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S. F. LEVY

2,034,050

SPIKED SPORT SHOE

Filed Dec. 7, 1934

Fig. 1.

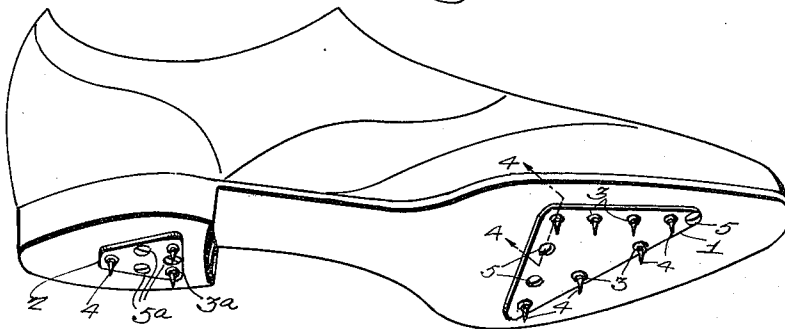


Fig. 2.

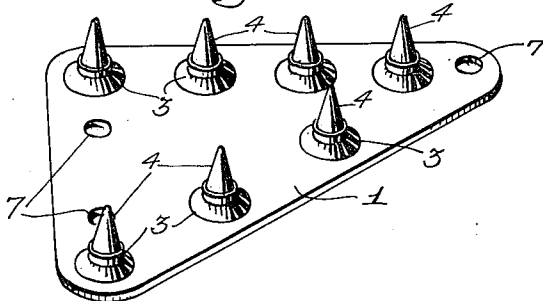


Fig. 3.

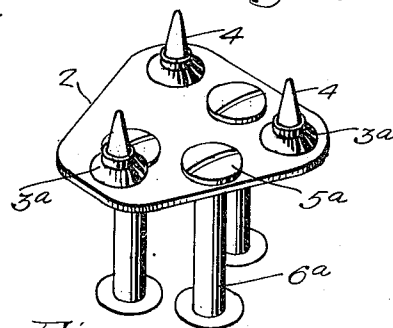


Fig. 4.

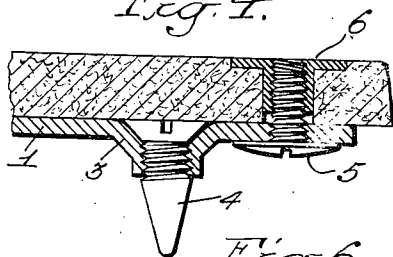


Fig. 5.

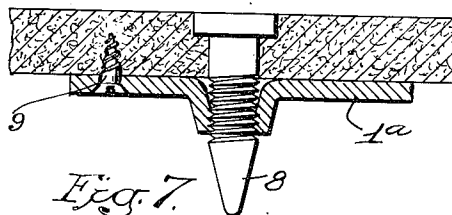


Fig. 6.

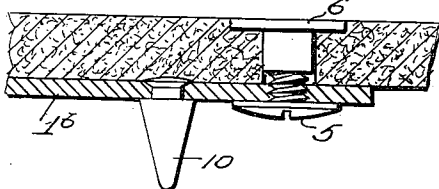
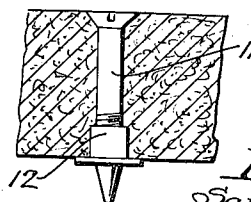


Fig. 7.



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UNITED STATES PATENT OFFICE

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SPIKED SPORT SHOE

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2 Claims. (Cl. 36—59)

This invention relates to improvements in spiked sport shoes, and a principal object of the invention is to provide simplified and generally improved means for mounting the spikes in the sole of the shoe.

The mounting of spikes on shoes has always presented a considerable problem. Not only must the spikes be securely retained in the sole, but they should be so mounted as to have a substantial rigidity preventing angular displacement from their normal axes. Screw-threaded spikes are incapable of adequately holding in the sole and quickly become displaced in the relatively soft leather. Spikes riveted in the sole are secure but are subject to displacement from their normal axes so that they lose their efficiency and make the shoe uncomfortable. Riveted spikes are also difficult to install and require the services of an expert for both installation and replacement.

An object of the present invention is to provide an efficient spike assembly that may be attached readily to any shoe by means involving no modification of the shoe structure beyond the capacity of the average layman.

Another object of the invention is to provide a novel spike device not only insuring positive retention of the spike on the shoe but also precluding angular displacement of the spike from its normal position.

Still another object of the invention is to provide a spike device in which the parts are so rigidly retained in normal position that even after extended wear the sole of the shoe will remain undeformed and comfortable to the foot.

Still another object of the invention is to provide a spike device of the stated character wherein the individual spikes may be readily removed for replacement in the event of excessive wear.

The invention further resides in certain novel structural details hereinafter described and illustrated in the attached drawing, in which:

Figure 1 is a view in perspective of a shoe equipped with spikes in accordance with my invention;

Figs. 2 and 3 are views in perspective showing the elements of a preferred embodiment of my device;

Fig. 4 is a fragmentary section on the line 4—4, Fig. 1, and

Figs. 5, 6, and 7 are fragmentary sectional views illustrating modifications within the scope of the invention.

With reference to the drawing, my device in a preferred embodiment comprises a sole plate 1

and a heel plate 2 both preferably made of non-corrodible metal, such as stainless steel, nickel silver or the like. The plate 1, which is preferably of triangular form as illustrated, is provided with a series of countersunk threaded sockets 3 which preferably and as illustrated in Fig. 4 are pressed out of the metal of the plate 1 so as to constitute integral parts of the latter. On that side of the plate which in assembly lies against the sole of the shoe the sockets 3 provide a recess for reception of the head of a threaded spike 4, the outer substantially cylindrical portion of the socket being threaded for reception of the correspondingly threaded portion of the spike element.

The plate 1 is adapted to be secured to the sole of the shoe in the position illustrated in Fig. 1, and the sockets 3 preferably are arranged along that edge of the plate which adjoins the inner edge of the sole of the shoe and along the diagonal edge, this arrangement affording the most effective distribution for golfing. It will be understood, however, that other forms of plate and other distributions of spikes on the plate may be used without departure from the invention.

The plate 1 in the illustrated embodiment and as shown in Fig. 4 is secured to the sole by means of a male screw element 5 and a mating female element 6, the female element being inserted from the inside of the shoe through a hole in the sole and the male element 5 being threaded into the female element from the outside of the plate. This type of connection affords an extremely rigid and strong union between the plate and the sole, is readily applied, and provides for removal of the plate 3 by simple release of the male screw element 5 from the outside of the shoe. Preferably the plate 1 is provided with three apertures 7 located as shown in Figs. 1 and 2 for reception of the retaining screw 5.

The heel plate 2 illustrated in Fig. 3 is provided with three sockets 3a corresponding to the sockets 3 of the sole plate 1 for reception of the threaded spikes 4, and this plate is also provided in a preferred embodiment with three openings for reception of the male element 5a of the plate-retaining screws, the female element 6a being of sufficient length to pass through the increased thickness of the heel. In all essential respects, the heel plate 2 corresponds structurally with the sole plate 1 described above.

An important feature of the construction resides in the mounting of all the spikes in a rigid plate adapted to be firmly secured to the bottom of the sole of the shoe. With this construction, the individual spikes are held rigidly in their

normal relative positions with respect to each other and to the sole of the shoe. When the plate 1 is secured by positive means such as the male and female screw elements 5-6 to the sole, there is no opportunity for displacement of any of the elements of the spike device or for misalignment of said elements resulting in distortion of the sole of the shoe and consequent discomfort to the wearer. At the same time by reason of the detachable mounting of the individual spikes in the plate and the readily detachable character of the means for securing the plate to the shoe, provision is made for replacement of the individual spike elements when the latter are worn to an extent destroying their effectiveness. It will be apparent further that utilization of the spike device entails merely the drilling of the sole of the shoe at the points where the retaining screws 5-6 are to enter and the insertion of the female elements 6 and 6a from the interior of the shoe through these apertures.

In Fig. 5, I have illustrated a modification within the scope of the invention wherein the threaded spike elements 8 are made to function also as the means for securing the plate 1a to the shoe, thus eliminating the separate retaining screws 5-6. In this case, as in the embodiment previously described, it may be desirable, in order to prevent displacement of the plate 1a in the plane of the sole and to avoid any consequent cocking of the spike elements resulting in the formation of protrusions at the inner surface of the sole, to provide screws 9 countersunk in the plate 1a and threaded into the sole of the shoe. These screws have no function in holding the plate 1a to the sole and merely tend to prevent displacement of the plate in its own plane so that the strains imposed upon the screws 9 are negligible, and there is no tendency for the screws to loosen in the sole.

In the embodiment illustrated in Fig. 6, the spike elements 10 are riveted to the plate 1b and are, therefore, not readily detachable therefrom. When replacement is required in this instance, the entire plate 1b is removed and a new one installed. While this type of device is an

entirely practical one, the other embodiments are preferred by reason of the ability afforded to replace the spikes individually without the necessity for replacing the base plate.

In Fig. 7 I have illustrated a modified heel spike in the form of a screw 11 passed through the heel from the inside of the shoe and held in place by a nut 12 inserted in a countersunk hole at the bottom of the heel and seating upon the latter. The thickness and relative rigidity of the heel prevent undesirable cocking of this individual spike. For relatively shallow heels, however, the plate formation is desirable.

I claim:

1. A spike device for sports shoes comprising a thin metal plate adapted to be secured against the bottom of the sole and having a plurality of threaded apertures for reception of projecting spike elements, means for rigidly securing the plate against the sole, and spike elements having head portions seating against the sole-engaging face of the plate and rigidly yet detachably secured to the plate by said threads, said plate in localized and limited areas immediately embracing said apertures being of extra effective thickness and thereby affording the apertures a threaded length in excess of the normal plate thickness sufficient to adequately hold the spikes against both transverse and longitudinal strains.
2. A spike device for sports shoes comprising a thin metal plate adapted to be secured against the bottom of the sole and having a plurality of threaded apertures for reception of projecting spike elements, means for rigidly securing the plate against the sole, and spike elements having head portions seating against the sole-engaging face of the plate and rigidly yet detachably secured to the plate by said threads, the metal of said plate in the localized areas immediately embracing said apertures being pressed out of the normal plane to provide an extra effective thickness affording the apertures a threaded length in excess of the normal plate thickness sufficient to adequately hold the spikes against both transverse and longitudinal strains.

SAMUEL F. LEVY.