J. W. HATCH & H. G. THOMPSON.

LASTING MECHANISM FOR BOOTS AND SHOES.

No. 193,445. Patented July 24, 1877.

Fig. 3.

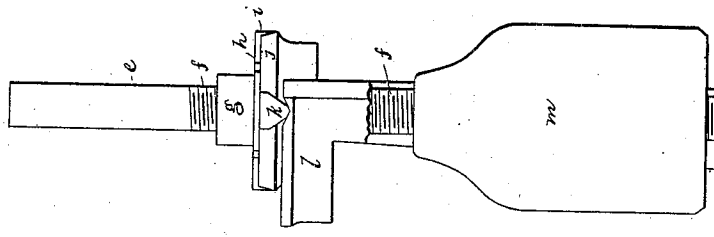


Fig. 2.

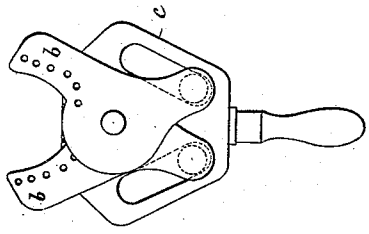
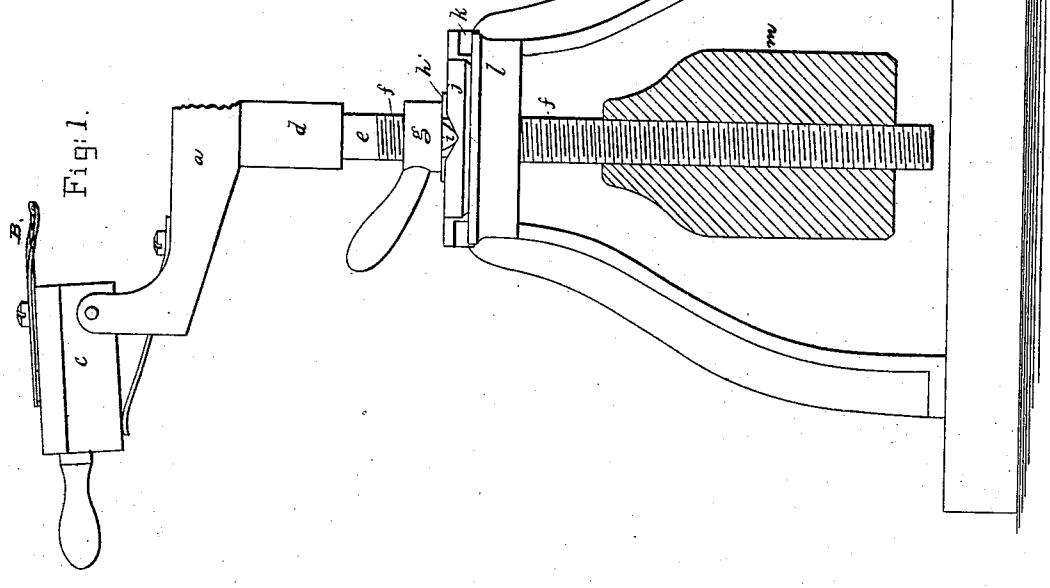


Fig. 1.



Witnesses

E. C. Perkins.

H. J. Pratt.

Inventors:

Jesse W. Hatch, and
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UNITED STATES PATENT OFFICE.

JESSE W. HATCH, OF ROCHESTER, NEW YORK, AND HENRY G. THOMPSON, OF MILFORD, CONNECTICUT.

IMPROVEMENT IN LASTING MECHANISMS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **193,445**, dated July 24, 1877; application filed June 6, 1877.

To all whom it may concern:

Be it known that we, JESSE W. HATCH, of Rochester, in the county of Monroe and State of New York, and HENRY G. THOMPSON, of Milford, in the county of New Haven and State of Connecticut, have invented an Improved Lasting Mechanism for Boots and Shoes, of which the following is a specification:

This invention relates to lasting-machines for boots and shoes, and has special reference to the class of lasting-machines described by one of us in another application for Letters Patent filed in the United States Patent Office February 27, 1877, to which reference may be had for the operation of the devices to crowd the upper over the last.

When lasting boots and shoes it is necessary to change the head carrying the devices to crowd over the upper, and mounted at the upper end of the jack, when different classes of shoes are being lasted—as, for instance, children's, misses', ladies', and men's work.

It is a great desideratum to so construct the machine that the operator may be able, by a like expenditure of power, to move the jack and present it to the tack or nail driving mechanism, whether the head be heavy or light, as for a large or small shoe.

To accomplish this we have pivoted the jack upon a gimbal or universal joint, and have applied to the jack-rod an adjustable counterbalancing-weight.

We have also provided the jack-rod with an adjusting device to raise or lower such rod, to adapt it to the depth of the head being employed, so that the bottom of the shoe may be brought on the proper level to operate in connection with the tack-driving mechanism.

Figure 1 represents, in side elevation, part of a lasting-head and jack, the counterbalancing-weight being in section; Fig. 2, a plan view of one form of jaws to crowd the upper over the last; and Fig. 3, a view of the jack turned one-fourth around, the head being omitted.

The head *a* (but partially shown in Fig. 1) is provided with jaws *b*, mounted upon a pivoted plate, *c*. The jaws are made movable longitudinally over the plate, and during such movement forward they are closed, and opened when moved backward. These jaws, plate, and head, and mechanism to operate the jaws at the heel and toe of the last, are fully described in the application hereinbefore referred to, and need not be herein further described.

The head is provided with a socket, *d*, to fit the upper end of the jack-rod *e*, so that it may be rotated freely thereon, or be readily removed or placed thereon, as when heads of different sizes and weights are applied to the jack to hold shoes of different sizes.

The jack-rod is screw-threaded at *f*, and receives an adjusting device—in this instance made as a handled nut, *g*. The nut rests loosely upon the upper side of the member *h* of the gimbal-joint, such member being provided with journals *i*, that rest in bearings on the upper side of the second member, *j*, of the gimbal-joint, it in turn having bearings *k* adapted to rest upon the support *l*.

The jack-rod passes loosely through holes in the centers of these members *h j*, and they are each so supported as to move or rock on centers at right angles each to the other.

The counterbalancing-weight *m* is applied to the lower portion of the jack-rod, and is made adjustable up or down thereon to counterbalance the weight of the head, which varies according to the size or class of shoe being lasted. By such weight it is possible to so counterbalance the parts that the jack with heads of different weights may be moved with like exertion on the part of the operator.

We claim—

1. A jack-rod and a gimbal or universal joint to support it between its ends, in combination with an adjustable weight, applied directly to the lower end of the jack-rod to counterbalance the weight of the devices carried by the upper end of the jack-rod, substantially as described.

2. The jack-rod, gimbal-joint to support it, a lasting-head, and counterbalancing-weight, in combination with an adjusting device to raise or lower the jack-rod with reference to

the gimbal-joint, to adapt the height of the rod to the devices applied to its upper end, to permit the shoe to be placed in proper position with reference to tack or nail driving devices, all substantially as described.

3. In a lasting-machine, a pair of crimping-jaws to draw over and plait in the uppers of boots and shoes, and mechanism to operate them, in combination with an adjustable counterbalance or weight, attached to the lower end of the jack-rod to counterbalance the weight of the lasting-head and its devices at the upper end of the jack-rod, as herein described.

In testimony whereof we have signed our names to this specification in the presence of subscribing witnesses.

JESSE W. HATCH.
HENRY G. THOMPSON.

Witnesses for J. W. Hatch:
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Witnesses for H. G. Thompson:
FRANK L. ALLIS,
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