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(54) Abstract Title
Shoes with traction members

(57) A pair of soles 18 for golf shoes (12, 14, Figs. 1A and 1B) each comprise a first edge 42 extending between toe 38 and heel 40 portions, a second edge 44 extending opposite the first edge, and elongate traction members 22. A first sole 18a comprises at least one first traction member 22b elongated along axis 48b and at least two second traction members 22a elongated along axis 48a, the number of second traction members being greater than the number of first traction members. Meanwhile, a second sole 18b comprises at least one third traction member 22a elongated along axis 48a and at least two fourth traction members 22b elongated along axis 48b, the number of fourth traction members being greater than the number of third traction members. Typically, one or more cleats 24 are connected to at least one of the soles. In another embodiment, the heel portions essentially comprise tractions members and cleats.

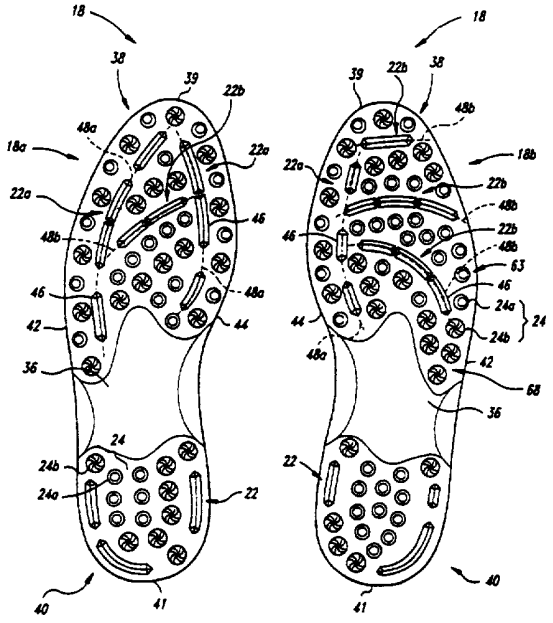

Fig. 4A *Fig. 4B*

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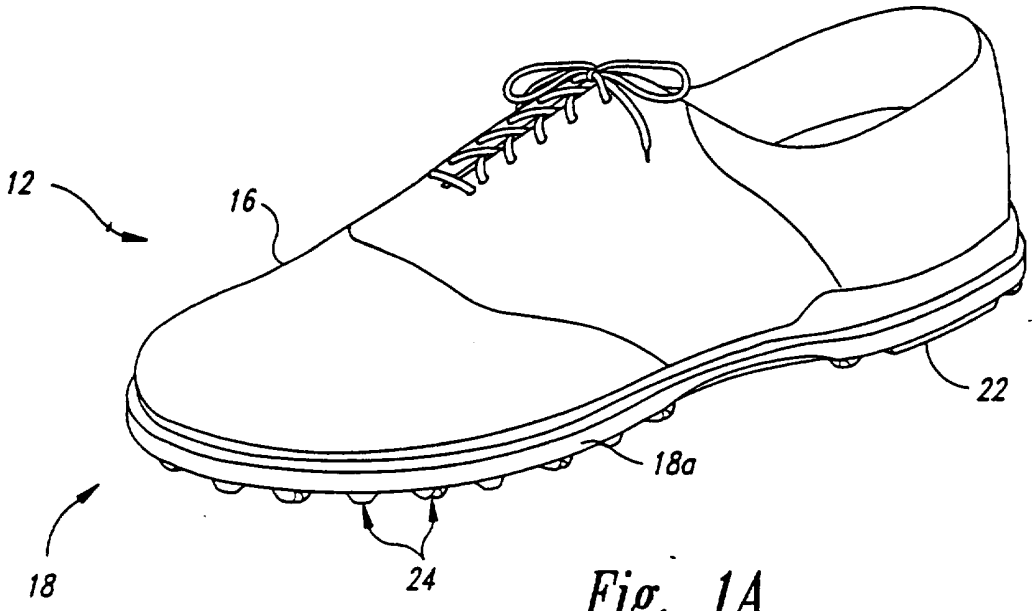


Fig. 1A

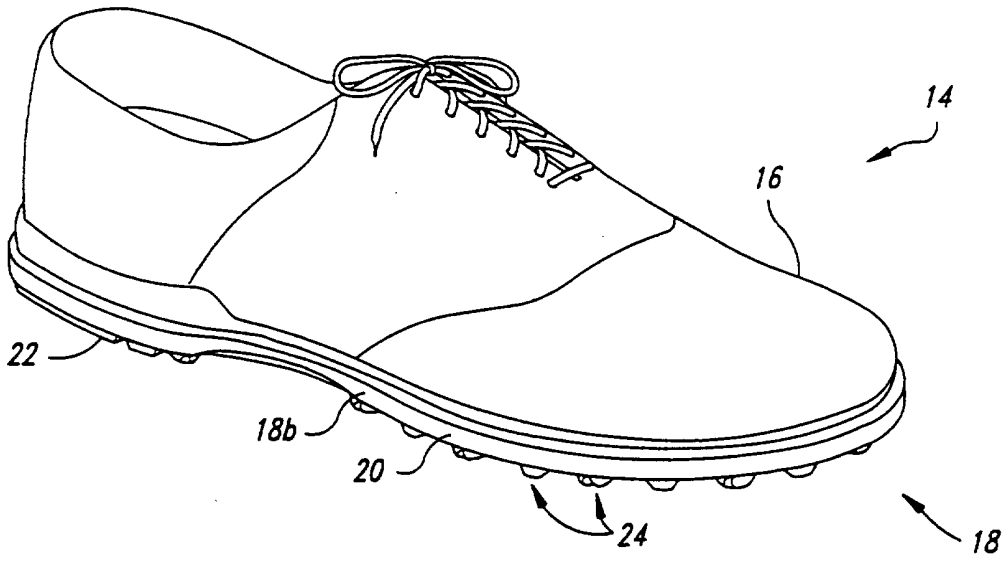


Fig. 1B

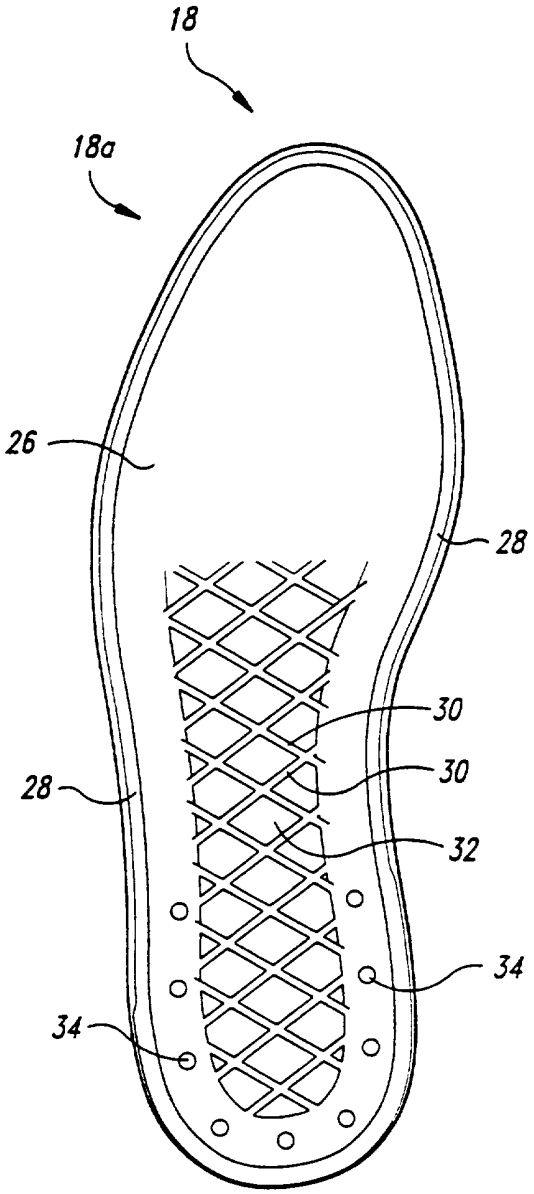


Fig. 2A

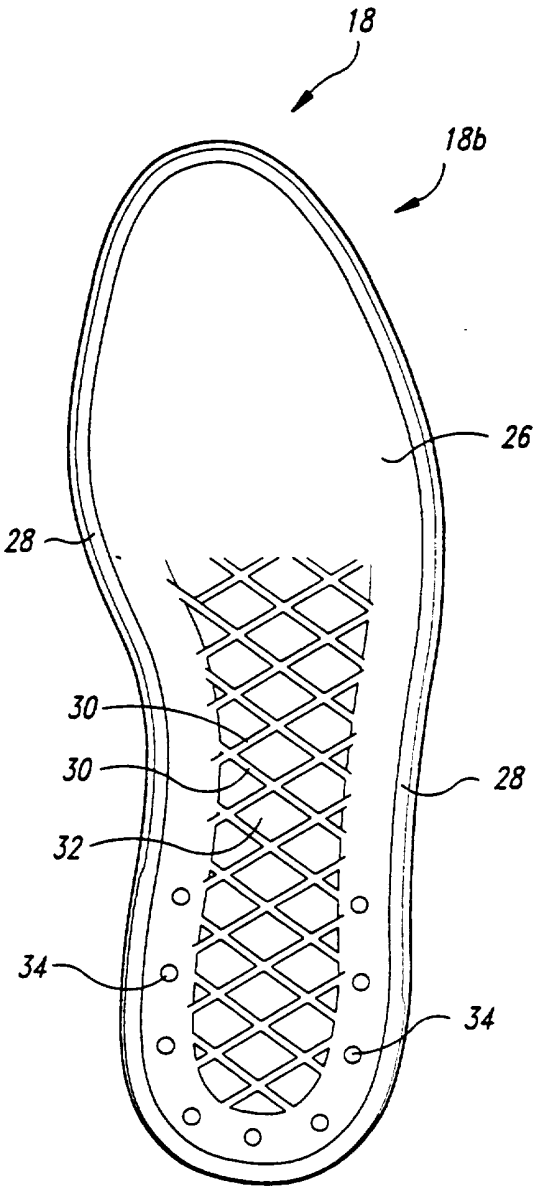


Fig. 2B

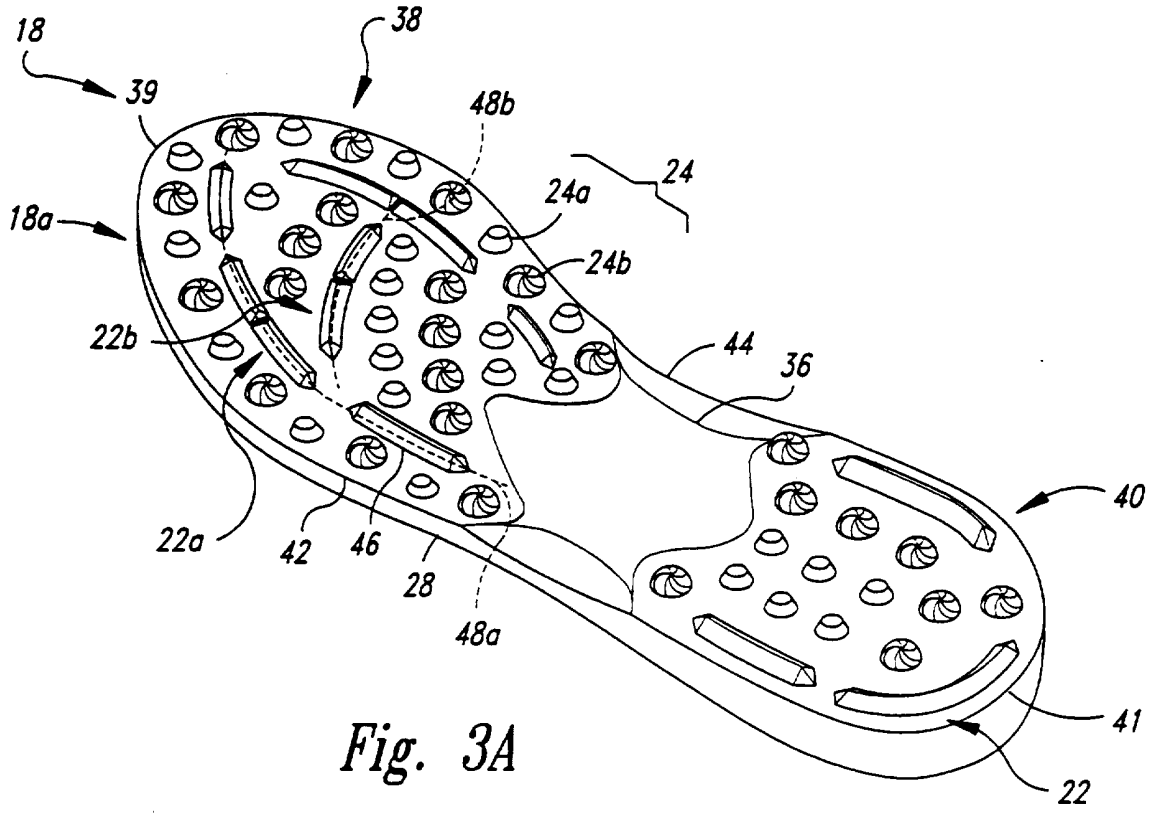

18
39
38
48b
24
24a
18a
24b
22b
44
36
40
22a
42
46
28
48a
41
22

Fig. 3A

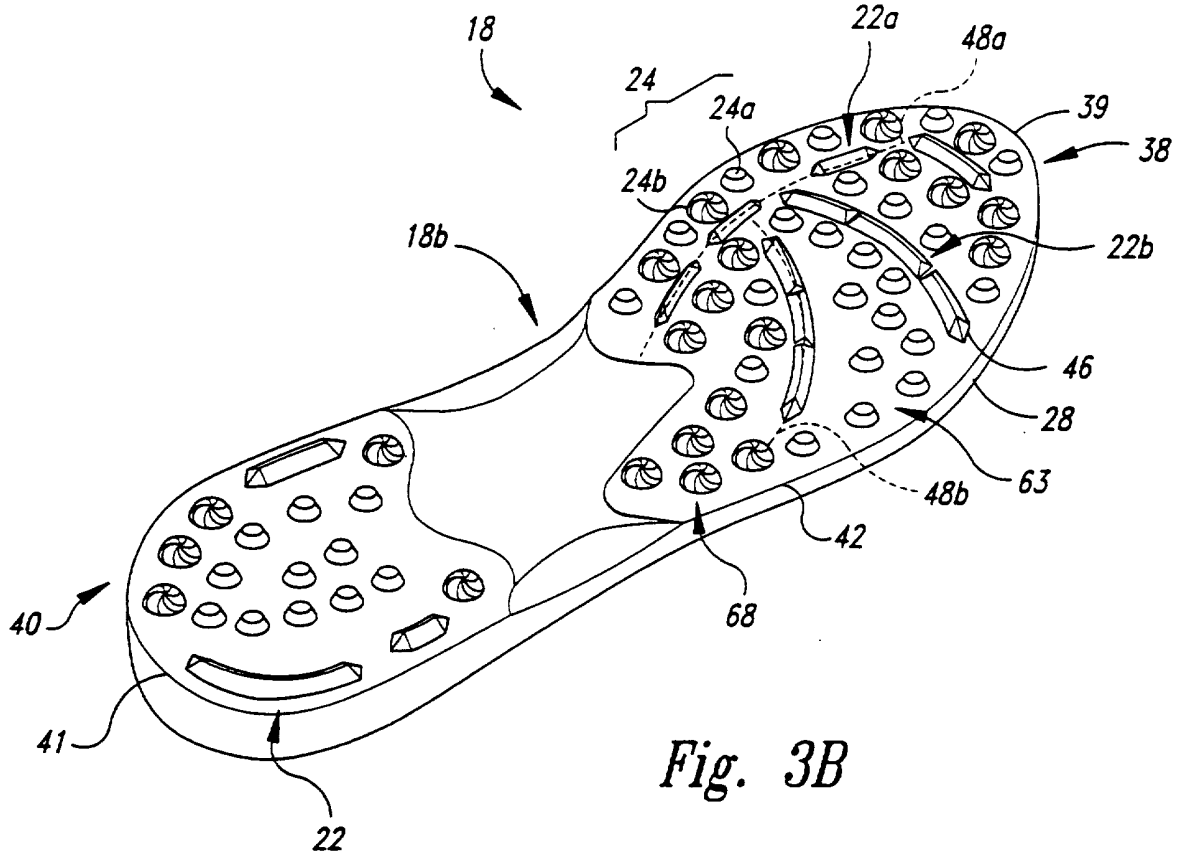
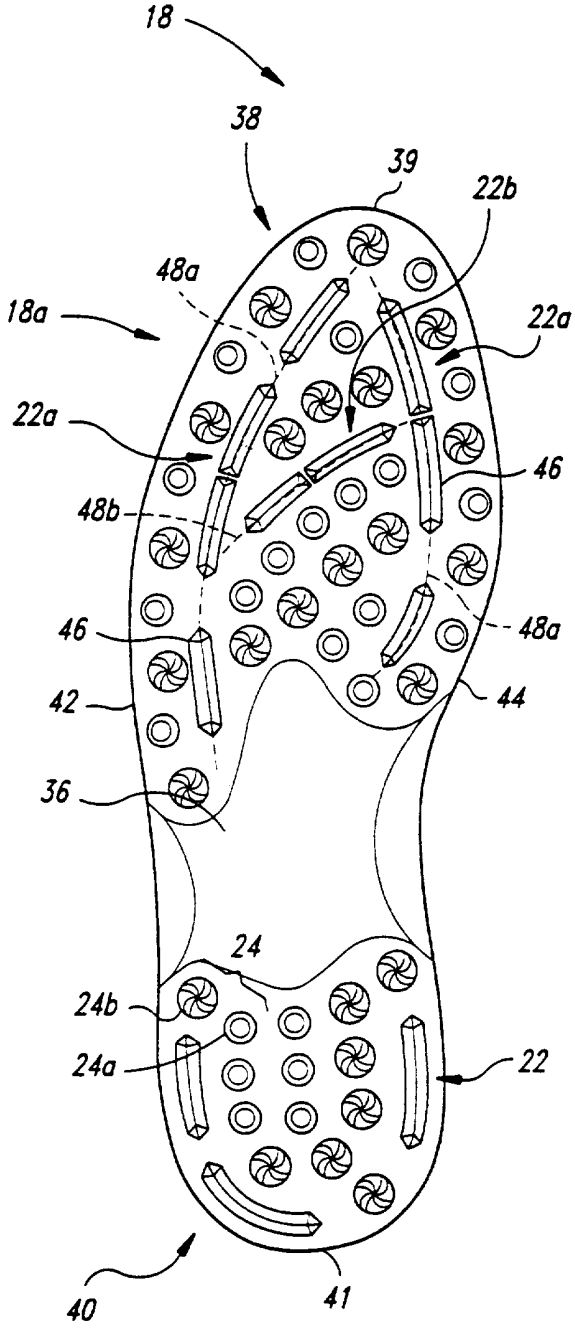

18
22a
48a
24
24a
39
38
24b
18b
22b
46
28
63
48b
42
68
40
41
22

Fig. 3B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22b
48a
18a
22a
22a
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36
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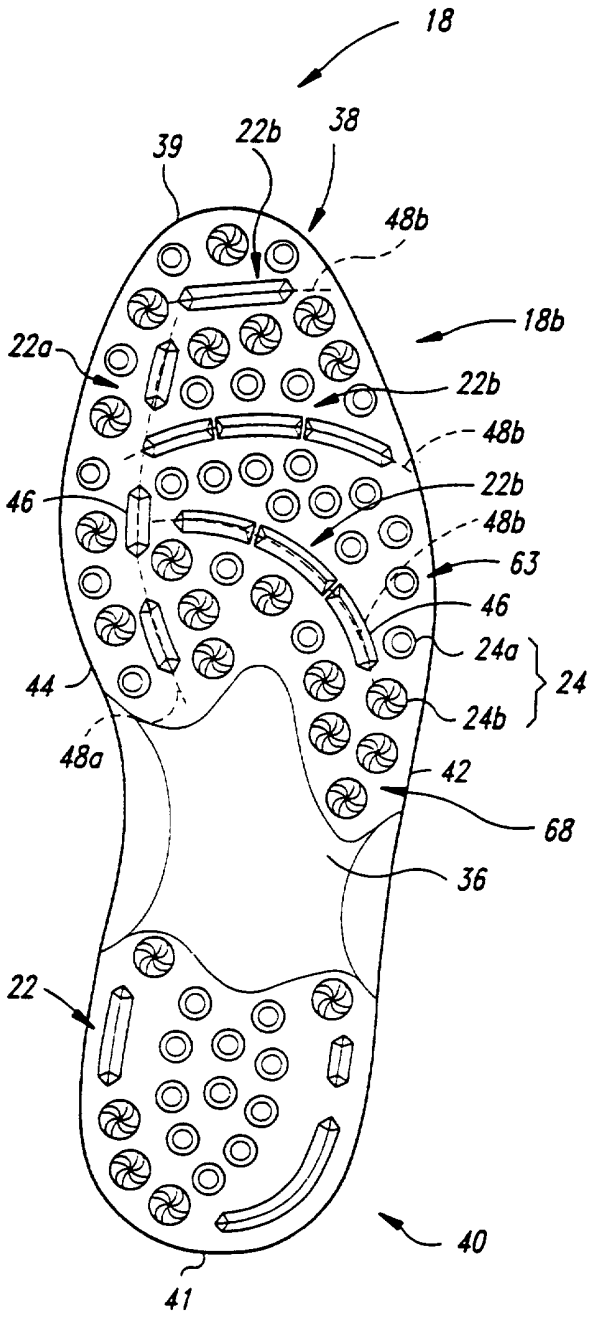
24b
24a
22
40
41

Fig. 4A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22b
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48b
18b
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22b
48b
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48a
42
68
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Fig. 4B

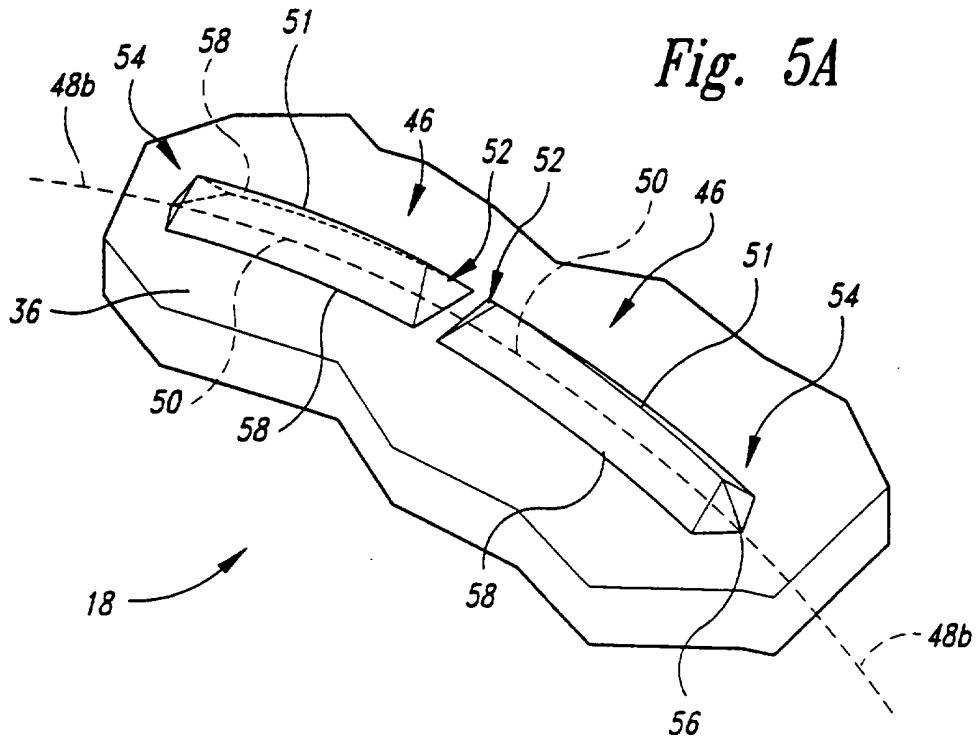


Fig. 5A

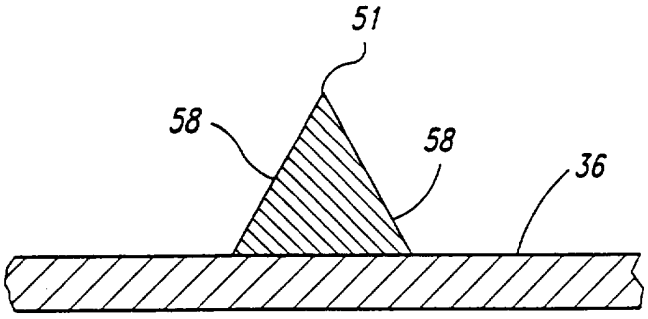


Fig. 5B

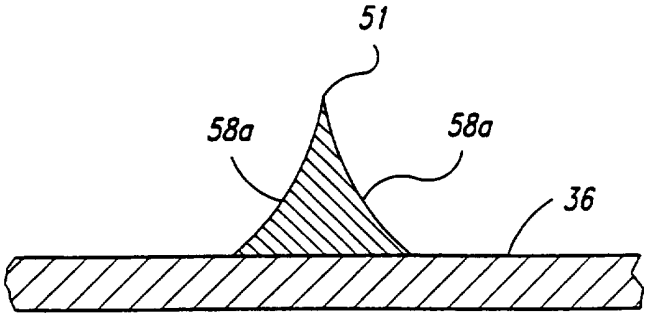
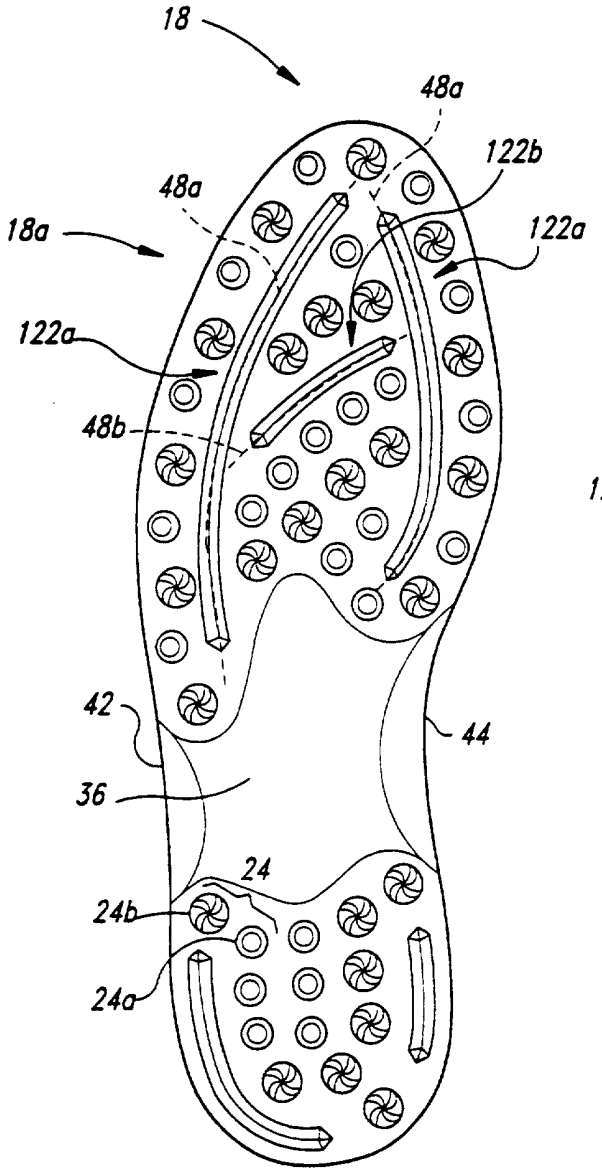


Fig. 5C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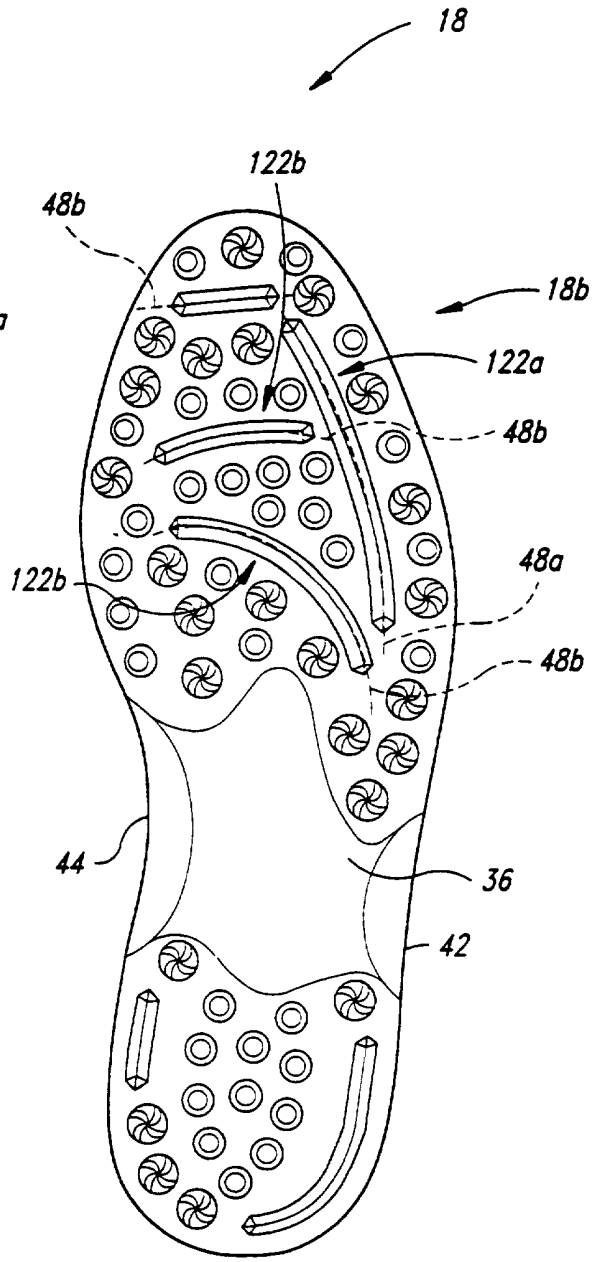
122b
18a
122a
122a
48b
42
44
36
24
24b
24a

Fig. 6A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122b
48b
18b
122a
48b
122b
48a
48b
44
36
42

Fig. 6B

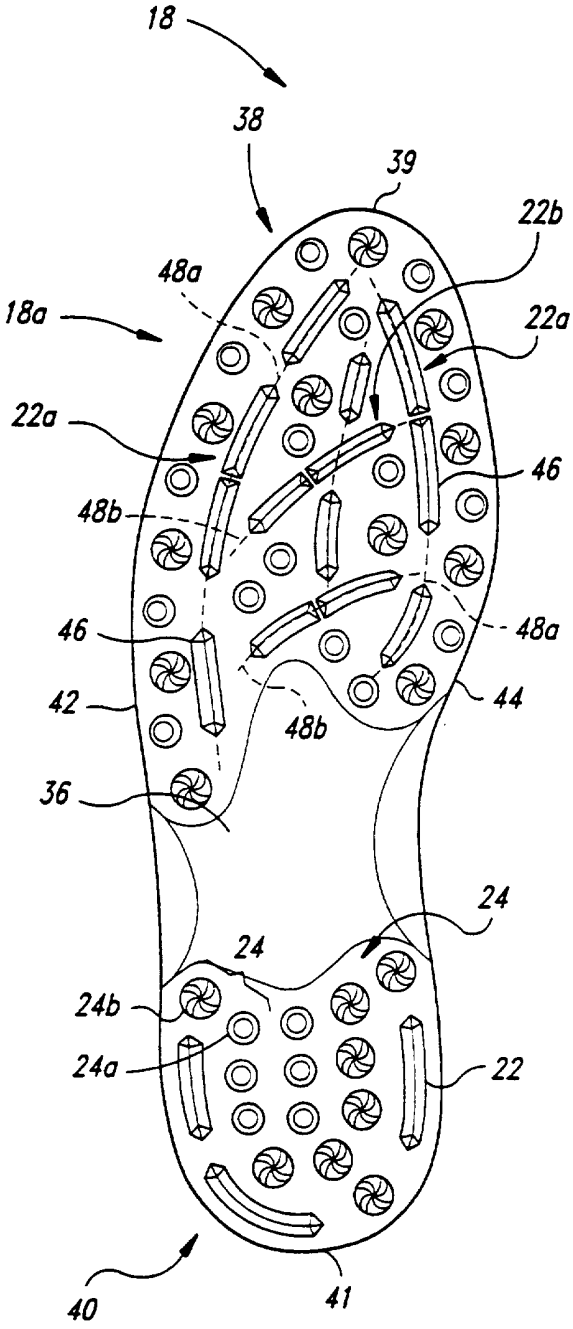
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Fig. 7A

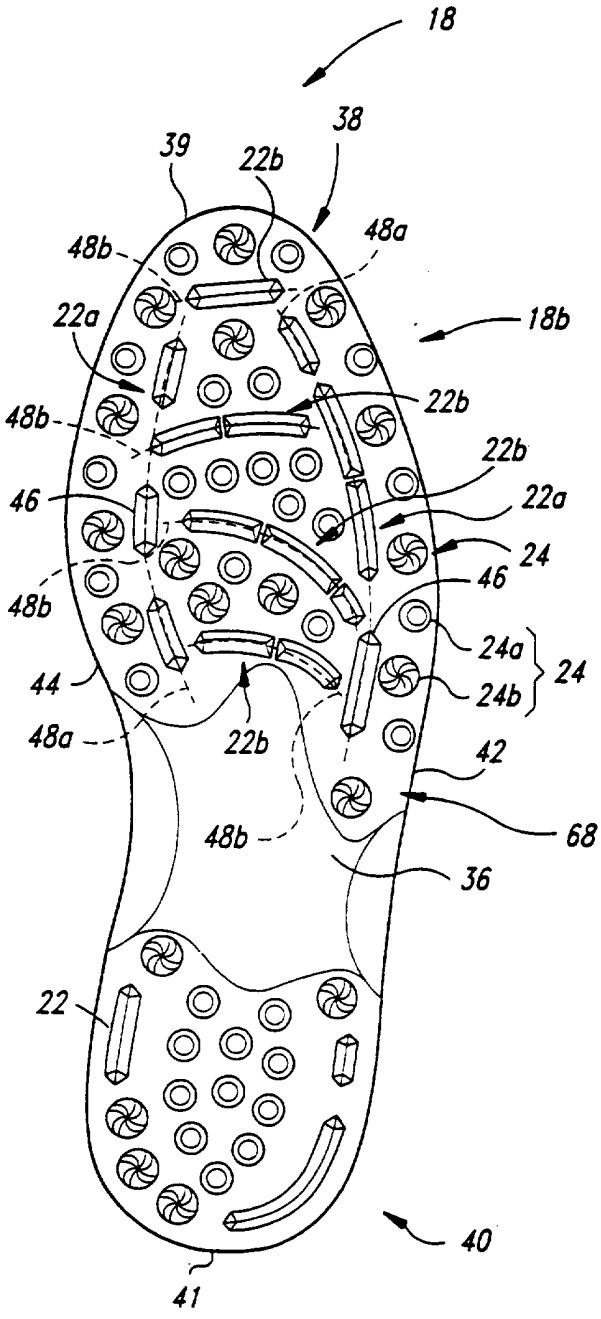
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Fig. 7B

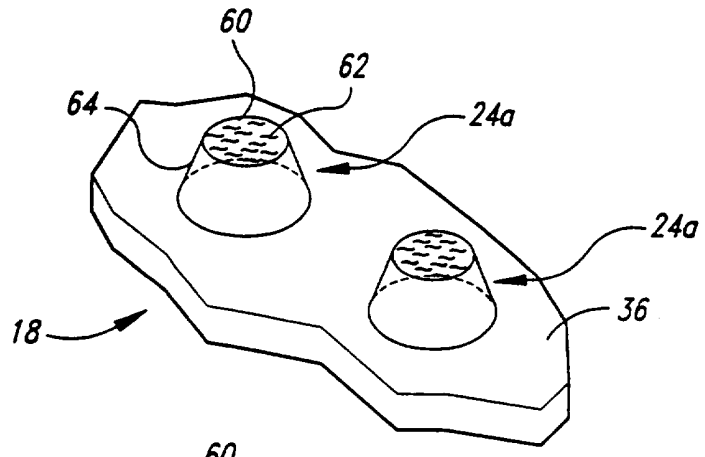

Fig. 8A

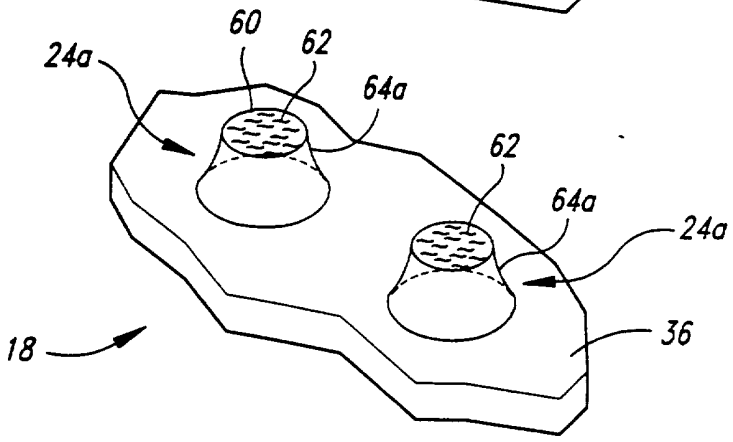

Fig. 8B

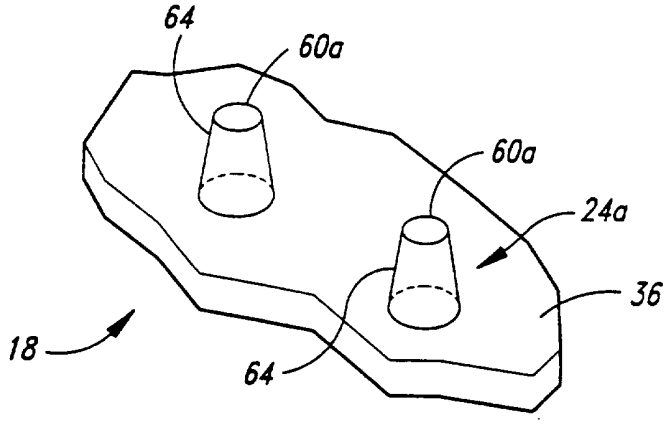

Fig. 8C

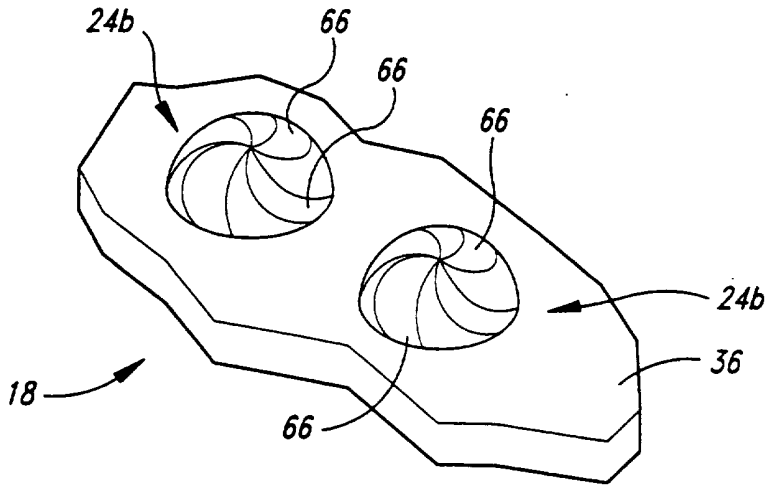

Fig. 8D

GOLF SHOES WITH ALIGNED TRACTION MEMBERS

TECHNICAL FIELD

The present invention is directed to an improved pair of golf shoes and golf shoe soles.

BACKGROUND OF THE INVENTION

Golfers typically wear specially designed golf shoes while playing on turf golf courses. The golf shoes are designed to fit comfortably on the golfer's feet and provide good traction to prevent the golfer from losing his or her balance on the potentially slick surface of the course. Accordingly, the soles of the golf shoes may be provided with spaced apart cleats which project downwardly therefrom to provide solid traction with the turf even if the turf is wet. These cleats are typically made of metal or hard plastic and placed at various locations around the shoe sole.

One problem with conventional golf shoes is that the cleats may tend to resist pivotal motion of the golfer's feet. As a result, the golfer's foot motion, particularly during the back swing, may be inhibited or altered. The power and accuracy of the golfer's swing may be reduced, and the golfer's game may suffer accordingly. Another problem with conventional golf shoes is that the shoes may not provide the proper balance of traction and stability which would permit the same pair of shoes to be used on both wet turf and a more rigid surface, such as a solid floor.

SUMMARY OF THE INVENTION

In brief, the present invention provides a pair of golf shoes and golf shoe soles with improved performance and usability both on and off the golf course. In a preferred embodiment, a pair of golf shoes having traction members arranged differently on one sole than the other is provided. One of the soles accordingly tends to restrict pivotal motion of the golf shoe to which it is attached, while the other sole tends to allow pivotal motion.

In one embodiment, the pair of soles comprises first and second soles, each having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions, and a second edge extending between the heel and toe portions opposite the first edge. The pair of soles further comprises a plurality of traction members, each elongated along a traction member axis. The plurality of traction members includes at least one first traction member connected to and depending from the first sole. The traction member axis of the first traction member is generally transverse to at least one of the first and second edges of the first sole. The first sole further includes at least two second traction members connected to and depending therefrom. The traction member axes of the second traction members are aligned generally parallel with at least one of the edges of the first sole and a number of second traction members is greater than a number of first traction members so as to resist pivotal motion of the first sole relative to the ground. The soles further include at least one third traction member connected to and depending from the second sole. The traction member axis of the third traction member is aligned generally parallel with at least one of the edges of the second sole. The second sole further includes at least two fourth traction members connected to and depending therefrom. The traction member axes of the fourth traction members are generally transverse to at least one of the first and second edges of the second sole and a number of fourth traction members is greater than a number of third traction members to allow pivotal motion of the second sole relative to the ground.

In a further aspect of this embodiment, the traction members comprise a plurality of spaced apart traction elements, each traction element being elongated along the traction member axis. In one embodiment, the traction members have a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis. The tapered shape includes a narrow portion spaced away from the sole to which the traction member is connected.

In another embodiment of the invention, the heel portion of the sole includes two spaced apart traction elements, each traction element being elongated along an axis which is generally aligned with one of the edges of the heel portion. The

heel portion further includes cleat members intermediate the traction elements. In a further aspect of this embodiment, the cleat members have a generally rounded cross-sectional shape when cut by a plane generally perpendicular to the heel portion.

The invention further provides a method for controlling motion of a golfer's feet. In one embodiment, the method comprises coupling at least one first elongated traction member to a first foot of the golfer. The first elongated traction member is elongated generally transverse to an edge of the first foot. The method further comprises coupling a number of second elongated traction members to the first foot of the golfer, the second elongated traction members being elongated generally parallel with an edge of the first foot and the number of second elongated traction members being greater than a number of first elongated traction members. The method further comprises coupling at least one third elongated traction member to a second foot of the golfer, the third elongated traction member being elongated generally parallel with an edge of the second foot, and coupling a number of fourth elongated traction members to the second foot, the fourth elongated traction members being elongated generally transverse to an edge of the second foot, the number of fourth elongated traction members being greater than a number of third elongated traction members. The method still further includes engaging the elongated traction members with the ground when the golfer swings a golf club, to resist pivotal motion of the first foot and allow pivotal motion of the second foot.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1A is a top isometric view of a right golf shoe in accordance with an embodiment of the invention.

Figure 1B is a top isometric view of a left golf shoe in accordance with an embodiment of the invention.

Figure 2A is a top plan view of a right sole for a golf shoe in accordance with an embodiment of the invention.

Figure 2B is a top plan view of a left sole for a golf shoe in accordance with an embodiment of the invention.

Figure 3A is an isometric view of a lower surface of the right sole shown in Figure 2A.

Figure 3B is an isometric view of a lower surface of the left sole shown in Figure 2B.

Figure 4A is a bottom plan view of the lower surface of the right sole shown in Figure 3A.

Figure 4B is a bottom plan view of the lower surface of the left sole shown in Figure 3B.

Figure 5A is an enlarged isometric view of a portion of a sole having traction elements in accordance with an embodiment of the invention.

Figure 5B is a cross-sectional view of one of the traction elements shown in Figure 5A.

Figure 5C is a cross-sectional view of a traction element in accordance with an alternate embodiment of the invention.

Figure 6A is a bottom plan view of the lower surface of a right sole in accordance with another embodiment of the invention.

Figure 6B is a bottom plan view of the lower surface of a left sole in accordance with another embodiment of the invention.

Figure 7A is a bottom plan view of the lower surface of a sole in accordance with still another embodiment of the invention.

Figure 7B is a bottom plan view of the lower surface of a sole in accordance with still another embodiment of the invention.

Figure 8A is an enlarged isometric view of a portion of a sole having flat cleat members in accordance with an embodiment of the invention.

Figure 8B is an enlarged isometric view of another embodiment of the flat cleat members shown in Figure 8A.

Figure 8C is an isometric view of yet another embodiment of the flat cleat members shown in Figure 8A.

Figure 8D is an isometric view of a portion of a sole having rounded cleat members in accordance with an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

As discussed above, the present invention is directed toward improved golf shoe shoes and soles. In a preferred embodiment, a pair of golf shoes, and more specifically a pair of golf shoe soles, enhances the ability of a golfer to pivot one foot while maintaining the other foot in a generally stationary position. As shown in Figures 1A and 1B, a pair of golf shoes in accordance with an embodiment of the invention includes a right shoe 12 and a left shoe 14. Each shoe generally includes an upper 16 attached to a sole 18. The soles 18 include a right sole 18a attached to the upper 16 of the right shoe 12 and a left sole 18b attached to the upper 16 of the left shoe 14. The right sole 18a and left sole 18b each include traction members 22 and cleat members 24 which project downwardly from the soles to enhance the pivotability and stability of the shoes, as will be discussed in greater detail below.

Figures 2A and 2B are top plan views of the right sole 18a and left sole 18b, respectively. The soles 18 each include a base portion 26 which may comprise a plastic, rubber, or other suitable material or combination of materials that is sufficiently flexible to be comfortable to the golfer (not shown), and sufficiently rigid to provide support for the golfer's feet. A lip 28 extends upwardly from the base portion 26 around an outer periphery of the base portion. The lip 28 is sized to fit around the upper 16 (Figures 1A-B) when the upper is attached to the sole 18. The base portion 26 further includes support ridges 30 which project upwardly from an interior region of the base portion 26. The support ridges 30 support the upper 16 and may be sized to elevate a heel portion of the upper relative to a toe portion of the upper. The support ridges 30 are separated by wells 32 which are provided to reduce the overall weight of the soles 18. Mounting apertures 34 are provided around the periphery of the base portion 26 interior to the lip 28 for mounting the uppers 16 to the soles 18.

The soles 18 each have a lower surface 36, as shown in isometric view in Figures 3A-B and in plan view in Figures 4A-B. The lower surface 36 includes a toe portion 38 positioned forward of a heel portion 40. An outside edge 42 extends between the toe portion 38 and heel portion 40 along the outside of the soles 18. An inside edge 44 extends between the toe and heel portions 38 and 40 along the inside of

the soles 18, opposite the outside edge 42. A rear edge 41 extends between the outside edge 42 and the inside edge 44 at the heel portion 40 and a forward edge 39 extends between the outside and inside edges of the toe portion 38.

The lower surface 36 further includes the traction members 22 and cleat members 24. The traction members 22 and cleat members 24 are preferably rigidly attached to the lower surface 36 and extend in a generally normal direction away from the lower surface so as to engage the ground and provide stability and/or pivotability to the soles 18, as discussed in greater detail below. The traction members 22 and cleat members 24 are preferably formed from a flexible, resilient material such as rubber, plastic, or other similar materials which are sufficiently rigid to provide support to the soles and sufficiently flexible in a lateral direction and compressible in the normal direction to be comfortable and to disengage from the ground when the golfer lifts his or her feet. In a preferred embodiment, the traction members 22 and cleat members 24 may comprise 3K Soft, a rubber compound having an abrasion level of 3000 NBS. 3K Soft is available from Jones & Vining of Nedham, Mass. The remainder of the soles 18 may comprise a rubber compound having an abrasion level of 90-110 NBS. The two rubber compounds may be integrally formed together in a single mold to provide a sole 18 which is generally rigid, and has traction members 22 and cleat members 24 which have a desired level of flexibility.

The traction members 22 may comprise a plurality of spaced apart traction elements 46 as shown in Figures 3A-B and 4A-B, and as discussed in greater detail below with reference to Figures 5A-C. The traction members 22 may also comprise continuous members, as discussed in greater detail below with reference to Figures 6A-B. In either case, the traction members 22 include axial traction members 22a and transverse traction members 22b. Each axial traction member 22a is elongated along an axial traction member axis 48a, shown schematically in dashed lines in Figures 3A-B and 4A-B. The axial traction member axis 48a may be aligned with the outside edge 42 or the inside edge 44 of the soles 18. The axial traction members 22a tend to resist lateral motion of the sole 18 transverse to the edges 42 and 44 when the

axial traction members engage the ground. The axial traction members 22a also tend to resist pivotal motion of the soles 18 about an axis normal to the plane of the soles. Accordingly, the axial traction members 22a tend to enhance the stability of the sole 18 from which they depend.

Each transverse traction member 22b is elongated along a transverse traction member axis 48b which may be aligned transverse to the inside and/or outside edges 42 and 44. The transverse traction members 22b tend to allow transverse or pivotal motion of the soles 18. Accordingly, the axial traction members 22a and transverse traction members 22b may be used in combination to either restrict or permit pivotal motion of the sole 18 to which they are attached.

As shown in Figures 3A and 4A, the toe portion 38 of the right sole 18a has two axial traction members 22a and a single transverse traction member 22b. Because the number of axial traction members 22a exceeds the number of transverse traction members 22b, the right sole 18a tends to restrict pivotal motion of the right shoe 12. Conversely, as shown in Figure 3B and 4B, the toe portion 38 of the left sole 18b has a single axial traction member 22a and three transverse traction members 22b. Because the number of transverse traction members 22b exceeds the number of axial traction members 22a, the left sole 18b tends to allow pivotal motion of the left shoe 14. In other embodiments, different absolute numbers of axial traction members 22a and transverse traction members 22b are used, as discussed below with reference to Figures 7A-B, so long as a greater number of axial traction members are used where pivotal motion is to be restricted and a greater number of transverse traction members are used where pivotal motion is to be unrestricted.

One advantage of the soles 18a and 18b shown in Figures 1A-B, 3A-B, and 4A-B is that the traction members 22 are arranged to promote stability of the right shoe 12 and pivotability of the left shoe 14. This is advantageous because it allows a right-handed golfer to more easily pivot his left shoe 14 as he swings his or her golf club backward in a back swing motion, prior to striking a golf ball. At the same time, the golfer's right shoe 12 resists pivotal motion and stabilizes the golfer's right foot as he or she pivots off the left foot. This is advantageous because a typical golfer may

shift 90% of his or her weight to the right foot during the backswing. As a result, the golfer's back swing may be less restricted, allowing the golfer to more completely extend the back swing and deliver a more powerful forward stroke. It is believed that the golfer's forward stroke may be made even more powerful and accurate because the golfer's right foot remains stable as he or she enters the forward stroke. The golfer accordingly has a more stable base from which to pivot as the golfer's weight is shifted in a forward direction during the course of the swing.

A further advantage of the golf shoe soles 18 shown in Figures 3A-B and Figures 4A-B is that, while each sole emphasizes either stability or pivotability, both soles have traction members 22 positioned to provide at least some degree of stability and at least some degree of pivotability. Accordingly, the right sole 18a, includes a transverse traction member 22b and does not completely restrict pivotal motion. Similarly, the left sole 18b includes an axial member 22a to provide a degree of stability. This feature is advantageous because, while the golfer may wish to emphasize pivotal motion in one foot and stability in the other, both feet may require a level of both stability and pivotability during different phases of the golfer's back swing and forward stroke.

As shown in Figures 3A-B and 4A-B, the right sole 18a and left sole 18b have traction members 22 configured for a right-handed golfer. In another embodiment, the configurations of the traction members 22 on the right sole 18a and the left sole 18b may be interchanged. This alternate embodiment may be desirable for left-handed golfers who wish to have a more stable left shoe 14 and a more pivotable right shoe 12. Accordingly, a further advantage of the golf shoe soles 18 shown in Figures 3A-B and 4A-B is that the soles may be designed to aid either a right-handed or left-handed golfer.

As discussed above, the traction members 22 may comprise elongated traction elements 46, which are shown in greater detail in Figure 5A. The traction elements 46 are each elongated along an element axis 50. The traction elements 46 preferably have an overall length of approximately one inch and an overall width of approximately 0.20 inch. The traction elements 46 may have other lengths, as shown in

Figures 4A-B, depending upon the particular location of the individual traction element. Traction elements 46 which form a transverse traction member 22b are preferably positioned such that the element axis 50 of each traction element 46 coincides with the transverse traction member axis 48b, as shown in Figure 5A. The element axes 50 of traction elements 46 forming an axial traction member 22a preferably coincide with the axial traction member axis 48a (Figures 4A-B).

Each traction element 46 has a ridge 51 which is preferably pointed so as to easily engage with and grip the golf course terrain, providing traction and stability. In a preferred embodiment, the ridge 51 is positioned approximately 0.20 inch from the lower surface 36 of the sole 18 such that the overall height of the traction elements is 0.20 inch. In other embodiments, the ridge 51 may be positioned a greater or lesser distance from the lower surface 36 to achieve the desired level of traction.

Each traction element 46 further includes a first end portion 52 and a second end portion 54 opposite the first end portion. The first and second end portions 52 and 54 of adjacent traction elements 46 are preferably canted away from each other as they extend away from the lower surface 36 of the sole 18. The end portions 52 and 54 accordingly resist the tendency to trap dirt and other particles between adjacent traction elements 46 because dirt or other particles will tend to fall away from the gaps between the traction elements as the sole 18 is moved away from the ground. Where the first end portion 52 is adjacent another traction element 46, it may be flat so as to further reduce any tendency for dirt to become trapped between adjacent traction elements 46. Where the second end portion 54 is not adjacent another traction element 46, it may have an end ridge line 56, as shown in Figure 5A, to further improve traction.

Each traction element 46 includes two elongated side surfaces 58 which are generally parallel to the element axis 50. The side surfaces 58 may be longer or shorter than shown in Figure 5A, as discussed above, so long as a side surface area of each traction element 46 tends to impede the motion of the sole transverse to the element axis 50 when the traction element is engaged with the ground. In one embodiment, the side surfaces 58 may be flat and canted toward each other as they extend away from the lower surface 36. Accordingly, the traction elements 46 have a

flat-sided triangular cross-sectional shape, as shown in Figure 5B, which may further reduce the tendency for dirt to become trapped against the traction elements. In another embodiment, shown in Figure 5C, the side surfaces 58a may have a curved shape. As shown in Figure 5C, the curved side surfaces 58a are canted toward each other as they extend away from the lower surface 36 to prevent dirt from becoming entrapped against the traction elements 46, as discussed above with reference to Figure 5B.

Figures 6A-B are plan views of a right sole 18a and left sole 18b, respectively, having continuous traction members 122a and 122b in accordance with another embodiment of the invention. As shown in Figures 6A-B, the traction members 122a and 122b are oriented generally as shown in Figures 3A-B but comprise single, continuous elements rather than a plurality of discrete elements. An advantage of the continuous traction members 122a and 122b when compared to traction members 22 comprising discrete traction elements 46 is that the traction members 122a and 122b may provide a greater degree of stability and resistance to motion transverse to the respective traction member axes 48a and 48b. Conversely, an advantage of the traction elements 46 shown in Figures 5A-5C is that the first and second end portions 52 and 54 of the traction elements may provide a greater degree of surface area with which to engage the golf course terrain and may accordingly provide better traction.

As shown in Figure 6B, the axial traction member 122a on the left sole 18b may be positioned adjacent to the outside edge 42 rather than the inside edge 44, as was shown in Figure 4B, without significantly affecting the performance of the left sole. In other embodiments, the traction members 122a and 122b may have other locations on the lower surfaces 36 of the soles 18, so long as they provide the desired level of stability and pivotability, respectively.

Figures 7A-B illustrate yet another embodiment of the golf shoe soles 18 having a greater number of traction members 22 than are shown in Figures 4A-B. The right sole 18a shown in Figure 7A has three axial traction members 22a and two transverse traction members 22b. Because the number of axial traction members 22a exceeds the number of transverse traction members 22b, the right sole 18a shown in Figure 7A tends to resist pivotal motion of the right shoe 12 to which the right sole is

attached. In a similar fashion, the left sole shown in Figure 7B has two axial traction members 22a and four transverse traction members 22b. Because the number of transverse traction members 22b exceeds the number of axial traction members 22a, the left sole 20 shown in Figure 7B tends to allow pivotal motion of the left shoe 14 to which the left sole is attached. In other embodiments, the right and left soles 18a and 18b may have a greater or lesser number of axial traction members 22a and transverse traction members 22b, so long as the number of axial traction members exceeds the number of transverse traction members for soles intended to provide resistance to pivotal motion, and the number of transverse traction members exceeds the number of axial traction members for soles intended to provide increased stability and less resistance to pivotal motion.

In still further embodiments, the number of axial traction members 22a need not exceed the number of transverse traction members 22b for a sole providing resistance to pivotal motion, so long as the surface area of the axial traction members 22a aligned with the axial traction member axes 48a is sufficient to resist pivotal motion of the sole to which the traction elements 46 are attached. In a similar fashion, the transverse traction members 22b need not outnumber the axial traction members 22a if the surface area of the axial traction members 22a aligned with the axial traction member axes 48a is sufficiently small so as not to impede the pivotal motion of a sole which is configured to allow pivotal motion.

As discussed previously with reference to Figures 3A-B and 4A-B, the soles 18 include cleat members 24 which depend from the lower surface 36 of the soles. The cleat members 24 include flat cleat members 24a and rounded cleat members 24b. The flat cleat members 24a are generally provided to enhance the stability of the sole to which they are attached, and the rounded cleat members 24b are generally provided to enhance pivotability of the soles to which the are attached, as discussed below with reference to Figures 8A-8D.

Referring to Figure 8A, the flat cleat members 24a have an end surface 60 which is generally parallel to the lower surface 36 of the sole. The end surface 60 may include roughness elements 62 which enhance the ability of the flat cleat members

24a to grip smooth surfaces. The flat cleat members 24a accordingly provide stability to the sole from which the flat cleat members depend, which may be particularly advantageous when the sole is used on flat smooth surfaces, such as hard floors. The flat cleat members 24a may also be positioned on portions of the sole which are preferably kept stable during the golfer's swing. Accordingly, the flat cleat members 24a may be concentrated in a central region 63 of the toe portion 38 of the left sole 18b, as shown in Figure 4B, to stabilize the central region during a right-handed golfer's swing. Because a typical right-handed golfer may shift 90% of his or her weight to the outside of the left shoe 14 at the conclusion of the swing, the concentration of flat cleat members 24b in the central region 63, and particularly near the outer edge 44, may improve the support of the golfer's feet. The flat cleat members 24a may be concentrated on the right sole 18a in a similar manner for left-handed golfers.

The flat cleat member 24a further includes a side surface 64 which may be partially conical as shown in Figure 8A. The conical side surface 64 allows the flat cleat member 24a to penetrate some distance into the golf course terrain, providing for increased traction. The side surface 64 is canted in a manner similar to that discussed previously with respect to the traction elements 46 shown in Figure 5A, so as to inhibit the tendency for the flat cleat members 24a to retain dirt, sod or other detritus.

In a preferred embodiment, the flat cleat members 24b have a generally circular cross-sectional shape which tapers from a diameter of approximately 0.40 near the lower surface 36 of the sole 18 to a diameter of approximately 0.25 inch near the end surface 60. The overall height of the flat cleat members is approximately 0.15-0.20 inch, though cleat members having heights outside this range may be used in alternate embodiments.

In another embodiment shown in Figure 8B, the flat cleat members 24a may include curved side surfaces 64a. The curved side surfaces 64a are canted in a manner similar to that discussed previously with reference to Figure 8A so as to reduce the tendency for the flat cleat members 24a to retain dirt particles. In other embodiments, the flat cleat members 24a may have side surfaces having other shapes which similarly tend to shed dirt particles. In yet another embodiment, shown in

Figure 8C, the flat cleat members 24a have conical side surfaces 64 and a smaller end surface 60a than is shown in Figure 8A. The flat cleat members 24a shown in Figure 8C may accordingly provide a greater deal of penetration into the terrain while providing a lesser degree of stability. A greater number of flat cleat members 24a of the type shown in Figure 8C may accordingly be used to provide the same level of stability as the flat cleat members shown in Figure 8C. In still other embodiments, the flat cleat members 24a may have other shapes which also provide for stability, traction, and a low affinity for dirt particles.

The rounded cleat members 24b are shown in greater detail in Figure 8D. The rounded cleat members 24b have flutes or grooves 66 formed therein which may have an arcuate shape, as shown in Figure 8D, or may have other shapes in other embodiments. The flutes or grooves 66 may enhance the traction provided by the rounded cleat members 24b by increasing the surface area of the rounded cleat members which is available to engage the terrain. The rounded cleats 24b have a diameter near the lower surface 36 of the sole 18 of approximately 0.5 inch and an overall height of approximately 0.20 inch. Accordingly, the heights of the traction elements 46, flat cleat members 24a and rounded clear members 24b are approximately equal in a preferred embodiment, though variations are possible in other embodiments.

The overall shape of the rounded cleat members 24b is rounded or hemispherical in a preferred embodiment. In other embodiments, the rounded cleat members 24b may have other generally curved overall shapes. The golfer may accordingly roll the golfer's foot more easily off the rounded cleat members 24b than the flat cleat members 24a or the traction members 22. In one embodiment, a greater number of rounded cleat members 24b may be provided near the inside edge 44 of the left sole 18b, as shown in Figures 3B and 4B. The concentration of rounded cleat members 24b in this region may allow a right-handed golfer to more easily rotate his or her weight toward the inside edge 44 of the left sole 18b while following through the swing. Similarly, the rounded cleat members 24b may be concentrated toward the outside edge 42 of a rear part 68 of the toe portion 38 of the left sole 18b to allow the golfer to more easily roll away from the outside edge and toward the inside edge 44.

For left-handed golfers, the concentrations of rounded cleat members 24b discussed above may be provided on the right sole 18a rather than the left sole 18b.

An advantage of the flat cleat members 24a is that they tend to stabilize the golf shoe to which they are attached. At the same time, the flat cleat members 24a may penetrate the surf slightly, providing for an increased degree of traction. An advantage of the rounded cleat members 24b is that they allow the golfer to more easily pivot or rotate his or her weight from one portion of the shoe to another. Such a rotational or pivotal motion is desirable during the golf swing so the golfer may more easily follow through during the swing, shifting his weight to impart more power to the ball.

In a manner similar to that discussed above with reference to the traction members 22a and 22b shown in Figures 3A-B and 4A-B, the flat cleat members 24a and rounded cleat members 24b may be used in combination to provide a level of stability and pivotability in the same shoe. The flat cleat members 24a may concentrated in regions of the sole where stability is of increased importance and the rounded cleat members 24b may be concentrated in regions where pivotability is of increased importance. Furthermore, the flat cleat members 24a and rounded cleat members 24b may be arranged in combination with the axial traction members 22a and transverse traction members 22b, as shown in Figures 3A-B, 4A-B, 6A-B and 7A-B. The foregoing components may be advantageously arranged to emphasize stability or pivotability, in a manner which may depend on the particular portion of the shoe to which the components are attached, and which may be tailored to account for the dexterity of the golfer.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

1. A pair of soles for golf shoes, comprising:

first and second soles, each having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge; and

a plurality of traction members, each elongated along a traction member axis, the plurality of traction members including

at least one first traction member connected to and depending from the first sole, the traction member axis thereof being generally transverse to least one of the first and second edges of the first sole,

at least two second traction members connected to and depending from the first sole, the traction member axes thereof being aligned generally parallel with at least one of the edges of the first sole, a number of second traction members being greater than a number of first traction members to resist pivotal motion of the first sole relative to the ground,

at least one third traction member connected to and depending from the second sole, the traction member axis thereof being aligned generally parallel with at least one of the edges of the second sole, and

at least two fourth traction members connected to and depending from the second sole, the traction member axes thereof being generally transverse to least one of the first and second edges of the second sole, a number of fourth traction members being greater than a number of third traction members to allow pivotal motion of the second sole relative to the ground.

2. The soles of claim 1 wherein the first sole is sized and shaped to be attached to a right shoe and the second sole is sized and shaped to be attached to a left shoe.

3. The soles of claim 1 wherein the first sole is sized and shaped to be attached to a left shoe and the second sole is sized and shaped to be attached to a right shoe.

4. The soles of claim 1 wherein at least one of the traction members comprises a plurality of spaced apart traction elements, each traction element being elongated along the traction member axis.

5. The soles of claim 1 wherein at least one of the traction members has a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis, the tapered shape having a narrow portion spaced away from the sole to which traction member is connected.

6. The soles of claim 5 wherein the tapered cross-sectional shape is generally triangular.

7. The soles of claim 1, further comprising at least one cleat member connected to and depending from at least one of the first and second soles to support the at least one of the first and second soles.

8. The soles of claim 7 wherein the cleat member has a tapered cross-sectional shape when cut by a plane generally perpendicular to the at least one of the first and second soles, the tapered shape having a narrow portion spaced away from the at least one of the first and second soles.

9. The soles of claim 7 wherein the cleat member has a generally circular cross-sectional shape when cut by a plane generally parallel to the at least one of the first and second soles.

10. The soles of claim 7 wherein the cleat member has a generally rounded cross-sectional shape when cut by a plane generally perpendicular to the at least one of the first and second soles.

11. The soles of claim 7 wherein the cleat member has a fluted surface.

12. The soles of claim 7 wherein the cleat member is positioned intermediate one of the traction members and an edge of one of the first and second soles with which the one traction member is aligned.

13. The soles of claim 1, further comprising a plurality of cleat members connected to and depending from at least one of the first and second soles to support the at least one of the first and second soles, the plurality of cleat members being aligned with one of the plurality of traction members.

14. The soles of claim 13 wherein the plurality of cleat members are positioned intermediate the one traction member and an edge of the one sole proximate the one traction member.

15. The soles of claim 1 wherein at least one of the first and second edges of at least one of the first and second soles is at least partly curved.

16. The soles of claim 1 wherein at least one of the traction members has a first end portion and a second end portion opposite the first end portion, the first and second end portions each having a tapered shape tapering from a wide region adjacent the sole to which the one traction member is connected to a narrow region spaced apart from the sole to which the traction member is connected, the narrow regions of the first and second end portions being canted toward each other.

17. The soles of claim 1 wherein at least one traction member has a first and second end portion positioned on the traction member axis, the first end portion being opposite the second end portion, the traction member being continuous between the first and second end portions.

18. The soles of claim 1 wherein at least one traction member is integrally formed with one of the first and second soles.

19. A sole for a golf shoe, comprising:

a heel portion attachable to a golf shoe, the heel portion having a first edge, a second edge opposite the first edge and a third edge intermediate the first and second edges;

a traction member connected to and depending from the heel portion, the traction member being elongated along a traction member axis generally aligned with at least one of the edges, the traction member being positioned proximate at least one of the edges to stabilize the heel portion; and

a plurality of spaced apart cleat members connected to and depending from the heel portion, the cleat members defining a second axis aligned with and proximate to at least one of the edges.

20. The sole of claim 19 wherein the traction member has a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis, the tapered shape having a narrow portion spaced away from the heel portion.

21. The sole of claim 19 wherein at least one cleat member has a tapered cross-sectional shape when cut by a plane generally perpendicular to the heel portion, the tapered cross-sectional shape having a narrow portion spaced away from the heel portion.

22. The sole of claim 19, wherein the traction member comprises at least two spaced apart traction elements, each traction element being elongated along the traction member axis.

23. The sole of claim 19, wherein the traction member comprises two spaced apart traction elements, each traction element being elongated along the traction member axis, the cleat members being intermediate the two traction elements.

24. The sole of claim 19 wherein the cleat members have a generally rounded cross-sectional shape when cut by a plane generally perpendicular to the heel portion.

25. A pair of soles for golf shoes, comprising:

a first heel portion attachable to a first golf shoe, the first heel portion having a first edge, a second edge opposite the first edge and a third edge intermediate the first and second edges;

a second heel portion attachable to a second golf shoe, the second heel portion having a first edge, a second edge opposite the first edge and a third edge intermediate the first and second edges;

a first traction member connected to and depending from the first heel portion, the first traction member being elongated along a first axis generally aligned with at least one of the edges of the first heel portion, the first traction member being positioned proximate at least one of the edges of the first heel portion;

a plurality of first cleat members connected to and depending from the first heel portion, the first cleat members defining a second axis aligned with and proximate to at least one of the edges of the first heel portion, the first cleat members being spaced apart to allow pivotal motion of the first heel portion;

a plurality of spaced apart second cleat members connected to and depending from the second heel portion; and

a second traction member connected to and depending from the second heel portion, the second traction member being elongated along a third axis generally aligned with at least one of the edges of the second heel portion, the second traction member being positioned proximate at least one of the edges of the second heel portion and intermediate the one edge and the plurality of second cleat members to stabilize the second heel portion.

26. The soles of claim 25 wherein the first heel portion is sized and shaped to be attached to a left shoe and the second heel portion is sized and shaped to be attached to a right shoe.

27. The soles of claim 25 wherein the first heel portion is sized and shaped to be attached to a right shoe and the second heel portion is sized and shaped to be attached to a left shoe.

28. The soles of claim 25, wherein the at least one of the first and second traction member comprises two spaced apart elongated traction elements.

29. A pair of golf shoes, comprising:

a first shoe having a first upper portion attached to a first sole, the first sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions, a second edge extending between the heel and toe portions opposite the first edge;

a second shoe having a second upper portion attached to a second sole, the second sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions, a second edge extending between the heel and toe portions opposite the first edge; and

a plurality of traction members, each elongated along a traction member axis, the plurality of traction members including

at least one first traction member connected to and depending from the first sole, the traction member axis thereof being generally transverse to least one of the first and second edges of the first sole,

at least two second traction members connected to and depending from the first sole, the traction member axes thereof being aligned generally parallel with at least one of the edges of the first sole, a number of second traction members being greater than a number of first traction members to resist pivotal motion of the first sole relative to the ground,

at least one third traction member connected to and depending from the second sole, the traction member axis thereof being aligned generally parallel with at least one of the edges of the second sole, and

at least two fourth traction members connected to and depending from the second sole, the traction member axes thereof being generally transverse to least one of the first and second edges of the second sole, a number of fourth traction members being greater than a number of third traction members to allow pivotal motion of the second sole relative to the ground.

30. The shoes of claim 29 wherein the first shoe is a right shoe and the second shoe is a left shoe.

31. The shoes of claim 29 wherein the first shoe is a left shoe and the second shoe is a right shoe.

32. The shoes of claim 29 wherein at least one of the traction members has a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis thereof, the tapered shape having a narrow portion spaced away from the sole to which the traction member is connected.

33. The shoes of claim 29 wherein at least one of the traction members is fixedly attached to the first sole, the traction member extending away from the sole to which it is connected in a direction substantially normal to the sole and being bendable away from the normal direction.

34. A golf shoe, comprising:

a sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge;

a plurality of traction elements connected to and depending from the sole, each traction element being elongated along an element axis and having a surface area aligned with the element axis thereof, traction elements in a first group of the plurality of traction elements being substantially aligned with at least one of the first and second edges of the sole to resist pivotal motion of the sole, traction elements in a second group of the plurality of traction elements having the element axes thereof extending between the first and second edges to allow pivotal motion of the sole, a combined surface area of the traction elements of the first group being different than a combined surface area of the traction elements of the second group.

35. A pair of golf shoes, comprising:

a first shoe having a first sole, the first sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge, the first sole further having a plurality of first traction elements connected to and depending therefrom, each first traction element being elongated along a first element axis and having a surface area aligned with the first element axis, the plurality of first traction elements including a first group and a second group, first traction elements of the first group having the element axes thereof generally aligned with at least one of the first and second edges of the first sole to resist pivotal motion of the first sole, first traction elements of the second group having the element axes thereof being generally transverse to at least one of the first and second edges of the first sole to allow pivotal motion of the first sole, a combined surface area of the first traction elements of the first group being greater than a combined surface area of the first traction elements of the second group to resist pivotal motion of the first sole; and

a second shoe having a second sole, the second sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge, the second sole having a plurality of second traction elements connected to and depending therefrom, each second traction element being elongated along a second element axis and having a surface area aligned with the second element axis, the plurality of second traction elements including a first group and a second group, second traction elements of the first group having the element axes thereof generally aligned with at least one of the first and second edges of the second sole to resist pivotal motion of the second sole, and second traction elements of the second group having the element axes thereof being generally transverse to at least one of first and second edges of the second sole to allow pivotal motion of the second sole, a combined surface area of the traction elements of the second group being greater than a combined surface area of the traction elements of the first group to allow pivotal motion of the second sole.

36. A shoe sole for a golf shoe, comprising:

a base portion defining a base portion plane;

a plurality of flexible projections comprising at least one traction member elongated in a direction generally parallel to the base portion plane and at least one cleat member, the projections being fixedly attached to the base portion, the projections depending from the base portion and extending away from the base portion in a direction substantially normal to the base portion plane and being bendable away from the normal direction.

37. The shoe sole of claim 36 wherein the at least one cleat member has a generally circular cross-sectional shape when cut by a plane generally parallel to the base portion plane.

38. The shoe sole of claim 36 wherein at least one of the projections comprises a rubber material.

39. A method for controlling motion of a golfer's feet, comprising:

coupling at least one first elongated traction member to a first foot of the golfer, the first elongated traction member being elongated generally transverse to an edge of the first foot and coupling number of second elongated traction members to the first foot of the golfer, the second elongated traction members being elongated generally parallel with an edge of the first foot, the number of second elongated traction members being greater than a number of first elongated traction members;

coupling at least one third elongated traction member to a second foot of the golfer, the third elongated traction member being elongated generally parallel with an edge of the second foot and coupling a number of fourth elongated traction members to the second foot, the fourth elongated traction members being elongated generally transverse to an edge of the second foot, the number of fourth elongated traction members being greater than a number of third elongated traction members; and

engaging the elongated traction members with the ground when the golfer swings a golf club, to resist pivotal motion of the first foot and allow pivotal motion of the second foot.

40. The method of claim 39 wherein the step of coupling the first elongated traction members and coupling the second elongated traction members includes providing the first and second elongated traction members on a sole of a shoe and placing the shoe on the first foot.

41. The method of claim 39 wherein the golfer has a right-handed swing and the step of coupling the first and second elongated traction members includes coupling the first and second elongated traction members to the right foot of the golfer and the step of coupling the third and fourth elongated traction members includes coupling the third and fourth elongated traction members to the left foot of the golfer.

42. The method of claim 39 wherein the golfer has a left-handed swing and the step of coupling the first and second elongated traction members includes coupling the first and second elongated traction members to the left foot of the golfer and the step of coupling the third and fourth elongated traction members includes coupling the third and fourth elongated traction members to the right foot of the golfer.

43. The method of claim 39, further comprising coupling lug members to at least one of the first and second feet to stabilize the one of the first and second feet when the golfer walks.

Amendments to the claims have been filed as follows

1. A pair of soles for golf shoes, comprising:

first and second soles, each having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge; and

a plurality of traction members, each elongated along a traction member axis, the plurality of traction members including

at least one first traction member connected to and depending from the first sole, the traction member axis thereof being generally transverse to least one of the first and second edges of the first sole,

at least two second traction members connected to and depending from the first sole, the traction member axes thereof being aligned generally parallel with at least one of the edges of the first sole, a number of second traction members being greater than a number of first traction members to resist pivotal motion of the first sole relative to the ground,

at least one third traction member connected to and depending from the second sole, the traction member axis thereof being aligned generally parallel with at least one of the edges of the second sole, and

at least two fourth traction members connected to and depending from the second sole, the traction member axes thereof being generally transverse to least one of the first and second edges of the second sole, a number of fourth traction members being greater than a number of third traction members to allow pivotal motion of the second sole relative to the ground.

2. The soles of claim 1 wherein the first sole is sized and shaped to be attached to a right shoe and the second sole is sized and shaped to be attached to a left shoe.

3. The soles of claim 1 wherein the first sole is sized and shaped to be attached to a left shoe and the second sole is sized and shaped to be attached to a right shoe.

4. The soles of claim 1 wherein at least one of the traction members comprises a plurality of spaced apart traction elements, each traction element being elongated along the traction member axis.

5. The soles of claim 1 wherein at least one of the traction members has a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis, the tapered shape having a narrow portion spaced away from the sole to which traction member is connected.

6. The soles of claim 5 wherein the tapered cross-sectional shape is generally triangular.

7. The soles of claim 1, further comprising at least one cleat member connected to and depending from at least one of the first and second soles to support the at least one of the first and second soles.

8. The soles of claim 7 wherein the cleat member has a tapered cross-sectional shape when cut by a plane generally perpendicular to the at least one of the first and second soles, the tapered shape having a narrow portion spaced away from the at least one of the first and second soles.

9. The soles of claim 7 wherein the cleat member has a generally circular cross-sectional shape when cut by a plane generally parallel to the at least one of the first and second soles.

10. The soles of claim 7 wherein the cleat member has a generally rounded cross-sectional shape when cut by a plane generally perpendicular to the at least one of the first and second soles.

11. The soles of claim 7 wherein the cleat member has a fluted surface.

12. The soles of claim 7 wherein the cleat member is positioned intermediate one of the traction members and an edge of one of the first and second soles with which the one traction member is aligned.

13. The soles of claim 1, further comprising a plurality of cleat members connected to and depending from at least one of the first and second soles to support the at least one of the first and second soles, the plurality of cleat members being aligned with one of the plurality of traction members.

14. The soles of claim 13 wherein the plurality of cleat members are positioned intermediate the one traction member and an edge of the one sole proximate the one traction member.

15. The soles of claim 1 wherein at least one of the first and second edges of at least one of the first and second soles is at least partly curved.

16. The soles of claim 1 wherein at least one of the traction members has a first end portion and a second end portion opposite the first end portion, the first and second end portions each having a tapered shape tapering from a wide region adjacent the sole to which the one traction member is connected to a narrow region spaced apart from the sole to which the traction member is connected, the narrow regions of the first and second end portions being canted toward each other.

17. The soles of claim 1 wherein at least one traction member has a first and second end portion positioned on the traction member axis, the first end portion being opposite the second end portion, the traction member being continuous between the first and second end portions.

18. The soles of claim 1 wherein at least one traction member is integrally formed with one of the first and second soles.

19. A pair of soles for golf shoes, comprising:

a first heel portion attachable to a first golf shoe, the first heel portion having a first edge, a second edge opposite the first edge and a third edge intermediate the first and second edges;

a second heel portion attachable to a second golf shoe, the second heel portion having a first edge, a second edge opposite the first edge and a third edge intermediate the first and second edges;

a first traction member connected to and depending from the first heel portion, the first traction member being elongated along a first axis generally aligned with at least one of the edges of the first heel portion, the first traction member being positioned proximate at least one of the edges of the first heel portion;

a plurality of first cleat members connected to and depending from the first heel portion, the first cleat members defining a second axis aligned with and proximate to at least one of the edges of the first heel portion, the first cleat members being spaced apart to allow pivotal motion of the first heel portion;

a plurality of spaced apart second cleat members connected to and depending from the second heel portion; and

a second traction member connected to and depending from the second heel portion, the second traction member being elongated along a third axis generally aligned with at least one of the edges of the second heel portion, the second traction member being positioned proximate at least one of the edges of the second heel portion

and intermediate the one edge and the plurality of second cleat members to stabilize the second heel portion.

20. The soles of claim 19 wherein the first heel portion is sized and shaped to be attached to a left shoe and the second heel portion is sized and shaped to be attached to a right shoe.

21. The soles of claim 19 wherein the first heel portion is sized and shaped to be attached to a right shoe and the second heel portion is sized and shaped to be attached to a left shoe.

22. The soles of claim 19, wherein the at least one of the first and second traction member comprises two spaced apart elongated traction elements.

23. A pair of golf shoes, comprising:

a first shoe having a first upper portion attached to a first sole, the first sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions, a second edge extending between the heel and toe portions opposite the first edge;

a second shoe having a second upper portion attached to a second sole, the second sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions, a second edge extending between the heel and toe portions opposite the first edge; and

a plurality of traction members, each elongated along a traction member axis, the plurality of traction members including

at least one first traction member connected to and depending from the first sole, the traction member axis thereof being generally transverse to least one of the first and second edges of the first sole,

at least two second traction members connected to and depending from the first sole, the traction member axes thereof being aligned generally parallel with at least

one of the edges of the first sole, a number of second traction members being greater than a number of first traction members to resist pivotal motion of the first sole relative to the ground,

at least one third traction member connected to and depending from the second sole, the traction member axis thereof being aligned generally parallel with at least one of the edges of the second sole, and

at least two fourth traction members connected to and depending from the second sole, the traction member axes thereof being generally transverse to least one of the first and second edges of the second sole, a number of fourth traction members being greater than a number of third traction members to allow pivotal motion of the second sole relative to the ground.

24. The shoes of claim 23 wherein the first shoe is a right shoe and the second shoe is a left shoe.

25. The shoes of claim 23 wherein the first shoe is a left shoe and the second shoe is a right shoe.

26. The shoes of claim 23 wherein at least one of the traction members has a tapered cross-sectional shape when cut by a plane generally perpendicular to the traction member axis thereof, the tapered shape having a narrow portion spaced away from the sole to which the traction member is connected.

27. The shoes of claim 24 wherein at least one of the traction members is fixedly attached to the first sole, the traction member extending away from the sole to which it is connected in a direction substantially normal to the sole and being bendable away from the normal direction.

28. A pair of golf shoes, comprising:

a first shoe having a first sole, the first sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge, the first sole further having a plurality of first traction elements connected to and depending therefrom, each first traction element being elongated along a first element axis and having a surface area aligned with the first element axis, the plurality of first traction elements including a first group and a second group, first traction elements of the first group having the element axes thereof generally aligned with at least one of the first and second edges of the first sole to resist pivotal motion of the first sole, first traction elements of the second group having the element axes thereof being generally transverse to at least one of the first and second edges of the first sole to allow pivotal motion of the first sole, a combined surface area of the first traction elements of the first group being greater than a combined surface area of the first traction elements of the second group to resist pivotal motion of the first sole; and

a second shoe having a second sole, the second sole having a heel portion, a toe portion forward of the heel portion, a first edge extending between the heel and toe portions and a second edge extending between the heel and toe portions opposite the first edge, the second sole having a plurality of second traction elements connected to and depending therefrom, each second traction element being elongated along a second element axis and having a surface area aligned with the second element axis, the plurality of second traction elements including a first group and a second group, second traction elements of the first group having the element axes thereof generally aligned with at least one of the first and second edges of the second sole to resist pivotal motion of the second sole, and second traction elements of the second group having the element axes thereof being generally transverse to at least one of first and second edges of the second sole to allow pivotal motion of the second sole, a combined surface area of the traction elements of the second group being greater than a combined surface area of the traction elements of the first group to allow pivotal motion of the second sole.

29. A method for controlling motion of a golfer's feet, comprising:

coupling at least one first elongated traction member to a first foot of the golfer, the first elongated traction member being elongated generally transverse to an edge of the first foot and coupling number of second elongated traction members to the first foot of the golfer, the second elongated traction members being elongated generally parallel with an edge of the first foot, the number of second elongated traction members being greater than a number of first elongated traction members;

coupling at least one third elongated traction member to a second foot of the golfer, the third elongated traction member being elongated generally parallel with an edge of the second foot and coupling a number of fourth elongated traction members to the second foot, the fourth elongated traction members being elongated generally transverse to an edge of the second foot, the number of fourth elongated traction members being greater than a number of third elongated traction members; and

engaging the elongated traction members with the ground when the golfer swings a golf club, to resist pivotal motion of the first foot and allow pivotal motion of the second foot.

30. The method of claim 29 wherein the step of coupling the first elongated traction members and coupling the second elongated traction members includes providing the first and second elongated traction members on a sole of a shoe and placing the shoe on the first foot.

31. The method of claim 29 wherein the golfer has a right-handed swing and the step of coupling the first and second elongated traction members includes coupling the first and second elongated traction members to the right foot of the golfer and the step of coupling the third and fourth elongated traction members includes coupling the third and fourth elongated traction members to the left foot of the golfer.

32. The method of claim 29 wherein the golfer has a left-handed swing and the step of coupling the first and second elongated traction members includes

coupling the first and second elongated traction members to the left foot of the golfer and the step of coupling the third and fourth elongated traction members includes coupling the third and fourth elongated traction members to the right foot of the golfer.

33. The method of claim 29, further comprising coupling lug members to at least one of the first and second feet to stabilize the one of the first and second feet when the golfer walks.

The Patent Office

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Claims searched:	1-18, 23-33	**Date of search:**	6 November 1998

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): A3B.

Int Cl (Ed.6): A43B 5/00, 13/22, 13/24, 13/26; A43C 15/02, 15/04, 15/16.

Other: -

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
A	US 5 711 094 A	(GROSSMAN). See particularly claim 1.	
A	US 4 885 851 A	(PETERSON). See particularly claim 2.	
A	US 4 527 345 A	(LOPEZ). See particularly Figures 1-4.	
A	US 4 367 600 A	(CROSS *et al*). See particularly Figures 2 & 3.	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.