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(54) MULTIPURPOSE SHOES.

(57) This invention relates to multipurpose shoes which can be used for a plurality of purposes, and each of which consists of a combination of a shoe body provided in the lower surfaces thereof with a plurality of spike-setting bores, and a spike set composed of at least two groups of different types of spikes, each of the spikes which constitute the spike groups being fixed exchangeably in the spike-setting bores.

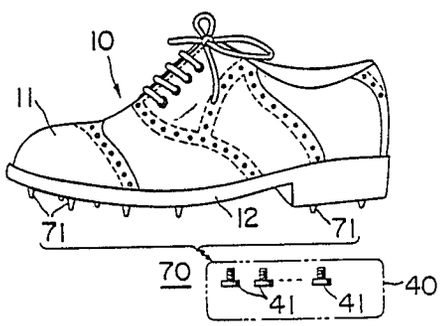

FIG. 1

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MULTIPURPOSE SHOES

Techinical Field

The present invention relates to a pair of shoes which can be used for various purposes.

Background Art

Among footwear used by people, in addition to general shoes such as town shoes, casual shoes, business shoes and so on which are generally used in daily life, there are various special purpose shoes such as golf shoes, fishing boots, shoes for mountain climbing, other sport shoes, rain shoes, ice shoes and so on.

One selects and puts on a pair of shoes depending upon his purpose, so that there are various kinds of different shoes. In the case of sports, he carries a pair of shoes suitable for a specific sport to a sport ground. For instance, in the case of playing golf, a pair of general purpose shoes are used until he arrives at a golf course while carrying a pair of golf shoes separately in a bag. Therefore, not only does a bag or the like which he carries become heavy in weight, but also after playing golf, the pair of shoes which have become dirty must be put into the bag so that their hanlding becomes very cumbersome.

Furthermore, in the case of bad weather when it rains or the snow falls, he tends to slip because of the flat soles of shoes so that an accident may happen. Therefore, rain shoes, snow shoes or ice shoes whose bottom soles are corrugated are used, but when it stops raining or snow stops falling or when he arrives at a dry place, he tends to suffer from leg fatigue because of the nature of such special shoes, which moreover generate noise in walking. Furthermore, they are unsightly in a dry place.

In addition, it is not preferable from the standpoint of cost, storage place, maintenance and so on to keep special shoes which are used only for a limited short period every year in addition to the business shoes.

In view of the above, the present invention has been made and its object is to provide multipurpose shoes and more particularly a pair of multipurpose shoes which can be used commonly for various purposes.

Disclosure of Invention

Multipurpose shoes in accordance with the present invention, which are used commonly for various conditions, are characterized in that each shoe body has a bottom sole formed with a plurality of spike-receiving holes in combination with at least two different spike sets each comprising a group of spikes, and that a plurality of spikes constituting a plurality of spike groups are detachably or interchangeably fitted into corresponding spike receiving holes.

According to the present invention, one pair of shoes can be used for multiple purposes by selecting a spike group depending upon a specific purpose or condition and interchangeably fitting the spikes into their corresponding spike-receiving holes.

BRIEF DESCRIPTION OF DRAWINGS

In the accompanying drawings:

Fig. 1 is a perspective view showing the outer appearance of a multipurpose shoe in accordance with the present invention;

Fig. 2 is a bottom view illustrating the outer sole of a multipurpose shoe in accordance with the present invention;

Fig. 3 is a partial enlarged sectional view of the shoe taken along the line III-III of Fig. 2;

Figs. 4(a) through 9(b) show examples of spikes used in multipurpose shoes in accordance with the present invention, in which figures with (a) are top views while those with (b) are sectional views,

Fig. 4 illustrating a spike of a group for a general or common shoe,

Fig. 5 illustrating a spike of a group for a rain shoe,

Fig. 6 illustrating a spike of a group for a snow or ice shoe,

Fig. 7 illustrating a spike of a group for a golf shoe,

Fig. 8 illustrating a spike of a group for a fishing boot, and

Fig. 9 illustrating a spike group for a shoe used for mountain climbing;

Figs. 10(a) and 10(b) are a top view and a sectional view, respectively, illustrating one example of a nut member used for attachment of spikes; and

Figs. 11 and 12 are a perspective view and a plan view illustrating nut members mounted on respective embedded plates,

Fig. 11 showing two nut members mounted on an embedded plate, and

Fig. 12 illustrating more than three nut members mounted on one embedded plate.

Best Mode for Carrying out the Invention

Now referring to Figs. 1, 2, and 3, a preferred embodiment of the present invention will be described.

A shoe body 10 comprises a main body portion 11 formed in accordance with the shape of a foot of a man and a bottom portion 12 covering the lower portion of the main body portion 11. The main body portion 11 is of a conventional dimension and structure. The side of the bottom portion 12 which contacts the ground is formed with a plurality of holes for receiving spikes therein. As shown in detail in Fig. 3, the bottom portion 12 is composed of an outer bottom 12a, an intermediate bottom 12b which functions as a water-proofing means, a cushion filler 12c and an inner bottom 12d laminated in the order named from the ground-contact surface of the bottom portion 12. Reference numeral 11a designates a tip leather portion which is a part of the main body portion 11.

A through hole 13 is formed through the outer bottom 12a of the outer bottom 12, and a nut member 21 is fitted into this through hole 13. An internally threaded screw hole 21a which has the function of receiving a spike is formed at the center of the nut member 21, and a flange portion 21b is extended at one end of the nut member 21. The flange portion 21b is interposed between the outer bottom 12a and the intermediate bottom 12b so that the flange portion 21b is clamped by both bottoms 12a and 12b. A plurality of nut members 21 are provided over the bottom portion 12 with a suitable pattern.

By utilizing the tapped holes 21a of the nut members 21, the spikes are interchangeably attached to the shoe body 10. The spikes to be attached are combined as a spike set for a respective shoe body 10. The spike set comprises more than two kinds of spike groups each of which consists of the same number of spikes.

In the example shown in Fig. 1, a spike set consisting of a first spike group 70 and a second spike group 40 is attached interchangeably to the shoe body 10. The first spike group 70 consists of a plurality of golf spikes 71, while the second spike group 40 consists of a plurality of general or ordinary spikes 41. In the case of the golf spikes 71, as shown in detail in Fig. 7, each golf spike 71 comprises a disk-shaped portion 71a made of a metal or a plastic, a projection 71b extended from one surface of the disk-shaped portion 71a and a screw portion 71c extended from the other surface of the disk-shaped portion 71a in the direction perpendicular to the disk-shaped portion 71a and made of a metal or a plastic. Reference numeral 71d denotes engaging holes used when the golf spike 71 is attached or detached. As shown in detail in Fig. 4, the general or ordinary spike 41 comprises a flat-disk-shaped portion 41a made of a metal or a plastic, an elastic member 4lb attached to the disk-shaped portion 41a to cover one surface thereof and a screw portion 41c made of a metal or a plastic and extended from the other surface of the disk-shaped portion 41a in the direction perpendicular thereto. Reference numeral 4ld designates an engaging hole used when the general or ordinary spike 41 is attached or detached.

Next, the multipurpose shoe in accordance with the present invention consisting of the combination of the shoe body 10 and the golf-spike group 70 or the general or ordinary spike group 40 will be described depending upon a specific use.

Figs. 1, 2, and 3 show the golf spike group 70 of the spike sets attached to the bottom portion 12 of the shoe body 10. The golf spike 71 is attached by screwing the screw portion 71c into the tapped hole 21a. In this case, when a water-proof packing 31 is interposed between the golf spike 71 and the outer bottom 12a, the intrusion of water and fine particles into the tapped hole 21 can be prevented, so that when the golf spike group 70 is replaced by the general or ordinary spike group 40, the engagement between the externally threaded screw and the internally threaded screw hole can be positively ensured, and furthermore damage to the screw and the tapped hole can be avoided.

When the golf-spike group 70 is attached to the shoe body 10 in the manner described above, the shoe can accomplish the function of a golf shoe.

After playing golf, pins (not shown) are fitted into a pair of engaging holes 71d and are rotated so that all of the golf spikes 71 are removed. Thereafter, the general or ordinary spike group 40 is selected, and each spike 41 is screwed into its corresponding tapped hole 20a so that the general or ordinary spike group 40 is attached to the shoe body 10. Consequently, the shoe can accomplish the function of a general or an ordinary shoe such as a town shoe, a casual shoe or the like. It follows therefore that even after completion of a golf play, he can go home with the same pair of shoes. In this case, the goods which the golfer must carry is only the golf-spike group 70.

In accordance with the above described example, it is not necessary to carry a pair of golf shoes to a golf course, and it is sufficient to carry only the

golf-spike group. In the case of the construction of the general or ordinary shoe, flat and elastic projections are only extended from the bottom portion 12, so that when he walks in a room or a road, there arises no problem about noise and outer appearance.

In addition, in the general or ordinary case, the shoe fitted with the general or ordinary spikes 41 is used so that wear of the bottom portion 12 of the shoe body 10 can be reduced to a minimum, whereby the service life and durability of the shoe can be remarkably improved.

Figs. 5, 6, 8 and 9 show spikes, respectively, used for other purposes.

Fig. 5 shows a spike suitable for a shoe body to be used as a rain shoe. This rain shoe spike 51 comprises a disk-shaped portion 51a made of a metal or a plastic, an elastic member 51b fitted over the disk-shaped portion 51a to cover one surface thereof and a screw portion 51c made of a metal or a plastic and extended from the other surface of the disk-shaped portion 51a in the direction perpendicular thereto. The surface of the elastic member 51b is formed with relatively small ridges and valleys in order to prevent slippage. Furthermore, the elastic member 51b is made of a rubber containing a non-slip agent. Reference numeral 51d indicates a pair of engaging holes which are used to attach or detach the rain shoe spike 41.

Fig. 6 shows a spike suitable for a shoe body to be used as a snow or ice shoe. The snow or ice spike 61 comprises a flat disk-shaped portion 61a, an elastic member 61b fitted over the disk-shaped portion 61a so as to cover one surface thereof, a screw portion 61c extended from the other surface of the disk-shaped portion 61a in the direction perpendicular thereto and a projection 61e extended from said one surface of the disk-shaped portion 61a and made of a metal or a plastic. The surface of the elastic member 61b is formed with relatively large ridges and valleys in order to prevent slippage. The elastic member 61b is made of a compound rubber which exhibits a large degree of frictional resistance against snow or ice. Reference numeral 61d represents an engaging hole similar to those described above.

Fig. 8 shows a spike suitable for a shoe body which is to be used as a fishing boot or shoe. This fishing spike 81 is so designed and constructed that a fisherman is prevented from slipping even on a rock wetted with sea water or the like and, like the above-mentioned snow or ice spike 61, comprises a disk-shaped portion 81a, an elastic member 81b, a screw portion 81c and a projection 81e. The surface of the elastic member 81b is formed with slip-preventive ridges and valleys which are preferably larger in size than those of the rain spike 51 but are smaller in size than those of the snow or ice spike 61. The elastic member 81b is made of a rubber containing a non-slip agent. Reference numeral 81d represents an engaging hole.

Fig. 9 shows a spike suitable for a shoe body which is to be used as a mountain climbing boot or shoe. This mountain climbing spike 9l comprises a flat disk-shaped part 91a, an elastic member 91b of frustoconical shape attached to this disk-shaped part 91a as though to enwrap the outer surface thereof and having a relatively thick body, and a screw part 91c formed on the reverse surface of the disk-shaped part 91a perpendicularly thereto. The elastic member 91b has a relatively large concavity and convexity formed on its front face and is fabricated from a compound rubber material of excellent abrasion resistance. Reference numeral 91d designates an engaging hole.

The spike groups as shown in Figs. 5 through 9 are combined with the general or ordinary spike group as shown in Fig. 4 and constitute a spike set. Each spike group can be interchangeably attached to the shoe body 10 so that the latter can be used as a multipurpose shoe which has multiple functions.

For instance, when the general or ordinary spike group and the snow or ice spike group as shown in Fig. 6 are combined as a spike set and then combined with the shoe body, the shoe can have a double function of a general or ordinary shoe and a snow or ice shoe. It follows therefore that when one travels from a relatively warm region to a region covered with snow, the personal baggage can be reduced both in size and weight. Furthermore, in both regions, the combined shoe can be used effectively.

When a spike set consisting of more than three spike groups is combined with the shoe body, it is apparent that the shoe can accomplish more than three functions. When he buys spike groups for his specific purposes, the shoe can be changed to a shoe suitable for a specific condition at any time. In this case, it is advantageous because the cost as well as the storage space can be reduced.

Fig. 10 shows an example of nut members used for attachment of a spike. The nut member 101 comprises a cylindrical portion 101b having an internally threaded screw hole 101a of the cylindrical portion 101b, and a flange portion 101c extended from one end of the cylindrical portion 101b. The flange portion 101c is bent radially inwardly over and around an embedded plate 102 in such a way that it embraces the opposite sides of the embedded plate 102. The embedded plate 102 is securely embedded, for instance, between the outer bottom 12a of the bottom portion 12 of the shoe body and the intermediate bottom 12b. The other end of the tapped hole 101a opposite to the surface in contact with the ground is covered with a

water-proof sheet member 103. When the water-proof sheet member 103 is used, the intrusion of water through the tapped holes 101a into the interior of the shoe body can be prevented.

Fig. 11 shows an embedded plate with two nut members. The embedded plate 112 is made of one rectangular metal plate and two nut members 101 are mounted at the opposite ends of the embedded plate 112 in the manner described above. When the embedded plate 112 with the nut members 101 is securely embedded in the bottom portion of the shoe body, the nut members 101 can be securely and easily embedded in the bottom portion of the shoe body.

Fig. 12 shows another example of the embedded plate 122 which is shaped in conformity with the profile of the bottom portion of the shoe body and which has more than three nut members 101 arranged in a suitable pattern adjacent to the periphery of the embedded plate 122. The method for mounting the nut members 101 is substantially similar to that described above with reference to Fig. 10, and the flange portion 101c is bent, whereby it is securely held in position. When a plurality of nut members 101 are mounted on a single embedded member 122, the method for embedding the nut members 101 is much facilitated. Furthermore, the replacement of the nut member or nut members whose tapped holes are damaged by new nut members can be carried out in a simple manner. Since the embedded plate 122 is large in size, the nut members can be securely held in position and can withstand a heavy load.

In the above examples, the spike groups are described as being attached to the shoe body by the screws, but it is possible to employ a method in which an attachment hole is provided with a mechanism for preventing the spike from falling out of the hole or a method in which each spike is extended from the interior of the shoe body through the bottom portion in such a way that the projection is extended beyond the bottom portion.

INDUSTRIAL APPLICABILITY

As described above, according to the present invention, a suitable spike group is selected for a specific purpose and is fitted into the spike receiving holes after the formerly used spike group has been removed so that a single shoe body can be modified for multiple purposes.

Claims

1. A multipurpose shoe characterized by comprising a combination of a shoe body whose bottom surface is formed with a plurality of spike receiving holes and a spike set consisting essentially of at least two spike groups and a plurality of spikes which compose each of said spike groups being interchangeably fitted into said spike receiving holes.

2. A multipurpose shoe as set forth in Claim 1, wherein said spike receiving holes are tapped holes.

3. A multipurpose shoe as set forth in Claim 1, wherein said spike receiving holes are formed in nut members embedded in the bottom portion of said shoe body.

4. A multipurpose shoe as set forth in Claim 3, wherein said nut members are mounted on an embedded plate which is securely embedded and held in position in the bottom portion of said shoe body.

5. A multipurpose shoe as set forth in Claim 4, wherein two nut members are mounted on each embedded plate.

6. A multipurpose shoe as set forth in Claim 4, wherein more than three nut members are mounted on each embedded plate.

7. A multipurpose shoe as set forth in Claim 1, wherein each spike group consists essentially of a plurality of spikes each comprising a flat disk-shaped portion, an elastic member fitted over said disk-shaped portion to cover one surface thereof and a screw portion extended from the other surface of said disk-shaped portion in the direction perpendicular thereto.

8. A multipurpose shoe as set forth in Claim 7, wherein the surface of said elastic member is formed with ridges and valleys.

9. A multipurpose shoe as set forth in Claim 7, wherein a projection is extended from said one surface of said disk-shaped portion beyond the surface of said elastic member.

10. A multipurpose shoe as set forth in Claim 7, wherein said elastic member is made of rubber.

11. A multipurpose shoe as set forth in Claim 7, wherein said disk-shaped portion and said screw portion are made of a metal.

12. A multipurpose shoe as set forth in Claim 1, wherein each spike group comprises a plurality of spikes each of which consists essentially of a disk-shaped portion, a projection extended from one surface of said disk-shaped portion and a screw portion extended from the other surface of said disk-shaped portion in the direction perpendicular thereto.

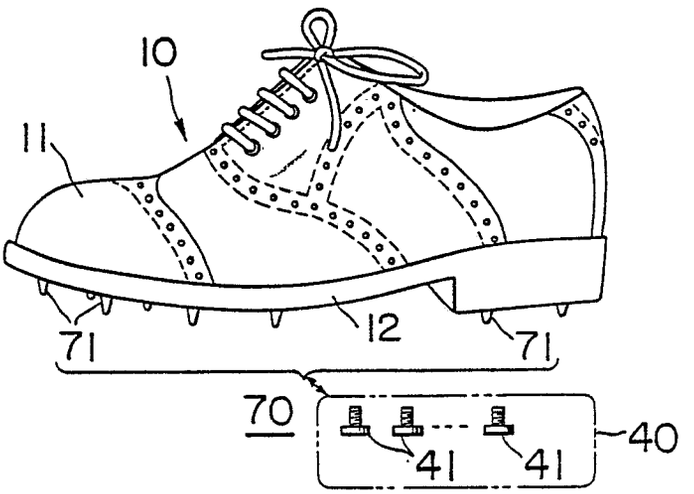


FIG. 1

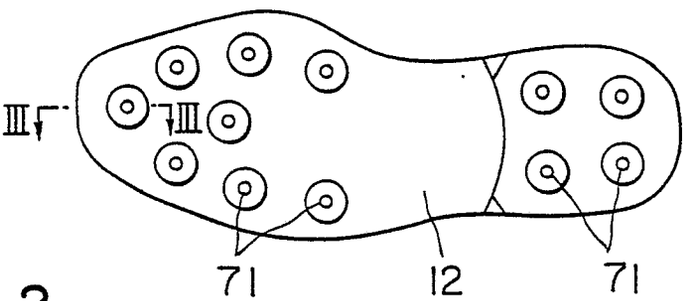


FIG. 2

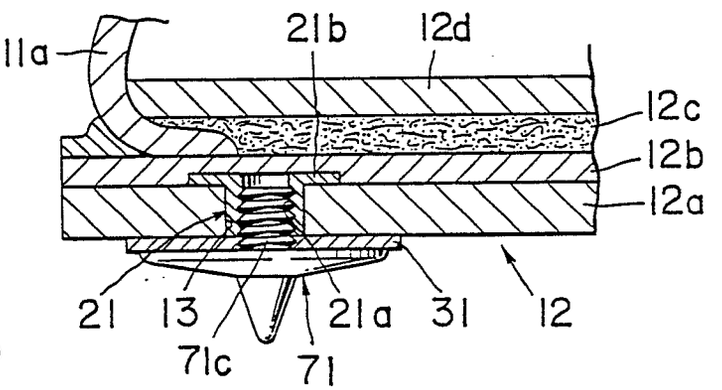
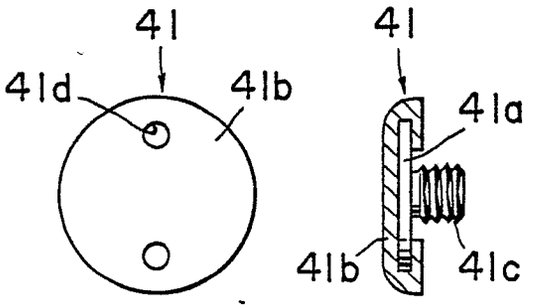
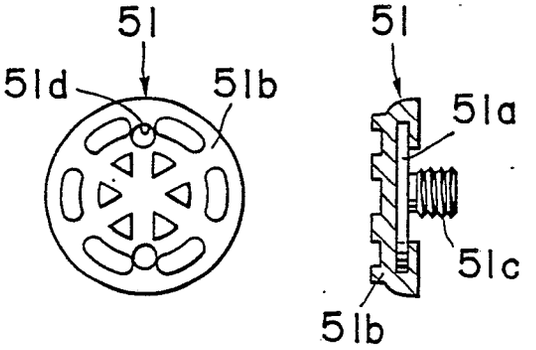


FIG. 3



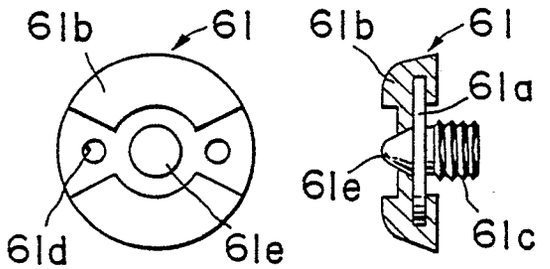
(a) (b)

FIG. 4



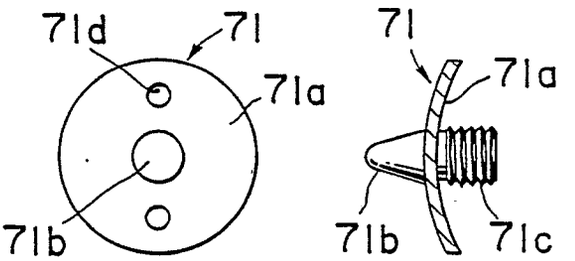
(a) (b)

FIG. 5



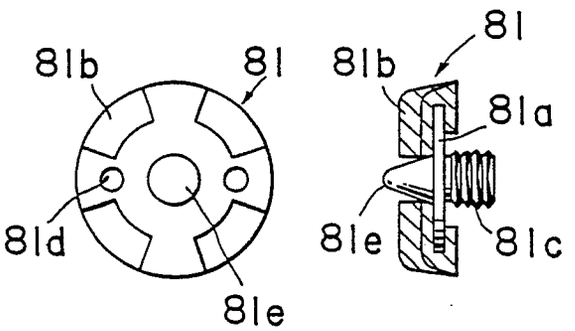
(a) (b)

FIG. 6



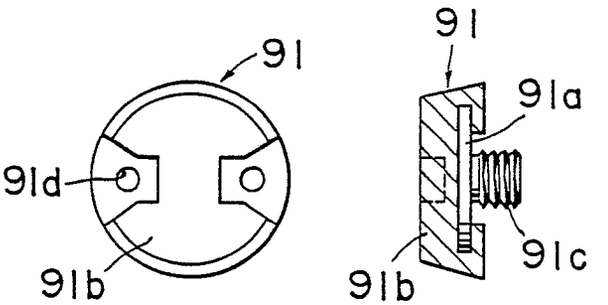
(a) (b)

FIG. 7



(a) (b)

FIG. 8



(a) (b)

FIG. 9

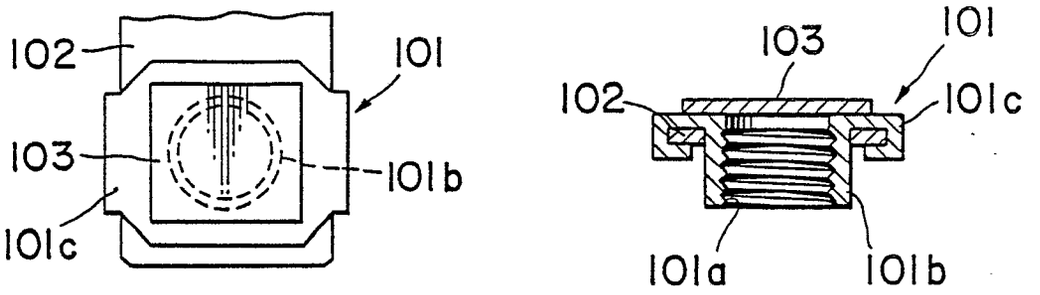


FIG. 10

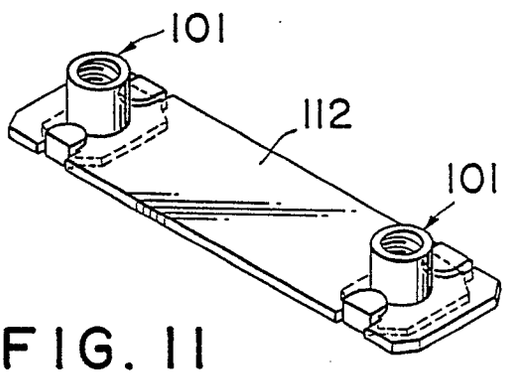


FIG. 11

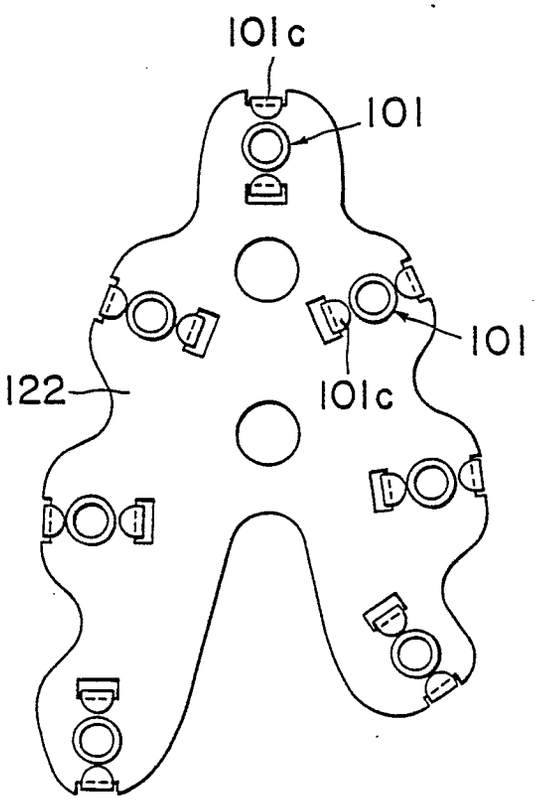


FIG. 12

INTERNATIONAL SEARCH REPORT

International Application No PCT/JP87/00602

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl[4] A43B13/26, A43C15/02

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System [5]	Classification Symbols
IPC	A43B13/26, A43C15/02

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [6]

Jitsuyo Shinan Koho 1960 - 1986
Kokai Jitsuyo Shinan Koho 1971 - 1986

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
Y	JP, U, 49-88938 (Kawashima Kanichi) 1 August 1974 (01. 08. 74) (Family: none)	1-12
Y	JP, U, 57-126801 (Araishi Nobuto) 7 August 1982 (07. 08. 82) (Family: none)	1-12
Y	JP, U, 58-19602 (Yamashita Harumi) 7 February 1983 (07. 02. 83) (Family: none)	3-6
Y	JP, U, 57-192204 (The Okamoto Riken Gomu Co., Ltd.) 6 December 1982 (06. 12. 82) (Family: none)	1-12
Y	JP, U, 60-25404 (R.K. Mizuno Sporting Goods Co., Ltd.) 21 February 1985 (21. 02. 85) (Family: none)	1-12

* Special categories of cited documents: [16]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
October 22, 1987 (22.10.87)	November 2, 1987 (02.11.87)

International Searching Authority [1]	Signature of Authorized Officer [20]
Japanese Patent Office	