2 Sheets--Sheet 1.

# T. BRANIGAN.

## Boot-Tree.

No. 165,151. Patented July 6, 1875.

*Fig. 1.*

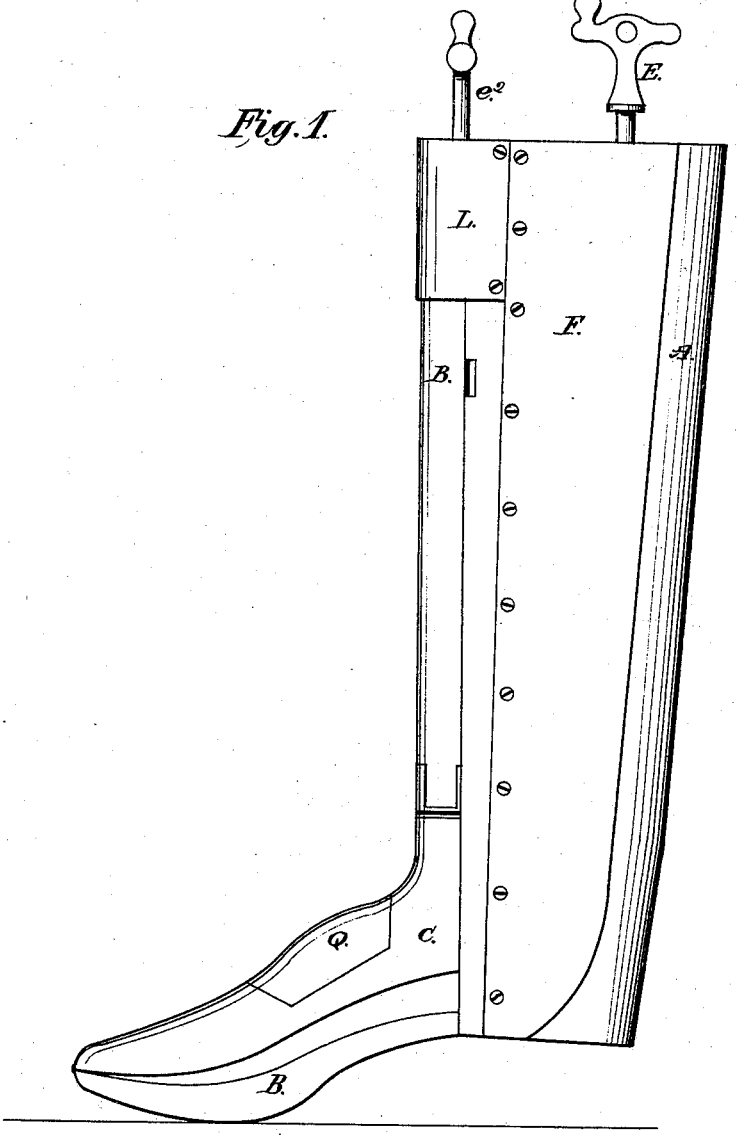
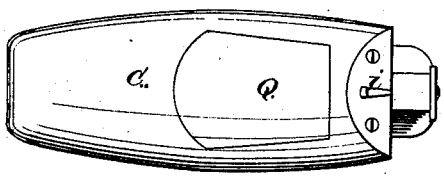



*Fig. 4.*

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George E. Cox

*Inventor:*

Thomas Branigan

2 Sheets--Sheet 2.

# T. BRANIGAN.
## Boot-Tree.

No. 165,151. Patented July 6, 1875.

*Fig. 2.*

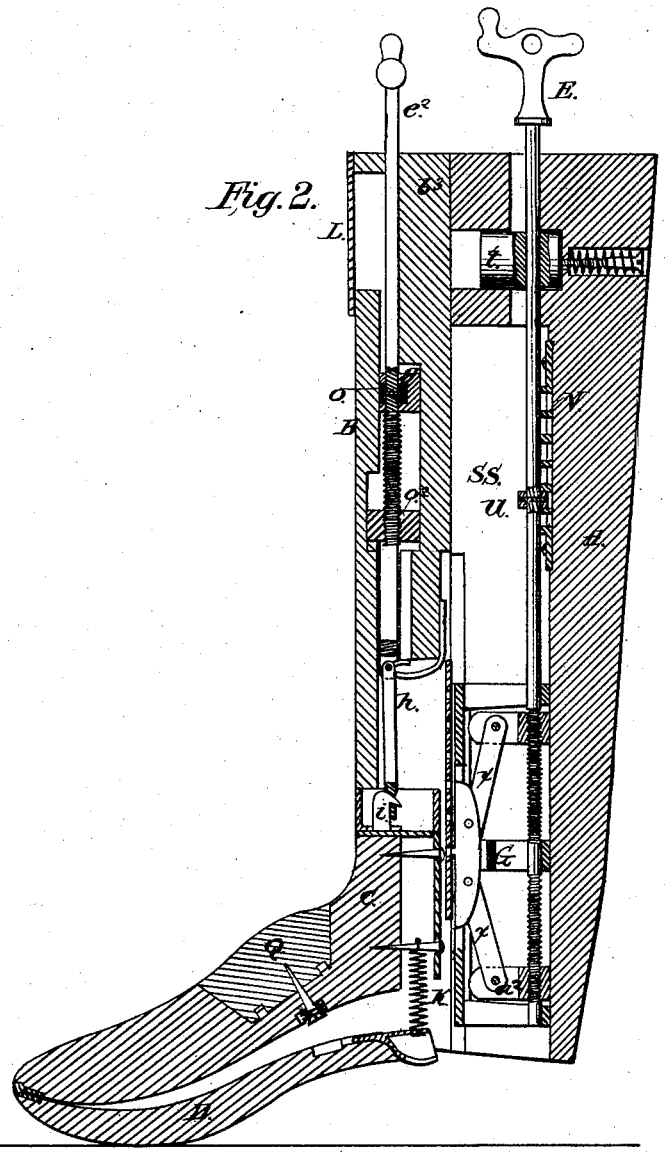
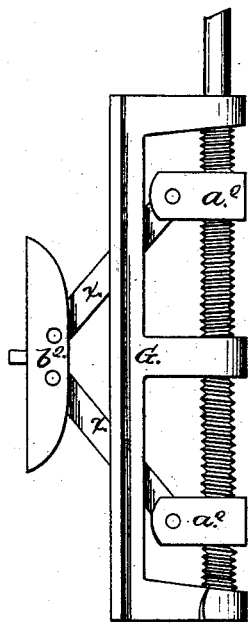



*Fig. 3.*




*Witnesses:*

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# UNITED STATES PATENT OFFICE.

THOMAS BRANIGAN, OF BELOIT, WISCONSIN.

## IMPROVEMENT IN BOOT-TREES.

Specification forming part of Letters Patent No. **165,151**, dated July 6, 1875; application filed November 19, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS BRANIGAN, of the city of Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Boot-Trees; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings which form part of this specification.

The object of my invention is to provide the trade with a boot-tree at once simple of construction and perfect in application, whereby any part of the boot may be stretched as required, without impairing the shape or form.

The foot or instep may be enlarged by raising the upper part of the last or foot of the tree vertically.

The bottom or top of the boot-leg may be enlarged as required, or the whole leg may be spread out at the same time equally from top to bottom, as hereinafter particularly described.

In the drawings, Figure 1 is a perspective view of the tree complete, with my improvements. Fig. 2 is a vertical plan section. Fig. 3 is a similar view of the stretching device placed in the rear part of the tree, detached; and Fig. 4 is a plan view of the foot detached.

In the drawings, similar letters of reference indicate corresponding parts.

It will be seen that by this invention the whole work of stretching or enlarging the foot or leg of a boot is accomplished by the proper manipulation of the vertical cross-headed screw-rods E and $e^2$, as hereinafter explained.

By turning the screw-rod $e^2$, Fig. 2, to the left, the sliding front B and upper part of the foot C will be carried down till the foot is closed, as in Fig. 4, the parts C and D being hinged together at the toe. The rod $e^2$ passes downward through the solid or rigid part $b^3$, covered by the metal cap L, as shown at Fig. 1. The rod $e^2$ has a rigid collar, O, working freely between hollow bearings $g$, in which the rod $e^2$ rotates, its lower end being screw-threaded, and working through a nut, $O^2$, having a strap on each side, between which the rod $e^2$ may traverse. The straps again unite at their lower ends, and are there loosely pivoted to a pitman, $h$, having a slot at the lower end, for the purpose of engaging with the hook $i$ of the foot C, and this is done in a most ingenious manner, to wit: when the pitman is screwed downward, by turning the rod $e^2$ to the left the lower end of the pitman falls to the bottom of the groove in the tree, and presents its open slot to the hook $i$, and upon turning the rod $e^2$ to the right immediately engages therewith, a small spring, not clearly shown in the drawing, performing this operation. The sliding front B and foot C may be disengaged by reversing the operation just detailed. The foot C traverses a suitable groove in the rigid part of the front B by means of a corresponding rabbet part, K, shown at Fig. 4.

It will be seen that the instep or whole foot of a boot may be enlarged or stretched by screwing up the front B and foot C, by means of turning the screw-rod $e^2$ to the right.

The action is perfect and uniform. The whole front being carried up together, there can be no wrinkle or unequal tension of the leather. The foot C is also provided with a novel reversible right-and-left instep-shaping piece, Q, which is held in its place by suitable pins, and a screw, having a spiral spring, allowing it to be reversed at the pleasure of the operator, as required.

By means of this adjustable right-and-left instep piece, the tree is always fit for use in finishing or expanding the foot of either a right or left boot, always shaping the instep of the boot so as to fit and give ease to the foot of the wearer.

The device connected with the screw-rod E is thus explained. In Fig. 2 the stretching device is shown at the bottom of the space S S, Fig. 2. Now, by turning the screw-rod E to the right, the right-and-left hand nuts $a^2$ upon the corresponding screw-threads of the rods E will be drawn toward each other, carrying with them the inner ends of the arms X X, pivoted to the said nuts, and having their outer ends pivoted to the follower $f^2$. Now, by observing this device, at Fig. 2, in its normal position, it will be seen that this operation must expand the whole foot and lower part of the boot-leg in the direction of the length of the foot.

The follower $f^2$ on its outer face is provided

with a suitable spur, engaging with slots cut in a metal face-plate, rigidly fixed to the rear of the front part B, by means of which the parts A and B are firmly held, and prevented from slipping up or down when in use.

The stretching device G in question may be raised or lowered for the purpose of operating upon any part of a boot-leg, by simply lifting the collar U (rigidly fixed to the rod E) out of contact with the rack V, as shown at Fig. 2, the collar U being held in contact with the rack V by means of the spring-bearing *t*, through which the rod E passes.

By means of this stretching device G the leg of a boot may be enlarged at any particular point, or if the stretcher is placed exactly at the middle of the leg, the whole length will be enlarged equally from top to bottom. The parts A, B, C, and D are clasped on each side by the metal shell F, screwed to the rigid part of the front B, as shown. When in use the whole tree is firmly held by the spur on the face of the follower $f^2$, so that neither the whole front or rear parts can move up or down independent of each other, as hereinbefore stated.

This application is for an improvement upon my invention of certain improvements in boot-trees, for which Letters Patent of the United States were granted to me under date of November 4, 1873, and numbered 144,312; hence, I do not herein claim as new any of the parts described and claimed in and covered by said Letters Patent.

Having thus described and explained my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a boot-tree, the reversible right-and-left instep-shaping piece Q, substantially as and for the purpose set forth.

2. The rod E, collar U, rack V, spring-bearing *t*, in combination with parts A, B, C, and D, and intermediate mechanism, all substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of November, 1874.

THOMAS BRANIGAN.

Witnesses:

DENNIS J. HENNESEY,

GEORGE COX.