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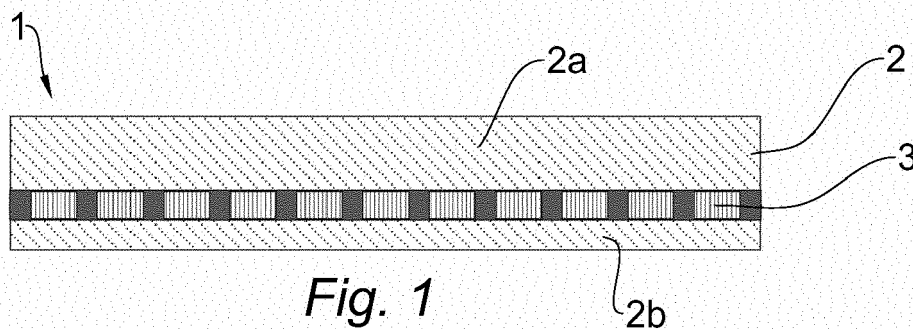
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(54) **LACE-HOLE SYSTEM**

(57) Lace-hole system (1) comprising a base ribbon (2) and an upper element (3) which is at least partially superimposed on the base ribbon (2), and characterized in that the upper element (3) is fixed to the base ribbon

(2) in fixing points (4) which are arranged along a superimposition zone of the base ribbon (2) and the upper element (3) so as to form a plurality of eyelets (5) which can receive at least one lace (6).



Description

Technical field

[0001] The present invention relates to a lace-hole system for footwear having the features set out in the preamble of the main claim and a footwear item comprising this lace-hole system and a method for producing it.

Technological background

[0002] The majority of footwear items provide for a lacing system which allows the footwear item to be opened or widened in order to allow the foot to be introduced and subsequently to be closed or tightened in such a manner that it is fixed to the foot of the person wearing it.

[0003] There are known systems for lacing footwear which provide for a lace to be slid inside holes which are typically constructed in the front portion of the footwear item itself. In particular, in many footwear items the holes are constructed in the surface of the upper, typically in the region of the instep; there is further usually present a tongue which is attached to the upper under the lacing system in such a manner that it protects the foot and in particular the instep from the pressure which the lace could apply during walking and from the friction generated following the lace itself sliding into the holes.

[0004] One of the disadvantages of this lacing system is that the operation of inserting the lace in these holes can be difficult because it is partially impeded by the presence of the tongue itself at one side of the hole.

[0005] Furthermore, these holes are often provided with metal reinforcement eyelets so that the holes do not become deformed or broken following wear generated by a repeated action of fastening and unfastening. Another disadvantage associated with these eyelets is that they can, over time, stain the laces. Footwear items having holes which are constructed on the upper can further involve the lace which extends through these holes applying an annoying pressure to the instep, notwithstanding the presence of the tongue. The annoyance can be further locally greater in the region of the hole itself, particularly for laces with great dimensions in cross-section, because in this zone there is brought about a variation in the thickness of the footwear item between the location where the lace is present and where it is not.

[0006] In order to overcome these disadvantages, over time there have been developed lacing systems which provide for using ribbons which are stitched in a suitable manner on the uppers so as to form eyelets for the laces to pass through.

[0007] For example, US2013/0019501 discloses a lacing system which provides for a continuous strip of material which has been folded and stitched to the upper so as to form a plurality of folded loops which are configured to receive a lace. This lacing system is very complex to carry out both from the point of view of the folding process of the material strip and from the point of view of main-

taining the folded material strip in shape and position during the process of fixing to the upper and, for this reason, it is susceptible to several defects.

[0008] Another example is disclosed in US2015/0040430; in this case, a number of material strips are also fixed directly to the upper so as to form an equal number of eyelets, inside which the lace is passed, as evident in Figure 4. This lacing system is also complex to carry out and may involve a high number of defects and therefore rejects.

[0009] Therefore, there remains in the technical sector in question the need to provide a lace-hole system which is easy to carry out and a footwear item which comprises this lace-hole system.

Description of the invention

[0010] The problem addressed by the present invention is to provide a lace-hole system for a footwear item which is functionally configured to overcome the limitations set out above with reference to the cited prior art.

[0011] In the context of this problem, an object of the invention is to provide a lace-hole system which is produced in a simple manner and which can be readily integrated in a footwear item.

[0012] Another object of the invention is to provide a footwear item comprising this lace-hole system and a method for producing it.

[0013] This problem is solved and these objects are achieved by the present invention by means of a lace-hole system, a footwear item comprising this lace-hole system and a method for producing this footwear item according to the appended claims.

[0014] In a first aspect thereof, therefore, the present invention is directed towards a lace-hole system comprising a base ribbon and an upper element which is at least partially superimposed on the base ribbon.

[0015] Preferably, the upper element is a ribbon or a cord.

[0016] Preferably, the upper element is fixed to the base ribbon in fixing points which are arranged along a superimposition zone of the base ribbon and the upper element so as to form a plurality of eyelets which can receive at least one lace.

[0017] Preferably, the upper element is superimposed on the base ribbon in a manner substantially parallel with a longitudinal axis of the base ribbon.

[0018] Preferably, the upper element is superimposed on the base ribbon in such a manner that there remains defined on the base ribbon at least a first zone, in which there is no superimposition with the upper element.

[0019] A first advantage of the invention is constituted by the simple production thereof; the production is further cheap from the point of view of both the materials used and the machinery necessary.

[0020] Furthermore, this lace-hole system can be fixed to the upper, particularly in the region of the opening with which many uppers are provided in order to make it easier

for the foot to be inserted in a simple and rapid manner. In fact, the lace-hole system being already preformed, it is not necessary to maintain the eyelets in terms of shape during the fixing itself.

[0021] Furthermore, the provision of a non-superimposition zone of the upper element on the base ribbon can advantageously be used to fix the base ribbon to the upper.

[0022] Furthermore, this lace-hole system can advantageously be supplied to the person who is making the footwear items in the form of a roll to be cut to the desired length.

[0023] Furthermore, this allows a given model of lace-hole system according to the present invention to be able to be mounted on footwear items of different types or models or different numbers, therefore having openings in the upper with different forms and/or dimensions.

[0024] Finally, this lace-hole system involves the lace, once the footwear item is fastened, applying an extremely low pressure to the instep with respect to when the footwear item provides for a lacing system with holes which are constructed in the surface of the upper.

[0025] In a second aspect thereof, the present invention is directed towards a footwear item comprising at least one lace-hole system according to the invention.

[0026] In a third aspect thereof, finally, the present invention is directed towards a method for producing a footwear item comprising the step of fixing at least one of these lace-hole systems to the upper.

[0027] In the present description and in the claims appended thereto, some terms and expressions are considered to assume, unless explicitly otherwise indicated, the meaning expressed in the following definitions.

[0028] The term "lace" is intended to be understood to be any string or cord or thread, made of fabric, synthetic polymer or leather, with a round or flat cross-section, which is produced monolithically or by means of interweaving; this lace can further have a specific degree of resilience.

[0029] Two elements, such as, for example, the base ribbon and the upper element, are said to be "superimposed" when the orthogonal projection of an element, for example, the upper element, is located on the second element, for example, on the base ribbon.

[0030] Two elements, such as, for example, the base ribbon and the upper element, are said to be "superimposed in terms of length" when one of the two elements is superimposed on the other over a main portion (equal to at least 80%) of the length of at least one of the two elements.

[0031] The term "ribbon" is intended to be understood to be a strip with a short length and an even smaller thickness, typically of flattened form, which is also obtained by means of interweaving threads.

[0032] The base ribbon may be made of any natural or synthetic material, such as, for example, cotton, polyester or polyamide.

[0033] The term "cord" is intended to be understood to

be a typically tubular structure which is constructed monolithically or by means of interweaving threads.

[0034] The upper element may be made of any natural or synthetic material, such as, for example, cotton, polyester or polyamide.

[0035] The person skilled in the art will be able to carry out the selection of the material both for the base ribbon and for the upper element in accordance with the properties of the material itself and the specific application of the footwear item.

[0036] In at least one of the above-mentioned aspects, the present invention may have one or more of the preferred features described below.

[0037] Preferably, the upper element is superimposed in terms of length on the base ribbon.

[0038] In some embodiments, each eyelet forms a through-channel which is transverse to the longitudinal axis of the base ribbon.

[0039] In some embodiments, the fixing points are arranged at regular intervals so as to be mutually equidistant.

[0040] This advantageously allows a homogeneous distribution of the fastening forces when the footwear item is fastened.

[0041] Preferably, these fixing points are located along a line which is arranged parallel with the longitudinal axis of the base ribbon and the upper element.

[0042] The pitch can be varied on the basis of requirements, for example, in accordance with the length of the opening of the upper, the dimensions of the upper element and/or of the lace which has to be received in the eyelets and the number of laces which have to be received in the single eyelets.

[0043] The fixing points may be adhesion points, stitching points, thermo-welding points depending on the desired aesthetics and/or the materials which constitute the base ribbon and the upper element.

[0044] In a preferred embodiment, the fixing points are stitches.

[0045] In some embodiments, the pitch of the fixing points along the base ribbon is less than the pitch along the upper element.

[0046] In some embodiments, the upper element is superimposed on the base ribbon with an undulating path so that the peaks of the upper element are spaced apart from the base ribbon and the valleys are located in the region of the fixing points.

[0047] This advantageously allows the provision of a footwear item in which the lace applies even less pressure to the instep because the eyelets are partially raised with respect to the footwear item itself.

[0048] Preferably, the first non-superimposition zone of the upper element on the base ribbon extends continuously along the entire length of the base ribbon.

[0049] This allows the lace-hole system to be fixed over the length of the front opening of the upper so as to efficiently and homogeneously correspond to the traction force applied by the lace in order to maintain the fastened

footwear item on the foot.

[0050] In one embodiment, the base ribbon has over the length thereof a first zone and a second zone, in which there is no superimposition with the upper element, these first and second zones being at opposite sides of the upper element.

[0051] Therefore, the upper element is narrower than the base ribbon and is superimposed on the base ribbon so that it has two zones in which there is no superimposition with the upper element, these two zones being at opposite sides with respect to the upper element. In this manner, the lace-hole system can be fixed to the upper at opposite sides of the upper element.

[0052] In one embodiment, the upper element is staggered with respect to a centre line of the base ribbon.

[0053] Preferably, the lace-hole system is fixed to the upper in the region of the opening of the upper, more preferably along the length of this opening.

[0054] When this opening in the upper is quadrangular, the lace-hole system can be fixed both along the length of the opening and at the top.

[0055] The fixing of the lace-hole system to the upper can be brought about by stitching, adhesive bonding or thermo-welding, preferably by stitching.

[0056] In one embodiment, the width of the first zone on the base ribbon is such as to allow fixing of the base ribbon along the length thereof to an upper by stitching.

[0057] The footwear item comprising at least one lace-hole system according to the invention is any footwear item which provides a fastening system by means of laces.

[0058] In one embodiment, the footwear item comprises two lace-hole systems, which are preferably fixed to the upper at opposite sides along the opening.

[0059] Preferably, this footwear item is a technical footwear item, such as, for example, a sports shoe, a work shoe or safety footwear.

[0060] The features and advantages of the invention will be better appreciated below from the detailed description of a preferred embodiment thereof which is illustrated by way of non-limiting example with reference to the appended drawings, in which:

- Figure 1 is a schematic plan view of a lace-hole system according to the present invention;
- Figure 2 is a schematic side view of the lace-hole system of Figure 1;
- Figure 3 is an enlarged view of the detail indicated III in the schematic side view of Figure 2;
- Figure 4 is a schematic front view of a detail of a footwear item comprising the lace-hole system of Figure 1, and
- Figure 5 is a schematic front view of a detail of a footwear item comprising the lace-hole system of Figure 1 and a lace.

[0061] With reference to the appended Figures, there is generally designated 1 a lace-hole system according

to the present invention.

[0062] The lace-hole system 1 comprises a base ribbon 2 and an upper element 3. In particular, this upper element 3 is a ribbon and as such will be identified below as an upper ribbon 3 but could also be a cord. The two ribbons, base ribbon 2 and upper ribbon 3, are superimposed in terms of length one on the other in such a manner that the respective longitudinal axes are mutually parallel. Furthermore, the two ribbons, base ribbon 2 and upper ribbon 3, are fixed to each other in the region of fixing points 4 so as to form a plurality of eyelets 5 which are arranged along the length of the two ribbons 2, 3.

[0063] With reference to Figure 1, the fixing points 4 are located along a line which is substantially parallel with the longitudinal axis of the base ribbon 2.

[0064] These fixing points 4 are constructed at regular intervals by stitching the base ribbon 2 with the upper ribbon 3 but may also be constructed with other techniques, such as thermo-welding or adhesive bonding.

[0065] In one embodiment, the lace-hole system 1 can be obtained in a single weaving step of both the ribbons 2, 3 which are woven simultaneously and stitched with spacing to each other, for example, as taught in EP3112510 in the name of the same Applicant.

[0066] The upper ribbon 3 has a width which is less than the width of the base ribbon 2 and they are superimposed in terms of length in such a manner that the base ribbon 2 has along the length thereof a first zone 2a and a second zone 2b in which there is no superimposition with the upper ribbon 3, the first zone 2a and the second zone 2b being at opposite sides of the line on which the fixing points 4 are located.

[0067] With reference to Figure 1, the first zone 2a and the second zone 2b of the base ribbon 2 do not have the same width, in particular the first zone 2a is wider than the second zone 2b.

[0068] The first zone 2a can be used to fix the lace-hole system 1 to the upper 7 of a footwear item 8. Preferably, the upper 7 has an opening 7a in order to make the insertion and removal of the foot into/from the footwear item 8 easier; preferably, this opening 7a is at the front, that is to say, in the region of the instep.

[0069] With reference to Figure 4, this opening 7a has a virtually rectangular shape in the region of the instep; in particular, it has two parallel sides 71 and 72 which extend along the instep and an upper side 73. In particular, the footwear item 8, as can be seen in Figure 4, comprises two lace-hole systems 1, one being fixed to the side 71 and the other being fixed to the side 72 of the opening 7a of the upper 7 in a specular manner.

[0070] This fixing is carried out by means of a seam 11. This seam 11, with reference to Figure 4, is produced between the upper 7 and the first zone 2a of the base ribbon 2, but could be carried out both between the upper 7 and the first zone 2a of the base ribbon 2 and, additionally, between the upper 7 and the second zone 2b of the base ribbon 2, if present.

[0071] The fixing of the two lace-hole systems 1 to the

upper 7 can be carried out with a single seam 11, as in Figure 4. In this case, therefore, the seam 11 extends from one of the ends 71a, 72a of one of the two parallel sides 71, 72 opposite the upper side 73, to the other end 71a, 72a of the other side 71, 72 opposite the upper side 73, passing through this head side 73. This seam 11 can further be doubled, as can be seen in Figure 4.

[0072] In the region of the seam 11, the upper 7 may comprise a strap 10 which is used for reinforcement and/or for aesthetic reasons.

[0073] With reference to Figure 4, under the opening 7a of the upper 7, there is further provided a tongue 9 for protecting the instep.

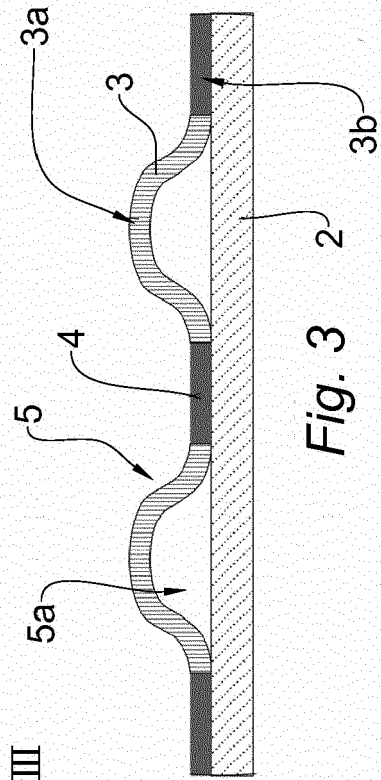
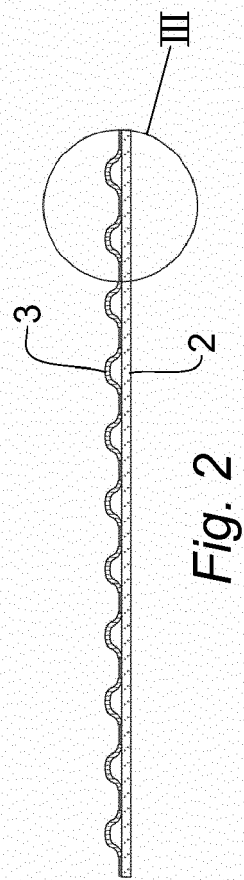
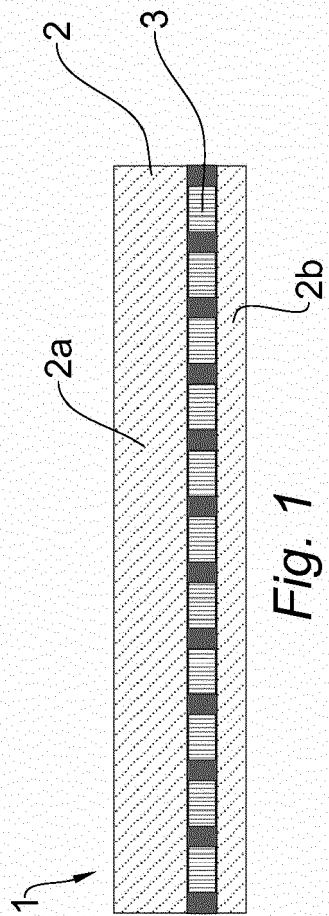
[0074] The tongue 9 may have channels or a stitched piece at the centre thereof, which are not shown in the Figures, so that the lace 6 can also be passed through the tongue 9; this assists in maintaining the tongue 9 in position and preventing it from sliding at one side of the instep.

[0075] As can be seen in Figure 5, the footwear item 8 may further comprise a lace 6 which passes through the eyelets 5 of the lace-hole system 1.

Claims

1. A lace-hole system (1) comprising a base ribbon (2) and an upper element (3) which is at least partially superimposed on the base ribbon (2), the upper element (3) being a ribbon or a cord, wherein the upper element (3) is fixed to the base ribbon (2) in fixing points (4) which are arranged along a superimposition zone of the base ribbon (2) and the upper element (3) so as to form a plurality of eyelets (5) which can receive at least one lace (6), and wherein the upper element (3) is superimposed on the base ribbon (2) in a manner substantially parallel with a longitudinal axis of the base ribbon (2) and in such a manner that there remains defined on the base ribbon (2) at least a first zone (2a), in which there is no superimposition with the upper element (3).
2. A lace-hole system according to claim 1, wherein the upper element (3) is superimposed in terms of length on the base ribbon (2).
3. A lace-hole system according to claim 1 or claim 2, wherein the fixing points (4) are arranged at regular intervals.
4. A lace-hole system according to any one of the preceding claims, **characterized in that** the upper element (3) is superimposed on the base ribbon (2) with an undulating path so that the peaks (3a) of the upper element (3) are spaced apart from the base ribbon (2) and the valleys (3b) are located in the region of the fixing points (4).

5. A lace-hole system according to any one of the preceding claims, wherein the first zone (2a) extends continuously along the entire length of the base ribbon (2).
6. A lace-hole system according to claim 5, wherein there is defined on the base ribbon (2) a second zone (2b), in which there is no superimposition with the upper element (3), this second zone (2b) extending continuously along the entire length of the base ribbon (2) at the side of the upper element (3) opposite the first zone (2a).
7. A lace-hole system according to claim 5 or 6, wherein the upper element (3) is staggered with respect to a centre line of the base ribbon (2).
8. A footwear item comprising at least one lace-hole system (1) according to any one of claims 1 to 7.
9. A method for producing a footwear item (8) according to claim 8, comprising the step of fixing at least one of these lace-hole systems to an upper (7) of the footwear item (8).



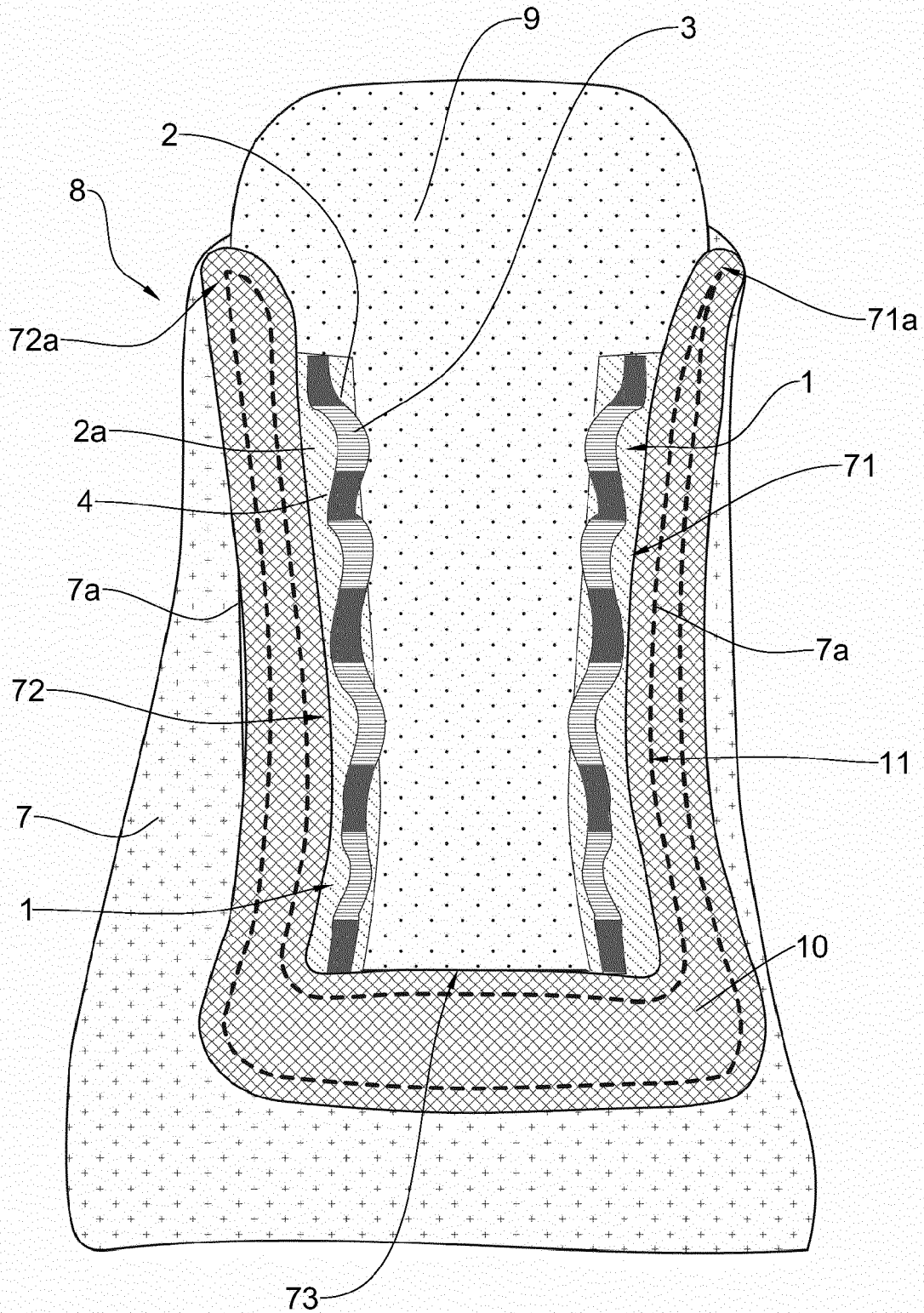


Fig. 4

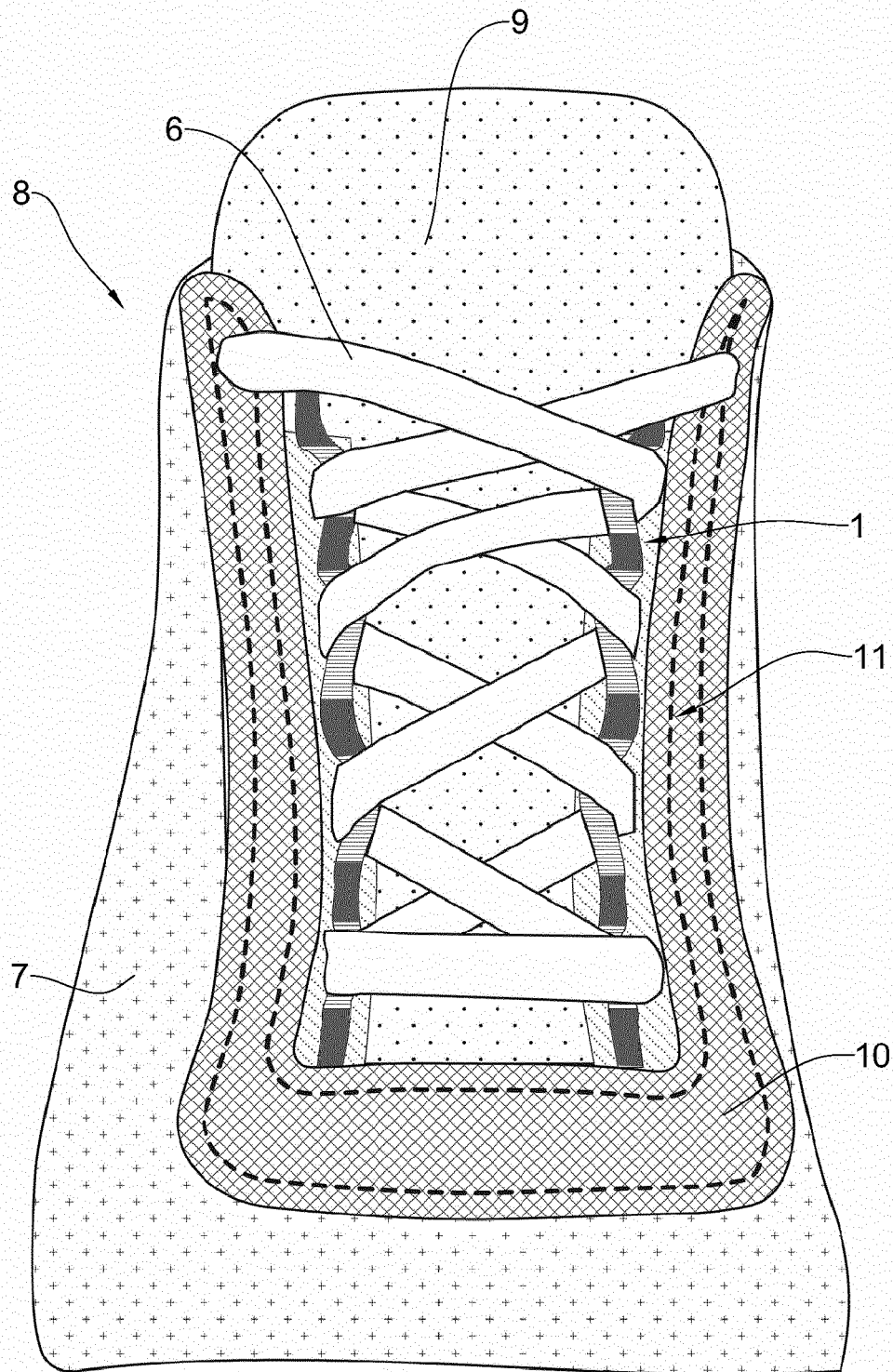


Fig. 5



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Application Number

EP 22 18 2409

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