

(No Model.)

W. M. HELBACH.
VENTILATED SHOE.

No. 479,805.

Patented Aug. 2, 1892.

Fig-1-

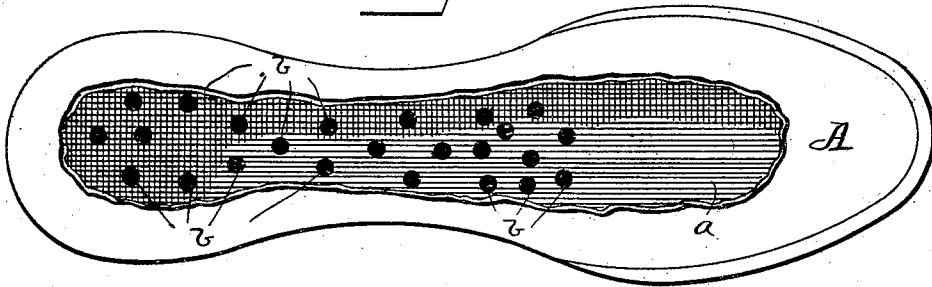


Fig-2-

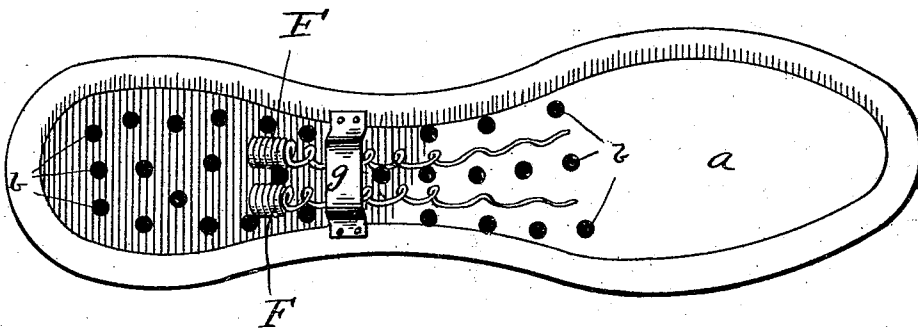


Fig-3-

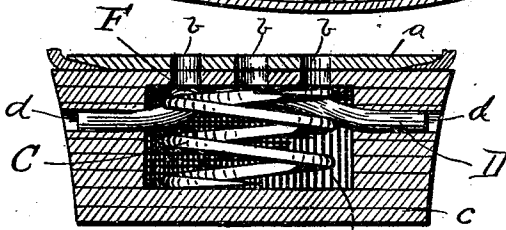
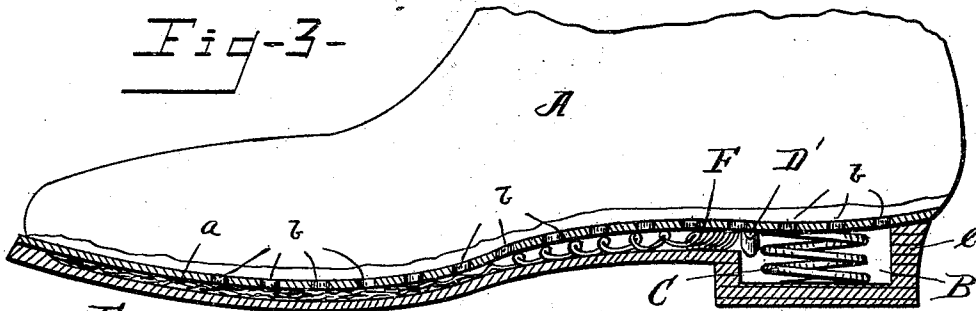
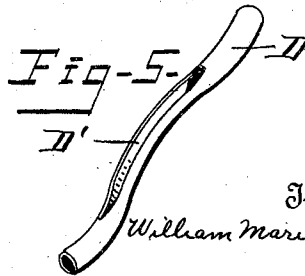


Fig-4-B



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WILLIAM MARIE HELBACH, OF CHICAGO, ILLINOIS.

VENTILATED SHOE.

SPECIFICATION forming part of Letters Patent No. 479,805, dated August 2, 1892.

Application filed May 8, 1891. Serial No. 392,132. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MARIE HELBACH, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Ventilated Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This invention has relation to that class of shoes which are so constructed that as the wearer walks with every step the air is alternately drawn into the same and expelled therefrom, whereby the wearer's feet are kept in a healthy condition; and it consists in certain peculiarities in the construction, arrangement, and combination of the several parts, substantially as hereinafter described, and as particularly pointed out in the subjoined claim.

25 Figure 1 shows a plan view of a shoe having my improvements applied thereto. Fig. 2 shows a plan of the bottom of the shoe having the outer sole and heel thereof removed. Fig. 3 is a vertical longitudinal section through the lower part of the same. Fig. 4 is a transverse vertical section through the heel of the said shoe, and Fig. 5 shows in perspective a detail view of an air-vent used in connection with said heel.

30 Referring to the drawings, A represents a shoe or gaiter or boot, the insole *a* of which is provided with a series of perforations *b b* and the heel *c* of which below the insole is provided with an air-chamber B, as shown.

35 In order to provide a brace between the lower lifts of the heel *c* and the insole of the shoe, I insert a comparatively strong coil-spring C. This prevents the insole over the heel *c* from sagging and forms a cushion therefor.

40 In order to admit the air to the chamber B, I provide in the side walls thereof the air ports or openings *d d*, which preferably are of such dimensions as to be made by simply cutting away a portion of contiguous lifts of the heel and which are preferably in transverse register and alignment with each other. While it is possible to make these ports *d* by simply cutting away a portion of the contiguous lifts of the heel, yet such construction

lacks the element of permanency which I desire to have. I have therefore made a tube D, which passes through said air-chamber, is of a length corresponding to the width of the portion of the heel in which said ports *d* are made, is of such a diameter as to fit within said ports, and is about its center of length provided with a suitable opening D', substantially as shown in Fig. 5. This tube D is bowed or bent upward at its center of length to such an extent that the plane of the floor of its bore in its central portion within the air-chamber will be above the plane of its end openings. My object in doing this is to prevent the water on rainy days from flowing into the chamber through said ports, as they would be liable to do if the tube were perfectly straight. I make the opening D' in such tube shaped as shown in Fig. 5 by slitting it longitudinally. By doing this I enable the air to pass into and out of said chamber through it.

45 As before stated, the insole *a* is provided with a series of perforations *b*. These extend from the heel under the ball of the foot. Their obvious design is to permit of the ingress and egress of the air. It is necessary, therefore, that sufficient air channels or passages be preserved under the insole leading from the chamber B in the heel. I accomplish this by means of longitudinal coil-springs F F, which are secured by a strap *g* to the upper and are placed between the insole and the outer sole of the shoe between the heel thereof and the ball of the foot. These springs F are more closely coiled at their rear ends and gradually become more opened and flattened as they extend toward the toe of the shoe. As it is not necessary that this space or air-passage made by these springs should be very large, and as it is desirable that the sole of the shoe resting upon the ground should be more compact, the purpose sought by flattening the springs in the manner shown in Fig. 2 is obvious.

50 I prefer to place under the forward ends of the springs F an intermediate layer of tarred hemp G, which underlies the insole from the instep to the toe of the shoe, as shown in Fig. 3.

What I claim as new is—

The combination, with a shoe having per-

forations in its insole and a channel between
its inner sole and outer sole and having its
heel formed with a chamber communicating
with said channel and formed with ports *d*,
5 of a spring C within said chamber in the heel,
a tube D, having its end inserted, with said
ports bowed or bent upward within said
chamber and formed in its upper side with
a longitudinal opening D', and longitudinal

springs within the channel between the insole 10
and the outer sole, said springs being closely
coiled at their rear ends and gradually opened
and flattened as they extend toward the toe
of the shoe, substantially as described.

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Witnesses:

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