

UNITED STATES PATENT OFFICE

ISIDOR TARLOW, OF BROCKTON, MASSACHUSETTS

SHOE

Application filed May 13, 1932. Serial No. 611,042.

This invention relates to shoes and is useful in any type of shoe although especially advantageous in the Goodyear and McKay types.

The object of the invention is to relieve foot strains which weaken the normal muscle support of the arch.

On weight bearing in which foot strain is present the excessive strain occurs on the musculature and ligaments that go to support the arches of the foot. In strain on the long arch of the foot there is a disturbance of the normal foot balance, which causes a rotation outward of the os calcis, while the head of the astragalus bears heavily on the inferior calcaneo-scaphoid ligament which gives away, allowing the head of the bone to pitch forward.

When this occurs, there is a severe strain put upon the plantar aponeurosis or the planta fascia. This plantar aponeurosis is of great strength and consists of white glistening fibers disposed, for the most part, longitudinally and is formed of three parts. The central portion, the thickest, is narrow behind and attached to the medial process of the tuberosity of the calcaneus. It becomes broader and thinner in front and divides near the heads of the metatarsal bones one for each bone.

Accordingly an important feature of this invention resides in a support of novel shape functioning to give additional support where most needed. To this end the support is located beneath the shank of the shoe just forward of the heel breast forming, in effect, a central projection from the heel so designed as to give support to the planta fascia before it is put on stretch, thus to relieve strain and prevent pain before there is a pull on the attachment to the calcaneus.

To the accomplishment of this object and such others as will be understood by those skilled in the art from the following description, the invention comprises the features and combinations of shoe parts first described in detail and then pointed out in their true scope by the appended claims.

The preferred form of the invention is illustrated in the accompanying drawing, in which:

Figure 1 is a view of a shoe, in side elevation, illustrating, by dotted lines, the effect on the wearer's foot when the shoe receives the wearer's weight as in walking;

Figure 2 is a view, in longitudinal cross-section, of the heel portion of the shoe shown by full lines in Fig. 1;

Figure 3 is a view, in transverse cross-section, on the line 3—3 of Fig. 1;

Figure 4 is a view, similar to Fig. 2, illustrating a mode of repair to restore the action of the novel support after wear has made it ineffective;

Figure 5 is a view, in perspective, of a rubber heel that may be used; and

Figure 6 is a view, in perspective, of the tread face of a leather heel embodying the invention applied to the shoe.

Figs. 1, 2 and 3 illustrate the invention, in its preferred form, applied to a conventional shoe having an upper 10, outsole 12, insole 13 and a base lift 14 which may be of leather. To the base lift 14 there is applied a rubber lift 15 (Fig. 5) having at its breast an integral, preferably semi-circular central projection 16 of greater thickness than the thickness of the lift 15 and providing a rearwardly facing shoulder 18. When the rubber lift is applied to the base lift, as shown in Fig. 2, its shoulder 18 bears snugly against the breast of the base lift 14, the rubber lift otherwise fitting the base lift. It will be observed that the top and bottom faces 19 and 20 of the projection 16 are parallel and that before the rubber lift is attached to the base lift, the bottom face 20 is in the general plane of the tread face 22 of the rubber lift. This is purposely the construction so that when the rubber lift is seated on the base lift the forwardly and downwardly inclined shank of the shoe (indicated by 23 on Fig. 1) will turn the upper face 19 also to an inclined position, the whole projection 16 yielding and bending on its line of jointer to the breast of the lift 15, so that after attachment its bottom face 20 is permanently inclined forwardly and downwardly relative to the tread face 22. The lift 15 is attached

The preferred form of the invention is

by nails 24 clenched on the heel seat as usual but the projection 16 is specially attached by a nail 25 which is clenched on the rear end of a metal shank piece 26 secured in position
5 between the outsole and insole.

A modification is shown in Fig. 6 wherein the invention is embodied in an all leather heel. Each leather lift 28 is dinked with a generally semi-circular lip centrally of its
10 breast which together form a leather projection 30 under the shank of the shoe which is turned down by the shank inclination so that its bottom face 31 is inclined relatively to the plane of the tread face of the heel just
15 as shown for the rubber projection 15 in Figs. 1 and 3. A heel nail (similar to 25 in Fig. 2) attaches the projection 30 firmly to a metal shank piece.

The bottom face of the downwardly inclined projection of either form of heel will, in time, wear to the plane of the tread face of the heel. The advantages, now to be described, of the novel shoe construction may be restored by withdrawing the nail 25 which
20 secures the projection, inserting a wedge 34 (see Fig. 4) between the upper face of the projection and the outsole to force the bottom face to an inclined position again, and then renailing to attach the repaired projection
25 immovably to the shoe.

In walking, the heel breast projection, because of its partial location in a plane below the plane of the tread face of the heel, meets the ground first, then as the weight settles
35 and bears on both the heel and forepart of the shoe the projection is bridged over by the downwardly acting forces and is forced upward and presses upwardly on the shank of the shoe just forward of the heel. As the
40 weight is thrown forward by bearing wholly on the forepart of the shoe the heel is raised and the pressure is relieved. The relation of the shoe to the ground, before the weight brings the heel down, is shown by full lines in
45 Fig. 1 and the dotted lines of Fig. 1 show the foot at the moment the weight bears on both heel and forepart at both front and rear of the fixed projection. The effect of the gradually upwardly moving heel breast projection
50 caused by downward pressure at both its front and rear is to spring or arch the outsole upward in the region of the heel breast before the full effect of the weight is felt on the planta and at the same time to longitudinally stretch the upper forming the ankle opening causing it to tighten about the ankle. Thus
55 a strong support is given to the planta before it is put on stretch and much comfort is derived from the snug supporting fit imparted by the arching shank to the entire counter portion of the shoe. This repeated action of bridging over the low lying heel breast projection at every step is aided and controlled
60 by reason of the projection being held immovably at the vital point through its secure-

ment to the metal shank piece within the shoe. It will be observed that the projection 16 tapers from top to bottom affording a relatively great arch supporting area with a minimum surface requiring distortion.

What is claimed as new, is:

1. A shoe having a forwardly and downwardly inclined shank forward of the heel breast, a heel comprising a base lift with a rubber lift at the tread end, said rubber lift
75 having a pressure exerting central breast projection with a solid top face engaged with said inclined shank and its bottom face in a plane forwardly and downwardly inclined relative to the plane of the tread face of the
80 heel.

2. A rubber top lift for heels of shoes, having a lift portion and a solid centralized relatively narrow projection at its breast edge, said projection having its bottom face level
85 and in substantially the plane of the tread face of the lift portion, being considerably thicker than the lift portion and having its top face unbroken and in a plane parallel to its bottom face, said lift after being attached
90 to a shoe adapted to have its bottom face in a plane forwardly and downwardly inclined relative to the plane of the tread face of the heel.

3. A rubber top-lift according to claim 2
95 in which the centralized projection is given a top face of greater area than its bottom face.

4. A shoe having a heel comprising a base lift, a rubber top-lift having a centralized projection at its breast extending upwardly to
100 overlap the base lift and engage the shoe sole with its top face, said projection bending downwardly along its line of joinder to the breast of the top-lift causing its bottom face to extend forwardly and downwardly relatively to the plane of the tread face of the
105 heel.

ISIDOR TARLOW.

110

115

120

125

130