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(11) **EP 1 557 104 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
27.07.2005 Bulletin 2005/30

(51) Int Cl.7: **A43B 13/18**, A43B 13/26

(21) Application number: **04380066.3**

(22) Date of filing: **26.03.2004**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

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(30) Priority: **23.01.2004 ES 200400130 U**

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(54) **A shoe sole**

(57) The present invention refers to a shoe sole (1) made from a material that is by preference flexible and includes a number of shock absorbing integrated protrusions (3), each one of the said protrusions being comprised of multiple cylindrical sections and which have a

reduction in their diameter as they become closer to the outside, in addition including a circular concave recess (5) in the centre.

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Description

[0001] The present invention has been developed for the purpose of providing a footwear sole that improves on the systems or above-mentioned devices, in addition, providing other additional advantages that will be clear from the description that is attached below.

[0002] The footwear sole of the present invention is made from a material that is by preference flexible, and is basically characterised by the fact that the surface of the face that is in direct contact with the floor is made up from a number of shock absorbing integrated protrusions, distributed uniformly and which protrude externally, each one of the said protrusions being comprised of multiple cylindrical sections and which have a reduction in their diameter as they become closer to the outside, in addition including a circular concave recess in the centre.

[0003] Thanks to these characteristics, a sole is obtained that has a low manufacturing cost which provides the user of same, on one hand, with a shock absorbing property during the movement brought about by walking, and on the other hand, a massaging effect on the sole of the foot or the area where the protrusions are located. This provides an area of relaxation created by a number of contact areas or friction from the protrusions, which attempts to contribute a sensation of relief and relaxation on the sole of the foot of the user. In addition, thanks to the presence of the circular concave recess located at the end of each one of the protrusions, adherence of the sole to the floor is made easier or is improved.

[0004] In accordance with another aspect of the sole of the invention, around the protrusion there is a second protrusion included that has an annular surrounding arrangement of a lesser height than the above-mentioned protrusions, also having a number of nerves arranged in a radial manner.

[0005] By preference the protrusions are made up of three cylindrical sections that have a shape similar to that of a tronco-conical pyramid.

[0006] Other features and advantages of the footwear sole of the present invention will become evident from the description given of the preferred embodiment, but are not exclusive, that is illustrated by way of example in the attached drawings, but is not by way of limitation, amongst which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

Figure 1. This is a perspective view corresponding to a section of the surface of the sole that is in contact with the floor for footwear of the present invention.

Figure 2. This is a section side elevation along the line A-A represented in the previous figure; and

Figure 3. This is a plan view seen from below of a footwear sole of the present invention that includes the composition made up of a number of protrusions of the type described above.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0008] As shown in figure 1 and 3, the footwear sole of the present invention that is made of flexible material to make the bending of the sole easier when walking, is formed by a body (1) in the shape of a sole, preferably of a flexible material, such as EVA, rubber, etc, the surface (2) of the face that is in direct contact with the floor comprising of a number of integral shock absorbing protrusions (3) distributed uniformly and in the form of a matrix, creating a mesh or area, along the complete length of the sole and protruding towards the outside. Each one of said protrusions (3) is made up of three cylindrical sections (4) that have a reduction in their diameter as they protrude further outwards, that is, in the direction towards the floor surface, in addition in the centre part there is a circular-concave recess (5) included which increases the adherence of the sole with the floor (see figure 2).

[0009] In addition, the protrusion (3) includes a second protrusion (6) surrounding its external surface, having annular form and a lesser height, also having a number of nerves (7) arranged in a radial manner, as can be seen in greater detail in figure 2.

[0010] The details, the shapes, the sizes and other ancillary elements, likewise the materials used in the manufacture of the footwear sole of the invention can be appropriately substituted for others that are technically equivalent and which do not diverge from the essence of the invention or the scope defined by the claims that are included below.

Claims

1. Footwear sole of a material that by preference is flexible, **characterised in that** the surface of the part that is in direct contact with the floor has a number of integral shock absorbing protrusions distributed uniformly and which protrude externally, each one of the stated protrusions being made up of different cylindrical sections that reduce in diameter as they protrude further towards the outside, in addition including a circular concave recess in the centre.
2. Footwear sole according to claim 1, **characterised in that** the protrusion includes a second protrusion surrounding its external surface, having annular form and a lesser height, also having a number of nerves arranged in a radial manner.
3. Footwear sole according to claims 1 and 2, **char-**

acterised in that the protrusions are made up of three cylindrical sections.

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FIG. 1

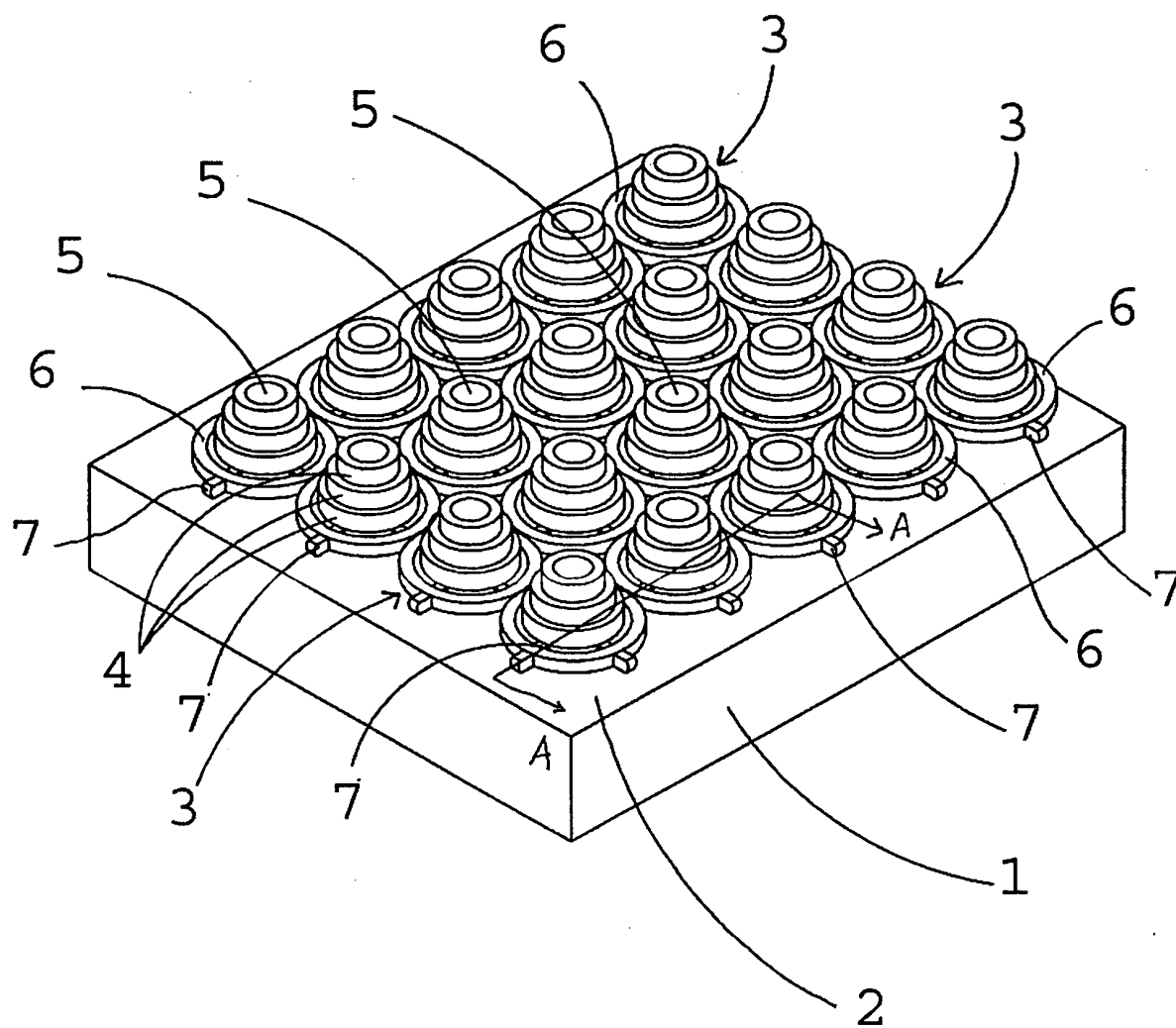


FIG.2

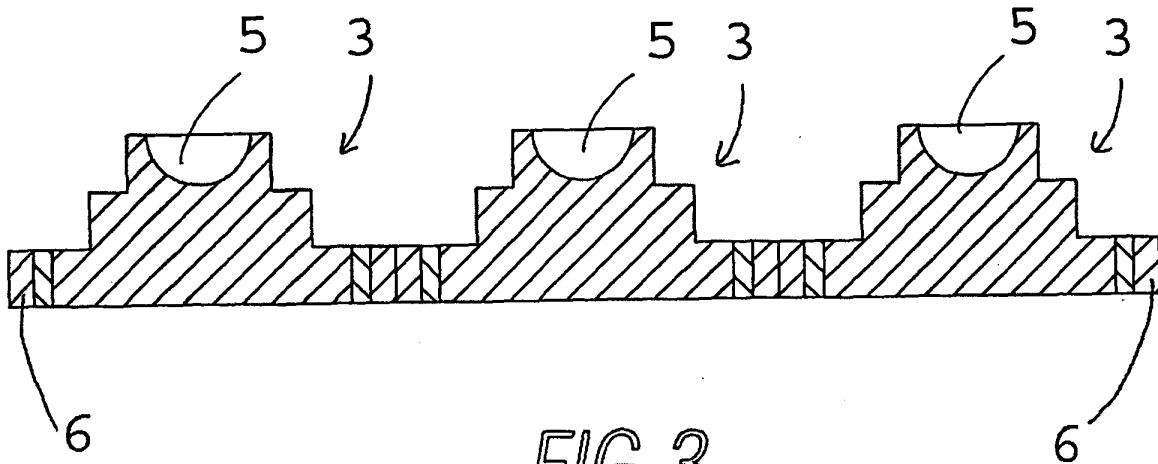
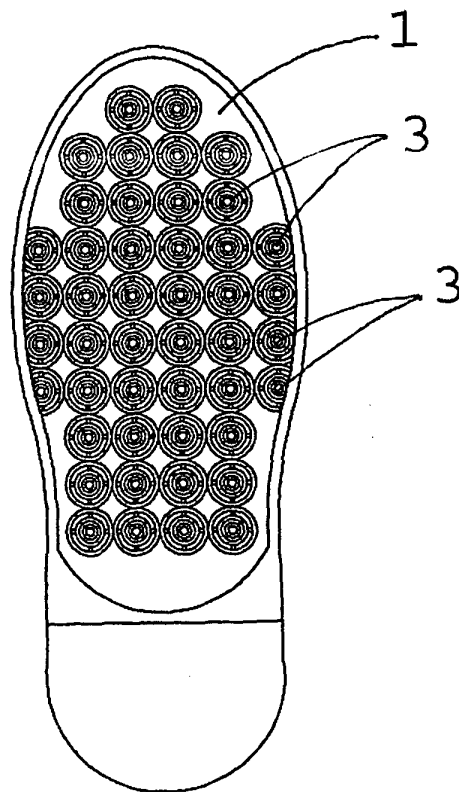


FIG.3





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EUROPEAN SEARCH REPORT

Application Number
EP 04 38 0066

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 February 2005	Examiner Cianci, S
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 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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15-02-2005

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