



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**15.08.2007 Bulletin 2007/33**

(51) Int Cl.:  
**A43B 17/10 (2006.01) A43B 23/07 (2006.01)**

(21) Application number: **06380150.0**

(22) Date of filing: **02.06.2006**

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

(71) Applicant: **Troquelados Rogelio Ines, S.L.**  
**50250 Illueca, Zaragoza (ES)**

(72) Inventor: **Francisco Javier, Ines Gaspar**  
**50250 Illueca, Zaragoza (ES)**

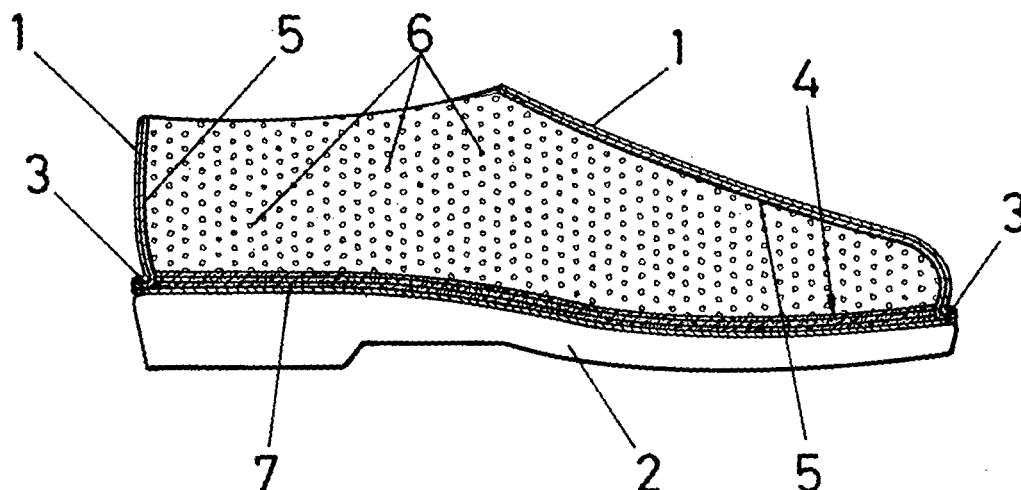
(74) Representative: **Carpintero Lopez, Francisco et al**  
**Herrero & Asociados, S.L.**  
**Alcalá 35**  
**28014 Madrid (ES)**

(30) Priority: **10.02.2006 ES 200600296 U**

(54) **Odour-free footwear and insole**

(57) The upper (1) incorporates internally a lining (5) of a textile or similar nature, with small areas (6) impregnated with a deodorant product and distributed evenly over its surface, which lining is breathable or semi-breathable. For its part the insole (4) has an upper layer

permeable both to air and to moisture, an intermediate layer which also constitutes a physical support for an antibacterial agent and an also permeable bottom layer. It is thereby possible to enhance the comfort of the footwear.



**FIG.2**

## Description

### OBJECT OF THE INVENTION

[0001] The present invention relates to footwear, of any design or configuration, but half closed or fully closed, that is of the type of that which is prone to produce sweating of the user's feet, and which to such an end are provided with deodorant means which neutralize the unpleasant smell that the bacteria produce which develop in the perspiration in question. The invention also concerns the complementary insole for said footwear, both if it is attached to the same, and if it constitutes a physically independent element.

[0002] The object of the invention is to enhance very substantially the deodorant effect both of the footwear itself and of the complementary insole.

### BACKGROUND OF THE INVENTION

[0003] It is well known that perspiration of the feet constitutes in many cases a suitable culture broth for the proliferation of bacteria which produce unpleasant smells, which should be suppressed for obvious social reasons.

[0004] To resolve this problem insoles are used at the present time, in some cases integrated in the original footwear and in others as an independent complement which can be fitted later in the same, so that such insoles, with different structural conceptions, incorporate a deodorant agent inside, such as activated carbon, among others.

[0005] This type of insole, perfectly valid from the functional and theoretical point of view, presents problems in practice consisting of an insufficient effectiveness, especially in the case of users that suffer severe sweating of their feet, wherein the sweating is not limited to the area of the sole or support of the foot, but instead extends over the whole surface of the same.

[0006] Evidently in these cases the substance utilized as active agent against the bacteria producing the unpleasant smell, being located on the insole, does not affect more than the bottom of the foot, being inoperative with regard to the rest of the surface thereof.

[0007] Evidently the problem remains in the case of using simple deodorant products on the insole, instead of active substances against the bacteria producing the unpleasant smell.

### DESCRIPTION OF THE INVENTION

[0008] The footwear which the invention proposes, jointly with its complementary insole, resolves in a fully satisfactory manner the problem outlined above, assuring optimum functional benefits, that is, assuring the disappearance of unpleasant smells both at the level of the sole and from the rest of the surface of the foot.

[0009] For this reason and in more specific terms, the

footwear disclosed, which will be incorporated like any conventional footwear by means of the combination of a sole and an upper, which can be joined indistinctly by means of stitching or by adhesive, centers its characteristics in the fact that the aforementioned upper is fitted internally with a kind of lining, made of a textile, adequately fixed to the upper itself, for example by means of adhesive, said lining incorporating an appropriate odorizing product which impregnates it suitably.

[0010] Specifically said odorizing product can affect the lining mentioned over the whole extension of the same, or in differentiated particular areas separated from each other, in order to minimize its own odorizing effect limiting it so that it does not redound negatively in the environment of the footwear, that is to achieve a delicate and barely perceptible odorization, in the precise and necessary degree to counteract the unpleasant smells due to the sweating of the foot, especially in the upper area of the same.

[0011] Complementarily the insole, which as has been said can be fixed rigidly to the footwear or be physically dependent thereon, is structured by means of three layers, a top layer permeable both to air and to moisture, which is that intended to be in contact with the foot, an intermediate layer which carries an anti-bacterial or anti-fungus agent capable of neutralizing the smell by creating a barrier to the growth of the bacteria which tend to proliferate using the perspiration as a medium for development, and finally a bottom layer also permeable both to air and to moisture, which provides a cool surface, both on the foot and in the footwear, by creating a cooling effect through evaporation of the perspiration.

[0012] This insole can also be fixed by means of adhesive to orthopedic insoles which are prescribed by podiatrists, in which case the third layer, that is to say the bottom layer, would be a sheet of two-sided adhesive, non-breathable.

### DESCRIPTION OF THE DRAWINGS

[0013] To complete the description that is being made and with the object of assisting in a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment of the same, this description is accompanied with a set of drawings, as an integral part thereof, wherein by way of illustration and not restrictively, the following has been represented:

Figure 1. - It shows a view in cross-section of an article of footwear, specifically of a shoe, fitted with the complementary insole and embodied in accordance with the invention, which confers upon it the odour-free character mentioned.

Figure 2. It shows a view in side elevation and in longitudinal cross-section of the same assembly as in the previous figure.

Figure 3. - It shows, finally, a partial explosion and in perspective of the insole which participates in the footwear of the previous figures.

## PREFERRED EMBODIMENT OF THE INVENTION

**[0014]** In the light of the foregoing figures, it can be observed how the footwear disclosed is incorporated, like any conventional footwear, by means of the combination of an upper (1) and a base or sole (2), obtained by means of appropriate materials and fixed to each other on the periphery (3) of the upper by means of stitching, adhesive or by any other means considered convenient, upper (1) and sole (2) being able to adopt any configuration, in accordance with any design approach, without this affecting in any way the essence of the invention, and the sole (2) being habitually supplemented with an insole (4) which has been represented schematically in figures 1 and 2 and in greater detail in figure 3.

**[0015]** Starting with this basic structure and now in accordance with the invention, the upper (1) incorporates a lining (5) internally, made of a textile or similar, conveniently fixed to the same, like for example by means of adhesive or by means of stitching the marginal areas near to their edges, said lining (5) incorporating a series of small areas (6) impregnated with a deodorant product and preferably distributed evenly on the surface of the aforementioned lining (5).

**[0016]** As is observed especially in figure 2, these small areas (6) impregnated with the deodorant product constitute small areas substantially separated, the object being to minimize the effect produced by the same on the footwear as a whole, as has previously been mentioned, and more specifically with the object of achieving that the odorization produced by said impregnations is mild and agreeable.

**[0017]** The lining (5) will be breathable or semi-breathable and optionally it can be in leather instead of being textile.

**[0018]** Returning again to the small impregnated areas (6), in figure 2 they adopt a circular configuration and have a grid-like distribution, but since said areas can be visible through the definitive lining which can cover the lining (5), and their configuration redound to a certain measure in the appearance of the footwear, they can adopt any other configuration and arrangement in accordance in turn with any design line. Therefore, the impregnated areas (6) can be, for example, of a quadrangular, triangular or any other configuration that is deemed convenient.

**[0019]** In practice the impregnated areas (6) are obtained by application to the lining (5), in form of moist powder, of the selected anti-bacterial or fungicide product, for the proper adherence thereof and with a device which allows the process to be automated, obviously before manufacturing the footwear, so that starting with the upper (1), firstly the lining (5) is fixed to the internal face of said upper, subsequently the upper (1) is stitched or

welded to the sole (2), with the parallel stitching or welding of the classic inner sole (7) that covers the top face of the sole, and finally the insole (4) is fitted, in an operation which is carried out once the shoe is completely finished.

**[0020]** This insole (4), as observed in figure 3, is constituted by a top layer (8) of a material permeable both to air and to moisture, an intermediate layer (9) which constitutes the physical support for an anti-bacterial agent, like for example a composition of talc, boric acid, zinc oxide and others, so that said layer (9) creates a barrier to bacterial development, and consequently it neutralizes the smell, and finally a bottom layer (10) which is also permeable both to air and to moisture, providing a cool surface, as has been said previously, which enhances the comfort of the footwear.

**[0021]** Lastly it only remains to point out that the aforementioned insole (4) can come in footwear with the characteristics which constitute the object of the present invention, that is, fitted with the lining (5) having the areas (6) impregnated with the deodorant product, or said insole (4) can be used in any other conventional footwear.

## Claims

1. - Odour-free footwear and insole, constituted by an upper and a sole or base, with any configuration, joined to each other by means of stitching, welding or by any other means, in the interior of which is housed the deodorant insole, coupled movably or immovably to the footwear, **characterized in that** the upper (1) is provided with an interior cladding by way of a lining (5), fixed to the same by any conventional means, made of a textile, leather or any other breathable product, impregnated with an anti-bacterial or anti-fungus substance, whilst the complementary insole (4) adopts a multi-layer structure, with a top layer (8) permeable both to the air and to moisture, intended to come into contact with the foot, an intermediate layer (9) supporting an anti-bacterial agent neutralizing the smell, by creating a barrier to the growth of the bacteria, and a bottom layer (10) also permeable both to air and to moisture.
2. - Odour-free footwear and insole, according to claim 1, **characterized in that** the lining (5) or interior cladding of the upper (1) incorporates small areas (6) impregnated with the anti-bacterial or fungicidal substance, which are uniformly distributed and substantially separated, so that they affect the surface of the lining (5) to a lesser extent, adopting formal configurations in accordance with any decorative design for said lining.
3. - Odour-free footwear and insole, according to claim 1, **characterized in that** the intermediate layer (9) of the insole (4) incorporates as anti-bacterial agent

a composition based on talc, boric acid and zinc oxide.

4. - Odour-free footwear and insole, according to claims 1 and 3, **characterized in that** when the insole (4) is intended to cover an orthopedic insole, the bottom layer is materialized in a two-sided adhesive sheet, non-breathable.

10

15

20

25

30

35

40

45

50

55

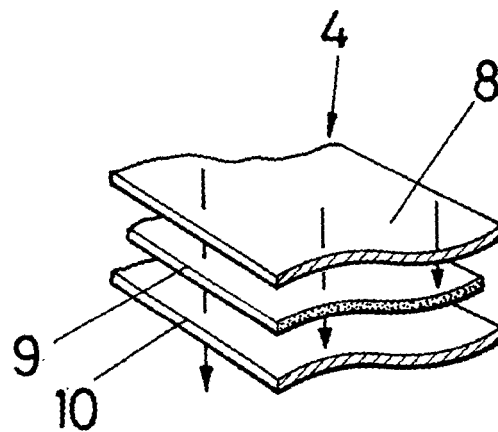
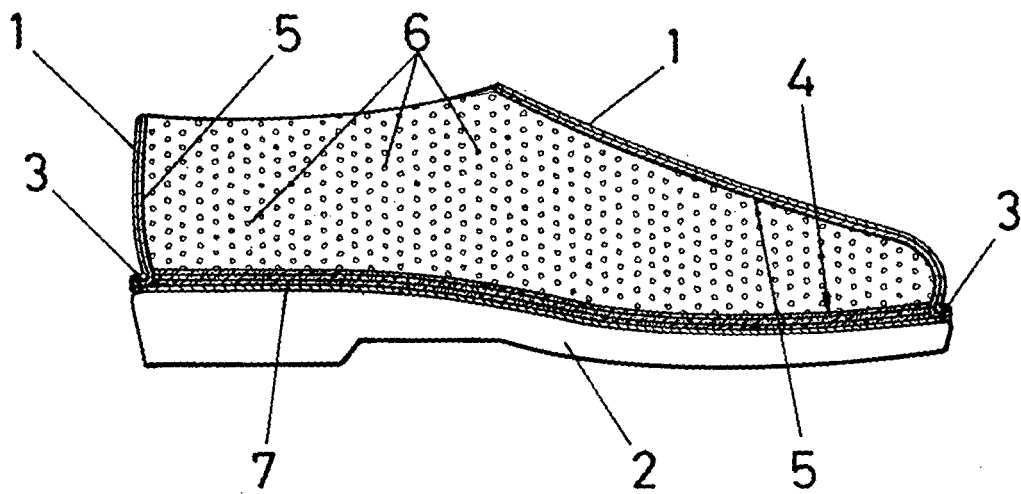
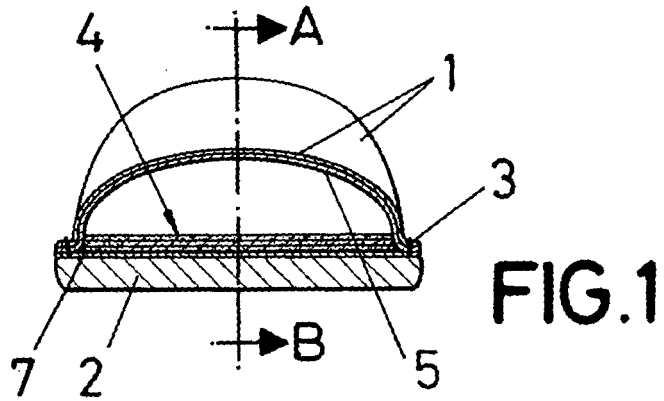


FIG.3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 06 38 0150

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	JP 10 137005 A (MIZUGUCHI HOICHI) 26 May 1998 (1998-05-26) * abstract *	1-4	INV. A43B17/10 A43B23/07
Y	FR 2 798 046 A (DEGORGE MICHEL [FR]) 9 March 2001 (2001-03-09) * the whole document *	1-4	
Y	US 6 210 508 B1 (WILLIAMSON ROBERT R [US] ET AL) 3 April 2001 (2001-04-03) * the whole document *	1-4	
Y	EP 0 685 257 A1 (FILIPITSCH & CO KEG C [AT]) 6 December 1995 (1995-12-06) * column 8, line 13 - column 9, line 47; figure 2 *	1-4	
Y	US 2005/075027 A1 (ETCHELLS MARC D [US] ET AL) 7 April 2005 (2005-04-07) * the whole document *	1-4	
Y	EP 0 272 690 A (KIMBERLY CLARK CO [US]) 29 June 1988 (1988-06-29) * the whole document *	1-4	TECHNICAL FIELDS SEARCHED (IPC)
P,A	WO 2006/021883 A (SPRINGTIME DEV S A [PA]; FERRETTI GIORGIO [MC]) 2 March 2006 (2006-03-02) * page 9, line 12 - page 10, line 5; figure 7 *	1-4	A43B
A	EP 0 713 658 A (GORE W L & ASS SRL [IT]) 29 May 1996 (1996-05-29) * the whole document *	1-4	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 March 2007	Examiner 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			

1  
EPO FORM 1503 03 82 (P04C01)

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

EP 06 38 0150

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  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-03-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 10137005	A	26-05-1998	NONE	
FR 2798046	A	09-03-2001	NONE	
US 6210508	B1	03-04-2001	NONE	
EP 0685257	A1	06-12-1995	CA 2191465 A1	14-12-1995
			DE 69514955 D1	16-03-2000
			DE 69514955 T2	05-10-2000
			DK 685257 T3	15-05-2000
			WO 9533555 A1	14-12-1995
			JP 10501168 T	03-02-1998
			US 5753357 A	19-05-1998
US 2005075027	A1	07-04-2005	NONE	
EP 0272690	A	29-06-1988	JP 63234902 A	30-09-1988
			US 4864740 A	12-09-1989
WO 2006021883	A	02-03-2006	WO 2007032037 A1	22-03-2007
EP 0713658	A	29-05-1996	IT VI940062 U1	23-05-1996