C. D. BIGELOW.

JACK-LASTS.

No. 185,478. Patented Dec. 19, 1876.

Fig. 1.

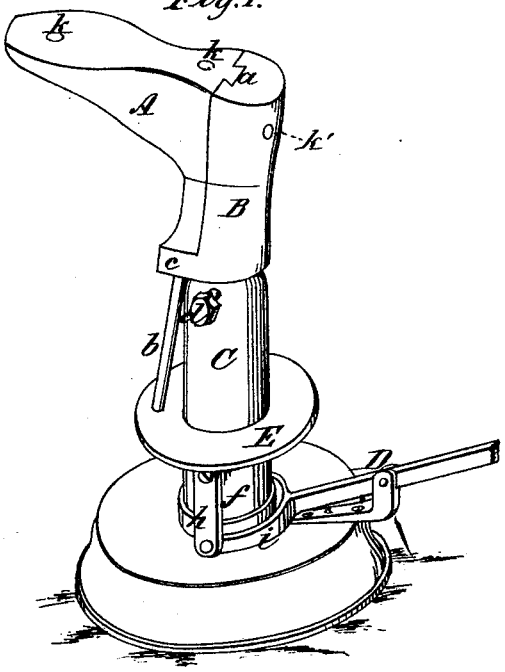
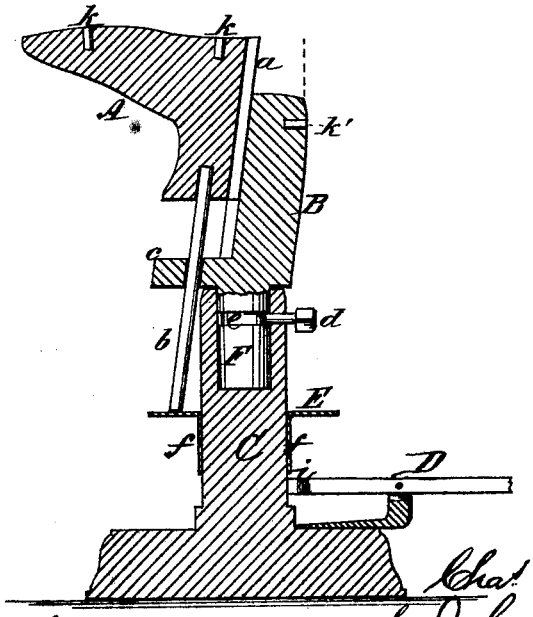


Fig. 2.



Witnesses;
Floyd Norris
F. H. Rutherford

Inventor;
Chas. D. Bigelow
by Johnson and Johnson
Attys.

UNITED STATES PATENT OFFICE.

CHARLES D. BIGELOW, OF NEW YORK, N. Y.

IMPROVEMENT IN JACK-LASTS.

Specification forming part of Letters Patent No. **185,478**, dated December 19, 1876; application filed November 11, 1876.

To all whom it may concern:

Be it known that I, CHARLES D. BIGELOW, formerly of Brooklyn, but now of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Jack-Lasts; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The design of the invention is to facilitate the manufacture of boots and shoes by a last of the proper size and form to fit the foot, and so that the bottom may be put on and the shoe finished upon the last, but more especially so that the shoe may be removed with facility from the last at any stage of its making, and placed upon another last of similar construction, with as much ease and facility as the shoe with the ordinary last in it may be transferred from one jack to another. In large manufactories the lasting of the shoes is carried on separately, the outsole tacked to, and the work, with the last in it, carried to another place to be nailed or pegged in the machine, after which the last is drawn out and returned to the part of the shop where the lasting is done. By means of my new jack-last the loss of time and trouble in carrying lasts from one part of the shop to another is avoided, and the expense and labor of drawing out the lasts are saved.

My jack-last is provided with the means for the ready placing and removal of the boot or shoe, preserving, when under operation, the integrity of the surface of the last. The "last" portion of the jack is bisected transversely, one section being adapted to be removed out of the surface-line, and to be restored thereto to constitute the jack-last a complete work-structure, upon and from which the shoe may be worked from one jack-last to another, and the work done with dispatch.

In the accompanying drawings, Figure 1 represents a view, in perspective, of a jack-last embracing my invention; and Fig. 2, a vertical longitudinal section of the same, the toe-piece being elevated to illustrate the method of shortening the last.

I make the last in two sections, A B, the bisection, as shown, being oblique to the line of the standard C, joined by a dovetail joint, *a*, using the heel-piece as a support or bearing. The bisection is inclined to the axis of the standard, and the movable section or toe-piece A rises upon an incline toward the heel-piece B, and gradually carries the shoe free of the heel-piece, and permits it to be readily slipped forward from off the toe-piece, since, as the toe-piece or movable portion rises upon the incline, it gradually diminishes the length of the whole last, and in doing so lifts and frees the shoe of the last, so that it may be slipped off, as before stated. The shoe is put on when the toe-piece is raised, and as the toe part is pressed down to its place the shoe is completely filled by the last. The toe-piece is raised by suitable treadle devices D, in order to leave both hands of the operative free, and connected therewith is an annulus, E, or universal lifting-disk, which strikes up the guide-pin *b*, which extends from the toe-piece, and is socketed therein. The toe-piece A is firmly supported upon a bearing projection, *c*, of the heel-piece B, through which bearing the guide-pin *b* passes, as shown in Fig. 2, and travels in the same inclined line. The last A B is pivoted in the standard C, and fastened by screw *d* (which may be countersunk in the standard) engaging with a circumferential groove, *e*, in the pivot projection F of the last. The last may be turned freely around upon its pivot, the pin *b* being of a length which does not touch the annulus E when the nailing or other work is going on. No matter in what position the last may be when the treadle is operated, the annulus strikes the pin and raises the toe-piece.

To give the annulus a free movement up and down the standard, it is provided with a collar, *f*, in lugs *g* of which, at its junction with the under surface of the lifting-annulus, are jointed links *h* of the treadle-bail *i*. Were it not for this annulus time would be wasted in lifting the toe-piece.

As shown in the drawings, the machine is designed to be operated in an upright position,

in which case it is used for lasting, nailing, and heeling. It may, however, be operated in a horizontal position, in which case it is used for trimming and burnishing the edges. The insole in the lasting is tacked to the wooden plugs *k*, and the upper drawn over and tacked to the insole and to the plug *k* in the heel.

A series of the jack-lasts are used for the different operations of lasting, pegging, trimming, and finishing. The last may be entirely of iron or other metal, or it may be of wood and plated. The bisecting joint need not necessarily be a dovetail joint, but it should be such as to lock the sections together in any position.

It will also be observed that I put on and free the shoe with relation to the last without entirely separating the sections, while the last is of the proper size to fill the shoe.

I claim—

1. A jack-last, the last portion being bisected transversely, one section being operated and controlled in constant connection with the other, to interrupt and restore the continuity of the last's surface by the direct agency of a treadle or lever and intermediate connections, substantially as described.

2. In a jack-last having a bisected last portion, the inclined guide device *b*, in combination with the movable section A, the bearing *c*, the annulus E, and the treadle or lever connection D, as described.

3. In a jack-last having a bisected last portion, the movable or acting section A, in combination with the passive section B, provided with guide-bearing *c*, and the operating device *b*, substantially as described.

4. In combination with a jack-last of two sections, bisected obliquely, as set forth, the annulus or universal lifting-disk E, adapted to operate with a guide-pin, *b*, or other suitable means to extend the movable section, for the purpose stated.

5. The combination, with a jack-last of two sections, bisected obliquely, as set forth, of the annulus or universal lifting-disk E and the intermediate lifting device *b* of a treadle-connection, for the purpose stated.

In testimony that I claim the foregoing I have affixed my signature in presence of two witnesses.

CHARLES D. BIGELOW.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.