Aug. 23, 1949. A. O. LINDSTROM 2,480,035

VENTILATED BOOT

Filed Aug. 1, 1947

Fig. 1

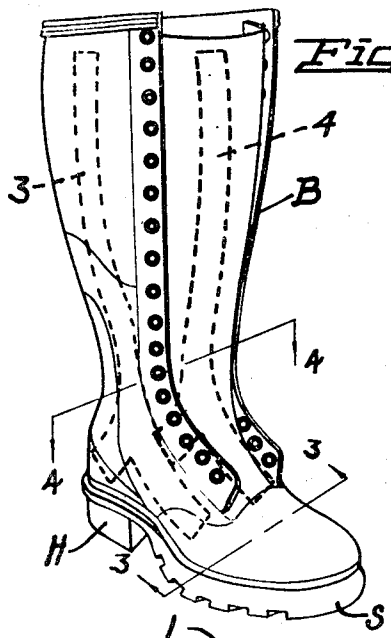


Fig. 2

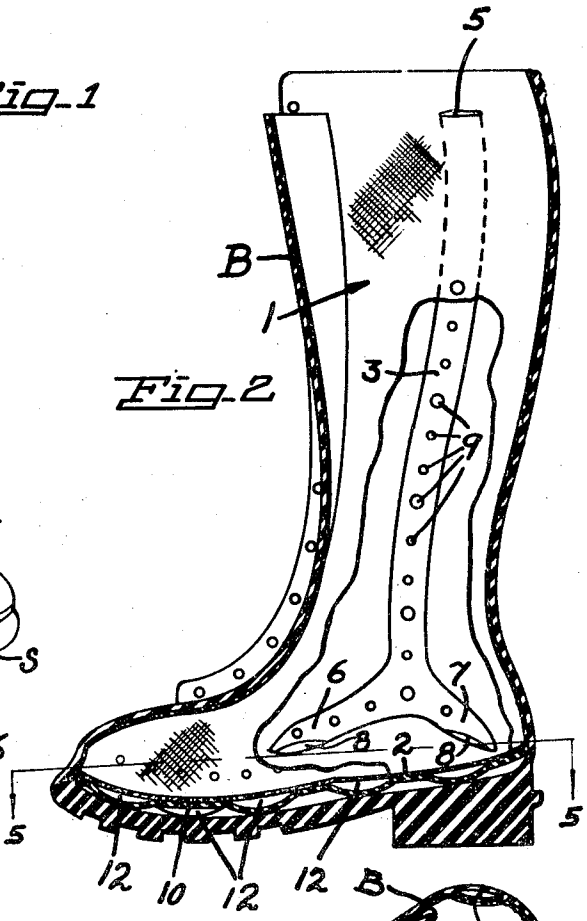


Fig. 3

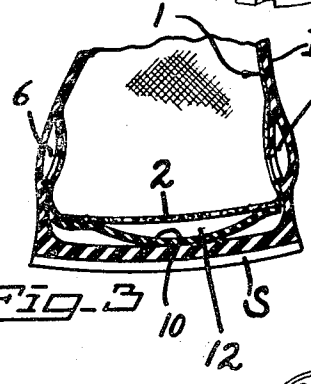


Fig. 4

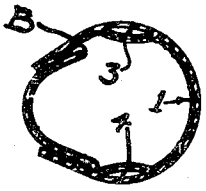


Fig. 5

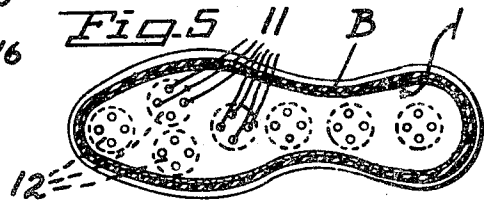
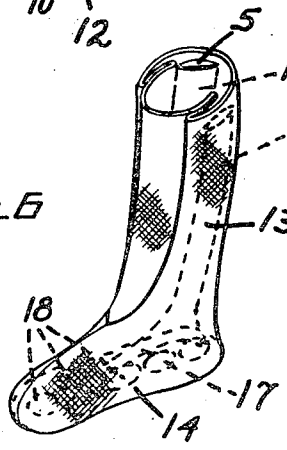


Fig. 6



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VENTILATED BOOT

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Application August 1, 1947, Serial No. 765,295

3 Claims. (Cl. 36—3)

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My present invention relates generally to footwear including boots and shoes of various types for out-door wear, and more specifically to an improved ventilated boot and while my invention is well adapted for installation in different styles of boots and shoes manufactured of suitable materials, it is especially adapted for use with conventional rubber boots to insure comfort for the wearer and sanitary conditions within the interior of the boot.

In carrying out my invention the boot is equipped with a cellular inner sole and air ducts forming an air circulating and venting system that is activated by the foot-movements of the wearer of the boot; and the invention consists in certain novel features of construction and combinations and arrangements of parts in an article of manufacture as will hereinafter be described and more particularly set forth in the appended claims.

In the accompanying drawings I have illustrated one complete example of a physical embodiment of my invention in which the parts are combined and arranged in accord with a mode I have so far devised for the practical application of the principles of the invention. It will, however, be understood that various changes and alterations are contemplated and may be made in these exemplifying drawings and structures, as evidenced by the illustrated modification, within the scope of my claims, without departing from the principles of the invention.

Figure 1 is a perspective view of a conventional boot equipped with the ventilating system of my invention.

Figure 2 is a vertical sectional detail view of the boot, with the inner lining broken away for convenience of illustration.

Figure 3 is an enlarged vertical transverse section as at line 3—3 of Fig. 1; Figure 4 is a horizontal section at line 4—4 of Fig. 1; and Figure 5 is a horizontal section through the foot portion of the boot at line 5—5 of Fig. 2.

Figure 6 is a perspective view of an inner lining or removable inner sock in which the invention is embodied.

The rubber boot B is provided with the conventional heel H and sole S, of suitable material, and the boot is equipped with an inner lining 1 of suitable flexible material that is provided with an inner sole 2 spaced slightly from the sole S of the boot.

In the process of manufacturing the boot it is equipped with air ducts or ventilating tubes in its side walls, and these vertically arranged ducts

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3 and 4 are located between the walls of the boot and the lining, or incorporated in the lining. The air ducts or venting tubes, which preferably are of flattened shape in cross section, are provided at their upper ends with air outlet ports 5 opening within the boot adjacent its upper edge to the atmosphere; and the lower ends of the ducts or tubes terminate in a toe-branch 6 and a heel-branch 7 diverging from the main upright duct toward the toe and heel of the boot. These branch ducts are provided with air inlet ports or openings 8, 8, through the lining to the interior of the foot portion of the boot; and in addition to the end ports of the ducts or tubes, lateral air ports 9 are spaced at intervals in the tubes that open to the interior of the boot.

The circulating of air currents is created by the foot-movements of the wearer of the boot, or pedestrian, and for this purpose a cellular structure is provided in the sole portion of the boot that creates a pumping action for venting the interior of the boot. For this purpose a flexible and resilient diaphragm 10, of rubber or other suitable material, is incorporated or attached between the boot sole S and the inner lining sole 2, and the lining 2 is provided with groups of ports 11 opening from the interior of the foot portion of the boot into air cells 12 formed by the diaphragm between the boot sole and the perforated sole of the lining.

From this description taken in connection with the drawings it will be apparent that as the wearer of the boot walks, his foot-movements will impart to the cellular sole structure a pumping action for creating air currents that ventilate the foot portion of the boot through the ported ducts to the atmosphere.

In the modified form of the invention shown in Fig. 6 a removable inner sock, or boot lining is shown that is adapted to be slipped over the foot before the boot is put on to enclose the sock, and this sock, of suitable flexible and durable material, is provided with a conventional leg portion 13 and foot portion 14. Auxiliary tubes or air ducts 15 and 16 are incorporated in the leg portion and provided with outlet ports 5 from the interior of the boot to the atmosphere, and each duct terminates in a sole duct 17 which open through ports 18 and the cellular structure in the sole of the sock, or of the boot, for creating the pumping action to vent the interior of the boot.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A boot having an interior lining forming a tubular upright air-duct having an upper outlet port and terminating in toe and heel ducts having intake ports opening into the foot portion of the boot, said lining having a sole portion formed with groups of perforations, and a resilient structure forming air cells beneath the groups of perforations adapted to create air currents and activated by foot-movements of the wearer of the boot.

2. A boot having an interior lining forming a tubular upright air duct terminating in an upper outlet port and having heel and toe ducts provided with intake ports in its foot portion, said lining having a bottom portion forming a perforated sole, a resilient diaphragm located between the sole of the boot and the perforated sole, and attaching means for the diaphragm forming multi-cells between said soles.

3. A boot having an interior lining forming spaced upright air ducts in its opposed side walls, said ducts having lateral ports opening to the interior of the boot and upper outlet ports open to the atmosphere, each duct having a pair of

diverging branches opening to the interior of the foot portion of the boot, said lining having a perforated sole portion, a resilient diaphragm located between the sole of the boot and the sole of the lining, and attaching means for the diaphragm forming multi-cells between the soles.

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