The present invention provides an inner covering (20) of a harness for bulletproof helmets, which is provided in the bulletproof helmet (10). The inner covering (20) includes a head protective part (22) having a streamlined shape to allow a contact surface thereof to be in surface contact with a head of a user, with a positioning protrusion part (21) provided on an edge of the head protective part to be placed on the rim part (12a) of the hemispherical suspension (12). The inner covering (20) further includes a plurality of fastening pieces (24a) independently sewn on a front part of the head protective part (22), and a ventilation space (27) defined between the independent fastening pieces (24a) to allow outside air to flow into the helmet (10).
FIG. 1

100

110

110a

130

120

130
INNER LAYER OF COVER FOR BULLETPROOF HELMET

TECHNICAL FIELD

[0001] The present invention relates, in general, to inner covering of a harness for bulletproof helmets and, more particularly, to an inner covering for a harness for a bulletproof helmet, which is provided in the bulletproof helmet, thus preventing the heavy bulletproof helmet from being in direct contact with a head or a forehead of a user wearing the helmet, and thereby providing superior wearing comfort, preventing sweat from streaming down the face of the user and providing good ventilation in the summer, and being easily removed for washing.

BACKGROUND ART

[0002] Generally, soldiers wear bulletproof helmets due to safety hazards during military training, running or shooting practices.

[0003] The conventional bulletproof helmets are made through processes of multi-layering special Kevlar plastics. The soldiers wearing the bulletproof helmets may feel burdened by the heavy weight of the bulletproof helmets.

[0004] As shown in FIG. 1, a bulletproof helmet 100 includes a hemispherical suspension 110 which is made of a fiber and is provided in the bulletproof helmet 100. When a user wears the helmet 100, the hemispherical suspension 110 prevents the helmet 100 from being in direct contact with the user’s head, and disperses the weight of the helmet 100. A size control band 120 is fastened to an inner surface of a rim of the hemispherical suspension 110 by a plurality of fastening clips 130 which is provided around the size control band 120 at regular intervals. The size control band 120 can adjust the size thereof according to the size of the head of the user.

[0005] However, the hemispherical suspension has a band-type shape as shown in the drawing. Thus, the hemispherical suspension does not come into surface contact with the head of the user wearing the helmet, but comes into partial contact with the head. Therefore, the hemispherical suspension cannot disperse the weight of the helmet. With the passage of time, a contact part of the hemispherical suspension presses the hair or the scalp of the user, thus being tiring for the user. Furthermore, the conventional helmet cannot prevent sweat, generated from the scalp or forehead of the user, from streaming down the face of the user during military training, running or shooting practice in the summer. The streaming sweat may interrupt the training. In addition, even though the conventional helmet has the size control band, the helmet is not firmly fastened on the head of the user. Thus, the helmet may swing forwards, backwards, leftwards and rightwards.

[0006] In an effort to overcome the above problems experienced in the conventional bulletproof helmet, an inner covering for a bulletproof helmet was proposed in Korean Utility Registration No. 20-264552. The conventional inner covering is as follows with reference to FIGS. 2a and 2b.

[0007] The conventional inner covering includes a circular head protective part 200 having a flat surface. The inner covering further includes a sweat absorbing part 210 which is provided on a part of a circumferential edge of the head protective part 200 to correspond to the forehead of the user while being perpendicular to the head protective part 200.

[0008] The sweat absorbing part 210 includes a plurality of attaching pieces 230 having Velcro tapes 220a and 220b to allow the inner covering to be mounted to a rim part 110a of the hemispherical suspension 110 of FIG. 1. The head protective part 200 is placed over the hemispherical suspension 110 without a separate mounting means.

[0009] The head protective part and sweat absorbing part are integrated into a single body. However, the circular head protective part has no means for being coupled to the hemispherical suspension. Therefore, if the bulletproof helmet is removed from the user’s head, the head protective part moves in the helmet without being firmly positioned. In the meantime, the sweat absorbing part is fastened to a circumferential edge of a front part of the hemispherical suspension in a winding type using the Velcro tapes. Thus, the sweat absorbing part is easily fastened to the hemispherical suspension. However, there is little space between the helmet and the rim part of the hemispherical suspension. Therefore, when the conventional inner covering is removed from the helmet to wash the inner covering, it is very difficult to detach the Velcro tapes from each other. In addition, because the sweat absorbing part has a straight body with poor ventilation, the conventional inner cover may insulate the head and excessively increase the generation of sweat in the summer.

Disclosure

[0010] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide an inner covering of a harness for bulletproof helmets, which is provided in the bulletproof helmet, thus preventing the heavy bulletproof helmet from being in direct contact with a head or a forehead of a user wearing the helmet, providing superior wearing comfort, preventing sweat from streaming down the face of the user and providing good ventilation in the summer, and being easily removed for washing.

Technical Problem

[0011] In order to accomplish the above object, the present invention provides an inner covering of a harness for bulletproof helmets, which is provided on a size control band coupled to a rim part of a hemispherical suspension of the harness, thus protecting the head of a user wearing the helmet and absorbing sweat on the forehead of the user. The inner covering includes: a head protective part having a streamlined shape to allow a contact surface thereof to surface-contact the head of the user, with a positioning protrusion part provided on an edge of the head protective part to be placed on the rim part of the hemispherical suspension; and a plurality of fastening pieces independently sewn on a front part of the head protective part. The fastening pieces are inserted into a gap defined between the rim part of the hemispherical suspension and the size control band while being placed around the size control band. The inner covering further includes a ventilation space defined between the independent fastening pieces to allow outside air to flow into the helmet.
Advantageous Effects

[0012] The present invention provides an inner covering which is provided to be placed over a hemispherical suspension by a simple locking engagement, different from forced bonding ways for Velcro tapes used in conventional inner coverings, so that a coupling of the inner covering to a helmet is maintained if a user does not willfully remove the inner covering from the helmet, and, when washing of the inner covering is desired, the inner covering is simply separated from the helmet by a slight pulling force, thus being convenient to the user.

[0013] Furthermore, the inner covering of the present invention has a ventilation function as well as a function of absorbing sweat. Therefore, the inner covering is beneficial to soldiers who must train frequently.

DESCRIPTION OF DRAWINGS

[0014] FIG. 1 is an exploded perspective view showing a construction of a conventional bulletproof helmet;

[0015] FIGS. 2a and 2b are a perspective view and a front view of an inner covering of another conventional bulletproof helmet, respectively;

[0016] FIG. 3 is an exploded perspective view of a bulletproof helmet having an inner covering according to the present invention;

[0017] FIG. 4 is a perspective view of the inner covering of the present invention;

[0018] FIG. 5 is a plan view showing a coupling of the inner covering to a hemispherical suspension of the bulletproof helmet; and

[0019] FIG. 6 is a sectional view including a partially enlarged view showing a coupling of the inner covering to the bulletproof helmet.

BEST MODE

[0020] Hereinafter, embodiments of the present invention will be described in detail with reference to the attached drawings.

[0021] FIG. 3 is an exploded perspective view of a bulletproof helmet having an inner covering according to the present invention. FIG. 4 is a perspective view of the inner covering of the present invention. FIG. 5 is a plan view showing a coupling of the inner covering to a hemispherical suspension of the bulletproof helmet. FIG. 6 is a sectional view including a partially enlarged view showing a coupling of the inner covering to the bulletproof helmet.

[0022] The inner covering 20 of the present invention is provided on a size control band 14 which is coupled to a rim part 12a of a hemispherical suspension 12 of the harness. The inner covering 20 protects the head of a user wearing the helmet 10 and absorbs sweat on the forehead of the user.

[0023] The inner covering 20 includes a head protective part 22 having a streamlined shape to allow a contact surface thereof to be in surface contact with the head of the user. A positioning protrusion part 21 is provided on an edge of the head protective part 22 to be placed on the rim part 12a of the hemispherical suspension 12.

[0024] For convenience and wearing comfort, and to enhance a cushioning effect, the head protective part 22 according to the present invention is made of fabric and various other materials through a laminating process such that a desired fabric is attached on one surface or both surfaces of a plastic foam product, such as rubber or sponge for a cushioning effect.

[0025] The inner covering 20 further includes a plurality of fastening pieces 24a which are independently sewn on a front part of the head protective part 22. The fastening pieces 24a are inserted into a gap defined between the rim part 12a of the hemispherical suspension 12 and the size control band 14 while being placed around the size control band 14.

[0026] The inner covering 20 further includes a ventilation space 27 which is defined between the independent fastening pieces 24a to allow outside air to flow into the helmet 10.

[0027] The inner covering 20 further includes a sweat-absorbing fiber layer 25a which is sewn on an inner surface of each of the fastening pieces 24a to absorb sweat.

[0028] The inner covering 20 further includes a locking piece 26a which is made of a hard material and provided on each of the fastening pieces 24a. The locking piece 26a engages with the size control band 14 until outside force is applied to the locking piece 26a.

[0029] The operation of the present invention having the above-mentioned construction will be described herein below.

[0030] The couplings of both the hemispherical suspension 12 and the size control band 14 to the helmet 10 are not directly related to the present invention, and detailed explanation is thus not deemed necessary. Briefly, the hemispherical suspension 12 is fastened in the helmet 10. The size control band 14 is mounted to the circular rim part 12a of the hemispherical suspension 12 by a plurality of fastening clips 15 which are provided around the size control band 14 at regular intervals. When the user changes the space between the size control band 14 and the rim part 12a, a predetermined space is defined between the size control band 14 and the rim part 12a of the hemispherical suspension 12 between the fastening clips 15.

[0031] The fastening pieces 24a are thereafter inserted into the above-mentioned predetermined spaces defined between the size control band 14 and the rim part 12a while being bent upwards. Then, the locking pieces 26a, which are made of hard material and are sewn on the surface of the fastening pieces 24a, are interposed between the size control band 14 and the rim part 12a of the hemispherical suspension 12. Therefore, if the fastening pieces 24a are not forcibly removed from the hemispherical suspension 12, the coupling of the fastening pieces 24a to the hemispherical suspension 12 is maintained.

[0032] Thereafter, the positioning protrusion part 21, which is provided on the edge of the head protective part 22, is placed over the rim part 12a of the hemispherical suspension 12 to complete the process of coupling the inner covering 22 to the helmet 10.

[0033] A user, such as a soldier, thereafter wears the bulletproof helmet 10 having the above-mentioned construction. At this time, the head protective part 22 has the streamlined shape to allow the contact surface thereof to be
in surface contact with the head of the user, thus providing good wearing comfort. Furthermore, the sweat-absorbing fiber layer 25a, which is sewn on the inner surface of each of the fastening pieces 24a, is in contact with the forehead of the user, thus absorbing sweat generated by the user. Simultaneously, the ventilation space 27, which is defined between the fastening pieces 24a, executes a function of drying the sweat during military training, running or shooting practice.

[0034] Furthermore, the inner covering 20 of the present invention is not attached to the helmet through a forced bonding process. Therefore, to separate the inner covering 20 of the present invention from the helmet 10 for washing the inner covering 20, when the user slightly pulls a part of the head protective part 22, the inner covering 20 is easily separated from the helmet 10.

[0035] In the meantime, Velcro tapes used in conventional inner coverings are problematic in that the Velcro tapes are damaged or damage other clothing while being washed. However, the inner covering 20 of the present invention solves these problems.

INDUSTRIAL APPLICABILITY

[0036] As described above, the present invention provides an inner covering which is placed over a hemispherical suspension by a simple locking engagement, different from forced bonding ways for Velcro tapes used in conventional inner coverings, so that a coupling of the inner covering to a helmet is maintained if a user does not forcibly remove the inner covering from the helmet, and, when washing of the inner covering is desired, the inner covering is easily separated from the helmet by a slight pulling force, thus being convenient to the user.

[0037] Furthermore, the inner covering of the present invention has a ventilation function as well as a function of absorbing sweat. Therefore, the inner covering is convenient to soldiers who must train frequently.

1. An inner covering of a harness for bulletproof helmets, which is provided on a size control band (14) coupled to a rim part (12a) of a hemispherical suspension (12) of the harness, thus protecting a head of a user wearing the helmet (10) and absorbing sweat on a forehead of the user, the inner covering (20) comprising:

- a head protective part (22) having a streamlined shape to allow a contact surface thereof to surface-contact the head of the user, with a positioning protrusion part (21) provided on an edge of the head protective part to be placed on the rim part (12a) of the hemispherical suspension (12);

- a plurality of fastening pieces (24a) independently sewn on a front part of the head protective part (22), the fastening pieces being inserted into a gap defined between the rim part (12a) of the hemispherical suspension (12) and the size control band (14) while being placed around the size control band (14); and

- a ventilation space (27) defined between the independent fastening pieces (24a) to allow outside air to flow into the helmet (10).

2. The inner covering of the harness for bulletproof helmets according to claim 1, further comprising:

- a sweat-absorbing fiber layer (25a) sewn on an inner surface of each of the fastening pieces (24a) to absorb sweat.

3. The inner covering of a harness for bulletproof helmets according to claim 1, further comprising:

- a locking piece (26a) made of a hard material and provided on each of the fastening pieces (24a) to engage with the size control band (14) until outside force is applied to the locking piece.

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