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G. L. PIERCE ET AL

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SPORT SHOE AND CLEAT STRUCTURE

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Fig. 1.

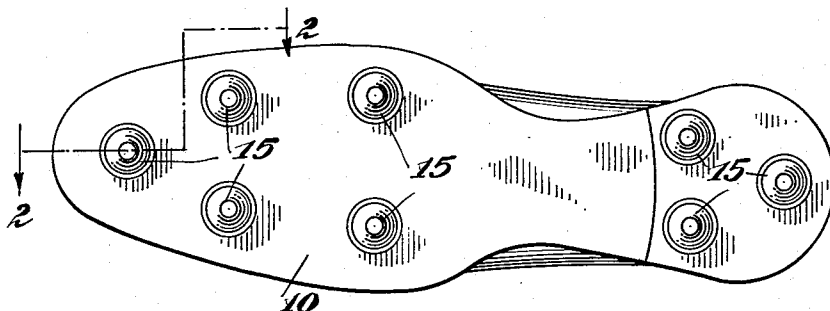


Fig. 2.

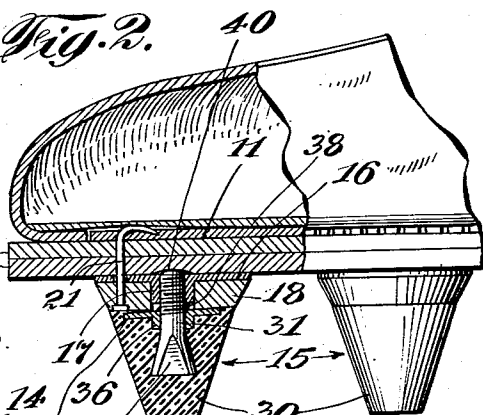


Fig. 3.

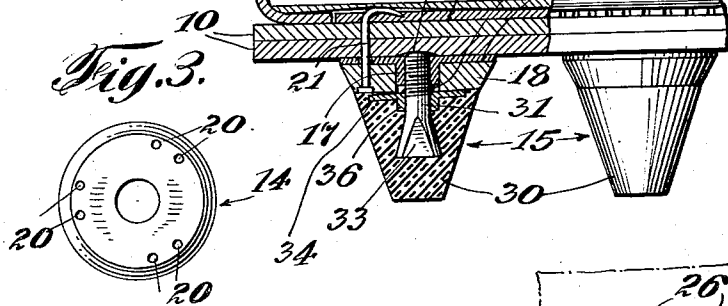


Fig. 5.

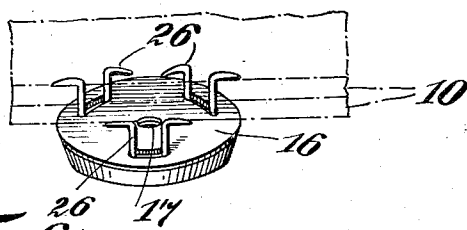


Fig. 4.

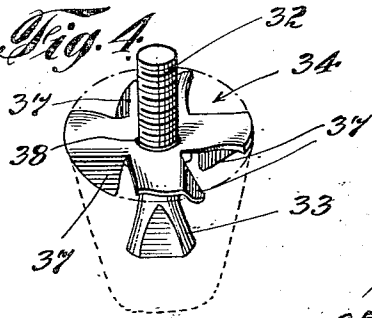
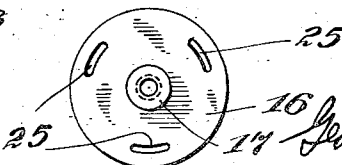


Fig. 6.



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SPORT SHOE AND CLEAT STRUCTURE

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Our invention relates to sport shoes and cleats for such shoes, and especially to means or arrangements for fastening the cleat to the shoe, designed to provide exceptional strength at desired points, and to practically prevent breakage of the fastening means and displacement of the cleat from the shoe.

To this end, the cleat base, or part which is permanently secured to the shoe sole, has nail or staple apertures arranged to provide for the location of a plurality, or specifically two, nails or staple members close together at a plurality of points circumferentially around the cleat, at least one pair of these closely adjacent fastening devices being located at a forward position, where the greatest strains occur. The nails, or staple prongs, passing through the cleat base and into the shoe sole and located close together in pairs, as compared with the single nails, uniformly circularly spaced in previous structures, provide practically double strength and resistance to breakage, so that displacement of the cleat from the shoe is practically prevented.

The invention also provides a cleat which includes, in addition to the base, a detachable cleat proper or tip portion, and certain novel features of construction and arrangement of the base and tip referred to hereafter.

The characteristics and advantages of the invention are further sufficiently explained in connection with the following detail description of the accompanying drawings, which show representative embodiments. After considering these examples, skilled persons will understand that many variations may be made without departing from the principles disclosed and we contemplate the employment of any structures that are properly within the scope of the appended claims.

Fig. 1 is a bottom plan view of a sport shoe having attached to its sole and heel, in one desirable arrangement, cleats embodying the invention in one form.

Fig. 2 is a section at 2—2, Fig. 1, enlarged, showing details of the cleat.

Fig. 3 is a bottom plan of a cleat base.

Fig. 4 is a perspective view of metal parts of the cleat tip, assembled.

Fig. 5 is a perspective view of a modified cleat base.

Fig. 6 is a bottom plan of the same.

The invention is not limited as to the specific construction of the shoe sole. As shown in Fig. 2, the sole structure may include two sole pieces 10 and an insole 11. The heel structure may be as usual, and the mode of attachment of cleats to the heel will readily be understood by skilled persons after explanation of the mode of attachment to the sole.

As to the attachment structure, or mode of attachment to the shoe, the invention is not limited to any specific type of cleat. The cleat here shown has certain features of novelty as later explained, and consists of two parts—a base 14 which is to be permanently attached to the shoe, and a detachable tip portion or cleat proper 15.

In the form shown, the base comprises a metal base plate or disk 16, usually circular, with a central sleeve 17, internally threaded. A conoidal leather washer or filler piece 18 is located on the base plate, being centrally apertured to receive sleeve 17.

The base plate in one desired form has near its periphery a plurality of nail holes 20, which preferably are arranged in pairs, the holes of each pair being located quite close together and the pairs of holes being uniformly circularly spaced. Thus, as in Fig. 3, there are three pairs of holes, although the number of pairs may evidently be varied.

In attaching the cleat to the shoe sole, one pair of holes 20 of each cleat base is usually located in a forward position, that is, toward the front of the shoe. Nails 21 are then driven through the leather filler piece and through the holes, passing through the shoe sole and insole 11 and being clinched thereon under the shoe liner. The cleat base is thus attached to the shoe sole by a plurality of fasteners arranged in pairs, the individual fasteners of each pair being close together and providing practically double strength as compared with the single nails, uniformly circularly spaced, as commonly employed. Especially, a pair of fastening nails,

close together, and located in a forward position, where usually occurs the greatest strain tending to rip the cleat or cleat base from the shoe, provides double strength and resistance to breakage at this point. This is particularly important since if the forward fastening device or devices are ruptured, subsequent scuffing strains will readily pry the cleat or cleat base away from the sole and rupture the rearward fastening devices. Evidently, the cleats may be attached in any desired arrangement, one arrangement being suggested in Fig. 1.

Figs. 5 and 6 show that instead of individual nail holes, the base plate 16 may be provided with short, substantially arcuate slots 25, uniformly circularly spaced, these slots providing for insertion in each of two or more nails—usually two nails, each located near one end of the slot. The slots also provide, when desired, for the convenient insertion of staples 26, Fig. 5, instead of nails. The prongs or legs of each staple will then be located near the opposite ends of one of the slots. The staples are driven and clinched as sufficiently explained in Fig. 5.

To cooperate with a cleat base of the type or structure above described, we desirably provide a detachable tip or cleat proper 15, composed of metal parts and a body 30 of a suitable plastic or moldable material such as hard rubber, fibre, a synthetic resin, etc. This body is usually in frusto-conical form. The metal parts include a stem 31 having an upper threaded or screw portion 32 and a lower flared and flattened head portion 33, and a washer 34 which has a central hole in which the stem is inserted. The washer is also desirably formed with a shallow boss or sleeve portion 36 about the stem, and its outer or disk portion is cut at intervals and segments are bent downward, forming flanges 37. The metal parts being assembled as in Fig. 4 are molded into the body portion 30 as sufficiently explained in Fig. 2, and thereupon the stem and washer are firmly retained and especially dislocation of the stem from the molded body is prevented by the flared head 33, and rotation is prevented by the flanges 37. When desired, displacement of the washer in relation to the stem may be prevented by indenting the stem material over the face of the washer, producing small lugs or tits 38, which positively prevent outward displacement of the washer in relation to the stem.

The detachable cleat tip is applied to the base by simply screwing its threaded stem portion 32 into the threaded base sleeve 17. The base of the tip thereupon engages the outer face of the leather filler or washer 18, and is thus resiliently and firmly held against unscrewing. Desirably also, the stem is made of such length that it passes entirely through sleeve 17, and its rounded end engages the

screw sole and depresses the sole inward somewhat as at 40, Fig. 2, thus increasing the frictional retention of the tip and preventing accidental displacement by unscrewing.

The entire cleat structure is exceptionally strong and durable; the tip body 30 is also resistant to wear and has long life, but when chipped or worn may readily be replaced in an obvious way.

We claim:

1. In combination, a shoe having an outer sole, a cleat base, and a cleat tip, said cleat base comprising a base disc, a threaded sleeve integral with said base disc, a resilient washer adjacent said disc and surrounding said threaded sleeve, fastening means securing said base disc to said sole, said cleat tip comprising a stem, a cleat body secured to and surrounding said stem, and engaging said resilient washer, said stem being provided with screw threads adapted to engage the threads of said threaded sleeve, the parts being so arranged that when the cleat tip is secured in attached position the resilient washer is held compressed.

2. In combination, a shoe having an outer sole, a cleat base, and a cleat tip, said cleat base comprising a base disc, a threaded sleeve integral with said base disc, and extending away from said sole, a resilient washer adjacent said disc and surrounding said threaded sleeve, fastening means securing said base disc to said sole, said cleat tip comprising a stem, a cleat body secured to and surrounding said stem, and engaging said resilient washer, said stem being provided with screw threads adapted to engage the threads of said threaded sleeve, the parts being so arranged that when the cleat tip is secured in attached position the resilient washer is held compressed.

3. In combination, a shoe having an outer sole, a cleat base, and a cleat tip, said cleat base comprising a base disc, a threaded sleeve integral with said base disc, and extending away from said sole, a resilient washer adjacent said disc and surrounding said threaded sleeve, the axial length of said threaded sleeve being less than the thickness of said washer to permit compression of said resilient washer, fastening means securing said base disc to said sole, said cleat tip comprising a stem, a cleat body secured to and surrounding said stem, and engaging said resilient washer, said stem being provided with screw threads adapted to engage the threads of said threaded sleeve, the parts being so arranged that when the cleat tip is secured in attached position the resilient washer is held compressed.

4. In combination, a shoe having an outer sole, a cleat base, and a frusto-conical cleat tip, said cleat tip comprising a cleat body, a threaded stem projecting therefrom, a washer attached to said stem, parts depending from said washer into said body adapted to

prevent rotation of said stem in said body,
said cleat base comprising a compressible
washer at least as large as the larger end of
the cleat tip, a base disc provided with an in-
ternally threaded sleeve adapted to enter into
threaded engagement with said stem, said
base disc being at least as large as said wash-
er, said sleeve being axially shorter than the
thickness of said washer, said washer being
normally compressed between said cleat body
and said base disc, and fastening means pass-
ing through said washer and said base disc
into said outer sole, to bind said cleat base
to the outer portion of said shoe.

In testimony whereof we affix our signa-
tures.

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KNUT KARLSON.