Nov. 10, 1959 J. A. CLERKE 2,911,738

ATHLETIC SHOE CLEAT

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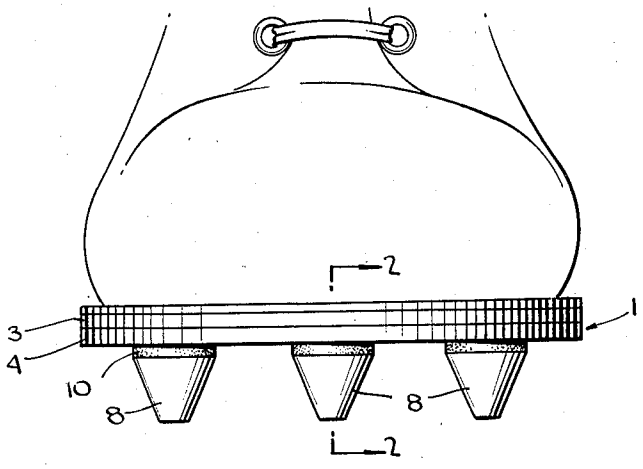


Fig. 1.

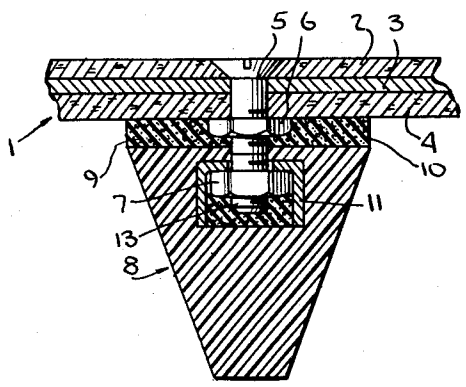


Fig. 2.

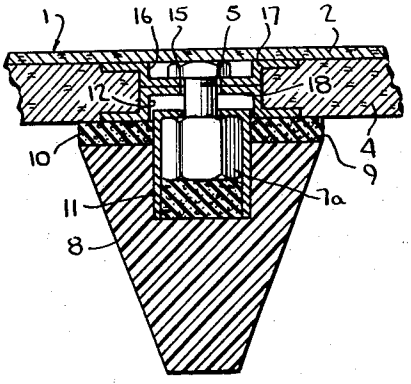


Fig. 3.

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Fig. 4.

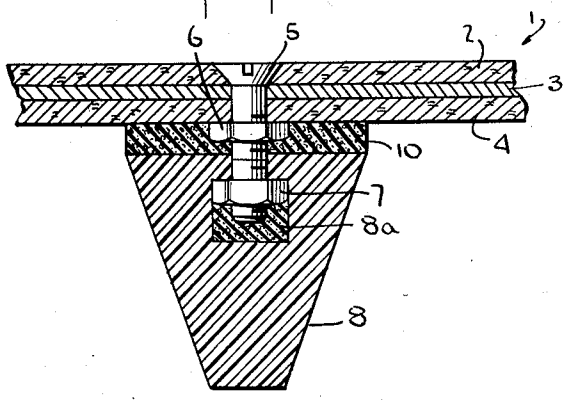
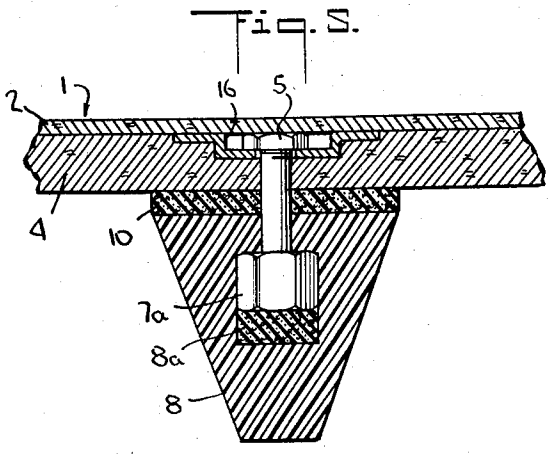


Fig. 5.



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ATHLETIC SHOE CLEAT

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14 Claims. (Cl. 36—2.5)

This invention relates to athletic shoes of the cleated type and more particularly to shoes having detachable cleats. The invention is especially applicable to detachable molded cleats as adapted for the game of football but is applicable to other types of detachable cleats such as those used in the games of soccer, softball, etc.

Cleats now in use on football and related shoes are adequate when the ground is soft and the wearer does not tread on hard surfaces. However, when the turf is hard, as is the usual case in late autumn after the first frost, the present rigid type cleat poses an annoying problem. The rigid cleat transmits any and all shocks directly to the wearer since there is little "give" by which the shock is absorbed or dissipated.

This shock is not only annoying and uncomfortable to the sole of the athlete's foot, but also causes the peculiar type of torn ligament known as shin-splint which is capable of disabling an athlete for a considerable length of time.

Cleats now used when worn on hard surfaces have the additional disadvantage that they often are the cause of bruises to the bottom of the wearer's foot.

One embodiment of the invention involves the use of the type of sole construction commonly in use today. In this invention a relatively resilient member is positioned between the sole of the shoe and the cleat which is made of hard rubber, nylon or other suitable material. This resilient member absorbs the shock which would ordinarily be transmitted to the foot and leg of the athlete, and thus to a great extent does away with the above mentioned disadvantages.

In another embodiment of the invention the sole of the shoe consists of two layers instead of the usual three and a socket is fixed in the bottom of the sole. A relatively resilient member is again placed between the sole and cleat to absorb the shock. This embodiment functions the same as that above with the additional advantage that the socket is better adapted to resist lateral shock.

In all embodiments of the invention a means is provided for attaching the cleat so that it is able to move up and down against the relative resilient member which will absorb most of the shock when the athlete steps down on the cleat.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

Fig. 1 is a front elevation of a football shoe with the cleats attached;

Fig. 2 is an enlarged cross-section of one embodiment taken through a cleat and sole of the shoe on line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross-section of another embodiment of the invention taken through a cleat and sole of the shoe on line 2—2 of Fig. 1;

Fig. 4 is an enlarged cross-section of another embodiment of the invention similar to the one shown in Fig. 2; and

Fig. 5 is an enlarged cross-section of another embodiment of the invention similar to the one shown in Fig. 3.

The sole of the athletic shoe is normally comprised of three laminated layers, the insole **2**, a metal plate **3** and the outer sole **4**. Attached thereto are cleats **8**. In accordance with this invention the cleats are attached to the sole as shown in Figs. 2 through 5. In one embodiment, as shown in Figs. 2 and 4, a bolt **5** extends downwardly through the sole **1** with its lower threaded end **13** extending below the outer sole **4**. A lock nut **6** holds this bolt in place against any transverse movement through the sole.

Referring to Fig. 2, the cleat **8** may be attached to a housing **11** which houses a nut **7** shaped to fit the sides thereof to prevent rotation of the nut. This nut **7**, however, is free to slide up and down within the housing when it is attached to the lower threaded end **13** of the bolt **5**. The cleat **8** is tightened on the bolt **5** until the top of the cleat **9** is adjacent the lower side of the relatively resilient member **10**. The resilient member **10** is positioned around the bolt **5** and the lock nut **6**, and thus when in position is held between the outer sole **4** and the top of the cleat **9**. The housing **11** to which the cleat **8** is attached is deep enough so that the bolt **5** and nut may move downwardly the same distance that the top of cleat **9** moves toward the sole of the shoe **1** when the maximum pressure is applied and the relatively resilient member is compressed to its greatest extent. The housing **11** may be filled with a soft resilient material, such as foam rubber or soft vulcanized rubber. The filling prevents the nut **7** from falling to the bottom of the housing **11** when the cleat is not attached to a shoe and likewise yieldingly holds the nut adjacent the top of the housing where it can be readily engaged by the bolt **5**.

Referring to Fig. 4, an embodiment of the invention is illustrated which is like the Fig. 2 embodiment just described in every respect except that there is no housing around the nut **7** in the cleat **8**. In this embodiment the nut **7** is first affixed to a soft resilient material, such as foam rubber or soft vulcanized rubber as shown at **8a** and the cleat **8** is formed or molded around the nut and soft material. The nut **7** is thus held within the cleat and is adapted to slide up and down therein when the cleat is attached to the athletic shoe much as it does in the embodiment of Fig. 2 where it is enclosed in a housing.

In Figs. 3 and 5 the sole **1** is comprised of a 2 ply member, an inner sole **2** and an outer sole **4**. Referring to Fig. 3, the top of the housing **11**, to which the cleat **8** is integrally attached, nestles or fits into a socket or cup **12** which is formed from leather or metal and is fixed in the bottom of the sole **1**. A bolt **5** extends upwardly out of the housing **11** having its upwardly extending end externally threaded whereas the lower end thereof is attached to a head **7a** which is multi-sided and is adapted to slide up and down in the multi-sided housing **11**. The outside configuration of the head **7a** is substantially the same as the internal configuration of the housing **11** so that the bolt will not rotate. A lock nut **15** is disposed adjacent the inner sole **2** and is held there in a cup **16** formed in a member **17** made of leather or metal which is held against the bottom of the inner sole **2** adjacent the outer edges of the lock nut **15**. The threaded portion of the bolt **5** is threaded into the lock nut **15** to attach the cleat **8** to the sole **1**. A relatively resilient member **10** surrounding the housing **11** is placed between the top of the cleat **9** and the bottom of the outer sole **4**. The cleat **8** is tightened upon the bolt **5** until the top of the cleat **9** is adjacent to the bottom of the resilient member **10**. The socket in the outer

sole is of sufficient depth so that when the cleat is in a tightened position there is a space between the housing **11** and the socket lining **18** which is the same distance as the maximum distance through which the cleat can travel when the relatively resilient member is compressed to its utmost. The housing **11** is also of such depth that the head *7a* and bolt **5** may travel downwardly the same distance as the cleat travels upwardly. Again the housing may have a filling such as foam rubber or soft vulcanized rubber below the head *7a*.

Fig. 5 illustrates an embodiment similar to Fig. 3 wherein the housing around head *7a* is again eliminated as in Fig. 4 and the head *7a* and soft resilient material *8a* are held inside the cleat **8** by molding the cleat around them. Again the head *7a* is thus adapted to slide up and down to provide a cushioning attachment of the cleat against the sole with the relatively resilient member **10** disposed between the top of the cleat **9** and the bottom of the outer sole **4** providing the major portion of this cushioning effect.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the following claims.

I claim:

1. In an athletic shoe the combination of a sole, a cleat, a housing integrally attached to the cleat, a member disposed in said housing in a non-rotatable manner adapted to slide up and down therein, a connecting member interconnecting said member within the housing with the sole and a relatively resilient member disposed between said cleat and sole.

2. The combination of claim 1 wherein a soft resilient filler is disposed in the housing beneath the member therein.

3. In an athletic shoe the combination of a bolt attached to the sole of the shoe and having a threaded portion extending downwardly therefrom, a cleat, a housing integrally attached to the top of said cleat, an internally threaded member disposed in said housing adapted to slide up and down therein in a non-rotating manner, said member being adapted to thread onto said bolt to secure said cleat to said sole and a relatively resilient member disposed between said cleat and sole.

4. The combination of claim 3 wherein a soft resilient filler is disposed in the housing beneath the threaded member.

5. In an athletic shoe the combination of a bolt attached to the sole and having a threaded portion extending downwardly therefrom, a cleat, a multi-sided housing integrally attached adjacent the top of said cleat, a multi-sided nut disposed in said housing having a height less than the height of the housing sides and having an external configuration substantially conforming to the interior of the housing, said nut being adapted to thread onto said bolt to attach the cleat to the sole and a relatively resilient member disposed intermediate the sole and cleat.

6. The combination of claim 5 wherein a soft resilient filler is disposed in the housing beneath the nut.

7. In an athletic shoe the combination of a sole, a cleat, a housing integrally attached to and extending above the top of said cleat, a bolt having an externally threaded end extending through the top of said housing and having a head which is non-rotatably disposed within said housing and adapted to slide up and down therein, a socket in the bottom of said sole adapted to cup the top of said housing therein, a lock washer disposed within the sole above the socket and adapted to receive the threaded end of the bolt to attach the cleat to the sole and a relatively resilient member disposed between the sole and cleat.

8. The combination of claim 7 wherein a soft resilient filler is disposed in the housing beneath the head of the bolt.

9. In an athletic shoe the combination of a sole, a cleat, a member disposed in said cleat in a non-rotatable manner adapted to slide up and down therein, a connecting member interconnecting said member within the cleat with the sole and a relatively resilient member disposed between said cleat and sole.

10. The combination of claim 9 wherein a soft resilient filler is disposed in the cleat beneath the member therein.

11. In an athletic shoe the combination of a bolt attached to the sole of the shoe and having a threaded portion extending downwardly therefrom, a cleat, an internally threaded member disposed in said cleat adapted to slide up and down therein in a non-rotating manner, said member being adapted to thread onto said bolt to secure said cleat to said sole and a relatively resilient member disposed between said cleat and sole.

12. The combination of claim 11 wherein a soft resilient filler is disposed in the cleat beneath the threaded member.

13. In an athletic shoe the combination of a sole, a cleat, a bolt having an externally threaded end extending through the top of said cleat and having a head which is non-rotatably disposed within said cleat and adapted to slide up and down therein, a lock washer disposed within the sole adapted to receive the threaded end of the bolt to attach the cleat to the sole and a relatively resilient member disposed between the sole and cleat.

14. The combination of claim 13 wherein a soft resilient filler is disposed in the cleat beneath the head of the bolt.

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