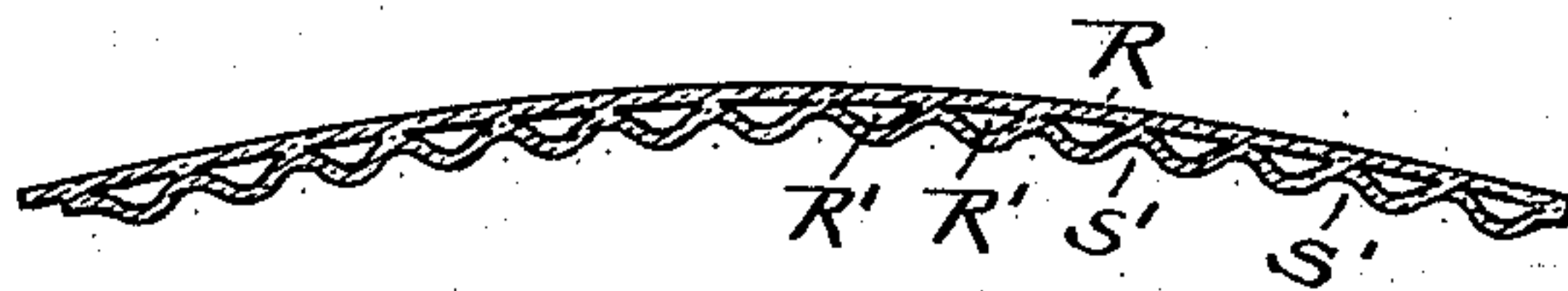
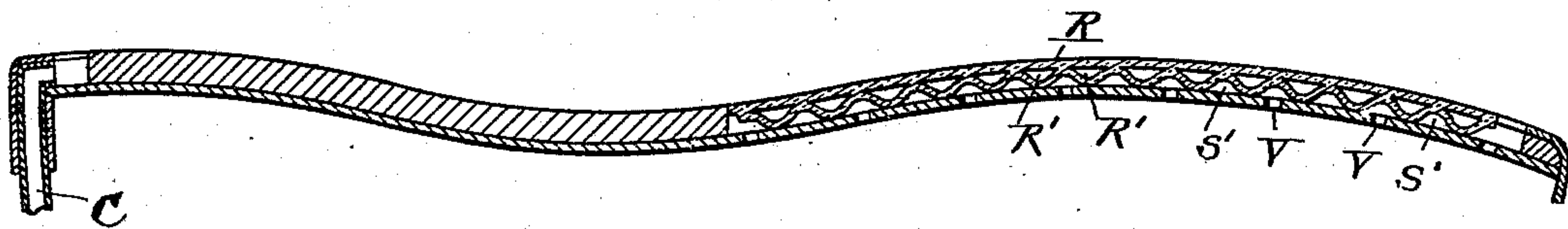
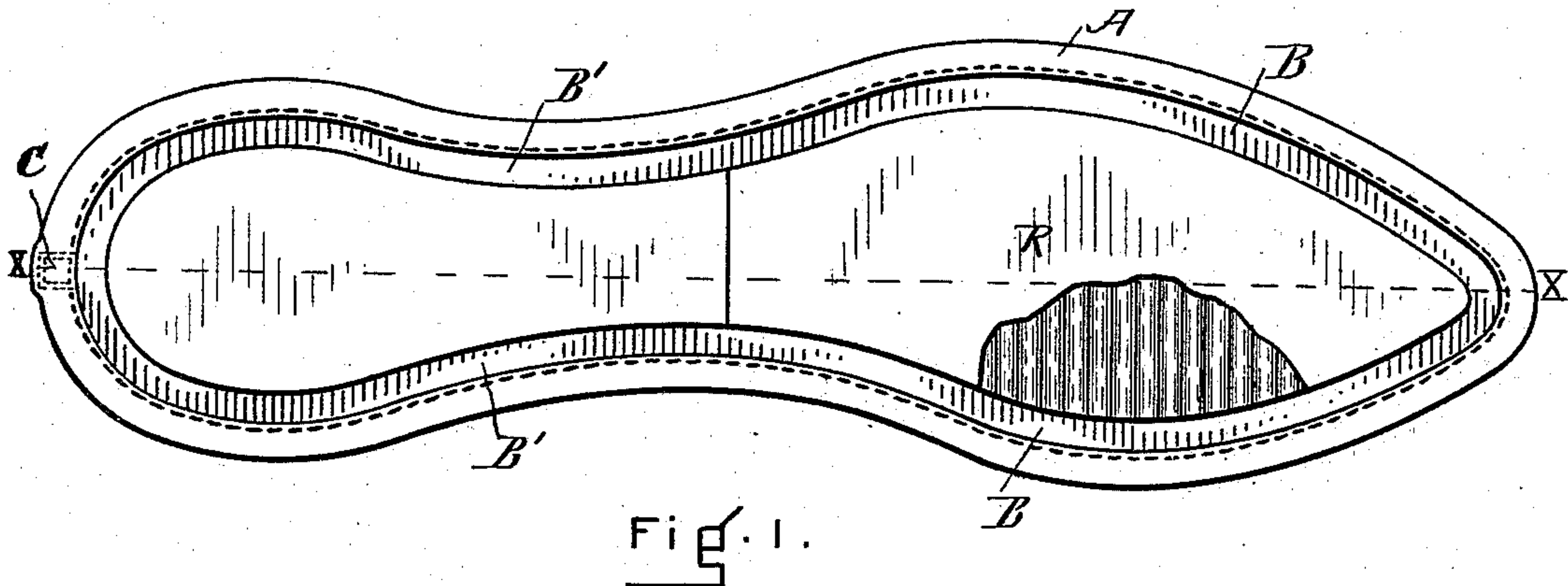


(No Model.)

J. F. WARNER.  
BOOT OR SHOE.

No. 578,794.

Patented Mar. 16, 1897.



WITNESSES.  
Frank H. Parker.  
H. H. Meek.

INVENTOR.  
John F. Warner.

# UNITED STATES PATENT OFFICE.

JOHN F. WARNER, OF BOSTON, MASSACHUSETTS.

## BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 578,794, dated March 16, 1897.

Application filed June 2, 1896. Serial No. 594,040. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. WARNER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Boots or Shoes, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the construction of the sole parts of boots and shoes with a view to make the same self-ventilating and self-cooling; and it consists in providing an air-passage on each side of the shank and heel leading to a tube at the rear part of the heel. These passages are between the inner and outer soles at the edge of the uppers. The front or ball of the shoe also has an air-passage in the shank and heel. The ball of the shoe between the inner and outer soles is filled with a tubulated elastic fabric each tube of which is elastic and compressible, so that the wearer at each step converts each tube into an air or vapor pump, causing a positive circulation of air between the soles and also effecting, through orifices in the inner sole, thorough ventilation and cooling of the interior of the shoe.

The exact manner of carrying my invention into effect is illustrated in the accompanying drawings, in which—

Figure 1 is a view in plan, showing the bottom of a shoe with the outer sole left off, a part of the ball-filling being represented as split to show the position of the air-tubes. Fig. 2 is a longitudinal section taken on line *x x* of Fig. 1. Fig. 3 is a section showing the construction of the elastic material that I use for the ball-filling.

In the drawings I have shown only those parts of a boot or shoe to which my invention particularly relates—that is, the tread or sole part and that part A of the upper that lies on the inner sole and is stitched thereto.

The filling of the shank and heel may be of any desired material or materials; but it is essential that there shall be a free air-passage B' B' between said filling and the edges of the upper. At the heel end I have an air-duct leading from the passages B' B' upward, terminating with an opening outside of the boot or shoe. The fore part or ball-filling R

is peculiar, and consists of an elastic fabric, compound in its nature. It has two members, namely, a flat sheet, thin and very flexible, which is united or made integral with a second member, which is a corrugated sheet, so as to form with the first member tubes R' R', each tube being complete in itself and open at each end, so as to be connected with the air-passages B B. The spaces S' S', formed by the corrugations and the surface of the inner soles, are not sufficiently distinct to act as tubes, although they serve as air-ducts to connect the interior of the shoe (through the orifices V V) with the air-passages B B.

The tubes R' R' being each complete in itself act when compressed and expanded as positive local-acting air-pumps. As the tubes R' R' are compressed the air or vapor in them is forced out into the passages B B, thereby creating a current which will pass outward and force the stagnant air or vapor to pass through the passages B' B' and out through the tube C. As the pressure is removed the tubes R' R', as well as the spaces S' S', will enlarge, drawing in air and vapor from the interior of the shoe and some from the passages B B and B' B', thus ventilating and cooling the whole boot or shoe.

I am aware that corrugated pads or cushions have been used between the inner and outer soles, but I believe that no pads having complete tubes have been used in this connection.

I claim—

In a boot or shoe, a filling, to be placed between the outer and inner soles, consisting of a tubulated elastic fabric each tube of which is elastic and compressible and interiorly connected to air-passages whereby the boot or shoe is thoroughly ventilated, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of May, A. D. 1896.

JOHN F. WARNER.

Witnesses:

FRANK G. PARKER,  
WILLIAM EASON.