SHOE WITH INTERCHANGEABLE HEELS

Inventor: Bobby G. Gillikin, Beaufort, N.C.
Assignee: Martha Ann Willis, Harkers Island, N.C., a part interest

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Primary Examiner—Alfred R. Guest
Attorney—Clarence A. O'Brien and Harvey B. Jacobson

ABSTRACT

A shoe construction having angle irons mounted to the heel seat of the shoe for slidably mounting interchangeable low and high heels. An arch supporting plate is attached to the shoe shank for rendering vertical support to the shank when a high heel is utilized. An elastic band is attached to the upper opening for retaining the upper snugly against the wearer's foot. Stiffening strips are attached to oppositely disposed vertical arch portions of the shoe to prevent outward bulging of this shoe portion when the high heel is employed.

4 Claims, 8 Drawing Figures
SHOE WITH INTERCHANGEABLE HEELS

In the past, several designs have been conceived which allow the shoe wearer to wear high and low heels. However, such shoe constructions generally require the fastening of hardware which requires tools. One type of prior art construction utilizes a dovetail connection for attaching a heel to the shoe. However, this retention loses its effectiveness as the shoe is worn and play in the connections develops. A common problem with the prior art resides in the absence of means for retaining the shoe upper in intimate contact with the wearer's foot when the shoe is converted to high heel use. Therefore, although the prior art constructions allow for snug fit when the shoe is worn with a flat heel, when the high heel is mounted, the flexing of the shoes causes outward bulging which definitely detracts from the shoe's aesthetic appearance.

The primary purpose of the present invention is to provide means for retaining the shape of a shoe having interchangeable heels. The present construction includes stiffener strips inserted in the oppositely disposed lateral arch portions of the shoe as well as an elastic band attached to the collar of the shoe. This combination of means provides intimate fitting between the shoe upper and a wearer's foot when the shoe is changed from a flat low-heel position to a flexed high heel position. Also, an arch supporting plate is mounted to the shoe shank for rendering vertical support to the shank thereby preventing the shank from sagging when the high heel is used.

In order to allow heel interchangeability, angle irons are suitably fastened to the heel seat of the shoe body, each of the angle irons being shaped to include a tapered or wedged flange portion. Mating grooves are formed in the heel so that sliding engagement between the heel and the angle irons can be effected. When the heel fully engages the angle irons, a wedging action is achieved thereby connecting the heel securely to the shoe. This wedging action is not lost after prolonged use and many changesover, as is prevalent with prior art constructions. These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a side elevational view of the present invention, having a cutaway portion to illustrate an elastic band along the shoe collar, the shoe being illustrated with a high heel.

FIG. 2 is a bottom plan view of the shoe shown in FIG. 1.

FIG. 3 is a partial longitudinal sectional view taken along a plane passing through section line 3—3 in FIG. 2.

FIG. 4 is a rear elevational view of the shoe shown in FIG. 3 with a cutaway portion to illustrate the mechanical components allowing shoe interchangeability.

FIG. 5 is an exploded view illustrating the interchangeable heels and means for mounting the same to the shoe body and also illustrates means for retaining the shoe upper in intimate contact with the wearer's foot.

FIG. 6 is a partial sectional view illustrating the contour of a groove formed in a heel which permits the mounting of the heel to the shoe body.

FIG. 7 is a view similar to FIG. 1 illustrating the shoe employed with a low heel.

FIG. 8 is a top view of the heel of FIG. 7.

Referring to the figures and more particularly FIG. 1 thereof, reference numeral 10 generally denotes a shoe construction having interchangeable heels. The shoe includes an upper 12 bounded along the top edge thereof referred to as a collar 13. The forward portion of the collar is referred to as a throat 14. The sole of the shoe 15 resembles the conventional sole and attaches to the rear portion of an interchangeable high heel 16. As will be seen by FIG. 7, the high heel may be removed from the shoe and in its stead, a low or flat heel 18 can be mounted. The heel forms an interface with a heel seat 17.

Referring to FIGS. 1-3, in order to retain the shape of shank 22 when the shoe is employed in the high-heel mode, a shank stiffening plate 20 is integrally attached between the shank 22 and an inner sole pad 21. This plate is fabricated from steel and is characterized by dimensions typically approximately ½ inch in width and 4½ inches in length. The steel plate exhibits little flexibility thereby rendering vertical support of the shank as becomes apparent in FIG. 1.

As previously mentioned, a common problem with shoes having interchangeable heels is that when a snuggly fitting shoe with a mounted low heel is converted to high heel use, the laterally opposing arch portions 25 of the shoe upper, as well as the shoe collar 13 have a tendency to bulge outward thus decreasing foot support and detracting from the aesthetic appearance of the shoe. In order to obviate this problem, two angularly inclined plastic strips 24 are suitably attached to the inner surface of the arches 25 and extend at the transverse edges thereof between the shoe collar and the shoe shank. These rigidifying strips prevent the outward bulging and drooping of the shoe arch portions.

In order to retain the shoe collar 13 against the wearer's foot, a generally U-shaped elastic band 26 clearly shown in FIG. 8 is sewn, pasted or otherwise suitably attached along the shoe collar. The bight portion of the band extends around the instep of the shoe while the outer band ends are generally disposed in vertical alignment with the breasting 27 of the heel.

A pair of mounting brackets 28 illustrated in FIG. 5 are mounted to the heel seat 17 and provide means for mounting the interchangeable heels. Each bracket 28 has an upper flange 30 including a series of apertures 32 therein for allowing rivet attachment of the bracket to the heel seat 17 and inner sole pad 21, as shown in FIG. 3. The web portion 34 of the bracket is formed perpendicular to the flange 30 and is fashioned in the shape of a wedge or elongated trapezoid. Thus, the forward edge of web 32 is smaller in height than the rearward edge. This configuration permits wedging engagement between the brackets and grooves formed in the interchangeable heels as hereinafter explained. A third bottom horizontal flange 36 appends from web 34 and is oppositely directed from the aforementioned flange 30. Thus, the cross section of the mounting brackets may be characterized as a dimensionally varying Z-shaped member as shown in FIG. 4. When mounted to the heel seat, the free ends of the bottom horizontal flanges 36 confront one another.

Once an interchangeable heel is slantly mounted on the angle irons 28, the heel is locked into place by a detect assembly including a plate 38 riveted to the shank 22 immediately in front of the heel breasting 27. A downwardly extending projections 42 is adapted to engage an aperture 46 formed in a cantilevered projection 45 which extends forwardly of the top edge of the interchangeable heels 16 and 18. The engagement of projection 42 and aperture 46 complete the detent engagement between the main shoe body and the heel. The forward edge of the cantilevered projection 45 is turned downwardly somewhat thereby permitting the wearer to manipulate the projection 45 when release of locking engagement is desired so that the mounted heel may be removed and an alternate heel put on. Two parallel spaced grooves generally indicated by reference number 44 are forward in the upper surface of heels 16 and 18. The cross section of these grooves is substantially L-shaped thereby permitting intimate sliding engagement between the angle irons 28 and the grooves 44. As previously mentioned, the web portion 34 of the angle iron 28 is wedged into mating groove portions so that the heel is snugly engaged by the angle iron. This engagement coupled with the locking engagement of the aforementioned detent assembly insures secure attachment of the heel to the shoe body.

When removal of a particular heel is desired, the cantilever projection 45 is pulled thus permitting easy sliding displacement of the mounted heel from the angle iron and positioning of a second heel thereon.
The present invention is particularly attractive for working women, such as secretaries and store clerks because it provides means for wearing low heels during the working day and rapid changeover to high heels when desired, such as for evening wear. The extra pair of heels can be conveniently carried in the lady's purse and when changeover is desired, it may be effected simply and conveniently.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows.

1. A shoe structure having removable heels comprising mounting means fastened to the heel seat for removable attaching a heel, and means attached to the shoe upper for retaining a snug fit between the shoe and the wearer's foot when the shoe is worn with either heel, the means connected to the upper of the shoe including vertically extending stiffening strips attached directly to oppositely disposed lateral side portions of the upper in the shank portion along a substantial length of each stiffening strip for retaining a snug fit between the side portions of the upper and the wearer's foot when the shoe is worn with either heel and to prevent outward bulging of the side portions when the high heel is worn.

2. The structure set forth in claim 1 wherein the means attached to the upper includes a generally U-shaped elastic band attached to the upper opening, the bight of the band lying along the throat portion of the upper opening and the outward ends of the bands extending to points in general vertical alignment with the breasting of the heel, the band overlying at least a portion of each stiffening strip serving to retain the shape of the side portions by preventing outward bulging in the proximate areas of the stiffening strips.

3. The structure set forth in claim 2 together with a shank stiffening plate attached to the shank for vertically supporting the shank when the shoe is worn with a high heel.

4. The structure set forth in claim 3 wherein said elastic band overlies a substantial vertical area of each side portion to prevent bulging in a generally horizontal direction, said stiffening strips maintaining the side portions shape to prevent bulging in a vertical direction.