

A. M. SMITH.  
 ARCH SUPPORT.  
 APPLICATION FILED DEC. 3, 1909.

961,174.

Patented June 14, 1910

2 SHEETS—SHEET 1.

Fig. 1.

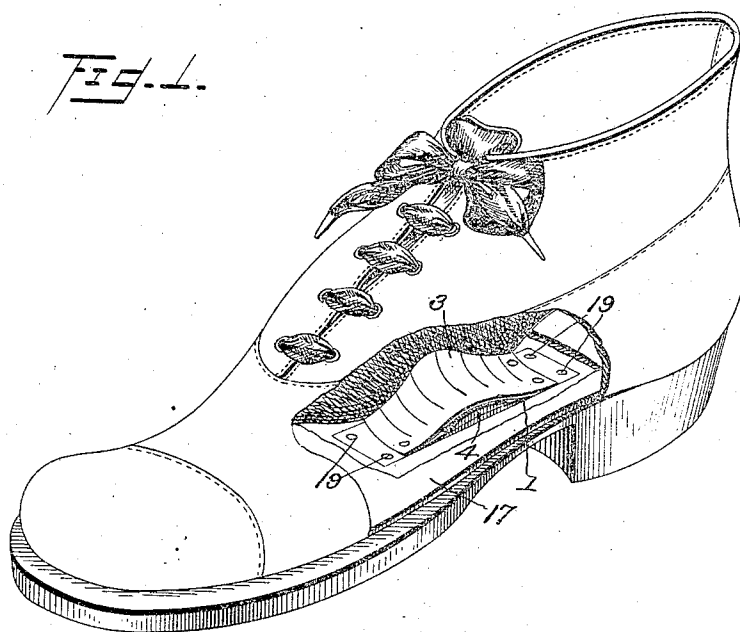


Fig. 3.

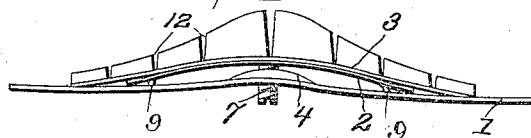


Fig. 4.

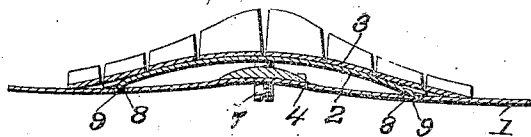
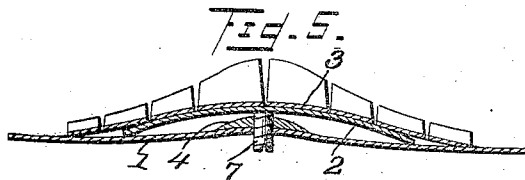


Fig. 5.



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2 SHEETS—SHEET 2.

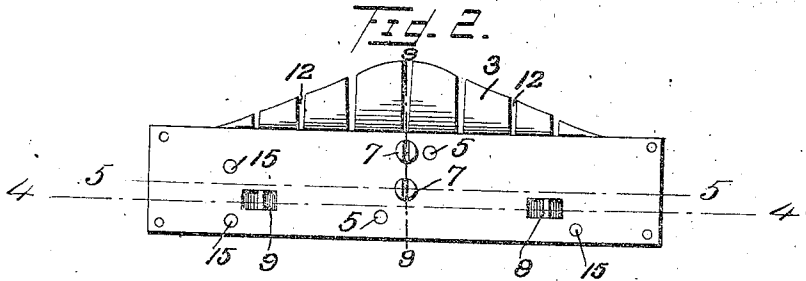


Fig. 5.

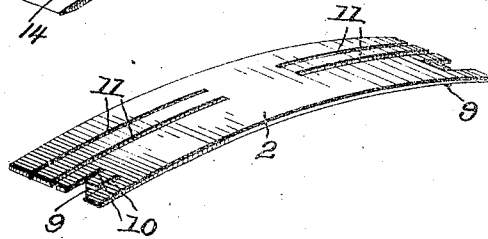
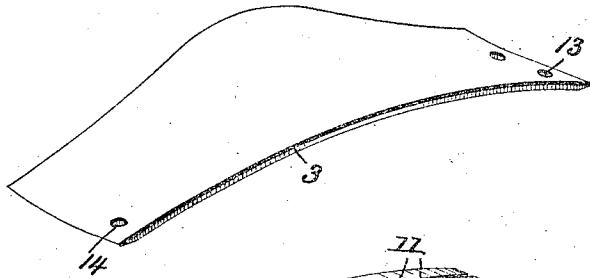


Fig. 7.

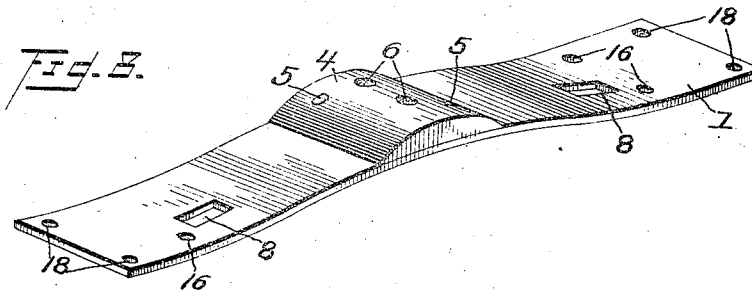
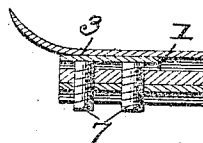


Fig. 9.



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# UNITED STATES PATENT OFFICE.

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## ARCH-SUPPORT.

961,174.

Specification of Letters Patent. Patented June 14, 1910.

Application filed December 3, 1909. Serial No. 531,215.

*To all whom it may concern:*

Be it known that I, ALFRED MARSHALL SMITH, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, have invented certain new and useful Improvements in Arch-Supports, of which the following is a specification.

This invention relates to arch-supports.

The object of the invention is to provide an article of this character which shall combine, in a practical and highly efficient manner, novel means for adjusting the curvature of the arch plate, whereby to cause it to adapt itself to the plantar surface or sole of the foot of the wearer, and thus insure the greatest comfort and most beneficial results in use.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of an arch-support, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts: Figure 1 is a view in perspective of a shoe, portions thereof being broken away to show the manner in which the arch-support is arranged therein. Fig. 2 is an inverted plan view of the arch-support. Fig. 3 is an edge view. Fig. 4 is a longitudinal sectional view taken on the line 4-4, Fig. 2. Fig. 5 is a similar view taken on the line 5-5, Fig. 2. Fig. 6 is a perspective detail view of a modified form of arch plate. Fig. 7 is a perspective view of the brace plate. Fig. 8 is a perspective view of the base plate. Fig. 9 is a transverse sectional view taken on the line 9-9, Fig. 2.

The article comprises three members, a base plate 1, a brace plate 2, and an arch plate 3.

The base plate is constructed from a length of metal, preferably resilient in character, and is exhibited as bent longitudinally on a compound curve, although this is not essential, as it may be of other contours if found necessary or expedient. Located at the center of the plate, and at its bellied portion, is a reinforcing plate 4, which is shown as held assembled with the base plate by rivets 5, but if preferred the two parts may be made integral. The outer surface of the plate 4

is curved, and through the two plates 1 and 4 extend threaded openings 6 that are engaged by screws 7, as clearly shown in Fig. 9, and the function of which will hereinafter appear.

Adjacent to each end of the base plate, and preferably to one side of its longitudinal axis, is a slot 8, and these two slots are engaged by tongues 9 at the terminals of the brace plate 2, the tongues being formed by providing pairs of parallel incisions 10, and then bending the freed metal in the manner shown in Fig. 7. The brace plate is further provided with pairs of longitudinal incisions 11, which extend from the ends of the plate inward any desired distance, the object of this arrangement being to render the plate resilient and adapted readily to yield to pressure, the resiliency being increased by gradually tapering or thinning the plate from its center to its ends.

The arch plate 3 is curved to conform to the contour of the plantar surface or sole of the foot of the wearer, and may be provided with the usual transverse incisions 12, to define fingers, as shown in Figs. 1-5, or may be a solid plate, as shown in Fig. 6. The arch plate is provided at each end with an opening or openings 13 and 14 that are engaged by rivets 15 by which the arch and base plates are held firmly assembled, the latter plate being provided with openings 16 to receive the rivets. As will be seen by reference to Fig. 4, the arch plate is of greater length than the brace plate and thereby serves positively to hold the latter against accidental disconnection from the base plate.

The article is designed to be secured within an insole 17, and to effect stable connection between the parts, the base plate is provided at its ends with openings 18 to receive rivets 19 by which it is attached to the insole.

From the construction shown it will be seen that by adjusting the screws 7, not only can the arch plate be flexed longitudinally, but also transversely, thus to secure the desired tilt, whereby gradually to bring the foot to normal and proper conditions.

Owing to the manner in which the parts of the device are constructed and assembled, there will be no danger of derangement in use, and further perfect comfort under all conditions of service will be assured.

Having thus fully described the invention, what is claimed, is:—

1. An arch support comprising a one-piece base plate provided with longitudinal slots, a brace plate having downturned tongues loosely to engage the slots, an arch plate secured at its ends to the base plate and operating to retain the brace plate in position, and means for flexing the latter plate whereby to vary the curvature of the arch plate.

2. An arch support comprising a rectangular one-piece base plate provided with longitudinal slots and with an intermediate reinforce, a resilient brace plate having downturned tongues to engage loosely with the slots, an arch plate secured at its ends to the base plate and serving to retain the brace plate in position, and screws threaded

through the base plate and reinforce to flex the brace plate.

3. An arch support comprising a base plate provided with longitudinal slots and with an intermediate reinforce, a resilient longitudinally slotted brace plate having tongues loosely to engage the slots, an arch plate secured to the base plate and engaging the bellied portion of the brace plate to retain the latter in position, and screws threaded through the base plate and reinforce to flex the brace plate.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED MARSHALL SMITH.

Witnesses:

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CHAS. EDW. HILLIARD.