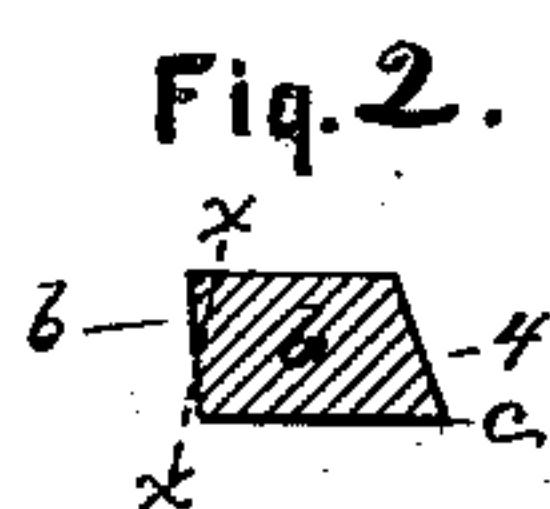
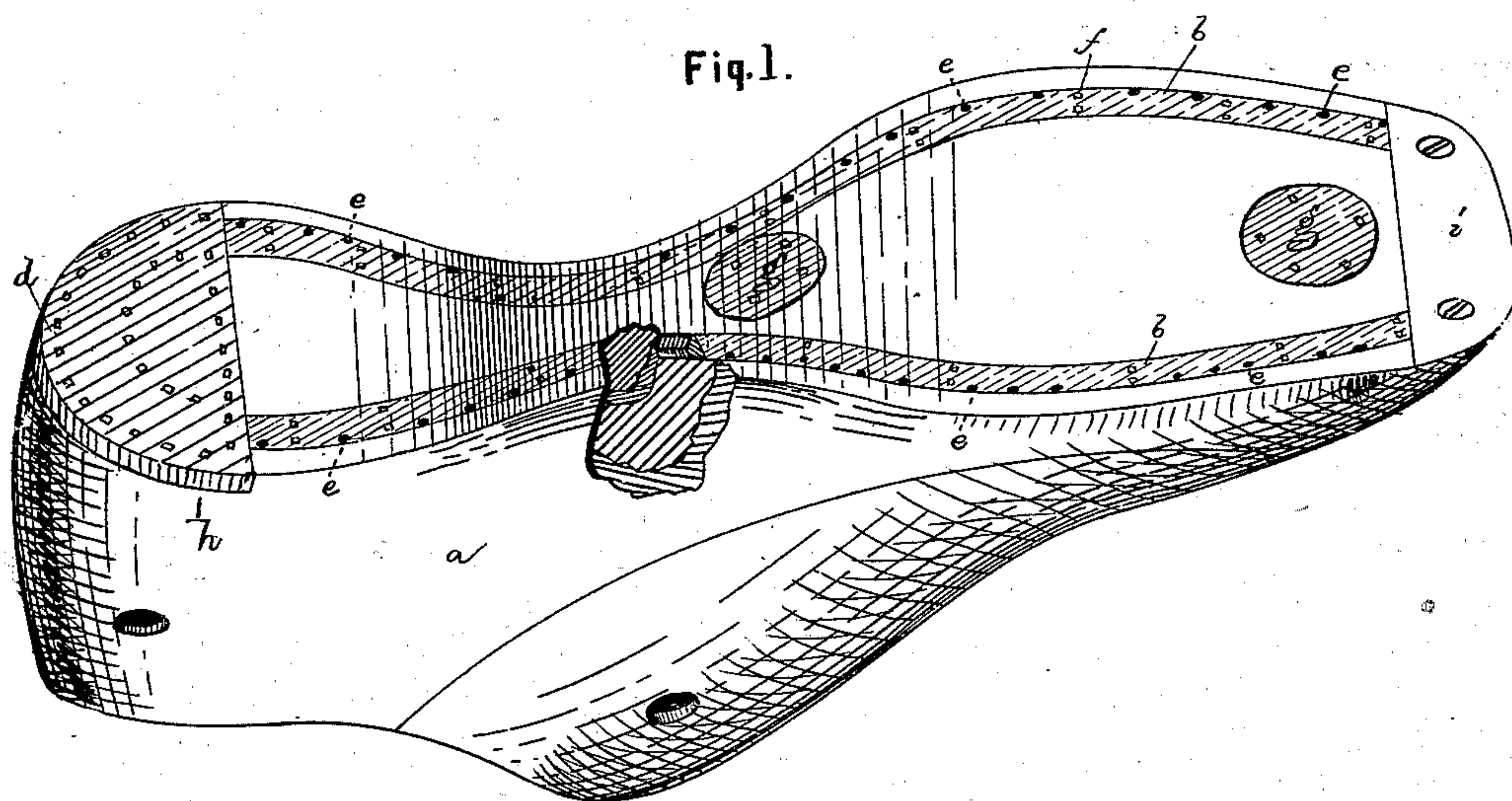


L. DAROZIR.  
LASTS.

No. 187,824.

Patented Feb. 27, 1877.



Witnesses.

*Levi Darozir*  
*Charles W. Collier*

Inventor

*Levi Darozir*  
per *Crabtree & Gregory* 07743



# UNITED STATES PATENT OFFICE

LEVI DAROZIR, OF NATICK, MASSACHUSETTS, ASSIGNOR TO CLAUDIUS B. TRAVIS, OF SAME PLACE.

## IMPROVEMENT IN LASTS.

Specification forming part of Letters Patent No. 187,821, dated February 27, 1877; application filed December 11, 1876.

*To all whom it may concern:*

Be it known that I, LEVI DAROZIR, of Natick, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Lasts for Boot and Shoe Making, of which the following is a specification:

This invention relates to improvements in wooden lasts for use in the manufacture of boots and shoes; and has for its object to provide the last with leather filling, substantially as hereinafter described, to receive the pegs driven through the inner sole. This leather filling permits the pegs driven into the shoe and into the filling to readily pull out when the last is removed, and the filling perforated by the awl and pegs may, when worn out, be easily and cheaply renewed. This filling enables manufacturers of boots and shoes to make a very great saving in lasts, for, when the awl and peg are driven into the wood of the last, the last is soon worn out and becomes useless.

Figure 1 represents an under-side view of a last made in accordance with this invention, and Fig. 2 a section of the leather filling at the edge.

I take an ordinary last, *a*, and, by means of suitable tools, to be described in another application, make in its under side two grooves at a little distance back from its edge in the line, where the awl driven through the shoe-sole would enter the last. These grooves are slanted a little toward the center of the last and filled with a sole-leather filling-strip, *b b*, shaped, preferably, as in cross-section, Fig. 2, the corner *c* fitting the bottom of the groove toward the center of the last. These strips of leather, before they are applied in the grooves along the side of the last, and the plates of leather *d* at the heel, are prepared with an oleaginous preparation, to cause the peg to adhere to such prepared leather strip less than it would to a strip of ordinary leather. This is of much importance, for the peg-holding properties of the leather, being thereby reduced, enables the last to be drawn from the shoe and the pegs to pull out from the filling easier than from the material of the shoe-sole. The leather fitted to the last bottom is treated with a mixture of tallow and

neat's-foot oil, as much of the mixture or its equivalent being used as can well be absorbed into it. This prepared leather is applied to the openings in the last bottom, with the flesh side up, as that side has less peg-holding properties than the grain side, is more spongy, will move or yield laterally more readily under the action of the awl and peg than the grain side, thereby permitting subsequent penetrations of the awl and peg to move the leather to close the perforations previously made in the leather.

Before applying the strips *b* the interior portions of the grooves are coated with glue of a water-proof character, preferably "frozen" white glue, mixed with shellac, japan, or varnish, and then the strips are pounded down into the grooves or recesses. The soles of the shoes being made are usually wet, and for that reason water-proof glue is best. This glue will not alone hold the strips sufficiently tight; so, after the strips are driven down into the grooves, I drive through the strips and into the wood of the last a number of metallic fastenings (shown by the dots *e*) at the outer edges of the strips. These fastenings are preferably like those used in cable-screw-wire work. They are placed sufficiently near the edge of the last to be removed from the path of the awl and pegs. Ordinarily these fastenings do not show. Then, along the edges of the strips I prefer to further employ a series of pegs, *f*. The center-pieces *g* at the center of the last-bottom are of leather prepared and secured in the manner before described, or they may be of wood. The heel-plate *d* is fitted to the heel of the last, the latter being cut away, as indicated in the drawing at *h*, and is glued and otherwise secured in place, substantially as before set forth. The toe portion *i* may be a plate of leather, as above described, or a regular iron plate.

After the pieces of leather are secured, substantially as described, the last bottom is dressed or finished by means of a rotating wheel covered with sand-paper or emery. I prefer after this to coat or dress the bottom of the last with a preparation of bees-wax, it assisting in decreasing the holding properties between the pegs and the filling-strips.

When the leather in the bottom of the last



becomes so worn as not to operate properly in the pegging of shoes, then it may be removed and other new strips or plates be added, the last being then as good as at first. Old worn-out lasts may be readily provided with these pieces of leather, by means of a machine invented by me and made the subject of another application for patent.

The undercut edge of the last, against which fits the edge 4 of the filling-strip, prevents the strip from lifting at that edge, and the cable-wire, or other nail with substantially equal holding-power, driven through the strip in the line *xx*, Fig. 2, holds the strip down at that edge. The glue acts entirely across the under side of the leather.

In the ordinary last the pegs driven into the center of the last bottom, to hold the sole at the center, gradually expand and often split the last. With the leather or wood center-pieces, they may be removed when fitted with pegs, and thereby worn.

I claim—

1. A wooden last, in combination with strips *b* of leather fitted in grooves in the last, and with the flesh side uppermost, substantially as and for the purpose described.

2. A wooden last, in combination with strips *b* of leather prepared and treated with an oleaginous preparation, substantially as described.

3. A wooden last, in combination with strips of leather *b* shaped and fitted in grooves in the last, substantially as described, and nailed

to the last at one edge of the strips, substantially as set forth.

4. A wooden last, grooved substantially as described, in combination with strips of leather glued into the grooves and nailed or pegged, to assist in holding the strips in place, substantially as described.

5. A wooden last grooved substantially as described, in combination with strips of prepared leather fitted to the grooves and glued and nailed or pegged to hold the strips, substantially as set forth.

6. A wooden last, in combination with leather strips *b* and center-pieces *g*, placed in grooves and recesses in the last bottom and nailed or pegged to the wood of the last, substantially as and for the purpose described.

7. A wooden last, in combination with leather strips *b* and heel-plate *d*, placed in grooves or recesses in the last bottom and nailed or pegged to the wood of the last, substantially as described.

8. A wooden last, in combination with leather strips *b*, center-pieces *g*, and heel-plate *d*, all applied in grooves or recesses in the last bottom and nailed or pegged to the wood of the last, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

Witnesses: LEVI DAROZIR.

G. W. GREGORY,  
S. B. KIDDER.