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(54) Outsole of shoes

(57) An outsole includes a front section (21), a mediate section (22) and a rear section (23) on a bottom of the outsole (20). A plurality of first protrusions (31,32) extend from the bottom of the outsole and are respectively arranged along two sides of the front section and the rear section. A first area (41) is located to be enclosed by the first protrusions on the front section and a plurality of second protrusions (43) are located in the first area. A second area (42) is located to be enclosed by the first protrusions (32) on the rear section (23) and a plurality of third protrusions (44) are located in the second area (42). The front section has a flexible section (210) which is perpendicular to a longitudinal axis of the front section and located corresponding to the ball of wearer's foot.

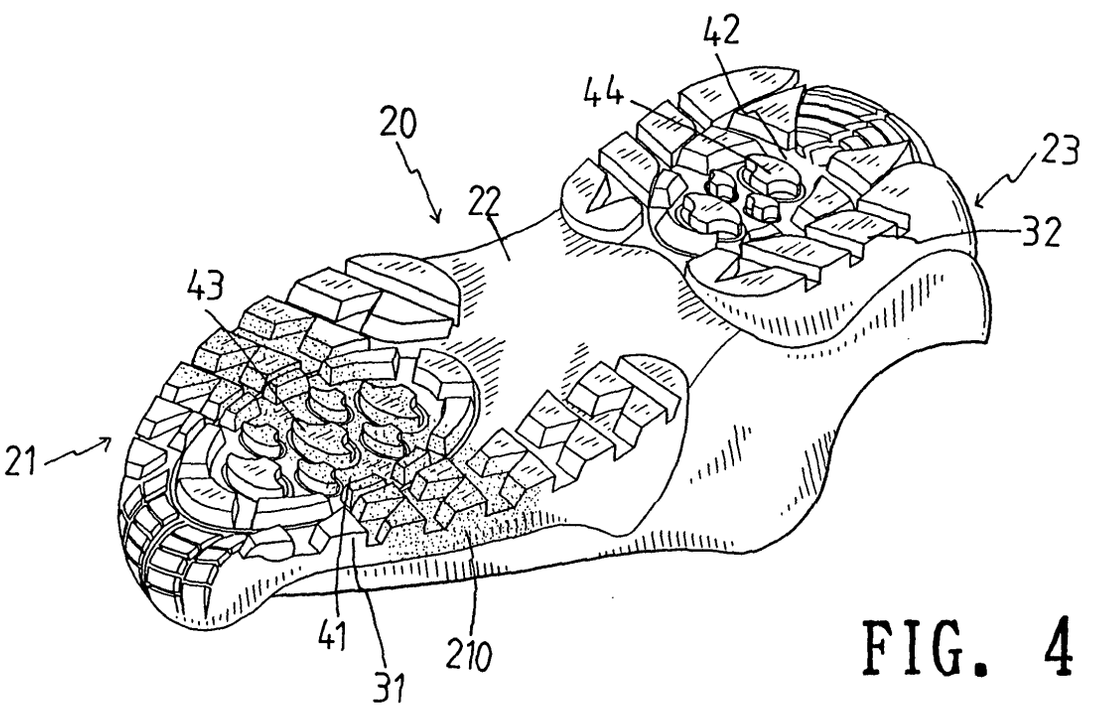

FIG. 4

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to an outsole having a front portion and a rear portion with a flexible section connected therebetween. Each of the front portion and the rear portion has anti-slip protrusions for providing anti-slip feature.

BACKGROUND OF THE INVENTION

[0002] A conventional outsole 10 for shoes is shown in Fig. 1 and generally is a thick and one-piece member which has a heel portion 12 attached to a rear section of the outsole 10, and patterns 11 extending from a front section of the outsole 10. The thick outsole 10 has less flexibility and is usually stiff so that it is not satisfied by the wearers. Besides, the conventional outsole 10 is made by the same material so that it has an identical stiffness which makes the outsole 10 to be not able to meet the complicated deformation requirements of outsole when the wearers walk or run on roads with differernt conditions. This conventional outsole 10 is slippery when walking on sandy or wet roads.

[0003] The present invention intends to provide an outsole that has anti-slip protrusions which have different stiffness and a flexible section is located corresponding to the ball of wearer's foot so that the outsole is easily bent when the wearers walk.

SUMMARY OF THE INVENTION

[0004] In accordance with one aspect of the present invention, there is provided an outsole and comprises a front section, a mediate section and a rear section on a bottom of the outsole. A plurality of first protrusions extend from the bottom of the outsole and are respectively arranged along two sides of the front section and the rear section. A first area is located between the first protrusions on the front section and a plurality of second protrusions are located in the first area. A second area is located between the first protrusions on the rear section and a plurality of third protrusions are located in the second area.

[0005] The primary object of the present invention is to provide an outsole that has protrusions on a bottom thereof and the stiffness of the protrusions is different so as to have a flexible and anti-slippery outsole.

[0006] Another object of the present invention is to provide an outsole that has a flexible section which is located at the ball portion of the wearer's foot such that the outsole is soft and flexible.

[0007] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

Fig. 1 is a side view to show a conventional outsole;
Fig. 2 is a plan view to show a bottom view of an outsole of the present invention;
Fig. 3 is a side view to show the outsole of the present invention;
Fig. 4 is a perspective view to show the protrusions on the outsole of the present invention, and
Fig. 5 is an illustrative view to show the front section of the outsole of the present invention is deformed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0009] Referring to Figs. 2 to 4, the outsole of the present invention comprises a front section 21, a mediate section 22 and a rear section 23 on a bottom of the outsole 20. A plurality of first protrusions 31, 32 respectively extend from the bottom of the outsole 20 and are respectively arranged as a U-shape arrangement along two sides of the front section 20 and the rear section 23. The mediate section 22 is softer than the first protrusions 31, 32. The front section 21 has a flexible section 210 which is perpendicular to a longitudinal axis of the front portion 21 and is located corresponding to the ball portion of wearer's foot so that the outsole is easily bent when the wearers walk.

[0010] A first area 41 is located between two wings of the first protrusions 31 on the front section 21 and a plurality of second protrusions 43 are located in the first area 41. A second area 42 is located between two wings of the first protrusions 32 on the rear section 23 and a plurality of third protrusions 44 are located in the second area 42. The first area 41 and the second area 42 are softer than the second protrusions 43 and the third protrusions 44.

[0011] Further referring to Fig. 5, the first protrusions 31, 32 have anti-slippery function which prevents the wearer from slip when walking on sandy or wet roads. The flexible section 210 allows the outsole to be more flexible when needed. The second protrusions 43 and the third protrusions 44 provides a better grape function on serrated roads. When the outsole is bent, the flexible section 210 the ball portion of the wearer's foot feel comfortable and the softer mediate section 22 let the outsole to be expandable so that the wearer's foot bears less stress.

[0012] While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

[0013] An outsole includes a front section, a mediate section and a rear section on a bottom of the outsole. A plurality of first protrusions extend from the bottom of

the outsole and are respectively arranged along two sides of the front section and the rear section. A first area is located to be enclosed by the first protrusions on the front section and a plurality of second protrusions are located in the first area. A second area is located to be enclosed by the first protrusions on the rear section and a plurality of third protrusions are located in the second area. The front section has a flexible section which is perpendicular to a longitudinal axis of the front section and located corresponding to the ball of wearer's foot.

Claims

1. An outsole comprising:

a front section, a mediate section and a rear section on a bottom of said outsole, a plurality of first protrusions extending from said bottom of said outsole and respectively arranged along two sides of said front section and said rear section;
a first area located between said first protrusions on said front section and a plurality of second protrusions located in said first area, and
a second area located between said first protrusions on said rear section and a plurality of third protrusions located in said second area.

2. The outsole as claimed in claim 1, wherein said mediate section is softer than said first protrusions.

3. The outsole as claimed in claim 1, wherein said first area and said second area are softer than said second protrusions and said third protrusions.

4. The outsole as claimed in claim 1, wherein said front portion has a flexible section which is perpendicular to a longitudinal axis of said front portion.

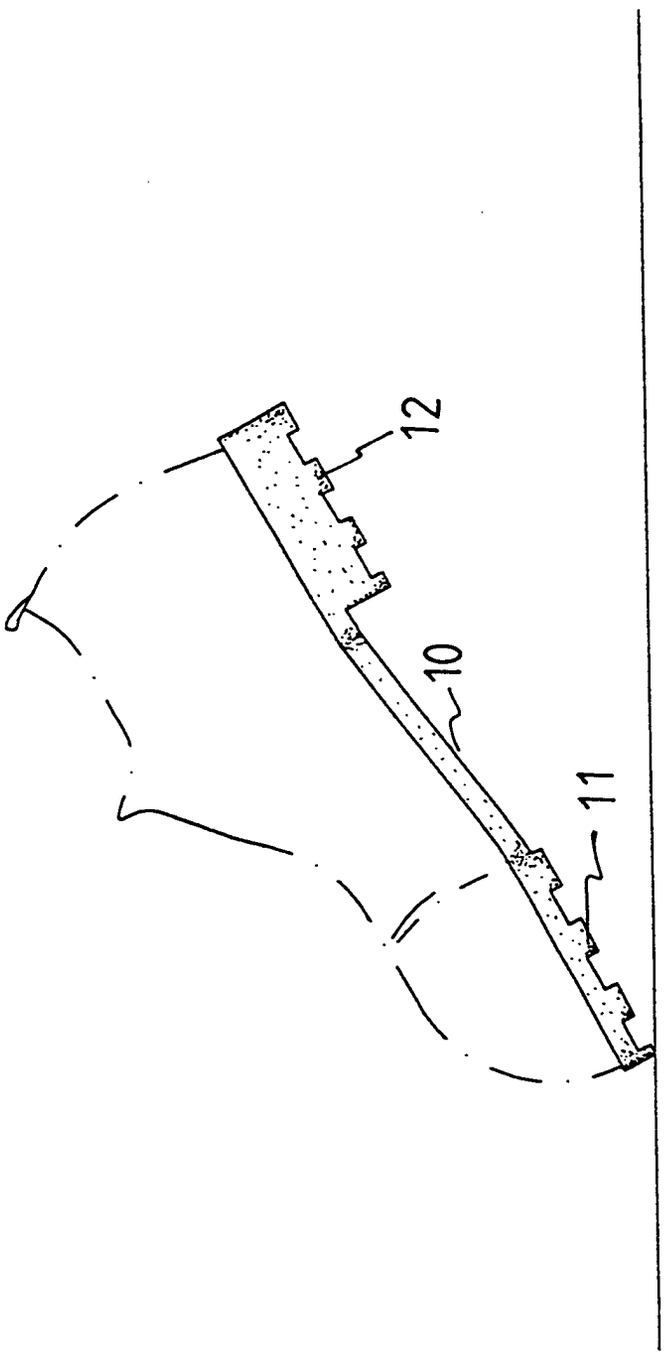

FIG. 1
PRIOR ART

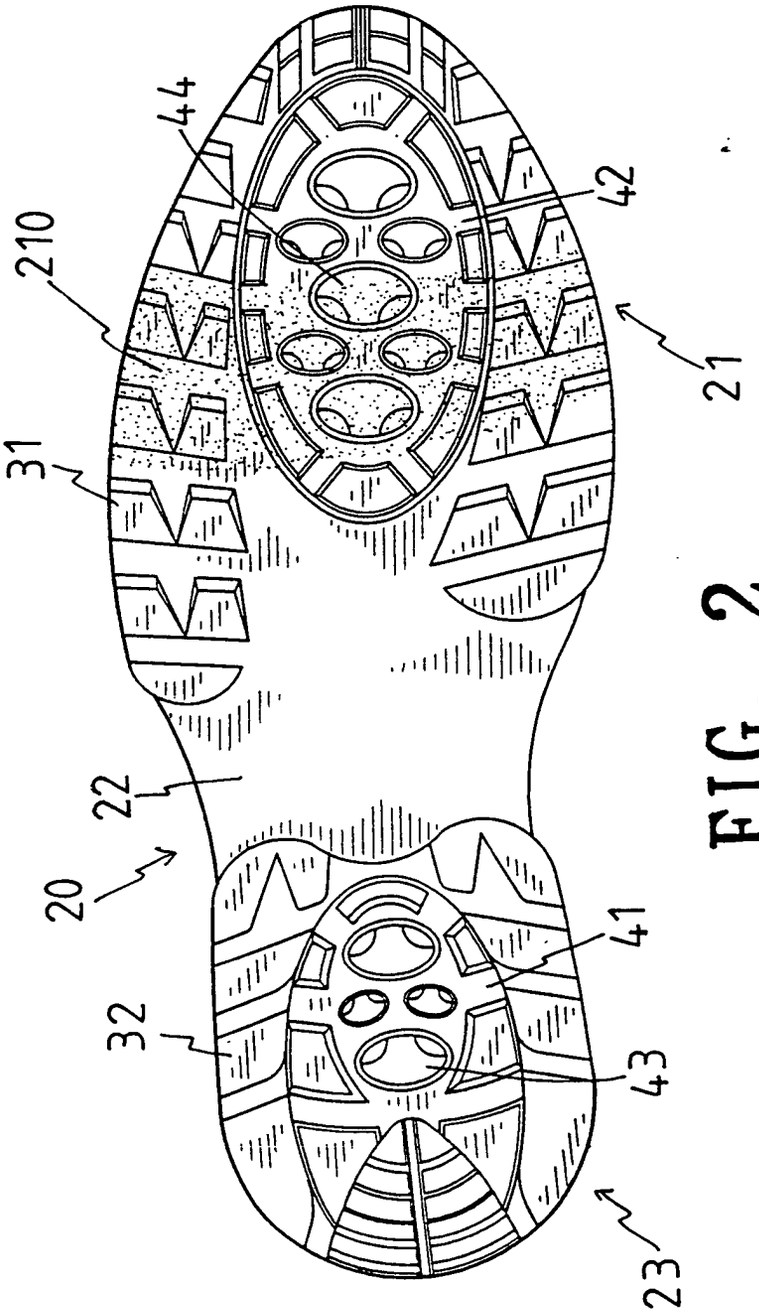

FIG. 2

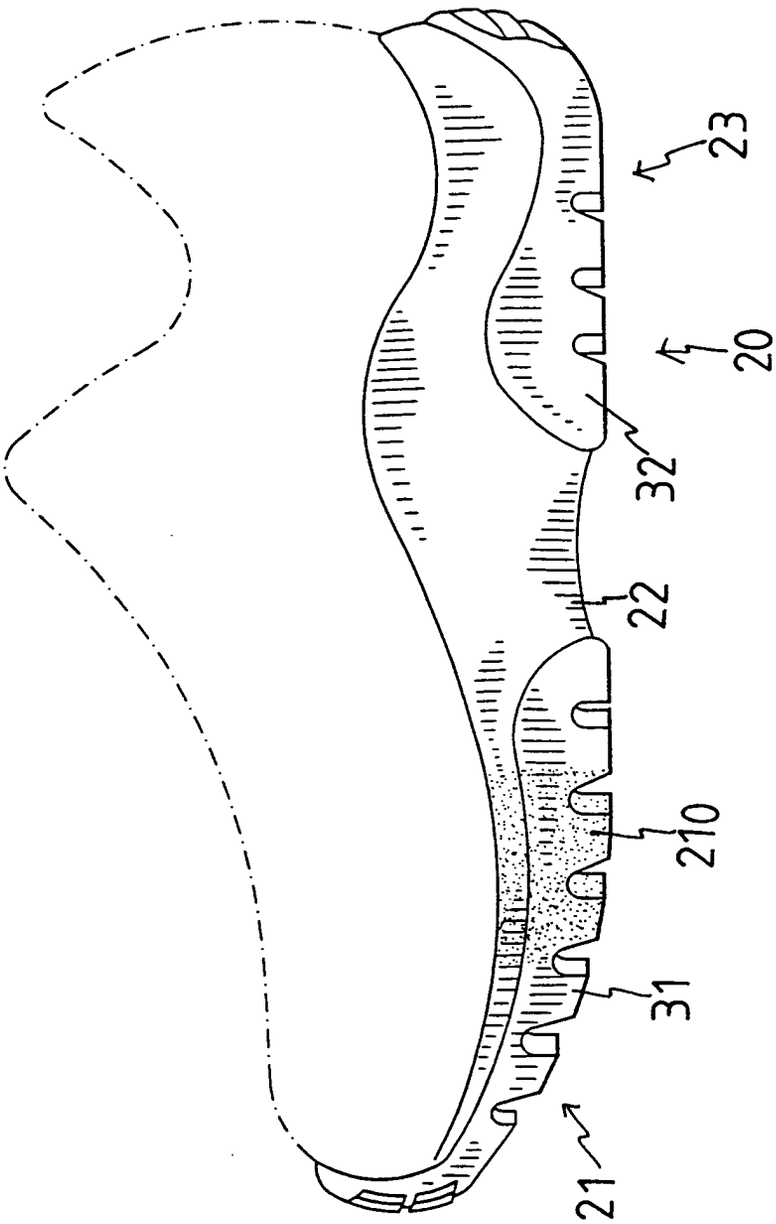

FIG. 3

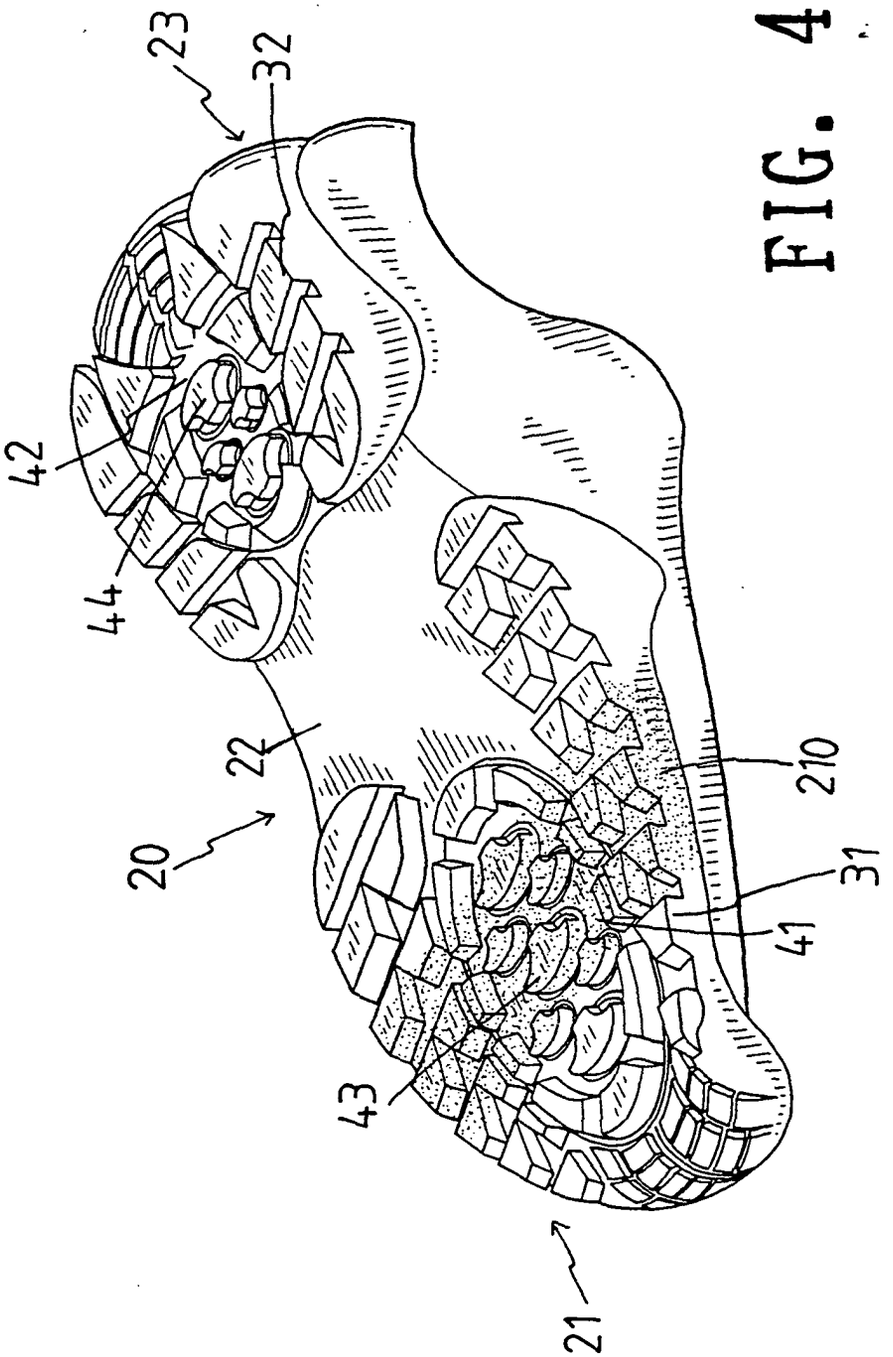

FIG. 4

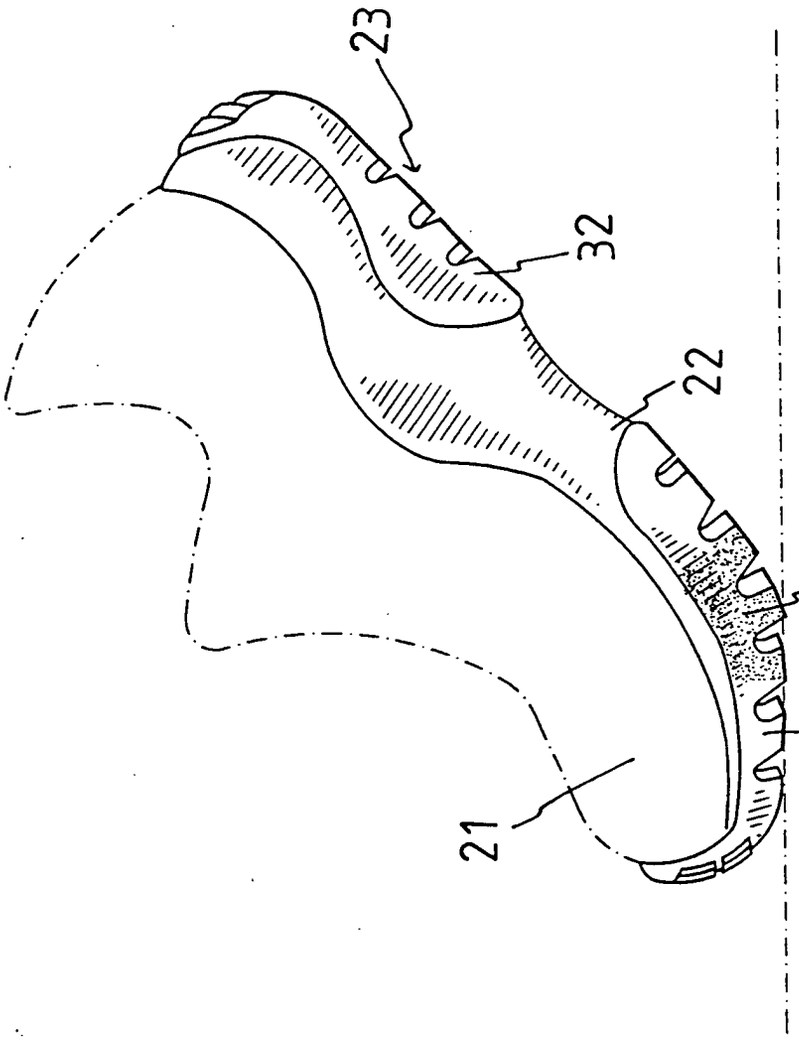

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 1786

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)
X Y	US 5 918 385 A (SESSA RAYMOND V) 6 July 1999 (1999-07-06) * column 2, line 46 - column 3, line 19; figure 1 *	1 4	A43B13/16 A43B13/14 A43B13/18 A43B13/22
X	US 4 060 917 A (CANALE ROMOLO) 6 December 1977 (1977-12-06) * the whole document *	1	
Y	EP 0 628 263 A (HUEMER HANS SEN ;KASTINGER STAPA SCHUHFABRIK HA (AT)) 14 December 1994 (1994-12-14) * column 3, line 16 - column 3, line 40; figure 1 *	4	
A	US 4 501 077 A (YOUNG DELTON W) 26 February 1985 (1985-02-26) * the whole document *	1-3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 November 2001	Cianci, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 11 1786

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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19-11-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5918385 A	06-07-1999	NONE	
US 4060917 A	06-12-1977	NONE	
EP 0628263 A	14-12-1994	AT 398511 B	27-12-1994
		AT 264590 A	15-05-1994
		WO 9211779 A1	23-07-1992
		AT 129385 T	15-11-1995
		AT 143225 T	15-10-1996
		DE 59106784 D1	30-11-1995
		DE 59108238 D1	31-10-1996
		DK 564525 T3	04-03-1996
		DK 628263 T3	17-03-1997
		EP 0564525 A1	13-10-1993
		EP 0628263 A1	14-12-1994
		ES 2081089 T3	16-02-1996
		US 5592755 A	14-01-1997
US 4501077 A	26-02-1985	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82