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(54) **SHOES VENTILATION SYSTEM**

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(57) **ABSTRACT**

The separate insole **2** with the, ventilation system is separately insertable in the shoe and the separate insole **2** has longitudinal grooves I downwards, which extend from the space of the heel to the space of the toe through bottom surface an elastic foam layer of the separate insole **2**. The rear ends of the longitudinal grooves **1** have an air inlet in the space of the heel and the front ends of the longitudinal grooves **1** have an air outlet in the space of the toe. During step, the longitudinal grooves **1** are gradually compressed from the heel to the toe and air is forced from the longitudinal grooves **1** to the inner toe space of the shoe.

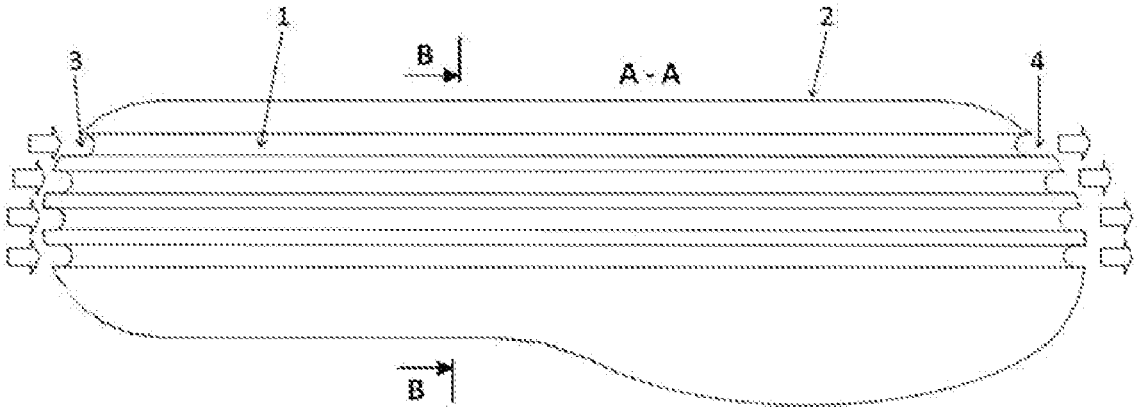


Fig. 1

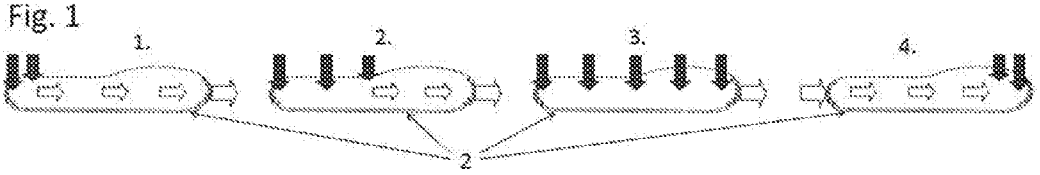


Fig. 2

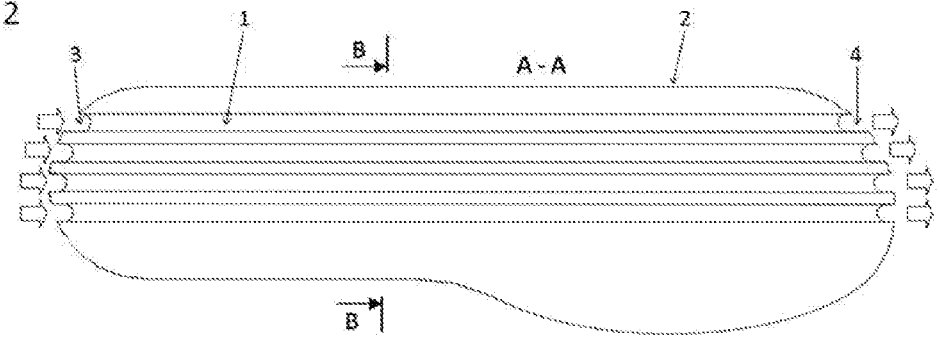


Fig. 3

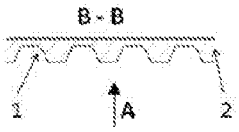
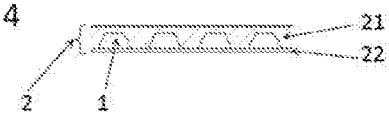


Fig. 4



SHOES VENTILATION SYSTEM

TECHNICAL FIELD

[0001] The separate insole with ventilation system is suitable for almost all types of shoes, except for banded or other open shoes. The separate insole can be put into the shoe and taken out of it.

BACKGROUND ART

[0002] The patent DE3247686A1 has complicated construction with transverse auxiliary air pumping cavities and only two longitudinal holes are used only to transfer air to another part of the shoe. Also another existing patents have complicated construction with various auxiliary air pumping cavities and only 1 or 2 longitudinal holes are used only to transfer air to another part of the shoe. Most of them require special shoe construction. Production of all existing constructions of ventilation of shoes would be problematic to realize.

SUMMARY OF INVENTION

[0003] The separate insole **2** with the ventilation system is separately insertable in the shoe and the separate insole **2** has longitudinal grooves **1** downwards, which extend from the space of the heel to the space of the toe through bottom surface an elastic foam layer of the separate insole **2**, where the rear ends of the longitudinal grooves **1** have an air inlets in the space of the heel such that when the heel of the foot presses against the separate insole **2** during the beginning step, the rear ends of the longitudinal grooves **1** are compressed and the air inlets thus closed and then, as the sole of the foot gradually treads on the separate insole **2**, the longitudinal grooves **1** are gradually compressed from the heel area towards the toe area and air is forced out of the longitudinal grooves **1** into the inner toe space of the shoe and, at the end of the step, when the toe of the separate insole **2** is compressed, the front ends of the longitudinal grooves **1** are compressed and the air outlets closed, but the heel of the foot is unloaded and the air inlets into the longitudinal grooves **1** are opened, and by gradually unloading the foot on the separate insole **2** from the heel towards the toe, air is sucked into the longitudinal grooves **1**.

[0004] The rear ends of the longitudinal grooves **1** are opened in the space o the heel inlet holes **3**.

[0005] The front ends of the longitudinal grooves **1** are opened in the space of the toe outlet holes **4**.

[0006] The separate insole **2** is composed of the main **21** flexible foam layer and a flexible lid **22** which fixed to each other.

[0007] At least the surface of the longitudinal grooves **1** has an elastic surface layer impermeable to air.

[0008] The tread surface of the separate insole **2**, which is in contact with the sole of the foot, is made of leather or fabric.

[0009] The advantage of this separate insole with ventilation system is its simplicity. The separate insole has only the longitudinal grooves downwards and in this position is inserted in the shoe, the insole pumps air into the inner toe space of the shoe. The separate insole is particularly advantageous in terms of production and versatility. Easy to maintain cleanliness of separate insole.

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. **1** shows step-by-step pictures of the system's features through the gradual compression of the separate insole with the ventilation system. FIG. **2** shows the separate insole with longitudinal grooves of the ventilation system. FIG. **3** shows a cross sectional view of the separate insole. FIG. **4** shows a cross sectional view of the separate insole.

1. A shoes ventilation system, characterized in that the separate insole (**2**) with the ventilation system is separately insertable in the shoe and the separate insole (**2**) has longitudinal grooves (**1**) downwards, which extend from the space of the heel to the space of the toe through bottom surface an elastic foam layer of the separate insole (**2**), where the rear ends of the longitudinal grooves (**1**) have an air inlets in the space of the heel such that when the heel of the foot presses against the separate insole (**2**) during the beginning step, the rear ends of the longitudinal grooves (**1**) are compressed, and the air inlets thus dosed and then, as the sole of the foot gradually treads on the separate insole (**2**), the longitudinal, grooves (**1**) are gradually compressed from the heel area towards the toe area and air is forced out of the longitudinal grooves (**1**) into the inner toe space of the shoe and, at the end of the step, when the toe of the separate insole (**2**) is compressed, the front ends of the longitudinal grooves (**1**) are compressed and the air outlets closed, but the heel of the foot is unloaded and the air inlets into the longitudinal grooves (**1**) are opened, and by gradually unloading the foot on the separate insole (**2**) from the heel towards the toe, air is sucked into the longitudinal grooves (**1**).

2. The shoes ventilation system according to claim **1**, wherein the tear ends of the longitudinal grooves (**1**) are opened in the space of the heel inlet holes (**3**).

3. The shoes ventilation system according to claim **1**, wherein the front ends of the longitudinal grooves (**1**) are opened in the space of the toe outlet holes (**4**).

4. The shoes ventilation system according to claim **1**, wherein the separate insole (**2**) is composed of the main (**21**) flexible foam layer and a flexible lid (**22**) which are fixed to each other.

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