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Multipurpose Athletic Shoe

INVENTOR: Mansfield, Kyle Matthew - HC67 Box 1, Lapoint, Utah, United States (US)

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LEGAL-REP: GREENBERG & LIEBERMAN, LLC - 2141 WISCONSIN AVE, N.W. SUITE C-2, WASHINGTON, District of Columbia, 20007

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ENGLISH-ABST:

A multi-purpose athletic shoe with built-in, integral ankle support. The shoe can be used for a variety of athletic purposes, ranging from basketball to soccer to walking and running, by a system of removable, interchangeable traction devices on the sides and bottom of the shoe. The present invention would also eliminate the need to wear a separate brace or bandage around the ankle, since the shoe itself serves as a brace for the wearer. The brace is inseparable from the shoe, which is exactly what provides the kind of ankle support a user would need for various kinds of athletic activity.

NO-OF-CLAIMS: 8

NO-DRWNG-PP: 3

SUMMARY:

FIELD OF THE INVENTION

[0001] The present invention relates to an athletic shoe; namely, to a multi-purpose athletic shoe with an integrated ankle brace and removable traction devices. Background of the Invention

[0002] Athletic footwear has become more and more specialized for the different needs of consumers. The prior art has attempted to solve the problem of preventing injury by creating designs that rise above the ankle in order to support it, but these athletic shoes have tended to be specialized for only one sport; furthermore, many athletic shoes require that a user wear a separate brace.

[0003] U.S. Pat. No. 5,177,884, issued to Pierre Rullier on Jan. 12, 1993, shows a cross-country ski shoe, or rather a boot, with a rigid upper half made of synthetic material and a collar, which surrounds the lower leg of the user. Rullier's device is intended for the purposes of walking (trekking) and particularly cross-country skiing, but is not intended for other athletic activities, and is not adaptable to other uses. Therefore Rullier's invention does not propose a solution to creating a supportive athletic shoe that does not impede rigorous athletic movement and can be used for multiple activities.

[0004] U.S. Pat. No. 5,430,960, issued to Willie C. Richardson on Jul. 11, 1995, describes a lightweight athletic shoe with foot and ankle support systems. The support system within this shoe has a removable ankle support and the model is known as a "high top." Similarly, U.S. Pat. No. 5,678,330, issued to Van Dyke et al. on Oct. 21, 1997, is a shoe with integral ankle support and improved ankle brace apparatus. The ankle brace is also removable. While both of these shoes aim to address the problem of ankle support, the fact that the ankle supports are removable, and that these models themselves are created in a "high top" fashion, could hinder the overall effectiveness of the support of the shoe.

[0005] There are indeed devices that have been created to support the ankle, but other athletic activities may require more structure than a lightweight, removable ankle support. There is therefore a need for a brace that is a supportive athletic shoe which does not impede rigorous movement, at the same time serving as an enhanced piece of footwear that can be used for multiple purposes.

[0006] A person who plays soccer will have a shoe with cleats, but needs a distinct athletic shoe for basketball, hiking or even playing racquet ball. The "high top" model used by basketball players--which supports quick, lateral movements often used in the game--is generally not compatible with the needs of a soccer player, who needs a shoe with cleats to provide adequate traction on grassy fields. Hence, a first problem arises when some athletic shoes are not necessarily useful for every type of sport.

[0007] A second problem appears when a user needs a versatile athletic shoe that continues to support the ankle. In addition to the various types of athletic shoes available to consumers, many professional and non-professional athletes will require the use of a bandage or brace to support the ankle and prevent injury while engaging in physical activity. These braces may range from simple bandages or elastic tape that are wound around the ankle, to a brace that is similar in fashion to shin guards, to an orthopedic structure made of a rigid material.

[0008] These bandages and braces may create undesired bulkiness although they might not be very effective in supporting the ankle itself, since they are not connected to the shoe. Taping an ankle has also caused users to become bruised or injured from the use of tape, since it can cut into the skin. Ideally, an athletic shoe would support the ankle without the user having to wear or tape an additional brace onto the ankle. The material used to support the ankle would be not too heavy as to constrict movement during activity, and not too light as to provide an insecure fit should the user strain or sprain the ankle.

[0009] Heretofore, there has been no such design to address both of these problems simultaneously.

SUMMARY OF THE INVENTION

[0010] It is an object of the present invention to provide an athletic shoe that does not have a removable, but rather integrated brace, to both support the ankle and prevent injury. It is also an object of the present invention to create a shoe that can be used for a variety of athletic activities.

[0011] The present invention solves the problem of having an athletic shoe that can be used for a variety of activities and which also serves as a permanent brace for the ankle.

[0012] The present invention eliminates the necessity of wearing a separate bandage or brace through the integrated support of the shoe, and it reduces the need to have several different shoes for various athletic activities, through a system of removable cleats. The present invention has two principle parts: the shoe, which is essentially an integrated brace with a hinge to support the ankle, and the traction devices, which create functionality.

[0013] Unlike a separate bandage/brace, the integrated brace of the present invention does not impede the athlete's ability to perform, due to the limited movement of the brace in the shoe. The present invention has an integrated brace which provides for a more cohesive support system for the foot and ankle, thereby reducing a) the bulkiness of the brace worn over the shoe and b) potential irritation, pinching or chafing of the skin between the brace and shoe. In the present invention, since the brace is inseparable from the shoe, there is greater fluidity in traction and movement and a better grip of the shoe on the foot. This reduces an athlete's chances of injury and increases their performance and confidence. The present invention also facilitates the process of applying a separate bandage/brace to the ankle, by reducing two steps (of applying the bandage and subsequently putting on the shoe) to just one. The present invention is also intended for use as a preventative measure in the face of injury.

[0014] Moreover, the present invention is adaptable to a variety of athletic activities, as the shoe has removable, interchangeable cleats that are screwed into the sides and bottom of the present invention. The user may therefore customize his/her shoe depending on which kind of sole is necessary for their purposes. These purposes may include, but not be limited to, the present invention being used as a walking, running, basketball, hiking, soccer, or court sole shoe.

[0015] The main idea behind the present invention is to create a brace that is worn as a shoe, not a shoe that can be worn as a brace, as previous patents have already accomplished. The present invention is about the height of a boot, not like the typical "high-top" model described in the aforementioned patents. The material of the shoe must rise above the ankle and it must be somewhat rigid if it is to fully protect it. In this way, the present invention is an improvement on previous designs since in essence the brace is the shoe. The present invention is an improvement on both the "high top" model and traditional ankle braces, because it combines the necessary ankle support of the shoe with the practical and versatile uses of the removable traction devices. It should be worn by any person who engages in physically demanding activities from football to basketball to hiking.

[0016] The present invention can also reduce costs for a user. Instead of having to purchase both a brace and a pair of athletic shoes, the present invention obviates the need for two distinct objects to fully support the foot and ankle.

DRWDESC:

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 shows a first embodiment of the present invention.

[0018] FIG. 2 shows a second embodiment of the present invention.

[0019] FIG. 3 is an embodiment of the present invention's integrated upper and lower braces.

DETDESC:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0020] As shown in FIG. 1, the present invention has a shoe (10), which houses an integrated upper brace (20) and lower brace (30), that are connected by two circular hinges (25), and the sole (40) can be composed of traction devices, or removable, interchangeable cleats (45). The shoe (10) has two parts: the first part is the upper brace (20) and the second part is the lower brace (30).

[0021] It is important that the user of the present invention be able to customize his/her shoe to fit their particular needs. The present invention may be adapted for use as a military model wherein the strongest bracing system is used to protect soldiers' feet, and a steel toe could be an optional add-on feature. Or, the present invention may be used as enhanced athletic footwear.

[0022] With the addition or removal of the cleats, the present invention can easily be used for a variety of sports. The present invention can also be adapted to fit the playing surface of the activity in question. In FIG. 1, the present invention has cleats (45) that are screwed in manually to the sole (40) to be used as a soccer or hiking shoe. The cleats (45) run along the bottom of the sole (40), over the toe, and on the sides of the lower third of the shoe (10) in order to increase traction and reduce rolling of the foot. The sole (40) compensates for any rolling of the foot by extending around to the side of the shoe (10) and covering the lower third of the shoe area. As shown in FIG. 2, the cleats (45) can be removed so that the shoe (10) may have a flat sole (40) and be used to play basketball. The cleats (45) may be put back into the sole (40) of the shoe (10) through a series of small ridges that hold the cleats (45) in place. Other optional cleats (45) may be used to adapt the present invention to use on muddy terrain, grassy fields, astro turf, and as ice spikes for hiking; hence, the cleats (45) are optional, removable and interchangeable.

[0023] The present invention is made with the idea in mind that the athlete needs traction on the sides in addition to the soles (40) of the shoe (10). Unlike some models of cleats, where the soles and traction devices extend up in the front and the back of the shoe (10), the present invention comprises a sole (40) that encircles the entire bottom portion of the shoe (10). In this fashion, the present invention gives unique traction and versatility to the user where no other previous design does.

[0024] FIG. 3 shows the upper (20) and lower (30) braces, which are completely integrated into the shoe (10) in order to support the foot and ankle. They are comprised of a supple but rigid material such as a carbon fiber, which is one of the sturdiest lightweight materials. The upper brace (20) is cupped to curve comfortably around the upper ankle and serves as a leg restraint, and the lower brace (30) makes a complete circumference of the foot, thereby restricting movement of the foot outside the range of the lower brace (30).

[0025] Braces (20 & 30) eliminate the need for any additional outside bracing or taping of the ankle, a crucial aspect of the present invention. They are connected by two small round hinges (25), which provide for a limited movement of the braces (20 & 30) on the lateral side, allowing the foot to stay as flat as possible and increasing traction. The hinges (25) are rounded to match the shape of the ankle and provide maximum comfort. The hinges (25) move both laterally and vertically (meaning in an arc motion between the leg and foot). The system of hinges (25) in the present invention serves two purposes: a) allow the foot to move up and down comfortably; and b) allow slight but controlled lateral movement (similar to the natural movement) of the ankle.

[0026] The sole (40) is attached directly to the bottom of the lower brace (30), and a durable exterior cushioning

material (50) is placed on the exterior of the braces (20 & 30) to create the shoe (10) itself, around the braces. Padding (60) is placed on the interior of the braces (20 & 30) to create a comfortable fit for the user. The braces (20 & 30) have shoelace-holding eyelets (34) along the top portion. The shoelaces (36) pass through the eyelets (34) of both the durable exterior material (50) and the braces (20 & 30), thus keeping the braces (20 & 30), exterior material (50) and padding (60) of the shoe (10) fully integrated. In additional support, there are two straps (55) made of a durable material that criss-cross above the ankle and fasten over the shoelaces (36).

[0027] Having illustrated the present invention, it should be understood that various adjustments and versions might be implemented without venturing away from the essence of the present invention. The present invention is not limited to the embodiments described above, and should be interpreted as any and all embodiments within the scope of the following claims.

ENGLISH-CLAIMS:

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What is claimed is:

1. An apparatus for holding the foot and ankle of a user, comprising: a lower brace having a sole, a front, a back, and sides; an upper brace, in communication with said lower brace; and cleats on said sole, and at least said front, said back, or said sides of said lower brace.
2. The apparatus of claim 1, further comprising a hinge between said lower brace and said upper brace.
3. The apparatus of claim 2, wherein said hinge is hemispherical.
4. The apparatus of claim 2, wherein said hinge is configured to move laterally and vertically.
5. The apparatus of claim 1, wherein said lower brace and said upper brace communicate with one another to provide support for the user's ankle while allowing free range of movement of the ankle.
6. The apparatus of claim 1, wherein said cleats are arranged to provide increased traction to the user.
7. The apparatus of claim 1 further comprising a durable cushioning material on the exterior of said upper brace and said lower brace, forming a shoe.
8. The apparatus of claim 1 wherein said cleats are removable.

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