Feb. 24, 1925.

1,527,371

A. J. MULLARKY

VENTILATED SHOE

Filed Feb. 15, 1923

FIG. 1

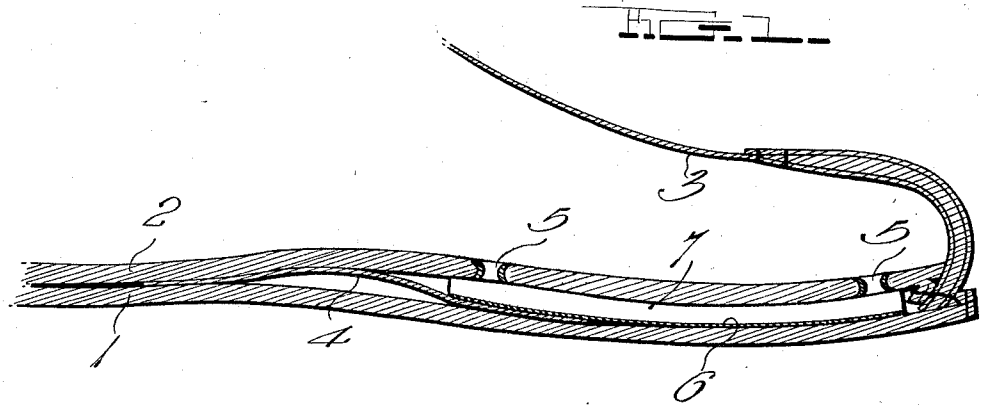


FIG. 2

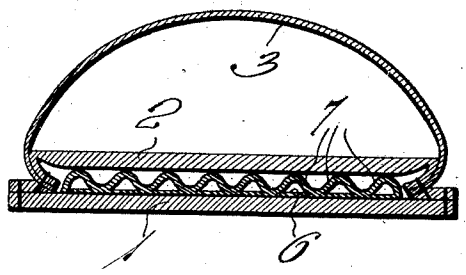
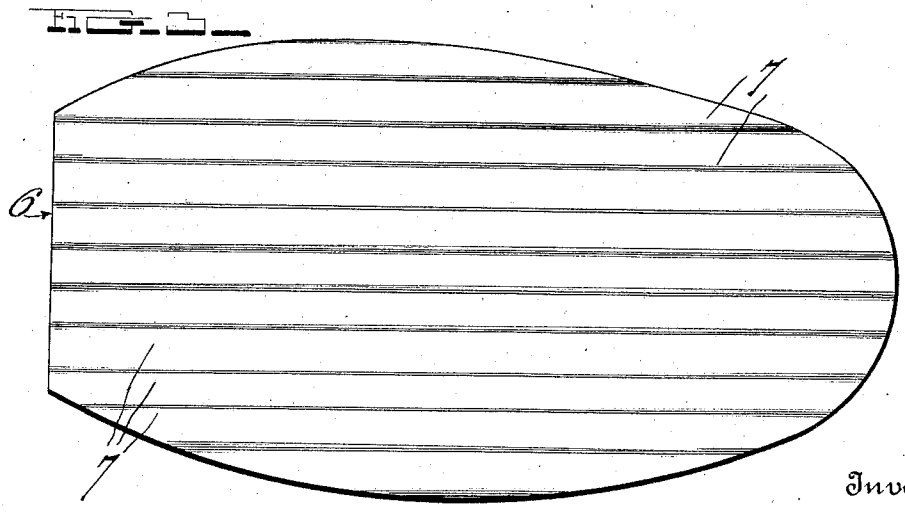


FIG. 3



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UNITED STATES PATENT OFFICE.

ALBERT J. MULLARKY, OF KEOKUK, IOWA.

VENTILATED SHOE.

Application filed February 15, 1923. Serial No. 619,203.

To all whom it may concern:

Be it known that I, ALBERT J. MULLARKY, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, have invented certain new and useful Improvements in Ventilated Shoes; and I do 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 improvements in ventilated shoes and more particularly to the fillers used therein between the inner and outer soles.

The object is to provide a ventilated shoe having a filler formed of rubber and of such nature that it compresses when the weight of the wearer is placed upon it, but immediately expands when the weight is relieved, said filler being formed with longitudinal, tubular, open-ended ribs which alternately receive and expel air during the walking operation, thus not only creating a circulation of air between the inner and outer soles to prevent saturation of the latter with perspiration from the feet, but also acting to ventilate the entire interior of the shoe, by way of a plurality of openings with which the insole is formed.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Figure 1 is a longitudinal section through a portion of a shoe having one of the improved fillers.

Figure 2 is a vertical transverse sectional view.

Figure 3 is a top plan view of one of the fillers.

In the drawings above briefly described, I have shown a shoe comprising the usual outer sole 1 and inner sole 2, the two being spaced apart from their instep portions to their front ends and secured to the upper 3 in the usual manner. The numeral 4 merely designates a common arch supporting strip between the two soles. In front of this strip, the two soles are spaced apart and at suitable points, ventilating openings are formed through the front portion of the inner sole 2, the walls of these openings being preferably lined by large eyelets 5. A circulation of air through these openings is created by the improved filler as hereinafter described.

The filler for the space between the outer sole 1 and the inner sole 2, extends entirely across the transverse dimension of this space and substantially throughout its longitudinal dimension, and includes a resilient sheet of rubber 6 to be cemented upon the outer sole, the upper side of said filler being provided with a plurality of closely spaced, parallel, longitudinally disposed ribs 7 which are of tubular form throughout their length and are open at both ends. These ribs and the portions of the sheet 6 between them, are preferably curved transversely as shown in Fig. 2.

When the weight of the user's body is supported by the shoe, the portion of the inner sole 2 in the region of the ball and metatarsal joints of the foot, presses downwardly toward the outer sole 1 and thus compresses all of the ribs 7 so that the greater portion of the air contained in said ribs is forced therefrom. Some of the air merely circulates between the two soles, but the remainder thereof is expelled into the shoe through the eyelets 5 which are at no time closed by the ribs. When weight is relieved from the shoe, the ribs 7 again expand to their normal positions and thus air is again drawn into said ribs, producing downward currents through the eyelets 5. By this circulation of air from the interior of the shoe into the space between the inner and outer soles and by the air circulation which also takes place in this space, the inner sole 2 cannot become saturated with perspiration from the user's foot, which has many advantages.

Attention is directed to the fact that in addition to the cushioning and ventilating feature above pointed out, the present invention is advantageous in other ways over the ordinary cork and cement filler. This last named filler becomes hard and brittle after it has been wet and dried and renders the sole exceptionally stiff and uncomfortable. Furthermore, when this form of filler becomes heated and moistened from the foot, it will roll, permitting the formation of objectionable ridges and hollows in the shoe. Moreover, the filler cannot be easily repaired or replaced when resoling the shoe. All of these difficulties are effectively overcome by my invention.

I may here state that numerous attempts have heretofore been made to provide a ven-

tilated cushioning sole for shoes, but the majority of these attempts have produced articles which so changed the ordinary shoe structure and were so expensive as to be prohibitive and in others, the fillers or cushions have been of such shape that a great deal of downward pressure was exerted on restricted portions of the sole with the result that these portions would soon wear through and expose the filler. Such objections as these however are effectively overcome by my invention. To produce inexpensive manufacture of the device, large sheets of rubber may be formed with the tubular ribs integral with one side and this sheet may be cut up into the necessary sizes and shapes to be incorporated in the shoe at the time of manufacturing, or when repairing.

As excellent results may be obtained from the details disclosed, they may well be followed. However, within the scope of the invention as claimed, numerous minor changes may be made.

I claim:

A ventilated shoe comprising an outer sole and an inner sole spaced apart from their instep portions to their front ends, said inner sole having openings from top to bottom constituting the sole means of communication with the space between the two soles, and a filler in said space extending throughout the transverse dimension thereof and substantially throughout the longitudinal dimension thereof, said filler being located in its entirety under the lower side of said inner sole and consisting of a flat resilient rubber sheet contacting with said outer sole, the upper side of said sheet having closely spaced parallel integral ribs throughout its area and free of upward projections, said ribs being tubular from end to end and open at both ends to permit free entrance and exit of air, said tubular ribs extending longitudinally of the shoe whereby all of said ribs are compressed or closed by the downward pressure from the ball and metatarsal joints of the user's foot at every step, and will expand or open under their own resiliency after each step, thereby constantly producing ventilating currents within and between all of said ribs and through the openings of said insole.

In testimony whereof I have hereunto affixed my signature.

ALBERT J. MULLARKY.