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Remarks:
This application was filed on 04-08-2011 as a divisional application to the application mentioned under INID code 62.

(54) Ski-touring boot with heel provided with engaging means for heel-pieces of ski-touring bindings

(57) Ski-touring boot comprising a shell (10), a toe (20) provided with a hole (32) on each side for engagement with a corresponding pin (52) of ski bindings (50,51) and a sole (11), said boot having a heel (60) provided with at least one pin (61;161) projecting from each side (60a) of the heel itself.

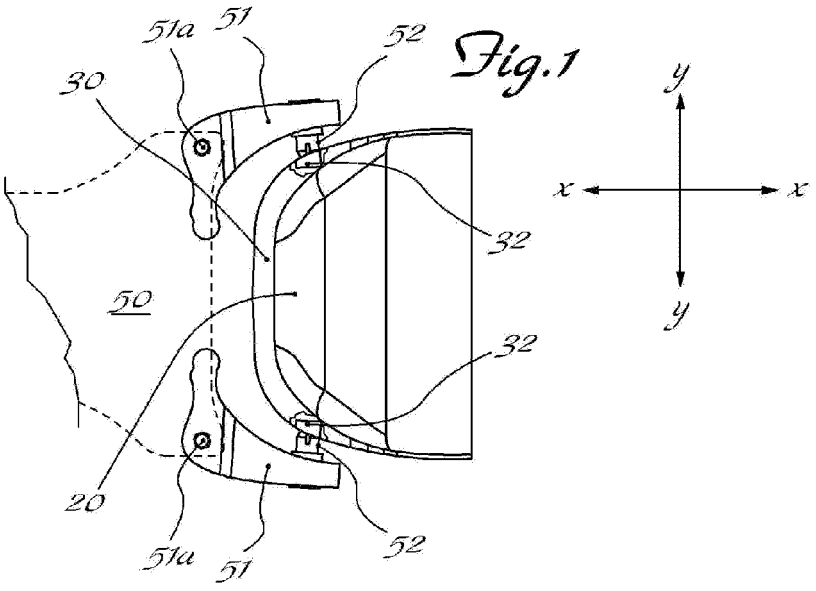

Fig.1

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Description

[0001] The present invention relates to a ski-touring boot with a toe having engaging seats for relative engagement with toe-pieces of ski-touring bindings and a heel provided with transverse pins for engagement with heel-pieces of ski-touring bindings.

[0002] It is known in the technical sector of ski-touring to provide safety bindings which comprise a front member, or toe-piece, able to lock in position the toe of the boot, while allowing rotation thereof about an axis which is substantially horizontal and transverse with respect to the ski, and a rear member, or heel-piece, able to cooperate with the heel of the boot so as to allow three different modes of use, i.e.: release of the heel (walking mode); supporting with greater/lesser inclination of the boot (uphill mode); and locking of the heel (downhill mode).

[0003] It is also known that said transverse horizontal axis of the toe-piece is formed by two oppositely arranged pins which extend in the transverse direction inwards and which are able to penetrate into corresponding holes on opposite sides of an associated boot which, when the binding is closed, is constrained to the toe-piece, being able to rotate only about the transverse axis consisting of said two pins so as to allow raising of the heel and the walking movement uphill or on the flat.

[0004] The technical problem which is posed, therefore, is to provide a ski-touring boot which, in addition to having a toe able to allow easy, but precise and reliable engagement with the engaging members of a corresponding ski-binding toe-piece for locking in position the toe of the boot with the rigidity normally required for such applications and with the possibility of rotating said toe about a horizontal axis, also has a heel which allows rapid, reliable and rigid engagement with heel-pieces of ski-touring safety bindings as well as absorption of the longitudinal flexing movements of the ski during use thereof.

[0005] In connection with this problem it is also required that the boot should have a low weight and longer duration and also be easy and inexpensive to produce using normal standardized means.

[0006] These results are achieved according to the present invention by a ski-touring boot having a toe for engagement with corresponding pins of ski-touring bindings and comprising a heel with transverse pins according to the characteristic features of Claim 1.

[0007] Further details may be obtained from the following description of a non-limiting example of embodiment of the subject of the present invention provided with reference to the accompanying drawings in which:

Figure 1: shows a top plan view of the toe of the ski-boot according to the present invention engaged with the toe-piece of the ski-binding;

Figure 2: shows a perspective view of the heel of the boot according to the present invention;

Figure 3: shows a schematic cross-section along the plane indicated by IX-IX in Fig. 2 of a first embodiment of the heel according to the present

Figure 4: invention; shows a schematic cross-section along the plane indicated by IX-IX in Fig. 2 of a second embodiment of the heel according to the present invention;

Figure 5 shows a side view of the boot with heel engaged with the heel-piece of a safety binding.

[0008] As shown in Fig. 1 and with reference to the layouts shown by way of example in the figures, where "top" is assumed as referring to the part for putting on the boot and "bottom" as referring to the sole part thereof, and a set of three axes, i.e. longitudinal axis X-X, transverse axis Y-Y and vertical axis Z-Z, conventionally assumed solely for the sake of convenience of description, the ski-touring boot according to the invention comprises essentially:

- a shell 10, the toe 20 of which is shaped in a conventional manner in compliance with the corresponding DIN regulations;
- a reinforcing insert 30 which is integral with the toe 20 and is provided with:
- a circular hole 32 arranged on each side of the toe for insertion of a corresponding pin 52 projecting in the transverse direction Y-Y of each arm 51, rotating about a vertical axis 51a, of the toe-piece 50 of a ski binding, only schematically shown in the figures.

[0009] The inner diameter of the hole 32 corresponds to the outer diameter of the said pin 52.

[0010] As shown in Fig. 2 it is envisaged that the boot 10 has a heel 60 provided with a pin 61 outwards in the direction Y-Y from each side 60a of the said heel.

[0011] Preferably the heel also has an inset seat 60b with a depth in the transverse direction Y-Y substantially corresponding to the length of the pin 61 which in this way does not project outside the shape of the boot and has a depth in the longitudinal direction corresponding to the dimension of the engaging member 101 (Fig. 5) of the heel-piece 100 of a ski binding.

[0012] As shown in Fig. 3, it is envisaged that the projecting pins 61 are independent of each other and forced into a respective transverse seat 60c of the heel 60; however it is envisaged (Fig. 4) that the pin 161 may be formed as a single body of suitable length inserted inside a through-hole 160c in the heel, thereby simplifying in this case the stages for manufacture of the finished boot.

[0013] It can therefore been seen how a boot with a heel having transverse pins as described above is particularly suitable for easy and reliable engagement with corresponding engaging members 101a of a corresponding fork element 101 of a heel-piece 100 of a ski binding, also being particularly suitable for absorbing the flexing

movements of the ski in the longitudinal direction which occur over bumpy ground and which cause shortening of the ski; this shortening, if not compensated for, by sliding in the longitudinal direction of the transverse pins of the boot on the heel-piece may also cause separation of the latter from the ski.

[0014] It is also envisaged that the embodiments described by way of example may have different geometrical layouts which are all equivalent in terms of the required functional features and are included within the scope of the present patent as defined by the claims which follow, such that, for example, the cross-section of the pin may be circular or polygonal.

Claims

1. Ski-touring boot comprising a shell (10), a toe (20) provided with a hole (32) on each side for engagement with a corresponding pin (52) of ski bindings (50,51) and a sole (11), **characterized in that** it has a heel (60) provided with at least one pin (61;161) projecting in the transverse direction (Y-Y) from each side (60a) of the heel itself.

2. Boot according to Claim 1, **characterized in that** said projecting pins (61) are independent of each other and forced inside a respective transverse seat (60c) in the heel (60).

3. Boot according to Claim 1, **characterized in that** said projecting pins (161) are formed as a single body of suitable length inserted inside a through-hole (160c) of the heel.

4. Boot according to Claim 1, **characterized in that** the heel (60) has, on each side (60a), an inset seat (60b) from which a pin (61) projects.

5. Boot according to Claim 4, **characterized in that** the depth, in the transverse direction (Y-Y), of each inset seat (60b) substantially corresponds to the length of the pin part (61;161) outside of the heel.

6. Ski-boot according to Claim 4, characterized n that the depth, in the longitudinal direction (X-X), of the said inset seats (60b) corresponds substantially to the longitudinal dimension of an engaging member (101a) of a heel-piece (100) of a ski-touring binding.

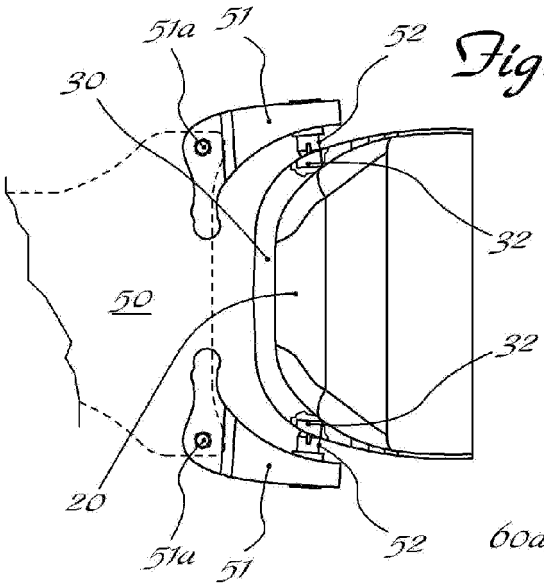


Fig.1

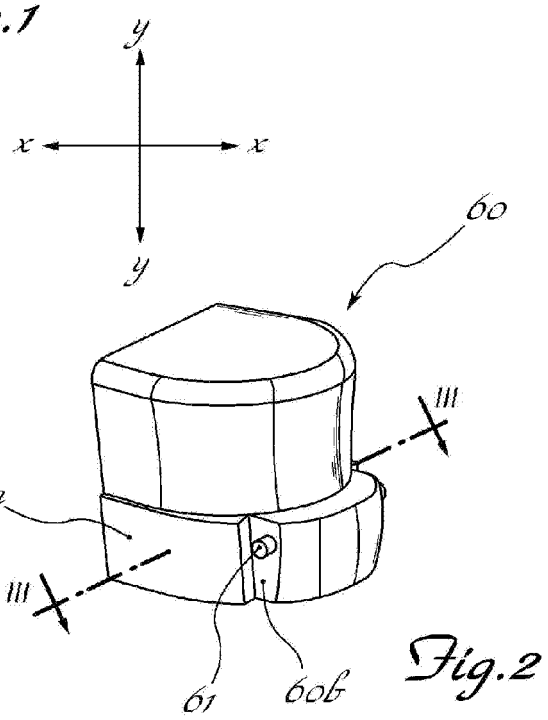


Fig.2

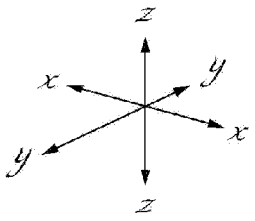


Fig.3

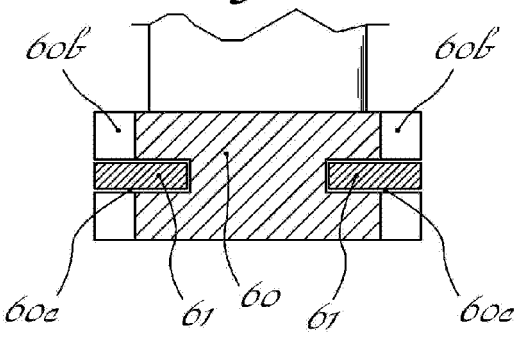


Fig.4

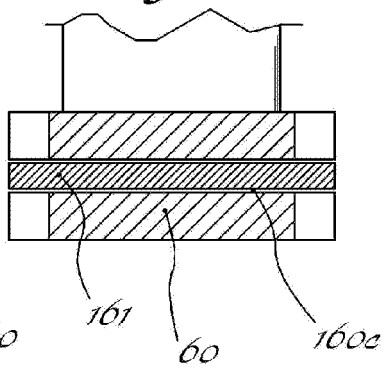
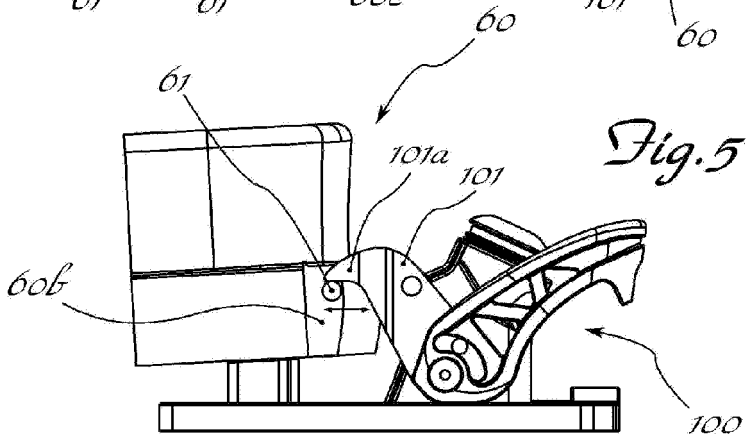


Fig.5



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EUROPEAN SEARCH REPORT

Application Number
EP 11 17 6527

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 September 2011	Herry, Manuel

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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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28-09-2011

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