

Description

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"Shin Guard"

The invention concerns a shin guard, in particular for footballers, which may have a rigid shield element arranged in front of the shin, and may have means of fastening the shield element on the lower leg.

The fastening means on conventional shin guards for footballers comprise flaps whose ends can be joined together at the back of the lower leg, and whose other ends are attached to the shield element at the latter's edge. Forces acting on the shield are transmitted in their entirety to the flaps via the joints, which causes not only the flaps, but also the shield element to slip slightly during play and is extremely unpleasant for the player.

The present invention is based on the problem of creating a new shin guard of the kind mentioned above, which may ensure a more stable positioning of the shield element on the shin.

According to a first aspect of the present invention, there is provided a shin pad, in particular for footballers, consisting of a rigid shield element, which is to be positioned in front of the user's shin, and attachments for fastening the shield element on the user's lower leg, wherein - the fastening attachments have a bandage which at least partially surrounds the user's lower leg; and - the shield element has a detachable connection with the bandage over a considerable part of its inner surface, which faces the user's shin, such that the forces acting on the shield element are distributed over the shield element such that the static frictional force between the bandage and the lower leg is not exceeded, characterised in that: the bandage has an opening which leaves the user's calf free, so that connection areas remaining above and below the opening, and which at least partially surround the user's lower leg, are positioned near to the hollow of the user's knee and ankle, and are of such a length, that they do not impede activity of the user's calf muscle.

According to a second aspect of the present invention, there is provided a bandage for a shin pad as disclosed above, which has attachments for detachably connecting with a shield element positioned in front of the user's shin, whereby a detachable connection is formed with a considerable part of the shield element's inner surface which faces the user's shin, such that the forces acting on the shield element are distributed over the shield element such that the static frictional force between the bandage and the lower leg is not exceeded, characterised in that: the bandage has an opening which leaves the user's calf free, so that connection areas remaining above and below the opening, and which at least partially surround the user's lower leg, are positioned so near to the hollow of the user's knee and ankle, and are of such a length, that they do not impede activity of the user's calf muscle.

According to example embodiments of the present invention, this problem is solved by a shin guard that is characterised in that the fastening means possess a bandage which surrounds the lower leg, and that the shield element is connected over a considerable part of its inner surface that faces the shin, with the bandage.

As a result of the connection which, in accordance with example embodiments of the present invention, covers a large area of e.g. more than 50% of the inner surface between the bandage and the shield element, the forces acting on the shield element are distributed over the shield element such that the static frictional force between the bandage and the lower leg is not exceeded. Therefore, under normal circumstances, it is hardly possible for the bandage and consequently the shield element to slip.

Preferably the shield element is detachable from the bandage. A

Velcro® fastener in particular is considered suitable for the detachable connection.

Advantageously, the bandage consists of an elastic material, in particular a textile material, which feels pleasant on the skin when worn. The elasticity may advantageously enable a desired gripping force to be adjusted in a stable and reproducible manner.

In a preferred example embodiment the bandage can only be wrapped around the lower leg once, and overlapping ends can be joined together, preferably by way of a Velcro® fastener. By choosing the appropriate extent of overlap of the flap ends, the Velcro® fastener advantageously offers sufficient variability for adjustment of the desired gripping force of the bandage.

The bandage preferably extends upwards to near the hollow of the knee, and downwards to near the ankle. In this way, the entire length of the lower leg may be used to achieve a stable seat for the bandage and consequently the shield element.

The shield element preferably ends above the lower end of the bandage. The part of the bandage that protrudes downwards beyond the end of the shield element may provide additional stability to the seating of the bandage on the lower leg.

In a particularly preferred example embodiment of the invention, the bandage has an opening that leaves the calf free.

Advantageously, the lengths of the connection areas remaining above and below the opening, and which surround the lower leg, are measured and positioned in such a way that they lie above and below the area in which the cross-section of the lower leg varies as a result of calf muscle activity. Consequently, the shin guard may not impede leg movement.

In a further elaboration of the invention, the bandage could possess a flap that extends downwards and can preferably be wrapped around the sole of the foot to form a padded ankle protection.

The invention is explained in more detail below by means of examples and the enclosed drawings relating to these examples. They show:

- Fig. 1 a lateral view of an inventive shin guard connected with a lower leg,
- Fig. 2 the shin guard of Fig. 1 on a lower leg, with the removed shield element,
- Fig. 3 the shin guard of Fig. 1 disassembled into its individual parts and detached from the lower leg, and
- Fig. 4 a partial illustration of a shin guard according to a second embodiment of the invention.

A shin guard for a footballer, which is to be worn under the latter's socks, has a bandage (2) that can be attached to the lower leg (1) and combined by way of a Velcro® fastener with a rigid shield element (3) that is intended to be positioned in front of the shin.

The bandage (2) manufactured from an elastic textile material possesses an opening (5) that leaves the calf (4) largely uncovered. The connecting sections (6) and (7) remaining above and below the opening each extend across an area of the lower leg in which changes to the cross-section of the lower leg as a result of calf-muscle activity are minimal.

As can be seen in Fig. 1, the bandage (2) extends upwards to near the hollow of the knee (8), and downwards to near the ankle (9).

In accordance with Fig. 3a, which shows the bandage (2) detached from the lower leg and spread out in one plane, the connecting section (6) comprises the flaps (11) and (12), and the connecting section (7), the flaps (13) and (14). At each of the flap ends a fastening area (10) is provided to form a Velcro® fastener (15) and (16).

A fastening surface (17) on the bandage (2) and a fastening surface (18) that extends over the entire inner surface (23) of the shield element (3) in the

embodiment shown, together form the abovementioned Velcro® fastener.

The shin guard shown in Fig. 1 to Fig. 3 can be comfortably applied without having to take off football boots and knee-length socks. The bandage (2) is applied to the lower leg with knee-length socks merely rolled down, and the Velcro® fasteners (15) and (16) are then closed. Finally the shield element (3) is attached, whose fastening surface (18) extends over the entire inner surface (23) and engages with the fastening surface (17) on the bandage (2).

The shin guard is comfortable to wear. Thanks to the opening (5), the activity of the calf muscle, and thus leg movement as a whole, is not impeded.

The connection extending over the entire inner surface (23) of the shield element (3) between the shield element (3) and the bandage (2) on the one hand, and the bandage (2) with a correspondingly large surface lying adjacent to the lower leg on the other, ensures that the shield element (3) remains in the desired position in front of the shin, and does not slip laterally or vertically.

Advantageously, when detached from the shield element (3), the bandage (2) can be washed like an item of clothing. One and the same shield element (3) can be used together with different bandages.

Should the shield element (3) still slip, it can be easily returned to the desired place by rolling down the sock covering it, opening the Velcro® fasteners (15) and (16) and closing them again when the position of the shield element (3) has been corrected. Where necessary, the bandage (2) can also be twisted without opening the Velcro® fasteners.

The embodiment of a shin guard shown in Fig. 4 differs from the previous design example in that a flap (19) is attached to a lower fastening section (7a). The flap (19) is padded in the area of the ankle at (20), thus forming an ankle protector. The end of the flap wrapped around the sole of the foot (21) can be attached to the bandage (2a) at (22) using a Velcro® fastener.

Claims

1. A shin pad, in particular for footballers, consisting of a rigid shield element, which is to be positioned in front of the user's shin, and attachments for fastening the shield element on the user's lower leg, wherein
 - the fastening attachments have a bandage which at least partially surrounds the user's lower leg; and
 - the shield element has a detachable connection with the bandage over a considerable part of its inner surface, which faces the user's shin, such that the forces acting on the shield element are distributed over the shield element such that the static frictional force between the bandage and the lower leg is not exceeded, characterised in that:

the bandage has an opening which leaves the user's calf free, so that connection areas remaining above and below the opening, and which at least partially surround the user's lower leg, are positioned near to the hollow of the user's knee and ankle, and are of such a length, that they do not impede activity of the user's calf muscle.
2. A shin pad as claimed in claim 1, further characterised in that:

the opposed ends of the connecting areas can be joined together.
3. A shin pad as claimed in claim 2, wherein the opposed ends of the bandage can be joined together by way of a Velcro® fastener.
4. A shin pad as claimed in any of the preceding claims, further characterised in that:

the shield element is detachably connected with the bandage by way of a Velcro® fastener.

5. A shin pad as claimed in any of the preceding claims, further characterised in that:
the bandage is made of an elasticated material, in particular a textile material.
6. A shin pad as claimed in any of the preceding claims, further characterised in that:
the shield element ends above the lower end of the bandage.
7. A shin pad as claimed in any of the preceding claims, further characterised in that:
the bandage has a flap which can preferably be wrapped around the sole of the user's foot to form a padded ankle protection.
8. A bandage for a shin pad as claimed in any of the preceding claims, which has attachments for detachably connecting with a shield element positioned in front of the user's shin, whereby a detachable connection is formed with a considerable part of the shield element's inner surface which faces the user's shin, such that the forces acting on the shield element are distributed over the shield element such that the static frictional force between the bandage and the lower leg is not exceeded, characterised in that:
the bandage has an opening which leaves the user's calf free, so that connection areas remaining above and below the opening, and which at least partially surround the user's lower leg, are positioned so near to the hollow of the user's knee and ankle, and are of such a length, that they do not impede activity of the user's calf muscle.