W. J. CROWLEY.
Repairing-Lasts.

No. 216,509. Patented June 17, 1879.

Fig. 1

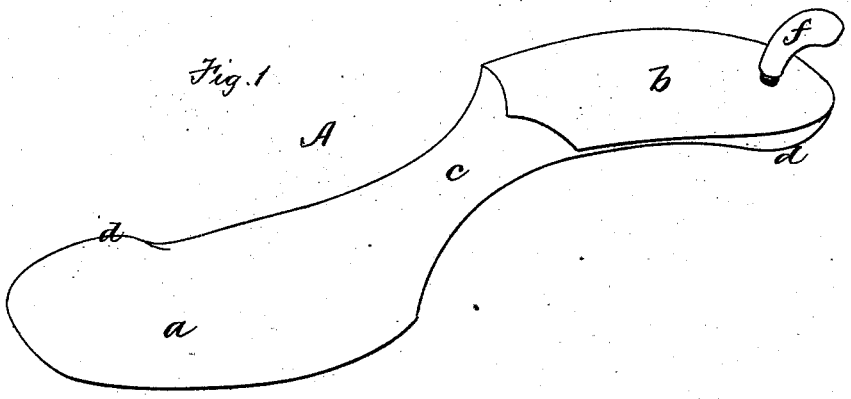


Fig. 2

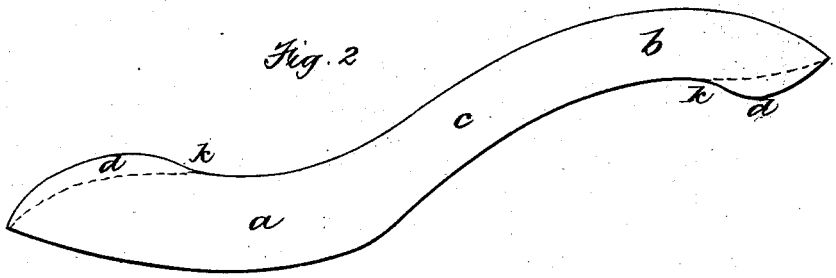


Fig 3

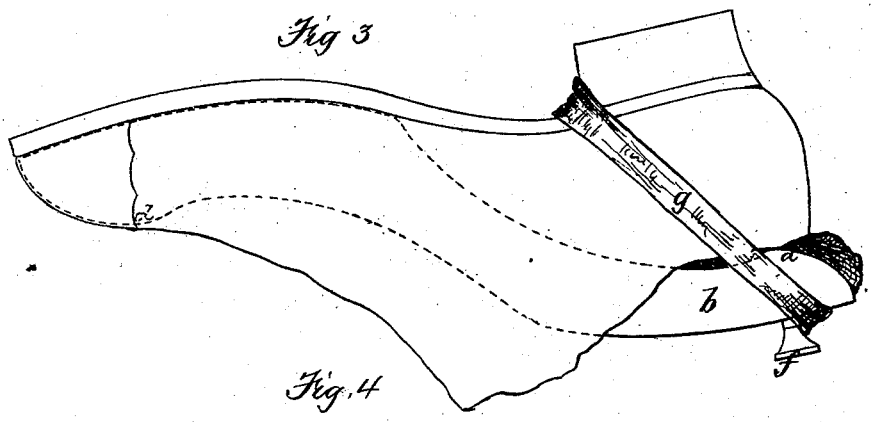
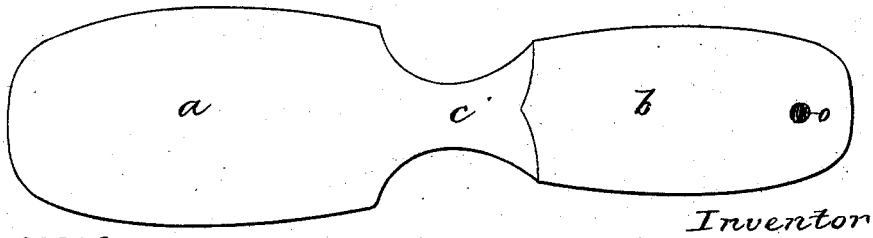


Fig. 4



Witnesses.
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Geo. W. Pierce

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UNITED STATES PATENT OFFICE.

WILLIAM J. CROWLEY, OF FALL RIVER, MASSACHUSETTS.

IMPROVEMENT IN REPAIRING-LASTS.

Specification forming part of Letters Patent No. **216,509**, dated June 17, 1879; application filed March 13, 1879.

To all whom it may concern:

Be it known that I, WILLIAM J. CROWLEY, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain Improvements in Repairing-Lasts, of which the following is a specification.

This invention has for its object to provide a reversible last adapted for use only in repairing the sole and the toe portion of a boot or shoe (said parts being most liable to need repairing) without stretching and injuring the fit of the main portion of the upper like an ordinary last.

The invention also has for its object to enable such a last to be held in place in a boot or shoe.

To these ends my invention consists, first, in the form of the last, and, second, in the provision of means for securing the same to a boot or shoe, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of a last embodying my improvements. Fig. 2 represents a side view of the same. Fig. 3 represents a side view of the same in a boot or shoe. Fig. 4 represents a plan view.

Similar letters of reference indicate like parts in all the figures.

In the drawings, A represents what is known as a "double reversible" repairing-last, which is of metal, and is composed of two parts, *a b*, connected by the shank *c*. The last is reversely curved longitudinally, so that the parts *a b* present convex surfaces, which are on opposite sides of the last. Each convex surface conforms to the shape of the inner surface of the sole of a boot or shoe, and is adapted to support the sole while it is being tapped, and forms a bed on which to clinch metallic sole-fastenings. The parts *a b* are counterparts of each other excepting in size, one being smaller than the other, and adapted to a different size of boot or shoe.

A double last of this general form is old, and it has always been made so slender or attenuated that it will not fill out and support any part of the upper of a boot or shoe, its only function being to support the sole. This tool has always been regarded as a convenience by shoe-repairers for use as a tapping-last, because it is easily inserted and removed from a boot or shoe, and does not stretch and distort the upper like an ordinary last, such as is used to make a boot or shoe upon.

I have found that by adding a protuberance to the toe portion of each part of the slender tapping-last above described, I am enabled to utilize it also for filling out or stretching the toe portion of the upper of a boot or shoe preparatory to repairing or placing a toe-cap thereon without detracting from the above-named advantages resulting from the slender form of the last, as the toe portion of the upper can be stretched without detriment to the fit of the boot or shoe. *d d* represent said protuberances, which increase the size of the toe portions of the last only, as indicated by the dotted lines in Fig. 2, which represent the former outlines of the toe portions. These protuberances are formed to smoothly fill out so much of the toe of the upper as is usually covered by a toe-cap. Each protuberance curves downwardly at its rear portion until it joins the slender portion of the last, a concavity, *k*, being thus formed back of each protuberance, which cavity fits over the knee of the workman when the last is in position to support the sole, as shown in Fig. 3, and prevents the last and the boot or shoe thereon from moving endwise.

The described curvature of the last causes its rear end to project outwardly away from the heel of the boot or shoe, as shown in Fig. 3, and serve as a handle for the part in the boot or shoe.

I have made other improvements in the repairing-last, which consist in the provision of an orifice, *o*, near the end of each part, *a b*, and a pin or stud, *f*, adapted to be inserted in either of said orifices. The pin or stud *f* is inserted in the outer end of the last to afford a hold for an elastic or other strap, *g*, when the last is in place in a boot or shoe, the strap passing around the heel of the boot or shoe, as shown in Fig. 3, and holding the last and shoe together. The stud may be inclined, as

shown in Fig. 1, or headed, as in Fig. 3, or of any suitable form, and may be used at either end of the last.

I claim—

1. The improved double reversible repairing-last consisting of the parts *a b*, connected by the shank *c*, and provided with the protuberances *d d*, as set forth.

2. A double reversible repairing-last provided in the bottom of each portion, *a b*, with an orifice adapted to receive a detachable pin or stud, *f*, substantially as and for the purpose specified.

3. In combination with a double reversible repairing-last having an orifice in the bottom of each portion, a detachable pin or stud, *f*, substantially as and for the purpose specified.

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

WILLIAM J. CROWLEY.

Witnesses:

WM. KELLEY,

JOHN W. COUGHLIN.