



(12)

EUROPEAN PATENT APPLICATION

- (43)

Date of publication:
26.09.2018 Bulletin 2018/39

(51)

Int Cl.:
 A43B 3/24 (2006.01)
 A43B 13/36 (2006.01)
- (21)

Application number: 17162499.2
- (22)

Date of filing: 23.03.2017

(84) Designated Contracting States: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR Designated Extension States: BA ME Designated Validation States: MA MD	(72) Inventor: Fenner, Marcel Toronto, ON M9A 0B6 (CA)
(71) Applicant: Fenner, Marcel Toronto, ON M9A 0B6 (CA)	(74) Representative: Dittmann, Rolf et al Patentanwaltskanzlei Dr. R. Dittmann Postfach 59 Hahnrainweg 4 5400 Baden (CH)

(54)

FOOTWEAR PRODUCT

(57) Disclosed is a footwear product (1), the footwear product comprising a top member (10) and a base member (20). The top member is adapted to receive a foot and comprises a front section (11) and a heel section (12). The top member further exhibits a bottom side (14) and an upper side, wherein the top member is closed at its bottom side and is open at its upper side at least in the heel section such as to receive a foot. The base member comprises a bottom side (24) and an upper side (23) and a platform height (h) between the bottom side and the upper side, wherein the bottom side is adapted to contact a ground (100). The footwear product is adapted and configured to be functionally assembled from at least the top member and the base member, wherein the upper side of the base member is oriented towards the bottom side of the top member. A connection interface (30) is provided between the base member and the top member. The connection interface is adapted and configured such that the connection interface is separable by a momentum applied at the connection interface.

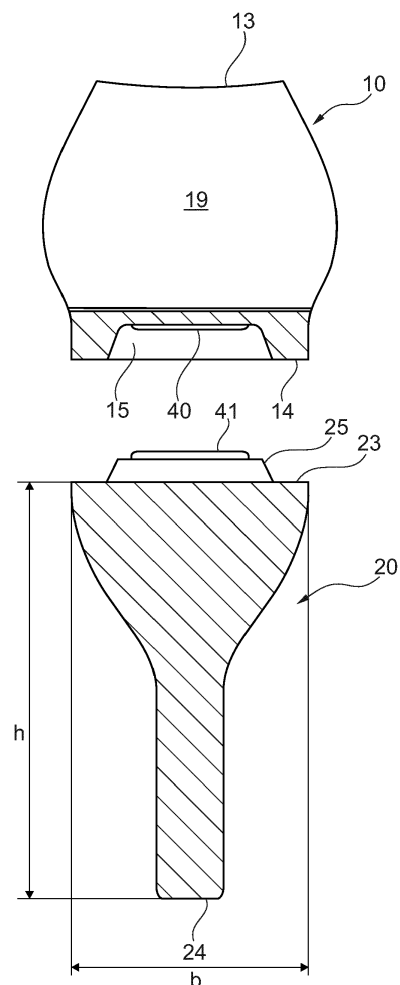


Fig. 2

Description

TECHNICAL FIELD

[0001] The present disclosure relates to a footwear product as set forth in claim 1. It further relates to a method

BACKGROUND OF THE DISCLOSURE

[0002] Footwear products with high heels are fairly common in fashionable ladieswear. They bear some danger of twisting the ankle, and related injuries. However, high heels mostly exhibit a very slender shape and are attached to an upper part of the footwear at a very small attachment area. Thus, they break easily, and at a comparatively low tilt angle, which limits the momentum acting on the bearer's ankle, and accordingly the risk of serious injury. Also, the bearer's forefoot is in contact with the ground, which enables the bearer to react and control the motion, at least to a certain extent. In fashion or show business, platform soles are used for reasons of aesthetics or other effects. A platform height of these platform soles is typically larger than several centimeters and may reach up to several ten centimeters. In this case, the bearer's entire foot is disconnected from the ground by a fairly large distance. In fact, the effect is comparable to stilt walking with the foot being rigidly attached to the stilt. Twisting the ankle or stumbling may thus easily result in a large momentum acting on the ankle, with the resulting danger of severe ankle injuries, or falling down, or both. Moreover, the knee, or soft tissue stabilizing the knee, may be in danger of injury, for instance due to lateral bending.

[0003] It is thus found desirable to provide a footwear product, in particular a shoe, which allows separation of a base or sole section upon danger of falling or twisting the ankle, such that the bearer may "step off" the platform sole. Injury may thus be avoided. It may in more specific instances be further found desirable, that the footwear product is not damaged by this separation, but may easily be reassembled. It may furthermore be found desirable that the separation does not occur arbitrarily, as in the case of the above mentioned breaking off a heel, that is, actually destroying the footwear product, but under controlled or controllable conditions and/or in a controlled or controllable manner.

[0004] In one aspect of the present disclosure it may be found desirable that said separation is automatically triggered by forces acting upon a certain tilt of the platform sole, and/or be triggered purposefully by forces induced by the bearer in performing certain foot movements when the bearer feels in jeopardy of falling or twisting the ankle.

[0005] Numerous embodiments are known in the art which disclose footwear products in which a sole or heel member may be separated from a top member of the footwear product. EP 1 864 585 for an instance discloses a footwear construction in which a heel is secured relative

to the underside of a sole member by means of a snap fit connection. The snap fit connection is provided to securely and firmly lock the heel to the sole member. The embodiments disclosed in FR 2 655 521, EP 2 474 245, DE 10 2008 017 674, FR 2 980 079 and CN 105639848 exhibit interchangeable heels, wherein the interchangeable heels are fixed to a sole or other part of the footwear product by magnets. In said art, the respective connection interfaces comprise bosses or studs such as to secure the heel members of said embodiments against lateral displacement and disconnection due to momenta being effective at the connection interface. US 2007/0000152, US 2,065,325, US 2,009,876 and US 2,478,810 disclose embodiments wherein outsoles or heel lifts are attached to footwear products by means of snap fit connections. However, in each of the named embodiments the attached outsole is rather flat, and requires manual operation to detach the respective outsole or heel lift member from the footwear product. In an embodiment disclosed in US 2013/0247413 heel members are interchangeable, wherein they are connected to an upper part of the footwear product by threads, a system with locking knobs, or rigid snap fit connections. In an embodiment known from US 8,132,341 a heel is attached to another part of the footwear product by a bayonet locking mechanism.

[0006] Summarizing, all of the cited embodiments are intended to securely lock a sole or heel member to a footwear product such that it does not separate from the footwear product during use. In this respect, none of the cited embodiments is suited to provide a footwear product in which the bearer can separate a heel or sole from the footwear product while walking in the footwear product.

OUTLINE OF THE SUBJECT MATTER OF THE PRESENT DISCLOSURE

[0007] It is an object of the present disclosure to provide a footwear product of the type initially mentioned. In an aspect, a footwear product shall be provided in which the danger of ankle injuries or falling down while walking in a footwear product with high heels and/or platform soles is reduced when compared to the art. In a more specific aspect, it is an object of the present disclosure to provide a footwear product in which the bearer is enabled to separate a sole member or heel member from the part of the footwear product in which the bearer's foot is received while he or she walks in the footwear product, and without manual manipulation. In another aspect, a footwear product shall be provided in which a sole member or heel member separates from the part of the footwear product in which the bearer's foot is received when the bearer steps on the footwear product and the sole or heel member reaches or exceeds a certain tilt angle.

[0008] This is achieved by the subject matter set forth in claim 1.

[0009] Further effects and advantages of the disclosed

subject matter, whether explicitly mentioned or not, will become apparent in view of the disclosure provided below.

[0010] Accordingly, disclosed is a footwear product, wherein the footwear product comprises a top member and a base member. The footwear product may in particular be a shoe. Each of the base member and the top member may be provided in one single part or may in turn be assembled from sub-members. The top member is adapted to receive a foot. The top member comprises a front section and a heel section, wherein in certain embodiments the front section may comprise and extend from a toecap. The top member exhibits a bottom side and an upper side, wherein the top member is closed at its bottom side and is open at its upper side at least in the heel section such as to receive a foot through the opening at which it is open at the upper side in the heel section. The top member may for one non-limiting instance comprise a closed compartment with an opening at the upper side in the heel section to receive a foot therethrough. For another non-limiting instance the top member may comprise one or more straps spanning the upper side to receive a foot between the straps and a closed bottom. It is understood that the named instances are given as examples only, and other embodiments of top members of a footwear product are possible within the scope of the present disclosure, although not being explicitly mentioned. The base member comprises a bottom side and an upper side, and a platform height between the bottom side and the upper side of the base member. The bottom side of the base member is adapted to contact a ground, in particular instances in that an outsole is provided on the bottom side of the base member. The footwear product as herein disclosed is adapted and configured to be functionally assembled from at least the top member and the base member, wherein the upper side of the base member is oriented towards the bottom side of the top member. It is understood that if the base member is directly attached to the top member, the upper side of the base member faces the bottom side of the top member. Such, the top member may be supported by the base member which is provided below the top member when a bearer walks in the functionally assembled footwear product. A connection interface is provided between the base member and the top member. The connection between the top member and the base member may be direct, such that the bottom side of the top member is provided adjacent the upper side of the base member, or indirect, with one or more intermediate members provided between the top member and the base member when the footwear product is functionally assembled. The connection interface is adapted and configured such that the connection interface is separable by a momentum applied at the connection interface.

[0011] In a first exemplary instance, the connection interface is adapted and configured such that the connection interface is separable by a torsional momentum around an at least essentially vertical axis. There may

for one non-limiting exemplary instance an interlocking system be provided as a connection system which works analogously to a clipless bicycle pedal system. In this instance, the bearer may support the base member on the ground and perform an adduction or abduction of the foot around the axis of the lower leg in order to exert a torsional momentum at the connection interface to disengage the interlocking system and thus to separate the base member from the top member.

[0012] In a second exemplary instance the connection interface is adapted and configured such that the connection interface is separable by a bending momentum, in particular around a toe-heel axis of the footwear product, or in other words, in a frontal plane of the footwear product. The bearer may exert this momentum in particular in two ways. She or he may either support the base member on the ground and perform a pronation or supination of the foot, that is, turn the foot around its longitudinal, toe-heel, axis. Thus, a bending momentum becomes effective at the connection interface to separate the base member from the top member. A bending momentum of the type mentioned is also induced by the bearer's weight if the base member of the footwear product starts to tilt on the ground and the bearer is in danger of twisting her or his ankle. The bearer may furthermore support the base member laterally against a firm object, like for instance a step, and perform an adduction or abduction of the leg towards the firm object. Thus, a lateral force is exerted at the top member of the footwear product, a counteracting lateral force is exerted at the bottom of the base member, and a resulting bending momentum becomes effective at the connection interface to separate the base member from the top member.

[0013] It is understood that the separation should only be effected if the momentum effective at the connection interface exceeds a threshold value. This threshold value should be chosen such that the base member remains securely fixed to the top member during normal use of the footwear product. The threshold value should be chosen such that a separation of the base member from the top member occurs if a momentum becomes effective at the connection interface which is sufficiently low in order not to cause any or at least not any serious harm or injury to the bearer's ankle or knee. The skilled person may easily determine suitable threshold values. In certain exemplary embodiments, a connection system which is provided to couple the base member to the top member may be provided such that the disengagement threshold is adjustable.

[0014] It is appreciated that in the current context spatial designations like top, base, bottom, upper, front, back, lateral, and the like are related to the position of the footwear product for intended use. Also, toe and heel indicate well-defined directions or positions in connection with a footwear product. That is, when a bearer stands on the ground bearing the footwear product. In this respect, the skilled person will readily appreciate that in this respect designations of directions and relative posi-

tions have clear and unique meanings in the context of a footwear product as such.

[0015] It is further noted that within the framework of the present disclosure the use of the indefinite article "a" or "an" does in no way stipulate a singularity nor does it exclude the presence of a multitude of the named member or feature. It is thus to be read in the sense of "at least one" or "one or a multitude of".

[0016] It is noted that one or more base members may be provided. For instance, one single base member may be provided which extends from a toe region to a heel region, and may be provided with a constant or a variable platform height, which may increase from a front or toe-side end to a back or the heelside end. A minimum platform height may measure 5 cm or more, more in particular 7 cm or more, and even more in particular 10 cm or more. In another instance, a first base member may be provided in the front or toe region of the footwear product and a second base member may be provided in the back or heel region of the footwear product. More platform members may be provided, with equal or different platform heights, which may in certain embodiments increase from the front to the back, and wherein further a minimum platform height may be 5 cm or larger. The base member may be provided as a single heel member.

[0017] According to certain aspects, there is a connection system provided to attach the base member to an adjacent member which is located adjacent the upper side of the base member when the footwear product is functionally assembled. As is lined out below, the adjacent member may in certain embodiments be the top member, but may in other embodiments be an intermediate member. More specifically, it may be the case that the connection system is adapted and configured to be a repeatedly separable and re-assembleable system. That means, in other words, the connection system is not destroyed upon separation or disengagement, and functionality of the connection system is maintained, when the connection system is disconnected to separate the base member from the top member. No repair is needed, and a footwear product with a separated base member may immediately be re-assembled if desired.

[0018] Further, in certain embodiments of the footwear product according to the present disclosure, the connection system is provided between the upper side of the base member and a bottom side of the adjacent member. In this case the connection system is invisible when the footwear product is functionally assembled, which may bear advantages as to aesthetics of the footwear product.

[0019] Below, some exemplary embodiments of suitable connection systems are mentioned for reference. However, it is understood that these examples are in no way intended to be comprehensive and/or to limit the scope of the present disclosure and/or the protection for which is sought.

[0020] For a first instance, the connection system may comprise a pair of magnetically attracting fasteners provided on the base member and the adjacent member,

respectively.

[0021] For a second instance the connection system may comprise a pair of hook and loop fasteners provided on the base member and the adjacent member, respectively. Hook and loop fasteners in this respect should be broadly understood as any pair of members providing fastening surfaces which are populated by structures which provide a mutual form locking interlock effect due to elastic deformation and elastic restoring forces and resulting interlocking undercuts upon mating the fastening surfaces. In certain embodiments the height of the interlocking structures is in a range of less than 5 mm, in more specific embodiments less than 3 mm, and in even more specific embodiments 1 mm or less. In this respect, a pair of hook and loop fasteners as herein referenced may comprise, while not being limited to, actual hook and loop fasteners with hooks provided on one fastening surface and loops on the counterpart surface, hook and pile fasteners, touch fasteners, or mushroom head lock fasteners.

[0022] For a further instance the connection system may comprise at least one adhesive fastener provided on at least one of the base member and the adjacent member.

[0023] For still a further instance, the connection system may comprise at least one pair of mutually interlocking elements provided on the base member and the adjacent member. It is understood that in particular out of each pair of mutually interlocking elements at least one should be resiliently elastic such as to allow mutual interlocking and an interlock due to resilient deformation and rebound upon mating a pair of mutually interlocking elements.

[0024] The at least one pair of mutually interlocking elements may in more specific embodiments comprise at least one pair of positive form lock elements, wherein the interlocking flanks of mutually interlocking positive form lock elements are provided as smooth ramps in and against the interlocking direction such that they may be engaged through a pushing force and be disengaged by a pulling force without destroying a form lock elements. That is to say, in other words, any undercuts provided to achieve the positive form lock interlocking the effect are shaped such that they are not self-retaining against disengagement; however, interlocking is maintained through the positive form lock until a certain disengagement pulling force is applied to the pair of positive form lock elements. In particular, the at least one pair of interlocking elements may comprise a snap fit joint.

[0025] At least one pair of mutually interlocking elements may be a press button.

[0026] It is understood that the connection system may comprise more than one pair of interlocking elements, and it is further understood that at least one pair of mutually interlocking elements may be combined with other attachment means, such as one or more pairs of magnetically attracting fasteners, hook and loop fasteners, and/or adhesive fasteners.

[0027] In certain aspects of the herein disclosed subject matter the connection interface may be provided between the bottom side of the top member and the upper side of the base member such that the base member is directly attached to the top member when the footwear product is functionally assembled.

[0028] As mentioned above, the bottom side of the base member may be furnished with an outsole.

[0029] In further aspects, a platform height may at least be equal to or be larger than three times a maximum width of the connection interface. In an aspect, this condition may be fulfilled for at least the maximum platform height. In more specific exemplary embodiments this condition may be fulfilled for the minimum platform height. It is appreciated that the width of the connection interface may generally be considered as the width of the narrower one of the bottom side of the top member and the upper side of the base member, and may more generally be considered as a width along which the bottom side of the top member and the upper side of the base member overlap. In more specific aspects, a platform height may at least be equal to or be larger than five times a maximum width of the connection interface, equal to or be larger than seven times a maximum width of the connection interface, or equal to or be larger than ten times a maximum width of the connection interface. Thus, a laterally acting force at the bottom of the base member is leveraged to an accordingly larger disengaging normal force acting on the connection system.

[0030] As mentioned above, there may be one or more base members provided, and there may be one or more base members connected to the top member when the footwear product is functionally assembled. There may, for one instance, one base member be connected to a top member in a functionally assembled footwear product which is a heel member and one base member be connected to the functionally assembled footwear product which is a platform sole member. It is understood that in the mentioned embodiment the platform sole member is connected to the functionally assembled footwear product in a front or toe region, while the heel member is connected to the functionally assembled footwear product in a back or heel region. In particular, all base members connected to the top member in a functionally assembled footwear product may be connected to the top member in the manner described above. In other embodiments, there may one single base member be provided as a platform sole.

[0031] The upper side of the base member may in specific embodiments extend at least essentially from a front end of the bottom side of an adjacent member to a heel or back end of the bottom side of an adjacent member when the footwear product is functionally assembled. The upper side of the base member may at least essentially cover the entire bottom side of an adjacent member, when the footwear product is functionally assembled. Again, it is appreciated that the adjacent member may be the top member.

[0032] In a further aspect, there is a footwear system disclosed wherein several base members may be interchanged and replace each other such as to provide a footwear product with a variable aesthetic appearance and/or platform height.

[0033] Further disclosed is a method of separating the base member from the top member of a footwear product of the type outlined above. The method comprises introducing and engaging a foot in the top member of the footwear product, stepping on a ground with the base member, and applying a normal force onto the ground between the base member and the ground. In a first aspect, the method comprises performing a rotation of the foot at least essentially around an axis of the lower leg, that is, performing an adduction or abduction of the foot relative to the leg. In another aspect, the method comprises performing a rotation of the foot at least essentially around a longitudinal axis of the foot, that is performing a pronation or supination of the foot. In still a further aspect, the method comprises moving the foot laterally, that is performing an adduction or abduction of the leg, such as to exert a lateral force on the top member and a counteracting lateral force at the bottom side of the base member.

[0034] It is understood that the features and embodiments disclosed above may be combined with each other. It will further be appreciated that further embodiments are conceivable within the scope of the present disclosure and the claimed subject matter which are obvious and apparent to the skilled person.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] The subject matter of the present disclosure is now to be explained in more detail by means of selected exemplary embodiments shown in the accompanying drawings. The figures show

- Fig. 1 a side view of an exemplary embodiment of a footwear product as herein described;
- Fig. 2 a section of a footwear product in a frontal plane outlining a first exemplary embodiment of an attachment of a base member to a top member;
- Fig. 3 a section of a footwear product in a frontal plane outlining a second exemplary embodiment of an attachment of a base member to a top member; and
- Fig. 4 a section of a footwear product in a sagittal plane outlining an exemplary arrangement of attachment means along the toe-to-heel direction of a footwear product according to the present disclosure.

[0036] It is understood that the drawings are highly schematic, and details not required for instruction purposes may have been omitted for the ease of understanding and depiction. It is further understood that the drawings show only selected, illustrative embodiments, and

embodiments not shown may still be well within the scope of the herein disclosed and/or claimed subject matter.

EXEMPLARY MODES OF CARRYING OUT THE TEACHING OF THE PRESENT DISCLOSURE

[0037] Figure 1 depicts a shoe 1 with a platform sole as an exemplary embodiment of a footwear product of the type described above. Shoe 1 comprises top member 10 and base member 20. Top member 10 and base member 20 are joined at connection interface 30. Shoe or footwear product 1 is functionally assembled from the top member and the base member. The shoe is intended to be placed on a ground 100 at a bottom side of base member 20. An outsole may be provided at the bottom of base member 20. In this respect, spatial orientations or designations like up, down, bottom, top, upper, lower and so forth are clearly defined with respect to footwear product or shoe 1 when placed on the ground as in intended use. Top member 10 is adapted and configured to receive a foot through an opening 13 which is provided at the upper side of top member 10 in a heel section of the top member. As top member 10 is intended to receive foot, it is clearly defined where a front or toe side 11 of the shoe is located and where and back or heel side 12 of the shoe is located. In this respect, it is appreciated that also front and back have clear and unique meanings in the context of a footwear product.

[0038] Top member 10 and base member 20 meet at connection interface 30 with a bottom side of top member 10 and an upper side of base member 20. It is understood that top member 10 is closed at its bottom side, and, as mentioned above, comprises an opening 13 at its upper side and in the heel section, adjacent back or heel side 12, such as to receive a foot therethrough. Apart from opening 13, top member 10 is shown as a closed containment for a foot. However, other embodiments are conceivable in which an upper part of top member 10 is provided with additional openings, or in which straps are provided extending from one lateral side of the bottom of top member 10 to another lateral side of the bottom of top member 10 and extending over the upper side of top member 10. Base member 20 exhibits a platform height h measured from the bottom side of base member 20 to the upper side of base member 20. While in the present exemplary embodiment platform height h is shown constant from the front side of the shoe to the back side of the shoe, embodiments are conceivable in which platform height h for example increases from the front end of the shoe to the back end of the shoe. Furthermore, shoe 1 is shown as comprising one single base member 20 which comprises a front section 21 and a heel section 22. The base member extends at least essentially from a front end of the bottom side of the top member to a heel end of the bottom side of the top member such that the upper side of the base member at least essentially covers the entire bottom side of an adjacent member arranged adjacent the upper side of the base member. However,

embodiments are conceivable in which a front section and a heel section of the base member are provided as separate members. It will be appreciated that a connection system is provided to attach the base member to the top member. The connection system is provided between the upper side of the base member 20 and the bottom side of top member 10. Thus, the connection system is not visible in the present depiction.

[0039] Figure 2 shows a sectional view of an exemplary footwear product, wherein the section is taken in a frontal plane. That is, in other words, the plane of the drawing is perpendicular to that of figure 1. Base member 20 and top member 10 are shown separated from each other. A containment 19 of top member 10 is visible in which a foot may be received through opening 13 at the upper side of top member 10. As mentioned above, top member 10 is closed at its bottom side 14. Base member 20 comprises upper side 23 and bottom side 24, wherein, as mentioned above, bottom side 24 is intended to be in contact with the ground when the footwear product is in use. A centering boss 25 is provided at the upper side 23 of base member 20. A centering recess 15 is provided on the bottom side 14 of top member 10 as a mating feature for centering boss 25, and is adapted and configured to receive centering boss 25. It is noted that centering boss 25 and centering recess 15 have generally sloped or ground lateral sides, such that centering boss 25 may swivel in and out of centering recess 15 through a pivoting movement around one of the lateral edges of the bottom side 14 of top member 10 and/or one of the lateral edges of the upper side 23 of base member 20. Thus, a in functionally assembled footwear product which is assembled from top member 10 base member 20 of figure 2 the base member may be separated from the top member by a momentum applied at the connection interface and acting in the frontal plane, for instance a momentum which is induced by counter-acting lateral forces acting on top member 10 and at the bottom 24 of base member 20 respectively, or a momentum which is caused by a pronation or supination of a foot received in top member 10 while the bottom side 24 of base member 20 is frictionally locked on the ground. The meaning of lateral in the current context will be fully appreciated by the skilled person as a direction which is perpendicular to the plane of drawing in figure 1. It is understood that the arrangement of centering boss and centering recess on the upper side of the base member and the bottom side of the top member may be inverse. Furthermore, a connection system comprising two connection members 40 and 41 are provided within centering recess 15 and on top of centering boss 25. Connection members 40 and 41 may for an instance be magnetic mutually attracting fasteners, but may also be a pair of hook and loop fasteners or comprise at least one adhesive fastener. Generally, the fasteners of the type shown in connection with figure 2 work in attaching their surfaces to another, and may thus be referred to as surface fasteners, as compared to attachment systems disclosed

below. Other types of fasteners are conceivable within the scope of the present disclosure. The connection system which comprises members 40 and 41 may then serve to attach base member 20 to top member 10. Platform height h is larger than the width b of the upper side 23 of base member 20, and, as will be appreciated, also larger than the width of the bottom side 14 of top member 10. Thus, a lateral force acting at the bottom of base member 20 is leveraged to a larger normal disengaging force for connection members 40 and 41.

[0040] Figure 3 shows a further exemplary embodiment of a footwear product of the type herein disclosed in a view which is comparable to that of figure 2. The connection system in this case comprises two mutually interlocking pairs of elastic tongues 42 and 43 provided on the bottom side 14 of top member 10, and 44 and 45 provided on the upper side 23 of base member 20. Elastic tongues 42, 43, 44 and 45 are dimensioned, shaped and arranged such that tongues 44 and 45 may be received between tongues 42 and 43 upon an elastic outward deformation of tongues 42 and 43 and an elastic inward deformation of tongues 44 and 45. The pairs of tongues thus jointly form a pair of interlocking elements. It is noted that, while in some embodiments all tongues 42, 43, 44 and 45 may be provided as elastic tongues, it is sufficient if out of each pair of mutually interlocking tongues 42 and 44, and 43 and 45, respectively, one tongue is provided with a sufficient elasticity or resilience such that the tongues may mate through to displacement of the tip of at least one tongue and may provide a form lock due to elastic rebound. When the footwear product is functionally assembled, tongues 44 and 45 are interlocked with tongues 42 and 43 through respective undercuts. As is seen, the interlocking flanks of the tongues, that is the laterally inner flanks of tongues 42 and 43 and the laterally outer flanks of tongues 44 and 45, are smoothly shaped and form smooth ramps in and again the interlocking direction. Such, they may be engaged through a pushing force while displacing the upper side 23 of base member 20 towards the bottom side 14 of top member 10, and may be disengaged by a pulling force when separating base member 20 from top member 10. It is noted, that the pairs of tongues are positive form lock elements and may be disengaged without destroying the tongues. The skilled person will further appreciate that due to an elastic interlocking force, wherein the pairs of tongues are interlocked by mutually engaging undercuts, a threshold force needs to be applied in order to disengage the thus provided connection system, while at lower disengagement forces the tongues are safely interlocked and provide a secure attachment of base member 20 to top member 10. It is understood that pairs of mutually interlocking elements may be provided such that the elastic deformation force for engaging and disengaging the mutually interlocking elements may be adjustable. Thus, the footwear product may be provided with an adjustable separation threshold momentum.

[0041] Figure 4 depicts a longitudinal or sagittal section

of an exemplary embodiment of a footwear product of the type herein described. In this embodiment, two pairs 4a and 4b of interlocking elements are provided spaced from each other in a longitudinal, that is, toe-to-heel direction in order to provide sufficient stability of the functionally assembled footwear product.

[0042] While the subject matter of the disclosure has been explained by means of exemplary embodiments, it is understood that these are in no way intended to limit the scope of the claimed invention. It will be appreciated that the claims cover embodiments not explicitly shown or disclosed herein, and embodiments deviating from those disclosed in the exemplary modes of carrying out the teaching of the present disclosure will still be covered by the claims.

LIST OF REFERENCE NUMERALS

[0043]

1	footwear product, shoe
4a	pair of interlocking elements
4b	pair of interlocking elements
10	top member
11	front side, toe side, toeside end, front section
12	back side, heel side, heelside end, heel section
13	opening, top opening
14	bottom side of top member
15	centering recess
19	containment
20	base member
21	front section of base member
22	heel section of base member
23	upper side of base member
24	bottom side of base member
25	centering boss
30	connection interface
40	connection member, surface fastener
41	connection member, surface fastener
42	elastic tongue, interlocking element
43	elastic tongue, interlocking element
44	elastic tongue, interlocking element
45	elastic tongue, interlocking element
100	ground
h	platform height
b	width of connection interface

Claims

1. A footwear product (1), the footwear product comprising a top member (10) and a base member (20), the top member being adapted to receive a foot, the top member comprising a front section (11) and a heel section (12), the top member further exhibiting a bottom side (14) and an upper side, wherein the top member is closed at its bottom side and is open

at its upper side at least in the heel section such as to receive a foot,

the base member comprising a bottom side (24) and an upper side (23) and a platform height (h) between the bottom side and the upper side, wherein the bottom side is adapted to contact a ground (100), wherein the footwear product is adapted and configured to be functionally assembled from at least the top member and the base member, wherein the upper side of the base member is oriented towards the bottom side of the top member, wherein a connection interface (30) is provided between the base member and the top member when the footwear product is functionally assembled, wherein the connection interface is adapted and configured such that the connection interface is separable by a momentum applied at the connection interface.

2. The footwear product according to the preceding claim, wherein a connection system is provided to attach the base member (20) to an adjacent member (10) which is located adjacent the upper side (23) of the base member when the footwear product is functionally assembled.
3. The footwear product according to the preceding claim, and wherein the connection system is adapted and configured as a repeatedly separable and re-assembleable system.
4. The footwear product according to any of the two the preceding claim, wherein the connection system is provided between the upper side (23) of the base member and a bottom side (14) of the adjacent member.
5. The footwear product according to any of the three preceding claims, wherein the connection system comprises at least one of:

a pair of magnetic mutually attracting fasteners provided on the base member and the adjacent member; and/or

a pair of hook and loop fasteners provided on the base member and the adjacent member; and/or

at least one adhesive fastener provided on at least one of the base member and the adjacent member.

6. The footwear product according to any of the four preceding claims, wherein the connection system comprises at least one pair of mutually interlocking elements (42, 43; 44, 45; 4a, 4b) provided on the base member and the adjacent member.
7. The footwear product according to the preceding

claim, wherein the at least one pair of mutually interlocking elements comprise at least one pair of positive form lock elements (42, 44; 43, 45), wherein the interlocking flanks of mutually interlocking positive form lock elements are provided as smooth ramps in and against the interlocking direction such that they may be engaged through a pushing force and be disengaged by a pulling force.

8. The footwear product according to any of the two preceding claims, wherein at least one pair of interlocking elements comprise at least one snap fit joint, and wherein mutually interlocking flanks are provided as smooth ramps in and against the interlocking direction such that they may be engaged through a pushing force and be disengaged by a pulling force.
9. The footwear product according to any of the two preceding claims, wherein at least one pair of mutually interlocking elements is a press button.
10. The footwear product according to any of the preceding claims, wherein the connection interface (30) is provided between the bottom side of the top member (10) and the upper side of the base member (20) such that the base member is directly attached to and located adjacent the top member when the footwear product is functionally assembled.
11. The footwear product according to any of the preceding claims, wherein a platform height (h) is at least equal to or is larger than three times a maximum width (b) of the connection interface.
12. The footwear product according to any of the preceding claims, wherein the upper side (23) of the base member (20) extends at least essentially from a front end of the bottom side (14) of an adjacent member (10) to a back end of the bottom side (14) of an adjacent member (10) when the footwear product is functionally assembled.
13. The footwear product according to any of the preceding claims, wherein the upper side (23) of the base member (20) at least essentially covers the entire bottom side (14) of an adjacent member (10) arranged adjacent the upper side of the base member when the footwear product is functionally assembled.
14. A footwear system, comprising a footwear product according to any of the preceding claims, wherein at least two interchangeable base members are provided which are suited to replace each other.
15. A method of separating the base member from the top member of a footwear product of the type described in any of the preceding claims, the method

comprising introducing and engaging a foot in the top member of the footwear product, stepping on a ground with the base member, applying a normal force onto the ground between the base member and the ground, and at least one of: a) performing an rotation of the foot at least essentially around an axis of the lower leg and/or b) performing a rotation of the foot at least essentially around a longitudinal axis of the foot and/or c) moving the foot laterally such as to exert a lateral force on the top member and a counteracting lateral force at the bottom side of the base member.

5

10

15

20

25

30

35

40

45

50

55

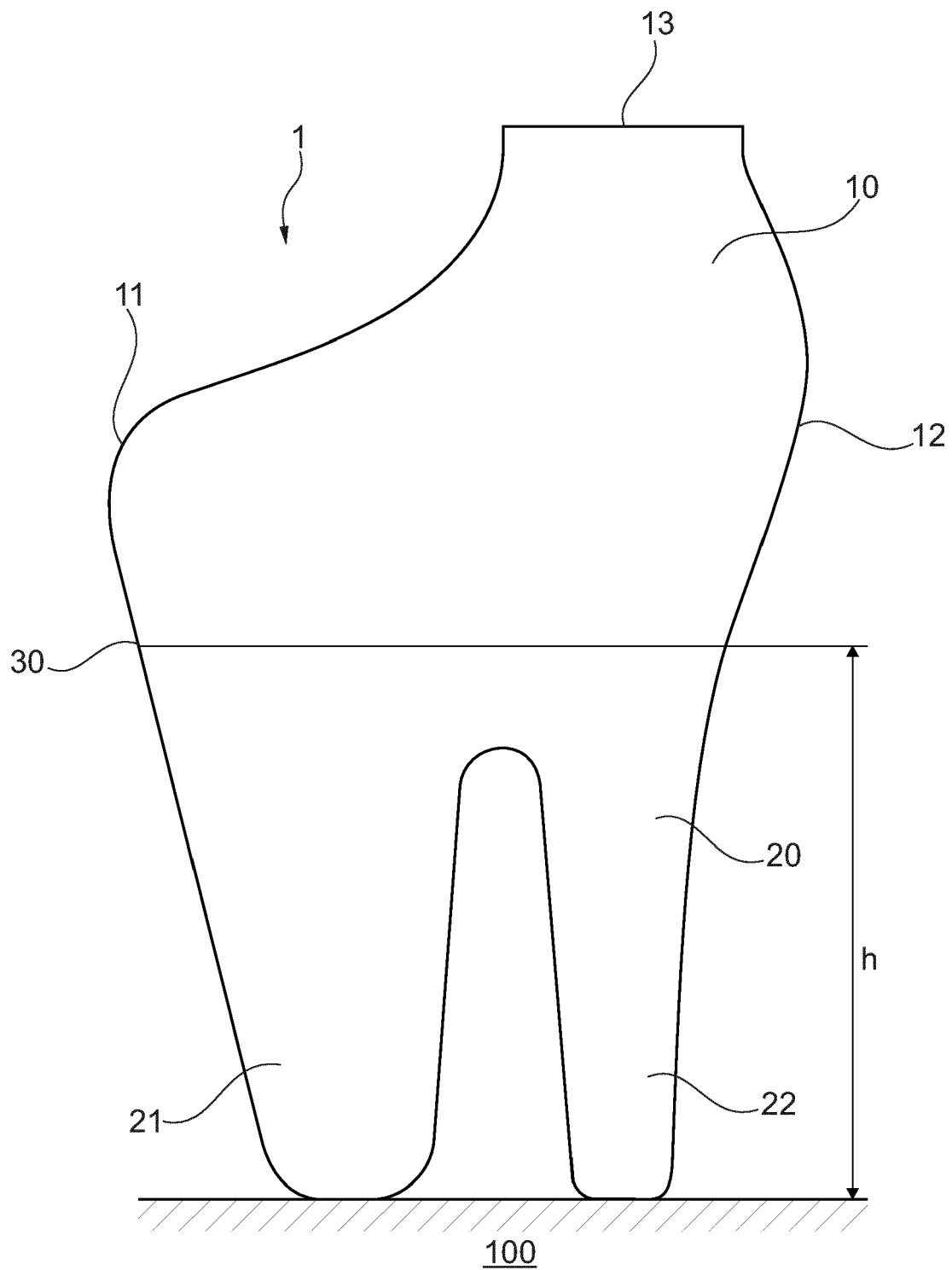


Fig. 1

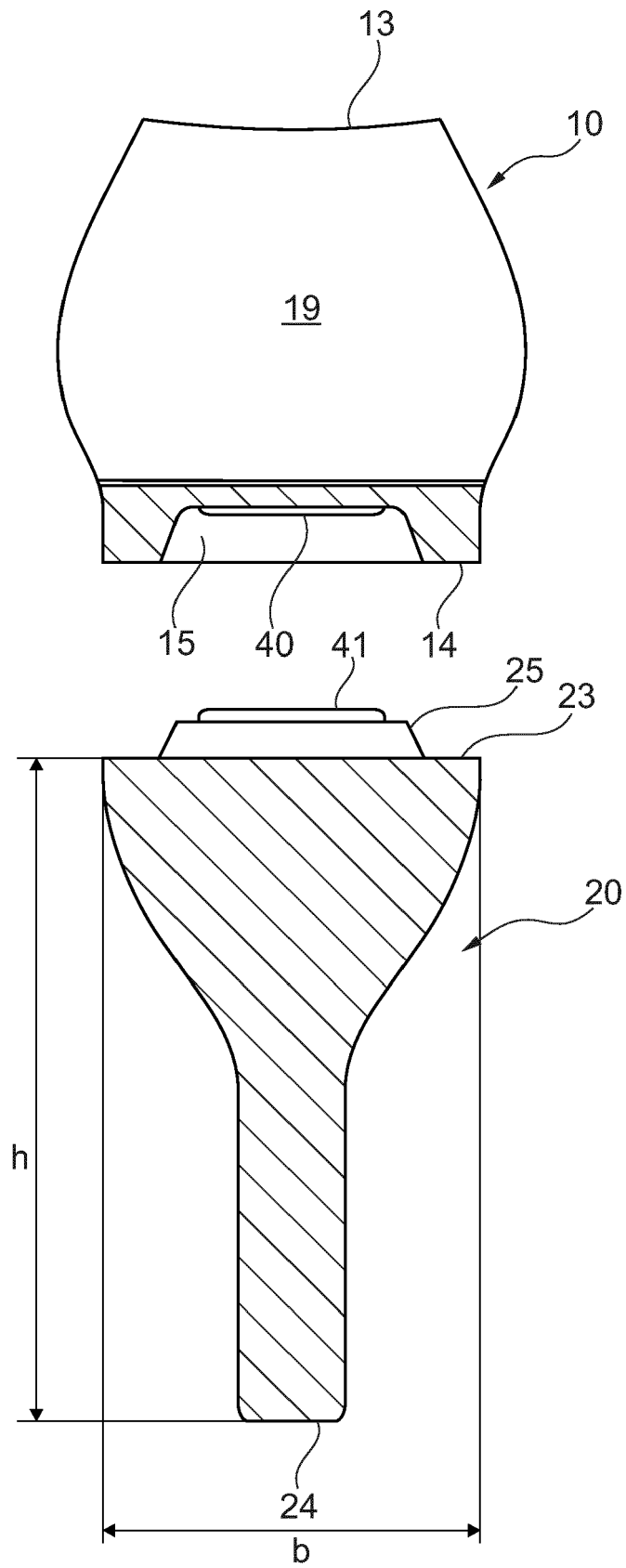


Fig. 2

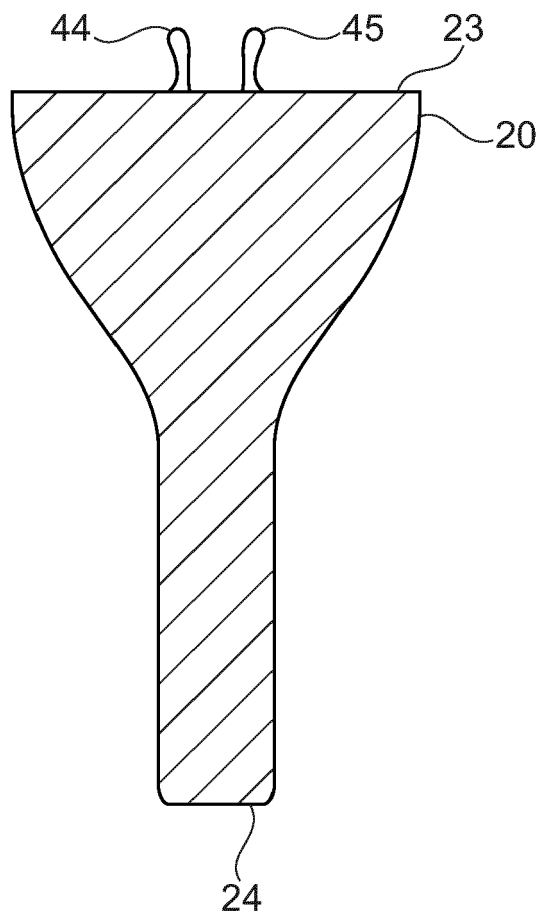
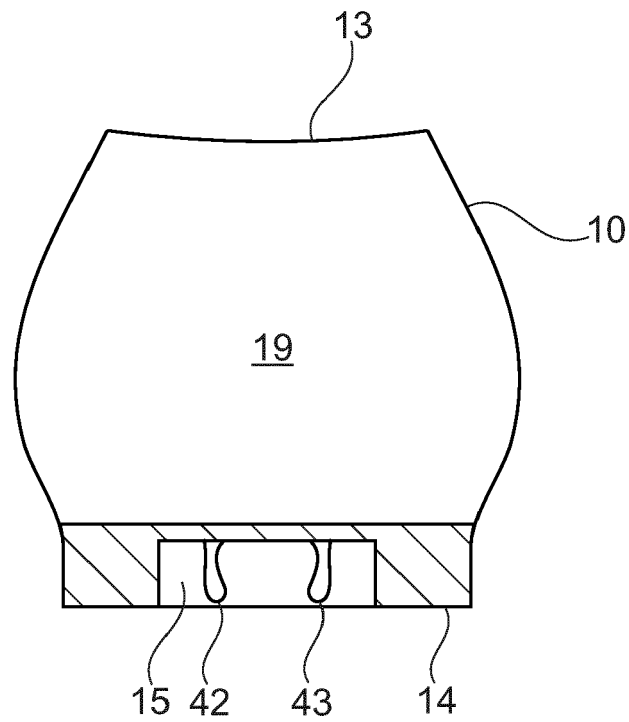


Fig. 3

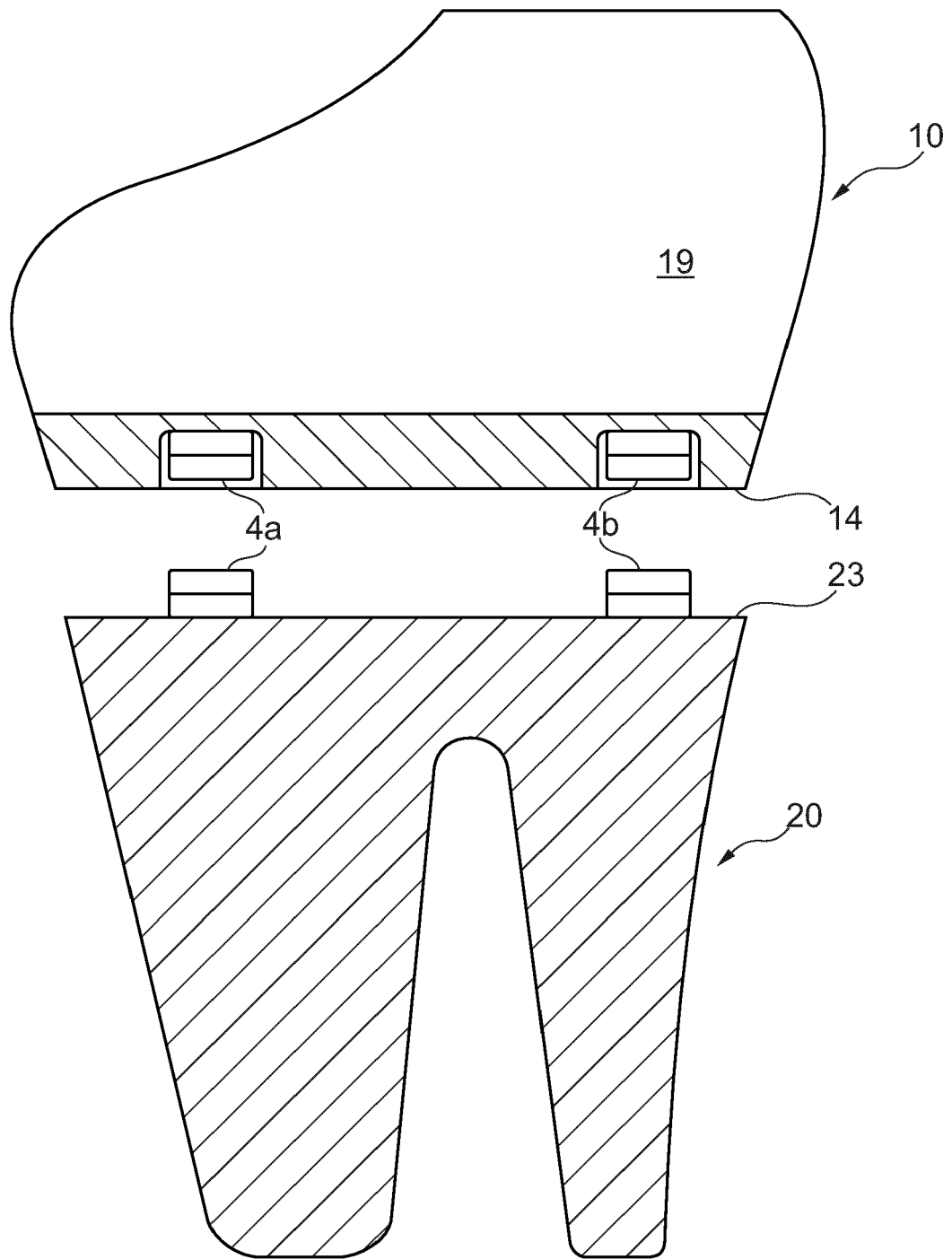


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 17 16 2499

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP 2005 046171 A (SUNRISE CT KK) 24 February 2005 (2005-02-24) * the whole document *	1-5, 10-15	INV. A43B3/24 A43B9/14 A43B13/36
X	DE 297 15 533 U1 (STURM) 22 January 1998 (1998-01-22) * the whole document *	1-15	ADD. A43B13/28
X	FR 2 980 672 A3 (CUMBUS MERVE [TR]) 5 April 2013 (2013-04-05) * page 9, line 30 - page 11, line 30; figures 1,5,6,8-10 *	1-15	
X	WO 2013/169284 A1 (MULHOLLAND) 14 November 2013 (2013-11-14) * paragraphs [0032] - [0045]; figures 1-14 *	1-15	
X	GB 2 459 644 A (BECKETT) 4 November 2009 (2009-11-04) * the whole document *	1-10, 12-15	
A	US 2014/033568 A1 (PEARSON) 6 February 2014 (2014-02-06) * paragraphs [0007], [0029], [0030]; figures 1,3,4 *	1-4,6, 10-15	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 31 August 2017	Examiner Williams, Mark
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			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 16 2499

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-08-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2005046171 A	24-02-2005	NONE	
DE 29715533 U1	22-01-1998	NONE	
FR 2980672 A3	05-04-2013	CN 202950099 U FR 2980672 A3 IT RM20120157 U1	29-05-2013 05-04-2013 31-03-2013
WO 2013169284 A1	14-11-2013	DK 2814352 T3 EP 2814352 A1 ES 2629018 T3 HK 1203131 A1 JP 6106898 B2 JP 2015519934 A WO 2013169284 A1	06-06-2017 24-12-2014 07-08-2017 23-10-2015 05-04-2017 16-07-2015 14-11-2013
GB 2459644 A	04-11-2009	NONE	
US 2014033568 A1	06-02-2014	NONE	

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1864585 A [0005]
- FR 2655521 [0005]
- EP 2474245 A [0005]
- DE 102008017674 [0005]
- FR 2980079 [0005]
- CN 105639848 [0005]
- US 20070000152 A [0005]
- US 2065325 A [0005]
- US 2009876 A [0005]
- US 2478810 A [0005]
- US 20130247413 A [0005]
- US 8132341 A [0005]