

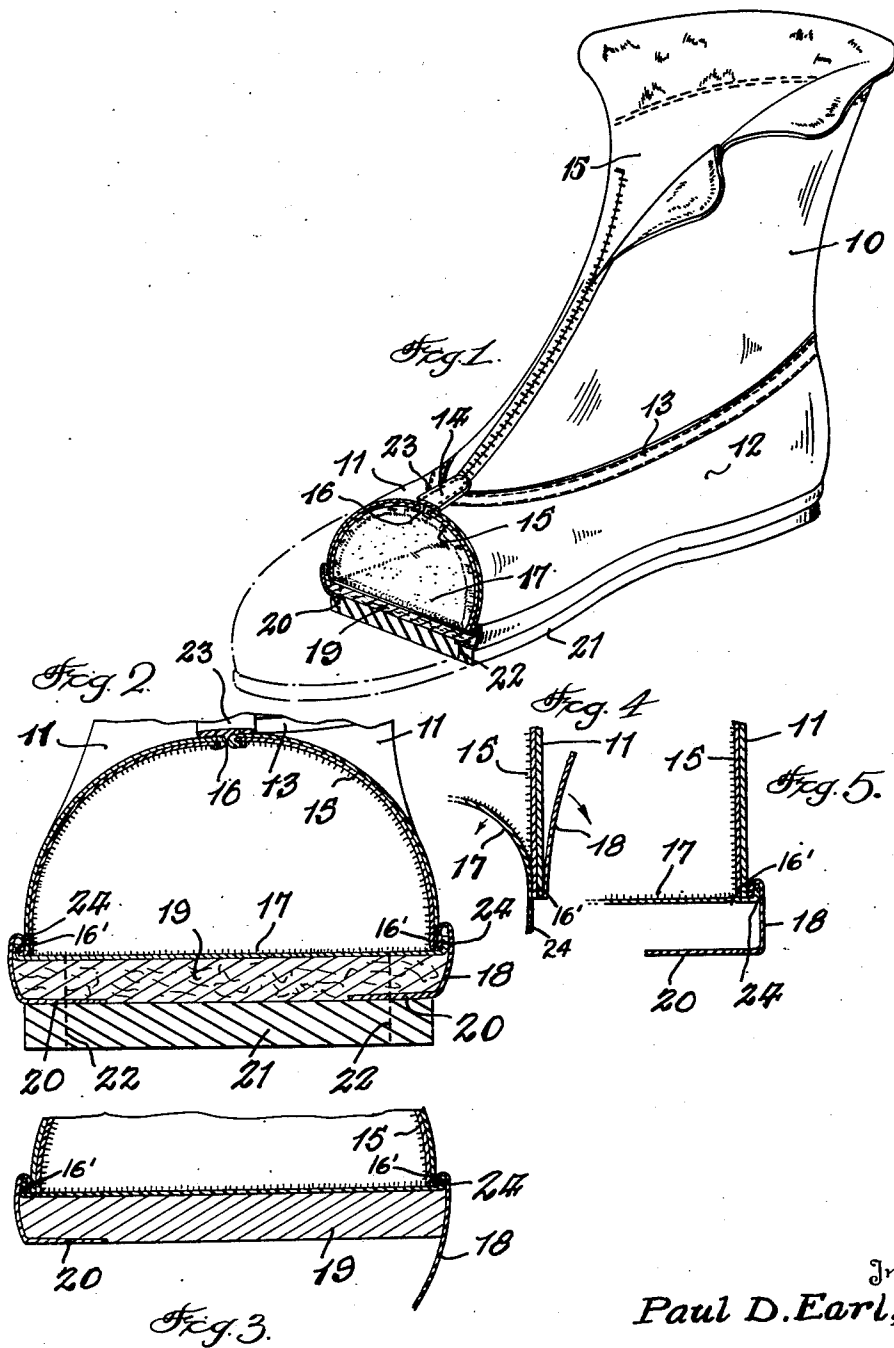
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BOOT CONSTRUCTION

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BOOT CONSTRUCTION

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1 Claim. (Cl. 36—19)

The invention relates to boots and shoes for wear in extremely cold weather, wherein a certain degree of insulation of the foot from external low temperature air is incorporated. It is a particular aim of the invention to present a boot which may be slipped on over ordinary shoes, and particularly one which may be embodied in the form suitable for women's wear over high-heeled shoes, while retaining all the advantages of heat insulation and comfort at frigid temperatures.

It is a particular aim of the invention to improve the method of manufacture of shoes, to the end that high efficiency in heat insulation, accompanied by a maximum durability and good appearance may be attained. A particular purpose of the invention is to attain a high degree of flexibility in a shoe of this type, so that the wearer may enjoy walking in comfort with a minimum liability of stumbling or exhaustion due to the quality of the shoe.

One of the most important aims of the invention is to enable the production of such a shoe at a reasonable cost, shoes of this type having heretofore been high in cost, because of the complicated procedures in production, most of the cost being absorbed by labor. By simplifying production procedure and construction of my shoe, it has been found possible to greatly lower the cost of producing a shoe of a given good appearance, wearing quality, and warmth, which may be sold at a substantially lower figure than prior production of corresponding quality as to materials, appearance, and wear.

Additional objects, advantages and features of invention reside in the construction, combination and arrangement of parts and method of procedure in relation thereto, as will be more readily understood from the following description and accompanying drawing, wherein

Figure 1 is a perspective view of a shoe constructed in accordance with my invention, with the toe portion cut off in a plane at right angles to the longitudinal axis of the shoe, so as to show the shoe in cross section.

Figure 2 is an enlarged cross sectional view of the shoe adjacent the ball of the foot thereof.

Figure 3 is a similar view at an earlier stage of manufacture.

Figure 4 is a fragmentary cross section at the lower side seam of the shoe.

Figure 5 is a fragmentary view at the side seam.

Referring more particularly to the drawing and procedure in production of the shoe, it may be

said that, in effect, a sock lining is first stitched into the shoe vamp, quarter and the upper 10 of the shoe. The vamp 11 and quarter 12 are joined conventionally, with a taped seam 13 at the junction of the upper and quarter. The lateral half of the vamp portion is preferably formed integrally with the quarter 12 at respective sides, and the two vamp portions joined at a middle seam 14 extending longitudinally over the toe. The lining 15 is attached and similarly divided in the vamp and toe of the shoe, and this seam is preferably left open until after a top sole, insole and outsole have been attached, after assembly of the lining pieces 15 along the vamp, toe and quarter.

Before lasting, after assembly of the upper as indicated, an insole 17 forming a part of the lining, is stitched to the upper, simultaneously with the application of a binding strip or sheath 18. As shown, the lining 15 and insole 17 are formed of fleece sheepskin, suitably sheared, with the fibers presented toward the inside of the shoe. In the attachment of the insole and binding strip 18 together with the vamp 11 and quarter 12 and lining 15, the latter having been already attached at the seam 13 and along the seam 16, if desired, or this attachment omitted until after attachment of the insole, according to the preferred steps of procedure. The parts are laid together as shown in Figure 4, the edges of the lining 15, vamp 11 and quarter 12 being alined. One longitudinal edge of the binder strip is laid with its finished side against the outer faces of the vamp and quarter with its lower edge alined with the edges of the lining and vamp. The insole 17 may be similarly alined with the first three pieces, but the lower edge projects slightly, as shown in Figure 4. The four pieces are then stitched together by stitching 16' close along the alined edges of the binder 18, vamp 11, quarter 12 and lining 15. This completes the sock with the vamp and quarter attached. The middle seam 16 of the vamp may be tacked temporarily, and the shoe lasted, which brings it to the form illustrated in Figures 1 and 2 without the lower sole portions, and with the binder 18 unattached and unshaped. The exposed under side of the insole 17 is now coated with a suitable adhesive, and a thick midsole 19 of felt or other good insulating material of a flexible nature and of suitable thickness, previously coated with a stiff cement is applied, as shown in Figure 3, and it may be put under suitable pressure to effect a good union, if desired. Thereafter, and while the shoe is still lasted, additional adhesive is applied to the edges and un-

der-face of the mid-sole. In order to form the shoe with an appearance of a welt and more pronounced thickness in the upper edge of the binding 18, the projecting portion 24 of the insole 17 is turned upwardly to overlie the lower edge portion of the binder 18, where it may be secured by adhesive or otherwise, or it may be stitched in position simultaneously with the stitching together of the lining vamp and binder as shown in Figure 5. Thereafter, the binder is pulled downwardly, as in Figure 3 and inlaid over the midsole 19, as shown at 20 and pressed against the mid-sole, when it will have the appearance shown in Figure 2, giving a good finish to the sole of the shoe, as well as adding security to the seam between the insole and the upper of the shoe. A further application of adhesive is then made throughout the lower exposed surfaces of the mid-sole and lasted over the portion 20, and an out-sole 21 such as crepe rubber, other composition, or leather, is applied and maintained under suitable pressure for a time, in the position and shape shown in Figures 1 and 2.

The mid-sole 19 may be of uniform thickness throughout, extending from the heel portion of the shoe to the toe-tip, and the out-sole 21 may likewise be of uniform thickness from heel to toe, although other practices may be carried out in accordance with conventional practices, including a thinning of the sole at the shank, and if desired, a thickening thereof, as well as a thickening of the mid-sole and instep portion, in case the boot is to be worn without shoes inside. After emplacement of the out-sole as shown, the tacking at the seam 16 may be removed, and the shoe unlaid, and placed upon a stitching machine by which a line of stitches 22 is formed through the out-sole, the mid-sole, and in-sole, extending throughout the length and width of the shoe in close parallel relation to the outer edge of the sole 21. Thereafter, the seam 16 may be permanently closed, and may have a tape 23 applied thereover, as an effective closure, although other practices may be carried out as found desirable. The front and upper may be laced or closed by other convenient means, as desired.

From the foregoing, it will be seen that the complete assembly of the insole, mid-sole and binder or welt and out-sole, is completed in two stitching operations, without the use of the conventional welt, and having other advantages, some of which will be explained.

The binder strip 18 is preferably of a very thin flexible leather, and the felt 19 likewise readily flexible. When rubber composition is used in the sole 21, it will be readily appreciated that the entire sole, including the insole and outsole, constitute a highly flexible body, the mid-sole being longitudinally compressible and extensible with a minimum of opposition under bending of the out-sole, so that great flexibility is attained in that respect. Also, due to the thin leather used in the binder strip 18, this does not have any stiffening effect.

It should be noted that owing to the high cushion value of the mid-sole 19, the stitching 22 holding the latter to the out-sole, does not tend to cause a stiffening of the out-sole, as would be the case where denser materials such as leather, leather composition, paper and other dense materials are used.

I have disclosed my invention with particularity in the best form known to me, but it will, nevertheless, be understood that this is exemplary, and that modifications in the construction, arrangement and combination of parts, substitution of materials and equivalents, structural and otherwise, may be made without departing from the spirit of the invention, within the scope of the appended claim, wherein I claim:

A footwear of the character described comprising an upper having a lining therewithin, the edges of the lining and upper being flush and attached together, an insole arranged transversely of the lower edges of the upper and lining and having a portion projected therebeyond, a binder strip laid externally edge to edge with said upper and lining, the projected edge portion of said insole being overlaid upon the edges of the upper, lining and binder strip and these parts connected together by a line of stitching inwardly of the lower edges of the lining, upper and said binder strip throughout the contour of the insole, a mid-sole of heat-insulating material adhesively secured upon the outer surface of said insole, the free edge of said binder being laid inwardly under said mid-sole, and an out-sole laid under the mid-sole overlying the free edge of said binder strip, and a line of stitches formed through the out-sole, the binder strip, mid-sole and insole.

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