W. H. HOOPER.

BOOT AND SHOE TREE AND STRETCHER.

APPLICATION FILED APR. 15, 1909.

944,365.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.

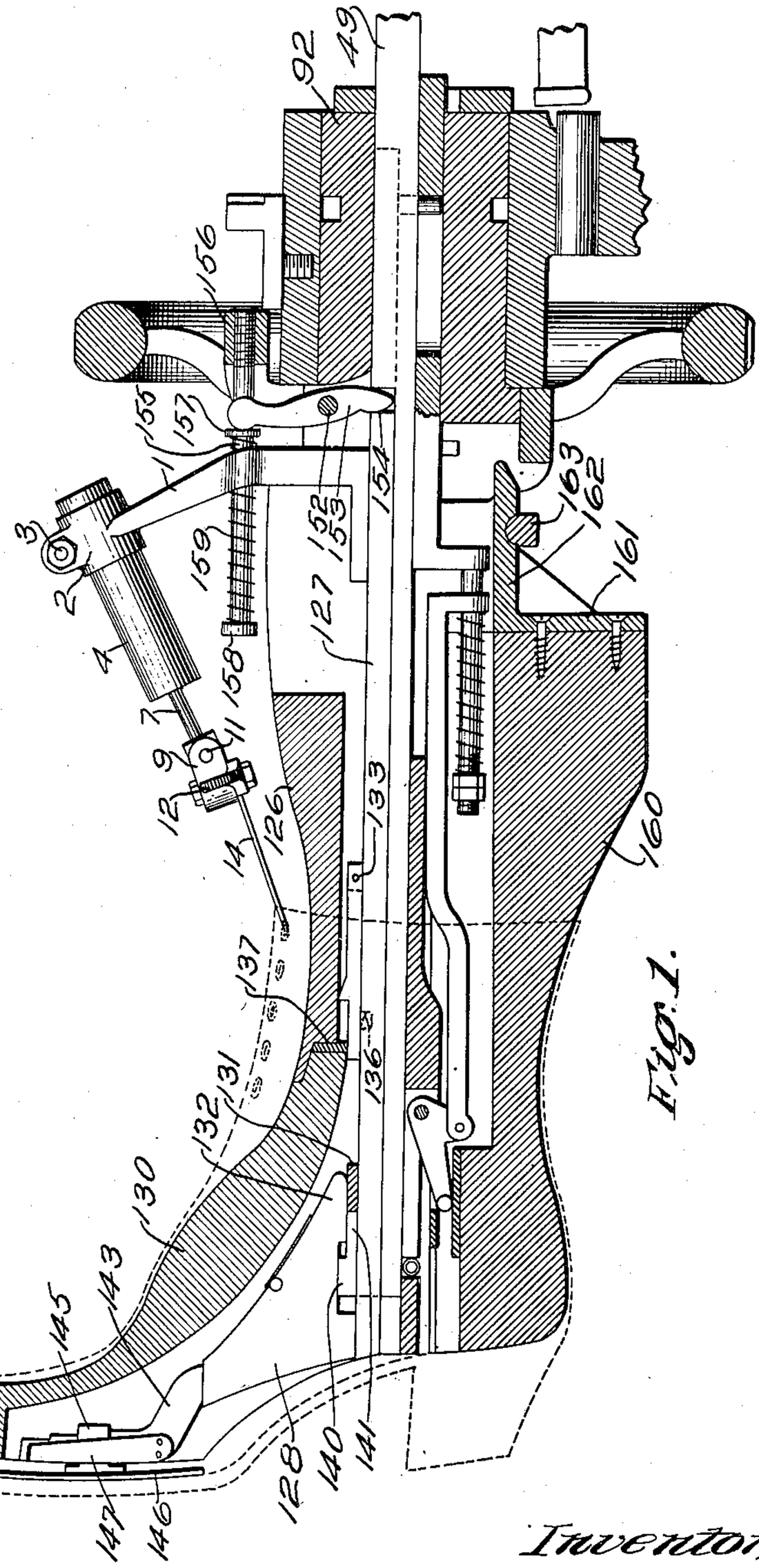

Fig. 1.

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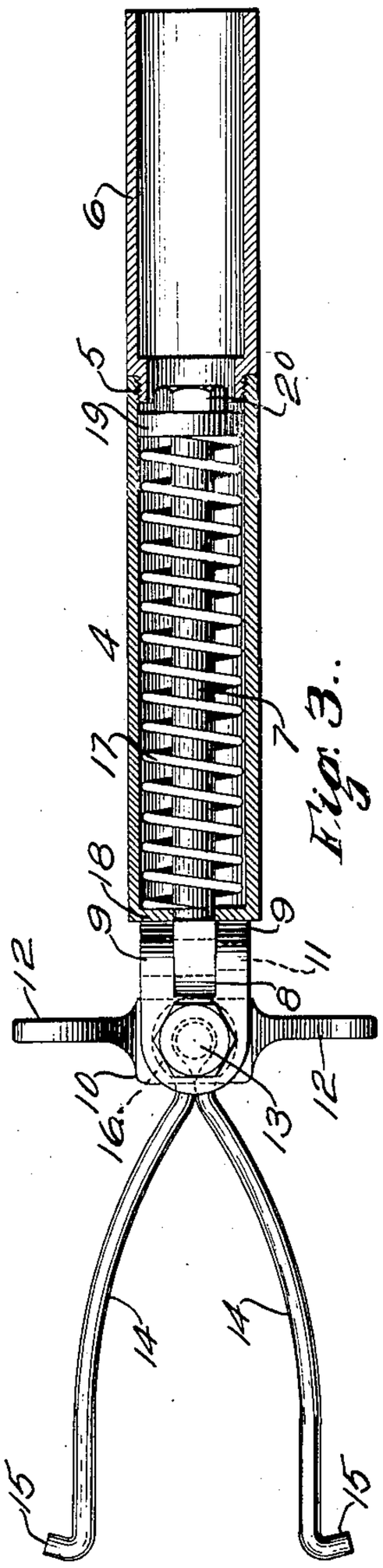

Fig. 3.

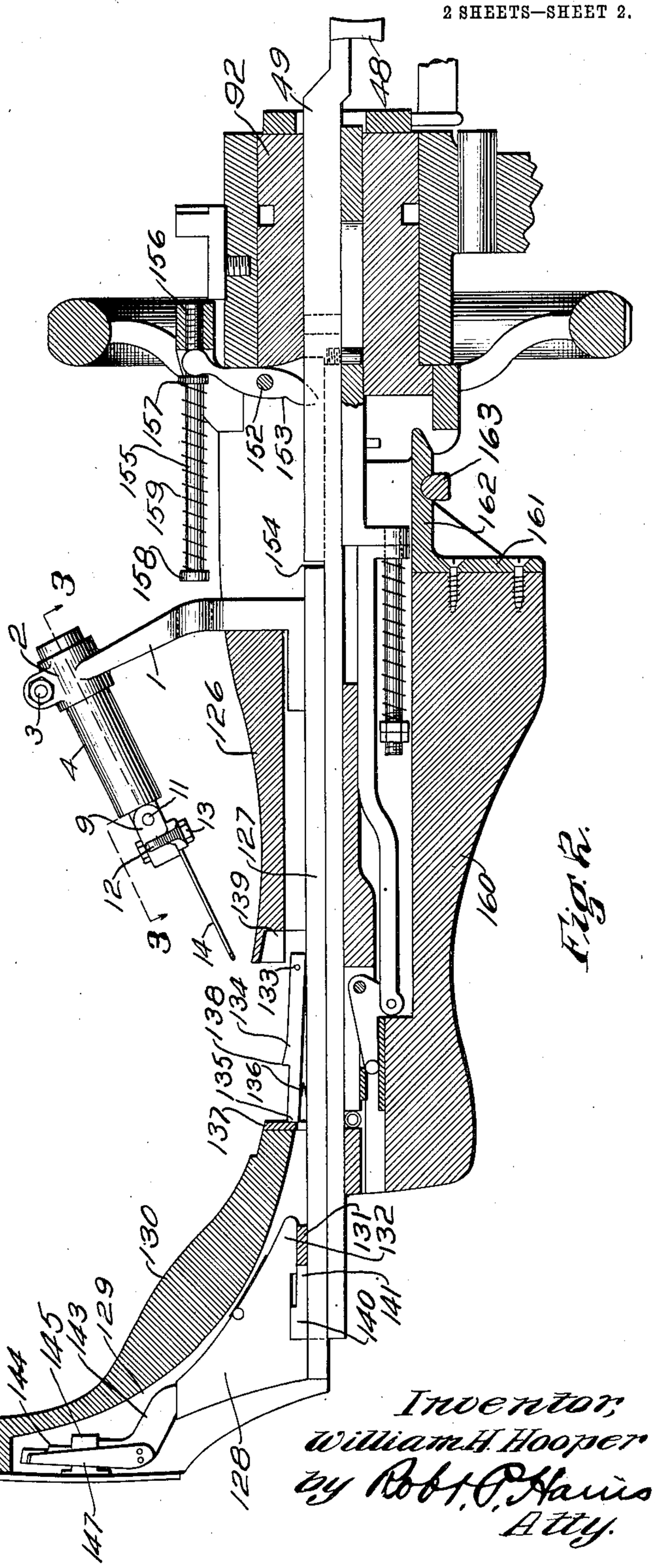

Fig. 2.

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UNITED STATES PATENT OFFICE.

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BOOT AND SHOE TREE AND STRETCHER.

944,365. Specification of Letters Patent. Patented Dec. 28, 1909.

Original application filed February 6, 1909, Serial No. 476,442. Divided and this application filed April 15, 1909. Serial No. 490,088.

To all whom it may concern:

Be it known that I, WILLIAM H. HOOPER, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Boot and Shoe Trees and Stretchers, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

The invention to be hereinafter described relates to a boot or shoe tree and top stretcher, and is a division of an application filed by me February 6, 1909, Serial No. 476,442.

As well understood by those skilled in the art, it is desirable that the upper portion of a boot or shoe when placed upon the tree shall be stretched or pulled in a direction lengthwise of the tree in order to smooth out the wrinkles and otherwise prepare the condition of the upper for the finishing process, and the aims of the present invention are to provide means to these ends.

With this general statement, the objects of the invention and its salient characteristics will best be understood from the following description and accompanying drawings of one form of means for carrying the same into practical effect, it being understood that the invention is not circumscribed by the details illustrated and described, except in so far as expressly set forth in the claims.

In the drawings, Figure 1 is a central longitudinal section of a boot tree embodying the features of the present invention and showing the tree in jacked or expanded position, and the stretcher acting upon the upper; Fig. 2 is a like sectional view, with the parts in contracted position and the shoe removed; and Fig. 3 is a sectional detail on the line 3—3 of Fig. 2.

Secured to or extending from the cylindrical portion 92 of the tree is a leg or front portion 126 provided with a longitudinal slot affording a proper slide bearing for the slide 49 having the downturned end 48 for engagement with suitable means for moving the slide in expanding and contracting the tree. It will be noted that the slide 49 extends to the foot portion of the tree and has loosely mounted thereon a slide 127 which, for identification, may be termed the foot slide. The foot slide 127 carries at its foot end an upwardly projecting foot support 128 adapted to engage the slot 129 formed in the foot-piece 130, said slot preferably extending, as indicated in Figs. 1 and 2, from the crown portion of the foot piece toward the toe end thereof. The foot piece 130 is likewise provided with a bridge piece 131 extending transversely of the slot leading from the crown toward the sole of the foot-piece, and a foot support 128 has its toe portion 132 adapted to engage above the bridge piece 130. Pivotally mounted on the foot slide at 133 is a finger or catch 134, the end 135 of which is normally held in raised position by a spring 136, so as to engage the top portion 137 of the foot piece and hold the same with its bridge 131 under the toe portion 132 of the foot support 128, the construction being such that a foot piece 130 may be applied to the foot support, and as the foot piece is moved to bring the bridge 131 under the toe 132, into the position indicated in Fig. 2, the finger or catch 134 will rise and its end 135 will engage with the end 137 of the foot piece to hold the latter in position on its foot slide 127.

The catch or finger 134 is provided with a trip or cam portion 138 adapted to contact with the end 139 of the leg front piece 126 and disengage the end 135 of the finger or catch from the crown of the foot piece when the foot slide 127 has been moved to bring the foot piece 130 sufficiently close to the leg front portion 126, the action being such that when the catch or finger 134 is thus disengaged the foot piece may be moved on the foot slide and independent thereof, as will presently appear.

The slide 49 is provided at its foot end with an upwardly projecting portion 140, Figs. 1 and 2, which passes upwardly through a slot in the foot slide 127 and is provided with a forwardly projecting portion 141 to engage behind the bridge piece 131, the construction being such that upon movement of the slide 49 with the parts in

position, as indicated in Fig. 2, the foot piece 130 and the foot slide 127 will be moved toward the leg front portion 126, but, as the cam portion 138 of the finger or catch 134 meets the shoulder 139 of the leg front portion 126, it will free the foot piece to movement with the slide 49 independent of the foot piece slide 127.

The foot support 128 carried by the foot slide 127 is provided with a socketed portion to receive the sole supporting member 143, the upper portion of this sole supporting member being provided with a shouldered extension or support 144 to engage and hold a yoke 145 secured to the sole expanding member 146, a spring 147 normally acting to hold the yoke 145 in proper position on the sole supporting member.

Mounted upon a part or fulcrum 152 is a yielding stop 153, the lower end of which projects outwardly into the path of the end 154 of the foot slide 127. The upper end of the yielding stop 153 is bifurcated to embrace a stud 155 secured at 156 to the tree leg, and said bifurcated end has resting thereupon the sliding collar 157 between which and the end 158 of the stud 155 is a spiral spring 159 which normally acts upon the upper bifurcated end of the yielding stop 153, the construction being such that as the slide 49 is drawn to the right, Fig. 2, and carries with it the foot slide 127, in the manner hereinbefore pointed out, the lower end of the yielding stop 153 will meet the end 154 of the foot slide, as the finger or catch 134 disengages its end 135 from the top of the foot piece 130, whereupon the foot piece will continue to move with the slide 49 by reason of the projection 141 engaging the bridge piece 131, but the foot slide will be yieldingly restrained from movement by the yielding stop 153, thereby stopping the foot support 128 and the sole expanding plate 146 yieldingly, while the foot piece continues to move into contact with the front leg portion 126, as indicated in Fig. 1.

The back of the leg portion may be of any suitable construction, enabling the heel part thereof to be moved from the foot piece as part of the jacking operation. The construction of this end, as illustrated in the drawing, comprises a back 160 having a bracket 161 provided with a recessed supporting portion 162 to engage a supporting shoulder 163. The above parts as herein described, as well as the means for moving the back 160 in expanding the tree by means of the slide 49, are or may be of substantially the same construction as fully pointed out and described in the above mentioned application.

As hereinbefore stated, it is desirable that the upper of the boot or shoe be properly stretched or smoothed and maintained in this position during the finishing operation, and to this end the following means is herein employed as part of the present invention.

Secured to and projecting upward from the foot slide 127 is an arm 1, the upper end of which carries a clamping sleeve 2, the parts whereof may be held in clamping relation by means of a set screw or nut and bolt 3. Passing through the clamping sleeve and held thereby is a cylinder 4, said cylinder being adjustable in the clamping sleeve 2 by loosening the set screw or clamping bolt 3, moving the cylinder back and forth as desired, and thereafter setting up the clamping sleeve. Provided the cylinder is not sufficiently long to secure the full adjustment desired, especially when treeing certain kinds of low shoes, the upper end of the cylinder 4 has a screw thread connection 5, Fig. 3, with a cylinder extension 6, so that the cylinder 4 may be adjusted farther toward the foot portion of the tree than would otherwise be the case.

Extending into the cylinder 4 is the stretcher rod 7 having a head portion 8 which is received between the bifurcated ends 9 of a carrying head 10, to which it is pivoted by a pin 11, Figs. 2 and 3. Pivotally supported on the carrying head 10 is the finger-piece or butterfly 12, preferably connected thereto by a swiveling bolt 13, Fig. 3. Mounted to swing with the finger-piece or butterfly 12 are the upper engaging arms 14, the ends 15 thereof being angularly turned and adapted to engage with eyelet holes or other means on the upper, as indicated in Fig. 1. The upper engaging arms 14 are preferably made as spring members and at their connection with the butterfly or finger-piece 12 may have formed the eye 16, dotted lines Fig. 3, to engage the bolt 13, and a suitable groove in the face of the butterfly or finger-piece 12, as indicated in Figs. 2 and 3, the construction being such that upon movement of the butterfly 12 on its pivotal axis 13, the upper engaging members 14 will be likewise moved.

Surrounding the stretcher rod 7 and preferably disposed in the cylinder 4 is the stretching spring 17, one end of which may be seated against the end 18 of the cylinder 4, and the other end against a collar 19 secured to the stretcher rod 7 by a suitable bolt 20, or otherwise, the construction being such that the spring 17 normally tends to maintain the parts in the position indicated in Fig. 3, but yet permits said parts to be moved into the position indicated in Fig. 1 against the tension of said spring. This movement may be brought about by engaging the butterfly or finger-piece 12 with the fingers of one hand and forcing the head 10 outwardly from the cylinder 4, so that the

ends 15 of the arms 14 may be properly engaged with the eyelets of the upper, as indicated in Fig. 1. When in such engagement, the spring 17 acts in a diagonally upward direction to maintain the upper of the boot or shoe smooth and in condition for finishing.

In the operation of the device, a shoe to be finished or treed is placed upon the foot piece 130 when the latter is in the position indicated in Fig. 2. The finger-piece or butterfly 12 is then engaged by the fingers and the ends 15 of the arms 14 are engaged with co-acting parts of the upper. If the shoe is a high shoe, the cylinder 4 may be held by the clamping sleeve 2, but if the shoe is too low for this purpose, the extension 6 may be attached to the cylinder 4 and held by the clamping sleeve. The shoe being thus in position for jacking, the slide 49 is moved to the right, Fig. 2, thus moving the shoe to the right with the foot piece 130, and as the stretcher is carried by the arm 1 secured to the foot slide 127, it follows that as the slide 49 moves to the right, the stretcher likewise moves, thus maintaining its original relation with the shoe and holding the upper taut and stretched. When the shoe has been completely jacked by the full movement of the slide 49 to the right, the parts are in position substantially as indicated in Fig. 1, whereupon the operative may give his entire attention to proper finishing or ironing of the shoe.

Various changes in the details and general arrangement of the parts may be made within the scope of the present invention as I believe I am the first to provide in a boot or shoe tree a top or upper stretcher movable longitudinally of the tree during the jacking operation, and as I further believe I am the first to provide such upper or top stretcher which yieldingly maintains the shoe upper diagonally stretched with relation to the tree, and yet is bodily movable longitudinally of the tree.

What is claimed is:

1. In a boot or shoe tree, the combination of an expansible foot piece, a stretcher provided with means for engaging a shoe-top, and means for expanding the foot piece and bodily moving the stretcher lengthwise of the tree.

2. In a boot or shoe tree, the combination of a leg portion, a foot movable toward and from the leg portion, a stretcher provided with means for engaging a shoe-top on said foot, and means for moving the foot and stretcher in a direction lengthwise of the tree.

3. In a boot and shoe tree, the combination of a leg portion, a foot, means to move the foot toward and from the leg, a stretcher provided with means to engage the upper of a shoe on said foot, and means to bodily move the stretcher as the foot is moved toward the leg.

4. In a boot and shoe tree, the combination of a leg portion, an expansible foot, a stretcher for engaging the upper of a shoe on said foot portion, and means to expand said foot portion and bodily move the stretcher.

5. In a boot and shoe tree, the combination of a leg portion, a foot, a stretcher to engage the upper of a shoe on said foot, and means to move the foot and stretcher.

6. In a boot and shoe tree, the combination of an expansible foot, a slide for expanding the foot, and a stretcher to engage the upper of a shoe on said foot and movable with said slide.

7. In a boot and shoe tree, the combination of a leg portion, a foot movable toward and from the leg portion, a stretcher having an upper engaging portion, means for causing the stretcher to pull the upper in a direction forwardly and upwardly from the ankle, and means to move the foot and stretcher bodily toward the leg portion.

8. In a boot and shoe tree, the combination of upper engaging members having a yielding connection acting normally to maintain said members in upper engaging relation, a head carrying said upper engaging members, and yielding means acting normally to draw said head and upper engaging members lengthwise of the tree.

9. In a boot and shoe tree, the combination of upper engaging members having upper engaging end portions and a yielding connection between said members acting normally to maintain said end portions in engagement with the upper, and yielding means acting normally to move said members lengthwise of the tree.

10. In a boot and shoe tree, the combination of a head provided with butterfly or finger-pieces, upper engaging members connected to said head, a stretcher rod to which said head is pivotally connected, and a spring acting normally to maintain the head in retracted or stretching position.

11. In a boot and shoe tree, the combination of upper engaging members 14 having the end portions 15, a yielding connection between said members acting normally to separate them and maintain the end portions 15 in engagement with the upper, and a yieldingly supported carrying head to which said members are connected.

12. In a boot and shoe tree, the combination of upper engaging members, a head to which said members are pivotally connected, a stretcher rod to which said head is jointed, and a spring acting normally to hold said head and engaging members in retracted or stretching condition.

13. In a boot and shoe tree, the combination of an arm having a clamping member, an upper stretcher adjustably supported by said clamping member, and a detachable extension adapted to be connected to the upper stretcher and held by the clamping member.

14. In a boot and shoe tree, the combination of an arm having a clamping member, upper engaging members to connect with the upper of a shoe, a spring for yieldingly supporting said upper engaging members, and a casing for said spring held by the clamping member.

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

WILLIAM H. HOOPER.

Witnesses:
ROSWELL F. HATCH,
REDFIELD H. ALLEN.