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(54) Disposable sweat and odour absorbing insoles or inserts for shoes

(57) A disposable insole (10) for absorbing odours caused by foot perspiration, comprises an enclosure defined by a first sheet (12) and a second sheet, and a body made from a pulp material positioned in the enclosure. The insole comprises at least one odour absorbing region (14, 16, 18) made from an odour absorbing material positioned in the enclosure. The first sheet (12) and/or the body is adapted for being in facial contact with a human foot and the second sheet being adapted for being in facial contact with the sole of a shoe.

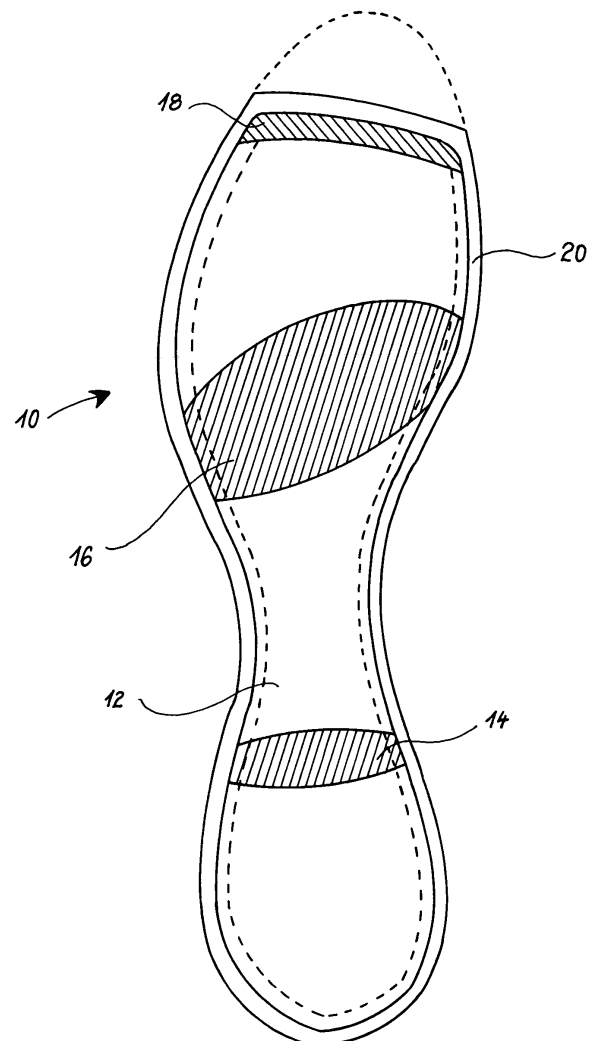


Fig. 1

Description

[0001] The present invention relates to disposable sweat and odour absorbing insoles or inserts for shoes.

[0002] Insoles or inserts have been described in publications such as US 5,935,671, WO 97/32498, US 4,186,499, US 5,392,533, WO 2004/012549, EP 0 839 462, US 6,203,810, Patent abstracts of Japan 09329404 and Patent abstracts of Japan 01160804. Reference is made to all of the above-mentioned US publications and all of the US publications are hereby incorporated by reference in the present specification by reference.

[0003] The publication US 5,935,671 describes a sweat-absorbing, disposable hygienic insert having a permeable inner film in contact with the foot, an outer film, and an absorbent layer intermediate the inner and outer films. The inner film is provided with a plurality of openings produced without removal of material. The absorbent layer has a flexible hygienic pad including absorbent material, hygienic additives and treatment additives. The outer and inner films are attached to one another at their edges, and are attached by at least one bond which passes through the hygienic pad, the bond located inside a boundary defined by the attached edges of the outer and inner films.

[0004] US 4,186,499 describes a construction for absorbing odours caused by perspiration wherein such construction comprises a fabric having at least one member comprising an exposed surface thereof with the member comprising an odour-absorbing material and with the member being freely accessible on the exposed surface to the perspiration thereby assuring unimpeded action by the odour-absorbing material thereof.

[0005] Soles of shoes having areas or portions with varying density have been described in publications such as EP 0 268 661 B1, US 5,575,089, US 5,572,805 and US 5,025,573. Reference is made to all of the above-mentioned US publications and all of the US publications are hereby incorporated by reference in the present specification by reference. The publications relating to shoe soles having varying density does may not be used as an insole.

[0006] The teachings of the present invention provides a disposable insole for absorbing odours caused by foot perspiration, that comprises:

- an enclosure defined by a first sheet and a second sheet,
- a body made from a pulp material positioned in the enclosure,
- at least one odour absorbing region made from an odour absorbing material positioned in the enclosure,
- the first sheet and/or the body is adapted for being in facial contact with a human foot and the second sheet being adapted for being in facial contact with the sole of a shoe.

[0007] The enclosure may alternatively be defined by a single sheet, e.g. by wrapping the body made from a pulp material and sealing, closing or joining two sides of one sheet so as to form an enclosure or pocket.

[0008] The body is preferably made from a paper pulp material. Material such as that used when producing sanitary towels or even diapers may be used. The pulp material may be somewhat odour absorbing, however, the odour absorbing regions preferably are better able to absorb odour and moist from feet.

[0009] The odour absorbing region or area is positioned inside, between the two sheets, so that the odour-absorbing region is not exposed on the surface of the insole.

[0010] One surface of the insole is preferably adapted for being in facial contact with the base part of a human foot, i.e. defining a substantially flat surface or one or more protruding areas, such as at the arch, pad or at the toes. Alternatively, indentations or recesses may be formed in the surface of the insole, e.g. substantially corresponding to the heel or other parts of a human foot. Further alternatively combinations of indentations, recesses and protruding areas.

[0011] According to the teachings of the present invention, a first feature relates to the at least one odour-absorbing region being defined at a position substantially corresponding to the arch and/or the pad and/or to one or more toes of a human foot.

[0012] Positioning odour-absorbing regions near or at the areas of a foot where the foot is contemplated to provide an improved comfort by providing a better absorption of unwanted odours and/or sweat produced by feet. Also, limiting the odour absorbing regions is contemplated to decrease the cost of producing the insole.

[0013] A second feature of the present invention relates to the first sheet and/or the second sheet being made from a pulp material. Preferably, the first and/or the second sheet is made from the same kind of pulp material, also, the first and/or the second sheet may be made from the same kind of pulp material as the body. The material used for the sheets may be a breathable material for ensuring that the sweat from a foot may be transported away from the foot, or the layer being in contact with the foot, and into the odour-absorbing region, area or volume. The odour-absorbing region preferably also acts as a moisture- and/or sweat-absorbing region. The body may also exhibit moisture- and/or sweat- and/or odour-absorbing properties.

[0014] The insole may define a circumferential rim by adjoining the first sheet and the second sheet. The circumferential rim may extend in a plane substantially parallel with the top surface of the insole. The rim may extend less than the outline of the insole or include cut-out areas, i.e. holes or the like. The rim preferably defines a small width compared with the size of the body.

[0015] In a particularly advantageous embodiment of the present invention, the first sheet and/or the second sheet and/or the body may define an outline substantially

corresponding to the outline of a foot or the inside of a shoe, so that the insole may be positioned inside a shoe and the wearer of the shoe does not feel any discomfort when using the insole.

[0016] The user of the insole may cut the insole e.g. with a pair of scissors so as to adapt the insole for a particular pair of shoes or shoes of a specific size. When a person cuts the insole, the layers preferably does not separate from the body, however, the insoles may be produced in various sizes, each matching a specific range of shoe sizes.

[0017] The insole may be provided with adhesive means for ensuring that the insole is kept in place after being positioned in a shoe. The adhesive means may be constituted by double-sided tape, glue, paste, sticky mass, preferably an adhesive that may enable a person to remove the insole after use.

[0018] A first advantage of the present invention is that the at least one odour absorbing region may be made from a pulp material, a carbonaceous material, a non-woven material, a homogeneous or non-homogeneous fibre material, a combination of silica, AGM and zeolites; or zeolites, activated carbon and AGM; or silica and AGM; or zeolite and AGM; or silica and zeolites; or delating agents or delating agents, AGM and zeolite or delating agents, AGM, zeolite and activated carbon, or any combinations thereof.

[0019] A second advantage relates to the odour-absorbing region comprising an antiperspirant or an anti-microbial agent. The antiperspirant or an anti-microbial agent is contemplated to substantially eliminate the bacteria or micro-organisms that causes odour in foot sweat and/or hinder or reduce the amount of foot sweat produced. Also, the odour-absorbing region may comprise at least one odour control agent selected from zeolites, absorbent gelling materials, activated carbons, silicas and mixtures thereof.

[0020] The presents of antiperspirant or an anti-microbial agent is contemplated to prolong the use of the insole, without hindering the insole to be disposed after use.

[0021] The insole according to the present invention preferably defines a thickness less than 1 cm, so that a user does not feel discomfort when wearing shoes with the insole inserted.

[0022] The present invention is to be described in more detail with reference to the drawings, in which:

Fig. 1 is a schematic view of an insole.

[0023] Fig. 1 is a schematic view of an insole designated the reference numeral 10 in its entirety. The insole 10 comprises a body encased or enclosed by two layers, where only a top layer 12 is visible in Fig. 1. The two layers a adjoined along a rim 20.

[0024] Three odour-absorbing areas 14, 16 and 18 are illustrated, although the areas are not exposed on the surface of the insole 10. The odour absorbing regions or area 14, 16 and 18 are preferably made from the same

material as the body of the insole.

[0025] The odour-absorbing area 14 is positioned in a location substantially corresponding to the arch of a human foot. The odour-absorbing area 16 is positioned in a location substantially corresponding to the pad of a human foot. The odour-absorbing area 18 is positioned in a location substantially corresponding to the toes of a human foot.

[0026] The insole 10 is preferably disposable and may also be biodegradable. Alternatively, the insole 10 may be incinerated when disposed of. Preferably, the insole 10 is disposed of along with the garbage or trash.

[0027] The odour-absorbing areas may include an antiperspirant, an anti-microbial agent or an odour control agent.

[0028] Although the odour- and/or sweat-absorbing areas or parts have been illustrated as covering the insole 10 from one side to another, the areas may extend less than the entire insole 10, e.g. smaller pads or limited areas may be included in the insole 10 or one or more odour- and/or sweat-absorbing areas may extend from one side or edge of the insole 10 towards an opposite side or edge.

Claims

1. A disposable insole for absorbing odours caused by foot perspiration, comprising:
 - an enclosure defined by a first sheet and a second sheet,
 - a body made from a pulp material positioned in said enclosure,
 - at least one odour absorbing region made from an odour absorbing material positioned in said enclosure,
 - said first sheet and/or said body is adapted for being in facial contact with a human foot and said second sheet being adapted for being in facial contact with the sole of a shoe.
2. The disposable insole according to claim 1, wherein said at least one odour absorbing region is defined at a position substantially corresponding to the arch and/or the pad and/or to one or more toes of a human foot.
3. The disposable insole according to any of the claims 1 or 2, wherein said first sheet and/or said second sheet is made from a pulp material.
4. The disposable insole according to any of the claims 1-3, wherein a circumferential rim is defined by adjoining said first sheet and said second sheet.
5. The disposable insole according to any of the claims 1-4, where said first sheet and/or said second sheet

defines an outline substantially corresponding to the outline of a foot, the inside of a shoe or parts hereof.

6. The disposable insole according to any of the claims 1-5, where said at least one odour absorbing region is made from a pulp material, a carbonaceous material, a non-woven material, a homogeneous or non-homogeneous fibre material, a combination of silica, AGM and zeolites; or zeolites, activated carbon and AGM; or silica and AGM; or zeolite and AGM; or silica and zeolites; or delating agents or delating agents, AGM and zeolite or delating agents, AGM, zeolite and activated carbon, or any combinations thereof.
7. The disposable insole according to any of the claims 1-6, wherein said odour-absorbing region comprises an antiperspirant or an anti-microbic agent.

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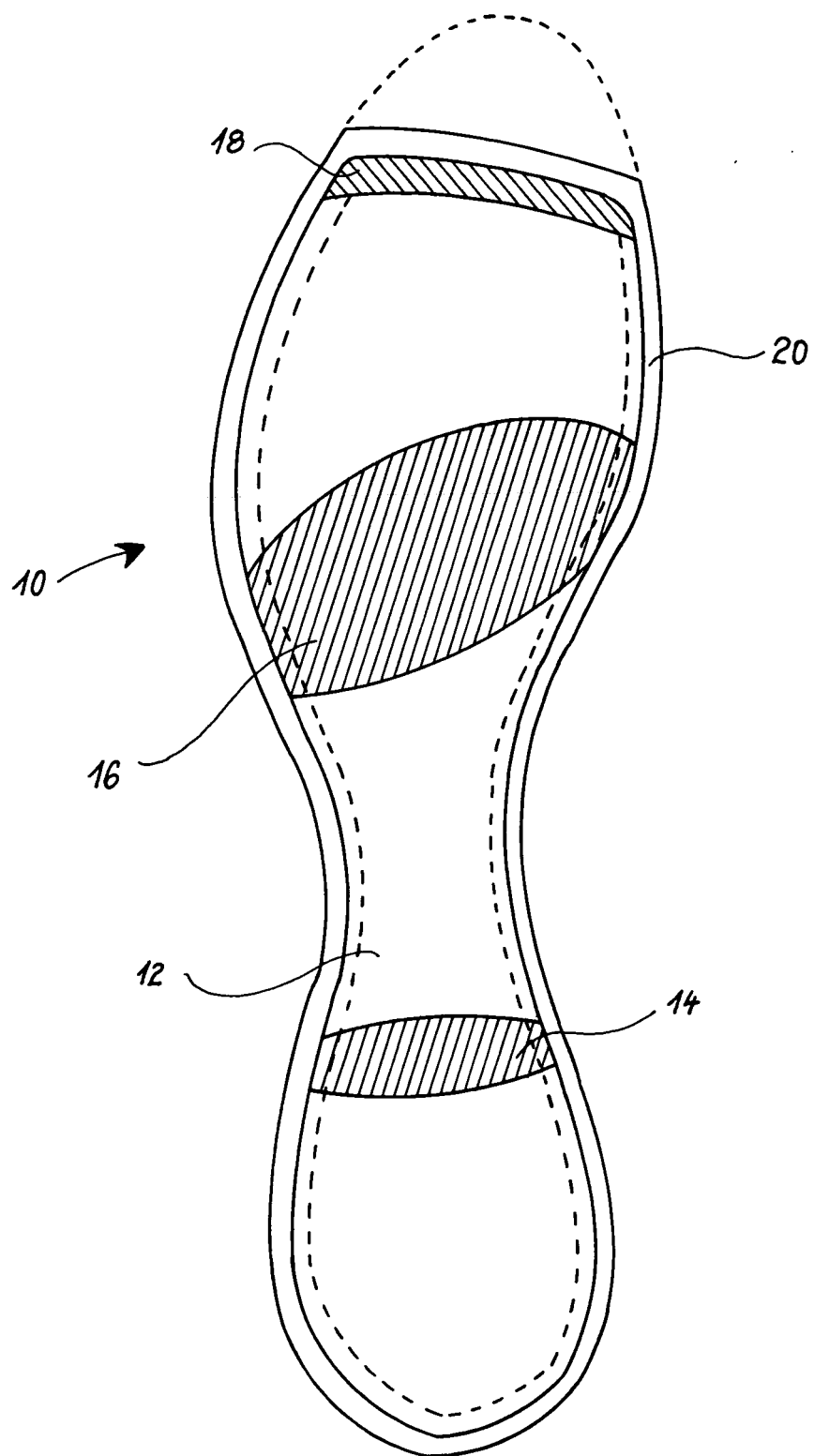


Fig. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 0263

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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 30 December 2004	Examiner Schölvinck, T.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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EP 04 02 0263

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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