Sept. 17, 1929. W. C. BURNS 1,728,780

CUBOID SUPPORT

Filed April 20, 1928

Fig. 1.

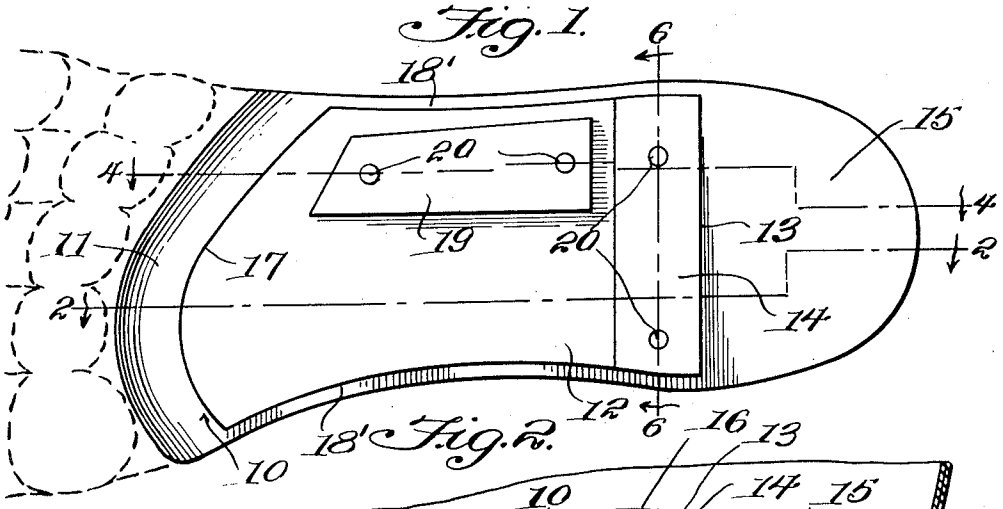


Fig. 2.

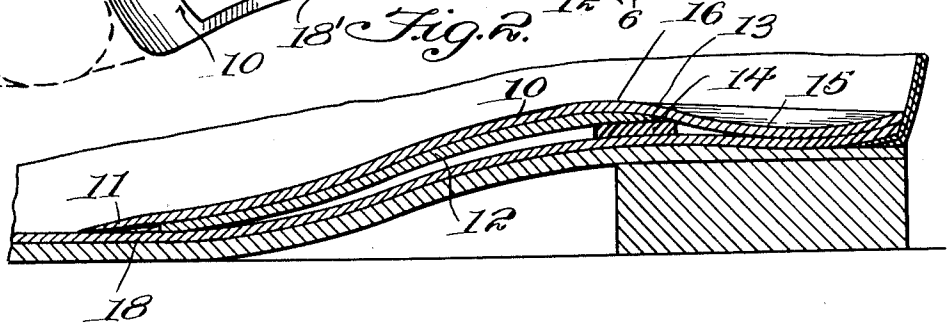


Fig. 3.

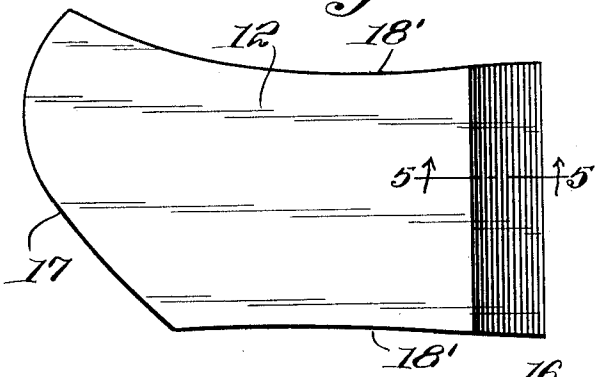


Fig. 5.



Fig. 6.

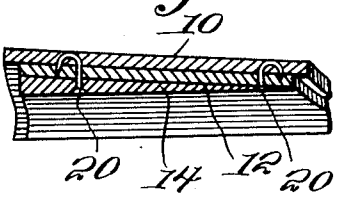


Fig. 4.

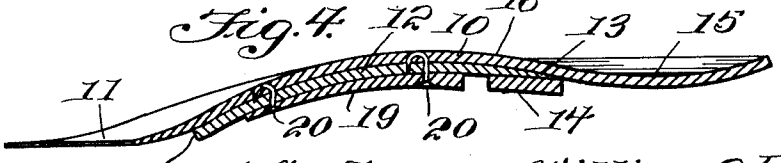
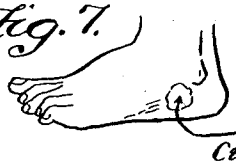


Fig. 7.



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UNITED STATES PATENT OFFICE

WILLIAM C. BURNS, OF ALBANY, OREGON

CUBOID SUPPORT

Application filed April 20, 1928. Serial No. 271,602.

This invention relates to means for supporting the cuboid bone, and is designed to be worn within a shoe for the purpose of effectually supporting and strengthening the muscles upon which the cuboid bone rests, the present invention being an improvement upon the support disclosed in Patent #1,426,258, granted to me August 15, 1922.

The primary object of the present invention is to provide a support which may be worn within a shoe for preventing, as well as correcting foot troubles. This is accomplished by supporting the foot so that the proper foot muscles will be brought into use to support the weight of the body without pressure upon the main artery of the foot, so that in addition to strengthening the muscles which support the cuboid bone, circulation of blood throughout the foot is stimulated.

In the patent referred to, the support included an insert whose front and rear edges are tapered and whose front edge is transversely curved. In the present invention however, the construction of the support and the shape of its forward edge differs so as to more effectually accomplish the intended purpose.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claim.

In the drawing:

Figure 1 is a bottom plan view of a cuboid support constructed in accordance with the invention, a portion of a foot being shown by dotted lines so as to illustrate the position of the support.

Figure 2 is a fragmentary sectional view showing the position of a support within a shoe, the section being taken substantially on the line 2—2 of Figure 1.

Figure 3 is a bottom plan view of the under layer.

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 1.

Figure 5 is a section on the line 5—5 of Figure 3,

Figure 6 is a section on the line 6—6 of Figure 1.

Figure 7 is a view illustrating by dotted lines the position of the cuboid bone and its supporting muscles.

Referring to the drawing in detail wherein like characters of reference denote corresponding parts, the invention which is preferably formed of leather, comprises a layer 10 which is adapted to conform to the shape of the inside of a shoe as well as the foot, and to occupy a position within the heel portion and to extend forward and terminate immediately at the rear of the metatarsus. The forward edge 11 of the layer 10 is skived or beveled so as to provide a very thin edge. This edge is so shaped in plan as to lie immediately behind the metatarsus. Its shape differs from the shape of the support disclosed in my patent referred to in that in addition to occupying a position immediately behind the great metatarsal joint, it extends forward and then inclines rearward so as to occupy the same relative positions with respect to the second, third, fourth and fifth metatarsal joints, instead of extending beneath the third, fourth and fifth metatarsal joints. Secured to the under face of what may be termed the over layer 10 is an under layer 12 which is also formed of leather. This under layer 12 lies wholly within the outer marginal edges of the layer 10 and its rear edge terminates an appreciable distance from the rear edge of the heel as shown at 13. This rear edge 13 extends transversely immediately in advance of the heel and this edge may be beveled or skived and provided with a strip 14. The rear longitudinal edge of this strip is rightangular so that when the support is arranged within the shoe as shown in Figure 2 of the drawings, that portion of the support indicated at 15 is depressed to receive the heel, while the portion of the support immediately in advance of the heel is raised as shown at 16.

The forward edge of the layer 12 is shaped to conform to the shape of the forward edge of the layer 10, as indicated at 17. This edge 17 is rectangular so as to provide a shoulder 18 whose transverse contour is

shaped in conformity with the forward edge of the layer 10. This forward edge of the layer 10 thus overhangs the forward edge of the layer 12 and provides an inclined apron which slightly elevates that portion of the foot immediately adjacent and behind the metatarsus and throughout the width of the foot.

By spacing the side edges 18′ of the layer 12 inwardly from the side edges of the layer 10, the support will conform to the transverse shape of the shoe without requiring these edges to be skived or beveled. In addition to the saving of labor, this also results in a saving of material.

The support may be provided with a longitudinally disposed strip or leveler 19 positioned under the outer longitudinal arch.

The strips 14 and 19 may be secured in place through the medium of fastening devices as illustrated at 20 in Figures 4 and 6 of the drawing, or any other fastening means.

The cause of much foot trouble is neglect of the use of the muscles which hold the cuboid bone in proper place. These muscles become weak through lack of use, and as the weight of the body forces the bones of the foot down and out of their natural position, circulation is interfered with, and the feet tire quickly due to their weakened condition.

While many arch supports are provided in an attempt to cure this defect, these supports improperly distribute the weight and in addition, interfere with the proper blood circulation. The weight is forced against the cords of the feet so as to cause cramps in the feet and legs and ache in the cords of the legs. In addition, the ordinary arch supports give only temporary relief at the expense of blood circulation. They relieve pressure on the metatarsus by carrying weight under the metatarsal and longitudinal arches, which causes the heart to be overworked by pressure on the arteries of the foot.

The present invention avoids and overcomes these defects by providing a support which causes the weight to be distributed properly throughout the foot as effectually as walking barefooted upon soft earth, so that the weight of the body is taken off of the metatarsus and caused to fall upon the strongest most cushioned parts of the foot, which are the muscles that support the cuboid and permit the heart to force the blood through the arteries and build up muscle tissue.

Shoes, as constructed up to and including the present time, act to hold the foot upon the insole by pressure against the toes. This pressure is so great as to stretch the shoe across the toes. The support which constitutes the present invention provides a cup-shaped depression which receives the heel, so that the foot is held upon the insole without pressure against the toes. The foot is gently pulled backward, eliminating stretch and strain.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

A cuboid support comprising an upper layer of leather having its rear end rounded to fit within a shoe beneath the heel of the wearer and to extend forward with its front end beveled and shaped to occupy a position immediately behind all of the joints of the metatarsus, a second layer of leather secured beneath the first layer and having its forward edge spaced from the front edge of the upper layer and its rear edge terminating transversely in advance of the heel, a transverse strip having front and rear rectangular edges and secured to the second layer in advance of the heel to elevate the support to an appreciable height immediately in advance of the heel, and a longitudinally tapered strip secured along the outer longitudinal arched portion of the support with the taper of the strip disposed away from the heel to provide a forwardly and laterally inclined support from the heel to the forward edge of said support.

In testimony whereof I affix my signature.

WILLIAM C. BURNS.