A lacing system for footwear of a type having a pair of spaced-apart flaps that are pulled together by tightening a lace includes a plurality of lace-receiving elements which are attachable to the flaps at multiple locations which allows the user to tailor the location of the lace-receiving elements to obtain a comfortable fit.
FOOTWEAR LACING SYSTEM
CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not applicable.

BACKGROUND OF THE INVENTION

[0002] Boots and other footwear have opposed flaps which cover the tongue at the front of the boot. The ends of a lace, which is placed through eyes or around hooks in a zig-zag pattern, are pulled to draw the flaps together and tighten the boot on the user’s foot. However, people’s feet are unique, and even for a given shoe size any particular pattern of the eyes or hooks on the flaps does not provide a comfortable fit for everyone.

SUMMARY OF THE INVENTION

[0003] The subject invention provides a lacing system having lace-receiving elements, which are attachable to their respective flaps at multiple locations, thereby allowing the lacing pattern to be varied to better fit the foot of a user.

[0004] The foregoing and other objectives, features, and advantages of the invention will be more readily understood upon consideration of the following detailed description of the invention taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL DRAWINGS

[0005] FIG. 1 is a front view of a portion of a boot showing one embodiment of the lacing system of the subject invention.

[0006] FIG. 2 is a fragmentary cross-sectional view, at an enlarged scale, taken along the line 2-2 in FIG. 1.

[0007] FIG. 3 is a perspective view showing two different embodiments of an attachment system with one embodiment showing the lace-receiving element separated from the system.

[0008] FIG. 4 is a perspective view showing two additional embodiments of an attachment system with one embodiment showing the lace-receiving element separated from the system.

[0009] FIG. 5 is a cross-sectional view taken along the line 5-5 of FIG. 4.

[0010] FIG. 6 is a cross-sectional view taken along the line 6-6 of FIG. 4.

[0011] FIG. 7 is a front view of a portion of a boot showing another embodiment of the lacing system of the subject invention.

[0012] FIG. 8 is a perspective view of the lace-receiving element of the lacing system of FIG. 7.

[0013] FIG. 9 is an exploded view of the lace-receiving element of FIG. 8.

[0014] FIG. 10 is a front view of a portion of a boot showing the lacing system of FIG. 7.

[0015] FIG. 11 is a cross-sectional view taken on the line 11-11 of FIG. 9.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0016] Referring now to FIGS. 1-7 and 10 of the drawings, a boot 20, or other footwear, has a pair of opposed flaps 22, which are drawn together by a lacing system 24 to tighten the boot on a user’s foot. The flaps have inwardly facing elongate margins 26. Attached to the margins 26 are a plurality of lace-receiving elements 30. A lace 32 extends between lace-receiving elements 30 on opposed flaps in a zig-zag pattern such that when the extremities 34 of the lace are pulled, the lace acts through the lace-receiving elements 30 to draw the opposed flaps toward one another to tighten the boot on the user’s foot. The lace-receiving elements 30 are attachable to the flaps 22 at multiple locations on the flaps. This allows the manner in which the flaps are drawn toward one another to be adjusted in order that the lacing system is tightened in a comfortable manner for a given user.

[0017] The lace-receiving elements 30 are attached to the flaps 22 by an attachment system 36. In a first embodiment, shown in FIGS. 1-3, the attachment system comprises a pair of elongate rails 38, which are located adjacent to the inwardly facing edges of the flaps. In the embodiment illustrated, the rails are circular in cross-section and have outwardly extending flat tabs 40, which are attached to the margins 26 of the flaps 22. The tabs 40 can be sewn onto the flaps as shown in the drawings, or attached by adhesive or any other attachment method.

[0018] The rails 38 are made from a material that is flexible enough to bend with the flaps to which they are attached but stiff enough to remain generally linear. In this embodiment, the lace-receiving elements 30 are attached to sliders 42, which are slidably attached to the rails. The sliders wrap around the rails 38 and have openings 43 through which the tabs 40 fit. In the embodiment shown in the drawings, the openings 43 located on the sliders are opposite the lace-receiving elements 30, but they could be slightly offset from one another. The lace-receiving elements 30 can be eyes 44 or hooks 46. When the lace is loose, the sliders 42 can be moved to any desired position along the rails 38. However, due to the zig-zag pattern of the lace, when the lace is tightened the sliders are twisted slightly on the rails and become fixed at their current position.

[0019] Referring now to FIGS. 4-6, in another embodiment the sliders 42 and rails 38 contain a locking system 48, which allows the sliders to be located immovably at selected locations along the rail. The locking system 48 includes slots 50 located at spaced-apart locations along the tabs 40. The slots 50 are slightly longer than the sliders 42 and have a width that is slightly less than the width of the sliders. In this embodiment, the openings 43 in the sliders 42 are oriented approximately 90° from the lace-receiving elements 30. When a slider is rotated around the rail 38 to a first position (FIG. 6), the locking mechanism is disengaged and the slider is free to slide along the rail. When the slider 42 is rotated approximately 90° to a second position (FIG. 5), the slider is located in the slot 50, which engages the locking system 48 and prevents the slider from moving along the rail. Because the openings 43 in the sliders 42 are oriented approximately 90° with respect to the lace-receiving elements 30, the locking mechanism is engaged when the lace-receiving elements 30 are rotated to where the locking mechanism is engaged when the lace 32 is tightened.

[0020] In another embodiment, shown in FIGS. 7-11, the attachment system 36 includes a plurality of seats 52 located in the flaps 22. The seats are placed at spaced-apart locations along the longitudinal extent of the flaps and at different locations relative to the inside edges of the flaps. The seats have elongate receptacles 54 located therein. The receptacles open out of the top surface of the seats 52 and extend toward
one side of the seats below the top surface of the seats. Clips 56 have downwardly-depending elongate anchors 58, which fit into the receptacles and can be moved into the portion of the receptacles below the top surface of the seats where they cannot be pulled back out of the receptacles. The clips 56 contain the lace-receiving elements 30, with either eyes 44 or hooks 46.

In use, clips 56 are placed in the desired seats 52 and moved toward the center of the boot to place the anchors in the position below the top surface of the bases. The laces are threaded through the lace-receiving elements in the normal manner. When the lace is tightened, it urges the anchors into the portion of the receptacles that is below the top surface of the bases and locks them in place.

The terms and expressions that have been employed in the foregoing specification are used therein as terms of description and not of limitation, and there is no intention in the use of such terms and expressions of excluding equivalents of the features shown and described or portions thereof, it being recognized that the scope of the invention is defined and limited only by the claims which follow.

What is claimed is:

1. A system for lacing footwear having a pair of spaced-apart elongate flaps, which are pulled toward one another by laces comprising:
   a) a plurality of lace-receiving elements, at least some of said lace-receiving elements being attached to each of said flaps; wherein
   b) at least some of said lace-receiving elements are attachable to the respective flap at multiple locations on said flap.

2. The system of claim 1 including an attachment system for attaching said lace-receiving elements at desired locations on said flaps.

3. The system of claim 2 wherein said attachment system comprises:
   a) a pair of rails, one of which extends longitudinally along a margin of each said flap;
   b) one or more sliders, which are attached to and slidable along said rails; and
   c) lace-receiving elements, which are located on said sliders.

4. The lacing system of claim 3 wherein said lace-receiving elements are hooks.

5. The lacing system of claim 3 wherein said lace-receiving elements are eyes.

6. The lacing system of claim 3 wherein said lacing system is a hook.

7. The lacing system of claim 6 wherein said sliders include a lock, which prevents said sliders from sliding along said rails.

8. The lacing system of claim 7 wherein said slider is engaged in a second position when a lace on said lacing system is tightened.

9. The lacing system of claim 1 wherein said lace-receiving clips are eyes.

10. The lacing system of claim 9 wherein said lace-receiving clips are hooks.

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