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(54) **ANATOMICAL FOREARM PROTECTION.**

ANATOMISCHER UNTERARMSCHUTZ

PROTECTION D' AVANT-BRAS ANATOMIQUE

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EP-A- 0 640 363 FR-A1- 2 600 900

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Description

[0001] The present invention relates to an anatomical forearm protection.

[0002] In practising winter sports, in particular in competitive alpine skiing, the arm regions are protected by rigid or semi rigid paddings inserted into special garments/jackets to be used under jackets and suits or by soft paddings integrated or sewn into the suit itself.

[0003] Such protection is necessary because the skier tries to reduce the travelled distance by passing as close as possible to the gates (equipped with a spring which makes them articulated) and clears the gates with those body parts located in a favourable position, such as the forearm.

[0004] However these known protections suffer from certain drawbacks, and in particular:

- poor protective provision,
- non-elastic impact against obstacles, associated with high absorption energy and friction generated during the impact, with consequent reduction in the skier's speed.

[0005] In the case of semi rigid jackets there is also the drawback of reduced articular mobility and hence a limited capacity for movement by the athlete.

[0006] EP 0640 363 relates to an impact protection element for protecting a part of the user's body, particularly of an athlete, said element being of concave form at that part facing the user, and comprising a body consisting of at least one layer of high-rigidity composite material and at least one inner layer of soft material facing the user, the body being of anatomical shape so as to adapt to that part of the wearing user's body on which the protection element is used.

[0007] FR 2 600 900 relates to a device for protecting and/or holding a part of a human or animal body, particularly a footballer's legs. This device includes at least one shell covering the part of the body to be protected, for example the front part of a leg.

[0008] An object of the invention is to provide an anatomical protection which enables the impact to be distributed over a large surface area of the arm.

[0009] Another object of the invention is to provide an anatomical protection in which sliding friction against the gates is reduced to a minimum.

[0010] These and further objects which will be apparent from the ensuing description are attained according to the invention by an anatomical forearm protection as claimed in claim 1.

[0011] The present invention is further clarified hereinafter with reference to the accompanying drawings, in which:

Figure 1 is a side view of a protection according to the invention,

Figure 2 is a plan view thereof,

Figure 3 is a view thereof from below, and
Figure 4 shows it applied to an athlete's forearm.

[0012] As can be seen from the figures, the anatomical protection of the invention comprises substantially an anatomical shell made of plastic material reinforced with various fibres, in particular carbon, aramid or glass, or with other materials all characterised by high specific rigidity, i.e. having a high elastic modulus/specific gravity ratio.

[0013] The convex lateral surface of said protection is provided with a plurality of parallel ribs 4 all extending substantially longitudinally, the concave surface being covered by a dishing 6.

[0014] The shell is provided with two elasticated bands 8 fixed to the shell at their ends by rivets 10.

[0015] To attach the protection of the invention to the forearm, the athlete inserts his/her hand into the rings formed between the bands and the shell.

[0016] The protection could also be fixed directly to the athlete's glove 12 by rivets 14 or screws, to prevent possible interference between the edge of the protection and the gates themselves.

[0017] Because of their elasticity the bands enable the variation in the muscle cross-section to be accommodated during the athlete's movement.

[0018] From the foregoing it is apparent that the protection according to the invention presents numerous advantages and in particular:

- it presents no friction or space reduction phenomena within clothes,
- it enables a mainly elastic impact with low energy dissipation to be achieved, as the impact is distributed over a large surface area of the arm rather than being concentrated in a small region,
- it enables sliding friction against the gate to be reduced to a minimum because of the presence of the ribs, which by reducing the contact surface further increase slidability,
- it enables the athlete, no longer preoccupied by impact with the gate, to optimise the trajectory and hence achieve improved performance.

Claims

1. An anatomical forearm protection for protecting the outside of the forearm against possible impact against gates in alpine skiing, consisting of a substantially concave semi cylindrical body (2) formed of indeformable rigid material provided with means (8) for its attachment to the forearm, said attachment means consist of elasticated bands (8), **characterised in that** the convex lateral surface of the body (2) of said protection is provided with a plurality of parallel ribs (4) all extending substantially longitudinally, said ribs (4) enabling a reduced sliding friction

with the gate by reducing the contact surface with said gate.

ce qu'elle comprend des moyens (14) pour sa fixation au gant de l'athlète.

2. A protection as claimed in claim 1, **characterised in that** the body is semi frusto conical. 5
3. A protection as claimed in claim 1, **characterised by** comprising means (14) for its fixing to the athlete's glove. 10

Patentansprüche

1. Anatomischer Unterarmschutz zum Schützen des Unterarms gegen einen möglichen Stoß gegen Tore beim alpinen Skilauf, der aus einem im Wesentlichen konkaven halbzyllindrischen Körper (2) besteht, der aus einem unverformbaren steifen Material ausgebildet und mit Mitteln (8) zu seiner Befestigung am Unterarm versehen ist, wobei diese Befestigungsmittel aus elastischen Bändern (8) bestehen, **dadurch gekennzeichnet, dass** die konvexe seitliche Oberfläche des Körpers (2) dieses Schutzes mit einer Vielzahl von parallelen Rippen (4) versehen ist, die sich alle im Wesentlichen in Längsrichtung erstrecken, wobei diese Rippen (4) eine verminderte Gleitreibung mit dem Tor ermöglichen, indem sie die Berührungsfläche mit diesem Tor verringern. 15 20 25
2. Schutz nach Anspruch 1, **dadurch gekennzeichnet, dass** der Körper halbkegelstumpfförmig ist. 30
3. Schutz nach Anspruch 1, **dadurch gekennzeichnet, dass** er Mittel (14) für seine Befestigung am Handschuh des Sportlers umfasst. 35

Revendications

1. Protection anatomique d'avant-bras pour protéger l'avant-bras contre un éventuel impact contre des portes dans le ski alpin, comprenant un corps (2) sensiblement semi-cylindrique concave constitué de matériau rigide indéformable, muni de moyens (8) pour sa fixation à l'avant-bras, lesdits moyens de fixation comprenant des bandes élastiques (8), **caractérisée en ce que** la surface latérale convexe du corps (2) de ladite protection est pourvue d'une pluralité de nervures parallèles (4) s'étendant toutes sensiblement longitudinalement, lesdites nervures (4) permettant un frottement de glissement réduit avec la porte en réduisant la surface de contact avec ladite porte. 40 45 50
2. Protection selon la revendication 1, **caractérisée en ce que** le corps est semi-tronconique. 55
3. Protection selon la revendication 1, **caractérisée en**

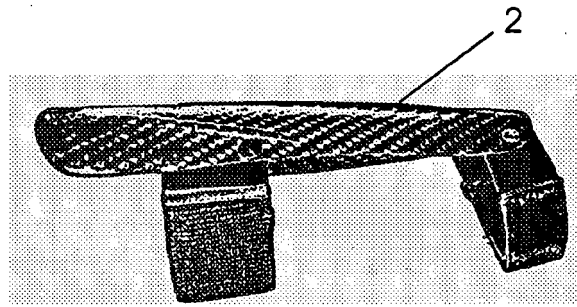


FIG. 1

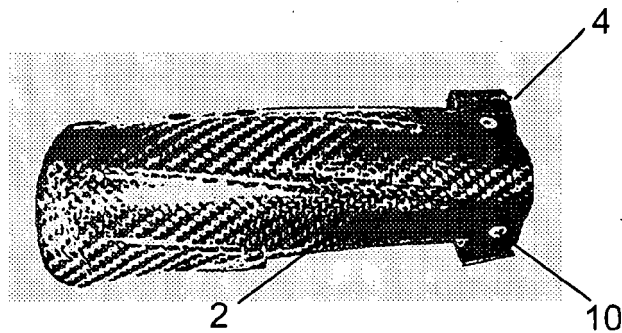


FIG. 2

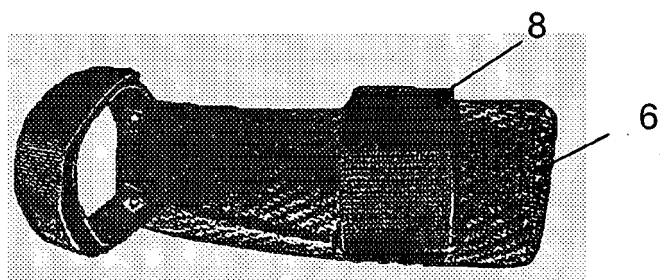


FIG. 3

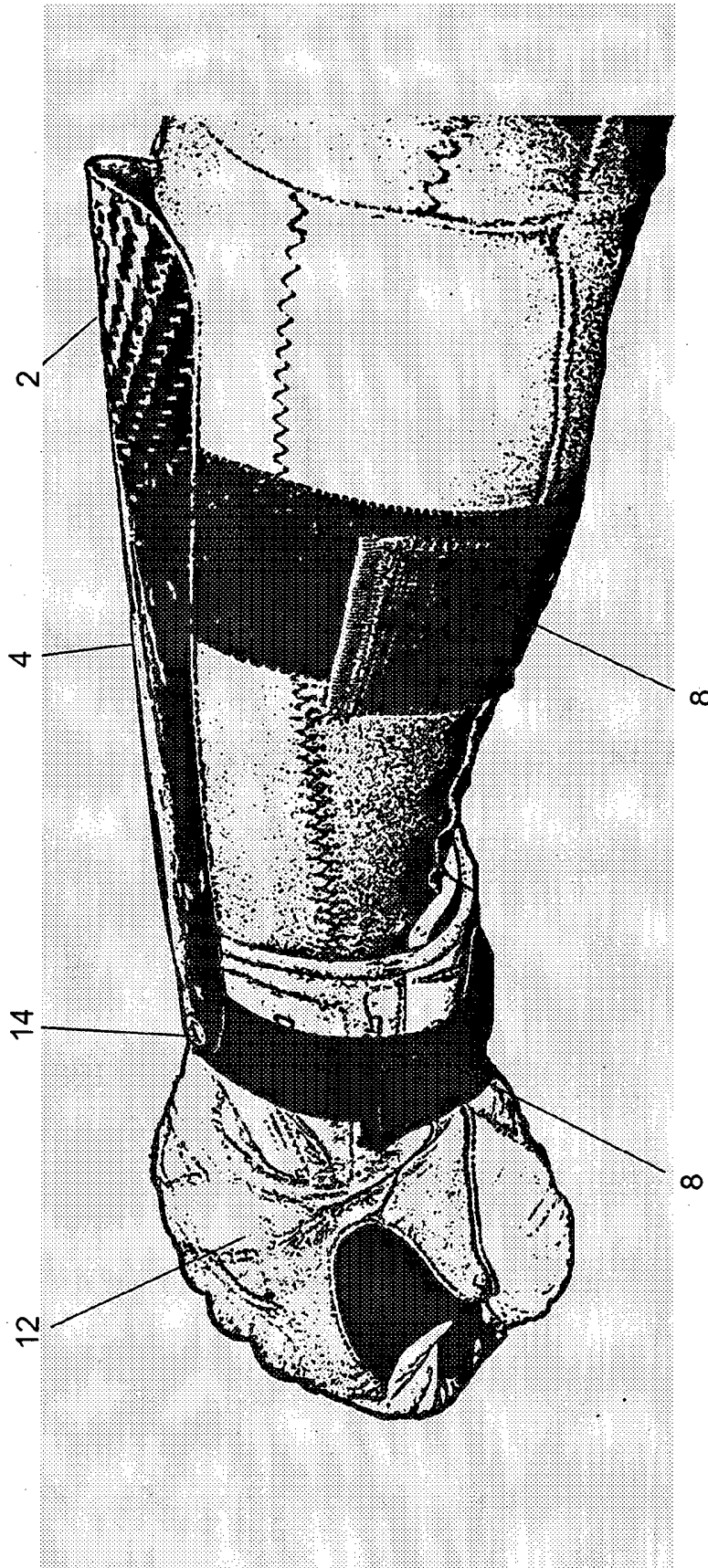


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 0640363 A [0006]
- FR 2600900 [0007]