L. LOESER.

Boots and Shoes.

No. 213,217. Patented Mar. 11, 1879.

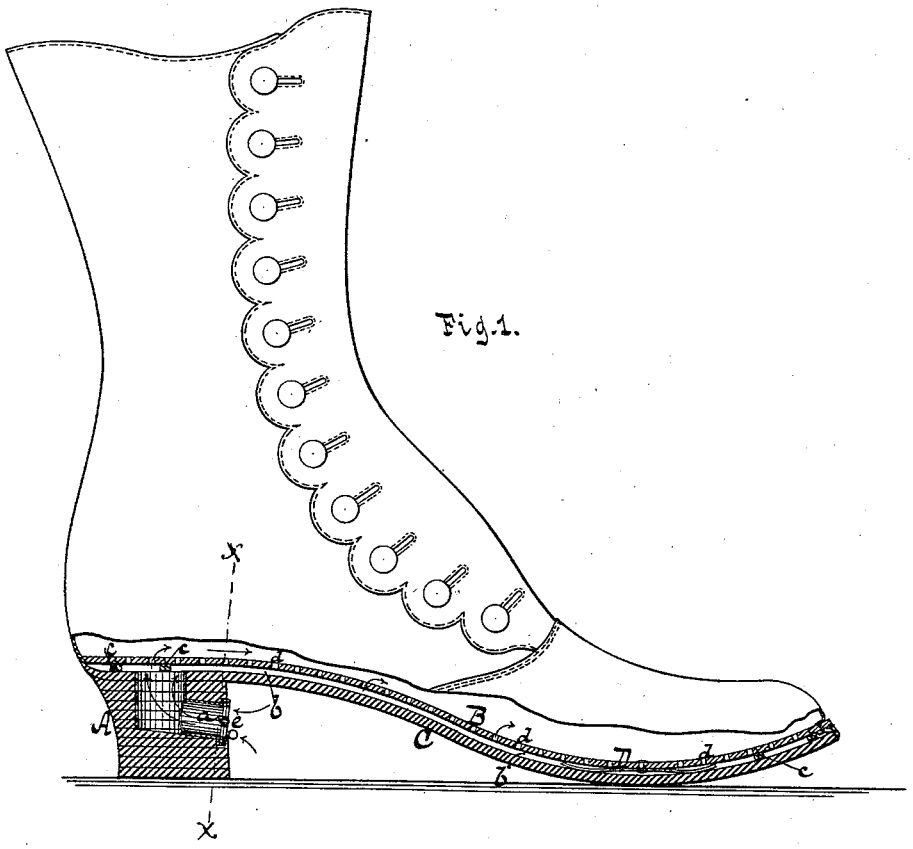


Fig. 1.

Fig. 2.

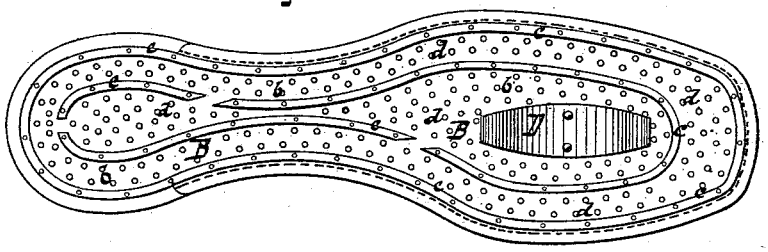
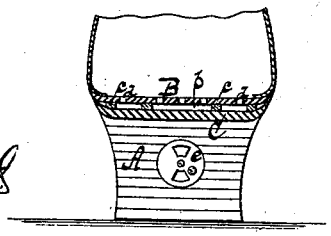


Fig. 3.



Witnesses.

Otto Stupeland

J. A. Rutherford

Inventor

Lazarus Loeser.

by

Van Santwood & Hauff

his attys.

UNITED STATES PATENT OFFICE.

LAZARUS LOESER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO ELIJAH HOWARD, OF SAME PLACE.

IMPROVEMENT IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. **213,217**, dated March 11, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that I, LAZARUS LOESER, of the city, county, and State of New York, have invented a new and useful Improvement in Boots and Shoes, which invention is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section. Fig. 2 is an inverted plan of the insole. Fig. 3 is a transverse section in the plane *x x*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the combination, in a boot or shoe, of an air-channel, (one or more,) extending through the heel, an air-space formed between the insole and the outsole, and communicating with said air-channel, and a spring, (one or more,) placed between said insole and outsole under the ball of the foot, so that whenever the insole is depressed against the action of said spring the air from the air-space is expelled through the air-channel in the heel, and when the pressure on the insole relaxes fresh air is sucked in through said air-channel. The air between the insole and the outsole communicates with the interior of the boot or shoe through perforations in the insole.

On the under surface of the insole are formed suitable ridges, to prevent the same from closing down tight upon the inner surface of the outsole.

A suitable register serves to open or close the air-channel in the heel.

In the drawings, the letter A designates the heel of a boot or shoe. B is the insole, and C the outsole. In the heel is formed an air-channel, *a*, (one or more,) which communicates with an air-space, *b*, formed between the insole B and the outsole C.

In the example shown in the drawings the air-channel *a* opens at the breast of the heel, so that it is not visible when the boot or shoe is worn.

The air-space *b* is formed by means of ridges *c*, which project from the under surface of the insole; or, if desired, such ridges may be formed on the inner surface of the sole C without deviating from my invention.

Between the insole B and the outsole C is situated a spring, D, which is preferably fastened to the insole, as shown in the drawings, and which is situated beneath the ball of the foot. If desired, two or more such springs may be applied.

By the action of this spring the insole is forced away from the outsole; but whenever the ball of the foot is brought to bear down upon the insole the spring D is compressed, and the air from the air-space *b* is expelled through the channel *a*, and when the pressure upon the spring relaxes a quantity of fresh air is drawn in the air-space.

The insole B is perforated with a number of holes, *d*, through which the air-space *b* communicates with the interior of the boot or shoe; and since at every step the spring D is first compressed and then relaxed, the damp air from the interior of the boot or shoe is first expelled, and then replaced by fresh air from the outside, and by these means a complete ventilation of the boot or shoe is effected.

On the mouth of the air-channel *a* is placed a register, *e*, which can be opened or closed, so that in wet weather the moisture from the outside is prevented from passing into the boot or shoe.

My invention is applicable to boots and shoes made of india-rubber or any other material, as well as to boots and shoes made of leather.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a boot or shoe, of an air-channel, (one or more,) extending through the heel, an air-space formed between the insole and the outsole, and communicating with said air-channel, and a spring, (one or more,) placed between the insole and the outsole, all constructed and adapted to operate substantially as and for the purpose shown and described.

2. The air-channel *a*, located in the heel of a boot or shoe, made to communicate with the external air through the breast of the heel, in combination with the air chamber or space *b*, intervening between the perforated insole and the inner surface of the outer sole, substantially as and for the purpose specified.

3. The air-channel *a*, located in the heel of a boot or shoe, and made to communicate with the external air through the breast of the heel, said air-channel being supplied with a register, in combination with the air chamber or space *b*, intervening between the perforated insole and the inner surface of the outer sole, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of February, 1879.

LAZARUS LOESER. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.