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W. DE K. WYLIE

2,239,211

VENTILATED SHOE

Filed April 19, 1940

Fig. 1.

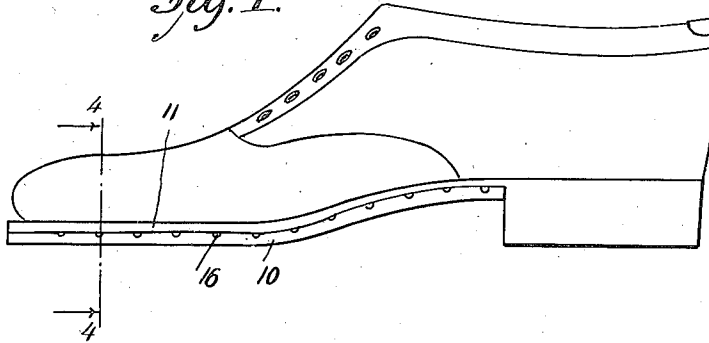


Fig. 2.

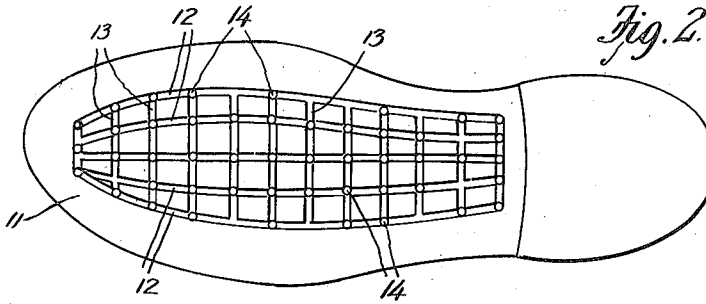


Fig. 3.

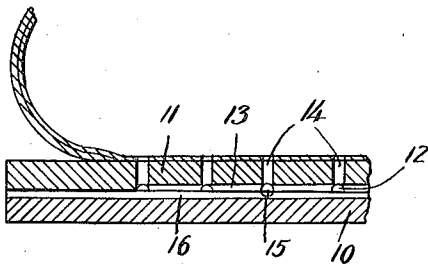
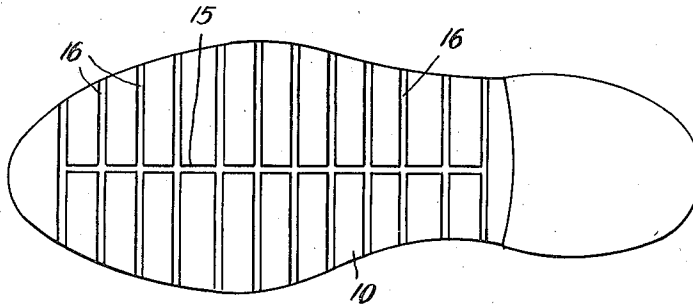


Fig. 4.

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UNITED STATES PATENT OFFICE

2,239,211

VENTILATED SHOE

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Application April 19, 1940, Serial No. 330,620

2 Claims. (Cl. 36-3)

This invention relates generally to shoes, and particularly to ventilated shoes.

Persons required to stand upon their feet for any considerable time, or those occupied in such lines of duty as require excessive walking about, frequently suffer from foot troubles, due largely to the heat generated and confined within the shoe or transmitted thereto from the exterior. The present invention contemplates a shoe construction of such character that currents of air are caused to constantly move in and out of the shoe through the sole part thereof, thus causing the heated air to be removed from the shoe and replaced by outside air, greatly to the relief of the wearer. The arrangement of the shoe is such that the normal movements of the shoe in the walking operation serve to create such actions within the shoe as will cause currents of air to move into and out of the shoe alternately, whereby continuous changes of air are accomplished, to the great comfort of the wearer.

The several functions and advantages claimed for the shoe of my construction will be apparent from the following specification and claims, reference being had to the accompanying drawing, wherein:

Figure 1 is a side elevation of a conventional form of shoe having a sole constructed in accordance with the invention,

Figure 2 is a bottom plan view of the shoe with the outer sole removed,

Figure 3 is a similar view of the upper face of the outer sole, and

Figure 4 is a fragmentary enlarged transverse sectional view taken through the shoe at approximately the line 4-4 of Figure 1.

In the drawing, the outer or wear sole of the shoe is indicated at 10, while the inner sole is represented at 11. These elements may be formed of leather or composition material, and are usually rigidly secured together by stitching or cement so as to present the appearance of a single thickness.

In preparing the shoe in accordance with the invention, the under surface of the inner sole, prior to the application of the outer sole, is provided with a series of longitudinal and lateral channels or grooves 12-13; the former extending from portions near the toe back and into the arch of the sole. These grooves are relatively close together, and are intersected at intervals with openings or ports 14 extending to the interior of the shoe. The lateral grooves 13 intersect the longitudinal grooves and these lateral grooves may also be in communication with the

ports 14 mentioned above. It will be observed that the longitudinal and lateral grooves 12-13, terminate a substantial distance inwardly from the toe and sides of the inner sole.

The upper surface of the outer sole is provided with a longitudinal groove 15 extending from the fore part of the sole clear back to the arch, and lateral substantially parallel grooves 16 extending the entire width of the sole. The lateral grooves 16 intersect the longitudinal central groove 15, so as to allow free passage of air from the lateral to the said central groove.

These grooves are so arranged and located upon the cooperating faces of the inner and outer soles 11-10, that air may pass freely in either direction through the lateral grooves, the longitudinal grooves and the ports or passages leading to the interior of the shoe. It will be obvious, therefore, that when applied to the foot, currents of air may pass freely into and out of the shoe through the sole and arch portion thereof. The muscular movements of the foot within the shoe incident to the walking or stepping operation, serve to "pump" the air in opposite directions through these passages.

It will be observed that when the outer sole 10 is firmly fitted to the inner sole, the ports which communicate with the atmosphere are substantially one half the size of the passages upon the interior of the soles. This is due to the fact that only the outer portions of the lateral grooves 16 communicate with the atmosphere at the shoe edge, so that these openings are reduced in size for the obvious purpose of precluding the entrance of sand, dust, and other foreign matter. The openings will be sufficiently large, however, to permit of free ingress and egress of air.

From the foregoing it is obvious that I have provided a shoe of extremely simple construction, for the purpose of ventilating the foot, but yet which will prove thoroughly efficient for the accomplishment of the outlined purposes. By arranging the grooves in the manner specified, and extending them longitudinally from the toe to and including the arch portion, it is apparent that practically the entire weight supporting portion of the shoe is equipped with ventilating means. By this provision of a constant supply of fresh air throughout the entire interior of the shoe, the sensation of burning feet and foot fatigue is greatly overcome. The arrangement is such that shoes of the present day construction may be readily equipped in accordance with my invention for the accomplishment of these beneficial results without change of variation in

the structure or methods of manufacture thereof.

It will be observed that near the forward end of the inner sole there are a series of transverse openings arranged in close relationship. It will also be observed that these openings are arranged at the intersections of longitudinal and lateral grooves or channels. The cooperating surface of the out sole is provided with forwardly divergent grooves or channels, each of which is in communication with the central longitudinal channel of the out sole. By this arrangement, ventilation at the toe portion of the shoe is materially augmented.

Having thus described my invention, what I claim as new and useful is:

1. In a shoe, an out sole and an inner sole, the inner sole having continuous unobstructed grooves in its under face extending longitudinally from the toe portion thereof throughout the arch, said face of said inner sole also having lateral grooves communicating with said longitudinal grooves, the longitudinal and lateral grooves of said inner sole terminating inwardly from the edges thereof, said inner sole having ports extending laterally therethrough and communicating with said grooves, said out sole having one face provided with a central longitudinal groove and spaced lateral grooves, the lateral grooves extending from side edge to side edge of said out

sole, and said out sole secured to said inner sole in sealed relationship therewith and with the grooves of the respective soles in registration with one another.

2. In a shoe, an outer sole and an inner sole, the outer sole having a central longitudinal groove in its upper face terminating inwardly from the forward end of the sole and extending to the arch thereof, said face having lateral grooves arranged in spaced parallel relation extending to the outer edges of said sole and all communicating with said longitudinal groove, said inner sole having its under face provided with a central longitudinal groove overlying the corresponding groove of said outer sole and co-terminous therewith, said inner sole also having its under face provided with other longitudinal grooves spaced from the central groove thereof, said inner sole having lateral grooves overlying the corresponding grooves of the outer sole and terminating at their outer ends inwardly from the lateral edges of said inner sole, all of the grooves of said soles being continuous and uninterrupted and said inner sole having openings therethrough establishing communication between said sole channels and the interior of the shoe at the intersections of said lateral and longitudinal inner sole grooves.

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