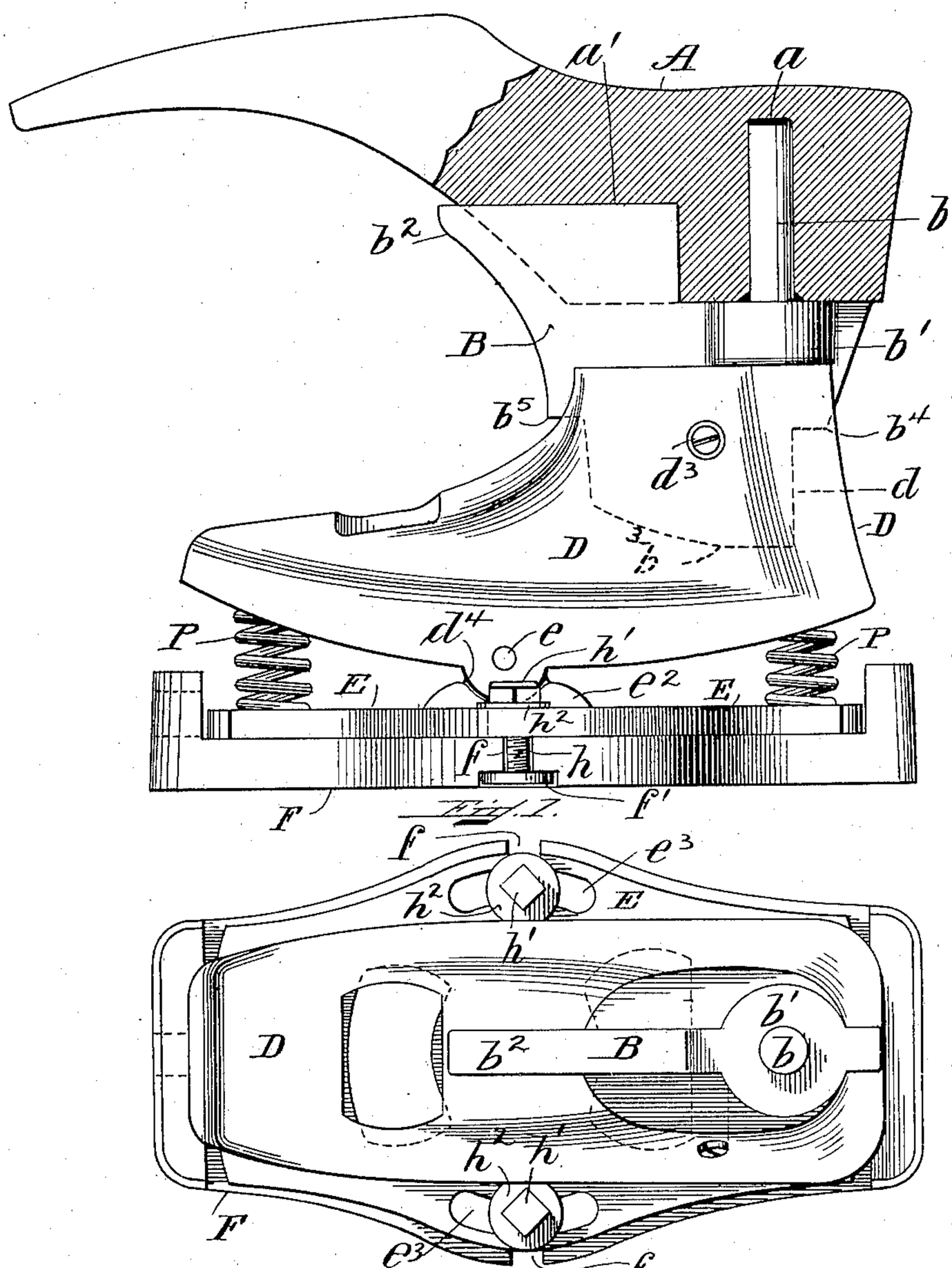
No. 653,227. Patented July 10, 1900.

W. E. FORSTER.

SHOE JACK.

(Application filed June 25, 1896.)

(No Model.) 2 Sheets—Sheet 1.



Witnesses:
T. E. Kennick
A. E. Hyde.

Inventor:
William E. Forster
By his Attorney
Benjamin Phillips

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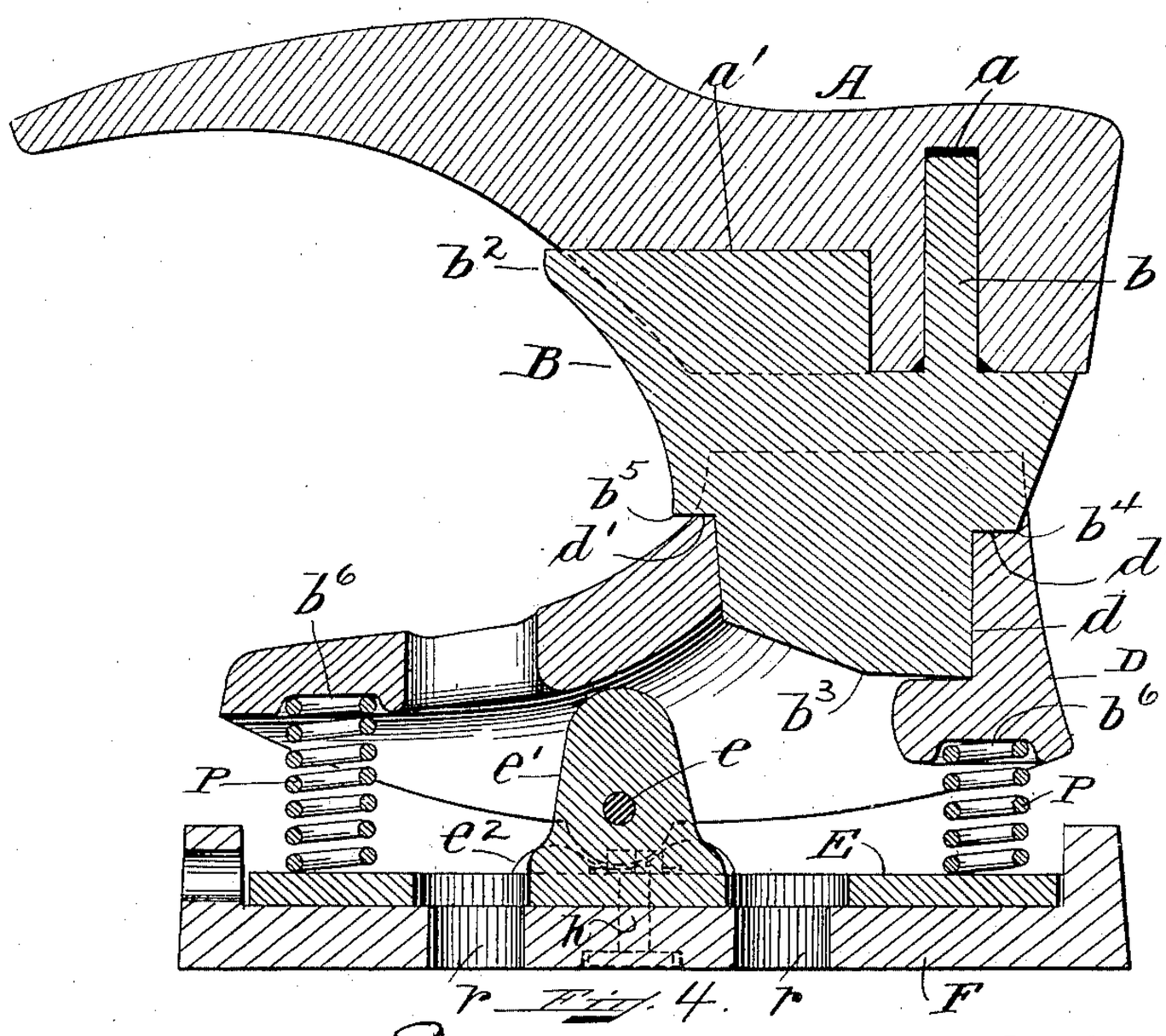

Fig. 4.

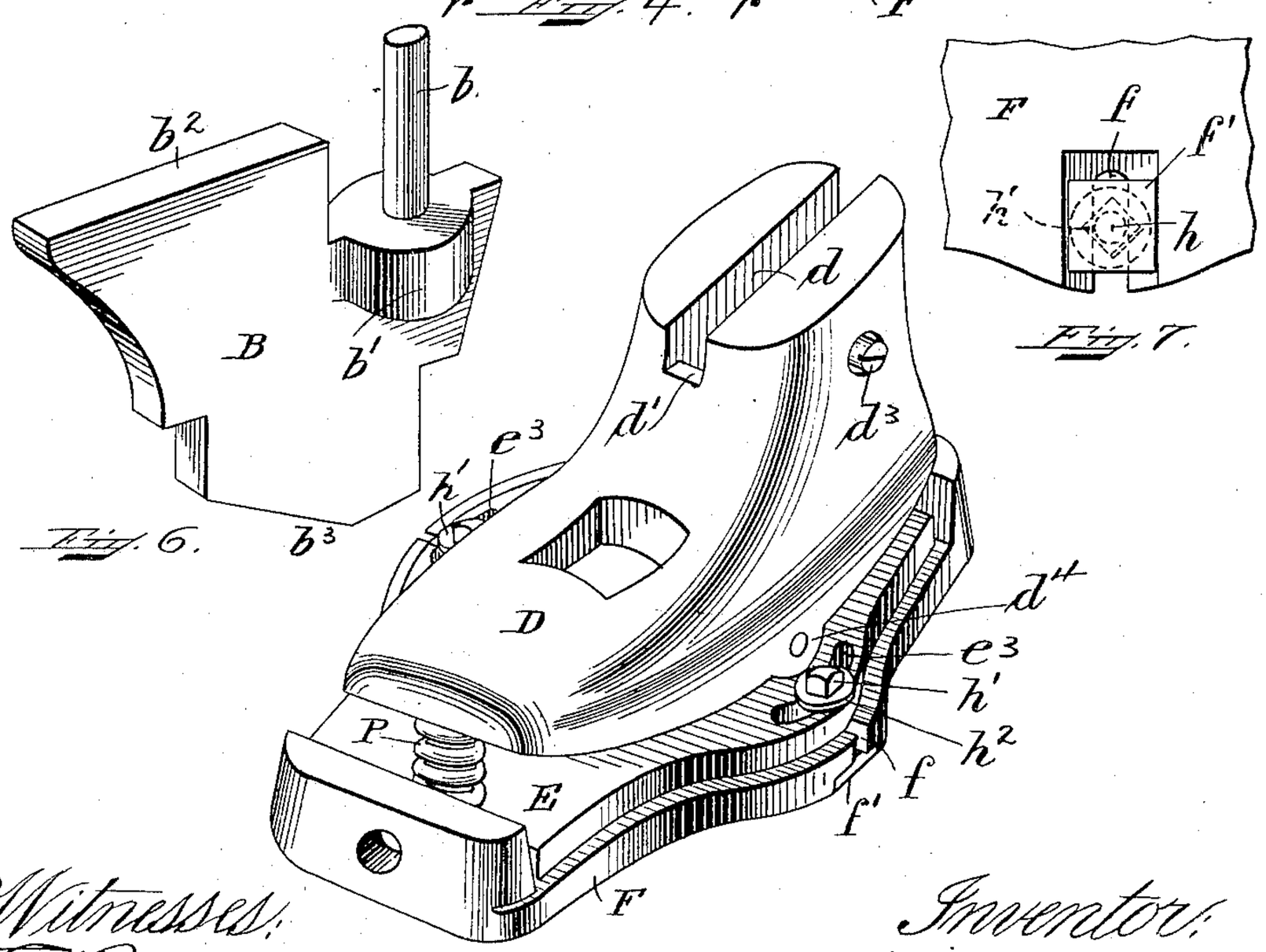

Fig. 6.

Fig. 7.

Fig. 5.

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H. E. Kenion
A. E. Hyde.

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UNITED STATES PATENT OFFICE.

WILLIAM E. FORSTER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY.

SHOE-JACK.

SPECIFICATION forming part of Letters Patent No. 653,227, dated July 10, 1900.

Application filed June 25, 1896. Serial No. 596,839. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. FORSTER, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Shoe-Jacks, of which the following, taken in connection with the accompanying drawings, is a specification.

Sole-leveling machines of the direct-pressure type commonly embody in their structure a male mold or last upon which the shoe is supported and which coöperates with a female mold or last form to perform the leveling operation.

The mold or last above referred to, together with its supporting-standard, is commonly termed the "jack," and the present invention, while it relates generally to all kinds of shoe-jacks, relates more particularly to shoe-jacks of the type above defined.

The present invention has for one object to improve the form and arrangement of the jack, so that the last can be easily and quickly removed therefrom and lasts of different sizes adjusted thereon, the change of lasts necessitating the least practical change in the jack.

The present invention has for its further object to provide in the jack means for insuring a proper presentation of the last to the last-form, also to provide means for accomplishing a swinging and lateral adjustment of the jack to bring the last in proper position under the form.

To the above ends the present invention consists of the devices and combination of devices hereinafter set forth and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a jack for sole-leveling machines embodying the present invention. Fig. 2 is a plan view of the same with last removed. Fig. 3 is a plan view of lower bed-plate. Fig. 4 is a longitudinal section. Fig. 5 is a perspective view of the jack with the last removed. Fig. 6 is a perspective view of the last-holder detached, and Fig. 7 is a reverse plan view of a portion of the lower bed-plate.

Similar letters of reference designate similar parts throughout the several views.

In the drawings, A represents the male mold or last. B represents what I have herein termed the "last-holder." D represents the supporting-standard; and E and F, respectively, the upper and lower bed-plates.

The last A comprises the sole-surface and such adjacent portions of a last as are necessary to coöperate with the same formed to shape the sole and to hold it in position during the shaping or leveling operation. The last A is provided with the usual spindle-hole a and preferably with the groove a', which extends from the instep toward the spindle-hole a and which receives the tongue or instep-rest on the holder B.

The holder B is provided with the usual spindle b, which is projected from its upper surface, preferably from a boss b', which forms a firm support for the spindle and presents an extended bearing-surface for the last. On the holder B is secured or formed a tongue or instep-rest b^2, which is fitted to the groove a' in the last A and which acts to prevent the last from turning on the spindle b and which projects under and supports the instep of the last A while under pressure. The holder B is also provided with a downwardly-extending tongue b^3, which is fitted to a groove or recess d in the standard D. The tongue b^3 is preferably provided with the projecting shoulders b^4 and b^5, for which are provided suitable rests d' and d^2 at opposite ends of the recess d.

The standard D may be of any suitable shape for the purposes hereinbefore and hereinafter set forth. As shown in the drawings, it has the general shape of the upper of a shoe cut off at the ankle, being cast hollow for lightness and to make room for associated parts.

While I do not regard the specific shape of the standard D as above described as an essential feature of the present invention, I find in practice that it is of the greatest advantage in that it protects the upper of a shoe on the jack from any possible injury from contact with moving parts of the jack.

The standard D is provided with recess d and rests d' and d^2 for the tongue b^3, as hereinbefore described. Through a suitable thread-bearing (not shown) in the walls of the recess

d extends a set-screw d^3, by means of which the tongue b^3 may be clamped firmly in the recess d. The standard D is mounted upon suitable bearings upon the upper bed-plate E and is free to rock longitudinally upon said bearings. As shown in the drawings, the standard D is mounted upon a rod e, supported in suitable bearing in a boss e' on the plate E. Adjacent to opposite ends of the rod e on the standard D are formed the circular bosses d^4, each of which is fitted to a correspondingly-shaped bearing in a boss e^2 on the plate e. The center of the rod e is the center of curvature of the boss d^4, and the function of the boss d^4 is to sustain the pressure brought on the standard D and to allow said standard to tip longitudinally without bringing great strain on the rod e, thus greatly adding to the strength and durability of the jack. With regard to the feature last above described, it is to be further noted that the bearing of the rod e in the standard D, and hence the center of the longitudinal tipping movement of the jack, is located forward of the center of the standard D, so that when pressure is applied to the sole of a shoe upon the jack by the pressing-form of a sole-pressing machine the toe of the last A will be thrown slightly upward, which is a feature of great importance in this class of machines, since it insures the proper set of the form at the toe, and hence the proper performance of the leveling operation.

On each side of the rod e the standard D is supported by the springs P P, by means of which the last A is held in a substantially-horizontal position, but allowed to tip longitudinally when pressure is applied to adjust itself to the form. As shown in the drawings, the springs P consist of suitable coiled springs interposed between the plate E and suitable rests b^6 on the standard D.

The plates E and F are so connected as to be laterally adjusted in the direction of the width of the last and to swing with reference to each other to accomplish the proper adjustment of the jack.

As shown in the drawings, the above-suggested result is secured as follows: In the upper bed-plate E are formed the circular adjustment-slots e^3, located upon opposite sides of the center of the plate E. In the lower bed-plate F, on opposite sides thereof, are formed the laterally-extended adjustment-slots $f\,f$, which are rabbeted at the bottom of the plate F to receive a guide-block f'. To the block f' is secured a bolt h, which extends through the slot f and also through the slot e^3, and which carries above the plate E a nut h' and conveniently a suitable washer h^2, the above-described arrangement being such that the plates E and F may be swung about a vertical axis and moved laterally to bring the last A into the proper position under the form and then firmly clamped in their adjusted position by setting up the nuts h'.

The jack may be secured to the machine by bolts through the bolt-holes r or in other suitable manner.

In practice I have found it convenient to provide three interchangeable holders B—one for misses' and children's lasts, one for women's, and one for men's; but it is evident that any number of interchangeable holders B may be provided, as desired by the operator.

It is of course understood that in connection with my improved jack I provide a series of lasts A, each fitted to a holder B.

In using my improved jack, as shown in the drawings, the operator when he desires to change the size of the last A removes the same from the holder B, and if the desired change in size is not too marked adjusts another last upon the same holder B. If, however, the required change in size is great—as, for example, from a man's last to a child's—he removes the holder B from the standard D and adjusts another holder B, adapted to receive the last required.

It will be noted from the above that changes to approximate sizes require only a change of the last A and that changes from the very largest to the smallest lasts require only a change in the last A and its holder B, the standard requiring no change, but being so arranged that it can remain constantly on the machine.

I am aware that it has heretofore been proposed to provide in jacks of this class a standard adapted to receive interchangeable lasts, and such device forms the subject-matter of a prior patent issued to me; but in such device the holder which receives the last is formed on the standard, and to provide for marked changes in the size of the last—as, for example, from men's to women's or children's lasts—a series of standards must be provided.

Having heretofore described the form, arrangement, and mode of operation of my present invention, I claim as novel and desire to secure by Letters Patent of the United States—

1. In a shoe-jack, the combination with a last and its supporting-standard, of suitable bearings for said standard upon which it is free to tip longitudinally, elastic supports for said standard on opposite sides of its bearings, and means for laterally adjusting said standard and for swinging it about a vertical axis, substantially as described.

2. In a shoe-jack, the combination with a last, of a longitudinally-tipping supporting-standard therefor, the bearing about which said standard tips being located forward of the center of the standard, whereby when pressure is applied to the last the toe portion thereof will be caused to tip upward, substantially as described.

3. In a shoe-jack the combination with a supporting or base plate, of a last-supporting standard mounted thereon, and connections between the base-plate and standard arranged to permit a lateral adjustment of the

standard in right lines, and a swinging adjustment thereof in a curved path, substantially as described.

4. In a shoe-jack, the combination with a suitable supporting-standard, of a removable last-holder mounted thereon, an upwardly and forwardly extending instep-rest on the last-holder, a spindle on the last-holder, and a last provided with a slot to engage the instep-rest, and a socket to engage the spindle, substantially as described.

5. In a shoe-jack, the combination with a swinging standard having a slotted bearing in its upper end, of a last-holder removably fitted to the said bearing, a forwardly-projecting instep-support in said last-holder, and a last having a slotted instep arranged to receive the instep-support of the last-holder, substantially as described.

In testimony whereof I have hereunto set my hand, in the presence of two attesting witnesses, this 19th day of June, 1896.

WILLIAM E. FORSTER.

Witnesses:

BENJAMIN PHILIP,

A. E. WHYTE.