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(54) **Footbed having functions of acupuncture point massage and reducing pressure**

(57) The present invention is to provide a footbed having functions of acupuncture point massage and reducing pressure, which is positioned at a location corresponding to shoe sole inside a shoe and includes a cushion and a plurality of massage components. The cushion is one-piece formed by latex material and has a top surface matching with a foot sole of human body and provided with a plurality of deformed holes thereon. The massage components are protrudingly disposed at a bottom of the cushion and each has a deformed space therein, a top of the deformed space is communicated with the deformed hole corresponding thereto, each of the massage components is provided with a protruded part disposed at an inner wall thereof corresponding to a bottom of the deformed space, and the protruded part has a tip extended toward the deformed hole and not exposed out of the deformed hole.

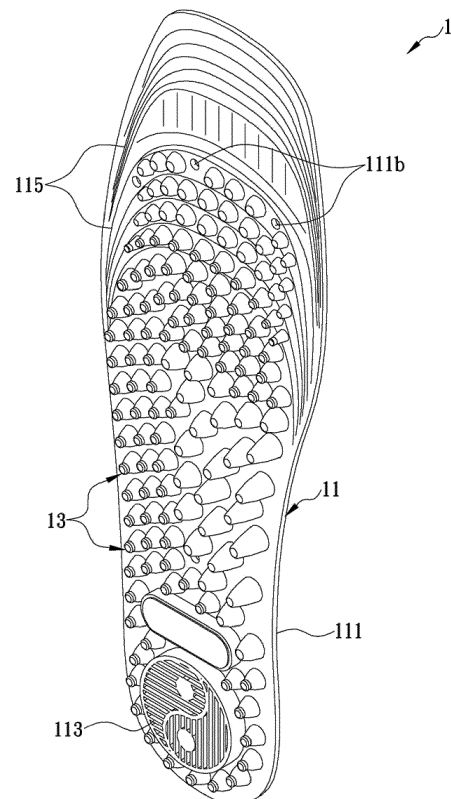


FIG. 1

Description

FIELD OF THE INVENTION

[0001] The present disclosure generally relates to a footbed, more particularly to a footbed capable of performing acupuncture point massage to a foot sole of human body and reducing pressure of the foot sole and the foot accordingly.

BACKGROUND OF THE INVENTION

[0002] According to the studies, nerve endings of organs are collected at foot soles of body, i.e. the reflex zones reflecting the states of organs are distributed over parts of the foot soles respectively. To massage and stimulate the reflex zones of the foot soles moderately can produce moderate health effect to the body's organs. Accordingly, a "feet reflex zone massage" service, which is also called foot massage commonly, exists in the health care service market over the years in domestic and foreign markets. Theoretical foundation of this service is that appropriate stimulation on peripheral nerves of the feet can reflect a subtle interaction of the brain central nerves, and improve blood circulation, adjust incretion and balance autonomic nerves. Then, according to the clinical trial certificate, a combination of the body's feet is the epitome of a three-dimensional distribution of the body's organs and tissues, and it is more proof of the aforementioned theoretical basis being correct by verification of the stimulating reflection.

[0003] In current society, the majority of people living in the metropolitan area are not only have the stressful life but also have the intensive workload due to living and work in the limited narrow space every day. In the case of long-term lack of exercise, it not only results in non-smooth blood circulation due to the body's tightness and thereby causing metabolic disorders, but also results in cell function decline. Days and months multiplying, it results back pain, frozen shoulders, aches in the limbs, hypertension, headaches or dizziness symptom, etc. These symptoms had become common diseases of the most urbanite. Generally speaking, the man's feet are the furthest part of the body from the brain and the heart. When the body is standing, the blood circulation is easy to go down but more difficult to go up because of effect of gravity. Moreover, when there is no obvious illness or symptoms in the body or foot yet, most people pay less attention to the declining problem of the blood circulation system. Therefore, over time, some undesirable substances that are difficult to be metabolized are easily accumulated at the feet which are lower parts of the body. For a long time, such undesirable substances has more influence on the smooth blood circulation system and normal metabolism and thereby making the nerves reflection abnormal, and many physiological functions of the body also degenerate gradually. At this time, to press on the reflex zones of foot soles moderately can not only

stimulate and improve blood circulation, but also have the quite significant results in adjusting incretion and balancing the autonomic nerves. This is why the "foot massage" can be popular in the metropolitan area and become an effective method of releasing the pressure.

[0004] Currently, the foot massage trails are provided in many public facilities (e.g. parks) of the metropolitan area for people to use. Generally speaking, stones used on the foot massage trail are pebbles. When people use the foot massage trail, they must have the bare feet in order to be allowed to step on the foot massage trail, and people must move back and forth constantly to stimulate the acupuncture points of feet by the pebbles which are placed irregularly. In addition, sharper ends of the pebbles are stood upward on the foot massage trail. The foot massage trail is an opened public area for anyone to use, but it lacks the specialized personnel to do regular clean and maintenance. Therefore, not only the sanitation of the foot massage trail is worrying, but also the user's foot soles may have serious bacterial infection easily if the user step on the too sharp pebbles resulting in their foot soles being injured in the accident, thereby posing a threat to the health and the safety of the user's body.

[0005] Therefore, what is need is to design a footbed which can provide people a nice massage function to promote blood circulation of the foot sole during walk or exercise, so as to efficiently achieve the effect of reducing pressure.

SUMMARY OF THE INVENTION

[0006] The traditional footbed does not have the functions of acupuncture point massage and reducing pressure, so the inventor design a footbed having functions of acupuncture point massage and reducing pressure to efficiently solve the above-mentioned problems, upon long-term practice experience.

[0007] The first objective of the present disclosure is to provide a footbed having functions of acupuncture point massage and reducing pressure. The footbed can be positioned at a location corresponding to shoe sole inside a shoe (such as leather shoe, cloth shoes footwear jogging shoes, etc.). The footbed includes a cushion and a plurality of massage components. The cushion is one-piece formed by latex material and has a top surface matching with a foot sole of human body, and the top surface is provided with a plurality of deformed holes thereon. The massage components are protrudingly disposed at a bottom of the cushion and formed integrally, and correspond to the deformed holes respectively. Each of the massage components has a deformed space therein, a top of the deformed space is communicated with the deformed hole corresponding thereto, each of the massage components is provided with a protruded part disposed at an inner wall thereof corresponding to a bottom of the deformed space, and the protruded part has a tip extended toward the deformed hole and not exposed out of the deformed hole.

[0008] After the user wears the shoe, the user's foot sole and the top surface are contacted with each other. However, while the user walks or exercises, the foot sole exerts a force on certain area of the top surface, thereby causing the massage components located between the foot sole (or the top surface) and the shoe sole to be deformed. The corresponding massage components are deformed downwardly to shorten, so the apertures of the deformed holes corresponding to the massage components 13 are enlarged, and the tips of the protruded parts of the massage components 13 are exposed out of the deformed holes and protruded on the top surface to perform foot massage like acupuncture and moxibustion on the portion of the foot sole which is exerting the force. Therefore, the acupuncture point reflex zones at the foot sole are stimulated to promote the blood circulation of the user's foot sole, and the tension of the foot and foot sole can be relaxed to achieve the effect of reducing pressure efficiently.

[0009] The second objective of the present disclosure is that the top surface is further provided with a plurality of ventilation holes thereon, the ventilation holes are passed through the cushion, and the deformed holes and the ventilation holes are in interlaced arrangement. When the massage components are deformed, the humidity and hot-gas between the footbed and the shoe sole can be discharged via the ventilation holes; otherwise, after the massage components are restored to original shapes, flesh and cold air can be inhaled into the space between the footbed and the shoe sole, whereby the air change function can be performed between the footbed and the shoe sole, and the effect of dissipating heat and dehumidification can be improved efficiently.

[0010] The third objective of the present disclosure is that structures of the plurality of massage components are in cone shapes with different heights, and the heights of the massage components located at a center portion of the cushion and near the inner side of the cushion are larger than the heights of the other massage components, so as to maintain the stability of the foot sole standing on the top surface.

[0011] The fourth objective of the present disclosure is that the footbed further includes a vapor-permeable layer which is made of vapor-permeable material (such as vapor-permeable skin or vapor-permeable fabric). The vapor-permeable layer is disposed on the top surface and has a structure matching with the top surface, and has a size larger than the top surface to increase the vapor-permeable function between the foot sole and the support plane.

[0012] The fifth objective of the present disclosure is that the cushion is provided with a support component protrudingly disposed at a bottom thereof corresponding to a heel, to efficiently absorb the force applied by the heel, whereby the effect of shock absorption and buffering can be efficiently applied on the heel.

[0013] The sixth objective of the present disclosure is that the cushion is provided with a plurality of trim lines

at bottom thereof, whereby the user can trim the cushion according to the size of the user's foot sole.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The detailed structure, operating principle and effects of the present disclosure will now be described in more details hereinafter with reference to the accompanying drawings that show various embodiments of the present disclosure as follows.

FIG. 1 is a schematic view of a preferred embodiment of the present disclosure;

FIG. 2 is a schematic view of a preferred embodiment of the present disclosure;

FIG. 3 is a section view of the present disclosure; and FIG. 4 is a schematic view of a preferred embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] Reference will now be made in detail to the exemplary embodiments of the present disclosure, examples of which are illustrated in the accompanying drawings. Therefore, it is to be understood that the foregoing is illustrative of exemplary embodiments and is not to be construed as limited to the specific embodiments disclosed, and that modifications to the disclosed exemplary embodiments, as well as other exemplary embodiments, are intended to be included within the scope of the appended claims. These embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the inventive concept to those skilled in the art. The relative proportions and ratios of elements in the drawings may be exaggerated or diminished in size for the sake of clarity and convenience in the drawings, and such arbitrary proportions are only illustrative and not limiting in any way. The same reference numbers are used in the drawings and the description to refer to the same or like parts.

[0016] It will be understood that, although the terms 'first', 'second', 'third', etc., may be used herein to describe various elements, these elements should not be limited by these terms. The terms are used only for the purpose of distinguishing one component from another component. Thus, a first element discussed below could be termed a second element without departing from the teachings of embodiments. As used herein, the term "or" includes any and all combinations of one or more of the associated listed items.

[0017] The present disclosure illustrates a footbed having functions of acupuncture point massage and reducing pressure. Please refer to FIG. 1 and FIG. 2 which show a preferred embodiment of the present disclosure. The footbed 1 can be positioned at a location corresponding to shoe sole inside a shoe (such as leather shoe, cloth shoes, footwear, jogging shoes, etc.). The footbed

1 includes a cushion 11 and a plurality of massage components 13. The cushion 11 is one-piece formed by latex material and has a top surface matching with the foot sole of human body, and the top surface is provided with a plurality of deformed holes 111a thereon.

[0018] The massage components 13 are formed integrally and protrudingly disposed at a bottom of the cushion 11, and correspond to the deformed holes 111a respectively. A structure of each of the massage components 13 is in a cone shape, a diameter of top of the massage component 13 is larger than a diameter of bottom of the massage component 13. Each of the massage components 13 has a deformed space 131 therein and a top of the deformed space 131 is communicated with the deformed hole 111a corresponding thereto. Each of the massage components 13 is provided with a protruded part 133 disposed therein at an inner wall thereof corresponding to a bottom of the deformed space 131, a diameter of the protruded part 133 is smaller than an aperture of the deformed hole 111a, and the protruded part 133 has a tip extended toward the deformed hole 111a and not exposed out of the deformed hole 111a. In addition, structures of the plurality of massage components 13 are in cone shapes with different heights, and the heights of the massage components 13 located at a center portion of the cushion and near the inner side of the cushion are larger than the heights of the other massage components 13, so as to maintain the stability of the foot sole standing on the top surface 111.

[0019] Please refer to FIG. 3. An arrow shown in FIG. 3 is a force bearing point of the user's foot sole. After the user wears the shoe (not shown in FIGs), the foot sole and the top surface 111 are contacted with each other. However, while the user walks or exercises, the foot sole exerts a force on certain area of the top surface 111, to cause the massage components 13 located between the foot sole (or the top surface 111) and the shoe sole to be deformed. The corresponding massage components 13 are deformed downwardly to shorten, so the apertures of the deformed holes 111a corresponding to the massage components 13 are enlarged, and the tips of the protruded part 133 of the massage components 13 are exposed out of the deformed holes 111a and protruded on the top surface 111 to perform foot massage like acupuncture and moxibustion on the portion of the foot sole exerting the force. Therefore, the acupuncture point reflex zones at the foot sole are stimulated to promote the blood circulation of the user's foot sole, and the tension of the foot and foot sole can be relaxed to achieve the effect of reducing pressure efficiently.

[0020] As shown in FIG. 1, in the embodiment of the present disclosure, the top surface 111 is further provided with a plurality of ventilation holes 111b thereon, ventilation holes 111b are passed through the cushion 11, and the ventilation holes 111b and the deformed holes 111a are in interlaced arrangement. When the massage components 13 are deformed, humidity and hot-gas between the footbed 1 and the shoe sole can be discharged

via the ventilation holes 111b; otherwise, after the massage components 13 are restored to original shape, flesh and cold air can be inhaled into the space between the footbed 1 and the shoe sole, whereby the air change function can be performed between the footbed 1 and the shoe sole, and the effect of dissipating heat and dehumidification can be improved efficiently.

[0021] Please refer to FIG. 4. According to the embodiment of the present disclosure, the footbed 1 is made of airtight material, the user's foot sole may contact with the cushion 11 for a long period of time and the heat is hard to be dissipated, so it is easy to generate humidity at the foot sole. The footbed 1 further includes a vapor-permeable layer 15 which is made of vapor-permeable material (such as vapor-permeable skin or vapor-permeable fabric). The vapor-permeable layer 15 is disposed on the top surface 111 and has a structure matching with the top surface 111, and has a size larger than the top surface 111 to increase the vapor-permeable function between the foot sole and the support plane. When the user wears shoe, the foot sole and the vapor-permeable layer 15 are contacted with each other, and the absorption of the foot sweat or heat humidity can be reduced by the slot within the vapor-permeable layer 15. Therefore, nice effect of the damp-proof and heat dissipation can be obtained, and the foot sole can be kept dry, clean and hygiene easily.

[0022] As shown in FIG. 1, according to the embodiment of the present disclosure, the cushion 11 is further provided with a support component 113 protrudingly disposed at a bottom thereof corresponding to a heel, to efficiently absorb the force applied by the heel, whereby the effect of shock absorption and buffering can be efficiently applied on the heel.

[0023] As shown in FIG. 1, according to the embodiment of the present disclosure, since users' foot soles have different sizes, the manufacturers dispose a plurality of trim lines 115 at the bottom of the cushion 11 in consideration of production cost, whereby the user can trim the cushion 11 along the trim lines 115 according to the size of user's foot sole.

[0024] The above-mentioned descriptions represent merely the exemplary embodiment of the present disclosure, without any intention to limit the scope of the present disclosure thereto. Various equivalent changes, alternations or modifications based on the claims of present disclosure are all consequently viewed as being embraced by the scope of the present disclosure.

Claims

1. A footbed (1) having functions of acupuncture point massage and pressure reduction, positioned correspondingly to a shoe sole inside a shoe, the footbed (1) comprising:

a cushion (11), one-piece formed by latex ma-

terial, having a top surface (111) matching with a foot sole of human body, and the top surface (111) provided with a plurality of deformed holes (111a) thereon; and

a plurality of massage components (13), protrudingly disposed at a bottom of the cushion (11), formed integrally and corresponding to the deformed holes (111a) respectively, each of the massage components (13) having a deformed space (131) therein, a top of the deformed space (131) communicated with the deformed hole corresponding thereto, each of the massage components (13) provided with a protruded part (133) disposed therein at an inner wall thereof corresponding to a bottom of the deformed space (131), and the protruded part (133) having a tip extended toward the deformed hole (111a) and not exposed out of the deformed hole (111a);

wherein after a user wears the shoe, the user's foot sole contacts with the top surface (111), and a certain area of the top surface (111) is applied a force by the foot sole during walk or sport, whereby each of the massage components (13) corresponding to the certain area is deformed to shorten downwardly, to enable the tip of the protruded part (133) being exposed out of the deformed hole correspondingly and protruded on the top surface (111).

2. The footbed (1) as defined in claim 1, wherein the structure of the massage component (13) is in a cone shape, a diameter of the top of the massage component (13) is larger than a diameter of the bottom of the massage component (13).

3. The footbed (1) as defined in claim 2, wherein an aperture of the deformed hole (111a) is larger than a diameter of the protruded part (133).

4. The footbed (1) as defined in claim 3, wherein the top surface (111) is further provided with a plurality of ventilation holes (111b) thereon, the ventilation holes (111b) are passed through the cushion (11), and the deformed holes (111a) and the ventilation holes (111b) are in interlaced arrangement.

5. The footbed (1) according to claim 4, wherein structures of the plurality of massage components (13) are cones with different heights, and the heights of the massage components (13) located at a center portion of the cushion (11) and near the inner side of the cushion (11) are larger than the heights of the other massage components (13).

6. The footbed (1) as defined in claim 5, further comprising a vapor-permeable layer (15) made of vapor-permeable material, the vapor-permeable layer (15)

disposed on the top surface (111), having a structure matching with the top surface (111), and larger than the top surface (111).

7. The footbed (1) as defined in claim 6, wherein the cushion (11) is provided with a support component (113) protrudingly disposed at a bottom portion thereof corresponding to a heel of the user.

8. The footbed (1) as defined in claim 7, wherein the cushion (11) is provided with a plurality of trim lines (115) at the bottom portion thereof.

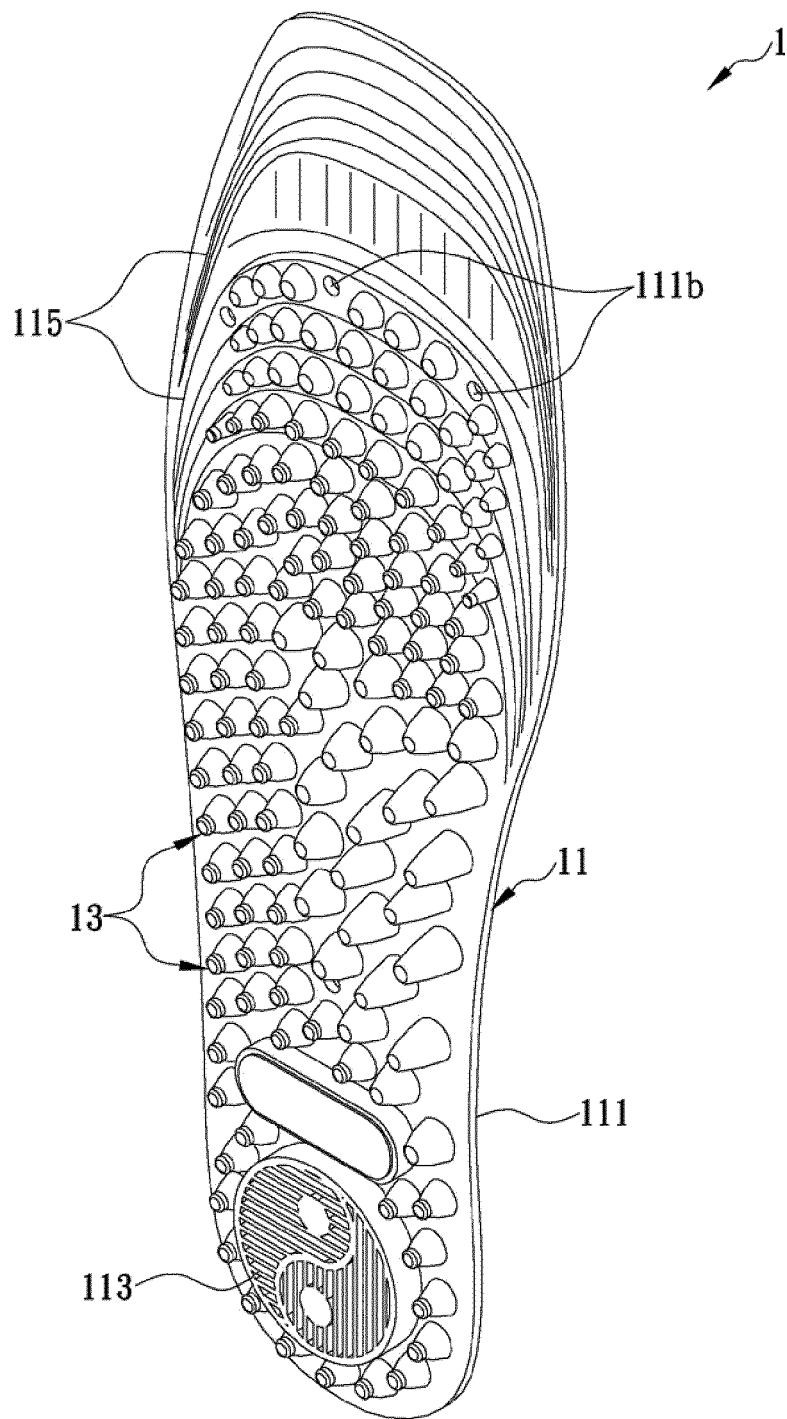


FIG. 1

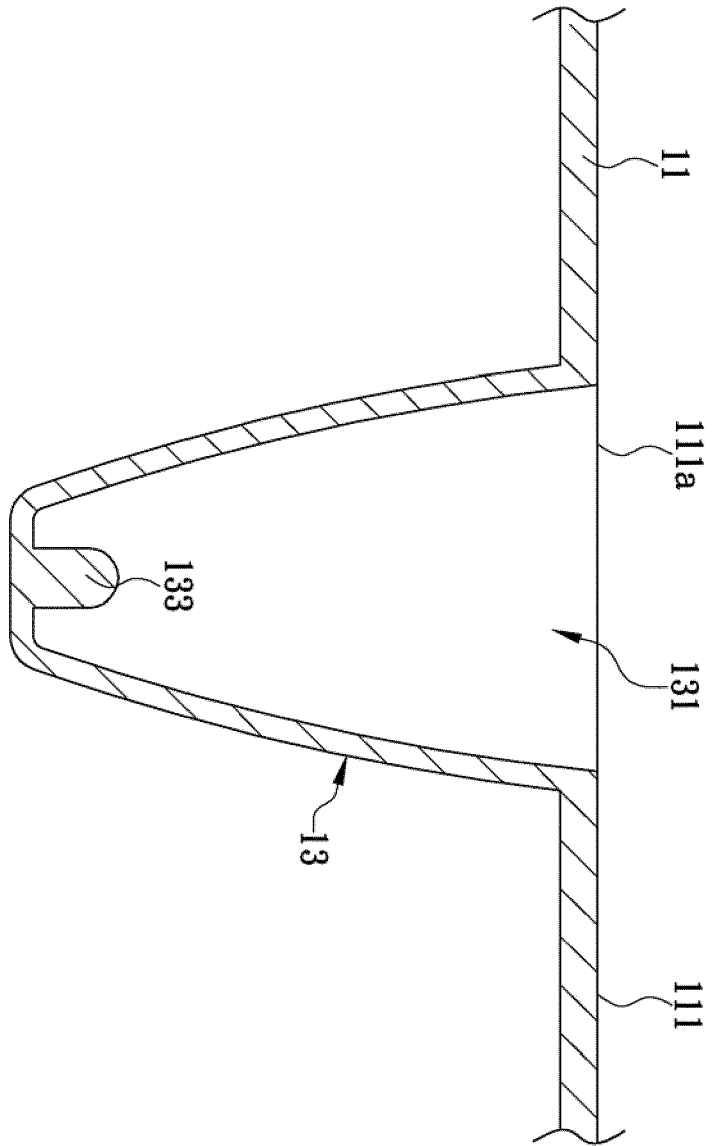


FIG. 2

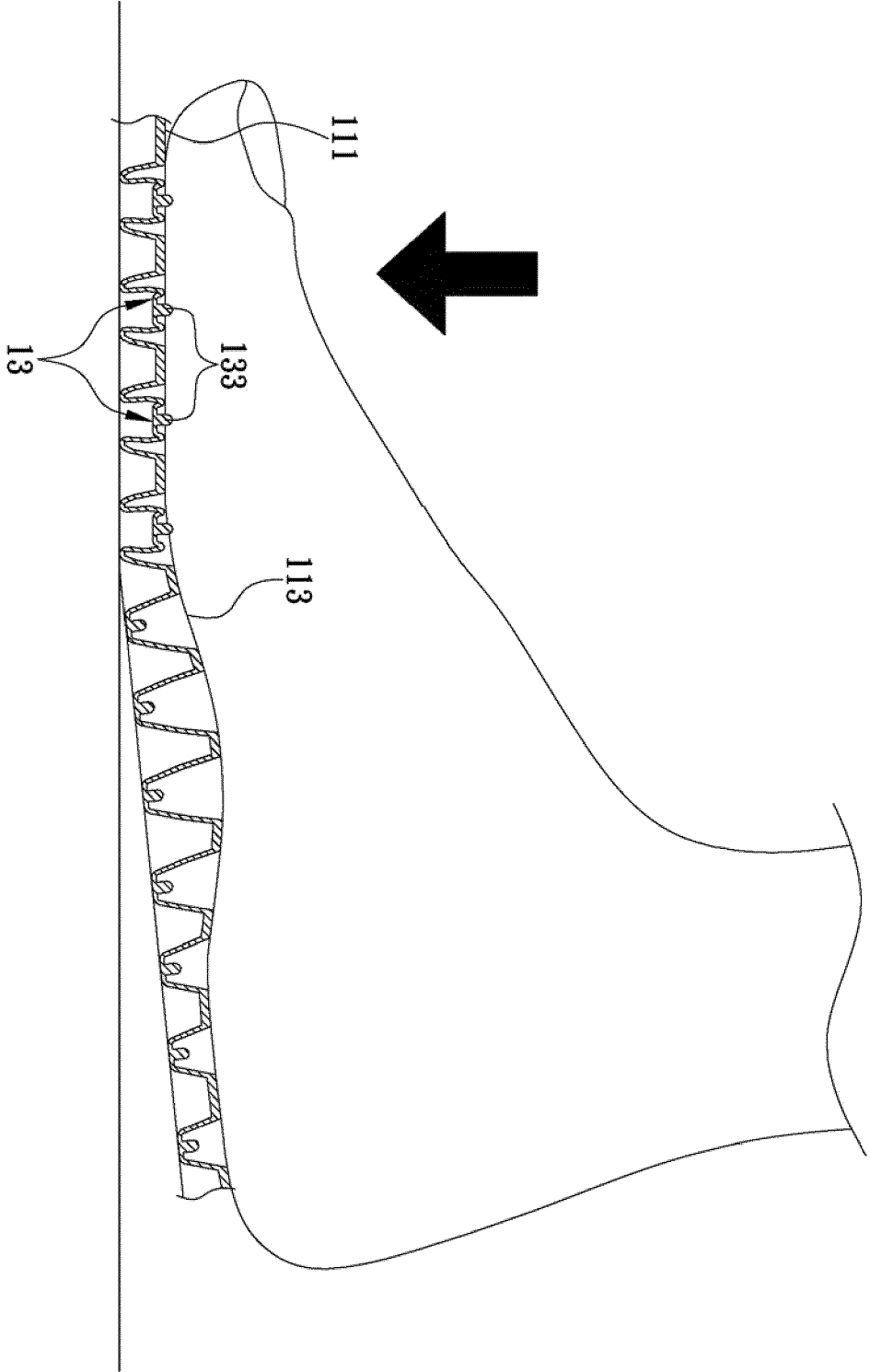


FIG. 3

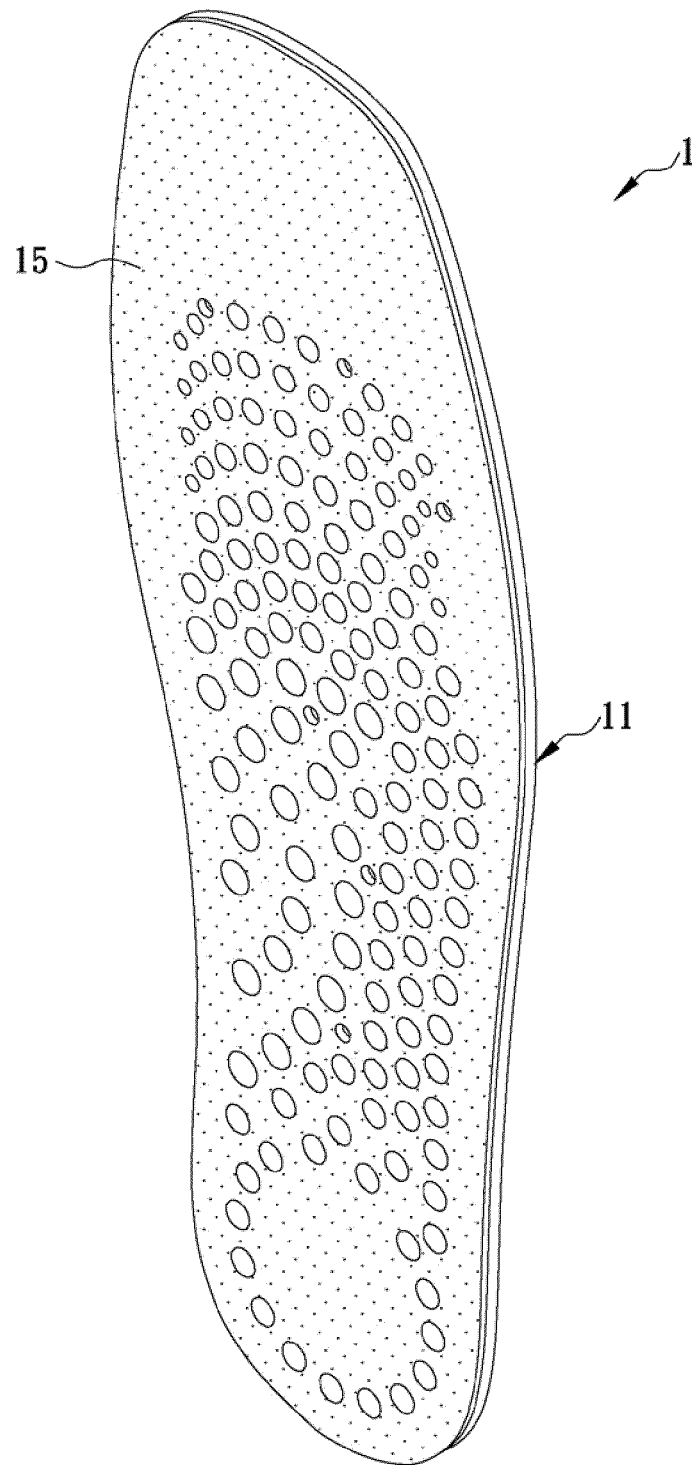


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 14 20 0605

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2009/136685 A1 (JUNG YONG-HEE [KR]; KIM HONG-MOON [KR]) 12 November 2009 (2009-11-12) * the whole document *	1-8	INV. A43B7/14 A43B17/14
X	US 6 209 226 B1 (SQUADRONI ONIFARES ELPIDIO [IT]) 3 April 2001 (2001-04-03) * column 2, line 64 - column 4, line 54; figures 1-5 *	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			A43B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 June 2015	Examiner Millward, Richard
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 20 0605

5 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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10-06-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009136685 A1	12-11-2009	KR 100881769 B1 WO 2009136685 A1	04-02-2009 12-11-2009
US 6209226 B1	03-04-2001	AT 301947 T DE 69831184 D1 DE 69831184 T2 EP 0875163 A2 ES 2245475 T3 IT RM970208 A1 US 6209226 B1	15-09-2005 22-09-2005 22-06-2006 04-11-1998 01-01-2006 12-10-1998 03-04-2001