July 7, 1936. J. FEIN 2,046,732

SELF LOCKING INSERT FOR INSOLES

Filed Jan. 24, 1936

FIG. 1

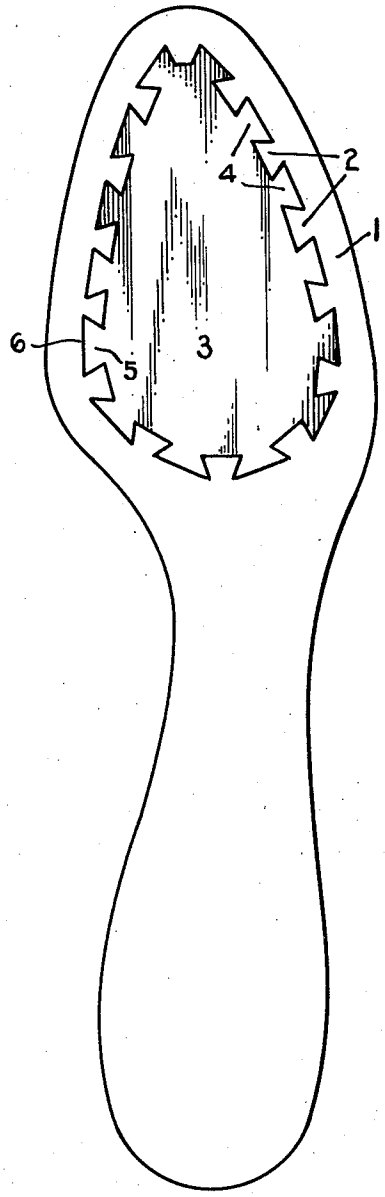


FIG. 2

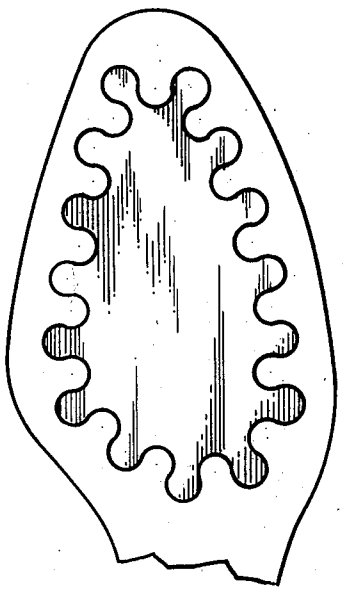
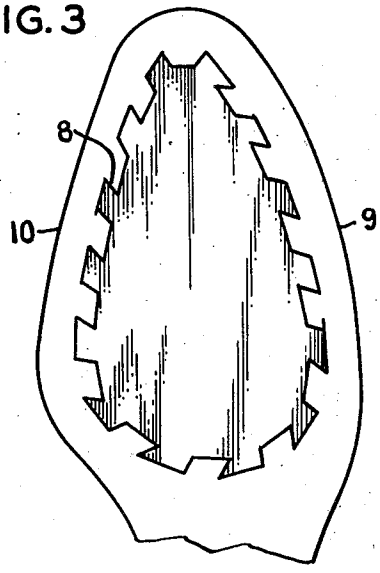


FIG. 3



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SELF-LOCKING INSERT FOR INSOLES

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3 Claims. (Cl. 36—43)

This invention relates to shoes and similar articles of footwear and more particularly to insoles thereof.

An object of the invention is to provide a self-locking insert for insoles that will act as a cushion and provide resiliency and flexibility.

Another object is to provide an insert for insoles that is free from stitches, adhesive or other separate fasteners.

Another object is to provide an insert that can move slightly, relatively to the insole, while in use so as to increase flexibility and provide additional comfort for the wearer.

Another object is to provide an insole with an insert at low cost of material and labor.

Other objects will appear in the following description, reference being had to the drawing, in which:

Fig. 1 is a plan view of an insole with the insert in place.

Fig. 2 is a view of a modification, the tread portion only, being shown.

Fig. 3 is a still further modification.

It is desirable to place inserts in the insoles of shoes or between the insole and the sole, to provide cushioning and resiliency for the comfort of the wearer. In some cases the insert in the sole has been fastened by extraneous means to the insole such as by sewing or with adhesive. These involve relatively costly operations and are not entirely satisfactory in use. For example, the insert of the prior art had to have a temporary retaining means before the stitching or other fastening operation took place, otherwise the insole and insert could not be held together prior to the fastening operation and the insole could be readily distorted. This required auxiliary holding means before the stitching operation could take place.

The sewed-in insert has not been satisfactory because the stitching causes irregularities to which the foot of the wearer is sensitive. Such inserts are rigidly held in place and cannot relatively adjust themselves to the insole during flexing of the shoe in walking. Other forms of prior art insoles have similar disadvantages.

My improved insole has none of the disadvantages and it can be used at less cost than any such device of which I am aware. The invention will be understood by referring to Fig. 1 in which the insole 1 has the opening cut therein but it has neither a straight nor a skived edge, as in the prior art types. The edge is serrated and it may take different forms so as to provide an interlock. In this figure the serrations 2 are shown as "dovetails". The opening with its dovetail edge, of course, may be stamped directly in a punching machine with a suitably shaped die and punching tool. The insert 3 is similarly punched out with serrations 4 that are counterparts of those in the insole; that is, the insert will have the form of the punched out part. The insert may be made of any desired material but I prefer one that is soft such as felt or cork, but kid or other soft leather or material could be used with like results.

The workman in the factory will receive the punched out insoles and the properly punched inserts and these can be readily interlocked together without any tools. The making of the openings, the insert and the interlocking of the two parts together are of extreme simplicity and the cost is low. Of course, if desired, the entire operation of stamping and fitting could be carried out by automatic machinery.

After the insert is fitted in place, the insole is as rigid to side stresses as before the center was cut out. That is, the outside edges of the insole cannot be altered from their original contour because the insert is locked in place and prevents distortion just as much as the original leather did. This is not true of prior art inserts and some temporary fastening means had to be employed to hold the two parts together before the permanent fastening means was applied. Usually paper or similar material was pasted over both insert and insole for this purpose. This had to be removed before applying the permanent fastening means.

In my invention the two parts are self-locking yet they can be assembled and disassembled as often as desired without affecting the fastening means in the least.

When the insole is finally secured in its proper place with the upper and sole of the shoe the insert provides resiliency and proper cushioning and yet it is not rigidly held in place in directions perpendicular to the insole. As the shoe is flexed in walking there can be relative movement between the interlocked edges which gives proper yielding to insure comfort to the wearer. There are also no rough spots to annoy the wearer as in the sewed-on types.

In Figure 2, I have shown a different form of interlock in which the serrations are of rounded contour. This has all the advantages of the form of Fig. 1.

The serrations need not necessarily be narrower at the points 5 than at 6, as in Figs. 1 and 2, though this is preferred. A number of them, though not necessarily all, may have a side mak-

ing an acute angle with the cut-out side as at 8 so as to provide a self-locking edge as in Fig. 3, the construction of which will be apparent. If one attempts to pull the edges 9 and 10 of the insole in reverse directions the slant of the sides of the serrations will prevent distortion. In this type only one edge of a serration prevents movement, whereas in Figs. 1 and 2 both edges of a serration resist movement, though of course all types are freely movable in a direction perpendicular to the plane of the sheet of drawing, as illustrated.

My invention is not to be limited to any particular self-locking arrangement as others may be employed without departing from the spirit of the invention.

The invention is applicable to various kinds of footwear and with various constructions of the same, either welt, cemented or other types.

Having described my invention, what I claim is:

1. In footwear, an insole of one material having an opening with serrations, one side of which extends at an acute angle from the edge of the opening, and an insert of another material in said opening having serrations with a correspondingly slanting side interfitting with the first-mentioned serrations whereby the insole and insert are self-locked except for movement perpendicular to the plane of the insole.

2. In footwear, an insole of one material having on opening, the edge of the opening having serrations with enlarged inner ends and an insert of another material in said opening with serrations that are substantially a counterpart of those on the insole and interfitting therewith whereby the insole and insert are self-locked except for movement perpendicular to the plane of the insole.

3. In footwear, an insole of one material having an opening with a dovetail edge, and an insert of another material in said opening having a dovetail edge interfitting with the first-mentioned dovetail edge whereby the insole and insert are self-locked except for movement perpendicular to the plane of the insole.

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