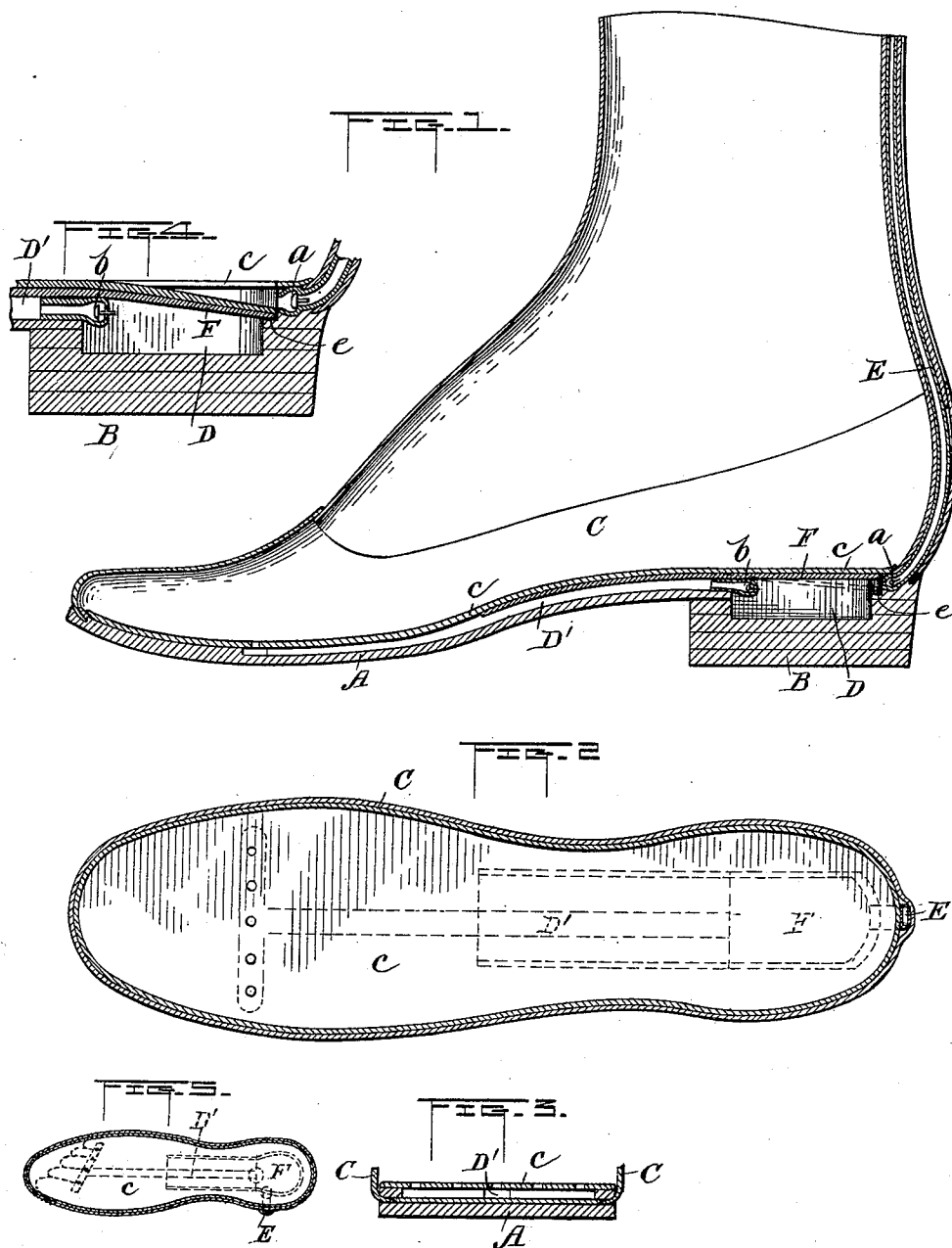


(No Model.)

L. F. LOCKE.  
VENTILATED SHOE.

No. 466,061.

Patented Dec. 29, 1891.



WITNESSES

*Deverance.*  
*H. J. Fennick*

INVENTOR  
*Luther F. Locke*  
*by his Attorneys*  
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# UNITED STATES PATENT OFFICE.

LUTHER F. LOCKE, OF NASHUA, NEW HAMPSHIRE.

## VENTILATED SHOE.

SPECIFICATION forming part of Letters Patent No. 466,061, dated December 29, 1891.

Application filed May 6, 1891. Serial No. 391,804. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER F. LOCKE, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Ventilated Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to ventilated shoes; and it consists in a shoe constructed with an air-induction passage leading down from the top of the rear or side portion of the upper leather into an air-well beneath the insole or lining of the heel portion of the shoe, said air-well being covered with a spring air-forcing diaphragm operated by the heel of the foot, and said air-well also being combined with an induction and eduction valve and with a longitudinal T-shaped air-channel-way and perforations in the insole of the shoe, in communication with the transverse portion of the channel-way, all as will be hereinafter described, whereby air is introduced into the shoe in contact with the foot, it passing up between the toes thereof and allowed to find its way out of the shoe between the foot and the upper leather, escaping at the top of the shoe above the ankle.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a shoe constructed in accordance with my invention. Fig. 2 is a horizontal section of the same on a line above the insole. Fig. 3 is a cross-section of a portion of the shoe in the line of the ventilating-passages. Fig. 4 is an enlarged broken longitudinal section of the heel portion of the shoe, and Fig. 5 shows the invention in another form.

A in the accompanying drawings designates the sole of the shoe, B the heel, and C the upper leather thereof.

D is an air-well formed in the upper side of the heel of the shoe.

E is an induction air-passage arranged, preferably, near the ankle-joint, as in Fig. 5, and provided with a valve *a*, in communication with said air-well, and D' is an eduction air-channel-way provided with a valve *b*, also in communication with the air-well. The

air-channel-way D' runs along the center of the outer sole on the upper side thereof, and at its forward end is extended laterally, preferably on an oblique line, as in Fig. 5, in opposite directions to near side edges of said sole, and in this laterally-extended portion the air circulates and passes up between the toes of the wearer of the shoe. The air-well and the air-channel-way are covered by the inner sole *c*, and through this inner sole, directly over the laterally-extended channel-way, numerous ventilating-holes *c'* are formed for the escape of air between the toes into the chamber of the shoe. To the under side of the insole a spring-diaphragm F, of the form shown by dotted lines in Fig. 2 and in section in Fig. 1, is applied. That portion of this diaphragm which is directly over the air-well is left free to be depressed into the air-well, as illustrated by the dotted lines in Fig. 1, and its downward movement is limited by means of a shoulder *e*, formed in the side of the wall of the well. The induction air-passage E is shown in Figs. 1, 2, and 4 formed in the rear or heel portion of the upper and its valve *a* arranged to open inward or forward to the entrance of the air and close backward against the escape of air, while in Fig. 5 said passage is located near the ankle-joint. The eduction-valve *b* opens forward to the escape of the air from the air-well into the ventilating channel-way D' and closes backward against the escape of the air from said channel-way.

The operation is as follows: The air fills the air-well and is trapped. The person wearing the shoe, by depressing the diaphragm with his heel, forces the air out of the air-well into the channel-way and through the ventilating-passages into the shoe at points between the toes of the foot, the return of the air being prevented by the valve *b* closing the entrance from the channel-way to the air-well. The foot is thus cooled and the shoe ventilated, and as fast as the air becomes warmed circulates out of the shoe between the foot and the upper-leather, its discharge being above the ankle or at such point as there may be an outlet from the shoe.

What I claim as my invention is—

The ventilated shoe provided with an air-entrance passage, an air-well in the body of the heel, a limitation-shoulder on one of the

walls of the air-well and below the inner upper surface of the heel, perforated insole, an air-channel-way having lateral branches in communication with and leading from it and  
5 extending beneath the perforations in the insole and the openings between the toes of the wearer, induction and eduction valves, one in the rear and the other in the front portion of the air-well, and a spring-diaphragm above  
10 the air-well and its limitation-shoulder, this combination being such that the air is allowed

to pass between the toes of the wearer and around the upper part of the foot and out at the usual opening of the shoe through which the foot is inserted, all substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

LUTHER F. LOCKE.

Witnesses:

J. L. CLOUGH,  
F. A. EATON.