

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 June 2003 (19.06.2003)

PCT

(10) International Publication Number
WO 03/049563 A2

(51) International Patent Classification⁷: **A43B**

(21) International Application Number: PCT/IB02/05258

(22) International Filing Date:
10 December 2002 (10.12.2002)

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:
PI2001A000085 10 December 2001 (10.12.2001) IT

(71) Applicant (for all designated States except US):
ARGEIEXPORT DI PALCHETTI RANIERI [—/IT];
Via Montepulciano, 6, I-50142 Firenze (IT).

(72) Inventor; and
(75) Inventor/Applicant (for US only): **PALCHETTI,
Ranieri** [IT/IT]; Via Lunga, 147, I-50142 Firenze (IT).

(74) Agent: **CELESTINO, Marco**; Viale Giovanni Pisano, 31,
I-56123 Pisa (IT).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

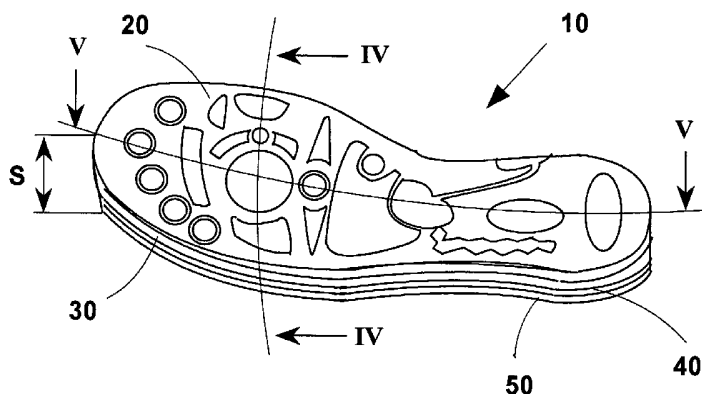
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

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.

(54) Title: INSOLE FOR FOOT SOLE REFLEXOLOGY AND SHOE THAT INCLUDES THAT INSOLE



(57) Abstract: An insole (10) is of the type equipped with a face (20) having projections (11-25), suitable for massaging the foot sole, and in particular certain sensitive points thereof, during motion such as walking and jogging. The projections (11-25) made on the insole (10) correspond to points of the foot connected to important parts of the human body in accordance with the general principles of foot sole reflexology. The insole (10) has at least one layer (30) of cushioned elastically yielding material and a thickness (S) set between 5 and 13 mm. The upper layer of the insole (10), or insole shaped, has a first face printed (20) with projections (11-25) towards the above and the second face printed with recesses corresponding to said projections (20') and is associated to a second layer located underneath (30), preformed with projections (11'-25') according to a same chart of the first face of the upper layer (20) and made preferentially of latex. In particular, the protrusions (11'-25') of the second layer (30) engage with in the recesses of the first layer (20) that are made with sharp edge. A third resilient layer (40) allow transpiration can be located under the second layer (30), and made preferably of Poron(R) or of PPT, for cushioning elastically the insole (10) for a correct stimulating action on the foot sole. The projections (11-25) made on the insole (20) are stiff and resilient at the same time for massaging the foot sole of an individual who wears the shoe (60).

- 1 -

TITLE

INSOLE FOR FOOT SOLE REFLEXOLOGY AND SHOE THAT INCLUDES
THAT INSOLE

DESCRIPTION5 Field of the invention

The present invention relates to the field of shoes,
and in particular it relates to an insole for shoes
equipped with projections that stimulate and massage the
foot sole when walking. Furthermore, the invention relates
10 to a shoe that includes such an insole.

Description of the prior art

Special shoes exist that stimulate the foot sole of
an individual. In particular, the insoles of such shoes
act on predetermined points of the foot sole by means of
15 suitable projections, according to the principles of an
old Chinese technique known as foot sole reflexology.

In accordance with the essential principles of foot
sole reflexology, important parts and muscles of the human
body are directly linked, through a complex system of
20 nerves, to specific points of the foot sole. Therefore, the
stimulation and the massage of such strategic points are
beneficial to the corresponding parts connected to them and,
normally the effect arises of helping blood circulation and
improving the psycho-physical health conditions.

25 In shoe making industry the need is felt of a shoe
capable of massaging directly the foot sole and specifically
the areas of higher interest, according to foot sole
reflexology, using insoles having projections arranged
according to particular charts. The solutions known up to
30 now cannot solve suitably the problem of an effective
stimulating action without affecting the essential comfort
of a shoe. It is scientifically proven, in fact, that
wearing a correct shoe has direct positive effects on the
fitness of individuals; vice versa, wearing a wrong shoe

- 2 -

can lead to more or less serious pathologies. A shoe must then necessarily combine comfort and therapeutical action.

On the other hand, shoes or insoles having such projections can be used only for a short time without
5 causing discomfort, and are not suitable for shoes that are used for a longer time or for a whole day.

Summary of the invention

It is an object of the present invention to provide an insole for shoes suitable to provide a rewarding massage
10 to the foot sole, according to the principles of foot sole reflexology.

It is another object of the present invention to provide such an insole for shoes not affecting negatively the comfort of the shoe for all the time an individual has
15 it on.

It is a particular object of the present invention to provide such an insole to be inserted directly in the shoe.

These and other objects are achieved by the insole,
20 according to the present invention, of the type having projections suitable for massaging the foot sole, and in particular certain sensitive points thereof, during motion such as walking and jogging. The projections made on the insole correspond to points of the foot connected to
25 important parts of the human body: heart, liver, intestine, kidney, solar plexus etc, in accordance with the general principles of foot sole reflexology. The feature of the insole according to the invention is of having at least one layer of cushioned elastically yielding material and of
30 having a overall thickness set between 5 and 13 mm.

In particular, the overall thickness of the insole can be set between 7 and 12 mm. Preferably the overall thickness of the insole is set between 9 and 11 mm.

According to another aspect of the invention, the

- 3 -

insole has an upper layer formed by a first face printed with convex projections and the second face printed with recesses corresponding to said projections, said second face being associated to a second layer located underneath,
5 preformed with projections according to a same chart of the first face of the upper layer and made preferentially of latex.

In particular, the protrusions of the second layer engage with the recesses of the first layer. The protrusions
10 of the first layer are preferably with sharp edge. This allows a better engagement of the second layer and a higher smoothness of contact with the foot.

To avoid tiredness to the foot and an active antishock protection the shoe according to the invention
15 can provide, furthermore, the use of a third elastic layer, located under the insole formed by the first and second layer, and made preferably of Poron® or of PPT. This insole has the elasticity necessary for making a correct stimulating action on the foot sole. The projections
20 emerging from the insole, in fact, for massaging the foot sole of whom wears the shoe, have to be at the same time stiff and elastic.

The first layer is preferably made of natural leather, for example a kip obtained by mixed tanning
25 (vegetable tanning + tallow). The three layers then allow transpiration singularly and in combination.

When the shoes are used for walking or jogging, the projections made on the insole, according to the present invention, exploit the regular change of the distribution
30 of the weight of the body between foot tip and heel for massaging rewardingly the foot sole, at the points of contact. The projections, in fact, are alternatively compressed, absorbing the energy charged by the weight of the body, and then released, returning this energy and thus

- 4 -

stimulating the foot sole.

To prevent the stimulating action of the projections on the foot sole from negatively affecting the comfort of the shoe, the overall thickness of the insole according to
5 the invention is set between 5 and 13 mm. Therefore, the shoe should be made with its uppers raised of several mm with respect to common shoes, to avoid that the foot works not naturally affecting the correct operation of the insole. In this case, the part of latex or other cushioning
10 material can also be injected directly in the shoe sole, so that only the upper layer has to be added.

A possible alternative embodiment, provided by the present invention, relates to arranging the insole directly in the shoe sole.

15 This can be done either raising the shoe uppers, or the shoe sole, in the latter case arranging the insole within the shoe sole.

Preferably the projections of the insole extend for the following height:

- 20
- Solar plexus, toe and kidney: 2-3 mm.
 - Other projections: 1,5-2 mm.

Brief description of the drawings

Further features and the advantages of the insole according to the present invention, will be made clearer
25 with the following description of an embodiment thereof with reference to attached drawings wherein:

- figure 1 shows a top plan view of the anatomical shape of the insole and a possible chart of the projections of the insole;
- 30 - figure 2 shows an exploded view of the position of the different parts of the insole at assembling;
- figure 3 shows in detail the insole after assembling the shoes;
- figure 4 shows a cross section of the insole according

- 5 -

to arrows IV-IV of figure 3.

- figure 5 shows a cross section of the insole according to arrows V-V of figure 3.

- figure 6 shows the position of the insole in a shoe;

5 Description of a preferred embodiment

With reference to figure 1 an insole 10, according to the present invention, is of the type equipped with a shaped upper surface 20, i.e. with projections 11-25, suitable for massaging the foot sole, and in particular
10 certain sensitive points thereof, during motion such as walking and jogging. The projections 11-25 made on the insole 10 correspond to points of the foot connected to important parts of the human body: heart 14, lungs 12, parts of the thorax 13, shoulders 15, liver, stomach and
15 pancreas 17, kidney 18, adrenaline stimulation 16, solar plexus 22, diaphragm 25, intestine 19, neck 21, sciatic nerve 23, genitals 24 etc., in accordance with the general principles of foot sole reflexology.

Insole 10, according to the invention, has at least one
20 layer 30 of cushioned elastically yielding material with a overall thickness S (figure 3) set between 5 and 13 mm. In particular thickness S (figure 3) of the insole can be chosen between 7 and 12 mm. Preferably, as in the present example, thickness S (figure 3) of the insole is between 9
25 and 11 mm.

With reference to figures 2-4, according to another aspect of the invention, the upper layer of the insole 10 is formed by a first face 20 printed with projections 11-25 towards the above and a second face 20'' printed with
30 recesses corresponding to said projections associated to second layer 30 located underneath, preformed with projections 11'-25' according to the same chart of the projections of the first face of upper layer 20 (figure 2) and made preferentially of latex.

- 6 -

In particular, projections 11'-25' of second layer 30 engage with the recesses of the first layer 20 (figure 2-5), and have a sharp edge.

In order to avoid tiredness to the foot and provide an
5 active antishock protection, the shoe according to the invention comprises, furthermore, a third resilient layer 40 that allows transpiration, located under the insole layers formed by the first layer 20 and second layer 30, and made preferably of Poron® or of PPT. Third layer 40 has
10 a cushioning function for insole 10 for a correct stimulating action on the foot sole. The projections 11-25 made on the first layer 20, in fact, in order to massage the foot sole of whom wears the shoe 60 (figure 6), have to be at the same time stiff and elastic.

15 When the shoes 60 are used for walking or jogging, the projections 11-25 made on the insole, according to the present invention, exploit the regular change of the distribution of the weight of the body between foot tip and heel by massaging rewardingly the foot sole, at the
20 respective points of contact. The projections 11-25, in fact, are alternatively compressed, absorbing the energy charged by the weight of the body, and then released, returning this energy and thus stimulating the foot sole.

To prevent the stimulating action of the projections
25 11-25 on the foot sole from negatively affecting the comfort of the shoe 60, the overall thickness S (figure 3) of the insole according to the invention, according to a preferred example, is about 10 mm. Therefore, a shoe is made preferably with raised uppers T (figure 6) of several
30 mm with respect to common shoes, to avoid that the foot works not naturally affecting the correct operation of the insole 10. In this case, the part of latex or other cushioning material can also be injected directly in the shoe sole, so that only the upper layer has to be added,

- 7 -

which is preferably a mixed tanning natural kip (vegetable tanning + tallow).

A possible alternative embodiment (not shown), provided by the present invention, relates to arranging the
5 insole 10 directly in a recess in the sole of shoe 60 so that the uppers have not to be raised.

Preferably the projections of the insole 10 extend up to the following height:

- Solar plexus, toe and kidney: 2-3 mm.
- 10 • Other projections: 1,5-2 mm.

The foregoing description of a specific embodiment will so fully reveal the invention according to the conceptual point of view, so that others, by applying current knowledge, will be able to modify and/or adapt for
15 various applications such an embodiment without further research and without parting from the invention, and it is therefore to be understood that such adaptations and modifications will have to be considered as equivalent to the specific embodiment. The means and the materials to
20 realise the different functions described herein could have a different nature without, for this reason, departing from the field of the invention. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

- 8 -

CLAIMS

1. Insole for shoes, said insole comprising a first layer on which a plurality is made of projections having a predetermined shape and thickness, located in use in
5 correspondence of sensitive points of the foot sole that are linked to relevant parts of the human body, in accordance with the principles of foot sole reflexology, and capable of massaging said foot sole at said sensitive points, exploiting the regular change of the distribution
10 of the weight of the body between foot tip and heel, said projections being alternatively compressed, absorbing the energy charged by the weight of the body, and then released, returning this energy and thus stimulating the foot sole **characterised in that** it consists of at least one
15 layer of a cushioned elastically yielding material that allows transpiration and has a overall thickness set between 5 and 13 mm.
2. Insole for shoes, according to claim 1, said insole having a overall thickness set between 7 and 12 mm.
- 20 3. Insole for shoes, according to claims 1 and 2, said insole having a overall thickness set between 9 and 11 mm.
4. Insole for shoes having an upper layer formed by a first face printed with convex projections and a second face printed with recesses corresponding to said projections,
25 said second face being associated to a second layer located underneath, preformed with projections according to a same chart of the first face of the upper layer and made preferentially of latex, in particular the protrusions of said second layer engaging the recesses of said first layer
30 that have a sharp edge profile.
5. Insole according to the previous claims wherein said first layer is made of natural mixed tanning kip (vegetable tanning + tallow).
6. Insole for shoes, according to claim 4, wherein said

- 9 -

spongy material of said second layer is latex.

7. Insole for shoes, according to claim 6, wherein to said second layer a third layer is associated of resilient material, chosen among Poron® or PPT, having the function
5 elastically cushioning said insole for a correct stimulating action on the foot sole.

8. Insole for shoes, according to claims from 4 to 7, said insole having an overall thickness set between 5 and 13 mm.

10 9. Insole for shoes, according to claims from 4 to 7, wherein said projections protrude 2-3 mm for solar plexus, toe and kidney and other projections protrude 1,5-2 mm.

10. Shoe suitable for including an insole according to the previous claims characterised in that it has a raised
15 uppers.

11. Shoe suitable for including an insole according to the previous claims, characterised in that it provides a recess in the shoe sole for receiving said insole.

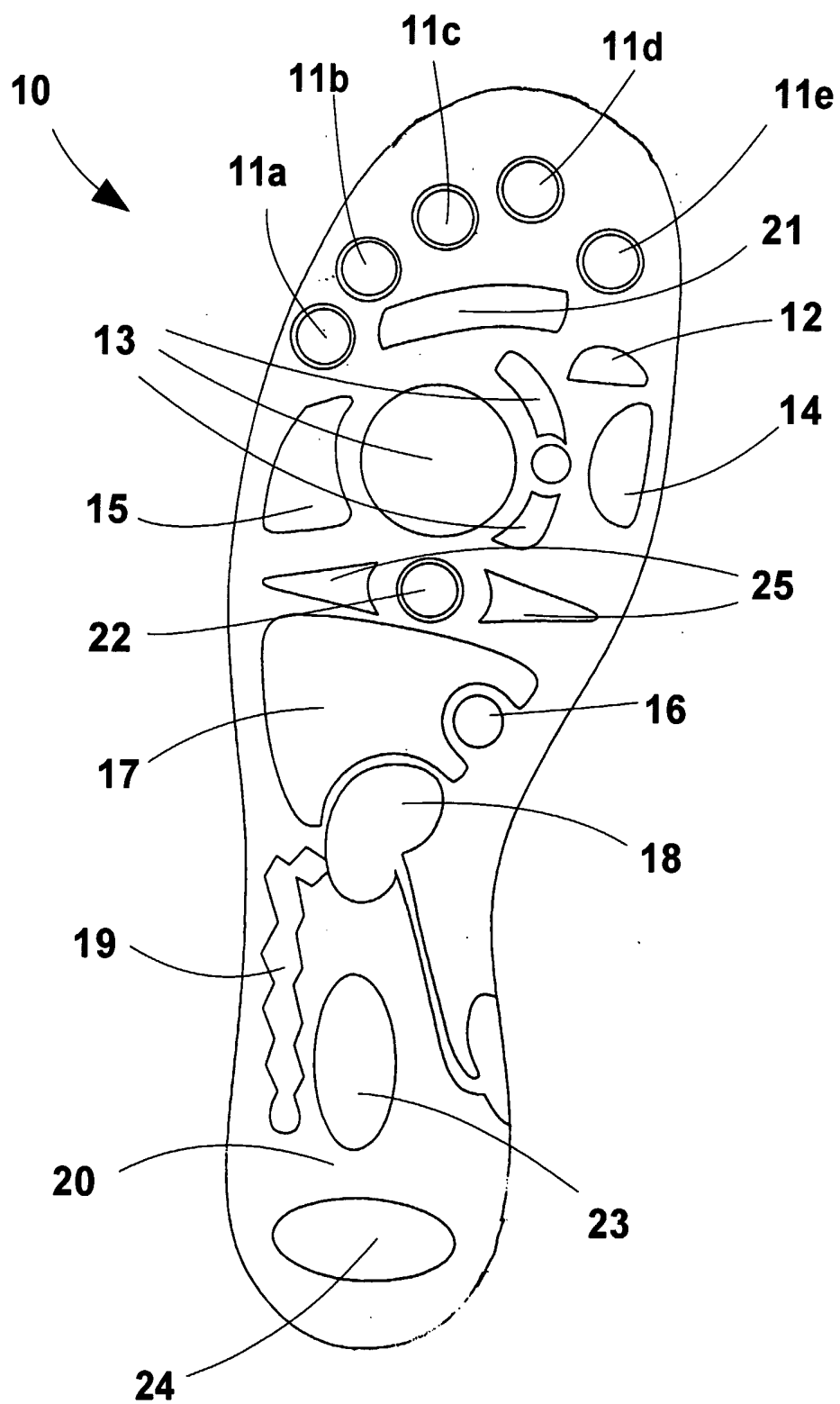
Fig. 1

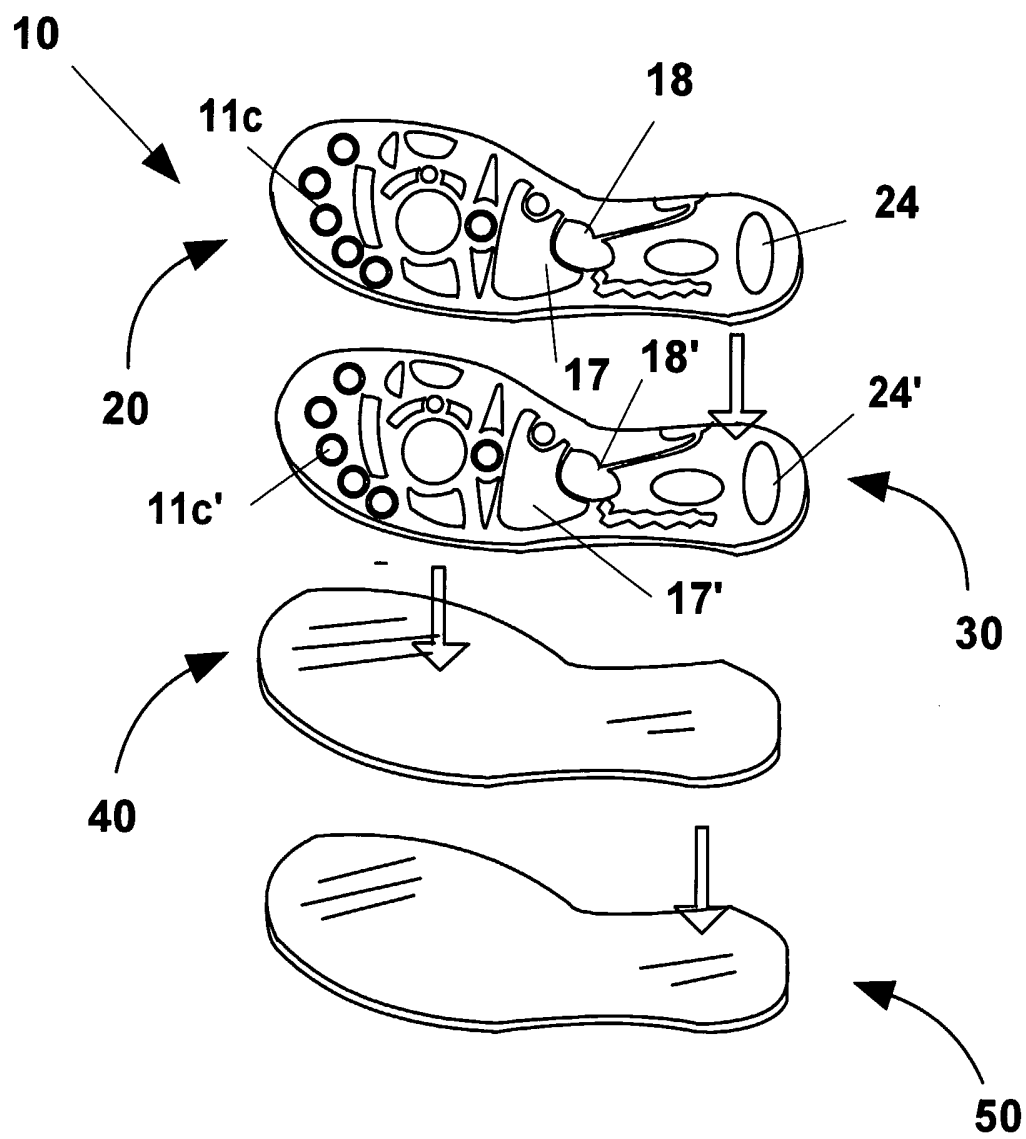
Fig. 2

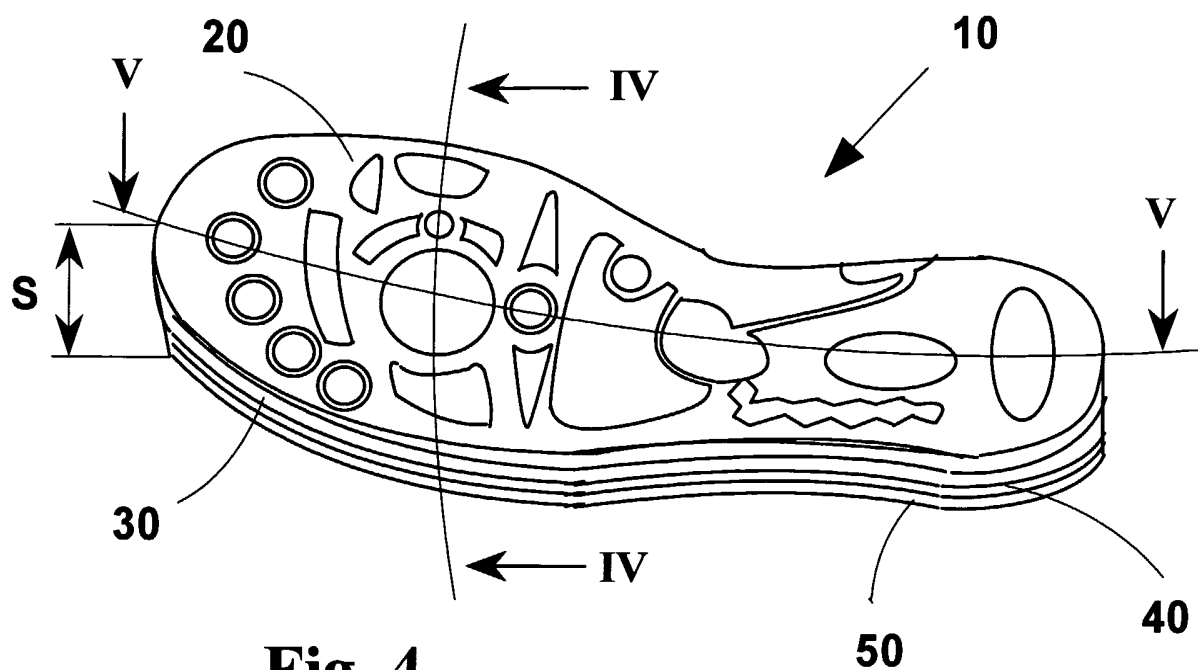
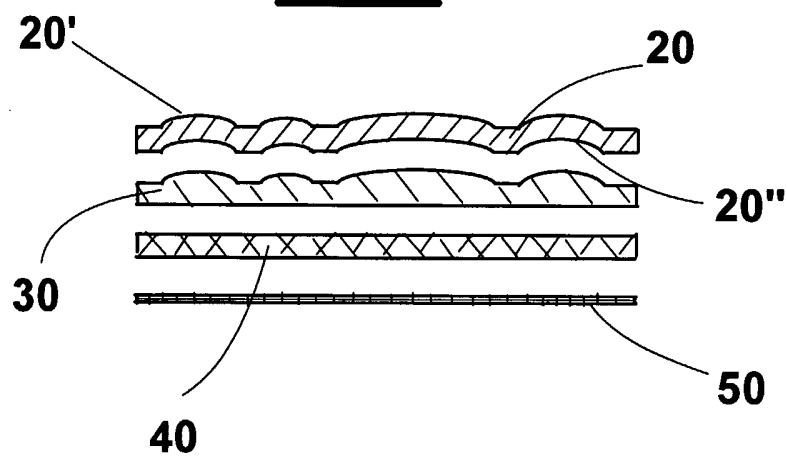
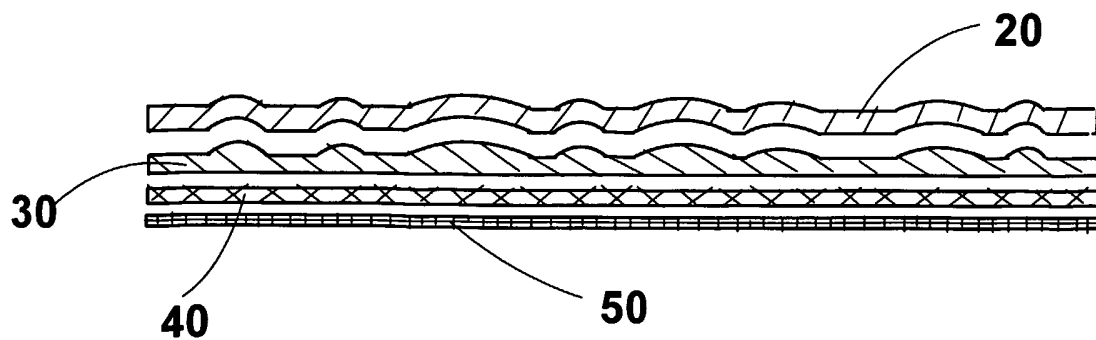
Fig. 3**Fig. 4****Fig. 5**

Fig. 6