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Sussman

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[54] **HEEL INSERT FOR HIGH-HEEL SHOE**

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[52] **U.S. Cl.** ..... **36/34 A**

[51] **Int. Cl.** **A43b 21/00**

[58] **Field of Search** ..... 36/34 A, 34 R

[56] **References Cited**

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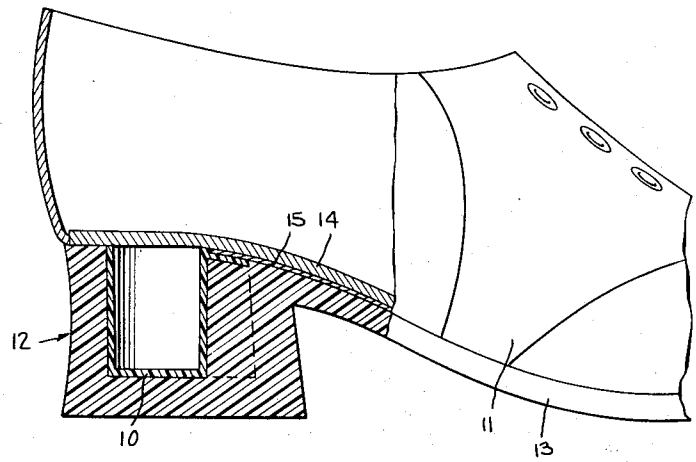
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Primary Examiner—Alfred R. Guest

[57] **ABSTRACT**

A heel insert adapted to cooperate with a stiffener shank and serving to reduce the amount of plastic material necessary to mold the heel of a high-heel shoe. The insert is preferably formed of polystyrene and is defined by a hollow, heel-shaped body having an open top which is adhered to an inner sole, the front wall of the body having a niche therein which when the heel is molded about the insert, is filled with plastic material to lock the insert within the heel. A recessed seat is formed at the upper end of the niche to receive the end of a stiffener shank which extends along the undersurface of the inner sole.

5 Claims, 4 Drawing Figures



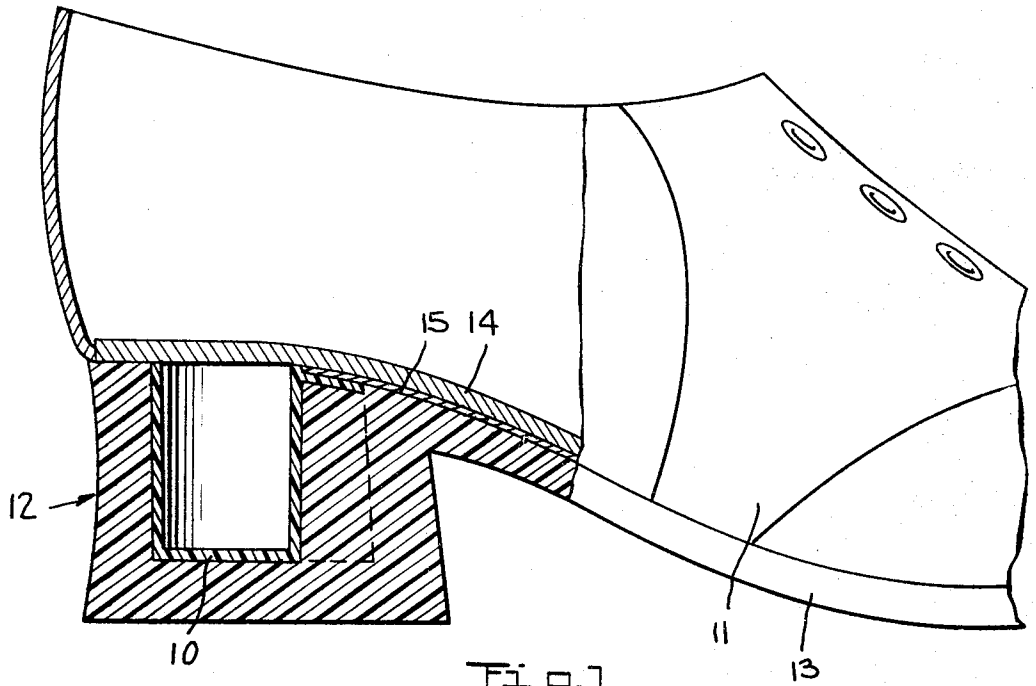


Fig. 1.

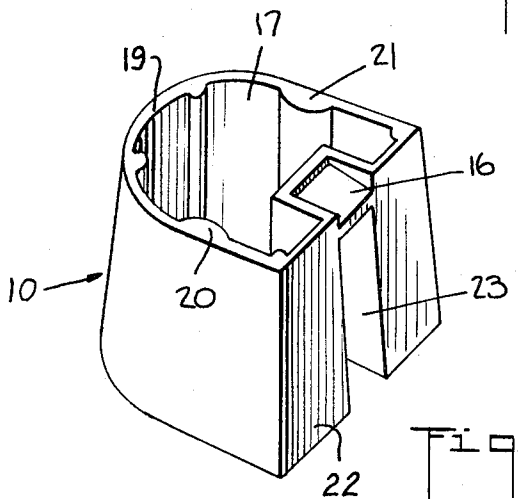


Fig. 2.

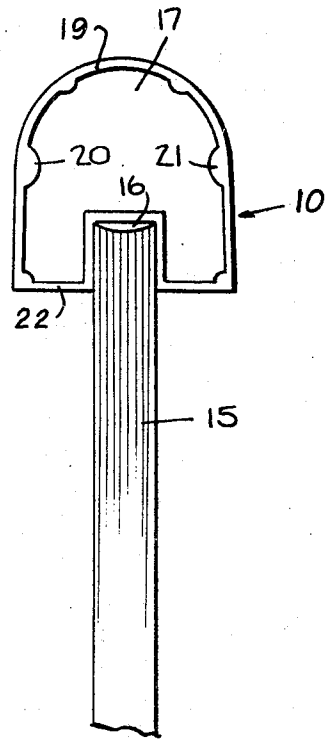
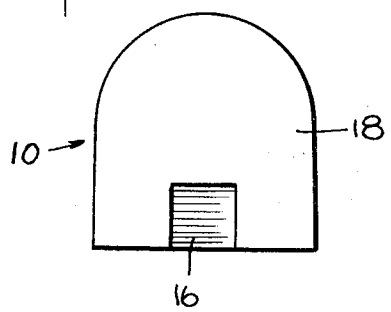


Fig. 3.

Fig. 4.



HEEL INSERT FOR HIGH-HEEL SHOE

BACKGROUND OF THE INVENTION

This invention relates generally to the manufacture of high-heel shoes, and more particularly to a heel insert adapted to cooperate with a stiffener shank and serving to reduce the amount of material necessary to mold the heel and to improve the structure of the shoe.

One method in widespread current use for manufacturing high-heel shoes involves die cutting a composition board or cardboard sheet to define an inner sole. One end of a steel stiffener shank is attached to the inner sole to form a subassembly. This sub-assembly is combined with a shoe upper in a rotary molding machine in which the sole and heel are injection molded of vinyl or similar plastic material in a manner forming a bond between the margin of the shoe upper and the plastic sole and heel assembly.

The traditional high heel is a tapered and rather slim structure. But present day styles dictate massive high heels, as a consequence of which a large amount of vinyl is required for the production of a shoe. Also because of the thickness and body of the heel, the molding cycle is relatively prolonged.

In order to reduce the amount of material required to form a high heel, it is known to use a cardboard or wooden plug as an insert about which the heel is molded, the plug being stapled to the inner sole. The disadvantage of a cardboard or wooden plug is that while it cuts down the amount of plastic required, it does not reduce molding time. Moreover, such plugs do little to strengthen the heel structure.

SUMMARY OF THE INVENTION

In view of the foregoing, it is the main object of this invention to provide a heel insert for a molded heel which improves the structure of the shoe, which decreases the molding time involved in forming the shoe, and which serves also to properly seat the associated stiffener shank.

Also an object of the invention is to provide a heel insert which not only reduces the cost of manufacturing high heel shoes but which also functions to improve the quality and strength of the shoe.

Briefly stated these objects are attained in a heel insert formed of polystyrene or other plastic material having similar thermal and mechanical characteristics, the insert being heel-shaped and being defined by a hollow body having an open top and a closed bottom and whose side wall has an arched configuration, the front wall having a niche therein which when the heel is molded about the insert, is filled with plastic material to lock the insert within the heel. Disposed at the upper end of the niche is a recessed seat for receiving the end of a steel shank and for fixing its position.

OUTLINE OF THE DRAWING

For a better understanding of the invention as well as other objects and features thereof, reference is made to the following detailed description to be read in conjunction with the accompanying drawing wherein:

FIG. 1 is a longitudinal section taken through a high-heel shoe which incorporates a heel insert in accordance with the invention;

FIG. 2 is a perspective view of the heel insert;

FIG. 3 is a top plan view of the heel insert and the shank stiffener associated therewith; and

FIG. 4 is a bottom plan view of the insert.

DESCRIPTION OF THE INVENTION

Referring now to FIG. 1, there is shown a high-heel shoe which incorporates a heel insert, generally designated by numeral 10, in accordance with the invention.

The shoe includes an upper 11 whose margin is bonded to a molded heel 12 which is integral with a molded sole 13. The top of the heel insert is adhered by a suitable glue to the underside of inner sole 14. Also provided is a stiffener shank 15 one end of which is received in a recessed seat 16 formed on the top of the heel insert. The shank is made of high strength flexible metal such as steel.

As best seen in FIGS. 2, 3 and 4, the heel insert, embedded in the heel, is formed by a heel-shaped, hollow body having an open top 17, a base 18 and a side wall 19 having an arched configuration. The interior surface of the side wall has reinforcing ribs 20 and 21 therein. The front wall 22 of the insert has a central niche 23 formed therein extending vertically and terminating in the recessed seat 16.

In fabricating the shoe, one end of the steel stiffener shank 15 is first seated on the insert and the inner sole 14 is then adhered to the top surface of the insert to form a sub-assembly. The sub-assembly is then placed in a rotary injection molding machine of a commercially available type having a station supplied with shoe uppers. The station is caused to rotate to a particular point at which the sole and heel are injection molded, the molding of the heel being about the insert. In the molding operation, a bond is formed between the margin of the shoe upper and the heel and sole assembly. Because the hollow insert is closed by the inner sole to which it is attached, no vinyl enters the insert.

Because the insert occupies substantial space, it markedly reduces the amount of plastic material required to create the heel. And because the average wall section of the heel is decreased by the insert, the molding cycle is shortened. The insert is preferably molded of rigid polystyrene or a plastic material having comparable thermal and structural characteristics, whereas the heel and sole are molded of vinyl or other suitable flexible material.

The thermal characteristics of polystyrene are such that it absorbs heat at a faster rate than wood or cardboard plugs of the type heretofore used as inserts. As a consequence, the vinyl surrounding the polystyrene insert solidifies more quickly, thereby decreasing the molding time.

Niche 23 formed in the insert creates an indentation that is filled with vinyl molding material to form a vinyl ridge serving to stabilize the insert position within the heel. The hollow insert not only cuts down the amount of vinyl required but it also lightens the heel. Since the heel is relatively massive, the resultant reduction in weight is of practical importance. Moreover the heel insert is of high strength and reinforces the heel structure.

While there has been disclosed a preferred embodiment of the invention, it will be appreciated that changes may be made therein without departing from the spirit of the invention as expressed herein.

I claim:

1. A heel insert for a molded shoe heel, said insert being formed by a heel-shaped hollow body having an open top which is adherable to an inner sole which encloses the body, said insert having a niche in the front wall thereof which is fillable with the molding material to form a stabilizing ridge, the niche terminating at the top of the insert in a recessed seat adapted to receive the end of a stiffener shank.

2. A heel insert as set forth in claim 1 fabricated of polystyrene.

3. A heel insert as set forth in claim 1 wherein said insert includes a side wall having an arched configuration, the inner surface of said side wall having reinforcing ribs.

4. A shoe heel molded of vinyl material and having embedded therein an insert formed by a heel-shaped hollow body of polystyrene material, said insert having an open top which is adherable to an inner sole which encloses the body, said insert having a niche in the front wall thereof filled with the molding material of the heel to form a stabilizing ridge, the niche terminating at the top of the insert in a recess seat adapted to receive the end of a stiffener shank.

5. A sub-assembly for a high-heel shoe comprising:

A. a shoe heel molded of plastic material;

B. an insert embedded in said heel and formed by a heel-shaped hollow body having an open top and a niche in the front wall thereof, said niche being filled with the molding material of the heel to form a stabilizing ridge that terminates at the top of the insert in a recessed seat;

C. a stiffener shank seated in said recessed seat, and

D. an inner sole bonded to the top of said insert to enclose said hollow body.

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