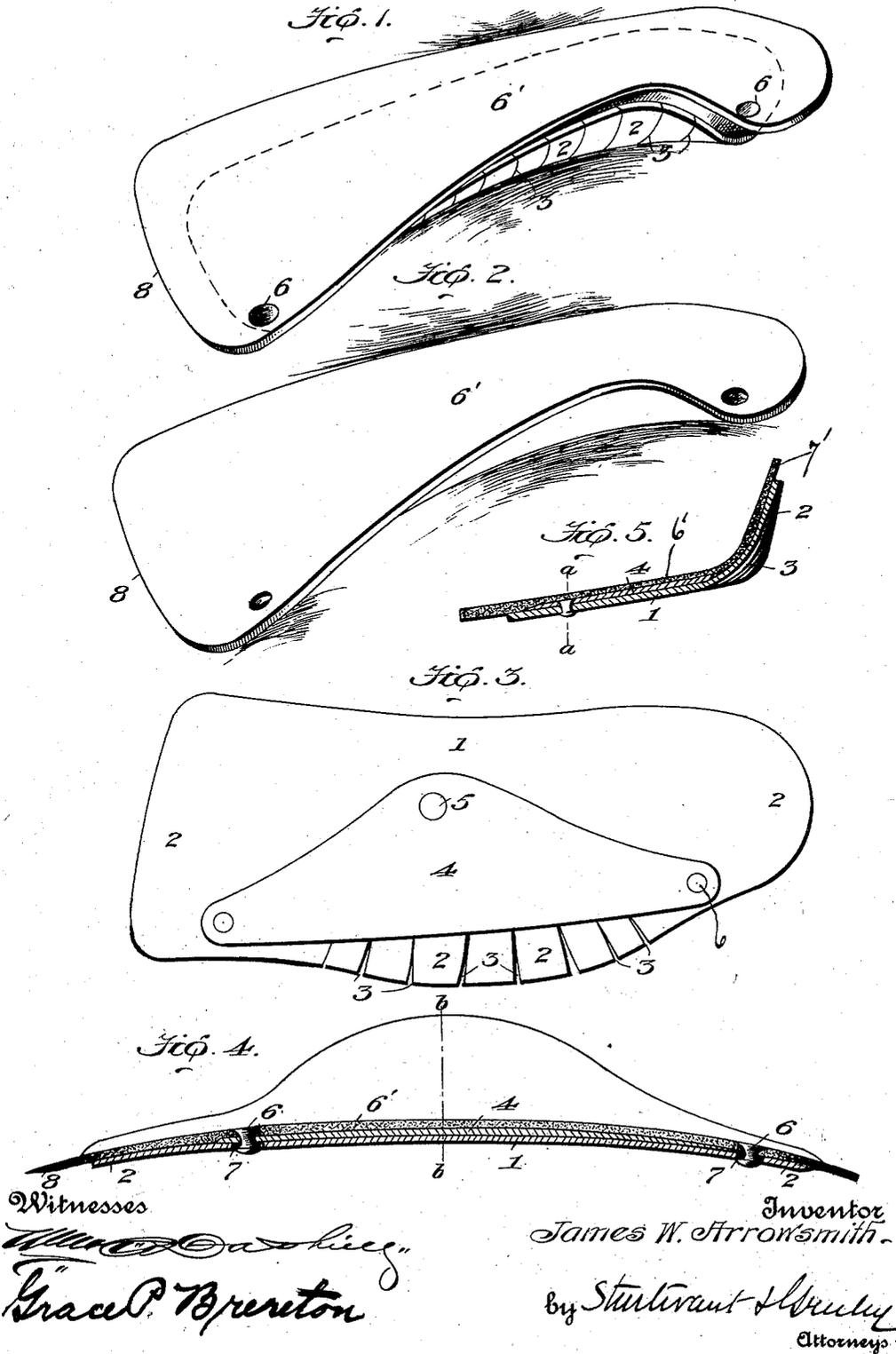


No. 748,553.

PATENTED DEC. 29, 1903.

J. W. ARROWSMITH.
INSTEP SUPPORT OR ARCH PROP.
APPLICATION FILED AUG. 16, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

JAMES W. ARROWSMITH, OF MORRISTOWN, NEW JERSEY.

INSTEP-SUPPORT OR ARCH-PROP.

SPECIFICATION forming part of Letters Patent No. 748,553, dated December 29, 1903.

Application filed August 15, 1903. Serial No. 169,621. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. ARROWSMITH, a citizen of the United States, residing at Morristown, in the county of Morris, State of New Jersey, have invented certain new and useful Improvements in Instep-Supports or Arch-Props, of which the following is a description, reference being had to the accompanying drawings and to the figures of reference marked thereon.

My invention relates to devices to be worn inside a boot or shoe for the purpose of supporting the instep or arch of the foot, such as is shown and described in the patent issued to me January 6, 1903, No. 717,523, on which the present invention is an improvement.

My present invention has for its object to provide a construction in which the reinforcing-plate may be so connected to the metallic plate which forms the body portion of the instep-support or arch-prop that the ends of the metallic plate may have a slight movement relative to the reinforcing-plate and to further provide the device with a covering of non-metallic material by which the reinforcing-plate placed upon the upper surface of the metallic plate forming the body portion of the device may be permitted without discomfort to the user of the device and by which the device may be adapted for use with boots or shoes of different widths and sizes.

In my patent referred to the reinforcing-plate is so secured to the surface of the metallic plate forming the body portion of the instep-support or arch-prop that no relative movement of the two parts is permitted. In my present invention the reinforcing-plate is secured to the upper surface of the plate forming the body portion of the instep-support or arch-support and is so connected thereto that a slight movement of the ends of the body portion relative to the reinforcing-plate is permitted. In addition the device is provided with a covering of sole-leather or like non-metallic relatively stiff material curved to fit the curve of the upper surface of the metallic portions of the device and serving to protect the foot of the wearer from contact with the metallic portion, and the covering-piece being made of larger area than the me-

tallic portion of the device and being of material easily cut may be trimmed to adapt the device to fit boots or shoes differing considerably in shape and size.

With these objects in view the invention consists in the construction and combination of elements hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of my improved instep-support or arch-prop having the covering-piece secured thereto. Fig. 2 is a perspective view of the covering-piece detached. Fig. 3 is a plan view of the device with the covering-piece removed. Fig. 4 is a longitudinal sectional view on line *a a* of Fig. 5, and Fig. 5 is a cross-sectional view on line *b b* of Fig. 4.

Referring in detail to the drawings, the instep-support or arch-prop is preferably made of sheet metal, having the rigid body portion 1 curved to fit the under surface of the normal arch of the instep and having the side portion composed of tongues 2, separated by slits 3, to provide a yielding support for the side of the arch of the instep, as in my patent referred to. The reinforcing-plate 4 instead of being secured to the under side of the metallic plate forming the body portion 1, as in my patent, is carried on its upper surface. The reinforcing-plate is curved to closely conform to the curvature of the upper surface of the body portion 1 and is of the form shown, having its central portion wider than its ends and having one edge straight from end to end, or approximately so. The reinforcing-plate is so arranged on the body portion 1 that its straight edge overlies the inner ends of the slits 3, which separate the tongues 2. At its widest part, at a point near the edge opposite the straight edge, the reinforcing-plate is rigidly secured to the body portion 1 by a rivet or like fastening device 5. At its ends the reinforcing-plate is held in position by rivets or like fastening devices 6 6, passing through slots 7 7 in the body portion 1. By means of the fastening devices 5 6 6 the reinforcing-plate is prevented from turning on the body portion, while at the same time the ends of the reinforcing-plate are permitted a slight movement relative to the ends of the body por-

tion. This permits the curve of the arch of the support to be changed without injury to the fastening means, so that stock sizes of the device may be readily adapted to fit different feet.

6' is a covering-piece of non-metallic material, preferably sole-leather, molded to shape to fit the upper and inner side surface of the instep-support or arch-prop, having the portion which fits against the tongues 2 skived off or thinned, as shown at 7', so as to be sufficiently flexible to yield outwardly with the tongues. The covering-piece is also preferably skived off at its forward end, as shown at 8. The covering-piece is secured to the instep-support or arch-prop by the rivets or other fastening devices 6 6 at two points only, one near the forward end of the body portion 1 and the other near the heel end, the two fastening devices being located near the edge of the body portion 1 on the side next the side from which the tongues 2 extend upward. By this location of the fastening devices the covering-piece is held firmly in position against the metallic plate. The portion lying against the tongues 2 not being secured to the tongues, the resiliency of the tongues is not interfered with and at the same time the covering-piece protects the foot of the wearer from injury from the edges of the tongues. The body portion of the covering-piece is of greater area than the body portion 1 of the instep-support or arch-prop, extending beyond the edge of the body portion 1 on the side opposite the tongues 2 and also extending beyond the front and heel ends. The projecting portions may be readily trimmed off to fit the shoe with which the device is to be used, so that one size of instep-support or arch-prop may be used in shoes which differ considerably in width and shape, it being necessary for a dealer to carry in stock a comparatively small variety of sizes. The covering-piece being secured to the support or prop only on a line near the edge of the body portion 1 on the side from which the tongues 2 extend, its opposite edge and body portion is free, and this free edge will adapt itself to the interior of the shoe and form a more comfortable support for the foot than if it were cemented or otherwise secured to the support or prop throughout its surface.

The edges of the reinforcing-plate 4 are preferably skived or chamfered off, so that the upper surface of the metallic portion of the device is comparatively free from ridges. The covering-piece being of comparatively thick material serves to protect the foot of the wearer from injury from such ridges as may exist, notwithstanding such skiving or chamfering.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an instep-support or arch-prop the

combination of a metallic plate having its body portion curved to fit the under surface of the normal arch of the instep and having its side portion curved to fit the side surface of the normal arch of the instep and consisting of a series of resilient tongues separated by slits, of a reinforcing-plate curved to fit the upper surface of the metallic plate, a non-metallic covering-piece molded to fit the upper plate and metallic plate, and fastening means extending through the metallic plate, the reinforcing-plate and the covering-piece at points near the edge of the body portion on the side from which the tongues extend upward; substantially as described.

2. In combination with a metallic instep-support or arch-prop having its body portion curved to fit the under surface of the normal arch of the instep and having its side portion curved to fit the side surface of the normal arch of the instep and consisting of a series of resilient tongues separated by slits, of a non-metallic covering-piece molded to fit the upper surface of the support or prop, and secured thereto at points near the edge of the body portion on the side from which the tongues extend upward, the portion of the covering-piece lying against the resilient tongues being free; substantially as described.

3. In combination with a metallic instep-support or arch-prop, having its body portion curved to fit the under surface of the normal arch of the instep, and having its side portion curved to fit the side surface of the normal arch of the instep, of a non-metallic covering-piece molded to fit the upper surface of the support or prop, and secured thereto at points near the line of junction of the body portion and side portion, the portions of the covering-piece lying against the body portion and against the side portion being free; substantially as described.

4. In combination with an instep-support or arch-prop of rigid material, having its body portion curved to fit the under surface of the normal arch of the instep, and having its side portion curved to fit the side surface of the normal arch of the instep, of a covering-piece of flexible material molded to fit the upper surface of the support or prop, and secured thereto at points near the line of junction of the body portion and side portion, the portion of the covering-piece lying against the side portion being free and having its upper edge skived or thinned; substantially as described.

5. In an instep-support or arch-prop, the combination of a metallic plate having its body portion curved to fit the under surface of the normal arch of the instep, and having its side portion curved to fit the side surface of the normal arch of the instep, of a non-metallic covering-piece molded to fit the upper surface of the metallic plate, and a reinforcing-plate rigidly secured near its middle to the metallic plate, and fastening means

extending through the covering-piece, the
metallic plate and the reinforcing-plate at
points near the line of junction of the body
portion and side portion of the metallic plate,
5 the metallic plate being provided with slots
to receive the fastening means; substantially
as described.

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

JAMES W. ARROWSMITH.

Witnesses:

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EDWIN W. ORR.