

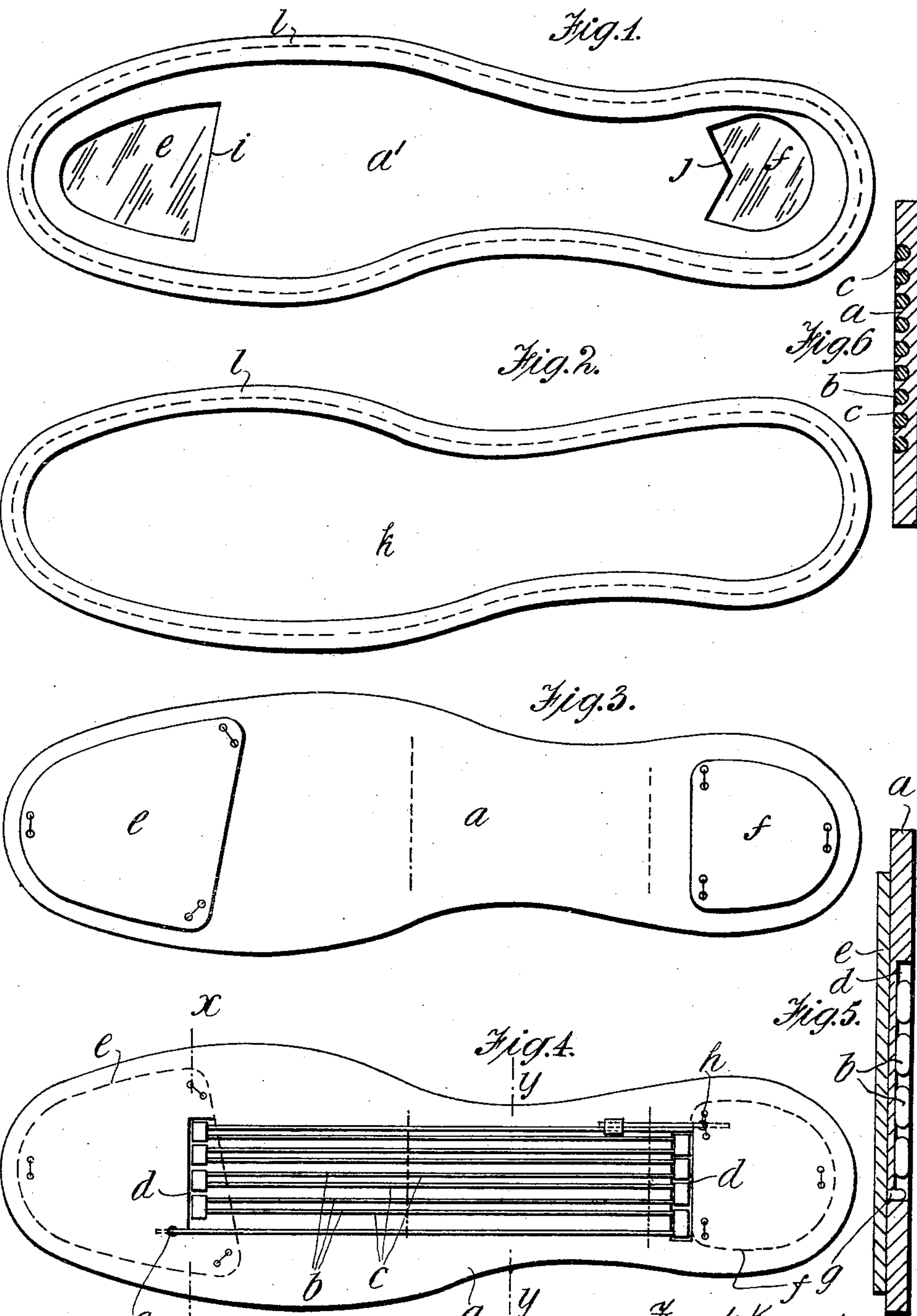
F. KENNEDY & J. V. DAVIS.

GALVANIC SOLE.

APPLICATION FILED AUG. 8, 1908.

931,068.

Patented Aug. 17, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK KENNEDY AND JOSEPH VINCENT DAVIS, OF BOURNEMOUTH, ENGLAND.

GALVANIC SOLE.

No. 931,068.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed August 8, 1908. Serial No. 447,561.

To all whom it may concern:

Be it known that we, FRANK KENNEDY and JOSEPH VINCENT DAVIS, subjects of the King of Great Britain and Ireland, and residents of Bournemouth, Hampshire, England, have invented certain new and useful Improvements in Galvanic Soles, for which we have obtained a patent in Great Britain, No. 23,500, bearing date October 24, 1907, of which the following is a specification.

This invention relates to soles containing one or more galvanic elements capable of generating a feeble current of electricity when excited by a suitable electrolyte such as dilute vinegar, or salt and water, or by a combination of the provided and natural acids, the intention being to assure to the wearer a constant flow of electricity during the whole time the sole or foot gear or wear is worn.

According to the present invention, the finished sole consists of or comprises three members, viz:—a central body and top and bottom covers. The central body upon which all the metallic elements are fitted is formed of canvas, felt or other suitable fabric, such for instance as basil (sheepskin tanned) capable of retaining a certain amount of moisture whereby a sufficient reserve of fluid electrolyte is retained for a day's continuous wear. Moreover the material being in contact with the wires of which the galvanic element is composed completely or almost completely round their circumference, the activity of said galvanic element is increased and its internal resistance reduced. By surrounding, that is to say, embedding the wires in grooves or recesses a smooth surface is presented for the reception of the top cover of the sole, and, consequently to the foot, while the wires forming the element are kept apart from one another, thus preventing short-circuiting. The positive and negative poles of the galvanic element are connected to zinc and copper plates arranged on the opposite side of the central body in which the wires are embedded, said plates being stamped to the shape of the toe and heel part of the sole and arranged so as to make direct contact with the skin, the top cover of the sole being provided with suitable openings for this purpose. The bottom or back of the central body is covered with a suitable canvas cover.

From the above description it will be understood that the galvanic element or grid

is insulated from the sole of the foot, current being distributed to the foot only through the direct contact with the exposed toe and heel plates.

The details of the present invention are shown by the accompanying sheet of drawings in which:—

Figure 1 is a top plan view showing the finished sole. Fig. 2 is an underside plan view of the finished sole. Fig. 3 represents a top view of the central body part of the sole showing the toe and heel plates. Fig. 4 represents an underside view of the central body part of the sole showing the galvanic elements or grids. Figs. 5 and 6 are cross sections on an enlarged scale on the lines *x, x* and *y, y* Fig. 4 showing the wire elements embedded in the grooves or recesses.

In said drawings *a* is the central or body part of the sole and *b* the galvanic element or grid composed of dissimilar metallic wires connected in series and embedded in grooves or recesses *c* and *d* formed in any suitable manner in the underside of said central part. The toe and heel plates or electrodes *e* and *f* are arranged on the opposite or top side of the central or body part of the sole, said electrodes being connected at *g* and *h* to the positive and negative poles of the grid or galvanic elements. Openings *i* and *j* are formed in the top cover *a*—see Fig. 1—exposing the electrodes, thus insuring effective contact with the toe and heel of the foot. The underside of the central or body part *a*, the side provided with the grid, is covered with a canvas layer or backing *k*, and the sole thus formed preferably finished off with a suitable binding *l*, Figs. 1 and 2.

With a galvanic element constructed and arranged as set forth the following advantages are obtained:—(a) the large surface it offers to the electrolyte; (b) its convenience for bedding into the grooved central part of the sock; and, (c) its flexibility by which the sole assumes the shape of the foot without any feeling of constraint or discomfort.

Having now described our invention what we claim as new and desire to secure by Letters Patent of the United States is:—

1. In a galvanic sole, the combination of a central body part, top and bottom covers for said body part, a grid formed of dissimilar metallic rails seated in one side of the central body part, electrode plates arranged at the opposite side of said central

body part, and means connecting said electrode plates with the opposite poles of the grid.

2. In a galvanic sole and in combination
5 a central body part, grooves or recesses in the underside thereof, a grid or galvanic element composed of dissimilar metallic wires embedded therein, a cover to the underside
10 of said central body part, toe and heel plates or electrodes on the top side of the central part and means connecting said toe and heel plates with the opposite poles of the grid.

3. In a galvanic sole and in combination
15 a central body part, grooves or recesses in the underside thereof, a grid or galvanic element composed of dissimilar metallic wires

embedded therein, a cover to the underside of the central body part, toe and heel plates or electrodes on the top side of the central part, a cover to said top side, openings in
20 said top cover to expose the toe and heel plates and means connecting said toe and heel plates with the opposite poles of the grid or galvanic element.

In testimony whereof we affix our signatures in presence of two witnesses. 25

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