US 20120255094A1

(19) **United States**

(12) **Patent Application Publication**

Dragony

(10) **Pub. No.: US 2012/0255094 A1**

(43) **Pub. Date: Oct. 11, 2012**

(54) **SUN SCREEN ARTICLE**

(76) Inventor: **Victor Dragony**, Tucson, AZ (US)

(21) Appl. No.: **13/439,416**

(22) Filed: **Apr. 4, 2012**

Related U.S. Application Data

(60) Provisional application No. 61/473,580, filed on Apr. 8, 2011.

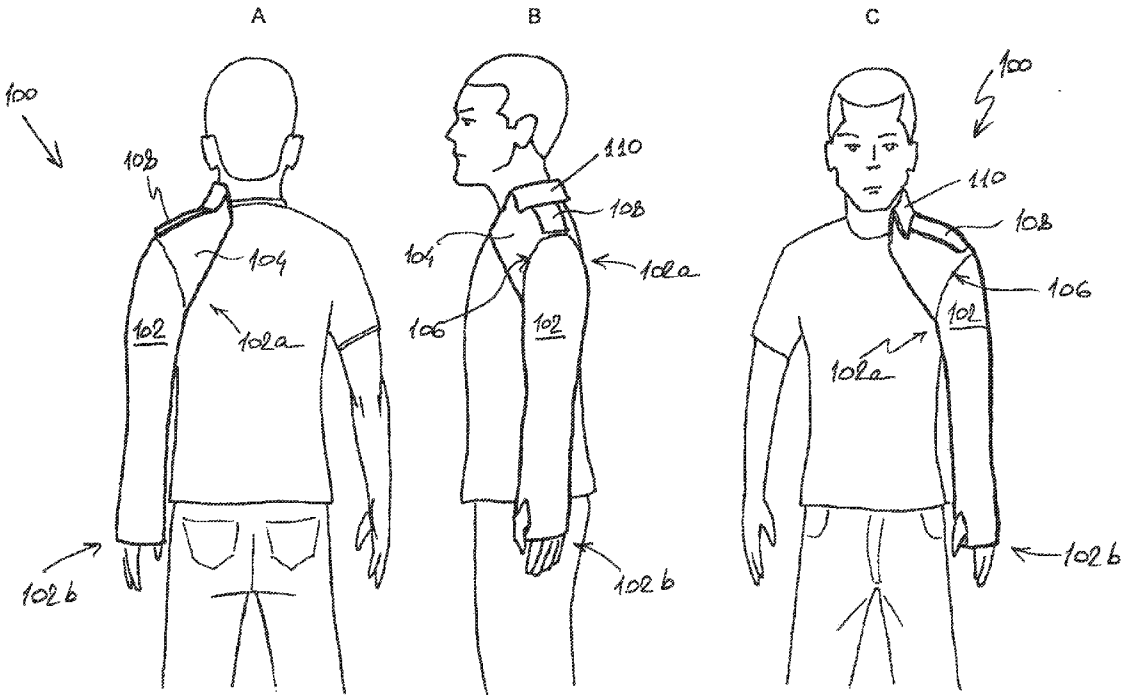
Publication Classification

(51) **Int. Cl.**
A41D 13/08 (2006.01)

(52) **U.S. Cl.** **2/16**

(57) **ABSTRACT**

A sun screen article protecting at least an arm and a shoulder, and optionally a portion of the neck and/or a portion of the hand of a person wearing it from excessive exposure to solar radiation, and method of using the sun screen article inside a vehicle. The article includes a tubular portion adapted to protect an arm and a flap adjoining the tubular portion and adapted to protect a shoulder. An optional collar portion affixed to the open and of the flap is structured to screen at least a portion of the neck. An epaulette, in affixable cooperation with the flap of the sun screen article, prevents a shoulder harness from freely moving with respect to the sun screen article and a body of the sun screen article from sliding down the arm of the wearer.



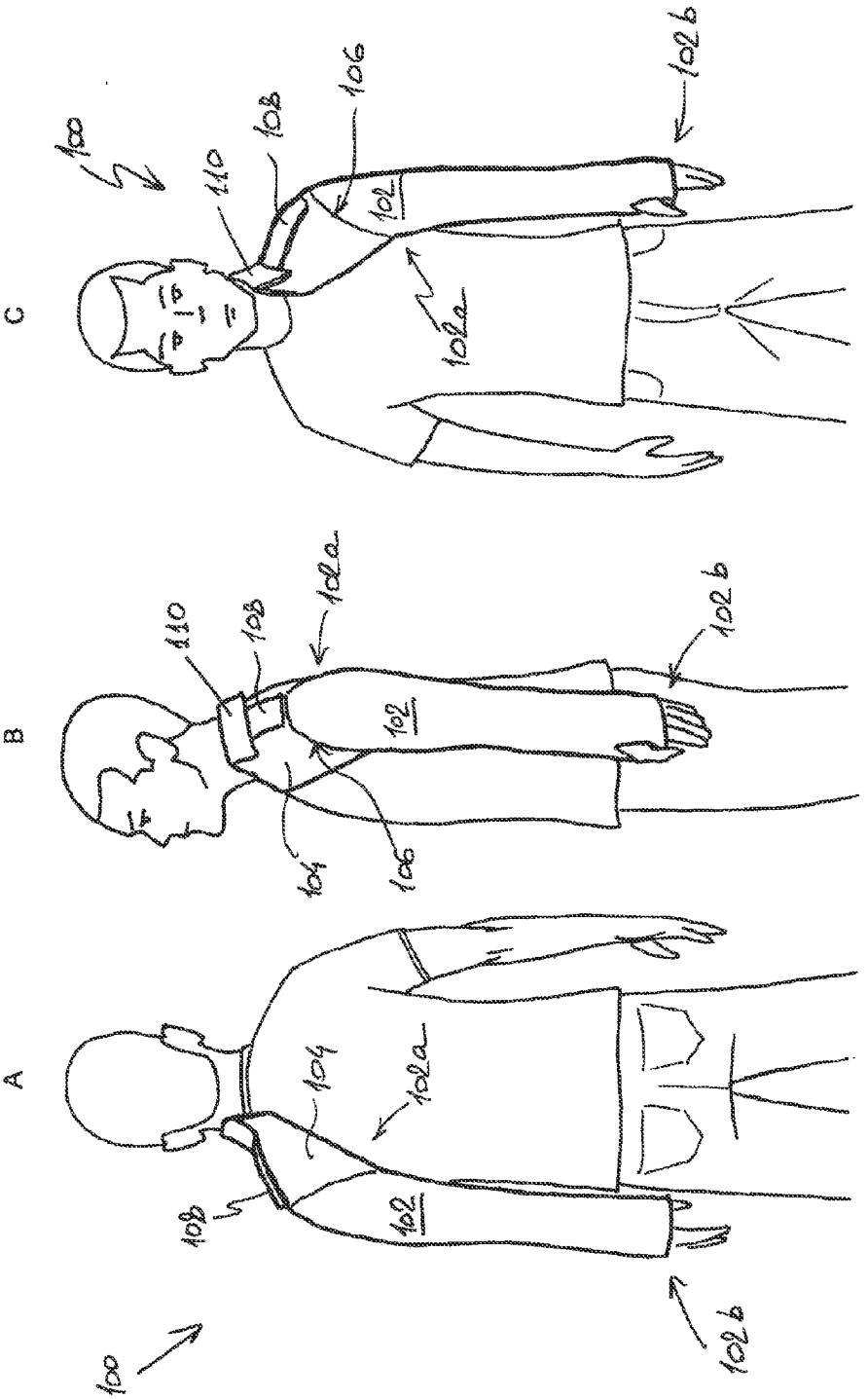


FIG. 1

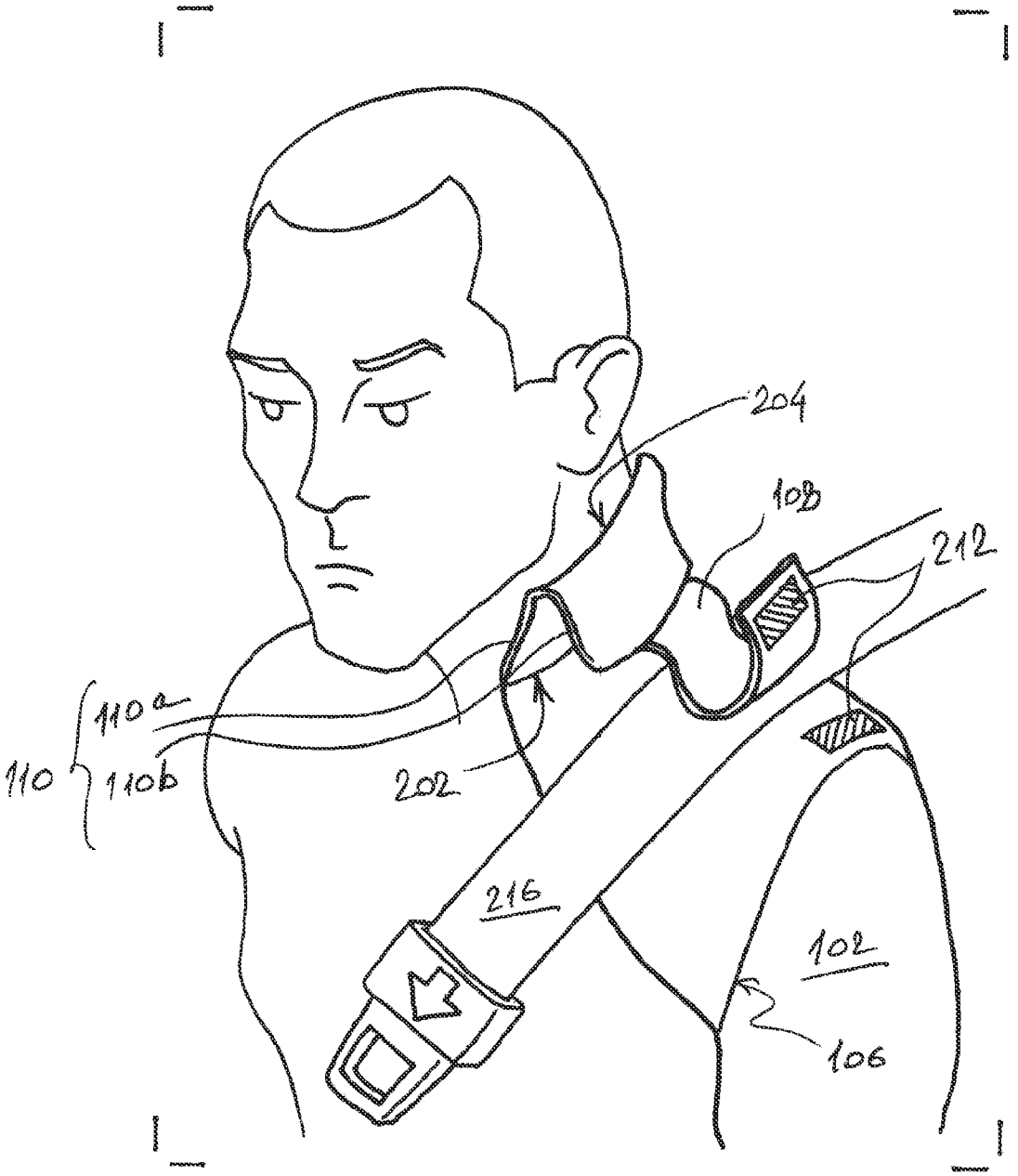


FIG. 2

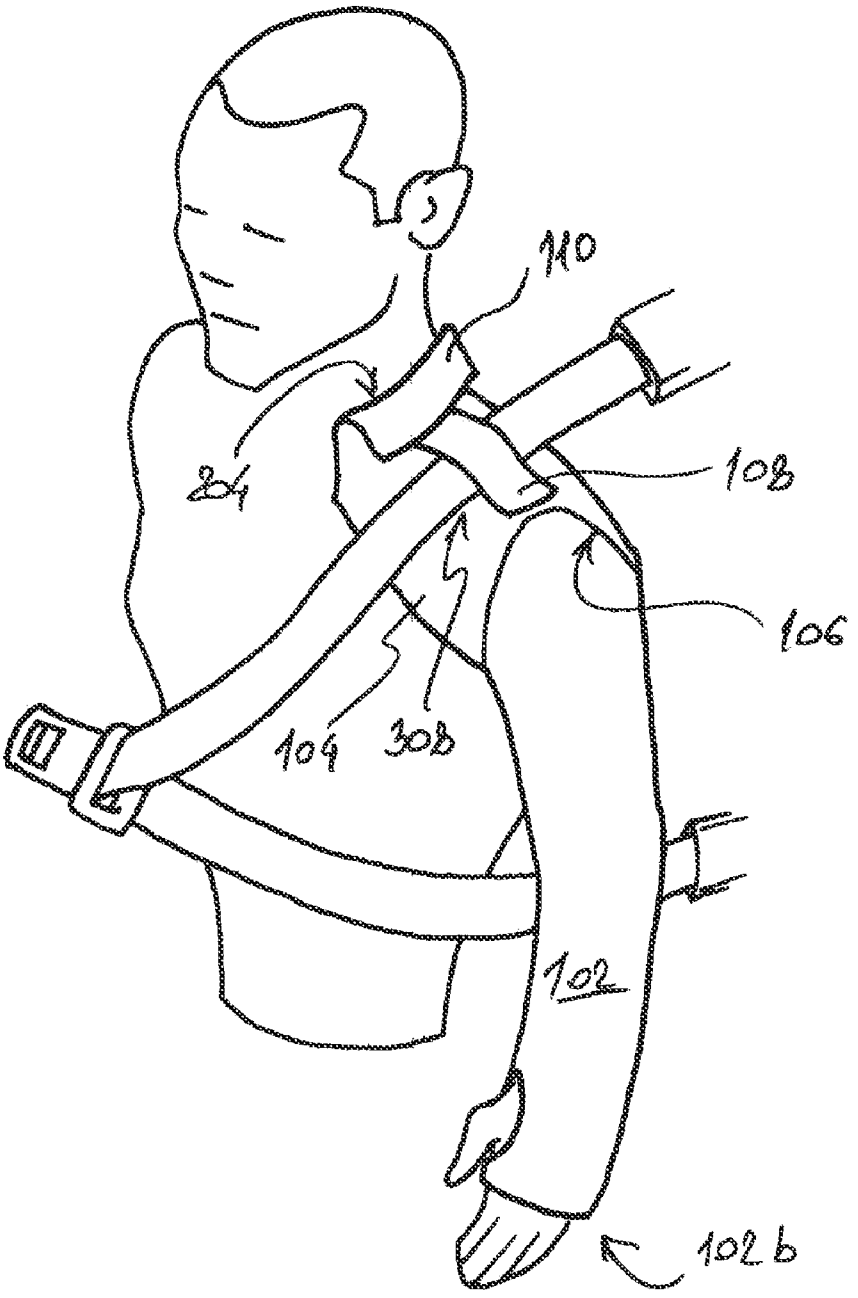


FIG. 3

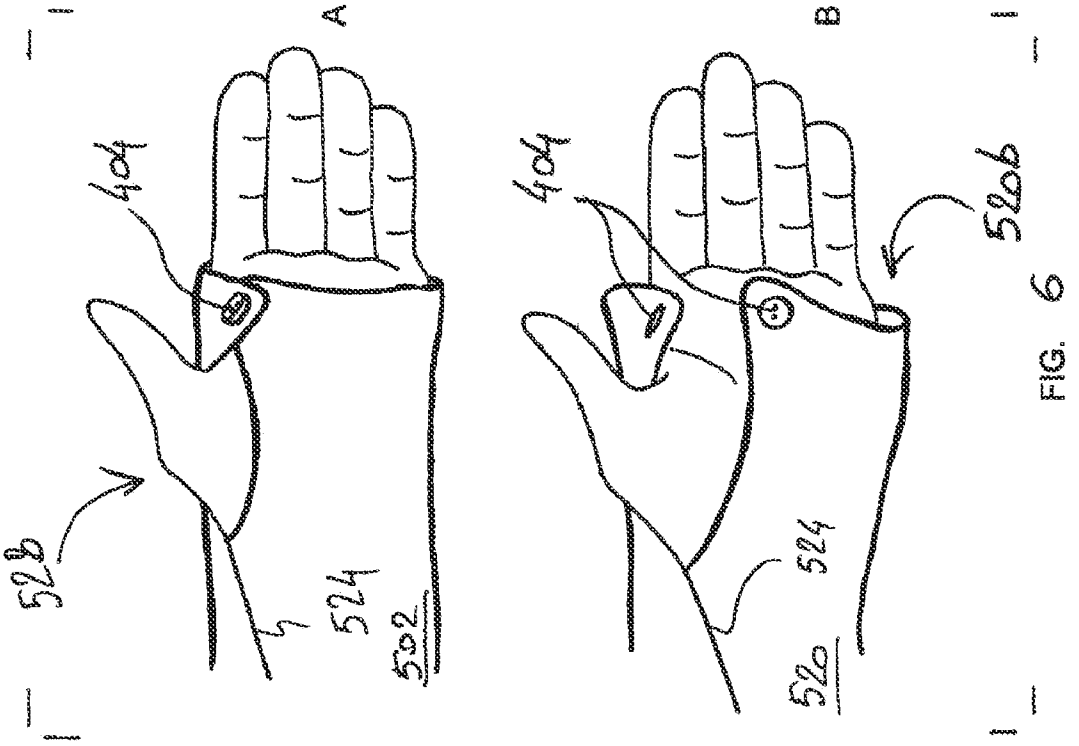


FIG. 6

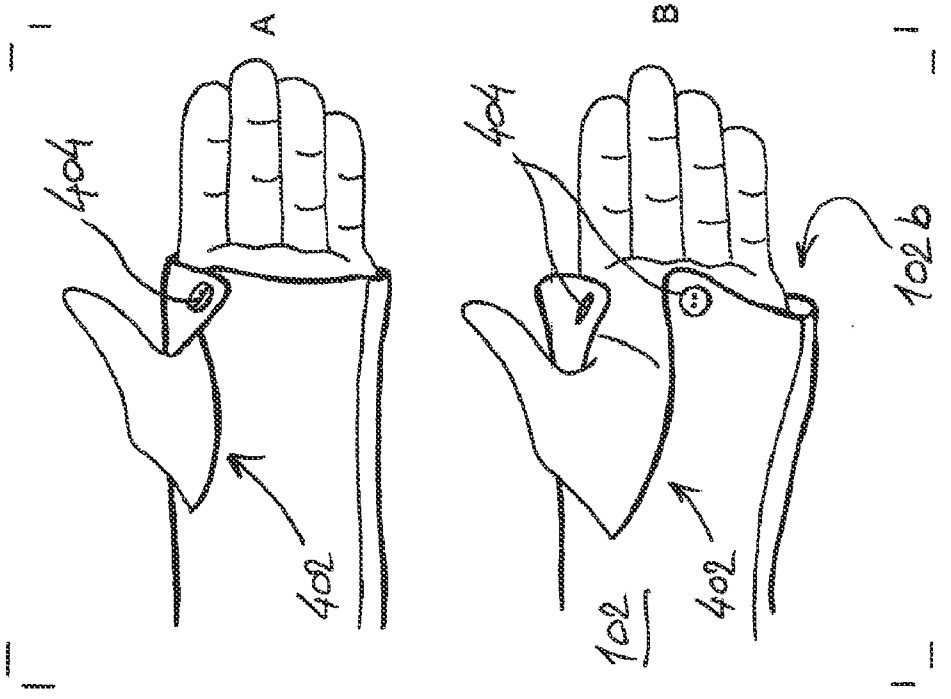


FIG. 4

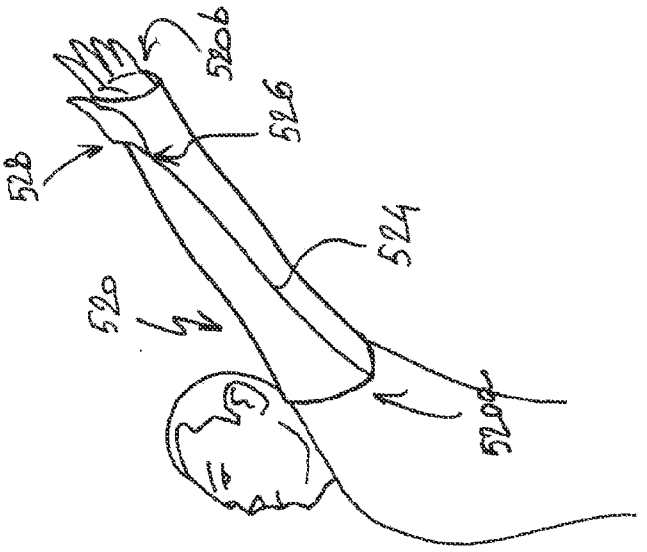

520b
526
528
524
520
520a

FIG. 5B

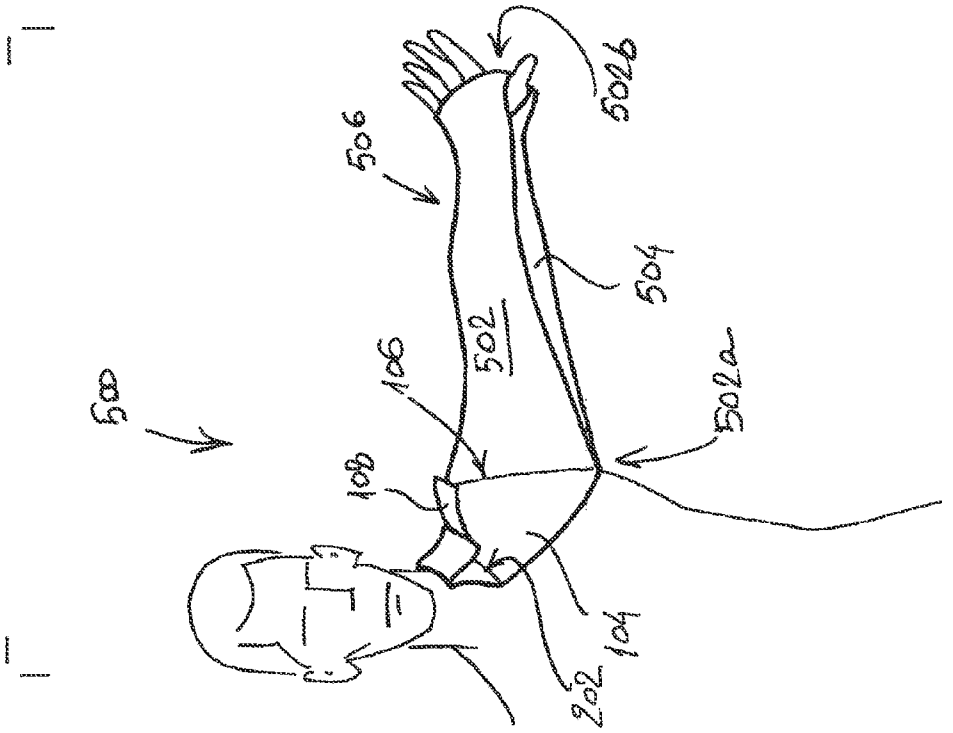

500
506
502b
504
502
106
502a
108
104
202

FIG. 5A

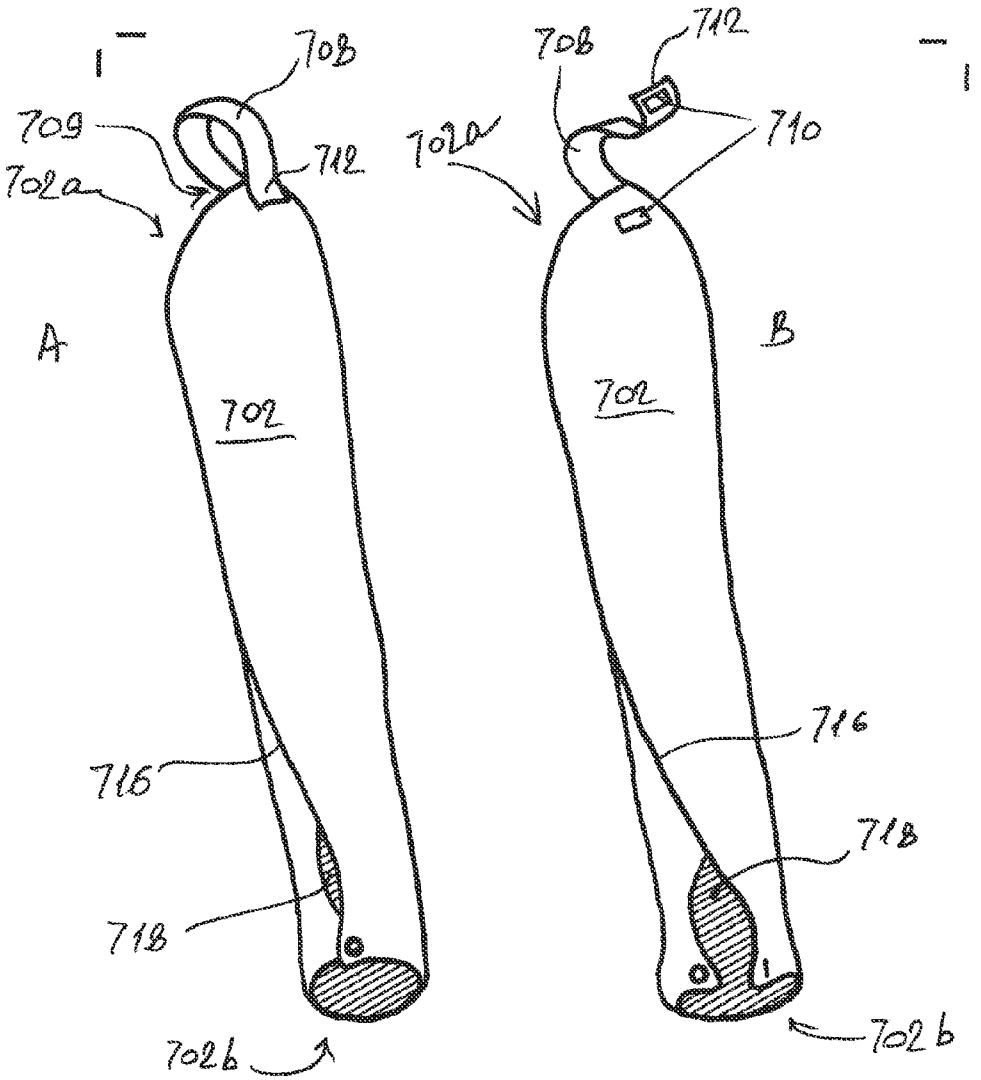

708
709
712
702a
A
702
716
718
702b
708
712
710
702a
B
702
716
718
702b

FIG. 7

SUN SCREEN ARTICLE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims benefit of and priority from the U.S. Provisional Patent Application No. 61/473,580 filed on Apr. 8, 2011 and titled "Sun Screen". The entire disclosure of this provisional application is incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates to means of protection from excessive exposure to solar radiation and, more particularly, to a sun screen configured for use by a person within a vehicle.

BACKGROUND ART

[0003] It is a very common practice for a person inside a vehicle to extend a portion of an arm outwardly beyond the window. If the arm so extended is directly exposed to sunlight, the person will experience sunburn. To address this problem, various garments have been proposed. And yet no solution has addressed the problem completely. A need still exists for a single-arm garment which would shield not only a wearer's arm, but also a shoulder, and/or neck and, possibly, a wearer's hand as well from sunburn, and which is not coupled with or affixed to the neck or head portions of the body.

SUMMARY OF THE INVENTION

[0004] Embodiments of the present invention provide a sun screen article and method of exploitation of the sun screen article. One embodiment includes a tubular body having input and output ends that are opposite to one another; a flap securely connected to said input end along a portion of a perimeter of said input end to define a dihedral angle between a surface of the flap and a surface of the tubular body; a collar portion integrated with the flap along a second side of the flap that is opposite to the portion of a perimeter of the input end to which the flap is secured; and a strap having first and second strap ends. The strap may be attached, at its first end, to the flap proximate the second side of the flap, either permanently or removably, and have its second end configured to be securely attachable to the flap proximate the portion of a perimeter of the input end to which the flap is secured. In a specific embodiment, the attached strap defines an epaulette on the flap, which is configured to securely accommodate a vehicular shoulder harness, which in one embodiments may be a seat-belt, between the epaulette and the flap when the sun screen is worn within a vehicle. In one embodiment, the collar portion may be configured to extend transversely with respect to the flap and, optionally, to conceal the first end of the strap attached to the flap from being observable.

[0005] In addition, an embodiment of a sun screen may further comprise fastening means attached to at least one end of the strap. The sun screen may be further configured as a sleeve dimensioned to accommodate, inside the tubular body, an arm of a person wearing the sleeve inside a vehicle, when the fingers of the person remain substantially outside of the output end and the flap covers the person's shoulder and the collar portion covers at least a lower portion of the person's neck, with the epaulette being adapted to restrict a shoulder harness under the epaulette such as to removably retain the tubular body of the sleeve from sliding down the arm of the person.

[0006] Another embodiment provides a sun screen for use in a vehicle that includes a sleeve having an input end and an output end and an internal cavity extending between these ends, the sleeve appropriately configured to receive an arm of a person inside the vehicle through said input end and to fit over said arm while enclosing said arm within the internal cavity and allowing the person's fingers to project outwardly beyond the output end; and shoulder harness attachment means in re-affixable communication with the sleeve. In one specific embodiment, the shoulder harness attachment means is configured to fit over the seat belt worn by the person while sitting in a car seat next to a vehicular window and to enclose a portion of the seat belt within a loop that is defined, at least on one side, by said shoulder harness attachment means. These shoulder harness attachment means is further adapted to substantially prevent the shoulder harness from sliding down the sleeve.

[0007] In one embodiment, the sleeve of the sun screen may include a placket at the output end of the sleeve, and further have the interfacing ends of such placket to be releasably affixable to one another with a use of at least one of a hook, a button, a Velcro, a snap, and a zipper. The embodiment of the sun screen may further include a shoulder portion at the input end, which is dimensioned to cover a shoulder and to extend to a neck of the wearer. Moreover, the shoulder harness attachment means of such embodiment may incorporate a strap having its first end attached to at least one of the sleeve and the shoulder portion and another end releasably attachable to at least one of the first end of the strap, the shoulder portion, and the sleeve. Such shoulder harness attachment means may be configured as an epaulette of the sleeve.

[0008] Yet another embodiment of the invention provides a method for screening an arm of a person sitting inside a vehicle next to a window from sunlight with a sun screen having a body with input and output openings and a strap affixable to the body, the length of the body being substantially commensurate with the length of the arm. The method includes at least the steps of extending the body over the arm such as to have the arm pass through the input opening and inside the body until the fingers are substantially outside of the output opening projecting outwardly therefrom, and until the input opening is positioned proximate to a person's shoulder; fastening the shoulder harness (which in one embodiment may be a vehicular seat belt); and removably attaching the strap to the body such as to form a loop around a portion the shoulder harness and define the loop at least on one side by the strap. The loop so defined constrains the shoulder harness and prevents the body of the sun screen from sliding down the arm. The used sun screen may be adapted to have a first end of the strap to be permanently affixed to the body proximate the input opening and a second end of the strip to contain fastening means. The step of removably attaching the strap to the body may include wrapping the strap over the shoulder harness such as to prevent the body from sliding down the arm and, optionally, affixing the second end of said strap proximate to the first end. Moreover, the strap may be configured to be removably attachable, with the use of fastening means to the sun screen's body at both ends of the strap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The invention will be more fully understood by referring to the following Detailed Description in conjunction with the Drawings, of which:

[0010] FIGS. **1**A, **1**B, **1**C show an embodiment of the invention in front, side, and back views, respectively.

[0011] FIG. **2** illustrates details of the embodiment of FIGS. **1**(A-C).

[0012] FIG. **3** provides another view of the embodiment of FIGS. **1**(A-C).

[0013] FIGS. **4**(A, B) illustrate output ends of the embodiments of FIGS. **1**(A-C).

[0014] FIGS. **5**(A, B) depict alternative embodiments of the present invention.

[0015] FIGS. **6**(A, B) illustrate alternative output ends including a placket corresponding to embodiment of FIG. **5**B.

[0016] FIGS. **7**(A, B) show additional alternative embodiments of the invention.

DETAILED DESCRIPTION

[0017] Definitions. For the purpose of this disclosure and claims appended herein, the following terms are defined to have meanings as indicated below unless required by context otherwise. A loop generally refers to a ring-like figure formed by a portion of a cord, ribbon, strap etc., that is folded or doubled upon itself at least once (or, in the alternative, that is attached at its ends to another element) so as to leave an opening between the parts, or anything having or forming this figure. For example, a ring-like fastening, whether tight or loose, formed by a belt around a person's waist provides an example of a loop.

[0018] The ordinary motorist (or his passenger) may wish to shield a hand and an arm from sunburn while driving along on his or her usual daily route, or on longer vacations drives. Air conditioning is great, but driving on a lovely day with one's arm resting on the ledge of an open car window is found enjoyable by many drivers. The driver's enjoyment, however, can be shattered if the drive results in severe sunburn to the hand, arm, shoulder, and neck. This problem is exacerbated in case of a long-distance driving such as trucking. This creates a concomitant problem of forcing the driver (and/or a passenger) of the vehicle to store a jacket or other garment in the vehicle for the express purpose of wearing such garment to protect the arm beyond the window of the vehicle from being sunburned.

[0019] The garment designs of the related art disclose some features beneficial to the driver's needs. A single-arm type of garment would be most useful since usually, at least for drivers, the left hand and/or arm is the most likely to be sunburned. The solutions of the related art have several shortcomings. To begin with, some solutions do not take into account the safety aspect of the design of a corresponding garment. In particular, such solutions are configured to be attached to the head or the neck of the person wearing a garment, which, in the case any other portion of the garment is pulled or dragged away, would impose a physical strain on the person wearing the garment. It is appreciated that the successful design of interest should not result in a conventional long-sleeve shirt or jacket in that it should not cover the trunk of the person wearing it, and should accommodate the specifics of being worn inside the vehicle. Moreover, even when a proposed garment is not fixated to a portion of the wearer's body, such garment leaves a shoulder and/or a portion of the neck exposed to direct sun-light, thereby creating an awkward situation when an arm of the wearer is screened from the sun but the shoulder and/or the neck is not. Put simply, such garment provides only a partial solution to being sun-burned. Consequently, a need still exists for a single-arm garment which would shield at least a driver's arm, shoulder, and neck or, possibly, a driver's hand as well from sunburn and that is de-coupled and not attached to with the neck or head portions of the body at the same time. The garment should preferably be fabricated of sun-resistant, durable, washable material and of simple design and construction for easy wearability by a driver. The simplicity of design and construction would also ensure inexpensive manufacture of the garment. The garment should be foldable to a compact size for easy storage and transport.

[0020] Embodiments of a sun screen article configured to protect a forearm, an upper arm, a shoulder and, optionally, a portion of the neck of a person from excessive solar radiation exposure through a window of a vehicle is schematically illustrated herein in several views. Referring to the drawings and, particularly, to FIGS. **1**(A-C), an embodiment **100** of the sun screen is shown to include a tubular portion having an input end **102***a* and an output end **102***b*; a flap **104** attached to the open end **102***a* along a portion **106** of the perimeter of the open end **102***a*; and a strap **108** that is attachable to the flap **104** at the ends of the strap such as to form an epaulette defining an openable gap between the epaulette and the surface of the flap **104** after the strap has been attached at its both ends. In one embodiment, the flap **104** may be integrated with the tubular portion having through a curved seam line defining a dihedral angle between the surfaces of the flap and the tubular portion. Alternatively, the flap may be formed by a seamless continuation of the tubular portion (not shown) such as to define one region of the tubular portion **102***a* that is longer than another region of the tubular portion **102***a*. In this specific embodiment, the longer-protruding and shorter-protruding regions define an opening, of the input end **102***a*, that is generally oblique with respect to the tubular portion itself. In either case, the tubular portion **102** and the flap **104** are appropriately dimensioned such that both the arm and the shoulder of a person, that has pulled his hand through the input end **102***a* into the tubular portion **102** until his fingers protrude outwards through the output end **102***b*, as shown in FIGS. **1**(A-C), are covered.

[0021] In further reference to FIGS. **1**(A-C) and referring to FIG. **2**, an embodiment **100** of the sun screen article may further include a collar portion **110** that has at least one material layer and is attached to the flap **104** at its free end along a curved peripheral portion **202** of the flap **104**. The curved peripheral portion **202** is generally opposite to the perimeter portion **106**. Preferably, the collar portion **110** includes a portion protruding transversely with respect to the flap **104**. As shown in FIG. **2**, the collar portion **110** includes two material layers **110***a*, **110***b* connected to each other through a fold **204** such as to increase the stiffness of the collar portion **110**. The collar portion **110** is judiciously dimensioned such as to cover at least a lower portion of the neck of the person wearing the sun screen article and, optionally, most of the neck at a side of the neck that corresponds to the sun screen article when worn.

[0022] The strap **108** may be attached to the flap **104** permanently at one end of the strap and removably at the other end of the strap (e.g., one end of the strap could be sewn to the flap while another end may contain fastening means such as a button/button-hole, a hook/hook-eye, Velcro, snap-fasteners or other equivalent means). Alternatively, both ends of the strap **108** can be configured to be re-attachable to the flap **104***b* at the discretion of the user, with the help of at least one of the above-listed fastening means at each of the ends of the

strap. In the embodiment of FIG. **2**, for example, the permanently-attached end of the strap **104** is normally concealed from view by the collar portion **110**. In operation, another end **210** of the strap **108**, shown in FIG. **2** to include a fastening means **212** (shown as a patch of Velcro), is pulled over a portion of the shoulder harness **216** such as, for example, a seat belt, and removably affixed, through the means **212** in proximity of the open end such as to partially restrict the movement of the shoulder harness within a loop that is formed by the strap **108** and the flap **104** once both ends of the strap **108** are articulated with the flap. Referring now to FIG. **3**, this capture of the shoulder harness, made possible by the strap-defined openable loop **308**, prevents the embodiment of the sun screen article from sliding down the person's arm even with no other movement-restrictive means such as belts, lock, ribbons etc that are conventionally employed by garments of the related art.

[0023] As shown in FIGS. **4**(A, B), embodiment **400** may include a placket **402** at the output end of the tubular body **102**, which facilitates the wearing of the sun screen article on the arm and allows to cover a portion of the hand of the wearer once the placket's ends are cooperated with one another through the attachment means **404** (shown as a button and a button-hole). The presence of a placket portion **402** accommodates the thumb of a driver and allows it to protrude outwards from inside the tubular body **102** so as to freely, without restriction, grasp the steering wheel of the car while still covering an upper region of his hand.

[0024] An embodiment **500** of FIG. **5**A illustrates an alternative structure of the sun screen article of the invention including a sleeve **502** having an open slit **504** extending along the sleeve between the input and output ends **502***a*, **502***b* of the sleeve **502**. The sleeve **502** contains a substantially rectangular or, in a specific embodiment, trapezoidal piece **506** of flexible material that is turned upon itself at its first side and that has two corners corresponding to this side connected to each other, either permanently or reattachably, so as to form the open input end **502***a* that has a closed perimeter. To this input end **502***a* the flap **104** is attached, as described above, along the perimeter curve **106** that, in a specific embodiment, includes a curved seam. A side of the piece **506** that is opposite to the input end **502***a* is adapted to have fastening means (not shown) so as to be closable upon itself thereby defining the output end **502***b*, by analogy with that described in reference to FIG. **4**, and an opening to accommodate a thumb. The embodiment **500** provides, therefore, an open slit or area **504** extending between that is configured to facilitate the ventilation of the arm otherwise covered by the sun screen article **500**.

[0025] FIG. **5**B depicts another alternative embodiment of the invention in which a tubular body **520** has a seam **524** extending between an open end **520***a* and a tip **526** of a placket **528**. In addition, the end of the placket **528** corresponding to an output end **520***b* of the body **520** has fastening means (not shown) equivalent to those as described above. It is worth noting that, while tubular body **102** require at least two independent process steps to create a placket portion **402** as part of the body **102** of FIGS. **1**(A-C), and **2** through **4**(A,B), embodiments of FIGS. **5**(A, B) have the placket fabricated in one step at the same time as the corresponding body **502**, **520** is formed by either sawing the opposite sides of the material layer together at a point in proximity to the output end **502***b* (FIG. **5**A) or sewing the opposite sides of the material layer together along the majority of its length to create a seam **524** (FIG. **5**B).

[0026] FIGS. **6** (A, B) show, in more detail, the arrangements of the output portion of the embodiment of FIG. **5**B including the coordination between the seam **524**, the placket **528**, and the output end **520** *b*.

[0027] In reference to FIGS. **7**(A, B), another alternative embodiment of the invention is shown to include a sleeve **702** having an input end **702***a*, an output end **702***b*, and a strap **708** attached, at one of its ends, **709**, in proximity to the input end **802***a* and adapted to form a loop around vehicular shoulder harness, as described above. In a specific embodiment, the length of the strap is judiciously chosen to be longer than about twice the width of a typical shoulder harness such as vehicular seat-belt by the amount sufficient to accommodate attachment means **710** (a patch of Velcro, for example) to another, free end of the strap **712**. The output end **702***b* may define a ring-like opening or, in a specific embodiment, may include a placket as described in reference to FIG. **4**, which simplifies the process of putting the sun screen article onto the arm and accommodates a thumb for firmer grasp of the steering wheel. This embodiment of the sun screen article is essentially adapted to cover the arm and an upper portion of the hand of the person wearing it. As shown, a seam **716** is configured to define a placket **718** in a manner similar to that described in reference to FIGS. **5**B and **6**A(, B).

[0028] While the invention is described through the above-described exemplary embodiments, it will be understood by those of ordinary skill in the art that modifications to, and variations of, the illustrated embodiments may be made without departing from the inventive concepts disclosed herein. For example, the output end of an embodiment may include a mitten covering the fingers of the wearer completely, therefore configuring the embodiment such as to provide total coverage of the wearer's lower neck, shoulder, arm, and hand with fingers, excepting the wearer's thumb only. It should be readily apparent that an embodiment can be made in different sizes, be made of fabric that is appropriately flexible to assure comfortable wearing, and that is optionally treated with means blocking UV radiation, such as, e.g., UV blocking solution, and that is provides protection from exposure to solar radiation whether or not the arm of the wearer is extended from the vehicle. However, the type of material used for fabrication of claimed embodiments is not limited to any particular fabric. Embodiments of the invention are ergonomically correct and functional at the same time, in that they are structured to reduce the physical confinement and associated discomfort of the wearer while at the same time increasing the wearer's operational flexibility and safety. The same embodiment of a sun screen article is reversible in that it can be worn on either left or right arm without modifications. Worn on either arm, the strap as well as the thumb opening is in the correct orientation with respect to the wearer. It is also appreciated that modern implementations of shoulder harness may include the shoulder portion of the harness and the lap belt integrated with one another and sharing a single belt strap. Alternatively, a shoulder harness may include two individual belt-straps, one securing the shoulder of the wearer and another securing his lap. Furthermore, disclosed aspects, or portions of these aspects, may be combined in ways not listed above. Accordingly, the inven-

tion should not be viewed as being limited to the disclosed embodiment(s).

1. A sun screen article comprising:

a tubular body having a tubular surface and input and output ends, the input end defining an input end perimeter;

a flap portion having a flap surface and a flap perimeter, the flap perimeter including first and second sides opposite to one another, the first side adjoining said tubular body along a portion of the input end perimeter to define a dihedral angle between said flap and tubular surfaces;

a collar portion integrated with the flap portion to be separated from the tubular body by the flap portion; and

a strap having first and second strap ends, the first end attached to the flap portion.

2. An article according to claim **1**, configured to be worn by a wearer in a vehicle to continuously cover a part of a wearer's body including a forearm, and elbow, an arm, a shoulder, and a portion of a neck and to leave exposed a chest and a back of the wearer.

3. An article according to claim **1**, wherein the first strap end is attached either permanently or removably to the flap portion proximate the second side thereof.

4. An article according to claim **1**, wherein the second strap end is configured to be securely attachable to the flap portion proximate said portion of the input end perimeter.

5. An article according to claim **1**, wherein the strap is adapted to define an epaulette on the flap portion, the epaulette adapted to securely accommodate a vehicular shoulder harness between said epaulette and the flap portion when the article is worn within a vehicle.

6. An article according to claim **1**, wherein the collar portion extends transversely from the flap portion, the collar portion adapted to conceal the first strap from being observable.

7. An article according to claim **1**, further comprising a placket at the output end configured to accommodate a wearer's thumb protruding therethrough when the article is worn.

8. An article according to claim **1**, wherein the tubular body includes an open slit extending along the sleeve component from the input end towards the output end.

9. A sun screen article comprising:

a sleeve component having input and output ends, an internal cavity, and a shoulder portion the input end, the sleeve component configured to receive an arm, an elbow, and a forearm of a person inside a vehicle through said input end to fit over said arm while enclosing said arm, elbow, and forearm within the internal cavity and continuously covering a shoulder and a portion of a neck of the person with the shoulder portion, the sleeve component including an open slit extending from the input end towards the output end; and

a shoulder harness affixed to the shoulder portion, defining an epaulette thereon, and configured to be in releasable cooperation with a seat belt of the vehicle.

10. An article according to claim **9**, further including a placket at the output end, the placket having interfacing end releasable affixable to one another.

11. An article according to claim **10**, wherein the placket defines an opening configured, when the article is worn, to accommodate a thumb of the wearer to have the thumb protrude outwards from inside the sleeve component that is dimensioned to cover a palm of a hand of the wearer.

12. An article according to claim **9**, wherein the shoulder harness is configured to include a strap having a first end attached to the shoulder portion and a second end attachable to the shoulder portion, and wherein the shoulder portion is adapted to conceal one of the first and second ends from being observable when the article is worn inside the vehicle.

* * * * *