No. 880,245. PATENTED FEB. 25, 1908.

W. M. SCHOLL.

INSTEP ARCH SUPPORT.

APPLICATION FILED OCT. 21, 1907.

Fig. 1.

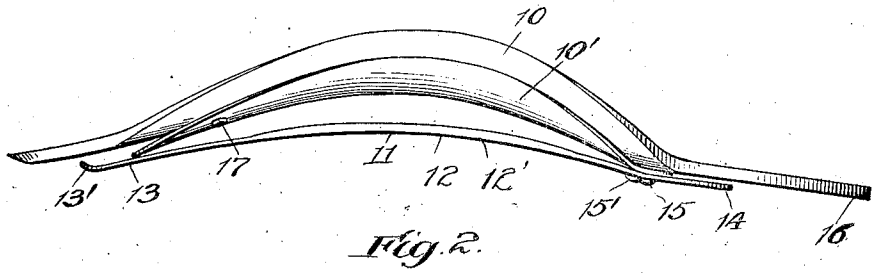


Fig. 2.

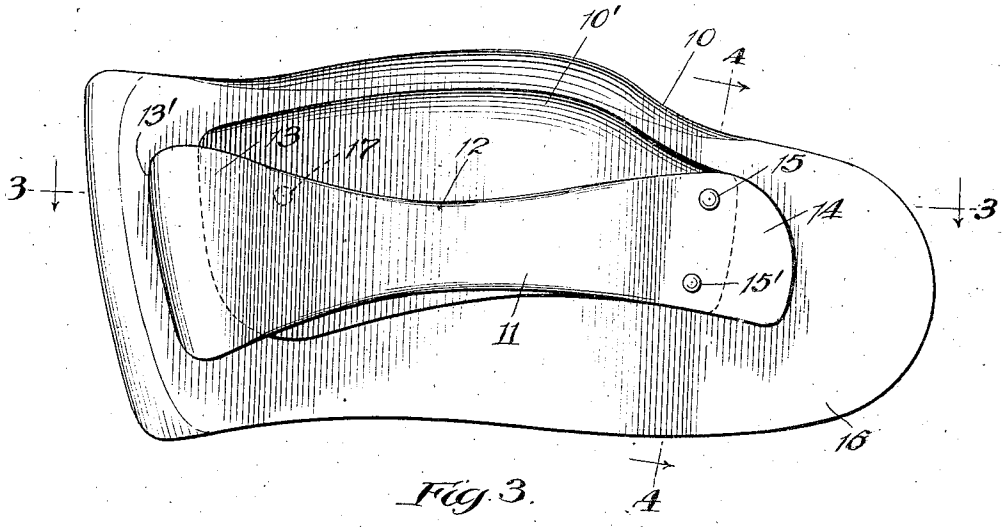


Fig. 3.

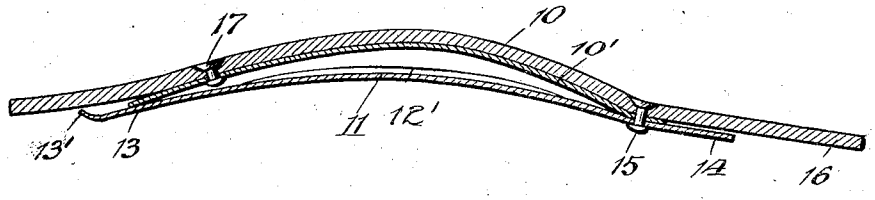
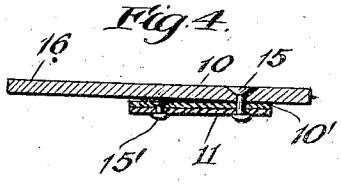


Fig. 4.



Witnesses
Harry R. L. White
Fay White.

Inventor
William M. Scholl
By Foote Bain and May
Attys

UNITED STATES PATENT OFFICE.

WILLIAM M. SCHOLL, OF CHICAGO, ILLINOIS.

INSTEP-ARCH SUPPORT.

No. 880,245. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed October 21, 1907. Serial No. 398,516.

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 Instep-Arch Supports, of which the following is a specification.

My invention relates to improvements in instep arch supports for insertion in foot wear, and has for its general object to provide an instep arch support of such character as to afford adequate support to the instep arch of the foot, but at all times yieldingly, so as to oppose no painfully harsh resistance to the pressure of that portion of the foot.

A further object of my invention is to provide a device of the character described which will substantially affect only the inner area of the arch most apt to be broken down and displaced, and will leave free from pressure the outer margin of the arch, which from its configuration and physical structure is not apt to become injured or broken down.

Another object of my invention is to provide a device of the character described of construction simple and easy of manufacture, but efficient and practical in operation; and other and further objects will best become apparent to those skilled in the art from the following description taken in conjunction with the accompanying drawing, wherein:

Figure 1 is a side elevation from the inside edge, of a support embodying my invention; Fig. 2 is a bottom plan view thereof; Fig. 3 is a longitudinal section on line 3—3 of Fig. 2, and, Fig. 4 is a transverse section on line 4—4 of Fig. 2.

Throughout said several figures like numerals of reference refer always to like parts.

In the embodiment of my invention I provide in general a resilient metallic arch plate longitudinally curved or arched to conform to the longitudinal arch of the instep which it underlies, a metallic spring plate, bowed or curved upward to less degree than the arch plate, secured in fixed relation to the arch plate at its rear end, and at its front end extending beyond the arch plate, to receive the forward extremity of the arch plate in sliding contact on its upper surface, and a cover piece of leather or other flexible material, shaped to fit within the shank and heel portions of a shoe, overlying the arch plate and secured thereto. Preferably the spring plate at its rear end as well as at its front end extends beyond the arch plate so that the arch plate has bearing at both ends at points located on the curve of the spring plate, and elevated above the extremities of the spring plate.

In the specific construction illustrated 10 indicates the arch plate, longitudinally curved to conform with the longitudinal, curve of the normal arch of the instep and transversely of shape and curvature to underlie and interfit with the longitudinal and transverse curves of the inside of the arch; and, while the width of the plate may be varied, I prefer that it shall be approximately of such width as to underlie the three inner metatarsal bones, and the inner and middle cuneiform bones, so giving support to the scaphoid and the astragalus, and leaving free of its support the outer metatarsals and the outer cuneiform bone.

11 indicates the spring plate, bowed upward in a longitudinal line to a less extent than the arch of plate 10, and preferably of length greater than that of the arch plate, so that the spring plate extends out beyond the arch plate at its rear end, and also at its front end, and receives both ends of said arch plate on its curving portions. In general I prefer that the spring plate shall provide a central narrow neck 12, having its side edges upturned as at 12′ for strength, and joining end portions 13 and 14 of greater width, the front end portion 13 being considerably widened to present a substantial bearing surface to the inner surface of the shoe, and slightly curled up at its front end, as indicated at 13′ to prevent cutting of the interior of the shoe. When positioned in the shoe, the end 13 of the spring plate lies at about the middle of the transverse dimension of the shoe and just in front of the shank. The rear enlargement 14 is preferably so shaped and positioned as to extend to approximately the center of the heel, to underlie and support the os calsis, and is secured at a suitable distance from its end to substantially the extremity of the arch plate, by two rivets 15 and 15′ arranged side by side. The front ends of the arch and spring plates are free with respect to each other, and the arch plate bears on the upper surface of the spring plate for free sliding movement relative thereto, the extent of projection of the spring plate beyond the end of the arch plate being preferably sufficient to permit the arch plate to substantially flatten out without interfer-

ence from or leaving contact with the spring plate.

16 indicates a cover piece of leather, shaped to approximate conformity with the interior of the heel and shank of a shoe, and proportioned to substantially fill such portions of the shoe for convenient retention therein, such cover piece being preferably skived along the edge of its upturned side portions and along its front edge, and permanently secured to the arch plate at its rear end by the rivet 15, (which also serves to retain the arch and spring plate together,) and by a second rivet 17 suitably positioned adjacent the front end of the arch plate.

In operation it will be understood the device is inserted bodily in the shoe, and, being sold of course in size approximate to the given shoe size, the leather cover piece fits snugly in the shoe and holds the plates in proper position therein. The arch plate shown when positioned in the shoe, affords support to the weight-carrying, inner portion of the arch, but leaves free from spring support the outer portion of the arch, which obviously needs the least support, and which is adequately supported by the relatively stiff leather cover-piece extending therebeneath across the shoe. When pressure is applied to the arch plate it may yield longitudinally, its rear extremity being held stationary with respect to the spring plate, and its front edge moving longitudinally with respect to the spring plate in sliding relation thereto. It will also be apparent that the spring plate itself is capable of depression and serves as an auxiliary spring, moving longitudinally however, to a much less extent than the arch spring, as the weight of the arch spring is carried near its ends and not at its point of highest curvature. Further curvature of the bearing surface presented by the spring plate for the arch plate facilitates the sliding movements of the latter.

Practical experience has demonstrated that an arch support thus constructed effectively prevents breaking down of the arch of the instep, and has a very appreciable effect toward restoring and reforming a broken down arch. It is, however, sufficiently elastic and adaptable in its movements to conform readily to the foot of the user, and in use a very comfortable and easy arch supporter or stay.

While I have herein described in some detail a specific embodiment of my invention which I have practically employed and found advantageous, it will be understood that I do not desire to limit myself to the exact details of construction and contour further than as specified in the claims, as numerous changes in detail might be made by those skilled in the art without departure from the spirit and scope of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is,

1. As an article of manufacture, an instep arch supporter for insertion in foot wear, comprising an arch plate longitudinally curved to conform to the longitudinal arch of the instep, a spring plate bowed to less degree than the arch plate, secured to said arch plate at its rear end, and at its front end extending beyond the arch plate and receiving the front edge of the latter in free sliding contact, and a flexible cover piece overlying and secured to the plate structure and shaped for comformity to the rear portions of a shoe.

2. As an article of manufacture, an instep arch supporter for insertion in foot wear, comprising a bowed spring plate, an overlying arch plate, longitudinally curved to conform to the normal longitudinal arch of the instep, and transversely shaped to conform to the inside of the instep arch, and terminating at its outer edge near the middle of the transverse arch of the foot, said arch plate being secured to the spring plate at its rear end and free from and contacting with said spring plate for sliding movement at its front end, and a flexible cover piece secured to the plates, and shaped to conform to the heel and shank of a shoe.

3. In an instep arch supporter, for insertion in and removal from foot-wear, the combination of an arched plate longitudinally curved to conform to the arch of the instep, and a spring plate, bowed to less degree than the arch plate, and flexibly connected to the arch plate at its rear end, and at its front end extending beyond the arch plate and receiving the front edge of the latter in free sliding relation thereto, whereby the arch plate may be straightened to an extent upon the spring plate by pressure applied to said arch, while the spring plate receives the pressure of the arch plate at its forward end at a point elevated by the bowing of the spring plate.

4. As an article of manufacture, an instep arch supporter for insertion in foot-wear, comprising a leather cover piece shaped to fit the shank and heel of a shoe, a longitudinally curved arch plate positioned by the cover piece and shaped to conform to the inner side of an instep arch, and a bowed spring plate, attached to said arch plate at one end only, and receiving the other end in sliding relation thereto, said spring plate being shaped to afford a relatively wide bearing edge at its front end, and a bearing about centrally of the heel at its rear end.

5. In an instep arch supporter, the combination of a spring plate, an arch plate overlying said spring plate and bearing thereon, and a cover piece overlying said

arch plate, a rivet joining the cover piece, arch plate and spring plate near the heel, a second rivet connecting the spring and arch plates only near the heel, and a third rivet connecting the arch plate and cover piece only near their front end, whereby the cover piece is secured to the arch plate near both ends of the latter, and the arch plate is secured to the spring plate near its rear end only and free for sliding movement on the spring plate at its front end.

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

WILLIAM M. SCHOLL.

In the presence of—
FORÉE BAIN,
MARY F. ALLEN.