

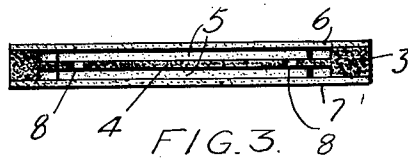
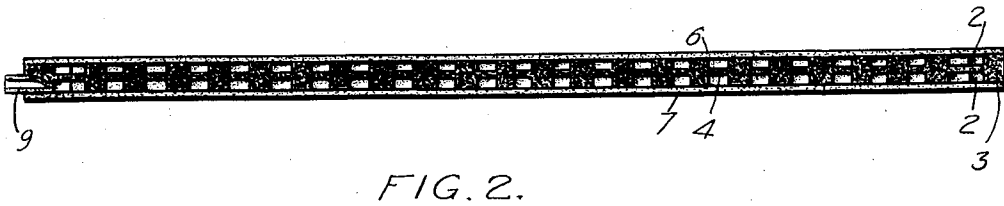
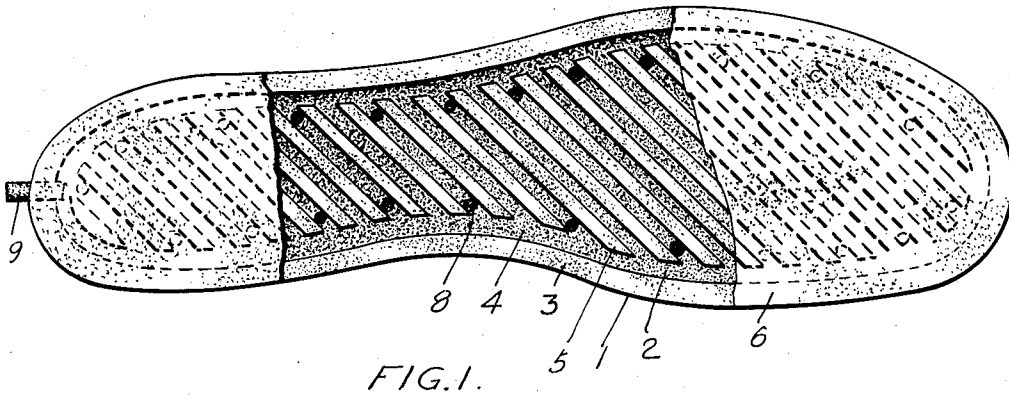
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CUSHION INSOLE

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CUSHION INSOLE.

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My invention relates to improvements in cushion insoles, and the object of the invention is to devise an insole for a boot or shoe which will form a support for the foot, which will have a maximum resilience and thereby render the boot or shoe far more comfortable to the wearer and giving a maximum ease to the feet, and at the same time dispensing with all rubber cushions secured exteriorly to the sole or heel of the boot or shoe, and it consists essentially of the arrangement and construction of parts as hereinafter more particularly explained.

Fig. 1 is a plan view of my insole, the upper wall being broken away to exhibit the interior construction thereof.

Fig. 2 is a longitudinal section through Fig. 1.

Fig. 3 is a cross section through Fig. 1.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 indicates the body of the insole which is formed of soft rubber through which are scattered cells in closely adjacent overlapping position. The upper and lower surfaces of the body 1 is recessed in its upper and lower face as indicated at 2, so as to leave a surrounding wall 3 the full thickness of the body 1 and a thin web or diaphragm 4 supported by the surrounding wall 3 intermediately of its height as will be clearly seen in Figure 2.

5 are a series of diagonally extending cross ribs provided with flat upper faces and spaced equal distances apart. The ribs 5 are located in the recessed portions 2 above and below. The upper horizontal faces of the ribs 5 are flush with the horizontal faces of the wall 3. The ribs 5 are sufficiently close together and to the surrounding wall 3 to form practically a continuous supporting surface for the foot.

6 and 7 are sheets of flexible material preferably of rubberized fabric which are cemented to the upper and lower faces of the wall 3 and corresponding faces of the ribs 5.

8 are perforations formed in the diaphragm 4 preferably between the ribs 5 so as to per-

mit the free circulation of air from between the ribs on one face of the insole to between the ribs on the other face of the insole.

9 is an air inlet tube preferably extending through the wall 3 in the heel portion of the insole, the inner end of the tube being contracted together in a flat form normally held closed and only opened by the forcing of air therethrough. By this means a non-return valve is provided.

By using my insole the air is forced through the tube 9 so as to fill all the space between the surrounding wall 3 and the ribs 5 and between the ribs themselves. Such air expanding outward against the flexible walls 6 and 7 between the ribs 5, thereby increasing the resilience of the insole, and also the softness and cushion effect produced upon the foot of the user when treading thereon.

It will of course be understood that my insole may be either slipped into the boot by the wearer or the boot so built that my cushion insole is recessed thereinto so as to permanently form a part of the boot.

If desired the insole may be used without inflating it with the air, the perforations being formed in the flexible covers 6 and 7 so as to permit the free circulation of air therethrough.

It will also be understood that the cross ribs 5 not only serve to form air ducts, but being themselves narrow wall portions carrying the weight of the foot spread easily under the pressure of the foot and thereby increase the effect of softness and comfort to the wearer.

By reason of the cellular structure of the insole the yielding movement to the weight of the foot is quickly and evenly distributed so that the surface carrying the weight of the foot conforms exactly to the shape of the foot increasing the comfort of the wearer to a maximum. Further the cellular structure also serves to prevent heat conduction and thereby impart greater comfort to the wearer. The recess construction provided with cross ribs also further adds to the resilience and easy yielding of the insole to the foot permitting the rib por-

tions to spread under the weight of the foot and thereby increase the cushioning effect.

What I claim as my invention is:—

A cushion insole adapted to fit a boot or shoe and formed of resilient material through which are scattered a multiplicity of independent cells located at different planes so as to form numerous dead air

spaces overlapping one with the other to prevent the conduction of heat therethrough and having a series of parallel transverse recesses in both faces of the insole, and a covering of material impervious to air secured to each face of the insole to extend over such recess. 10

CHARLES COONEY.