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REPLACEABLE INSERTS FOR SHOES AND THE LIKE

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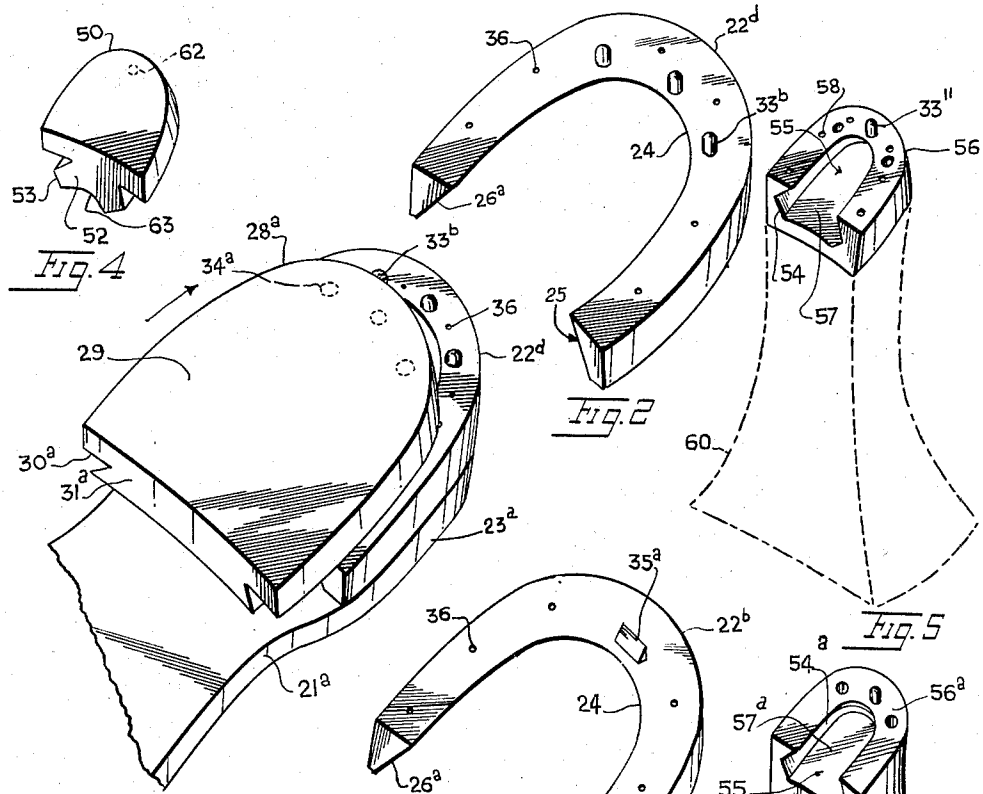

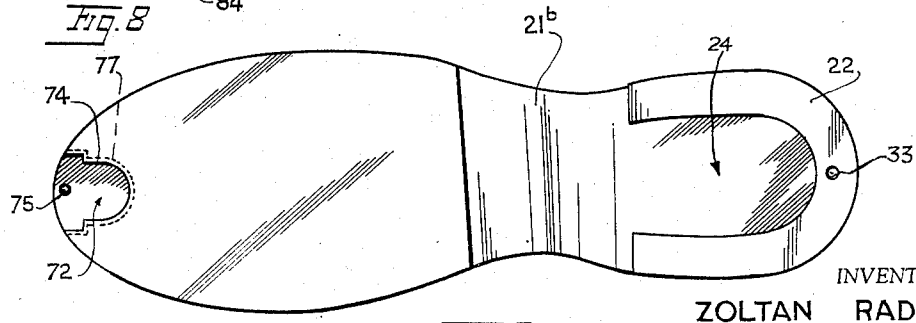

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REPLACEABLE INSERTS FOR SHOES AND THE LIKE

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1 Claim. (Cl. 36—25)

This invention concerns novel heel and toe constructions for shoes and the like.

The invention has as a principal object provision of a replaceable heel or toe insert for a shoe. The shoe heel or toe insert is formed of resilient rubber material and is adapted for easy application to a heel or toe portion of the sole of a shoe, the attached heel or toe insert being held in place by friction and the resiliency thereof.

A further object is the provision of a removable resilient shoe heel or toe insert which is so constructed and formed that it will have an interfitting and interlocking relation with the heel or toe portion of the sole of the shoe with which it is associated.

A still further object is the provision of a replaceable heel or toe insert which is easily mounted in position and which when once mounted will be firmly secured in place, until the replaceable heel or toe insert is worn, when it becomes easily removable from the shoe to which it has been attached.

Another object is the provision of a heel or toe insert which utilizes compressive forces set up therein during use to hold the structure more securely in position on a shoe.

According to the invention the replaceable heel or toe insert is provided with a dovetailed projection and groove adapted to fit a correspondingly dovetailed portion of a fixed shoe heel or toe structure. The heel or toe insert is held in position by a detent pin carried by the fixed shoe and fitting into a recess in the replaceable heel or toe insert.

The invention provides a means whereby the user can replace his own worn shoe heel and toe structures with new ones without requiring any particular skill and tools, and at very low cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a shoe heel structure embodying one form of the invention.

Fig. 2 is a similar view of a shoe heel structure embodying another modified form of the invention.

Fig. 3 is a perspective view of a portion of a shoe showing the heel structure of Fig. 2 fixed thereon and another replaceable heel structure partly mounted on the fixed heel.

Fig. 4 is a perspective view of another modified form of heel lift adapted for use on a lady's shoe.

Fig. 5 is a perspective view of a fixed heel mounting structure adapted to accommodate the heel lift of Fig. 4 on a heel of a lady's shoe.

Fig. 6 is a perspective view of a portion of a fixed heel of a lady's shoe adapted to mount the heel lift of Fig. 4 thereon.

Fig. 7 is a bottom plan view of a shoe sole showing

modified fixed heel and toe insert mounting structures according to the invention.

Fig. 8 is a bottom plan view of a replaceable toe insert adapted to be used with the toe portion mounting structure of Fig. 7.

Fig. 9 is a sectional view taken on line 9—9 of Fig. 8.

Referring to Fig. 1, there is shown a heel mounting structure 22^b embodying one form of the invention. This structure 22^b is adapted to be mounted on a heel portion 23^a of the sole 21^a of a shoe, a portion of which is shown in Fig. 3. The heel structure 22^b has a U-shaped or horseshoe-shaped body defining a U-shaped recess 24. The recess has a flat bottom and a side wall 26^a which is undercut to define a dovetailed groove 25. Holes 36 serve to receive nails or screws whereby the structure is secured to the heel portion 23^a of a shoe sole 21^a as shown in Fig. 3. The U-shaped body 22^b is adapted to accommodate removably a replaceable heel structure, such as the heel structure 28^a shown in Fig. 3. Heel 28^a is formed of resilient rubber or plastic material and has the shape of the heel portion 23^a of the sole 21^a. It has a flat bottom 29 and a U-shaped outer wall. Extending from the inner or upper side 30^a of the heel is a U-shaped tenon 31^a having a flaring dovetailed side wall adapted to fit into the dovetailed groove 25 of the mounting structure 22^b of the shoe. A wedge-shaped detent 35^a is mounted at the bight end of the structure 22^b and projects upwardly therefrom. Accordingly, a shaped hole is formed in the facing side of the heel structure, to receive the detent 35^a.

Another modified form of heel mounting structure 22^d is shown in Fig. 9. This form of mounting structure is somewhat similar to the form of structure shown in Fig. 8 except that three spaced detents 33^b are provided in place of a single detent 35^a.

In Fig. 3, the modified form of heel mounting structure 22^d is shown attached to the heel portion 23^a of the sole 21^a. Heel structure 28^a is shown being mounted on the structure 22^d in Fig. 3. Structure 22^d has a plurality of spaced pins or pegs 33^b projecting upwardly therefrom. Corresponding spaced holes 34^a are formed in the facing side 30^a of heel structure 28^a. Heel structure 28^a has a dovetailed tenon 31^a of U-shape.

Figs. 4–6 illustrate heel mounting arrangements especially adapted for ladies' shoes. Heel lift 50 has a dovetailed tenon 52 whose side wall 53 is ridged rather than flat. This ridged wall fits into a groove 54 which has a V-shaped cross section and is formed in the U-shaped mounting structure 56 which has a recess 55 with flat bottom 57. Holes 58 in the U-shaped rim permit nailing the structure to a heel 60 shown in dotted lines in Fig. 5. Detent pin 33″ on structure 56 engages in a recess 62 in the heel lift 50 to retain the lift on the heel 60.

Fig. 6 shows the heel mounting structure 56^a integrally formed with the heel 60^a. The U-shaped recess 55 is formed in the end of the heel and this recess is provided with a dovetailed groove 54^a for retaining the tenon 52 of heel lift 50. The recess has a flat bottom 57^a which receives the side 63 of the tenon 52.

In Figs. 7–9 there is shown a sole 21^b provided with a heel mounting structure 22. This structure has a U-shaped or horseshoe-shaped body defining a U-shaped recess 24. The recess has a flat bottom and a side wall which is undercut to define a dovetailed groove adapted to accommodate removably a replaceable heel structure, such as the heel structure 28^a shown in Fig. 3. In addition, the sole is provided with a toe mounting structure 72. This structure includes a generally U-shaped recess 74 having an undercut dovetail grooved side wall 77. A detent pin or projection 75 extends from the bight end of recess 74. A toe insert 80 for mounting in the toe mounting structure is best shown in Figs. 8 and 9. It is

a resilient rubber member provided with a U-shaped dovetailed tenon **82** having an inclined side wall **84** which fits into the dovetail grooved wall **77** of the mounting structure.

As best shown in Fig. 9, a hole or recess **83** is formed near the bight end of the toe insert to receive the pin **75**. The base **78** of the toe insert is thicker than the tenon **82**. This base takes up wear on the toe portion of the shoe and when worn away, the toe insert **80** can easily be peeled off of the toe mounting structure **72** for replacement with a new toe insert **80**. Thus, without use of tools or any special skill or facilities, the user can replace his own shoe toes and heels when worn. If desired, the user can obtain several shoe toe inserts and replaceable heels from the dealer at the time he purchases his shoes, or he can purchase the replaceable heels and toe inserts separately as needed. The mounting structures, if integrally formed with the heel portions of the soles as shown in Figs. 6 and 7, will be fabricated at the factory where the shoe is made. The mounting structures of Figs. 1–3, and 5 may be applied by a shoe repairman to any conventional shoe sole. Thereafter, the user can attach his own replaceable heels at will without requiring further use of the repairman's services in this regard. The old worn shoe heels are health hazards as they tend to twist and disfigure the normal condition and growth of the angles of the wearer, therefore, this invention facilitates the interchanging of old shoe heels which may be readily detached by lifting and removed when they become thinner and worn. The invention is applicable to the heels or toes of men's, ladies' and children's shoes, as explained above.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Referring to Fig. 1, there is shown a heel mounting structure 22^b embodying one form of the invention. This structure 22^b is adapted to be mounted on a heel portion 23^a of the sole 21^a of a shoe, a portion of which is shown in Fig. 3. The heel structure 22^b has a U-shaped or horseshoe-shaped body defining a U-shaped recess **24**. The recess has a flat bottom and a side wall 26^a which is undercut to define a dovetailed groove **25**. Holes **36** serve to receive nails or screws whereby the structure is secured to the heel portion 23^a of a shoe sole 21^a as shown in Fig. 3. The U-shaped body 22^b is adapted to accommodate removably a replaceable heel structure, such as the heel structure 28^a shown in Fig. 3. Heel 28^a is formed of resilient rubber or plastic material and has the shape of the heel portion 23^a of the sole 21^a. It has a flat bottom **29** and a U-shaped outer wall. Extending from the inner or upper side 30^a of the heel is a U-shaped tenon 31^a having a flaring dovetailed side wall adapted to fit into the dovetailed groove **25** of the mounting structure 22^b of the shoe. A wedge-shaped detent 35^a is mounted at the bight end of the structure 22^b and projects upwardly therefrom. Accordingly, a shaped hole is formed in the facing side of the heel structure, to receive the detent 35^a.

Another modified form of heel mounting structure 22^d is shown in Fig. 9. This form of mounting structure is somewhat similar to the form of structure shown in Fig. 8 except that three spaced detents 33^b are provided in place of a single detent 35^a.

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Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

In a shoe, an outer sole having a recess in the center of the toe portion thereof and opening outwardly of the toe portion, said recess having an outer wide rectangular-shaped portion and an inner restricted U-shaped portion with rounded end, said recess having an undercut dovetail peripheral wall, and a rubber insert similar in configuration to the recess in said recess, said insert having a beveled side wall interlocking with the undercut peripheral wall of the recess, and a detent pin radiating from the base of the recess, said insert having a recess in its surface adapted to receive the pin for releasably holding the insert in position in the recess.

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