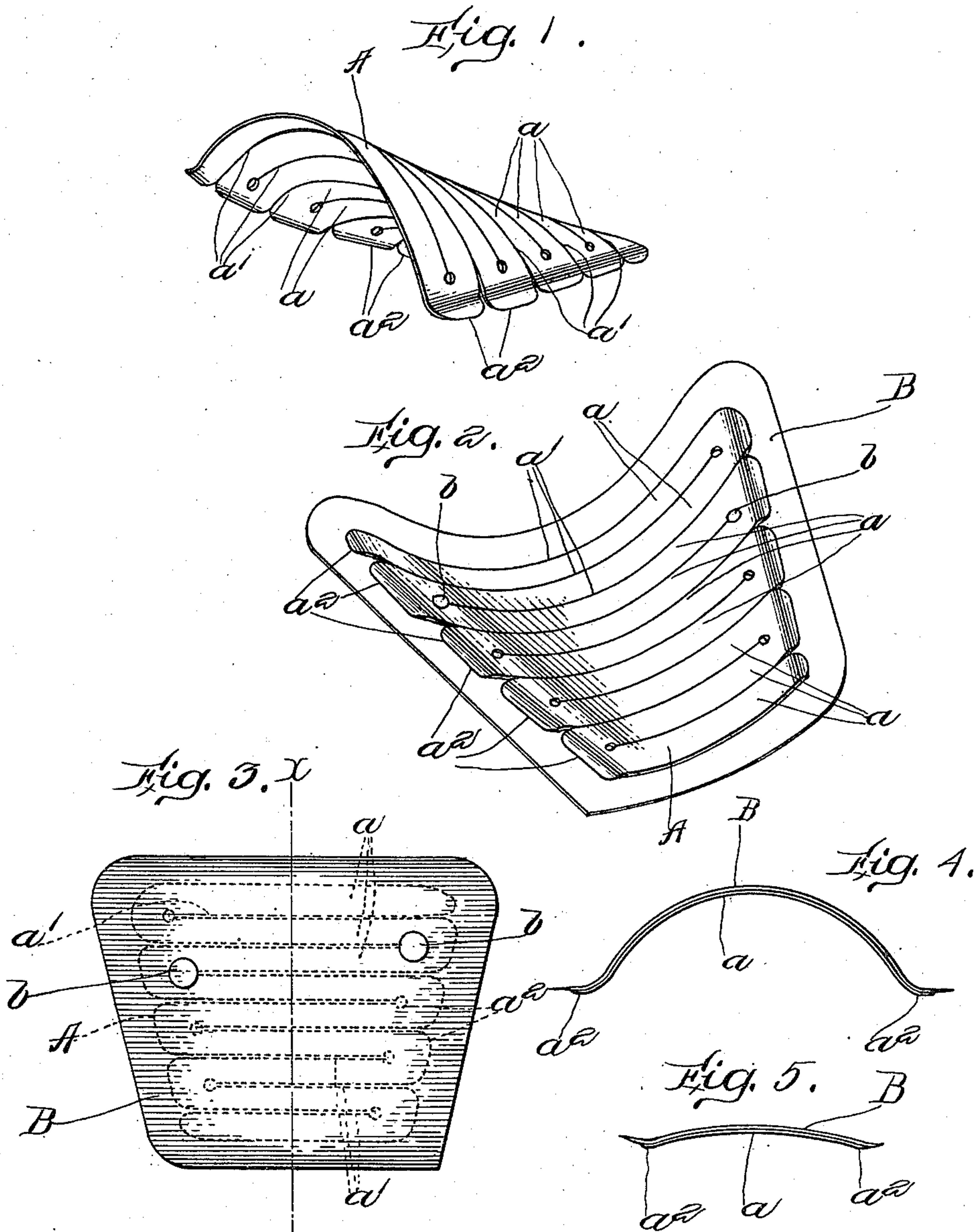


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ARCH SUPPORT.  
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989,823.

Patented Apr. 18, 1911.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN SVENSON, OF MALDEN, MASSACHUSETTS.

## ARCH-SUPPORT.

989,823.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed March 11, 1910. Serial No. 548,568.

*To all whom it may concern:*

Be it known that I, JOHN SVENSON, a citizen of the United States, and resident of Malden, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Arch-Supports, of which the following is a specification.

This invention relates to arch supports to be worn inside the shoe to support the arch or instep of the foot, and its object is to provide an improved arch support which will be lighter, and will provide more freedom of play and elasticity and will therefore afford greater comfort than structures heretofore devised; and which will at the same time furnish adequate support for a broken or stretched arch whether the weight of the body is on the foot, as when the wearer is standing, or whether there is comparatively little weight on the foot, as when the wearer is sitting.

In the accompanying drawings which illustrate one embodiment of the invention,—Figure 1 is a perspective view of the spring body of the arch support, in its normal position of use; Fig. 2 is a perspective view of the under side of the arch support; Fig. 3 is a top plan view of the arch support; Fig. 4 is a side view of the innermost or largest of the arched spring members; and Fig. 5 is a similar view of the outermost or smallest of the arched spring members.

The resilient body A of the arch support, is made from a single piece of resilient sheet metal, such as steel, of tapering form, cut inwardly from its inclined edges, alternately from one side and the other as shown at  $a'$ , to form a continuous, convoluted or zigzag strip or ribbon, the convolutions  $a$  of which lie side by side in close juxtaposition. These convolutions or bands  $a$  extend lengthwise of the foot and are arched or curved as shown, each section or convolution forming an arched spring which is independently

and individually expansible, thus insuring great flexibility and elasticity throughout all parts of the spring body of the arch support. And as the lateral edges of the connected spring members  $a$  are closely juxtaposed, as shown, the body of the arch support A affords a substantially continuous supporting surface, without spaces between the individual spring members. The ends of the several convolutions or spring members are upturned as shown at  $a^2$ , so as not to cut or tear the bottom of the shoe when the weight of the user tends to flatten the arched spring members, and to provide a smooth and easy bearing surface.

Since the spring body of the arch support is cut from a blank of tapering form, the length of the arched spring members  $a$  will decrease from one side toward the other of the arch support. The broad side of the support (Fig. 4) is intended for the inner side of the foot, where the instep is highest and the arch most pronounced, and may be termed the inner side of the arch support; and the narrow side of the arch support, may be termed its outer side. It will also be seen that the curve of the arch of the spring members on the inner side of the support is more pronounced than that of the outer spring members. In order to conform to the normal shape of the foot the resilient body A is also curved downward on its transverse axis X—X.

Covering the resilient body of the support, and conforming to its general shape, is a shield B, of thin leather or other suitable flexible material to protect the foot from the springs. The shield may be secured to the top side of the resilient body in any suitable manner. It should be secured at two points at least in order to prevent it from twisting out of position, but in order that the free play of the spring members may be interfered with as little as pos-

sible, it is preferably connected by means of rivets or other fasteners at only two points, as at *b*, *b*.

I claim:

- 5 In an arch support, a curved resilient body made from a single piece of sheet metal cut inwardly alternately from its opposite edges to form a continuous convoluted strip, the several convolutions thereof having their  
10 lateral edges in close juxtaposition, whereby

the several convolutions form a substantially continuous arched supporting surface, the individual members of which are independently compressible and expansible.

Signed by me at Boston, Massachusetts, 15  
this 5th day of March 1910.

JOHN SVENSON.

Witnesses:

ROBERT CUSHMAN,  
CHARLES D. WOODBERRY.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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