

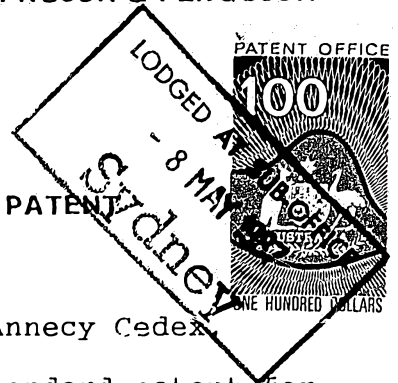
592180/87

SPRUSON & FERGUSON

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

CONVENTION APPLICATION FOR A STANDARD PATENT



We, SALOMON S.A., of Siege Social, Metz-Tessy, Annecy Cedex 74011, France hereby apply for the grant of a standard patent for an invention entitled:

"GOLF SHOE"

which is described in the accompanying complete specification.

DETAILS OF BASIC APPLICATION

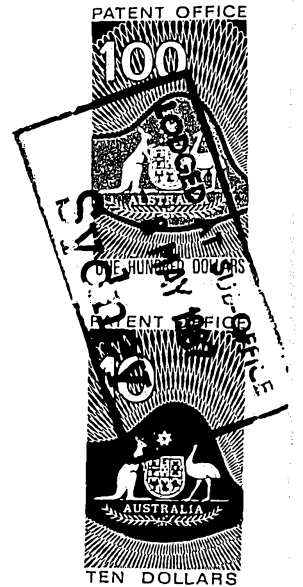
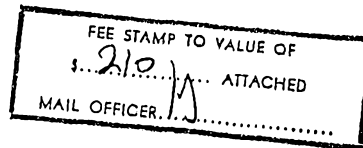
Number of Basic Application:-
86.07102

Name of Convention Country in which Basic Application was filed:-
France

Date of Basic application:-
9 May, 1986

Our address for service is:-

C/- Spruson & Ferguson
Patent Attorneys
Level 33 St Martins Tower
31 Market Street
Sydney New South Wales Australia



DATED this EIGHTH day of MAY 1987

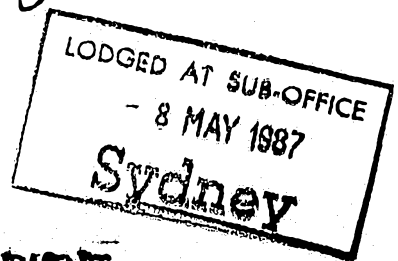
SALOMON S.A.

By:

M.J. Anderson

Registered Patent Attorney.

TO: THE COMMISSIONER OF PATENTS
AUSTRALIA



SBR/JS/0075F

APPLICATION ACCEPTED AND AMENDMENTS

ALLOWED 24-10-89

COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952

DECLARATION IN SUPPORT OF A
CONVENTION APPLICATION FOR A PATENT

In support of the Convention Application made for a patent for an invention entitled:

"GOLF SHOE"

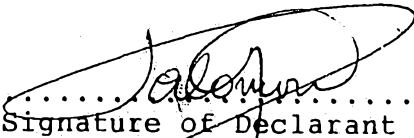
I/We, SALOMON S.A. (G. P. J. SALOMON) Georges Pierre Joseph Salomon
[full name of declarant(s)]

of LA RAVOIRE - METZ-TESSY - 74370 PRINGY PRINGY
[full address of declarant(s) - not post office box]
FRANCE

do solemnly and sincerely declare as follows:-

1. I am/~~We are~~ authorised by SALOMON S.A., the applicant for the patent to make this declaration on its behalf.
2. The basic application as defined by Section 141 of the Act was made in France on 9 May, 1986 by SALOMON S.A.
3. PIERRE DUFOUR, of 20, rue Henry Bordeaux-74000 Annecy, France, is the actual inventor of the invention and the facts upon which the applicant is entitled to make the application are as follows:
The said applicant is the assignee of the actual inventor.
4. The basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention the subject of the application.

DECLARED at Metz-Tessy this 5th day of May 19 87

..... 
Signature of Declarant

TO: THE COMMISSIONER OF PATENTS AUSTRALIA Georges Pierre Joseph Salomon

SBR/JS/0034W

SALOMON S.A.
Societe Metz-Tessy D.P. 104
74011 ANNÉCY CEDEX
Tel. 80 65 41 41
Telex 355 081
SIREN 325 820 751 00015
Capital 35 416 200 F

(12) PATENT ABRIDGMENT (11) Document No. AU-B-72620/87
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 592180

(54) Title
GOLF SHOE

International Patent Classification(s)
(51)* **A43B 013/40 A43B 005/00 A43B 007/32**

(21) Application No. : **72620/87** (22) Application Date : **08.05.87**

(30) Priority Data

(31) Number (32) Date (33) Country
86 07102 09.05.86 FR FRANCE

(43) Publication Date : **12.11.87**

(44) Publication Date of Accepted Application : **04.01.90**

(71) Applicant(s)
SALOMON S.A.

(72) Inventor(s)
PIERRE DUFOUR

(74) Attorney or Agent
SPRUSON & FERGUSON

(56) Prior Art Documents
US 4506462
US 4642911
EP 0092366

(57) Claim

1. A golf shoe wherein the sole is divided into two support zones for the plantar surface of the golfer's foot, with these two zones extending continuously from each of other, and defining a first, "passive" zone which is made of material having a certain hardness, with said passive zone constituting the main seating for the foot, and a second, "active" zone having a shock absorbing element whose constituent material is relatively softer than that of the passive zone, and with which is associated a walking surface having at least one zone whose structure can deform transversely to the longitudinal axis of the sole.

592180

FORM 10

SPRUSON & FERGUSON

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE:

72620/87

Class Int. Class

Complete Specification Lodged:

Accepted:

Published:

Priority:

Related Art:

This document contains the amendments made under Section 49 and is correct for printing.

This document contains the amendments made under Section 49 and is correct for printing.

Name of Applicant: SALOMON S.A.
Address of Applicant: Siege Social, Metz-Tessy, Annecy Cedex, 74011, France
Actual Inventor: PIERRE DUFOUR
Address for Service: Spruson & Ferguson, Patent Attorneys, Level 33 St Martins Tower, 31 Market Street, Sydney, New South Wales, 2000, Australia

Complete Specification for the invention entitled:

"GOLF SHOE"

The following statement is a full description of this invention, including the best method of performing it known to us

SBR/JS/0075F

The present invention relates to golf shoes, and, more particularly, to a sole for a shoe which is adapted to make it easier for the foot, that is, the left foot of a right-handed person, or the right foot of a left-handed person, to roll during the player's swing movement; the term "swing" means the set of movements a golfer performs when striking the ball.

Numerous golf shoes are known wherein the sole of the left shoe (for example) is provided with an inclined plane surface on the side corresponding to its left outer edge; and arrangement of this type allow the foot to "roll" laterally in the direction of the outer edge during the swing and to be relatively stabilised at the end of the movement. Such shoes, are, moreover, often provided with a certain number of studs on the under side of the sole to ensure a good grip on the ground. However, such shoes prove uncomfortably during the execution of the swing because the foot is not cushioned specifically inside the shoe in the area of support corresponding to the outer left edge of the sole, that being an area in which pressures become very significant momentarily.

Other known golf shoes, such as the one described in German Gebrauchsmuster GbM 85366706, are provided with soles which largely project beyond the uppers, in the vicinity of the left outer edge, in such a way as to permit the foot to roll through the elastic deformation of those sole areas. In actual fact, the rolling to the foot occurs more gradually than when a previously known incline plane is used. The fact remains however, that soles of this type, which are still only moderately comfortable, appreciably alter the way the feet grip the ground, which causes certain problems when the player moves.

Other shoes may be mentioned, for example, those described in US Patent 4 506 4262 and in French Patent applications FR 2 522 482 and FR 2 553 636; those shoes have soles comprising several juxtaposed and/or associated elements or inserts with varying cushioning properties. Although such shoes are more comfortable than those previously mentioned, they are primarily intended to be worn in walking races so as to allow the foot to roll correctly on the outer edge of the shoe, which makes them unsuitable for the game of golf.

It is the object of the present invention to overcome or substantially ameliorate the above disadvantages.



There is disclosed herein a golf shoe wherein the sole is divided into two support zones of the plantar surface of the golfer's foot, with these two zones extending continuously from each other, and defining a first, "passive" zone which is made of material having a certain hardness, with said passive zone constituting the main seating for the foot, and a second, "active" zone having a shock absorbing element whose constituent material is relatively softer than that of the passive zone, and with which is associated a walking surface having at least one zone whose structure can deform transversely to the longitudinal axis of the sole.

Fig. 1 is a perspective view of the shoe;

Fig. 2 is a front elevation of the shoe;

Fig. 3 is a front elevation of the shoe shown schematically in a position where the foot is rolling during the swing;

Fig. 4 is a view from below of the sole of the shoe;

Fig. 5 is a view of another embodiment of the sole of shoe of Fig. 1;

Figs. 6 to 9 are sections along VI-VI of Fig. 1 and shown in detail several structures and constructions of the sole of a golf shoe, still according to the invention;

Fig. 10 is a front elevation of a golf shoe according to one variant



KLN/15571

embodiment of the sole;

Figs. 11 and 12 are schematic representations of another embodiment of the sole, the subject of the invention, Fig. 11 being a perspective view of the sole and Fig. 12 is a section along XII-XII of that sole;

Fig. 13 is a view of an embodiment of the sole of the golf shoe wherein the zone of cushioning extends from the front of the foot to the heel;

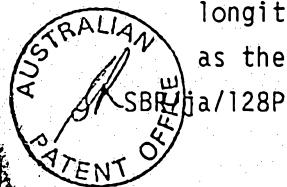
Fig. 14 is a side elevation of a golf shoe wherein the zone of cushioning tapers down progressively to near the heel; and

10 Fig. 15 is a section along XV-XV of the sole of Fig. 13 showing another structure capable of transverse deformation in the direction in which the foot is rolling.

As has been explained above, a left shoe is preferably being described, that is to say, a shoe which is particularly appropriate for right-handed players; it goes without saying that the characteristics which will be described hereinafter are also capable of being incorporated in a right shoe, that being a shoe appropriate for left-hand players (about 10%), without departing from the scope of the invention.

As may be seen in Fig. 1, the golf shoe 1 is shown as though transparent, so that the details of the construction of the sole 2 may be more readily apparent; the said sole has two distinct zones, 3 and 4 respectively, intended to support the left foot of the player. In accordance with the invention, the first zone 3 of the said zones extends beneath the greater part of the foot, from the heel to the front extremity of the sole, whilst the second zone 4 covers only a surface of reduced dimensions situated approximately where the third, fourth and fifth metatarses and the corresponding first phalangers of the player's foot lie; the so-called passive zone 3 constitutes the main base for the foot and is made of a material of a predetermined hardness, whilst the so-called active zone 4 consists on the one hand of a cushioning element 5, corresponding to all intents and purposes to the zone 4, made of a material which is less hard, and on the other hand of a structure 6 which is deformable transversely to the longitudinal axis of the sole 2. Figures 1, 2, 3 and 4 show that the said structure 6 is associated with the active zone 4 so as to give it more transverse flexibility when the player leans on the outer left side of his left foot during the swing. Fig. 3 shows this also. In this embodiment that transverse flexibility is provided by means of a succession of grooves 6' extending approximately parallel to the longitudinal axis of the sole from the front part 7 of the said sole as far as the heel 8, that is, over at least part of the active zone 4 and by

30



means of the thinned extension 9 of the passive zone 3 which supports the cushioning element 5. Studs 10 are then advantageously integral with the sole 2 on the surface 11 which contacts the ground, to ensure a good grip of the ground; preferably, the studs 10 are distributed more or less densely according to how they are inserted into the passive and active zones 3 and 4 respectively of the sole. Thus, the active zone 4 has a significantly higher density of studs 10 than the passive zone 3.

10 In another embodiment of the sole with a deformable structure, as shown in Fig. 5, the grooves 15 are sinuous and in the middle of each groove there is one part which roughly speaking describes an arc of a circle which is approximately concentric with each metatarsal arch. The said grooves are then secant to the exterior edge 16 of the sole 17.

Figure 6 is a section along VI-VI in Fig. 1 of the transverse structure of a sole 20 of a golf shoe. In this embodiment, the cushioning element 22 of the active zone 19 is juxtaposed with the passive zone 21, whilst the deformable structure 18 consists of a relatively flexible wear sole 23 provided on its surface 23' which contacts the ground with projections 24 which are integral with the said sole 23. In such a case the wear sole 23 and the projections thereon 24 will be a one piece injection moulding.

Figure 7 shows a sole 31 wherein the active zone 25 comprises a composite structure whereas the passive zone 26 is made in one piece; in this example, the active zone 25 comprises a wear sole part 28, containing grooves 29, and the cushioning element 27, the wear sole part 28 and the element 27 being made integral with the passive zone 26 through any known means or process such as glueing, sewing, welding, etc. Studs 30 are also provided there, screwed into the surface 31' which contacts the ground and which extends from the passive zone 26 to the sole part 28.

As may be seen in Figure 8, the passive zone 35 extends over the entire surface 36 which contacts the ground, as in the example described in Figures 1, 2, 3 and 4, but the taper of the extension 38 is more gradual, from the right interior of the sole 30 to the left outside edge 40, along an oblique line which joins the inferior angle 41 of the said edge 40, beneath the active zone 37 which is provided with a cushioning element 37'.

In Figure 9, and still according to the invention, the sole 45 presents a transverse cross-section wherein the interior support surface 46 is inclined relative to the surface 47 which contacts the ground. Having in mind that the sole 45 in question is the sole of a left shoe, the inclination of the surface 46 rises from the right interior edge 48 of the said sole 45 up to the outer edge 49 of the latter. In the said sole 45



there is a passive zone 50, one part 54 of which serves as the surface which contacts the ground, and an active zone 51; the latter consists of a cushioning element 52 and a sole 53 which contacts the ground corresponding to the said element; in this embodiment, the sole part 53 which contacts the ground is relatively flexible, and, in conjunction with the elasticity of the cushioning element 52, determines the cushioning and deformability characteristics of the sole 45, at least in the transverse direction.

10 As shown in Figure 10, the sole 55 provides a transverse plantar surface of support 56 for the foot, giving it an inclined seating relative to the surface 57 which contacts the ground, just as described above with reference to Figure 9; on the other hand, in order to facilitate the rolling of the foot on the left outer edge 58 of the sole 55, an inclined planar surface 59, secant to the surface 57 which contacts the ground, is provided on the lower side of the said edge 58.

20 As shown in Figures 11 and 12, the sole 60 may also provide a transverse base for the foot with varying plantar support surfaces. Thus, the plantar support surface 61 at the heel level remains substantially parallel to the surface 62 which contacts the ground, whilst the support surface 63, in the front part of the foot, is inclined towards the top from the interior edge 64 towards the exterior edge 65.

30 In another embodiment shown in Figure 13, the sole 70 is provided with a cushioning element 71 which extends to all intents and purposes from the front part 72 occupied by the third, fourth and fifth phalangers of the foot to the vicinity of the heel 73; the said element 71 varies in thickness, so that the front part 72 is thinner than the part located at the level of the heel 73. In this example, the sole 70, when viewed in elevation in the direction of its length, varies in thickness, increasing evenly towards the region of the heel 73.

40 Finally, another embodiment of the sole 75, shown in Figure 14, teaches relatively constant thickness in the direction of its length when the thickness of the cushioning element 76 progressively diminishes from the front part 77 occupied by the third, fourth and fifth first phalangers of the foot to the heel 78.

Figure 15 is a transverse section through another structure of a sole 80 in accordance with the invention, wherein the passive zone 81 comprises a tapered extension 82 extending below the cushioning element 83, the extension 82 and the element 83 constituting the so-called active zone 84, as before. A succession of clefts 85 made in the surface 87 which contacts the ground comprise the deformable structure 86 which promotes the transverse flexibility of the sole.



SBR/ja/128P

The claims defining the invention are as follows:

1. A golf shoe wherein the sole is divided into two support zones for the plantar surface of the golfer's foot, with these two zones extending continuously from each of other, and defining a first, "passive" zone which is made of material having a certain hardness, with said passive zone constituting the main seating for the foot, and a second, "active" zone having a shock absorbing element whose constituent material is relatively softer than that of the passive zone, and with which is associated a walking surface having at least one zone whose structure can deform transversely to the longitudinal axis of the sole.

2. Golf shoe according to claim 1, wherein the active support zone, covers at least the surface corresponding substantially to the zone of a golfer's foot from the 3rd, 4th and 5th metatarsals to the respective first phalanges thereof.

3. Golf shoe according to claim 1 or 2, wherein the shock absorbing element extends over a surface corresponding at least to that of the active zone.

4. Golf shoe according to claim 3, wherein the shock absorbing element extends over a surface greater than that of the active zone.

5. Golf shoe according to claim 1 or 2, wherein the zone having a transversely deformable structure to the walking sole extends over a surface corresponding at least to that of the active support zone.

6. Golf shoe according to claim 1 or 2, wherein the shock absorbing element is inserted in the sole continuously, on the side of the plantar surface of the foot, with a first passive support zone.

7. Golf shoe according claim 5, wherein the deformable structure is comprised of a series of grooves made in the sole on the side of the walking surface.

8. Golf shoe according to claim 7, wherein the grooves are essentially parallel to each other and to the longitudinal axis of the sole.

9. Golf shoe according to claim 7, wherein the grooves are sinuous and define at least one circle arc curve the ends of which face the left outer edge and the sole.

10. Golf shoe according to claim 1 or 2, wherein the deformable structure is comprised of a tapered extension of the passive support zone constituting the walking sole which extends under the shock absorbing element.



11. Golf shoe according to claim 1 or 2, wherein the sole comprises an inclined plane on the outer edge thereof and this inclined plane is secant to the walking surface of the sole.

12. Golf shoe according to claim 1 or 2, wherein the shock absorbing element extends longitudinally at least into a zone approximately between the position of the 3rd, 4th and 5th first phalanges of the foot, and the heel.

13. Golf shoe according to claim 1 or 2, wherein the thickness of the shock absorbing element is constant in the active support zone.

14. Golf shoe according to claim 1 or 2, wherein the shock absorbing element comprises a thickness which tapers towards the passive support zone, from the outer edge of the active support zone.

15. Golf shoe according to claim 1 or 2, wherein the sole has a general transverse section in which the plantar surface of the foot is parallel to the lower surface (or walking surface) which comes into contact with the ground.

16. Golf shoe according to claim 1 or 2, wherein the sole has a general transverse section in which the plantar surface of the foot is substantially inclined with respect to the lower surface (or walking surface) which comes into contact with the ground, with the thickness of the sole increasing from the inside towards the outside of the foot.

17. Golf shoe according to claim 1 or 2, wherein the sole has a transverse section in which the position of the plantar surface of the foot varies progressively from the heel to the front of the foot, from a parallel position to an inclined position with respect to the walking surface.

18. Golf shoe according to claim 1 or 2, wherein the walking surface of the sole is provided with a certain number of spikes.

19. Golf shoe according to claim 18, wherein the spikes are attached to the walking surface of the sole.

20. Golf shoe according to claim 18, wherein the spikes are unitary with the outsole.

21. Golf shoe according to claim 19, wherein the number of spikes is greater in the part of the sole corresponding to the active zone than in the passive support zone.



22. A golf shoe substantially as hereinbefore described with reference to the accompanying drawings.

DATED this TWENTIETH day of SEPTEMBER 1989

Salomon S A

Patent Attorneys for the Applicant
SPRUSON & FERGUSON

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150

151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200

201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250



FIG. 1

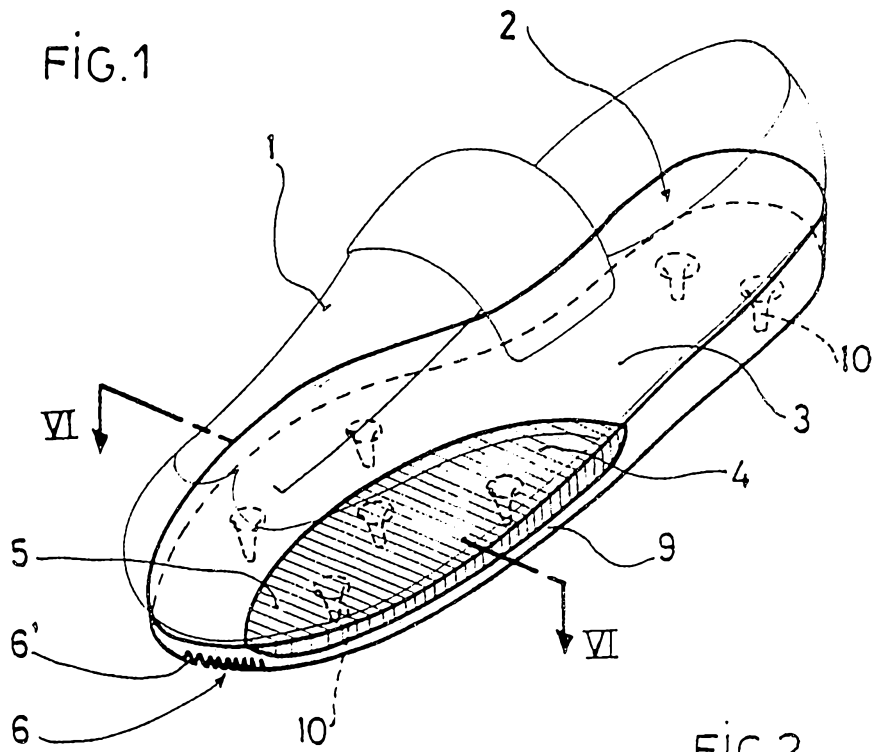


FIG. 2

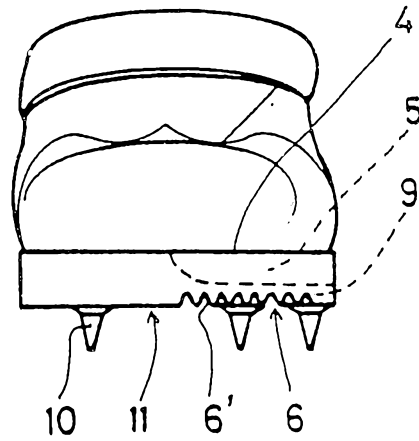


FIG. 3

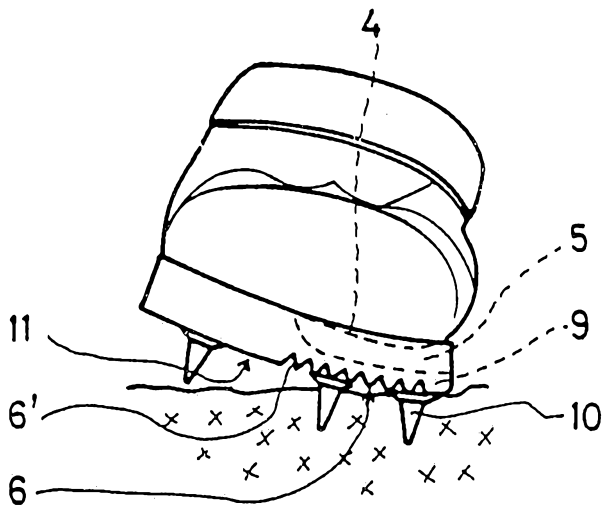


FIG. 4

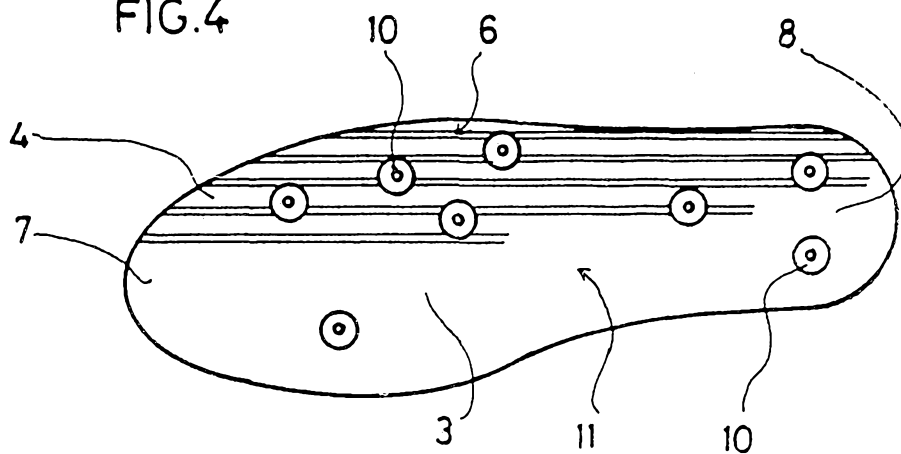


FIG. 5

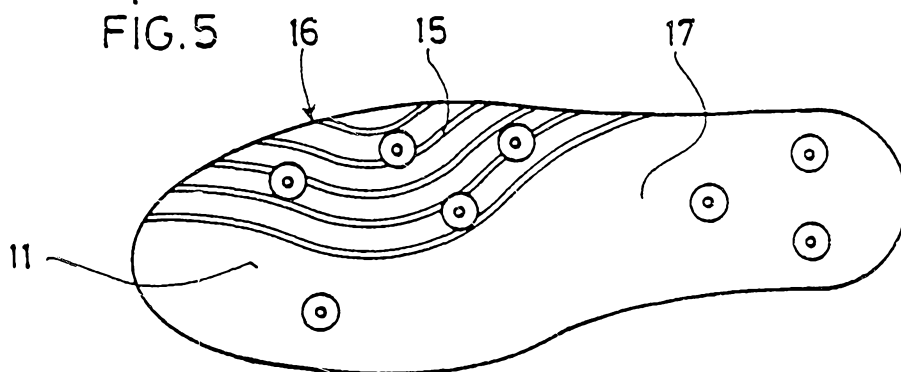


FIG. 7

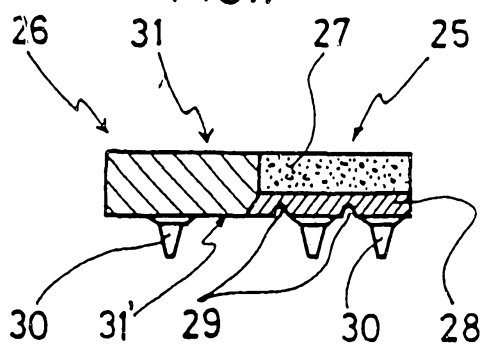


FIG. 6

