Footwear for running, jogging and/or walking on a sloped surface, such as a roadway or a circular track that is not flat, for example. The footwear includes a left shoe and a right shoe. Each of the left shoe and the right shoe includes an upper member and a sole body, which is formed by one or more sole members, attached thereto. The sole bodies of each shoe are of uniformly varying thickness from the lateral side to the medial side of the shoe. The sole body of the left shoe is of a different average thickness than is the average thickness of the right shoe. The sole bodies and/or the sole members of the shoes may be reversibly connectable, such as to allow flexibility in customizing the shoes to be used on a variety of underlying surfaces, including substantially flat surfaces, for example.
FOOTWEAR FOR SLOPED SURFACES

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] The present invention relates to footwear. More particularly, the present invention relates to footwear that may be worn on a sloped surface, such as a roadway or a circular track that is not flat, for example, such as for running, jogging, and/or walking thereon. Still more particularly, the present invention relates to footwear having sloped soles that enable a person wearing the shoes to be level when that person is on a surface substantially orthogonally in relation to the direction the person is moving.

[0003] 2. Description of the Prior Art
[0004] Running, jogging and walking are probably the most popular fitness activities. While some prefer to undertake such activities on a flat surface, such as a flat running track, there are many individuals who prefer to run, jog or walk on a sloped surface, such as a roadway. Indeed, some individuals consistently log one hundred miles or more each week traveling by foot along their favorite roadway.

[0005] Despite their popularity, however, running, jogging and walking on a roadway can be frustrating and even hazardous. The frustration and hazard of traveling by foot on a roadway is partially owed to the design of most roadways. Most roadways are built with a cross-slope, which primarily serves to facilitate drainage of water from the road to the flanking soft shoulder. For example, according to State of Maine Department of Transportation model grading specifications, Maine roadways are graded with a cross-slope of 1/2"-per-foot of lane width from centerline to shoulder (e.g., a ten foot wide lane would have a cross-slope of 5°). Further, the Maine specifications call for shoulders of the roadway to be graded at a slightly steeper cross-slope than that from centerline to shoulder. Unfortunately, sloped surfaces are not conducive to travel by foot. Individuals wearing existing footwear while traveling on these surfaces are forced to alter their normal gait, and therefore their normal posture, as they walk, jog and walk. For example, consider the case of a person who is running along the left side of a roadway while facing on-coming traffic (most foot travelers prefer to travel on the left side of a roadway for safety reasons). Assuming that this hypothetical runner is on a roadway that is graded similarly to the Maine specifications, he/she would have to step further with his/her left foot, which is further from the roadway centerline than the right, to reach the roadway surface than with his/her right foot. Having to consciously be aware of this needed change in gait and having to actually make this change in gait is annoying and physically burdensome. Worse, over time, this unnatural movement can cause injury, such as to the spine or to a hip or knee, for example. In particular, the injury that is often experienced is chondromalacia, which is felt by the injured individual as a pain or tenderness near or under the patella at the front or side of the knee. Pain attributable to chondromalacia may progressively exacerbate over time as the cartilage of the patella gradually wears away.

[0006] What is needed therefore is footwear having sloped soles that would enable a person to maintain normal posture and gait while traveling by foot on a sloped surface, and in particular, on a roadway. While footwear having sloped soles do exist, none are conducive for travel on sloped surfaces. For example, U.S. Pat. No. 5,345,701 issued to Smith describes an orthopedic device that is meant to be used to help correct pre-existing orthopedic conditions and is not meant for prevention of such conditions. Further, this device, which is a shoe having a plurality of sloped wedges connected to the bottom thereof, would not be useful for recreational running or jogging, and in fact probably would be dangerous when used for those activities. This is true because when the wedges of the Smith device are positioned on the bottom of the sole of the device, only the wedges, which represent only a small fraction of the surface area of the bottom of the sole, are meant to contact a ground surface when the device is worn. Anyone running or jogging while wearing the Smith device therefore would be prone to slipping, especially when on a roadway surface that is wet or covered with debris, such as sand, for example.

[0007] As another example, U.S. Pat. No. 2,616,190 issued to Darby describes footwear for correcting a person’s walking angle. While each sole of each of the shoes of the footwear of Darby is of a varying thickness, the two soles are not of different average thicknesses. As a result, the feet of a person wearing the Darby footwear while on a slope would be on different planes. That is, one foot would be more elevated than the other. Due to this unevenness, the person therefore would have to alter his/her normal gait while walking on the slope. As mentioned, this would be problematic to most wearers. Further, the Smith device is also limited for this same reason, as the wedges of its left shoe are no different than the wedges of its right shoe.

[0008] Other examples include other specialty shoes, such as golf shoes having spikes, that are not meant for travel on rigid surfaces, such as a paved roadway, for example. Like the footware of Darby and Smith, none of these shoes address the difference in the position of the feet when moving in a direction that is orthogonal to the slope of the underlying surface.

SUMMARY OF THE INVENTION

[0009] It is an object of the present invention to provide footwear that may be used to keep a person level while the person is traveling by foot on a sloped surface, such as a roadway, a circular track that is not flat, or some beach surfaces, for example, particularly a person traveling in a direction orthogonal to the direction of the slope. The footwear of the present invention includes a pair of shoes, specifically a left shoe and a right shoe. Each shoe includes an upper member for holding a person’s foot therein and a sole body, which includes one or more sole members, connectable or integral to the upper member. The sole body of each shoe is sloped such that its medial side is of a different thickness than its lateral side, and the average thickness of the sole body of one shoe is different than the average thickness of the other shoe. This arrangement allows a wearer of the footwear to remain level while traveling by foot on a sloped surface. Further, although the degree of slope of the sole body of one shoe of a particular pair of shoes is the same as that of the other shoe of that pair, this degree of slope may be varied between pairs of shoes, such that the sole bodies of left and right shoes of one pair of shoes may be sloped differently than the sole bodies of left and right shoes of another pair of shoes. For this reason, the footwear of the present invention may be specifically designed to be used on a surface having a particular slope. For example, the footwear may be designed specifically to facilitate travel by foot on the left side of a roadway or it may be designed specifically to facilitate travel by foot on the right side of a roadway. The footwear also may be designed specifically to be used on a roadway of a particular design.
The details of one or more examples related to the invention are set forth in the accompanying drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the following description and accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a rear view of a left shoe and a right shoe of the present invention, each of which has a sole body that is only an outsole member.

FIG. 2 is an exploded view of the right shoe of the present invention having an upper member, a midsole member and an outsole member.

FIG. 3 is a bottom perspective view of the left and right shoes of FIG. 1 showing a second surface of the left sole body and right sole body.

FIG. 4 is a rear view of the left and right shoes of FIG. 1 shown as being worn on a sloped surface.

FIG. 5 is a rear view of the left and right shoes of FIG. 1 shown as being worn on a level surface.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is footwear that may be worn while running, jogging or walking on a sloped surface, such as a roadway or a circular track that is not flat, for example. In particular, where the person travels in a direction that is substantially orthogonal to the direction of the sloped surface. As shown in FIG. 1, footwear 10 of the present invention includes a left shoe 100, having a medial side 101 and a lateral side 102, for wearing on a left foot, and a right shoe 200, having a medial side 201 and a lateral side 202, for wearing on a right foot.

Each shoe 100/200 includes an upper member 110/210 and one or more sole members 120/220. Individually or collectively, the one or more sole members 120/220 form a sole body 130/230. The upper member 110/210 is either integrally connected to, or is removably connectable to, the sole body 130/230. The upper member 110 is contoured to contain a person’s left foot and the upper member 210 is contoured to contain a person’s right foot.

The one or more sole members 120/220 may be, for example, only an outsole member 121/221, such as is shown in FIG. 1. When the one or more sole members 120/220 are only an outsole member 121/221, the outsole member 121/221 is the sole body 130/230.

Alternatively, as shown in FIG. 2, the one or more sole members 120/220 may be the outsole member 121/221 and a midsole member 122/222 connectable to the outsole member 121/221 to form the sole body 130/230. In this arrangement, the midsole member 122/222 is directly connectable to the upper member 110/210. (For the purpose of clarity, the upper member 110/210, midsole member 122/222 and outsole member 121/221 are shown as being separate in FIG. 2. However, it is to be understood that the upper 121 is connectable to the midsole member 222 and the midsole member 222 is further connectable to the outsole member 221 in actual use.)

Although examples of each shoe 100/200 of the present invention have been described as including one or two sole members 120/220, it is to be understood that each shoe 100/200 may include more than two sole members 120/220. Those of ordinary skill in the art would recognize that many arrangements of the shoe 120/220, including those having three or more sole members 120/220, are possible.

Whether each shoe 100/200 includes only one sole member 120/220 or each shoe 100/200 includes a plurality of sole members 120/220, the sole body 130/230 formed by the one or more sole members 120/220 is asymmetrical shaped. Referring again to FIG. 1, the sole body 130/230 has at least a first surface 131/231, a second surface 132/232, which is opposite and spaced from the first surface 131/231, a third surface 133/233 and a fourth surface 134/234, which is opposite and spaced from the third surface 133/233. The first surface 131/231 is connectable or formed integral to lower surface 111/211 of the upper member 110/210 (the lower surface 111/211 is substantially flat), and the second surface 132/232 is meant to contact a ground surface, such as a roadway, for example, when the shoes 100/200 are being worn (i.e., when a person’s feet are contained within the upper members 110/210).

Further, the second surface 132/232 of the sole body 130/230 is sloped, angled or otherwise modified such that the sole body 130/230 is of varying thickness from medial side 101/201 to lateral side 102/202. In FIG. 1, for example, the sole body 130 is thickest at the lateral side 102 of the left shoe 100 and the sole body 230 is thickest at the medial side 201 of the right shoe 200. Specifically, the sole body 130 shown in the drawing decreases uniformly in thickness from the lateral side 102 of the left shoe 100 to the medial side 101 of the left shoe 100. Therefore, the sole body 130 is thickest at lateral sole body region 135 and thinnest at medial sole body region 136. Further, the sole body 230 uniformly decreases in thickness from the medial side 201 of the right shoe 200 to the lateral side 202 of the right shoe 200. Therefore, the sole body 230 is thickest at medial sole body region 235 and thinnest at lateral sole body region 236.

Referring to FIG. 3, the degree of slope of the second surface 132/232 of the sole body 130/230 is substantially similar at top region 137/237 with respect to the slope at rear region 138/238, and further is substantially similar at all regions between front region 137/237 and rear region 138/238. That is, the sole body 130/230 is of a uniformly sloped thickness from front to back. It is to be noted that the sole body 130/230 may include an arch 139/239 at some point between the top region 137/237 and the rear region 138/238, but that no portion of any included arch 139/239 is considered to be part of the second surface 132/232. Therefore, any included arch 138/238 may be of any shape and slope.

The slope of the second surface 132/232 of the sole body 130/230 of the shoes 100/200 of FIGS. 1 and 3 allows a person wearing the shoes 100/200 to remain level on a sloped surface when traveling substantially orthogonally on the left side of the surface. For example, FIG. 4 shows the shoes 100/200 as being worn on the feet 50 of a person who is standing on a roadway surface 60 that is sloped downwardly from right-to-left. Due to the sloped design of the second surfaces 132/232 of the sole bodies 130/230, each foot 50 (and therefore each leg 55) of the wearer remains at a substantially 900 angle with respect to the surface 60 while the second surfaces 132/232 are in contact with the roadway surface 60.

In contrast to FIG. 4, FIG. 5 shows the shoes 100/200 of FIGS. 1 and 3 as being worn on the feet 50 of a person who is standing on a level surface 70. Due to the sloped design of the sole bodies 130/230, each foot 50 (and therefore each leg 55) of the wearer does not remain at a substantially 900 angle with respect to the surface 70 while the second surfaces 132/232 are in contact with the roadway surface 70.
It is to be understood that while FIGS. 1, 3, 4 and 5 show one example of the shoes of the present invention, the thickness, uniformity of thickness change, degree of slope and/or orientation of the slope of the sole bodies 130/230 of the shoes are not limited to those shown in that example. For example, the sole body 130 of the left shoe 100 may be thickest at medial sole body region 136 and thinnest at lateral sole body region 135, and the sole body 230 of the right shoe 200 may be thickest at lateral sole body region 236 and thinnest at medial sole body region 235. As another example, the sole body 200 of the right shoe 200 may have a greater average thickness than that of the sole body 130 of the left shoe 100. This flexibility in the design of the thickness, thickness uniformity, degree of slope and orientation of the slope of the sole bodies 130/230 of the shoes would enable a manufacturer of the shoes 100/200 to tailor the design of the shoes to a particular slope. For example, a manufacturer may design some of the shoes of the present invention that it manufactures for use on the left side of a roadway and design other shoes for use on the right side of a roadway. Further, a manufacturer may design some of the shoes of the present invention that it manufactures for use on a roadway having a particular design, such as one having a slight slope or a very steep slope.

Further, it is to be understood that the sole body 130/230 may be integrally connected to the upper member 110/210 or the sole body 130/230 and or any one or more of the one or more sole members 120/220 may be removably connectable to the upper member 110/210. The ability to remove the sole body 130/230 and or any one or more of the one or more sole members 120/220 from the upper member 110/210 would enable the wearer to add sole bodies 130/230 and/or sole members 120/220 from the upper member 110/210 or from other sole members 120 as the wearer wishes. For example, the wearer may wish to possess a plurality of sole bodies collectively having a variety of shapes and thicknesses for traveling on multiple surfaces of particular slope. As another example, the wearer may wish to have an outsole member that is not flat and a midsole member that is substantially flat; in this arrangement, the wearer could replace the outsole member from the midsole member whenever he/she is to run, jog or walk on a flat underlying surface.

In any arrangement, the shoes of the present invention should be comfortable and safe for running, jogging and walking. To this end, the material from which the upper member 110/210 may be formed may be synthetic or naturally occurring, and include, for example, nylon, taffeta, canvas, leather, suede, vinyl, nubuck, or any other material or plurality of materials that are suitable for running, jogging and/or walking. It is to be understood, however, that the upper member 110/210 is not limited to being formed from these materials. Further, the material from which the upper member 110/210 is formed optionally may be perforated, such as to allow air exchange between the inside of the shoe 100/200 and the ambient air. Such perforation would allow the feet of the wearer of the shoes to remain cool and relatively free from sweating.

Additionally, materials from which the sole members 120/220 may be formed include, but are not limited to, synthetic and naturally occurring materials, such as rubber and foam, for example. Such materials are conducive to running, jogging and walking. Those of ordinary skill in the art would recognize materials that may be used to form the sole members 120/220.

The second surface 132/232 may be textured to allow improved traction between the shoe 100/200 and a ground surface. In FIG. 3, for example, the second surface 132/232 includes treads 132'/232'. Those of ordinary skill in the art would recognize that the second surface 132/232 may be textured in a variety of other ways to improve traction.

Further, each shoe 100/200 may optionally include an insert, which may be padded, contained within the upper member 110/210. When the shoes 100/200 are being worn, the bottom surface of the feet of the wearer would rest upon the insert for comfort and/or moisture absorption.

The components of the shoes of the present invention, including the upper member, the one or more sole members, and the optional insert may be fabricated into a unitary piece. Alternatively, the components of the shoes of the present invention, including the upper member, the one or more sole members, and the optional insert, may be fabricated separately.

While the present invention has been described with particular reference to certain embodiments of the shoes, it is to be understood that it includes all reasonable equivalents thereof as defined by the following appended claims.

What is claimed is:

1. Footwear, comprising:
   a. a left shoe including a left upper member and a left sole body wherein the left sole body includes a left lateral side and a left medial side, wherein a thickness of the left sole body at the left lateral side is different than a thickness of the left sole body at the left medial side; and
   b. a right shoe including a right upper member and a right sole body, wherein the right sole member includes a right lateral side and a right medial side, wherein a thickness of the right sole body at the right lateral side is different than a thickness of the right sole body at the right medial side;
   wherein the thickness of the left sole body at the left lateral side is different than the thickness of the right sole body at least at the right lateral side.

2. The footwear of claim 1 wherein upper left member is integrally connected to the left sole body and the right upper member is integrally connected to the right sole body.

3. The footwear of claim 1 wherein upper left member is removable connectable to the left sole body and the right upper member is removable connectable to the right sole body.

4. The footwear of claim 1 wherein the left sole body includes two or more left sole members and the right sole body includes two or more right sole members.

5. The footwear of claim 1 wherein the left sole body includes a left midsole and a left outsole and the right sole body includes a right midsole and a right outsole.

6. The footwear of claim 5 wherein the left upper member is connectable to both midsole and the left midsole is connected to the left outsole, and the right upper member is connectable to both midsole and the right midsole is connected to the right outsole.

7. The footwear of claim 5 wherein a bottom surface of the left midsole and a bottom surface of the right midsole are substantially flat.

8. The footwear of claim 1 wherein the left shoe includes a left insert insertable within the left upper member, and the right shoe includes a right insert insertable within the right upper member.

9. The footwear of claim 1 wherein the left upper member and the right upper member are formed from one or more of nylon, taffeta, canvas, leather, suede, vinyl, and nubuck.

10. The footwear of claim 1 wherein the one or more left sole members and the one or more right sole members are formed from rubber, foam or rubber and foam.

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