GARMENT HAVING ARMORED PROTECTION

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ABSTRACT
Embodiments described herein relate to a garment which includes a flexible, lightweight, compact article of clothing having a form-fitting design and protective armor within it. More specifically, the garment utilizes a form-fitting shirt design that encloses a protective armor shield, e.g., a Kevlar protective shield. The garment comprises a housing, which is incredibly strong, durable, and weather resistant, to hold the protective armor shield.
GARMENT HAVING ARMORED PROTECTION

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority from U.S. Provisional Application No. 61/336,984, filed on Jan. 29, 2010, which is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] Embodiments described herein relate to garments having armored protection and, more specifically, to a garment which includes a flexible, lightweight, compact article of clothing having a form-fitting design and protective armor within it.

BACKGROUND OF THE INVENTION

[0003] In the dangerous worlds of law enforcement and defense, dedicated officers and members of the military face life-threatening circumstances as a routine part of their job. Their daily work puts them in dangerous situations and unforgiving environments, often exposing them to severe weather for hours at a time. These officers often must endure these physical hardships while wearing uncomfortable, but necessary protective equipment.

[0004] With all of the hardships faced everyday, law enforcement officers and members of the military should not, as they do now, have to wear uncomfortable protective wear. The one piece of equipment that is a must wear part of the uniform, is the life saving Kevlar vest, which protects the most vital organs of the body. As a trade off for that protection, the officers must wear a bulky material that does not “breathe”, and holds heat causing an increase in body sweat such that the vest becomes soaked with wetness and clings to the officer’s body, especially to the chest and back. In the winter, this is dangerous when the officer is facing cold weather. In the summer or in hot climates, the vest holds the moisture such that it develops mildew in the material, which is then exposed to the body. The resulting mildew is dangerous to an officer and, because the material is not washable, festers inside the web of threads.

[0005] As the law enforcement community has learned to adjust to the hazards of wearing a vest, they have devised a temporary, make shift solutions. For example, they layer their clothes so that they can peel-off, and put back on, layers according to their comfort level. The layering method usually involves several pieces of clothing such as a tee shirt, thermal wear, breasplate, uniform shirt, and outside coat. Of course, there is nothing to be done about the problem of mildew, as once it is detected, the only thing to do is to replace the infected vest. In the meantime, officers wear uniform white tee shirts under their vests to protect their bodies from direct exposure to the moisture in the vest. In some areas of the country, however, the tee shirt has exposed them to greater dangers as criminals target the vulnerable area known as the “triangle of death”, which is visible at a distance based on the visibility of the tee shirt.

[0006] As for fitting the vest to the body, the officers use the shoulder straps on the vest to constantly adjust the position of the garment and to keep it in place. This method has proven to be less than adequate in securing the vests for women, especially for officers who are full-breasted, and is equally problematic for officers above extra-large in size. In fact, the current vest is typically unavailable to large and/or over weight officers. Consequently, law enforcement agencies have reported that some officers are forced to go without the vests.

[0007] Given this, there is a need and desire for a flexible, breathing, contoured garment that includes a protective armor shield.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is an illustration of a garment according to an embodiment described herein.

[0009] FIG. 2 is another illustration of the garment according to an embodiment described herein.

[0010] FIG. 3 is another illustration of the garment according to an embodiment described herein.

[0011] FIG. 4 is another illustration of the garment according to an embodiment described herein.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0012] Embodiments discussed herein provide a garment which includes a flexible, lightweight, compact article of clothing having a form-fitting design and protective armor within it. In the following detailed description, reference is made to the accompanying drawings which form a part hereof, and in which is shown by way of illustration specific embodiments that may be practiced. These embodiments are described in sufficient detail to enable those of ordinary skill in the art to make and use them, and it is to be understood that structural or logical changes may be made to the specific embodiments disclosed. The following description refers to the use of specific embodiments of the garment used in the field of law enforcement, however, that is only one application. It should be appreciated that the described embodiments can be applied to any other desirable application such as, but not limited to, the military, sports, and the like.

[0013] Referring to FIGS. 1-4, a flexible, lightweight, compact garment 100 comprising of a form-fitting shirt 110 and protective armor 120 is described in accordance with embodiments described herein. More specifically, the garment 100 utilizes a form-fitting shirt 110 designed to enclose a protective armor 120, e.g., a Kevlar protective shield. Garment 100 includes a housing 105, which is strong, durable, and weather resistant, to enclose the protective armor 120. FIG. 1 illustrates a front view of an outer view of garment 100. FIG. 2 illustrates a back view of the outer view of garment 100. FIG. 3 illustrates a front view of an inner view of garment 100. FIG. 4 illustrates a back view of the inner view of garment 100. It should be appreciated that all illustrations include a view of the reinforced lines in the garment as well as the outline of the protective armor, however, garment 100 does not visually need to include these lines or outlines.

[0014] The housing 105 of garment 100 may comprise of two sections, one section being positioned on a frontal side 125 of a user and the other being positioned on a back side 135 of the user. Each of the two sections 125, 135 are provided such that the upper torso area of the user is covered and protected by the protective armor 120 (when inserted). It should be appreciated that the remaining sleeve portions may, or may not, be covered and protected by the protective armor. In the preferred embodiment, the sleeve portions are not covered and protected by the protective armor. Front area 125 and back area 135 may be separated by seams 145.
In use, the protective armor 120 is inserted into housing 105 through opening 130, which may be on the side of the garment 100 (as illustrated) or laterally across the front area 125 and back area 135 respectively. Opening 130 can be opened and closed using any known method such as, but not limited to, a zipper, Velcro, or the like. FIGS. 1-4 are provided to more clearly show a visual delineation between the protective armor portions 120 and the sleeve portions 110, however, no visual delineations are required on the garment 100 itself. Conversely, protective armor portions 120 may optionally be delineated from the rest of the garment by using a different color or material or the like, whether for functional or aesthetic reasons.

Garment 100 can be made of a poly-ester/elastane fabric. In the preferred embodiment, a high elastane content is used in the fabric to allow for proper stretch and support. In other preferred embodiments, garment 100 can be designed and constructed of materials that are well-suited for cooling the body. It should be appreciated that other materials known in the art can be used such as, but not limited to, microfibers, including elastane, nylon, polyester, blends thereof and the like.

Garment 100 is comfortable, contoured, and serves as a body shield encasement. In a preferred embodiment, the garment 100 is made of washable materials, thereby allowing the garment to be washed and/or dried as needed, once the protective armor is removed. When constructed of washable materials, there is no chance of mildew forming and garment 100 is more hygienic than the garments worn by officers today. In other preferred embodiments, the design and material used to construct garment 100 can be adapted for use in cold weather as well as for use in summer or hot climates.

Garment 100 can be made of known materials that provide for a uniform, contoured body-fitted sheath to hold the Kevlar bulletproof vest plate snugly in place. When garment 100 is made of such materials, the use of a shoulder strap to make the vest plate fit better may be eliminated. Contouring the design of garment 100 allows for the protective sheath to be made in larger sizes, which provides for a better fit and better comfort for female officers and/or large officers of both genders.

Garment 100 is well suited to be worn with compression type clothing where an additional garment, e.g., a law enforcement uniform, is disposed over it. In such an embodiment, garment 100 may serve as an undergarment.

The embodiments described herein eliminate the need for the layering method the officers currently use to protect against especially cold weather. Instead of wearing the tee shirt, thermal, breasplate, uniform shirt, and outside coat, an officer riding in a cruiser need only wear a tee shirt below garment 100, covered by a uniform shirt. Garment 100 is highly flexible, and not cumbersome. It is easy to put on and can be taken off with less time and wears comfortably. The embodiments described herein offer a freedom of movement without the need to take the outer coat off and on as officers jump in and out of their cruiser all day long. The contour fit also frees access to their firearm and other equipment carried around the belt area.

Another feature of the embodiments described herein is that it is discreet and not immediately or easily detected when being worn. Its understated design does not draw a lot of attention, which cannot be said of the box-like design of the vests currently being worn. The garment 100 eliminates the exposure of the tee shirt line and conceals the so-called “triangle of death”, making it more difficult to be targeted by criminals.

While aspects of the embodiments have been particularly shown and described with reference to exemplary embodiments above, it will be understood by those skilled in the art that various additional embodiments may be contemplated without departing from the spirit and scope of the embodiments described herein. For example, the garment might be only one of several layers of underclothing worn by the user; the garment could be worn at times without overlying protective gear; the protective armor could cover substantially the entire garment; or the size, shape, and/or positioning of the protective armor could be assigned and/or marketed for use in a specific activity. However, a device or method incorporating such embodiments should be understood to fall within the scope of the embodiments described herein.

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A garment comprising:
   a fabric having a torso portion, and two sleeve portions, wherein the torso portion comprises a housing that includes a protective armor.

2. The garment of claim 1, wherein the protective armor is a Kevlar shield.

3. The garment of claim 1, wherein the fabric comprises of a poly-ester/elastane fabric.

4. The garment of claim 1, wherein the garment further comprises an opening for inserting and removing the protective armor.

5. The garment of claim 1, wherein the torso portion has a different delineation than the two sleeve portions.

6. A law enforcement garment comprising:
   a fabric having a first portion covering an upper torso area of a user, and a second portion forming a left arm sleeve portion and a right arm sleeve portion, wherein the first portion comprises a protective armor shield.

7. The law enforcement garment of claim 6, wherein the protective armor is a Kevlar shield.

8. The law enforcement garment of claim 6, wherein the garment is an undergarment.

9. The law enforcement garment of claim 6, wherein the garment further comprises an opening for inserting the protective armor.

10. The law enforcement garment of claim 9, wherein the opening is opened and closed by a zipper.

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