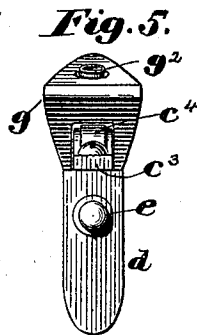
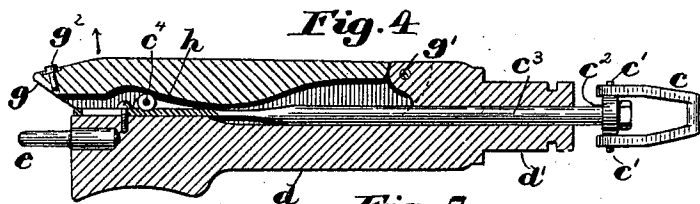
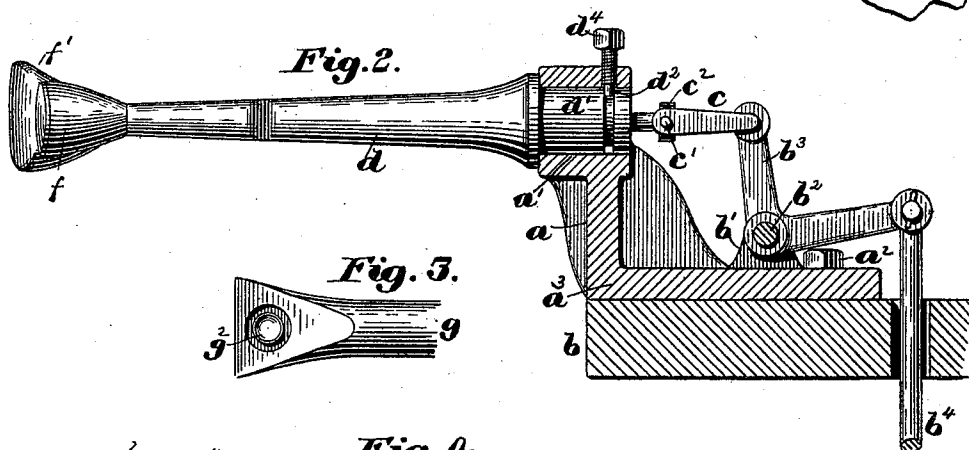
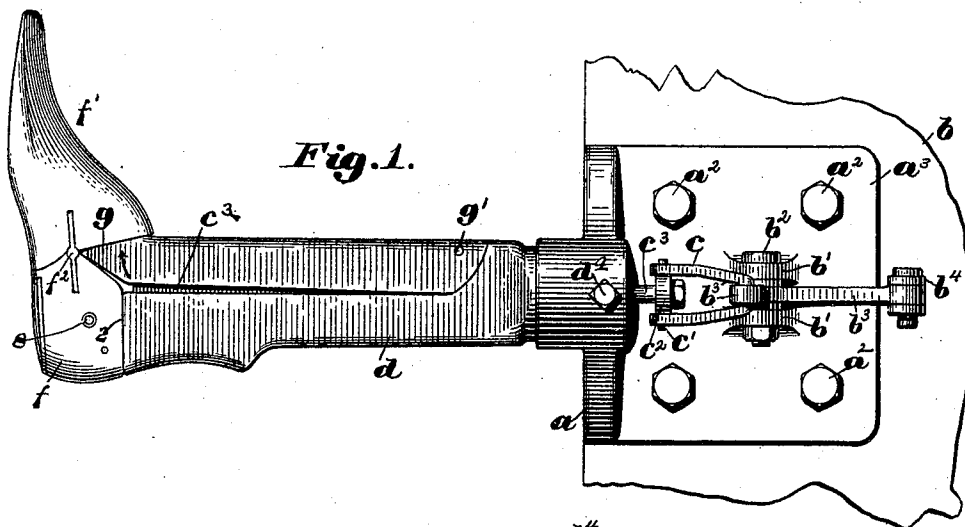


(No Model.)

W. B. ARNOLD.
SHOE TREE.

No. 581,449.

Patented Apr. 27, 1897.



Witnesses:

Walter Lombard
Thomas Drummond

Inventor:

William B. Arnold
by Leroy Longory
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM B. ARNOLD, OF ABINGTON, MASSACHUSETTS.

SHOE-TREE.

SPECIFICATION forming part of Letters Patent No. 581,449, dated April 27, 1897.

Application filed November 5, 1896. Serial No. 611,132. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. ARNOLD, of North Abington, county of Plymouth, State of Massachusetts, have invented an Improvement in Shoe-Trees, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a novel shoe-tree.

It is a great desideratum in the manufacture of boots and shoes to avoid changing the last; and this invention has for its object to tree the boot or shoe on the last on which it was made and after the treeing operation to easily and readily remove the last from the shoe. To effect this desired object, I employ a multipart last, it in this instance of my invention being shown as composed of a heel part and a toe part hinged together within the plane of the bottom of the last, the two parts of the last at its bottom at one side of said hinge presenting abutting shoulders or ends, which, when the last is in its operative position as part of a treeing-support, lie in contact, and at the opposite side of this hinge the last is so shaped as to present a surface upon which may act a pressure member or device, forming part of the treeing-support, said pressure device acting to keep the last firm and stiff during the treeing operation and retain it in place on and as a working part of the tree, the relaxation of the pressure of the pressure device on the foot part of the last leaving the last with the shoe on it free to be removed from the holding device, forming part of the shank of the tree, and the last free to be withdrawn from the shoe.

Figure 1 is a top or plan view of my improved tree, the last, forming a part of it, being held firmly; Fig. 2, a side elevation with the stand holding the shank of the tree broken out; Fig. 3, a detail showing one face of the pressure member or device; Fig. 4, a sectional detail of the shank of the tree and its pressure member or device, and Fig. 5 an end view of the shank.

The last shown is substantially such as represented in my application, Serial No. 396,367, filed June 22, 1896, it consisting of a heel part f and a foot part f' , united by a hinge f^2 , so as to leave two abutting surfaces, as shown in

Fig. 1, at one side of said hinge, one surface on the foot part and the other on the heel part, while at the opposite side of said hinge the foot part is free to be acted upon by the pressure member or device to hold the same in rigid working condition to thus form an operative part of said treeing-support.

The stand a , having a bearing a' , is secured by suitable bolts a^2 to a bench b , said bolts entering holes in the foot a^3 of the stand. The foot has ears b' , provided with a stud b^2 , on which is mounted an elbow-lever b^3 , to which is jointed a rod b^4 , supposed to be attached to a treadle (not shown) located at the floor, the upper end of said lever engaging loosely a loop or eye c , pivoted on studs c' of a collar c^2 , applied to a draw-rod c^3 , carrying a roll or lump c^4 , said rod passing into the shank d of the tree and being free to be moved longitudinally therein.

The inner end of the shank is rounded, as at d' , to enter the bearing a' and rotate therein, a suitable shoe d^2 entering a groove in said end to prevent the shank from being pulled out of said bearing, a set-screw d^4 holding the shoe in place. The outer end of the shank has a pin or holding device e to enter a hole in the heel part f of the last. The shank is provided with a movable pressure member or device g , herein shown as a lever pivoted at g' to the solid or stiff part of the shank of the tree, said lever being shown as having a tapered or wedge-shaped end to cooperate with a portion of the foot part, it entering between the heel part f and the foot part f' at one side of the hinge f^2 .

One face of the pressure member or device, preferably the one which contacts with the foot part f' , has a dog g^2 suitably shaped to engage and hold the wood of the foot part and aid in preventing the removal of the last from the holding device e .

The inner side of the movable pressure member or device (shown as a lever) has a cam portion, as h , and as the rod c^3 is drawn to the right, after the heel of the last has been put on the pin e , with the acting end of the pressure member or device g against the foot part of the last, said pressure member or device when moved in the direction of the arrow on it, Figs. 1 and 4, causes the foot part of the last to be turned on the hinge to force

the abutting surfaces closely together and hold the foot part stiff and solid with relation to the heel part, the last being thereby retained in rigid position as an operative part of the treeing-support.

The pressure device in operation also acts to keep the last on the holding device *e*, the dog *e*², cooperating with the foot part, further acting to prevent the removal of the last from said holding device until after the pressure of the pressure member or device is relaxed from the foot part of the last, this pressure being herein shown as relaxed by a reverse movement of the slide-rod and the cam or roll carried by it.

The pressure member or device by its action on the foot part holds the latter stiff during the treeing operation.

Preferably the dog is made as an edge arranged in the shape of a ring, as it will not wedge a hole in the wood, as would a point, and soon tend to crack or split the wood.

By employing a last such as shown and described it is possible to last and make and complete a shoe on the same last, even to treeing, after which the last may be taken from the shank of the tree and a tool or spindle be put into the hole in the top of the heel part of the last and the heel part be tipped on its hinge and elevated, thus shortening the last, as provided for in my said application, thus making it easy to draw the entire last from the finished shoe without straining the latter.

The shank *d*, the pressure member or device, and the holding device for the heel part of the last constitute the treeing-support.

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

1. The combination with a multipart last, of a treeing-support having a holding device for the heel part of the last, and a pressure member or device cooperating with said foot part, to maintain the last in rigid working condition, and at the same time retain said last upon and to form an operative part of said treeing-support, substantially as described.

2. The combination with a multipart last,

of a treeing-support having a holding device for the heel part of the last, and a pressure member or device cooperating with and adapted to engage a part of said last, the separation of said holding device and pressure member holding the last in rigid operating position as an operative part of said treeing-support, substantially as described.

3. A multipart last composed of a heel and a foot part, combined with a treeing-support having a holding device to engage and hold the heel part of the last, and a pressure member or device having a dog to engage the foot part of the last, and aid in preventing the removal of the last from the said holding device, substantially as described.

4. A divided last composed of a heel and toe part hinged together as described, and cut away to present a V-shaped open notch, and a tree-shank having a pin to enter a hole in the heel part of the last, combined with a pressure member or device made as a lever provided with a cam-surface, and a slide-rod to act on the said cam-surface and cause the pressure member or device to engage the foot part of the last and hold the same stiff for treeing purposes, substantially as described.

5. A divided last composed of a heel and toe part hinged together as described, and cut away to present a V-shaped open notch, and a tree-shank having a pin to enter a hole in the heel part of the last, combined with a pressure member or device made as a lever provided with a cam-surface, and a slide-rod to act on the said cam-surface and cause the pressure member or device to engage the foot part of the last and hold the same stiff for treeing purposes, said pressure member or device being provided with a ring-shaped dog to engage the foot part, substantially as described.

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

WILLIAM B. ARNOLD.

Witnesses:

GEO. W. GREGORY,
LAURA T. MANIX.