

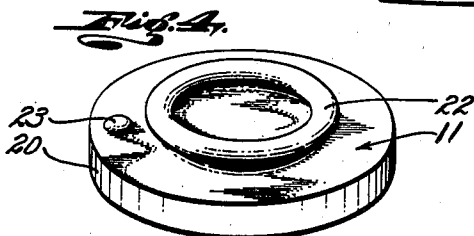
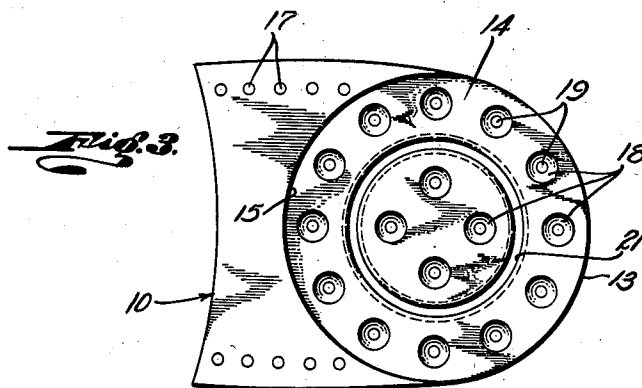
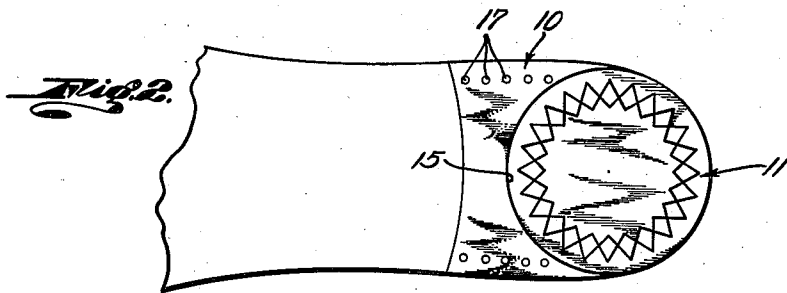
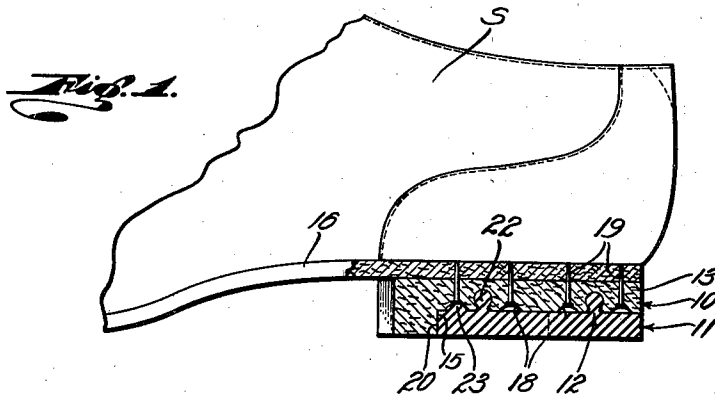
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H. SHEPHERD

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HEEL

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Inventor
HENRY SHEPHERD
By
W. H. H. of ell
His Attorney

UNITED STATES PATENT OFFICE

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HEEL

Henry Shepherd, Santa Ana, Calif.

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3 Claims. (Cl. 36—36)

This invention relates to foot wear and relates more particularly to heels for shoes, boots, slippers, etc. A general object of this invention is to provide simple, practical and very long wearing heels.

Another object of this invention is to provide novel heels embodying wear taking parts which may be shifted or turned from time to time to present new or substantially unworn wearing surfaces. Heels usually wear or run down very rapidly at their rear or outer edges, this uneven wearing usually being accelerated in the case of rubber heels, and the heels whether they be of leather, rubber or other material, usually require reconditioning or replacement at short intervals. The present invention overcomes this difficulty of the conventional heels, providing novel heels which are very long lived by reason of their advanceable or turnable wear taking parts.

Another object of this invention is to provide heels which are characterized by readily installed and readily replaced wear taking parts of jar absorbing, yielding and resilient material, such as rubber, which may be shifted or turned from time to time to present new wearing surfaces and thus greatly prolong their lives and which may be easily replaced after extensive use.

Another object of this invention is to provide heels of the character referred to having simple yet very effective and dependable means for retaining or securing the replaceable and turnable caps or wear taking members to the heel bodies.

Another object of the invention is to provide heels of the character mentioned having simple releasable means for retaining the turnable wear taking cap members in various rotative positions so that the members may be advanced or turned from time to time to evenly distribute the wear, which means is optional and may be cut off or otherwise removed if it is desired to have the cap members automatically turn or advance by the action resulting from the regular use of the shoes.

A further object of this invention is to provide improved heels of the character referred to which are inexpensive to manufacture and easy to install or embody in the foot wear.

The various objects and features of my invention will be fully understood from the following detailed description of a typical preferred form and application of the invention, throughout which description reference is made to the accompanying drawing, in which:

Fig. 1 is a fragmentary side elevation of a shoe showing a typical form of the heel of the inven-

tion with the heel and adjacent part of the shoe in vertical cross section. Fig. 2 is a fragmentary elevation of the under side of the shoe and heel. Fig. 3 is an enlarged elevation view of the under side of the heel apart from the shoe and Fig. 4 is a perspective view of the replaceable turnable yielding cap member.

The heels of the present invention may be varied in construction, materials, design and mode of attachment to adapt them for use on foot wear of different kinds. In the following detailed description I will describe the typical form of the invention illustrated in the drawing, it being understood that this disclosure is not to be construed as limiting or restricting the scope of the invention.

The heel provided by this invention may be said to comprise, generally, a heel body 10, a detachable and turnable yielding pad or member 11 and means 12 for removably and turnably securing the member 11 to the heel body 10.

The heel body 10 is adapted to be attached to the shoe S or embodied in the shoe either at the time of manufacture of the shoe or as a replacement for the original shoe heel following the fabrication of the shoe. The heel body 10 may be formed of any selected rather hard rigid material. In practice the body 10 may be formed of laminated leather, a suitable thermo-plastic material, wood, or the like. The shape of the body 10, of course, depends to a large extent upon the shape and type of shoe S. As shown, the body 10 is of conventional design being rounded at its rear edge to present a curved surface 13 which conforms generally to the rear part of the shoe S and having flat generally parallel upper and lower sides.

In accordance with the invention a socket 14 is formed in the under side of the body 10 to receive the pad or cap member 11. The socket 14 is formed in the rear portion of the body 10 to be open at the rear end of the heel body. As illustrated, the socket 14 is cylindrical having a cylindrically curved side wall 15 which dies out at the opposite sides of the heel body 10 where the curved body surface 13 merges with the side surfaces of the body. The rear surface 13 of the body 10 may be cylindrically curved and the socket wall 15 may be concentric with and may be of the same diameter of curvature as the surface 13 and the wall 15 may die out where the surface 13 merges with the side surface of the body 10. The upper wall of the socket 14 is preferably flat and generally horizontal to be parallel with the under side of the heel body 10,

In the preferred construction the socket 14 is quite large in diameter to occupy the major portion of the heel's under side and is located to leave but a small portion of the heel body 10 to present a lower surface at the forward part of the heel.

The heel body 10 may be tacked or nailed to the sole 16 of the shoe S. There may be marginal rows of nails 17 driven through the forward part of the heel body into the shoe sole structure. In accordance with the invention the upper wall of the socket 14 has a number of dimples or depressions 18. The depressions 18 may be alike in size and shape. In the particular case illustrated there are two annular rows of depressions 18, the rows being concentric with the socket wall 15 and the heel body surface 13. Nails 19 may be driven through the body 10 from the socket 14 to assist in securing the body to the wall 16 and these nails may be located to have their heads or lower ends in the depressions 18. In the particular case illustrated there is a nail 19 driven through the body 10 from each depression 18, it being understood that this is not always necessary or desirable. When the nails 19 are driven through the body 10 from the depressions 18 the upper wall of the socket 14 is left smooth and without nail heads and hammer marks. Further, the depressions 18 provide a convenient means for spacing and locating the nails 19.

The member 11 is a replaceable wear taking element and in most instances is a yielding resilient shock and jar absorbing element. The member 11 occupies the socket 14 so that its lower surface forms the principal active portion of the under side of the heel. In the preferred construction the member 11 is designed and proportioned to fit the socket 14 being a substantially disc-shaped member having a cylindrically curved periphery 20 which is adapted to fit against the cylindrically curved wall 15. The member 11 preferably has a flat smooth upper surface for bearing on the upper wall of the socket 14 and its lower surface may be substantially horizontal to lie flush with the under side of the heel body 10. The lower face of the member 11 may have any selected type of finish, design, pattern or tread.

The replaceable and turnable heel member 11 may be formed of different materials. In most instances it will be preferred to form the member 11 of rubber, rubber composition, synthetic rubber, or material of this character combined with or reinforced by fabric. The member 11 may be quite soft or yielding to be effective in absorbing the jars and shocks usually accompanying walking. The member 11 is a simple, inexpensive, one-piece element and forms a flush continuation of the heel body 10 when in the active position. In this connection it will be observed that the periphery 20 of the member 11 may lie flush with and may form an even continuation of the rear surface 13 of the heel body 10.

The means 12 removably and turnably secures the member 11 to the heel body 10. The means 12 comprises a groove 21 in the upper wall of the socket 14 and a tongue or ridge 22 on the upper side of the member 11 for cooperating with the groove. The groove 21 is circular or annular and is preferably concentric with the socket wall 15 and the body surface 13. It is preferred to make the groove 21 quite large in diameter and the groove may be spaced between the concentric rows of depressions 18. The groove 21 is of substantial depth and is of special shape or cross section. In accordance with the

invention the groove 21 is under cut, that is, its side walls flare or diverge upwardly and its mouth or entrance is restricted. As shown, the groove 21 has curved or concave side walls merging with a concave upper wall so that it is practically cylindrical in transverse cross section with a restricted mouth or open lower side. It is to be understood that the groove 21 is continuous and substantially uniform in transverse cross section.

The ridge 22 is formed to fit or occupy the groove 21. The ridge 22 is preferably of the same cross sectional shape as the groove 21 and is proportioned to rather closely fit the groove. The ridge 22 is circular or annular and is uniform in size and shape throughout. In accordance with the invention the ridge 22 is formed of a compressible resilient material. Where the member 11 is formed of rubber, rubber composition, synthetic rubber, or the like, the ridge 22 is formed integral with the member. The compressible resilient ridge 22 is adapted to be forced into and out of the groove 21. In attaching the member 11 to the body 10 the member 11 is first centrally located in the socket 14 and is then pressed or hammered, or both, to cause the ridge 22 to enter the groove. The rounded or flared major portion of the ridge 22 is compressed as the ridge is forced into the groove 21 and following its passage through the restricted mouth of the groove expands to occupy or fill the flared upper part of the groove. This secures or keys the member 11 to the heel body 10. While the ridge 22 rather closely fits the groove 21 as above described, the fit is not so tight that the member 11 cannot turn. The flared ridge 22 engaged in the under cut groove 21 securely and dependably attaches the member 11 to the body 10 and yet allows the member to turn with respect to the heel body. The large diametered ridge 22 engaged in the groove 21 keys or secures the member to the heel body 10 along or adjacent the edge portions of the member assuring a dependable connection.

When the member 11 is to be removed or detached it is pried from the body 10 to pull or disengage the ridge 22 from the groove 21. The prying action may be started at one point by a suitable tool engaged between the body 10 and the member 11 and when the ridge 22 has started from the groove 21 the member 11 may be readily pulled free. The attaching ridge 22 engaged in the groove 21 allows the upper side of the member 11 to flatly and evenly bear on the upper wall of the socket 14 so that the member has full or ample bearing on the body 10. The spaced depressions 18 reduce the total area of engagement between the upper side of the member 11 and the body 10 and thus increases the shock absorbing and jar absorbing capacity of the member 11. When the wearer's weight is applied to the heel the yielding resilient material of the member 11 may extend or bulge into the depressions 18 increasing the "give" or compression of the member 11. The depressions 18 are distributed or spaced throughout the upper face of the member 11 and greatly increase the resiliency and yieldability of the member.

The means 12 further includes an optional and removable structure for releasably holding the member 11 in selected rotative positions. The upper side of the member 11 is provided with one or more cogs, lugs or buttons 23 for cooperating with the depressions 18. In the form of the invention illustrated there is a single projection of button 23 on the upper side of the member 11. The button 23 is preferably yieldable and resil-

1ent. Where the member 11 is formed of rubber, rubber composition, synthetic rubber, or the like, the button 23 may be an integral part of the member. The button 23 is preferably, though not necessarily, spaced outwardly beyond the ridge 22 to cooperate with the outer row of depressions 18. The button 23 is formed or shaped to fit the depressions 18. Thus in the construction illustrated the button 23 is partially spherical or dome-like to fit the concave or partially spherical depressions 18. The engagement of the button 23 in a depression 18 operates to hold the member 11 against turning. When it is desired to advance or turn the member 11 to present a new or unworn surface at the wearing part of the heel assembly, the member 11 is forcibly turned so that the button 23 is forced out of its depression 18. When the member 11 turns the button 23 engages in the next depression 18 or an adjacent depression to again hold the member 11 against rotation. In the event it is desired to have the member 11 automatically advance or turn the button 23 is ground off, cut off or otherwise removed to leave the upper side of the member 11 plain. In some cases it may be desired to provide or manufacture members 11 with buttons 23 and members 11 without buttons 23 to meet the demand for both types.

It is believed that the utility and practicability of the heel provided by this invention will be readily understood from the foregoing detailed description. The heel body 10 is readily applied to the shoe either at the time of manufacture or as a replacement heel body. Following the application of the body 10 to the shoe the member 11 is secured to the body. This is done as described above by forcing the tongue 22 into the undercut groove 21. Where the member 11 is provided with the button 23 it is turned and brought to a position where the button engages in one of the depressions 18 to hold the member 11 against turning. The upper side of the member 11 bears on the upper wall of the socket 14 and the ridge 22 engaging in the groove 21 retains the member in this position. When the member 11 is formed of rubber, or the like, it constitutes an effective jar and shock absorbing cap for the heel. The spaced dimples or depressions 18 opposing the upper side of the member 11 make the member 11 more yielding and resilient. After extensive use the rear under surface parts of the member 11 may be worn or run down. The member 11 is then turned to bring a new or substantially unworn under surface part to the rear of the heel. The member 11 may be forcibly turned to disengage the button 23 from its depression 18 and the button engages in another depression to retain the member 11 in the new position. The heel is thus conditioned for further use.

The member 11 may be turned from time to time to present new wearing surfaces thus giving the member 11 and the heel generally a very long effective life. With extended use the member 11 may become worn down throughout its circumference. In this case the member 11 may be pried free and replaced by a new member 11. The forward part of the body 10 which is exposed at the under side of the heel receives but little wear and the heel body may receive several replacement members 11 before it is excessively worn. If it is desired to have the member 11 turn automatically as the wearer walks the button 23 is not employed or if the button is formed on the member 11 it is ground off or otherwise removed. The member 11 engaged in the socket 14 is dependably supported against dislodging forces and has little or no tendency to warp. The continuous bulged ridge 22 engaged in the undercut groove 21 of large diameter dependably retains the member in place.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art or fall within the scope of the following claims.

Having described my invention, I claim:

1. A heel of the character described comprising a body, the under side of the body having a circular undercut groove and spaced depressions, a yielding turnable cap member on the under side of the body covering the depressions, a circular ridge on the upper side of the member shiftably fitting the groove to turnably retain the member on the body, and a button on the member engageable in the depressions to hold the member in selected rotative positions.

2. A heel comprising a heel body having a socket in its under side, the upper wall of the socket having a curved undercut groove and spaced depressions, a cap member in the socket, a curved flaring ridge on the member engaged in the groove to turnably secure the member to the body, and a button on the member engageable with the depressions to hold the member in different rotative positions.

3. A heel comprising a heel body having a socket in its under side, the upper wall of the socket having a curved undercut groove and spaced depressions, a yielding resilient cap member, a curved ridge on the member adapted to be forced into the groove to removably and turnably secure the member in the socket, and a button on the member cooperable with the depressions to releasably hold the member in selected rotative positions.

HENRY SHEPHERD.