

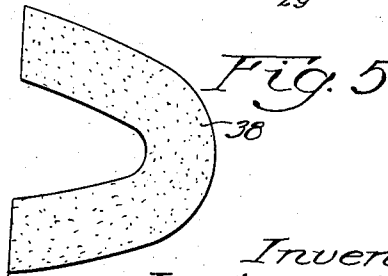
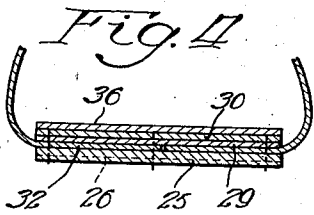
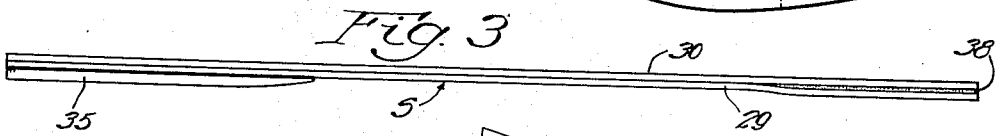
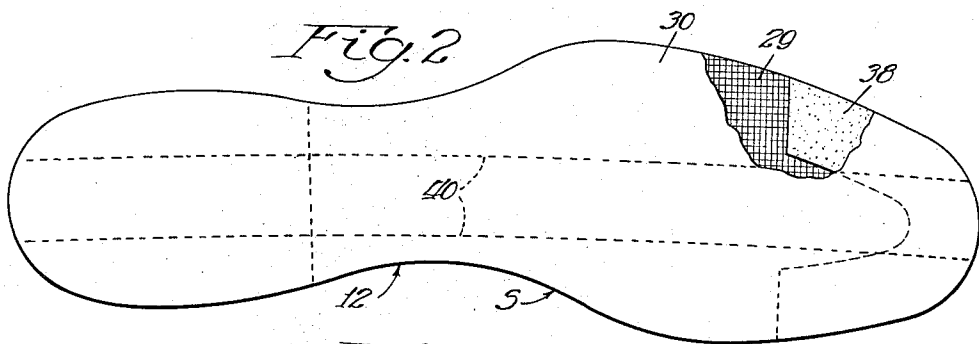
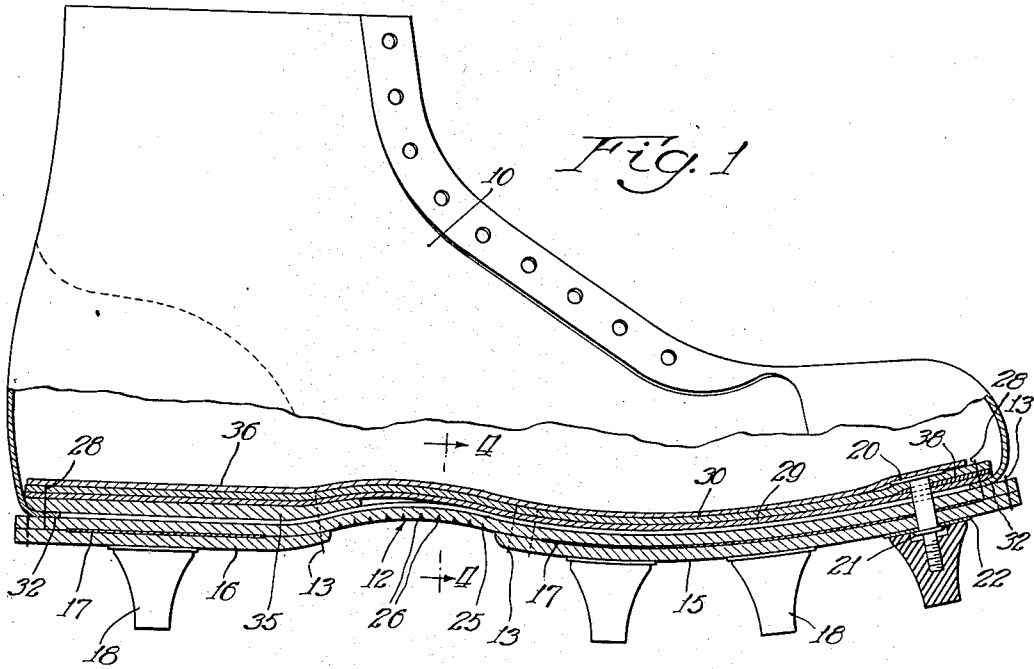
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I. SHAPIRO

2,177,156

SHOE INSOLE

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Inventor:
Isadore Shapiro
By: Frank H. Marks, Att'y.

UNITED STATES PATENT OFFICE

2,177,156

SHOE INSOLE

Isadore Shapiro, Chicago, Ill., assignor to The Athletic Shoe Company, Chicago, Ill., a corporation of Illinois

Application June 4, 1937, Serial No. 146,350

1 Claim. (Cl. 36—44)

My invention relates to shoes and has to do more particularly with shoes which are especially adapted for sports and athletics, such as for football, track, baseball, etc.

My invention also has a special application, but is not restricted to, cleated shoes.

Shoes for outdoor sports, and more especially shoes which are provided with ground penetrating cleats or spikes, in the past have been provided with reinforcing devices such as steel plates embedded in the sole of the shoe and other devices which were found necessary or desirable to give the necessary support to the cleats and to prevent such devices or their attaching means from being pushed up into the foot of the wearer. Such reinforcing devices added greatly to the weight of the shoe and substantially reduced the flexibility thereof, thus impeding the activity of the wearer and reducing his mobility as well as adding to his fatigue.

An object of my invention is to provide a shoe construction which is especially suitable for athletic shoes which will have greatly enhanced flexibility and reduced weight as compared with shoes of the types heretofore known, while at the same time having all of the necessary strength and support for the foot and for cleats where the latter are used.

A feature of my invention is that I use, in lieu of the usual heavy insole customarily provided in a shoe, a member formed of soft, light weight and extremely flexible leather such as kid or the like, such as is customarily used for the uppers of high grade shoes and is known in the trade as "upper leather". I am enabled to employ such material, which has heretofore been found difficult or impossible to use in this relation, by means of my improved construction.

My invention will be best understood by reference to the attached drawing forming a part of this specification and illustrating a preferred embodiment of my invention, wherein:

Fig. 1 is a longitudinal elevation partly in section of a shoe embodying my invention;

Fig. 2 is a bottom plan view of an insole embodying my invention, with parts torn away to illustrate the interior construction;

Fig. 3 is a side elevational view of said insole.

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 1; and

Fig. 5 is a plan view of a toe reinforcing member forming an element of my invention.

The numeral 10 represents the upper of a shoe, the sole being indicated generally by the numeral 12. To the sole are attached as by stitching 13

or the like a sole tap 15 and a heel tap 16. Plates 17 of thin flexible spring steel are preferably interposed between the taps 15 and 16 and the sole 12 when the shoe is provided with cleats, as in the embodiment illustrated. Molded frusto-conical cleats 18 are detachably secured to the sole and heel by any suitable cleat attachment such as studs 20. The studs may be upset as at 21 against washer 22 as more fully disclosed and claimed in my Patent No. 2,098,468 granted November 9, 1937.

The sole 12 comprises a strip 25 of relatively thin flexible leather, having sufficient strength to support the shoe combined with a high degree of flexibility. If desired, the flexibility of this member may be enhanced by means of scoring in the shank, as at 26. To the member 25 is attached by means of stitching 28 a composite insole S. This insole comprises a strip 29 of canvas or similar light flexible material to which is secured as by means of cement or the like a thin layer 30 of upper leather. As stated above, this material is a thin sheet of soft flexible kid or the like of the type which is used in shoe uppers. Artificial leather or other material having the necessary qualities may be used in lieu of the upper leather.

The stitching 28 extends around the sole and insole S adjacent the margin thereof and also secures to the sole and insole the upper which is turned under as at 32. A heel pad 35 formed of leather or other suitable material may be glued to the member 29 and a sock lining 36 formed of felt, thin leather, or other suitable material may be arranged in the inside of the shoe and secured to the top of the member 30, as by adhesive.

I preferably arrange between the members 29 and 30 adjacent the toe a stiff U-shaped strip 38, this strip being preferably formed of fabric impregnated with a suitable plastic material such as a cellulose ester or the like for strengthening the sole at this point. Any resinous product, natural or synthetic, may be used to stiffen the strip 38.

The preferred process of constructing the shoe embodying my invention is as follows: The U-shaped strip 38 is cemented either to the member 29 or 30 and the two last mentioned elements are then secured together as by a suitable cement. If the shoe is to be used without cleats, the composite insole S is then provided with longitudinal stitching 40 as shown in Fig. 2. This stitching is important in that it maintains the elements 29 and 30 in proper superposed and registered relation. The heel piece 35 is then

secured to the strip 29 as by cement and the shoe is then lasted by hand. In this process the upper 10 is temporarily tacked around under the composite sole part S as shown at 32 in Fig. 1 and the 5 turned in portion 32 of the upper is then cemented to the canvas part 29. In this process the toe portion of the shoe must be wiped over by machine and in order to withstand such treatment the reinforcing element 38 is desirable. The 10 sole member 25 is then laid on and cemented to the adjacent parts and the stitching 28 is then applied. The metal plates and the sole and heel taps are then secured by the stitching 13 in such embodiments as employ cleats.

15 It will be understood that where the shoe is provided with cleats, the longitudinal stitching 40 may be eliminated inasmuch as the cleat fastening devices will serve to maintain the elements 29 and 30 in proper relation. My invention is 20 applicable both to cleated and uncleated shoes.

In all embodiments of my invention I have provided a shoe of adequate strength for all practical purposes while at the same time such shoes have greatly enhanced flexibility and re-

duced weight, thus adding greatly to the comfort and efficiency of the wearer.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art, and hence I do not wish to be 5 limited to the specific forms shown and described or uses mentioned except to the extent indicated by the appended claim, which is to be interpreted as broadly as the state of the art will permit.

I claim:

10 In a shoe, a composite insole comprising a strip of upper leather, a strip of substantial and relatively flexible, light weight fabric secured thereto by adhesive and by longitudinal stitching 15 adjacent the central portion of the insole to prevent relative slippage of said parts, and a thin and relatively stiff U-shaped member formed of light weight material secured between said parts 20 adjacent the toe portion and having its outer edge substantially coextensive with the outer edge of said insole to provide reinforcement during the 25 lasting operation.

ISADORE SHAPIRO.