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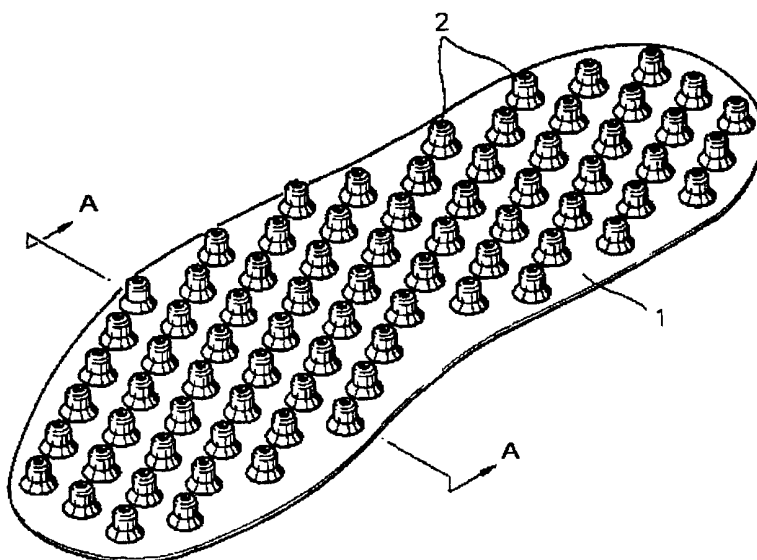
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[Continued on next page]

(54) Title: INSOLE



(57) Abstract: Disclosed is an insole (1) for shoes having a plurality of protrusions (2) which have a ventilation hole (4) formed through a center of the protrusion and are connected to the insole (1) with a thin slanted portion (3) extended from the upper surface of the insole to the lower end of the protrusion and having a diameter gradually increased along the downward direction thereof, thereby being molded integrally with the insole. Since the protrusions (2) protrude above the upper surface of the insole (1), even if they are collapsed, the insole maintains a continuous therapeutic effect based on the reflex zone therapy, and further since the protrusions can be tilted, the insole provides a user with a good feeling and the massage effect of his foot-sole.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INSOLE

Field of the Invention

5 The present invention relates to an insole for shoes; and, more particularly, to an insole for shoes having a ventilating hole allowing a foot-sole to be ventilated therethrough and providing a therapeutic effect based on reflex zone therapy.

10 Description of the Prior Art

A term "reflex zone therapy" describes a treatment based on the established fact that special zones of the soles and palms are correlated to certain internal organs.

15 In this reason, a plurality of insoles for shoes having a therapeutic effect based on the reflex zone therapy have been proposed. These insoles for shoes also can prevent a moisture generation which may occur from a contact between a foot-sole and the insole.

Especially, in order to maximize ventilation capability in the shoe, 20 even a configuration where an outside air is forced to be introduced into the shoe by a pumping action provided in an outsole of the shoe has been proposed, which has a shortcoming of an increased manufacturing cost.

To overcome the shortcoming, Korean Utility Model Publication No. 1992-7619 discloses an insole for shoes having a therapeutic effect based 25 on the reflex zone therapy and an increased ventilation capability. In the prior art, the insole has ceramic powder integrally mixed and molded therewith, an annular groove formed on its upper surface, and a plurality of reflex zone protrusions protruding from the upper surface each of

which has a ventilation hole and a hollow portion. The insole also has a plurality of arcuate protrusions each of which is formed on an lower surface of the insole, corresponding to positions of the reflex zone protrusions and has an air passage communicating with the ventilation
5 hole.

The prior art described above, however, has shortcomings. First, when the reflex zone protrusion is pressurized by the foot, it is easily laid flat. As a result, it cannot provide an appropriate massage onto the reflex zones of the foot-sole. Secondly, the reflex zone protrusion
10 which has been collapsed is not properly restored to its original shape in the prior art.

Detailed description

15 It is, therefore, an object of the invention to provide an insole for shoes having a maximized therapeutic effect based on the reflex zone therapy as well as an enhanced ventilation capability.

Another object of the invention is to provide an insole for shoes having a plurality of protrusions, comprising hard projections to maintain forms
20 thereof as well as soft projections and also being capable of coloring with various colors.

Further object of the invention is to provide an insole for shoes which is usable as an insole liner for shoes as well as an insole for shoes, having a therapeutic effect based on the reflex zone therapy as
25 well as a massage effect.

The other object of the invention is to provide an insole for shoes which is securely fitted into shoes in wearing and easily detachable.

In order to accomplish the objects as described above, the insole for shoes according to the present invention having a plurality of protrusions, is characterized in that each of the protrusions has a ventilation hole formed through a center of the protrusion, the protrusion being connected with a thin slanted portion protruding from the insole, while a plurality of smaller auxiliary protrusions may be formed between the larger protrusions, so that the protrusions are integrally molded with the insole.

10 The insole may be made of soft synthetic resin, and more preferably made of silicone.

Accordingly, the insole according to the invention is not deformed with good resilience, and when the protrusions are collapsed, the insole maintains a therapeutic effect based on the reflex zone therapy as the protrusions is slightly upper on the insole, and further the insole serve a massage effect as well as a therapeutic effect based on the reflex zone therapy as the protrusion is freely tiltable in every direction when it is pressurized by the foot.

In another embodiment, the present invention is further characterized in that the invention provides a set of insoles comprising the first insole for shoes having a plurality of protrusions and the second insole for shoes provided with a plurality of holes, each hole of the second insole being corresponding to each protrusions of the first insole.

25 Also, protrusions may be formed on the second insole.

Further, the insole for shoes according to the present invention having a plurality of protrusions, is characterized in that each of the protrusions has a ventilation hole formed through a center of the

protrusion, the protrusion being connected with a thin slanted portion protruding from the insole, while the protrusions are upper of the surface of the insole and integrally molded with the insole, and the insole is further provided with a cover having holes corresponding to the
5 protrusions respectively and covering the upper surface of the insole and the brim of the lower surface of the insole.

As one aspect of the present invention, a plurality of lug holes are formed through the insole; and the insole further comprises a pad having on its lower portion a double-faced tape attached to both the pad and an
10 upper surface of the outsole of the shoe, and a plurality of lugs protruding from an upper surface of the pad, the lugs positioned to correspond to the lug holes, respectively and insertable into the lug holes.

15 Brief Description of the Drawings

Fig. 1 illustrates a perspective view of an embodiment of the inventive insole;

Fig. 2 shows a sectional view of the inventive insole shown in Fig. 1, when taken along the line A-A;

20 Fig. 3 depicts a partial enlarged view of the part B in Fig. 2;

Fig. 4 presents a sectional view of the reflex zone knob showing its vertical movement;

Fig. 5 represents a section view of the reflex zone knob showing its tilting movement;

25 Fig. 6 represents a sectional view of the reflex zone knob provided with auxiliary protrusions;

Fig. 7 describes a perspective view of another embodiment of the inventive insole;

Fig. 8 describes a perspective view when the insole of Fig. 7 is divided into parts;

Fig. 9 shows a sectional view of the inventive insole shown in Fig. 7, when taken along the line C-C;

5 Fig. 10 describes a perspective view of another embodiment of the inventive insole;

Fig. 11 shows a sectional view of the inventive insole shown in Fig. 10, when taken along the line D-D;

10 Fig. 12 shows a perspective view of the insole in Fig. 10 put on shoes;

Fig. 13 describes a perspective view of another embodiment of the inventive insole; and

Fig. 14 discloses a sectional view of the inventive insole shown in Fig. 13, when taken along the line E-E.

15

Detailed Description of the Preferred Embodiments

The above and other objects and features of the instant invention will become apparent from the following description of preferred embodiments taken in conjunction with the accompanying drawings.

20 Fig. 1 illustrates a perspective view of the first embodiment of the inventive insole; Fig. 2 shows a sectional view of the inventive insole shown in Fig. 1, when taken along the line A-A; and Fig. 3 depicts a partial enlarged view of the part 'B'. Referring to Figs. 1 through 3, the inventive insole for shoes 1 made of soft synthetic resin has reflex
25 zone knobs 2 protruding from the upper surface of the insole 1.

Although the knob 2 is shown as a cylindrical shape, a variety of shapes, e.g., a post having a polygonal shape, e.g., a rectangular shape or a hexagonal shape, are allowable. The knob 2 has a ventilation hole 4

vertically formed through a center of the knob 2, through which the ventilation occurs and an air occupied in a lower side of the knob is exhausted, when the knob 2 is collapsed.

The knob 2 is connected with a slanted portion 3 made of a thin and soft material and having the diameter larger along its downward direction, thereby being integrally molded with the insole 1.

The insole may be made of any possible material with no limitation, but preferably made of soft synthetic resin, such as silicone, which has resilience and is good for health.

10 Fig. 4 presents a sectional view of the reflex zone knob 2 showing its vertical movement; and Fig. 5 represents a section view of the reflex zone knob 2 showing its tilting movement horizontally.

Referring to Figs. 4 and 5, when the knob 2 is pressurized by the foot, the slanted portion 3 is freely folded in any direction. Even at this time, the knob 2 is maintained in a position protruding above the upper surface of the insole 1, continuously massaging the reflex zone of the foot-sole.

Further, the slanted portion 3 is tiltable when a force laterally exerted by the foot-sole is applied on the knob 2, since it is made of soft and resilient material. In this case, the therapeutic effect based on the reflex zone therapy together with the massage effect is still obtained regardless of the direction of the force.

Accordingly, as the knob 2 may be freely movable within the range in which the slanted portion 3 is folded and tilted and further the material of the knob is soft and resilient, the therapeutic effect based on the reflex zone therapy together with the massage effect is obtained at the same time, and as a result users may be agreeable to the touch of the insole.

Fig. 6 shows another embodiment of the invention wherein the inventive insole for shoes 1 is additionally provided with auxiliary protrusions 5, which may enhance the therapeutic effect based on the reflex zone therapy together with the massage effect. In this embodiment 5 of the insole it is preferred that the height of the auxiliary protrusions 5 is substantially same with the height of the knob 2 when it is collapsed.

Fig. 7 describes a perspective view of another embodiment of the inventive insole; Fig. 8 describes a perspective view when the insole of 10 the Fig. 7 is divided into parts; and Fig. 9 discloses a sectional view of the inventive insole shown in Fig. 7, when taken along the line C-C. Referring to Figs. 7, 8 and 9, the inventive insole comprises the first insole 11 and the second insole 21.

The first insole 11 is provided with a plurality of knobs 12 on 15 the upper surface thereof. Although the knobs 12 are shown as a cylindrical shape, a variety of shapes, e.g., a post having a polygonal shape, e.g., a rectangular shape or a hexagonal shape, are allowable. The knob 12 has a ventilation hole 14 vertically formed through a center of the knob 12, through which the ventilation occurs and an air occupied in 20 a lower side of the knob is exhausted, when the knob 12 is collapsed.

The knob 12 is connected with a thin slanted portion 13 protruding from the insole 11 and having the diameter larger along its downward direction, so that the knobs are integrally molded with the insole.

The second insole 21 is provided with a plurality of holes 16 25 corresponding to the knobs 12 formed on the first insole 11, so that the second insole 21 is securely fitted on the upper surface of the first insole 11 through the holes, and the second insole 21 is provided with a plurality of auxiliary smaller protrusions 15 on the upper surface

thereof.

Fig. 9 shows an functioning manner of the knob 12 in the embodiment. Referring to Fig. 9, when the knob 12 is pressed by a foot, the slanted connection portion 13 is freely collapsed and then the protrusion of the knob 12 is stably supported by the second insole 21 in order to give the therapeutic effect based on the reflex zone therapy.

In addition, the material of the slanted connection portion 13 is made of thin and resilient material, and thus laterally tiltable by lateral pressure of the foot-sole. Consequently, the insole serve both of a massage effect and a therapeutic effect based on the reflex zone therapy as the protrusion is freely tiltable in every direction when it is pressurized by the foot.

Meanwhile, the first insole 11 and the second insole 21 may be made of different material with each other. For example, the first insole 11 is made of soft material and the second insole 21 is made of quite harder material than the first insole, whereby the knob 12 gives soft feeling while the auxiliary protrusions 15 gives hard feeling, so that a massage effect and a therapeutic effect based on the reflex zone therapy may be improved.

As another modification, colors of the first insole 11 and the second insole 21 may be different whereby the knobs 12 protruding through the holes 16 of the second insole 21 is of different color to the color of the second insole 21, so that the insoles may be improved in appearance.

Figs. 10, 11 and 12 shows another embodiment of the inventive insole, wherein Fig. 10 describes a perspective view thereof; Fig. 11 discloses a sectional view of the inventive insole shown in Fig. 10, when taken along the line D-D; and Fig. 12 shows a functional view thereof.

Referring to Figs. 10, 11 and 12, the inventive insole comprises the insole 31 and the cover 37.

The insole 31 is provided with a plurality of knobs 32 on the upper surface thereof and although the knobs 32 are shown in figures as a cylindrical shape, a variety of shapes, e.g., a post having a polygonal shape, e.g., a rectangular shape or a hexagonal shape, are allowable. The knob 32 has a ventilation hole 34 vertically formed through a center of the knob 32, through which the ventilation occurs and an air occupied in a lower side of the knob is exhausted, when the knob 32 is collapsed.

10 The knob 32 is connected with a slanted portion 3 made of a thin and soft material, thereby being integrally molded with the insole 31.

The insole 31 is wrapped by the cover 37 which is made of leather or the like and is provided with a plurality of holes 36 corresponding to the knobs 32 of the insole 31, whereby the knobs 32 may be protruded through the holes 36 in order to secure the cover 37 and the insole 31.

15

The insole 31 with the cover may be used as an inner insole for shoes to be bonded to the upper side of the outsole of the shoes.

In addition in order to improve the stability of the insole for shoes 31, the insole 31 may be further provided with an additional auxiliary insole 38. The additional insole 38 is platelike and placed on the upper side of the outsole(bottom piece) of the shoes, and corresponding to the insole 31 in shape, and then wrapped by the cover 37 together with the insole 31.

20

When using the above-said insole for shoes with a cover, as the knobs 32 may be folded vertically when they are pressurized by the foot, a therapeutic effect based on the reflex zone therapy and a massage effect may be obtained as like as above embodiments.

25

Also, as the slanted connection portion 33 is made of thin and

resilient material, it may be freely tiltable in every direction when pressed by a horizontal force, and thus the insole provides a massage effect and a therapeutic effect based on the reflex zone therapy.

In addition, the cover 37 and the knobs 32 protruding through the
5 holes 36 of the cover 37 may be of different colors and design of the knobs and holes may be various, so that it feels good in appearance. The additional insole 38 may be made of various material and with various thickness in consideration of feeling and shock-absorbing of the feet.

Figs. 13 and 14 show another embodiment of the inventive insole, wherein
10 Fig. 13 describes a perspective view thereof divided in parts and Fig. 14 discloses a sectional view of the inventive insole shown in Fig. 13, when taken along the line E-E.

Referring to Figs. 13 and 14, in order to prevent the insole from being easily deviated from the shoe, there is provided with a pad 48.
15 The pad 48 has on its bottom portion a double-faced tape 49 which is attached to both the pad 48 and an upper surface of the outsole of the shoes. The pad 48 also has on its upper portion a plurality of lugs 50 protruding from the pad 48. In order to fix the pad 48 to the insole 41, the insole 41 has a plurality of lug holes 46 corresponding to the
20 plurality of lugs 50 on the pad 48, respectively, whereby each of the lugs 50 is inserted into each of the lug hole 46.

The insole 41 is fixed with respect to the shoe in such a manner that the pad 48 is first attached to the upper surface of the outsole of the shoe(bottom piece) and then the lugs 50 on the pad 48 are inserted into
25 the lug holes 46 of the insole 41, respectively.

As the insole for shoes according to the invention is made of soft material, it is easily attachable and detachable to and from the pad.

Using the above-said insole with a pad, it may be solved that the

insole for shoes is easily deviated from the shoe, and then the insole keeps secure fixing on the shoe.

Although the invention has been shown and described with respect to the preferred embodiments, it will be understood by those skilled in the art
5 that various changes and modifications may be made without departing from the spirit and scope of the invention as defined in the following claims.

Industrial availability

As described above, in the inventive insole for shoes, the insole 1
10 wherein the reflex zone knob 2 has the ventilation hole 4 formed through the center of the knob is connected with the slanted portion 3 protruding from the upper surface of the insole and having the diameter larger along its downward direction, thereby being integrally molded with the insole 1, can maintain a continuous therapeutic effect based on the reflex zone
15 therapy, since the knob 2 protrudes above the upper surface of the insole 1, even if the knob 2 is collapsed, and further, since the inventive insole 1 can be tilted, it provides the user with a good feeling. Furthermore, the inventive insole 1 provides the massage effect of the foot-sole.

20

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What is claimed is:

1. An insole for shoes having a plurality of protrusions, characterized in that each of the protrusions has a ventilation hole formed through a center of the protrusion, the protrusion being connected with a thin slanted portion protruding from the insole and having a diameter larger along a downward direction of the thin slanted portion, so that the protrusions are integrally molded with the insole.
2. The insole for shoes according to claim 1, wherein the insole for shoes is provided with a plurality of auxiliary protrusions and the height of the auxiliary protrusions is substantially same with the height of the protrusions when they are collapsed.
3. The insole for shoes according to claim 1, wherein the insole is further provided with the second insole for shoes 21 having a plurality of holes, each hole being corresponding to each protrusions of the first insole.
4. The insole for shoes according to claim 1, wherein the insole is further provided with a cover 37 having a plurality of holes corresponding to the protrusions of the insole respectively and being able to wrap the upper surface of the insole and the brim of the lower surface thereof.
5. The insole for shoes according to claim 3, wherein the insole is further provided with an auxiliary insole 38 corresponding to the insole in shape on the lower side thereof, and the cover wraps the insole and the brim of the lower surface of the auxiliary insole.
6. The insole for shoes according to claim 1, wherein the insole further comprises a fixing pad 48 having on its lower portion a double-faced tape attached to both the pad and an upper surface of the shoe, while a

plurality of lug holes 46 are formed through the insole and the pad has a plurality of lugs 50 protruding from an upper surface of the pad, the lugs being positioned to correspond to the lug holes, respectively and insertable into the lug holes.

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FIG. 1

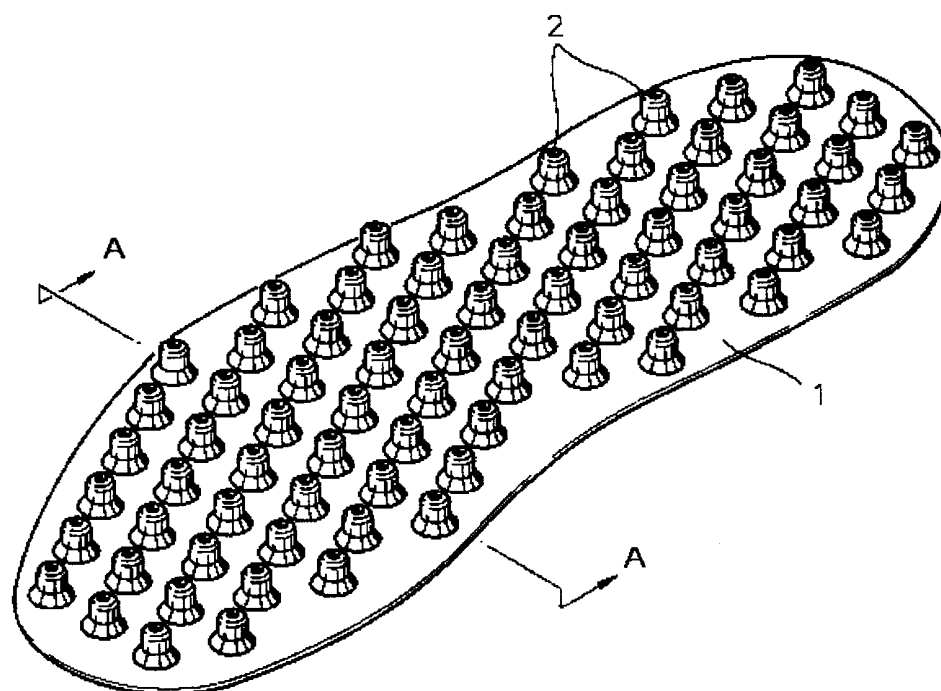
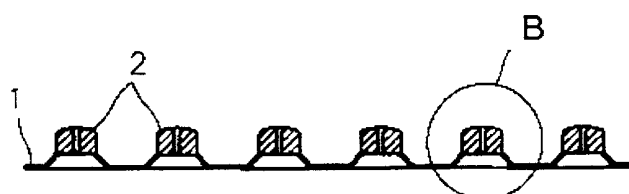


FIG. 2



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FIG. 3

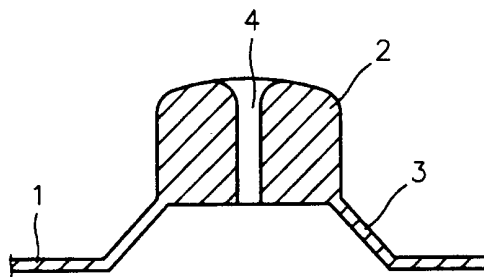


FIG. 4

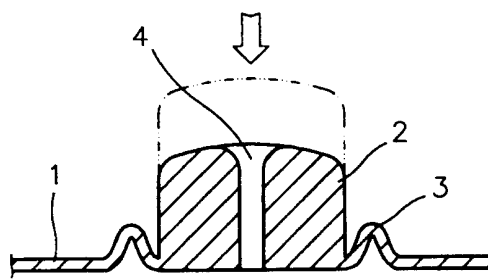
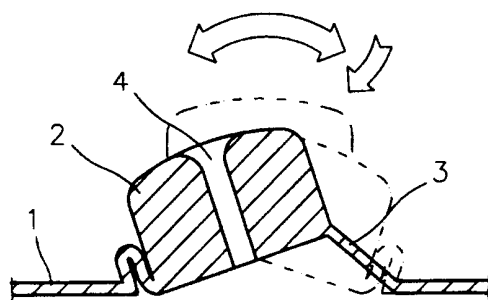


FIG. 5



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FIG. 6

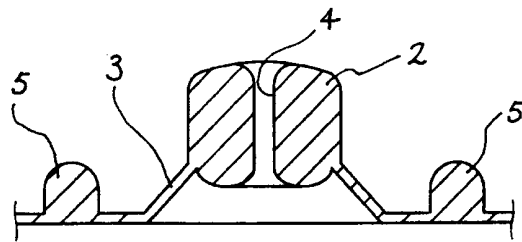
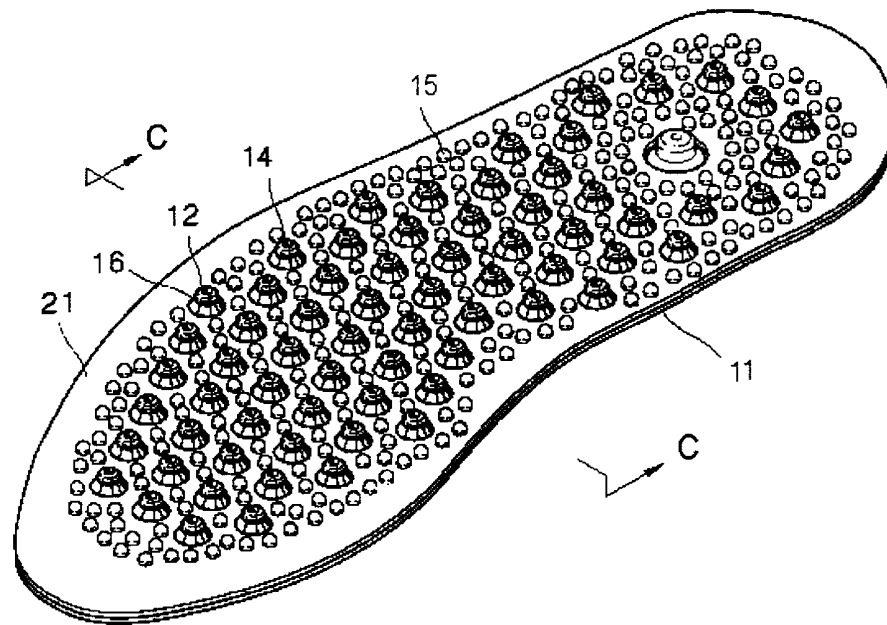


FIG. 7



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FIG. 8

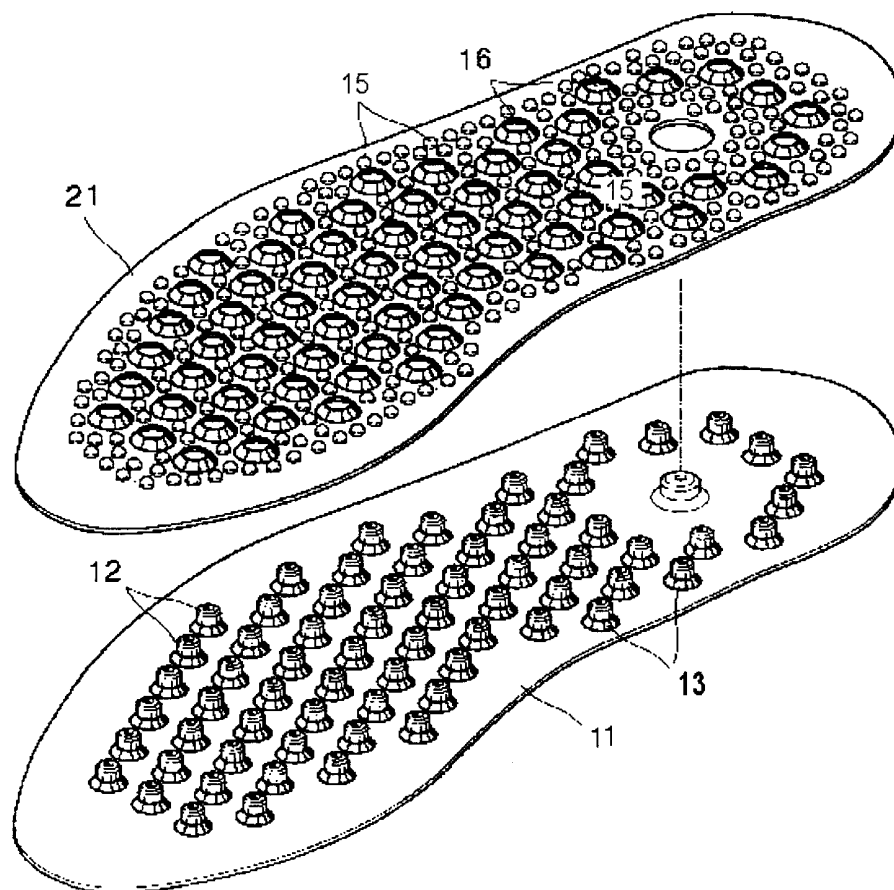


FIG. 9

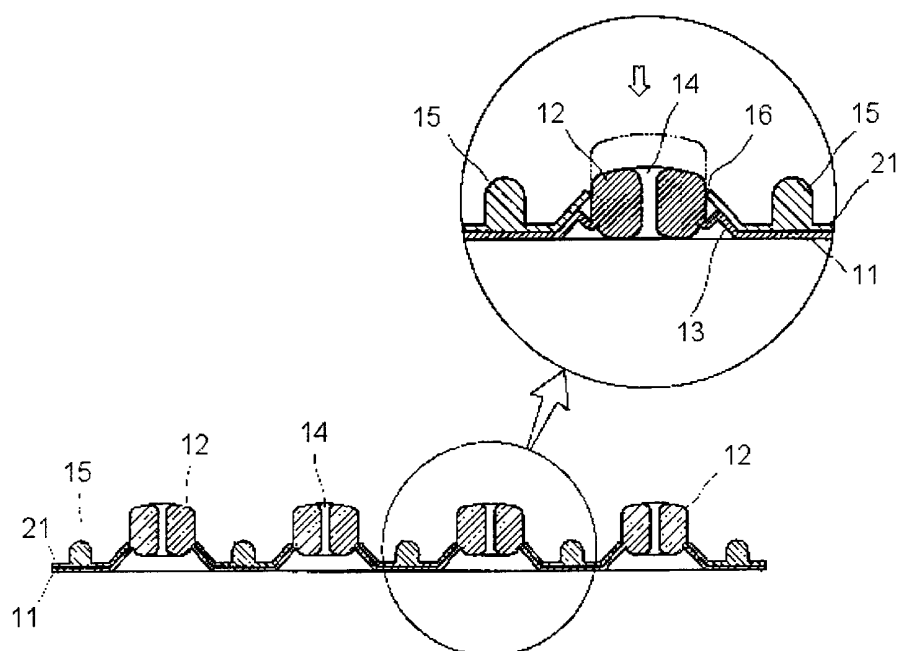
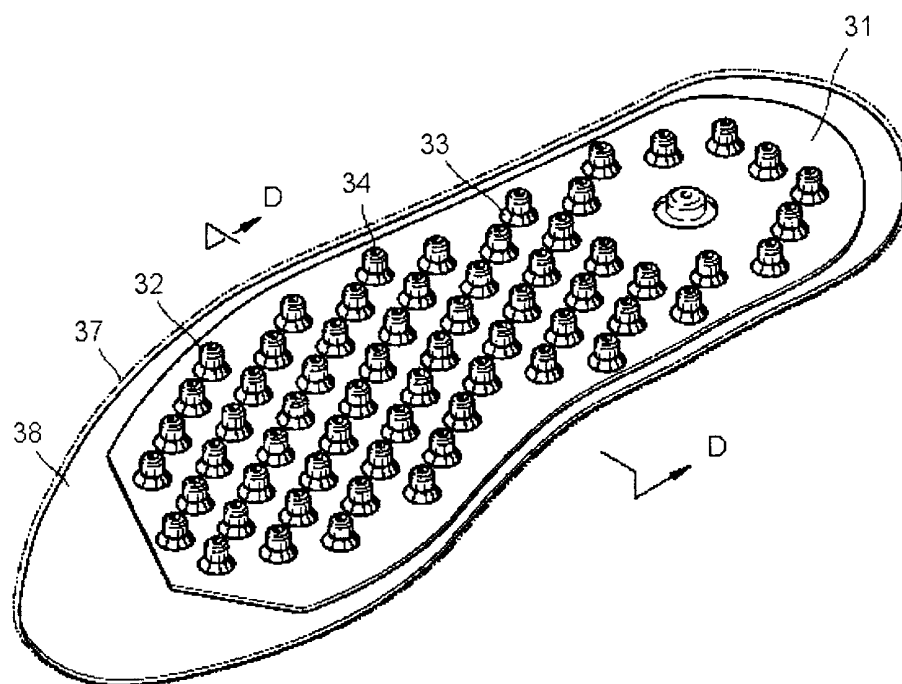


FIG. 10



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FIG. 11

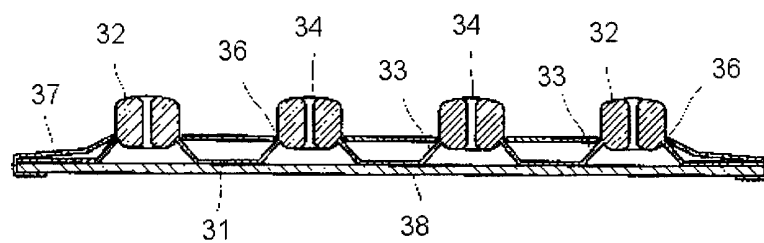
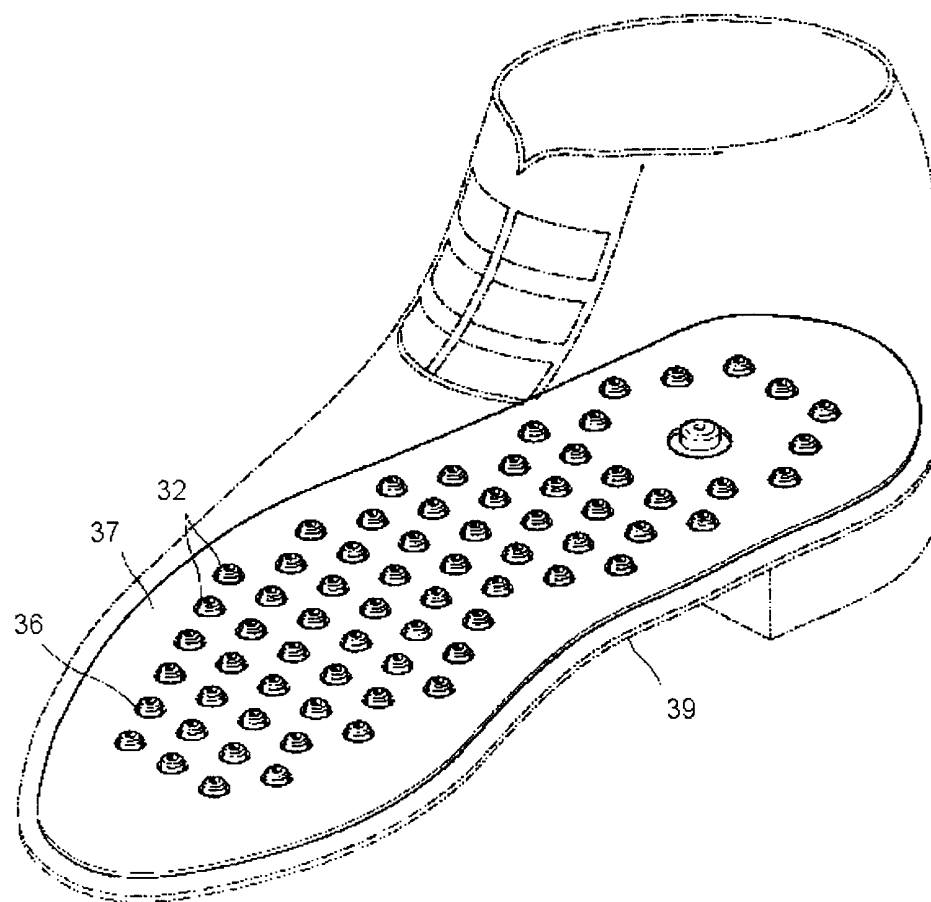


FIG. 12



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FIG. 13

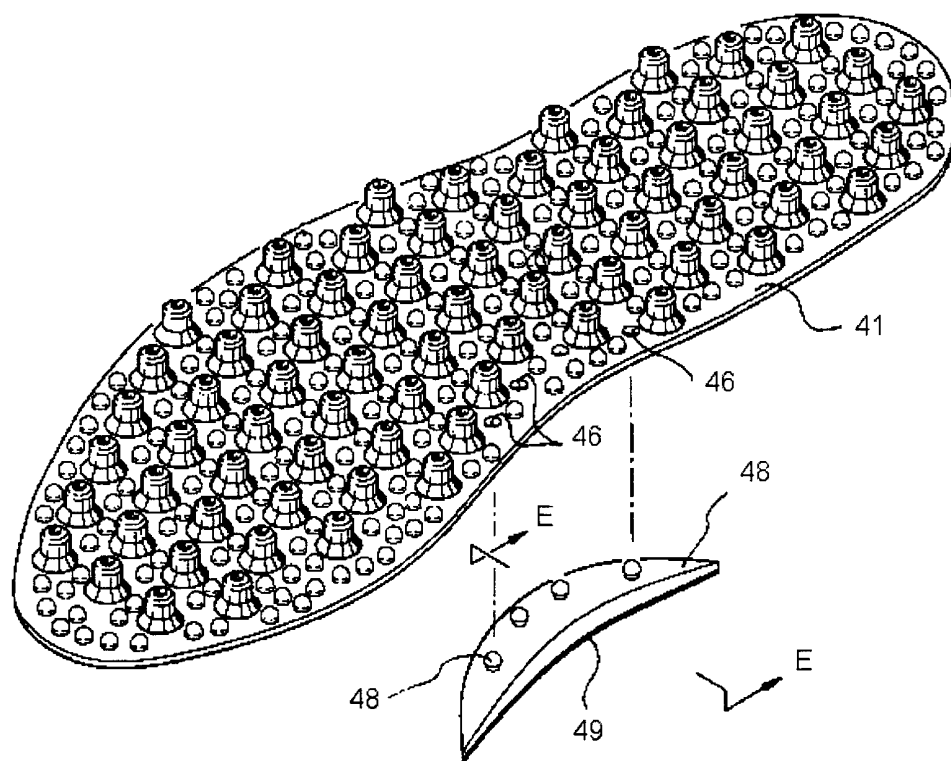
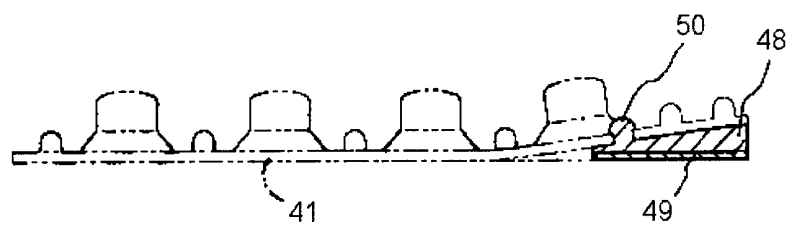


FIG. 14



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR00/00672

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A43B 17/00, A43B 17/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A43B 17/00, A43B 17/08, A43B 17/02, A43B 13/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Patents and applications for inventions since 1975, Korean Utility models and applications for Utility models since 1975
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NPS, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 50-154146 Y (MUROYA) 20 DECEMBER 1975 see figure 1	1
Y	JP 57-186511 Y (ICHIGAWA) 26 NOVEMBER 1982 see figures	1
A	US 5685094 A (JOHN H. J. LIN) 11 NOVEMBER 1997 see the whole document	1 - 5
A	US 5400526 A (RAYMOND V. SESSA) 28 MARCH 1995 see the whole document	1 - 5
A	KR 86-12741 Y (TAEHWA CO.LTD.) 5 NOVEMBER 1986	1 - 6

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

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Date of mailing of the international search report

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