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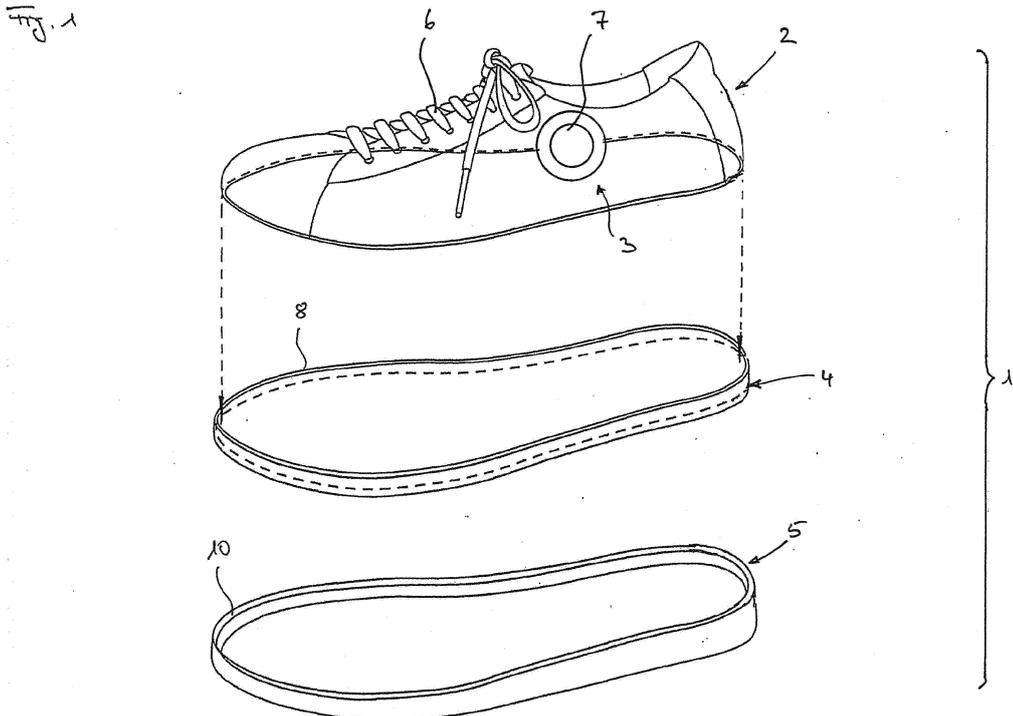
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Amended claims in accordance with Rule 137(2) EPC.

(54) **Shoe assembly**

(57) Shoe assembly (1) comprising an upper shoe part (2), an inner sole (3), a connecting sole (4) fixed to the inner sole (3) and an outer sole (5), which is fixed to the connecting sole (4) by means of a manually detachable snap-fit connection, wherein the snap-fit connection comprises first connecting means (8) provided at and

upwardly protruding from the connecting sole (4), and second connecting means (9) provided at a free end of an upwardly protruding circumferential rim (10) of the outer sole (5) and encompassing the first connecting means (8), when the outer sole (5) is fixed to the connecting sole (4).



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## Description

**[0001]** The present invention relates to a shoe assembly comprising an upper shoe part, an inner sole, a connecting sole fixed to the inner sole and an outer sole, which is fixed to the connecting sole by means of a manually detachable snap-fit connection.

**[0002]** Such a shoe assembly is known for example from US-A-4,377,042. This document relates to an athletic shoe having replacement outer soles. Accordingly, the user can adapt the shoe to different requirements by changing the outer sole. The connecting sole is a three-layer construction comprising two outer layers of sponge rubber and an intermediate recess-providing part. The recess of the recess-providing part faces sideways and forms a first connecting means of a snap-fit connection. The outer sole is a one-piece rubber component and comprises an upwardly protruding circumferential rim. At half height of the rim there is provided an inwardly and sideways protruding undercut projection forming a second connecting means of the snap-fit connection. However, this construction of the snap-fit connection is difficult and expensive to manufacture. Moreover, the fixation of the outer sole at the connecting sole achieved with this snap-fit connection is not reliable. When person steps on the upwardly protruding rim of the outer sole, there is a danger that the snap-fit connection will release under additional side forces. For this reason, additional hook-and-loop-fasteners are provided between the outer sole and the connecting sole.

**[0003]** Starting from this prior art it is an object of the present invention to provide a shoe assembly of the above-mentioned kind, which is easy and inexpensive to manufacture and whose snap-fit connection ensures a strong hold between the outer sole and the connecting sole.

**[0004]** In order to solve this object the present invention provides a shoe assembly of the above-mentioned kind wherein the snap-fit connection comprises first connecting means provided at and upwardly protruding from the connecting sole, and second connecting means provided at a free end of an upwardly protruding circumferential rim of the outer sole and encompassing the first connecting means, when the outer sole is fixed to the connecting sole.

**[0005]** One advantage of the inventive shoe assembly is that this construction of the snap-fit connection allows a low cost production of the outer sole as well as of the connecting sole in one piece, respectively. Moreover - thanks to the provision of the second connecting means at the free end of the circumferential rim of the outer sole - a safe connection between the outer sole and the connecting sole is ensured, even if a person steps on the circumferential rim of the outer sole, because the second connecting means encompasses the first connecting means from above. Accordingly, no additional fixing means between the outer sole and the connecting sole are necessary.

**[0006]** According to one aspect of the present invention the first connecting means are provided in the form of an upwardly extending circumferential lug. This ensures a construction of the connecting sole, which is easy and inexpensive to manufacture.

**[0007]** Preferably, the second connecting means have a hook-shaped cross section and face downwards. Thus, a strong hold between the first and second connecting means is ensured.

**[0008]** According to one aspect of the present invention the material of the connecting sole is chosen from the group of leather, rubber, plastic material, such as ethylene-vinylacetate (EVA), and combinations thereof.

**[0009]** The material of the outer sole can be chosen from the group of leather, rubber, plastic material, such as EVA, and combinations thereof.

**[0010]** According to one aspect of the present invention the shoe assembly comprises at least one patch, which is detachably fixed to the upper shoe part, in particular by means of a hook-and-loop fastener. Such a patch may be in the form of a logo, a colored design element or the like, which affects the optical appearance of the shoe assembly.

**[0011]** Moreover, the present invention provides a shoe assembly set comprising a shoe assembly according to the present invention and at least one further component chosen from the group of an upper shoe part provided with a connecting sole; an inner sole, an outer sole, a patch or combinations thereof, wherein said at least one further component is interchangeable with the corresponding component of the shoe assembly in order to vary the outer appearance and/or other features of the shoe assembly, such as the resiliency of the outer sole or the like. Preferably, the shoe assembly set comprises a plurality of further components of the above-mentioned group, which differ from the corresponding components of the shoe assembly with respect to the form, the color, the material etc. Accordingly, shoes with different optical appearances and functional features can be assembled by the user using a small number of single components.

**[0012]** Further features and advantages of the present invention become apparent from the following description of a preferred embodiment of a shoe assembly according to the present invention with reference to the accompanying drawing. In the drawing

Figure 1 is an exploded view of a shoe assembly according to an embodiment of the present invention;

Figure 2 is a perspective sectional view of the assembled shoe assembly shown in figure 1;

Figure 3 is an enlarged side view of detail III in figure 2;

Figure 4 is a side view of the shoe assembly showing the step of fixing an outer sole to a connecting sole; and

Figure 5 is a side view of a shoe assembly set according to an embodiment of the present invention.

**[0013]** Figures 1 to 4 show a shoe assembly 1 according to an embodiment of the present invention. The shoe assembly 1 comprises an upper shoe part 2, an inner sole 3, a connecting sole 4 fixed to the inner sole 3 and an outer sole 5, which is detachably fixable to the connecting sole 4.

**[0014]** The upper shoe part 2 is made of a conventional material, such as leather, textile or the like. It is designed to provide a closed shoe. However, it should be noted that the present invention is also applicable to open shoes, e.g. sandals. The upper shoe part 2 has closing means 6 in the form of shoe laces. Alternatively, the closing means 6 are provided as hook-and-loop closing means, straps or the like. If the upper shoe part 2 is structured as a slip-on shoe, the closing means 6 can also be omitted. The upper shoe part 2 is provided with a patch 7, which serves as a decorative element and is detachably fixed to the upper shoe part 2 by means of a hook-and-loop fastener, although other detachable connections are also possible. The inner sole 3 is fixed to the upper shoe part 2 by gluing, stitching or the like. The material of the inner sole 3 is leather or any other suitable material known in the art.

**[0015]** The connecting sole 4 is fixedly attached to the inner sole 3 and/or the upper shoe part 2 by means of gluing, stitching or the like. It is made of a one-piece rubber component. Alternatively, other materials can be used for the connecting sole 4 such as leather, plastic material, in particular ethylene-vinylacetate (EVA), etc. The connecting sole 4 comprises a first connecting means 8 provided at and upwardly protruding from the connecting sole 4 in the form of an upwardly extending circumferential lug. The first connecting means or lug 8 has an essentially triangular cross section, wherein other cross section forms may likewise be applicable.

**[0016]** The outer sole 5 is formed as a one-piece rubber component. However, alternative materials can be used for the outer sole 5, such as leather, plastic material, etc. The outer sole 5 comprises second connecting means 9 provided at a free end of an upwardly protruding circumferential rim 10. As best shown in figure 3, the second connecting means 9 have a hook-shaped cross section and face downwards. The second connecting means 9 of the outer sole 5 and the first connecting means 8 of the connecting sole 4 together define a manual detachable snap-fixed connection in order to fix the outer sole 5 to or disengage the outer sole 5 from the connecting sole 4, as shown in figure 4. When the outer sole 5 is fixed to the connecting sole 4, the second connecting means 9 of the outer sole 5 encompass the first connecting means 8 of the connecting sole 4 from above, such that a strong hold between the outer sole 5 and the connecting sole 4 is achieved.

**[0017]** One advantage of the shoe assembly 1 shown

in figures 1 to 4 is its easy construction due to the chosen structures of the first connecting means 8 and the second connecting means 9 forming the snap-fit connection. These structures make it possible to form the connecting sole 4 and the outer sole 5 as one-piece components, respectively, leading to an inexpensive production. Moreover, due to the fact that the second connecting means 8 encompass the first connecting means 7 from above, no additional fixing means between the outer sole 5 and the connecting sole 4 are necessary, what also has a positive impact with respect to the manufacturing costs. Furthermore, a safe connection between the outer sole 5 and the connecting sole 4 is ensured, even if a person steps on the circumferential rim 9 of the outer sole 5.

**[0018]** Figure 5 shows a shoe assembly set 11 according to the present invention. The shoe assembly set 11 comprises a shoe assembly 1 as shown in figures 1 to 4 and at least one further component chosen from the group of an upper shoe part provided with the connecting sole; an inner sole, an outer sole, a patch or combinations thereof, wherein the at least one further component is interchangeable with the corresponding component of the shoe assembly in order to vary the outer appearance and/or other features of this shoe assembly 1, such as the resiliency of the outer sole or the like.

**[0019]** More precisely, the shown shoe assembly set 11 comprises in addition to the shoe assembly 1 two further upper shoe parts 2a and 2b, which are each provided with an inner sole and a connecting sole (not shown), one further outer sole 5a and three further patches 7a, 7b and 7c as additional components. These additional components can differ from the corresponding components of the shoe assembly 1 with respect to the form, the color, the material etc. Accordingly, shoes with different optical appearances and functional features can be assembled by the user using a small number of single components. Just to give an example, the upper shoe parts 2, 2a and 2b have different colors, forms and materials, in order to provide e.g. business-shoes, casual shoes and/or sports shoes. The material of the inner sole and the connecting sole of the upper shoe parts 2, 2a and 2b may vary with respect to the intended function of the shoe. The patches 7, 7a, 7b and 7c, which can interchangeably fixed to the hook-and-loop fasteners 12 of the upper shoes 2, 2a and 2b, are of various forms, colors etc., wherein the colors are preferably adapted to the ones of the upper shoe parts and the shoelaces. Moreover, the outer soles 5 and 5a have different forms, colors and materials. By means of all of the above-mentioned components, shoes of various looks and functions are achievable by different component combinations.

## Claims

1. Shoe assembly (1) comprising an upper shoe part (2), an inner sole (3), a connecting sole (4) fixed to the inner sole (3) and an outer sole (5), which is fixed

to the connecting sole (4) by means of a manually detachable snap-fit connection, wherein the snap-fit connection comprises first connecting means (8) provided at and upwardly protruding from the connecting sole (4), and second connecting means (9) provided at a free end of an upwardly protruding circumferential rim (10) of the outer sole (5) and encompassing the first connecting means (8), when the outer sole (5) is fixed to the connecting sole (4).

2. Shoe assembly (1) according to claim 1, **characterized in that** the first connecting means (8) are provided in the form of an upwardly extending circumferential lug.
3. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the second connecting means (9) have a hook-shaped cross section and face downwards.
4. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the material of the connecting sole (4) is chosen from the group of leather, rubber, plastic material and combinations thereof.
5. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the material of the outer sole (5) is chosen from the group of leather, rubber, plastic material and combinations thereof.
6. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** it comprises at least one patch (7), which is detachably fixed to the upper shoe (2) part, in particular by means of a hook-and-loop fastener (12).
7. Shoe assembly set (11) comprising a shoe assembly (1) according to one of the foregoing claims and at least one further component chosen from the group of an upper shoe part (2a, 2b) provided with a connecting sole; an inner sole; an outer sole (5a); a patch (7a, 7b, 7c) or combinations thereof, wherein said at least one further component is interchangeable with the corresponding component of the shoe assembly (1) in order to vary the outer appearance and/or other features of the shoe assembly (1), such as the resiliency of the outer sole or the like.

provided at and upwardly protruding from the connecting sole (4), and second connecting means (9) provided at a free end of an upwardly protruding circumferential rim (10) of the outer sole (5) and encompassing the first connecting means (8) from above, when the outer sole (5) is fixed to the connecting sole (4).

2. Shoe assembly (1) according to claim 1, **characterized in that** the first connecting means (8) are provided in the form of an upwardly extending circumferential lug.

3. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the second connecting means (9) have a hook-shaped cross section and face downwards.

4. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the material of the connecting sole (4) is chosen from the group of leather, rubber, plastic material and combinations thereof.

5. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** the material of the outer sole (5) is chosen from the group of leather, rubber, plastic material and combinations thereof.

6. Shoe assembly (1) according to one of the foregoing claims, **characterized in that** it comprises at least one patch (7), which is detachably fixed to the upper shoe (2) part, in particular by means of a hook-and-loop fastener (12).

7. Shoe assembly set (11) comprising a shoe assembly (1) according to one of the foregoing claims and at least one further component chosen from the group of an upper shoe part (2a, 2b) provided with a connecting sole; an inner sole; an outer sole (5a); a patch (7a, 7b, 7c) or combinations thereof, wherein said at least one further component is interchangeable with the corresponding component of the shoe assembly (1) in order to vary the outer appearance and/or other features of the shoe assembly (1), such as the resiliency of the outer sole or the like.

#### Amended claims in accordance with Rule 137(2) EPC.

1. Shoe assembly (1) comprising an upper shoe part (2), an inner sole (3), a connecting sole (4) fixed to the inner sole (3) and an outer sole (5), which is fixed to the connecting sole (4) by means of a manually detachable snap-fit connection, wherein the snap-fit connection comprises first connecting means (8)

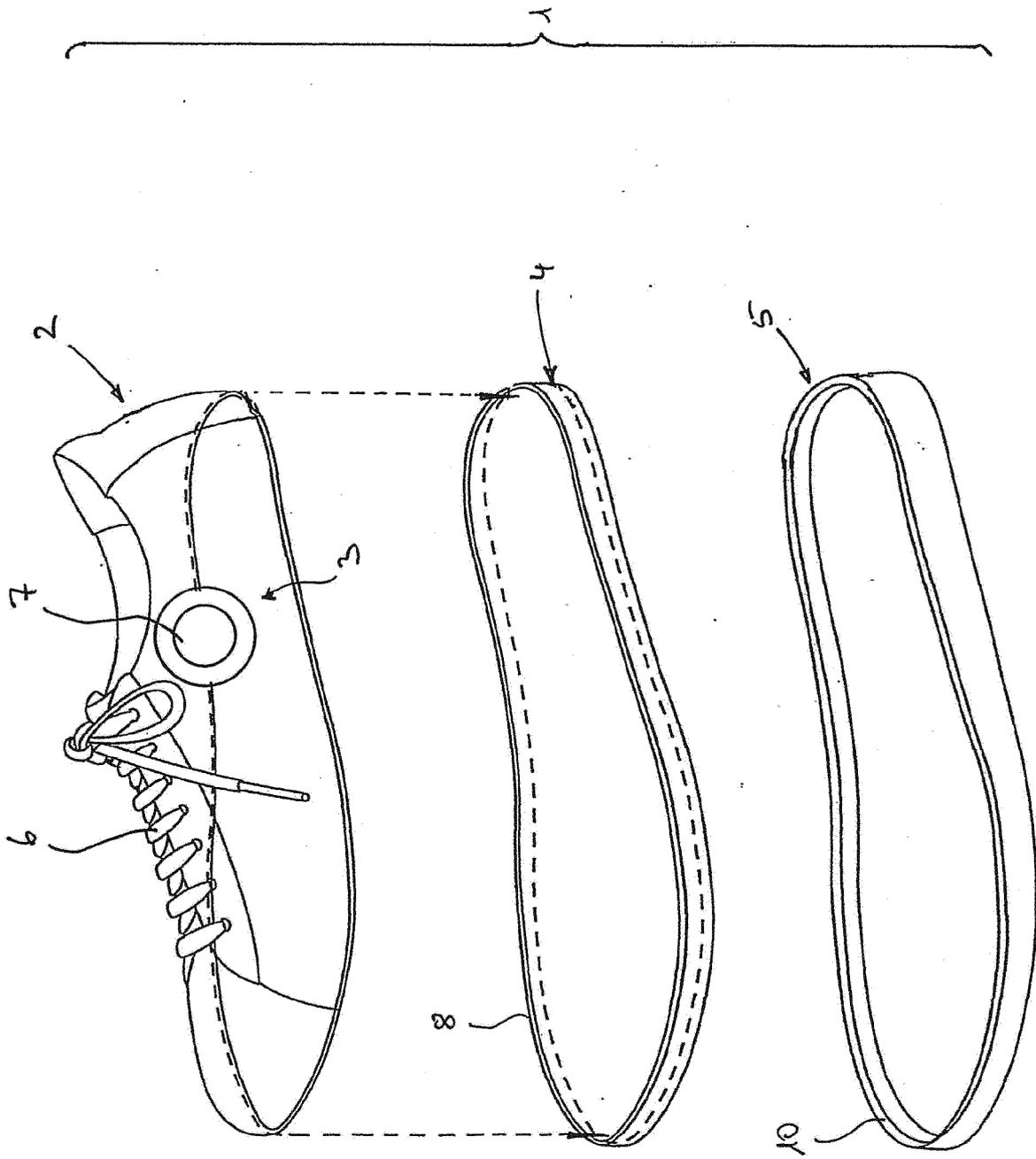


Fig. 1

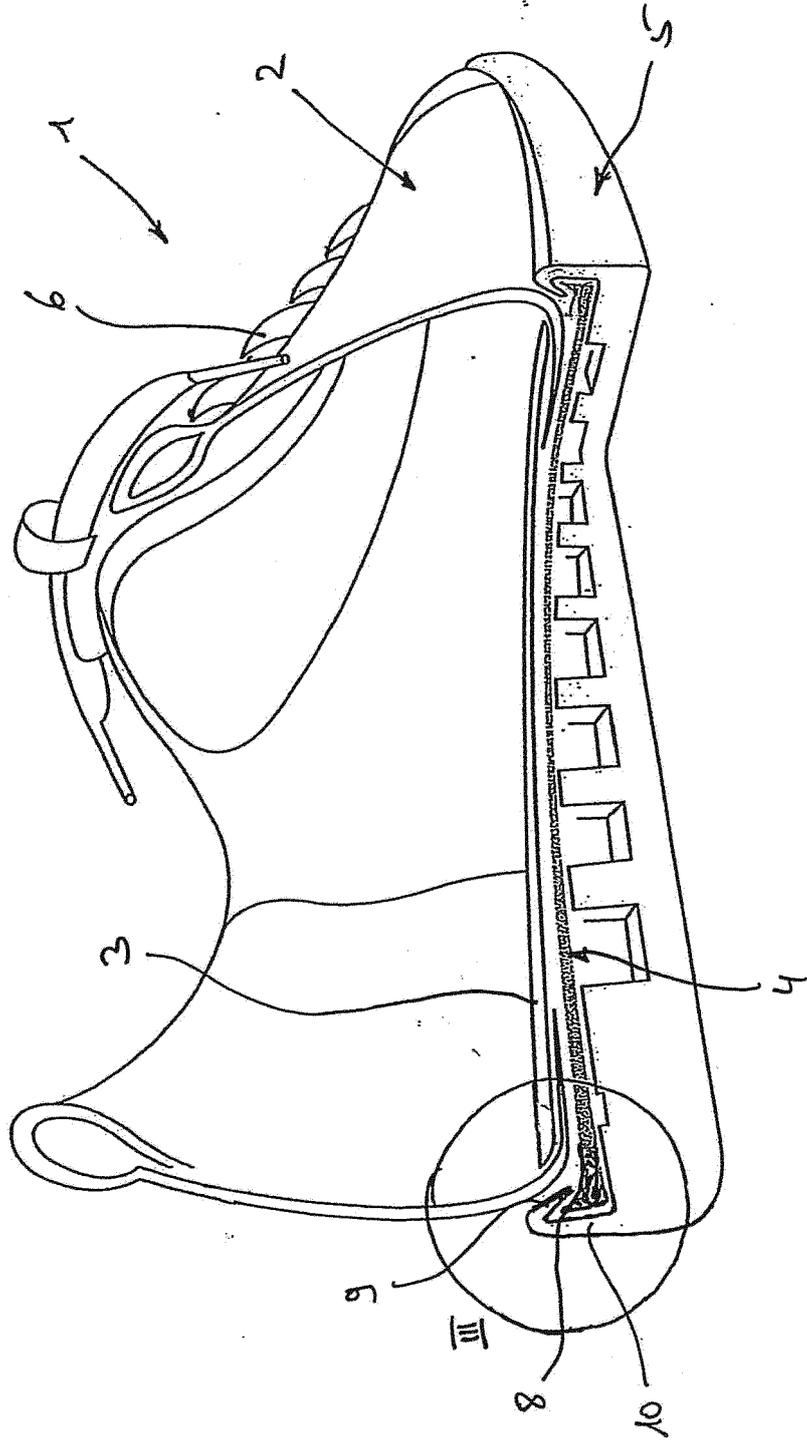


Fig. 2

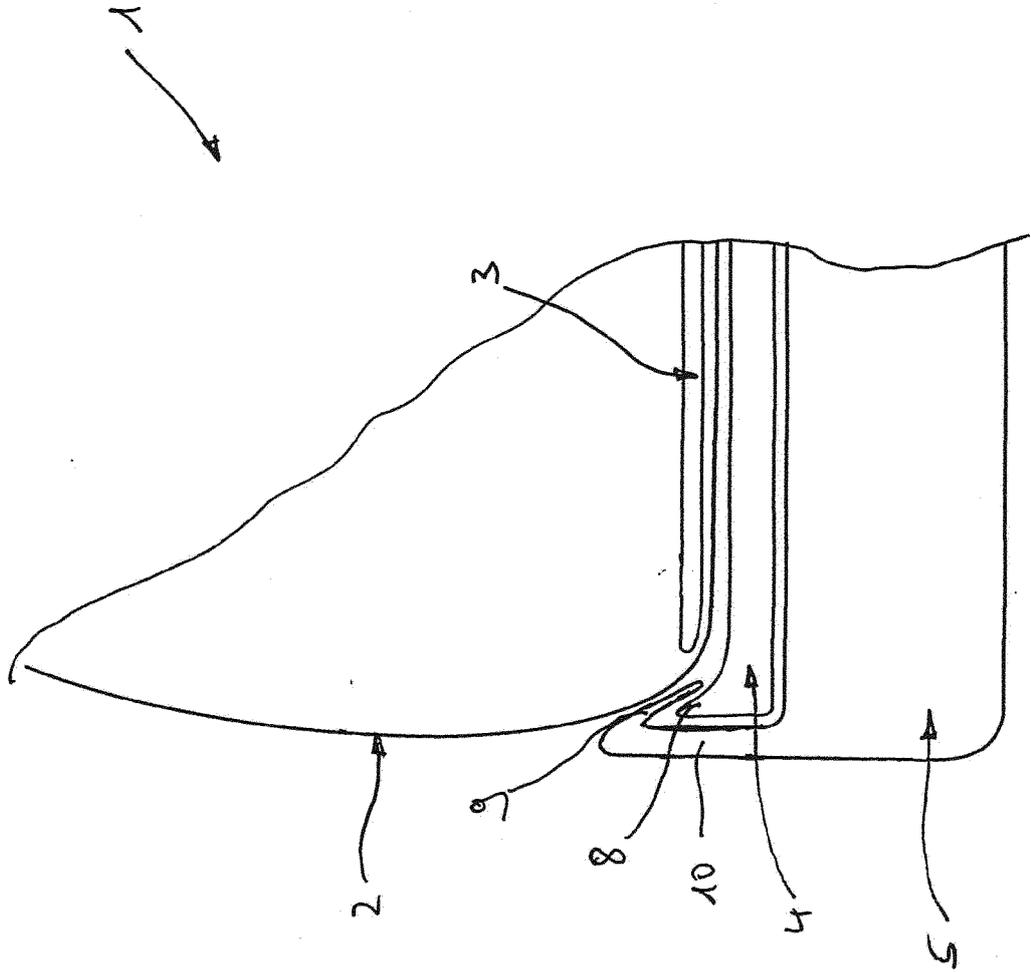


Fig. 3

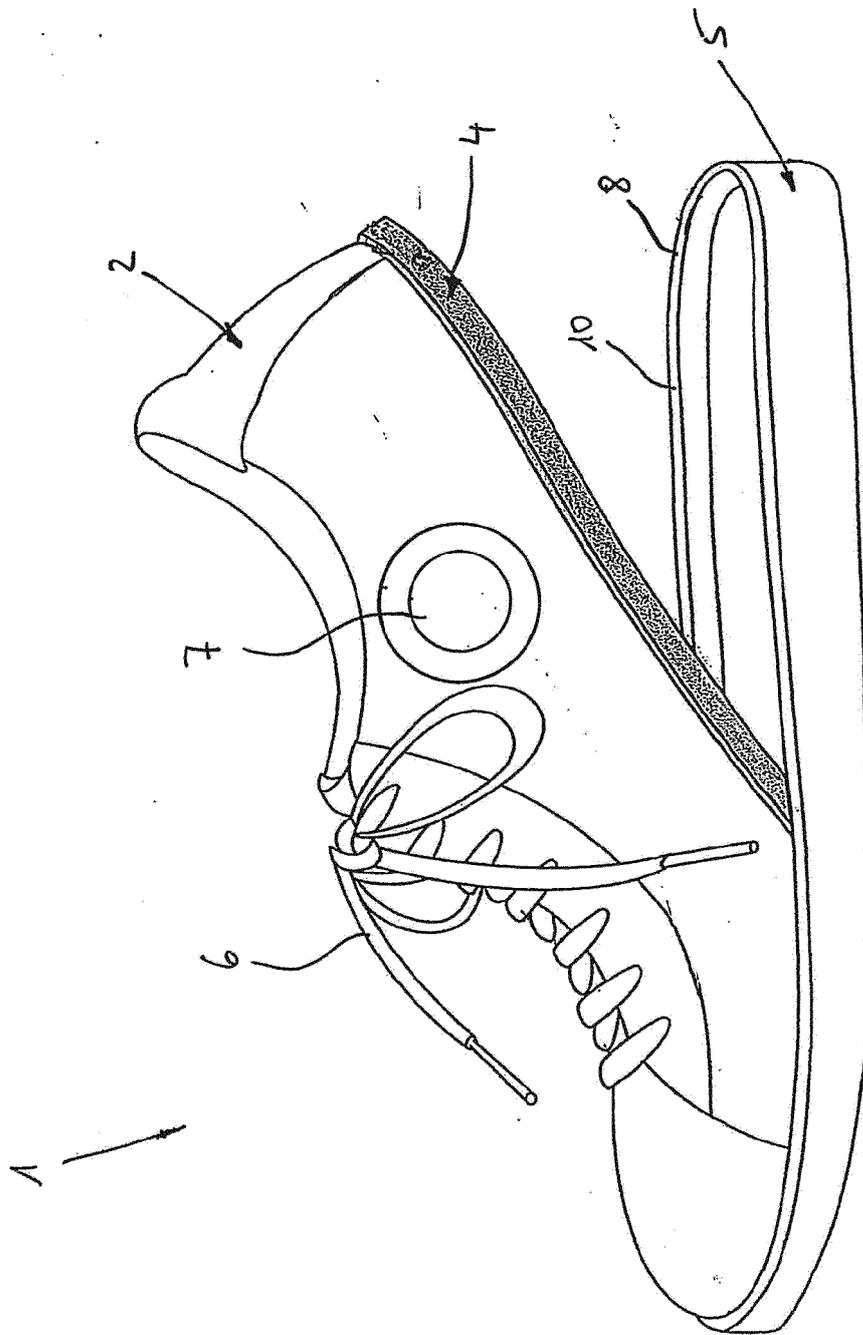
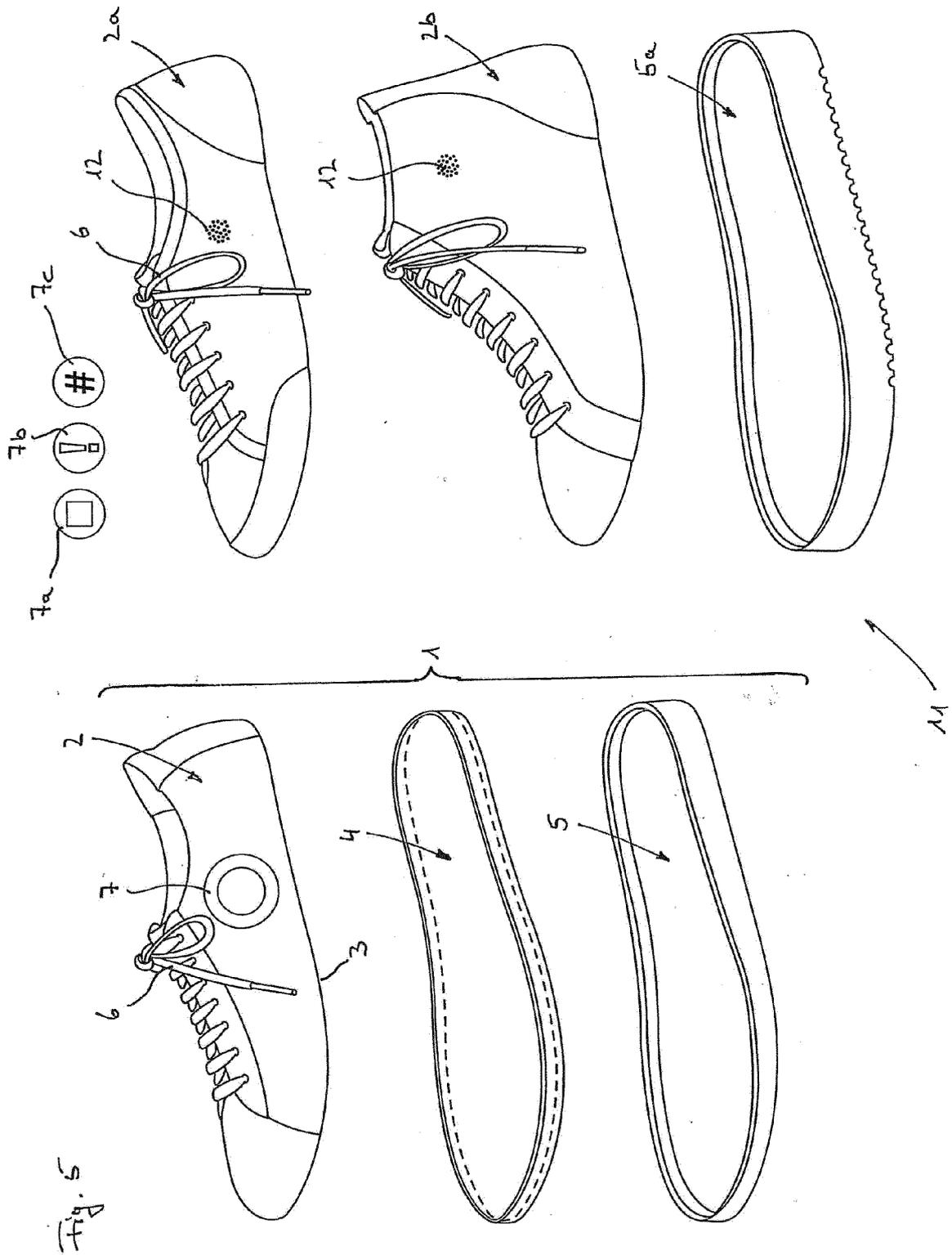


Fig. 4





EUROPEAN SEARCH REPORT

Application Number  
EP 13 15 3015

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 23 May 2013	Examiner Oelschläger, Holger
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**REFERENCES CITED IN THE DESCRIPTION**

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