

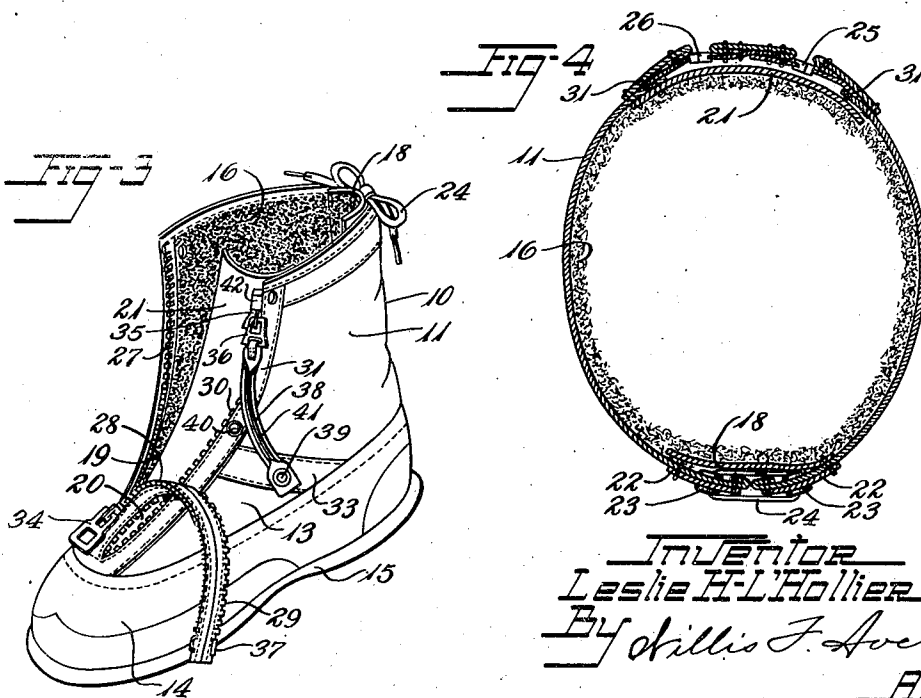
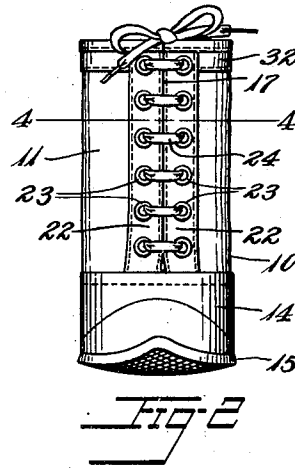
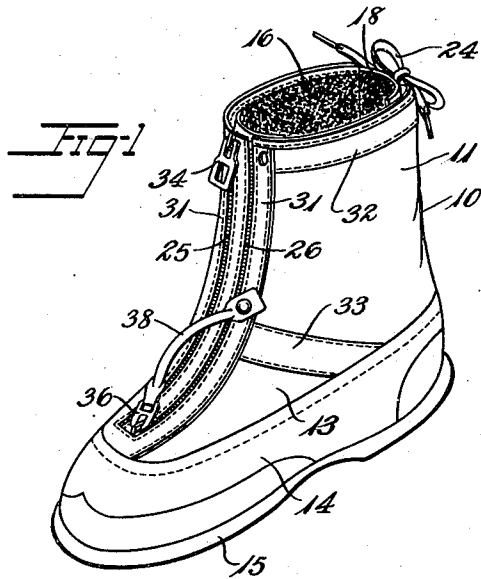
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QUICKLY REMOVABLE BOOT

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QUICKLY REMOVABLE BOOT

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5 Claims. (Cl. 36—50)

This invention relates to footwear and especially to quickly removable boots useful, for example, as aviators' boots.

Where flying operations are to be performed in extremely cold temperatures, such as are encountered in cold climates or at high altitudes, it is usually necessary for the pilots, other crew members, and passengers, to wear heavy garments insulated against the conduction of heat. Footwear suitable for such operations are ordinarily made of rubber, fabric, leather, or combinations of these, lined heavily with sheep wool or other insulating material. These articles of footwear are so heavy, especially when wet, that they are a hazard to the wearer in case of a crash or forced landing in water unless they can be readily and easily removed.

It is an object of this invention to provide an article of footwear, such as an aviator's boot, that is readily and quickly removable by performing a single pulling movement on a readily accessible element, and at the same time to provide an adjusting means for adjusting the size of the article to fit the leg of the wearer, and independent closure means provided so that the article may be donned with greater ease when the wearer is encased in other articles of heavy clothing which may restrict his freedom of movement considerably.

These and other objects will appear from the following description and the accompanying drawing, of which

Fig. 1 is a perspective view of a boot embodying the invention with the fastening means in secured position;

Fig. 2 is a rear view of the boot illustrated in Fig. 1;

Fig. 3 is a perspective view of a boot embodying the invention with the fastening means in opened position;

Fig. 4 is a cross-sectional view taken along line 4—4 of Fig. 2.

In accordance with the present invention, a warm heavy boot suitable for use by aviators is provided with one vent extending from near the bottom portion to the top of the boot and closed by adjustable closure means comprising a lacing means passed through rigid eyelets positioned at intervals along the two margins of the vent. The boot is also provided with a second vent extending from near the bottom of the boot to the top of the upper with the margins adjacent the vent secured to the stringers of a fastener structure adapted to be closed by upward movement of a slider element movably fastened to the stringers. The boot is likewise provided with still a third

vent extending preferably parallel to the second vent and of preferably substantially the same length as the second vent with the margins adjacent the vent secured to the stringers of a separable fastener structure adapted to be closed by downward movement of a slider element movably fastened to the stringers, and to be opened by upward movement of the slider element. The slider element of the slide fastener on the third vent is provided with handle means for securing the slider in its lower or closed position and for quick manipulation by a single movement in opening the vent, which handle means preferably is detachably mounted at its free end so as to be in the most convenient position for being quickly grasped.

A preferred embodiment of the invention as applied to an aviator's boot is illustrated in the accompanying drawing. The aviator's low boot 10 comprises an upper 11 having quarters 13 of pliable and preferably waterproof material, such as rubber or rubberized fabric, a one-piece toe and counter reinforcement 14 of waterproof material extending thereover to the height of the heel and providing a waterproof reinforcement, and a rubber sole 15 vulcanized to the upper 11. The entire article is lined with a sheared sheep leather lining 16 with the wool side turned inwardly. The upper 11 is formed with one vent 17 extending from near the sole 15 to the top of the upper 11 and preferably at the back of the boot above the heel portion, and a tongue portion 18 covering the vent 17 on the inside of the boot with one edge and the bottom of the tongue stitched to the boot. There is also provided a second vent 19 extending from the toe portion of the boot to the top of the upper 11 and preferably at the front of the boot above the toe portion. Likewise, there is provided a third vent 20 also extending from the toe portion of the boot to the top of the upper 11 preferably at the front of the boot above the toe portion and substantially parallel to the second vent 19. There is a second single tongue portion 21 covering both the second and third vents 19, 20 on the inside of the boot with one edge and the bottom of the tongue stitched to the boot. Both of the tongue portions 18, 21 are of sheep-skin leather with the wool turned to the inside of the boot.

The first vent 17 at the back of the boot is intended to provide for adjustment of the boot to the leg size of the individual wearer. To accomplish this the margins 22, 22 of the vent are provided with eyelets 23, 23 of metal or the like spaced at intervals along these margins. Through the eyelets a cord 24 or similar interlacing means

is placed and tied at the top. By means of this cord 24 the margins 22, 22 may be drawn as close together as required for comfortable wear of the boot and the ends of the cord tied in order to provide a snug fit.

The second and third vents 19, 20 are provided with separable slide fasteners 25, 26 having flexible stringers 27, 28, 29, 30 secured to the upper along the margins defining the respective vents, preferably by cement and sewed means, and reinforcements 31, 31 of soft leather are applied to the upper around the vents as by stitched means to reinforce the openings of the vents. A leather binding 32 is also applied over the top margin of the upper and sewed thereto. Ankle stay straps 33, 33 are also secured over the quarters 13, 13 to provide additional strength in that region. These may be of leather and sewed to the quarters so as to extend diagonally from the counter reinforcement to the vent reinforcement and extending under both the counter reinforcement and the vent reinforcement strip. These ankle stay straps are secured to the boot by stitching. The front tongue 21, preferably is made of soft leather having a lining of sheared or unsheared sheep leather, and is disposed so as to extend beneath both the second and third vents 19, 20. This tongue is preferably secured to the upper along the outer margin of one of the vents, as well as to the vamp at the toe.

The slide fastener 25 of the second vent is of a construction in which the fastener elements 27, 28 are engaged or disengaged from each other by a slider means 34 having cam surfaces to manipulate the fastener elements into inter-engaging relation. The slide fastener 25 is mounted on the second vent of the boot in such relation that the fastener elements 27, 28 are engaged by upward movement of the slider means 34 and disengaged by downward movement of the slider means. The slide fastener 25 is constructed thusly so that when the boot is donned by the wearer his heavy leg covering may be stuffed into the top of the boot and the slide fastener closed by pulling the slider means 34 upward, thus facilitating the donning of the boot.

The slide fastener 26 of the third vent 20 is of a construction similar to the fastener of the second vent except that it is mounted on the third vent 20 of the boot in such relation that the fastener elements 29, 30 are engaged by downward movement of the slider means 35 toward the toe of the boot and disengaged by movement of the slider means in the opposite direction or toward the top of the boot, the arrangement being such that by grasping the tab 36 on the slider means 35 and pulling the slider means up the leg the fastener elements are completely separated at the top of the boot as well as along the margins so that the boot may be doffed easily and quickly especially in case of an emergency. A stop 42 attached to one of the stringers 30 prevents withdrawing the slider means 35 completely from that side of the fastener, and a guide element 37 at the top of the other stringer 29 is employed for guiding the slider means 35 into fastener-element-engaging position when closing the slide fastener 26.

To provide against accidental opening of the slide fastener 26 on the third vent 20 and to provide an element for ready manipulation by the wearer in case of emergency, a strap 38, preferably of leather, is provided with one end secured to the tab 36 of the slider means 35 and

the opposite end removably secured to the upper at a position above the slider means 35, when in closed position, preferably along the margin of the third vent 20 by snap fastener elements 39, 40 secured to the strap and upper and engageable with each other. The strap 38 is preferably made relatively stiff to provide a strut, and for this purpose the leather may be rolled between its ends to provide a tubular cross-section with the margins 41 sewed together.

The strap 38 is preferably bowed between its ends so as to stand clear of the upper, as shown in Fig. 1, providing a handle which may be grasped quickly by the wearer even with thick gloves on his hands for quick doffing of the boot in an emergency such as landing in water. The fastening of the snap fastener elements 39, 40 keeps the strap in bowed condition and holds the slider means 35 at its lowest position.

In using the boot the slide fastener on the third vent normally is kept closed and the slide fastener on the second vent is used for ordinary donning and doffing of the boot. This is much simpler as the slide fastener on the second vent operates upward to close the vent and it is, therefore, easier to secure the boot when the wearer is encased in heavy clothing. In using the boot the cord 24 on the first vent is adjusted so that the boot will fit the individual wearer. The slide fastener 25 on the second vent is opened. The slide fastener 26 on the third vent is closed and the strap 38 is snapped into place on the upper. The boot is then donned and the slider means 34 is pulled upward to close the slide fastener 25. In case of emergency the wearer may grasp the strap 38 that is fixed to the tab 36 on the slider means 35 and, in one motion, pull it loose at the snap fastener 39, 40 and pull it upward thereby disengaging completely the slide fastener on the third vent. The boot may then be quickly kicked off.

While it is preferred to have the first vent opening in the back of the boot and the second and third vent openings at the front of the boot these vents may be placed at other locations if desired.

Having described my invention in considerable detail with particular application to an aviator's boot it is to be understood that I do not limit my invention to the details of construction or possible uses but that variations may be made without departing from the spirit and scope of the invention as defined by the following claims.

I claim:

1. A quickly removable article of footwear comprising a sole and heel portion, an upper portion, and at least two vents extending from near the sole portion to the top of the upper portion, the first of said vents having a slide fastener equipped with slider means adapted to close the slide fastener when the slider means is pulled upwardly, and the second of said vents having a fully separable slide fastener equipped with slider means adapted to close the slide fastener when the slider means is pulled downwardly and to completely open the slide fastener when pulled upwardly.

2. A quickly removable article of footwear comprising a sole and heel portion, an upper portion, adjusting means to adjust for size, and two vents extending from near the sole portion to the top of the upper portion, the first of said vents having a slide fastener equipped with slider means adapted to close the slide fastener when the

slider means is pulled upwardly, and the second of said vents having a fully separable slide fastener equipped with slider means adapted to close the slide fastener when the slider means is pulled downwardly and to completely open the slide fastener when pulled upwardly.

3. A quickly removable article of footwear comprising a sole and heel portion, a toe portion, an upper portion, adjusting means located substantially at the rear of the article to adjust for size, and two vents located at the front of the article and extending in substantially parallel relationship from above the toe to the top of the upper portion, the first of said vents having a slide fastener equipped with slider means adapted to close the slide fastener when the slider means is pulled upwardly, and the second of said vents having a fully separable slide fastener equipped with slider means adapted to close the slide fastener when the slider means is pulled downwardly and to completely open the slide fastener when pulled upwardly.

4. A quickly removable article of footwear comprising a foot covering having three vents extending from near the bottom of the foot covering to the top; the first of said vents having rigid eyelets placed at intervals along the margins fitted with interlacing means passed through the rigid eyelets; the second of said vents having a slide fastener having inter-engageable fastening elements secured at the opposite margins of the vent, and slider means movably engaging the fastening elements to close said vent when the slider means is moved from the bottom of the foot covering toward the top; the third of said vents having a fully separable slide fastener having inter-engageable fastening elements secured at the opposite margins of the vent, and slider means movably engaging the fastening elements to close said vent when the slider means is moved from

the top of the foot covering toward the bottom and open said vent completely when moved in the opposite direction; said slide fastener on said third vent having handle means fixed at one end to the slider means.

5. A quickly removable boot for aviators and the like comprising a foot covering having a closed bottom over the sole and heel portions and three vents extending from near the bottom of the boot to the top of the upper of the boot; the first of said vents being positioned at the back of the boot and having rigid eyelets placed at intervals along the margins fitted with interlacing means passed through the rigid eyelets; the second of said vents being positioned at the front of the boot and having a slide fastener having inter-engageable fastening elements secured at the opposite margins of the vent, and slider means movably engaging the fastening elements to close said vent when the slider means is moved from the bottom of the boot toward the top of the upper of the boot; the third of said vents being positioned at the front of the boot substantially parallel to the second vent and having a fully separable slide fastener having inter-engageable fastening elements secured at the opposite margins of the vents, and slider means movably engaging the fastening elements to close said vent when the slider means is moved from the top of the upper of the boot toward the bottom and open said vent completely when moved in the opposite direction; said slide fastener on said third vent having a strap-like handle fixed at one end to the slider means and removably secured at its opposite end to the foot covering at a position above the closed position of the slider means and near the vent for ready grasping of the strap-like handle.

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