

UNITED STATES PATENT OFFICE.

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HEEL-CUSHION AND VENTILATOR FOR SHOES.

SPECIFICATION forming part of Letters Patent No. 733,167, dated July 7, 1903.

Application filed September 8, 1902. Serial No. 122,619. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. DENTON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Heel-Cushions and Ventilators for Shoes, of which the following is a specification.

This invention provides an attachment for shoes which will obviate the dampness and resultant ills attendant upon perspiring feet, as well as diminish fatigue commonly experienced by persons unaccustomed to long walks, the device combining a cushion for relieving the foot of any jar and a current-generator, whereby a circulation of air through the shoe and about the foot is assured.

The device is of such construction as to be removably fitted within a shoe after the fashion of the ordinary insole and is of such construction as to occupy a minimum amount of space, so as not to cause inconvenience or discomfort or require a larger shoe than generally worn.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a shoe-ventilator and cushion constructed in accordance with and embodying the essential features of the invention. Fig. 2 is a longitudinal section thereof, about on the line *x x* of Fig. 1. Fig. 3 is a detail view showing the manner of connecting a spring to the spring-support. Fig. 4 is a transverse section about on the line *y y* of Fig. 1. Fig. 5 is a detail section of a spring and the bottom portion of the device.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The article is designed chiefly for the heel portion of a shoe and is constructed to ex-

tend from the heel to a point beneath the hollow of the foot, and its front portion is tapered to a feather-edge, as indicated most clearly in Fig. 2, so as not to cause any inconvenience or annoyance or present any welt or projection between the article and the insole of the shoe at the point of juncture.

The device comprises a top piece 1, a bottom piece 2, and a connecting-strip 3, the parts 1 and 2 being held apart by interposed springs 4 and composed of stout leather having the grain outermost, so as not to absorb moisture and to resist wear. The lower part 2 is smaller than the upper part 1 and is attached to the latter at its front end by stitching, as indicated most clearly in Fig. 1, and by being cemented thereto. The parts 1 and 2 diverge toward the heel, and the inclosing strip 3, connecting said parts, tapers toward its ends in conformity to the tapering space between the upper and lower parts of the article. The strip 3 is of soft leather, being preferably chrome tan and non-porous, and is stitched at its lower edge to the part 2 and is folded over the stitched portion, as shown at 5, to protect the stitching, its opposite edge being stitched to the part 1, as indicated most clearly at 6. The top portion 1 is provided with a series of perforations 7 for the ingress and egress of air, according as the part 1 moves upward or downward. When the pressure comes upon the part 1, the air confined between the parts 1 and 2 is expelled through the opening 7 and is forced outward through the shoe, and when said part is relieved of the weight the springs 4 react and force the part 1 outward, thereby drawing air into the shoe and the space 10, formed between the parts 1, 2, and 3.

The springs 4 are of conical form and of the coil type and are usually constructed of No. 16 piano-wire, which is highly polished, so as to resist moisture. Any number of springs, depending upon the size of the article, will be used, and are secured at their smaller ends to a support 8, preferably by means of an eyelet 9, as shown most clearly in Fig. 3. The spring-support 8 is preferably a stout piece of leather approximating the form of the part 2, but not quite as long, and cemented or otherwise secured thereto.

The part 8 further stiffens the part 2 and reinforces the same, the lower ends of the springs and eyelets being protected by the part 2.

The heel-cushion and ventilator is provided in different sizes and is slipped into the shoe, and occupying the heel portion thereof does not require a larger shoe than ordinarily worn, as provision may be had to accommodate the device by letting out the lace or moving the fastenings. The article being independent of the shoe may be removed from one shoe and placed in another, as desired. When walking, the pressure is alternately placed upon and removed from the part 1, which part moves toward and from the part 2, according as the weight comes thereon or is removed therefrom. The movement of the part 1 up and down causes the article to act as a bellows and to draw air into the space 10 through the openings 7 or forced outward from said space through said openings, thereby creating a circulation of air through the shoe and about the foot, whereby the latter is kept dry and walking rendered easy and comfortable because of the spring action of the parts 4.

Having thus described the invention, what is claimed as new is—

1. A heel-cushion and shoe-ventilator comprising upper and lower parts joined at their

front ends and diverged toward their rear ends, the upper part being provided with a series of openings, springs interposed between said parts, and a strip inclosing the space between said upper and lower parts and stitched at its edges to each, the lower stitching being protected by folding the strip thereover, substantially as set forth.

2. A heel-cushion and ventilator for shoes comprising an upper part provided with a series of openings and having its front end portion tapered to a feather-edge, a lower part having its front end feathered and secured to the front portion of the upper part, a strip inclosing the space between the upper and lower parts and stitched at its edges to each, the lower stitching being protected by having the strip folded thereover, a series of cone-shaped coil-springs interposed between the upper and lower parts, and a support having the lower ends of said springs secured thereto and in turn attached to the lower part of the device for reinforcing the same, substantially as set forth.

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

JOHN H. DENTON. [L. s.]

Witnesses:

C. W. LEVERING,
D. B. SHARP.