

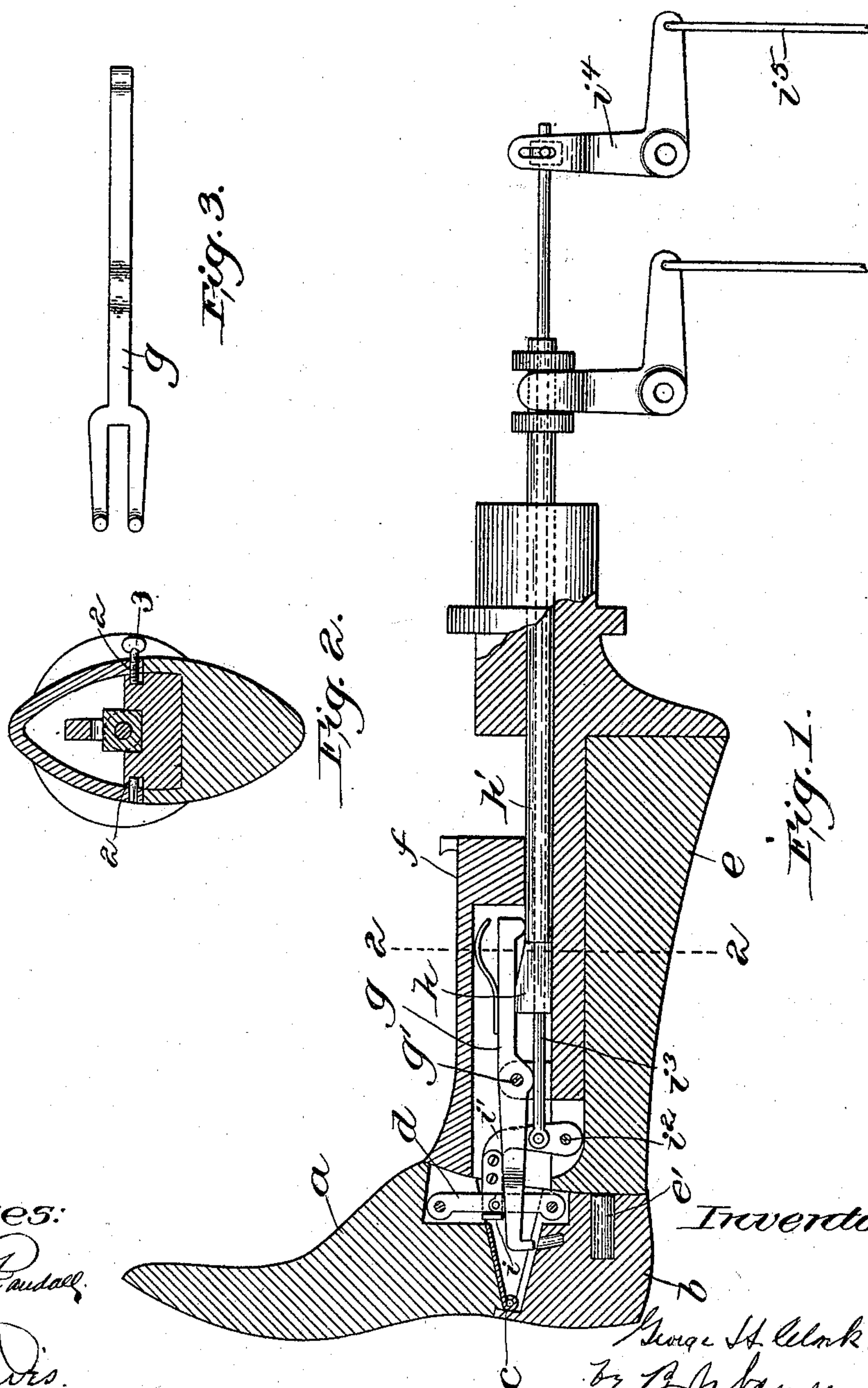
No. 612,482.

Patented Oct. 18, 1898.

G. H. CLARK.
TREEING MACHINE.

(Application filed Jan. 4, 1898.)

(No Model.)



Witnesses:

Arthur W. Paulsell.
H. B. Davis.

Inventor:

George H. Clark.
By B. J. Bay es Atty

UNITED STATES PATENT OFFICE.

GEORGE H. CLARK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MORLEY FINISHING MACHINE COMPANY, OF SAME PLACE.

TREEING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 612,482, dated October 18, 1898.

Application filed January 4, 1898. Serial No. 665,535. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. CLARK, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Treeing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

10 In an application for Letters Patent, Serial No. 630,370, filed by me a last is shown upon which boots and shoes may be lasted and which may remain in the boots and shoes during the successive steps of their manufacture
15 and then finally withdrawn when the boots and shoes are finished. The last shown in said application comprises, essentially, a fore part and a heel-piece connected together by a hinge or equivalent device, whereby said
20 parts may move one with relation to the other in expanding and collapsing the last, and an engaging device is provided for a last-hook or equivalent device, adapted to be manipulated to collapse the last as it is withdrawn from the
25 boot or shoe—as, for instance, by pulling upon the hook—and said engaging device also serves as a locking device to hold the last in its expanded condition. In the last shown in
30 said application the engaging device was represented as a toggle-joint connecting the fore part and heel-piece.

In the manufacture of boots and shoes it is customary to tree the same, and the operation of treeing is one of the final steps in the
35 manufacture; and this invention has for its object to provide a jack or form especially adapted to receive upon it the last shown in the above-named application and hold it firmly while the boot or shoe is being treed
40 and also to provide said jack or form with means whereby the engaging device of the last may be operated to collapse the last or enable said last to be collapsed as the boot or shoe is withdrawn from it.

45 The jack or form comprehending this invention consists, essentially, of a back leg part having means for engaging the heel-piece of the last, a front leg part, preferably adapted to be moved lengthwise the jack or
50 form—that is to say, toward and from the fore part of the last—a locking device, and

means for operating it to positively engage one member of the last—as, for instance, the heel-piece—to thereby hold the last firmly in place on the jack or form. In some instances, however, said front leg part may be omitted. The jack or form is provided with means for engaging the toggle-joint or equivalent device of the last when the last is placed in position on the jack or form or at any other
60 suitable time, which operates said toggle-joint to draw one of the parts of the last toward the other, and thereby enable the boot or shoe to be readily withdrawn from the last, and, as herein shown, the toggle-joint may be
65 operated by a treadle or may be operated as the last is withdrawn from the jack or form during the time that the boot or shoe is being withdrawn from the last.

Figure 1 shows in longitudinal section a
70 last and a jack or form embodying this invention, said parts being assembled to constitute a treeing-machine. Fig. 2 is a cross-section of the jack or form, showing one way of connecting the sliding front leg part; and
75 Fig. 3, a detail of the locking device employed for securing the last in place on the jack or form.

The last consists, essentially, of the fore part *a* and heel-piece *b*, separated by a V-shaped
80 opening, and a hinge *c* connects said parts together at the bottom, or it may be at any other desired point, so far as this invention is concerned.

d represents a toggle-joint contained in the
85 V-shaped opening between said parts *a* and *b*, which is connected to said parts and which serves when straightened out as a means for holding the parts *a* and *b* separated—i. e., in expanded condition—and also is adapted to
90 be engaged by a last-hook or other device and operated by pulling upon said hook to draw said parts *a* and *b* together to enable the boot or shoe to be withdrawn from the last.

e represents the back leg part of a jack or
95 form, which may be stationarily supported by a frame and formed or provided with a pin *e'*, which is adapted to enter a socket formed or provided in the heel-piece *b* of the last. 100

f is the front leg part of the jack or form, which is herein shown as mounted upon and

supported by the frame and adapted to slide along on its support, as by pins 2, sliding in ways provided for them, and to be locked in its forward or lowermost position by a set-screw 3, being at such time in engagement with the top of the fore part of the last.

The locking device for the last is herein shown as a lever *g*, (see Figs. 1 and 3,) pivoted at *g'* to the frame and having its forward or lower end bifurcated and so disposed as to straddle the toggle-joint *d* of the last. The extremities of the arms of said bifurcated end of the lever are formed or provided with lateral projections which are adapted to enter sockets formed in one side or face of the heel-piece.

A wedge *h* on a slide or bar *h'* is adapted to act upon the upper end of said locking-lever *g*, and when said wedge is drawn outward said locking-lever will be operated in such manner as to cause its bifurcated end portion to engage the heel-piece of the last and thus firmly hold said last in place. The sliding bar *h'* has its rear end connected by a bell-crank lever to a treadle-rod by which it may be operated, or said sliding bar may be operated any other desirable way.

It will be understood that as the two parts *a b* of the last are held in expanded condition by the toggle-joint but one of said parts need be engaged by the locking device.

A latch *i* is attached to an arm *i'*, pivoted at *i²* to the frame, and a rod *i³* is connected at one end to said arm *i'*, and said rod passes rearwardly through a hole in the sliding bar *h'* and is connected at its rear end to a bell-crank lever *i⁴*, which is connected to a treadle-rod *i⁵*. Rearward movement of the rod *i³* causes said latch, which is in engagement with the toggle-joint *d*, to pull out said toggle-joint and to turn the fore part *a* on its hinge connection toward the heel-piece *b*, thereby shortening the last and permitting easy withdrawal of the boot or shoe; but, as shown in the drawings, the sliding front leg part *f* must be released by loosening the set-screw 3, and thereby permitting said front leg part to be moved along its support in order that the fore part *a* may be thus turned on its hinge connection. The rod *i³* may be moved rearwardly by the treadle as the boot or shoe is withdrawn from the last and the heel-piece remain locked on the jack, or the last may be released and withdrawn from the jack by pulling off the boot or shoe, the latch remaining stationary, yet operating the toggle-joint to collapse the last, or the last may be disengaged and the toggle-joint operated by its treadle as the last is withdrawn by pulling off the boot or shoe.

I do not desire or intend to limit my invention to any particular construction of the means employed for operating the toggle-joint or equivalent device of the last, and which is herein represented as a latch, and operating mechanism therefor, as it is obvious that many modifications of such device may be made which would come within the spirit and scope

of this invention, and it is also obvious that many of the other features herein shown may be more or less modified without departing from the present invention.

I claim—

1. The combination with a last comprising a fore part and heel-piece connected together, a jack or form having a pin which enters a socket in the heel-piece, and having a locking-lever provided with a bifurcated end which engages said heel-piece, and means for operating said locking-lever, substantially as described.

2. The combination with a last comprising a fore part and a heel-piece hinged together, and having means for holding said parts in expanded condition, of a jack or form adapted to receive said last, having a locking device which engages one member of said last, and means for operating said locking device, substantially as described.

3. The combination with a last comprising a fore part and a heel-piece hinged together, and having means for holding said parts in expanded condition, of a jack or form adapted to receive said last having a back leg part and a sliding front leg part, and a locking device for engaging one member of said last, and means for operating one member of said last, substantially as described.

4. The combination with a last comprising a fore part and a heel-piece hinged together, and having means for holding said parts in expanded condition, of a jack or form adapted to receive said last, having a device for engaging said means which holds the last expanded, and for operating it to collapse the last, substantially as described.

5. The combination with a last comprising a fore part and a heel-piece hinged together, and having means for holding said parts in expanded condition, of a jack or form adapted to receive said last, having a device for engaging said means which holds the last expanded, and for operating it to collapse the last, and also having a locking device which engages one member of said last, and means for operating said locking device, substantially as described.

6. The combination with a last comprising a fore part and a heel-piece hinged together, and having means for holding said parts in expanded condition, of a jack or form adapted to receive said last, having a device for automatically engaging said means when the last is placed on the jack, and for thereafter operating said means to collapse the last, substantially as described.

7. The combination with a last comprising a fore part and heel-piece hinged together, of a jack adapted to receive said last and having a device for moving one of said parts on the hinge connection to thereby collapse the last, substantially as described.

8. The combination with a last comprising a fore part and a heel-piece hinged together, of a jack adapted to receive said last and hav-

ing a device for collapsing the last, connected with and operated by a treadle, substantially as described.

5 9. The combination with a last comprising a fore part and a heel-piece hinged together, of a jack adapted to receive said last and having a device for moving one of said parts on the hinge connection to thereby collapse the last, which is operated by withdrawing the
10 last from the jack, substantially as described.

10 10. The combination with a last comprising a fore part and a heel-piece hinged together, of a jack adapted to receive said last and having a device for collapsing the last, as the last
15 is withdrawn from the jack, which collapsing device is operated by pulling off the boot or shoe, substantially as described.

11. The combination with a last comprising a fore part and heel-piece hinged together, a toggle-joint connecting them, and a jack or 20 form having a locking device by means of which the last is firmly held in place on said jack or form, and also having a latch which engages said toggle-joint, and which operates to pull out said toggle-joint to collapse the 25 last, substantially as described.

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

GEORGE H. CLARK.

Witnesses:

B. J. NOYES,
H. B. DAVIS.