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(54) **STIRRUP COMPRISING MEANS FOR SIMPLE ATTACHMENT OF STIRRUP LEATHER**

(57) The present invention relates to a stirrup (1) for use in horseback riding, comprising a stirrup tread body (30); an arch-shaped side piece (50) extending from said stirrup tread body, said arch-shaped side piece defining an opening (53), wherein said opening is divided into an upper portion (531) and a lower portion (532) by at least one protrusion (55a, 55b) extending from one side of said arch-shaped side piece towards the other side of said arch-shaped side piece, such that said at least one protrusion defines a gap (57) connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough; wherein said lower portion of said opening is of a first size and said upper portion of said opening is of a second size that is smaller than said first size, such that a stirrup leather buckle may be passed through said lower portion of said opening, but not through said upper portion of said opening.

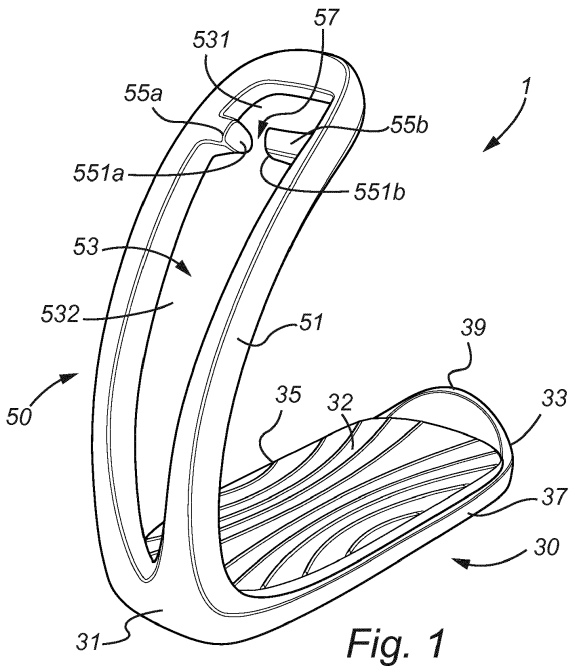

Fig. 1

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Description

Field of the Invention

[0001] The present invention relates to a stirrup for use in horseback riding.

Background

[0002] When attaching and detaching a stirrup to a saddle, by means of threading a stirrup leather through an eye of the stirrup, care is required so as to not attach the stirrup leather to the stirrup incorrectly. For traditional stirrups, the process of attaching and detaching a stirrup requires the complete removal of the stirrup leather due to its construction, which takes time, increases the risk of attaching the stirrup leather incorrectly and may result in unnecessary wear on the stirrup leather.

[0003] Furthermore, in certain situations, particularly when leading the horse to and from a stable while not riding, it is necessary to either detach the stirrup or secure it to the upper part of the stirrup leather, i.e. close to the saddle, in order to prohibit injuries for horse and rider due to the hanging stirrup hitting them. A solution which is easy to use, can be secured to the saddle when not in use, and does not require the complete removal of the stirrup leather from the saddle when the stirrup is attached or removed from the stirrup leather is therefore needed.

[0004] Finally, in horseback riding, falling off the horse may cause serious injury. Losing one's balance and falling off the horse while one riding boot slips through and subsequently gets caught in the stirrup is even more dangerous. Riders being dragged behind bolting horses has resulted in a number of tragic injuries and casualties, and a solution which mitigates this and the above problems is therefore needed.

Summary of the Invention

[0005] An object of the present invention is therefore to alleviate the abovementioned problems and provide a safe, secure and easy-to-use stirrup for use in horseback riding. Such a stirrup allows easy connection and disconnection of the stirrup leather to the stirrup, as well as reduces the risk of a rider's boot being stuck in the stirrup during an accident.

[0006] The above and other objects which will be evident from the following description are achieved by a stirrup according to the present invention.

[0007] According to a first aspect of the present invention, a stirrup for use in horseback riding is provided, comprising a stirrup tread body; an arch-shaped side piece extending from said stirrup tread body, said arch-shaped side piece defining an opening, wherein said opening is divided into an upper portion and a lower portion by at least one protrusion extending from one side of said arch-shaped side piece towards the other side of said arch-shaped side piece, such that said at least one protrusion defines a gap connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough, and; wherein said lower portion of said opening is of a first size and said upper portion of said opening is of a second size that is smaller than said first size, such that a stirrup leather buckle may be passed through said lower portion of said opening, but not through said upper portion of said opening.

[0008] According to another aspect of the present invention, a stirrup for use in horseback riding is provided, comprising a stirrup tread body; an arch-shaped side piece extending from said stirrup tread body, said arch-shaped side piece defining an opening, wherein said opening is divided into an upper portion and a lower portion by at least one protrusion extending from one side of said arch-shaped side piece towards the other side of said arch-shaped side piece, such that said at least one protrusion defines a gap connecting said lower portion with said upper portion of said opening, and; wherein said lower portion of said opening is of a first size and said upper portion of said opening is of a second size that is smaller than said first size.

[0009] In the following, references to relativistic determinations of directions are to be interpreted as per their everyday meaning from the perspective of a situation when the stirrup is in use and is connected to a stirrup leather of a saddle, i.e. when the upper surface of the stirrup tread body faces away from the ground and the stirrup tread body is substantially horizontal. Furthermore, the terms stirrup, stirrup tread, stirrup leather and stirrup leather buckle are well understood by the skilled person and are to be interpreted as per their usual meaning in the field of horseback riding.

[0010] Alternatively, said stirrup may be referred to as a safety stirrup.

[0011] Arch-shaped is to be understood as meaning that said side piece comprises two members extending upwardly from a base of the stirrup tread body to a point where the two members meet and join each other. The space between the two members is the opening which said arch-shaped side piece defines. Alternatively, the arch-shaped side piece may be seen as comprising a single continuous member extending upwardly from the base of the stirrup tread body to a top-most point, where the single continuous member turns back down and returns to the stirrup tread body, the arch of which body defines an opening. Arch-shaped is to be understood as including also the shape of flat arches and triangular arches.

[0012] According to one exemplary embodiment, the entire or at least a portion of said at least one elongated member of said arch-shaped side piece is curved.

[0013] According to one exemplary embodiment, at least a portion of said at least one elongated member of said arch-shaped side piece is straight except for where it bends at substantially non-rounded corners, thus form-

ing an arch.

[0014] According to one exemplary embodiment, the two members of the arch-shaped side piece extend in a curved geometric plane. Said cured geometric plane may for example be curved so as to extend over said stirrup tread body. Thereby, the arch-shaped side piece may be provided at a perpendicular angle to an upper surface of said stirrup tread body at the area where the two meet, and curve inwards over said stirrup tread body. This allows for better balance of the stirrup when a stirrup leather is connected to said arch-shaped side piece.

[0015] According to one exemplary embodiment, the two members of the arch-shaped side piece extend in a geometric plane that is angled relative to a surface normal of an upper surface of said stirrup tread body. Said geometric plane may for example be angled over said stirrup tread body. Thereby, the arch-shaped side piece may be angled inwards over said stirrup tread body, thus providing better balance of the stirrup when a stirrup leather is connected to said arch-shaped side piece.

[0016] According to one exemplary embodiment, said stirrup tread body and said arch-shaped side piece are integrally formed in one piece. This allows for a more robust construction, with fewer joints that run the risk of breaking. Furthermore, having fewer joints, cracks and crevices at the surface of the stirrup provides for a surface to which less dirt may adhere, making for a stirrup that is easier to keep clean.

[0017] According to one exemplary embodiment, the lower portion of the opening is at least 3 times the size of the upper portion of the opening, preferably at least 4 times the size, most preferably at least 5 times the size. This allows for simple insertion of the stirrup leather and the stirrup leather buckle into the lower portion of the opening, and a secure and reliable retention of the stirrup leather buckle in the upper portion of the opening.

[0018] According to one exemplary embodiment, a cross-sectional area of said upper portion of the opening is smaller than 600 mm^2, preferably smaller than 500 mm^2, most preferably smaller than 400 mm^2.

[0019] Additionally or alternatively, the largest dimension of said upper portion of said opening is smaller than 35 mm, preferably smaller than 30 mm, most preferably smaller than 25 mm. This means that both the width and the height of the upper portion of the opening are smaller than 35 mm, preferably smaller than 30 mm, or most preferably smaller than 25 mm. This prevents a stirrup leather buckle from passing through the upper portion of the opening, due to the opening being too small for the buckle to fit therethrough. Thus, a secure retention of the stirrup on the stirrup leather is achieved.

[0020] According to one exemplary embodiment, said stirrup tread body comprises a ledge or ridge arranged on an opposite side of said arch-shaped side piece, for keeping the boot of a rider on the stirrup tread body. Said ledge or ridge may for example extend upwardly in a perpendicular direction to an upper surface of said stirrup tread body.

[0021] According to one exemplary embodiment, said stirrup tread body comprises a magnetic system comprising at least one magnetic member for attracting a magnetic boot member, such as a magnetic insole or an integrated magnetic member of a riding boot.

[0022] This allows for a more secure riding experience, as the boot of a rider is kept in place on the upper surface of the stirrup tread body by the magnetic system.

[0023] According to one exemplary embodiment, said magnetic system is a Halbach array comprising a plurality of magnetic members.

[0024] By having the stirrup tread body comprise a Halbach array, the magnetic field may be directed away from a lower portion of the stirrup tread body and instead focused towards an upper surface of the same. Thus, a more secure riding experience is achieved, as the boot of a rider is kept in place on the upper surface of the stirrup tread body by the magnetic system, while reducing the risk of the stirrup tread body accidently attaching to magnetic items in an equestrian facility such as a stable, barn, riding hall or similar.

[0025] According to one exemplary embodiment, said magnetic system comprises a backer plate arranged between said magnetic system and said stirrup tread body. By doing so, the risk of the stirrup tread body accidently attaching to magnetic items in an equestrian facility is reduced as the strength of the portion of the magnetic field facing downwards is reduced.

[0026] According to one exemplary embodiment, said stirrup tread body comprises a stirrup tread cover arranged on top of said magnetic system. This further reduces the risk of a rider losing grip of the stirrup and also protects the magnetic system from the environment.

[0027] According to one aspect of the present invention, said stirrup tread body has a first lateral side and a second lateral side that is opposite said first lateral side, and wherein said arch-shaped side piece extends from said first lateral side and said stirrup is open from said second lateral side.

[0028] Said stirrup tread body may be oval, elliptical, rectangular, or having another elongated shape, when viewed from a top-down perspective. The stirrup tread body has a first and a second lateral side, these being the short sides of the stirrup tread body as viewed from above.

[0029] According to one exemplary embodiment, a first and a second end of said arch-shaped side piece are connected to a first lateral side of said stirrup tread body. Alternatively, said first and said second member of the arch-shaped side piece both extend from a first lateral side of said stirrup tread body. Thus, there is little risk of a foot of the rider being caught in the stirrup in an accident that causes the rider to fall off the horse. This prevents the potentially very dangerous situation of a rider being dragged behind a bolting horse.

[0030] According to one aspect of the present invention, said at least one protrusion does not extend all the way from one side of said arch-shaped side piece to the

other side.

[0031] This is to be understood as the at least one protrusion not extending all the way across the opening, thus leaving a gap connecting the upper portion of the opening with the lower portion.

[0032] According to one exemplary embodiment, said at least one protrusion and one side of said arch-shaped side piece jointly defines a gap connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough.

[0033] According to one aspect of the present invention, said opening is divided into said upper portion and said lower portion by two protrusions extending from a respective side of said arch-shaped, said protrusions jointly defining a gap connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough.

[0034] According to one aspect of the present invention, the respective end surfaces of said two protrusions are arranged at parallel angles, said angle being such that the gap defined by said protrusions is angled relative to a plane that is perpendicular to said stirrup tread body and which extends from a first lateral side to a second lateral side of said stirrup tread body.

[0035] Additionally or alternatively, the respective end surfaces of said two protrusions are parallel. Additionally or alternatively, the respective end surfaces of said two protrusions are not perpendicular to a longitudinal extension of each respective protrusion. For example, the respective end surfaces of said two protrusions are angled at least 10° with respect to a respective geometric plane that is perpendicular to the longitudinal extension of each one of said protrusions, preferably at least 20°, or most preferably at least 30°.

Brief description of the drawings

[0036] The above, as well as additional objects, features and advantages of the present invention, will be better understood through the following illustrative and non-limiting detailed description of exemplary embodiments of the present invention, with reference to the appended drawing, wherein:

Figure 1 is a perspective view of a stirrup according to one aspect of the present invention,
Figure 2 is a top view of the stirrup of Figure 1,
Figure 3 is a front view of the stirrup of Figure 1,
Figure 4 is a side view of the stirrup of Figure 1.

Detailed description of the drawings

[0037] In the present detailed description, embodiments of a stirrup according to the present invention are mainly discussed with reference to drawings showing a stirrup with components and portions being relevant in relation to various embodiments of the invention. It should be noted that this by no means limits the scope of the invention, which is also applicable in other circumstances for instance with other types or variants of stirrups than the embodiments shown in the appended drawings. Further, that specific features are mentioned in connection to an embodiment of the invention does not mean that those components cannot be used to an advantage together with other embodiments of the invention.

[0038] The invention will now by way of example be described in more detail by means of embodiments and with reference to the accompanying drawings.

[0039] Figure 1 is a perspective view of a stirrup 1 according to one aspect of the present invention. The stirrup comprises a stirrup tread body 30 for receiving the boot of a rider, the stirrup tread body 30 having a first lateral side 31 and a second lateral side 33, as well as a front side 35 and a rear side 37 arranged between the two lateral sides 31, 33. The stirrup 1 further comprises an arch-shaped side piece 50 extending from the stirrup tread body 30. The stirrup tread body 30 and the arch-shaped side piece 50 are integrally formed in one piece, thereby providing a smooth product surface with few cracks and crevices in which dirt may adhere. The arch-shaped side piece 50 extends from the first lateral side 31 and the stirrup is open from the second lateral side 33. This means that the boot of a rider is free to exit the stirrup 1 by moving from the stirrup tread body 30, on which the boot normally rests, and in a direction towards the second lateral side 33. The stirrup tread body 30 further comprises a ledge 39 arranged on the opposite side of the arch-shaped side piece 50, i.e. the ledge 39 is provided on the second lateral side 33 of the stirrup tread body 30. The ledge helps in keeping the boot of a rider on the stirrup tread body 30 and reduces the risk of slipping out of the stirrup 1 accidentally. The ledge 39 extends upwardly in a perpendicular direction from an upper surface 32 of the stirrup tread body 30.

[0040] The arch-shaped side piece 50 comprises an elongated member 51 extending from the first lateral side 31 of the stirrup tread body 30 and upwards, to a topmost position where the elongated member 51 curves back down towards the first lateral side 31 of the stirrup tread body 30 and connects thereto. The arch formed by the elongated member 51 defines an opening 53. This opening 53 is divided into an upper portion 531 and a lower portion 532 by two protrusions 55a, 55b extending from either side of the arch which is formed by the elongated member 51. Each one of these protrusions 55a, 55b comprises a respective end surface 551a, 551b that is arranged at a non-perpendicular angle to the longitudinal extension of the protrusions 55a, 55b. The protrusions 55a, 55b extend towards each other without touching, such that a gap 57 is defined between them. This is to be understood as the distance between the respective end surface 551a, 551b of the protrusions 55a, 55b defining the gap 57. This gap 57 connects the upper portion 531 of the opening 53 with the lower portion 532 of the opening 53. When the stirrup 1 is in use, this gap 57

allows a portion of a stirrup leather to be passed from the lower portion 532 to the upper portion 531 of the opening 53. Furthermore, the lower portion 532 of the opening 53 is smaller than and the upper portion 531 of said opening 53. Specifically, the lower portion 532 of the opening 53 is approximately 5 times the size of the upper portion 531 of the opening 53. When the stirrup 1 is in use, this allows a stirrup leather buckle to be passed through the lower portion 532 of the opening 53, but not through the upper portion 531 of the opening 53. Thus, a rider may easily tread the stirrup leather and the stirrup leather connected thereto through the lower portion 532 of the opening 53, after which the stirrup leather is moved through the gap 57 so that it enter the upper portion 531 of the opening 53. In the upper portion 531 of the opening 53, the stirrup leather is held securely in place due to the fact that the stirrup leather buckle is prevented from passing through the upper portion 531 of the opening 53. This is achieved in part by the fact that the width of the upper portion 531 of the opening 53 is smaller than 35 mm. As the height H of the upper portion 531 of the opening 53 is smaller than the width W, the stirrup leather buckle is prevented from passing therethrough.

[0041] The respective end surfaces 551a, 551b of the two protrusions 55a, 55b are arranged at parallel angles with each other. This means that the gap 57 defined by the protrusions 55a, 55b is angled relative to a reference line C extending from the center of the first lateral side 31 of the stirrup tread body 30 to the center of the second lateral side 33 of the stirrup tread body 30. This is shown in more detail in Figure 2.

[0042] Figure 2 is a top view of the stirrup of Figure 1. Here the parallel angles of the respective end surface of the two protrusions is clearly seen. Compared to the reference line C extending from the center of the first lateral side 31 of the stirrup tread body 30 to the center of the second lateral side 33 of the stirrup tread body 30, the end surfaces are angled approximately 45°.

[0043] Figure 3 is a front view of the stirrup of Figure 1, and Figure 4 is a side view of the stirrup of Figure 1. The stirrup 1 as described in relation to Figure 1 above is shown in these figures as well.

[0044] Generally, all terms used in the claims are to be interpreted according to their ordinary meaning in the technical field, unless explicitly defined otherwise herein. All references to "a/an/the [element, device, component, means, step, etc.]" are to be interpreted openly as referring to at least one instance of said element, device, component, means, step, etc., unless explicitly stated otherwise. Furthermore, any reference signs in the claims should not be construed as limiting the scope.

Claims

1. A stirrup (1) for use in horseback riding, comprising
a stirrup tread body (30),
an arch-shaped side piece (50) extending from said stirrup tread body, said arch-shaped side piece defining an opening (53), wherein said opening is divided into an upper portion (531) and a lower portion (532) by at least one protrusion (55a, 55b) extending from one side of said arch-shaped side piece towards the other side of said arch-shaped side piece, **characterized in that** said at least one protrusion defines a gap (57) connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough,
wherein said lower portion of said opening is of a first size and said upper portion of said opening is of a second size that is smaller than said first size, such that a stirrup leather buckle may be passed through said lower portion of said opening, but not through said upper portion of said opening.

2. A stirrup according to claim 1, wherein said stirrup tread body has a first lateral side (31) and a second lateral side (33) that is opposite said first lateral side, and wherein said arch-shaped side piece extends from said first lateral side and said stirrup is open from said second lateral side.

3. A stirrup according to any one of the preceding claims, wherein said at least one protrusion does not extend all the way from one side of said arch-shaped side piece to the other side.

4. A stirrup according to any one of the preceding claims, wherein said opening is divided into said upper portion and said lower portion by two protrusions extending from a respective side of said arch-shaped side piece, said protrusions jointly defining a gap connecting said lower portion with said upper portion of said opening, thereby allowing a portion of a stirrup leather to be passed therethrough.

5. A stirrup according to any one of the preceding claims, wherein the respective end surfaces (551a, 551b) of said two protrusions are arranged at parallel angles, said angle being such that the gap defined by said protrusions is angled relative to a plane that is perpendicular to said stirrup tread body and which extends from a first lateral side to a second lateral side of said stirrup tread body.

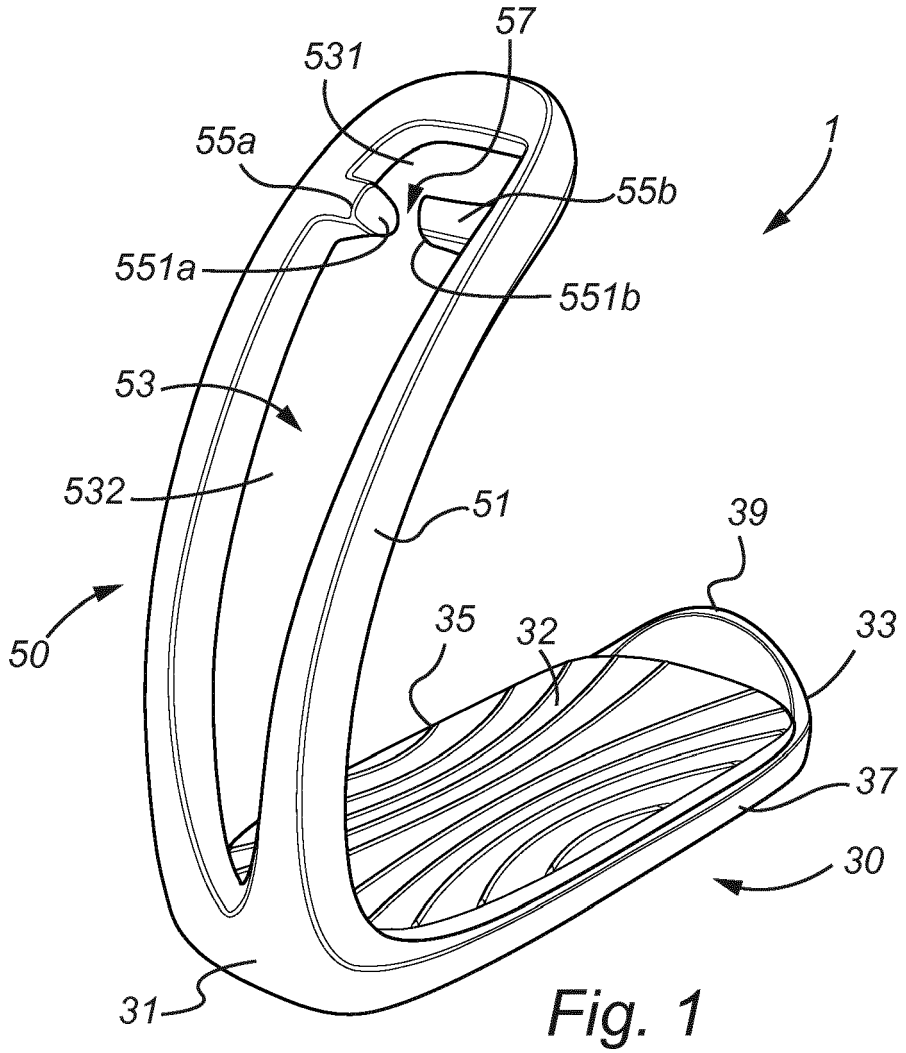

Fig. 1

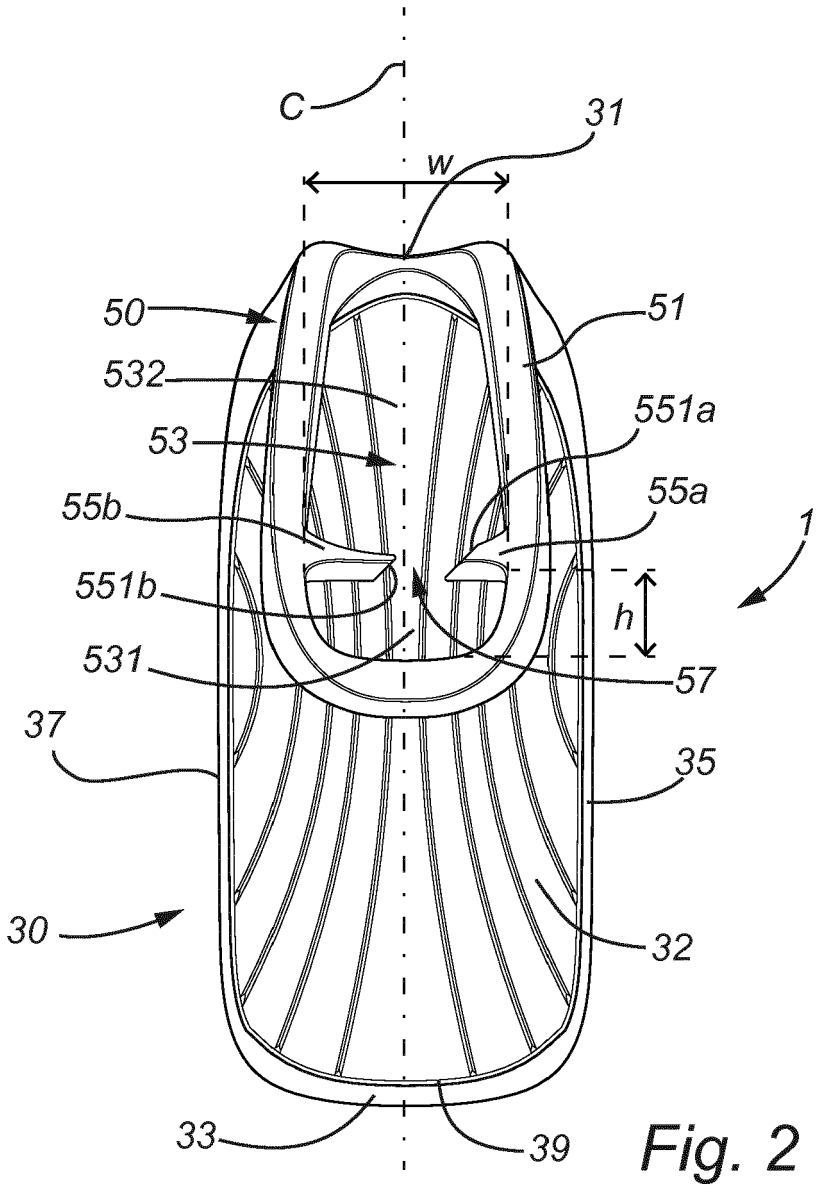

Fig. 2

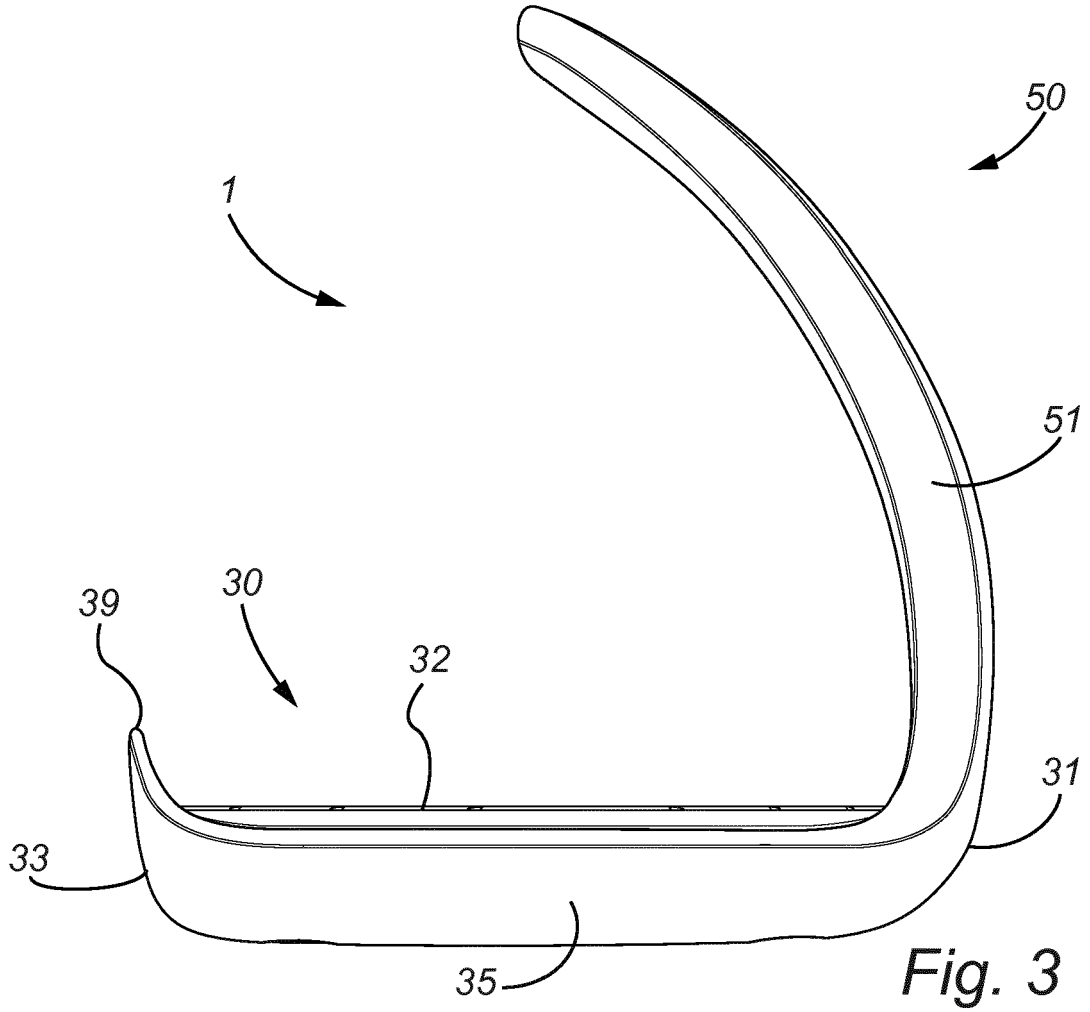

Fig. 3

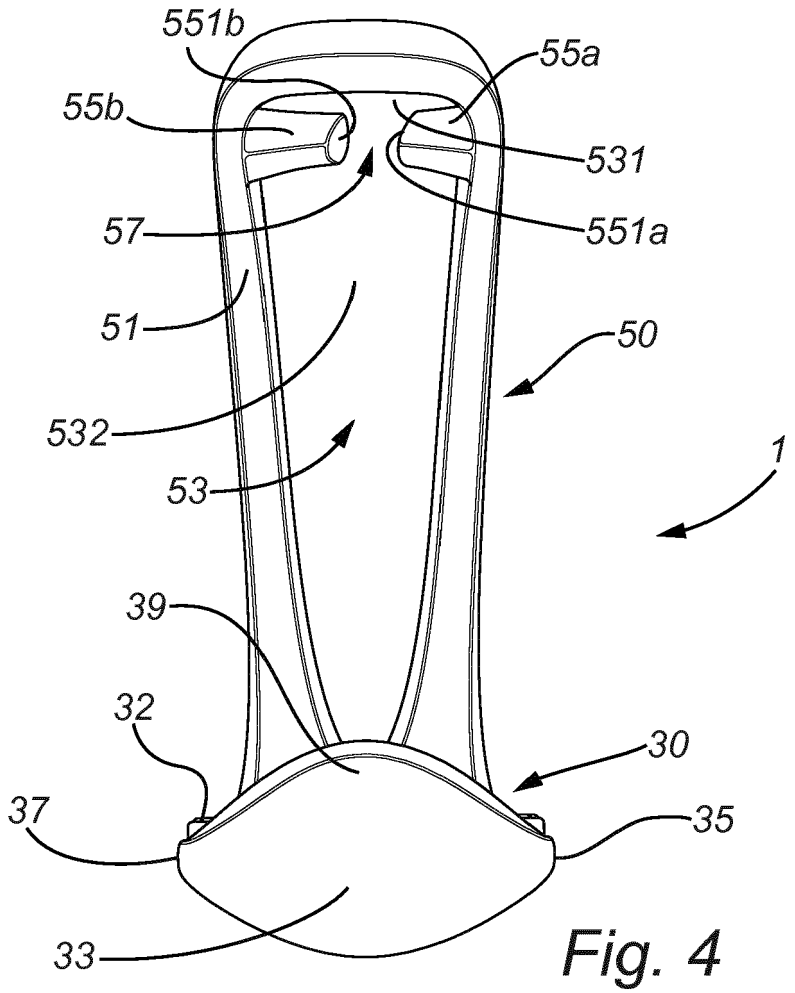

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 19 18 4131

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 November 2019	Espeel, Els

CATEGORY OF CITED DOCUMENTS

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