

April 5, 1966

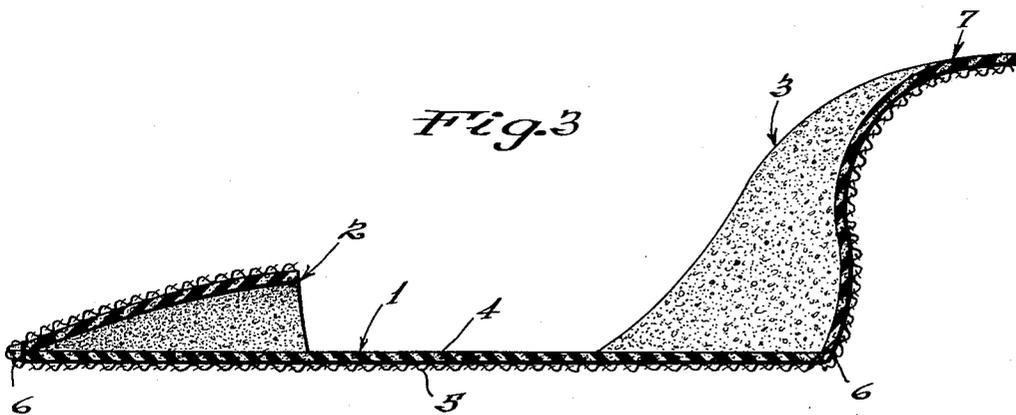
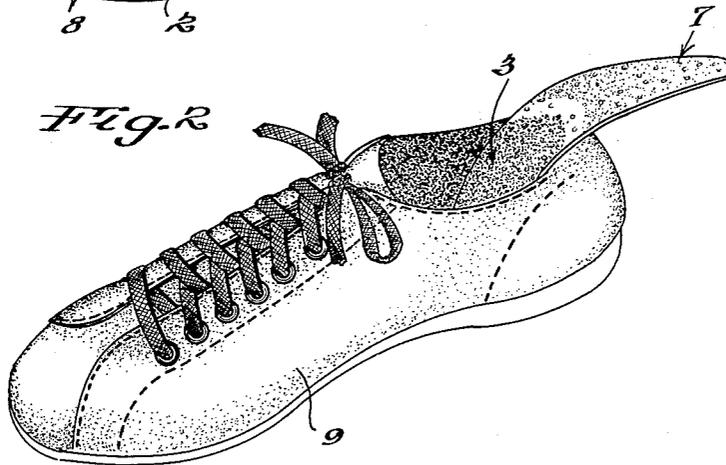
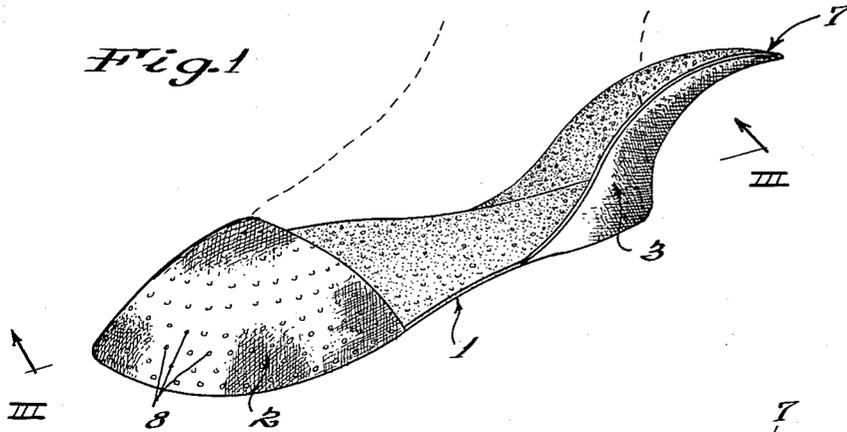
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3,243,901

ATHLETE'S FOOT PROTECTOR

Filed Sept. 5, 1963

2 Sheets-Sheet 1



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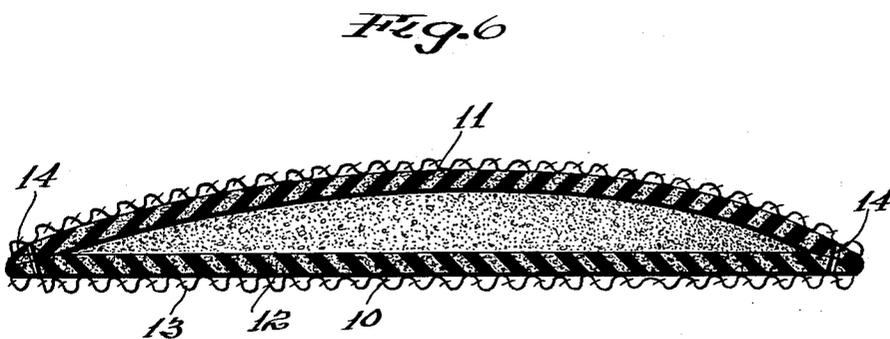
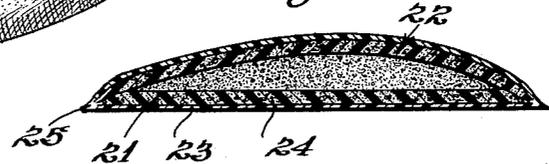
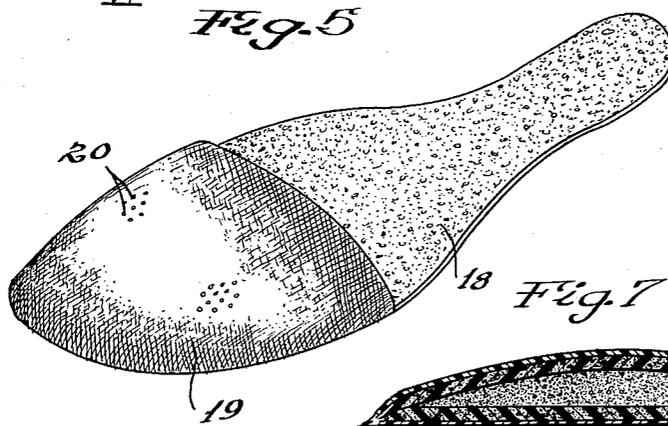
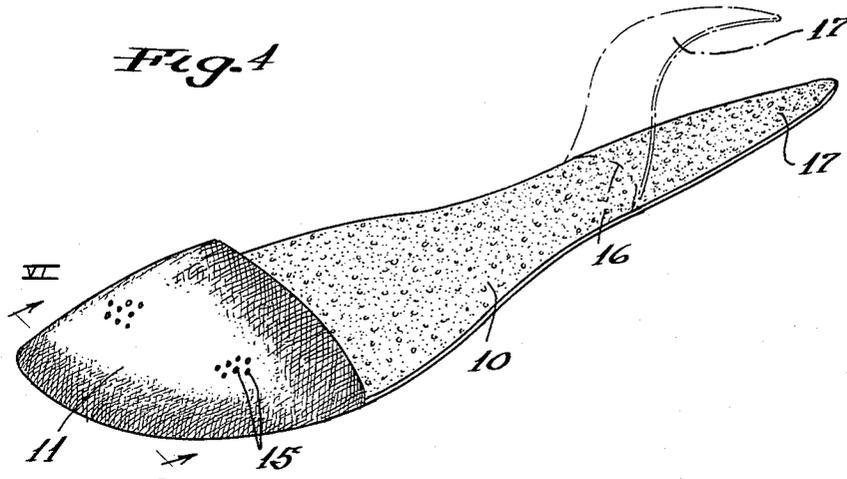
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3,243,901

ATHLETE'S FOOT PROTECTOR

Filed Sept. 5, 1963

2 Sheets-Sheet 2



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3,243,901

ATHLETE'S FOOT PROTECTOR

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Filed Sept. 5, 1963, Ser. No. 306,764
5 Claims. (Cl. 36-72)

This invention relates to improvements in an athlete's foot protector, and more particularly to a sock-like protector highly desirable for use by an athlete within a track shoe, baseball shoe, or similar article of footwear particularly where the athlete is engaged in running as a means of protecting the foot against blisters, bruises, and similar injuries occasioned by the terrific pounding occurring during a foot race, although the invention will have other uses and purposes as will be apparent to one skilled in the art.

Track shoes of the type used particularly in foot races are built extremely light, with relatively thin soles and carry judiciously disposed spikes or calks on the soles. The calks must be of sufficient length to penetrate into the ground, cinders, clay or whatever substance comprises the track, sufficient in diameter to withstand the pressure, and consequently pound and bruise the foot of the runner if no protector is utilized in the shoe. Blisters are frequently formed on the foot of the runner by virtue of the fact that the foot tends to slide forwardly in the track shoe whenever the spikes hold. The abuse of the foot is intensified when the track is not completely uniform in texture, and one or more spikes of the shoe may easily penetrate while one or more spikes may contact a hard substance and not penetrate nearly as far as the others. While ordinary cushion insoles may benefit the sole of the foot and aid in protecting it from spike hammer and the like, it does not help the toes in any material degree, particularly where the toes rub against the shoe upper. With many standard forms of insoles appearing on the open market, buckling and wrinkling in a most uncomfortable or injurious manner will in all probability occur.

Heretofore various types of sock-like or slipper-like protectors have been devised for use in a track shoe or other athletic footwear. These formerly known devices, however, particularly in connection with foot race runners, failed to give adequate cushioning to the foot both beneath the plantar surface of a foot and above the toes of the foot; and also failed in most cases to sufficiently absorb moisture, and remain flat in the shoe without buckling, wrinkling, gathering, opening up, or in some other fashion becoming askew to the discomfort and possibly injury of the user. Many of these formerly known devices do not eliminate blistering of the toes and the adverse effects of spike hammer on the sole of the foot.

With the foregoing in mind, it is an important object of the instant invention to provide a sock-like protector for an athlete's foot, with or without a formation to receive the heel of the foot at the sides thereof, which is so constructed as to stay flat in the shoe and provide a cushioning action on both the plantar surface of the foot and above the toes of the foot.

Also an important object of this invention is the provision of an athlete's foot protector so designed as to eliminate the adverse effects of spike hammer, and eliminate blistering of the toes, being made of a substance that has a gentle clinging action which prevents any relative frictional movement between the foot and the device in a manner to injure the skin.

It is also an object of this invention to provide a foot protector of the kind set forth herein which embodies a foam cushioning substance disposed entirely beneath the plantar surface of the foot and also over the dorsal

surface of the foot in the region of the toes to provide adequate moisture adsorption and more than sufficient cushioning effect against abrasion of the foot with the shoe.

Still another object of this invention is the provision of a foot protector highly desirable for use by athletes so constructed that during use it will not open up, gather, wrinkle, or become malformed in some similar fashion yet will yield to all normal foot movements and effectively protect the foot against the abuse suffered during foot race running.

It is a further object of this invention to provide a foot protector for athletes which has a socket portion at the front end to receive the toes of the foot, a portion flatly underlying the plantar surface of the foot, and portion to the rear which projects outside the shoe upper behind the heel and which aids materially in properly placing the foot in the shoe with the protector thereon.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a foot protector embodying principles of the instant invention, the outline of a foot being indicated by dotted lines;

FIGURE 2 is a perspective view of an athletic shoe with the structure of FIGURE 1 shown in operative position therein;

FIGURE 3 an enlarged central vertical sectional view of the device itself taken substantially as indicated by the line III—III of FIGURE 1, looking in the direction of the arrows;

FIGURE 4 is a perspective view of a foot protector also embodying principles of the instant invention, but of a slightly different construction, indicating in dotted lines the position of the rear portion of the device when in an athletic shoe;

FIGURE 5 is a perspective view of a device embodying principles of the instant invention but of a still different shape;

FIGURE 6 is a greatly enlarged transverse vertical sectional view of any of the devices of FIGURES 1, 2, 3, 4 and 5 taken in a location corresponding to that indicated by the line VI—VI of FIGURE 4; and

FIGURE 7 is a transverse vertical sectional view which may be taken in the same general location as FIGURE 6 through a device embodying principles of the instant invention, illustrating a slightly different construction.

As shown on the drawings:

The first embodiment of the instant invention, seen in FIGURES 1, 2 and 3 comprises a bottom member generally indicated by numeral 1, a toecap or covering generally indicated by numeral 2, and an upstanding heel receiving portion generally indicated by numeral 3. With reference to FIGURE 3, it will be noted that each one of the parts 1, 2 and 3 may be made of the same material if so desired. In the illustrated instance each of these parts comprises a layer 4 of foam material having intercommunicating cells for ventilative purposes as well as moisture absorption. This foam may be latex foam, vinyl foam, polyurethane foam, or the equivalent. Over the outer face of the foam is a fabric 5 secured thereto in any suitable manner, such as by cementing or curing the foam to the fabric, and this material 5 may desirably be a knitted fabric, jersey fabric, or the equivalent. There is an inherent stretchability in the foam layer more than sufficient for the intended usage, and the fabric is preferably so made that it is stretchable in one direction only, and in the case of this protector the fabric is stretchable laterally of the device only. With

only a lateral stretch in the protector, the fabric prohibiting any longitudinal stretch of the foam, the device will not open up, gather, wrinkle, or otherwise become uncomfortably or injuriously distorted during usage.

The toecap 2 and the heel receiving portion 3 of the device may each be joined to the bottom member 1 by stitching 6, and this stitching is preferably an overcast stitch which during usage expands and lessens the bulk of the device in the region where the parts are joined together.

It should also be noted that the heel receiving part 3 of the device has an elongated rearwardly extending tongue 7 which may be grasped between the thumb and fingers at the time the foot with the device thereon is inserted in the shoe.

For added ventilation, the toecap 2 may be provided with numerous apertures 8 in the fabric or through both the fabric and the foam, if such is deemed desirable or necessary for any particular circumstances of use.

In FIGURE 2 I have illustrated the device in operative position in an athlete's article of footwear such as a track shoe 9. It will be noted that the tongue portion 7 on the heel receiving part 3 projects without the shoe and it continues to do so during usage of the device. After putting the device itself upon the foot, the tongue portion 7 functions in the general manner of a shoehorn for placing the foot in the track shoe, and after usage this projecting tongue 7 frequently aids in removing the track shoe from the hot swollen foot.

The foam is in contact with the foot in all parts of the device, and this foam is preferably of a density such as to have a rapid recovery factor, being restored to initial thickness almost instantaneously upon removal of foot pressure. The foam provides a gentle clinging action against the foot and prevents any relative frictional movement between the foot and the protector such as would uncomfortably rub or abrade the skin. The foam also provides a cushioning effect to the device over the tops of the toes, the tips of the toes, the entire plantar surface of the foot and around the heel sufficient to absorb most of the jar in running, and protect the foot against spike hammer, stone bruises, and the like. The upper of the shoe cannot blister the tops of the toes, the ends of the toes or the heel of the foot by virtue of relative movement of the foot thereagainst. The device stays flatly against the inside of the shoe and does not open up, gather, wrinkle, or otherwise become uncomfortably distorted. Any relative movement between the foot and shoe during running or otherwise using the shoe does not cause objectionable friction against the foot because it is absorbed entirely by the protector. Furthermore, the protector is extremely light in weight and does not add objectionably to the weight of the shoe.

As is well known in the art, foam of the character herein utilized can be varied in density during the manufacture thereof. It should be noted, therefore, that if the foam layer 4 in the bottom member 1 of the protector is made of relatively dense foam there will still be sufficient cushioning and protection of the foot, and the fabric 5 on the outside thereof could be eliminated. In most cases, however, it is desirable to utilize the fabric to avoid any stretch longitudinally in the foam layer.

The form of the invention illustrated in FIGURE 4 comprises a flat bottom or base member 10 and a toecap 11, both of which may be made of the same laminated material as above described including an inner layer of foam 12 and an outer covering 13 of fabric stretchable in one direction only, namely laterally. These two parts may be secured together by overcast stitching as indicated at 14 in FIGURE 6. The toecap 2 may have numerous perforations 15 therein, if so desired.

In this instance, however, the base or bottom member 10 extends beyond the heel of the shoe, the termination point inside of the shoe being indicated by the dotted

line 16 and beyond that line the base member 10 incorporates an extension or tongue 17. This turns upwardly along the rear of the shoe and extends outwardly over the top of the shoe in the same manner as the tongue 7 previously described, and functions for the same purpose. The device of FIGURE 4 is desirable for an athlete who may not wish a heel receiving portion in the protector, but nevertheless desires the benefits of the projecting tongue.

In the event an athlete does not wish any heel receiving portion or rearwardly protruding tongue on the protector, he can use such a structure as is shown in FIGURE 5. In this instance, there is a laminated bottom layer 18 that reaches just to the rear of the shoe, a toecap 19 with or without apertures 20 therein secured to the base member in the manner above described, and both the base member and toecap are of the same material as above described. In this instance there is nothing protruding out of the shoe during use of the protector and the heel may be naked within the shoe.

In FIGURE 7 I have indicated that the protector may be made of different materials if so desired. In this instance the base member generally indicated by numeral 21 and the toecap generally indicated by numeral 22 are both shown as having an outer covering 23 of thermoplastic film such as vinyl or acetate film or the like, and an inner layer 24 of thermoplastic foam such as vinyl foam or polyurethane foam, or the equivalent. The parts then may be joined by a knife edge heat seal seam 25 which takes up very little room in a shoe.

From the foregoing, it is apparent that I have provided an economical, extremely lightweight, and durable foot protector highly desirable for use in athletic footwear such as track shoes. When the protector is in use, the foot of the athlete is cushioned and protected against abrasion, blisters, spike hammer, bruises and the like to an excellent extent.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In a foot protector for athletes, a laminated structure comprising a fabric outer layer stretchable in one direction only, a foam cushioning inner layer exposed to direct clinging contact with the foot whereby to avoid frictional movement relative to the foot, said structure being shaped to define a heel receiving part, a flat part devoid of sidewalls to underlie the plantar surface of the foot, and a toecap to receive the toes of the foot.
2. In a foot protector for athletes, a laminated structure comprising a fabric outer layer stretchable in one direction only, a foam cushioning inner layer, said structure being shaped to define a heel receiving part, a flat part devoid of sidewalls to underlie the plantar surface of the foot, a toecap to receive the toes of the foot, and a rearwardly extending tongue on said heel receiving part to project out of a shoe when the protector is in use.
3. In a foot protector for athletes, a flat part devoid of sidewalls to underlie the plantar surface of a foot, and a toecap attached to the forward end of said part to form a toe receiving pocket, both said part and said toecap comprising an outer cover of fabric stretchable only laterally, and an inner layer of foam cushioning material having intercommunicating cells and exposed to direct clinging

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contact with the foot whereby to avoid frictional movement relative to the foot.

4. In a lightweight foot protector for use within a light athletic spiked shoe,
 a flat part devoid of sidewalls to underlie the plantar surface of the foot, and
 a toecap attached to the forward end of said part to receive the toes of the foot and protect the same over all surfaces thereof,
 both said part and said toecap comprising a laminated material embodying
 an inner layer of foam cushioning material for contact with the foot of a user, and
 a thin outer cover in face-to-face connection with said inner layer and non-stretchable longitudinally of the protector. 15
 5. In a lightweight foot protector for use within a light athletic spiked shoe,
 a flat part devoid of sidewalls to underlie the complete plantar surface of the foot,
 an integral tapered extension on said flat part of a length sufficient to extend over the rear of the heel and out the top of the shoe when the device is in use, and
 a toecap attached to the forward end of said part to 25

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- receive the toes of the foot and protect the same over all surfaces thereof,
 both said part and said toecap comprising a laminated material embodying
 an inner layer of foam cushioning material for contact with the foot of a user, and
 a thin outer cover in face-to-face connection with said inner layer and non-stretchable longitudinally of the protector.

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