July 6, 1954 F. C. PHILLIPS 2,682,714

FOOTBALL SHOE CLEAT

Filed Nov. 15, 1951

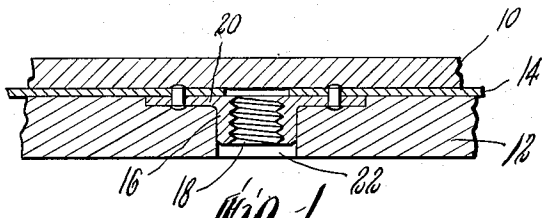


Fig. 1.

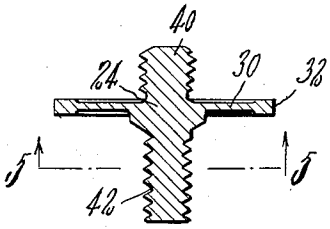


Fig. 2.

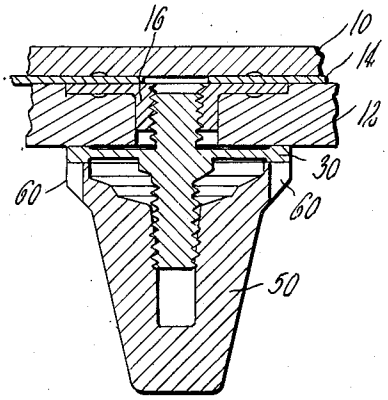


Fig. 4.

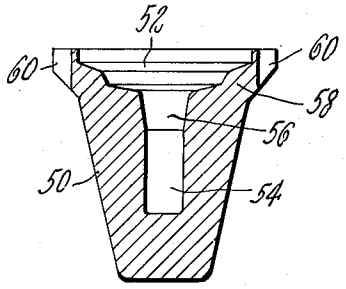


Fig. 3.

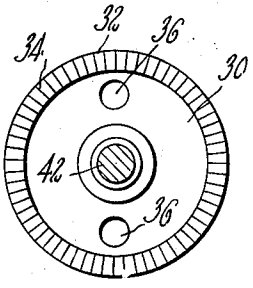


Fig. 5.

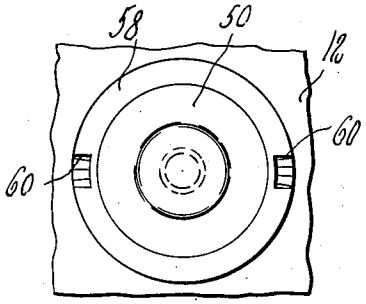


Fig. 6.

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FOOTBALL SHOE CLEAT

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4 Claims. (Cl. 36—59)

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This invention relates to a cleat structure for an athletic shoe, and more particularly for a football shoe. The use of removable cleats on football shoes has become practically universal in this country, owing to the desirability of replacing worn or damaged cleats with new ones. Furthermore, many football squads use calks of different lengths for wet and dry fields, and it is customary in many cases to replace cleats used in practice scrimmaging with new or better cleats used in competitive games. It is desirable that cleats be capable of being readily applied to or removed from a shoe any number of times by means of a simple hand tool, and that when mounted on a shoe, a cleat be strongly held against accidental loosening. It is an object of the invention to provide a cleat and support therefor which will meet these and other requirements simply but effectively.

According to the invention, the cleat is a single molded body made of a tough, synthetic plastic, such as nylon, which is sufficiently hard for the purpose. This cleat is screwed onto the screw-threaded shank of a connector member, the other end of which is screw-threaded into a socket member secured in the sole of the shoe.

For a more complete understanding of the invention, reference may be had to the following description thereof and to the drawing, of which—

Figure 1 is a fragmentary sectional view of a shoe sole in which is mounted a socket to receive the cleat;

Figure 2 is a connector member having a portion adapted to be screw-threaded into the cleat shown in Figure 1;

Figure 3 is a cleat to be screwed onto the connector member shown in Figure 2;

Figure 4 is a sectional view of the socket shown assembled with the connector and cleat;

Figure 5 is a section on line 5—5 of Figure 2; and

Figure 6 is a bottom plan view of the assembled structure shown in Figure 4.

A fragmentary section of a sole of an athletic shoe such as a football shoe is shown in Figure 1. This sole includes an insole 10, an outsole 12 and a thin steel plate 14 mounted between them. A flanged socket member 16 having an interior thread 18 is mounted with its flange 20 riveted to the steel plate 14 between the insole and the outsole. The socket itself projects into a hole 22 through the outsole 12, the end of the socket member being preferably spaced inward from the orifice 22.

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A connector member 24 is provided to connect a cleat to the socket member 16. The connector consists of a disc 30 having a thickened margin 32, the annular faces of which are preferably roughened by being knurled or milled. Figure 5 shows a milled surface with a series of radial ribs 34. The disc 30 is preferably provided with a pair of holes 36 to receive a wrench by which the connector is set up in the socket 16 or unscrewed therefrom. From the faces of the disc 30 two shanks 40 and 42 project axially in opposite directions. The shank 40 is shorter than 42 and is screw-threaded to engage the thread 18 of the socket member 16. When the connector is screwed into the socket 16, the rim 32 bears strongly against the surface of the sole 12 so as to prevent accidental loosening of the connector member from the socket.

The shank 42 is also screw-threaded, the diameter of the shank and the pitch of the thread being preferably such as to receive a standard cleat such as is now in common use for football shoes.

According to the present invention, however, a special cleat 50 is provided, this cleat being a single piece of molded thermoplastic material such as nylon. The outer surface may be of frusto-conical shape. The base is made with a suitable recess 52 from which an axial bore 54 extends into the body of the cleat and part way toward the small end thereof. The bore 54 is preferably cylindrical for the most part but may have a slightly flared part 56 adjacent to the recess 52, the walls being smooth when unstressed. The diameter of the cylindrical portion 54 is greater than the minor diameter but less than the major diameter of the screw thread of the shank 42. When the cleat 50 is screwed on the shank 42, the crest of the screw thread must force its way into the wall of the bore 54. Although the solid nylon material is of a hard and horny consistency, it will yield sufficiently to permit the crest of the screw-thread to indent the wall of the bore as the cleat is screwed onto the shank 42. The thread is thus tightly gripped by the natural tendency of the nylon to resume its original shape. This means that the cleat is firmly held on the shank 42 of the connector member. Whenever it is removed from the connector shank, the indented groove in the wall of the bore will gradually disappear as the nylon returns to its original condition with a smooth wall for the bore. Hence the cleat can be mounted and removed repeatedly without diminishing the natural grip which the cleat has on the

shank **42**. Since considerable force is required to screw the cleat on to and off from the shank **42** it is preferably made with an annular flange **58** at its base, this flange having a pair of diametrically opposed notches **60** to receive lugs on a suitable wrench (not shown) by which the cleat may be turned.

I claim:

1. A cleat assembly for an athletic shoe comprising an interiorly screw-threaded socket member adapted to be mounted in a shoe sole, a connector member consisting of a disc having two screw-threaded shanks projecting respectively from the faces of said disc and coaxial therewith, one of said shanks being adapted for screw-threaded engagement with said socket, and a molded nylon cleat having a central bore extending inward from the base thereof to receive the other said shank on the connector member, said bore being smooth when unstressed and tapering slightly for a part of its length adjacent to the base, the remainder of the bore being cylindrical, the diameter of the bore being greater than the minor diameter of the thread of the other said shank but less than the major diameter thereof.

2. As a separate article of commerce, a cleat for an athletic shoe, consisting of a single molded piece of a synthetic thermo-plastic substance which is tough and hard, said cleat having a central bore which is smooth when unstressed extending in from the base thereof and tapering slightly for a part of its length adjacent to said base, the inner portion of said bore being cylindrical.

3. As a separate article of commerce, a cleat for an athletic shoe, consisting of a single piece of nylon with a generally frusto-conical exterior shape and having a central bore which is smooth when unstressed extending in from the base thereof and tapering slightly for a part of its length adjacent to said base, the inner portion of said bore being cylindrical.

4. As a separate article of commerce, a cleat for an athletic shoe, consisting of a single molded piece of nylon having a generally frusto-conical exterior contour with a flange at its base extending outward beyond said contour, said flange having notches therein to receive a tool, said cleat having a central bore which is smooth when unstressed extending in from the base thereof and tapering slightly for a part of its length adjacent to said base, the inner portion of said bore being cylindrical.

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