

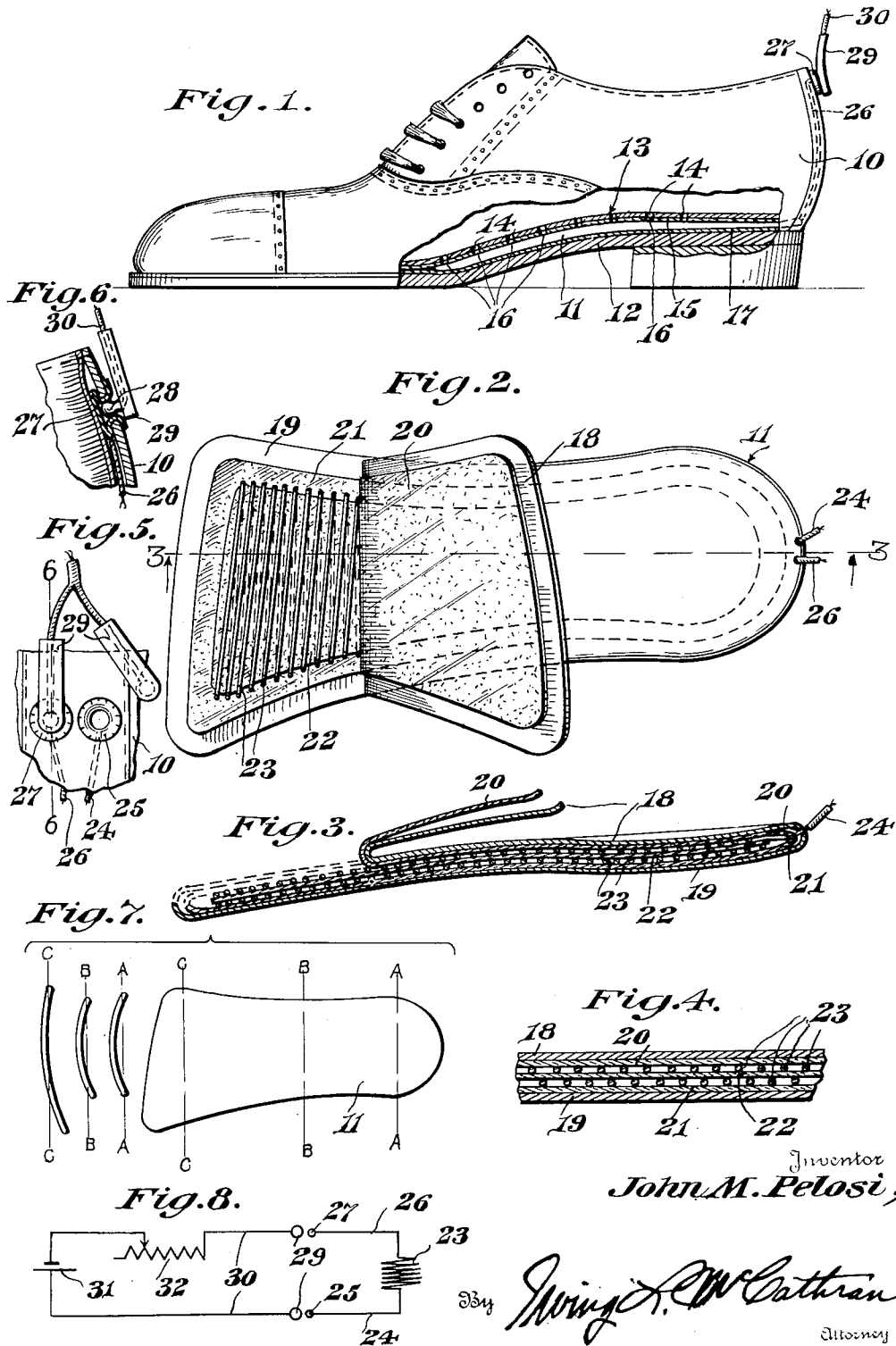
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HEATED BOOT

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HEATED BOOT

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1 Claim. (Cl. 219—19)

This invention relates to heated boots, shoes, or other footwear, and has for its object the production of a simple and efficient heating element for use in connection with boots, shoes, and the like, wherein the flexibility of the shoe must be maintained in view of the fact that the heating element is rigidly housed in a specially designed shank.

A further object of this invention is the production of a simple and efficient heating element for shoes, and a mounting for the element, the heating element constituting an efficient support for the arch of the foot.

Other objects and advantages of the present invention will appear throughout the following specification and claim.

In the drawing:—

Figure 1 is a side elevation partly in section illustrating the heating element in position in the shank of a shoe;

Figure 2 is a top plan view of the heating element, a portion of which is folded back to show the heating coil;

Figure 3 is a section taken on line 3—3 of Figure 2;

Figure 4 is an enlarged fragmentary longitudinal sectional view through a portion of the heating element and supporting shank;

Figure 5 is a rear elevation of a portion of the shoe showing the electrical contacts;

Figure 6 is a section taken on line 6—6 of Figure 5;

Figure 7 is a group view showing the heating element and casing in top plan view and various diagrammatic sectional views illustrating the transverse construction;

Figure 8 is a diagrammatic view of the electrical circuit employed for heating the heating element.

By referring to the drawing, it will be seen that 10 designates the shoe or boot in which is rigidly mounted the shank unit 11 which fits snugly upon the arch portion 12 of the shoe, as shown clearly in Figure 1. Over this shank unit 11 extends a leather insole 13 which leather insole 13 is perforated, as at 14, while under this leather insole 13 fits a top asbestos sheet the same size as the insole, which asbestos sheet is indicated by the numeral 15, the asbestos sheet 15 being perforated, as indicated at 16, which perforations 16 of the asbestos sheet 15 register with the perforations 14 of the leather insole 13. A bottom asbestos sheet 17 rests upon the bottom of the shoe and preferably extends the full length of the shoe and constitutes a support for the shank unit 11, as

clearly shown in Figure 1. As is illustrated in Figure 1, the shank unit 11 is sandwiched between the upper and lower asbestos sheets 15 and 17, respectively. The shank unit 11, in this way will be firmly held in its proper position and this shank unit extends from the heel of the shoe or boot down to a point close to the ball of the foot, permitting the free flexing of the boot or shoe, the shank unit being firmly held in its position between the two asbestos sheets and at the same time permitting the shank unit 11 to act as an efficient arch support.

The shank unit 11 is shaped to conform to the contour of the sole of the shoe extending from the heel to a point near the ball of the foot and efficiently support the arch of the foot. This shank unit 11 comprises an upper metallic plate 18 and a bottom metallic plate 19, the edges of which may be secured together in any suitable or desired manner. Against the under face of the top metallic plate 19 is fitted a mica plate 20, which plate 20 terminates short of the marginal edges of the upper plate 18, as shown. Against the inner face of the bottom plate 19 fits a mica plate 21 which is of the same size as the plate 20, the marginal edges of the mica plates 20 and 21 being secured together in any suitable or desired manner. A mica sheet 22 is interposed between the mica plates 20 and 21, as shown in Figure 2, and wound about this mica strip or sheet 22 in a spiral-like manner, is an electrical conducting wire heating element 23, the edges of the strip 22 terminating short of the marginal edges of the mica plates 20 and 21 to cause the heating element and supporting strip to be completely housed and sealed within the shank unit 11. The terminals of the heating element 23 project beyond the heel portion of the shank unit 11, one terminal 24 extending up through the back of the shoe and contacting with an electrical socket 25 and the other terminal 26 extending up through the back of the shoe and being electrically connected with an electrical socket 27. These sockets 25 and 27 are secured to the rear portion or back of the shoe near the upper edge and are adapted to receive the projecting terminals 28 of the positive and negative contact fingers 29 which lead from a source of electrical supply through the conducting wires 30. These contacts may be of the snap-hook variety or the contacts may be made in any suitable or desired manner.

By referring to Figure 8, it will be noted that the heating element 23 is illustrated in diagram and the wires 30 extend to a source of electrical

supply indicated by the numeral 31 in the circuit of which may be located a suitable rheostat 32 for controlling the amount of current passing through the heating element 23.

5 In Figure 7, there is shown a group view illustrating the construction of the shank unit 11 and illustrating also the relative transverse areas of the shank unit. It will be noted that the transverse area of the shank unit is concavo-convex in cross-section, the transverse curvature gradually increasing from the front toward the rear of the shank unit.

10 It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed so long as such changes fall within the scope of the appended claim.

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

20 In combination with a shoe having a main sole

and an insole, asbestos sheets between the main sole and insole, a stiff reinforcing shank between the asbestos sheets extending from the rear end of the heel of the shoe and terminating at the junction of the front of the arch of the main sole 5 with the ball portion thereof and conforming to the width and outline of the heel and arch portion of the main sole, said shank consisting of a hollow metal casing having upper and lower walls united along their marginal edges, a core in 10 the hollow casing consisting of a sheet of insulation, a resistance coil about said core, sheets of insulation enclosing the core and coil with their marginal portions projecting therefrom secure along their edges, and conductors leading from 15 said coil between margins of the sheets of insulation and projecting outwardly from the casing for connection with a source of electric energy.

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