

(19)



(11)

**EP 2 082 659 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:

**29.07.2009 Bulletin 2009/31**

(51) Int Cl.:

**A43B 5/04 (2006.01)**

**A43C 11/14 (2006.01)**

(21) Application number: **09150345.8**

(22) Date of filing: **09.01.2009**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL  
PT RO SE SI SK TR**

Designated Extension States:

**AL BA RS**

(30) Priority: **25.01.2008 IT PN20080001 U**

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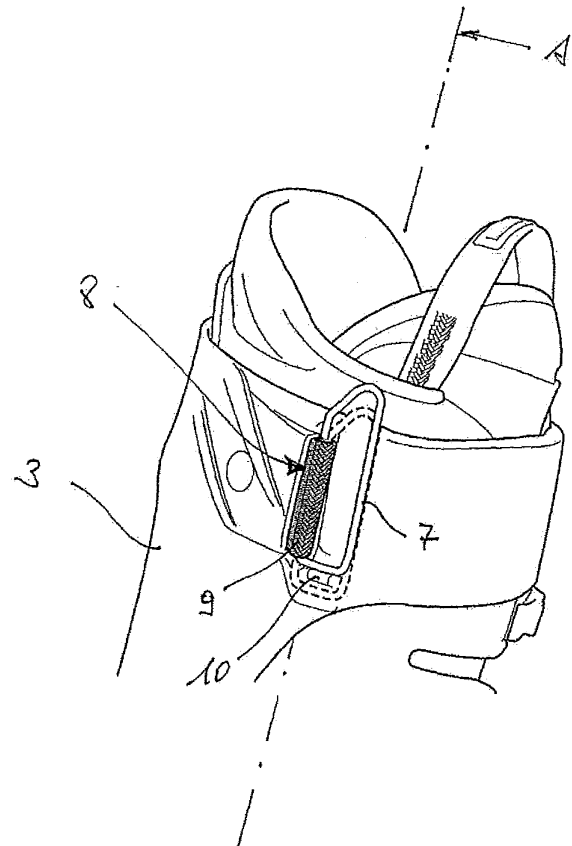
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(54) **Fastening device for sports footwear items**

(57) The present invention refers to a fastening device for sports footwear items comprising a shell (2) and a cuff (3) at least partially wrapping around, in use, a wearer's lower leg; the cuff (3) extends along an axis A substantially perpendicular to the sole of the shell (2); the fastening device (5) comprises a strap (6) associable to the cuff (3) by connecting means (8) fixedly attached adjacent an upper edge of the cuff (3); the strap (6) at least partially wraps around, in use, the cuff (3) or the wearer's lower leg at least over the respective front regions thereof. The strap (6) is slidable relative to the connecting means (8) along an axis substantially parallel to the axis A so as to be selectively adjustable in at least a first position and a second position relative to the cuff (3).



**Fig. 2**

**EP 2 082 659 A1**

**Description**

**[0001]** The present invention refers to a fastening device for sports footwear items such as downhill ski boots, cross-country ski boots, snowboard boots, ice skates, roller skates, trekking or mountaineering boots.

**[0002]** It is generally known on such footwear items, and in particular on ski boots featuring overlapping flaps, the use of fastening devices that generally comprise a strap wholly or partially wrapping around the upper portion of the cuff so as to ensure an optimum contact of the latter to the wearer's leg, thereby cooperating in the tightening of the boot generally performed by conventional levers or clamping hooks.

**[0003]** The strap comprises at least a pull-off portion provided with Velcro® to quickly and easily perform the operations of selecting the degree of fastening, as well as closing and releasing the boot; the strap is generally supported at the rear of the cuff, so that it wraps entirely around it, or at the sides thereof, so that it wraps around it solely along the front region.

**[0004]** The main object of the present invention is to improve the effectiveness of a fastening device of the type comprising a strap according to the prior art, to thereby enable the adjustment of the position of such strap relative to the cuff in accordance to the particular needs of the wearer.

**[0005]** Within the above-noted general object, it is a purpose of the present invention to provide a fastening device wherein the adjustment of the position of the strap relative to the cuff can be performed in a simple, quick and easy manner by the wearer without requiring the use of particular tools which are not always readily available when performing sports activities.

**[0006]** A further purpose of the present invention is to provide a fastening device comprising an adjustable strap capable of maintaining anyway an optimal reliability and effectiveness in the fastening of a sports footwear item.

**[0007]** Still another purpose is to provide a fastening device that is simple in construction and easy to assemble onto the footwear item.

**[0008]** A further purpose is to provide a fastening device capable of being manufactured at competitive costs using generally and readily available tools and machinery.

**[0009]** These aims and advantages, along with further ones that will be apparent in the following description, are reached in a fastening device for sports footwear items as defined in claim 1.

**[0010]** Further characteristics of the fastening device according to the present invention are set forth in the dependent claims.

**[0011]** Anyway, features and advantages of the present invention will be more readily understood from the description of a particular, although not sole embodiment which is given in greater detail below by way of non-limiting example with reference to the accompanying

drawings, in which:

- Figure 1 shows a sports footwear item, such as a ski boot, comprising a fastening device according to the present invention;
- Figure 2 shows a detail of the cuff of the sports footwear item as shown in Figure 1 which comprises a support member for the fastening device according to the present invention;
- Figure 3 shows, in a view similar to Figure 2, the fastening device according to the present invention in a first adjustment position relative to the cuff;
- Figure 4 shows, in a view similar to Figure 2, the fastening device according to the present invention in a second adjustment position relative to the cuff.

**[0012]** With reference to the Figures listed above, a sports footwear item, such as a ski boot having overlapping flaps, is indicated at the reference number 1; the sports footwear item comprises a shell 2 wrapping around the wearer's foot and a cuff 3 wrapping around the lower leg of the same wearer and extending along an axis A that is substantially perpendicular to the sole associated to the shell 2.

**[0013]** The boot 1 is provided with a plurality of levers, hooks or other conventional tightening systems 4, used to mutually draw up and tighten the flaps of both the shell 2 and the cuff 3, as well as a fastening device 5 comprising a strap 6 associable to the cuff 3 by connecting means 8 fixedly attached adjacent the upper edge of the cuff 3. When in use, such strap 6 wraps around the cuff 3, either wholly or partially at the front portion thereof. In the case where the front flaps of the cuff are not overlapping but simply mutually facing such that the front portion of the wearer's leg is left uncovered (although such portion is anyway protected by a soft padding such as an inner boot or a padded tongue, as largely known in the footwear art), the strap 6 is in all cases attached to the upper cuff and wraps round the front portion of the leg.

**[0014]** According to the common practice in the related art, the strap 6 may advantageously comprise at least one portion provided with a pull-off fastening material commercially known under the Velcro® trade-name.

**[0015]** According to an innovative feature of the present invention, the strap 6 is selectively adjustable on at least a first and a second position relative to the cuff 3, as illustrated in Figures 3 and 4, through a sliding motion relative to the connecting means 8 along an axis that is substantially parallel to the axis A; this allows the wearer to change the position of the strap 6 along the lower portion of his/her leg to achieve the fastening characteristics that best fit his/her own requirements.

**[0016]** With reference to the embodiment illustrated in Figures 2, 3 and 4, the strap 6 is adapted to be slidably and rotatably associated to the connecting means 8, and

hence to the upper cuff 3, by means of at least a support member 7 which is slidably and rotatably connected to the connecting means 8; this support member 7 is therefore capable of performing both a sliding motion relative to the connecting means 8 along an axis that is substantially parallel to the axis A and a pivoting motion about the same axis, so as to achieve the adjustment of the strap 6 into the above-mentioned first or second position, respectively.

**[0017]** Advantageously, the support member 7 is formed by an elongated ring having at least one rectilinear portion adapted to perform the afore-mentioned sliding and pivoting motions relative to the connecting means 8; such connecting means 8 may be formed of a band 9 folded up and sewn, or fixedly attached in any other suitable manner, on to the cuff 3.

**[0018]** Locking means 10 are provided to lock the support member 7 in the selected position; the locking means 10 may be constituted, for instance, by at least a protrusion extending from the cuff 3. In an advantageous manner, such locking means 10 may be moulded integrally, i.e. as a one-piece unitary construction, with the cuff 3.

**[0019]** According to a preferred embodiment, the fastening device 5 comprises a first support member 7 slidably and pivotally connected to the connecting means 8 provided on a side region of the cuff 3 and acting as a return member for the strap 6, and a second support element (not shown in the Figures) connected to the connecting means 8 provided on the opposite side region of the cuff 3 and acting as a permanent retaining member of the strap 6 to the cuff 3.

**[0020]** The second support member may be connected to the respective connecting means either in a fixed manner or - similarly to the afore-considered case of the first support member - in a sliding and pivoting manner, in which case the strap 6 will be permanently retained at the second support member and returned at the first support member, thus advantageously giving the wearer the possibility to adjust the position of the strap 6 on both sides of the cuff 3.

**[0021]** Although the preceding description is referred to an embodiment in which the strap 6 is supported at the sides of the cuff 3 and wraps around the front portion of such cuff, the person skilled in the art will of course be readily capable of understanding that the present invention can similarly be applied to constructions providing a strap 6 which entirely wraps around the cuff 3.

**[0022]** The manner in which the fastening device according to the present invention works is as follows: starting with the strap 6 in its released condition, and thus not under tension, the wearer simply rotates the support member 7 by approximately 90° (clockwise in the drawings) about the connecting means 8, so as to bring the support member 7 in a position substantially perpendicular to the surface of the cuff 3, thereby disengaging the support member 7 from the locking means 10. Once disengaged, the wearer causes the support member 7 to slide relative to the connecting means 8 until the desired

fastening position is reached. Once the new position of the strap 6 has been selected, the wearer rotates (counterclockwise in the drawings) the support member 7 relative to the connecting means so as to bring it back close to the surface of the cuff 3 and cause it to engage the locking means 10 corresponding to the new selected position of the strap; finally the wearer locks the strap 6 in this new position thereof.

**[0023]** Fully apparent from the above description is therefore the ability of the present invention to effectively reach the afore-cited aims and advantages by in fact providing a fastening device for sports footwear items which comprises a strap wrapping around, either entirely or partially, a cuff, wherein the fastening position of the strap is adjustable relative to the cuff according to the particular needs of the wearer in a simple, quick and easy manner, while at the same time maintaining an optimal reliability and effectiveness in the fastening of the sports footwear item. In addition, no use of special tools, such as screwdrivers or the like, which may not be so easily or readily available to the wearer when performing a sports activity, is required to adjust the fastening position of the strap, so that this operation may be easily and readily performed even when wearing gloves or protections of any kind, as well as without any need to take the footwear item off the foot.

**[0024]** Furthermore, it should be specially noticed that both the construction and the assembly of the fastening device onto the footwear item are particularly simple and easy, such that the fastening device can be obtainable at a reasonably low cost.

**[0025]** It shall be appreciated that the fastening device for sports footwear items as described above may of course be the subject of a number of applications, further embodiments and modifications without departing from the scope of the present invention as defined in the appended claim 1.

**[0026]** It shall be further appreciated that the materials used, as well as the shape and the sizing of the various parts of the fastening device according to the invention, may each time be selected so as to more appropriately meet the particular requirements or suit the particular application.

## Claims

1. Fastening device for sports footwear items comprising a shell (2) and a cuff (3) at least partially wrapping around, in use, a wearer's lower leg, said cuff (3) extending along an axis (A) substantially perpendicular to the sole of said shell (2), said fastening device (5) comprising a strap (6) associable to said cuff (3) by connecting means (8) fixedly attached adjacent an upper edge of said cuff (3), said strap (6) at least partially wrapping around, in use, said cuff (3) or said wearer's lower leg at least over the respective front regions thereof, **characterized in that** said strap (6)

is slidable relative to said connecting means (8) along an axis substantially parallel to said axis (A) so as to be selectively adjustable in at least a first position and a second position relative to said cuff (3).

according to claim 1.

2. Fastening device according to claim 1, wherein said strap (6) is associable to said connecting means (8) by means of at least one support member (7) slidably and pivotally connected to said connecting means (8), said support member (7) being capable of a sliding motion relative to said connecting means (8) along an axis substantially parallel to said axis (A) between said first position and said second position. 5 10 15
3. Fastening device according to claim 2, wherein locking means (10) are provided to lock said support member (7) in said first position or said second position. 20
4. Fastening device according to claim 3, wherein said support member (7) is capable of a pivoting motion about said connecting means (8) in a first direction of rotation, in which said support member (7) moves away from said cuff (3) and disengages from said locking means (10), and a second direction of rotation opposite said first direction, in which said support member (7) approaches said cuff (3) and engages said locking means (10). 25 30
5. Fastening device according to claim 2, wherein said support member (7) is formed by an elongated ring having at least one rectilinear portion adapted to perform said sliding and pivoting motions relative to said connecting means (8). 35
6. Fastening device according to claim 2, wherein said connecting means (8) are formed of a folded-up band (9) firmly fixed to said cuff (3). 40
7. Fastening device according to claim 3, wherein said locking means are constituted by at least a protrusion extending from said cuff (3).
8. Fastening device according to any the preceding claims, wherein a first support member (7) slidably and pivotally connected to said connecting means (8) at a first side region of said cuff (3) acts as a return member for said strap (6). 45 50
9. Fastening device according to claim 8, wherein a second support member (7) slidably and pivotally connected to said connecting means (8) at a side region of said cuff (3) opposite said first side region acts as a permanent retaining member of said strap (6) to said cuff (3). 55
10. Sports footwear item comprising a fastening device

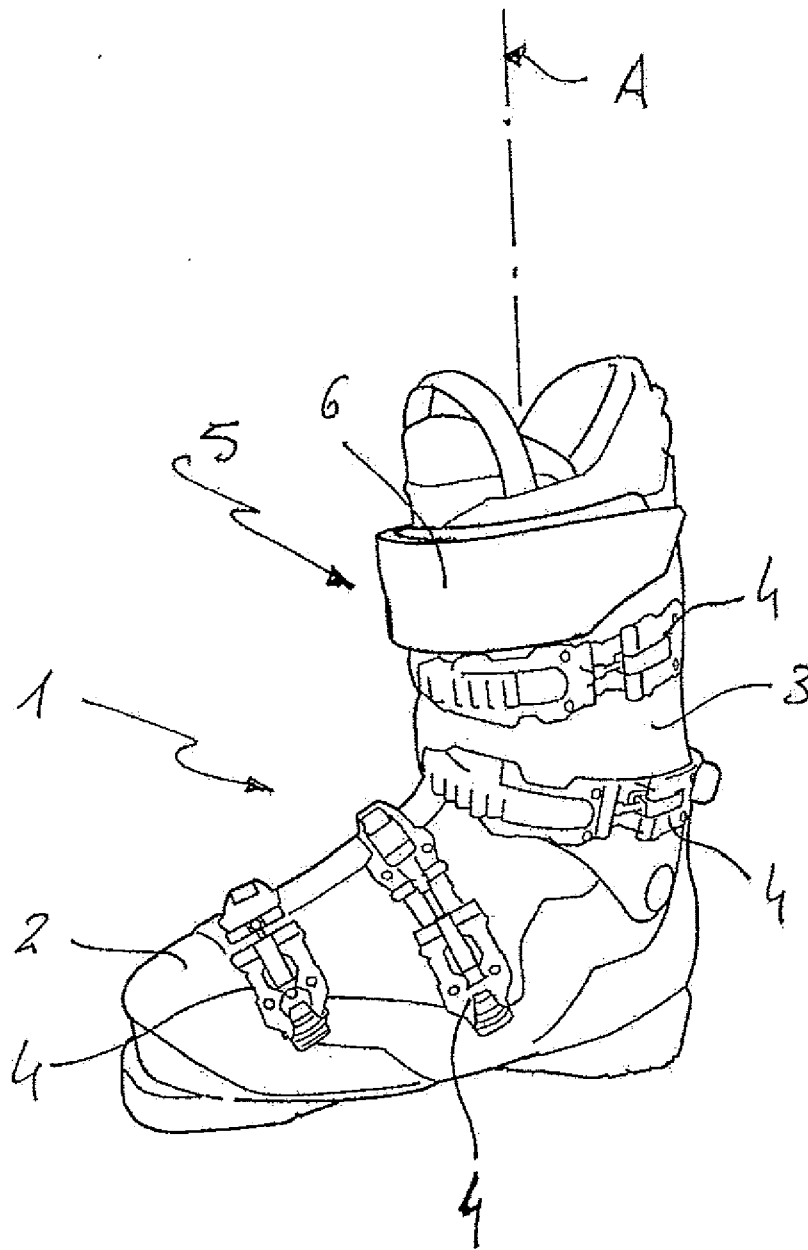


Fig. 1

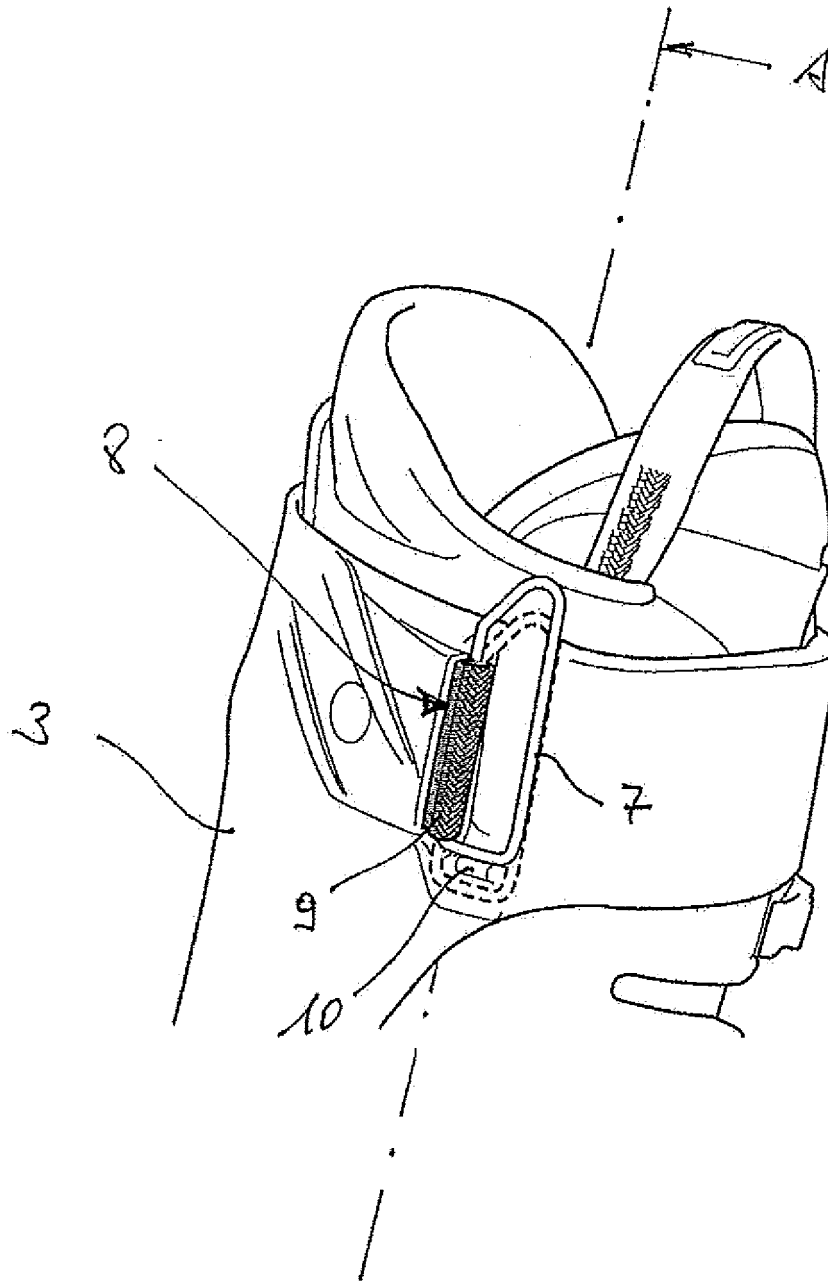


Fig. 2

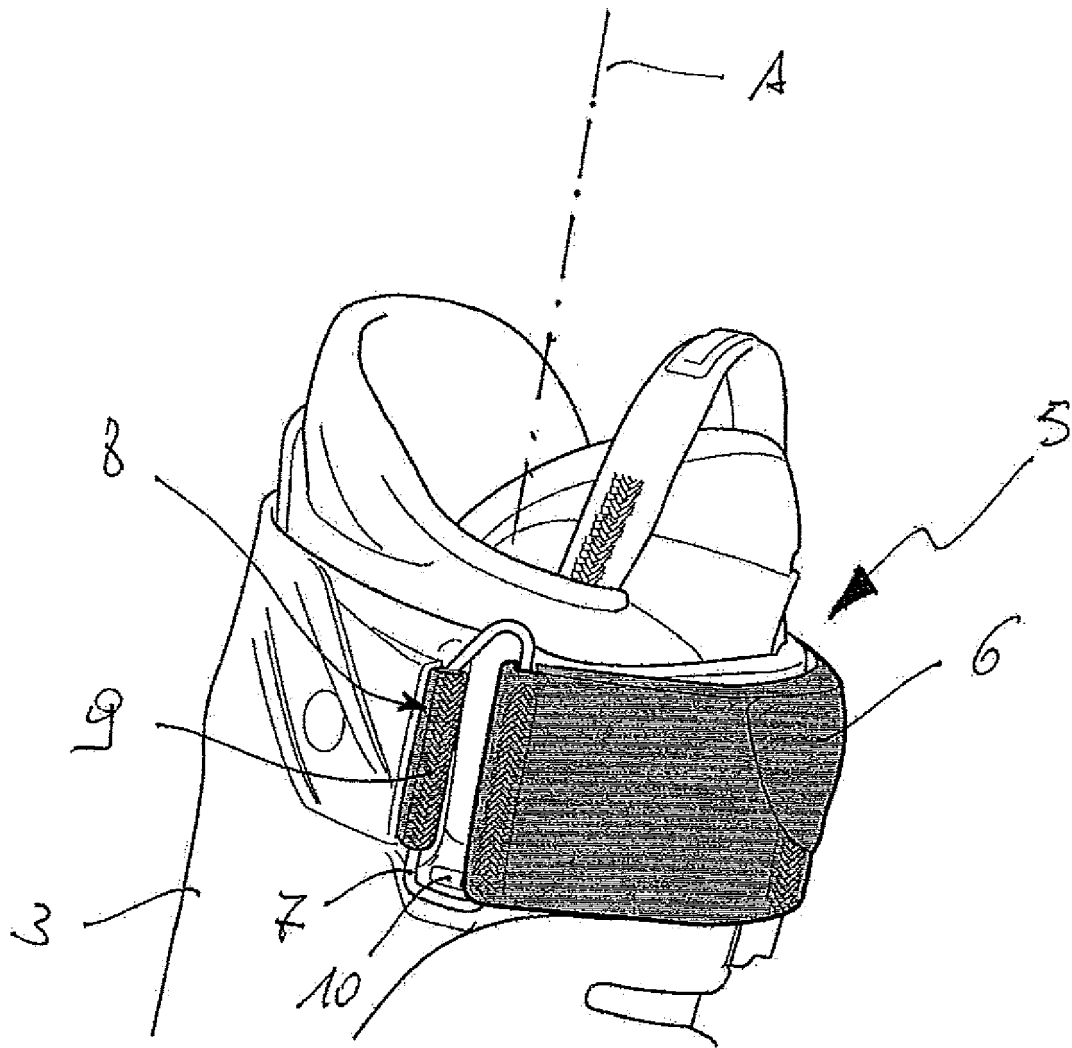


Fig. 3

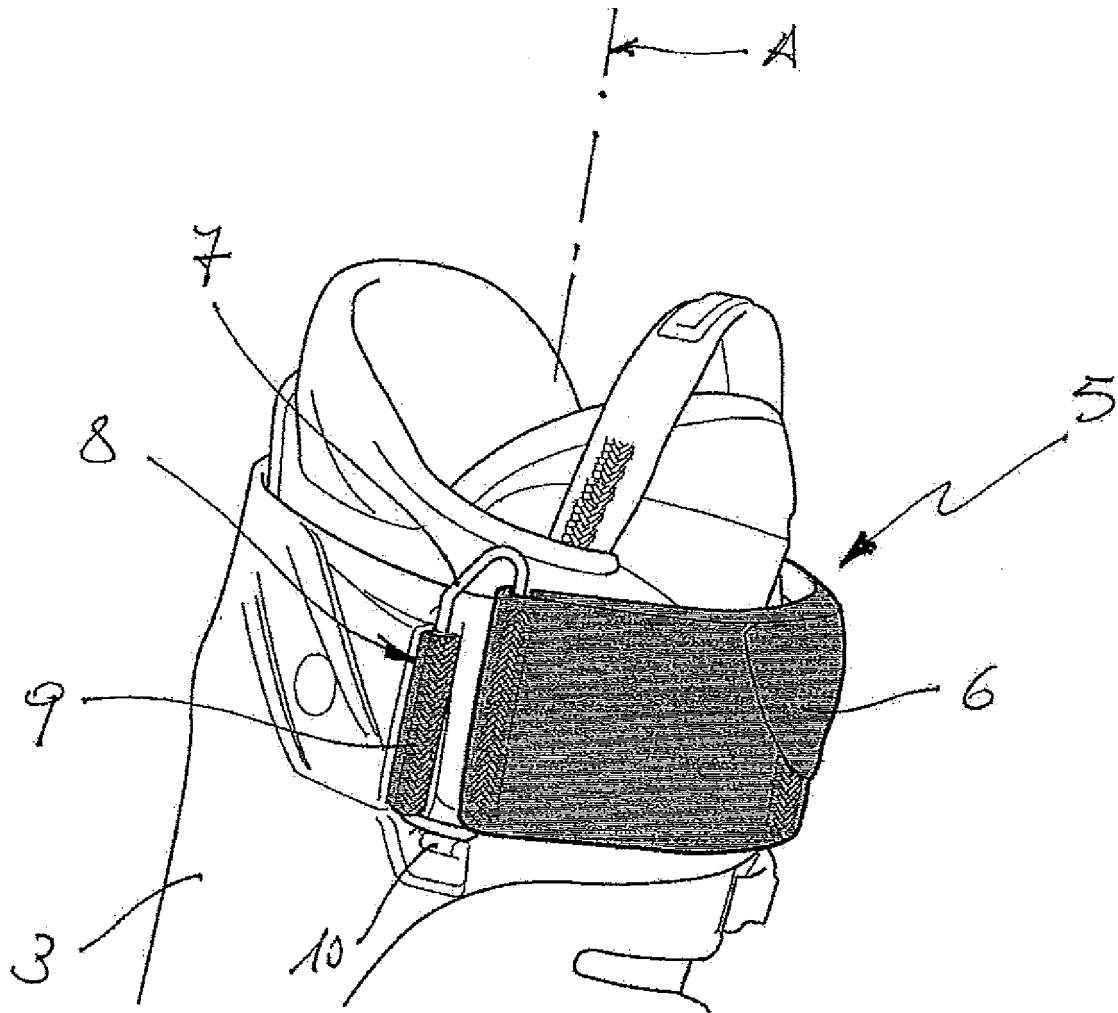


Fig. 4





## EUROPEAN SEARCH REPORT

Application Number  
EP 09 15 0345

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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