ATHLETIC SHOE'S SAFETY TRACTION-SOLE CLEATS

9 Claims, 3 Drawing Figs.

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ABSTRACT: Safety traction sole cleats for an athletic shoe. There are four cleats fixedly attached to the sole, namely, a toe cleat, a front ball cleat, a rear ball cleat, and a heel cleat. The toe, front ball and rear ball cleats have sloped forward surfaces, flat lower surfaces and reardward surfaces substantially perpendicular to the lower surfaces, and the heel cleat has a flat lower surface and surfaces around the lower surface sloping upwardly to the sole. There are cut-cleat portions extending rearwardly from said front and rear ball cleats.
FIG. 3.

[Diagram showing a cross-sectional view with labeled parts: 13, 15, 17, 2, 11]
ATHLETIC SHOE'S SAFETY TRACTION-SOLE CLEATS

OBJECTS OF THE INVENTION

One of the objects of the present invention is to prevent injuries to the athlete.

A further object is to provide cleats in an athletic shoe so shaped that there is a traction or spade-grip effect provided along the rearward edge and rearward surface of the cleats and yet the forward face will wedge the shoe upwardly and forwardly and let escape or slip relative to the ground.

A further object is to provide a heel cleat that is sloped around the sides thereof which allows the heel to move or escape in any direction when the foot or leg is hit.

A further object is generally to improve the design and construction of heel cleats in an athletic shoe.

To define in simple terms my request for a patent on athletic shoes' safety traction-sole cleats is to point out the difference that heretofore athletic shoes have been outfitted with cleats of different shapes, forms and sizes that stick, punch, or peg into the ground that give traction and firm footing but hold the foot to the ground, decreasing the runner's speed by hang, interrupting maneuverability by allowing the foot to turn, and increasing the possibility of injury by holding the foot firmly in the ground without freedom to turn or escape when the runner is hit or blocked. On the other hand, athletic shoes' safety traction-sole cleats are made with a flat ridge that does not stick or punch into the ground, but keeps the foot up on top of the ground. Traction, speed and force are obtained by the spacing, digging, clawing effect of three long wide cleats across the sole of each shoe that are sloped, or somewhat oval shaped, on the forward side and have a straight edge on the bite side which exposes much more surface for spade-grip traction with the ground with each rounded action of the step. The cleats do not hang and have a free lift and keep the foot up on the surface of the ground for the advantage of greater speed, and better maneuverability, and under the weight of the player the cleats do not hold the foot to the ground which allows freedom of movement of the foot so that the ankle, knee and leg can give and escape injury when the player is blocked or hit about the legs or hips.

A brief description of athletic shoes' safety traction-sole cleats is given here with the nomenclature.

FIG. 1 is a view of the sole of a shoe of the left foot showing the actual sizes and positions of the three ball cleats and one heel cleat on a size 9½ shoe sole.

FIG. 2 is a cross section side view of the sole of the shoe in FIG. 1 cut on lines I-I.

FIG. 3 is a rear view of the tapers of the ball cleats from the outer side of the sole to the inner side.

In FIG. 1 and FIG. 2 there are four distinct cleats molded into the sole 11 of each shoe.

The toe cleat 13 is situated under the toes integrally attached to the toe position 11' of sole 11.

The forward ball cleat 15 is under the forward part of the ball of the foot integrally attached to the ball portion 11' of sole 11.

The rear ball cleat 17 is under the rear part of the ball of the foot integrally attached to the ball portion 11' of sole 11.

The heel cleat 19 is under the heel of the foot integrally attached to the foot portion 11" of sole 11.

As reviewed in FIG. 1 the front toe cleat 13, front ball cleat 15 and rear ball cleat 7 are preferably respectively slightly curved as they extend transversely across the sole 1 of the shoe, although they may be straight without departing from the spirit and scope of the present invention.

As best seen in FIG. 1 the front ball cleat 15 and the rear ball cleat 17 curve and extend aft or rearwardly for about an inch from the remaining portions thereof adjacent the outside of the sole 11 forming the front cut cleat 21 and the rear cut cleat 23. The front cut cleat 21 is an integral part of the front ball cleat 15 and the rear cut cleat 23 is an integral part of the rear ball cleat 17. Thus, the front cut cleat 21 is at an angle relative to the remaining portions of cleat 15 and provides an arcuate rearward surface 21′ extending substantially rearwardly and outwardly, as viewed in FIG. 1, and on the opposite side of front cleat 21 is provided a sloping surface 21". Likewise, the rear cut cleat 23 is at an angle relative to the remaining portions of cleat 17 and provides an arcuate rearward surface 23′ extending substantially rearwardly and outwardly, as viewed in FIG. 1, and on the opposite side of rear cut cleat 23 is provided a sloping surface 23". Also, the outer side of toe cleat 13 extends slightly aft as at 13′.

In FIG. 1 the front instep cleat 25 is shown connected to the aft side of the rear ball cleat 17 under the front part of the instep and it is an integral part of the rear ball cleat 17. Front instep cleat 25 extends rearwardly from rear ball cleat 17 intermediate the ends thereof and in spaced substantially parallel relationship relative to rear cut cleat 23.

As best seen in FIG. 1 the heel cleat 19 is rectangular in shape, flat on top 26, extends transversely straight across the heel 19 and is arcuate or sloped on all four surfaces 27 for freedom of movement in all directions. In other words, heel cleat 19 has a flat lower surface 26 and surfaces 27 sloping upwardly therefrom to sole 11.

As viewed in FIG. 2 rearward or bite surfaces 29, 31 and 33 respectively arc of the toe cleat 13, front ball cleat 15 and rear ball cleat 17 preferably are respectively perpendicular to the sole 11. The forward or release sides or surfaces 35, 37 and 39 of the toe cleat 13, front ball cleat 15 and rear ball cleat 17 respectively extend rearwardly and downwardly from sole 11 to the respective lower edges 41, 43 and 45 thereof. In other words, cleats 13, 15 and 17 respectively have sloped forward surfaces 35, 37 and 39 which are somewhat oval shaped when viewed as at FIG. 1 and which extend rearwardly and downwardly from sole 11 to lower edges 41, 43 and 45; cleats 13, 15 and 17 respectively have flat lower surfaces 47, 49 and 51 extending rearwardly from lower edges 41, 43 and 45 respectively to rearward edges 53, 55 and 57; and cleats 13, 15 and 17 respectively have rearward surfaces 29, 31 and 33 extending substantially perpendicular relative to lower surfaces 47, 49 and 51 to sole 11. Where the surfaces 29, 31 and 33 join the sole 11, there are preferably slightly rounded corners as at 29′, 31′ and 33′ to prevent packing of the sod or turf between the cleats 13, 15, and 17.

In FIG. 2 the cleats 13, 15, 17 and 19 are drawn actual size and are about one-half inch high. The rear ball cleat 17 and the heel cleat 19 balance the foot. Most forward power and thrust is developed by the spade grip of the rear bite surface 29 of the toe cleat 13 and the surface 31 of the forward ball cleat 15.

All measurements may vary with the size of the shoe, experience and usage.

A detailed explanation follows the use and adaptability of safety traction-sole cleats and how the natural physical principles put in practice and usage reduces the chances of injury, improves upon traction and increases the possibility of more speed and better maneuverability.

Athletic shoes' safety traction-sole cleats are devised and molded into shoe soles to fit an athletic shoe for good purpose to prevent injuries to legs, knees, and ankles of players of football, soccer, and other physical contact sports by providing a natural release and escape of the foot from the ground when a player is bodily blocked or hit by another player.

The player wants foot traction for all conditions of natural and synthetic turf and sod to exert accelerated force of body movement in any direction to hit, block or avoid opposing players. The athletic shoes in common use today for traction have conical peg stud cleats of varying lengths and sharpness that are fastened or molded to the soles of the shoes. When the player sticks, stumps, or punches the cleats of his shoes firmly into the sod for traction and to keep from slipping, he also develops the problem of fastening his feet into the sod or turf that pulls, hangs, and slows the athlete when he runs, and prevents free maneuverability, and makes him susceptible to leg injury when bodily blocked or hit while he is running, walking, or standing, because his cleats that give him firm
footing are punched and stuck in the ground under the weight of his body and hold his foot firmly to the ground.

If the foot while fastened in the sod for traction cannot give or escape before a swift hard blow to the legs, or if the foot is not able to twist free, the athlete's leg can be compared to a stick of wood leaning firmly against a wall, which can readily be smashed by a transverse blow across the middle of the stick.

For example, in FIG. 1 (movement directions of the left foot are viewed looking up at the bottom of the left foot) the weight of the player is on his left foot. The force of the block strikes the player's foot from the left side as indicated by motion line 59. The heel 19 slips to the right. The toe cleat 13, front ball cleat 15 and rear ball cleat 17 turn slightly to the left as indicated by direction line from 1 to 2, freeing the whole foot to escape the force of the blow. If the weight of the player is balanced on the forward ball cleat 15 and the rear ball cleat 17, the front cut cleat 21 and the rear cut cleat 23 act as a center pivot between the movement of the heel cleat 19 to the right and the cleats 13, 15 and 17 of the foot going to the left, freeing the foot instantly from the surface.

Visualize again the escape of the foot with the use of safety traction-sole cleats when a runner is blocked or clipped from the rear. The sloped surfaces 35, 37, 39 and 27 of the cleats 13, 15 and 17 and the heel cleat 19 allows the foot to slip forward and escape the force of the block or clip. Visualize again a player wearing shoes with sharp-stud cleats standing with most of his weight on his heels being blocked from the side and compare the results of the force of the block upon a player wearing safety traction-sole cleats with heel cleats 19 that are free to move on the surface and escape the force of the block.

In FIG. 2 a player using safety traction-sole cleats to get force and acceleration by traction may be compared to a tractor using tires made with high and wide Rice and Cannon cleats that pulls heavy loads over soft mucky land. The safety traction-sole cleats 13, 15 and 17 provide extensive surfaces 29, 31 and 33 for safe grip and traction by each cleat 13, 15 and 17, preferably slightly curved, as viewed in FIG. 1, or if desired straight, that extends completely across the sole of the shoe, spaced adequately to permit the full deep face surfaces 29, 31 and 33 of cleats 13, 15 and 17 to take a spade bite of the surface with the rounded action of each foot as the athlete runs.

In FIGS. 1 and 2 the functions of the heel cleat 19 is to balance the foot and the athlete and to keep the foot free to move without restriction in any direction while under the weight of the athlete. The heel cleat 19 is designed simply with a rectangular surface 26 not to stick in the ground but to stay on top of the ground without resistance to free movement by the sloped surface 27 on all four sides so that when the athlete is blocked from any direction the heel can move and spin and throw the whole foot free to prevent injury to the athlete.

1. In an athletic shoe having a sole including a toe portion, a ball portion and a heel portion; a toe cleat fixedly attached to said sole at said toe portion, a front ball cleat fixedly attached to said sole at said ball portion and extending transversely of said sole rearwardly of said toe cleat in spaced relationship thereto, a rear ball cleat fixedly attached to said sole at said ball portion and extending transversely of said sole rearwardly of said rear ball cleat, each of said toe, front ball and rear ball cleats having a sloped forward surface extending rearwardly and downwardly from said sole to a lower edge thereof, having a flat lower surface extending rearwardly from said lower edge to a rearward edge, and having a rearward surface extending substantially perpendicular relative to said lower surface upwardly from said rearward edge to said sole.

2. The combination of claim 1 in which said heel cleat has a flat lower surface and surfaces around said lower surface sloping upwardly to said sole.

3. The combination of claim 1 in which said front ball cleat includes a front cut-cleat portion at one end of said front ball cleat extending substantially rearwardly from the remaining portion of said front ball cleat.

4. The combination of claim 1 in which said rear ball cleat includes a rear cut-cleat portion at one end of said rear ball cleat extending substantially rearwardly from the remaining portion of said rear ball cleat.

5. The combination of claim 4 which includes a front instep cleat extending rearwardly from said rear ball cleat in spaced relationship from said rear cut-cleat portion.

6. The combination of claim 5 in which is provided rounded corners at the junctures of said rearward surfaces, respectively, of said toe, front ball and rear ball cleats with said sole.

7. In an athletic shoe having a sole including a toe portion, a ball portion, and a heel portion; a toe cleat fixedly attached to said sole at said toe portion, a front ball cleat fixedly attached to said sole at said ball portion and extending transversely of said sole rearwardly of said toe cleat in spaced relationship thereto, a rear ball cleat fixedly attached to said sole at said ball portion and extending transversely of said sole rearwardly of said front ball cleat, and a heel cleat fixedly attached to said sole at said heel portion and extending transversely of said sole rearwardly of said rear ball cleat, each of said toe, front ball and rear ball cleats having a sloped forward surface extending rearwardly and downwardly from said sole to a lower edge thereof, having a flat lower surface extending rearwardly from said lower edge to a rearward edge, and having a rearward surface extending substantially perpendicular relative to said lower surface upwardly from said rearward edge to said sole; said heel cleat having a flat lower surface and surfaces sloping upwardly to said sole, said front ball cleat including a front cut-cleat portion at one end of said front ball cleat extending substantially rearwardly from the remaining portion of said front ball cleat, and said rear ball cleat including a rear cut-cleat portion at one end of said rear ball cleat extending substantially rearwardly from the remaining portion of said rear ball cleat.

8. The combination of claim 7 which includes a front instep cleat extending rearwardly from said rear ball cleat in spaced relationship from said rear cut-cleat portion.

9. The combination of claim 8 in which is provided rounded corners at the junctures of said rearward surfaces respectively, of said toe, front ball and rear ball cleats with said sole.