

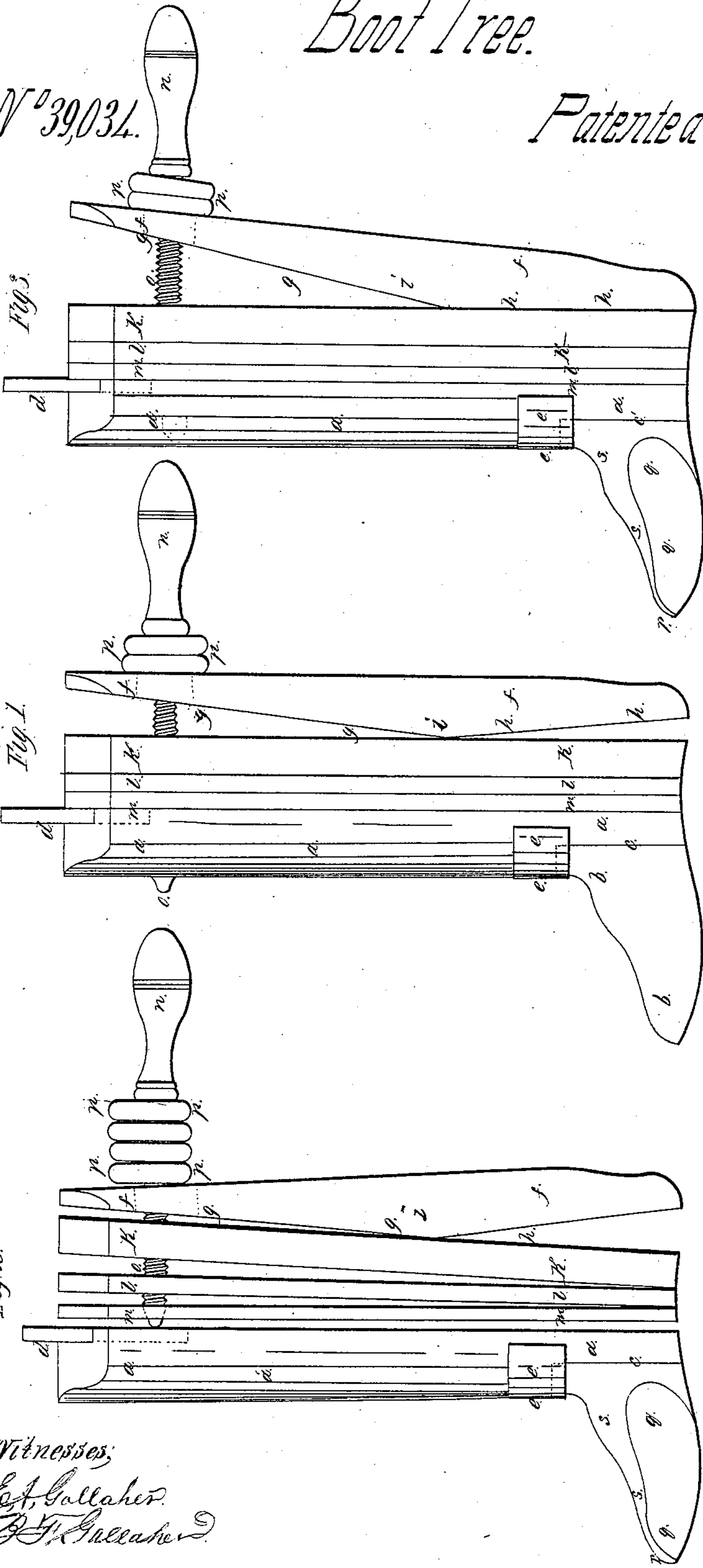
W. C. Clark,

2 Sheets Sheet 1

Boot Tree.

N^o 39,034.

Patented June 30, 1863.



Witnesses;
C. F. Gallaher.
J. F. Gallaher.

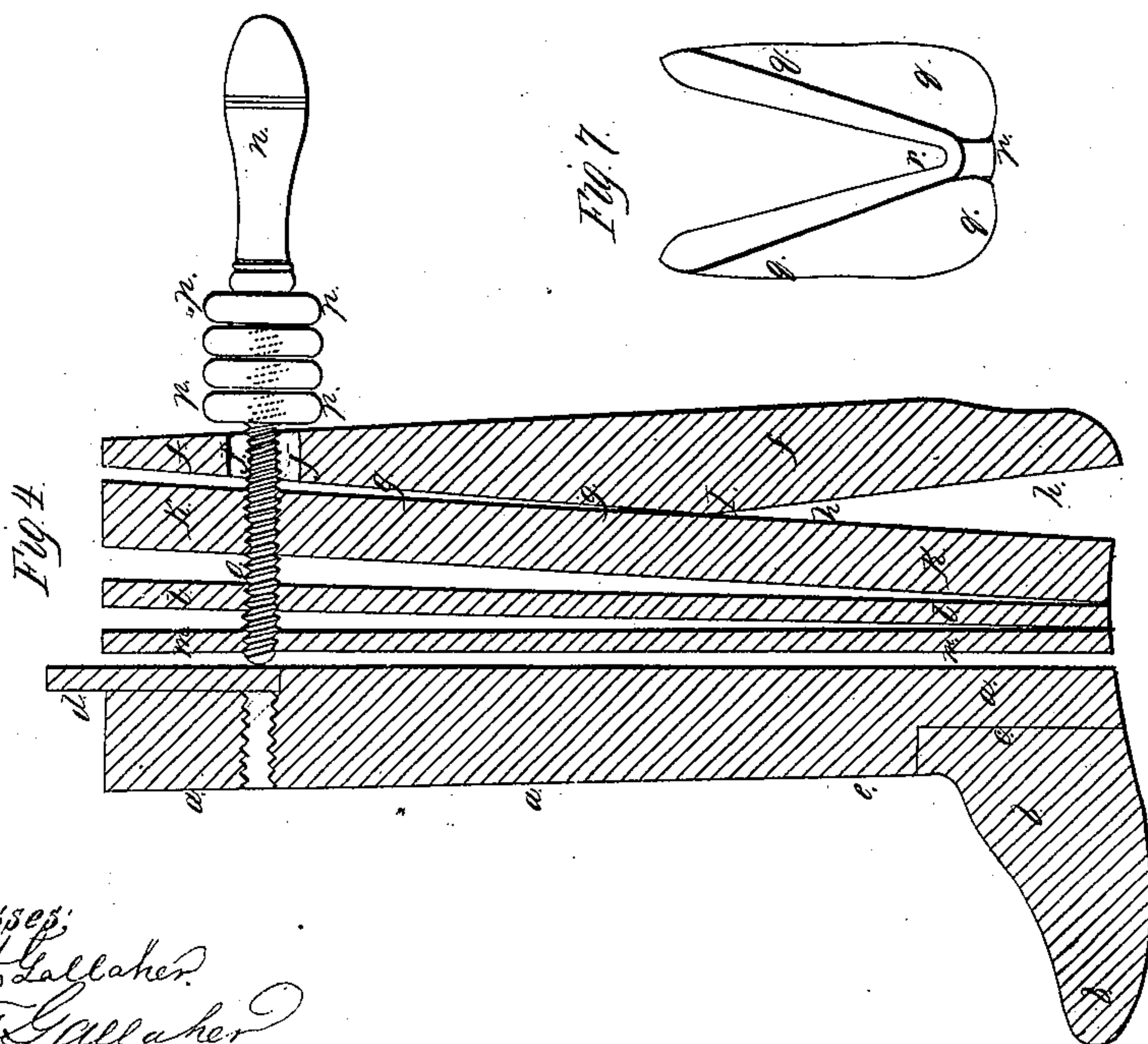
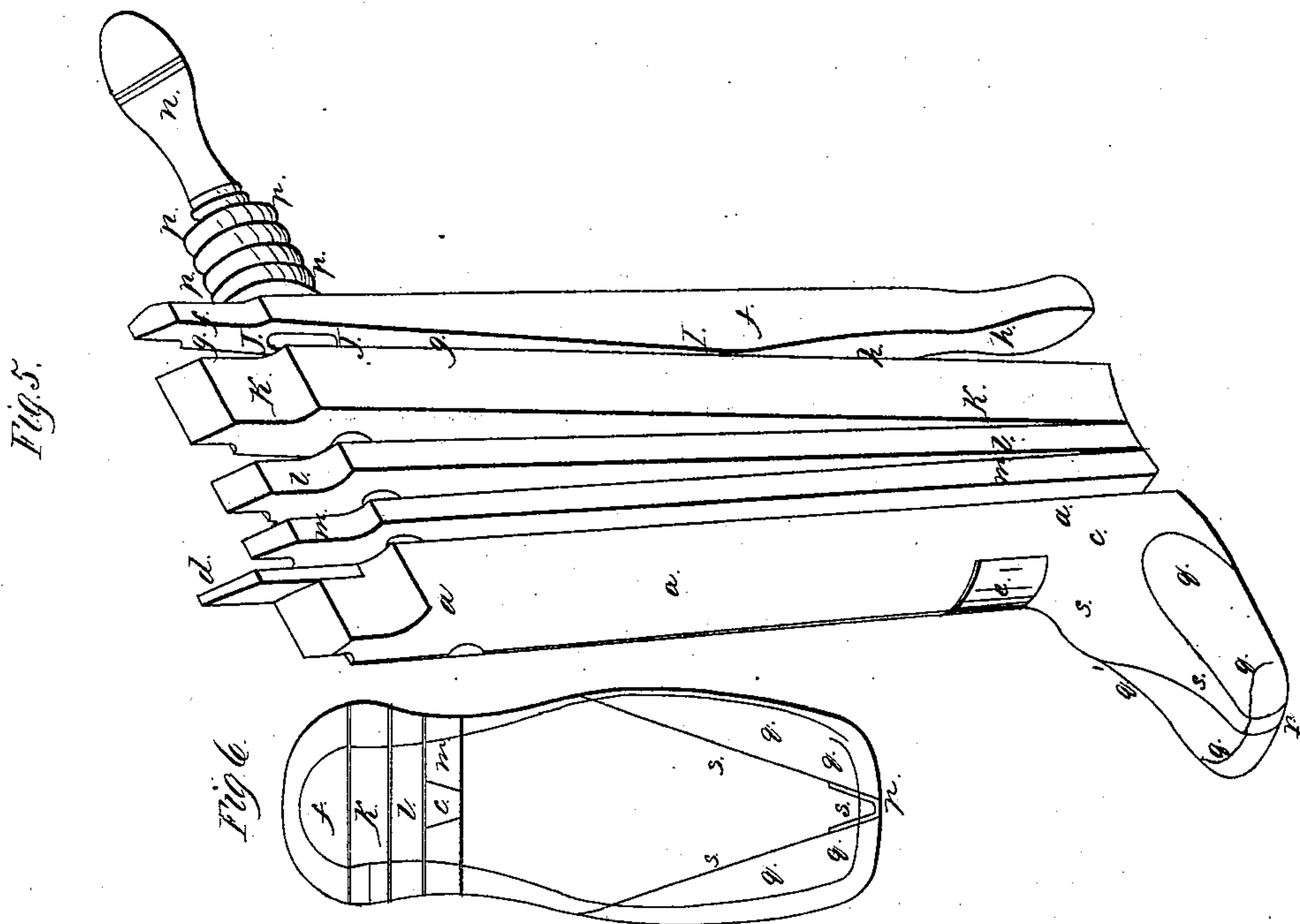
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By his Attorney
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Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM CORBIN CLARK, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN BOOT-TREES.

Specification forming part of Letters Patent No. 39,034, dated June 30, 1863.

To all whom it may concern:

Be it known that I, WILLIAM CORBIN CLARK, of the city and county of Baltimore, and State of Maryland, have invented and made certain new and useful Improvements in Boot-Trees; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical side view of the tree complete. Fig. 2 is a vertical side view of the tree, representing the several keys or expanding devices thereof separated partly. Fig. 3 is a vertical view of the boot-tree with pegs in close contact. Fig. 4 is a vertical longitudinal sectional view of the several parts forming the boot-tree. Fig. 5 is a perspective view of the boot tree showing the detachable side stretcher-blocks. Fig. 6 is an inverted view of the last-sole or foot part of the boot-tree. Fig. 7 represents the side stretcher-blocks detached from the foot of the boot-tree, and showing the hinge-connection of the blocks.

The nature of my improvements consists in so constructing a boot-tree as to enable the workmen in boots to use the tree in such a manner in the stretching and shaping of the boot as to admit of applying the required pressure at any one point independent of another—that is to say, for example, instead of stretching or distending the whole of the boot simultaneously, by my improvements the leg, heel, sides, instep, or toe, each can be distended or stretched separately without at all interfering with the other several parts, thereby bringing about a great desideratum long needed in boot-making—the producing a neat and comfortable-fitting covering for the feet. Furthermore, my improvements are of such a nature as to render the several parts of the boot-tree most simple of construction, and doing away entirely with every species of complex mechanism, such as “inclined guides,” axial stretching-rods, cross-heads, toggles, springs, screw-shafts, yokes, sleeves, cords, and levers, which contrivances may be found in numerous boot-trees in use.

To enable others to be skilled in the construction, operation, and use of my boot-tree,

the following description will be found thoroughly explanatory thereof.

In Fig. 1, at *a a a*, is shown the tibia or shank stretcher staff, to which is attached the foot or last part *b b* by an ordinary dovetail tenon-joint, as indicated by the line *c c*.

At *d d* is shown a detachable sliding stop-piece of suitable size, with its longitudinal sides beveled in manner of a dovetail, and this piece is fitted into a seat or groove with bevel sides formed in the back or flat side of the tibia-staff so as to admit of the stop being moved up and down, in and out, as occasion may require; and at *e e* is a metallic half-band or guard-strap affixed permanently to the lower or ankle part of the staff, the object of which will be more fully explained hereinafter.

At *f f* is shown the “calf-stretcher piece” or lever-staff, formed with a longer incline plane or sloping surface, *g g*, and a shorter incline surface, *h h*, the lines of which converge together at *I*, forming an edge line across the surface of the planes, and designed to answer as a fulcrum or pivot-sustaining point, thereby affording the application of leverage power. This lever-staff is provided with an elongated slot or mortise, without any screw-thread, and which slot is to admit of a vertical up-and-down play or movement of the staff. (See slot in Figs. 4, 5, at *J J*.)

At *K L M* are shown three separate different size key-strips, each having parallel surface, instead of being wedge shape. These key-strips each have female screw-threads formed through their thicknesses, into which fits an adjusting hand-screw, *n o*, provided with two or more collars, *p p p p*, formed with circular openings of double the diameter of the shank of the screw, in order to afford required play or movement so as to compensate with the inclination in and out of the lever-staff in certain adjustments thereof.

In Figs. 2, 3, 5, 6, 7, at *q q*, is shown lateral attachable stretcher-blocks, hinged together at the toe ends by a strap of leather or other suitable connection, as at *r r*.

When the several parts of my boot-tree are put together in position, the whole compose in general appearance an ordinary boot-tree, as in Fig. 1; but in the operation and appli-

cation of the boot-tree it can be made by various simple and facile adjustments to present the several forms shown in Figs. 2, 3, 4.

In order to demonstrate the peculiar features of my improvements, their great utility, and the facility of bringing about the desired result through the simple construction and combination of the several parts, the following is the mode of using the tree, viz.:

In shaping a boot the tibia or shank staff *a a*, with the last or foot part *b b*, being first placed within the completed boot, the calf lever-staff *f f*, together with the desired number of keys *k l m*, also being adjusted thereto, and the hand-screw *n o* inserted through said part, as shown in Fig. 4, the boot may then be stretched or shaped at any given point desired; and to distend the whole of the leg of the boot, from heel to top, the several parts of the boot-tree *a f k l m* are adjusted so as to be in position relative to each other, as shown in Figs. 1 and 5, and if necessary additional keys of different thicknesses may be applied. If the upper part or "calf" of the boot is required to be enlarged, the sliding stop-piece *d d* is pushed down in position to close over the screw-hole in the tibia or shank, as shown in the sectional Fig. 4, while the several parts forming the boot-tree are adjusted together in position by inclining the upper or longer end of the lever-staff outwardly by detaching one or more of the circular collars *p p p p* and tightening up the hand-screw *n o*, the end or point thereof bearing against the face of the stop-piece *d d* with required force, thus tightening up the parts and pressing outwardly against the material of the boot. If the heel, toe, or instep separately are to be enlarged, then the several parts of the boot-tree are to be adjusted in position, as in Figs. 2, 4, wherein the shorter or lower part, *h h*, of the lever-staff is inclined outwardly, while the longer end, *g g*, is inclined inwardly, and in order to get greater force, the several collars *p p p p* must be used around the screw, as in Figs. 2, 4, 5. If the sides of the foot are to be stretched, the ordinary last attachment, *b b*, must be detached, and the extra angular pointed or wedge-shape last, Fig. 6, *s s s s*, with the side stretcher-blocks, *q q q q*, Fig. 7, must be first introduced into the bottom of the boot, after which the angular or wedge-shaped last, being attached to the tibia or shank staff, must be inserted in the boot, together with the keys *K L M*, and lever-staff *f f*, when the hand-screw *n o* is tightened up, as in Fig. 5, the angular or wedge shape last thereby being forced forward between the side stretcher-blocks, as shown in Figs. 5 and 7, whereby said blocks are forced or pressed outwardly against the sides of the boot, thereby causing an expansion of the leather at the parts desired to be enlarged, and without affecting the shape of the rise or instep of the boot, none of which results have

ever been brought about in the use of those boot-trees heretofore constructed. It will be observed that owing to the elongated mortise *J J* of the calf or lever-staff that it can be adjusted up and down, more or less, so as to adapt the position thereof to the desired stretch and shape of the heel, or any portion of the calf part of the leg. This elongated mortise *J J* also admits of any required inclination in or out of the lever-staff.

In the boot-trees ordinarily used no provision is made in protecting or covering the joint-connection of the last part and the tibia-staff. Consequently, owing to the continuous use of the boot-tree, said joint-connection becomes more or less worn out, and the parts become loose, so that in stretching the boot the last and staff become more or less separated, leaving a space between them into which the material of the boot invariably "crowds," causing a wrinkle or inequality of surface. But by the attachment of the metallic guard-strap *e e* this difficulty is entirely overcome, for should the last separate from the staff the guard-strap will cover the aperture, making a smooth surface, and keep the leather of the boot in regular and uniform condition, preventing any creasing or wrinkling thereof.

The great features of simplicity in construction, the dispensing with all complication of contrivances, and using but one simple horizontal hand-screw to produce all the desired adjustments of the several parts, and affording also ample leverage force to distend the material of the boot, together with the new and improved features of utility in producing the desired and greatly improved results, as well as the great facility with which a boot can be shaped as desired without the heretofore required several tedious manipulations, all tend to prove the very important advantages presented by my improvements. Besides, boot-trees after my plan can be constructed and put into the market at about one-third the cost of the best boot-trees now in use, and should any part of my boot-tree be lost, broken, or get out of order, it readily can be replaced with little or no expense comparatively and by any ordinary workman.

I am aware that in the patent of W. H. Bettes and J. H. Parke, of July 19, 1859, there are side blocks or pieces hinged onto the foot part of the tree and operated by cords and bell-crank connections, and not by the direct forward pressure of the foot part of the tree; consequently such form of construction, combination, and mode of operating the same I do not claim.

I also am aware that in the twice-rejected case of John Stuart and William Barkalow there are shown and described side block-pieces that are hinged or connected directly to the sole part of the boot-tree, and which side blocks are operated upon or expanded

outwardly by means of a sliding piece with two small rollers, and also by the action of a rack and pinion, but such devices and mode of operating the same I do not claim; but

Having described the nature, construction, operation, and many advantages of my improvements, and shown the same by various diagrams, I claim—

1. The construction and employment of a lever-staff or calf-stretcher piece, *ff*, formed with the double-inclined surfaces *g g h h I*, and provided with the elongated slot *J*, by which said lever-staff is adjustable up and down, in and out, and whereby the leg, heel, instep, or toe of the boot may be acted on separately by one single horizontal hand-screw, *no*, substantially in the manner as set forth and described.

2. The employment of an adjustable sliding stop-piece, *dd*, attached to the tibia or shin

block *aaaa*, together and in combination with the horizontal tightening-screw *no* and lever staff-piece *ff g g h h I J*, for the purpose as herein set forth and described.

3. The construction of the attachable angular or wedge-shape last *ssss*, together with the attachable side stretcher-blocks *qqqq*, when combined, employed, and operated in connection with the lever-staff *ff g g h h I J*, substantially in the manner and for the purpose set forth and described.

4. The employment of adjustable collars *pppp*, when combined and used with the adjustable lever-staff or calf-stretcher piece *ff g g h h I J*, for the purpose and in the manner substantially as set forth and described.

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Witnesses:

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