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R. A. ARMELLINO
LIGHTWEIGHT BODY ARMOR
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3,582,988

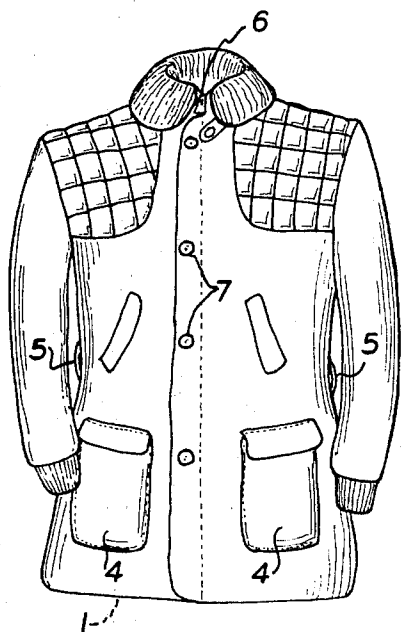


Fig. 1

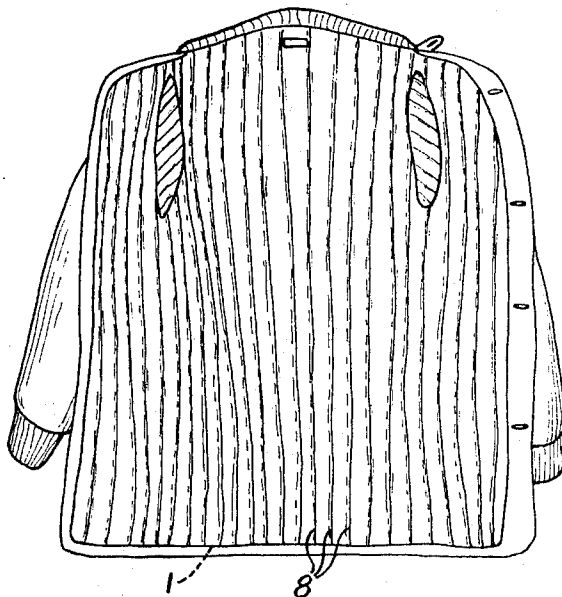


Fig. 4

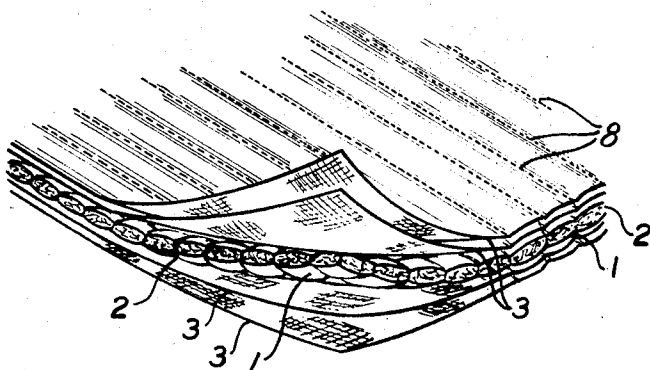


Fig. 3

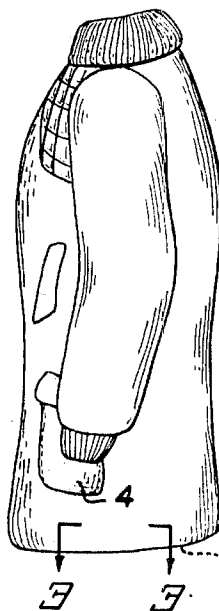


Fig. 2

INVENTOR
RICHARD A. ARMELLINO

BY

Ernest A. Armellino
ATTORNEY

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LIGHTWEIGHT BODY ARMOR

Richard A. Armellino, Huntington, N.Y. (% Emil C. Herrmann, Esq., 158 3rd St., Mineola, N.Y. 11501)

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2 Claims

ABSTRACT OF THE DISCLOSURE

A lightweight body garment resistant to buckshot, pellets, and other missiles, comprised of a liner made up of a high tensile stable fibers sandwiched between outer layers of fabric having anti-ballistic properties, the stable fibers of the inner liner being loosely quilted or contained so as to prevent bunching or packing of the fibers.

This invention relates to lightweight body armor and more particularly to garments made up of materials having anti-ballistic qualities for protection against missiles such as buckshot or shotgun pellets.

One of the major problems concerning sportsmen in the field is the danger of being accidentally shot by other sportsmen or even themselves as a result of negligence or carelessness in the handling of weapons. While there are on the market today several types of armored garments capable of affording adequate protection, such armor has been generally designed for combat or anti-riot areas and, consequently, it is fabricated to give all-around protection to the wearer against a multitude of anti-personnel missiles, as, for example, rifle, machine gun, and pistol fire as well as mortar and shell fragments. To be effective against such missiles, the garment must necessarily be somewhat awkward and heavy and as such is impractical for wear by sportsmen engaged in a field hunt. My invention, on the other hand, is designed and directed primarily toward such sportsmen and, in particular, those engaged in hunting or being afield where shotguns are used, and an object of my invention is to provide a suitable garment of extremely lightweight material capable of affording protection to the wearer against death or injury caused by shotgun pellets.

My invention consists of fabricating a garment, such as a jacket, of materials having anti-ballistic qualities, such materials being comprised of a quilted layer made up of staple fibers having high tensile strength, such fibers being either natural or synthetic sandwiched between two layers of one or more segments of ballistic cloth such as nylon. The quilted liner may be made up in advance of being affixed to the ballistic fabric, or the entire assembly may be made up at once as illustrated in FIG. 3. The purpose of the quilting of the material is to prevent the loose fibers from settling to the bottom of the garment and thereby bunching or packing and rendering the garment both uncomfortable and ineffectual. Such a garment would be light in weight and still have resistance against penetration of most shotgun pellets. In tests of material so fabricated consisting of a layer of quilted synthetic staple fibers sandwiched between multiple layers of ballistic nylon, there was no puncture nor complete penetration from either direction when fired at with a 12 gauge shotgun using a standard load of #6 shot at a range of 20 feet.

When penetration is effected, the fibers entwine and hold the pellet, slowing its path of flight, while at the

same time the ballistic cloth has distributed part of the shock and dispersed it radially from the point of impact.

In describing the foregoing, the pellets rotate due to air friction before striking the outer garment. They become deformed upon impact with the ballistic cloth and if any of the individual pellets penetrate the ballistic cloth, it moves into the fibers and is entwined. As it twists into the fibers, its velocity is decreased due to the increase of the surface area of the moving pellet and the fibers entwine around it. By the time the pellet reaches the other side and strikes the ballistic fabric much of the initial energy has been absorbed and the remainder is dispersed by the ballistic fabric.

The accompanying drawings illustrate a preferred embodiment of my invention but should not be deemed to limit the scope of my invention to any particular dimensions, proportions or similar details shown thereon.

FIG. 1 of the drawing is a front elevation of an armored jacket fabricated in accordance with my invention.

FIG. 2 is a side elevation of the garment illustrated in FIG. 1.

FIG. 3 is an enlarged sectional view partly broken away taken along lines 3 to 3 of FIG. 2.

FIG. 4 is a view of the garment shown in FIG. 1 unfastened and open so as to expose the interior surface.

More particularly, the armored garment in accordance with the present invention consists of a quilted liner 1 of staple fibers 2 having a high tensile strength sandwiched between a shell 3 of ballistic fabric that is a tightly woven high tenacity elongatable plastic material such as nylon. The jacket may further be detailed by the addition of patch-pockets 4, belt-loops 5, closure means as, for example, a slide fastener 6 or buttons 7.

While changes in the arrangement, proportions, dimensions and shape of the armored garment disclosed in this specification will occur without departing from the spirit of the invention, it is my desire to encompass such variations within the scope of such invention. I thus desire to be limited only by the appended claims.

I claim:

1. A missile retardant garment comprising a body portion, said body portion having an inner layer and two outer layers with stitch means securing said inner and outer layers together the inner layer comprising a quilted liner of staple fibers having a high tensile strength, and each of the outer layers comprising a plurality of layers of fabric of tightly woven high tenacity elongated plastic material having anti-ballistic qualities.

2. A missile retardant garment as defined in claim 1 wherein said stitch means comprises nylon threads and each of the outer layers comprises sheets of nylon fabric.

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RICHARD J. SCANLAN, JR., Primary Examiner

G. H. KRISNANICH, Assistant Examiner

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