

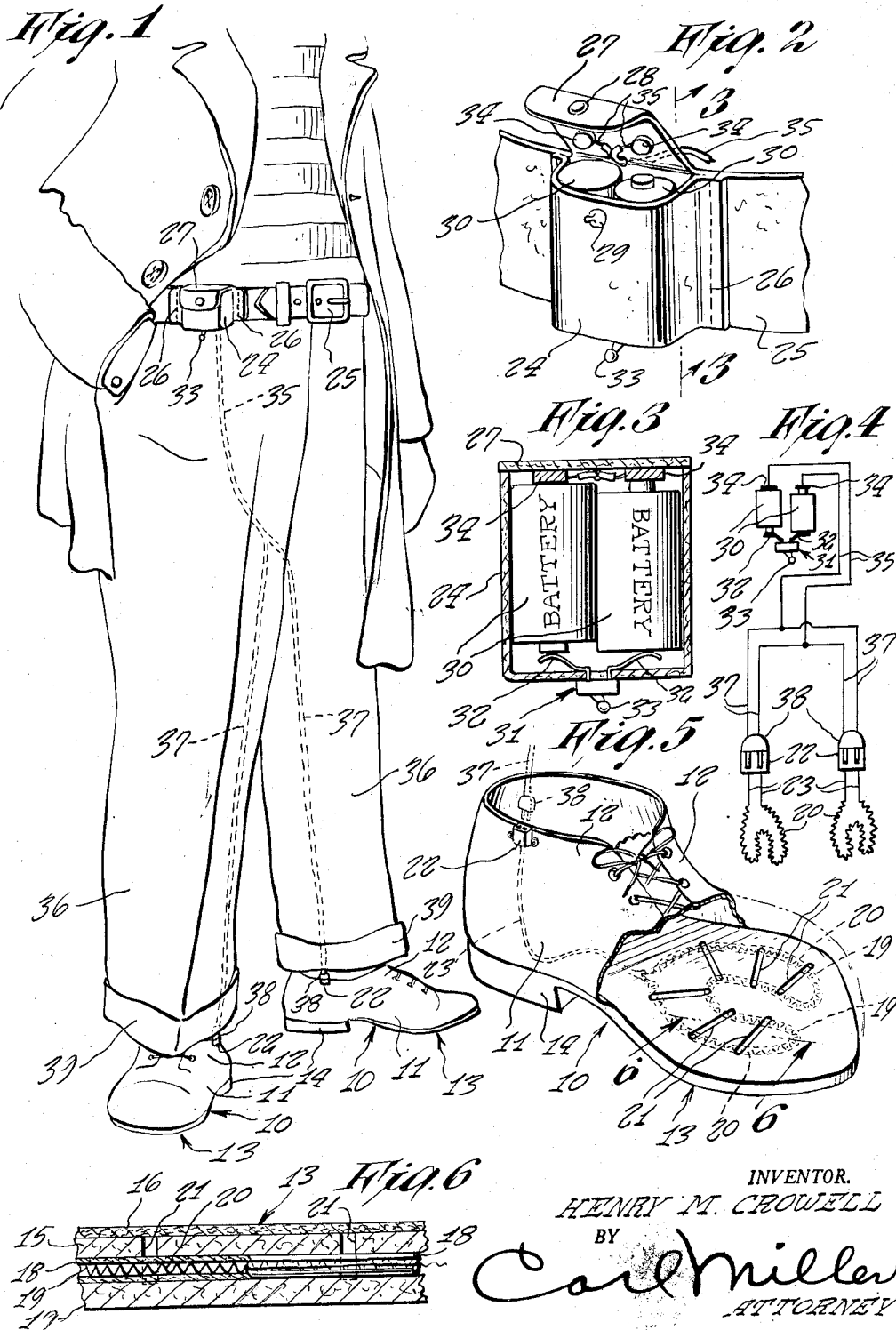
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ELECTRICALLY HEATED SHOE

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ELECTRICALLY HEATED SHOE

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2 Claims. (Cl. 219—19)

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This invention relates to electrically heated shoes.

It is an object of the present invention to provide an electrically heated shoe particularly adapted for use in cold weather and for high altitude flying.

It is another object of the present invention to provide an electrically heated shoe which to all intents and purposes is identical in appearance with ordinary footwear, the only visible part being the electricity source which is conveniently carried on the belt of the wearer.

Other objects of the present invention are to provide an electrically heated shoe bearing the above objects in mind which is of simple construction, inexpensive to manufacture, has a minimum number of parts, is compact, easy to operate and efficient in use.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view of an electrically heated shoe embodying the features of the present invention and shown in operative use on the wearer;

Fig. 2 is a perspective view of the battery pocket on the belt of the wearer, shown in an open position;

Fig. 3 is a vertical sectional view taken along line 3—3 of Fig. 2 and showing the pocket closed;

Fig. 4 is an electrical circuit diagram of the invention;

Fig. 5 is a perspective view of the left shoe shown in Fig. 1 and partly broken away to illustrate the heating elements and hot air circulating passages and

Fig. 6 is a fragmentary vertical sectional view taken along line 6—6 of Fig. 5.

Referring more in detail to the drawing, in which similar reference characters designate corresponding parts throughout the several views, there is shown a shoe, referred to collectively as 10, and including the usual vamp 11, upper 12 and sole 13 having attached thereto a heel 14.

Referring to Fig. 6, it will be seen that the sole 13 consists of an inner sole 15 topped by a lining 16 with the outer or bottom sole 17 secured therebelow in the usual manner and carrying the heel 14.

Intermediate the inner sole 15 and the outer or bottom sole 17 a sheet of dielectric material

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18 is disposed having a contour corresponding to sole 17, substantially as illustrated.

The sheet 18 is made up of four layers, the two inner sheets or layers being provided with horseshoe-shaped openings 19 therethrough in which is disposed a coil 20 of high resistance wire.

The inner sole 15 is provided with a plurality of transverse openings 21 connecting the parallel portions of coil 20 substantially as illustrated in Fig. 5.

A female plug 22 is secured in suitable manner to the upper outside edge of shoe upper 12 and is electrically connected to coil 20 by means of a pair of insulated wires 23, the wires 23 passing through openings in the uppers 12 and extending down to the sole 13 where they pass between the inner layers of sheet 18 and extend forwardly where they join the free ends of coil 20, as shown in Fig. 5. The portion of wires 23 intermediate plug 22 and sole 13 is secured to the inside of upper 12 by stitching, not shown, or other suitable means whereby to retain them in a substantially invisible and inaccessible position within the shoe.

Referring now to Figs. 1-3, there is shown a leather pocket 24 secured to the outside of belt 25 as by stitching 26 and having a flexible cover 27 integrally formed therein. The cover 27 carries one half of a snap fastening element 28 adapted to cooperate with a complementary half 29 when it is desired to secure the cover in a closed position.

A pair of dry-cells 30 are located within the pocket 24 and are connected in series with a switch 31. The switch 31 is secured to the outer side of the bottom of pocket 24 and includes a pair of contacts 32 passing into the pocket through suitable openings in the bottom thereof and electrically connected to the batteries and a manually operable button 33 adapted to open and close the switch.

A pair of electrical contact buttons 34 are secured to the inside of cover 27 and come into electrical contact with batteries 30 when the cover is closed, as shown in Fig. 3. These contacts are connected to insulated wires 35 passing outwardly of the pocket through a suitable opening in the top thereof and extending downwardly from within the trousers 36 to the crotch, where two pairs of insulated wires 37 are connected in parallel with the wires 35, a pair of male plugs 38 being connected to their other ends. It will be noted that the wires 37 extends to the cuffs 39, permitting the plugs 38 to be in-

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serted into female plugs 22, substantially as illustrated in Fig. 1.

In operation, the cover 27 is snapped closed, thus bringing contacts 34 into proper position on batteries 30, as shown in Fig. 3. Upon moving the button 33 to close the switch 31 (see Fig. 4) the circuit is complete and current flows along wires 35 to branch off into wires 37 and to pass through the high resistance coil 20, causing the latter to glow and throw off heat. The transverse openings 21 act as hot air vents and pass the heat upwardly through the inner sole 15 and lining 16. Since there are no other openings in the inner sole 15 nor in the bottom sole 17, the heat is thus concentrated upwardly through these openings.

When sufficient heat has thusly been applied to the foot of the wearer, it is only necessary to throw switch 31 into an off position and the coils 20 will cease to glow. To remove the shoes, it is only necessary to disconnect the plugs 22 and 38. The trousers may then be removed without disassembling the remainder of the device. It will be noted that the wires 35 and 37 hang freely within the trousers 36 and may be readily removed therefrom along with the belt 25 in the usual manner, when it is desired to send the pants to the cleaners or to equip another pair with the unit.

It should now be apparent that there has been provided an electrically heated shoe particularly adapted for use in cold weather and for high altitude flying and which to all intents and purposes is identical in appearance with ordinary footwear, the only visible part being the pocket containing the dry-cells which is conveniently carried on the belt of the wearer.

While various changes may be made in the detailed construction, it shall be understood that such changes shall be within the spirit and scope of the invention as defined by the appended claims.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

1. An electrically heated shoe comprising an upper sole, a bottom sole, a sheet of dielectric material intermediate said upper and bottom soles, a coil of high resistance wire enclosed within said sheet of dielectric material, said upper sole having a plurality of openings above

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said coil, a female plug secured to the upper portion of the shoe on the outside thereof, means interconnecting said female plug and said coil, a pocket connected to the belt of the person wearing the shoes, dry-cells within said pocket, a manually operable switch connected in series with said dry-cells and secured to said pocket, a male plug engaging said female plug, and second means interconnecting said dry-cells and switch with said male plug, said second means permitting said male plug to be connected to said female plug.

2. An electrically heated shoe comprising an upper sole, a bottom sole, a plurality of layers of dielectric material intermediate said upper and bottom sole, said layers following the contour of said upper and bottom soles, the inner layers of said dielectric material having a substantially horseshoe-shaped opening therethrough whereby to provide a substantially horseshoe-shaped recess intermediate the top and bottom layers of said dielectric material, a coil of high resistance wire within said recess, a female plug secured to the top of the shoe on the outer side thereof, means interconnecting said female plug and said coil, a flexible pocket connected to the outside of a belt, a flexible cover for said pocket, a pair of contacts secured to the inner face of said cover, said contacts connecting electrically with said dry-cells when said cover is closed, means for securing said cover to said pocket, a manually operable switch connected in series with said dry-cells and secured to said pocket on the outside thereof, a male plug engaging said female plug, and means interconnecting said contacts with said male plug, said second means permitting said male plug to be connected to said female plug.

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