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Remarks:

The references to figure 3 are deemed to be deleted (Rule 43 EPC).

(54) **Insole for footwear**

(57) It is structured from a base body (1) wherein a large recess (2) is defined in its upper part which leaves free a narrow marginal and perimeter band, a recess which is accentuated in the heel where it becomes a housing (3) for a small suction/blow air pump (4), a housing which is closed by an upper flexible piece (5), which affects the entire recess (2), which has, on its lower surface, channels (6) for a distribution of air generated by the pump (4) throughout the surface of the insole, which is finished by the classic upper inner sole (7) fixed to the perimeter edge of the base piece (1). Both the inner sole (7) and the base piece (1) have a high production of small through-holes (8-9) for the inlet/outlet of air, thus achieving optimal aeration of the foot which improves the breathability of the footwear as a whole.

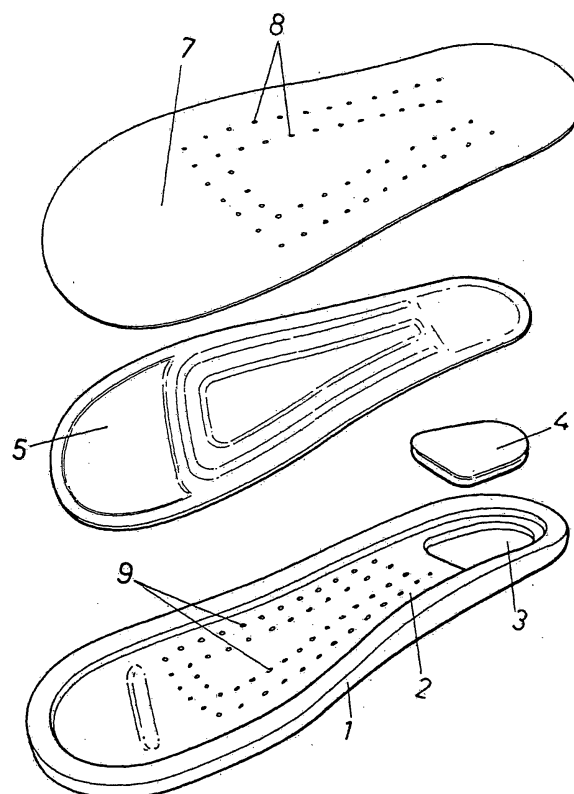


FIG.1

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to an insole for footwear, of the type designed to be tightly fitted inside said footwear, establishing internal covering for the sole, which separates the latter from the user's foot and which makes the footwear as a whole suitably comfortable.

[0002] The object of the invention is to achieve a self-ventilating insole, which in its normal movement on walking causes aeration of the user's foot, improving the breathability conditions.

BACKGROUND OF THE INVENTION

[0003] As is known, insoles for footwear are usually structured from a body which, with a contour which coincides with that of the footwear sole, has an appreciably flat lower surface, of adaptation to said sole, and an upper surface with a more or less anatomic configuration, for its adaptation to the user's foot, and it is covered on its upper part by an inner sole based on a very soft leather or similar, which, by its very nature, contributes to better breathability of the footwear as a whole.

[0004] Nevertheless, the nature of this inner sole is usually insufficient to achieve good comfort, as the actual insole is also usually made of an impermeable material and, of course, on very many occasions the sole is totally impermeable, as it is obtained by injection moulding based on plastic materials.

[0005] This entails that, especially when it is footwear with a closed upper, its breathability is minimal, and in any case said breathability is not as sufficiently high as would be desirable.

DESCRIPTION OF THE INVENTION

[0006] The insole proposed by the invention resolves in a fully satisfactory manner the aforementioned problem, offering the footwear user a high degree of breathability, determined by a permanent circulation of air inside said insole, whilst the footwear is being used.

[0007] To do this, and more specifically, the insole disclosed centres its characteristics on the fact that it incorporates therein, specifically in its heel, a small air pump which is intermittently actuated when the footwear user rests his foot on the ground, generating a movement of air inside the insole which is distributed throughout its surface, due to the existence of inner channels, from which vertical orifices are derived which extend between the upper surface and the lower surface thereof, which causes the air to circulate not only between the insole and the user's foot, but also between the insole and the shoe upper.

[0008] More specifically, the insole of the invention, in addition to incorporating the classic said inner sole, is structured from two pieces, a lower piece or base piece,

constituting the insole, and an upper piece, elastically deformable, which together with the lower piece defines both the housing for the pump and the channels to distribute the air throughout the insole surface.

DESCRIPTION OF THE DRAWINGS

[0009] To complement the description being made and in order to contribute to a better understanding of the invention's characteristics following a preferred practical embodiment thereof, a set of drawings is attached as an integral part of said description, which by way of illustration but not limitation represent the following:

- 15 Figure 1.- Shows a perspective exploded view of an insole made in accordance with the object of the present invention.
- Figure 2.- Also shows a perspective view of the same unit of the previous figure properly assembled.
- 20 Figure 3.- Finally shows a longitudinal sectioned detail of the unit represented in the previous figure.

25 PREFERRED EMBODIMENT OF THE INVENTION

[0010] In light of said figures, it can be observed that the insole that the invention proposes is constituted from a base body (1), of any material commonly used in producing an insole, such as, for example, based on agglomerated cork stiffened by a fibrous lattice structure, with an essentially flat lower surface to adapt to the sole of the footwear, not represented in the drawings, and with an upper surface largely affected by a recess (2) which is especially accentuated in the heel, where a housing (3) is defined for a small pneumatic pump (4), this base piece (1) being complemented with an upper piece (5), of an elastic material, which closes on its upper part the chamber or housing (3) for the pump (4) and which incorporates longitudinal and transversal channels (6) on its lower surface for a suitable distribution of the air generated by the pump (4) throughout the surface of the insole.

[0011] The structure of the insole is complemented with an upper inner sole (7), of contour which coincides with that of the base piece (1) and whereto it is fixed covering and concealing the intermediate elastic piece (5), defining a chamber connected with the outside by a plurality of perforations (8) which affect said inner sole (7), and of which perforations (9) which profusely affect the base piece (1) are complementary.

[0012] In this way the air suction and blowing effects generated by the pump (4) entail alternative and permanent suction and expulsion of the air from the inside of the insole towards the inside of the footwear and vice-versa, with the subsequent aeration and ventilation thereof, which gives a high degree of breathability for the user's feet, also determining a high degree of comfort for the

footwear.

Claims

1. Insole for footwear, of the type that are constituted by a base body whereto an inner sole is adapted and fixed on its upper part, constituting a unit which is tightly fitted to the inside of the footwear and which constitutes the support surface for the user's foot, **characterized in that** said base body (1) incorporates on its upper surface a recess (2) which largely affects it, with the exception of a perimeter band, a recess which is accentuated in the heel defining a housing (3) for a suction/blow air pump (2), which is positioned under a flexible body (5) which occupies the entire recess (2) of the base piece (1) and which incorporates a plurality of channels (6) on its lower surface to distribute the air sucked/blown by the pump (4), the classic inner sole (7) being positioned on said elastic piece (5), an inner sole (7) which is fixed by its perimeter to the external marginal zone of the base piece (1), having designed that both said base piece (1) and the inner sole (7) incorporate a plurality of orifices (8-9) which establish communication between the interior area of the insole and, both the space defined between it and the sole, and between it and the inside of the footwear.

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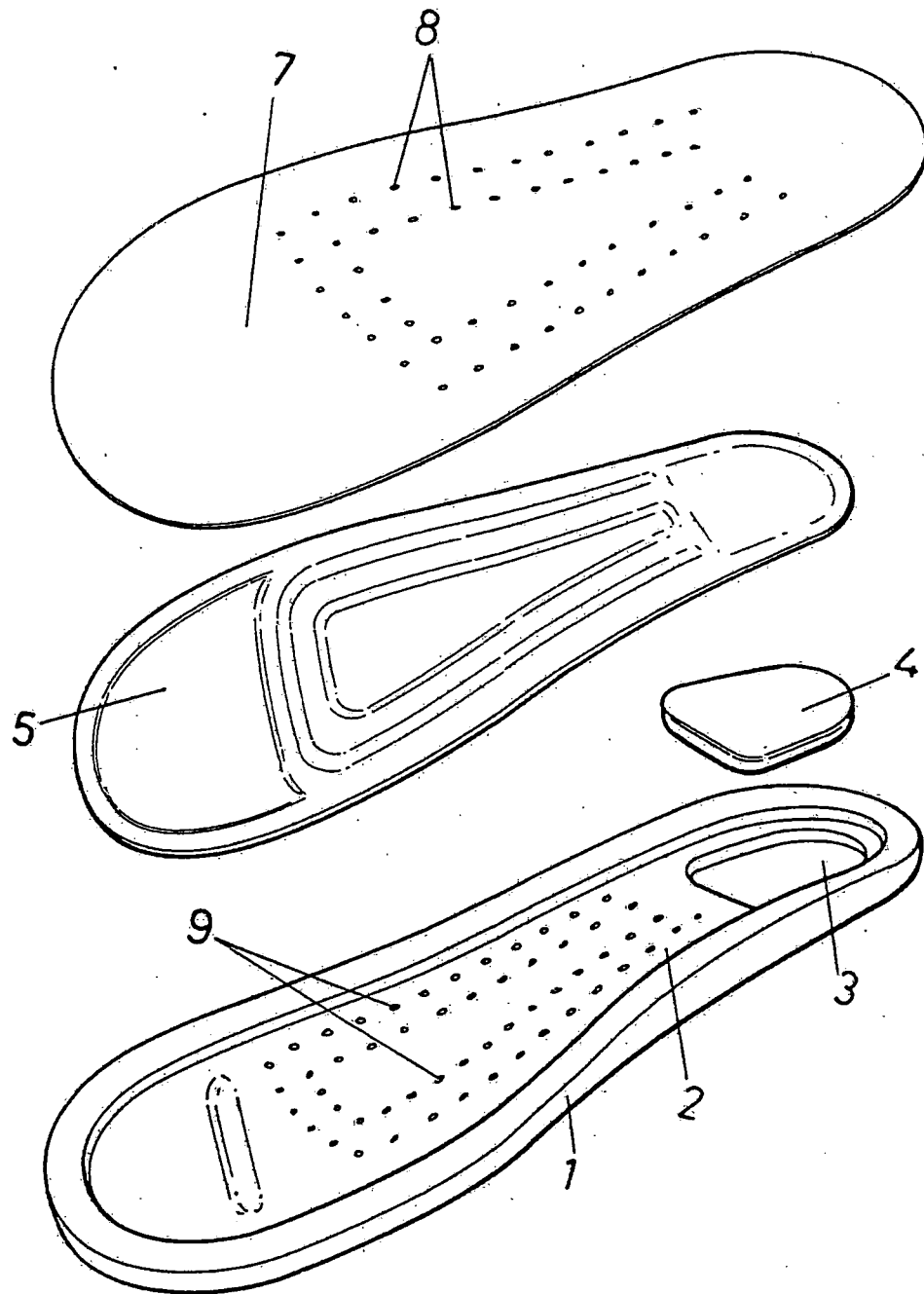


FIG.1

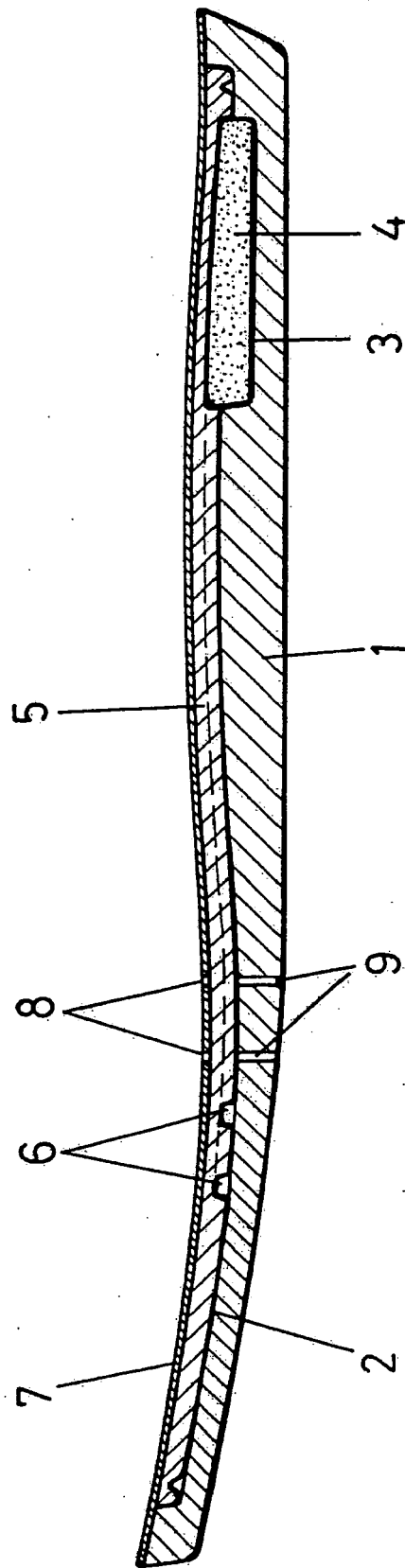


FIG.2



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 42 5626

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	GB 2 382 017 A (C & J CLARK INTERNAT LTD [GB]) 21 May 2003 (2003-05-21) * page 23, line 26 - page 25, line 2; figure 6 *	1	INV. A43B17/08
Y	US 5 675 914 A (CINTRON ARTHUR G [US]) 14 October 1997 (1997-10-14) * column 2, line 59 - column 4, line 46; figures 2,4 *	1	
A	DE 201 04 040 U1 (GIAMBALVO SALVATORE [DE]) 28 June 2001 (2001-06-28) * the whole document *	1	
P,A	CN 2 726 358 Y (MEGA NICE CO LTD [CN]) 21 September 2005 (2005-09-21) * figure 5 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A43B
Place of search		Date of completion of the search	Examiner
The Hague		25 January 2007	Cianci, Sabino
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
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 42 5626

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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25-01-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2382017	A	21-05-2003	AU 2002343025 A1	10-06-2003
			WO 03043454 A2	30-05-2003

US 5675914	A	14-10-1997	NONE	

DE 20104040	U1	28-06-2001	DE 10209728 A1	12-12-2002
			WO 02085151 A1	31-10-2002

CN 2726358	Y	21-09-2005	NONE	
