W. H. WOOD.

ARCH SUPPORT.

APPLICATION FILED OCT. 24, 1905.

905,617. Patented Dec. 1, 1908.

Fig. 1.

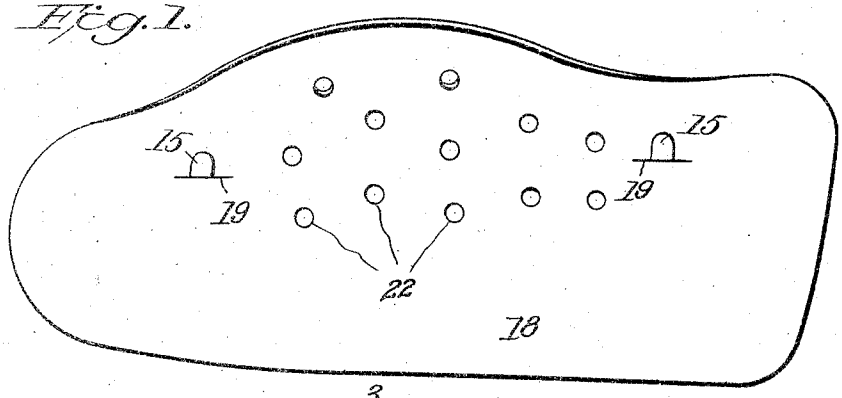



Fig. 2.

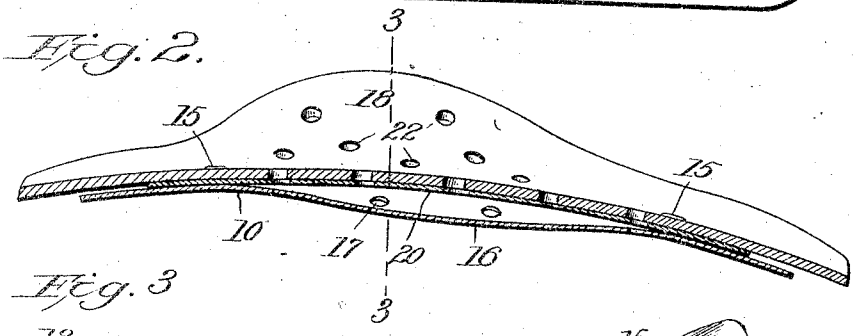



Fig. 3

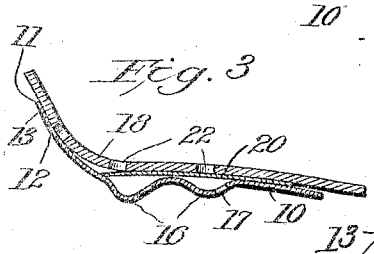



Fig. 4.

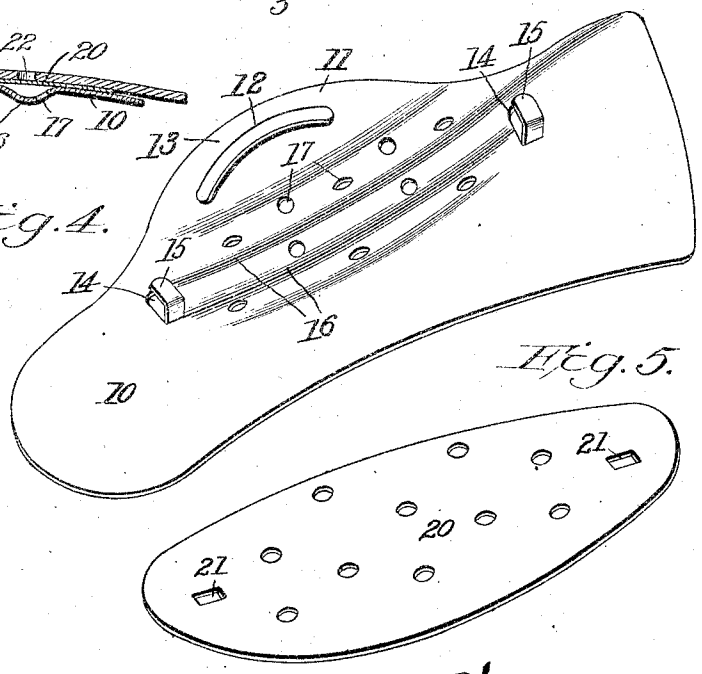



Fig. 5.




Witnesses

C. H. Walker

H. Jones Doyle

Inventor

William H. Wood

By Wm. D. Hodges Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM H. WOOD, OF CLEVELAND, OHIO.

## ARCH-SUPPORT.

No. 905,617. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed October 24, 1905. Serial No. 284,246.

*To all whom it may concern:*

Be it known that I, WILLIAM H. WOOD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Arch-Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in arch supports for the treatment and prevention of the condition known as "flat foot."

The invention has for its object the production of a simple and inexpensive device of the character specified which can be readily adjusted to conform to feet of various shapes and also combine the necessary rigidity with a maximum lightness and elasticity.

A further object is to provide means for ventilating the arch of the foot and at the same time protect the foot from any discomfort which might otherwise arise through contact with the ventilating channels.

A further object is to provide means for securing a cover or lining to the arch support in such a manner that the same is securely held in position, and yet may be readily detached for cleansing or renewing.

In carrying out my invention I provide a comparatively thin metal plate with a bulged or upturned edge portion to form the arch support. Said plate is provided with longitudinally extended curved corrugations forming ventilating channels, perforations being formed in said corrugations for ventilating purposes. Said plate is also provided with integral clips which are bent up to engage a protector plate and a lining, the free ends of said lugs pointing towards the bulged portion or arch support, whereby the downward pressure of the foot tends to hold said lining and protector plate into engagement with the lugs. The protector plate and lining are perforated to allow the ventilating currents to pass from the corrugations to the arch of the foot.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawing:—Figure 1 is a plan view illustrating my invention. Fig. 2 is a longitudinal sectional view. Fig. 3 is a cross sectional view on the line 3—3, Fig. 1. Fig. 4 is a perspective view of the arch plate. Fig. 5 is a similar view of the protector plate.

Referring to the drawing, 10 designates a metallic plate having a bulged upturned edge portion 11 to support the arch of the foot, said bulged portion being provided with an approximately semi circular slot 12. The slot 12 extends longitudinally of the plate forming a strip 13. Near each end of the plate 10 the body thereof is cut out at 14 and the metal struck up to form clips 15, the free ends of which extend transversely across the plate in the approximate direction of the bulged portion or arch support 11. The plate 10 is also provided adjacent the base of the arch support with a plurality of longitudinally curved corrugations 16 extending lengthwise of said plate and of diminishing lengths, as shown, ventilating holes or perforations 17 being formed in said corrugations. In this connection it will be noted that the longest corrugation 16 conforms approximately to the base of the bulged portion or arch support 11.

A lining 18 is placed over the top face of plate 10 and provided with slots 19 which are arranged to receive the free ends of the clips 15, the lining being preferably of leather or other flexible material and held in position by bending down the ends of said clips. Interposed between said lining 18 and the top face of plate 10, and spanning the corrugations thereof, is a protector plate 20 which is slotted at 21 to receive the clips 15. The plate 20 serves to bridge over the corrugations 16 to form a plurality of channels, said plate being perforated to allow the ventilating currents to pass through, the lining 18 being also perforated, as indicated at 22 to allow of perfect ventilation of the arch of the foot. The plate 20 also serves to protect the foot from the unevenness caused by the corrugations in plate 10.

The operation and advantages of my improved arch support will be at once apparent to those skilled in the art to which it appertains.

When it is desired to raise the arch, the support is placed upon a solid rest allowing the broad end to project over the edge about one quarter of the length of the support, and the extended end may then be bent down by a blow. A slight bend will effect the desired result, but if a further bend is required the opposite end may be treated in the same

way. To adjust the side of the arch, the strip 13 above slot 12 is bent at each end of the slot. It will thus be noted that by forming the arch plate of thin metal and providing the arch support with slot 12 and strip 13, I am enabled to secure the necessary adjustability and rigidity, combined with a maximum lightness and elasticity. It will also be noted that by arranging the longest corrugation 16 to conform to the base of the arch support, said corrugation serves to stiffen the bulged portion forming said arch support. It will be further observed that by providing integral securing clips for the lining and protector plate, and pointing the free ends of said clips toward the higher part of the support, said lining and protector plate are worked down into engagement with the clips by the pressure of the foot. In this manner the natural pressure of the foot overcomes any tendency of the lining and protector plate to work out. It will also be seen that the clips may be readily bent down to engage the lining, and when it is desired to remove the latter for cleansing or renewing, the ends of the clips may be readily bent upward, whereby the lining may be easily disengaged. It will also be observed that the protector plate not only serves to complete the ventilating channels but being made of thin metal conforms to inequalities of the foot and protects the same from formation of callous places and any discomfort that would otherwise arise through contact with the uneven or corrugated portion of the base. In addition to the foregoing, it will appear from the drawing that the slot in the arch support, in addition to its arch-supporting function, also serves to ventilate the adjacent portion of the arch of the foot, the lining being provided with holes adjacent said slot for this purpose.

I claim as my invention:—

1. An article of manufacture comprising an arch supporting plate having one edge bent up to form an inflexible arch support, said bent up portion being cut out in a longitudinally extended line at a point above the bend and adjacent its free edge, said cut out portion being adapted to facilitate the bending of the arch support to conform to the curvature of the foot.

2. An article of manufacture comprising an arch supporting plate having one edge bent up to form an inflexible arch support, said bent up portion being provided with a longitudinally extended curved slot located edge to form a ventilating opening and to facilitate bending of said edge in adjusting the arch support to the foot, ventilating channels being formed in said plate, and a perforated lining covering said slot and said channels, whereby means are provided for the ventilation of the entire arch.

4. An article of manufacture comprising an arch supporting plate having one edge turned up to form an arch support, said plate being also provided with corrugations, and a protector plate spanning said corrugations whereby ventilating channels are formed, said supporting plate being provided with means for securing the protector plate thereto.

5. An article of manufacture comprising an arch supporting plate having one edge turned up to form an arch support, and a lining for said plate, said plate having clips struck up therefrom and having their free ends extended towards the higher side of the plate and adapted to engage said lining.

6. An article of manufacture comprising an arch supporting plate having one edge turned up to form an arch support, said plate being also provided with corrugations, and a perforated protector plate spanning said corrugations, whereby ventilating channels are formed, said arch supporting plate having clips struck up therefrom adjacent its ends and adapted to engage said protector plate.

7. An article of manufacture comprising an arch supporting plate having one edge turned up to form an arch support, said plate being also provided with corrugations, and a perforated protector plate spanning said corrugations and provided with slots, said arch supporting plate having clips struck up therefrom and engaging the slots of said protector plate, the free ends of said slots extending towards the higher side of the arch support.

8. An article of manufacture comprising an arch supporting plate having one edge turned up to form an arch support, said plate being also provided with corrugations and securing clips struck up therefrom, a perforated protector plate spanning said corrugations and engaged by said clips, and a lining also engaged by said clips.

9. An article of manufacture comprising an arch supporting plate conforming to the curvature of the under portion of the human foot, said plate being provided with corrugations, a protector plate spanning said corru-

prising a sheet metal plate having a bottom portion arched to fit the arch of the instep and having an upwardly extending side portion curved to fit the side curve of the instep, an aperture in said side portion, a flexible covering secured to and overlying said bottom and side portions and extending beyond the periphery thereof, the said plate being provided with a curved strengthening rib located within and extending longitudinally of the arched portion thereof.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. WOOD.

Witnesses:
C. L. STOCKER,
J. A. FENNER.