No. 747,994. PATENTED DEC. 29, 1903.

E. MAYER & P. WENGER.

INSTEP SUPPORTING AND INSULATING PAD.

APPLICATION FILED MAY 28, 1903.

NO MODEL.

Fig. 1.

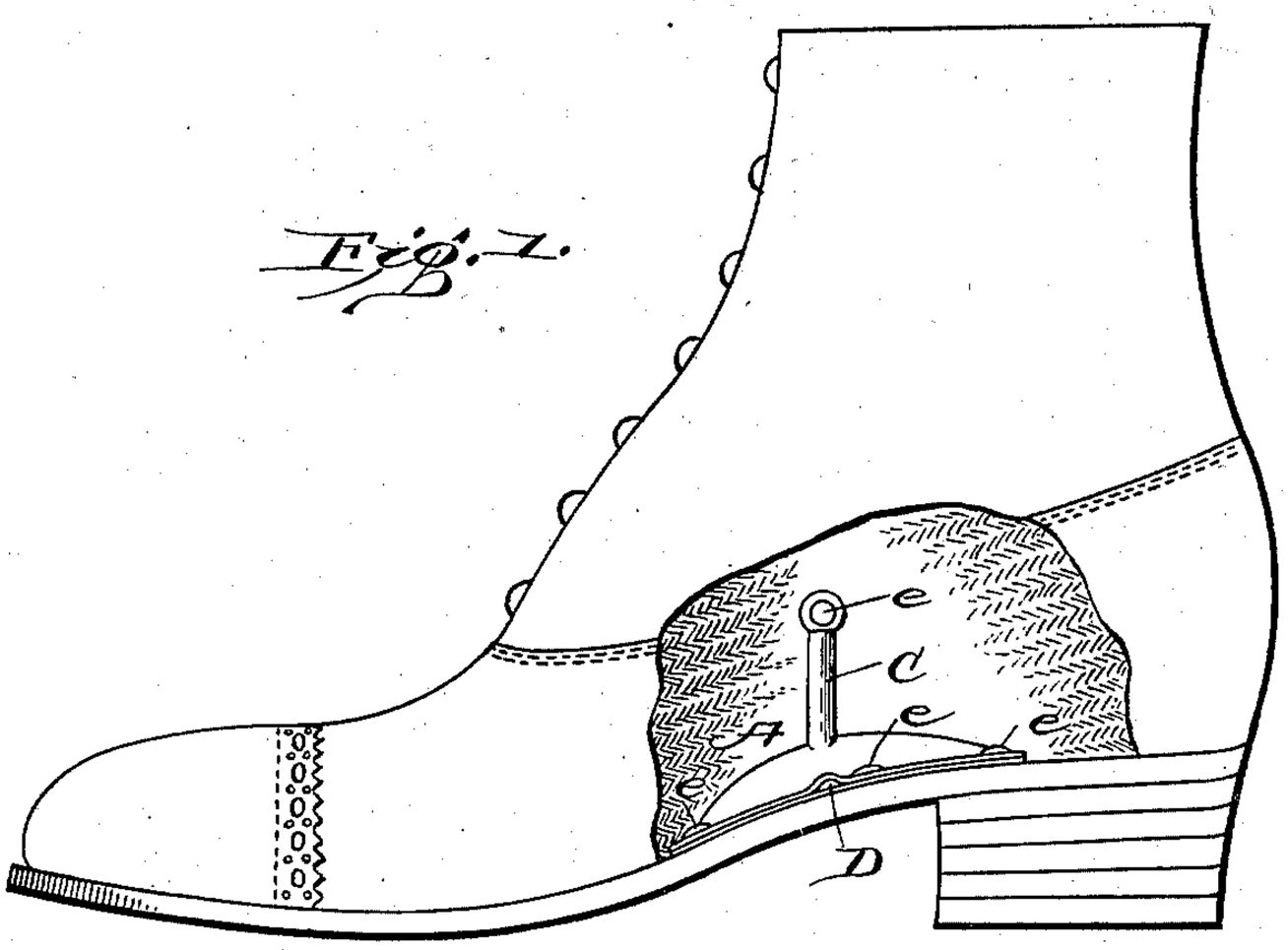


Fig. 2.

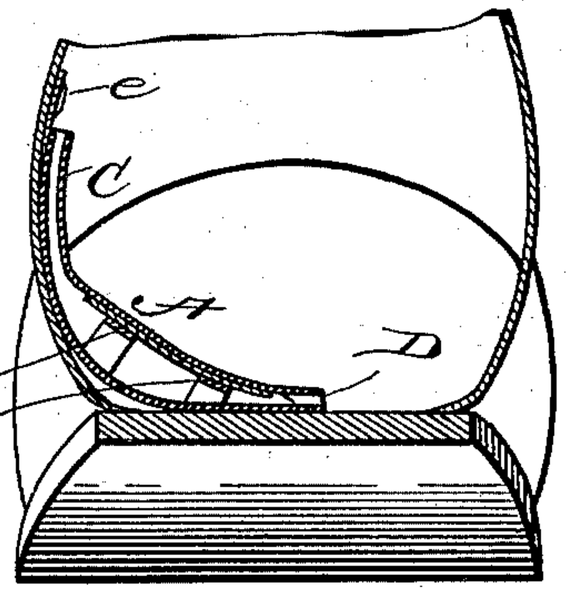
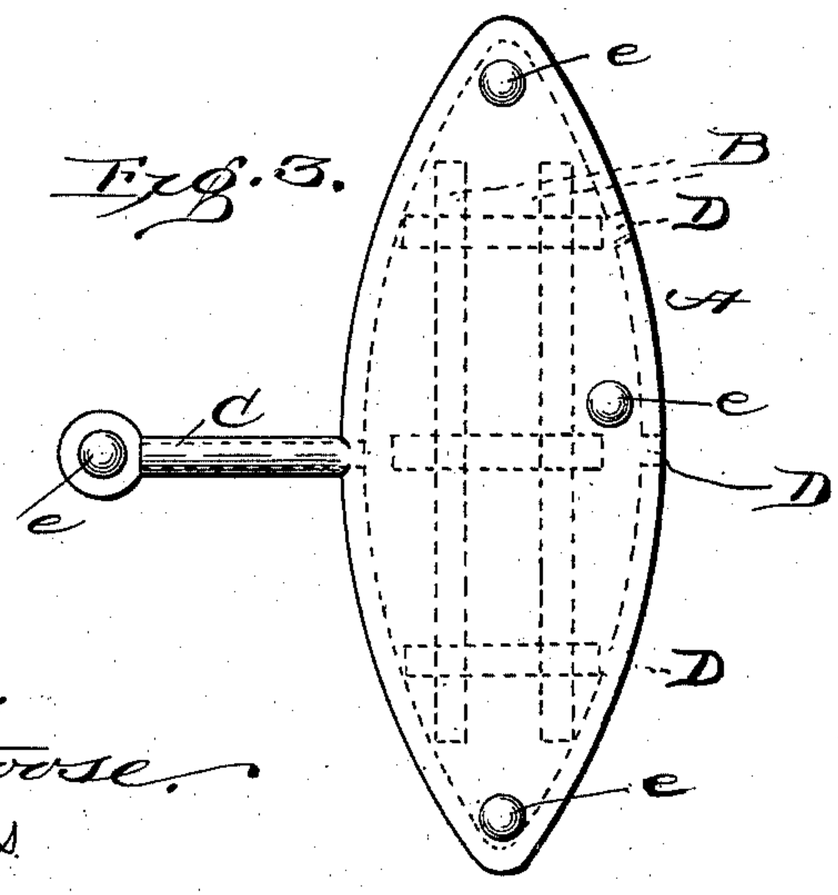


Fig. 3.



Witnesses;
Allan Goose.
J. L. Pybas.

Ernest Mayer,
Paul Wenger,
Inventors.
BY
J. R. Littell
Their Atty.

No. 747,994. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

ERNST MAYER AND PAUL WENGER, OF NEW YORK, N. Y.

INSTEP-SUPPORTING AND INSULATING PAD.

SPECIFICATION forming part of Letters Patent No. 747,994, dated December 29, 1903.

Application filed May 28, 1903. Serial No. 159,085. (No model.)

To all whom it may concern:

Be it known that we, ERNST MAYER, a subject of the Emperor of Germany, and PAUL WENGER, a citizen of the United States, both residents of New York, in the county and State of New York, have invented certain new and useful Improvements in Instep-Supporting and Insulating Pads, of which the following is a specification.

Our invention relates to pads designed for insertion within shoes and to support the instep and at the same time to ventilate the shoe.

The object of our invention is to produce a pad of this character which may be employed either as a component part of the shoe or preferably as a separate article which may be inserted and removed at will.

Our invention comprises a device of this character constructed in accordance with the description hereinafter given and will be defined in its scope by the claims appended hereunto.

In the drawings, Figure 1 shows a side elevation of a shoe having our pad therein, a portion of the shoe-upper being broken away to more clearly show the pad. Fig. 2 is a cross-section through a shoe having a pad in place within, and Fig. 3 is a view showing the pad removed from the shoe.

Corresponding parts in all the figures are denoted by the same reference characters.

With many persons it is desirable to provide a pad of some nature which may be placed within the shoe and beneath the instep and inner side of the shoe, so as to form a support for this portion of the foot. By our present invention we provide a pad of this character which acts effectively as a support for the instep and at the same time provides ventilation for the shoe. This pad is shown separately in Fig. 3 and consists of a hollow body A of relatively small thickness. The thickness of the pad is clearly shown in Fig. 2, in which a cross-section thereof is shown. The general outline of the pad in plan view is that of an elongated ellipse, the ends being, however, pointed. The shape of the pad may be made such as will best fit the cavity beneath the instep and at the inner side of the foot. The edges of the walls of the pad are joined, leaving the central portions of the top and bottom walls separated, thus forming a cavity which is utilized for forcing air underneath the foot. The material of the walls is preferably some flexible material—such, for instance, as rubber or rubber compounds—and the walls are so constructed that the natural tendency of the top and bottom walls is to separate, thus forming a cavity. To insure that there should be a separation of these walls when the pressure of the foot is removed, we may embed therein, and especially in the upper wall, a series of upwardly-curved resilient strips or springs. In Fig. 3 we have shown such upwardly-curved strips at B, two of these curved strips being shown extending longitudinally of the pad and three strips transversely thereof connecting the curved strips. These strips may be made of any suitable material—such, for instance, as whalebone or steel. Upon the edge of the pad, which is placed upward when it is in position, is provided an inlet-opening, to which a tube C, of rubber or similar material, is preferably connected, said tube when the pad is in use extending upward along the inner side of the foot. Upon the opposite side of the pad, which extends under the foot, is provided one or more outlet-openings—as, for instance, at the points indicated by D.

When the pad is in position, the pressure of the foot will force the upper wall downward until it substantially contacts with the lower wall. At the beginning of this operation the tube C is compressed, so as to prevent escape of the air at this point. As the pad is compressed the air is thus forced out through the outlet-openings D, thus furnishing a measure of ventilation for the foot.

The pad may be incorporated in or secured to an insole, being thereby held in place. It may of course be built into the shoe at the time the shoe is made, if desired, in which case it might be secured to either the sole or the upper thereof or to both. The pad may also be provided with ball-and-socket fasteners of the type employed for securing gloves and for cast-offs of suspenders. Such a fastening is shown at *e*, one member of which being secured to the pad and the other to the shoe sole or upper, as the case may be. A similar fastener may be used for securing the upper end of the tube to the shoe.

It is evident that the outline of the pad, as

herein shown, may be varied either for individuals having different shapes of feet, for different styles of shoes, or for any other special purpose. We do not, therefore, wish to be confined to the particular shape of pad herein shown. It is also evident that other features of the pad may be varied without departing from the spirit of our invention. The pad may be attached to the shoe, so as to be a permanent part thereof, or be entirely separated therefrom and inserted or removed, as desired.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. An instep-supporting pad for use in shoes, comprising a hollow body having flexible upper and lower walls and adapted to fit in the hollow beneath the instep at the inner side of the foot, each of said walls being convex longitudinally and concave transversely of said body, a tube communicating with the interior thereof at its upper edge and adapted to extend upwardly along the inner side of the foot, and outlet-openings in its lower edge beneath the foot, substantially as described.

2. An instep-supporting pad for use in shoes, comprising a hollow body having flexible upper and lower walls and adapted to fit in the hollow beneath the instep at the inner side of the foot, each of said walls being convex longitudinally and concave transversely of said body, a tube communicating with the interior thereof at its upper edge and adapted to extend upwardly along the inner side of the foot, outlet-openings in its lower edge beneath the foot, and means for removably attaching said pad within a shoe, substantially as described.

3. An instep-supporting pad for use in shoes, comprising a hollow body having flexible walls and adapted to fit below the instep and at the inner side of the foot, an air-inlet at its upper edge, an air-outlet in its lower edge, and curved flexible strips supporting the upper wall of said pad, substantially as described.

4. An instep-supporting pad for use in shoes, comprising a hollow body having upper and lower flexible walls and adapted to fit in the hollow beneath the instep at the inner side of the foot, each of said walls concave transversely and convex longitudinally of said body, a tube connected with the interior thereof, an outlet, and means for removably attaching said pad within a shoe, substantially as described.

In testimony whereof we have signed our names in the presence of the subscribing witnesses.

ERNST MAYER. [L. S.]
PAUL WENGER. [L. S.]

Witnesses:
HENRY NUMBERG,
PETER FESER.