

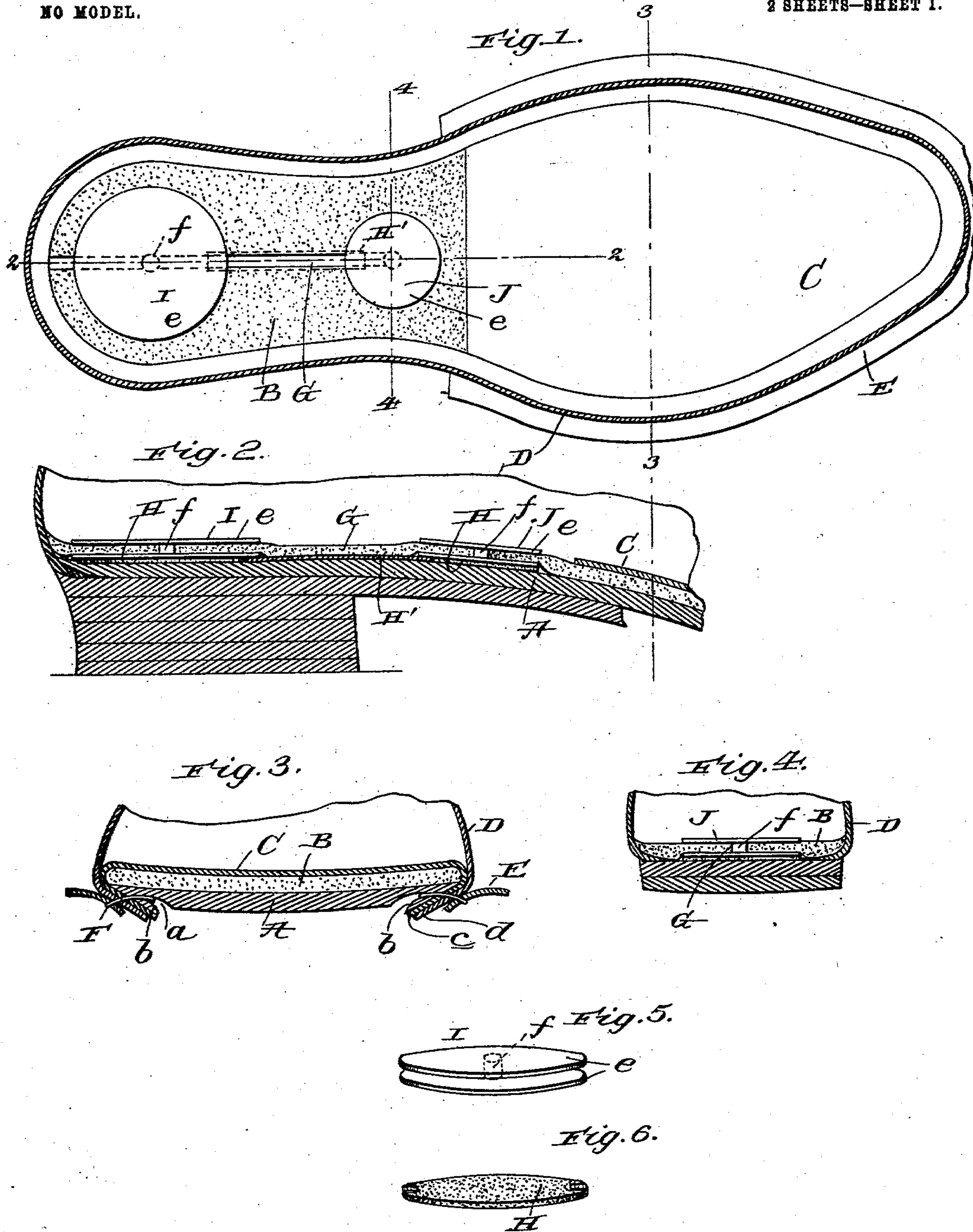
No. 757,495.

PATENTED APR. 19, 1904.

A. REED.
ELECTRIC SOLE SHOE.
APPLICATION FILED FEB. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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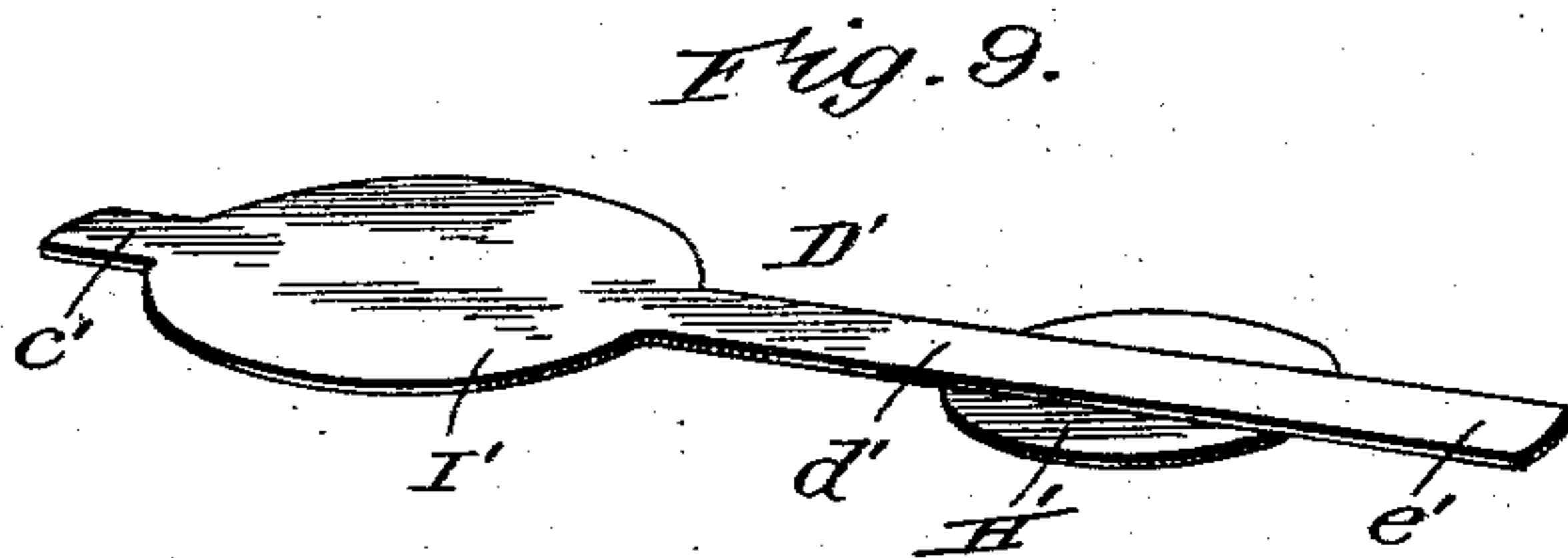
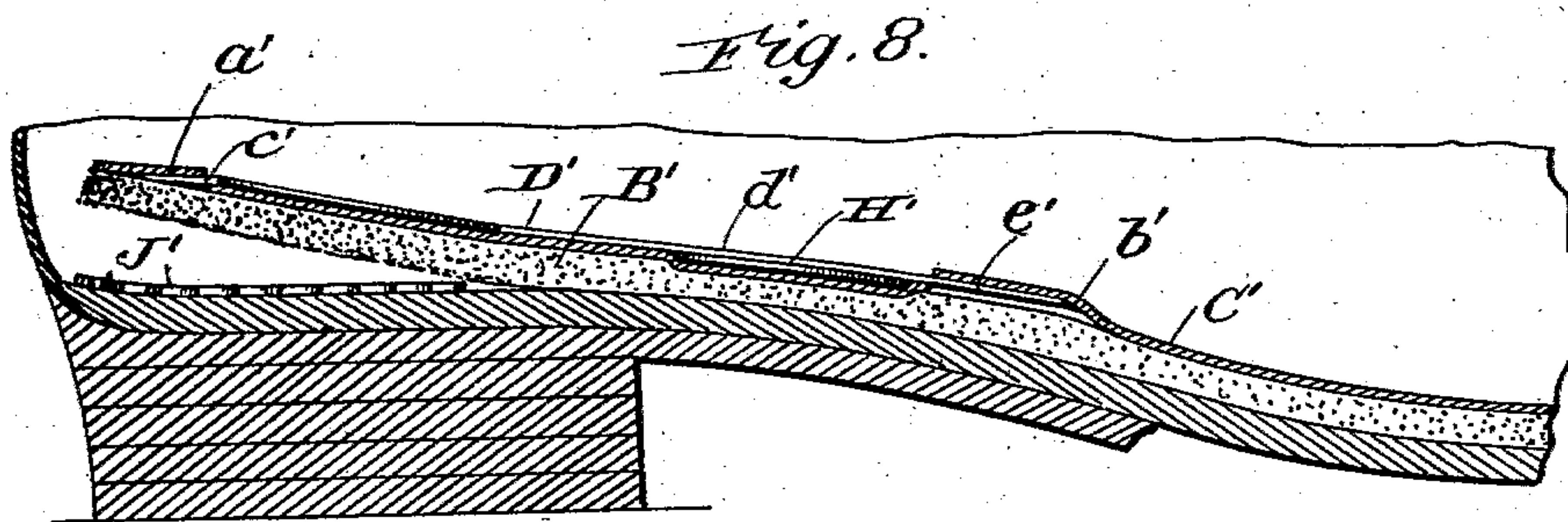
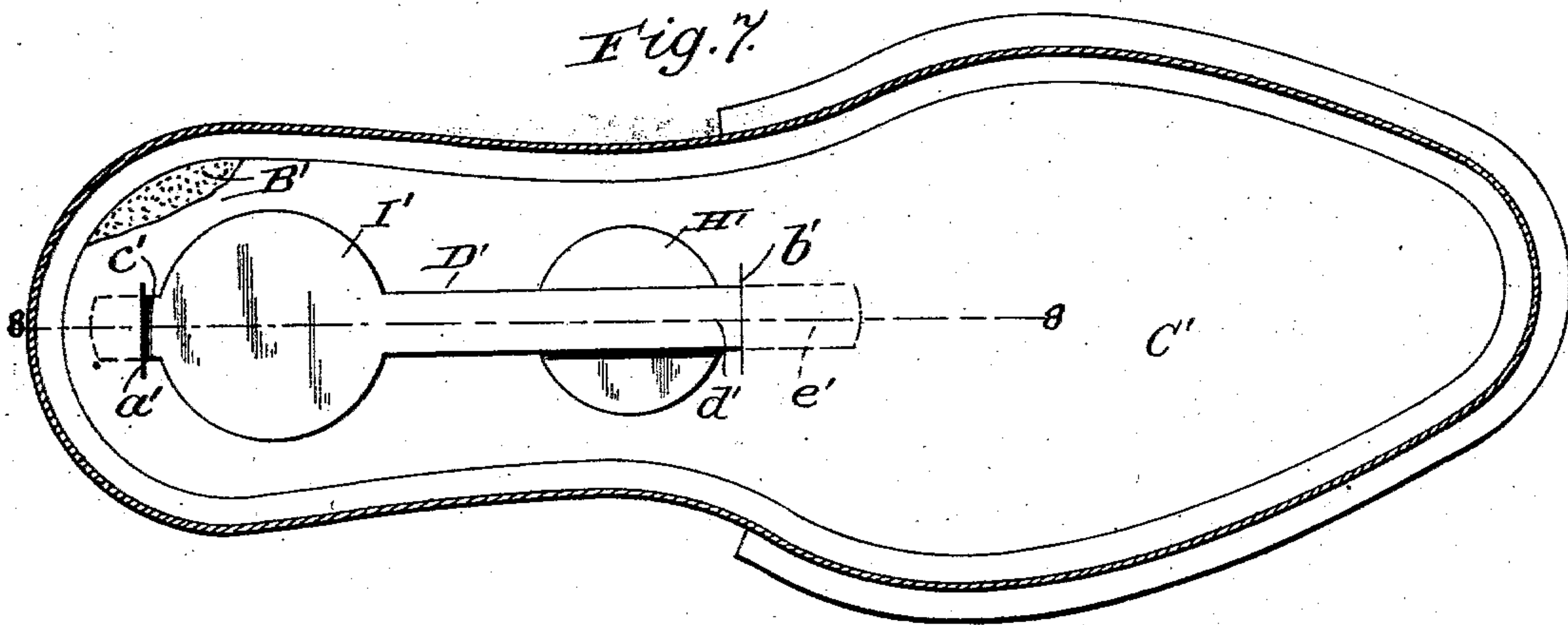
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2 SHEETS—SHEET 2.



Inventor

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Witnesses
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UNITED STATES PATENT OFFICE.

ADAM REED, OF ST. JOSEPH, MISSOURI.

ELECTRIC-SOLE SHOE.

SPECIFICATION forming part of Letters Patent No. 757,495, dated April 19, 1904.

Application filed February 4, 1904. Serial No. 192,018. (No model.)

To all whom it may concern:

Be it known that I, ADAM REED, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented new and useful Improvements in Electric-Sole Shoes, of which the following is a specification.

My invention pertains to electric soles for shoes; and its novelty, utility, and practical advantages will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal section of a shoe provided with my improved electric sole, the section being taken in a plane immediately above the sole. Figs. 2, 3, and 4 are sections taken in the planes indicated by the lines 2 2, 3 3, and 4 4, respectively, of Fig. 1. Fig. 5 is a perspective view of one of the elements of the galvanic couple which I employ removed. Fig. 6 is a similar view of one of the disk cushions employed below the said elements. Fig. 7 is a view similar to Fig. 1, illustrating a modified construction which constitutes the preferred embodiment of my invention. Fig. 8 is a longitudinal central section taken in the plane indicated by the line 8 8 of Fig. 7, and Fig. 9 is a perspective view of the galvanic couple forming part of the modified construction removed.

Referring by letter to the said drawings, and more particularly to Figs. 1 to 6 thereof, A is the insole of the shoe, which is preferably of leather and is undercut at *a*, Fig. 3, to form a lip *b*; B, a cushion, of lamb's wool, felt, or other suitable material, arranged on the upper side of the insole throughout the area thereof; C, a covering of thin soft leather arranged over the forward portion of the cushion and having a depending portion *c*, Fig. 3, disposed alongside the lip of the insole; D, a vamp or upper having a portion *d* disposed at the outer side of the covering portion *c*; E, a welt disposed alongside the vamp portion *d* and designed for the connection of a tap-sole, which is not shown, and F a seam uniting the lip *b*, covering C, vamp D, and welt E. I prefer to assemble and connect the

insole, covering, vamp, and welt in the manner stated, because of the simplicity and durability of such construction. The forward portion of the cushion B is preferably connected throughout its area to the insole A by adhesive, while the rear portion of said cushion is similarly connected to the insole along its edge, this latter to facilitate the introduction and removal of the elements of the galvanic couple presently described. G is a longitudinal central slot formed in the rear portion of the cushion B and extending from the rear end thereof to a point adjacent to the rear end of the covering C. H H are disks, of felt or other soft material, attached by adhesive or other means to the insole A below the slot G; H', a thin metallic strip connected by cement or other means to the upper side of the insole A and extending from one felt disk to the other, and I J the elements of a galvanic couple which bear on the metallic strip. These elements are similar, with the exception that the element I, which is formed of zinc, is preferably larger in diameter than the element J, which is formed of copper. Said elements, respectively, comprise upper and lower flat disks *e*, adapted to receive the thickness of the cushion E between them, and a central connection *f*, interposed between the disks and designed to rest in the slot G of the cushion. The element J rests on the forward felt disk H and below the instep of the wearer of the shoe, while the element I rests on the rear disk H and below the heel of the wearer. A considerable portion of the weight of the wearer is imposed on the disk I; but the said disk will not injure the foot, because of the fact that the heel of the human foot is a natural cushion.

It will be appreciated from the foregoing that the cushion B, the galvanic elements I J, and the plate H' constitute my novel electric sole, and in this connection I desire it understood that when desired the said sole *per se* may be placed on the market as an article of manufacture and adjusted in a shoe by a purchaser.

In the use of the shoe embodying the cushion described the sock or stocking of the wearer, which is generally moist with perspi-

ration, rests against the upper disks of the elements I and J and gives rise to a galvanic action calculated to promote the circulation of blood through the foot and keep the same
 5 warm and comfortable. The galvanic action is assisted in keeping the foot warm and comfortable by the cushion of lamb's wool, felt, or analagous material.

The elements I and J being arranged above
 10 and below the cushion B and the connections f in the slot of the cushion, the elements are securely held against casual displacement or movement and yet may be readily removed to be cleaned and as readily replaced in engage-
 15 ment with the cushion. To remove either of the elements from the cushion, it is simply necessary to press the latter crosswise until the portions of the disks at one side of the connection f clear one wall of the slot in the
 20 cushion and then draw the element out of engagement with the opposite wall of the slot. To replace the element in engagement with the cushion, it is simply necessary to reverse the operation just described.

25 When my novel electric sole is to be placed on the market apart from a shoe, the metallic strip or plate H' is preferably brazed or otherwise connected to the lower disks of the elements I and J.

30 In the modified construction shown in Figs. 7 to 10 of the drawings the cushion B', of lamb's wool, felt, or the like, is covered throughout its area by a covering C', of soft leather or other suitable material, and the electric sole
 35 is formed by the said cushion B', covering C', and a galvanic couple D'. The covering C' is provided adjacent to its rear end with a transverse slit a' and in its instep portion with a similar slit b' , and the galvanic couple comprises a disk or element I', preferably of copper, having a tongue c' adapted to be inserted
 40 in the slit a' after the manner shown in Fig. 7 and also having an opposite strip d' and a disk or element H', preferably of zinc, connected to the strip d' . The strip d' extends
 45 beyond the disk H', as shown, and forms a tongue e' , adapted to be inserted in the slit b' of the covering. In virtue of this construction it will be observed that the galvanic
 50 couple rests flat against the upper side of the cushion and is not likely to injure or be uncomfortable to the foot, also that said couple may be readily removed from the covering by simply withdrawing its tongues from the slits
 55 a' b' and may as readily be again connected to the covering when desired by simply placing its tongues in the slits. From this it follows that when the wearer of the sole desires he may quickly and easily eliminate the gal-
 60 vanic action. As best shown in Fig. 8, the heel portion of the cushion B' is left free from the heel-seat of the inner sole, and the nails J', connecting the heel-lifts to the heel-seat, are clenched against the inner side of the said seat,
 65 while the heel portion of the cushion is held

away from the heel-seat. The said heel portion of the cushion is then placed upon and connected to the heel-seat by cement or other means, when it will cover the clenched ends of the nails and prevent them from injuring the
 70 heel of the wearer or affecting the action of the galvanic couple.

The electric sole shown in Figs. 7 to 9 is, like that shown in Figs. 1 to 6, adapted to be placed on the market apart from the shoe
 75 when desired and may be so marketed without involving a departure from the scope of my invention.

In the use of the sole shown in Figs. 7 to 9 it will be observed that the weight of the body
 80 will press the galvanic couple down upon the soft cushion and in this way effectually prevent the said couple from hurting the heel or any other part of the foot.

I have entered into a detailed description of
 85 the present embodiments of my invention in order to impart a definite understanding of the same. I do not desire, however, to be understood as confining myself to the specific construction and relative arrangement of
 90 parts described, as such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

Having described my invention, what I claim, and desire to secure by Letters Patent, 95 is—

1. An electric sole for shoes comprising a slitted cushion, and a galvanic couple comprising electrically-connected elements exposed above the slitted cushion and provided
 100 with means disposed in said slitted cushion, whereby the elements are removably connected thereto.

2. As an article of manufacture, a galvanic couple for use on shoe-soles, comprising flat
 105 elements having tongues extending in opposite directions therefrom, and a strip extending between and permanently connecting the said elements.

3. In an electric sole, the combination of a
 110 cushion, a covering thereon having slits a' b' , and a galvanic couple arranged on the covering and having disk-like elements electrically connected together, and also having tongues projecting beyond the elements and remov-
 115 ably arranged in the slits of the covering.

4. In an electric sole, the combination of a cushion, a covering thereon having slits a' b' , and a galvanic couple arranged on the cover-
 120 ing and having a disk-like element and a second disk-like element having a tongue arranged in one of the slits of the covering, and also having a strip connected to the first-mentioned element and extending beyond the same and forming a tongue which is arranged in
 125 the other slit of the covering.

5. An electric sole comprising a cushion having a vertical slot, and a galvanic couple made up of elements having flat disks dis-
 130 posed above and below the cushion and con-

nected together, and means electrically connecting the said elements.

5 6. In an electric-sole shoe, the combination of an insole, a cushion arranged on said insole, and having a vertical slot in its rear portion, and a galvanic couple made up of elements having flat disks disposed above and below the cushion and connected together by means extending through the vertical slot, 10 and means electrically connecting the said elements.

15 7. In an electric-sole shoe, the combination of an insole, of leather or other suitable material, having a lip at its under side, a cushion arranged on said insole throughout the area thereof, and having a longitudinal central, vertical slot in its rear portion, extending to its rear end, disks of felt or other soft material connected to the insole, and arranged 20 below the slot of the cushion, a thin metallic strip extending between said disks, removable

galvanic-couple elements arranged on the soft disks and the metallic strip, and respectively comprising flat disks disposed above and below the cushion, and a connection interposed 25 between said disks and resting in the slot of the cushion, a covering arranged over the forward portion of the cushion, and having a depending portion disposed alongside the lip of the insole, a vamp or upper having a depending portion disposed alongside that of the covering, a welt, and a seam uniting the welt, the depending portions of the vamp and covering, and the lip of the insole.

In testimony whereof I have hereunto set 35 my hand in presence of two subscribing witnesses.

ADAM REED.

Witnesses:

Mrs. W. H. FARRAN,
MYRTIE L. SCOTT.