No. 726,477. PATENTED APR. 28, 1903.

A. STROMDAHL.

JACK.

APPLICATION FILED OCT. 9, 1902.

NO MODEL.

Fig. 2.

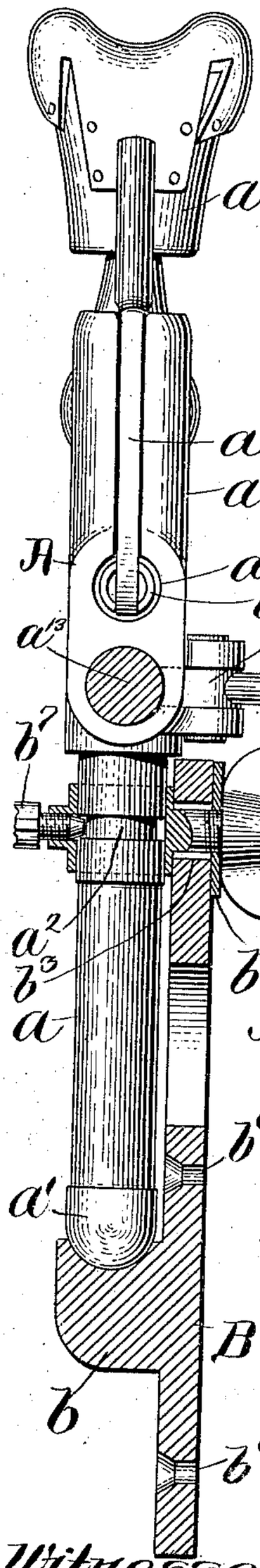

Fig. 3.

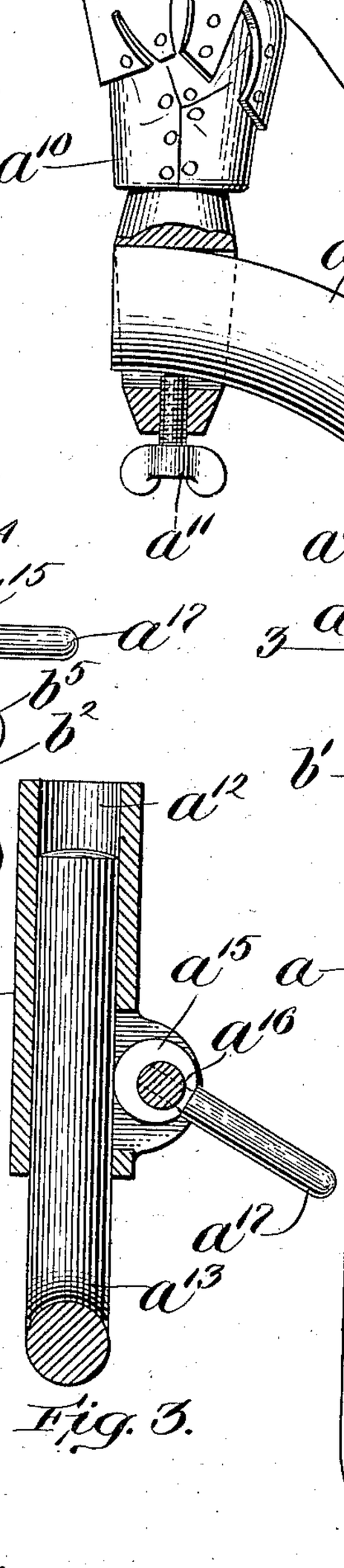

Fig. 1.

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UNITED STATES PATENT OFFICE.

ANDREW STROMDAHL, OF SOMERVILLE, MASSACHUSETTS.

JACK.

SPECIFICATION forming part of Letters Patent No. 726,477, dated April 28, 1903.

Application filed October 9, 1902. Serial No. 126,452. (No model.)

To all whom it may concern:

Be it known that I, ANDREW STROMDAHL, a citizen of the United States, and a resident of Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Jacks, of which the following is a specification.

My invention relates to jacks for use in lasting boots and shoes, and has for its object to improve the construction of such jacks and to provide a jack comprising few parts in its construction and also one that will not only be easily operated, but will hold the last firmly and prevent displacement of the upper on the last.

To these ends my invention consists in a jack comprising a last-holding member and a support with a ball-and-socket joint connecting those two parts at one point and a second independent connection between said member and support at a point separated from the ball-and-socket joint for adjustably holding the last-holding member in position with provision for adjustment thereof on the joint relatively to the support.

In the preferred form of my invention, as herein shown, the second connection is such as to provide for both angular and rotary adjustment of the last-holding member on the ball-and-socket joint. By this construction the jack may be made to comprise but two principal parts—a last-holding member and a support therefor—and the provision of the ball-and-socket joint causes the support to directly oppose blows and pressure delivered directly onto the end of the jack, while sidewise blows and pressure are solidly resisted by the ball-and-socket joint at one point, assisted by the second connection at another point, thus constituting two points of resistance to such blows and pressures. Moreover, by the provision of a ball-and-socket joint with this second connection both angular and rotary adjustment of a one-piece last-holding member may be secured and at the same time great rigidity of the jack under blows and pressure from all directions maintained. The rigidity and ease of manipulation of a jack of this class is of vital importance to its practical utility, and that the construction of my improved jack as above described enhances these characteristics to a marked degree will be appreciated by all skilled in this art.

Other features of my invention are hereinafter pointed out.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of a jack for use in lasting boots and shoes embodying one form of my invention. Fig. 2 is a section of line 2 2 of Fig. 1. Fig. 3 is a section of line 3 3 of Fig. 1.

Having reference to the drawings, A represents the last-holding member, and B its support. Member A is provided with a post a, formed at its lower end with a ball a', resting in a socket b on support B. Near its upper end the post a is swiveled in a socket or sleeve b', which is provided with a threaded stud b^2, projecting through a slot b^3 in support B, and upon the opposite side of support B is a washer b^4 and a thumb-nut b^5, by means of which the socket b' may be clamped at any desired point along the slot b^3. The support B is provided with perforations b^6 to receive screws by which it may be fastened to a bench or the like. Within the socket b' the post a is provided with an annular groove a^2, and in the socket b' is mounted a thumb-screw b^7, the inner end of which projects into the groove a^2, and thereby locks the post a within the socket b'. When it is desired to clamp the post a to socket b' in order to prevent its turning therein, the screw b^7 is tightened against the post a.

The member A is provided with a chamber a^3, within which is arranged a spring a^4, bearing at one end against an adjustable abutment a^5, herein shown as a screw, and at its other end said spring bears against one end of a swinging heel-support a^6, pivoted at a^7 in a slotted post a^8, provided on the member A. The upper end of the heel-support a^6 is adapted to fit the usual socket provided in the heel of a last. The member A is provided with a horn a^9, on which is adjustably fixed the usual toe-support a^{10} by means of a thumb-screw a^{11}. In a bore a^{12}, provided in the member A, is mounted a presser a^{13}, carrying at its outer end a shielded pad a^{14}.

The operation of my improved jack is as follows: The last-holding member A having been angularly adjusted on its pivot by positioning socket b' along slot b^3 and fixing it there by means of the thumb-nut b^5, the heel of the last with the upper on it is applied to support a^6, and the toe part is swung around

alongside of the toe-support a^{10}, and then lifted against the pressure of spring a^4, over the support a^{10} and lowered into the saddle thereof. After this has been accomplished the hinged presser a^{13} is swung crosswise of the last from the dotted-line position shown in Fig. 1 and pressed into engagement with the heel portion of the last, as shown in full lines in Fig. 1. The presser a^{13} is locked and held against the heel of the last by means of an eccentric-clamp a^{15}, mounted on a pin a^{16}, journaled in lugs at the side of bore a^{12}, a handle a^{17} being provided by which the eccentric a^{15} is operated to engage or disengage the presser a^{13}. The pressure of presser a^{13} on the heel of the last not only acts to hold the heel part of the upper in position on the last, thus obviating the use of tacks, but it also acts, by swinging the last on pivot a^7, to clamp the toe portion of the upper between the toe of the last and support a^{16}, the last being thus locked positively and firmly in position, so as to prevent its being displaced.

By my invention not only am I enabled to simplify the construction of jacks of this class and to provide a jack which will hold a last more firmly than heretofore without permitting displacement of the upper, but in view of the fact that member A is directly connected to support B the shocks and strains incident to lasting a boot or shoe will always be delivered onto the last practically in line with the axis of post a, so that the jack is not subjected to torsional strains as heretofore.

Either the spring a^4 or the presser a^{13} may be employed alone to secure a last. By reason of the position and unyielding securement due to the use of the presser a^{13} as distinguished from the yielding-spring securement by the spring a^4 I prefer to employ the former if either of these securing devices is to be dispensed with.

What I claim is—

1. In a jack, in combination, a last-holding member; a support; a ball-and-socket joint connecting said member and support, and a second independent connection between said member and support separated from the ball-and-socket joint for holding said member in position with provision for adjustment of said member on said joint relatively to the support.

2. In a jack, in combination, a last-holding member; a support; a ball-and-socket joint connecting said member and support, and a second independent connection between said member and support for holding said member in position with provision for angular and rotary adjustment of said member on said joint relatively to the support.

3. In a jack, a last-holding member, a support, a ball-and-socket joint connecting said member and support, a socket on the support in which said member is swiveled, means for holding said member within the socket, and means for adjustably fixing the socket to the support.

4. In a jack, a last-holding member, a support, a ball-and-socket joint connecting said member and support, a socket on the support in which said member is swiveled, means for clamping the last-holding member to the socket, and means for adjustably fixing the socket to the support.

5. In a jack, a last-holding member, a support, a ball-and-socket joint connecting said member and support, a socket on the support in which said member is swiveled, and means for adjustably fixing the socket in position on the support so as to provide angular adjustment of said member on the joint relatively to the support.

6. In a jack, in combination, a last-holding member provided with a post; a support; a ball-and-socket joint connecting the lower end of the post and the support; a socket in which said post is swiveled near its upper end; and means for adjustably fastening the socket to the support with provision for angular and rotary adjustment of the post on the ball-and-socket joint.

7. In a jack, a last-holding member provided with a presser for engaging the heel portion of the last which is hinged to the member to adapt it to be swung crosswise of the last into and out of operative position.

8. In a jack, a last-holding member provided with a presser for engaging the heel portion of the last which is hinged to said member to adapt it to be swung crosswise of the last into and out of operative position, and means to hold the presser in operative position.

9. In a jack, a last-holding member provided with a presser for engaging the heel portion of the last which is mounted on said member so as to be swung crosswise of the last into and out of operative position and to be shifted on said member toward and from the last after it is in operative position, and means to hold said presser against the last.

10. In a jack, a last-holding member provided with a presser for engaging the heel portion of the last which is mounted on said member so as to be swung crosswise of the last into and out of operative position, and to be slid on said member toward and from the last after it is in operative position, and means to hold said presser against the last.

11. In a jack, a last-holding member provided with a presser for engaging the heel portion of the last which is mounted on said member so as to be swung crosswise of the last into and out of operative position and so as to be slid on said member toward and from the last after it is in operative position, and a clamp on said member for locking the presser against the last.

Signed by me at Boston, Massachusetts, this 30th day of September, 1902.

ANDREW STROMDAHL.

Witnesses:

ODIN ROBERTS,

JOSEPH T. BRENNAN.