Jan. 25, 1949. R. MALING 2,460,098

PLATFORM TYPE SHOE

Filed May 13, 1948 2 Sheets-Sheet 1

Fig. 1.

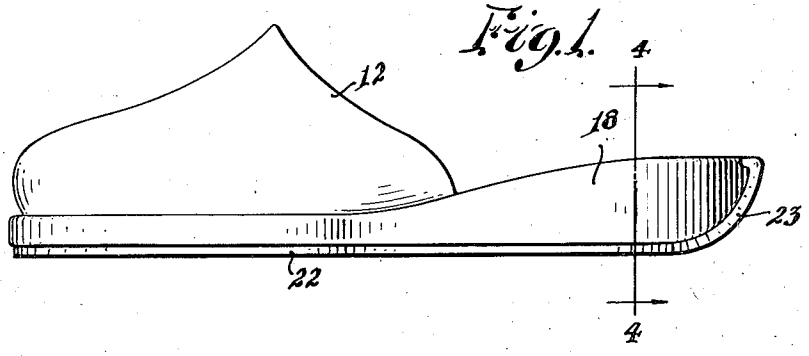


Fig. 2.

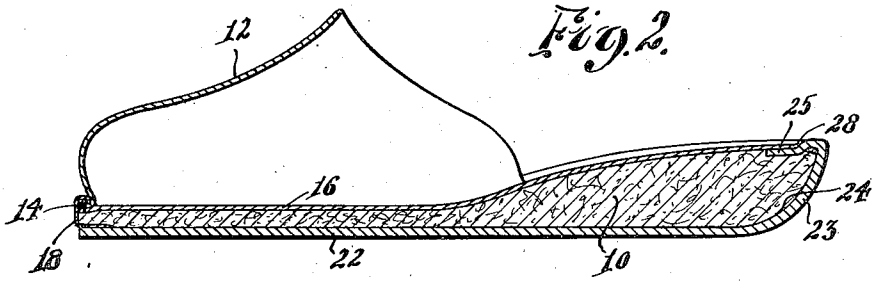


Fig. 3.

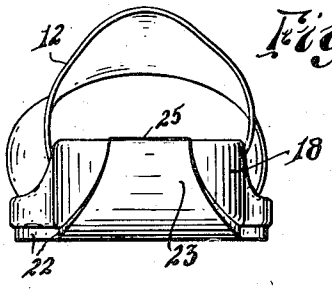


Fig. 4.

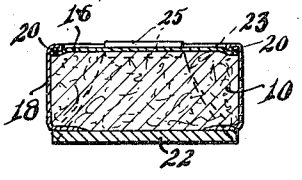


Fig. 6.

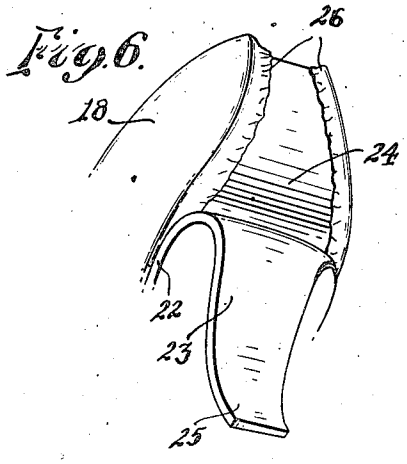
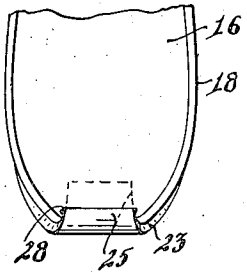


Fig. 5.



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Fig. 7.

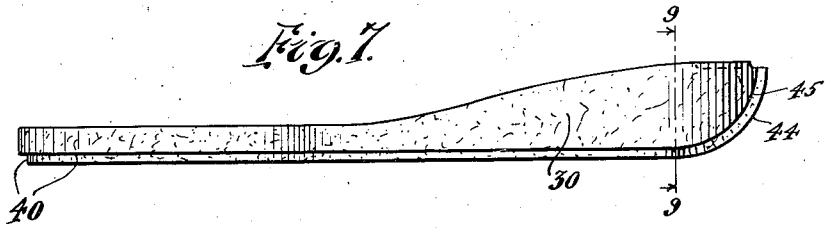


Fig. 8.

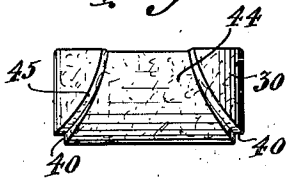


Fig. 9.

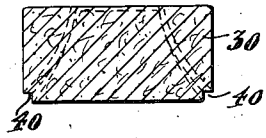


Fig. 10.

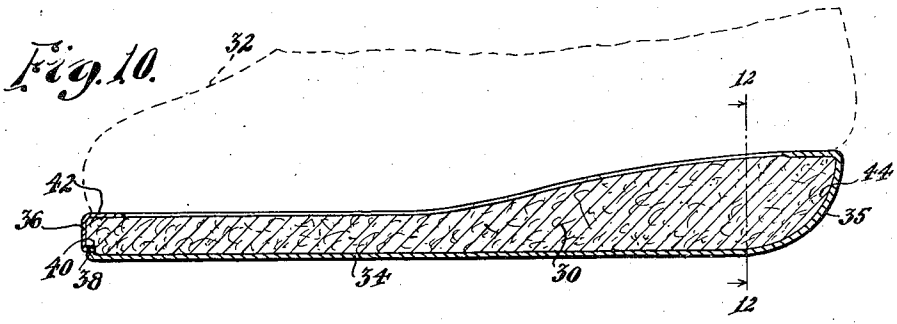


Fig. 11.

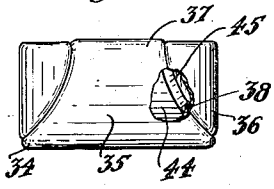


Fig. 12.

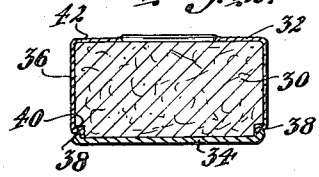
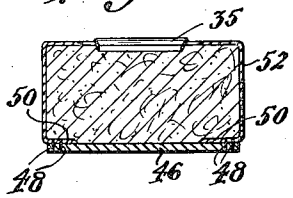


Fig. 13.



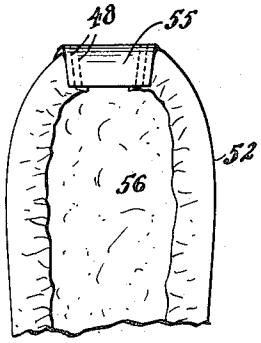
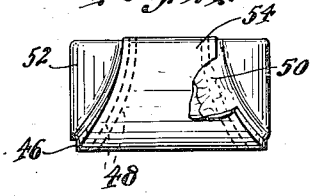


Fig. 15.

Fig. 14.



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2,460,098

PLATFORM TYPE SHOE

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Application May 13, 1948, Serial No. 26,761

6 Claims. (Cl. 36—19.5)

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This invention relates to improvements in shoes and slippers of the general type having wedge-shaped heels whose tapering extent into the shank region of a shoe or slipper contributes support for the arch of a foot. More specifically, the invention provides an improved rolling-contact type of wedge-heel structure and particularly a novel means for effectively covering such a structure and combining the composite wedge unit, including a novel tread element, with an upper.

Conventional heel constructions having flat under or tread surfaces and abrupt generally vertically extending side and rear edges rising from the plane of the under flat surface, involve an initial point contact of the heel with a pavement or floor in the process of walking. Ordinarily the rear lower edge of the heel is semi-circular, and the normal angular walking approach of a foot toward contact results in the mentioned initial contact only at one point along the semi-circular lower rear edge of the heel. The contact relatively quickly enlarges and spreads as the foot rocks about the initial contact point until the full area of the under flat surface of the heel ultimately rests on the pavement or floor. Immediately following the initial contact, however, the foot is free to rock sideways, in or out, on the semi-circular lower rear edge of the heel. Also, the point of initial contact takes the brunt of wear imposed on a conventional heel, and such a heel gradually wears at and adjacent to the point of initial contact and eventually acquires a more or less rounded rear edge contour whereby the subsequent initial contacts become line contacts followed by a slight forward rolling motion on the rounded surface of the heel.

The mentioned characteristics of conventional heels have long been recognized, and there have been various proposals directed toward stabilizing the initial contact of a heel in walking and utilizing the rolling-line-contact principle which the rounded edge contours of worn heels have suggested. It has been proposed to provide the conventional type of heel with a rounded lower rear edge portion so that the heel initially would be adapted to provide initial line contact when walking, followed by a rolling motion of the foot forwardly and downwardly into full contact with a pavement or floor. The mentioned prior proposals, however, have not met with favor in the industry, and the conventional heels, without any rounded rear lower edges, continue to be quite universally used. The practise of providing rubber heels or leather heel lifts, which may be readily and quickly replaced at small cost, has minimized and rendered relatively unimportant the fact that wear on conventional heels is concentrated at the rear lower edge region.

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But, the present day wide use of so-called platform and wedge-heel types of footwear has focused the attention of manufacturers of such footwear on the wearing characteristics at the heel regions thereof. This general type of footwear ordinarily has a relatively thick platform or mid-sole intervening between the upper and the outsole, and the outsole or tread element customarily is a relatively thin and flexible sheet of leather secured in covering relation to the underside of the platform or mid-sole. The platform or mid-sole conventionally has its side edges covered with fabric, or the like, and this relatively delicate covering material extends down to the mentioned thin outsole element. Hence any substantial uneven wear of the outsole element causes the adjacent covering material to be lowered to an extent which frequently subjects it to contact with a pavement or floor, with resulting quick destruction of the platform covering material.

Inasmuch as the outsole elements of such footwear extend from the toe to the rear end of the shoe, and are unitarily built into the shoe structure at the time of manufacture, it usually is impracticable to replace an outsole. Hence, excessive concentrated wear at the rear edge portion of these relatively thin outsoles, which also provide the tread surface at the heel regions, materially reduces the useful life of the shoes. While the prior rounding of conventional heels has suggested that a comparable rounding of the lower rear edge portions of platforms and wedge heels might prolong the useful life of the shoes, serious problems have been involved to satisfactorily embody the curving heel tread idea in the platform and wedge-heel types of footwear. When the outsole member is extended to surface a curved rear portion of heel unit, the covering material has been inadequate for holding the extension under the stresses of use of a shoe. Also, there have been problems to provide an effective composite covering of the rear portions of such a heel.

It is among the objects of my present invention to provide a wedge-type heel structure for shoes and slippers wherein a wedge-heel body is shaped at its under side and rear portions for seating a flexible-sheet outsole element, and said outsole element has generally flat extent under the wedge-heel body with a rear extension part curv-

ing rearwardly and upwardly over rear portions of the body and turned inward at its end portion to an anchoring position overlying the top rear margin of the body, and wherein the side and rear edge surfaces of the wedge-heel body on opposite sides of the rear extension part of the outsole element are covered by flexible material which is secured to the body and also is secured to the opposite edge portions of the rear extension part of the outsole element.

Another object is to provide a wedge-type heel structure wherein a flexible outsole element surfaces the under side of a wedge-heel body and curves rearwardly and upwardly in surfacing relation to rear portions of said body, with an end portion foldable inward over the rear top margin of the body for anchored engagement between the wedge-heel body and an upper structure to be mounted thereon.

Still another object is to provide a wedge-heel structure having a wear-resisting tread surface at the under side of a wedge-heel body and extending smoothly rearwardly and upwardly over rear portions of the body, and having relatively delicate sheet material covering the side edges of the body forward of said rearwardly and upwardly extending wear-resisting surface.

It is, moreover, my purpose and object generally to improve platform and wedge-heel types of footwear and more especially such footwear having relatively thin and flexible outsole elements.

In the accompanying drawings:

Fig. 1 is a side elevation of a shoe embodying features of the invention;

Fig. 2 is a medial longitudinal cross-sectional view of the shoe of Fig. 1;

Fig. 3 is a rear elevational view of the shoe of Fig. 1;

Fig. 4 is a cross-sectional view on line 4—4 of Fig. 1;

Fig. 5 is a top plan view of the rear portion of the shoe of Figs. 1–4;

Fig. 6 is a fragmentary perspective view of the rear under side of the shoe of Figs. 1–5, with the rear extension part of the outsole pulled away;

Fig. 7 is a side elevation of a modified form of platform and heel unit;

Fig. 8 is a rear elevation of the unit of Fig. 7;

Fig. 9 is a cross-sectional view on line 9—9 of Fig. 7;

Fig. 10 is a medial longitudinal cross-sectional view showing the unit of Figs. 7–9 with a tread element and covering strip applied thereto, and showing an upper in dotted outline mounted on the platform and heel unit;

Fig. 11 is a rear elevation of the covered unit of Fig. 10;

Fig. 12 is a cross-sectional view on line 12—12 of Fig. 10;

Fig. 13 is a cross-sectional view similar to Fig. 12 but showing another modification;

Fig. 14 is a rear elevation, similar to Fig. 11, but showing the modified structure of Fig. 13; and

Fig. 15 is a top plan view of the rear portion of the unit of Fig. 14.

Shoes of the general type to which the invention relates may have so-called force-lasted or slip-lasted uppers, or their uppers may be regularly lasted. A force-lasted upper has its upper stitched to a sock-lining, or comparable element, while the upper is free of a last, and a last subsequently is forced into this pre-stitched unit preparatory to association of the upper with a base structure. When the base structure includes a platform or mid-sole element whose side edges are to be covered, a suitable covering strip, according to one well known procedure, is stitched to the lower edge of the upper, usually by the same stitches which secure the upper and sock-lining together. After the upper has been force-lasted, this covering strip may be drawn over the edges of a platform element and turned inward over the under margin of the platform element where the in-turned portions customarily are secured by cement. A flexible outsole then is cemented to the under side of the platform element.

According to another well known procedure, the side edges of a platform element are covered before the platform is associated with an upper. This may be done by wrapping a covering strip over the side edges of the platform, with edge portions of the strip turned inward over and cemented to both top and bottom margins of the platform, or the covering strip preliminarily may be stitched to a flexible outsole member, so that the platform may be set within this pre-stitched unit, after which the covering strip is drawn over the side edges of the platform and turned inward over and cemented to the upper margin of the platform.

My present invention is applicable to platform and wedge-heel types of footwear made according to either of the above described procedures, and it is herein illustrated as it may be embodied in the products of each procedure.

Referring to the embodiment of Figs. 1–6, the covered platform and heel unit 10 may be of any suitable material and may be formed as a single element or may be composite of two or more elements associated together to provide a unit having generally the shape as shown wherein the forepart portion has generally uniform thickness and the rear or heel portion has substantially greater thickness gradually tapering at the shank region to provide support under the arch of a foot. The unit 10 may be made of felted fibre, cork, or combinations of fibre and cork, or it may be composite of felt and wood, for example. In any case, it is preferable to have a material or materials which will provide a resilient cushion effect under the foot of the wearer of the shoe.

The upper 12 may be of any conventional design and may extend only at the forepart, as shown, or may extend all around the shoe, with or without open regions as may be desired. The particular upper 12, herein illustrated, is of a force-lasted type in which the lower edge of the upper is stitched at 14 to a sock-lining 16 all around the extent of the lower edge of the upper, and the same stitches secure a covering strip 18 to the upper and sock-lining around the forepart, and the covering strip 18 is stitched to the sock-lining around the rear portions of the shoe where there is no upper, as at 20. A last subsequently is forced into this pre-stitched upper unit, after which the platform and heel unit 10 is placed against the sock-lining and the covering strip 18 wrapped over the sides of the unit 10 and turned inward over and cemented to the under margin of the unit 10. A flexible outsole 22 then is cemented to the under side of the unit 10.

According to the invention, the rear portion of the unit 10 is formed with a gradually curving rear surface 24 whose curvature is smoothly continuous from the plane of the under surface of the heel portion of the unit, curving gradually upwardly and rearwardly to the general plane of the upper surface of the heel portion of the unit.

Because this surface 24 curves upwardly and rearwardly on the heel portion of unit 10 which, at the rear of its heel portion has generally semi-circular shape in plan, the surface 24 constitutes a smooth continuation of the under surface of the heel portion of unit 10; with gradually diminishing width toward the plane of the top surface of the unit, as best seen in Fig. 3. Hence, in covering the rear portions of the unit 10 the covering strip 18 conveniently may terminate, at each side of the heel, somewhat short of the longitudinal center-line of the shoe, with the rear end portions of the strip wrapped over the sides of the heel and turned over and cemented to the margins of the rear surface 24, as at 26 in Fig. 6. This facilitates a smooth covering of side and rear portions of unit 10 by the covering strip 18, leaving a substantial portion of the surface 24 uncovered by strip 18, all the way up the back of unit 10.

The outsole 22 has a rear end tapering extension 23 which is adapted to be cemented in covering relation to the curved surface 24 of unit 10, with a terminal part 25 which is adapted to be turned inward over the rear top margin of unit 10 where it is cemented or otherwise anchored to the unit 10. Preferably a slit 28 is provided adjacent the rear end of the sock-lining 16, and the terminal part 25 of the outsole extension is inserted through the slit so that its main inward extent is under the sock-lining, as best seen in Figs. 2 and 5. The anchoring of the terminal part 25 in a general plane to be securely held between the upper and the platform and heel unit 10 relieves the cement lines between the outsole and unit 10, at the rear of the shoe, of much of the stress acting to pull the curving rear outsole extension away from the unit 10, in use of the shoe. Also, the smoothly curving and tapering outsole extension provides a distinctive and attractive aspect at the rear of the shoe, as well as providing a smoothly curving continuation of the tread surface of the heel whereby a rolling contact is attained when the shoe initially contacts a floor or pavement, in walking. And this rolling contact is spread across the full width of the outsole surface at the region of contact, avoiding the lateral rocking tendency, inward or outward, which is a prevalent occurrence with conventional heels.

Figs. 7–12 illustrate the invention as it may be embodied in a modified form of shoe structure wherein the platform and heel unit 30 is covered and associated with an outsole, after which the completed base unit is cemented to a lasted upper. In this case, the upper 32 may be regularly lasted or force-lasted. The base unit 30, however, is set within a flexible sheet unit which is composite of a soft-sole outsole or tread element 34 and an edge-covering strip 36 which is preliminarily stitched to the tread element 34, as at 38. This stitching at 38 is accomplished while the strip and element are inside out, after which they are inverted so that the in-seam at 38 stands interiorly. The under edge margin of the unit 30 preferably is cut away to provide an angular space 40 around its under margin, for accommodating the in-seam, thereby permitting a smooth covering of unit 30, with the upper marginal portions of strip 36 turned inward over and cemented to the upper margin of unit 30, as shown at 42 in Figs. 10 and 12.

The platform and heel unit 30 has a rear surface 44 curving smoothly upwardly and rearwardly from the plane of the under surface of

the heel portion to a little below the general plane of the upper surface of the heel portion, comparable to the surface 24 of the Figs. 1–6 form, and the angular marginal cut-back at 40 extends rearwardly and upwardly at 45 along the opposite sides of surface 44. The tread element 34 has a gradually tapering rear extension 35 to whose opposite side edges the rear edges of cover strip 36 are stitched to provide rear continuations of the in-seam 38 which seat in the rear cut-backs 40, to enable a smooth covering of the sides and rear of the unit 30, with upper marginal portions of the strip and extension turned inward over and cemented to the upper rear marginal portions of unit 30. Hence, as in the Figs. 1–6 form, the in-turned terminal portion 37 of the tread element extension 35 becomes securely anchored in a generally horizontal plane, between the platform unit 30 and the subsequently combined upper 32, so that stresses of service tending to spread the extension 35 away from unit 30 are successfully and effectively resisted in a structure having a tread surface extended rearwardly to provide a rolling line contact of the shoe with a floor or pavement, comparable to that described in connection with the Figs. 1–6 form.

Figs. 13–15 illustrate a modification generally similar to the Figs. 7–12 form but having a more rugged flexible outsole 46 which is stitched through and through at 48 to the lower margins 50 of the cover strip 52. The outsole has a rear extension 54 and a terminal part 55 which latter is in-turned over the rear top margin of the platform unit 56, and anchored between said unit and the upper, comparable to the in-turned anchored terminals of the earlier described forms. A double row of stitches 48 is shown, extending all along the opposite edges of the outsole, its extension 54 and its terminal part 55. As in the other forms, the extension 54 provides for rolling line contact when the shoe initially contacts a floor or pavement in walking.

It will be apparent from the foregoing description, in connection with the drawings, that I have provided practical platform type shoe and slipper structures whose platform units can be smoothly covered, particularly at rear portions, by the joint spread of a covering strip and a tread element or outsole, with the tread element or outsole smoothly continuous up the back of the platform to a location of secure anchorage between the platform unit and an upper element or lasted structure.

I claim as my invention:

1. In a shoe, an upper, a unit underlying the rear portion of the upper for constituting a heel, and having gradually diminishing tapering extent under the shank portion of the upper, said heel portion of the unit having a rearwardly facing surface curving gradually rearwardly and upwardly from the plane of the under surface of the heel portion approximately to the plane of the upper surface of the heel portion, flexible material covering the sides of said heel and shank portions of the unit, and a tread element covering the bottom of said heel and shank portions of the unit and having extent rearwardly and upwardly in covering relation to said rearwardly facing gradually curving surface of the unit, said flexible covering material extending rearwardly at least to said rearwardly and upwardly extending portion of the tread element whereby the latter said portion of the tread element and said flexible covering material together cover all rear surfaces of the said unit.

2. In a shoe, an upper, a unit underlying the rear portion of the upper for constituting a heel, and having gradually diminishing tapering extent under the shank portion of the upper, said heel portion of the unit having a rearwardly facing surface curving gradually rearwardly and upwardly from the plane of the under surface of the heel portion approximately to the plane of the upper surface of the heel portion, flexible material covering the sides of said heel and shank portions of the unit, and a tread element covering the bottom of said heel and shank portions of the unit and having extent rearwardly and upwardly in covering relation to said rearwardly facing gradually curving surface of the unit, a line of stitching extending along each edge of the tread element securing the tread element to the lower marginal portion of said flexible covering material throughout the extent of said tread element at the shank and heel regions including its said extent rearwardly and upwardly at the rear of the shoe.

3. In a shoe, an upper, a unit underlying the rear portion of the upper for constituting a heel, and having gradually diminishing tapering extent under the shank portion of the upper, said heel portion of the unit having a rearwardly facing surface curving gradually rearwardly and upwardly from the plane of the under surface of the heel portion approximately to the plane of the upper surface of the heel portion, flexible material covering the sides of said heel and shank portions of the unit, and a tread element covering the bottom of said heel and shank portions of the unit and having extent rearwardly and upwardly in covering relation to said rearwardly facing gradually curving surface of the unit, and having an end portion turned inward and secured between said upper and said underlying unit.

4. In a shoe having an upper and a wedge shaped heel unit underlying the upper at its shank and heel regions, a tread element covering the under surface of said unit and having a generally tapering rear end portion turned upwardly in covering relation to the rear end of said unit and turned inward over the top rear margin of the unit to lie between said upper and the unit, and flexible sheet material covering the sides of said unit with its upper marginal portions secured to said upper and with its lower

marginal portions secured to the marginal edges of the tread element throughout the extent of the latter at the shank and heel regions of the shoe and along said tapering rear end portion of the tread element approximately to the plane of the top of said unit at the rear of the shoe.

5. In a shoe having an upper and a wedge shaped heel unit underlying the upper at its shank and heel regions, a tread element covering the under surface of said unit and having a generally tapering rear end portion turned upwardly in covering relation to the rear end of said unit and extending upwardly approximately to the plane of the top surface of the unit at the rear end thereof, flexible sheet material stitched to the edges of said tread element throughout the extent of the latter, said flexible sheet material being turned upwardly in covering relation to the side of said unit and having its upper marginal portions laid over upon the top marginal portions of the unit between said upper and the unit, and means at the rear of the shoe and additional to said flexible sheet material, maintaining said tapering rear end portion of the tread element in its said covering relation to the rear end of said unit.

6. In a shoe having an upper and a wedge-shaped platform unit underlying the upper, means for covering all portions of the unit left exposed by the upper, comprising a wear-resisting tread element covering the under surface of the unit and extending upwardly approximately to the plane of the top of the rear end of the unit, in covering relation to a substantial rearwardly facing surface of the unit, a flexible sheet element of more delicate texture having its lower marginal portions stitched to the edges of the tread element throughout the extent of the latter at the shank and heel regions, including said upwardly extending portion thereof at the rear of the unit, and having its upper marginal portions secured to the upper, said rearwardly facing surface of the unit which is covered by the tread element having gradually curving extent rearwardly and upwardly, whereby the tread surface at the rear of the shoe promotes a rolling contact in walking.

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No references cited.