

W. M. SCHOLL.
 UNION SHIELD.
 APPLICATION FILED JAN. 22, 1912.

1,055,811.

Patented Mar. 11, 1913.

Fig. 1.

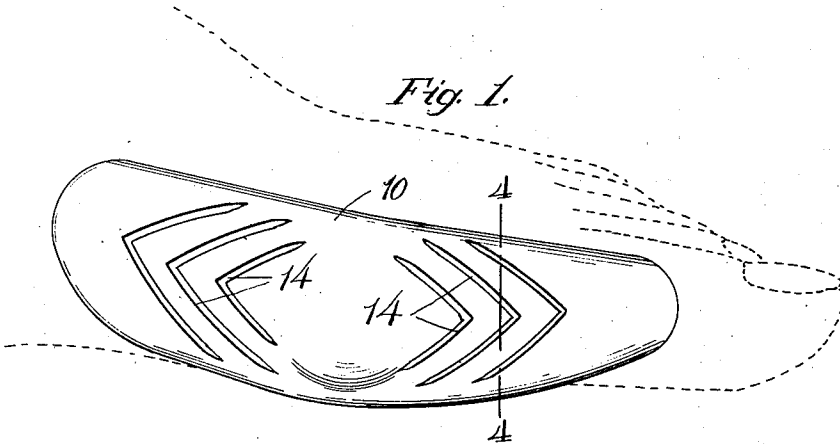


Fig. 2.

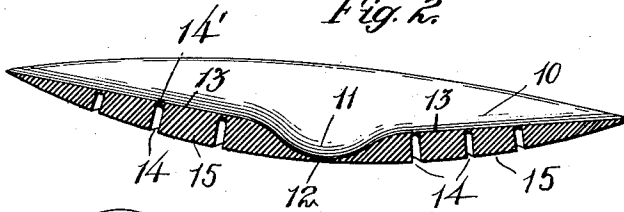


Fig. 3.

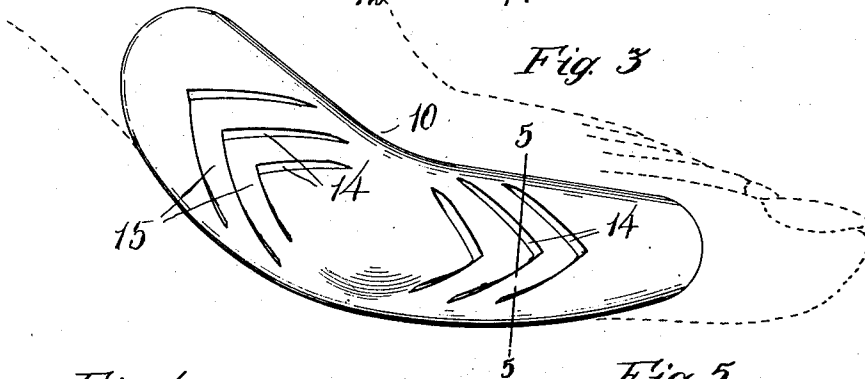


Fig. 4.

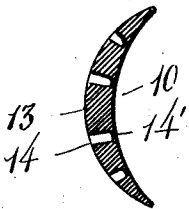


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM M. SCHOLL, OF CHICAGO, ILLINOIS.

BUNION-SHIELD.

1,055,811.

Specification of Letters Patent.

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Application filed January 22, 1912. Serial No. 672,600.

To all whom it may concern:

Be it known that I, WILLIAM M. SCHOLL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bunion-Shields, of which the following is a specification.

My invention relates to improvements in bunion shields, and more particularly to bunion shields of rubber or similar material molded to form bunion receiving pockets and thickened pressure distributing end portions. In the provision of such shield it is necessary, for the relief of the bunion from the pressure of the shoe, that the rubber portions lying longitudinally beyond the bunion receiving pocket have considerable thickness to perform their function, and, therefore the shield as a whole is generally relatively inflexible and tends to stiffen the movements of the wearer, preventing free play of the protected joint.

The general object of my invention is to provide an improved rubber bunion shield, preserving the appropriate contour and proportions for most effective protection of the affected joint, but constructed to give resilient flexibility to the thickened portions of the structure, particularly to permit the bending thereof in vertical plane when on the foot.

In the drawings wherein I have illustrated an embodiment of my invention; Figure 1 is a side elevation of my improved bunion shield; Fig. 2 is a longitudinal section thereof; Fig. 3 is a side elevation indicating the action of the structure under a vertical bending strain; Fig. 4 is a transverse section on lines 4-4 of Fig. 1; and, Fig. 5 is a section on line 5-5 of Fig. 3.

In the drawing 10 indicates in general the rubber shield, shaped to extend along the inside of the human foot, from near the middle of the length of the great toe, over and around an enlarged great toe joint (phalangeal-metatarsal articulation) and along the inside of the instep arch of the foot. The shield interiorly provides a recess, or pocket, 11 for the great toe joint overlain by a thin diaphragm 12 of rubber and flanked, in front of and in rear of the pocket, by the thickened portions 13 the inner surface of the structure being curved for appropriate conformity to the flesh contour of the foot and the affected joint, and

the outer surface being curved longitudinally and transversely on smooth curves to fit neatly into the shoe, so that the portions 13 taper to thin edges both longitudinally and vertically or transversely.

In the outer surface of the appliance are formed relatively narrow deep grooves or scores, 14, preferably extending nearly, but not quite, through the rubber bodies, the thin bottom walls 14' of the grooves leaving the interior surface of the appliance continuous, smooth and impervious. The grooves 14-14 are arranged in pairs, converging from separated points on opposite sides of the median longitudinal line of the appliance, respectively toward the contiguous end of the appliance to join or intersect approximately on the median line so that each pair of grooves makes a substantially V-shaped figure having its arms spreading apart and directed toward the longitudinal center of the appliance. These grooves give a resilient flexibility to the appliance to permit its bending throughout the thickened portion of the appliance, particularly for bending of the thickened portions in a vertical plane, rendering the appliance as a whole the more readily conformable to the foot of the individual wearer. When the bending strain is in a vertical plane the grooves may act as indicated in Fig. 3, the walls of the grooves toward the outer side of the curve crowding together and the walls toward the inner side of the curve separating somewhat, the curvature being thus accomplished rather by relative displacement of the relatively wide pressure-resisting V-shaped blocks 15, between the grooves than by actual elongation of that edge of the appliance which lies along the outside of the curve. Also it will be observed that the flexibility imparted to the device permits it to take lateral and longitudinal curves for conformity to the shape of the foot of the wearer with greater ease than where the thickened portions are solid throughout.

While I have herein described in some detail a particular embodiment of my invention it will be seen that changes in detail thereof may be made without departure from the spirit of my invention and within the scope of the appended claims.

What I claim is:

1. A bunion shield consisting of a rubber

- structure molded to afford a central inwardly facing pocket, and thickened pressure distributing portions longitudinally beyond said pocket, said thickened portion 5 having therein relatively narrow slots relatively widely spaced apart and extending from points on opposite sides of the median line of the appliance toward the proximate end of the appliance.
- 10 2. A bunion shield consisting of a rubber structure molded to afford a central inwardly facing pocket, and thickened pressure distributing portions longitudinally beyond said pocket in both directions, and 15 said thickened portion having formed therein relatively narrow grooves, relatively widely spaced apart and extending from the outer surface nearly, but not quite, to the inner surface of the appliance, leaving 20 the inner surface smooth, continuous and impervious, said grooves, on each side of the pocketed central portion of the appliance, forming a series of V's all having their apices substantially in the median line 25 of the device, and their arms diverging toward the longitudinal center of the device.
3. A rubber bunion shield having its inner surface continuous and portions of its outer surface divided by relatively narrow 30 deep grooves into relatively wide V shaped

blocks, shiftable relative to each other to conform the shield to different curvatures.

4. A bunion shield consisting of a rubber structure shaped to afford a protective body interiorly shaped to conform to the 35 fleshy surfaces of a foot over and around a bunion, and transversely curved for conformity with the foot, said rubber body being thinned throughout the central portion thereof for contact with the bunion, 40 and thickened throughout pressure distributing portions longitudinally beyond the bunion engaging portion, the exterior surface of said shield being shaped in smooth curves to conform to the inner contour of 45 a shoe, said thickened portion of the shield being provided with relatively deep narrow exterior grooves separated by relatively wide stout pressure receiving portions, 50 bodily shiftable by reason of the resiliency of the grooved portions, to accommodate bending of the thickened pressure receiving portions of the shield in a generally vertical plane.

In testimony whereof I hereunto set my 55 hand in the presence of two witnesses.

WILLIAM M. SCHOLL.

In the presence of—
W. LINN ALLEN,
MARY F. ALLEN.