

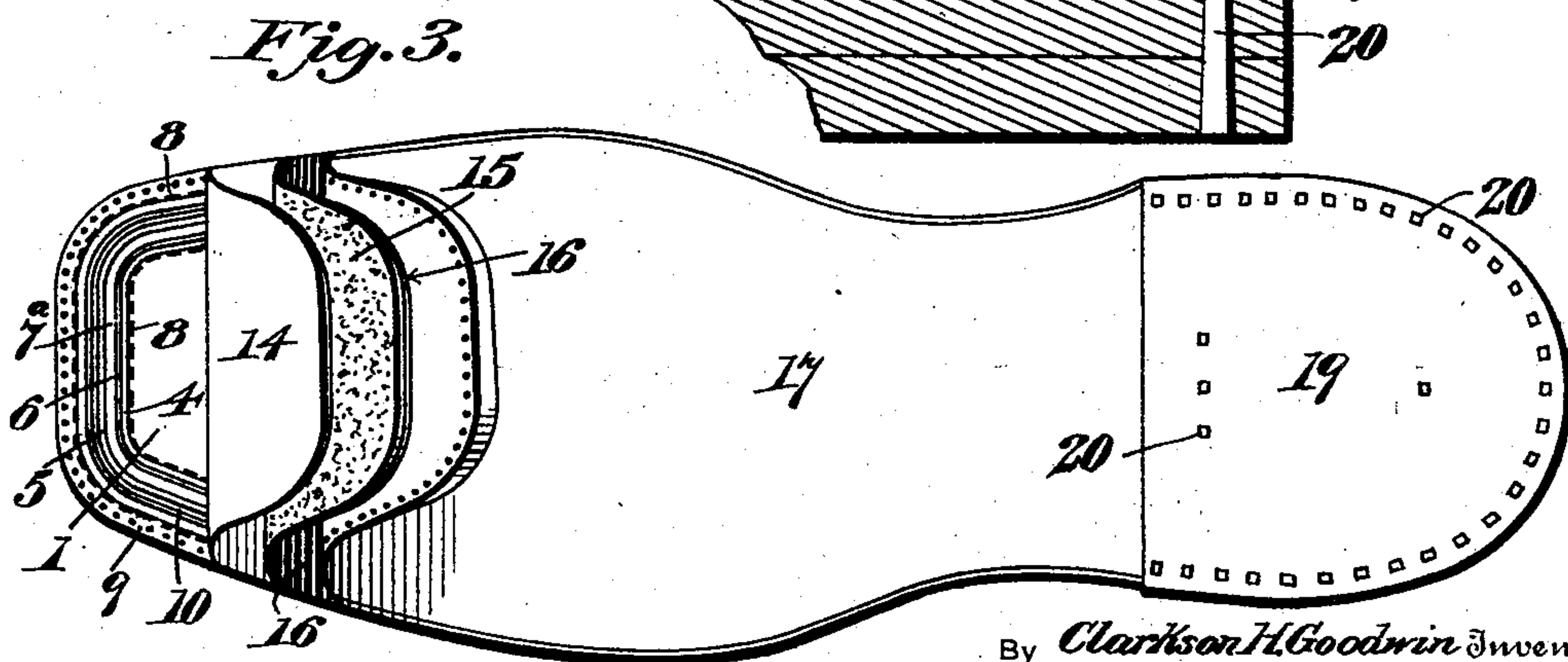
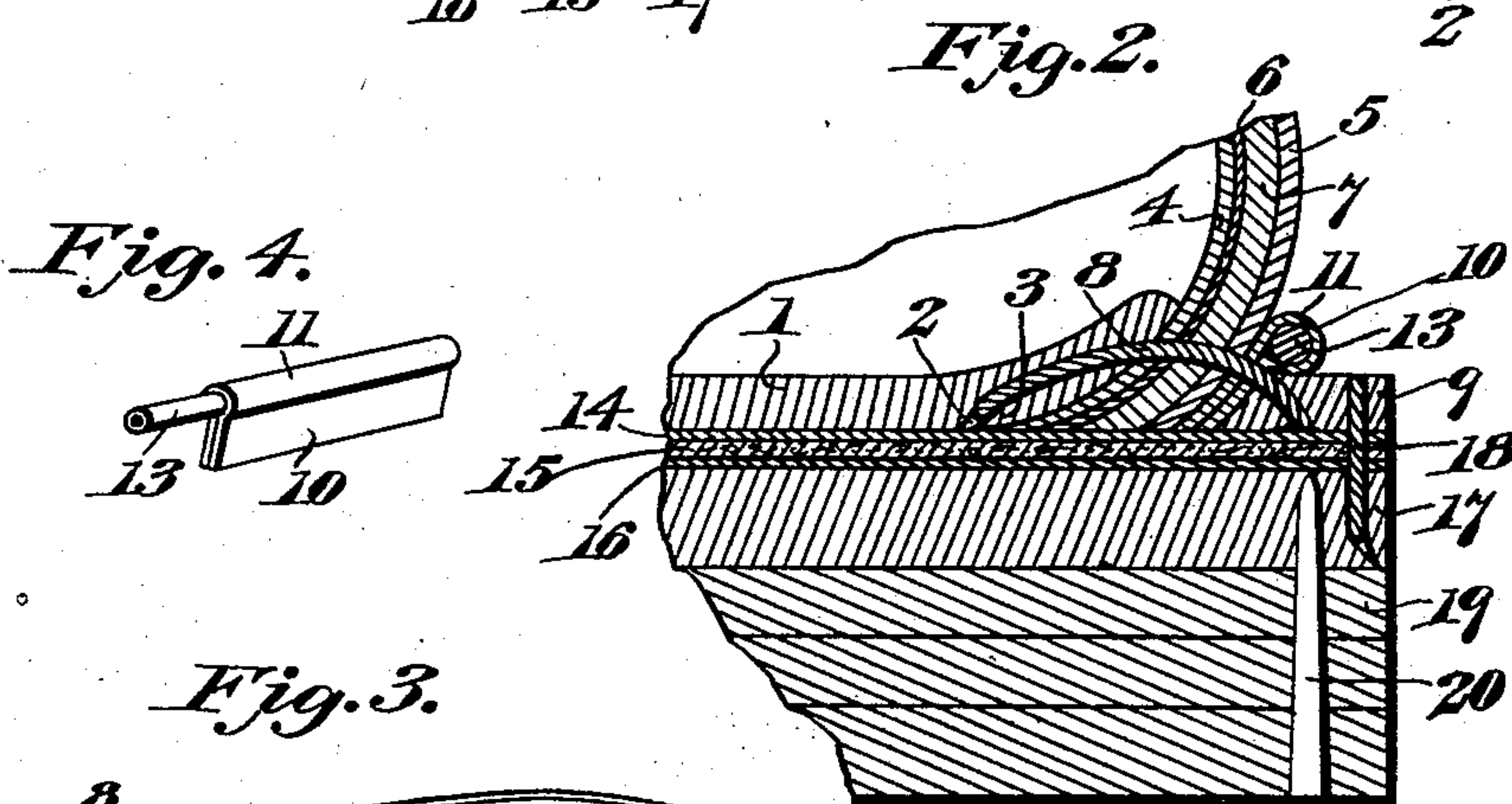
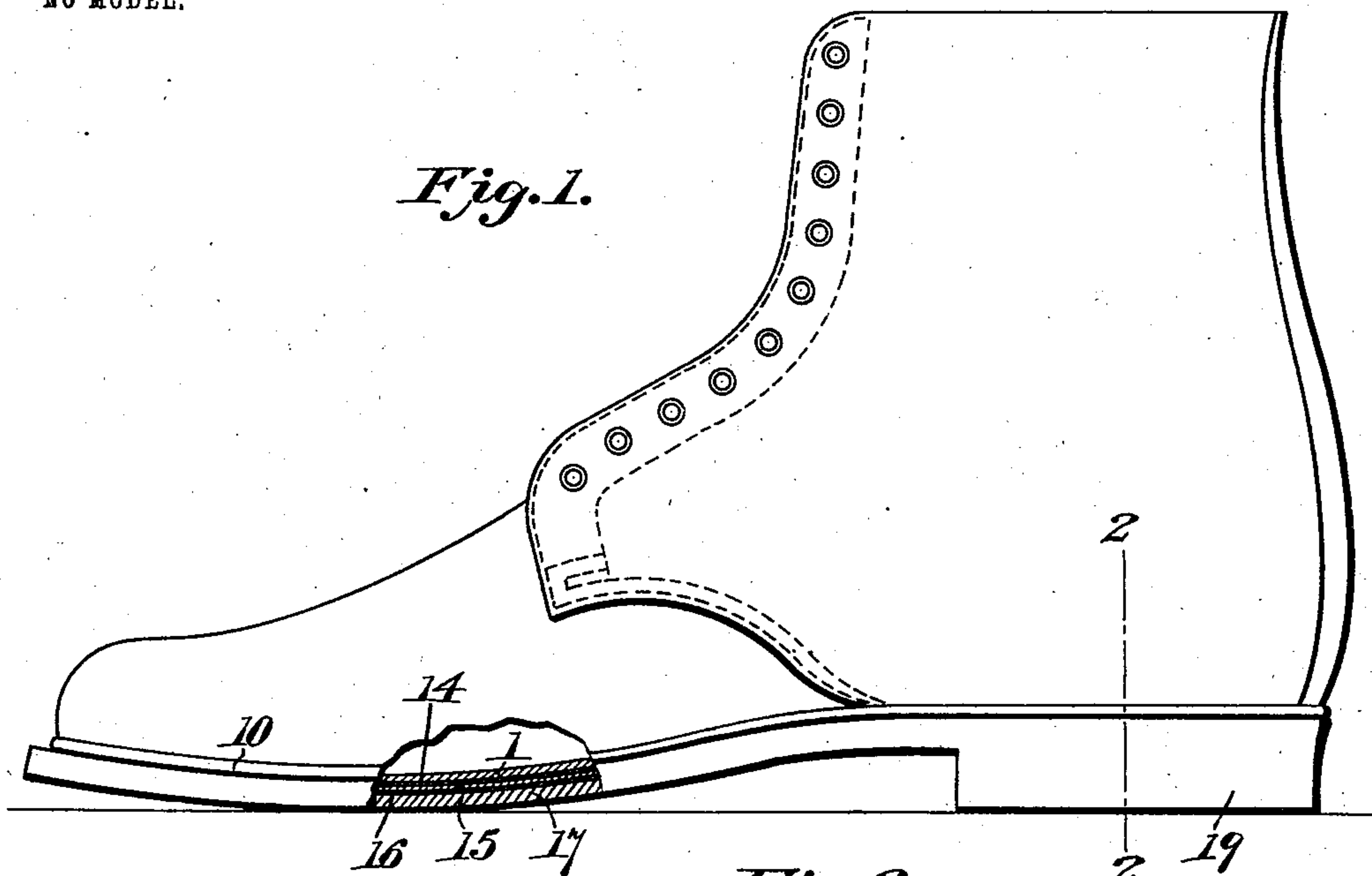
No. 724,846.

PATENTED APR. 7, 1903.

C. H. GOODWIN.
SHOE.

APPLICATION FILED JUNE 22, 1900.

NO MODEL.



Witnesses

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CLARKSON H. GOODWIN, OF WESTCHESTER, PENNSYLVANIA.

SHOE.

SPECIFICATION forming part of Letters Patent No. 724,846, dated April 7, 1903.

Application filed June 22, 1900. Serial No. 21,186. (No model.)

To all whom it may concern:

Be it known that I, CLARKSON H. GOODWIN, a citizen of the United States, residing at Westchester, in the county of Chester and State of Pennsylvania, have invented a new and useful Shoe, of which the following is a specification.

My present invention has relation to improvements in footwear, the object in view being to produce a shoe which will be absolutely non-conductive and waterproof.

Before proceeding with a detailed description of the construction of my shoe it may be well by way of premise to discuss briefly those considerations which have led to the organization thereof. Numerous reports of the accidental electrocution of linemen, electricians in charge of lighting and power plants, and other electrical workers have led to a discussion looking to the prevention of such accidents. It is customary for persons exposed to contact with highly-charged electrical conductors to wear non-conductive gloves, and where these are carefully fitted so as to leave no exposed surfaces they are effective for the purpose of preventing the electrician from receiving severe electrical shocks by the passage of the current through his body from the conductors handled. It sometimes happens, however, that the gloves will become loosened to expose a portion of the wrist or hand or will be worn sufficiently to permit the establishment of an electrical circuit through the body of the wearer. It also happens under some circumstances that the contact will be made with some other unprotected part of the body—as, for instance, the face or neck—and my invention has been devised particularly for the purpose of providing an insulated shoe for the use of linemen and other electricians. It is obvious that these various accidents could not happen were it not for the grounding of the current passed into the body at some exposed point. That the ordinary forms of footwear facilitate the completion of the circuit in such cases is evidenced by the fact that the shoes of victims of these accidental electrocutions are found to be charred and in some instances to be entirely consumed in immediate proximity to the nails or other metal fastening devices employed in the construction of the shoes and

through which undoubtedly the grounding of the fatal current was effected.

Having these facts in mind, the object of my invention in its broadest aspect is to produce a shoe constructed entirely without the employment of metallic parts of any kind and embodying rubber and other insulation which will absolutely preclude the possibility of the grounding of the current through the shoes and which will lend elasticity to the structure, and thereby conduce to the ease and comfort of the wearer. Subordinate to this general object is the production of a shoe which will not only be electrically non-conductive, but which will also be absolutely waterproof, both by reason of the incorporation of rubber or other non-porous material and by the additional provision of a cushioning-strip of peculiar form embodied in the structure between the welt and the upper and inclosing a resilient core, serving to prevent the spreading of the upper immediately above the welt without opposing such resistance to the proper shaping of the upper to the foot of the wearer, as results from the employment of a layer of cork or similar material at this point.

To the accomplishment of the objects enumerated and others which will hereinafter more fully appear the invention consists in the construction and arrangement of parts hereinafter illustrated and described and embraced within the scope of the appended claims.

Figure 1 is a side elevation of a shoe constructed in accordance with my invention, parts being broken away to disclose an interior section. Fig. 2 is a central vertical sectional view, on an enlarged scale, through a portion of the heel and the adjacent part of the upper on the line 2 2 of Fig. 1. Fig. 3 is a bottom plan view with the sole, slip-sole, and covering turned back to disclose their relations and the united edges of the several layers stitched to the insole; and Fig. 4 is a detail view of a modified form of cushioning-strip, the core in this instance being shown in tubular form.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 indicates an insole formed with a channel 2 and a channel-flap 3, as

usual. Upon the insole are assembled the upper lining 4 and the upper 5, between which is interposed a waterproof and non-conductive sheet 6, of any suitable material, but preferably oiled silk, which sheet I shall term the "supplemental" lining of the upper. At the heel and toe, respectively, the usual counter 7 and toe-box 7^a are interposed between the lining and the upper for the purpose of imparting the necessary stiffness to maintain the proper shape of the shoe. The imposed layers—that is to say, the edges of the lining 4, supplemental lining 6, and upper 5, together with the counter and toe-box 7^a—are secured to the channel-flap 3 of the insole 1 by stitches 8, which also pass through and confine the welt 9 and the edges of what may be termed a "cushioning-strip" 10, said edges being located between the contiguous edges of the upper and welt in order to position the fold 11 of said strip immediately above the welt and between the welt and upper, where it serves to support the upper in a manner to prevent the distortion of the latter as the shoe is stretched by the foot of the wearer. In order to give sufficient body to the cushioning-strip, while at the same time lending sufficient resiliency thereto, the folded edge 11 of the strip 10 is made to inclose a resilient core 13, which may be embodied in a small rubber tube, as shown in Fig. 4 of the drawings, but which is preferably a solid cylindrical strand of rubber which, in effect, constitutes a resilient bead or cushion shielded by the cushioning-strip 10 and lying upon the welt 9 in contact with the contiguous outer surface of the upper 5.

It will be observed that the cushioning-strip 10 is a continuous one—that is, the same extends continuously about the upper, including the rounded heel portion—thereby affording an effective cushion for the entire shoe structure, besides constituting a watertight joint around the entire upper at the point where the welt is arranged.

After the shoe elements enumerated have been assembled, as thus far described and as shown in Fig. 3 of the drawings, a non-conductive and waterproof sheet or layer of insulation 14, preferably oiled silk, conforming closely to the shape of the sole, is pasted or otherwise secured over the insole and the exposed sewed edges of the several layers of material, which latter are first pressed down to conform approximately to the plane of the insole. We now have the shoe complete and ready for the slip-sole, which is a composite intermediate sole designed to lie between the inner and outer soles and made up of a plurality of layers having the desirable properties of non-conductivity and elasticity. The slip-sole or intermediate composite sole is composed of a thin layer of cork 15, opposed to the sheet 14 and covered by a thin layer of rubber 16. In order to close the pores of the cork and to render the same completely non-conductive, the layer 15 is boiled in

spermaceti or linseed-oil and is varnished with pure gum-copal, the varnish serving to adhesively unite the layers 15 and 16, constituting the slip-sole. After the slip-sole has been positioned the outer sole 17 is imposed upon the rubber layer 16 of the slip-sole and is sewed to the welt by a line of stitches 18, which pass through the outer sole, the slip-sole, and welt, as shown. The shoe is now completed by securing the heel-lifts 19 with wooden pegs 20, which are substituted for the usual metallic fasteners by reason of their non-conductivity.

A careful consideration of the shoe structure described discloses the entire absence of any metallic parts which could serve as electrical conductors and reveals the presence between the upper and its lining of a supplemental lining which is not only non-conductive, but which is absolutely waterproof; also, a sheet or layer of similar material covering the edges of the several layers of material sewed to the channel-flap of the insole, and a composite slip-sole intermediate of the inner and outer soles and composed of thin layers of cork and rubber, which impart a high degree of elasticity to the sole of the shoe and absolutely preclude the possibility of the grounding of a current through the body of the wearer. It will also be seen that the possibility of the ingress of moisture between the welt and the upper will be prevented by the continuous cushioning-strip 10, which is preferably kid or some smooth material, and that the rubber core within the fold of said strip will constitute a resilient support tending to maintain the foot from of the shoe-upper. I wish it to be understood, however, that while the preferred embodiment of my invention is comprehended by the construction illustrated and described I do not limit myself to the details of construction or to the materials used, as, on the contrary, I reserve the right to effect such modifications, structural variations, and the substitution of such materials as may be possible without departing from the spirit of the invention.

What I claim is—

1. In a boot or shoe, the combination with an upper, insole and welt, of a folded cushioning-strip extending continuously around the entire shoe, the edges of said strip being retained between the united edges of the welt and upper, and a continuous core of compressible material located within the folded edge of the continuous cushioning-strip, the folded edge of said strip being located directly between the welt and upper to locate the core in position to be compressed between the upper and welt, whereby said cushioning-strip constitutes a water-excluding, continuous packing disposed at the line of union of the welt and upper and extending continuously around the lower edge of the upper and the inner edge of the welt.

2. An article of footwear having a resilient, water-excluding cushioning-strip extending

continuously around the shoe and located between the welt and upper, whereby said strip is compressed between the upper and welt for the purpose of forming a cushion for the upper and a water-tight packing continuously closing the line of union or connection between the welt and upper.

3. An article of footwear having a resilient water-excluding cushioning-strip extending continuously around the shoe and located between the welt and upper, whereby said strip constitutes a compressible cushion for said upper and a water-tight packing continuously

closing the line of union between the welt and upper, a slip-sole interposed between the inner and outer soles and composed of united layers of cork and rubber, and a thin sheet of non-porous material interposed between the insole and the cork layer of the slip-sole.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CLARKSON H. GOODWIN.

Witnesses:

JOHN H. SIGGERS,
EDWIN E. VROOMAN.