(No Model.)

J. A. BLAIR.

ELECTRIC HEEL AND TOE PROTECTOR.

No. 559,254. Patented Apr. 28, 1896.

Fig. 1.

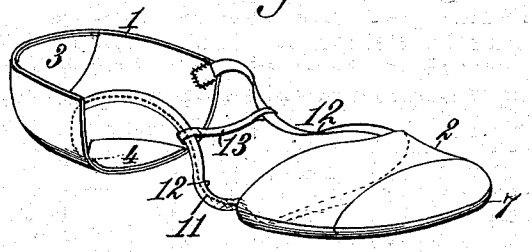


Fig. 2.

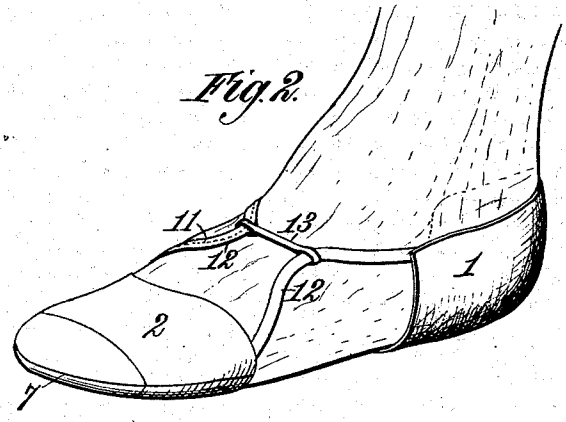
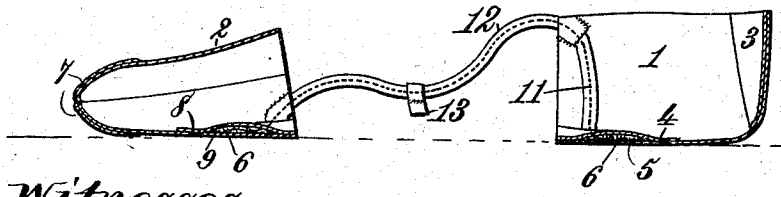


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

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ELECTRIC HEEL AND TOE PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 559,254, dated April 28, 1896.

Application filed February 27, 1896. Serial No. 580,947. (No model.)

To all whom it may concern:

Be it known that I, JENNIE A. BLAIR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Electric Heel and Toe Protectors, of which the following is a specification.

My invention relates to an improved electric heel and toe protector, constructed and adapted for the generation and application of a mild current of electricity to the foot for prevention and cure of rheumatism, chilblain, frost-bite, and other ailments, and useful also as a protection against cold and dampness and for prevention of wear and tear to hosiery.

It is the object of my invention to provide a heel and toe protector comprising soft flexible sockets to receive the heel and toes respectively and separately provided with inclosed electropositive and electronegative elements, such as copper and zinc, preferably in the form of filings that when moistened will generate a gentle current of electricity adapted to the prevention and treatment of disease, the said elements being connected by a copper wire and the entire device so arranged that a circuit will be completed through the body of the wearer.

It is another purpose of my invention to connect the heel and toe sockets of the protector by means of flexible and elastic bands so arranged as to extend over the arch of the foot and hold the protector securely in place without interfering with the proper fit of a shoe or a free movement of the foot in walking, and in one of these bands may be inclosed the wire that connects the elements or electrodes.

The invention is illustrated in the annexed drawings, in which—

Figure 1 is a view of my improved heel and toe protector. Fig. 2 shows the same on the foot. Fig. 3 is a sectional view showing the pockets or receptacles for the zinc and copper filings and the connecting wire or conductor.

The heel-socket 1 and the toe-socket 2 may each be made from sheepskin or other suitable soft material. It is preferable to make the rear upper portion of the heel-socket with a reinforcing-layer 3 or of double thickness, as shown, the said reinforcement being stitched or otherwise secured in place. There is also provided in the front lower portion or bottom of the heel-socket a reinforcing-layer or double thickness of material 4, suitably secured or stitched, and at this point there is placed between the two thicknesses of material one or more small bags or pockets 5, containing, say, the zinc element 6, that may be in the form of filings or coarse powder.

The construction of the toe-socket 2 is similar to the heel-socket. At the toe end there is preferably a double thickness of reinforcing material 7, and the socket is extended rearward beneath the ball of the foot and reinforced by a layer or thickness of material 8, beneath which is secured one or more bags or pockets 9, in which the copper element 10 is inclosed. It is obvious that the zinc and copper elements may be reversed in position with relation to the heel and toe sockets, if preferred. The reinforcing-pieces and the pockets or receptacles for the separated zinc and copper filings or other electropositive and electronegative elements may be stitched or otherwise secured in place. For the purpose of connecting the electropositive and electronegative elements a copper wire 11 is provided.

In order to hold the heel and toe protector on the foot it is provided with elastic side bands 12, extended from the rear portion of the toe-socket to the upper front portion of the heel-socket, and an elastic cross-band 13 is arranged to connect the said side bands across the arch of the foot. The wire or conductor 11 is preferably inclosed in one of the side bands.

The device is preferably worn over the stocking, as shown in Fig. 2, and will fit neatly and smoothly, without tendency to wrinkling, there being no connections between the heel and toe sockets except the elastic bands and inclosed wire.

Besides protecting the foot against cold, dampness, and frost, the device affords a convenient means for the application of electricity in the treatment of rheumatism, neuralgia, sprains, frost-bite, chilblains, and other ailments, and will also prevent wear and tear of hosiery. Being worn always within the shoe and applied only to the heel and toes it offers no obstruction to the bend of the foot

in walking and will not interfere with the fit of a shoe.

The protector has no sole portion or connection between the bottom of heel and toe sockets, and consequently there is no cramping or wrinkling when worn within a shoe, and the foot is allowed perfect freedom of movement.

The electropositive and electronegative elements may be slightly moistened before the protector is adjusted to the foot, but this is not always necessary, for with the heat and moisture of the foot a mild current of electricity will be generated through the separately located but connected elements and be thereby applied to the body through which a circuit is completed.

What I claim as my invention is—

1. As an improved article of manufacture, the herein-described electric heel and toe protector, consisting of the heel-socket and the toe-socket connected by elastic bands adapted to extend over the arch of the foot and pockets located in said sockets and separately containing electropositive and electronegative elements connected by a conductor, substantially as and for the purposes set forth.

2. As an improved article of manufacture, the herein-described electric heel and toe protector, consisting of the heel-socket and the toe-socket, each having located therein a pocket, electropositive and electronegative elements, separately inclosed in the respective pockets of the heel and toe sockets, bands connecting said sockets, and a wire inclosed in one of said bands and connecting the electropositive and electronegative elements, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JENNIE A. BLAIR.

Witnesses:
WINSTON H. HAGEN,
MALCOLM W. CLEPHANE.