

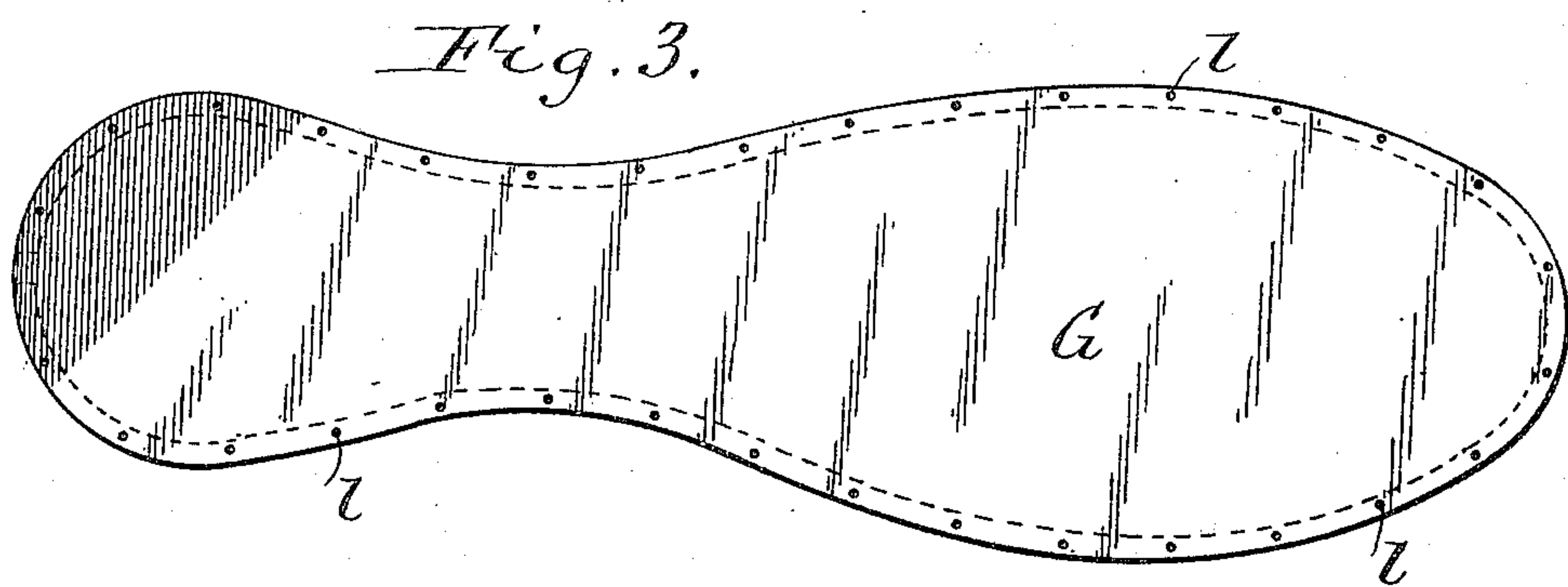
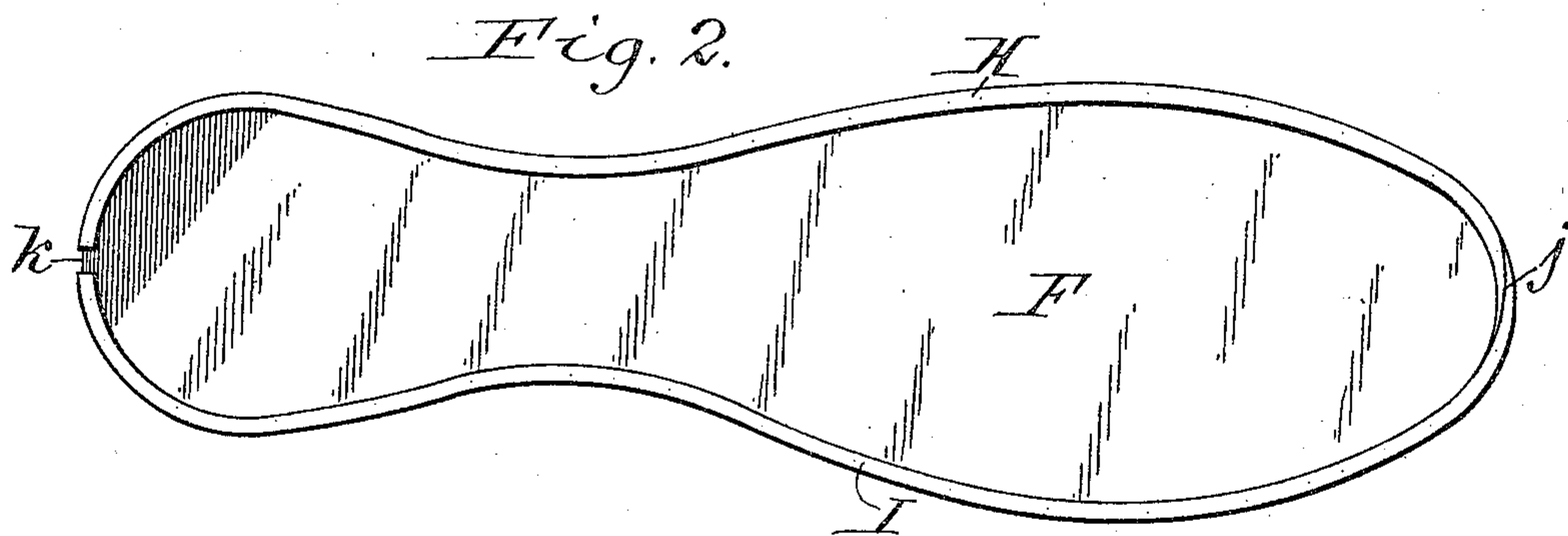
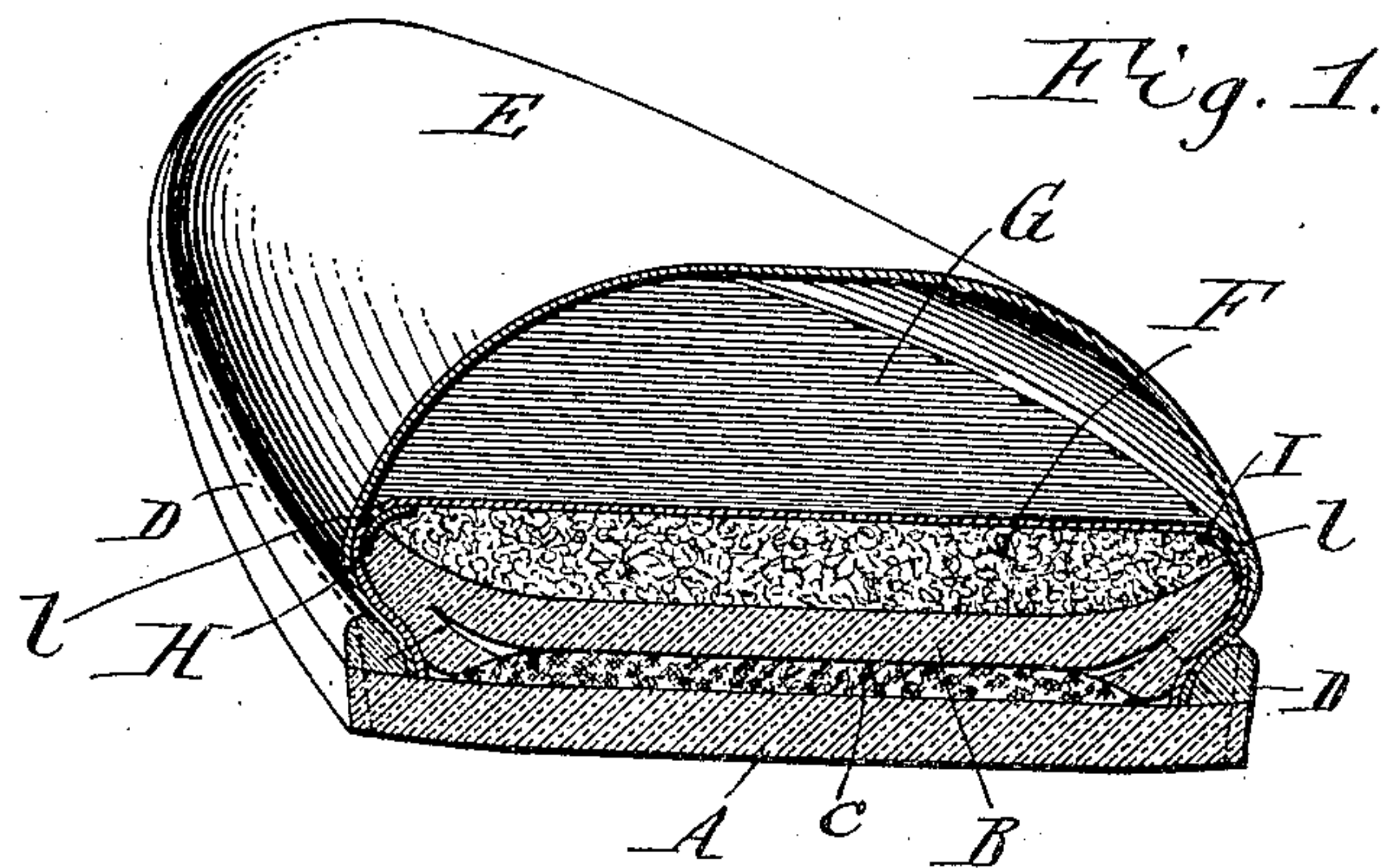
No. 813,053.

PATENTED FEB. 20, 1906.

J. G. MARCHAND.

SHOE.

APPLICATION FILED JULY 1, 1905.



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UNITED STATES PATENT OFFICE.

JOHN G. MARCHAND, OF BUFFALO, NEW YORK.

SHOE.

No. 813,053.

Specification of Letters Patent.

Patented Feb. 20, 1906.

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To all whom it may concern:

Be it known that I, JOHN G. MARCHAND, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Shoes, of which the following is a specification.

This invention relates to a shoe having galvanic elements in its insole for generating a mild electric current, which has a beneficial effect upon the foot.

The object of this invention is to construct and combine the galvanic elements with the shoe in such manner that the cost of the same is not materially increased and that the same will be as comfortable as an ordinary shoe.

In the accompanying drawings, Figure 1 is a sectional perspective view of a shoe provided with my improvements. Fig. 2 is a top plan view of the insole with the electric elements applied thereto. Fig. 3 is a similar view showing the insole-covering.

Similar letters of reference indicate corresponding parts throughout the several views. My improved galvanic elements are applicable to shoes of various constructions. The shoe shown in the drawings for illustrating one application of my invention is commonly known as a "welt-shoe" and consists, essentially, of a bottom or out sole A, a top or in sole B, a filling C, arranged between the out and in soles, a welt D, secured to the margin of the outsole, and a vamp E, secured at its edge between the welt and the margin of the insole in a well-known manner. The shoe is also preferably provided with a cushion F, arranged upon the insole, and a pliable covering G, extending over the cushion and secured at its edge between the edges of the vamp and insole.

The galvanic elements forming part of my improved shoe consist of two strips of metal H I, which are arranged lengthwise between the margins or edges of the insole and the cushion and the adjacent part of the covering. Each of these strips is preferably curved transversely and extends with its outer longitudinal edge downwardly between the edge of the insole and the edge portion of the covering, while its upper longitudinal edge projects horizontally inwardly between the top on the cushion and the covering. By this construction and arrangement of the strips the same extend across the joint between the insole and cushion and are firmly gripped at their outer edges for preventing displace-

ment thereof, while their upper edges yield sufficiently in a vertical direction under the pressure of the foot to prevent inconvenience to the wearer of the shoe. One of these strips preferably consists of zinc and the other of copper, and two of their respective ends are connected, while their opposite ends are unconnected. These elements are attacked by the perspiration of the feet or other moisture present in the shoe, thereby setting up a mild electric action. The foot serves as the means for electrically connecting the unattached ends of the strips, whereby the circuit of the electric elements is completed through the foot and an electrotherapeutic effect is produced upon the same.

The connection between the two galvanic elements is preferably located at the toe of the shoe and effected by shaving to an edge or thinning the opposing ends on the metal strips and lapping one over the other, as shown at *j* in Fig. 2, and the separation or gap between the two elements is preferably located at the heel of the shoe, as shown at *k* in the same figure. The overlapping front ends of the strips are preferably electrically connected by soldering; but, if desired, this connection may be effected solely by the frictional contact between these parts.

In order to enable the perspiration or moisture of the foot to reach the galvanic elements more directly, the marginal part of the cushion-covering is provided with a row of perforations *l* above the strips H I, as shown in Figs. 1 and 3. The moisture of the foot is conducted by the perforations quickly to the metal strip, and the electric action is therefore set up more effectively.

This improved construction of electric elements for shoes can be applied readily in the course of manufacturing the shoe without any considerable increase in cost. The same does not alter the shape of the shoe, nor does it produce any discomfort.

I claim as my invention—

1. In a shoe, the combination of an insole, a cushion arranged on the insole, a metallic strip arranged lengthwise of the edges of the insole and cushion and across the joint between the same, and a covering extending over said insole, cushion and strip, substantially as set forth.

2. In a shoe, the combination of an insole, a cushion arranged on the insole, a metallic strip arranged lengthwise of the edges of the insole and cushion and across the joint be-

tween the same, and a covering extending over said insole, cushion and strip, and having perforations above said strip, substantially as set forth.

- 5 3. In a shoe, the combination of an insole, a cushion arranged on the insole, strips of copper and zinc arranged along opposite edges of the insole and cushion across the joint between the same and overlapping each
10 other at two of their respective ends while their opposite ends are out of contact with

each other, and a covering extending over said insole, cushion and strips and having perforations above the strips substantially as set forth.

Witness my hand this 29th day of June, 1905. ¹⁵

JOHN G. MARCHAND.

Witnesses:

THEO. L. POPP,
MAY E. MCARTHUR.