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(54) Rear-entry ski boot with foot securing device.

(57) The present invention relates to a rear-entry ski boot with foot securing device. The peculiarity of the invention resides in the fact that it comprises a traction element (10) connected at least at one point to the rear quarter and at least at one end to a means (9) for tensioning and/or adjusting the length of the traction element. This traction element furthermore embraces the heel (5) and foot instep (19) regions of the skier.

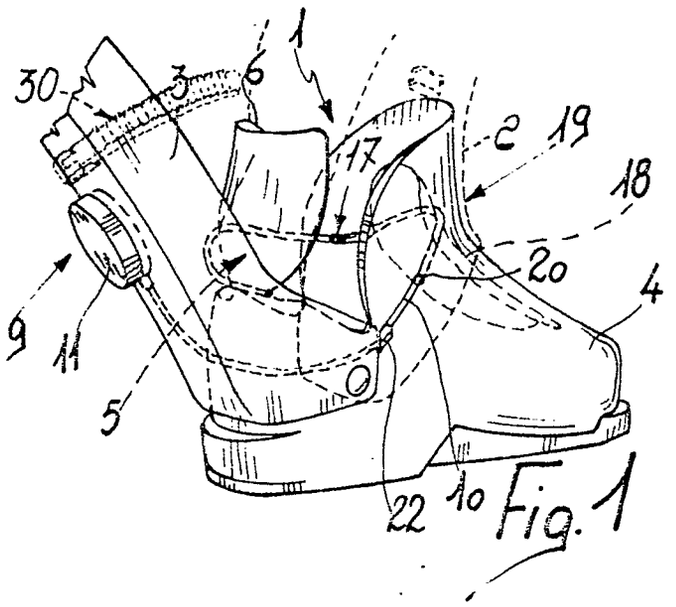

Fig. 1

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REAR-ENTRY SKI BOOT WITH FOOT SECURING DEVICE

The present invention relates to a rear-entry ski boot with foot securing device.

The securing of the foot inside ski boots is currently usually performed by using cables which are tensioned by means of levers or are wound at adapted takeup means.

Especially in the case of rear-entry boots, if a high degree of foot securing and a sufficient release are both required to allow the easy extraction of the foot, cables having a considerable length are indispensable, and this requires a considerable takeup thereof in order to achieve the required functions.

The use is in fact known of circular devices applied rearwardly to the rear quarter which takeup a cable which affects for example the foot instep and heel regions and is rigidly associated with the shell at its other end, as disclosed in the European patent application No. 85106345.3 by this same Applicant.

A partial solution to this disadvantage related to the considerable length of the cables and to the high number of turns to be imparted to the circular device in order to tension said cables, is disclosed in the European patent application No. 86109850.7 by this same Applicant. This application discloses an elongated element which extends transversely to the longitudinal extension of the rear quarter and is provided inside said rear quarter approximately at the heel of the foot of the user and is connected to the opposite longitudinal edges of said rear quarter.

This device, though it has the undoubted advantage that it allows to release the heel when the quarter is opened, has a disadvantage: the adjustment of the securing degree is in fact troublesome, as it can be performed only with the quarters open, by selecting the length of the elongated element inside the rear quarter.

The aim of the present invention is therefore to eliminate the disadvantages described above in known types by providing a rear-entry ski boot having a device which allows the optimum securing of the foot inside said boot and allows to release and/or secure the foot in extremely short times and in a manner which is extremely easy for the skier.

Within the scope of the above described aim, an important object is to provide a ski boot the foot securing device whereof allows the user to optimally adjust the degree of securing of the heel and of the foot instep from the outside of the boot.

Still another object is to provide a ski boot wherein the above described adjustment can be achieved by the skier, once it has been set, without further actuations every time he puts the boot on.

Another important object is to provide a ski boot which the skier can easily slip off.

The above described aim and objects, as well as others which will become apparent hereinafter, are achieved by a rear-entry ski boot with foot securing device, comprising a front quarter and a rear quarter, both pivoted to a shell, characterized in that it comprises a traction element connected at least at one point to said rear quarter and at least at one end to a means for tensioning and traction element and adjusting its length, said means being accessible to the skier, said traction element embracing the heel and foot instep regions.

Further characteristics and advantages of the invention will become apparent from the detailed description of some particular embodiments, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a perspective view of the boot, with the rear quarter in open position;

figure 2 is a view, similar to the preceding one, of the boot with the rear quarter in its closure condition;

figure 3 is a view of the boot taken transversely to its quarters at a plane passing through the means for tensioning the traction element and/or adjusting its useful length, with the quarters closed;

figure 4 is instead a view, similar to the preceding one, with the quarters open;

figure 5 is a view, similar to figure 3, of a second embodiment;

figure 6 is a view, similar to figure 4, of said second embodiment;

figure 7 is a side perspective view of a ski boot with the rear vertical lever to which said second embodiment is applied;

figure 8 is a view, similar to that of figures 3 and 5, of a third embodiment;

figure 9 is a view, similar to that of figures 4 and 6, of said third embodiment;

figure 10 is a partially sectional perspective view of a rear-entry ski boot, in which a fourth embodiment is applied;

figure 11 is a view, similar to the preceding one, of a fifth embodiment.

With reference to the above described figures, the ski boot, generally indicated by the reference numeral 1, is of the rear-entry type and is therefore constituted by a front quarter 2 and a rear quarter 3 both pivoted to a shell 4.

The quarters can be closed and secured for example by means of a strap 30.

Said shell has, at the heel region 5, a flap 6 which embraces the rear portion of the skier's ankle.

The flap 6 can alternatively belong to the inner shoe or to the shell.

A means 9 for tensioning a traction element and/or adjusting its useful length is then associated with the rear quarter 3 at the rear surface 7 and within an adapted seat 8: said traction element is constituted by a cable 10 and is arranged inside the boot.

Said means 9 is advantageously constituted by a circular device, e.g. of the type described in the European patent No. 0056953.

Said circular device comprises a knob 11 which can be accessed by the skier and devices 12 for tensioning the traction element and/or adjusting its useful length, arranged inside the rear quarter 3 and inserted within the accommodation 8, or a vertical lever pivoted transversely to the rear quarter.

The cable 10 has a first end 13 connected to the inner surface 14 of the rear quarter 3.

The coupling with said inner surface advantageously occurs proximate to a lateral perimetral edge 15 of said rear quarter 3.

The coupling between said first end 13 and the inner surface 14 occurs, in the particular illustrated embodiment, by means of a rivet 16.

The cable 10 thus rearwardly embraces the flap 6 of the shell 4 starting from said first end 13, therefore at the heel region 5, and is passed inside the shell 4 through a preset first lateral opening 17 to embrace a presser 18 placed at the foot instep region 19.

The cable 10 is successively caused to exit out of the shell 4 through a preset second lateral opening 20 arranged opposite to the first one, and its end is then connected to said means 9 for tensioning it and/or adjusting its useful length.

The cable 10 is advantageously inserted, in its final portion, within an adapted sheath 21 having a connection 22 which can be associated externally to the shell 4.

The use of the boot with foot securing device is as follows: once the skier has preset the tensioning of the cable 10 and/or the adjustment of its useful length using the means 9 with his foot in the boot and once he has closed the quarters, the simple opening of said quarters allows, by virtue of the coupling of the first end 13 of the cable 10 with the rear quarter 3, the immediate release of the tensioning of said cable to thus release the foot from the pressure exerted on said foot by the flap 6.

It is thus possible to release the heel and in general the foot enough to extract the foot from the boot merely by opening the rear quarter.

It is thus possible to use a cable 10 which is considerably reduced in length since a great excursion thereof is no longer necessary to release the foot and extract it from the boot.

Naturally, once the degree of adjustment of the useful length of the cable 10 has been preset, it is sufficient for the skier to close the rear quarter to immediately restore the desired degree of securing which can be exerted on the foot at the flap 6.

It has thus been observed that the invention achieves the intended aim and objects, a rear-entry ski boot having been provided which has a device which allows to optimally secure the foot and allows at the same time to release and/or secure said foot in a manner which is rapid and extremely easy for the skier.

Though the securing and/or release of the foot is obtained by merely opening and/or closing the rear quarter 3, the useful length of the traction element adapted to obtain the optimum pressure at the flap 6 and at the presser 19 is in any case always preset.

The presence of the sheath 21 in fact allows the cable 10 to slide optimally in all conditions.

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

Thus, for example, figures 5 and 6 illustrate a ski boot 101 having a rear quarter 103 with which a knob 111 is associated; said knob actuates tensioning and/or adjustment devices 112.

The cable 110 again has a first end 113 connected to the inner surface 114 of the rear quarter 103, then rearwardly embraces the flap 106 of the shell 104 and then a first non-extendable sheath 121a which has, at its ends, a first connection 122a which is laterally and internally coupled with the rear quarter 103 and a second connection 122b which is laterally and externally coupled with the shell 104 or alternatively with the front quarter 122.

The cable 110 then affects a presser 118 arranged inside the boot at the foot instep region 119 and is then inserted, in its last portion, within a second sheath 121b which is interposed between a third connection 122c, externally associable with the shell 104, and the takeup and/or adjustment means 109.

The first sheath 121a has a constant length both with the quarters open, as illustrated in figure 6, and with the quarters closed, as illustrated in figure 5.

The arrangement of the first sheath 121a is shown in closed condition in figure 7, in which the second sheath 121b is interposed between the third connection 122c and a fourth connection 122d associated with the rear quarter 103.

The cable 110 is then connected to a means 109 for tensioning it and/or adjusting its useful

length, constituted by a vertical level 123 bearing tensioning and/or adjustment devices 112.

Figures 8 and 9 illustrate a third embodiment, wherein the cable 210 has a first end 213 associated with the inner surface 214 of the rear quarter 203.

The cable 210 subsequently rearwardly embraces the flap 206 of the shell 204 and is then connected at a fixed point outside said shell 204 or alternatively inside the front quarter 202.

As in the first embodiment, the cable 210 embraces a presser 218 and affects a sheath 221 which is interposed between a connection 222 externally associated with the shell 204 and a tensioning and/or adjustment means 209.

Figure 10 illustrates a boot 301 wherein the cable 310 interacts at one end with a tensioning and/or adjustment means 309 associated with the rear quarter 303.

The cable 310 is fixed, at its other end, to the inside of the front quarter 302 by means of a terminal 324, then embraces the heel region 305 and affects a transmission element 325 associated with the rear quarter 303 on the opposite side with respect to the side to which the terminal 324 is fixed.

The cable 310 then passes inside the shell 304 at the side to which the terminal is fixed through a first lateral opening 317 provided on said shell.

The cable 310 then embraces a presser 318 arranged at the foot instep region 319 and protrudes from the shell 304 through a second lateral opening 320 provided on said shell.

The quarters 302 and 303 can be secured together by means of a strap 330.

Figure 11 instead illustrates a rear-entry ski boot 401 in which the cable 410 is fixed at one end to the shell 404, differently from what is shown in the preceding figure.

Naturally the materials and the dimensions which constitute the boot and the foot securing device may be the most pertinent 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-entry ski boot with foot securing device, comprising a front quarter (2, 102, 202, 302, 402) and a rear quarter (3, 103, 203, 303, 403), both pivoted to a shell (4, 104, 204, 304, 404), characterized in that it comprises a traction element (10, 110, 210, 310, 410) connected at least at one point to said rear quarter and at least at one end to a means (9, 109, 209, 309, 409) for tensioning said traction element and adjusting its length, said means being accessible to the skier, said traction element embracing the heel (5, 305) and foot instep (19, 119, 319) regions.

2. Boot according to claim 1, characterized in that said traction element is constituted by a cable (10, 110, 210, 310, 410) having a first end connected to the inner lateral surface of said rear quarter proximate to the lateral perimetral edge thereof.

3. Boot according to claims 1 and 2, characterized in that said cable embraces a flap (6, 106, 206) which protrudes from said shell (4, 104, 204) or from an inner shoe arranged inside said shell at the heel region (5) starting from said first end of said cable and embraces the rear portion of the skier's heel.

4. Boot according to claims 1 and 3, characterized in that said cable affects a first lateral open (17, 317) provided on said shell and embraces a presser (18, 118, 218, 318) arranged inside said shell at the foot instep region.

5. Boot according to claims 1 and 4, characterized in that said cable protrudes outside said shell through a second lateral open (20, 320) provided on said shell and is inserted in a sheath (21) which is connected at its end, together with said cable, to said means (9) for tensioning said cable and/or adjusting its useful length.

6. Boot according to claims 1 and 5, characterized in that said sheath has a connection (22) associable laterally to said shell.

7. Boot according to claims 1 and 5, characterized in that said means for tensioning said traction element and/or adjusting its useful length is constituted by a circular device comprising a knob (11) which can be accessed by the skier and devices (12) for tensioning said cable and/or adjusting its useful length which are arranged inside an accommodation (8) provided on the rear surface of said rear quarter.

8. Boot according to claims 1 and 2, characterized in that said first end of said cable interacts with preset means for adjusting the degree of securing.

9. Boot according to claims 1 and 3, characterized in that said cable (110) which embraces said flap which protrudes from said shell and/or inner shoe successively affects a first non-extendable sheath (121a) having at its ends a first connection (122a) rigidly associated laterally to said rear quar-

ter (103), and a second connection (122b), laterally rigidly associated with said shell or said front quarter.

10. Boot according to claims 1 , 3 and 9, characterized in that said cable which embraces said presser arranged at the foot instep region successively affects a second sheath (121b) interposed between a third connection (122c), externally associated with said shell, and said tensioning and/or adjustment means (109).

11. Boot according to claims 1 , 5 and 10, characterized in that said tensioning and/or adjustment means is constituted by a vertical level (123) pivoted to said rear quarter.

12.. Boot according to claims 1 and 3, characterized in that said cable (210) which embraces said flap (206) which protrudes from said shell (204) and/or inner shoe is successively connected at a fixed point externally to said shell or internally to said front quarter (202).

13. Boot according to claims 1, characterized in that said traction element is constituted by a cable (310) having a first end connected externally to said shell (304) or internally and laterally to said front quarter (302) by means of a terminal (324).

14. Boot according to claims 1 and 13, characterized in that said cable embraces the heel region (305) starting from said first end and then affects a transmission element (325) associated with said rear quarter on the side opposite to the fixing side of said terminal, and successively passes, at the same fixing side as said terminal, through a first opening (317) provided on said shell, embracing a presser (318) arranged internally to said shell at the foot instep region (319), said cable passing externally to said shell through a second opening (320) and being connected to said means for tensioning it and/or adjusting its useful length.

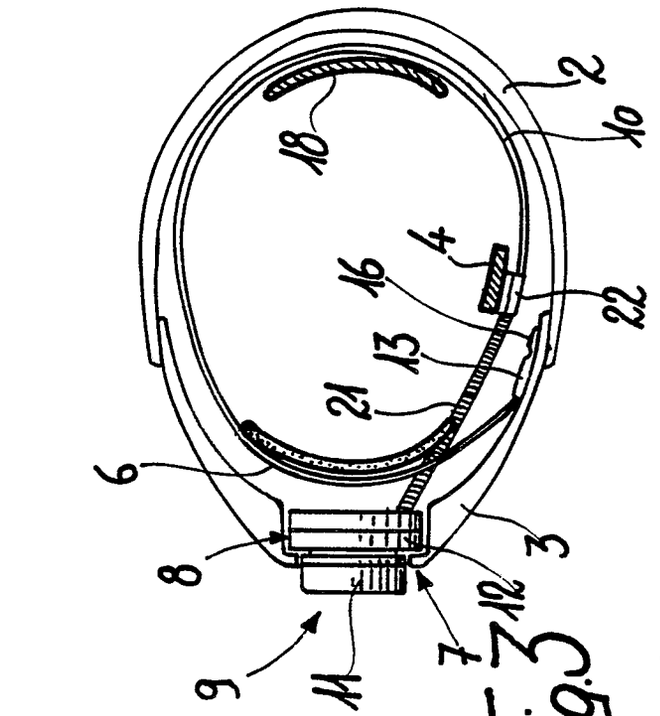

Fig.3

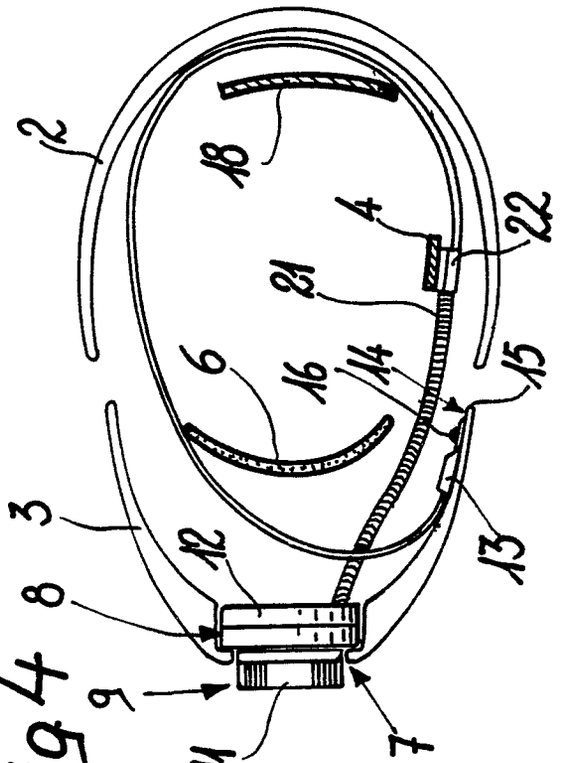

Fig.4

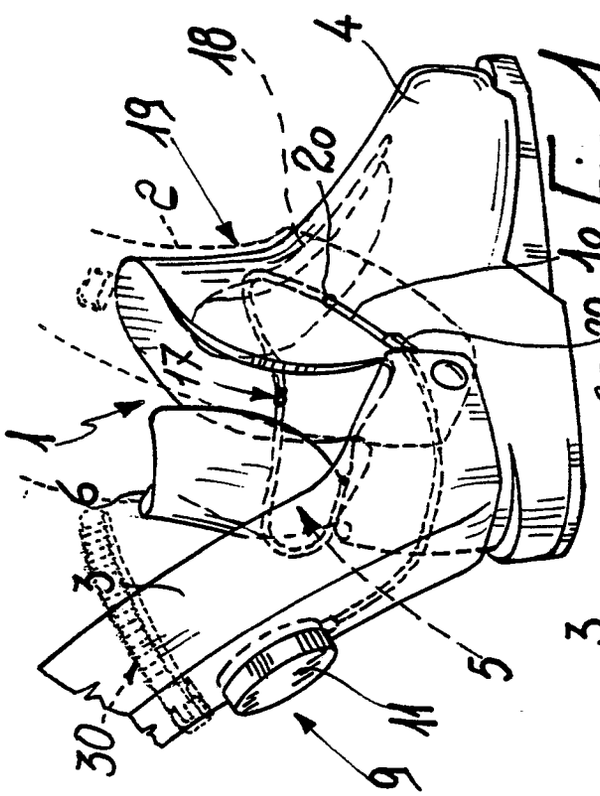

Fig.1

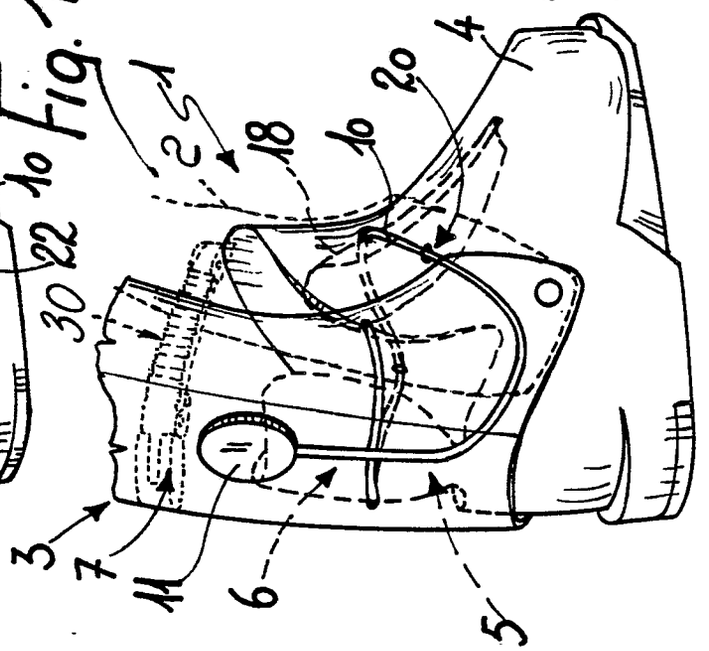

Fig.2

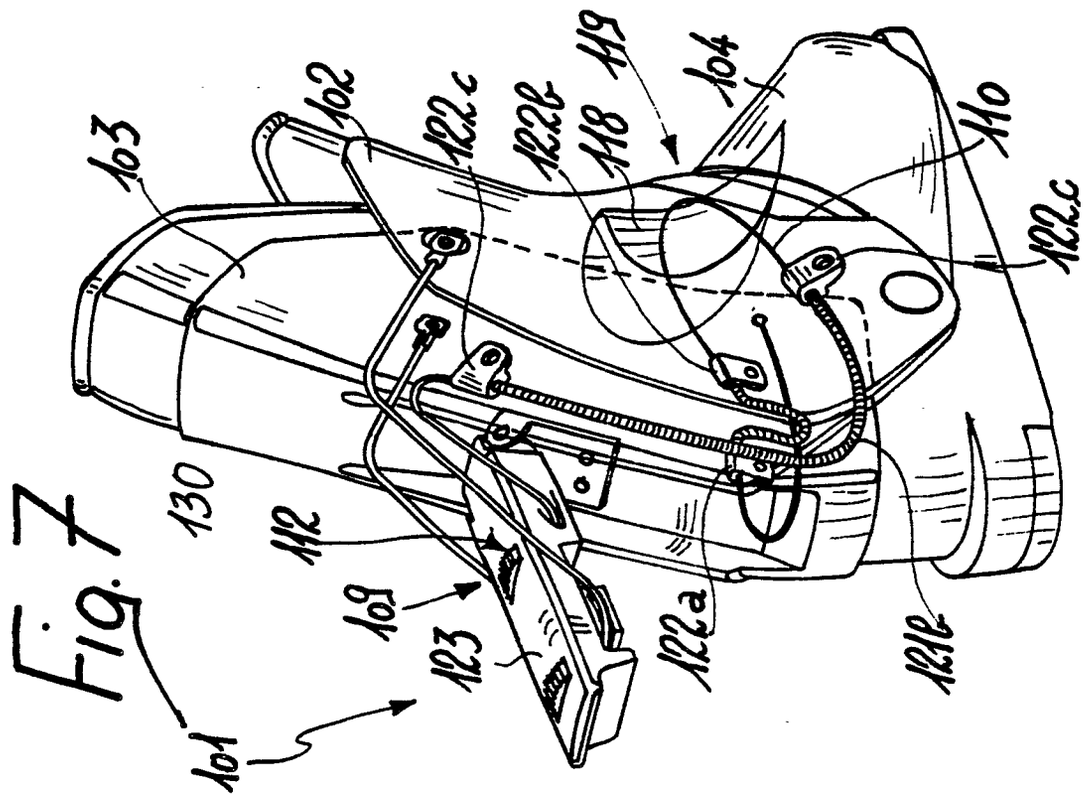

Fig. 7

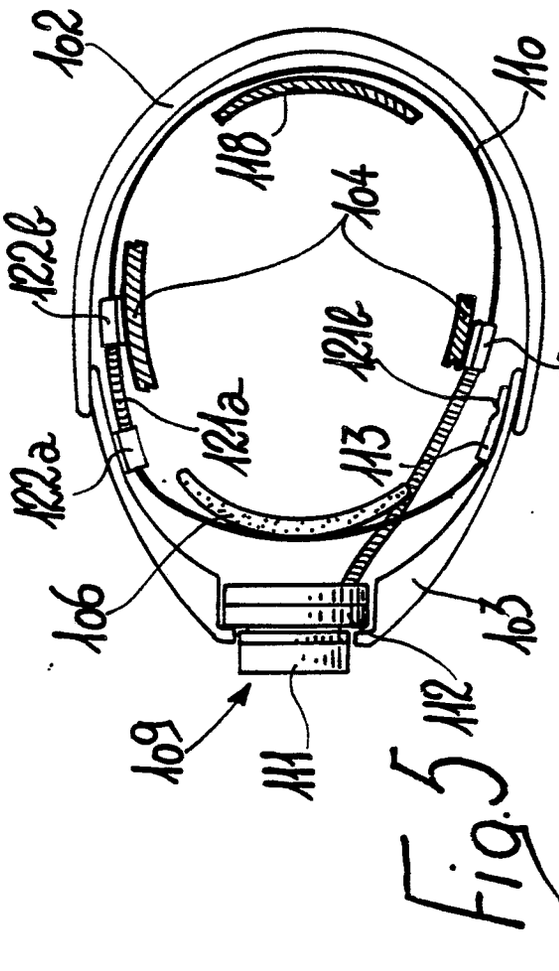

Fig. 5

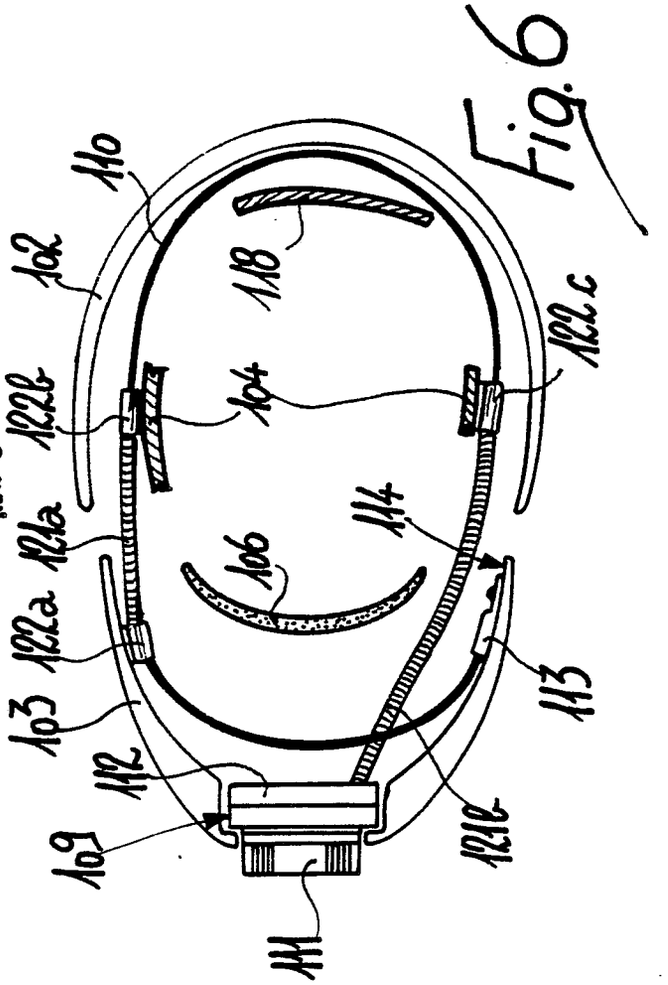

Fig. 6

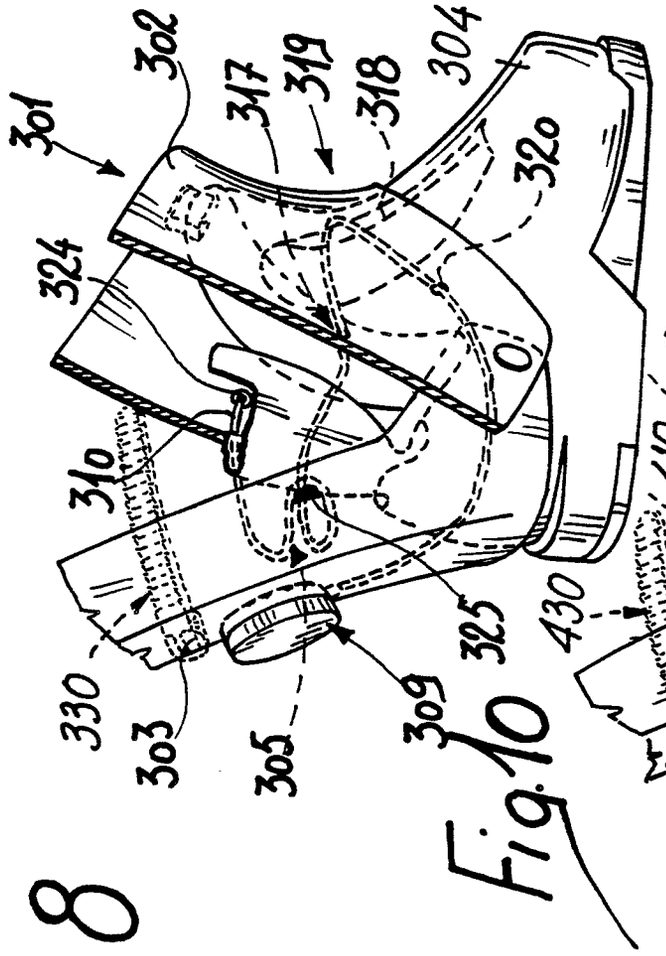

Fig. 10

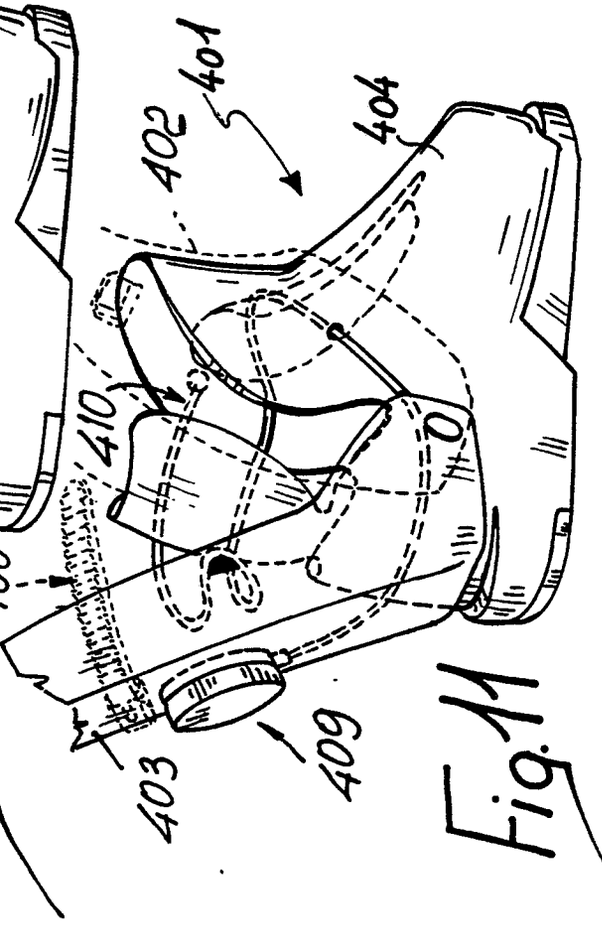

Fig. 11

Fig. 8

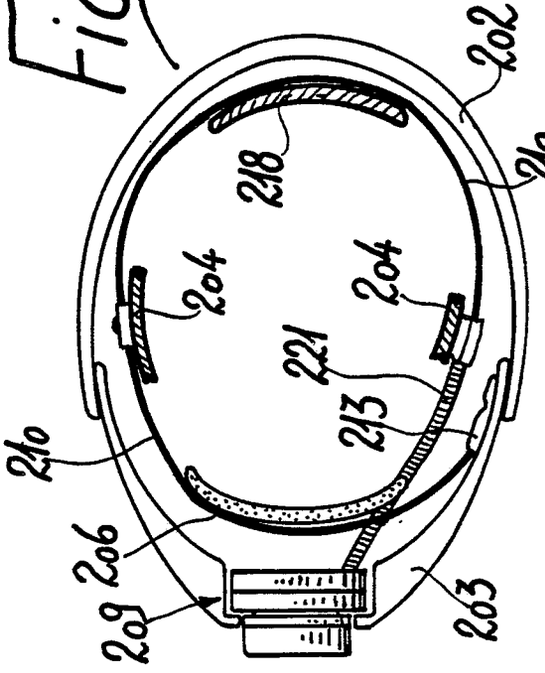

Fig. 9