(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 194 184 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
09.06.2010 Bulletin 2010/23

(51) Int Cl.:
D06F 59/00 *(2006.01)* ***D06F 58/00*** *(2006.01)*

(21) Application number: **08170639.2**

(22) Date of filing: **04.12.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

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(54) Device for drying shoes exploiting a laundry drying household appliance

(57) An accessory (140;505) adapted to be used in conjunction with a household appliance (100) having a worktop (110) defining at least one perforated drying surface (130) provided with a plurality of apertures (135) fluidly connected with air circulating means (210) adapted to deliver a flow of air through said apertures (135). The accessory (140,505) is shaped so as to define a support rack for receiving and supporting at least one shoe (145) in such a way that the shoe (145), when supported by the rack, is hit by the flow of air. The accessory (140,505) maybe either integrally formed with, or it can be separate and removably couplable to the perforated drying surface (130) in order to convey the flow of air inside the supported shoe (145).

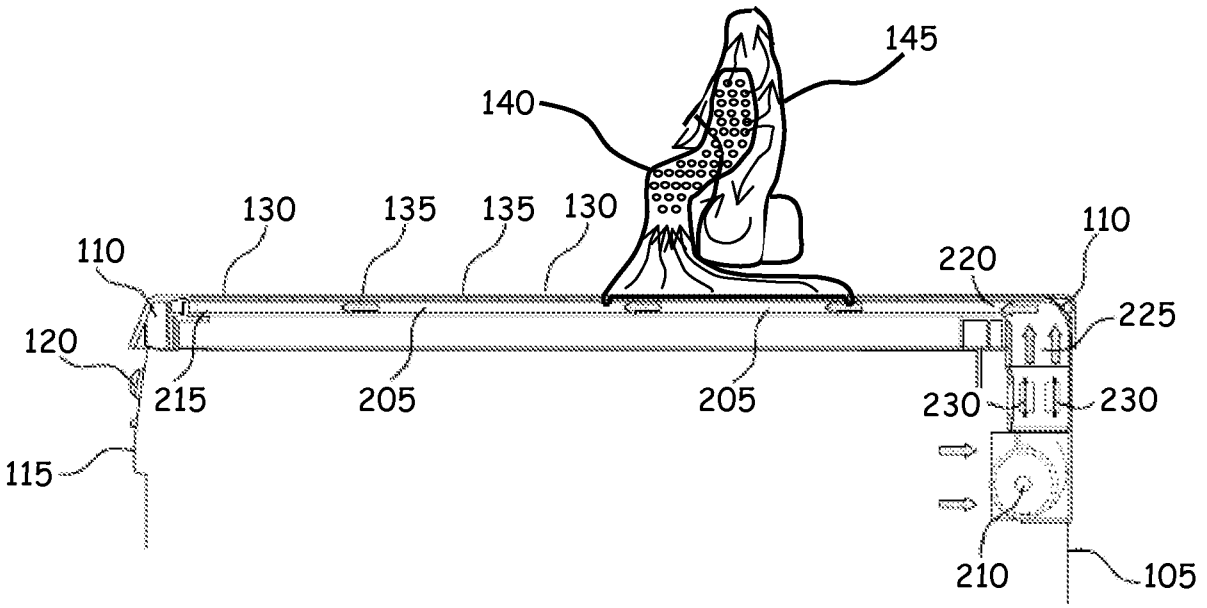

FIG. 2

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Description

[0001] The present invention relates in general to the field of household appliances, and more particularly to laundry washing and/or drying appliances like laundry washers, dryers and washer-dryers. Specifically, the present invention concerns an accessory, adapted to be used in conjunction with a household appliance having the function of drying laundry, for drying shoes exploiting the drying household appliance.

[0002] When shoes get wet in consequence for example to walking on the streets in rainy days or in the grass of parks or of the countryside, a rather long time is needed for them to dry by simple natural evaporation, especially in the rainy or winter seasons. This is an evident problem, because until the shoes are dry they cannot be worn again, since wearing wet shoes is a very uncomfortable experience and is possibly unsafe for health.

[0003] The Applicant has tackled the problem of devising an effective solution for drying shoes rapidly and without damaging them.

[0004] The Applicant has found that, for drying wet shoes, advantage can be taken of laundry drying household appliances like those disclosed in the European patent applications EP 1845185 and EP 1854916, both in the name of the present Applicant.

[0005] Such household appliances have been designed for quickly and effectively drying garments made for example of delicate textile materials, such as cashmere, which are not adapted to undergo regular drying treatments in a laundry drying household appliances like tumble dryers, due to the mechanical stresses, mainly in the form of impacts, which the textile fibers would be subject to, and the consequent damage to the garments.

[0006] In particular, the household appliances disclosed in EP 1845185 and EP 1854916 have a worktop defining a drying surface having a plurality of apertures fluidly connected to conveying means which are adapted to deliver a flow of air, particularly warm air, through said apertures for drying garments placed over said drying surface.

[0007] The Applicant has found that, in order to dry wet shoes, the flow of air delivered through the drying surface of these appliances can be exploited.

[0008] The Applicant has devised for this purpose an accessory adapted to be used in conjunction with a household appliance of the type having a worktop defining at least a drying surface having a plurality of apertures fluidly connected with conveying means adapted to deliver a flow of air through said apertures. The accessory is an adapter suitable to be coupled to the household appliance so as to modify the drying surface to confer thereto a shape defining a support rack for receiving and supporting at least one shoe in such a way that the shoe, when supported by the rack, is hit by the flow of air.

[0009] In this way, by exploiting the flow of air exiting from the drying surface of the household appliance , the shoe supported by the rack is effectively and rapidly dried.

[0010] According to an aspect of the present invention, an accessory is provided which is adapted to be used in conjunction with a household appliance having a worktop defining at least one perforated drying surface provided with a plurality of apertures fluidly connected with conveying means adapted to deliver a flow of air through said apertures. The accessory is shaped so as to define a support rack for receiving and supporting at least one shoe in such a way that the shoe, when supported by the rack, is hit by the flow of air. The accessory is either integrally formed with, or it is separate and removably couplable to said drying surface in order to convey the flow of air inside the supported shoe.

[0011] The accessory may comprise a hollow body having a base for the abutment on said drying surface, and at least one perforated head shaped so as to be insertable into a shoe.

[0012] A rim of said base may be flanged, to ensure stability of the accessory when lying on the drying surface.

[0013] At least one peg may be provided along a rim of the base, said at least one peg having size and shape adapted for the insertion into one of the apertures of the drying surface.

[0014] Said drying surface may comprise a plate-like element shaped to define at least one perforated head shaped so as to be insertable into a shoe.

[0015] According to another aspect of the present invention, a household appliance is provided, having a worktop defining at least one perforated drying surface provided with a plurality of apertures fluidly connected with conveying means adapted to deliver a flow of air through said apertures, characterized by comprising at least one accessory according to any one of the preceding claims.

[0016] These and other features and advantages of the present invention will become apparent by reading the following detailed description of some embodiments thereof. For better intelligibility, the description should be read in conjunction with the attached drawings, wherein:

Figure 1 shows in perspective a household appliance with applied accessories for drying wet shoes according to an embodiment of the present invention;

Figure 2 shows in cross-section and in enlarged scale a detail of a worktop of the household appliance of **Figure 1** with applied one of the accessories for drying shoes according to an embodiment of the present invention;

Figure 3 shows, in still enlarged scale, a detail of the coupling of the accessory of **Figures 1** and **2** to a drying surface of the household appliance, according to an embodiment of the present invention;

Figure 4 is similar to **Figure 3**, but shows a coupling according to another embodiment of the present invention; and

Figure 5 shows a detail of a drying surface of a household appliance shaped so as to integrally define a support rack for shoes, according to another embodiment of the preen invention.

[0017] Making reference to the drawings, in **Figure 1** there is shown in perspective a household appliance **100,** particularly for washing and/or drying clothes and garments, of the type described in detail in the European patent application EP 1845145, which is incorporated herein in its entirety by reference. The household appliance **100** comprises an outer casing **105** with a worktop **110** and a front panel **115** carrying operational input and setting controls **120** for the user. A drum-shaped tub (not visible in the drawing), adapted to be loaded with the items to be washed and/or dried, is rotatably accommodated and supported within the casing **105,** and an opening in the front panel of the casing **105** allows access to the tub for loading/unloading the items into/from the tub; the opening is closable by a door **125.**

[0018] The worktop **110** comprises a top plate member **127,** for example in plastic, which defines a drying surface **130,** on which the garment to be dried is laid. The drying surface **130** has a plurality of apertures or perforations **135,** each one of which is fluidly connected with conveying means adapted to direct a flow of air through the apertures **135;** the air flowing through the apertures **135** hits the garment that is laid upon the drying surface **135,** thereby drying it quickly and gently.

[0019] The conveying means may be located inside the outer casing **105,** below the drying surface **130** of the worktop **110,** as shown in **Figure 2.**

[0020] The conveying means may comprise at least an air passage **205** adapted to convey the air up to the worktop **110** underneath the drying surface **130,** so that the air is then able to flow through the apertures **135** from the bottom upwards, as well as air circulating means **210** adapted to force a flow of air into and through the air passage **205.**

[0021] The air passage **205** extends horizontally along the drying surface **130,** so as to be able to supply air to every aperture **135** at the same time. An end portion **215** of the air passage **205** is blind, *i.e.* sealed, whereas the other end portion **220** thereof is open and fluidly communicating with the air circulating means **210** to receive the flow of drying air thereinto. The conveying means may further comprise a communication duct **225** provided in the worktop and/or the outer casing **105** to connect the air circulating means **210** with the air passage **205.**

[0022] The air circulating means **210** may for instance be comprised of at least one blower arranged inside the outer casing **105** of the appliance and adapted to take in air form either the interior or the exterior of the cabinet of the household appliance to convey it into the air passage **205.** The blower may be housed in a proper accommodation provided to this purpose inside the outer casing of the appliance in order to take in the ambient air from the interior of the cabinet (which is normally not air-tight and thus is in fluid communication with the external ambient, from which air can enter into the cabinet). Other arrangements are however possible, as described in EP 1845185, which is incorporated herein by reference; in particular, and merely by way of example, the conveying means may be located outside the casing **105,** for example, the air circulating means **210** and the communication duct **225** may be associated to the upper backward portion of the casing **105** in proximity to and below the worktop **110** projecting from the casing, or the air circulating means **210** and the communication duct **225** may arranged above the worktop **110** in fluidly connection with the air passage **205.** The air to be conveyed to the drying surface may be ambient air taken in from the exterior or interior of the outer casing; in embodiments of the present invention, the air conveyed to the drying surface may be process air used to dry the items inside the dryer drum, or air used to cool a condenser present to remove moisture from the process air used to dry the items in the drum.

[0023] Advantageously, heating means **230** may be provided to heat up the air that flows into the air passage **205;** heated-up air hitting the garment to be dried accelerates the drying process. The heating means **230** may for instance be comprised of one or more electric heating elements arranged downstream from the air circulating means **210** and upstream of the air passage **205.** In particular, the heating means **230** may be housed inside the communication duct **225,** upstream of the open end portion **220** of the air passage **205.**

[0024] The household appliance **100** comprises control means to enable the air circulating means **210** and the heating means **230** to be switched on as required, as well as the different drying modes of the appliance to be properly selected (different drying temperatures and different drying times may be required to properly treat the various garments to be dried, depending, among other things, on the textile fibres which each single garment is made of). Such control means may be arranged on the front panel **115** of the household appliance **100,** or on a specific console provided on the appliance, or they may be directly integrated on the worktop **110,** as shown in **Figure 1.**

[0025] According to the present invention, the drying surface **130** provided on the worktop **110** of the appliance **100** is advantageously exploited for drying shoes. To this purpose, according to an embodiment of the present invention, an accessory **140** is provided for, which is adapted to be coupled to the drying surface **130.**

[0026] The accessory **140** is shaped so a to perform the function of support rack for at least one shoe **145** to be dried. In particular, as better visible in **Figures 3** and **4,** the accessory **140** comprises an enlarged base **305,** for example of circular shape, adapted to rest by abutment on the drying surface **130,** the base **305** being wide enough to allow the accessory **140** remain in upstanding position and not fall even when supporting the weight of a shoe to be dried. A tubular neck **310** extends essentially vertically from the base **305** and terminates into an arcu-

ated tubular head **315** shaped so as to be capable of being inserted into a shoe to be supported by the accessory **140** for being dried.

[0027] The accessory **140,** which may be realized in plastic or metal, in a single piece or as an assembly of separate parts, is internally hollow, and, in an embodiment of the present invention, the base **305** thereof is open from the side that, in use, abuts against the drying surface **130.** The tubular head **315** is provided with a plurality of apertures **320,** adapted to allow the air passage.

[0028] As shown in **Figure 3,** in an embodiment of the present invention, one or more pegs **330** may be provided along the rim **325** of the base **305,** for instance regularly distributed, of size matching the diameter of the apertures **135** in the drying surface **130;** in use, when the accessory **140** is placed on the drying surface **130,** the user may take care of inserting the pegs **330** into corresponding apertures **135,** and this will ensure that the accessory **140** is hold in proper position during the drying of a shoe.

[0029] In an alternative embodiment of the present invention, depicted in **Figure 4,** the pegs **330** are not provided, and the rim of the base **305** is properly flanged, for ensuring the steadiness of the accessory on the drying surface **130.**

[0030] One or more accessories **140** may be laid on the drying surface **130** of the worktop **110,** for drying one or more shoes simultaneously.

[0031] In still another embodiment of the present invention, depicted in **Figure 5,** the accessory **140,** instead of being a stand-alone, separate component, is integrated in the worktop **110:** the top plate member **127** of the worktop is shaped so as to provide, in one or more selected areas thereof, for example along a side or at the back thereof, a support rack **505** for the shoes to be dried. The support rack **505** may have the same shape as the stand-alone accessory **140** described in the foregoing, with a neck **510** and a perforated arcuated head **515,** without however the necessity of providing an enlarged base. The top plate member **127** may preferably easily be interchangeable, so as to allow the user to replace the top plate member shaped to define the support rack (s) **505** with an essentially planar top plate member when there is no necessity to dry shoes; in this case, a preferred solution may provide for not having apertures **135** formed in the top plate member shaped to define the support rack **505,** apart from those formed in the head **515** of the support rack **505** for the shoes, so as to maximize the hitting of the shoes to be dried by the flow of air generated by the air circulating means **210.**

[0032] Accessories **140** of different size may be provided for, to adapt to shoes of different size, different weight, different type (*e.g.*, male shoes, female shoes, children shoes, boots and so on); the same applies to the case the accessory **140** is integrated in the top plate member **127** of the worktop **110.**

[0033] In use, when the user desires to dry one or more wet shoes, he/she simply mounts a corresponding number of accessories **140** on the worktop **110** of the appliance **100,** puts the wet shoes to be dried on the corresponding support racks thus created, and turns on the air circulating means **210** (and, where provided, the heating means **230),** possibly selecting the temperature/duration of the treatment. The flow of air passing through the apertures **135** in the drying surface **130** enters the hollow space inside the shoes support racks, rises to the head **315** thereof and there the air passes through the apertures **320,** entering the shoes to be dried and hitting the walls of the shoes, thereby drying them.

[0034] The accessory according to the present invention is also useful to warm-up shoes before wearing them.

[0035] The present invention has been here described presenting some of its possible, exemplary embodiments. Those skilled in the art will recognize that several modifications to the presented embodiments, as well as different embodiments of the invention are possible, without departing from the scope of protection as set forth in the appended claims.

[0036] For example, the generic accessory **140** may be designed to define two or even more support racks (*i.e.*, two or more heads **315**) for two or more shoes.

[0037] Also, the base 305 of the accessory **104** may be a perforated plate with apertures matching the apertures **135** of the drying surface **130.**

[0038] The accessory of the present invention can be used in combination with any household appliance (*e.g.*, a washing machine, a tumble dryer, a washer-dryer, an autonomous household appliance specially intended for drying delicate garments) having a worktop defining a drying surface, like for example the household appliance disclosed in EP 1854916, which is incorporated herein by reference. In particular, the accessory of the present invention can be used in conjunction with a household appliance having a worktop with a tray-like slidable drying surface.

Claims

1. An accessory (140;505) adapted to be used in conjunction with a household appliance (100) having a worktop (110) defining at least one perforated drying surface (130) provided with a plurality of apertures (135) fluidly connected with conveying means (210) adapted to deliver a flow of air through said apertures, the accessory being **characterized by** being shaped so as to define a support rack for receiving and supporting at least one shoe in such a way that the shoe, when supported by the rack, is hit by the flow of air, and by being either integrally formed with, or separate and removably couplable to said drying surface in order to convey the flow of air inside the supported shoe.

2. The accessory of claim 1, comprising a hollow body having a base (305) for the abutment on said drying

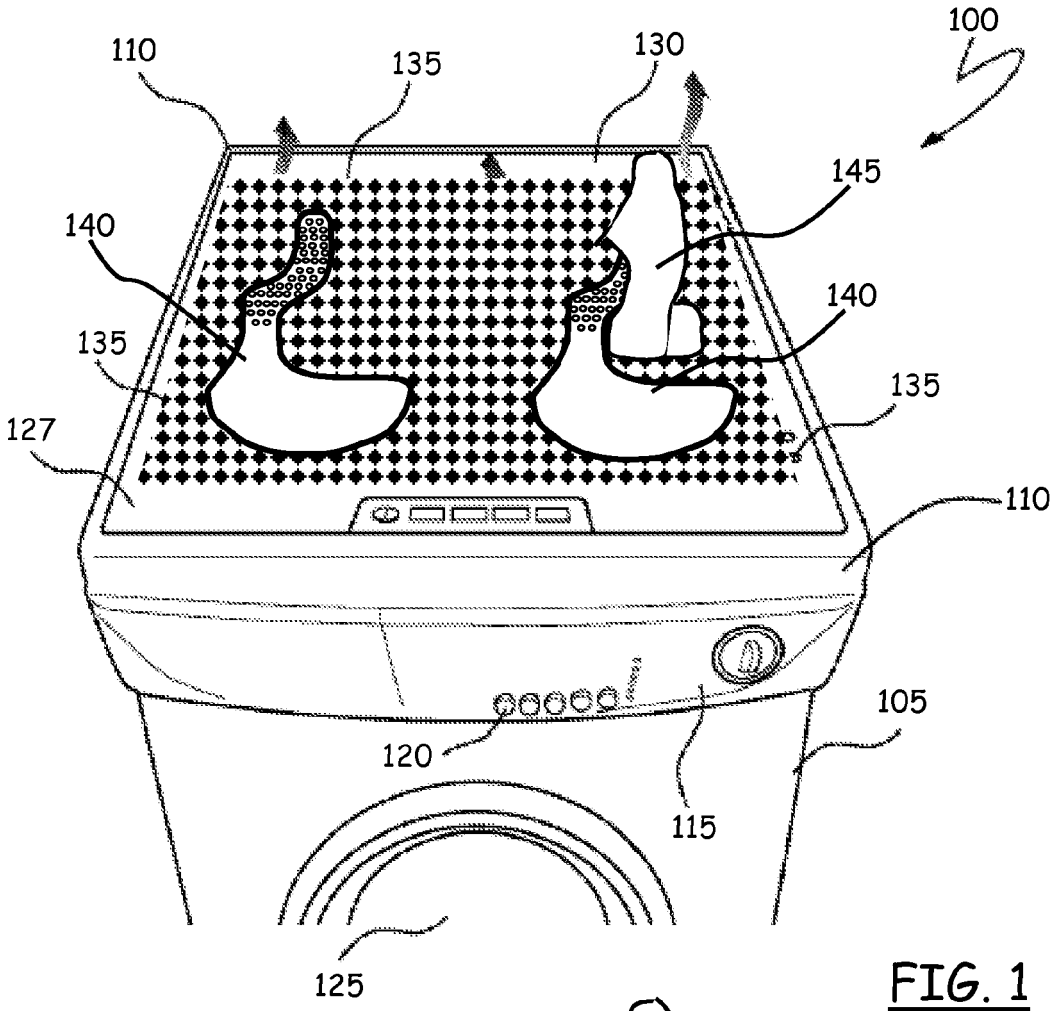
surface, and at least one perforated head (315) shaped so as to be insertable into a shoe.

3. The accessory of claim 2, wherein a rim of said base is flanged.

4. The accessory of claim 2 or 3, wherein at least one peg (330) is provided along a rim of the base, said at least one peg having size and shape adapted for the insertion into one of the apertures of the drying surface.

5. The accessory of claim 1, wherein said drying surface comprises a plate-like element (127) shaped to define at least one perforated head (515) shaped so as to be insertable into a shoe.

6. A household appliance (100) having a worktop (110) defining at least one perforated drying surface (130) provided with a plurality of apertures (135) fluidly connected with conveying means (210) adapted to deliver a flow of air through said apertures, **characterized by** comprising at least one accessory according to any one of the preceding claims.


100
110
135
130
145
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127
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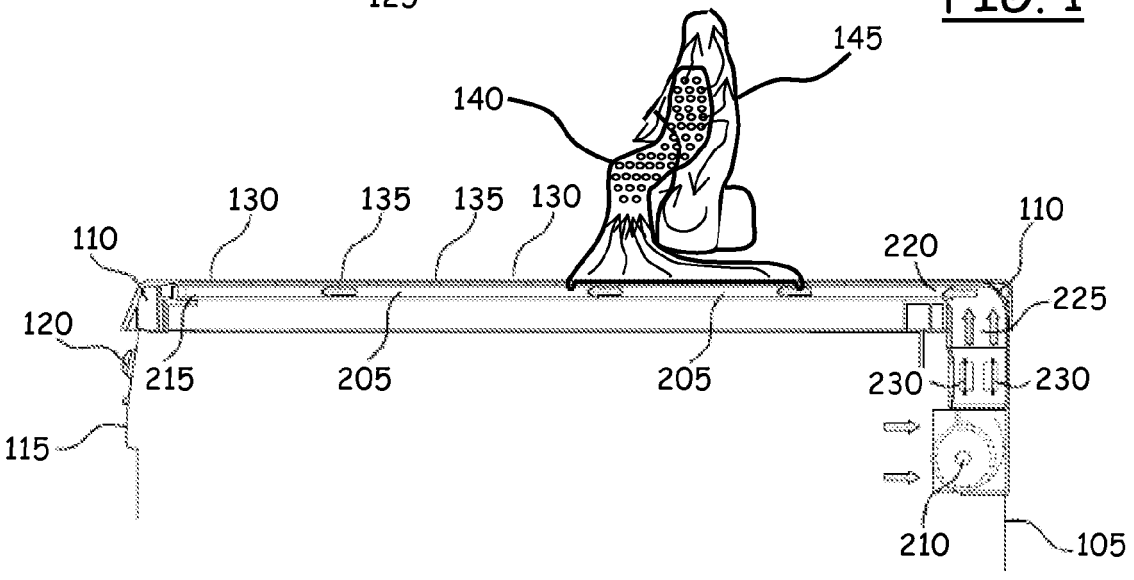
105
120
115
125

FIG. 1


145
140
130
135
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130
110
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220
225
120
215
205
205
230
230
115
210
105

FIG. 2

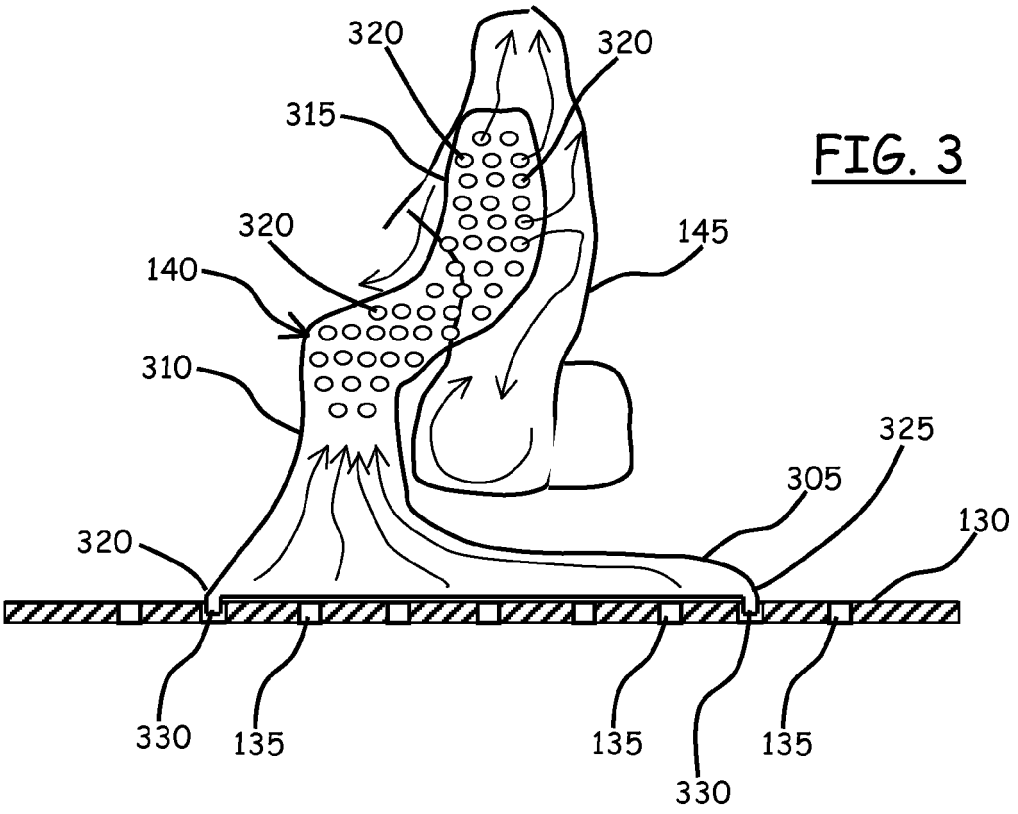
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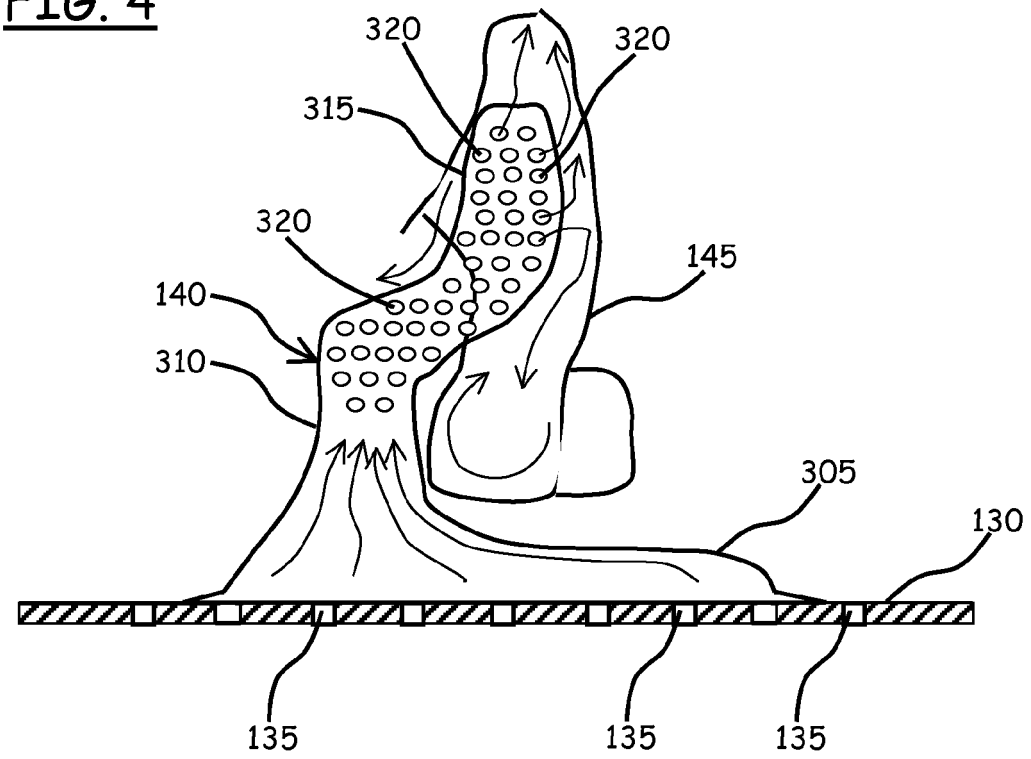
FIG. 3

FIG. 4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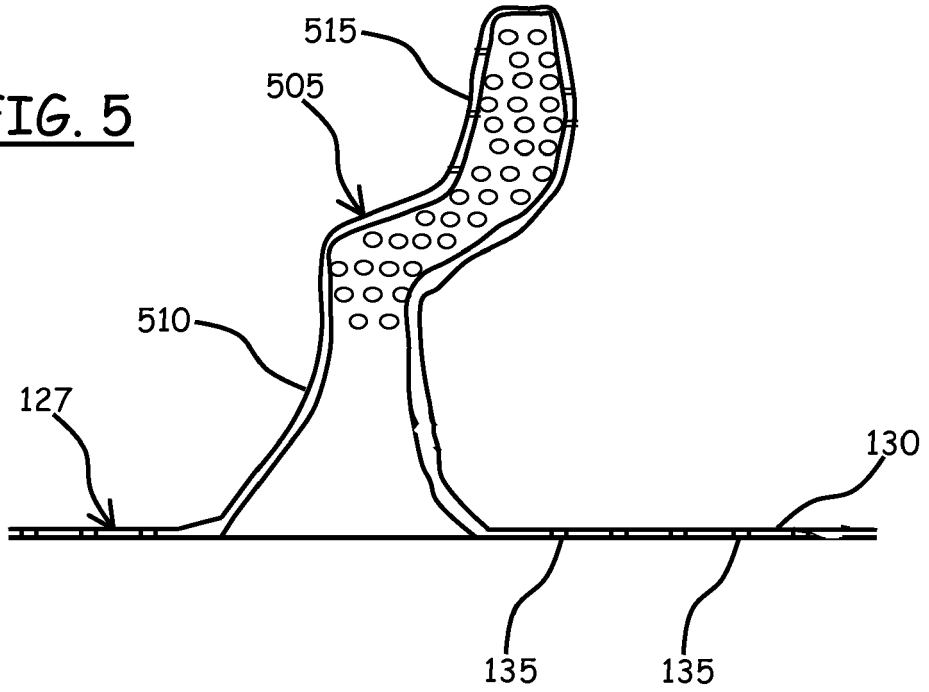
145
140
310
305
130
135
135
135

FIG. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 08 17 0639

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	US 2005/050754 A1 (DEBLOIS JEAN-PIERRE [CA]) 10 March 2005 (2005-03-10) * paragraphs [0001] - [0006], [0017], [0018]; figures 1-4 *	1,2,6 3-5	INV. D06F59/00 D06F58/00
A	EP 1 431 442 A (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 23 June 2004 (2004-06-23) * paragraphs [0001], [0026] - [0028]; claims; figures 1,2 *	1-6	
A,D	EP 1 845 185 A (ELECTROLUX HOME PROD CORP [BE]) 17 October 2007 (2007-10-17) * the whole document *	1-6	
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			TECHNICAL FIELDS SEARCHED (IPC) D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 February 2009	Clivio, Eugenio

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18-02-2009

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- EP 1854916 A **[0004] [0006] [0038]**
- EP 1845145 A **[0017]**