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(19) **United States**(12) **Patent Application Publication**
Park(10) **Pub. No.: US 2013/0031802 A1**(43) **Pub. Date: Feb. 7, 2013**(54) **FUNCTIONAL SHOE INCLUDING WEIGHT
SUPPORT UNIT**(76) Inventor: **Dong-jin Park**, Gyeonggi-Do (KR)(21) Appl. No.: **13/580,993**(22) PCT Filed: **Jun. 11, 2012**(86) PCT No.: **PCT/KR2012/004595**

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Publication Classification(51) **Int. Cl.****A43B 5/00** (2006.01)**A43B 1/00** (2006.01)(52) **U.S. Cl.** **36/84; 36/127; 36/113; 36/126**(57) **ABSTRACT**

As described above, just as a person inserts his/her toes into a space under furniture and does sit-ups by using the force of the toes, a functional shoe of the present invention provides a portion into which an instep and a toe base portion are inserted on the functional shoe to use the force of the toe base portion which may exert the greatest force from among portions of a foot, thereby adding momentum.

Accordingly, a wearer may further use the force of the instep and the toe base portion to support weight.

That is, when a batter hits a baseball in a baseball game, an instep of the batter including a toe base portion may be inserted into a weight support unit to support the weight of the batter, thereby adding forces of the instep and the toe base portion the weight of the batter. When a golfer makes a tee shot in a golf game, an instep and a toe base portion may be inserted into a weight support unit provided on a golf shoe to support weight, thereby obtaining a distance gain as much as forces of the instep and the toe base portion of the golfer.

Also, the functional shoe including a weight support unit consisting of a weight support part and an auxiliary support band may be applied to a golf shoe which helps a golfer to achieve balance in a finishing posture during a golf swing or a mountain climbing shoe or a combat boot which helps a wearer to achieve balance on an ascent.

For example, when the functional shoe of the present invention is applied to a golf shoe, the golf shoe is structured to conform with a foot not to obstruct the upward movement of toes to pull ligaments, which connect the toes and an instep of a grounded foot, to achieve balance when weight is shifted backward in a finishing posture during a golf swing, and structured to allow the instep and a toe base portion to be inserted into the weight support unit formed on an instep portion to achieve balance in a finishing posture during a golf swing which is very important in a golf game, thereby improving performance.

Also, for example, when the functional shoe is applied to a mountain climbing shoe or a combat boot, when a wearer climbs a slight slope by inserting an instep including a toe base portion into the weight support unit formed on the instep portion to achieve balance when weight is shifted or climbs a steep slope by holding a rope or a wire with the arms and hands to support weight, the burden of the arms and hands may be reduced by using the weight support unit into which the instep including the toe base portion is inserted and supporting the weight based on the fulcrum and level effect

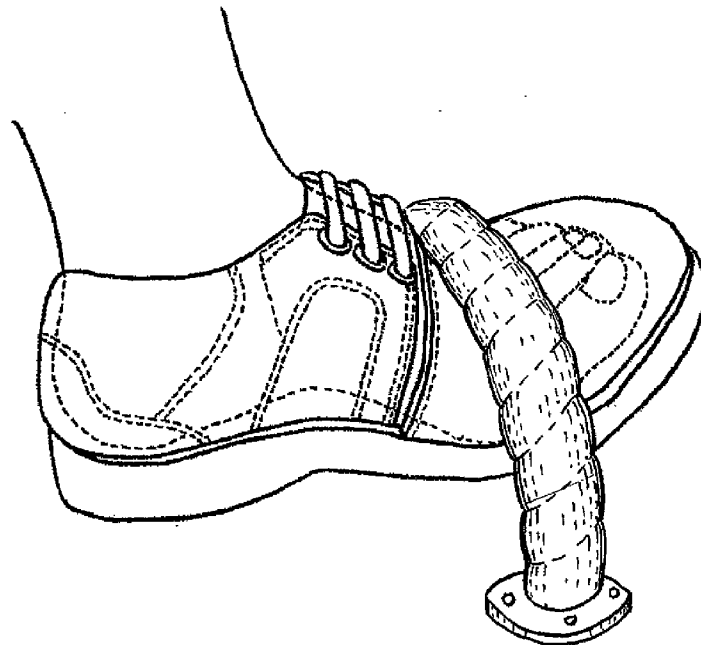


FIG. 1

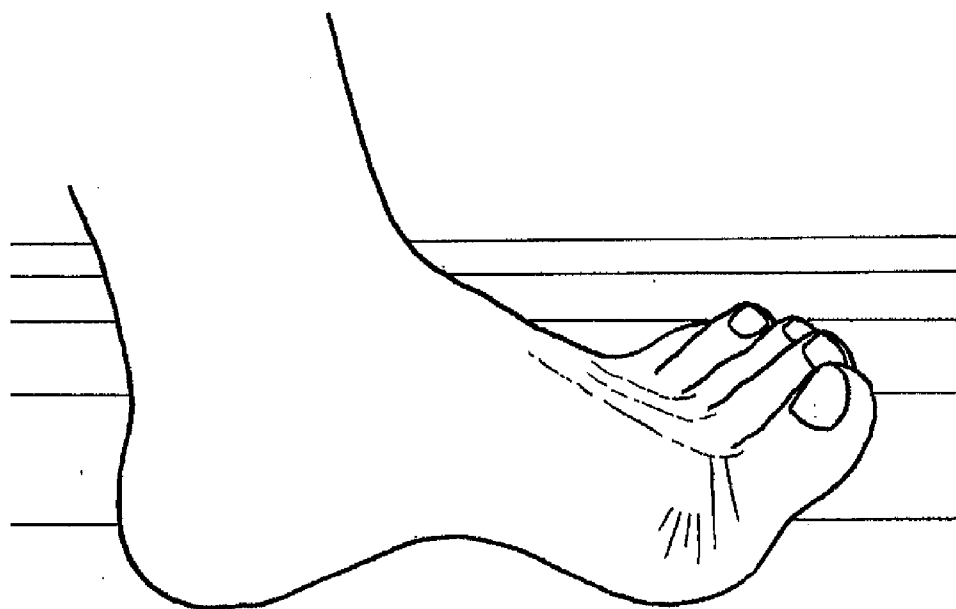


FIG. 2

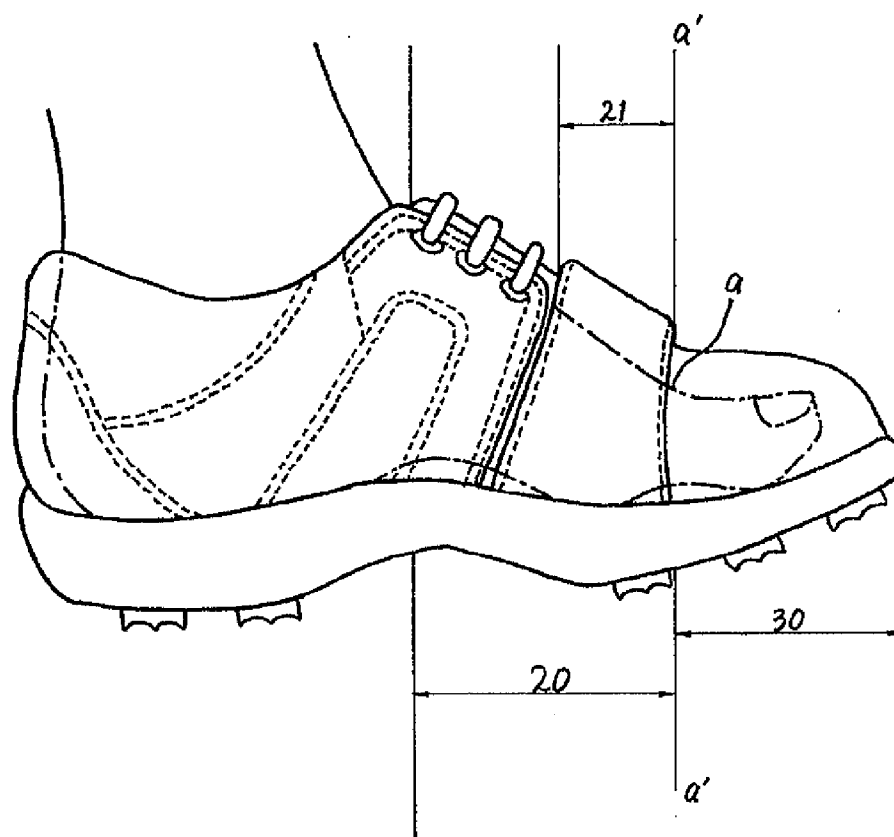


FIG. 3

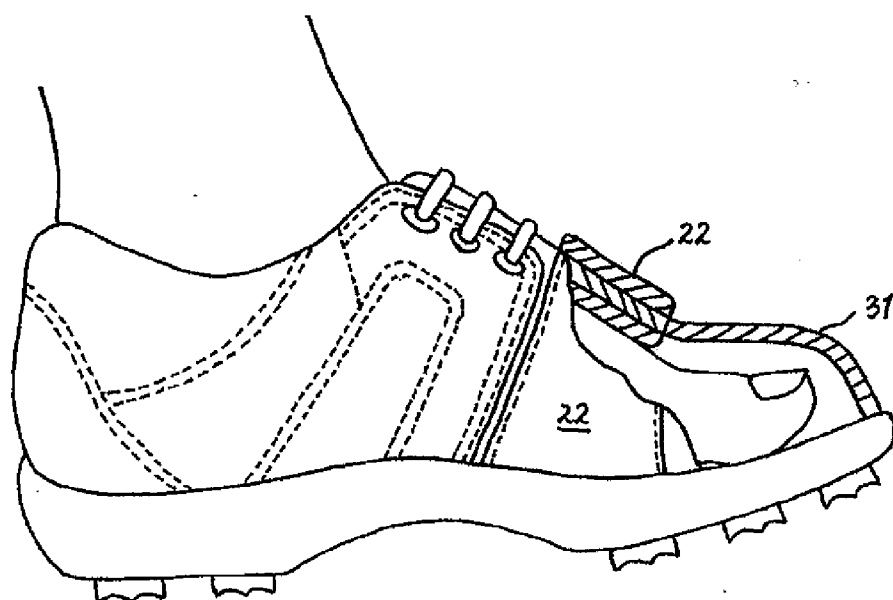


FIG. 4

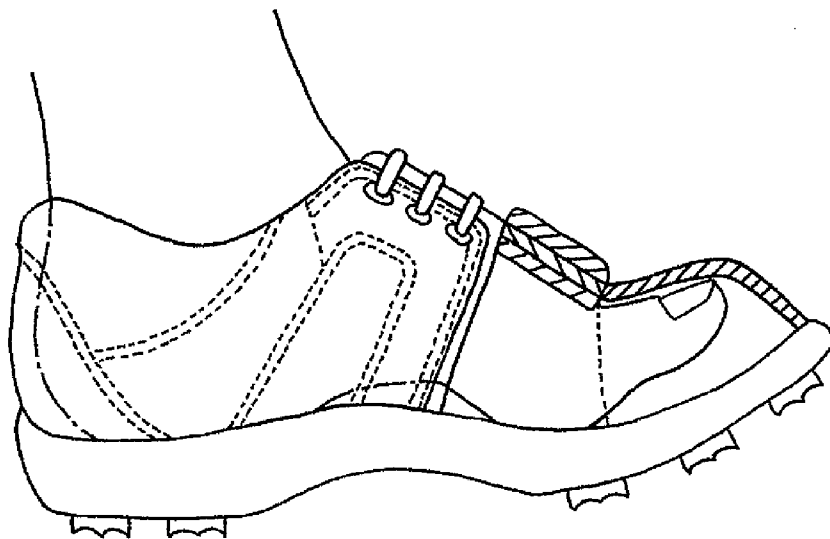


FIG. 5

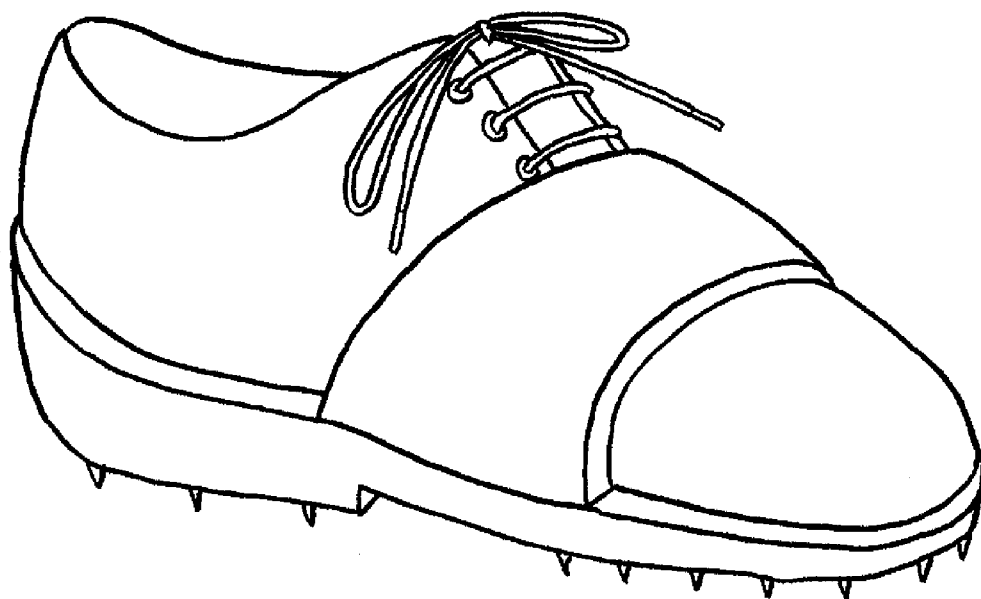


FIG. 6

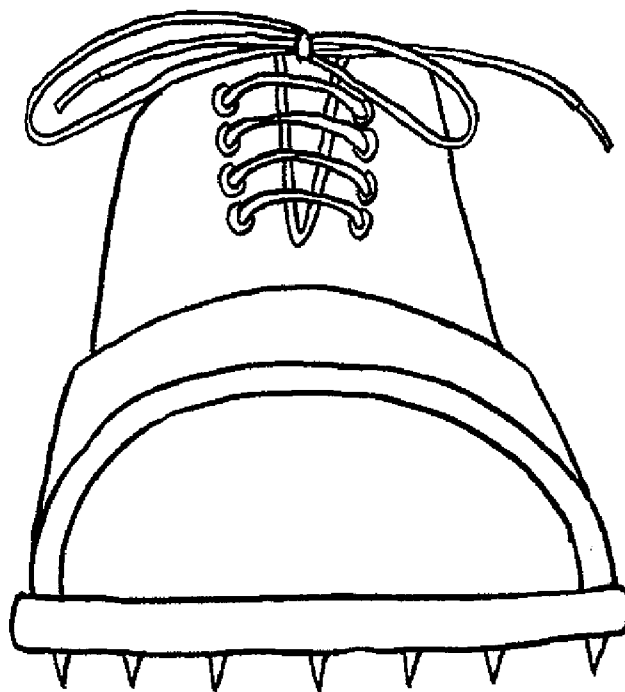


FIG. 7

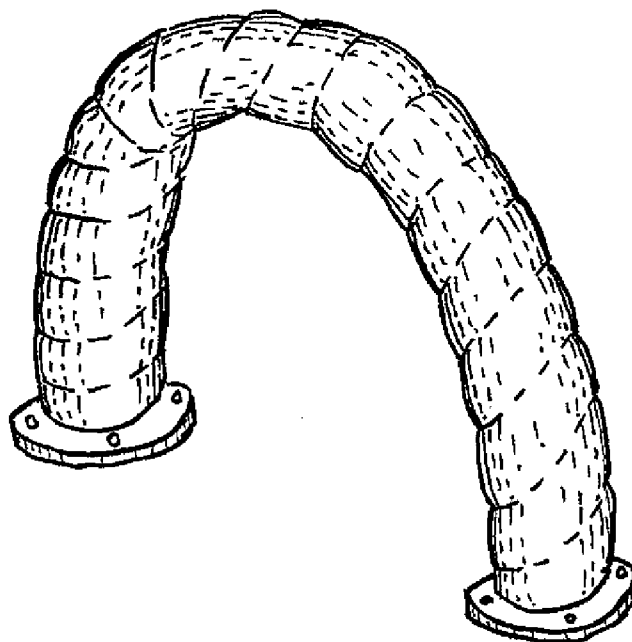


FIG. 8

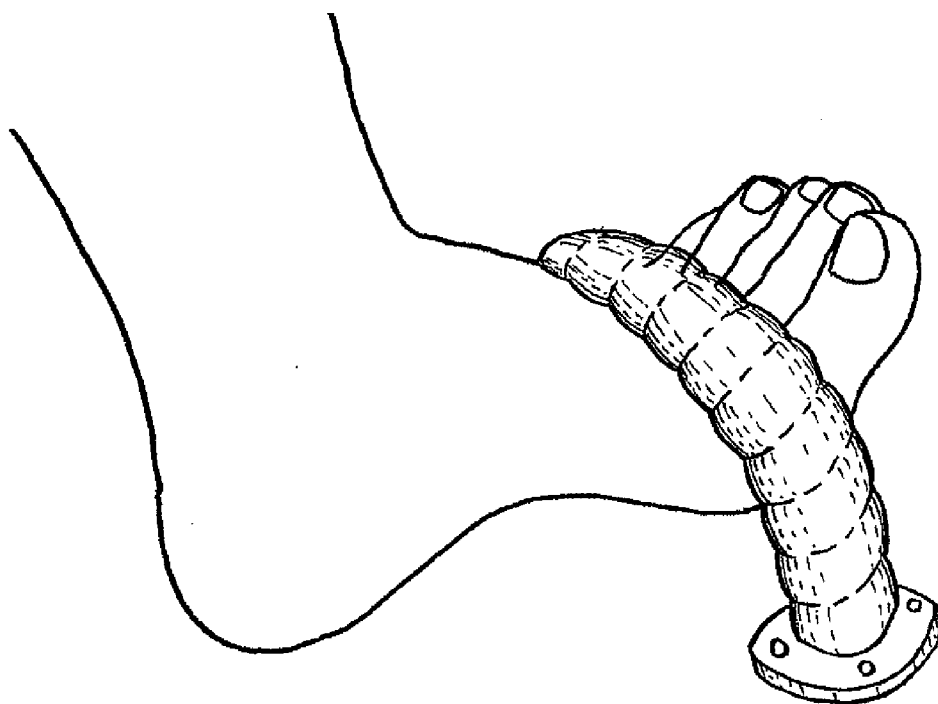


FIG. 9

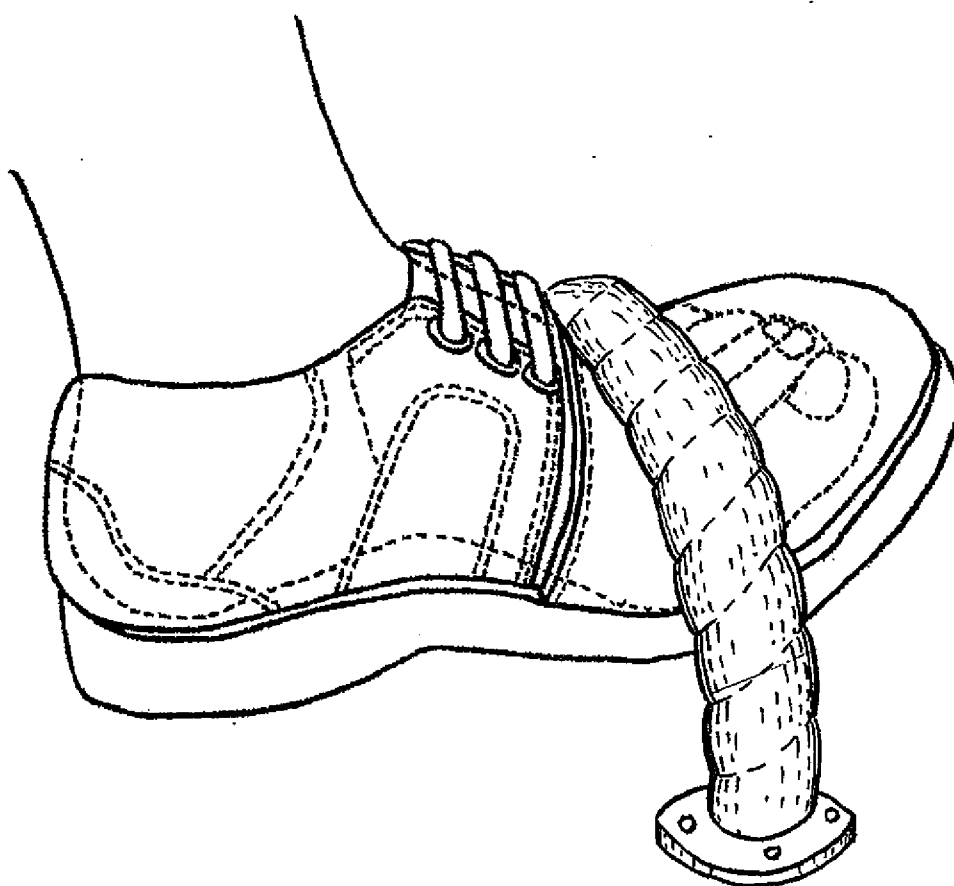


FIG. 10

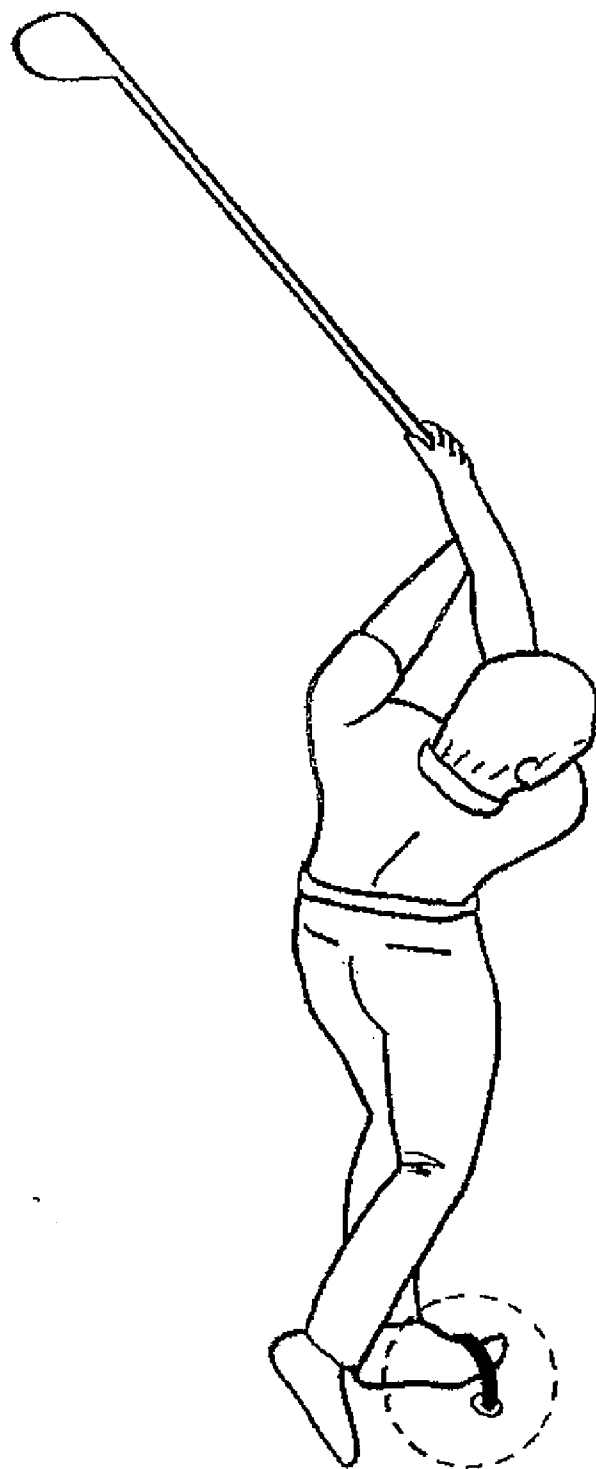


FIG. 11



FIG. 12

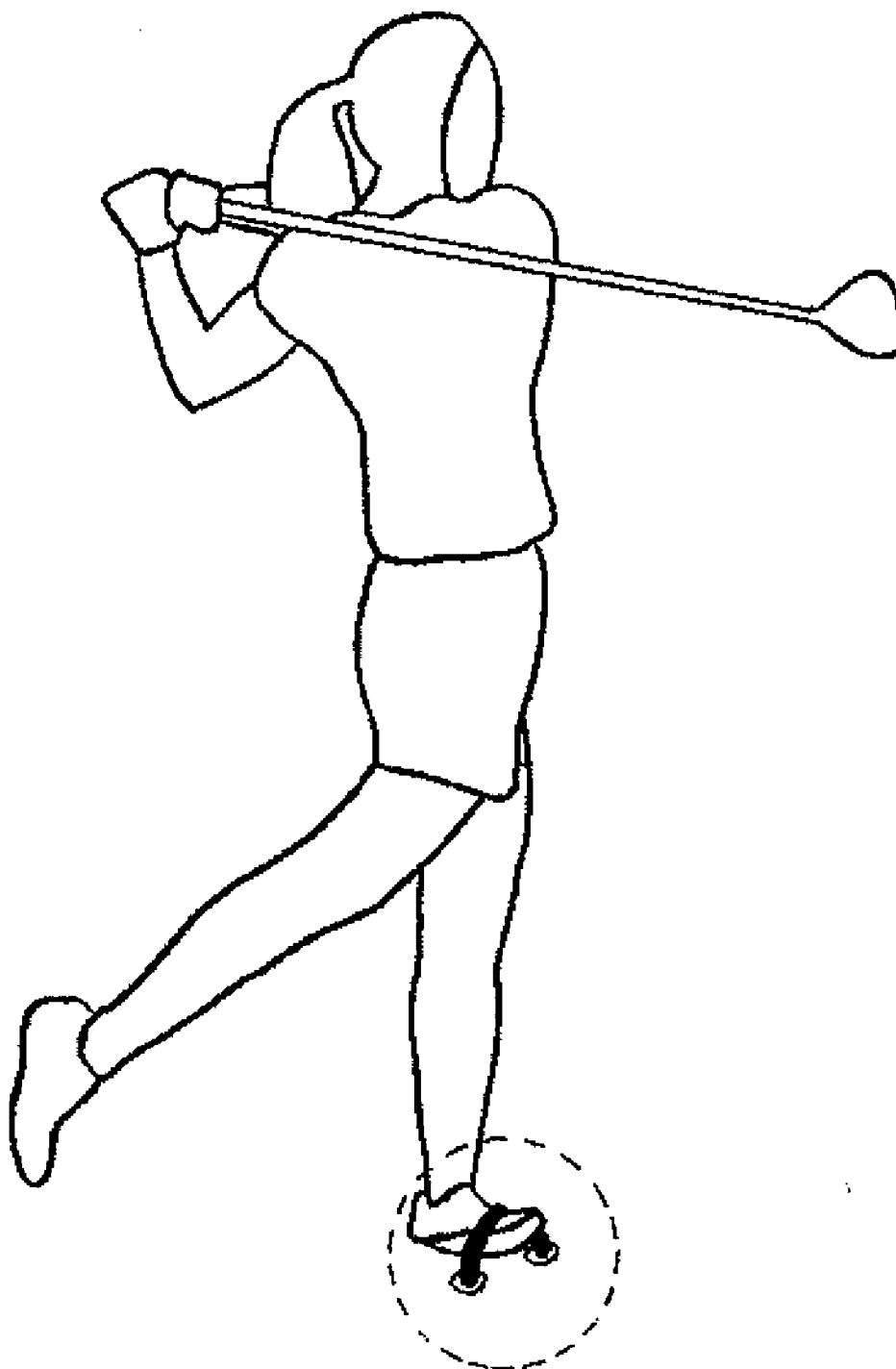


FIG. 13

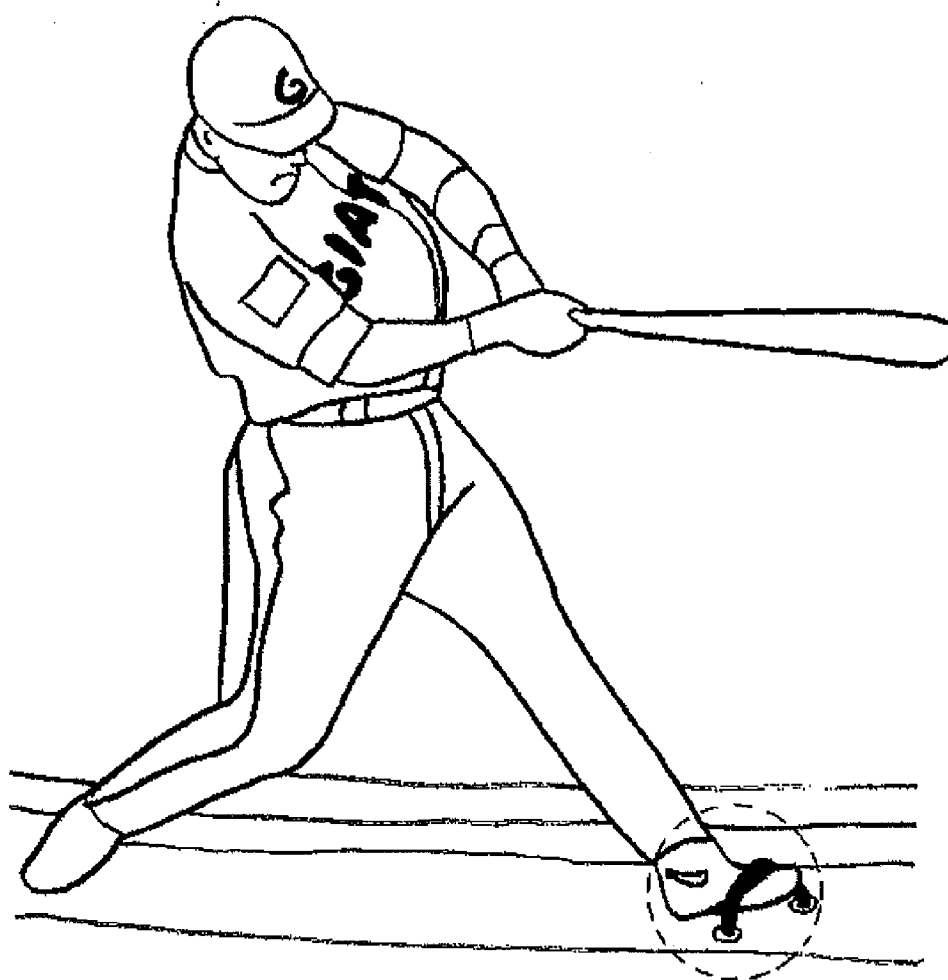
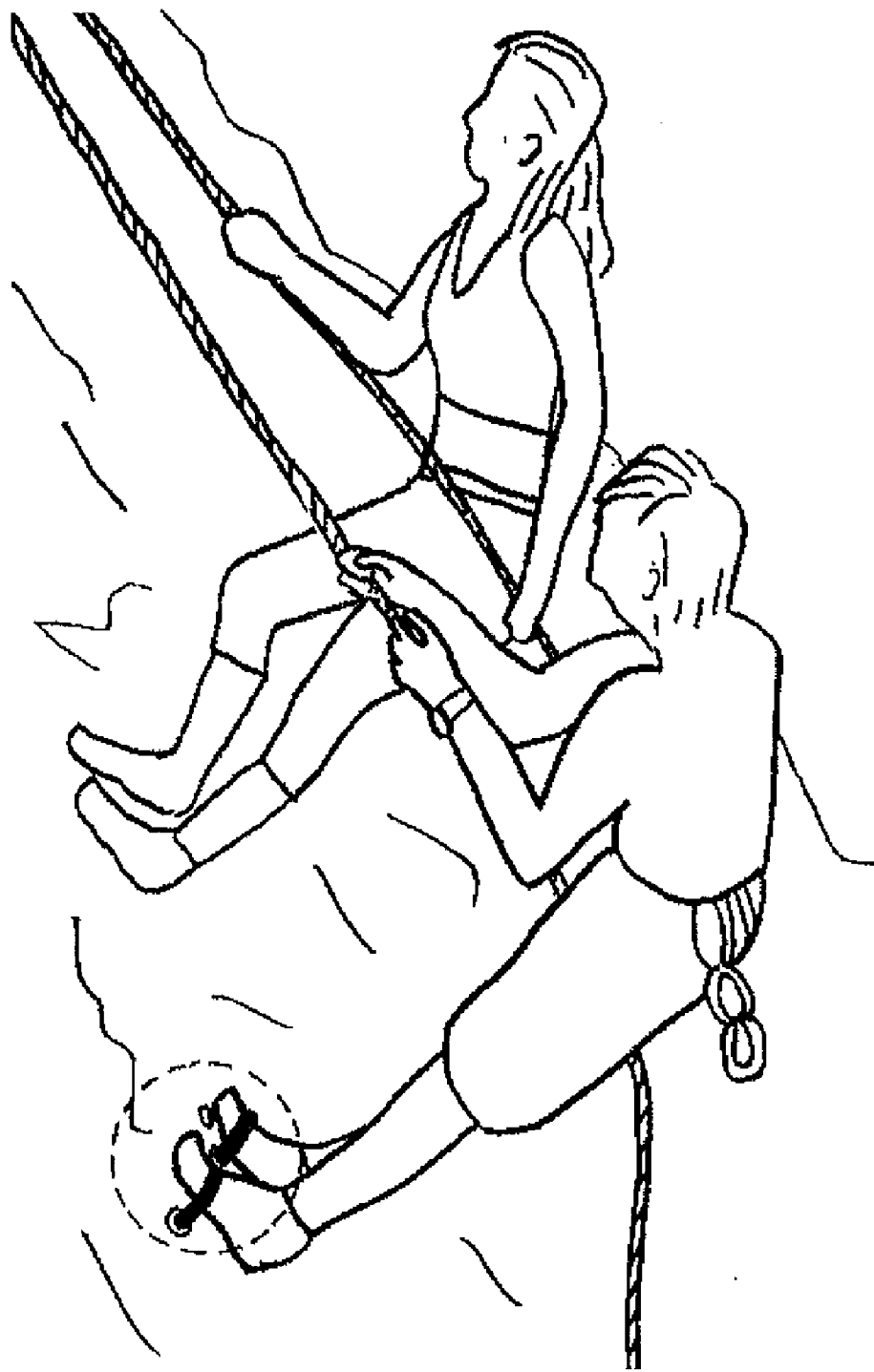


FIG. 14



FUNCTIONAL SHOE INCLUDING WEIGHT SUPPORT UNIT

TECHNICAL FIELD

[0001] The present invention relates to a functional shoe which helps an athlete or a person who performs an operation during which weight is shifted backward to achieve balance by inserting an instep including a toe base portion of a foot on the ground (hereinafter, referred to as a grounded foot) into a weight support unit provided on an instep portion of the functional shoe to support the weight or to increase power for supporting the weight by using the force of the toe base portion inserted into the weight support unit when the weight is applied to the grounded foot.

[0002] For example, when the functional shoe is applied to a golf shoe, the functional shoe may be structured such that weight shifted backward during a finishing operation is supported to stably make a finishing posture, which is an important part of a successful golf swing by inserting the toe base portion of the grounded foot into the weight support unit provided on the instep portion of the functional shoe.

[0003] The functional shoe may be structured such that when a ball is hit during a swing, that is, when a ball is hit in a baseball game or a golf game, a force applied to the ball is further increased by inserting the instep and the toe base portion of the grounded foot into the weight support unit to support weight. Accordingly, the functional shoe may be applied to a golf shoe, a baseball shoe, a combat boot, etc.

BACKGROUND ART

[0004] On a flat floor, when a barefooted person raises one foot, stands on the other foot, and tilts slightly backward, the toes of the other foot are moved upward in order to support weight, as shown in FIG. 1, thereby achieving balance.

[0005] The other foot instinctively moves to pull ligaments connected to the toes in order to support the backwardly shifted weight.

[0006] Unless the toes are moved upward as soon as one foot is raised and thus the weight is shifted backward, the person would lose balance and easily tumble over backward.

[0007] The movement of the other foot helps to achieve balance, which shows how important it is to move the toes upward.

[0008] On a bare floor, without wearing a golf shoe, when a golfer makes a finishing posture during a golf swing, the toes of a foot on the floor (hereinafter, referred to as a grounded foot) are moved upward for the same reason.

[0009] In a finishing posture during a golf swing, a golfer's upper body is twisted in a direction perpendicular to a direction of a sole of a grounded foot and thus weight is shifted backward. The toes are naturally moved upward to support the weight which is shifted backward and to achieve balance as described above.

[0010] Just as a tent is prevented from being blown away by tightly pulling poles, the toes do their best in a finishing posture during a golf swing to achieve balance by being moved upward to pull ligaments.

[0011] Accordingly, in a finishing posture during a golf swing, the upward movement of the toes of a grounded foot is very important to achieve balance.

[0012] Meanwhile, some people might have an experience of inserting toes into a space under furniture or a chest of drawers and doing sit-ups by using the force of the toes.

[0013] The force of the ligaments located on an instep when the toes are inserted into the space is great enough for them to do sit-ups.

[0014] The present invention provides a functional shoe which may adapt to the upward movement of the toes when weight is shifted backward to achieve balance and may balance the body when weight is shifted backward by using the force of the ligaments, which connect the toes and an instep, which is great enough to do sit-ups.

[0015] Also, the present invention provides a functional shoe which may add momentum and thus provide a force gain to a wearer by providing on the functional shoe a weight support unit into which a toe base portion that exerts the maximum force of the ligaments from among portions of the toes to which the ligaments are connected is inserted to support weight.

[0016] FIGS. 7 through 9 are perspective views for figuratively explaining a function of a functional shoe according to the present invention. In FIG. 7, both ends of a rope are fixed to a flat surface in an inverted U-shape, and the rope corresponds to a weight support unit included in the functional shoe.

[0017] In FIG. 8, an instep including a toe base portion is inserted into the rope which corresponds to the weight support unit to support weight.

[0018] An upper fastening portion for fastening an upper with a strap or the like is provided on an upper of an existing golf shoe of a golfer, to just fasten the existing golf shoe and surround a foot.

[0019] Ends of the toes which are naturally moved upward to achieve balance when weight is shifted backward in a finishing posture during a golf swing are blocked by the upper, thereby obstructing the movement of the toes and preventing loss of balance.

[0020] Also, since the weight is supported by only the ends of the toes blocked by the upper, the toes are strained and shin and the instep under the knee, which are related to muscles and ligaments for moving the toes upward, feel tired.

[0021] Since the movement of the foot is obstructed by the upper, the golfer would lose balance, which is an important part in a golf swing, due to the existing golf shoe.

[0022] In order to solve the problems of the existing golf shoe, there is a demand for a golf shoe which may adapt to the movement of a foot to achieve balance in a finishing posture and further helps a wearer to balance his/her body by using the force of the ligaments of the toes, which is great enough to do sit-ups as described above.

[0023] Also, when a batter who wears an existing baseball shoe hits a baseball, the batter rotates about the heel of a grounded foot (see FIG. 13). However, the existing baseball shoe does not provide a force gain to the batter.

[0024] However, when the functional shoe according to the present invention is applied to a baseball shoe, when the toes are moved upward, since the functional shoe may increase the force of an instep of a grounded foot by using muscles and ligaments connected to a batter's calf and the instep by inserting a toe base portion into a weight support part, thereby greatly increasing a carry distance of a hit ball and providing a force gain to the batter.

[0025] Also, when a wearer climbs a steep mountain slope with the help of a rope or a wire and weight is shifted backward, balance is achieved by holding the rope or the wire with the arms and hands. When the functional shoe is applied to a mountain climbing shoe or a combat boot, the burden of the

arms and hands to support weight may be reduced by inserting an instep and a toe base portion into a weight support unit and supporting the weight based on the fulcrum and lever effect.

DISCLOSURE

Technical Problem

[0026] In order to solve the problems described above, the present invention provides a functional shoe.

[0027] For example, when the functional shoe is applied to a golf shoe, the golf shoe is structured such that when the weight of a golfer is shifted backward in a finishing posture during a golf swing, an upper of a toe portion of the golf shoe does not obstruct the natural upward movement of a foot, that is, the natural upward movement of the toes to pull ligaments connected to the toes and to achieve balance.

[0028] Also, the golf shoe includes a weight support part provided on the upper of an instep portion of the golf shoe into which an instep including a toe base portion is inserted to achieve balance when weight is shifted backward in the finishing posture during the golf swing, thereby adding momentum to the movement of the toes to achieve balance.

[0029] In order to insert the toe base portion of a wearer into a weight support unit of the instep portion, the toe portion of the present invention has to be structured not to obstruct the upward movement of the toes.

Technical Solution

[0030] According to an aspect of the present invention, there is provided a functional shoe such as a golf shoe, a mountain climbing shoe, a baseball shoe, or a combat boot, which includes an insole that supports an entire sole of a foot, an upper that surrounds an entire foot body including toes, an instep, and a sole other than the insole, and an upper fastening portion that fastens or unfastens the upper to conform with the foot, when it is assumed that the functional shoe is worn and a front portion that is in front of a boundary line, which is based on a toe base portion, close to the toes is referred to as a toe portion and a rear portion that is behind the boundary line is referred to as an instep portion, the functional shoe including: the toe portion that is structured such that the toes of a grounded foot, when a wearer climbs a steep mountain slope with the help of a rope or a wire or is in a finishing posture during a golf swing, may be naturally moved upward to pull ligaments connected to the toes of the grounded foot and achieve balance when weight is shifted backward without being obstructed by the upper; and a weight support unit that is separately provided from the toe portion on the instep portion along the boundary line, and includes only a weight support part into which the instep including the toe base portion of the grounded foot is inserted to support the weight which is shifted backward when the wearer climbs the steep mountain slope or is in the finishing posture during the golf swing, or includes a combination of the weight support part and an auxiliary support band that makes the weight support part provided on the upper further closely attached to the grounded foot of the wearer, wherein the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper, and the weight support unit is provided on the instep portion along the boundary line of the functional shoe and allows the instep including the toe base portion of the wearer to be inserted

thereinto to support the weight while maintaining the shapes of the toes which are moved upward to support the weight.

[0031] When the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion, the toe portion may have an inner space large enough for the toes to be moved upward without being obstructed by the upper of the toe portion.

[0032] When the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion, a portion of the toe portion facing the boundary line or the entire toe portion may be formed of a material soft enough for the toes of the grounded foot to be easily moved upward without being obstructed by the upper of the toe portion.

[0033] When the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion, a portion of the toe portion facing the boundary line or the entire toe portion may have a structure such as a wrinkled structure, flexible enough for the toes of the grounded foot, even when the toes touch the upper, to be easily moved upward without being obstructed by the upper of the toe portion.

[0034] When the weight support unit is separately provided from the toe portion on the instep portion, and includes only the weight support part or a combination of the weight support part and the auxiliary support band that makes the weight support part further closely attached to the grounded foot of the wearer, the weight support part that is separately provided from the toe portion may be formed of a material thick or strong enough to support the weight by padding a portion facing the boundary line or by forming the entire upper of the instep portion with a thick or strong material. A material of the weight support part may be a synthetic resin bag which is filled with air.

[0035] A material of the weight support part may be a synthetic resin bag which is filled with air.

[0036] The weight support part may be formed in a tube shape into or from which air may be injected or expelled when needed by using an air injection pump disposed at a side of the functional shoe.

[0037] When the toe portion is separately provided from the toe portion on the instep portion, the weight support part may be provided outside the upper to surround the upper of the instep portion along the boundary line.

[0038] When the weight support part is provided outside the upper to surround the instep portion along the boundary line, the weight support part may be formed in a band shape at a side of the insole of the instep portion to cover the upper of the instep portion, a coupling member including a connection band connected to the insole may be formed at the opposite side of the insole of the instep portion, and the weight support part may be fixed to the coupling member by being pulled to adjust a length.

[0039] Detachable members having female and male connection structures may be provided on one end portion of the weight support part connected to the insole, on the other portion of the connection band to which the coupling member is connected, and on both side portions of the insole connected to the one end portion and the other end portion so that the weight support part and the coupling member may be attached to or detached from a main body of the functional shoe.

[0040] When the weight support part is provided outside the upper to surround the upper of the instep portion along the boundary line, the weight support part may be formed in a band shape at a side of the insole of the instep portion along the boundary line to cover an outer surface of the upper of the instep portion, a loop through which the weight support part passes may be formed at the opposite side of the insole of the instep portion, an end portion of the weight support part may be inserted from inside to outside into the loop and is pulled in an opposite direction to closely attach the weight support part to the grounded foot, and the end portion of the weight support part may be fixed by female and male coupling members respectively provided on the end portion of the weight support part and the side to which the end portion of the weight support part is connected.

[0041] When the auxiliary support band makes the weight support part provided on the upper further closely attached to the grounded foot of the wearer, the auxiliary support band constituting the weight support unit along with the weight support part provided on the upper may be provided outside the upper on which the weight support part is formed to surround the upper of the instep portion along the boundary line and is fixed by being pulled.

[0042] The auxiliary support band may be provided in a band shape outside the upper to surround along the boundary line the weight support part of the instep portion previously formed at one side of the insole of the instep portion or at a side where the upper of the instep portion and the insole are engaged, the coupling member including the connection band connected to the insole may be formed at the opposite side, and the auxiliary support band may be fixed to the coupling member by being pulled to adjust a length.

[0043] The auxiliary support band may be provided in a band shape outside the upper to surround along the boundary line the weight support part formed on the upper of the instep portion at one side of the insole of the instep portion or at a side where the upper of the instep portion and the insole are engaged with each other, a loop through which the auxiliary band support passes may be formed at the opposite side of the insole of the instep portion to be connected to the insole, an end portion of the auxiliary support band is inserted from inside to outside into the loop and may be pulled in an opposite direction to closely attach the auxiliary support band to the grounded foot, and the end portion of the auxiliary support band may be fixed by female and male coupling members respectively provided on the end portion of the auxiliary support band and a portion of the auxiliary support band to which the end portion of the auxiliary support band is connected.

[0044] Detachable members including female and male connection structures may be provided on the auxiliary support band, the coupling member, the loop, and both side portions of a main body of the functional shoe to which the auxiliary support band, the coupling member, and the loop are connected.

[0045] The auxiliary support band may be independent of a main body of the functional shoe and have both end portions, loops through which the auxiliary support band passes may be provided at both sides of the insole of the instep portion facing the boundary line, and both ends of the auxiliary support band surrounding the weight support part of the upper along the boundary line may be inserted from inside to outside into the loops provided at the both sides of the insole,

may be pulled to closely attach the weight support part provided on the upper to the grounded foot of the wearer, and may be fixed to each other.

DESCRIPTION OF DRAWINGS

[0046] The above and other features and advantages of the present invention will become more apparent by describing in detail exemplary embodiments thereof with reference to the attached drawings in which:

[0047] FIG. 1 is a perspective view illustrating a state where when weight is shifted backward, toes are moved upward to pull ligaments connected to the toes and to achieve balance;

[0048] FIG. 2 is a perspective view illustrating a structure of a functional shoe and a position of a foot in the functional shoe;

[0049] FIG. 3 is a partial cross-sectional view illustrating a structure of a weight support part and toes;

[0050] FIG. 4 is a partial cross-sectional view illustrating a state where an instep including a toe base portion is inserted into the weight support part to support weight;

[0051] FIG. 5 is a perspective view illustrating the functional shoe including the weight support part provided on an upper;

[0052] FIG. 6 is a right side view of FIG. 5;

[0053] FIGS. 7 through 9 are perspective views for figuratively explaining a function of the functional shoe, wherein FIG. 7 illustrates a state where both ends of a rope are fixed in an inverted U-shape and the rope corresponds to a weight support unit included in the functional shoe and FIG. 8 illustrates a state where the instep including the toe base portion is inserted into the rope fixed to a floor to support weight; and **[0054]** FIGS. 10 through 14 are perspective views for explaining the usefulness of the functional shoe when the functional shoe is used in various applications, wherein a circle indicated by a dashed line shows a case where a wearer uses a function of the functional shoe, wherein FIG. 10 illustrates a case where a wearer hits a ball in a golf game, FIG. 11 illustrates a finishing posture during a golf game, FIG. 12 illustrates a finishing posture in a golf game, FIG. 13 illustrates a case where a batter bats a ball in a baseball game, and FIG. 14 illustrates a case where a climber holds a wire or a rope in a steep mountain slope.

EMBODIMENTS

[0055] A weight support part 22 is separately provided from a toe portion 30 on an instep portion 20, and allows an instep and a toe base portion of a foot to be inserted therein to support weight. An auxiliary support band is provided on the instep portion 20 to reinforce a function of the weight support part 22 provided on an upper 31 of a functional shoe and enables the weight support part 22 provided on the upper 31 to be closely attached to the foot.

[0056] A weight support unit 21 includes only the weight support part 22, or a combination of the weight support part 22 and the auxiliary support band 25. That is, the weight support unit 21 includes the weight support part 22 and/or the auxiliary support band 25.

[0057] Herein, the toe base portion refers to a portion of the toes close to joints that connect the instep (metatarsus) and the toes (phalanx) of the foot.

[0058] The present invention will now be described more fully with reference to the accompanying drawings, in which exemplary embodiments of the invention are shown.

[0059] For convenience of explanation, it is assumed that when the functional shoe such as a golf shoe, a mountain climbing shoe, a baseball shoe, or a combat boot, is worn, a front portion located in front of a boundary line a', which is based on the toe base portion a, close to the toes is referred to as the toe portion 30 and a rear portion located behind the boundary line a' is referred to as the instep portion 20.

[0060] Since the essential point of the present invention is to provide the functional shoe that may allow the toes, which are instinctively moved upward to pull ligaments of the instep of a grounded foot and to achieve balance when weight is shifted backward, to be moved upward and also allow the instep and the toe base portion a to be inserted into the weight support part 22 provided on the instep portion 20 to support the weight, it is important that the toe portion 30 has a structure in which the toes may be moved upward without being obstructed by the upper 31.

[0061] Accordingly, the upper 31 of the toe portion 30 may have an inner space large enough for the toes to be moved upward without being obstructed by the upper 31.

[0062] Alternatively, the toe portion 30 may be formed of a material soft enough for the toes, even when the toes touch the upper 31, to be moved upward without being obstructed by the upper 31.

[0063] The weight support part 22 constituting the weight support unit 21, which is separately formed from the toe portion 30, allows the instep including the toe base portion a to be inserted thereinto to support weight which is shifted backward, for example, in a finishing posture during a golf swing. Considering a function of the weight support part 22, the weight support part 22 may be formed of a material that is thick and strong enough to sufficiently support weight by additionally padding an inner surface of the weight support part 22 facing the upper 31 or an outer surface of the weight support part 22 or by forming the instep portion 20 itself with a high-volume material (see FIGS. 3 and 4).

[0064] When the weight support part 22 constituting the weight support unit 21 is separately formed, the weight support part 22 may be formed outside the upper 31 in a different method. That is, the weight support part 22 may be formed in a band shape to cover the instep by providing the weight support part 22 at a side of an insole of the instep portion 20, pulling and fastening an end of the weight support part 22 past the instep portion 20 outside the upper 31 along the boundary line a' of the functional shoe, and fixing the end of the weight support part 22 to a coupling member provided at the opposite side of the insole.

[0065] As such, when the weight support part 22 is provided outside the upper 31 in such a manner, the toe portion 30 may be formed of a material soft enough for the toes to be moved upward without being obstructed.

[0066] Alternatively, the toe portion 30 may have an inner space large enough for the toes to be moved upward without being obstructed by the upper 31. In this case, the functional shoe may be applied to a mountain climbing shoe or a combat boot having an upper that has to be strong enough.

[0067] The functional shoe, including the weight support part 22, not only functions to support weight but also functions to prevent ends of the toes from touching the upper 31 when the weight is supported.

[0068] That is, in a general functional shoe not including the weight support part 22, when weight is shifted backward, ends of the toes are brought into contact with the upper 31 and the ends of the toes bear the weight, thereby straining the toes

and tiring the foot. However, according to the present invention, before the toes are brought into contact with the upper 31, the instep and the toe base portion a are inserted into the weight support part 22 to support weight, thereby preventing the toes from supporting the weight.

[0069] Since ends of the toes are prevented from supporting the weight, a foot feels less tired, thereby allowing a golfer to play golf in more comfortable conditions.

[0070] In order to closely attach the weight support part 22 provided on the upper 31 of the instep portion 20 to the foot, the auxiliary support band 25 in a band shape which constitutes the weight support unit 21 along with the weight support part 22 may be attached to a side of the insole of the instep portion 20, and an end of the auxiliary support band 25 may be fixed to the coupling member provided on the opposite side, to reinforce a function of the weight support part 22 to support weight by using the instep including the toe base portion a. That is, since the auxiliary support band 25 enables the weight support part 22 provided on the upper 31 of the functional shoe, not the weight support part 22 provided outside the functional shoe as described above, to be further closely attached to the foot, the auxiliary support band 25 reinforces the function of the weight support part 22 provided on the upper 31.

[0071] Also, loops through which the auxiliary support band 25 having both end portions independent of a main body of the functional shoe passes are provided at both sides of the insole engaged with the weight support part 22 provided on the upper 31 to make the auxiliary support band 25 attachable and detachable to and from the functional shoe such as a golf shoe. Both ends of the auxiliary support band 25 may be inserted from inside to outside into the loops, may cross an instep portion outside the weight support part 25, and may be pulled to reinforce a function of the weight support part 22. The golfer wearing the functional shoe may play golf with or without the auxiliary support band 25.

[0072] When weight which is shifted backward is applied to a grounded foot, the grounded foot presses the insole. Accordingly, when the instep including the toe base portion a is inserted into the weight support part 22 connected to the insole to which the weight is applied, the insole is required to be formed of a material and have a structure capable of bearing a certain amount of weight.

Advantageous Effects

[0073] Generally, the shoes' main functions are to protect feet.

[0074] However, just as a person inserts his/her toes into a space under furniture and does sit-ups by using the force of the toes, the functional shoe of the present invention provides a portion into which the instep and a toe base portion are inserted on the functional shoe to use the force of the toe base portion which may exert the greatest force from among portions of a foot, thereby adding momentum.

[0075] Accordingly, a wearer may further use the force of the toe base portion to support weight.

[0076] That is, when a batter hits a baseball in a baseball game, an instep of the batter including a toe base portion may be inserted into a weight support unit to support the weight of the batter, thereby adding a force of the toe base portion to the weight of the batter (see FIG. 13). When a golfer makes a tee shot in a golf game, an instep of the golfer including a toe base portion may be inserted into a weight support unit provided on a golf shoe to support weight, thereby obtaining a distance

gain as much as forces of the instep and the toe base portion of the golfer (see FIG. 10). If a golfer who desperately needs a longer carry distance in a golf game wears the golf shoe having such a function, he/she may achieve the longer carry distance.

[0077] Also, the golf shoe including the weight support unit of the present invention includes a toe portion that is structured to adapt to the shape of a grounded foot and pull ligaments of an instep connected to toes to achieve balance when weight is shifted in a finishing posture during a golf swing.

[0078] The golf shoe includes the weight support unit formed on an instep portion that is structured to allow the instep and the toe base portion to be inserted therein to support weight while maintaining the shapes of the toes which support the weight, thereby achieving balance during a golf swing, which is very important in a golf game and improving performance (see FIGS. 11 and 12).

[0079] When the wearer of the golf shoe having the afore-described structure makes a tee shot on an ascent in a fairway, the weight support unit into which the toe base portion and the instep are inserted may help the wearer to easily achieve balance when weight is shifted backward.

[0080] Also, when a wearer of a mountain climbing shoe or a combat boot including the weight support unit according to the present invention climbs a steep mountain slope by holding a rope or a wire with the arms and hands, the wearer supports his/her weight shifted backward with his/her arms and hands. In the mountain climbing shoe including the weight support unit, since the instep including the toe base portion is inserted into the weight support unit to support the weight, the burden of the arms and hands to bear the weight may be reduced (see FIG. 14).

[0081] While the present invention has been particularly shown and described with reference to exemplary embodiments thereof, it will be understood by those of ordinary skill in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present invention as defined by the following claims.

What is claimed is:

1. A functional shoe including a golf shoe, a mountain climbing shoe, a baseball shoe, and a combat boot, which includes an insole that supports an entire sole of a foot, an upper that surrounds an entire foot body including toes, an instep, and a sole other than the insole, and an upper fastening portion that fastens or unfastens the upper to conform with the foot,

when it is assumed that the functional shoe is worn and a front portion that is in front of a boundary line, which is based on a toe base portion, close to the toes is referred to as a toe portion and a rear portion that is behind the boundary line is referred to as an instep portion,

the functional shoe comprising:

the toe portion that is structured such that the toes of a grounded foot, when a wearer climbs a steep mountain slope with the help of a rope or a wire or is in a finishing posture during a golf swing, may be naturally moved upward to pull ligaments connected to the toes of the grounded foot and achieve balance when weight is shifted backward without being obstructed by the upper; and

a weight support unit that is separately provided from the toe portion on the instep portion along the boundary line, and comprises only a weight support part into which the instep including the toe base portion of the grounded

foot is inserted to support the weight which is shifted backward when the wearer climbs the steep mountain slope or is in the finishing posture during the golf swing, or comprises a combination of the weight support part and an auxiliary support band that makes the weight support part provided on the upper further closely attached to the grounded foot of the wearer,

wherein the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper, and the weight support unit is provided on the instep portion along the boundary line of the functional shoe and allows the instep including the toe base portion of the wearer to be inserted therein to support the weight while maintaining the shapes of the toes which are moved upward to support the weight.

2. The functional shoe of claim 1, wherein when the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion,

the toe portion has an inner space large enough for the toes to be moved upward without being obstructed by the upper of the toe portion.

3. The functional shoe of claim 1, wherein when the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion,

a portion of the toe portion facing the boundary line or the entire toe portion is formed of a material soft enough for the toes of the grounded foot to be easily moved upward without being obstructed by the upper of the toe portion.

4. The functional shoe of claim 1, wherein when the toe portion is structured such that the toes of the grounded foot may be moved upward without being obstructed by the upper of the toe portion,

a portion of the toe portion facing the boundary line or the entire toe portion has a structure including a wrinkled structure, flexible enough for the toes of the grounded foot, even when the toes touch the upper, to be easily moved upward without being obstructed by the upper of the toe portion.

5. The functional shoe of claim 1, wherein when the weight support unit is separately provided from the toe portion on the instep portion, and comprises only the weight support part or a combination of the weight support part and the auxiliary support band that makes the weight support part further closely attached to the grounded foot of the wearer,

the weight support part that is separately provided from the toe portion is formed of a material thick or strong enough to support the weight by padding a portion facing the boundary line or by forming the entire upper of the instep portion with a thick or strong material.

6. The functional shoe of claim 5, wherein material of the weight support part is a synthetic resin bag which is filled with air.

7. The functional shoe of claim 5, wherein the weight support part is formed in a tube shape into or from which air may be injected or expelled when needed by using an air injection pump disposed at a side of the functional shoe.

8. The functional shoe of claim 1, wherein when the toe portion is separately provided from the toe portion on the instep portion,

the weight support part is provided outside the upper to surround the upper of the instep portion along the boundary line.

9. The functional shoe of claim 8, wherein when the weight support part is provided outside the upper to surround the instep portion along the boundary line,

the weight support part is formed in a band shape at a side of the insole of the instep portion to cover the upper of the instep portion, a coupling member comprising a connection band connected to the insole is formed at the opposite side of the insole of the instep portion, and the weight support part is fixed to the coupling member by being pulled to adjust a length.

10. The functional shoe of claim 9, wherein detachable members having female and male connection structures are provided on one end portion of the weight support part connected to the insole, on the other portion of the connection band to which the coupling member is connected, and on both side portions of the insole connected to the one end portion and the other end portion so that the weight support part and the coupling member may be attached to or detached from a main body of the functional shoe.

11. The functional shoe of claim 8, wherein when the weight support part is provided outside the upper to surround the upper of the instep portion along the boundary line,

the weight support part is formed in a band shape at a side of the insole of the instep portion along the boundary line to cover an outer surface of the upper of the instep portion, a loop through which the weight support part passes is formed at the opposite side of the insole of the instep portion, an end portion of the weight support part is inserted from inside to outside into the loop and is pulled in an opposite direction to closely attach the weight support part to the grounded foot, and the end portion of the weight support part is fixed by female and male coupling members respectively provided on the end portion of the weight support part and the side to which the end portion of the weight support part is connected.

12. The functional shoe of claim 1, wherein when the auxiliary support band makes the weight support part provided on the upper further closely attached to the grounded foot of the wearer,

the auxiliary support band constituting the weight support unit along with the weight support part provided on the upper is provided outside the upper on which the weight support part is formed to surround the upper of the instep portion along the boundary line and is fixed by being pulled.

13. The functional shoe of claim 12, wherein the auxiliary support band is provided in a band shape outside the upper to surround along the boundary line the weight support part of the instep portion previously formed at one side of the insole

of the instep portion or at a side where the upper of the instep portion and the insole are engaged, a coupling member comprising a connection band connected to the insole is formed at an opposite side of the insole of the instep portion, and the auxiliary support band is fixed to the coupling member by being pulled to adjust a length.

14. The functional shoe of claim 12, wherein the auxiliary support band is provided in a band shape outside the upper to surround along the boundary line the weight support part formed on the upper of the instep portion at one side of the insole of the instep portion or at a side where the upper of the instep portion and the insole are engaged with each other, a loop through which the auxiliary band support passes is formed at the opposite side of the insole of the instep portion to be connected to the insole, an end portion of the auxiliary support band is inserted from inside to outside into the loop and is pulled in an opposite direction to closely attach the auxiliary support band to the grounded foot, and the end portion of the auxiliary support band is fixed by female and male coupling members respectively provided on the end portion of the auxiliary support band and a portion of the auxiliary support band to which the end portion of the auxiliary support band is connected.

15. The functional shoe of claim 13, wherein detachable members comprising female and male connection structures are provided on the auxiliary support band, the coupling member, the loop, and both side portions of a main body of the functional shoe to which the auxiliary support band, the coupling member, and the loop are connected.

16. (canceled)

17. The functional shoe of claim 1, wherein the auxiliary support band is independent of a main body of the functional shoe and has both end portions,

loops through which the auxiliary support band passes are provided at both sides of the insole of the instep portion facing the boundary line, and

both ends of the auxiliary support band surrounding the weight support part of the upper along the boundary line are inserted from inside to outside into the loops provided at the both sides of the insole, are pulled to closely attach the weight support part provided on the upper to the grounded foot of the wearer, and are fixed to each other.

18. The functional shoe of claim 14, wherein detachable members comprising female and male connection structures are provided on the auxiliary support band, the coupling member, the loop, and both side portions of a main body of the functional shoe to which the auxiliary support band, the coupling member, and the loop are connected.

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