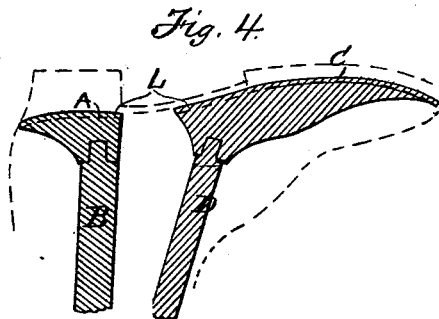
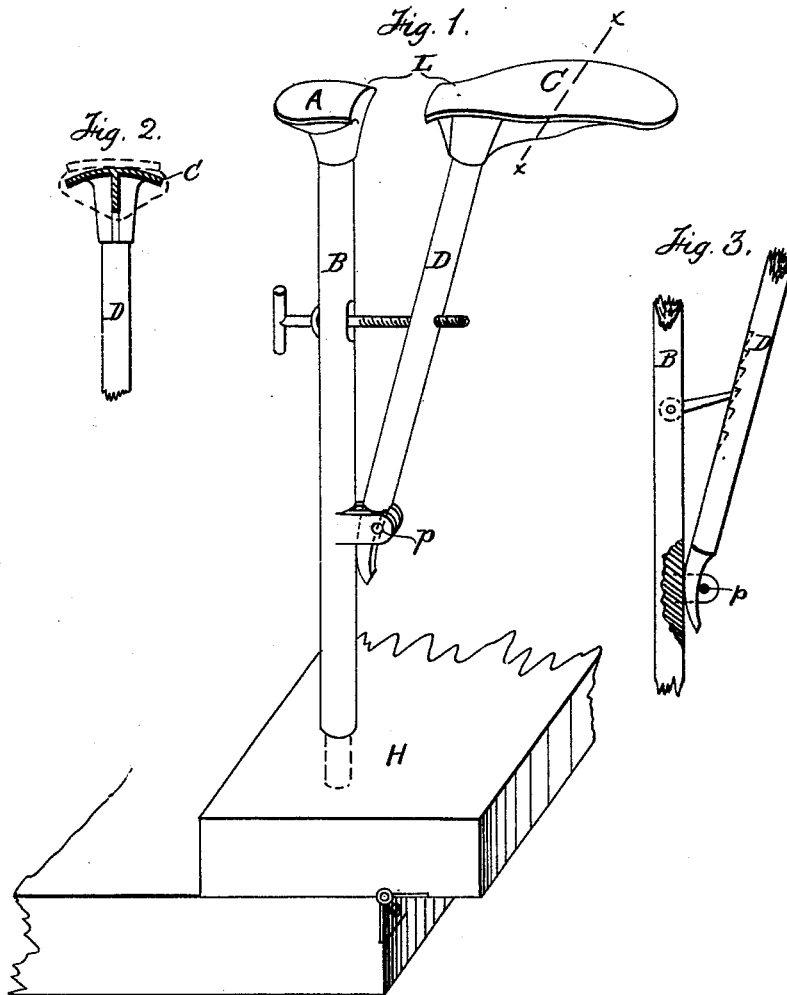


J. MORRELL.  
Lasts.

No. 219,753.

Patented Sept. 16, 1879.



Witnesses.

J. McKim  
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# UNITED STATES PATENT OFFICE.

JOHN MORRELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF,  
HENRY HANSON, AND WALTER L. ROOD, OF SAME PLACE.

## IMPROVEMENT IN LASTS.

Specification forming part of Letters Patent No. **219,753**, dated September 16, 1879; application filed June 30, 1879.

*To all whom it may concern:*

Be it known that I, JOHN MORRELL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Heeling and Tapping Lasts, of which the following is a specification.

The object of my invention is to provide a last for supporting a boot or shoe while taps are being applied to the heel and sole thereof without filling out the upper, which last is capable of adjustment as to length while in a boot or shoe, and is thus adapted to serve for a variety of sizes, and to hold the boot or shoe in place without stretching the upper.

My invention consists in a last composed of a heel-support and a sole-support, which are adapted to be adjusted in such manner as to increase or diminish the length of the last, said parts being formed with reference only to supporting the heel and sole without filling out and stretching the upper, 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 my improved last. Fig. 2 represents a transverse section of the same. Fig. 3 represents a modification of adjusting device, and Fig. 4 represents a longitudinal section.

In the drawings, L represents my improved last, which I term a "heeling" and "tapping" last. Said last is composed of two metallic plates, A C, which constitute, respectively, heel and sole supports for a boot or shoe. Said plates are supported on a divided or two-part standard, composed of a part, B, to which the heel-support A is attached, and a part, D, to which the sole-support C is attached.

The part B is placed in a head-block, H, or otherwise supported, and the part D is pivoted to the part B at *p*, or otherwise connected, so that it can swing to move the sole-support toward and from the heel-support.

The part D is held at any desired angle with the part B by any suitable means—for instance,

a screw working in the divided standard, as shown in Fig. 1, or a dog and ratchet-teeth, as shown in Fig. 3.

The parts A C are composed, preferably, of plates of metal formed to support only the sole and heel of a boot or shoe without filling out the upper, the edges of the parts A C being so thin as to afford no considerable bearing-surface on the upper.

By moving the part C away from the part A, I increase the length of the last, and vice versa.

The width of the parts A C is about equal to the width of the inner sole of a boot or shoe of the largest size to be used on the last, and the length of said parts is such that they will have to be separated from each other to enable the last to extend the entire length of the boot or shoe.

The last is thus enabled to be inserted in a boot or shoe in a contracted condition, and then extended, so as to press in opposite directions against the counter and toe of the boot or shoe and hold the same firmly.

It will be seen, however, that when the last is extended it does not fill out nor bear upon the upper sufficiently to stretch the same. Hence the last differs, essentially, from a stretching-last.

When the last is used in smaller sizes, the parts are moved toward each other, and the width of the part A being greater than the width of the boot or shoe sole, the unfilled vamp portion of the upper will yield laterally, so that the part C will project on each side of the sole, as shown in dotted lines in Fig. 2.

There is less variation in the width of heels than in the width of the soles in different sizes of boots and shoes, so that the same heel-support will answer for several sizes, and there is, therefore, no difficulty arising from the fact that the counter of a boot or shoe is too stiff to yield laterally, like the vamp.

By the use of two sizes of the improved

last I can accommodate all sizes of boots or shoes, from the largest man's size to the smallest child's size.

If desired, the parts A C may be detachably connected to the divided standard, so that the latter can be used for all sizes.

I claim as my invention—

A last composed of the plates A C, supported on a divided standard, B D, and made

adjustable to and from each other by means substantially as described.

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

JOHN MORRELL.

Witnesses:

C. F. BROWN,

GEO. W. PIERCE.