April 8, 1941. F. H. HUMMEL 2,237,783

METHOD OF STIFFENING SHOE INSOLES

Filed July 24, 1940

Fig. 1.

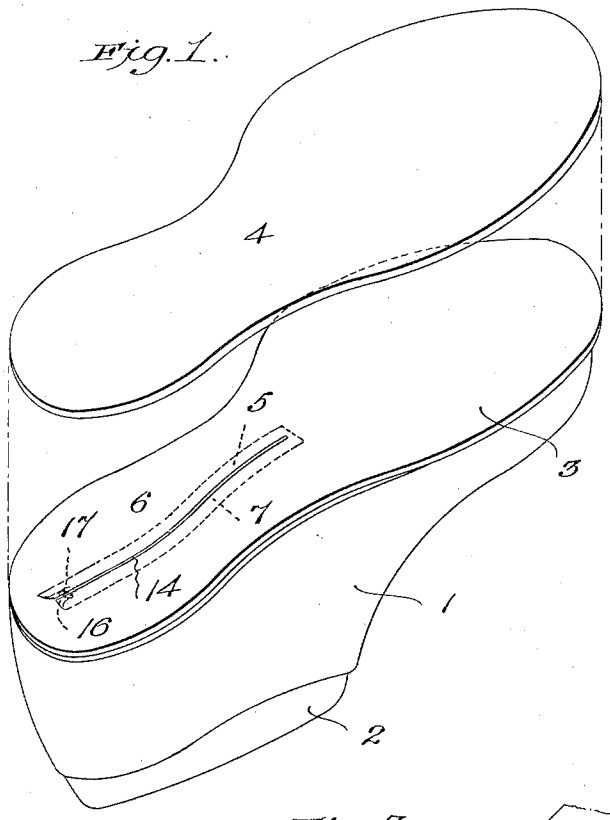


Fig. 5.

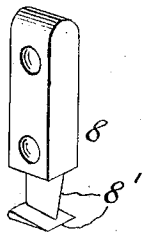


Fig. 6.

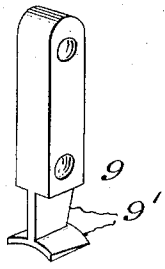


Fig. 3.

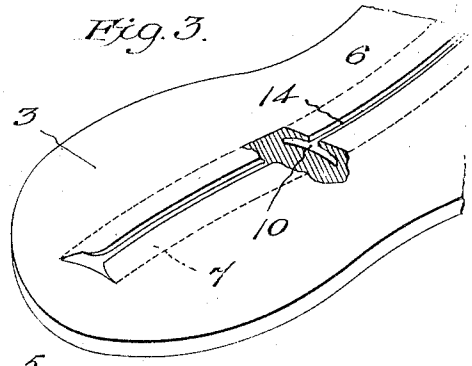


Fig. 2.

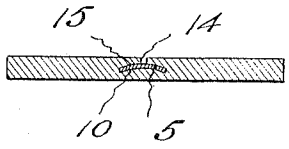
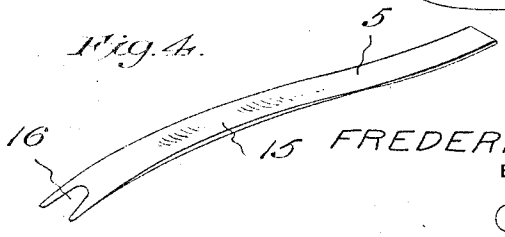


Fig. 4.



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METHOD OF STIFFENING SHOE INSOLES

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Application July 24, 1940, Serial No. 347,128

6 Claims. (Cl. 12—146)

The invention relates to improvements in means for reinforcing the shanks of shoes and is designed to stiffen and impart the desired form to the shank portion of ladies' and men's shoes.

The general object of the invention is to provide an improved method of securing the required stiffness to the shank of the shoe so that proper and comfortable support may be given to the arch of the foot of a wearer.

Another object of the invention is to provide a shank stiffener which is constructed and shaped so that it may serve to a material extent, as an arch support.

Another and further object of the invention is to provide a metallic shank-stiffener which may be quickly inserted and embedded within an elongated pocket formed within the interior of the shank so that no portion of the stiffener is exposed to the exterior thereof.

Other and further objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a perspective view showing my improved shank-stiffener in position on the shank or insole of a shoe and the outer sole ready to be secured thereto.

Fig. 2 is an enlarged cross-sectional view of an inner sole showing the pocket and stiffener mounted therein.

Fig. 3 is an enlarged perspective view of a portion of an inner sole with a part broken away to show the pocket formed therein.

Fig. 4 is an inverted perspective view of the shank stiffener.

Fig. 5 is a perspective view of a die for cutting a flat form of pocket in an insole, and

Fig. 6 is a perspective view of a die for cutting a curved or convex form of pocket in an insole.

Broadly stated according to the principles of my invention I provide a method of stiffening shanks or shoe insoles which consists of slitting the insole through the portion to be stiffened to provide a pocket within its interior, bisecting the outer wall of the pocket by a narrow elongated slot and inserting into the pocket a metallic stiffener to present a substantially smooth surface on the slotted face of the insole with no portion of the stiffener exposed to the exterior so that a covering layer of adhesive may be secured thereto if desired.

The invention will now be more fully described in detail to those skilled in the art, reference being had to the accompanying drawing, wherein:

1 designates a shoe in the process of manufacture mounted on a last 2 and 3 an insole to which is to be securely fastened the outsole 4. During the manufacturing process it is important to provide a metallic shank stiffener 5 which will maintain the shape originally imparted to the shoe and give rigidity to support the arch of the foot. In conforming to this procedure I propose to slit the insole through the portion to be stiffened as shown at 6 to provide a pocket 7 within its interior for completely housing the shank stiffener 5 with no portion of it exposed to the exterior.

The pocket is formed by means of an inverted T-shaped cutting die 8 as shown in Fig. 5, provided with cutting edges 8' to provide a flat form of pocket as shown in Fig. 1, or by means of a cutting die 9, provided with cutting edges 9' as shown in Fig. 6 to provide a curved or convex form of pocket 10 as shown in Figs. 2 and 3. During the process of manufacture the desired form of die to be used is secured in its proper adjusted position to a machine particularly adapted for its use and when operated the cutting edges of the die are forced through the body of the insole the desired length. In passing through the insole it is obvious that the cutting edges will slit the material through the portion to be stiffened to provide a pocket within its interior, with its outer wall bisected by a narrow elongated slot 14. The stiffener 5, as shown in Fig. 4, comprises a strip of metal of the desired thickness and elasticity, which is cut in any well known manner into sections of the required length. The strip is then bent lengthwise into the desired shape to strengthen and uphold the shank of the shoe and to support the arch of the foot in a resilient and easy manner. To further strengthen the shank portion of the shoe the metal shank piece may be slightly curved outwardly or arched in cross-section as indicated at 15 and shown in Figs. 2 and 4, and to securely hold the shank piece in position when housed in the insole, its rear-end portion may be provided with an opening 16 through which a nail 17, as shown in Fig. 1, may be driven into the insole to prevent displacement of the shank piece and preserve the proper shape of the shoes.

From the foregoing it will be apparent that with the shank stiffener firmly secured within the interior of the shank against displacement with no portion of it exposed to the exterior and due to the resiliency of the stiffener the molded

shape of the outsole may be obtained without destroying the flexibility of the shoe.

Although the present invention has been described with a preferred embodiment thereof, variations and modifications may be resorted to by those skilled in the art without departing from the principles of the present invention.

What I claim as new is:

1. The combination of a shoe insole having an elongated pocket formed within the material at the shank portion thereof and having one of its walls bisected by an elongated slot and a metallic reinforcing member fitting within the pocket with no portion of its surface exposed to the exterior.

2. The combination of a shoe insole having an elongated pocket formed within the material at the shank portion thereof, the forward end of the pocket being closed and the rear end open and terminating at the outer wall of the insole above its heel portion, said pocket having its outer wall bisected by a narrow elongated slot and a metallic reinforcing member fitting within the pocket with no portion of its surface exposed to the exterior.

3. The combination of a shoe insole having an elongated pocket of convex shape in cross section formed within the material at the shank portion thereof, the forward end of said pocket being closed and its rear end open and terminating at the outer wall of the insole above its heel portion, said pocket having its outer wall bisected by a narrow elongated slot and a metallic reinforcing member, of convex shape in cross section, fitting within the pocket with no portion of said member exposed to the exterior.

4. The method of stiffening shoe insoles which consists of slitting the insole through the portion to be stiffened to provide a pocket within its interior, bisecting the outer wall of said pocket by a narrow elongated slot, and inserting into said pocket a metallic stiffener so as to present a substantially smooth surface on the slotted face of the insole for receiving a covering layer whereby no portion of said stiffener is exposed to the exterior.

5. The method of stiffening shoe insoles which consists of slitting the insole by forcing a cutting die through the portion to be stiffened to provide a pocket within the interior of the insole with its outer wall bisected by a narrow elongated slot, and inserting into said pocket a metallic stiffener so as to present a substantially smooth surface on the slotted face of the insole whereby no portion of said stiffener is exposed to the exterior.

6. The method of stiffening shoe insoles which consists of forcing an inverted T shaped cutting die through the portion to be stiffened to provide a pocket within the interior of the insole with its outer wall bisected by a narrow elongated slot, and inserting into said pocket a metallic stiffener so as to present a substantially smooth surface on the slotted face of the insole whereby no portion of said stiffener is exposed to the exterior.

FREDERICK H. HUMMEL.