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(54) Ski pole provided with a warning device and detachable grip

(57) The present invention relates to a ski pole comprising means for the fast release (1, 2) of a handgrip (4) from a tubular element (3), said handgrip (4) and tubular element (3) belonging to said ski pole.

According to the invention, acoustic and/or radio transmitter warning devices adapted to communicate the skier position in case of emergency are provided.

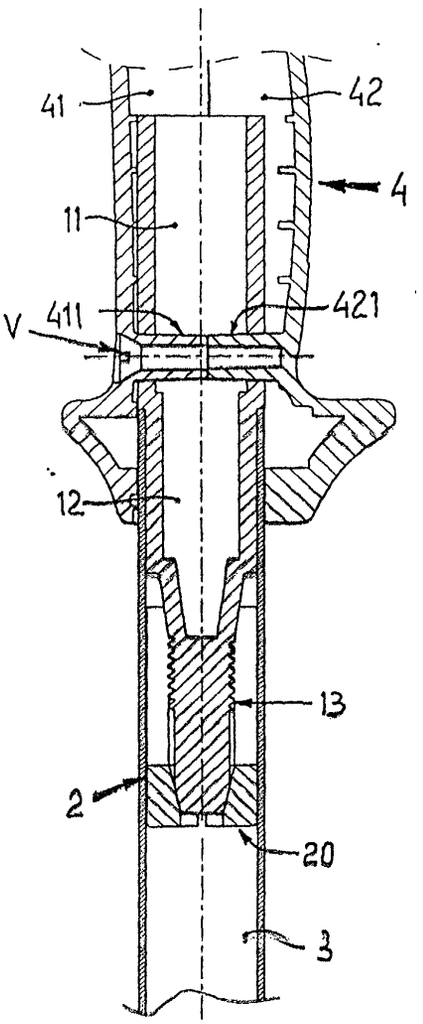

FIG.6

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Description

[0001] The present invention relates to a ski pole-, especially dedicated to those people paying particular attention to personal safety, such as in the case of accidents, snowslides or avalanches.

[0002] In the Italian patent application N° PN99000024 of the same Applicant, the construction and the use, inside of a ski pole handle, of acoustic and/or radio transmitter warning devices is explained. The above mentioned devices are particularly useful to skiers in cases of emergency, such as skiing out of bounds, colliding with other skiers or during a snowslide or avalanche. In such cases it is convenient the skier to leave the ski poles because, apart from the possibility of being injured by the ski poles, they would hinder the skier from doing essential movements to safe his o her life, especially whenever buried under a big amount of snow. To avoid this problem, people practicing down hill skiing are not used to fastening the ski pole handle lace on wrist, such in a way as not to be bonded to the ski pole. While, in this manner, the skier is not able to utilize the ski pole in a proper way taking advantage of the support furnished by the grip lace, apart from the risk of loosing it during its normal use.

[0003] Therefore an aim of the present invention is to allow a skier, in one of the above mentioned cases such as accident or injury, to leave the restrictive part of the ski pole, or the shaft of them, in a simple way without being obliged to slip the hand out of the lace of the ski pole handle.

[0004] According to the present invention, being able to signal and/or communicate the position and/or the emergency condition of a skier, is another aim of the ski pole in subject.

[0005] Further aims, characteristics and advantages of the ski pole according to the present invention will become apparent from the following detailed description and annexed drawings of a preferred representation of the present invention, which is only supplied by the way of a non limiting example, wherein:

- Fig. 1 illustrates a perspective view of a ski pole in subject;
- Fig. 2 shows a frontal view concerning a part of the ski pole according to the invention;
- Fig. 3 shows a section according to the axis I-I of Fig. 2;
- Fig. 4 illustrates a longitudinal section of part of the ski pole according to the invention;
- Fig. 5 shows a section according to the axis II-II of Fig. 4;
- Fig. 6 illustrates a longitudinal section of the assembled ski pole according to the present invention.

[0006] In Figs. 1 and 6 the ski pole in subject according to the present invention is shown, which comprises two elements and in particular a first element 1, which is applied and fixed to a ski pole handgrip 4, and a second element 2 adapted to be inserted into an end of a ski pole tubular element 3; the first 1 and second element 2 belonging to means for the fast release of the handgrip 4 from the engaging of the tubular element 3.

[0007] As will be explained further on, the second element 2 is engaged into the cited tubular element 3 by expanding itself, expansion generated by an inward screwing of said first element 1 to get a removable connection between the handgrip 4 and the cited tubular element 3.

[0008] Figs 1, 2, 3 clearly illustrate the first element 1, which consists in a unique body capable to be subdivided in the following parts:

- a first section 11 cylindrical-shaped having outer diameter equal to that of the cited first element 1, and of a length a little longer than the double amount of its diameter;
- a second section 12 cylindrical-shaped, which is extended from the lower end of the first section 11 and concentrically to it, with outer diameter equal to the tubular element 3 inner diameter and of a length a little shorter than the double amount of its diameter;
- a machined stem 13, which is extended from the lower end of the second section 12 and concentrically to the other cited parts 11 and 12, adapted to be engaged with its threaded part 132 into a corresponding threaded section 22 of the second element 2.

[0009] Such a machined stem 13 is constituted by a first truncated cone section 131, that follows the lower end of the second section 12 and is provided with a diameter restricting in its longitudinal development. After this section, the machined stem 13 presents a threaded cylindrical section 132, with a length substantially equal to its diameter. It then presents, on its distal end, a further cylindrical section 133 provided with a diameter as long as the base diameter of the thread concerning the threaded cylindrical section 132. The machined stem 13 longitudinal development ends with a second truncated cone section 134 convergent toward the trailing edge, being the trailing edge properly chamfered to help an entry of the machined stem 13 in a hollow.

[0010] In Figs. 3 and 6 the hollow shape characterizing a good portion of the whole machined stem 13 is well illustrated, with particular attention to its cylindrical sections 11 and 12 and to the first truncated cone section 131 furnished with a proper tick walls.

[0011] The first section 11 cylindrical shaped is characterized by a through hole 111 horizontally positioned next to its lower part and defining a crossing for an eventual gudgeon or body V having the function of fastening the first element 1.

[0012] In the Fig. 1 and better itemized in the figs 4 and 5 is properly shown the second element 2, which is formed of a hollow sleeve collar provided with an outer

diameter substantially equal to the inner diameter of the tubular element 3, in which it is definitely engaged in assembled configuration. The second element 2 inner hollow shows longitudinally and top-down a first longitudinal development 21, converging to the down blending itself to a threaded cylindrical development 22, and presents a further cylindrical development 23 ending with a second truncated cone development 24, the same 24 presenting a cylindrical hole 25 on the lower end.

[0013] The first and the second truncated cone development 21 and 24 are shaped in a complementary way in comparison respectively with the first and the second truncated cone section 131 and 134 of the machined stem 13. Particularly the first truncated cone development 21 extends itself with a proper shorter length in comparison with the first truncated cone section 131, but the second truncated cone development is provided with a definitely greater length in comparison with the second truncated cone section 134; this is to allow the shrinkage of the machined stem 13 into the inner side of the hollow sleeve collar 20 as will be explained further.

[0014] The threaded development 22 represents the female element of a threaded fit set up by the threaded cylindrical section 132 of the machined stem 13, which therefore represents the male element. The threaded development 22 extension is just greater than the respective section 132.

[0015] Finally, in the wall defining the cited hollow of the cylindrical hollow sleeve collar 20, two pairs of longitudinal notches 26 and 27 with the same longitudinal development extension, equal to almost the whole cylindrical hollow sleeve collar 20 length, are machined; each pair of notches being diametrically and squarely positioned from opposite parts in comparison with those concerning the other pair. Particularly, the pair of notches 26 presents the notches developing longitudinally from the upper edge of the cylindrical hollow sleeve collar 20 downward, but the pair of notches 27 presents the notches developing from the inner edge upward, as clearly illustrated in Figs 1, 4 and 5.

[0016] In Fig. 6 the assembly of the ski pole according to the invention 1 and 2 together with the handgrip 4 and the tubular element 3 of the ski pole is represented. In this representation the handgrip 4 is formed by two shells 41 and 42 comprising two little tubular cylindrical body 411 and 421, mounted in a coaxial and opposed way being inserted in the through hole 111 of the first cylindrical section 11 of the first element 1. The cited tubular cylindrical bodies 411 and 412 present known means adapted to the mutual clamping, as a screw V, in such a way that the shells 41 and 42 are mutually screwed together and so rigidly connected. It is specified that the through hole 111, the two tubular cylindrical body 411 and 421 and the screw V belong to means for fixing the first element 1 to the handgrip 4.

[0017] Now the assembly of the ski pole according to the invention is detailed.

[0018] The handgrip 4 is assembled in the previously described way, i.e. applying in its inner side the acoustic and/or radio transmitter warning devices such in a way as taught in the previously mentioned patent application of the same applicant, the devices not being illustrated in the enclosed figures to simplify the representation. Particularly such acoustic and/or radio transmitter warning devices are able to be housed both inside the hollow defined into the first element 1, precisely in correspondence with the first 11 and/or the second cylindrical section 12, and into the handgrip 4 above the first element 1.

[0019] The second element 2 is joined to the assembly formed by the handgrip 4 provided with the acoustic and/or radio transmitter warning devices, just on the machined stem 13 leaning lower down out of the first element 1. The hollow sleeve collar 20 constituting the second element 2 is inserted on the machined stem 13 and then screwed onto it 13 by the means of the above described threaded fit 132 and 22, in this way being assembled to.

[0020] At this point the second element 2 is inserted into the tubular element's 3 upper end, that we remember its inner surface to be cylindrically-shaped, pushing the handgrip 4 toward the tubular element 3. First the second element 2 and then the second section 12 slide inside the tubular element 3 until the collar defined in the first section 11 lower wall reaches the upper edge of the tubular element 3. In this described situation the cylindrically shaped tubular element 3 is able to be extracted from the handgrip 4 by a movement opposite to that previously described.

[0021] To achieve the fixing of the handgrip 4 to the tubular element 3 it is sufficient a mutual rotation of these two parts 3 and 4 in the screwing, generally clockwise, of the thread concerning the threaded fit 132, 22. The screwing take the first and the second truncated cone section 131 and 134 to force the penetration of the machined stem 13 into the hollow sleeve collar 20 against the surfaces related to the first and the second truncated cone development 21 and 24 respectively of the second element 2. A result of this penetration is the expansion of the hollow sleeve collar 20 caused by the presence of the pair of longitudinal notches 26 and 27 quite adapted to allow this effect under the solicitations of the stress radial components acting on the truncated cone surfaces in contact, mutually the 131 with the 21 and the 134 with the 24. Because of the particular positioning of the truncated cone fits next to the two ends of the hollow sleeve collar 20, an even expansion of the whole cylindrical surface is granted, with the consequent clamp of the second element 2 for interference between its outer surface and the tubular element 3 inner surface.

[0022] Definitely the clamp of the handgrip 4 inside the tubular element 3 is in that way realized for the means of a simple rotation of the same handgrip 4.

[0023] Obviously such a connection is of a removable type whereby, setting the screwing action, it is possible

to vary the sealing or clamping action of the hollow sleeve collar 20 inside the tubular element 3. The setting is operated in such a way as to allow, in case of emergency, the release of the tubular element 3 from the handgrip 4 for the means of a proper tensile action between the parts; by the way the skier, although releasing the ski pole tubular element 3, is able to retain the handgrip for the reason that it is fastened to the wrist by the respective grip lace.

[0024] Therefore the use of the ski pole according to the present invention allows to retain the handgrip 4 containing the acoustic and/or radio transmitter warning devices in case of emergency. In such a way a fast and safe localization of the skier is allowed to rescuers, in the same time allowing the release of the ski pole tubular element 3 that would impede the skier to do essential movements to safe his o her life, especially in the presence of a snowslide or an avalanche.

[0025] Advantageously the invention in subject allows the ski pole handle to be joined in a simple and practical way with the respective tubular element, permitting a fast and simple release of the mentioned ski pole parts in case of emregency by the means of a simple mutual rotation and pull. These operations are easy to do by the skier in case of accident and injury or of particular difficulty. In this way the skier is always sure to take the acoustic and/or radio transmitter warning devices with, without any risk of being impeded in his or her movements.

Claims

1. Ski pole, of the type comprising a handgrip (4) and a tubular element (3), **characterized in that** comprises means for the fast release (1, 2) of the handgrip (4) from the tubular element (3), and comprises the acoustic and/or radio transmitter warning devices.

2. Ski pole according to claim 1, **characterized in that** said acoustic and/or radio transmitter warning devices are comprised inside the handgrip (4) of said ski pole.

3. Ski pole according to claims 1 and 2, **characterized in that** said acoustic and/or radio transmitter warning are housed next to the upper end of said tubular element (3), **in that** part substantially inserted inside said handgrip (4).

4. Ski pole according to one or more of the preceding claims, **characterized in that** said means for the fast release comprise:

   - a first element (1) whereof development ends lower down with a machined stem (13);
   - means for clamping (111, 411, 421, V) said first element (1) to said handgrip (4), wherefrom said first element (1) leans out with a part formed by said machined stem (13) whenever said ski pole is assembled;
   - a second element (2) formed by a cylindrical sleeve collar (20) made elastic by the presence of longitudinal notches pairs (26, 27), said second element (2) adapted to be screwed by the means of a threaded fit (22, 132) to said machined stem (13) of said first element (1);

   said cylindrical sleeve collar (20) presenting outer diameter equal to the inner diameter of said tubular element (3) whereto end is adapted to be inserted, and comprising truncated cone developments (21, 24) adapted to be screwed into said first element (1) inside said second element (2), together with respective and complementary truncated cone sections (131 and 134) belonging to said machined stem (13).

5. Ski pole according to claim 4, **characterized in that** said first element (1) comprises:

   - a first cylindrical section (11) with diameter equal to the outer diameter of the tubular element (3) of said ski pole;
   - a second cylindrical section (12), coaxial to said first cylindrical section (11), with diameter equal to the inner diameter of said tubular element (3);
   - said macined stem (13).

6. Ski pole according to claim 4 and following ones, **characterized in that** said first cylindrical section (11) of said first element (1) comprises a part of said means for clamping (111) of said first element (1) into said handgrip (4).

7. Ski pole according to the previous claim, **characterized in that** said means for clamping of said first element (1) into said handgrip (4) comprise a through hollow (111) next to the lower part of said first cylindrical section (11).

8. Ski pole according to claim 4 and following ones, **characterized in that** said machined stem (13) comprises a first truncated cone section (131) jointing itself to a short threaded section (132), then presenting a cylindrical section (133) with diameter equal to the base diameter of said short thread section (132), further on ending with a second truncated cone section (134) provided with a properly chamfered edge.

9. Ski pole according to claim 4 and following ones, **characterized in that** said hollow sleeve collar (20) is provided with an outer diameter equal to the inner

diameter of siad tubular element (3) and comprises a inner hollow formed by a first truncated cone development (21) inwardly convergent, whereto a threaded development (22) and a cylindrical development (23) ending with a second truncated cone development (24) ending with a cylindrical hollow (24) are provided in sequence, first (21) and second truncated cone development (24) being complementary mutually to said first (131) and second truncated cone development (134) of said machined stem (13) of said first element (1); said collar (20) presenting besides in its wall, or **in that** part defined between its outer surface and said inner hollow, two pairs of notches (26 and 27) provided with longitudinal developments of a same length equal to almost the whole length of said hollow sleeve collar (20), each pair (26 and 27) provided with respective notches being diametrically and squarely positioned in comparison with those of the other pair.

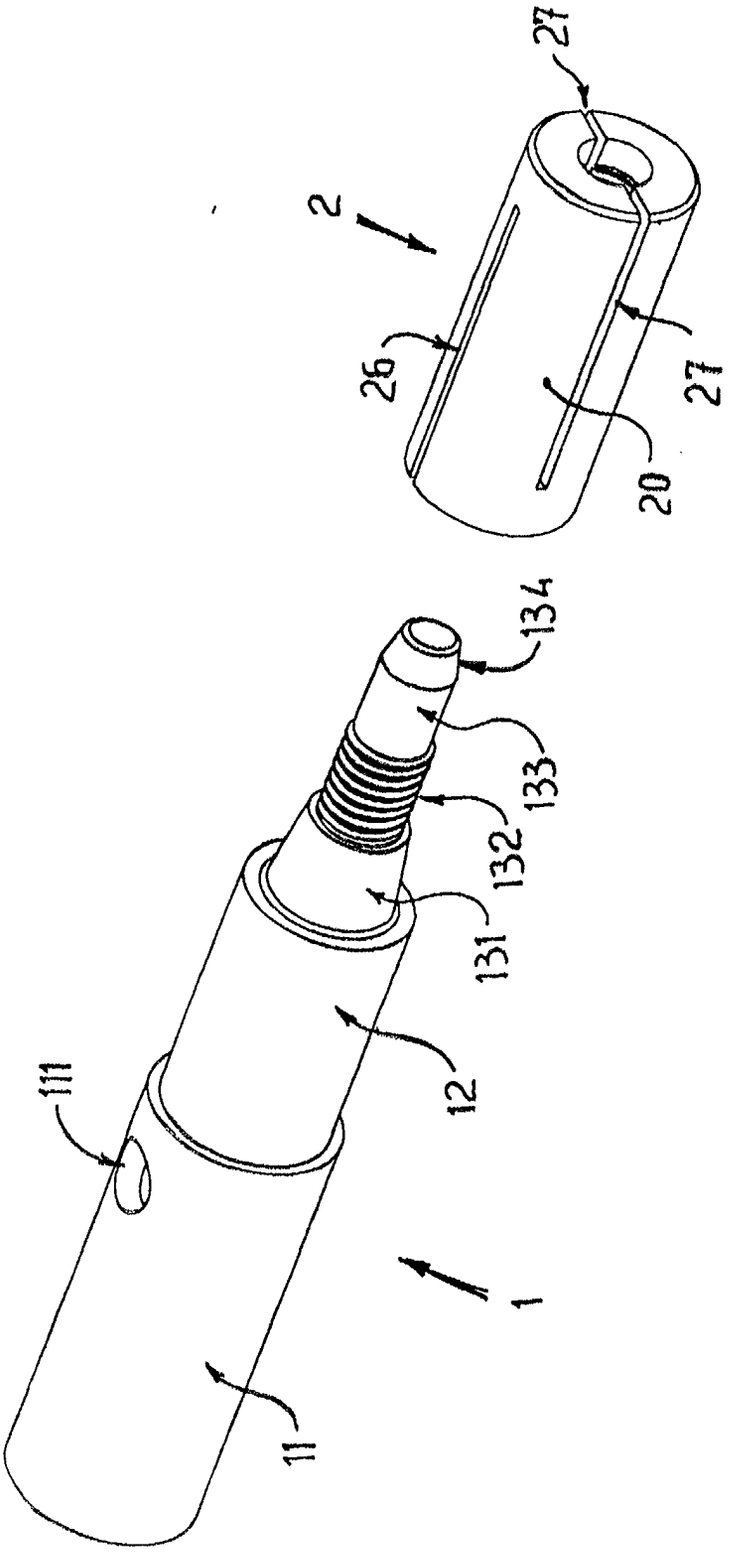

FIG. 1,

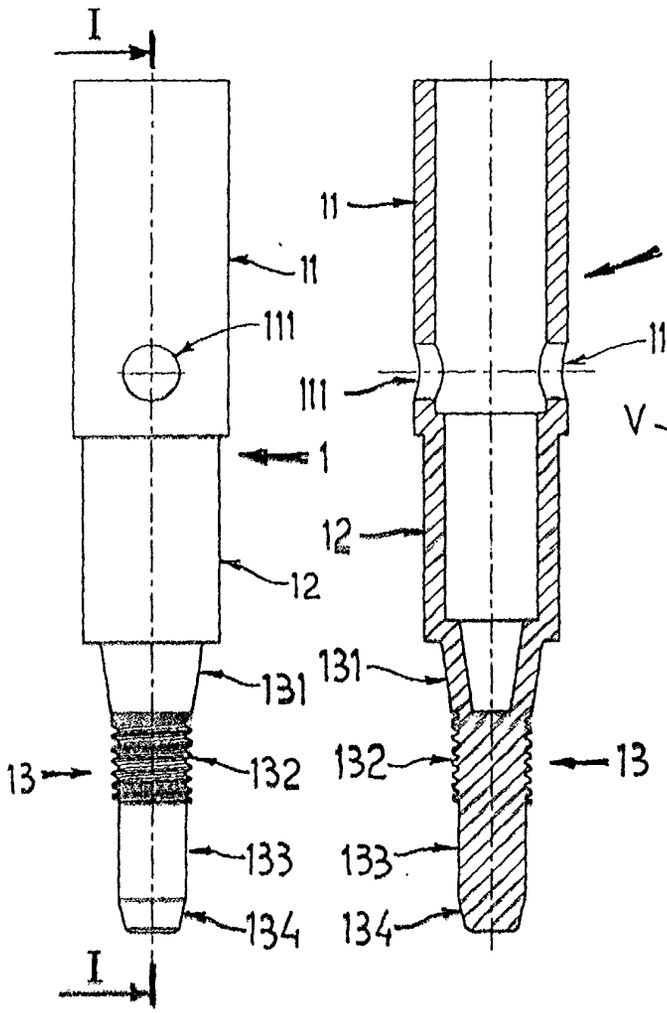

FIG.2

FIG.3

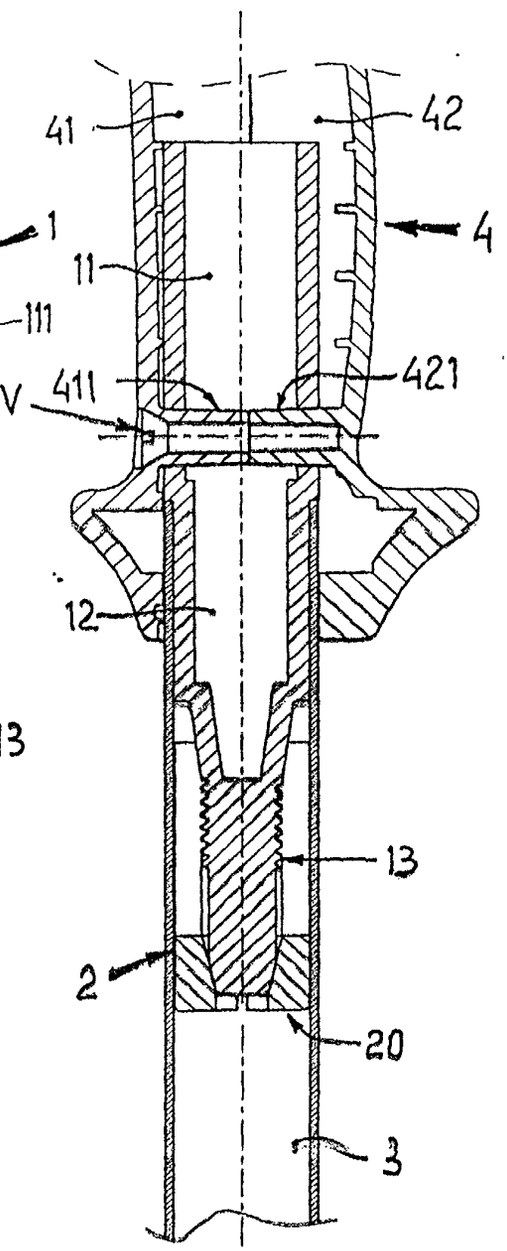

FIG.6

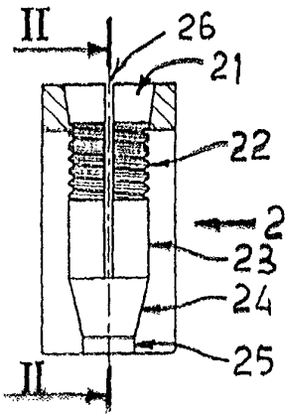

FIG.4

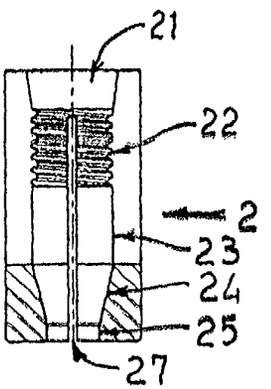

FIG.5

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 8633

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.7)
A,D	EP 1 033 155 A (GRANZIERA LORIS) 6 September 2000 (2000-09-06) * the whole document *	1-3	A63C11/22 A63C11/00
A	US 5 429 389 A (KENNETH E. SHANDELL) 4 July 1995 (1995-07-04) * column 2, line 31 - column 4, line 55; figure 2 *	1-3	
A	US 6 203 063 B1 (EDWARD J. BUJOLD) 20 March 2001 (2001-03-20) * column 2, line 14 - column 4, line 27; figure 4; examples 1,4 *	1	
A	DE 298 07 681 U (SSG (EUROPE) S.A.) 2 July 1998 (1998-07-02) * page 4, line 10 - page 5, line 28; figure 1; examples 1,2,13-18,21,22 *	4-9	
A	DE 89 10 469 U (KLAUS LEHNHART) 26 October 1989 (1989-10-26) * page 4, line 14 - page 6, line 6; figure 1; examples 1,2,6,16,17,19,22 *	4-9	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A63C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	22 March 2002	Murer, M

CATEGORY OF CITED DOCUMENTS

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1033155 A	06-09-2000	IT PN990024 A1 EP 1033155 A1 JP 2000279568 A	25-08-2000 06-09-2000 10-10-2000
US 5429389 A	04-07-1995	NONE	
US 6203063 B1	20-03-2001	US 6082767 A US 6070907 A	04-07-2000 06-06-2000
DE 29807681 U	02-07-1998	DE 29807681 U1	02-07-1998
DE 8910469 U	26-10-1989	DE 8910469 U1	26-10-1989

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