

C. H. MATSON.
VENTILATED SHOE.

APPLICATION FILED FEB. 17, 1902.

NO. MODEL.

Fig. 1.

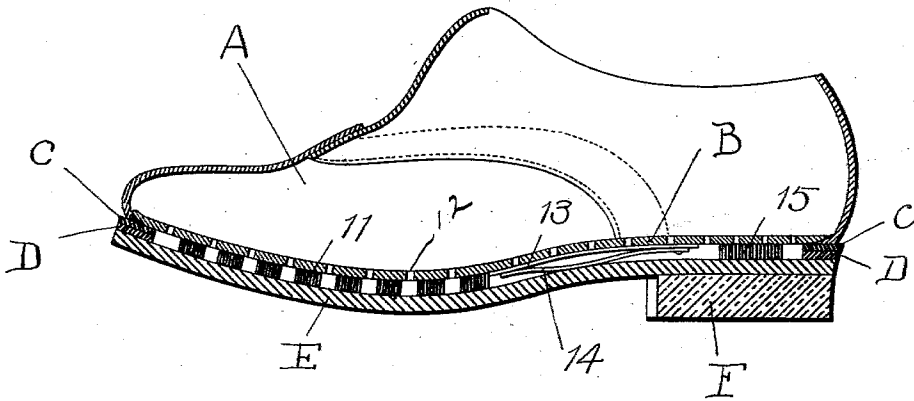


Fig. 2.

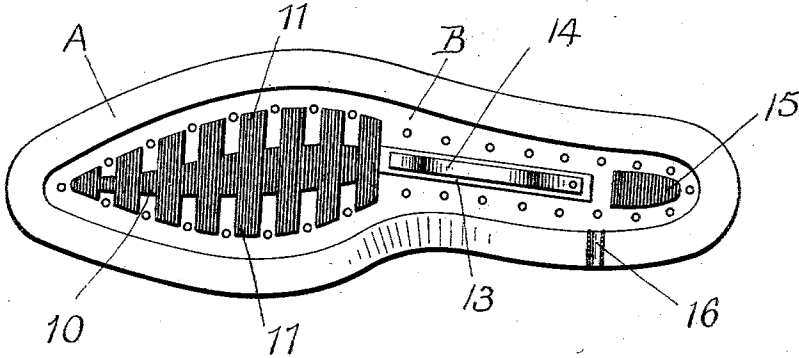
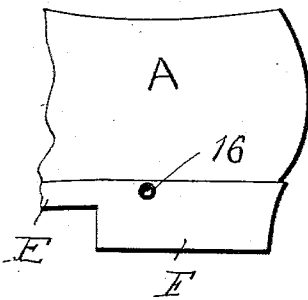


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. MATSON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHARLES P. ANDERSON, OF WORCESTER, MASSACHUSETTS.

VENTILATED SHOE.

SPECIFICATION forming part of Letters Patent No. 746,862, dated December 15, 1903.

Application filed February 17, 1902. Serial No. 94,399. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. MATSON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Ventilated Shoe, of which the following is a specification.

This invention relates to that class of ventilated shoes or other footwear in which provision is made for a circulation of air in the space between the inner sole and outsole of the shoe.

The especial objects of this invention are to provide an inlet or air-supply passage which is so located as to be less liable to become choked or filled up than in other constructions which have been heretofore employed, to provide an improved form of flexible separating-piece or middle sole for separating the inner and outer sole, to provide an additional welt, and to arrange the parts so that a surrounding air-channel will be formed extending substantially around the outline of the shoe and forming a connection between the separated air chambers or cells into which open the perforations through the inner sole.

To these ends this invention consists of the ventilated shoe as an article of manufacture and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claim at the end of this specification.

In the accompanying drawings, Figure 1 is a sectional view of a ventilated shoe constructed according to my invention. Fig. 2 is a bottom view of the same with the outsole removed, and Fig. 3 is a fragmentary side view showing the position of the inlet passage or opening.

To provide a ventilated shoe or other form of footwear, it has heretofore been proposed to provide a collapsible air chamber or passage inside of the sole of the shoe, which is compressed or collapsed when a person's weight is resting thereon and which expands when the pressure is relieved, so that the air-chamber will act substantially as a bellows for causing a circulation of air through the sole of the shoe and up through perforations of the inner sole to the inside of the shoe. In

the use of this class of footwear it has been found difficult to provide a construction which will permanently retain its shape, the repeated collapsing of the air-passage in the sole of the shoe usually resulting in a speedy permanent bending in of the outer sole. To overcome this objection, a ventilated shoe or other article of footwear constructed according to my invention is provided with a separating-piece or middle sole, which is usually formed of rubber or other compressible material and which is provided with a central rib or body portion which forms an efficient support for the center of the outsole and which is also provided with arms or fingers extending from the opposite sides of its body portion to form small air cells or channels.

In the preferred construction the parts of a shoe or other article of footwear constructed according to my invention are preferably arranged so that a continuous air-channel extends around the separating-piece or middle sole, connecting the several air-cells and extending substantially around the outer edge of the shoe.

The air-chambers of a shoe or other article of footwear constructed according to my invention may be supplied with air from any suitable inlet, although in practice I prefer to locate an air-inlet on the inner side of the shoe, over the heel, as I have found in practice that an inlet-opening as thus located is less liable to be stopped up by mud or dust than when located either directly at the toe or heel of the shoe or at points on the outer side of the shoe.

Referring to the accompanying drawings for a detail description of a shoe constructed according to my invention as herein illustrated, the shoe comprises an upper A, within which is an insole B, which is stitched onto or united to a welt C, which welt C is united to a supplemental welt D, the welts C and D being secured to the outsole E, having the ordinary heel F. These parts may be put together as in the ordinary sewed-shoe construction, and while in practice I prefer to employ two welts C and D in order to provide a sufficient air-chamber between the inner sole and outer sole of a shoe constructed

according to my invention I may employ only one welt, if desired, or may secure the desired amount of air-space by using a welt of greater than ordinary thickness.

5 Located in the air chamber or space between the inner sole and the outer sole, I provide a special form of separating-piece or middle sole. As herein illustrated, this separating-piece or middle sole is preferably
10 stamped out of rubber and is provided with a central rib or body portion 10, having arms or fingers 11, extending from opposite sides thereof to form separate air cells or chambers. This form of separating-piece or middle sole
15 I have found in practice will provide an efficient support for the outer sole, which will prevent the outer sole from dishing into permanently-distorted position, while at the same time the separating-piece or middle sole
20 is sufficiently collapsible to insure the desired pumping or forcing of the air.

In practice I prefer to stamp out the separating-piece or middle sole of such size that a continuous air-channel will be left completely around the separating-piece, so as to
25 form a connection between the separate air cells or chambers between the arms or fingers which project from the central rib of the separating-piece, and opening into each of these
30 separate air chambers or cells is a perforation 12, extending up through the inner sole.

To prevent the collapse of the shank or in-step portion of the shoe, I preferably use a stiffener or sole-supporter comprising a plate carrying a spring 14, and to support the center
35 of the heel of the shoe I preferably provide a rubber heel-separating piece 15.

The inlet for the introduction of air is preferably provided through a metallic tube or
40 bushing which is set into place on the inner side of the shoe, over the heel, an air-inlet as thus located being found in practice to be less liable to be choked up than when located

either at the front or extreme rear of the shoe or on the outer edge thereof, the air-inlet 16
45 providing for a direct admission of air without requiring the same to be drawn down through a comparatively long tube or passage, as has been suggested in a number of prior constructions. 50

I am aware that numerous changes may be made in practicing my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claim. I do not wish, therefore, to be limited to the
55 construction I have herein shown and described nor to the application of my invention to shoes alone, as the same construction may be employed to advantage for ventilating the heavier boots or other articles of foot-
60 wear.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

As an article of manufacture, a ventilated
65 shoe having an insole, an outsole, a separating-piece or middle sole formed of rubber and having a central rib or body portion with arms extending from opposite sides thereof, a perforation from each air cell or chamber be-
70 tween the arms of the middle sole opening up through the insole, a spring-fork-separating device for separating the outsole and insole at the shank of the shoe, a compressible heel-piece arranged between the outsole and in-
75 sole, and an air-supply tube opening at the inner side of the sole, substantially above the heel.

In testimony whereof I have hereunto set my hand in the presence of two subscribing
80 witnesses.

CHARLES H. MATSON.

Witnesses:

PHILIP W. SOUTHGATE,
LOUIS W. SOUTHGATE.