

C. A. HOWE.
FOOT SUPPORT.
APPLICATION FILED OCT. 24, 1910.

1,025,571.

Patented May 7, 1912

Fig. 1.

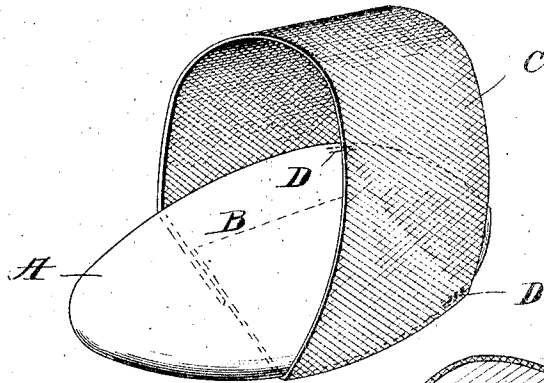


Fig. 2.

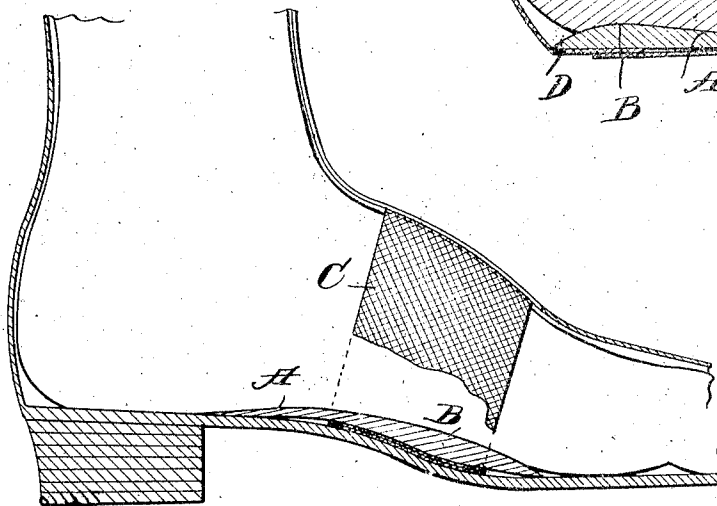
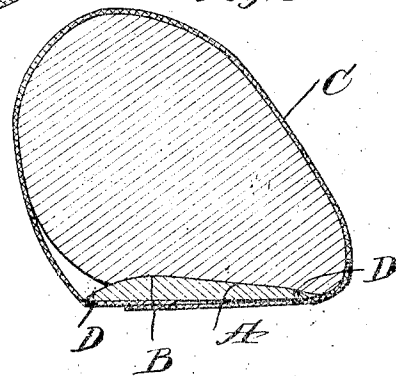


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES A. HOWE, OF CHICAGO, ILLINOIS.

FOOT-SUPPORT.

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To all whom it may concern:

Be it known that I, CHARLES A. HOWE, 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 Foot-Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object to provide a device for supporting the arch or instep and reinforcing this portion of the foot, and consists in the novel features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating this invention: Figure —1— is a perspective view of an arch supporting and instep reinforcing device constructed in accordance with this invention. Fig. —2— is a vertical transverse section of the same showing it mounted upon the foot, the latter being indicated in cross-section. Fig. —3— is a sectional view showing a shoe and indicating the position of the foot therein and the position of my said devices upon the latter.

My invention is particularly intended to relieve fatigue of the feet due to lack of proper support for the arch or instep thereof, and the spreading of this portion of the foot as well as strains on the cords, ligaments and tendons.

Lack of support of the arch of the foot, I believe, causes a strain at the junctures of the tarsus with the metatarsal bones and tends further to cause a spreading of the latter. This strain is probably communicated to the tendons and ligaments of the foot and causes rapid fatigue of and intense pain in the foot which extends through the ankle and into the calf of the leg.

My invention has for its object to provide means for supporting the arch of the foot and yieldingly embracing and confining the instep portion thereof whereby the above mentioned strains are obviated. To these ends I provide a plate A of a flexible material, preferably sole leather, which is trimmed on its upper face to render the latter convex, the highest portion thereof being adjacent one end and one side edge of the plate. The contour of said upper face may be said to closely resemble the contour

of the convex face of a fresh-water clam-shell. The thickness of the plate A at its thickest point B as well as the exact position of the latter relative to the whole surface must be changed and varied to fit the shapes and sizes of the feet of different persons, being sometimes disposed nearer the forward end or nearer one side edge or it may be shifted to lie near the meeting point of the forward end and side edge and may sometimes be farther removed from either the said end or said side edge or from both as may be determined by observation and experiment in each particular case. The said thickest portion of the plate is interposed under that portion of the foot immediately rearwardly of what is generally termed the "ball" of the foot. From its thickest portion the plate tapers longitudinally gradually rearwardly toward its rear end which terminates in a sharp edge usually disposed immediately forward of the heel of the foot, and sometimes extended to lie underneath the heel, and laterally said plate tapers less gradually, the side edge thereof adapted to be disposed nearest the outer side of the foot, being also sharp and lying underneath the fourth, or the fourth and fifth, metatarsal bones. The exact positions and relative elevations of the metatarsal bones differ in different individuals so that the width and lateral taper of the plate must be varied to suit each case and to provide substantially uniform support to each of said bones. The arch of the foot is thus firmly supported but such support is insufficient to alone remedy the cause of fatigue and pain in the feet.

The pressure upon the feet tends to cause the metatarsal bones to spread and this appears to contribute largely to the trouble sought to be remedied. I have found that a broad band C of elastic webbing passing over the arch or instep and yieldingly embracing the same sufficiently resists the tendency to spreading of this portion of the foot to give the desired relief, only, however, in conjunction with the plate A supporting the said arch, that is to say, neither the plate A nor the band C used alone will afford substantial relief but that the two together afford complete relief. It is preferable to secure the band C to the plate A by means, for example, of stitching D at several points, said band thus serving to hold the plate A against displacement.

Elasticity of the band C is absolutely es-

5 sential so that it will not interfere with the freedom of relative movement of the metatarsal bones, and at the same time the pressure exerted by said band must not retard circulation.

I claim as my invention:

1. A device of the kind specified, comprising in combination, a flexible plate having convex lower and upper faces, the upper face thereof adapted to oppose the sole of the foot, said plate being of greatest thickness at a point lying rearwardly of and adjacent the ball of the foot and on the inner side of the latter, said plate extending longitudinally to a point adjacent the heel and laterally to a point adjacent the outer side of the foot and being tapered from said thickest point in various degrees to the periphery, the latter being sharp, and an elastic band adapted to pass around the foot underneath said plate and over the instep, substantially as and for the purpose described.

2. A device of the kind specified comprising a plate of flexible material having a lower face ogee-curved in the direction of its length, and a convex upper face, the lat-

ter adapted to oppose the sole of the foot, and being of greatest height at its forward end portion, the latter adapted to support the portion of the foot lying immediately rearwardly of the ball thereof, said plate tapering sharply from said highest point in said convex face to the forward end thereof and gradually to the rear end thereof, the latter adapted to be immediately forward of the heel, the side edge portion of said plate underlying the inner side portion of the sole being of greater thickness than the other side edge portion thereof, and an elastic band passing over the arch of the foot and underneath said plate and secured to the latter adapted to hold the same in place and to coact therewith to confine the metatarsal bones, substantially as and for the purpose specified.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

CHARLES A. HOWE.

Witnesses:

M. M. BOYLE,
F. P. HIGLEY.