Feb. 25, 1941. D. R. BRADY 2,233,241

CLEAT FOR SHOES

Filed Nov. 16, 1939

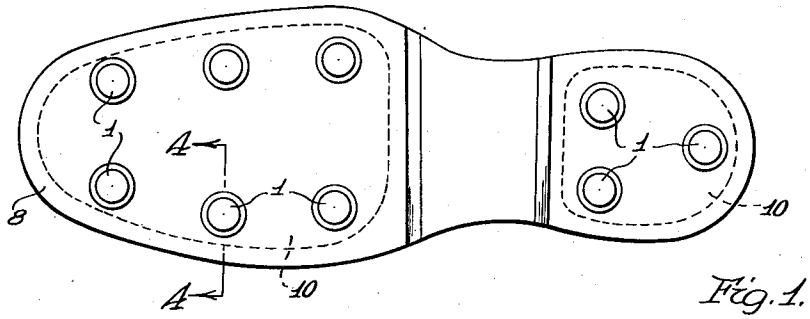


Fig. 1.

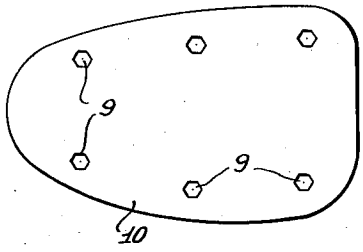


Fig. 2.

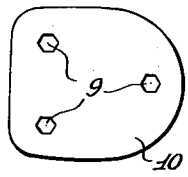


Fig. 3.

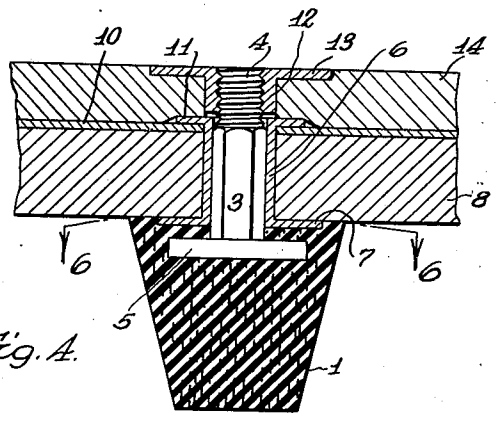


Fig. 4.

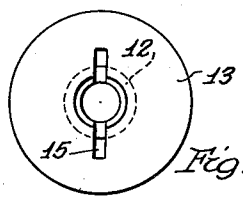


Fig. 5.

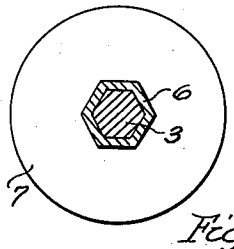


Fig. 6.

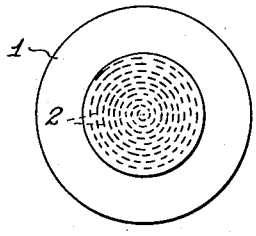


Fig. 7.

INVENTOR.
David R. Brady

BY

ATTORNEY.

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CLEAT FOR SHOES

David R. Brady, Highland Park, Mich., assignor to David R. Brady and J. Windsor Davis, as joint trustees for Brady Research Company, Detroit, Mich., a joint-venture company

Application November 16, 1939, Serial No. 304,733

9 Claims. (Cl. 36—59)

This invention relates to cleats such as are attached to the sole of shoes worn by athletes and has for its primary object to provide an improved cleat anchoring means, as well as a cleat of improved construction. The subject matter herein disclosed relates to the same class as the subject matter of my applications Serial No. 270,613, filed April 28, 1939, and Serial No. 280,648, filed June 22, 1939, to which cross reference is hereby made.

The main object of this invention is to provide cleat anchoring means in which the cleat retaining member is placed in operative or inoperative position from the inside of the shoe. In this respect the cleat is provided with a stud which extends through the sole and having a screwthreaded end upon which a nut is placed from the inside of the shoe to retain the stud in the sole. Such an arrangement has an important advantage in that it enables replacement of cleats whose metal anchoring studs have become broken, for the reason that the broken portions remaining in the sole may be pushed into the shoe, leaving the holes from which they were forced in condition for reception of the stud of a new cleat.

Another object is to provide anchoring means of the character above mentioned including a flexible sheet metal plate for distributing pressure over a comparatively large area of the sole, and means coacting with the plate for preventing rotation of the cleat studs in order that nuts may be readily screwed thereon.

Another object is to provide a cleat composed of rubber and fabric, the fabric being spirally wound around the longitudinal axis of the cleat in such manner that the edges of the wound fabric constitutes the wear surface at the outer end of the cleat. This construction provides the desired resiliency and at the same time provides a high degree of strength and wear resisting properties.

Other objects and advantages will become more fully apparent as reference is had to the accompanying drawing wherein my invention is illustrated, and in which:

Fig. 1 is a bottom view of a shoe, illustrating cleats anchored to the sole thereof,

Figs. 2 and 3 are elevations of the metal sole and heel plates respectively,

Fig. 4 is a section taken on the line 4—4 of Fig. 1,

Fig. 5 is a plan of the nut,

Fig. 6 is a section taken on the line 6—6 of Fig. 4 and

Fig. 7 is an enlarged end view of the cleat, illustrating the manner in which the fabric is employed in the cleat.

Referring first to Fig. 2, 1 designates a cleat composed of rubber and fabric. The fabric is in the form of a ribbon, or a multiplicity of ribbons, spirally wound as may better be seen in Fig. 7. When the fabric is wound in this manner and impregnated with rubber the cleat has the appearance of rubber, but the usual characteristics of the rubber are changed. The cleat may flex to a desired extent, will not compress under the weight of the wearer because the width of the fabric opposes compression, and wear resistant qualities are materially improved because the edge or edges of the ribbon or ribbons are exposed at the tip.

The anchoring means for the cleat comprises a metal stud 3, having a screwthreaded end 4 and an enlarged head 5 on its other end. The head 5 is imbedded in the cleat 1 at the time the rubber is vulcanized, and the stud 3 is of angular cross section, preferably hexagonal as may best be seen in Fig. 6.

A sleeve 6, of cross section similar to that of the stud 3, and having an end flange 7, is inserted in a suitable hole in the sole 8, and the flange 7 engages the outer surface of the hole. The sleeve 6 also extends through a hexagonally shaped aperture 9 in a sheet metal plate 10 and has its inner end spun or otherwise bent over in the nature of a flange 11, which engages the top of the plate. The stud 3 is disposed within the sleeve 6 with its inner or screwthreaded end 4 extending into an opening in an insole 14 which rests upon the plate 10. A nut 12, having an enlarged flange 13 is screwed upon the stud 3 in such manner that the flange engages the insole 14, and by compressing the sole 8, plate 10 and insole between itself and the sleeve flange 7, tightly draws the cleat 1 against the flange 7.

From the foregoing it becomes apparent that the nut 12 is placed on the stud 3 from the inside of the shoe. It is held against rotation by the sleeve 6 and the walls of the apertures 9, and in order that the nuts 12 may be rotated, they are provided with wrench receiving means such as the radial slots 15, for example.

In the presence of extremely rough usage, as for example football games played upon frozen ground, the cleat anchoring studs 3 sometimes become broken. If this occurs, the broken stud and nut may be pushed inwardly through the sole assembly and removed from the inside of the shoe. Obviously, after removal of the stud

the nut may be easily removed therefrom, a new cleat stud placed in the sleeve from which the broken stud was removed, and the same nut used to anchor the new cleat.

It is found that the presence of the nuts 12 do not cause discomfort to the foot of the wearer for the reason that very heavy socks are usually worn with this type of shoe. In fact the socks ordinarily worn are close to one-quarter of an inch in thickness and, therefore, afford sufficient padding to make the presence of the nuts unnoticeable.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various changes may be made within the scope of the appended claims without departing from the spirit of the invention, and such changes are contemplated.

What is claimed is:

1. In combination, a shoe sole having an opening extending therethrough, a cleat having an endwise extending anchoring stud received in said opening, metal means imbedded in said sole and holding said stud against rotation, and a nut on the inner end of said stud and engaging the inner surface of said sole to retain said stud against removal from said opening.

2. In combination, a shoe sole having an opening extending therethrough, a cleat having an endwise extending anchoring stud received in said opening, metal means imbedded in said sole and holding said stud against rotation, said metal means including a flexible sheet metal plate having an area equal to a major portion of the area of said sole, and a nut on the inner end of said stud and engaging the inner surface of said sole to retain said stud against removal from said opening.

3. In combination, a shoe sole having an opening extending therethrough, a non-rotatable metal liner for said opening of other than round cross sectional shape, a stud of other than round shape received in said liner, a cleat on the outer end of said stud, and a nut on the inner end of said stud engaging the inner surface of said sole to draw said cleat against the outer surface of the sole.

4. In combination, a shoe sole having an opening extending therethrough, a non-rotatable metal liner for said opening of other than round cross sectional shape, a stud of other than round shape received in said liner, a cleat on the outer end of said stud, a nut on the inner end of said stud engaging the inner surface of said sole to draw said cleat against the outer surface of the sole, and a flexible sheet metal plate imbedded in the sole and coacting with said liner and stud in transmitting strains resulting from weight on said cleat over a comparatively large area of the sole.

5. In combination, outer and inner sole members having a flexible sheet metal plate interposed therebetween, said metal plate having an aperture of other than round shape and said sole members having openings in alignment therewith, a cleat having a stud of other than round cross sectional shape, said stud extending through said openings, and a nut on the inner end of said stud and engaging the inner surface of the inner sole member to draw said cleat against the outer surface of the outer sole member.

6. In combination, outer and inner sole members having a flexible sheet metal plate interposed therebetween, said metal plate having an aperture of other than round shape, a sleeve of other than round shape received in said aperture and held against rotation by the walls thereof, a cleat having a stud of other than round shape disposed in said sleeve and held against rotation thereby, and a nut on the inner end of said stud preventing removal thereof from said sleeve.

7. In combination, outer and inner sole members having a flexible sheet metal plate interposed therebetween, said metal plate having an aperture of other than round shape, a sleeve of other than round shape received in said aperture and held against rotation by the walls thereof, a cleat having a stud of other than round shape disposed in said sleeve and held against rotation thereby, and a nut on the inner end of said stud preventing removal thereof from said sleeve, said nut having an enlarged flange engaging the inner surface of the inner sole member.

8. In combination, outer and inner sole members having a flexible sheet metal plate interposed therebetween, said metal plate having an aperture of other than round shape, a sleeve of other than round shape received in said aperture and held against rotation by the walls thereof, said sleeve having end portions engaging the outer surface of the outer sole member and the inner surface of the flexible plate respectively, a cleat having a stud of other than round shape disposed in said sleeve and held against rotation thereby, and a nut on the inner end of said stud preventing removal thereof from said sleeve, said nut having an enlarged flange engaging the inner surface of the inner sole member.

9. In combination, outer and inner sole members having a flexible sheet metal plate interposed therebetween, said metal plate having an aperture of other than round shape, a sleeve of other than round shape received in said aperture and held against rotation by the walls thereof, said sleeve having end portions engaging the outer surface of the outer sole member and the inner surface of the flexible plate respectively, a cleat having a stud of other than round shape disposed in said sleeve and held against rotation thereby, and a nut on the inner end of said stud preventing removal thereof from said sleeve, said nut having an enlarged flange engaging the inner surface of the inner sole member.

DAVID R. BRADY.