Nov. 20, 1934. O. M. BERG 1,981,300

SHOE SOLE

Filed June 21, 1932

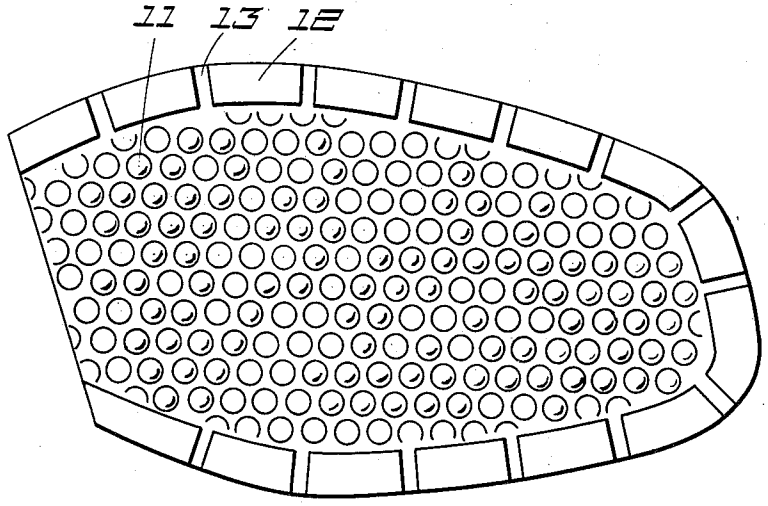



Fig. 1.

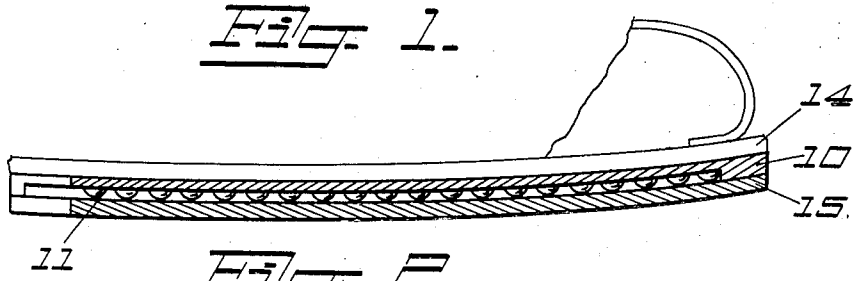



Fig. 2.

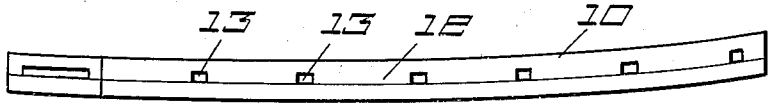



Fig. 3.

INVENTOR.
Otto M Berg
BY
Harry C. Schroeder
ATTORNEYS.

Patented Nov. 20, 1934

1,981,300

# UNITED STATES PATENT OFFICE

1,981,300

## SHOE SOLE

Otto M. Berg, Emeryville, Calif.

Application June 21, 1932, Serial No. 618,410

1 Claim. (Cl. 36—3)

This invention is a shoe sole and is specifically directed to a shoe sole which is provided with means for preventing the transference of heat from an object with which the bottom of the sole is in contact, to the foot of the wearer, and which is of a type which may be properly termed a breathing sole. Persons occupied in certain lines of duty which require their standing or walking about on hot streets and sidewalks are prone to have a great deal of foot trouble due to the heat which is usually conducted from the hot sidewalk or street through the sole of the shoe and to the foot of the wearer.

My invention contemplates the provision of a shoe sole, which due to its specific construction and arrangement causes a breathing action within the shoe sole, whereby air passing through the sole carries the heat out of the sole before reaching the foot of the wearer.

Another object of the invention is to provide a shoe sole with interposed resilient means which due to its resiliency, and to the air passages which communicate with ports all about the periphery of the sole, will cause a pumping action within the sole, the air being taken in and forced out through a plurality of ports formed about the periphery of the sole.

A further object of the invention is to provide a shoe sole, which due to fluctuations in weight applied thereto will cause a breathing action within the sole.

Other objects and advantages of the invention will become apparent as the following description is read on the drawing forming a part of this specification and in which similar reference characters are used to designate similar parts throughout the several views, of which:

Fig. 1 is a plan view of the breathing element.

Fig. 2 is a longitudinal section through a shoe sole with my invention applied thereto.

Fig. 3 is an outside view of the shoe sole.

The invention consists of a resilient element 10 made to the form of a shoe sole and which is provided with a peripheral portion constructed of a plurality of independent supporting elements 12 relatively spaced to provide ports 13 therebetween. The portion of the body of the sole which is enclosed by said supporting elements is of less thickness than said elements so as to provide a chamber while the sole is in operative position. The inner surface of the body 10 is provided with a multiplicty of approximately hemispherical protuberances 11, which are so spaced as to form air passages, and their tips being in approximately the same horizontal plane as the lower edges of the supporting elements.

This element is suitably secured between two layers of leather or other suitable shoe sole material 14 and 15, the element 15 forming the wear surface.

With the assembled sole as shown in Figs. 2 and 3, the pressure of the foot on the sole compresses the protuberances 11, reducing the free volume between the members 14 and 15 and forces the air out through the ports or passages 13 and on releasing this pressure the protuberances 11 expand, forcing the element 15 away from the element 14, increasing the volume between these two elements consequently drawing in air through the passages 13 which is permitted to circulate substantially over the entire area of the top surface of the element 15 and the under-surface of the element 10, and this air being alternately drawn in and expelled retains the sole in a cool condition. When a person is standing still, there is always a fluctuation in the pressure applied on the foot as it is substantially impossible to stand without varying this pressure and this fluctuation will cause a breathing action through the sole due to the slight initial resistance of the semi-spherical protuberances, thereby providing the same cooling action for military men or officers standing at attention as would ordinarily be obtained when walking, therefore a very efficient cooling device is provided for a shoe sole.

Further, this shoe sole also will effectively retain the foot warmer when the surface on which the person is standing is colder than the surrounding air as it will prevent the transference of the extreme cold to the foot of the wearer by the breathing of the warmer air through the shoe sole.

Having described an operative device and method of use it will be understood that variations in construction and arrangement of parts which are consistent with the appended claims may be resorted to without detracting from the spirit or scope of the invention or sacrificing any of the advantages thereof.

I claim:

In a shoe sole, a ventilating member of resilient material having its peripheral portion provided with a plurality of independent supporting elements having air ports interposed between them, the portion of said body enclosed by said supporting elements being of less thickness than said elements, and provided with spaced apart protuberances, the tips of which are in approximately the same horizontal plane as the lower edges of said supporting elements.

OTTO M. BERG.