 according to European standard EN388 and/or the performance level 4 according to European standard NEN-EN-ISO 13997, more preferably the material meets the performance level 5 according to NEN-EN-ISO 13997.

[0016] By the term "slash resistant", referred to in the present invention, is meant that the material provides an adequate protection against slash actions with sharp objects. The British standard "HOSDB Slash Resistance Standard for UK Police (2006), with Publication No. 48/05" describes a test procedure for slash resistance. By the term "penetration strength" is meant in the present invention, the corresponding penetration force as determined in this standard.

[0017] By the term "stab resistant", referred to in the present invention, is meant that the material provides an adequate protection against stab actions with sharp objects. Preferably, the material meets a maximum penetration depth of 7 mm at a performance level of 10J. Preferably, the material meets a maximum penetration depth of 20 mm at a performance level of 20J. The British standard "HOSDB Body Armour Standards for UK Police (2007)" describes a test procedure for stab resistance. The terms "penetration depth" and "performance level" should be understood in the present invention as determined in this standard.

[0018] By the term "protective pad", referred to in the present invention, is meant a protective mass, which is suitable to be incorporated in a pocket of a protective garment and is suitable to protect the corresponding zone of the protective garment against stab actions. Typically, these comprise a fabric with metal wires, preferably steel wires, or a network (mesh) of mutually connected metal rings, i.e. a so-called chainmail or hauberk. Preferably, the shape of a protective pad is in accordance with the pocket in which it is suitable to be incorporated.

[0019] By the term "zone in need of protection" in the present invention is meant a zone on the protective garment which, dependent on the function of the garment, requires additional protection for the wearer.

[0020] In a first aspect, the present invention relates to a protective garment, manufactured from a cut and/or slash resistant fabric, the protective garment being locally provided with two or more attachment elements on zones in need of protection, which attachment elements are suitable for removably attaching a stab resistant protective pad to the protective garment.

[0021] This allows for an adjustability of the protective garment to locally optionally additionally protect zones in need of protection, by attaching or inserting stab resistant protective pads thereto/therein. The degree of protection can be set up, therefore, in zones in need of said protection, depending on the desire of the wearer. In this way, there is also the possibility, depending on a need for comfort (e.g. because of weight) as a protection to modularly adjust the garment. This also provides a diversification of more and less zones to be protected for a protective garment. There is a heterogeneous protection distribution.

[0022] These pockets also offer the advantage of adaptability to, according to the desire of the wearer, to provide stab resistant protective pads or not. As a result, there is the possibility to modularly set up and adjust the level of protection at the locations of the pockets on the protective garment.

[0023] In a further embodiment, the term "attachment element" is to be understood as a synonym for the term "protection element" and indicates a zone in a protective garment, which zone is provided from a material with increased cut , slash , and/or stab resistant properties in relation to the surrounding zones. Preferably, said protection element is provided on a zone in need of protection. More preferably, said protective clothing is provided with protection elements, wherein the transition between said protective elements to the surrounding zone is provided seamlessly. In a further embodiment, the protective garment may at the height of the protection zone have seamless duplication, thereby obtaining a pocket or recess or insert, which pocket or recess offers the possibility to position a protection or protective pad.

[0024] For example, in addition to cut resistance, the cut resistant fabric may also comprise some slash resistance, and the zones in need of protection may, without attachment of said stab resistant protective pads, comprise a higher level of cut resistance and slash resistance. If a stab resistant protective pad is provided on/to said zone in need of protection, this zone also offers stab resistance, in addition to cut resistance and slash resistance.

[0025] Furthermore, it becomes possible to achieve a better balance between limited weight and acceptable level of protection of the protective garment.

[0026] By the term "flat knit" in the present invention is meant a knitted fabric, obtained by a machine with one or two needle beds, a so-called flat knitting machine.

[0027] In a preferred embodiment of the present invention, said cut resistant fabric relates to a flat knit.

[0028] This offers the advantage of a better comfort, better maneuverability and flexibility of the protective garment.

[0029] In another embodiment of present invention, said cut resistant fabric relates to a circular knit.

[0030] With the term "circular knit" is meant a knitted fabric, obtained by a machine which knits the yarn in round or tubular shape with curved or straight needles, a so-called circular knitting machine.

[0031] In a preferred embodiment of the present invention, the preferred flat knit relates to a right/left-bound knit. The term "right/left-bound knit" in the present inven-

tion means a knitted fabric which comprises only knit right stitches at the front and only purl left stitches at the rear. The front and rear side therefore have a different appearance.

[0032] In a preferred embodiment of the present invention, the preferred flat knit relates to a left/left-bound knit. By the term "left/left-bound knit" in the present invention is meant a knitted fabric which alternately comprises a row of knit right stitches and a row of purl left stitches.

[0033] In a preferred embodiment of the present invention, the preferred flat knit relates to a rib-bound knit. By the term "rib-bound knit" in the present invention is meant a knitted fabric which alternately comprises a number of knit right stitches and a number of purl left stitches. The structure shows clear vertical ribs. In a more preferred embodiment of the invention, the rib-bound knit consists of alternately a knit right stitch and a purl left stitch.

[0034] In a preferred embodiment of the present invention, the flat knit relates to an interlock knit. With the term "interlock knit" is meant in the present invention a knitted fabric which comprises two rib-bound knitted fabrics which are knitted together. The front and rear look the same and only show knit right stitches. The purl left stitches of the one knitted fabric are covered by the knit right stitches of the other knitted fabric.

[0035] In a preferred embodiment of the present invention, the flat knit relates to a single bed interlock knit. By the term "single bed interlock knit" in the present invention is meant a flat knit which is knitted on a single bed, wherein one row is knitted on even needles and one row on odd needles. Herein, the front and rear side have a different appearance.

[0036] In a preferred embodiment of the present invention, said flat knit preferably has a density ranging between 2 and 10 stitches/cm according to the width direction, preferably between 3 and 6 stitches/cm.

[0037] This allows for a sufficiently dense flat knit, which ensures a better cut as well as slash resistant protection.

[0038] The term "minimum cutting strength" in the present invention means the force, as determined according to the European standard NEN-EN-ISO 13997. Hereby, a straight knife is mounted onto a carriage which is capable of pulling the knife through a piece of fabric with a horizontal movement. The piece of fabric is mounted onto a curved surface. This in turn is placed on a series of levers in order to apply a force from underneath the piece of fabric onto the knife, and thus simulates a weight which is placed on top of the knife itself. The knife is drawn over the piece of fabric with a predetermined speed, with the distance traveled until a through-cut is observed. The test procedure starts by implementing a number of cuts with the aid of a variety of weights, applied to the knife, in order to obtain an acceptable range of cut lengths. These are typically 5 cuts in the order of 5 mm to 15 mm, 5 cuts in the order of 15 mm to 30 mm and 5 cuts in the order of 30 mm to 50 mm, wherein cutting lengths respectively below and above 5 mm and 50 mm are ignored. With the help of this data, a scatter graph is obtained wherein cutting length and applied weight are plotted in relation to one other. For this graph, an applied weight is estimated in order to obtain a 20 mm cut for cutting through, this by means of a trend line through the data points. With this estimate, 5 new cutting tests are carried out. A subsequent estimate is made of the new graph and is determined as final result. The final result or the cutting strength corresponds to the estimated force needed to generate a 20 mm cutting length, wherein this force is expressed in Newton.

[0039] In a preferred embodiment of the present invention, said cut resistant fabric has a minimum cutting strength of 13 N, preferably minimum 14 N, more preferably minimum 15 N. This allows for a sufficient cut resistance.

[0040] In a preferred embodiment of the present invention, said cut resistant fabric has a minimum penetration strength of 7 N, preferably minimum 9 N, more preferably a minimum of 11 N. This allows for a sufficient slash resistance.

[0041] In a preferred embodiment of the present invention, said two or more attachment elements are locally provided on zones in need of protection, which zones morphologically correspond to the average outline of an organ or of a combination of multiple adjacent organs. By the term "average contour" in the present invention is meant a contour of an organ or of a combination of multiple adjacent organs determined for a given population. Preferably, these zones are adapted for male or female wearers.

[0042] By the term "life-threatening zones" in the present invention, zones are meant, which, if said protective garment is worn by the user, correspond to those places on the body of the user where, if a cut, slash or stab action is carried out, vital organs could be affected as a result of which the user could die.

[0043] In a preferred embodiment of the present invention, said zones in need of the protection correspond with life-threatening zones on the human body.

[0044] In a preferred embodiment of the present invention, said zones in need of protection correspond to more than 40%, preferably more than 50%, more preferably more than 60%, most preferably more than 70% of the total surface of the protective garment.

[0045] In a preferred embodiment of the present invention an attachment element relates to a pocket, which is suitable for removably incorporate a stab-resistant protective pad.

[0046] The term "seam" in the present invention means the place, where two or more separate pieces of fabric are attached to each other. Typically, this concerns a stitching together of these pieces.

[0047] In a preferred embodiment of the present invention, said pockets relate to seamless pockets.

[0048] Seamless pockets provide an improved comfort, maneuverability and safety for the wearer. Seams in a protective garment, after all, cause some kind of dis-

comfort, such as, for example, irritation of the skin. The sowing on or attaching of the pockets onto the protective garment could, for example, by cleaning processes or frequent use, lead to damaging of the protective garment through friction, abrasion or other mechanical impact. By applying seamless pockets, these adverse effects are reduced and it becomes possible for a wearer to wear the protective garment on the skin and it becomes possible to wash such garments in domestic washing machines.

[0049] In a preferred embodiment of the present invention, said pockets are manufactured from two flat knit layers.

[0050] In a more preferred embodiment of the present invention, the combination of said two flat knit layers has a minimum cut strength of 22 N, preferably minimum 23 N, more preferably minimum 24 N.

[0051] This offers, besides a better cut resistance, the possibility of also achieving better slash resistance at the places or zones of the pockets. If the corresponding pocket is provided with a stab resistant protective pad, this zone is provided with a cut resistant, slash resistant and stab resistant protection.

[0052] In a more preferred embodiment of the present invention, the combination of said two flat knit layers has a minimum penetration strength of 50 N, preferably a minimum of 55 N, more preferably a minimum of 60 N. This allows for a sufficient slash resistance.

[0053] In a more preferred embodiment of the present invention, said two or more pockets are defined by a seamless transition from a single layer flat knit to two flat knit layers.

[0054] This provides a continuous build-up of the garment by the seamless transition between the zones of the pockets and the cut and/or slash resistant fabric around it.

[0055] In an even more preferred embodiment, one of the two said flat knit layers is obtained by a further knitting on the other flat knit layer or by an alternative method known in the prior art.

[0056] In a still even more preferred embodiment, one of the two said flat knit layers comprises one and the same knitted fabric and yarn as said single layer flat knit.

[0057] In a most preferred embodiment, the other of the two said flat knit layers comprises a different knitted fabric and/or yarn as that of said single layer flat knit.

[0058] In a preferred embodiment the present invention, said pockets are provided with an opening.

[0059] This offers the advantage that through this opening, a protective pad can be incorporated or removed.

[0060] The pockets may be provided with one or more sealing means, which are suitable for closing said opening. Such a sealing means is, for example, a hook-and-loop strap fastener or one or more buttons.

[0061] The terms "Velcro" or "hook-and-loop strap fastener" are to be used as synonyms in the present invention. By the term "Velcro" in the present invention is meant a two-layer closure or connection, which can be pulled loose. It includes, on the one side, a piece of fabric with tiny hooks and, on the other side, a piece of fabric covered with tiny loops.

[0062] In an alternative preferred embodiment of the present invention, an attachment element relates to an element which makes it possible to attach and position a protective pad on the garment such as, for example, hook-and-loop strap fastener, a sew on, etc.

[0063] By the term "hybrid yarn" in the present invention is meant a composite yarn, which comprises fibers of at least two different materials. Examples may include and are not limited to:

- two yarns twisted around another;
- one core spun yarn twisted with another yarn;
- a plurality of different yarns, one of which, for example, embodies the core and the remainder is twisted around it;
- or two already hybrid yarns twisted around one another.

[0064] In this way, two or more yarns within said hybrid yarn may be mutually different in fiber material.

[0065] In a preferred embodiment of the present invention, said cut resistant fabric is manufactured from a hybrid yarn.

[0066] In a preferred embodiment of the present invention, the hybrid yarn comprises at least two different fibers, which are selected from the following group of aramid, para-aramid, meta-aramid, polyamide, polyamide-imide, polyethylene, high-tenacity (HT) polyester, high-tenacity (HT) polyamide, glass, polyester, stainless steel, ultra-high molecular weight polyethylene, modified ultra-high molecular weight polyethylene, polyphenylene benzobisoxazole (PBO), liquid crystal polymer (LCP), polyester to which a ceramic product is added and elastane.

[0067] Typical para-aramid fibers are Kevlar, Twaron or Technora. Typical meta-aramid fibers are Nomex, Arawin, Conex or Newstar. Example of a polyamide-imide fiber is Kermel. Ultra-high molecular weight polyethylene (UHMWPE) is, for example, Dyneema or Spectra. Example of an LCP fiber is Vectran. Typical modified ultra-high molecular weight polyethylene fibers are Dyneema Diamond.

[0068] In a preferred embodiment of the present invention, said hybrid yarn comprises glass fiber, which is preferably provided with a coating. This coating has the goal of preventing possible skin irritation due to the glass fiber.

[0069] In a preferred embodiment, this coating is PVC. This offers a more robust fiber build-up on the basis of glass fiber and has the advantage of an adequate protection of the skin against the possible irritant effect of the glass fiber. In addition, this offers the advantage that the protective garment maintains the cut and/or slash resistant properties after multiple wash cycles. The aforementioned properties are reduced when a protective garment according to the prior art is washed. By providing,

for example, a bi-component yarn with in the center a glass fiber or a glass fiber reinforced fiber and surrounded by a coating layer, such as preferably a PVC layer, (i), irritation as a result of contact between glass fiber and skin is avoided, and (ii) wear on the glass fiber as a result of one or more wash operations is avoided or at least suppressed.

[0070] By the term "linear mass density" in the present invention is meant the mass for the yarn per km of its length. The tex unit is equivalent to g/km. In a preferred embodiment of the present invention, said hybrid yarn has a linear mass density of between 20 tex and 200 tex.

[0071] In a preferred embodiment of the present invention, the cut resistant fabric has a specific weight between 300 g/m^2 and 1000 g/m^2.

[0072] In a preferred embodiment of the present invention, it concerns a protective garment selected from the following group of T-shirt with long sleeves, T-shirt with short sleeves, boxer shorts, caleçon, UBAC (Under Body Armour Combat) T-shirt and neck protection.

[0073] In a second aspect, the present invention relates to a kit of a protective garment with one or more stab resistant protective pads.

[0074] In a preferred embodiment of the present invention, said attachment elements relate to pockets and the shape of said one of more stab resistant protective pads corresponds to the pockets of the protective garment, in which these are suitable to be incorporated.

[0075] In what follows, the invention is described with the aid of non-limiting examples which illustrate the invention, and which are not intended nor should be construed to limit the scope of the invention.

EXAMPLES

[0076] Figure 1 schematically shows a cross-sectional view of a pocket (3) of a protective garment (1) manufactured from a cut resistant fabric (2). The pocket (3) comprises two flat knit layers (8,9) which pass via a seamless transition (5) to the surrounding cut resistant fabric (2). These seamless transitions (5) correspond to the contours of the pocket (3) in the protective garment (1). The pocket is further surrounded by a front pocket layer (8) and a rear pocket layer (9). The pocket (3) is provided with an opening (6) on the side, thereby making it possible to incorporate a stab resistant protective pad (4).

[0077] Figure 2 shows a same cross-sectional view of the pocket (3) of Figure 1, wherein a stab resistant protective pad (4) was incorporated along the opening (6). This opening (6) is typically large enough to slide a protective pad (4) into the pocket (3) and to slide it back out, and at the same time not too large so that the protective pad (4) remains situated firmly enough during wearing of the protective garment (1).

[0078] Figure 3 shows a cross-sectional view of a pocket (20) of a protective garment (1) manufactured from a cut resistant fabric (2). The pocket (20) comprises two flat knit layers (8,9) which pass via a seamless transition (5) to the surrounding cut resistant fabric (2). The pocket (20) is further surrounded by a front pocket layer (8) and a rear pocket layer (9). The pocket (20) is empty, closed and thus not provided with an opening (6). This empty pocket (20) preferably provides a slash resistant protection.

[0079] In Figure 4, a T-shirt (1) is shown in front view on a wearer, according to a preferred embodiment of the invention. The protective garment (1) manufactured from a cut resistant fabric (2) is provided at the front side with three pockets (3), wherein a protective pad can be incorporated through the outer side. These pockets (3) are provided in zones of the protective garment (1) in accordance with life-threatening zones on the body of the wearer. The top two pockets (3) provide a protection for the lungs (10) and the heart (11) of the wearer. The lower pocket (3) protects the liver (12) and the spleen (13). Furthermore, the 10th rib (15), the kidneys (14) and the navel (16) are also indicated.

[0080] Figure 5 shows a rear view for the T-shirt (1) from Figure 4. The T-shirt is provided at the rear side with three pockets (3). The top pocket (3) provides protection to the spinal cord in the spine, the lower two pockets (3) protect the kidneys (14).

[0081] In the event that the pockets (3) are provided with a stab resistant protective pad (4), these provide a stab resistant protection for the life-threatening zones of the wearer. In the event that the pockets (3) are empty, these zones provide, by an additional flat knit layer, an additional protection in comparison to the surrounding cut resistant zones. Preferably, the combination of these two flat knit layers provides a slash resistant protection.

[0082] Figures 6A and 6B show, respectively, a front and rear view of a T-shirt (1) with short sleeves, according to a preferred embodiment of the invention. The protective garment (1) manufactured from a cut resistant fabric (2) is provided with three pockets (3) at the front and rear, wherein a stab resistant protective pad (4) can be removably incorporated.

[0083] Figures 7A and 7B show, respectively, the front and rear view of a T-shirt (1) with short sleeves provided with a neck protection, according to a preferred embodiment of the invention. The protective garment (1) manufactured from a cut resistant fabric (2) is provided with three pockets (3) at the front and rear, wherein a stab resistant protective pad (4) can be removably incorporated. The T-shirt (1) is provided with a neck protection (17).

[0084] Figures 8A and 8B respectively show the front and rear view of a T-shirt (1) with long sleeves, according to a preferred embodiment of the invention. The T-shirt (1) manufactured from cut resistant fabric (2) is provided with three pockets (3) at the front and rear, wherein a stab resistant protective pad (4) can be removably incorporated.

[0085] The lower parts (20) of the sleeves are, like the pockets (3), composed out of two flat knit layers. These zones (20) are not, however, provided with an opening

or, in other words, not suited to removably incorporate a protective pad (4). These 'empty closed pockets' offer preferably a slash resistant protection. In a preferred embodiment of the present invention, the empty closed pockets (20) are provided on zones in accordance with the inner side of the forearm. This allows for an additional protection, for example, in an attack on the face of the wearer, wherein the wearer brings the forearms in front of the face in a reflexive defensive reaction.

[0086] It is believed that the present invention is not limited to the embodiments described above and that a number of modifications or changes can be added to the described examples without having to re-evaluate the appended claims.

REFERENCES IN THE DRAWINGS

[0087]

Protective garment (1)
Cut and/or slash resistant fabric (2)
Pocket (3)
Protective pad (4)
Seamless transition (5)
Opening (6)
Sealing means (7)
Front pocket layer (8)
Rear pocket layer (9)
Lung (10)
Heart (11)
Liver (12)
Spleen (13)
Kidneys (14)
10^{th} rib (15)
Navel (16)
Neck protection (17)
Lower sleeve zones (20)

Claims

1. Protective garment (1) manufactured from a cut and/or slash resistant fabric (2), **characterized in that** the protective garment (1) is locally provided with two or more attachment elements (3) on zones in need of protection, which attachment elements (3) are suitable for removably attaching a stab resistant protective pad (4) to the protective garment (1).

2. Protective garment (1) according to preceding claim 1, **characterized in that** said cut resistant fabric (2) relates to a flat knit.

3. Protective garment (1) according to preceding claim 2, **characterized in that** said flat knit (2) has a density of between 2 and 10 stitches/cm according to the width direction, preferably between 3 and 6 stitches/cm.

4. Protective garment (1) according to claims 1-3, **characterized in that** said cut resistant fabric (2) relates to a circular knit.

5. Protective garment (1) according to any one of the preceding claims 1-4, **characterized in that** said cut resistant fabric (2) has a minimum cutting strength of 13N, preferably a minimum of 14N, more preferably a minimum of 15N.

6. Protective garment (1) according to any one of the preceding claims 1-5, **characterized in that** said two or more attachment elements (3) are locally provided on zones in need of protection, which zones morphologically correspond to the average contour of an organ or of a combination of multiple adjacent organs.

7. Protective garment (1) according to preceding claim 6, **characterized in that** said zones in need of protection correspond to life-threatening zones on the human body.

8. Protective garment (1) according to any one of the preceding claims 6 or 7, **characterized in that** said zones in need of protection correspond to more than 40%, preferably more than 50%, more preferably more than 60%, most preferably more than 70% of the total surface area of the protective garment (1).

9. Protective garment (1) according to any one of the preceding claims 1-8, **characterized in that** an attachment element (3) relates to a pocket (3), which is suitable to removably incorporate a stab resistant protective pad (4).

10. Protective garment (1) according to preceding claim 9, **characterized in that** said pockets relate to seamless pockets.

11. Protective garment (1) according to any one of the preceding claims 9 or 10, **characterized in that** said pockets (3) are provided with an opening (6).

12. Protective garment (1) according to any one of the preceding claims 1-11, **characterized in that** said cut resistant fabric (2) is manufactured from a hybrid yarn.

13. Protective garment (1) according to preceding claim 12, **characterized in that** the hybrid yarn comprises at least two different fibers, which are selected from the following group of aramid, para-aramid, meta-aramid, polyamide, polyamide-imide, polyethylene, high-tenacity (HT) polyester, high-tenacity (HT) polyamide, glass, polyester, stainless steel, ultra-high molecular weight polyethylene, modified ultra-high molecular weight polyethylene, polyphenylene

benzobisoxazole (PBO), liquid crystal polymer (LCP), polyester to which a ceramic product is added and elastane, and preferably glass fiber provided with a coating; with preferably having a linear mass density ranging between 20 tex and 200 tex and wherein the cut resistant fabric (2) has a specific weight between 300 g/m^2 and 1000 g/m^2.

14. Kit of a protective garment (1) according to any one of the preceding claims 1-13 with one or more stab resistant protective pads (4).

15. Kit according to preceding claim 14, **characterized in that** said attachment elements relate to pockets and that the shape of said one or more stab resistant protective pads (4) corresponds to the pockets (3) of the protective garment (1), in which these are suitable to be incorporated.

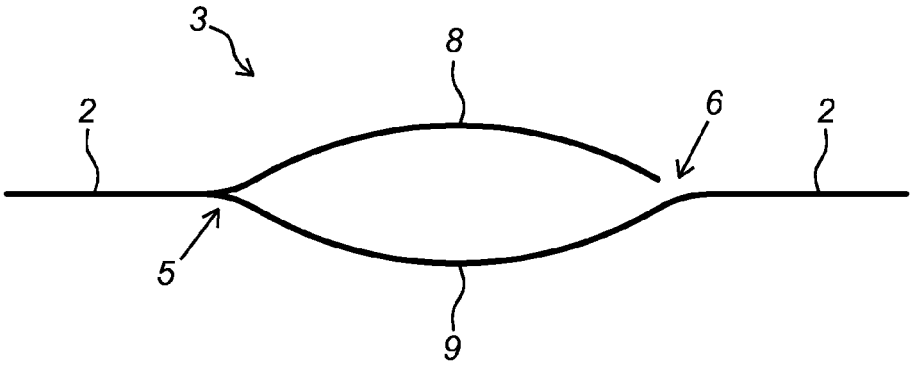


Fig. 1

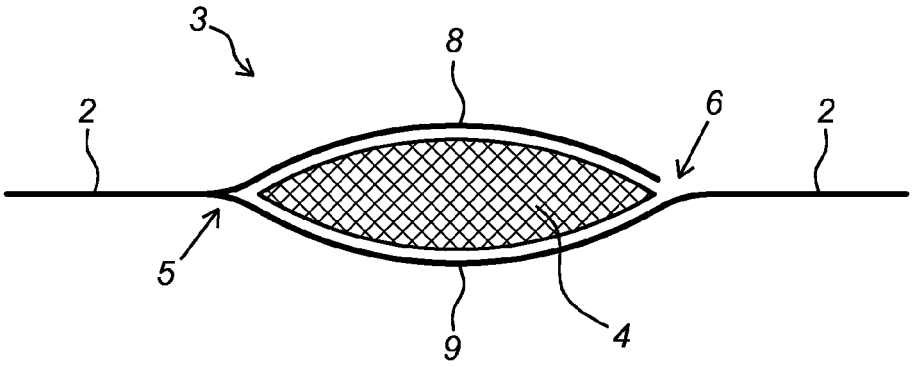


Fig. 2

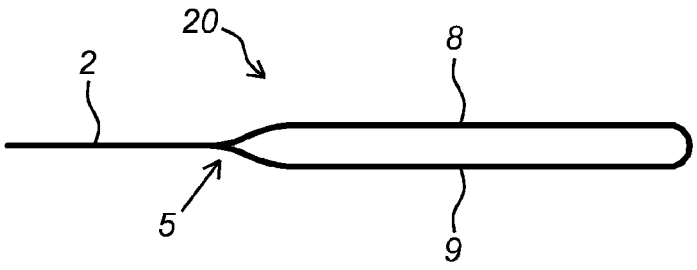


Fig. 3

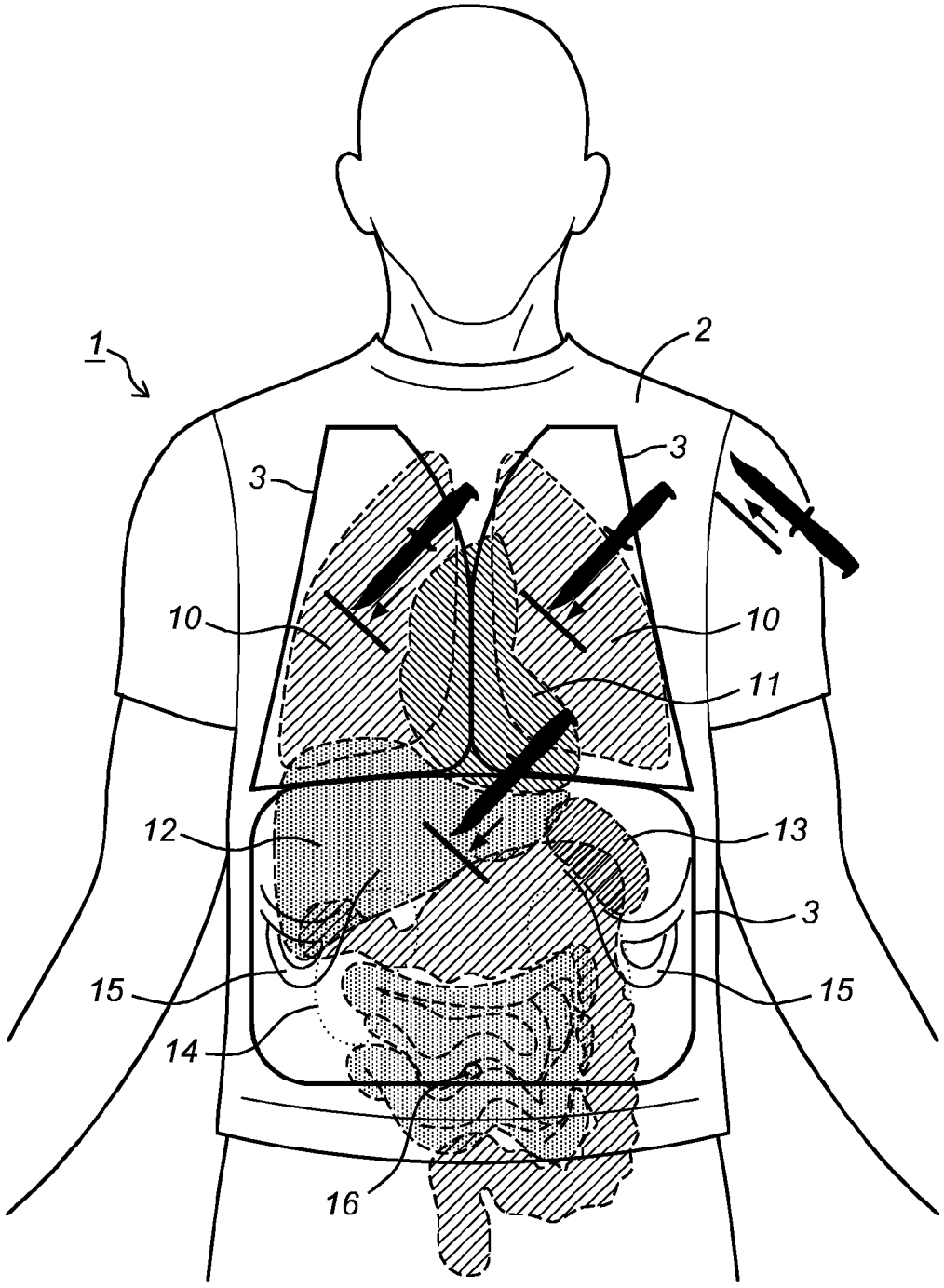


Fig. 4

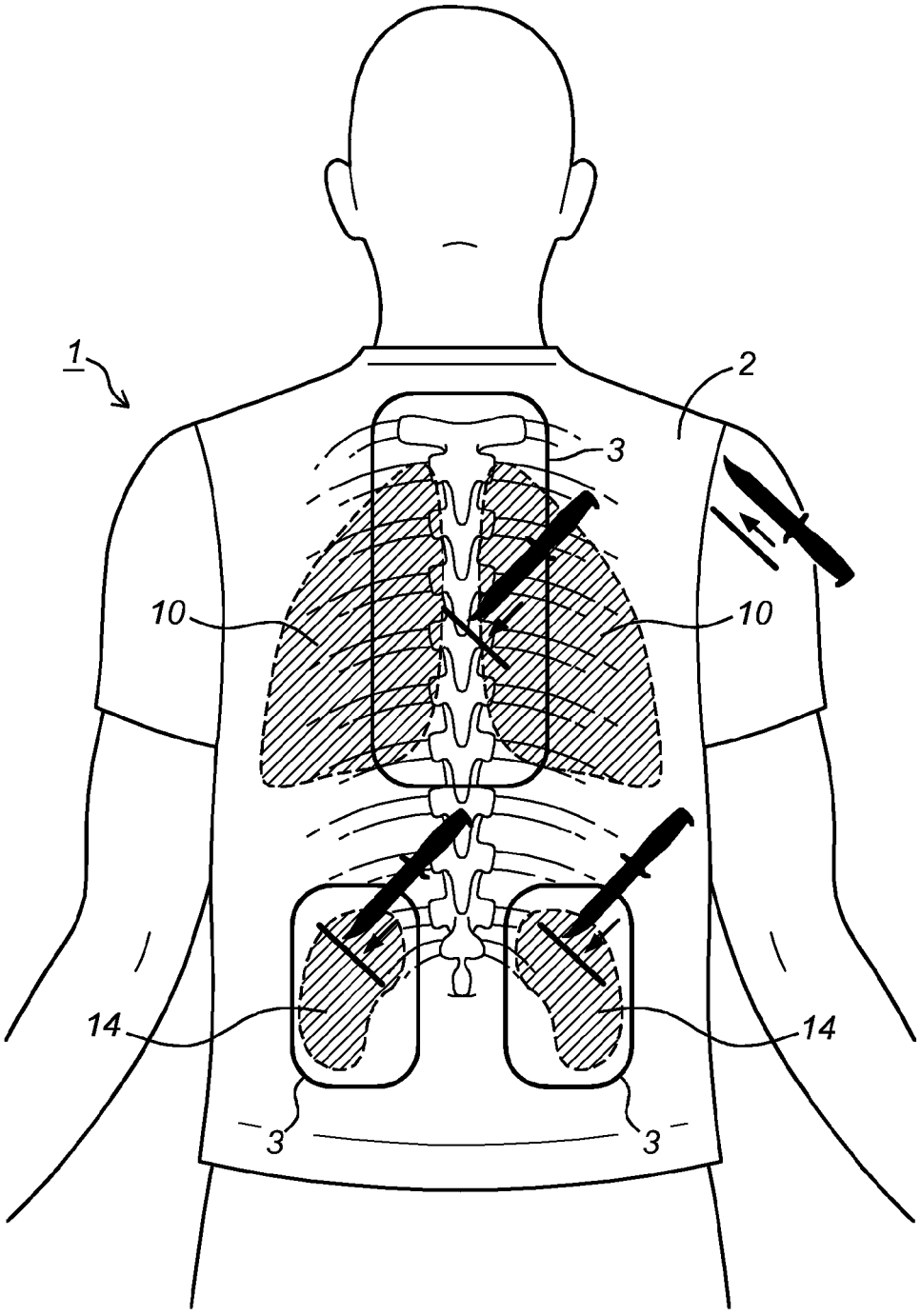


Fig. 5

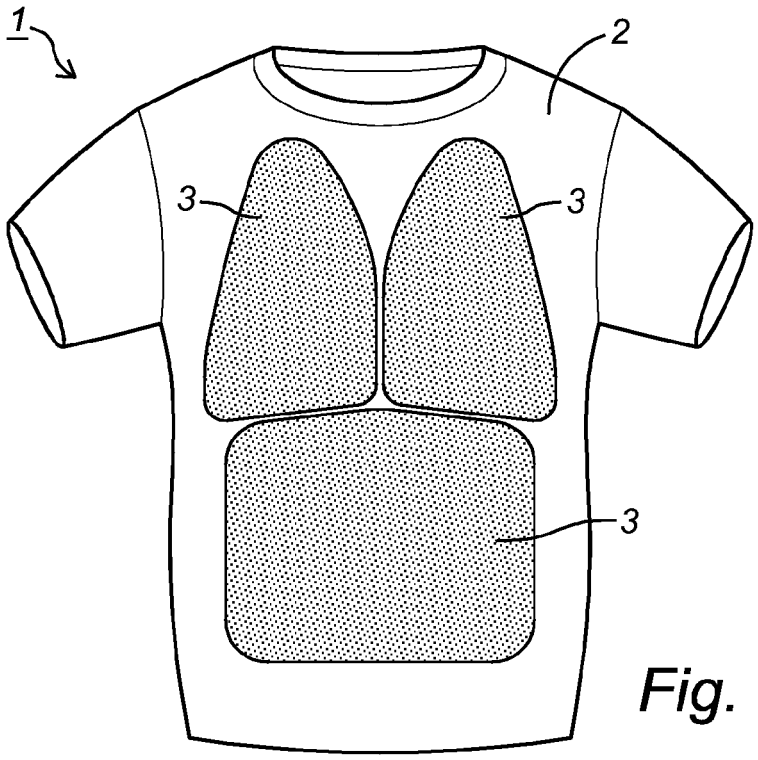


Fig. 6a

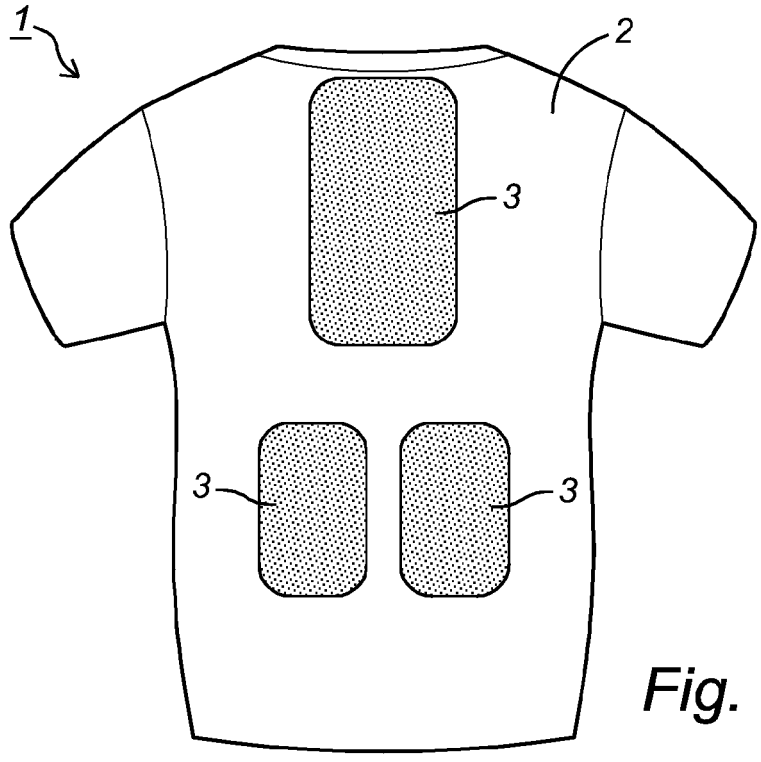


Fig. 6b

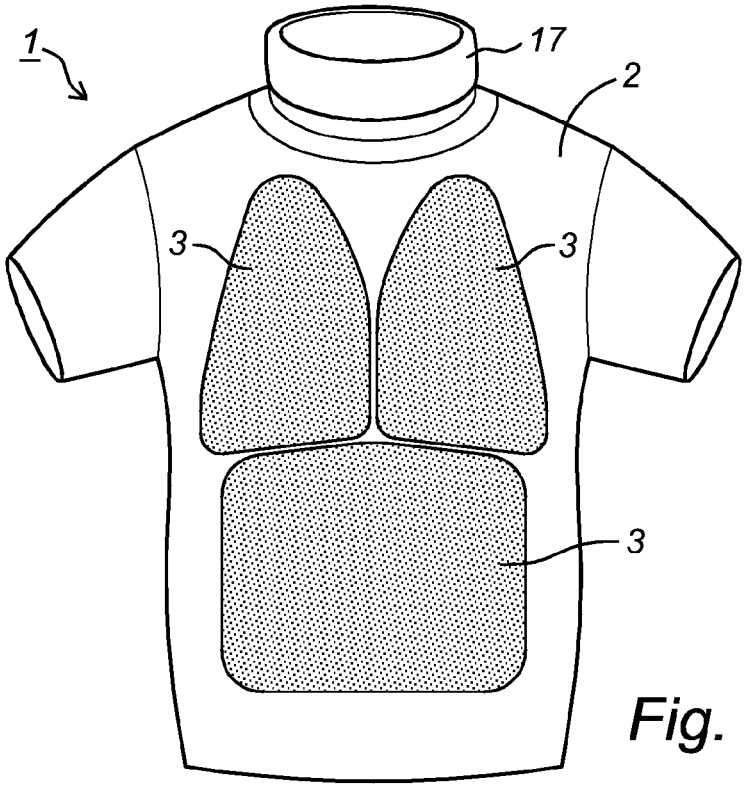


Fig. 7a

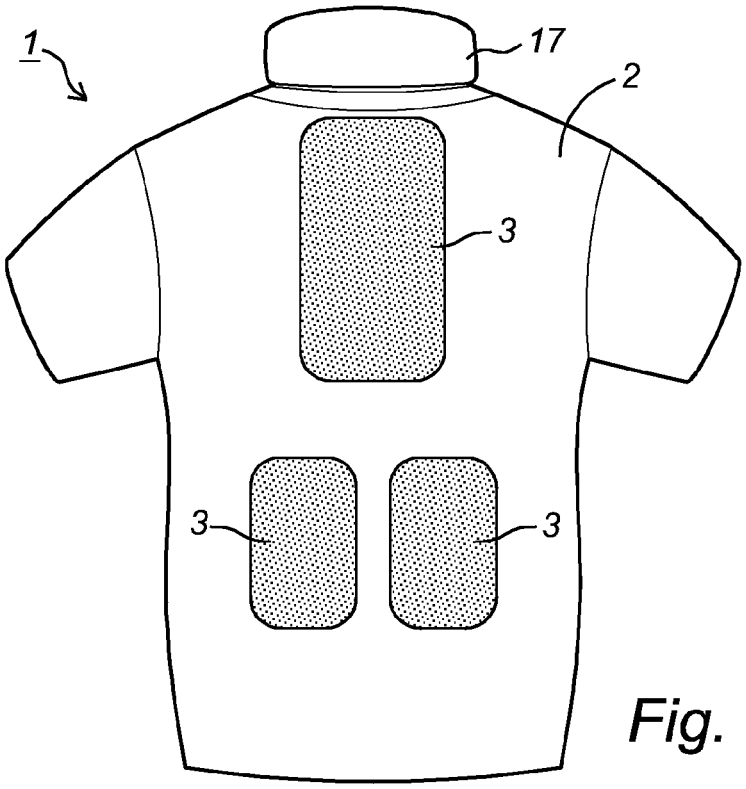


Fig. 7b

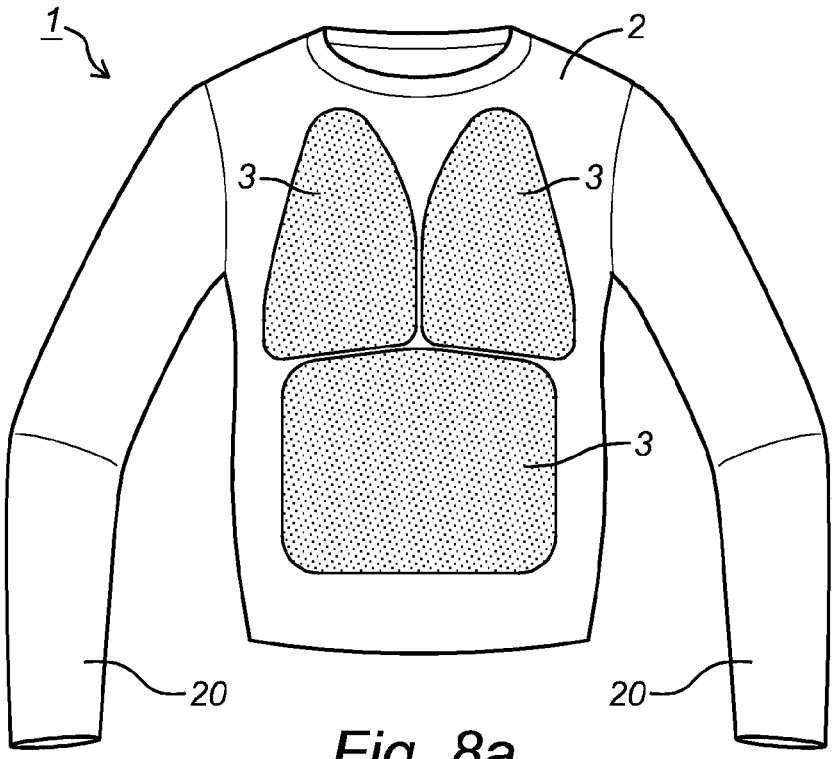


Fig. 8a

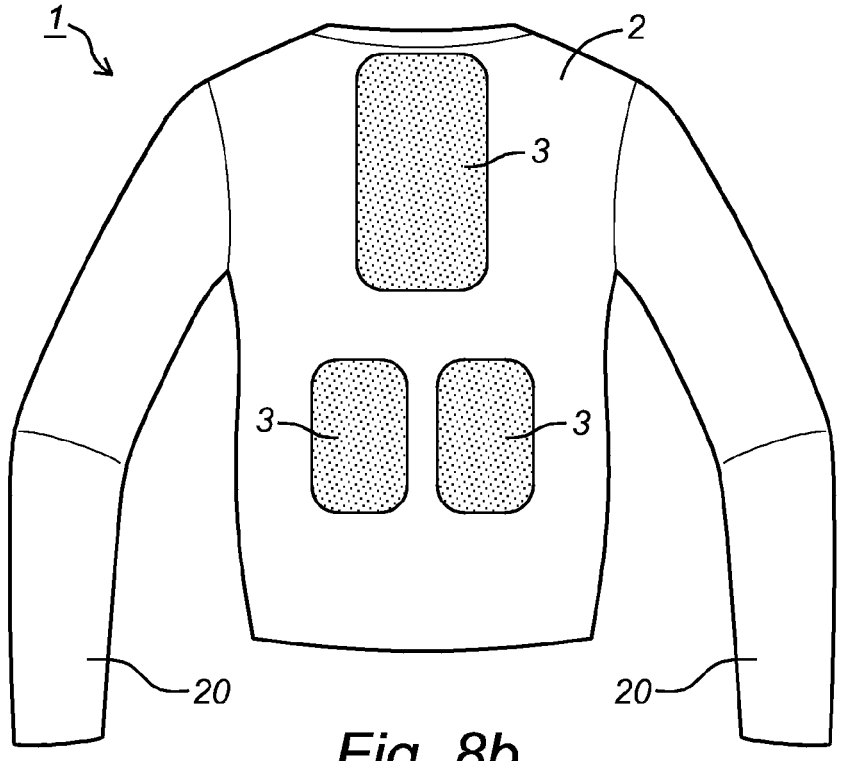


Fig. 8b

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EUROPEAN SEARCH REPORT

Application Number
EP 14 19 3651

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A41D
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 February 2015	van Voorst, Frank

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