

Dec. 31, 1935.

A. KURTZ

2,025,950

FOOT WARMING DEVICE

Filed July 5, 1934

*Fig. 1*

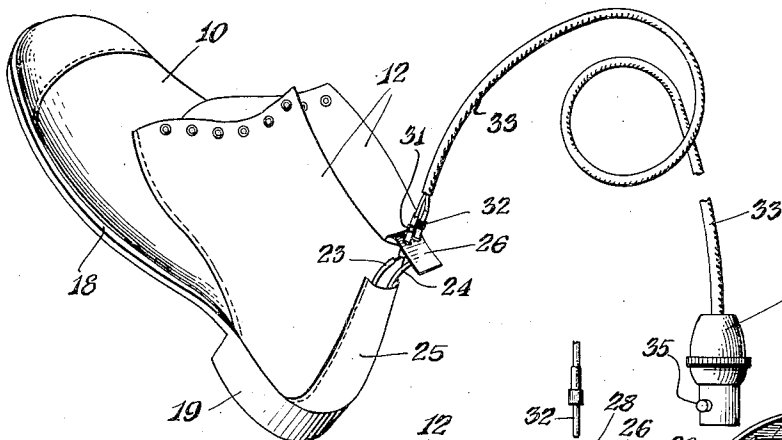


*Fig. 2*

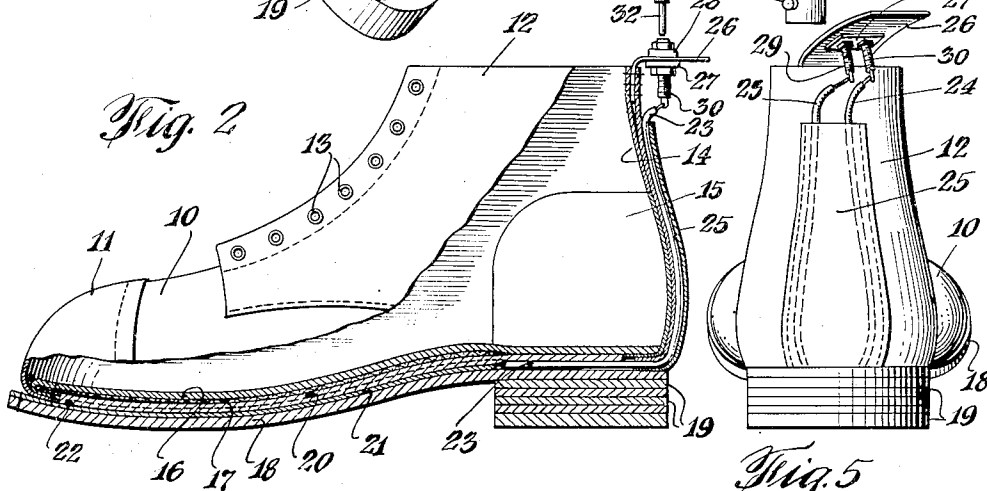


*Fig. 3*

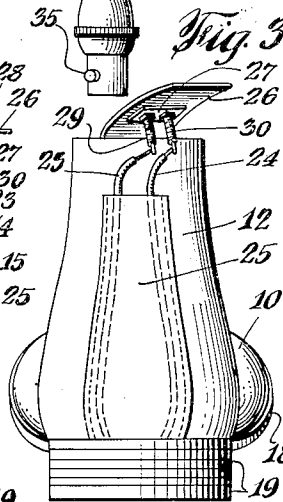


*Fig. 5*

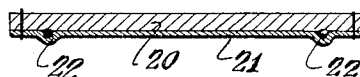
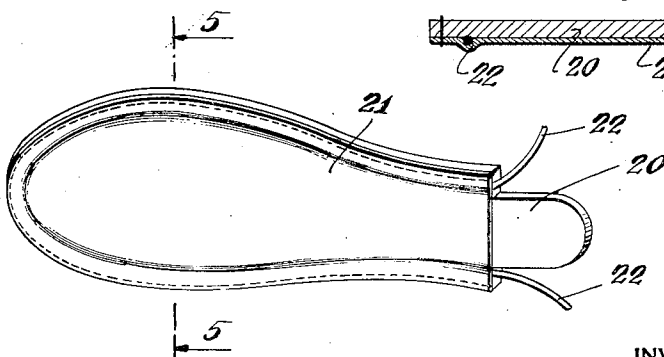


*Fig. 4*



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## UNITED STATES PATENT OFFICE

2,025,950

## FOOT WARMING DEVICE

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Application July 5, 1934, Serial No. 733,738

1 Claim. (Cl. 219-19)

This invention relates to shoe warming devices in which the shoe is provided with means to impart warmth to the feet of a person wearing same.

One of the objects of the invention is to provide a device, directly incorporated in the structure, whereby an electric circuit is caused to be generated causing a desirable degree of warmth in the sole of a shoe, rendering the wearer comfortable even in extreme cold.

A further feature is the provision of a heating device which nowise obstructs or interferes with the free and unimpeded movements of the wearer of the shoe and which is substantially invisible to an observer.

A further aim is to provide a foot warmer which can be applied to any ordinary shoe as a permanent part thereof, at a moderate cost.

Another object is the provision of a foot warmer of this character, which may be replaced if worn out, and which will permit the re-soleing and repairing of a shoe of which it is a part.

These and other objects and advantages are attained by the novel construction, combination and arrangement of parts hereinafter described and illustrated in the accompanying drawing, forming a material part of this disclosure, and in which:

Figure 1 is a perspective view of a conventional shoe, showing application of the device.

Figure 2 is a partial side elevational, partial sectional view of the same.

Figure 3 is a rear elevational view thereof.

Figure 4 is a perspective view of an intermediate sole, carrying the heating element.

Figure 5 is a transverse sectional view taken on line 5-5 of Figure 4 and drawn to an enlarged scale.

The shoe shown consists, as usual, of a vamp 10, having a toe 11 and uppers 12 provided with lacing holes 13.

At the rear or heel portion of the upper is a lining 14 below which is a stiffener or counter 15, the lower edge of the upper and counter being intumed below an inner sole 16 under which is a thin, water-proof liner 17, while the outer or bottom sole is arranged in its usual manner and has attached the lift or heel 18.

Between the liner 17 and the outer sole 19 is inserted a flexible plate 20 of dielectric material having a profile corresponding to the sole 19, and secured on its under surface is a relatively thin, non-conducting sheet 21.

A high resistant wire 22 is bent to present a loop disposed between the plate 20 and sheet 21, adjacent the margin, as best seen in Figures 4 and 5, the ends of the wire being set in insulators 23, 24, upturned at the heel and held in contact with the upper 12 by a patch 25 acting as a guard to avoid injury to the insulators.

A bracket 26 of flexible material, as leather, is stitched between the upper 12 and inner 14 at their upper sides, its outstanding portion being 10 reinforced by non-conducting plates 27-28 in which are adjustably secured a pair of socket posts 29-30 adapted to receive the respective terminals 31-32 of a conducting cable 33, leading to a plug 34 provided with a switch 35.

The plug 34 may be engaged with any convenient source of electrical supply, as for instance a six volt battery carried on the person wearing the shoe, or on some part of structure occupied by him, as for instance an automobile, 20 boat, airplane etc., the cable 33 passing below the wearer's clothing to engage the posts.

Due to the disposition of the resistance 22, the entire lower portion of the shoe will be uniformly heated during the time the current is turned on.

By reason of its construction, the shoe may be re-soled or repaired without injury to the heating elements, and the heating elements may be replaced, if no longer fit for use.

Although the foregoing is descriptive of the preferred embodiment of the invention, it will be apparent that changes may be made in the construction without departure from the spirit of the invention, as set forth in the appended 35 claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

In a shoe warmer, the combination with a shoe 40 having inner and outer soles, of a resistance wire having a loop spaced from the edges of said soles and disposed therebetween, an insulating plate below said loop, insulated cables engaging the ends of said wires and extending upwardly exteriorly of the heel portion of the shoe, a flexible 45 bracket fixed at the upper edge of the shoe to extend rearwardly therefrom, socket posts fixed in said bracket in engagement with the opposite ends of said cable, a cover over said cables, and 50 means to connect said posts with a source of electricity.

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