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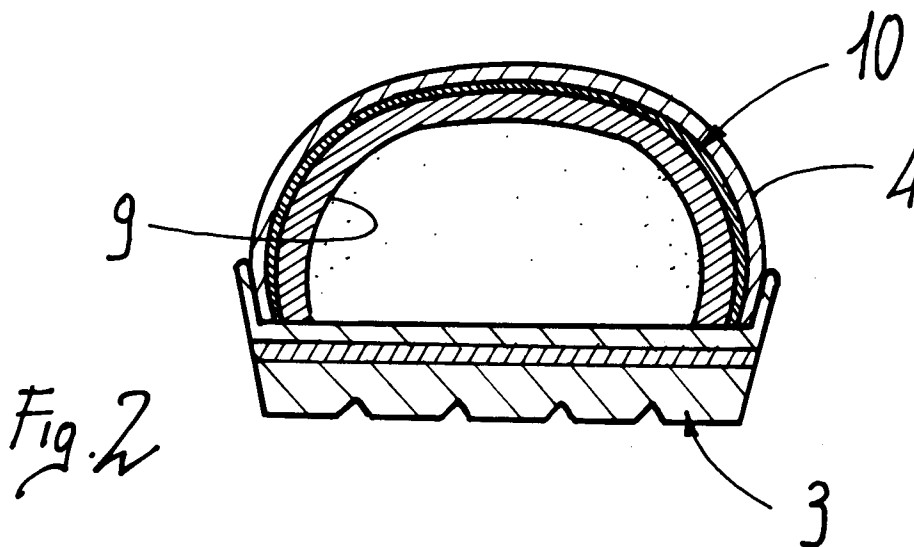
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54 Upper structure particularly for items of footwear.

57 The present invention relates to an upper structure comprising at least one first water-repellent and transpiring inner layer (9) coupled, by means of dry powders, to at least one outer second layer (10) of water-repellent and transpiring woven fabric. This

structure allows to manufacture an item of footwear which simultaneously allows optimum foot transpiration and prevents the infiltration of water from outside.



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The present invention relates to an upper structure particularly usable for mountaineering and trekking footwear.

These known types of footwear are currently made of leather or nylon in one or more layers, to which a sole made of rubber or synthetic material is applied.

Uppers are thus known which are made of nylon, which by itself is not suitable for use in footwear, since it can be subject to tearing or to becoming loose.

For this purpose, the known art provides the resin-bonding of the nylon, thus eliminating every possibility of transpiration; the nylon is subsequently coupled, by means of adhesives, to closed-cell foamed materials (EVA) so as to form a non-transpiring body.

These known types of footwear thus manufactured have the considerable disadvantage that they do not allow the foot to transpire, thus creating discomfort for the user during use.

The aim of the present invention is therefore to eliminate the disadvantages described above in known types by providing an item of footwear which has an optimum foot transpiration action.

Within the scope of the above aim, an important object is to provide an upper structure which can be manufactured with conventional facilities and known machines.

Another important object is to provide an upper which has, in addition to the above mentioned characteristics, also considerable softness and thus optimum comfort for the foot.

Not least object is to provide an upper structure which associates with the preceding characteristics that of being reliable and safe in use.

This aim, these objects and others which will become apparent hereinafter are achieved by an upper structure, particularly for items of footwear constituted by a sole with which said upper is associated, characterized in that said upper is constituted by at least one first water-repellent and transpiring inner layer coupled, by means of dry powders, to at least one second outer layer of water-repellent and transpiring woven fabric.

Further characteristics and advantages of the invention will become apparent from the detailed description of a particular embodiment, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a partially sectional perspective view of the upper structure;

figure 2 is a view taken along the sectional plane II-II of figure 1;

figure 3 is a view of a portion of the first and second layers which constitute the upper.

With reference to the above figures, the reference numeral 1 indicates an item of footwear,

particularly for mountaineering or trekking, which comprises an upper structure, indicated by the reference numeral 2, and a sole 3.

Said sole can advantageously be constituted by one or more layers coupled to one another.

The upper structure 2 comprises one or more elements and/or bands preferably made of leather, indicated by the numeral 4, which in figure 1, by way of example, entirely affect the lower and upper perimetric edges 5 and 6 of said upper structure 2.

Said one or more elements and/or bands furthermore mutually connect said lower and upper perimetric edges 5 and 6 at the flaps to be joined, and the usual known fastenings 7 for engagement with fastening laces 8 are arranged facing one another on said flaps.

The upper structure 2 comprises a first inner layer 9, preferably constituted by a water-repellent and transpiring felt.

Said first layer has the function of giving shape to the upper structure by being coupled, as specified hereinafter, to a second layer of woven, water-repellent and transpiring fabric 10 which is arranged externally with respect to said first layer.

It should be stressed that the coupling between the first layer 9 and the second layer 10, which is preferably constituted by untreated polyester, occurs without using any adhesive of any kind, but specifically by using adapted dry powders which, due to the effect of heat, mutually assemble said first and second layers.

Once the coupling between the first and second layers is achieved, the upper structure is completed by associating, with one layer or with both layers, the elements and/or bands 4, the entire assembly being subsequently coupled to the sole 3.

The use of the upper structure 2 thus provides that once the foot has been placed inside it, the user can achieve optimum transpiration by virtue of the innovation of the use of dry powders for the coupling between the first and second layers, thus eliminating any impermeable film which would prevent any possibility of transpiration.

It has thus been observed that the invention has achieved the intended aim and objects, an item of footwear having been achieved wherein the structure of the upper allows optimum transpiration of the foot.

It is furthermore observed that the upper structure is intrinsically very soft.

The use of the upper structure associated with an internal membrane or sock which embraces the foot, and preferably made of the material commercially known by the trade-mark "GORE-TEX", which has waterproofing and transpiration characteristics, allows to obtain an item of footwear which as a whole has markedly better transpiration char-

acteristics than known items of footwear.

ers.

It is furthermore stressed that the first polyester layer can have a neutral coloring and can be subsequently colored according to the required coloring of the upper.

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The materials and dimensions which constitute the individual components of the structure may naturally be the most pertinent according to the specific requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

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### Claims

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1. Upper structure, particularly for items of footwear having a sole with which said upper is associated, characterized in that said upper comprises at least one first water-repellent and transpiring inner layer coupled, by means of dry powders, to at least one second layer of water-repellent and transpiring woven fabric which is external to said first layer.

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2. Structure according to claim 1, characterized in that said first layer is arranged inside said structure and adjacent to a foot containment sock having waterproofing and transpiration characteristics, said first layer being made of water-repellent felt.

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3. Structure according to claims 1 and 2, characterized in that said second layer is constituted by a woven fabric preferably made of untreated polyester.

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4. Structure according to claims 1 and 3, characterized in that said second layer initially has a neutral coloring and can be colored subsequently.

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5. Structure according to claims 1 and 3, characterized in that said second layer is arranged outside said first layer, one or more leather elements and/or bands being partially superimposable on said second layer.

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6. Structure according to claims 1 and 5, characterized in that said first layer is coupled to said second layer by means of the application of adapted dry powders which, due to the effect of the heat which can be applied, allow permanent connection between said two lay-

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