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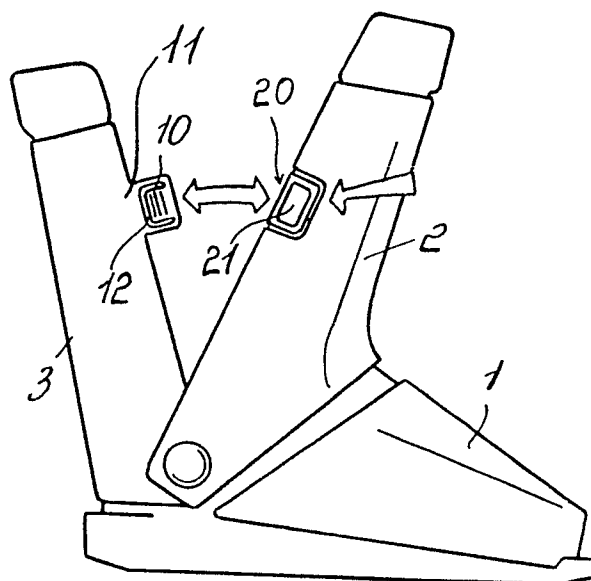
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⑤④ **Rear entrance ski boot with differentiated closure.**

⑤⑦ This invention relates to a rear entrance ski boot which comprises a boot shell (1) whereon a front quarter (2) and a rear quarter (3) are journaled. The peculiar aspect of the invention resides in that the boot closure means are constructed without outer closure levers and comprise mutual connection means (10, 11, 20) for detachably joining the rear quarter (3) with the front quarter (2), as well as locking means (30) which may be operated independently of the cited connection means and act in the area delimited by the quarters to constrain the skier's leg.



"REAR ENTRANCE SKI BOOT WITH DIFFERENTIATED CLOSURE"

This invention relates to a rear entrance ski boot with differentiated closure.

As is known, rear entrance ski boots comprise substantially a shell whereon a front quarter and a rear quarter are journaled which, to close the boot, are held together by means of one or more levers which serve in practice a dual function. A first is that of connecting fixedly together the front and rear quarters, and a second is that of fastening the quarters to each other so as to constrain the skier's leg as desired within the boot and secure the leg with respect to the quarters.

This approach, even if universally adopted, has some disadvantages, a first of which is that considerable problems are encountered with the positioning of the levers on the boot, which must have a certain length in order to apply a desired clamping force and at the same time, should not protrude excessively from the boot, because they could be released incidentally in the event of impacts or the like.

Another disadvantage of the above approach is that, since the two actions cannot be split, that is the action of connecting the quarters together and the constraint action on the leg, it is necessary to apply relatively large forces which, in some cases, may make operating the levers difficult.

It is the aim of this invention to obviate such

prior disadvantages by providing a rear entrance ski boot affording the possibility of closing the quarters independently against each other and constraining the leg with respect to the quarters, thus rendering
5 the boot closing operation both easy and quick to complete.

Within the above aim, it is a particular object of the invention to provide a ski boot which has no outward protruding levers which, besides detracting
10 from the boot's appearance, create considerable problems as regards their manufacture, for the reasons set forth above.

Another object of this invention is to provide a ski boot which affords a constraining action
15 on the leg in between the quarters, without by so doing generating large loads or uncomfortable constraints for the user.

A not least object of the invention is to provide a ski boot which affords reciprocal opening of the
20 quarters, so as to greatly facilitate putting the boots on.

The above aim, and these and other objects to become apparent hereinafter, are achieved by a rear entrance ski boot with differentiated closure,
25 according to the invention, comprising a shell whereon front and rear quarters are journalled, characterized in that the boot closure means comprise mutual connection means for detachably connecting said front and rear quarters together, and locking means
30 operable independently of said connection means and

acting in the area delimited by said quarters to constrain the skier's leg.

Further features and advantages will be apparent from the description of a preferred but not exclusive
5 embodiment of a rear entrance ski boot, as shown by way of illustration and not of limitation in the accompanying drawings, where:

Figure 1 shows diagrammatically a ski boot according to the invention in its closed position;

10 Figure 2 shows the ski boot in its open position;

Figure 3 shows diagrammatically a detail of the mutual connection means as coupled together;

Figure 4 shows the mutual connection means separate from one another;

15 Figure 5 is a sectional view of the boot showing the locking means;

Figure 6 is a sectional view of the boot showing the locking means during the leg constraining phase;

20 Figure 7 is an exploded perspective view of the locking means; and

Figure 8 is a perspective view of the locking means as constraining is being performed.

With reference to the drawing figures, a rear
25 entrance ski boot according to the invention comprises a shell 1, of known configuration, whereon there are journaled a front quarter 2 and a rear quarter 3, also of conventional configuration.

The invention is peculiar in that the boot closure means have no levers protruding externally from the boot but include means of mutual connection which allow the rear quarter 3 to be engaged releasably with the front quarter 2.

In detail, the connection means comprise a pushbutton element 10 defined on a small ear 11 provided on the sides of the rear quarter and being movable elastically. The pushbutton element 10 is preferably a unitary construction with the ears 11 and is received in a small window 12 whereto it is connected at the front side.

On the rear edge, the pushbutton element 10 has an abutment detent 15.

The ears 11 with the respective pushbutton elements 10 are removably accommodatable in a seat 20 defined at the edge of the front quarter 2, and having a window wherein the pushbutton element 10 is accommodated removably which on surfacing through the window 21 in the seat, brings its abutment detent to engage with the rear edge 23 of the seat, thus preventing the ear 11 from incidentally disengaging itself from the seat 20.

To effect the opening, it will be sufficient to apply a pressure to the pushbutton element, so as to disengage the abutment detent from the rear edge of the window, thereby allowing the ears to be removed from the seats which are provided, correspondingly with the ears, on either sides of the front quarter.

Thus, coupling of the connection means provides

for uniting the rear quarter with the front quarter without, however, providing of necessity constraint on the skier's leg, also on account of the fact that the skier's leg may have different anatomical
5 dimensions, so that the coupling accomplished in the manner just described for the rear and front quarters applies no constraint to the leg.

To close the boot, together with the connection means described above, there are provided locking
10 means, which are operable independently of the connection means and serve the function of constraining the skier's leg in the area delimited by the quarters.

Such locking means, which may be of a mechanical or the like nature, are preferably, but not necessarily,
15 formed of an air bladder 30 carried on the rear quarter 3 and in communication with pump means, of a type known per se, which are not shown in the drawing.

Advantageously, on the side confronting the leg,
20 there is provided a rigid presser 31 which has the function of better distributing the pressure on the leg.

Furthermore, it should be said that advantageously the air bladder 30 has partitions, provided by welded
25 seam lines 33, which afford a differentiated action of the pressure applicable by the air bladder.

The boot closure described above is operated by merely uniting the front quarter first with the rear quarter, utilizing the pushbutton element 10 which
30 enters the seat 20 locking itself releasably; then,

to constrain the leg, it will be sufficient to introduce air (or fluid) under pressure into the air bladder 30, so as to exert the sought constraint action on the leg inside the quarters, with an
5 action which is applicable independently of the union of the quarters together, contrary to what occurs in the prior art which, to accomplish the quarter closure, performs simultaneously the union and mutual fastening of the quarters to each other and
10 on the skier's leg.

From the foregoing description it may be appreciated that the invention achieves its objects, and in particular that a boot is provided wherein the closure can be effected without outer levers in
15 a convenient and quick manner without great closure efforts being required.

The invention herein is susceptible to many modifications and variations without departing from the scope of the inventive concept.

20 Furthermore, all of the details may be replaced with technical equivalents thereof.

In practicing the invention, the materials used, and the dimensions and contingent shapes, may be any appropriate ones.

CLAIMS

1 1. A rear entrance ski boot comprising a boot
2 shell (1) whereon a front quarter (2) and a rear
3 quarter (3) are journaled, boot closure means being
4 also provided, characterized in that the boot closure
5 means include means of mutual connection (10,11,20)
6 for detachably connecting said rear quarter (3) with
7 said front quarter (2), and locking means (30)
8 operable independently of said connection means
9 (10,11,20) and acting in the area delimited by said
10 quarters (2,3) to constrain the skier's leg.

1 2. A ski boot according to the preceding claims,
2 characterized in that said connection means comprise
3 a pushbutton element (10), for each side of the rear
4 quarter (3), which is removably insertable into
5 seats (20) defined at the side edges of said front
6 quarter (2).

1 3. A ski boot according to the preceding claims,
2 characterized in that said pushbutton element (10)
3 is accommodated within a small window (12) provided
4 on ears (11) protruding from the front edge of the
5 rear quarter (3), said pushbutton element (10) being
6 connected at one edge thereof to an edge of said
7 small window (12) and having on the outer edge an
8 abutment detent (15) engageable by abutment against
9 the rear edge of a window (21) defined in said seats
10 (20), from said window (21) there surfacing said
11 pushbutton element (10).

1 4. A ski boot according to one or more of the
2 preceding claims, characterized in that said locking

3 means (30) act on a presser (31) to evenly distribute
4 the pressure action exerted on the skier's leg.

1 5. A ski boot according to one or more of the
2 preceding claims, characterized in that said locking
3 means comprise an air bladder (30) connectable to
4 pumping means.

1 6. A ski boot according to one or more of the
2 preceding claims, characterized in that said air
3 bladder (30) has a plurality of areas in mutual
4 communication to control the fastening action accord-
5 ing to the corresponding areas on the skier's leg.

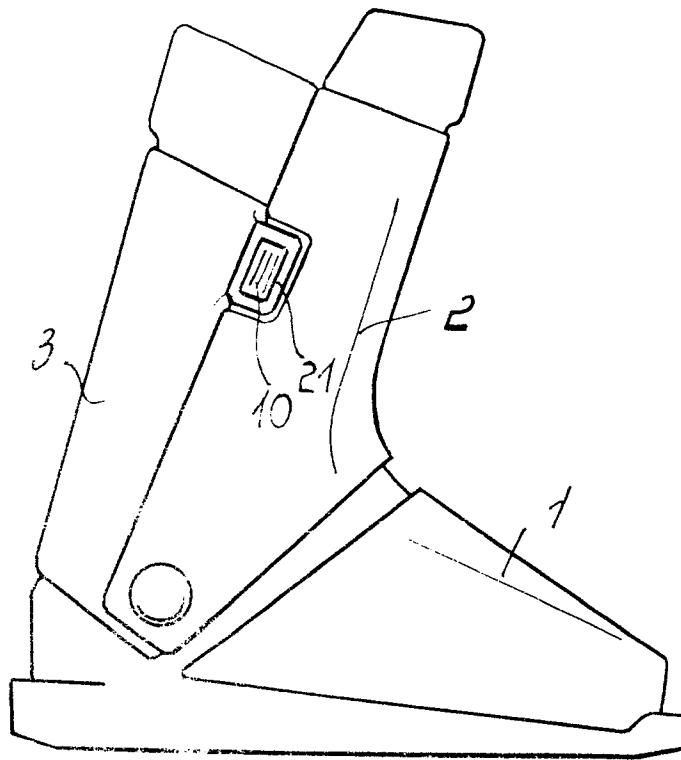


Fig. 1

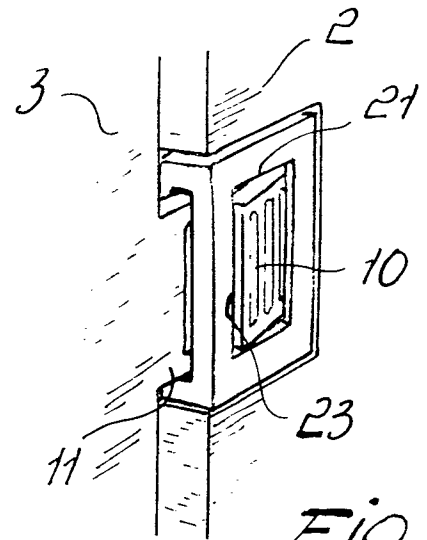


Fig. 3

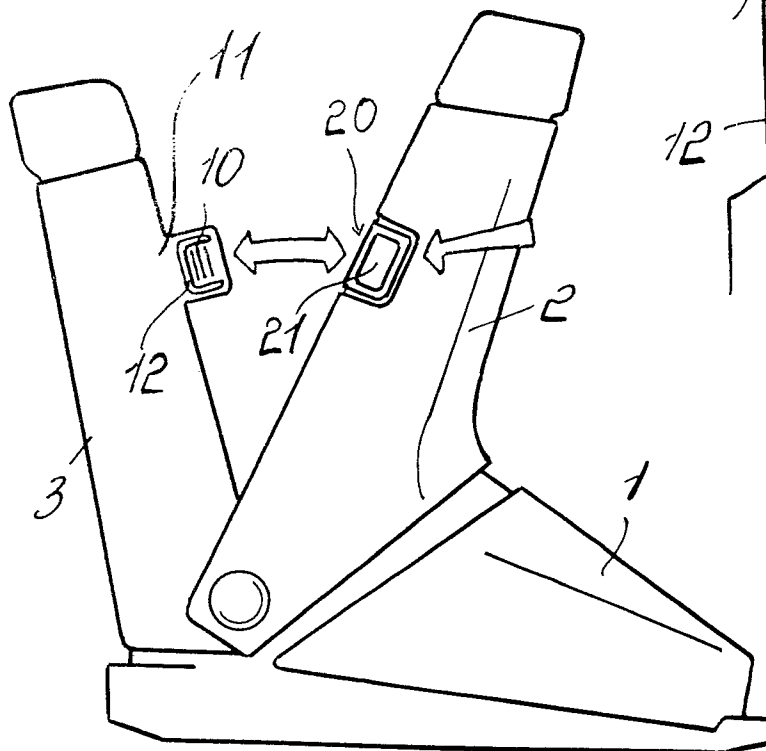


Fig. 2

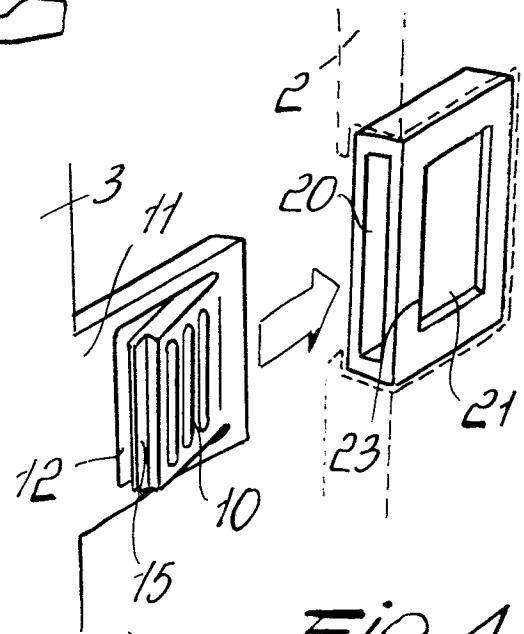


Fig. 4

Fig. 5

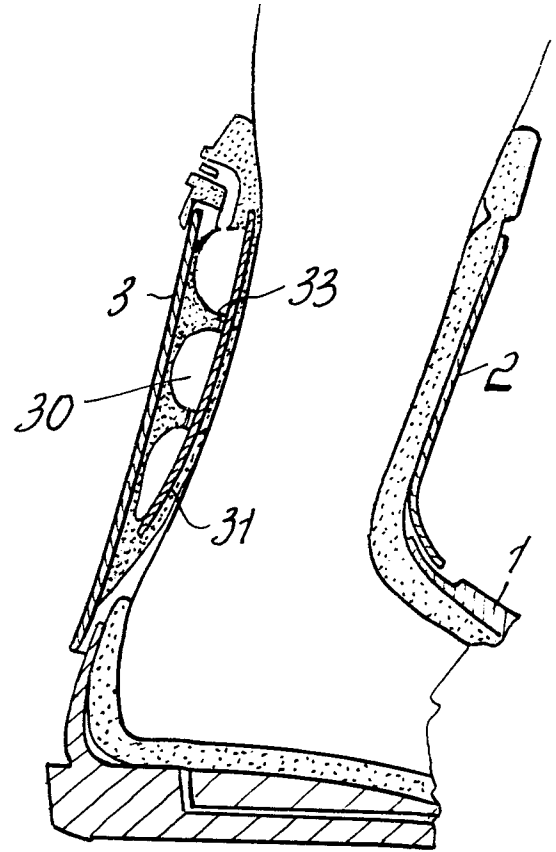
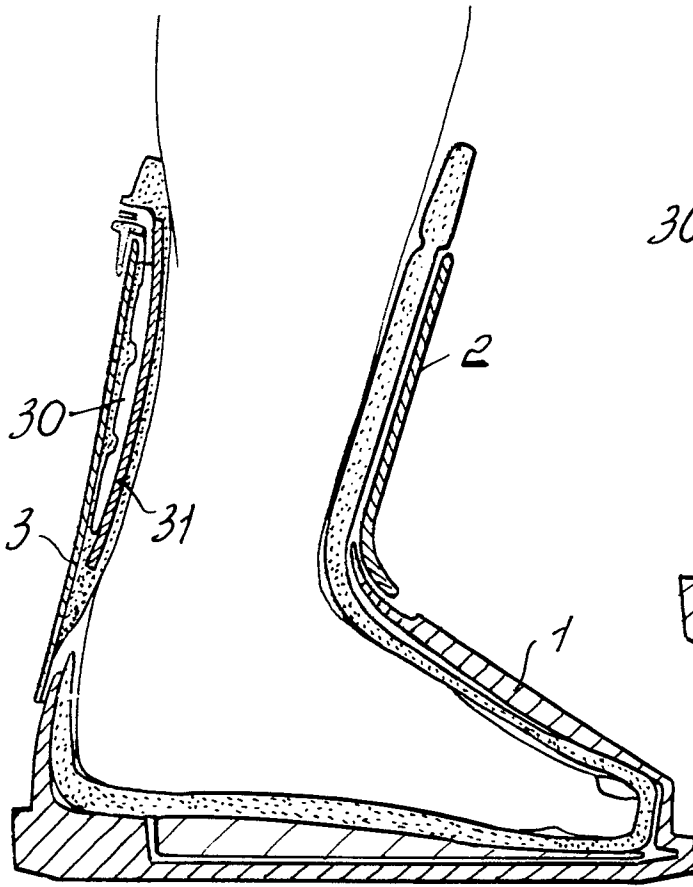


Fig. 6

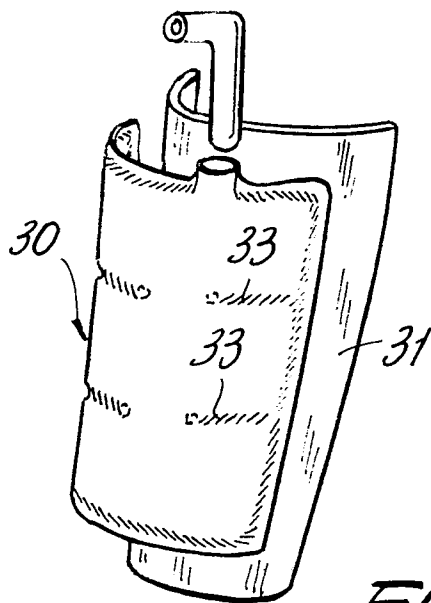


Fig. 7

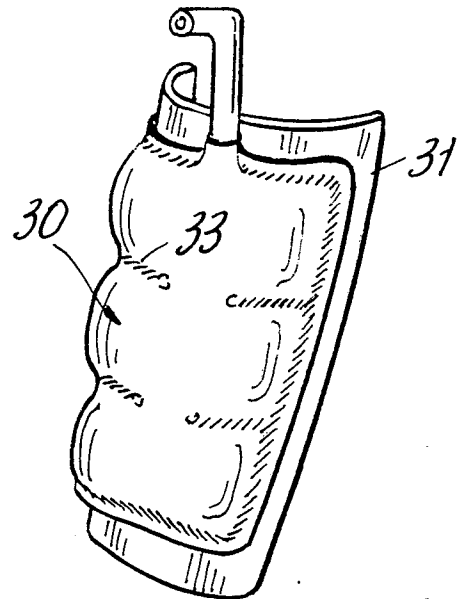


Fig. 8



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X,Y	FR-A-2 464 728 (J. BATAILLE) * Page 3, lines 6-19; figures 1-3 *	1,2	A 43 B 5/04
P,X	--- WO-A-8 504 557 (TECNOSKI) * Claims 1,2; figures 1-3 *	1	
A	--- FR-A-2 540 359 (F. SALOMON & FILS) * Page 3, lines 7-10; figures 1,2 *	2	
A	--- FR-A-2 407 008 (J.R. BATAILLE) * Claims 1,2; figures *	5,6	
A	--- JP-A-57 086 301 * Figures 1-4 * -----	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.4) A 43 B A 43 C
Place of search THE HAGUE		Date of completion of the search 17-02-1986	Examiner MALIC K.
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			