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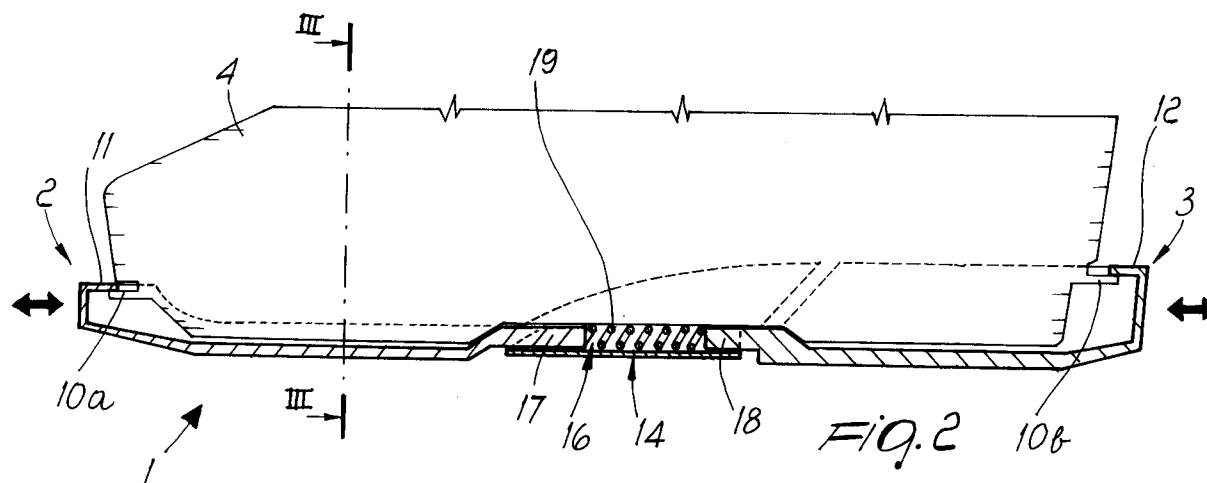
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I-20123 Milan (IT)(54) **Sole particularly for ski boots.**

(57) A sole for ski boots includes standard tip (2) and heel (3). The tip and heel are slidingly associated with the ends of the shell (4) which constitutes the boot. A spring (19) and a covering element (14) are

interposed between the tip and the heel. The sole allows to elastically recover the play to which the bindings are subjected during ski inflections.


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The present invention relates to a sole particularly for ski boots.

The following problem is currently observed in the practice of skiing: since the interspace between the tip and the heel of the boot is fixed during use, and since the tip and heel interact with the respective bindings which are associated with the ski, the need arises to compensate for the change in the position of the bindings during the inflections to which the ski is subject every time there are hollows in the snow surface.

As a partial solution to this problem, it is known to provide ski bindings having inner devices adapted to let the coupling elements slide slightly so as to allow this compensation.

However, these solutions are expensive and difficult to design, because the bindings must contain a large number of components in very small spaces.

The aim of the present invention is to eliminate the problems described above by providing a ski boot which allows to recover the play between the sole and the bindings associated with the ski during possible inflections imparted to the latter.

Within the scope of the above aim, an important object is to provide a device wherein this recovery can be achieved by using a limited number of components which interact with one another in a very simple manner.

Another important object is to provide a device which allows to make the recovery of said play independent of the ski bindings.

Still another important object is to provide a device which is reliable and safe in use and has low manufacturing costs.

This aim, these objects and others which will become apparent hereinafter are achieved by a sole, particularly for ski boots comprising a shell, characterized in that it comprises a tip member and heel member, at least one of said members being slidably associated with a respective end of said shell with the interposition of at least one resilient member and of a covering element associated with said shell.

Advantageously, guiding means for complementarily shaped centering means associated with the tip and/or with the heel are provided on the covering elements.

Furthermore, the resilient member conveniently interacts with means for adjusting its position.

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 partially sectional exploded view of the sole, according to the invention;

figure 2 is a sectional side view, taken along a median longitudinal plane of the sole;

figure 3 is a sectional front view, taken along the plane III-III of figure 2.

With reference to the above figures, the reference numeral 1 designates the sole, which is constituted by two members: a tip 2 and a heel 3, both of which are conveniently provided in a standard size for connection with the usual ski bindings.

At least one of either the tip member 2 or the heel member 3, is slidably associated with the respective end of a shell 4 of a ski boot; said associated member furthermore has adapted guiding means for sliding along an axis which is longitudinal with respect to the shell 4; stop means are furthermore provided in order to limit the stroke of the associated member.

The tip 2 and/or the heel 3 are also advantageously case shaped, so that one or more pairs of wings, designated by the reference numerals 5, 6 and 7, innerly protrude at the longitudinal sides and constitute said guiding means.

Said wings can be arranged at complementarily shaped seats, designated by the reference numerals 8 and 9, which are defined laterally and longitudinally with respect to the ends of the shell 4 and below said shell.

Said shell advantageously has, at its ends, transverse tangs 10a and 10b at which the upper perimetric edges 11 and 12 of the tip 2 and/or of the heel 3 slide in an upward position.

The longitudinal extension of said tip 2 and/or heel 3 is such as to allow to interpose a covering element 14 approximately at the region 13 of the sole of the foot. An adapted recess is provided on said shell 4 in said region 13.

Said covering element 14 is provided with adapted holes 15 for its connection to the shell, for example by means of screws.

On the covering element 14 there are also adapted guiding means, such as a box seat 16 defined longitudinally and centrally, for complementarily shaped centering means constituted by a first lug 17 and by a second lug 18 which protrude longitudinally and axially with respect to said tip and heel at the mutually facing surfaces.

Once the tip and/or the heel are associated with the shell, at least one resilient member, such as for example a spring 19, can be interposed in the interspace defined between the ends of the first lug 17 and of the second lug 18.

The use of the invention is thus as follows: after associating the tip 2 and/or the heel 3 at the shell 4, after positioning the resilient member between said tip and heel, and after associating the covering element 14 with said shell, the sole thus obtained can be subjected to movements along an axis which is longitudinal with respect to said shell

if forces are imparted at the heel and/or the tip.

The resilient member in fact allows the heel and/or the tip to slide with respect to the shell.

These conditions can occur if, during skiing, the ski encounters uneven regions of the snow surface and is thus subjected to flexing, with a consequent variation in the distance between the ends of the bindings which are coupled with the tip and heel of the boot.

It has thus been observed that the invention has achieved the intended aim and objects, a sole having been provided which allows to obtain an easy elastic recovery of the changes in the position of the ski bindings during skiing, said sole being at the same time very simple and manufactured with low costs.

Advantageously, the resilient member can also interact with means suitable to allow to adjust its position in the interspace between the ends of the first and second lugs.

The sole is susceptible to numerous modifications and variations, all of which are within the scope of the same inventive concept.

The materials and the dimensions which constitute the individual components of the invention may 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. Sole, particularly for ski boots comprising a shell (4), characterized in that it comprises a tip member (2) and heel member (3), at least one of said members being slidingly associated with a respective end of said shell with the interposition of at least one resilient member (19) and of a covering element (14) associated with said shell.
2. Sole according to claim 1, characterized in that at least one of said members is provided with adapted guiding means (5,6,7) for sliding along an axis which is longitudinal with respect to said shell (4) and means for stopping their stroke.
3. Sole according to claim 2, characterized in that said members are case shaped inside each of said members at least one pair of wings (5,6,7) protruding at the longitudinal sides.
4. Sole according to claim 3, characterized in that said at least one pair of wings (5,6,7) is arranged at complementarily shaped seats (8,9) which are defined laterally and longitudinally with respect to at least one end and below said shell.
5. Sole according to claim 4, characterized in that said shell has, at least at one end, transverse tangs (10a,10b) at which the upper perimetric edges of said members (2,3) slide in an upward position.
6. Sole according to claim 5, characterized in that the longitudinal extension of said tip and said heel is such as to allow to interpose said covering element (14) approximately at the region of the sole of the foot, an adapted recess being defined on said shell in said region.
7. Sole according to claim 6, characterized in that guiding means are provided on said covering element (14), said guiding means being constituted by a longitudinally and centrally defined box seat (16) for complementarily shaped centering means which are constituted by a first lug (17) and by a second lug (18) which protrude longitudinally and axially respectively at said tip member and at said heel member at the mutually facing surfaces.
8. Sole according to claim 7, characterized in that said resilient member comprises a spring (19) interposed in the interspace defined between the ends of said first lug (17) and of said second lug (18).

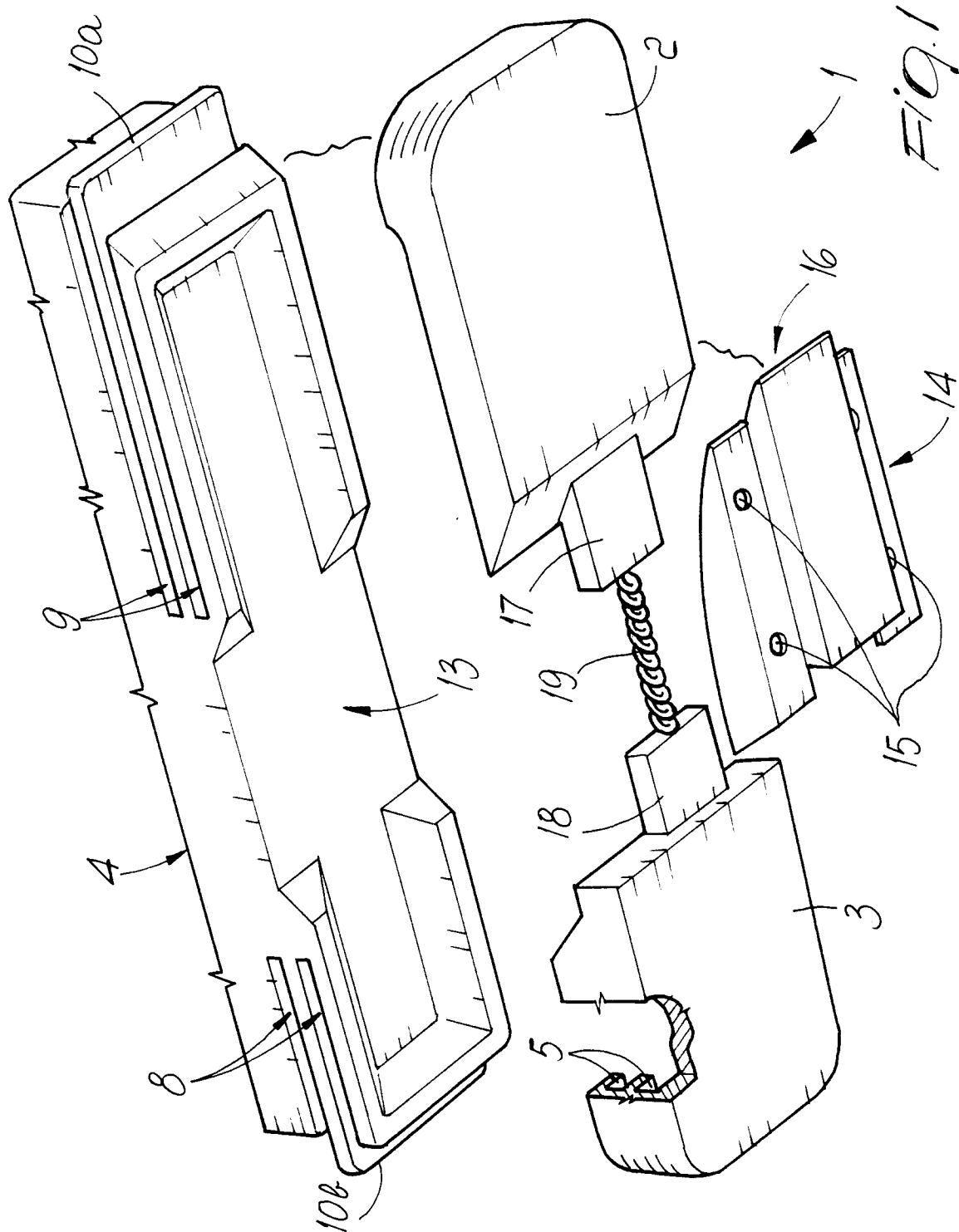


Fig. 1

