Title: FOOTWEAR WITH INTERCHANGEABLE UPPER

Abstract: Footwear with interchangeable uppers, comprising a lower sole group (A) and a top upper group (B) joined together in an interchangeable form by means of at least one layer of pairs of Velcro (TM) strips, wherein said group (A) comprises a lower sole (1) and a first continuous layer of Velcro (TM) hooks (2) laid over and glued to the sole (1) and said group (B) comprises a second continuous layer (3) of Velcro (TM) sponge on the underside which can be laid over layer (2) precisely.
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FOOTWEAR WITH INTERCHANGEABLE UPPER.

Field of invention

The herein described invention concerns the footwear sector, and in particular refers to a type of footwear with an interchangeable upper.

Known Art

As we know, shoes with interchangeable uppers have been known for some time and allow whoever wears them to change the physical aspect of the shoes by using the same sole unit.

For example, US4450633, US3983642 and US4297798 describe types of shoes in which upper and sole are joined together by hooks, laces or loops distributed along the side perimeter of the sole.

However, these known types of shoes do not permit the wearer to adjust and adapt the positioning of the upper to be replaced, this being the reason why the use of this type of footwear is limited to shoes that do not require particular comfort, for example footwear such as a casual sandal or destined to be used for a relatively brief space of time.

In any case, the comfort of these shoes is still rather unsatisfactory for a large part of users, especially due to the aesthetic limits that they impose.

Summary of the invention

For this purpose, a type of footwear was produced, comprising a lower sole group (A) and a top upper group (B) joined together in an interchangeable from by means of at least one layer of pairs of Velcro® strips as claimed in the independent claims..

Further embodiments of the invention are claimed in the dependent claims.

One particular advantage of the invention is the fact that the size of the upper can easily be adapted to the foot that is wearing the shoe

List of drawings

The advantages achieved will be understood by those expert in the field by the description that follows and the attached designs that are provided as non-restrictive example, in which:
- Figure 1 shows a view of the design of a shoe according to the invention;
- Figures 1a and 1b show the section according to plan A (without upper) and B (with
upper) of the shoe from Figure 1 respectively;
- Figure 2 shows an exploded diagram of the single components of the shoe in Figure 1;
- Figures 3A and 3B show the partially assembled shoe;
- Figure 4 shows a view of the sole of the shoe according to a particular embodiment of the invention;
- Figure 5 shows an upper in two pieces according to the embodiment shown in Fig. 4;
- Figure 6 shows a section of the sole of Fig. 4 according to a plan lying perpendicular to the sole along a longitudinal axis;
- Figure 7 shows the assembled shoe according to the embodiment shown in Fig. 4.

**Detailed description**

In the description that follows, the term Velcro® means a fixing system that can be removed by a tearing action, of a type known per se and widely used for some time, with one layer that is made of a spongy surface and the other that is made from a surface full of tiny hooks that can attach themselves to the sponge by simply pressing them together.

In reference to the attached drawings, a preferred embodiment of a shoe according to the invention includes a group A comprising:
- a lower sole 1; and
- a first continuous layer of Velcro with small hooks 2 laid over and glued to the sole 1. And a group B comprising
  - a second continuous layer 3 with, on the underside a layer of spongy Velcro® which can be laid over layer 2 precisely;
  - an inner sole 6, which preferably has a inner sole cover band 7, that can be precisely laid over and glued to layer 3; and
  - an upper 8, with front and back tongues 9, 10 the upper part of which (in the configuration shown in Figure 2) present Velcro® sponge surfaces and the lower part (in the configuration shown in Figure 2) Velcro® hooks. The tongues 9, 10 are intended to be attached to the small hooks from the fixed layer 2 and with the sponge of layer 3. In the drawings, the tongues 9, 10 are shown with the two hook/sponge layers separated but it is understood that during assembly, the two layers can be
sewn together. Preferably, layers 3, 6 and 7, glued together, produce a side shape 31, 41 at the point where the tongues 9, 10 of the upper are inserted and, underneath, have further layers with Velcro® sponge 32-34, that may be made up of a double layer of sponge + small hooks underneath, to compensate for the increase in thickness due to the application of the same tongues 9, 10 on the layer of sponge 3.

In greater detail, sole 1 has a side border in relief 11 which is slightly concave so that it can close and hold the various layers on top 2, 3, 6, 7, (section A in Fig.1A) where the upper is missing, and leave an empty space 12 (section B in Fig.1B) corresponding with the place where the upper is inserted, so as to aid application and removal.

During assembly of the shoe, the tongues 9 and 10 of the upper are first attached to the lower Velcro® sponge of layer 3, and then the group B comprising the inner sole 6, with layer 3 glued thereon, and the upper 8 is applied below layer 2.

In this way, the tongues 9, 10 remain firm with dual tear-off attachment to layers 3 and 2, providing maximum safety to the closing of the shoe.

Advantageously, the footwear described has a substantially continuous tear-off joining around the whole area where the foot is placed and therefore provides a high level of comfort together with the easiness of replacing the upper simply by opening the tear-off fastenings.

Preferably, a small removal tongue 35 is also provided which helps to remove group B from group A.

Also, the dual attachment surface allows the wearer to first remove the group from the sole bearing the upper and to adjust or to replace the selected upper and/or the inner sole in comfort.

According to another embodiment of the invention, as shown in Fig. 4 – 7, the shoe according to the invention comprises: a sole 100 on whose lower surface, near to the toe and the heel respectively, there are two or more cavities 110 to which a part of the tear-off fastening is attached an upper 120, comprising one or two pieces, with tongues 130, that can be attached in the cavities 110, to which internally (which cannot be seen once the upper has been fitted to the sole as described below) the other part of the tear-off fastening is
applied (which is the completion of the fastening on the surface of the cavity 110). The position of the cavity 110 on the sole depends on the type of sole (flat, hollow with or without a heel and its size etc) so that it can distribute forces optimally and can guarantee maximum hold between sole and upper.

The cavities 110 can have borders with various shapes so as to further increase the grip between the cavities and the tongues 130 which, of course, will be shaped in a similar way.

The thickness of the tongues 130 (including the tear-off fastening applied to them) will be the same as the depth of the cavities 110 so that once the tongue 130 has been inserted into the corresponding cavity 110, the under part of the sole (which is placed on the ground) will be perfectly smooth as if it was a normal whole sole.

The tongues 130 will be made from the same material as the rest of the sole or in a different material, for example, a sole in leather may have the tongues that are also in leather or, for example, they may be made in Parà rubber or slip-proof rubber.

When a tear-off fastening Velcro® is used, a layer of Velcro® 140 (sponge side or hook side) will be glued to the surface of the cavity 110 and another layer of Velcro® 140' (the corresponding part to the previous one) will be glued onto the internal surfaces (as previously defined) of the tongues 130.

In place of Velcro®, it is also possible to use other tear-off fastening tools that can be removed by a tearing action (for example press-studs) that will provide a similar hold and easy use in attachment and removal of the sole and tongues; such tools will be applied to the surfaces of the cavities 110 and the tongues 130 depending on the ways required by the fastening method.

Furthermore, according to a particular form of the invention, the tongues 130 are closed in pairs in the form of two continuous rings, one at the front and one at the back; this form is particularly suitable for the production of elegant leather shoes.

From Figure 7 it can be seen how, once the shoe has been assembled, it cannot be distinguished from traditional footwear.

The footwear according to the invention can be produced according to the known techniques, the different parts are in fact cut and joined together, for example by gluing, as it is done with the corresponding analogous part building up a traditional shoe.
The herein invention has been described with reference to the preferred embodiments but it is possible for equivalent modifications to be made without however departing from the scope of the protection agreed by herein industrial patent. For example, the shape of the upper may vary from that of a sandal to that of a closed-in shoe for men, women or children. The material used for the sole and the upper may also vary, from rubber, Para rubber or leather for the sole and from leather, synthetic materials or fabric for the upper.

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CLAIMS

1. Footwear with interchangeable uppers, comprising a lower sole group (A) and a top upper group (B) joined together in an interchangeable from by means of at least one layer of pairs of Velcro® strips.

2. The footwear as set out in claim 1, wherein said group (A) comprises a lower sole (1) and a first continuous layer of Velcro® hooks (2) laid over and glued to the sole (1) and said group (B) comprises a second continuous layer (3) of Velcro® sponge on the underside which can be laid over layer (2) precisely.

3. The footwear as set out in claim 2, wherein said group (B) comprises an upper (8) with front and back tongues (9, 10) that have Velcro® sponge on the upper surface and Velcro® hooks on the lower surface so that it can be attached and interchanged with the fixed layer of hooks (2) and the sponge layer (3) respectively.

4. The footwear as set out in claim 3, wherein said tongues (9, 10) attach themselves to said layers (2) and (3) in such a way that they can be adjusted in width.

5. The footwear as set out in claim 2, wherein said group (B) further comprises an inner sole (6) with an inner sole cover band (7) that can be placed over and glued to layer (3) precisely.

6. The footwear as set out in claim 5, wherein said layers (3, 6 and 7) are glued together and form a side shaping (31, 41) at the same point where the tongues (9,10) of the upper are inserted between the Velcro® layers (2) and (3).

7. The footwear as set out in claim 5, wherein said layer (3) is provided with other layers of Velcro® sponge on its underside (32-34) to compensate for the increase in thickness due to the application of the tongues (9, 10) onto the sponge layer (3).

8. The footwear as set out in claim 1, wherein the sole (1) has a side border in relief (11) which is slightly concave so that it closes and holds the various layers above (2, 3, 6, 7) in the cross sections where the shoe upper is missing and leaves an empty space (12) corresponding to the lateral insertion of the upper in order to aid application and removal.

9. The footwear as set out in claim 1 with a removal tongue (35) to aid the removal of group (B) from group (A).
10. Footwear with interchangeable uppers, comprising:
   - a sole (100) on whose lower surface, near to the toe and the heel respectively, there are two or more cavities (110);
   - an upper (120), comprising one or more pieces, with tongues (130), that can be attached to the above-mentioned cavities (110), said cavities (110) and tongues (130) being provided with tear-off fastening systems.

11. The footwear as set out in claim 10 wherein the fastening systems used are Velcro® layers.

12. The footwear as set out in claim 10 and 12 wherein the cavities (110) and the tongues (130) are correspondingly shaped.

13. The footwear as set out in claims 10 – 12 wherein the tongues (130) are made from the same material as the rest of the sole.

14. The footwear as set out in claims 10 – 12 wherein the tongues (130) are made from a different material than the rest of the sole.

15. The footwear as set out in claims 10 – 14 comprising:
   - a sole (100) on whose lower surface, near to the toe and the heel respectively, there are two or more cavities (110) to whose surface a layer of Velcro® is glued (sponge side or small hooks side)
   - an upper (120), comprising one or more pieces, with tongues (130), that can be attached to the above-mentioned cavities (110), whose internal surfaces (i.e. that cannot be seen once the upper has been attached to the sole as described below) have a layer of Velcro® glued thereon (which is the completion of the Velcro® that is placed on the surface of the cavity (110).

16. The footwear as set out in claims 10 - 15, wherein the tongues (130) are joined in pairs in the form of two closed rings.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7

- A43B3/24
- A43B13/36
- A43B3/12

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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19 November 2002

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27/11/2002

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