

J. L. JOYCE.
Boots and Shoes.

No. 208,740.

Patented Oct. 8, 1878.

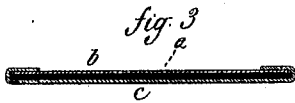
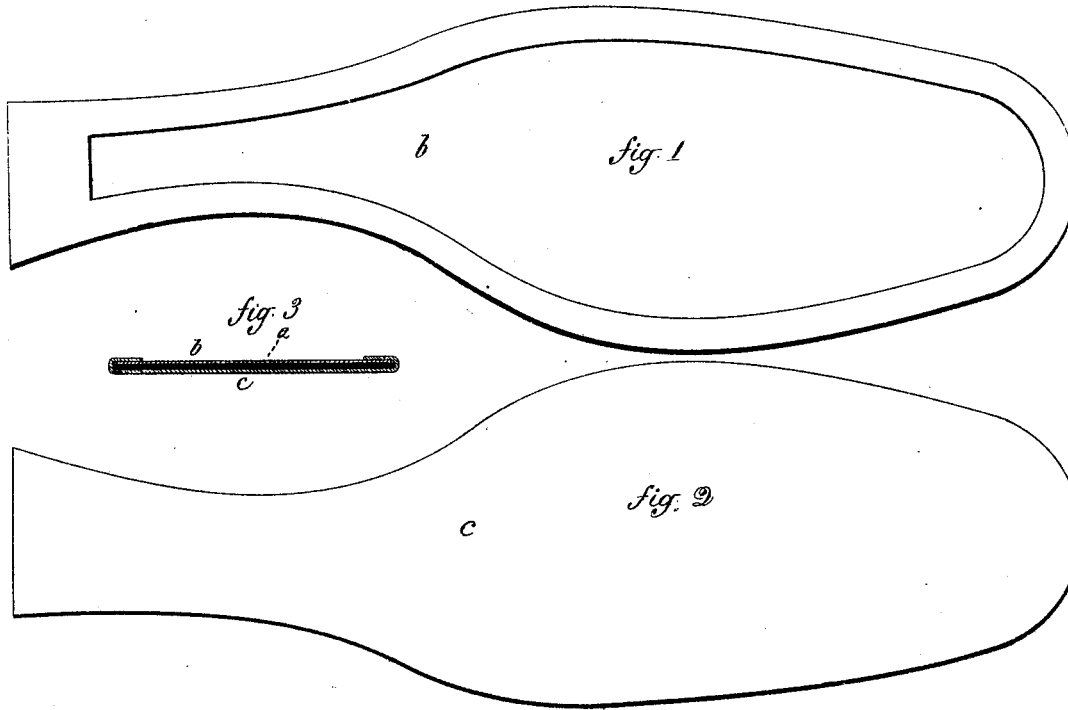
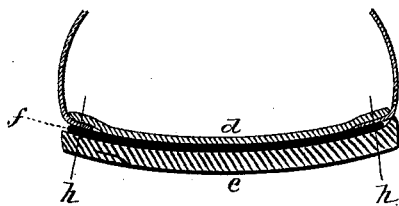


fig 4



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH L. JOYCE, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. 208,740, dated October 8, 1878; application filed July 1, 1878.

To all whom it may concern:

Be it known that I, JOS. L. JOYCE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Boots and Shoes; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an upper side view; Fig. 2, an under side view; Fig. 3, transverse section of the improved sole; Fig. 4, transverse section of a shoe, showing the application of the sole.

This invention relates to an improvement in the manufacture of boots and shoes, the object being to prevent "squeaking" of the shoe, and also to render the sole water-proof; and it consists, essentially, in an in or intermediate sole having a body of paper or similar hard material, one surface of which is covered with cloth or similar fabricated material and the reverse surface covered with india-rubber and introduced into the shoe in the process of manufacture.

The sole is best made by first cutting the blank *a*, Fig. 3, indicated in solid black, from paper or similar material, and of the size or form corresponding to the shoe to be produced. Then one surface of this is covered with fabric, as at *b*, the other surface covered with a thin sheet of rubber gum, *c*, the edges of the sheet turned over, and so as to extend slightly onto the fabricated surface *b*, as seen in Fig. 3; but the sole may be made by coating one surface of a sheet of paper with the fabric and the other with india-rubber, vulcanizing the whole, and then cutting the soles from the sheet by suitable dies; but by the first method described—applying the india-rubber so as to be turned over the edge—the edge of the paper is protected in the first instance, and the india-rubber is to be vulcanized to complete the sole.

The best method of applying this sole is to introduce it between the insole, *d*, and the outer sole, *e*, *f* representing the water-proof

sole, and preferably so that the edge of the water-proof sole will be exposed between the upper and outer sole, as seen at the left in Fig. 4, (shown there in form of a bead or cord,) but it may be slightly narrower, so as to be hidden by the outsole, as seen at the right, Fig. 4.

The soles are arranged for stitching in the usual manner, and the stitching is made through and through, as indicated by *h*, Fig. 4, taking through the outsole the intermediate and insole or welt, as the case may be.

The surface of india-rubber presented next the outsole affords a protection against water or dampness, and at the same time offers to the outsole in the wear of the shoe a surface against which the outsole in wearing cannot produce a disagreeable squeaking, which is almost unavoidable between two leather surfaces.

This new sole may, if desired, be applied as the insole and the usual leather insole dispensed with. In that case the fabric surface should be of a strong or heavy character, so as to insure the holding of the stitches.

The paper affords the body, the fabric the strength, and the india-rubber the water-proof and anti-squeaking portion.

I am aware that inner or intermediate soles have been made from material coated with india-rubber, and therefore make no claim to such sole.

I am also aware that a thin layer of rubber has been introduced in the make-up of the sole, and therefore make no claim to the water-proof quality produced by the coating of the sole with rubber.

I claim—

The combination in a boot and shoe of the upper, the outer sole, with an insole or intermediate sole, composed of a paper or similar hard material body, having one surface covered with fabric, the other covered with india-rubber, the combination being made substantially as described.

JOS. L. JOYCE.

Witnesses:

JOHN E. EARLE,
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