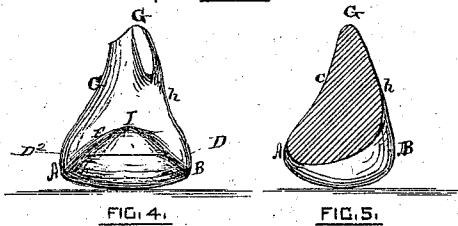
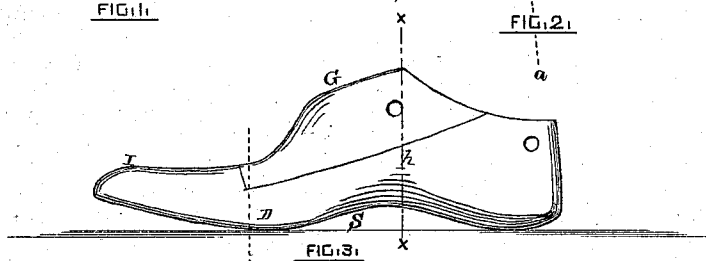
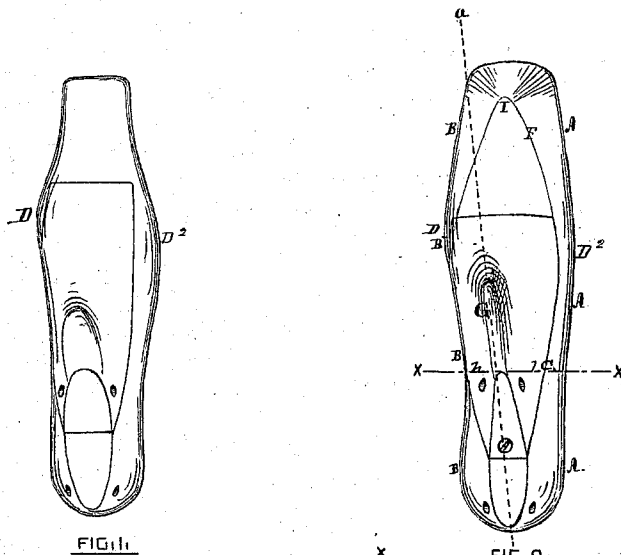


J. H. LIVINGSTON.
Lasts for Boots and Shoes.

No. 149,871.

Patented April 21, 1874.



WITNESSES.

INVENTOR.

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UNITED STATES PATENT OFFICE.

JOHN H. LIVINGSTON, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN LASTS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 149,871, dated April 21, 1874; application filed February 15, 1873.

To all whom it may concern:

Be it known that I, JOHN H. LIVINGSTON, of the city and county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Lasts for Boots and Shoes, of which the following is a specification, referring to the accompanying drawing making part of the same, in which—

Figure 1 is a top view and outline of the last now in general use. Fig. 2 is a plan of my improved last. Fig. 3 is a side elevation of the same. Fig. 4 is a front view of the same from the toe end. Fig. 5 is a vertical section of the same by line *x x*, Figs. 2 and 3.

Similar letters mark like parts in all the figures.

My improvement relates to certain new shapes that are given to different portions of the last, with a view to produce a better fit of the human foot; to make the boot or shoe easier and more comfortable about the difficult fitting parts; and, mainly, to prevent the same from treading over on the outside. My invention, therefore, resides in several characteristic features which are hereinafter described—that is to say:

The outside outline A of the last is nearly straight, without prominence at the ball of the foot, or marked taper thence to the toe. The inside outline B is marked by an easy swell from the arch or hollow S, to and around the ball D, and a gradual taper toward the toe more marked than in the outside outline A. The toe is of medium width, and is marked by a prominent cone, I, slightly inside from the center, with a sharp convex inclination in front and to the inside B, and a more gradual and flat inclination from the apex I, and along the line F, representing the tip of the toes, to the outside line A, until it merges into the round surface, or edge D², at the ball. The instep is marked by a high narrow ridge, G, rising abruptly in front, with a longitudinal inclination from the center of the heel to the inner outline of the toe, as shown by the dotted line *a a*, Fig. 2. The ridge G is also set prominently inside the center line of the tread, vertically, with an easy concave outline, C, from the top of the ridge to the outline A, and a precipitous convex outline, *h*, from the

top of the ridge to the inner outline at the arch of the foot, on the line *x x*, as shown in Figs. 4 and 5. The bottom of the last is marked by an unusual roundness or convexity, and the entire absence of any sharpness of outline or surface. That portion of the sole near and around the ball of the foot is conspicuously convex, as shown in Fig. 4, as well as at the heel, as shown in Fig. 5, and is calculated to produce a corresponding concavity at these points, so as to let the ball and heel down into or below the general level of the sole, instead of elevating the same to the level of a flat sole, as heretofore.

Of the several features thus described the first and second constitute a correct and easy boundary of the tread of the human foot. The third governs the distribution of the upper-leather over the toes and fore-foot, giving special ease to the great toe and its joint, and the boot or shoe a shorter appearance, and better form to the toe of the same. The fourth feature disposes the upper-leather to fit around the instep with ease and smoothness, and avoids undue slackness, which lets the foot forward against the toe of the boot, and gaps or bulges outward from the instep of the foot in a shoe. This feature also defines the situation of the instep and upper-leather relatively with the tread of the foot, to balance the tread by the position given the ankle in the upper-leather above it, nearer the outline B, and therefore calculated to poise the balance in favor of an in-tread instead of an out-tread of the foot, as is commonly the case.

The last above described can be used without alteration, by rasping away or building upon, for a boot, a shoe, or slipper. The common last cannot be used indifferently for a boot or for a shoe. If a shoe, especially a low-quarter one, is made on a common last used for a boot, the quarters will bulge out, leaving a gaping space between the side of the shoe and outside line of the foot below the ankle, but with my improved last, sloped as shown at *c*, in sectional view, Fig. 5, the quarters fit snugly to the side of the foot.

Having described my invention, I claim—

The last, substantially as described, with the outer tread-line A, extending from heel

to toe, without special inward or outward curves; the inner tread-line B, extending from the inner side of the heel, on a general straight line, to a point adjacent to the center of the arch, and thence by easy outward and inward curves to the toe; the cone I, adjacent to the toe, substantially in the lateral center of the last; and the instep-ridge G, with the outside

vertical concave surface *c*, and the inside vertical convex surface *h*, all as and for the purposes specified.

JOHN H. LIVINGSTON.

Witnesses:

EDWIN C. PIERCE,

THOMAS F. COSGROVE.