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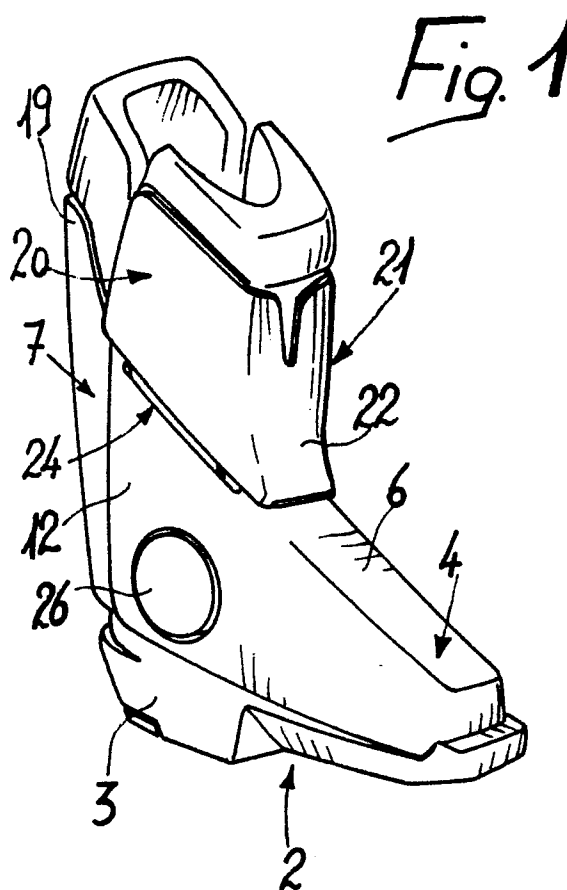
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I-20123 Milan(IT)(54) **Rear-entry ski boot.**

(57) The present invention relates to a rear-entry ski boot. The ski boot comprises a front quarter (21) essentially composed of two separate elements: a shell (2) and a collar (20). The latter is removably associable with the shell (2) and is therefore replaceable by the user. The collar (20) is furthermore movable with respect to the shell (2), allowing the flexibility of the front quarter (21). Conveniently, between the shell (21) and the collar (20) are arrangeable members for the adjustment of the extent of the movement of the collar (20) with respect to the shell (2). Advantageously the shell (2) constituting the front quarter (21) embraces the foot from the metatarsal region (4) to the malleolar region.



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REAR-ENTRY SKI BOOT

The present invention relates to a rear-entry ski boot.

Currently, rear-entry ski boots are composed of a shell whereon are outwardly fixed, by means of studs, the front quarter and the rear quarter.

The use of such studs allows the rotation, with respect to their axis, of said front quarter and rear quarter, but at the same time has the disadvantage of allowing, under stress while skiing, a lateral deformability.

This deformation does not allow the precise transmission, on the part of the skier, of the efforts imparted laterally to the ski by the foot.

Some known types of rear-entry ski boots are furthermore provided, at the shell, with an engagement tooth for the front quarter which allows to limit the excursion thereof towards the rear quarter.

The disadvantage which can be found in such known types of boots resides in the fact that this tooth is subject not only to breakage but also to uncoupling from the front quarter, thus invalidating its function.

Known ski boots furthermore have the disadvantage that they cannot be structurally customized by the skier himself, nor can they be easily differentiated from an aesthetical viewpoint.

The main aim of the present invention is therefore to eliminate the disadvantages described above in known types of ski boots.

For this purpose, the main aim of the present invention is to provide a rear-entry ski boot which is provided with increased aesthetical characteristics differentiable in a rapid and simple manner, furthermore allowing the customization of the ski boot by the skier.

Within the scope of the above described aim, another important object is to provide a rear-entry ski boot wherein it is possible to limit safely and in an optimum manner the excursion of the front quarter in the direction of the rear quarter.

Not least object is to provide a ski boot which associates the above characteristics with that of being provided with excellent lateral rigidity allowing the precise transmission of lateral efforts of the foot to the ski, at the same time allowing the flexibility of the front quarter.

The aim and the objects mentioned above, as well as others which will become apparent hereinafter, are achieved by a rear-entry ski boot, comprising a shell whereto is pivotably coupled a rear quarter, characterized in that it comprises a front quarter composed of said shell and of a collar removably associable therewith, said collar being movable with respect to said shell.

Conveniently, between said shell and said collar are arrangeable means for the adjustment of the extent of the movement of said collar with respect to said shell.

Advantageously, said shell constituting said front quarter embraces the foot from the metatarsal region to the malleolar region.

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 drawing tables, wherein:

Fig. 1 is a perspective view of the ski boot;

Fig. 2 is a lateral view of the same;

Fig. 3 is a perspective view of the components constituting the front quarter;

Fig. 4 is a fragmentary cross section view along a longitudinal plane passing through the collar;

Fig. 5 is a perspective view of a ski boot according to another aspect of the invention;

Fig. 6 is a perspective view of the components of the front quarter of said other aspect of the invention;

Fig. 7 is a fragmentary cross sectional view, similar to that of fig. 4, of the coupling between said collar and said shell; and

Fig. 8 is a cross section view of the boot along the longitudinal mid-plane thereof.

With reference to the above described figures, the rear-entry ski boot 1 comprises a shell 2, provided monolithically together with the sole 3, and embracing the foot from the metatarsal region 4 to the malleolar region 5.

Between said regions the shell 2 is provided with a plane upper surface 6, interrupted at the region of the foot instep, which extends at the lateral ends up to the rear end 7 of the shell 2 to define a pair of plane lateral guides 8, whereto are connected, protruding upwardly, two flaps 9 and 10 having a groove 11 provided at the longitudinal mid-plane of the shell.

Said flaps 9 and 10 are arranged at planes approximately parallel to those of arrangement of the outer lateral surface 12 of the shell 2, the guides 8 being perpendicular to said flaps and said surface and connecting them to one another.

Advantageously, the surface 6 is inclined with respect to the resting plane of the sole 3, defining a wedge-like configuration for the shell.

At each of said pairs of lateral guides 8 there is a longitudinal slot 13 affecting the entire region above the malleolus.

At the lateral surfaces 12 of the shell 2, and proximate to the rear end 7 and to the heel region, there is a number of circular seats 14 comprising a first semicircular depressed portion 15 with an outer diameter equal to the inner diameter of the seat.

Said depressed portion 15 occludes the seat 14 at a region adjacent to the sole 3, there projecting therefrom, in the direction of the upper end of the ski boot 1, a first tab 16, in the shape of a half cylinder, with an outer diameter smaller than the inner diameter of the seat 14, defining an opening 17.

To the shell 2, at the tab 16 and by means of an adapted stud 18, a rear quarter 19 is pivotably coupled.

The ski boot 1 furthermore comprises a collar 20, removable associated with the shell 2 and constituting in association therewith the front quarter 21.

The collar 20 laterally and frontally embraces said flaps 9 and 10, and is provided with a surface 22, facing towards the metatarsal region 4, which connects to the plane upper surface 6 of the shell 2.

The lower lateral perimetral borders 23 of the collar 20 rest laterally on the guides 8, from said borders 23 there projecting second tabs 24, of reduced thickness, elastically deformable, having an essentially triangular form with the apex directed towards the sole and resting, in use, on the inner lateral surface of said collar 20.

At the ends, the tabs 24 are provided with a semicircular undercutting 25, with its concavity directed towards the borders 23.

Laterally and externally with respect to the ends of each of the tabs 24 there is rigidly associated and projecting an element for connecting the collar to the shell, consisting of a circular projection 26, its external diameter being slightly smaller than the inner diameter of the seat 14.

The thickness of the projection 26, together with that of the tab 24, is slightly smaller than the width of the opening of the slots 13.

Moreover, the width of the tabs 24 at their coupling to the perimetral borders 23 is smaller than the length of the slots 13.

The assembly of the front quarter 21 thus occurs by associating the collar 20 with the shell 2: this operation is performed by inserting each of the projections 26 and the tabs 24 inside the corresponding longitudinal slots 13, the locking occurring by inserting said projections 26, through the openings 17, into the seats 14.

Thus a snap-together insertion is achieved, the tab 16 blocking the projection 26 in the seat 14.

The undercutting 25 rests on the end of the tab 16 complementarily shaped thereto, this facilitating the rotation of the collar 20 with respect to the shell 2.

As illustrated in fig. 2, indeed during the flexing phase the front quarter 21 bends in the direction of the metatarsal region 4, it being possible to impose a shift in this direction to the collar 20, until the abutment occurs of the tabs 24 with the ends of the slots 13 directed towards the point of the shell.

It has thus been observed that the invention achieves the aim and the objects intended, a ski boot having been devised which is provided with aesthetical characteristics which can be differentiated by virtue of the interchangeability of the collar with respect to the shell, said interchangeability in fact allowing the use of collars provided in different materials and different colors.

Furthermore, the provision of a shell defining a fixed structure at the malleolar region allows to provide thereon adapted spaces or seats for the insertion of mechanisms currently usually placed at a movable element, such as the front quarter which covers the malleolar region, or graphic motifs.

The invention thus conceived furthermore allows the stud 18 for the pivoting of the rear quarter 19 to be left unpainted, it being possible to replace said stud with a simple rivet, thus limiting costs and dimensions. Said stud is indeed hidden by the projection 26.

If a lever for the closure of the ski boot is associated with the collar and with the rear quarter, the possible excursion of the front quarter in the direction of the rear quarter is limited by the interaction occurring between the tabs 24 and the end of the slots 13 directed towards the rear quarter. The ski boot thus conceived is furthermore much more rigid laterally, avoiding splayings and making the transmission of lateral efforts of the foot to the ski more precise. Naturally, the invention thus conceived is more susceptible to numerous modifications and variations, all of which are within the scope of the same inventive concept.

Thus, for example, according to another aspect of the invention illustrated in figures 5, 6 and 7, a ski boot 101 is described comprising a shell 102 provided with a pair of lateral guides 108, each connected to the outer lateral surface 112 of the shell and to a flap, indicated by the reference numerals 109 and 110.

At the surface 106 of the latter there is a step-like discontinuity 127 provided at a region adjacent to the end of the slot 113 provided on the guides 108.

From said step-like discontinuity there projects in the direction of the flaps 109 and 110 a thin plate 128 arranged on a plane parallel to that of the surface 106, the free end of said thin plate being accommodatable within a complementarily shaped seat 129 provided at the end of the surface 122 of the collar directed towards the region 4.

Thus, a means for the adjustment of the extent of the relative motion of said collar and said shell is arrangeable between the same, said means being composed of a small block 130, provided preferably in elastically deformable material, and provided with an axial seat 131 shaped complementarily with respect to the thin plate 128.

The sliding of the collar 120 with respect to the shell 102 is ensured, the same being provided, at the perimetral borders 123, with a pair of tabs 124 insertable in said slot 113, at the inner facing surfaces of said tabs there projecting a longitudinal lug 132 adapted to interact in abutment, after a snap-together insertion, with the inner lateral surface of the flaps 109 and 110.

Also in this case, flexibility is achieved, it being possible to move the collar 120 within the slots 113, it being also possible to determine the degree of flexibility also by employing a small block 130 having the required compressibility characteristics.

Also in this case the collar 120 can be replaced rapidly and simply, allowing to achieve the same characteristics and advantages described previously. Naturally, the materials as well as the dimensions of the individual components of the rear-entry ski boot may be any according to the requirements.

Claims

1. Rear-entry ski boot (1,101), comprising a shell (2,102) whereto is pivoted a rear quarter (19), characterized in that it comprises a front quarter (21) composed of said shell (2,102) and a collar (20,120) removable associable therewith, said collar (20,120) being movable with respect to said shell (2,102).

2. Rear-entry ski boot (1,101) according to claim 1, characterized in that it comprises a shell (2,102), provided monolithically together with a sole (3), embracing the foot from the metatarsal region (4) to the malleolar region (5), between said regions (4,5) said shell (2,102) being provided with a plane upper surface (6,106) interrupted approximately at the foot instep, said plane upper surface (6,106) extending at the lateral ends up to the rear end (7) of said shell (2,102) to define a pair of lateral guides (8,108) arranged on a plane approximately parallel to that of said sole (3).

3. Ski boot according to claims 1 and 2, characterized in that to said lateral guides (8,108) are connected and upwardly project two flaps (9,10,109,110) arranged at planes approximately parallel to those of arrangement of the outer lateral surface (12,112) of the shell (2,102), at each of said lateral guides (8,108) there being provided a longitudinal slot (13,113) affecting the entire region of the malleolus, said flaps (9,10,109,110) being connected to said plane upper surface (6,106) of the shell (2,102), therebetween there being provided, at the longitudinal middle plane of the shell (2,102), a groove (11).

4. Ski boot according to claims 1 and 3, characterized in that said shell (2) is provided, at the lateral surfaces (12) and proximate to the rear end (7) of the heel region, with a circular seat (14) provided with a first semicircular depressed portion (15) with an outer diameter equal to the inner diameter of said seat (14), said first depressed portion (15) occluding said seat (14) at a region adjacent to said sole (3), from said first depressed portion (15) there projecting, in the direction of the upper ends of said ski boot (1), a first tab (16) in the shape of a half-cylinder, having an outer diameter which is smaller than the inner diameter of said seat (14) to define an opening (17).

5. Ski boot according to the preceding claims, characterized in that it comprises a front quarter (21) consisting of a collar (20), separate from said shell (2) and removably associable therewith, said collar (20) laterally and frontally embracing said flaps (9,10) and being provided with a surface (22) directed towards the metatarsal region (4) which connects to said plane upper surface (6) of said shell (2).

6. Ski boot according to claims 1 and 5, characterized in that said collar (20) is provided with lower lateral perimetral borders (23) resting at said lateral guides (8) provided on said shell (2), from said lower lateral perimetral borders (23) of said collar (20) there projecting second tabs (24) having a reduced thickness, said tabs (24) being elastically deformable, provided with an essentially triangular shape with the apex directed towards the sole (3) and arranged at the plane of arrangement of the inner lateral surface of said collar (20).

7. Ski boot according to claims 1, 5 and 6, characterized in that it comprises second tabs (24) provided at the ends with a semicircular undercutting (25) with a concavity facing towards said lower lateral perimetral borders (23) of said collar (20).

8. Ski boot according to claims 1 and 7, characterized in that it comprises a collar (20) provided, laterally and outwardly with respect to the ends of each of said tabs (24), with an element (26) for connection to said shell (2), said element being composed of a projection (26) rigidly associated

with, and projecting from said ends, said projection (26) being circular in shape with the outer diameter having dimensions slightly smaller than the inner diameter of said seat (14) provided on said shell (2).

9. Ski boot according to claims 1 and 8, characterized in that said undercutting (25), provided at the ends of said tabs (24) projecting from said lower lateral perimetral borders (23) of said collar (20) interacts in abutment, once said projections (26) have been placed at said seats (14) provided on said shell (2), with said first tab (16) projecting from said first depressed portion (15).

10. Ski boot according to claims 1 and 9, characterized in that the thickness of each of said projections (26) and tabs (24) of said collar (20) is slightly smaller than the width of the opening of said slots (13) provided on said shell (2).

11. Ski boot according to the preceding claims, characterized in that the longitudinal extension of said tabs (24) of said collar (20) is such as to allow, once said projections (26) have been inserted in said seats (14) provided on said shell (2), the interaction of said lower lateral perimetral borders (23) of said collar (20) with each of said lateral guides (8) provided on said shell (2).

12. Ski boot according to the preceding claims, characterized in that it comprises a shell (102) provided, at the upper plane surface (106), with a step-like discontinuity (127) provided proximate to a region adjacent to the end of the slot (113) provided at said guides (108), from said step-like discontinuity (127) there projecting in the direction of said flaps (109,110) a thin plate (128) arranged on a plane approximately parallel to that of said plane upper surface (106) of said shell (102).

13. Ski boot according to claims 1 and 12, characterized in that it comprises a collar (120) provided with an end shaped complementarily and facing said step-like discontinuity (127) provided on said shell (102), at said ends there being provided a seat (129) accommodating the end of said thin plate (128).

14. Ski boot according to claims 1, 12 and 13, characterized in that it comprises a means (130) for the adjustment of the extent of the motion of said collar (120) with respect to said shell (102), composed of a small block (130), preferably in elastically deformable material and provided with an axial seat (131) shaped complementarily with respect to said thin plate (128) projecting from said step-like discontinuity (127) provided on said shell (102).

15. Ski boot according to claims 1 and 14, characterized in that it comprises a collar (120) wherefrom projects a pair of tabs (124) insertable at each of said slots (113) provided on said shell (102), at the inner facing surfaces of said tabs there

projecting a longitudinal lug (132) having an axis parallel to the plane of arrangement of said lateral guides (108), said lug (132) interacting in abutment, once said tabs (124) are inserted in said slots (113), with the inner lateral surface of said flaps (109,110).

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