Oct. 31, 1944. K. A. STRITTER 2,361,511

TREAD UNIT FOR SHOES

Filed April 23, 1943

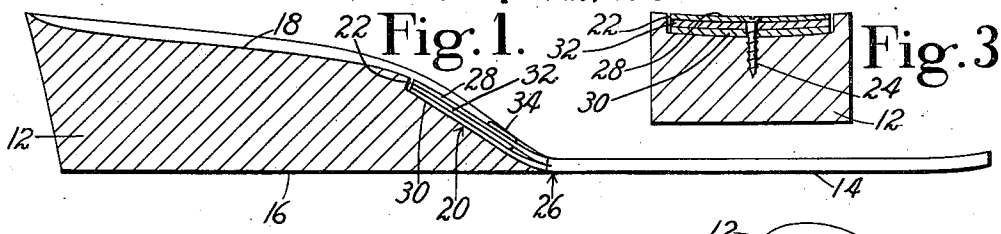


Fig. 1.

Fig. 3.

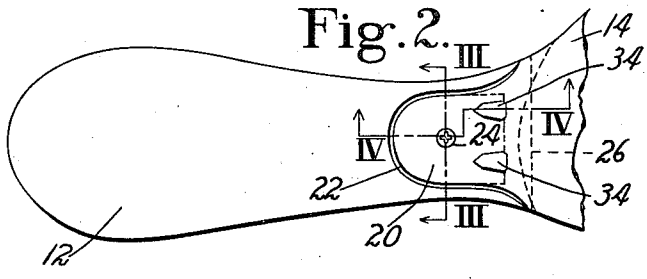


Fig. 2.

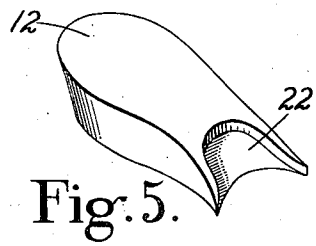


Fig. 5.

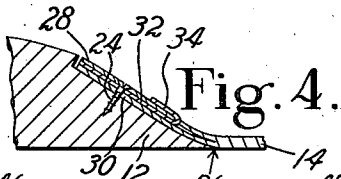


Fig. 4.

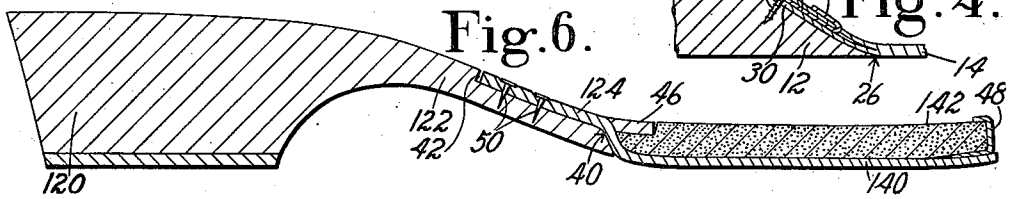


Fig. 6.

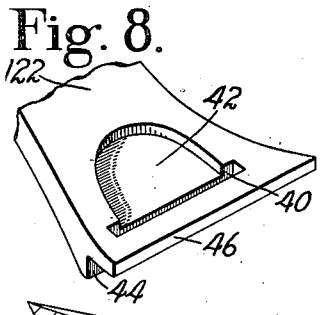


Fig. 8.

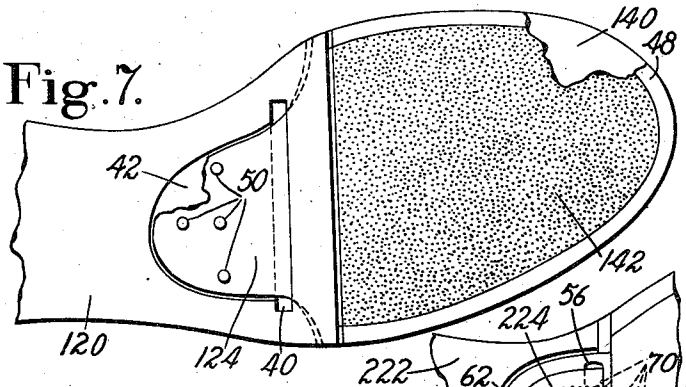


Fig. 7.

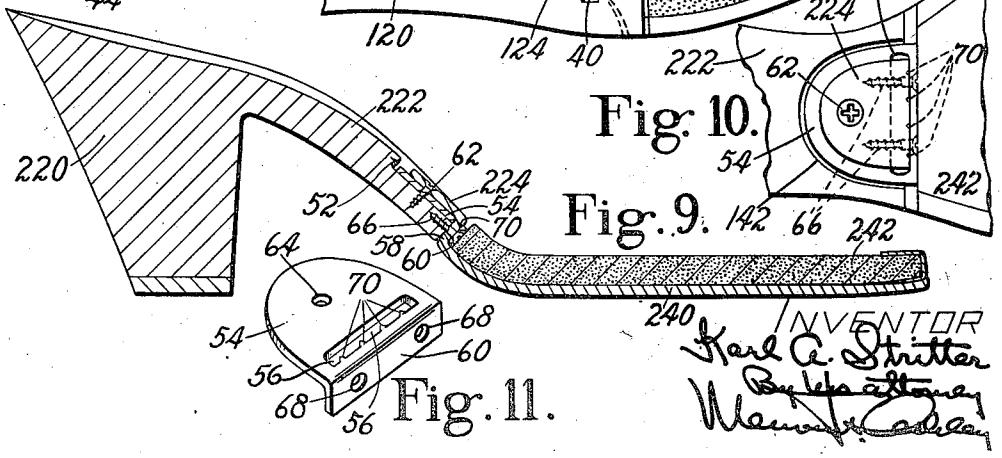


Fig. 10.

Fig. 9.

Fig. 11.

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UNITED STATES PATENT OFFICE

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TREAD UNIT FOR SHOES

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Application April 23, 1943, Serial No. 484,241

14 Claims. (Cl. 36—31)

This invention relates to improvements in tread units for shoes.

In most shoes the outsole is made of leather or other flexible material of good wearing quality and it usually extends throughout the length of the shoe or at least throughout the length of the forepart and shank portions of the shoe. It is only in the foreparts of most shoes, however, that the outsole is subjected to wear and, accordingly, it has been proposed to conserve outsole material by providing tread units or outsole units each consisting of a forepart of leather and a rear part of a less expensive substance, such as leather substitute material or fiberboard. The rear parts of such tread units may advantageously be made of rigid material to afford better support for the heel and the instep of the foot and it has been common to make them of wood or hardened plastic material. In all cases, however, it has been a difficult problem to provide a satisfactory connection or joint between the forepart and the back part of a tread unit of this sort.

One object of the present invention is to provide between the flexible forepart and the rigid back part of a tread unit for a shoe a joint of strong and durable construction which will enable the forepart of the unit to flex freely in use and which will enhance the appearance of the shoe in which the unit is incorporated.

With this object in view, the present invention provides a tread unit for a shoe comprising a back part, a forepart, and a joint or connection between the parts having the novel construction and arrangement of elements illustratively disclosed in the following description and thereafter defined in the claims.

The invention will be disclosed with reference to the accompanying drawing, in which

Fig. 1 is a view, partially in side elevation and partially in longitudinal section, of a tread unit illustrative of one form of my invention;

Fig. 2 is a plan view of a portion of the tread unit;

Fig. 3 is a sectional view taken along the line III—III of Fig. 2;

Fig. 4 is a fragmentary sectional view taken along the line IV—IV of Fig. 2;

Fig. 5 is a perspective view of the back part or wedge heel portion of the tread unit;

Fig. 6 is a view in longitudinal section of a tread unit of modified construction;

Fig. 7 is a plan view of a portion of the tread unit shown in Fig. 6;

Fig. 8 is a perspective view of a portion of the back part or heel extension of the tread unit shown in Fig. 6;

Fig. 9 is a longitudinal sectional view of a tread unit of still further modified construction;

Fig. 10 is a plan view of a portion of the tread unit shown in Fig. 9; and

Fig. 11 is a perspective view of the locking or clamping plate employed in the tread unit shown in Figs. 9 and 10.

As shown in Figs. 1 to 5, inclusive, the back part of my improved tread unit consists of a wooden wedge heel 12 and a short leather outsole 14. The wedge heel 12 is of a type commonly employed in sport shoes, platform shoes, and the like, the heel extending forwardly to underlie and support the entire instep or arch portion of the foot and having a flat tread face 16 and an attaching face 18 which slopes forwardly from the rear of the heel to the front extremity thereof. The short outsole 14 is adapted to underlie the ball and toe portions of the foot and it is formed with an integral rearward extension in the form of a tab 20 which extends into and fits within a correspondingly shaped shallow recess 22 (Fig. 5) in the upper side of the heel 12, the recess extending rearwardly from the front extremity of the heel. The outsole tab 20 is secured to the heel 12 by means of a suitable fastening, such as the screw 24. As shown, the tab 20 is split edgewise from its rear end to a location 26 substantially at the junction of the tab with the body of the outsole. Thus, the tab 20 is divided into upper and lower leaves or layers 28 and 30, respectively (Figs. 3 and 4), and a thin metallic locking or clamping plate 32 is interposed between the leaves of the tab. The screw 24 extends through a hole in the plate 32 and serves to clamp the lower leaf 30 of the outsole tab between the plate and the heel. Two prongs 34 extend from the front edge of the plate 32 through the upper leaf 24 of the tab 20, the prongs being bent backwardly and downwardly against the upper surface of the leaf 28 so that they hold the tab 20 and the outsole 14 against edgewise turning displacement about the screw 24 and thus assist in locking or fastening the outsole securely to the heel. The depth of the recess 22 in the heel is such that after the outsole tab 20 has been secured to the heel the upper surface of the tab will be flush with the attaching face of the heel.

The above-described connection or joint between the outsole 14 and the heel 12 holds these two parts securely together to constitute a tread member adapted for attachment as a unit to a shoe. The construction of the joint is such that

the outsole or forepart of the unit is rendered capable of bending as freely as required to accommodate the flexing movements of the foot without risk of breaking or becoming weakened at the joint. Moreover, there will be no fastenings such as screws, nails or rivets visible after the unit has been applied to the shoe. The outsole unit may be attached directly to a lasted shoe, or a middle or platform sole may be attached to the unit before the unit is attached to the shoe.

In the modified construction of my tread unit, as shown in Figs. 6 to 8, inclusive, the back part of the unit consists of a wooden heel 120 having an integral undercut shank extension 122 to the upper side of which is attached by means of nails 50 the rearwardly extending tab portion 124 of a short outsole 140 which, together with a short middle or platform sole 142, constitutes the forepart of the unit. The tab 124 of the outsole 140 extends upwardly through a transverse slot 40 which is cut through the forward end portion of the heel extension 122 and rearwardly within a shallow recess 42 formed in the upper side of the heel extension. Forwardly of the slot 40 the heel extension 122 is notched or rabbeted at its lower side, as indicated at 44 in Fig. 8, to form a lip 46 beneath which the rear end portion of the middle sole 142 extends. The middle sole 142 may be secured to the lower side of the lip 46 and to the outsole 140 by means of cement and, as shown, it may be provided with an edge binding 48.

In a still further modified construction of my tread unit shown in Figs. 9 to 11, inclusive, the forepart of the unit comprises a short outsole 240 and a short middle or platform sole 242 which is secured by cement or otherwise to the outsole. The back part of the unit consists of a high heel 220 having an arched shank extension 222 the upper side of the forward end portion of which is recessed at 52 (Fig. 9) to receive a tab 224 formed at the rear end of the outsole 240. A locking plate 54 is seated in the recess 52 beneath the tab 224, the plate 54 extending a short distance beyond the front end of the heel extension and having a transverse slot 56 formed therein through which the tab extends. Forwardly of the slot 56 the plate 54 is bent downwardly to form a lip 60 between which and the front edge of the heel extension the base portion 58 of the tab 224 is bent substantially at right angles to the rest of the tab and to the body of the outsole. The body portion of the tab 224 is secured to the heel extension 222 by means of a screw 62 which extends also through a hole 64 in the plate 54 and secures the plate in place. As shown, two screws 66 extend through holes 68 in the lip 60, through the bent portion 58 of the outsole tab and into the heel extension 222, causing the tab to be tightly clamped between the lip 60 and the front edge of the heel extension. Further to assist in holding the tab firmly in place, several short prongs 70, projecting from the plate 54 along the front edge of the slot 56 are arranged to bite into the bent portion of the tab.

In the several embodiments of the invention herein illustrated the tread unit consists of a rear or heel member having a forward extension for underlying the shank portion of the foot and a front member for underlying the forepart of the foot. It is to be understood, however, that the rear part of the unit may extend no farther forward than a conventional heel, that is, it may have no shank extension, and the front member may extend rearwardly to underlie the instep or arch portion of the foot. In such a unit the joint between the front and rear members thereof will be located beneath the heel portion of the foot.

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

1. A tread unit for a shoe comprising a heel having a rigid forward extension for supporting the instep of a foot, said extension having a slot extending from the lower to the upper side of its forward portion, and a forepart consisting of a short, flexible outsole for underlying the ball and toe portions of the foot, said outsole having at its rear extremity a tab extending through said slot and secured to the upper side of the forward extension of said heel.

2. A tread unit for a shoe comprising a wedge heel having a recess in its attaching face extending rearwardly from its forward extremity, a short outsole consisting of a body portion for underlying the ball and toe portions of a foot and a tab extending rearwardly from said body portion into said recess, and means for securing said tab to said wedge heel.

3. A tread unit for a shoe comprising a rigid back part for underlying the heel and shank portions of the shoe, a short outsole of flexible material for underlying the ball and toe portions of the shoe, said outsole having an integral rearward extension split edgewise into upper and lower layers, a clamping plate interposed between said layers, and a fastening extending through said layers and said plate and into said back part for securing said outsole to said back part.

4. A tread unit for a shoe comprising a rigid back part for underlying the heel and shank portions of the shoe, a short outsole of flexible material for underlying the ball and toe portions of the shoe, said outsole having an integral rearward extension split edgewise into upper and lower layers, a clamping plate interposed between said layers, said plate having a locking prong extending from its forward extremity through the upper layer of said extension and being clenched over the upper side of said layer, and an attaching fastening extending through said layers and said plate and into said back part.

5. A tread unit for a shoe comprising a heel having a shank extension provided with an upper surface continuous with the attaching face of the heel, said extension having in its upper side a shallow recess of less than the full width of the extension, a short outsole for underlying the ball and toe portions of a foot, a tab extending rearwardly from said outsole and fitting within said recess with its upper surface flush with the unrecessed portion of the upper side of said shank extension, and means for securing said tab to said shank extension.

6. A tread unit for a shoe comprising a rigid heel and shank part, and a flexible forepart, said heel and shank part having a recess in its upper face extending rearwardly from its front extremity and said forepart having a rearwardly extending tab fitting within said recess with the upper surface of the tab flush with the upper surface of said heel and shank part, said tab being split edgewise into upper and lower leaves and the lower leaf of the tab being secured to said heel and shank part by means including a clamping plate located between said leaves.

7. A tread unit for a shoe comprising a back part for underlying the heel and shank portions of a shoe, and a forepart for underlying the ball

and toe portions of the shoe, said back part having a slot extending from its lower to its upper side near its forward extremity, and said forepart having a tab extending from its rear portion upwardly through said slot and secured to the upper side of said back part.

8. A tread unit for a shoe comprising a rigid heel and shank part, and a flexible forepart, said heel and shank part having a slot extending transversely thereof from its lower to its upper side near its forward extremity and having a recess in its upper side extending rearwardly of said slot, and said forepart having a tab extending from its rear extremity upwardly through said slot and rearwardly into said recess, and a fastener securing the rearwardly extending portion of said tab to said heel and shank part.

9. A tread unit for a shoe comprising a rigid heel having a shank extension, and a flexible forepart consisting of an outsole and a middle sole for underlying the ball and toe portions of the foot, said shank extension being formed with an upper surface continuous with the attaching face of the heel and having a transverse slot near its forward end and a notch in its lower side forwardly of said slot, said outsole having a tab extending from its rear portion upwardly through said slot and rearwardly over the upper side of said shank extension and being secured to the latter, and said middle sole being secured to said outsole and having its rear portion extending into said notch.

10. A tread unit for a shoe comprising a rigid heel having a shank extension formed with an upper surface continuous with the attaching face of the heel, said extension having a recess in the upper side of its forward portion, a plate located in said recess, said plate projecting forwardly beyond said shank extension and having a transverse slot in its projecting portion, a flexible outsole having a tab extending upwardly from its rear portion through said slot and rearwardly into said recess and above said plate, and a fastening securing said tab and said plate to said shank extension.

11. A tread unit for a shoe comprising a rigid heel having a shank extension formed with an upper surface continuous with the attaching face of the heel, said extension having a recess in its upper side extending rearwardly from its front extremity, a plate located in said recess, said plate having a portion projecting forwardly beyond said shank extension and terminating in a downturned lip and said plate having a transverse slot between said lip and the forward end of said shank extension, a flexible outsole for underlying the ball and toe portions of the foot, said outsole having a tab extending upwardly from its rear portion behind said lip and through said slot and rearwardly into said recess and above said plate, and means for securing said tab and said plate to said shank extension.

12. A tread unit for a shoe comprising a rigid back part, a flexible outsole constituting the forepart of the unit, a tab at the rear of said outsole, said tab having an upwardly extending base portion and a rearwardly extending end portion, a plate between said outer tab portion and said back part, said plate having a slot through which said inner tab portion extends and a downturned lip forwardly of said slot clamping the base portion of said tab against said back part, and a fastener securing the end portion of said tab and said plate to said back part.

13. A tread unit for a shoe comprising a rigid back part constituting the heel and shank portions of the unit, a flexible short outsole constituting the forepart of the unit, a plate secured to the upper side of said back part and having a downturned lip spaced from the front extremity of said back part, a tab extending upwardly from the rear extremity of said outsole between said lip and said back part, and a fastening extending through said lip and through said tab and into said back part for securing the outsole to the back part.

14. A tread unit for a shoe comprising a rigid back part constituting the heel and shank portions of the unit, a flexible short outsole constituting the forepart of the unit, a plate secured to the upper side of said back part, said plate extending forwardly therefrom and having a slot in its forward portion, a tab having a base portion extending upwardly from the rear of said outsole and through said slot and an end portion extending rearwardly above said plate, a fastening securing the end portion of said tab and the rear portion of said plate to said back part, and a lip extending downwardly from the forward extremity of said plate and holding the base portion of said tab against the front extremity of said back part.

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