MOLDED RUBBER STORM BOOT
Frank M. Le Compte, Watchung, N.J., assignor to
Tingley Rubber Corporation, a corporation of New
Jersey
Filed Feb. 16, 1959, Ser. No. 793,562
I Claim.
(Cl. 36—7.3)

The present invention is directed to a new form of molded rubber storm boot, which is waterproof, sturdy, but of very light construction, which can be worn comfortably without perspiring due to the build in ventilation, which permits easy ingress or egress of the shoe due to integrally molded rubber fins therein, which permits the boot to fit shoes of different shapes and sizes and centers the shoes in said boot, and which has other advantageous features later to be described in detail.

The boot of the present invention may be made either with the standard tubular upper or with an upper having a triangular two ply gusset flap which serves as an extension of the upper to expand the top opening thereof and thereby permit easy ingress of the shoe. Preferably, the boot is made in one piece of rubber by a single molding operation and the toe and heel fins are molded in at the same time.

Various other objects, features and advantages of the invention are readily apparent from the following description and from the accompanying drawings, in which

FIG. 1 is a perspective of a boot embodying the present invention and broken away to show the toe and heel fins;

FIG. 2 is a partial section taken on the lines 2—2 of FIG. 1;

FIG. 3 is a partial section taken on the lines 3—3 of FIG. 1;

FIG. 4 is a partial section taken on the lines 4—4 of FIG. 1 and showing the heel fins compressed as in inserting or removing the shoe;

FIG. 5 is a partial section similar to FIG. 4 but showing the heel fins in normal position with heel of shoe in place;

FIG. 6 is a perspective of a boot with a foldable flap in the upper and broken away to show the toe and heel fins;

FIG. 7 is a partial section taken on the lines 7—7 of FIG. 6;

FIG. 8 is a partial section similar to FIG. 7 but showing the heel fins compressed as in inserting or removing the shoe; and

FIG. 9 is a partial section taken on the lines 9—9 of FIG. 6 but showing the flap closed.

Referring to the drawings:

In FIG. 1 the boot is shown as made entirely of rubber and molded in one piece. It comprises a lower foot section 10 having a treading sole 11, a vamp 12 and a reinforcing boxing 13 around the edge of said sole and vamp. The boot also has an upper leg portion 14 formed as an open top sleeve and molded in one piece with the vamp 12. The vamp 12 and upper leg portion 34 are molded with fins 15 projecting inwardly from the wall of the boot and extending from the toe right up to point 19 which is just below the top of the boot 16. These fins vary in width from the toe area 17, where they are narrow, on up to the instep 18, where they widen out to full width, and then again narrow as they approach the top at 19. The fins 15, being molded to the boot wall, constitute a means whereby the boot may be easily slipped on over a wearer's shoe as well as a means for holding the shoe 22 properly in place in said boot; and they also provide a means for ventilation during the wearing period. As the boot wall flexes above the shoe during the stepping motion, alternately contracting and expanding the air space so provided by the fins, an air movement occurs, producing the ventilating effect.

Heel fins 21 are also formed in the rear portion of the vamp 12 and molded on the wall 20 to act in the same way as the fins 15 in the toe and instep area of the boot.

The boot, made of a single piece of rubber by the use of compression molding, is economical to manufacture and produces a tough durable product. The inwardly projecting fins, being molded in the single operation, have the added advantage of being structurally sound and economical to produce while achieving the desired improvement in wearing comfort. The fins not only provide passages for ventilation, but also provide a means whereby various shapes and sizes of shoes may be worn in the same boot without changing the shape or size of the boot, thus allowing fewer sizes of boots to be made and still accommodate a variety of shoe sizes.

Increased comfort to the wearer is also provided by the fact that the heel and toe fins provide a means for grasping the wearer's shoe so that in actual walking the shoe does not tend to pull out heel first at each step, as has hitherto been the case. In other words, the fins limit the movement of the shoe in the boot while permitting sufficient flexing of the boot wall to provide the ventilating effect.

The details of the toe fins 15 and the manner in which they function are well depicted in FIGS. 2 and 3, it being noted that (1) the fins are arranged in such spaced relation as to provide passages for ventilation; (2) they are of sufficient width to allow them to act as spacers to separate the boot and shoe for positioning; (3) they are arranged to act as guides for easy ingress and egress of the shoe; and (4) they are flexible and resilient and thus insure a tight fit between the shoe and the boot regardless of the shape or size of the shoe.

In FIG. 4 is shown the position of the heel fins 21 when the heel 23 of the shoe 22 makes a perfect fit with the heel portion of the boot.

In FIG. 5 is shown the position of the heel fins 21 when the heel 23 of the shoe 22 makes a perfect fit with the heel portion of the boot.

When the extension 41 is fully extended forwardly, a wide top opening is presented, and the flap presents a triangular pocket forming a forward extension of the hollow of the upper of the main body 34. Four fins 35, two on each inside face of the boot, permit the foot of the wearer to be guided easily and comfortably into the boot. Heel fins 41a are also provided to act in the same way as the heel fins 21 of the first embodiment. When the boot has been fully slipped onto the shoe and the inwardly projecting fins have assumed their normal position, the extension 41 is folded and wrapped around the outer side 34 of the boot to close said opening snugly and neatly about the leg either in the region of the ankle or directly above it. The extension 41 is fastened in this folded and wrapped position by means of a rubber button 44 molded integrally with the wall 34 of the boot in the same molding operation which molds the complete boot, and the upper forward section of the flap 41 is provided with a tab 42a having a circular eyelet forming a grommet 43.
which can be slipped over said button for fastening purposes.

The fins 35, like the fins 15 of the first embodiment, are carried down to the toe of the boot where at point 37 they are narrow and extend inwardly and upwardly and widen out as they go on up over the instep and at point 38 where they are widest and again narrow down to the wall at point 39. The fins 35, being molded in one piece with the boot, constitute means whereby the boot may be easily slipped over the wearer's shoe as well as a means for positioning the shoe properly in said boot and thus when properly placed, provide passages for ventilation during the wearing period.

The heel fins 41a, formed in the rear portion of the vamp 32 and molded on the wall 40, also provide means for controlling the putting on and taking off of the boot as well as a shoe positioning means plus a set of ventilation passages between the boot and shoe through which air can be drawn in and forced out at each step.

In FIG. 7 the heel 43 of the shoe 42 is shown in a normal position providing maximum passage area for ventilation by the fins 41a.

In FIG. 8 the heel 43 of the shoe 42 is shown in the ingress or egress position or as fitted in an oversize shoe, with the fins still providing means for ventilation and control.

FIG. 9 shows the fins 35 at their wider point 38, with two fins on each side of the fold, thereby making it possible for the fins to be molded continuously from the toe up to the top at 39.

While the triangular flap 41 is shown placed at the front of the boot in FIG. 6, it could be placed at the rear instead and the rear small fins located thereon.

The boots herein shown are intended for men's sizes but the invention of course is equally applicable to boots for children's sizes. The actual dimensions of the fins will naturally vary in such cases, although the proportions will be approximately the same.

While the invention has been described with particular reference to specific embodiment, it is to be understood that it is not to be limited thereto, but it is to be construed broadly and restricted solely by the scope of the appended claim.

What is claimed is:

A molded rubber storm boot formed on its inner wall with a plurality of flexible and resilient inwardly projecting fins for contact with the heel portion of the shoe, said fins being arranged in definite spaced relation to provide open-ended passages for ventilation and being of sufficient width to act as spacers to separate the boot and shoe for positioning, said fins extending vertically of the boot and varying in width along their length in a direction transverse to the wall from which said fins extend, said fins starting in the heel area of the shoe widening out as the fins extend upwardly and finally running out in the upper portion of the boot above the shoe, said fins being contoured to fit between the boot and the heel portion of the shoe to act as guides for easy ingress and egress of the shoe and extending above the upper edge of the shoe so as to thereby resist any tendency of the shoe to pull out heel first during walking.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Inventor</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,947</td>
<td>Pease</td>
<td>Nov. 14, 1854</td>
</tr>
<tr>
<td>227,811</td>
<td>Miller</td>
<td>May 18, 1886</td>
</tr>
<tr>
<td>1,612,622</td>
<td>Costello</td>
<td>June 30, 1931</td>
</tr>
<tr>
<td>2,108,656</td>
<td>De Noronha</td>
<td>Feb. 15, 1938</td>
</tr>
<tr>
<td>2,756,516</td>
<td>Teague</td>
<td>July 31, 1956</td>
</tr>
</tbody>
</table>