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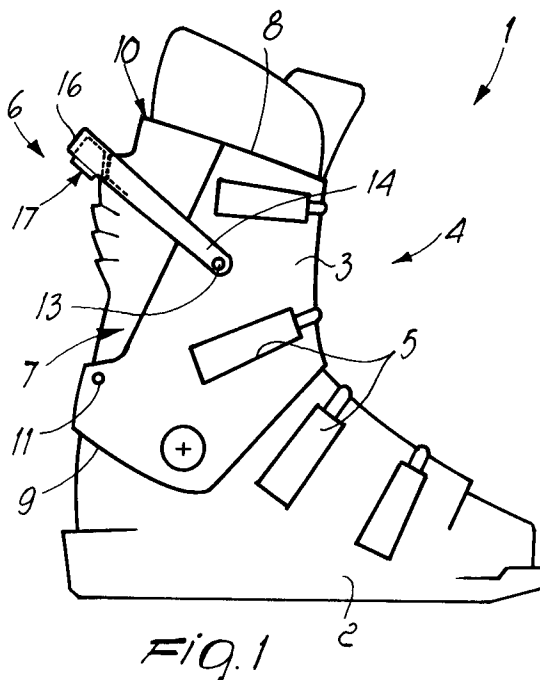
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I-20123 Milano(IT)(54) **Rear support adjustment device, particularly for ski boots.**

(57) A rear support adjustment device, particularly usable in ski boots composed of a shell (2) with which at least one quarter (3) is associated. The quarter has, in a rearward position, a recess (7) which acts as seat for a spoiler (10) which is articulated transversely to the quarter. The structure comprises a U-shaped bracket (15) the ends (14) whereof are pivoted laterally to the quarter. The bracket furthermore comprises members (17) for temporary engagement with grip members (18) defined on the spoiler. This device allows the skier to rapidly and easily vary the degree of inclination of the spoiler without varying, for example, the degree of securing of the quarter.

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The present invention relates to a rear support adjustment device, particularly usable in ski boots.

Several devices are currently known adapted to vary the inclination of a quarter with respect to the shell so as to allow the skier to easily transmit efforts to the ski in view of an optimum adaptation of the configuration of the boot to the technical characteristics required by the skier.

A German patent, published as No. 2,018,704 and filed on April 18, 1970, discloses a ski boot the shell whereof has a pair of lateral wings at which the ends of a U-shaped bracket, which protrudes behind the quarter, are pivoted.

Said bracket, which has a fixed configuration, has a screw, at the base arranged outside the quarter, the activation of the screw causing the threaded stem thereof to compress a plate which is associated with the quarter in a rearward position.

This movement allows the quarter to vary its angle with respect to the shell.

Although this solution allows to vary the angle of the quarter, it has some disadvantages: first of all, the variation in inclination affects the entire quarter and thus the entire region in which the leg rests thereon, and this can create localized pressure regions and thus pain for the skier.

Furthermore, the inclination varying operation is in itself a long one, since the skier must impart a considerable number of turns to the screw before the correct position thereof is achieved.

This operation must necessarily be performed twice, once to find the correct inclination and once to eliminate this selection so as to be able to comfortably remove the foot from the boot.

Thus it is not possible to achieve any degree of memorization of the chosen optimum condition, and this forces the skier to constant adjustments every time he puts the boot on.

Finally, it is stressed that the variation in inclination which can be imparted to the quarter is necessarily limited, since it is not possible to provide, due to practical convenience, screws having very long threaded stems, since said screw would be an element which protrudes considerably from the boot and would thus be subject to accidental impacts.

The French patent published as No. 2,266,468 and filed on April 3, 1974 is also known, which discloses a ski boot comprising a shell which has a rear wing which protrudes and is externally toothed along a transverse axis and has a quarter which is also provided with a wing which is articulated proximate to the tip region of said shell.

Straps are associated at one side of the quarter and can be tensed by means of adapted levers which interact, by means of adapted teeth arranged longitudinally thereto, with the set of teeth defined on the wing which protrudes from the shell.

Thus, in this solution, the tensing of the straps causes a variation in the inclination of the wing which protrudes from the shell.

The disadvantage observed in this known solution consists of the fact that the tensing of the straps does not merely entails a variation in the inclination of the wing but also varies the degree of closure of the quarter: this is a disadvantage, since an optimum inclination of the wing may not be matched by an optimum securing of the quarter.

The same Applicant is also the holder of a US patent, No. 4,882,857, which discloses rear-entry ski boots which are provided with devices suitable for allowing to vary the inclination of the rear quarter.

Although these solutions are undoubtedly valid, they have the disadvantage of being structurally complicated and bulky.

The aim of the present invention is therefore to eliminate the disadvantages described above in known types by providing a device which allows to achieve the optimum and rapid adjustment of the rear support for the skier's leg.

Within the scope of the above aim, an important object is to provide a device wherein the degree of rear support can be preset in a rapid manner by means of simple operations which are easy for the skier.

Another important object is to provide a device which associates with the preceding characteristics that of allowing, in an equally rapid and easy manner, the optimum walking of the skier once skiing has ended.

Another important object is to provide a device wherein the skier can rapidly identify the degree of rear support achieved previously when deactivating it.

Another important object is to provide a device which allows to optimally select the degree of rear support of the skier's leg independently of the degree of securing of the shell or of the quarter.

Not least object is to provide a device which associates with the preceding characteristics that of being structurally simple, said device not substantially altering the usual aesthetic configuration of boots and being at the same time reliable and safe in use.

This aim, these objects and others which will become apparent hereinafter are achieved by a rear support adjustment device, particularly for ski boots composed of at least one quarter associated with a shell, characterized in that said at least one quarter has a rear recess which acts as seat for a spoiler which is pivoted thereto, the ends of a substantially U-shaped bracket being pivoted to said quarter, said bracket having means for temporary engagement with grip means defined on said spoiler.

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

figure 1 is a side view of the device, wherein the bracket interacts with the spoiler in the condition of maximum inclination of the latter;

figure 2 is a view, similar to the preceding one, of the condition wherein the bracket does not interact with the spoiler so as to allow optimum walking for the skier.

With reference to the above figures, the reference numeral 1 generally indicates a front-entry ski boot which comprises a shell 2 with which a quarter 3 is associated.

Adapted known closure devices, such as levers 5 for tensing adapted tension elements, are arranged at the shell 2 and at the front region 4 of the quarter 3.

Said quarter 3 has, in the rear region 6, a recess 7 which affects said quarter starting from the upper perimetric edge 8 up to the vicinity of the lower perimetric edge 9.

A spoiler 10 can be arranged at the recess 7 and is pivoted, at a pivot 11, transversely to the quarter 3 in the rear region 6 which is adjacent to the lower perimetric edge 9 of said quarter 3.

The ends 14 of a substantially U-shaped bracket 15 are pivoted, by means of adapted studs or rivets 13, at the lateral ends 12 of the quarter 3 which are adjacent to the recess 7.

Said bracket has, at the base 16 for connection to the ends 14, means 17 for temporary engagement with grip means defined on the spoiler 3.

The temporary engagement means 17 can be constituted for example by similar solutions described in the above mentioned US patent no. 4,882,857, whereas the grip means defined on the spoiler 10 can be advantageously constituted by a plurality of teeth 18 which are defined transversely and protrude rearward with respect to said spoiler 10.

The protrusion of said teeth 18 from the spoiler 10 is advantageously such as to allow optimum interaction with the temporary engagement means 17 defined on the bracket 15 as its angular position varies.

The operation of the device is thus as follows: once the boot has been put on, the skier grips the base 16 of the bracket 15 and raises it until the temporary engagement means 17 interact with the required tooth 18, thus imparting the required inclination to the spoiler 10.

This adjustment can be performed after closing the quarter and the shell and thus after presetting the optimum degree of securing thereof according

to the type of skiing.

Naturally, the closer the bracket 15 is to the upper perimetric edge 8 of the quarter 3, the more the spoiler 10 is inclined.

Once skiing has ended, the skier disengages the temporary engagement means 17 from the selected tooth 18, arranging the bracket 15 turned downward, with the base 16 adjacent to the lower perimetric edge 9 of the quarter 3: in this manner the spoiler 10 is free to oscillate with respect to the quarter 3, allowing the skier to walk optimally even with the boot completely closed.

Furthermore, the downward turning of the spoiler 10 facilitates the insertion of the foot inside the boot.

It has thus been observed that the invention has achieved the intended aim and objects, a device having been obtained which allows to optimally adjust the rear support for the skier's leg, said adjustment being easy and immediate.

The activation of the device is furthermore equally rapid both during the engagement of the bracket 15 with the spoiler 10 and during the disengagement thereof.

The device is furthermore completely separate from the means adapted to close the quarter 3 or the shell 2: thus, for example, it is possible to walk easily in an upright position while keeping the degree of securing of the quarter unchanged.

The spoiler 10 can naturally also be constituted by a wing which protrudes rearward with respect to the shell 2.

Similarly, the ends 14 of the bracket 15 can be pivoted inside or outside the quarter 3.

The materials and the dimensions which constitute the individual components of the invention may naturally also be the most appropriate according to the specific requirements.

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 scope of each element identified by way of example by such reference signs.

Claims

1. Rear support adjustment device, particularly for ski boots composed of at least one quarter (3) associated with a shell (2), characterized in that said at least one quarter has a rear recess (7) which acts as seat for a spoiler (10) which is pivoted thereto, the ends (14) of a substantially U-shaped bracket (15) being pivoted to said quarter, said bracket having means (17) for temporary engagement with grip means

(18) defined on said spoiler.

2. Device according to claim 1, characterized in that said at least one quarter has said recess, in the rear region (6), said recess affecting said at least one quarter starting from the upper perimetric edge (8) up to the vicinity of the lower perimetric edge (9). 5
3. Device according to claim 2, characterized in that said spoiler can be arranged at said recess, said spoiler being pivoted, at a pivot (11), transversely to said at least one quarter in the rear region which is adjacent to said lower perimetric edge of said at least one quarter. 10 15
4. Device, according to claims 1 and 3, characterized in that said ends of said substantially U-shaped bracket are pivoted, by means of adapted studs (13), at the lateral ends (12) of said at least one quarter which are adjacent to said recess. 20
5. Device according to claims 1 and 4, characterized in that said bracket has, at the base (16) for connection to said ends, said means for temporary engagement with grip means defined on said spoiler, said grip means defined on said spoiler being constituted by a plurality of teeth (18) which are defined transversely and protrude rearward with respect to said spoiler, the protrusion and configuration of said teeth allowing interaction between said teeth and said temporary engagement means defined on said bracket as the angular position of the latter varies. 25 30 35
6. Device according to one or more of the preceding claims, characterized in that said spoiler is constituted by a wing which protrudes rearward with respect to said shell. 40
7. Device according to one or more of the preceding claims, characterized in that said ends (14) of said bracket (15) are pivoted to said quarter. 45

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