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(11) Publication number:

0 410 201 A1

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **90113126.8**

(51) Int. Cl.⁵: **A43B 5/04**

(22) Date of filing: **10.07.90**

(30) Priority: **25.07.89 IT 4166389**

(43) Date of publication of application:
30.01.91 Bulletin 91/05

(84) Designated Contracting States:
AT CH DE FR LI

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(54) **A rear-entry ski boot.**

(57) A ski boot is disclosed which includes a bootleg (15) hinged to a boot shell (2) and a flap (25) hinged rearwardly to the bootleg in different areas from the area where the bootleg is hinged to the boot shell.

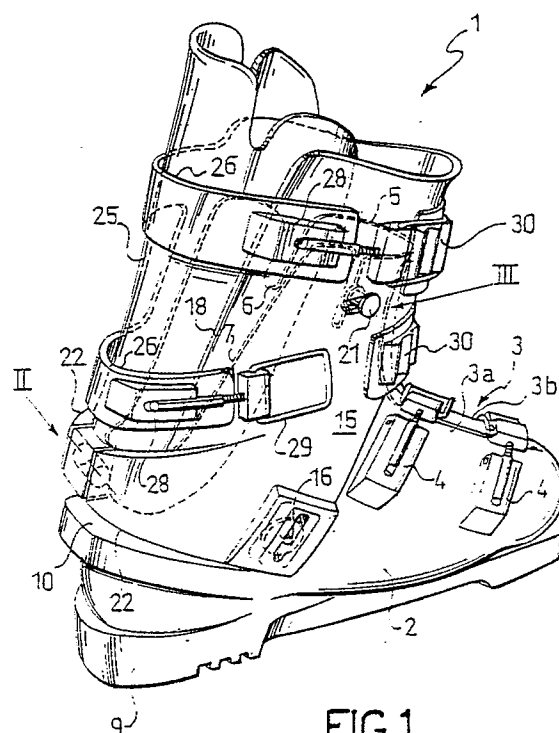


FIG.1

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This invention relates to a rear-entry ski boot including a bootleg hingedly connected to a boot shell in overlapping relationship with an instep portion of said boot shell in continuation thereof, a cutout formed rearwardly on said bootleg and said boot shell to define a rear opening for putting the boot on, which opening is removably closed by a flap in swivelling association with the boot shell.

Ski boots that are put on from the rear end, or rear-entry type, have met with widespread acceptance by the market also because they are convenient to put on and take off, and their fastening tension relatively easy to adjust.

Such boots have usually a fixed volume shell, that is a shell wherein the portion intended to accommodate the foot is made as a fully enclosed monolithic case. The shell has the bootleg and rear flap hinged thereto.

In prior art practice, such as on the products from this same Applicant, the flap is connected hingedly to the shell by means of the same hinge pins provided for the bootleg, or alternatively, by the use of a pair of hinge pins set slightly rearward of the former but in all cases affixed to the shell.

A drawback of the former arrangement for attaching the flap to the shell is that the tilt-out movement in opening the flap is somewhat restricted by the so-called "heel" portion of the shell interfering with the bottom edge of the flap; in fact, this design only allows a partial rearward tilting of the flap when putting the boot on, which is of apparent hindrance to the introduction of the foot into the boot.

The latter arrangement, with the flap attached to the shell on separate hinge pins, partly obviates the above-noted drawback. However, this design interferes with the freedom of oscillation of the bootleg relatively to the shell because the pivot centers are different for the bootleg and the flap.

These problems are accompanied by a further drawback common with rear-entry ski boots consisting of that fixed-volume shells as usually adopted, which employ links or pressure devices for locking the foot, afford a relatively low degree of unitization of the foot with the shell, whereby voids or low-compression areas are allowed between the foot and the shell such that the foot may move within the boot.

The problem that underlies this invention is to provide a rear-entry ski boot so structured as to permit tilting of the rear flap fully out when putting on the boots, but without interfering with the swivel movement of the bootleg on the shell.

This problem is solved by a ski boot of the type outlined above being characterized in that said flap is connected hingedly to said bootleg in different areas from the area where the bootleg is hinged to the shell.

Advantageously, the boot shell is of the variable volume, not fully enclosing type, and fastening means are provided for adjustably tightening portions of said shell to each other.

The features and advantages of this ski boot will be more clearly appreciated from the following detailed description of a preferred, but not exclusive, embodiment thereof, given by way of illustration and not of limitation with reference to the accompanying drawings, where:

Figure 1 is a perspective view of a ski boot according to the invention;

Figure 2 is a part-sectional perspective view, drawn to an enlarged scale, of a detail indicated by an arrow II in Figure 1; and

Figure 3 is an enlarged scale sectional view of a detail indicated by an arrow III in Figure 1.

Generally shown at 1 in Figure 1 is a ski boot embodying this invention.

The ski boot 1 comprises a shell 2 of the variable volume type, that is not all-enclosing at a back 3 due to two overlapping flaps 3a,b being provided which can be tightened over each other by operation of conventional fastening means 4 of the lever kind.

This construction enables the shell 2 to be brought to a tight fit, together with the inner shoe which will intervene between the shell and the foot with the ski boot in its assembled condition, by so changing the boot volume as to lock it on the skier's foot much more effectively than is provided by fixed volume boot shells.

The shell 2 extends upwardly into an instep 5 which is made deformable elastically by the provision of slits 6 and formed rearwardly with a cutout 7, as typifying rear-entry ski boots, indeed to allow the foot to enter the boot.

Formed between the bottom edge of the cutout 7 and a heel 9 of the boot, in the so-called heel area of the shell, is a raised molding 10 from the outside wall of the shell.

Two slots 11 are formed symmetrically in the instep portion 5 of the shell 2 whose function will be explained hereinafter.

A bootleg 15 is connected hingedly, as by means of two hinge pins 16, to opposed sides of the shell in a so-called malleolar area.

The bootleg 15 is wrapped around the instep portion 5 and open rearwards, at the cutout 7, to provide an additional cutout 18.

Formed in each side wall of said bootleg is a respective slot 20 arranged to be in registry with the slots 11 in the shell. A rivet 21 fits through each pair of slots, 11 and 20, whereby the bootleg 15 is secured laterally of the instep 5 of the shell 2 with limited freedom of oscillation relatively to the latter.

Two bracket formations, both shown at 22, are provided at the base of the cutout 18 which have

free ends 22a arranged to face each other a mutual distance apart.

Carried between the ends 22a is a hinge pin 24 for a flap 25 providing an eave to cover the opening defined by the cutouts 7, 18.

The two bracket formations 22 also act as travel stops for the rearward swivel movement of the bootleg 15 on the shell 2, with the molding 10 used as an abutment member therefor.

The hinge pin 24, which is secured between the bracket formations such as by press fitting into corresponding sockets 24a or by incorporation to the plastics material from which the bootleg is molded, additionally to providing pivotal support for the flap 25, also serves as an interconnecting member between the bracket formations 22 effective to stiffen the rear portion of the bootleg 15.

Two small flexible straps, both shown at 26, extend with free sections thereof across the cutout 18 and carry at their free ends conventional fastening lever means 28 provided with a ring 29 which is engaged in a corresponding rack 30 affixed frontally to the bootleg 15.

The straps 26 are either formed integrally with a side wall of the bootleg or otherwise attached to the same.

The flap 25 has an enlarged portion 31 at its bottom portion which is through-penetrated by a clearance hole 32 accommodating the hinge pin 24 in loose fit relationship; said flap 25 is terminated at the opposite end with a plate-like formation adapted to provide a rest (commonly referred to as "spoiler" in the specific art) for the skier's calf.

That flap 25 forms a rear closure for the boot 1 and can be swung between a closed position, where it will abut against the shell 2 and the bootleg 15, at the cutouts 7 and 18, and an open position where it will be tilted approximately 90° to the rear.

In the closed position, the flap 25 would be held tightly against the shell 2 and the bootleg 15 by the straps 26.

To put the ski boot 1 on, the fastening lever means 28 are first released from their respective racks 30 so as to have both straps 26 released; likewise, the lever fasteners 4 are released to allow the shell 2 to expand at the back 3 into its state of maximum volume.

Thereafter, the flap 25 is tilted backward relatively to the bootleg 15 about the hinge pin 24, thereby uncovering the opening defined by the cutouts 7 and 18.

It should be noted that at this stage too, with the straps 26 and respective fastening means released, the bootleg 15 will stay close against the shell 2 due to the rivets 21 provided, so that it does not hinder the operations for putting the ski boot on.

After the boot has been put on, the very presence of the foot inside it will tend to bring the flap 25 back to its position adjacent to the shell, which operation may be brought to completion manually by re-engaging the straps 26 and respective lever fasteners 28.

The shell is then tightened onto the foot by manipulation of the fastening means 4 and of the bootleg through its corresponding means 28.

In use, the bootleg is allowed to swing about the hinge pins 16 together with the flap 25. This oscillatory movement will be limited by the amount of play provided by the slots 11, 20 and by the bracket formations 22 abutting on the molding 10.

A major advantage of this ski boot is that it facilitates the put-on operations through the ability to tilt the flap covering the rear opening fully to the rear; an additional advantage is that a variable volume shell can be used, which affords improved ski control by locking the foot more effectively inside the ski boot.

Furthermore, by holding the bootleg secured on the shell sides through the rivets 21, a higher degree of freedom is attained for the movements, with no hindrance even with the boot unfastened.

Claims

1. A rear-entry ski boot including a bootleg (15) hingedly connected to a boot shell (2) in overlapping relationship with an instep portion (5) of said boot shell in continuation thereof, a cutout (7) formed rearwardly on said bootleg and said boot shell to define a rear opening for putting the boot on, which opening is removably closed by a flap (25) in swivelling association with the boot shell, characterized in that said flap (25) is connected hingedly to said bootleg (15) in different areas from the area where the bootleg is hinged to the shell (2).
2. A ski boot according to Claim 1, characterized in that said shell (2) is of the variable volume type, not fully enclosed on itself and that fastening means (4) are provided to adjustably tighten portions of said boot shell to each other.
3. A ski boot according to either claim 1 or 2, characterized in that said bootleg has, at the base of said opening, juxtaposed bracket formations (22), said flap (25) being hinged to the bootleg at said bracket formations.
4. A ski boot according to Claim 3, characterized in that it comprises a hinge pin (24) for said flap being supported between said bracket formations.
5. A ski boot according to Claim 4, characterized in that said hinge pin forms linking member between said bracket formations (22) effective to stiffen the rear portion of said bootleg.

6. A ski boot according to one or more of the preceding claims, characterized in that it comprises linking means (11,20,21) between said bootleg and said shell to limit the freedom of oscillatory movement of said bootleg relatively to said shell.

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7. A ski boot according to Claim 6, characterized in that said linking means include respective slots (11, 20) provided at corresponding locations on said bootleg and the instep portion of said shell, homologous pairs of said slots accommodating a respective rivet (21) therethrough.

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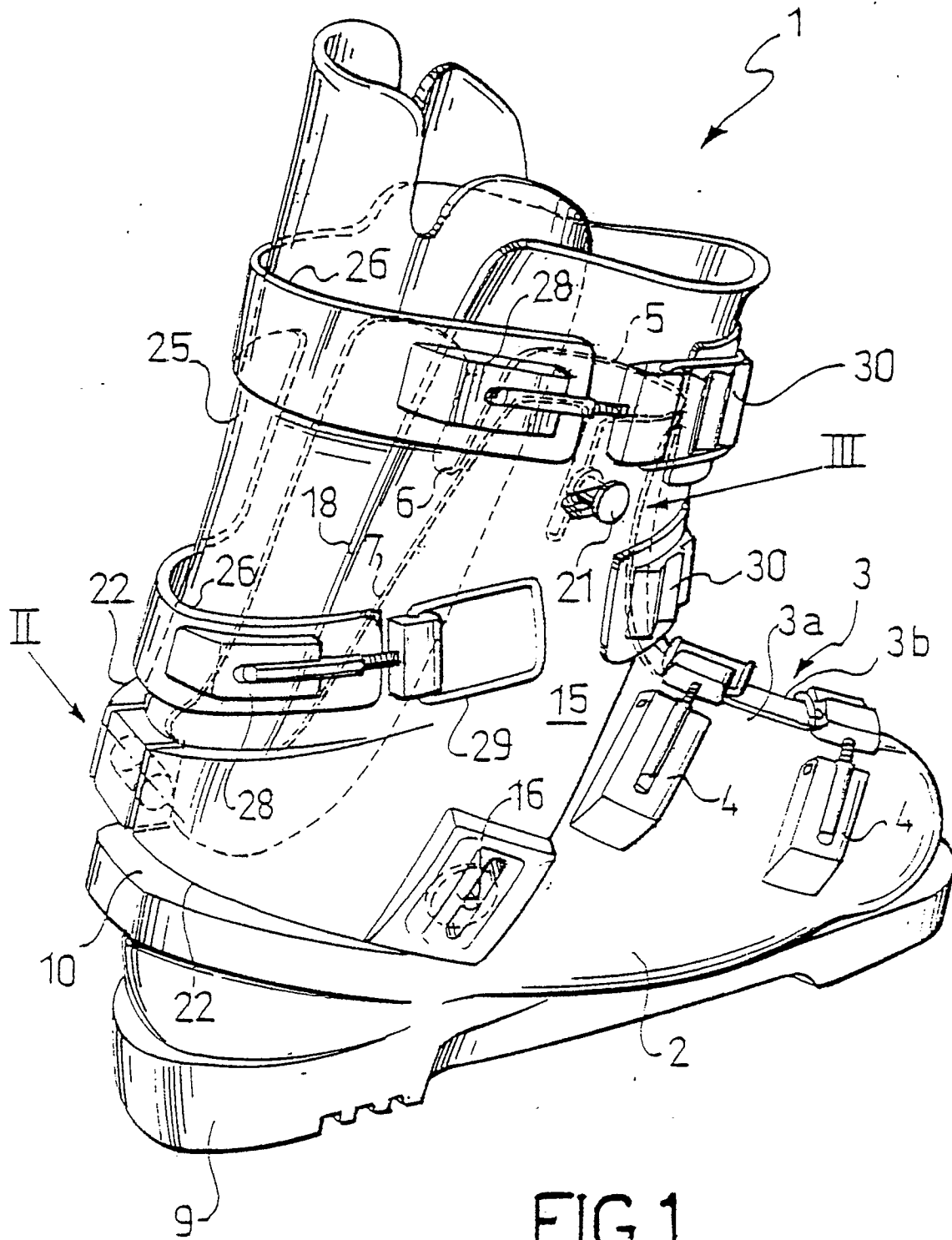


FIG.1

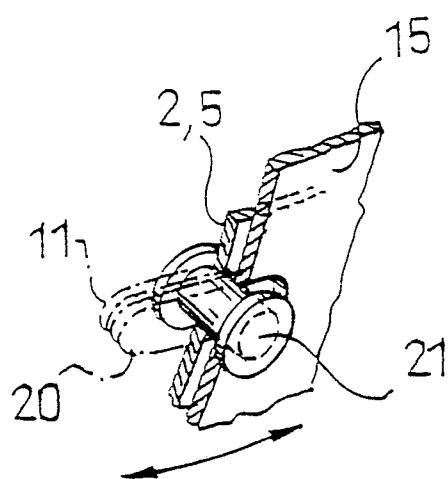
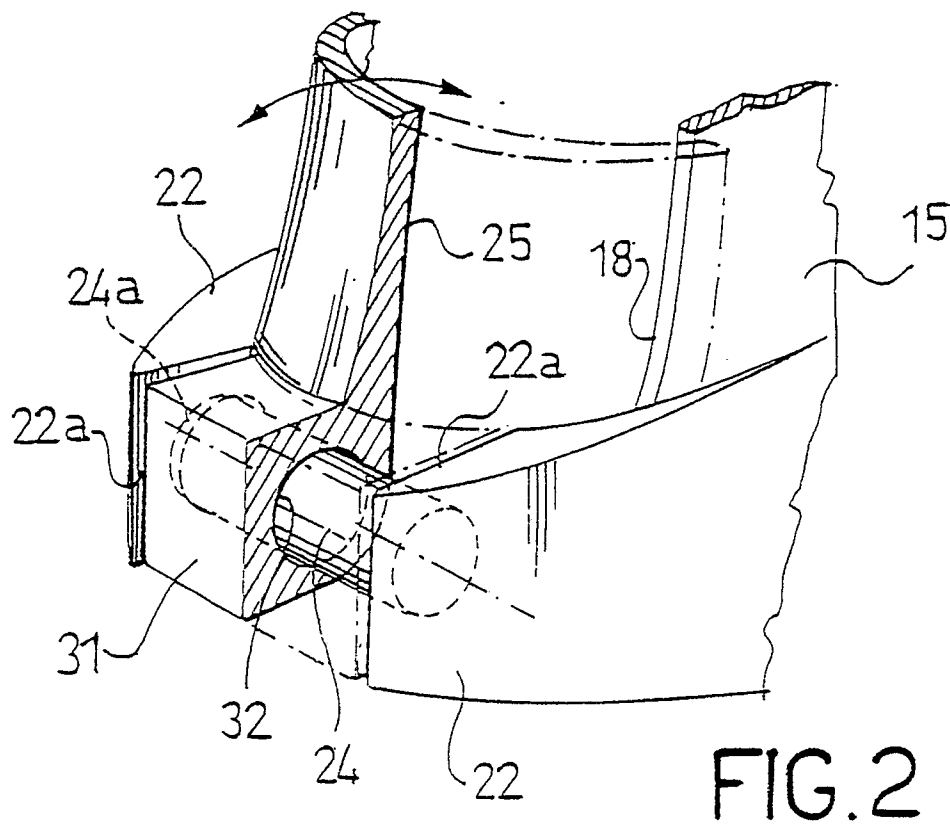


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number

EP 90 11 3126

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
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| | | | TECHNICAL FIELDS SEARCHED (Int. Cl.5) |
| | | | A 43 B |
| The present search report has been drawn up for all claims | | | |
| Place of search THE HAGUE | | Date of completion of the search 12-10-1990 | Examiner KUHN E.F.E. |
| CATEGORY OF CITED DOCUMENTS 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 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 & : member of the same patent family, corresponding document | | | |