E. P. CUSHMAN.

ARCH SUPPORT.

APPLICATION FILED JULY 29, 1915.

1,163,395. Patented Dec. 7, 1915.

FIG. 1.

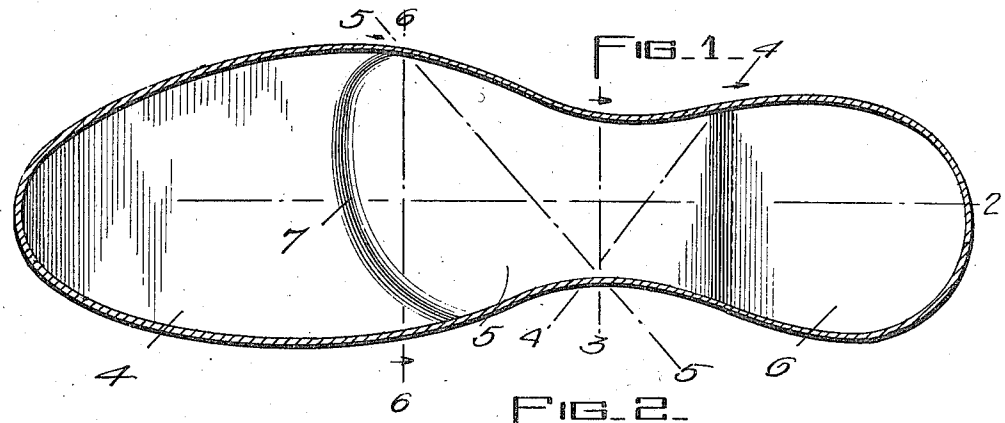


FIG. 2.

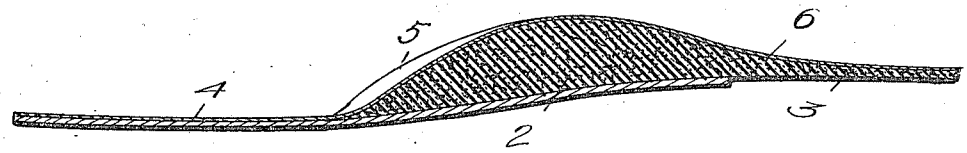


FIG. 6.

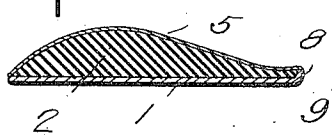


FIG. 3.

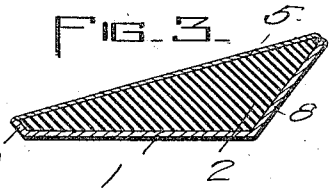


FIG. 8.

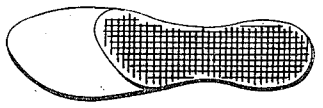


FIG. 5.

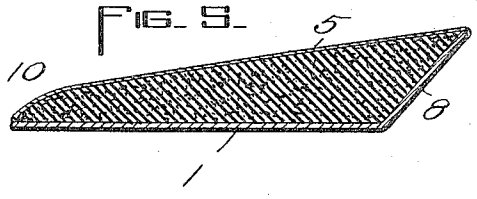


FIG. 4.

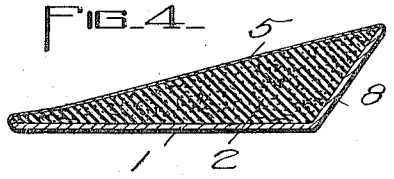
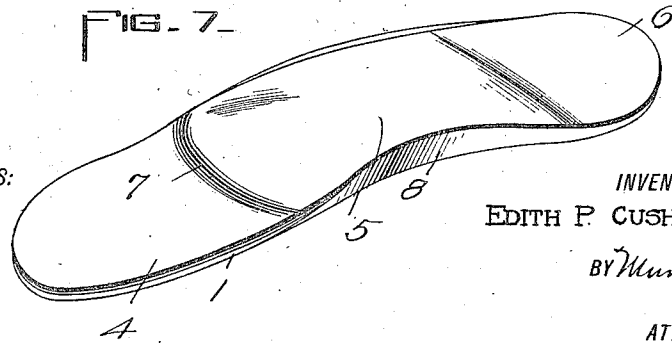


FIG. 7.



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ARCH-SUPPORT.

1,163,395. Specification of Letters Patent. Patented Dec. 7, 1915.

Application filed July 29, 1915. Serial No. 42,505.

To all whom it may concern:

Be it known that I, EDITH P. CUSHMAN, a citizen of the United States, and a resident of Methuen, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Arch-Supports, of which the following is a specification.

My invention is an improvement in arch supports, and the invention has for its object to provide a support of the character specified, especially adapted for persons suffering from flat foot and the like, wherein the support is so arranged that it will afford a firm yet yielding support for the distal ends of the third and fourth metatarsal bones, which lack the thickness and heaviness of the first and second bones, and are supported by the muscles and ligaments, to relieve the strain on such muscles and ligaments, and to permit the third and fourth toes to assume their natural straight position.

In the drawing: Figure 1 is a bottom plan view of the improved support; Figs. 2, 3, 4, 5 and 6 are sections on the lines 2—2, 3—3, 4—4, 5—5 and 6—6, respectively, of Fig. 1, Figs. 3, 4, 5 and 6, each looking in the direction of the arrow adjacent to the line; Fig. 7 is a perspective view of the support, and Fig. 8 is a top plan view of the support in place.

In the present embodiment of the invention a base 1 is provided of suitable material, as for instance leather, the said base being bent on a double curve longitudinally, as shown, and at the rear of the said base a pad is provided, the said pad consisting of two portions, namely, a thickened front portion 2, and a thin rear or heel portion 3. The pad, it will be noticed, extends approximately half the length of the base 1, and extends rearwardly beyond the base a distance equal to approximately half the length of the pad.

The front portion 2 of the pad is higher than the rear portion, as shown, and the upper surface of this portion 2 is convex longitudinally, while the portion 3 has its upper surface approximately flat or plane, but merging into the portion 2 on a gradual curve, as shown. A lining or facing is arranged above the pad and above the front end of the base 1, the said lining consisting of a portion 4 above the base, a portion 5 above the portion 2 of the pad, and a portion 6 above the portion 3 of the pad. The portion 4 of the lining or facing is superposed on the upper face of the base, while the portions 5 and 6 of the facing are superposed on the upper face of the pad.

Referring to Fig. 1, it will be seen that the outline of the support as a whole corresponds to that of the sole of the shoe in which the pad is to be placed, and it will be noticed that the front edge of the portion 5 of the pad transverse of the sole is convex toward the toe, as indicated at 7.

Referring to Figs. 3 to 6, inclusive, it will be noticed that at the narrowest portion of the sole (Fig. 3) the portion 2 of the pad is of greatest thickness at the inner side of the foot, and that the portion 5 of the facing inclines toward the outer side of the foot on a straight line.

At the inner side of the support or base 1 the said base has a flange 8, inclining upwardly, and at the outer edge the base has a second flange 9 also inclined, and the free edges of the flanges 8 and 9 abut the portion 5 of the lining or facing.

On the line 4 meeting the line 3 at the inner side of the foot at an acute angle, (Fig. 4) the inclination of the portion 2 of the pad is approximately the same as at the line 3, but the flange 9 of the base is omitted, the lining meeting the base at the outer edge of the foot.

On the line 5 meeting the line 4 at the inner side of the foot at approximately a right angle, it will be noticed from Fig. 5 that the flange 9 is omitted at the outer side of the foot, while the flange 8 meets the base at a more obtuse angle.

The outer edge of the pad is rounded or convex as indicated at 10. On the line 6 near the front edge of the portion 5 of the pad, (Fig. 6) it will be seen that the pad is of greatest height at the outer side of the foot, and that the lining or facing 5 meets the base of the support 1 at the outer edge of the support.

The flange 9 at this point is omitted, while the flange 8 is of very slight height. On this line the upper surface of the pad or lining has the contour of a double curve, with its convex portion outwardly and the concave portion inwardly.

Referring to Figs. 1 and 7, it will be noted that at the heel the upper surface of the pad is slightly concave, but almost plane and flat. Referring to the same figures, it will

be noted that the line of junction between the portions 5 and 6 of the lining and the line of junction between the portions 2 and 3 of the pad is approximately straight transverse to the long axis of the shoe.

A line joining the ends of the curve of the front line of the pad will be inclined to the long axis of the shoe. In other words, at the outer side of the foot this line is in advance of the end of the line at the inner side of the foot, and at the outer side of the foot the pad is elevated, to support the distal ends of the metatarsal bones of the third and fourth toes.

The improved support may be built in the shoe, or it may be separate, which is the preferable construction, and it will be understood that the supports will be made in sizes to fit various shoes, and that the element 1 is preferably of leather, so that the pad will hold its place in the shoe.

The high portion of the pad extends from the heel to the front of the arch of the foot, and in addition to supporting the inner high part of the arch, it also supports the outer side of the foot at the metatarsal bones of the little toe and the adjacent toe.

The base or support 1 is of sufficient thickness to hold its shape, while the facing or lining 4—5—6 is of flexible material. The pad is of any desired material having sufficient elasticity, and the upper surface thereof is smooth and uniform.

The heel portion of the pad is of greatest thickness at its front, thus fitting the bottom of the heel. It will be evident that the support 1 might be omitted, thus lessening the cost of production of the pad. The edge of the lining throughout its extent is flush with the edge of the support or the edges of the flanges 8 and 9, and these edges may be stitched or otherwise secured together.

I claim:

1. A device of the character specified, comprising a base or support of leather, having an outline to fit within a shoe upon the sole thereof and in advance of the heel, a pad of elastic material seated on the support at the rear thereof and extending rearwardly to cover the heel portion of the sole, said pad being convex longitudinally from its front end to the rear end of the support and being approximately plane from the said rear end of the support to the rear end of the pad, and a facing or lining of flexible material superposed on the front end of the support and covering the pad and secured at its edges to the support, said pad merging gradually into the support at its front end into the heel portion at the rear, and having its front edge convex transversely of the shoe, said pad having its highest point at the inner side of the shoe and at approximately half way between the front edge of the pad and the rear edge of the support, and inclining downwardly in a straight line to the outer side of the foot, said pad extending forward a greater distance at the outer side of the foot than at the inner, and having a rounded elevation at the front outer corner, for the purpose specified.

2. A device of the character specified, comprising a flexible elastic support for insertion in a shoe and having its outline corresponding approximately to that of the sole, said support having its upper surface convex at the arch of the foot and of greatest height at the inner side of the foot and inclining downwardly toward the outer side of the foot, and extending at the outer side of the foot a greater distance than at the inner side, and being elevated at the outer side at the said extended end to support the distal ends of the metatarsal bones of the third and fourth toes.

3. A device of the character specified, comprising a flexible support having an out-line corresponding approximately to that of a sole of a shoe, and a pad of elastic material seated on the support at the rear thereof and extending rearwardly beyond the support to cover the heel portion of the sole, said pad being convex at the arch of the foot and of greatest height at the inner side of the foot, and at approximately half way between the front edge of the pad and the rear edge of the support, and inclining downwardly toward the outer side of the foot and being extended at the outer side of the foot beyond the inner side and elevated at the said outer side to support the distal ends of the metatarsal bones of the third and fourth toes.

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Witnesses:

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