W. W. LILLARD.

WARMER FOR FOOTWEAR.

APPLICATION FILED NOV. 2, 1917.

1,275,451. Patented Aug. 13, 1918.

Fig. 1.

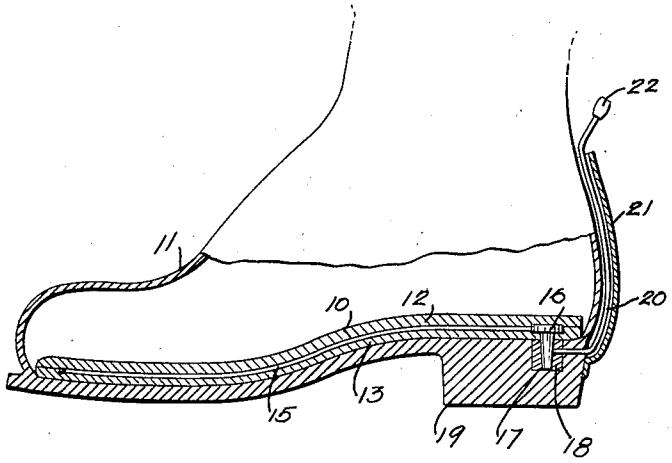


Fig. 3.

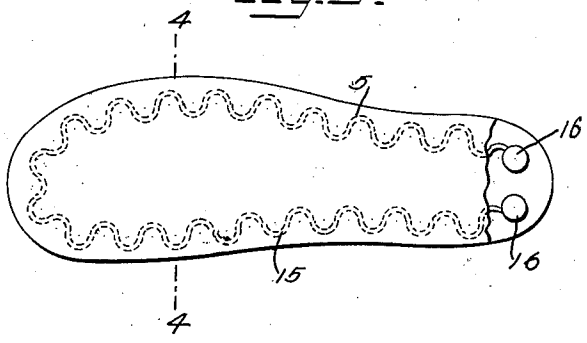


Fig. 2.

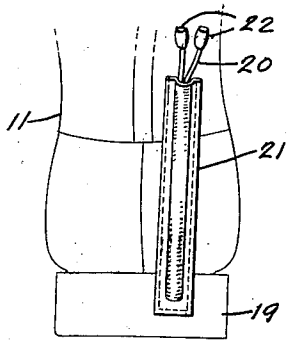
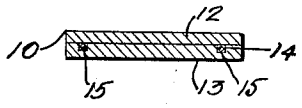


Fig. 4.



WITNESSES

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WARMER FOR FOOTWEAR.

1,275,451. Specification of Letters Patent. Patented Aug. 13, 1918.

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To all whom it may concern:

Be it known that I, WILLIAM W. LILLARD, a citizen of the United States, and a resident of Irvington, in the county of Essex and State of New Jersey, have invented a new and Improved Warmer for Footwear, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved warmer for footwear, such as is used for persons exposed to extremely cold weather, for instance, aviators making flights to high altitudes, and drivers of street cars, automobiles and other vehicles. Another object is to permit of readily applying the warmer to the footwear.

In order to accomplish the desired result, use is made of an insole for removable insertion in a shoe, boot or other footwear, an electric heating medium embedded in the said insole, electric conductors extending through the heel of the footwear to the outside thereof, and sets of contacts in the said heel and the said insole and in detachable engagement with each other, one of the sets of contacts being held in the insole and being connected with the said electric heating medium and the other set of contacts being held in the heel and being connected with the said conductors.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the warmer as applied to a shoe;

Fig. 2 is a rear end view of the same;

Fig. 3 is a plan view of the insole; and

Fig. 4 is a cross section of the same on the line 4—4 of Fig. 3.

The foot warmer is in the form of a heated insole 10 adapted to be placed in a boot, shoe or other footwear 11, as plainly shown in Fig. 1, and the said insole 10 is preferably made of two superimposed parts 12 and 13, glued, cemented or otherwise fastened together. The lower insole part 13 is provided on its top with a recess 14 in which is arranged a heating medium 15, preferably in the form of an electric resistance wire of German silver or the like. The ends of the heating medium 15 are located at the rear end portion of the insole 10 and are attached to the heads 16 of tapering contact plugs 17 extending downward through the insole part 13 and projecting a distance below the under side of the said insole part 13. The contact plugs 17 fit into contact sockets 18 embedded in the top of the heel 19 of the footwear 11. The contact sockets 18 are connected with insulated electric conductors 20 extending through the rear of the heel 19 to the outside of the footwear. The conductors 20 pass through a protective waterproof pocket 21 arranged on the rear of the footwear 11 and the said conductors 20 terminate in coupling members 22 adapted to be coupled to line wires connected with a battery or other suitable source of electrical energy.

It will be noticed that when the several parts are in position in the footwear, as shown in Figs. 1 and 2, and the coupling members 22 are connected with the insulated line wires of a source of electrical energy then the electricity from such source passes by way of the contact sockets 18 and contact plugs 17 to the resistance wire 15 thus heating the same and consequently the insole 10 in which the heating medium 15 is embedded.

It will also be noticed that the contact sockets 18 can be readily placed in position in shoes, boots and other footwear as now constructed, and the electric conductors 20 can be readily connected with the said sockets and the user of the footwear has only to slip the insole 10 in position in the footwear so that the contact plugs 17 engage the contact sockets 18.

It will also be noticed that the conductors 20 are carried upward near the top of the footwear and attached thereto by means of the pocket 21. This is done to keep the coupling members 22 as high up as possible because if the footwear is partly submerged in water or mud the conductors 20 will not be short circuited until the coupling members 22 are submerged. The waterproof pocket 21 is designed to protect the insulation of the conductors 20 from injury and especially from moisture. Placing the conductors 20 in a neat pocket is of importance from the standpoint of appearance of the footwear. The pocket 20 can be so constructed as to be scarcely noticeable, which is a very desirable feature.

Connection with the line wires can be

readily made by the use of the coupling members 22 to cause the desired heating of the insole 10 by the electricity passing through the resistance wire 15 and heating the latter.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:— .

1. A warmer for footwear, comprising an insole, an electric heating medium embedded in the said insole, electric conductors extending through the heel of the footwear to the outside thereof, and sets of contacts in the said heel and the said insole and in detachable engagement with each other, one of the sets of contacts being held on the insole and being connected with the said electric heating medium, and the other set of contacts being held in the heel and being connected with the said conductors.

2. A warmer for footwear, comprising an insole, an electric heating medium embedded therein and provided with contact plugs, contact sockets embedded in the heel of the footwear and engaged by the said contact plugs, and conductors connected with the said contact sockets and extending to the outside of the heel for connection with a source of electrical energy.

3. A warmer for footwear, comprising an insole made in two superimposed parts, of which one is provided with a recess, an electric resistance wire in the said recess, spaced contact plugs connected with the terminals of the said wires and extending through the lower part of the insole and projecting downward a distance from the bottom of the said lower insole part, contact sockets embedded in the top of the heel of the footwear and engaged by the said contact plugs, and conductors connected with the said contact sockets and extending through the rear of the heel to the outside thereof for connection with a source of electrical energy.

4. A warmer for footwear, comprising an insole made in two superimposed parts, of which one is provided with a recess, an electric resistance wire in the said recess, spaced contact plugs connected with the terminals of the said wire and extending through the lower part of the insole and projecting downward a distance from the bottom of the said lower insole part, contact sockets embedded in the top of the heel of the footwear and engaged by the said contact plugs, conductors connected with the said contact sockets and extending through the heel to the outside thereof, the outer ends of the conductors terminating in coupling members, and a pocket on the footwear and through which extend the outer portions of the said conductors.

5. A warmer for footwear, comprising an insole, an electric resistance wire in said insole, a source of electric current external to the footwear, a pocket on the footwear and means for connecting electric resistance wire with said source, said means extending from a connection with said electric resistance wire to the outside of said footwear and then through the said pocket to a point near the top thereof.

WILLIAM W. LILLARD.