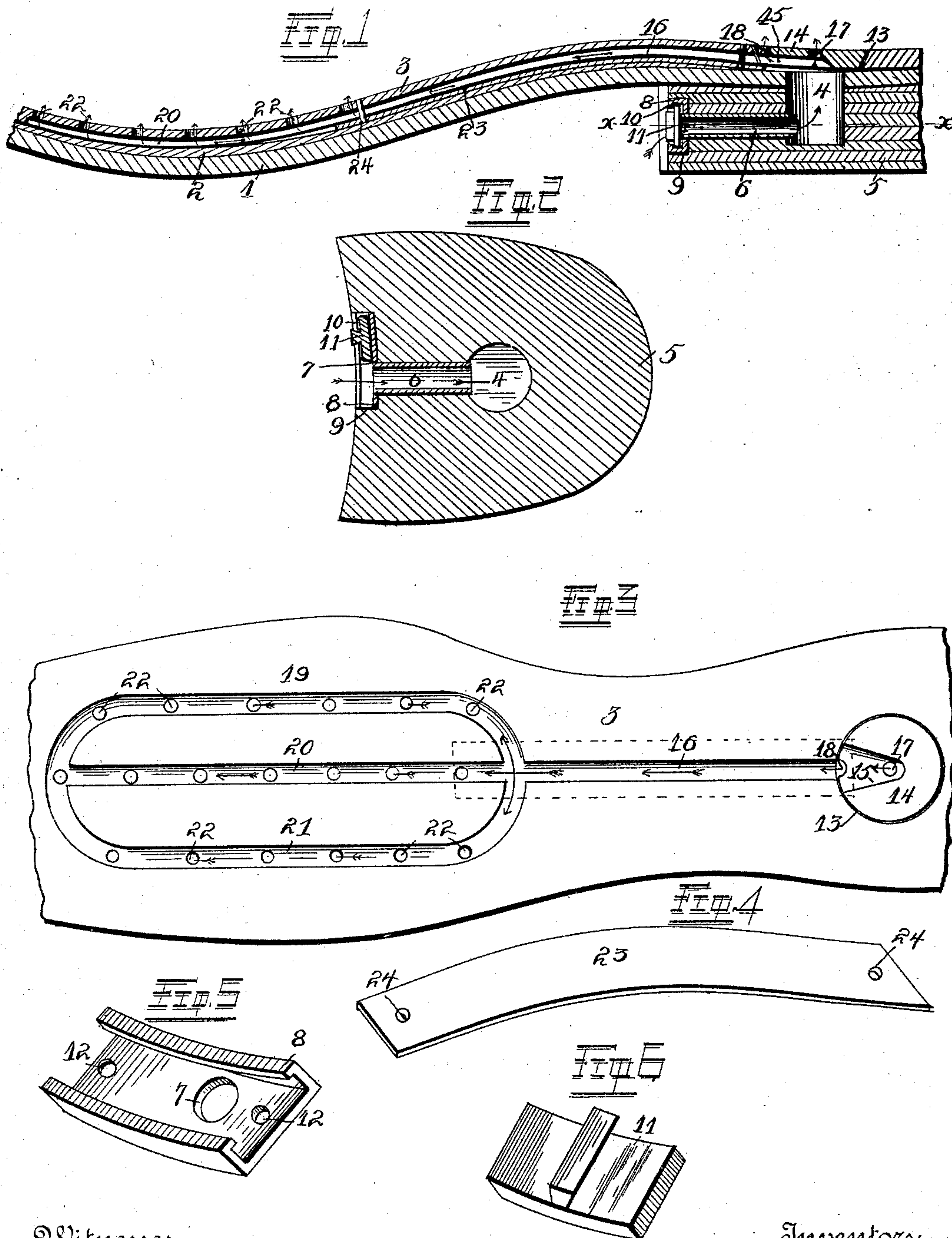


(No Model.)

J. W. TURNER & J. H. ENGLE.
VENTILATED BOOT OR SHOE.

No. 485,243.

Patented Nov. 1, 1892.



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UNITED STATES PATENT OFFICE.

JESSEE WEBB TURNER AND JOHN H. ENGLE, OF LOUISIANA, MISSOURI.

VENTILATED BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 485,243, dated November 1, 1892.

Application filed April 22, 1892. Serial No. 430,217. (No model.)

To all whom it may concern:

Be it known that we, JESSEE WEBB TURNER and JOHN H. ENGLE, of the city of Louisiana, Pike county, and State of Missouri, have invented certain new and useful Improvements in Ventilating Boots or Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to devices for ventilating boots or shoes; and it consists in the novel construction, combination, and relative arrangement of parts hereinafter set forth, and pointed out in the claims.

In the drawings, Figure 1 is a longitudinal sectional elevation of a boot or shoe constructed in accordance with our invention, portions being broken away. Fig. 2 is a horizontal section through the heel, taken on line *xx* of Fig. 1. Fig. 3 is a plan view of the inner sole inverted, parts of the same being broken away. Fig. 4 is a perspective view of a removable steel covering-plate made use of in carrying out the invention. Fig. 5 is a perspective view of a metallic valve-casing, and Fig. 6 is a perspective view of a valve or slide detached from the casing.

The object of our invention is to provide an improved construction of either boots or shoes which will enable air to be passed through an opening in the forward end of the heel, thence upward and into suitable channels formed in the under side of the inner sole, and thence upward through suitable apertures to the foot of the wearer, the circulation of air being produced by the motion of the foot in the act of walking.

1 indicates the outer sole of the boot or shoe, 2 the sheet of filling material located above the said outer sole, and 3 the inner sole.

A vertical ventilating-cell 4, having an open upper end and closed lower end, is formed in the heel 5 and the outer sole of the shoe above the heel. Extending forwardly from the ventilating-cell 4 (which cell should be of considerable size and capacity) is a horizontal passage, in which is located and securely fixed a short metallic tube 6. The outer end of this tube passes through or connects with an aperture 7, formed in the metallic valve-casing 8, which latter is firmly located and secured in a recess or socket 9, formed in the

forward edge of the heel 5, so that an open passage-way will be provided from the said forward edge of the heel to the interior of the boot or shoe.

The valve-casing 8 is preferably constructed of a suitable sheet of metal of the required size, bent to form forwardly-extending flanges at its upper and lower edges, and the free edges of these flanges are provided with opposite inwardly-extending marginal projections 10, the purpose of which latter is to retain in position a sliding valve 11, which is located in said casing and adapted to be moved into contact with one end or the other of the socket 9 and to open or close the opening 7 in the casing.

12 indicates suitable nail or screw holes formed in the rear side of casing 8 for the purpose of securing same in place in the socket 9. The valve 11 is provided with a suitable handle or projection upon its forward face to permit its being slid in the casing during operation.

Formed in the heel of the inner sole 3 is a preferably-circular aperture 13, having tapering walls and being of greater diameter than the ventilating-cell 4. The aperture 13 is normally closed by a tapering or conical plug 14, which is adapted to be removed when it is desired to gain access to and remove collections of dirt and other material from the ventilating-cell. Formed in the under surface of the plug 14 is a short horizontal channel 15, and said cell extends to the forward edge of said plug and communicates with horizontal channel 16, formed in the under side of the inner sole 3, for the purpose presently made known. The plug 14 is provided with a central perforation 17 and a peripheral perforation 18, and said central perforation communicates with the channel in the plug for the purpose hereinafter mentioned. Of course an additional number of perforations, such as 17, may be made in the plug 14 or in the inner sole above and adjacent to the cell 4, if so desired.

19, 20, and 21 is a series of horizontal channels formed upon the under surface of the inner sole 3 and extending therein longitudinally and parallel to each other. The channels are connected at their ends and connected at their rear end to the forward end

of the channel 16. A series of perforations or vertical air-passages 22 is formed in the inner sole 3, and each communicates with the interior of the boot or shoe and with one of the parallel channels.

23 indicates a combined covering-plate and spring-shank, which is located between the insole 3 and the filling material 2 and the rear end whereof terminates closely adjacent the apertures in the heel of said insole and the forward end of which terminates adjacent the junction of the channel 16 and the channels formed in the forward portion of the insole. The function of this steel plate 23 is, primarily, to cover and close up the channel 16 and prevent it from becoming filled with obstructing material. The plate 23 also acts as a metallic spring-shank, the function of which is well known and need not be further explained. The plate 23 is preferably secured to the under side of the insole in the position just described by means of suitable pegs or rivets passed through apertures 24, formed in said plate near to the respective ends of same. (See Fig. 4.)

The filling material 2, it will be observed, covers the parallel channels 19, 20, and 21, and thus prevents them from becoming filled with obstructing substances in a manner similar to that in which the steel covering-plate 23 protects the channel 16.

Other portions of the boot or shoe which we have not mentioned form no portion of our invention, and therefore need not be described.

From the foregoing it will be seen that we have produced an improved construction for the thorough ventilation of boots or shoes and the distribution of fresh air upon the interior of the same.

The invention will be found to have a good sanitary effect upon the system of the wearer, preventing in a great measure perspiration and undue heating of the parts in warm weather.

The operation is as follows: The parts being situated in the relative positions shown in Figs. 1 and 2 and the boot or shoe in position upon the foot of the wearer, circulation of air through the shoe will be produced by the motion of the foot in the act of walking, air entering past the valve 11, passing through tube 6 to the cell 4, thence upward through the apertures 17 and 18 and also by way of channel 15 in plug 14 into the rear end of channel 16, thence into channels 19, 20, and 21, and upward through the series of apertures 22. It will be observed that the series of apertures 22 is distributed over a considerable portion of the surface of the insole, which

distributes the air over a comparatively-large portion of the surface of the bottom of the foot, and of course the motion of the foot within the boot or shoe in the act of walking will act in a manner similar to an air-pump, drawing in air and forcing it out again through the parts above mentioned. If so desired, the system of channels (indicated by 19, 20, and 21) may be somewhat extended and increased in number, so as to cover a greater portion of the surface of the boot or shoe sole and be connected with the supply-channel 16. When it is desired to close the passage from the outer air to the cell 4, the valve 11 is moved by means of the handle attached thereto so as to cover the opening at the outer end of tube 6. This of course should only be done in wet or rainy weather for the purpose of preventing ingress of water and moisture to the said cell.

We do not desire to limit ourselves to the exact construction of parts herein shown, but reserve the right to all such modifications as may be made without departing from the scope of our invention. For instance, the casing 8 may be differently constructed; also, the valve 11 may be changed in slight details.

What we claim is—

1. The combination, with the heel and sole of a boot or shoe provided with ventilating-channels, channels 4 and 6, communicating therewith and with the exterior of the boot or shoe, and a valve at the exterior end of the channel 6, of the insole provided with a vertical opening in the heel thereof and above the heel-channel 4, said opening having inclined walls, and a tapered plug 14, loosely disposed in said opening above the channel 4, substantially as and for the purpose set forth.

2. As an improvement in boots or shoes, the combination, with the sole provided with ventilating-channels and the heel provided with channel 6 and the channel 4, connecting the latter with the sole-channels, of an insole provided with a vertical opening in the heel thereof and above the channel 4 and a plug loosely disposed in said opening above the point of intersection of the sole-channel and channel 4, said plug being provided with ventilating-apertures, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JESSEE WEBB TURNER.

JOHN H. ENGLE.

Witnesses:

R. H. GOODMAN,
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