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(54) Fastening device particularly for ski boots

(57) A fastening device particularly for ski boots which have a shell to which at least one cuff is articulated and which can be used for mountain skiing. The fastening device has a rack (9) constituted by a body provided with a plurality of concordantly orientated teeth (11) for selective and temporary engagement with a cable provided in a lever which is associated with a first flap of the cuff. The body (10) is rotatably associated with the second flap of the cuff and a hook (14) is associated therewith. The hook (14) is orientated in the opposite direction with respect to the teeth (11) and is adapted to engage the cable.

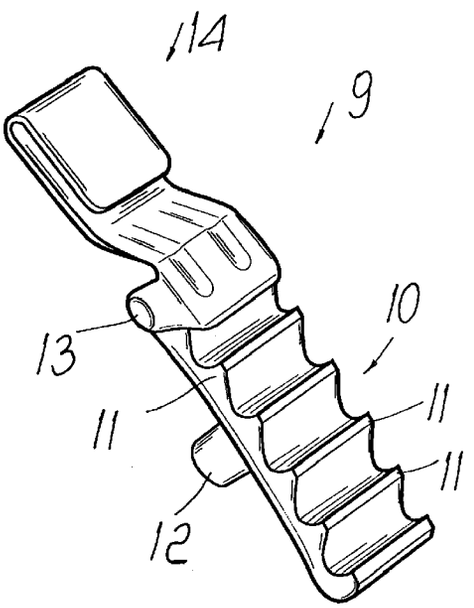

Fig.1

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Description

[0001] The present invention relates to a fastening device particularly for boots for mountain skiing.

[0002] Such boots are usually constituted by a shell with overlapping flaps, to which a cuff is articulated which also has a first flap and a second flap. A soft innerboot can be arranged inside them in order to improve comfort for the skier.

[0003] In order to practice this sport it is necessary to use the boot both when descending along a snow-covered slope and when climbing up it. These two separate steps require the boot to have different characteristics: in the first case, the boot must be rigid enough to allow optimum transmission of forces from the leg to the ski, while in the second case it must allow ample oscillation of the leg.

[0004] In order to partially solve these problems, conventional boots for mountain skiing comprise a cuff in which a lever is associated with the first flap of the cuff and is provided with a cable which in turn selectively engages one of a plurality of concordantly orientated teeth of a rack which is associated with a plastic band which is in turn associated with the second flap of the cuff at one end.

[0005] A hook is formed at the other end of the plastic band and is adjacent to the last one of the teeth and is orientated like said teeth. When the user wants to walk, he engages the cable in the hook which, being arranged at the very end of the plastic band, is adjacent to the lever and thus allows to achieve greater freedom of movement for the innerboot and therefore for the skier's leg.

[0006] When instead the skier wants to ski, he engages the cable in the chosen tooth, thus achieving a desired degree of fastening of the cuff.

[0007] This conventional boot, however, still has drawbacks. The hook is in fact arranged proximate to the last one of the teeth provided on the rack, and causes frequent errors in the positioning of the cable. Said positioning is made even more difficult by the fact that the user usually wears gloves for protection from the cold.

[0008] Furthermore, owing to the position and shape of the hook, it can cause accidental engagements of the cable during the step in which the lever is fully opened and therefore just before the foot is removed from the boot.

[0009] Another drawback is the greater length of the rack, which is required in order to accommodate the hook and can cause interference with the opposite flap of the cuff during fastening, making this operation difficult.

[0010] The aim of the present invention is therefore to solve the mentioned problems, eliminating the drawbacks of prior art by providing a fastening device which allows the skier to quickly and easily achieve the required fastening and a presettable freedom of motion of the leg as a function of optimum skiing and walking.

[0011] An important object is to provide a fastening device having a rack which can be engaged with engagement means associated with a lever, allowing to achieve a chosen degree of fastening, in order to allow the user to ski, or a chosen loosening of the cuff, in order to walk.

[0012] A further important object is to provide a fastening device which allows to achieve the chosen setting of the boot for skiing or walking without the possibility of accidental engagements incompatible with the chosen skiing or walking function, thus facilitating the operations for opening and fastening the cuff.

[0013] A further important object is to provide a fastening device which allows to easily remove the foot from the boot.

[0014] A further object is to provide a fastening device which is structurally simple and has low costs and small dimensions.

[0015] This aim, these objects and others which will become apparent hereinafter are achieved by a fastening device particularly for ski boots having at least a first flap and a second flap to be fastened, said device comprising a rack having a body provided with a plurality of concordantly orientated teeth for selective and temporary engagement with an engagement means of a lever which is associated with said first flap, characterized in that said body is rotatably associated with said second flap and a hook member is associated therewith, said hook member being orientated in the opposite direction with respect to said teeth and being adapted to engage said engagement means.

[0016] Further characteristics and advantages of the invention will become apparent from the detailed description of a particular but not exclusive embodiment, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a lateral perspective view of the rack of the fastening device according to the invention;
Figure 2 is a front view of the boot in the condition used for skiing, according to the invention;
Figure 3 is a view, similar to Figure 2, of the condition in which the boot is used for walking.

[0017] With reference to the above figures, the reference numeral 1 designates a ski boot, particularly for mountain skiing, which is constituted by a shell 2, preferably having overlapping flaps, to which at least one cuff 3 is articulated. The cuff has a first flap 4 and a second flap 5 which can be mutually partially overlapped.

[0018] A soft innerboot 6 can be arranged inside the shell and the cuff.

[0019] A lever 7 is associated at the first flap 4 of the cuff 3, and an engagement means, such as a cable 8, is in turn associated with said lever and engages a rack designated by the reference numeral 9.

[0020] Said rack comprises a body 10 from which a plurality of concordantly orientated teeth 11 protrude.

[0021] A first pivot 12 protrudes below the body, on the opposite side with respect to said teeth 11, and can be arranged at a complementarily shaped seat formed on the second flap 5 of the cuff 3, so as to allow the rotary connection of said rack 9 to said second flap.

[0022] A hook 14 is associated with one end of body 10, preferably so that it can rotate by means of a second pivot 13, and is orientated in the opposite direction with respect to the teeth 11.

[0023] The hook 14 can also be provided monolithically with the body 10.

[0024] In order to ensure closer contact of the hook 14 with the cuff 3, the connection between the body 10 and the hook 14 can be elastic, or if the hook 14 can rotate about the pivot 13 there is a spring or an equivalent elastic means for contrasting the oscillation of said hook 14 with respect to the body 10.

[0025] The configuration of the teeth and of the hook allows selective connection to the engagement means associated with the lever.

[0026] The use of the rack is as follows: if the user wishes to use the boot for skiing down a slope, he merely needs to orientate the rack so that the teeth 11 are directed toward the lever 7, so as to allow them to engage the cable 8, as shown in Figure 2.

[0027] If instead the user wishes to use the boot for walking, he merely needs to turn the rack, arranging the hook 14 toward the lever 7 as shown in Figure 3.

[0028] In this last condition, the hook 14 is adjacent to the lever 7 and the longitudinal extension of the hook 14 allows a chosen spacing of the first and second flaps and therefore a chosen oscillation of the leg.

[0029] The possibility to rotate the rack through 180° therefore allows to alternatively place the teeth 11 or the hook 14 in a region which is adjacent to the lever 7 and the skier can thus easily determine beforehand the condition in which the boot is to be used.

[0030] It has thus been observed that the invention has achieved the intended aim and objects, since it is very easy for the user to determine beforehand the chosen setting for the use of the boot, because it is possible for example to give a different coloring to the teeth with respect to the hook in order to allow the user to immediately see their arrangement and therefore the interaction of one of them with the cable 8 of the lever 7.

[0031] The arrangement of the hook and of the teeth in different directions in fact prevents the simultaneous engagement of said teeth or of said hook with the cable, thus avoiding any possible accidental engagement of the cable in an unwanted position.

[0032] Orientating the hook 14 away from the teeth 11 also prevents the accidental and inaccurate engagement of the cable with the hook when not walking and therefore the hook causes no hindrance at all during normal use of the boot.

[0033] Viceversa, during walking no accidental engagement with one of the teeth 11 can occur because the teeth are not orientated in the same direction as the hook 14.

[0034] During this step, the lever 7 is in close contact with the cuff 3 and does not oscillate with respect to it by virtue of the engagement of the cable 8 with the hook 14, avoiding interference with the practice of mountain skiing during ascent or transfer due to the undesired free oscillation of the lever arm and of the cable that occurs in conventional solutions.

[0035] The fastening device according to the invention is susceptible of numerous modifications and variations, all of which are within the scope of the same inventive concept.

[0036] The materials and the dimensions that constitute the individual components of the structure may of course also be the most pertinent according to the specific requirements.

[0037] The disclosures in Italian Patent Application No. TV97A000156 from which this application claims priority are incorporated herein by reference.

[0038] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A fastening device particularly for ski boots having at least a first flap (4) and a second flap (5) to be fastened, said device comprising a rack (9) having a body (10) provided with a plurality of concordantly orientated teeth (11) for selective and temporary engagement with an engagement means (8) of a lever (7) which is associated with said first flap (4), characterized in that said body (10) is rotatably associated with said second flap (5) and a hook member (14) is associated therewith, said hook member (14) being orientated in the opposite direction with respect to said teeth (11) and being adapted to engage said engagement means (8).

2. The fastening device according to claim 1, characterized in that rotary means (12) for rotary connection to said second flap (5) are provided below said body (10).

3. The fastening device according to claim 2, characterized in that said rotary means (12) are constituted by a first pivot (12), which protrudes from said body (10) on the opposite side with respect to said plurality of teeth (11) and can be arranged in a complementarily shaped seat formed on said flap for rotary connection thereto.

4. The fastening device according to claim 1, characterized in that at one end of said body (10) said

hook member (14) is rotatably associated by means of a second pivot (13).

5. The fastening device according to claim 1, characterized in that said at least one hook has a chosen longitudinal extension.

6. The fastening device according to one or more of the preceding claims, characterized in that said engagement means (8) selectively interacts with said hook member (14) or with one of said plurality of teeth (11).

7. The fastening device according to one or more of the preceding claims, characterized in that the orientation of said plurality of teeth (11) and of said hook member (14) does not allow, during the closure of said lever (7), the interaction of said engagement means (8) with said hook member (14) and with one of said plurality of teeth (11).

8. The fastening device according to claim 1, characterized in that said hook member (14) is formed monolithically with said body (10).

9. The fastening device according to claim 8, characterized in that the connection on said body (10) and said hook member (14) is elastically flexible.

10. The fastening device according to claim 4, characterized in that it comprises an elastic means for contrasting the oscillation of said hook member (14) with respect to said body (10).

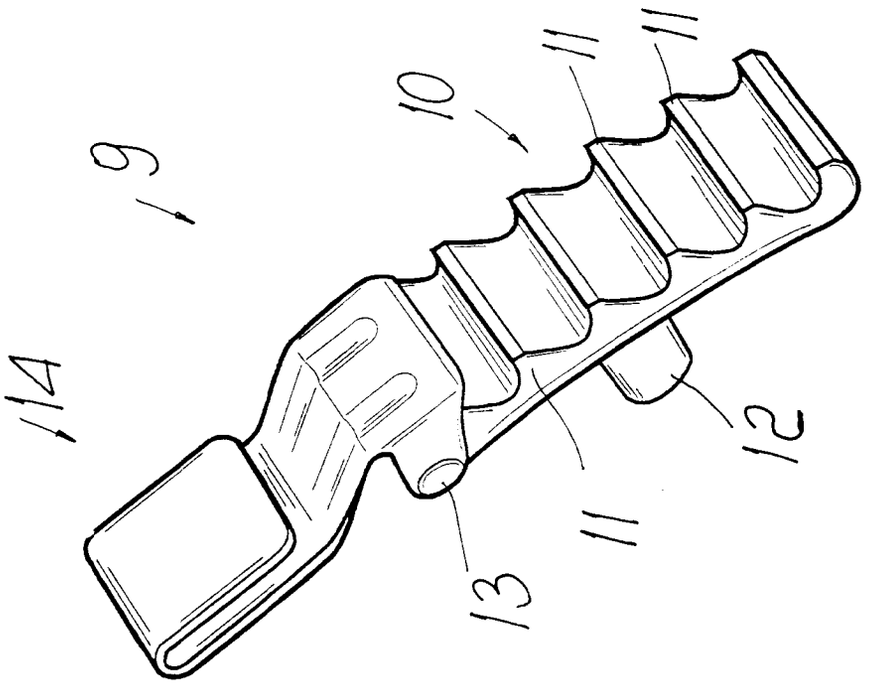

Fig. 1

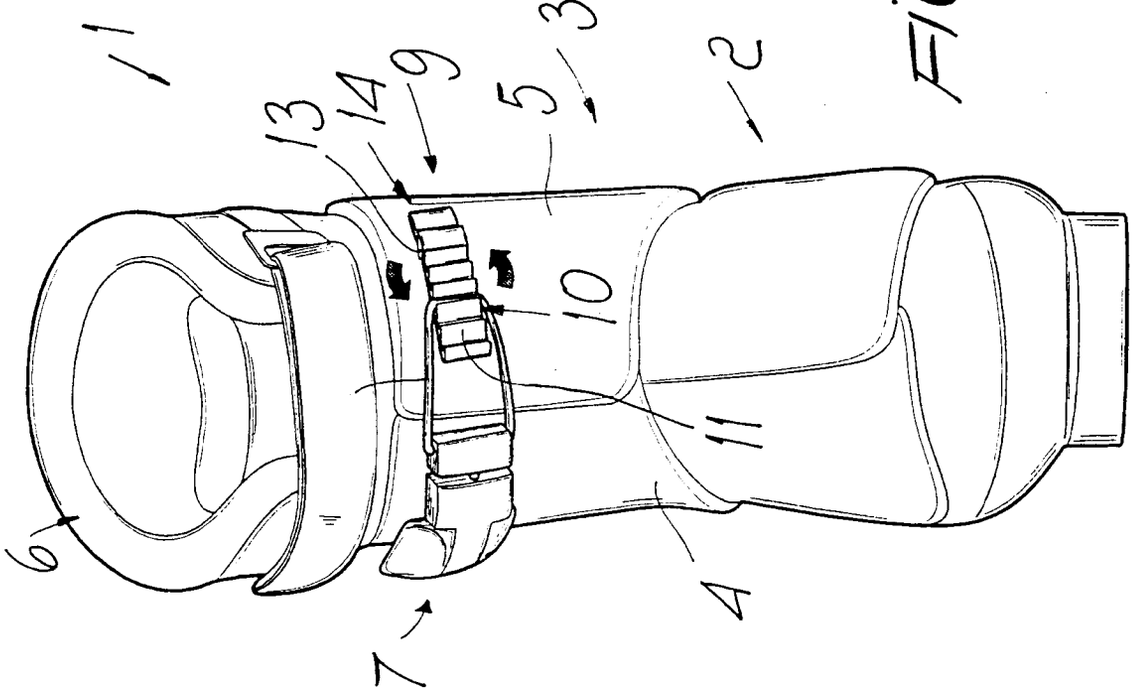

Fig. 2

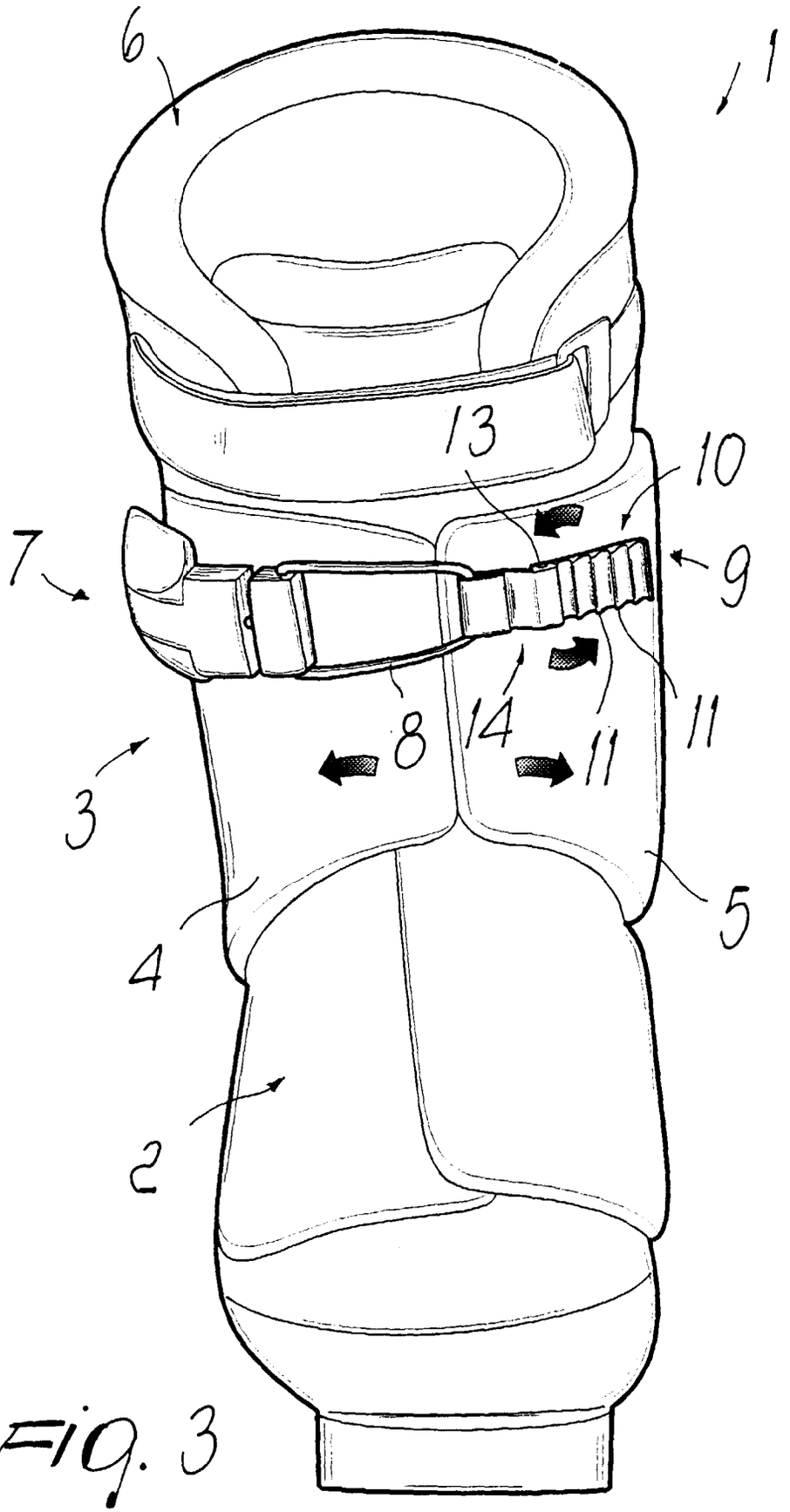

Fig. 3