

G. W. BADGER.

BOOT-TREE.

No. 170,462.

Patented Nov. 30, 1875.

Fig. 1.

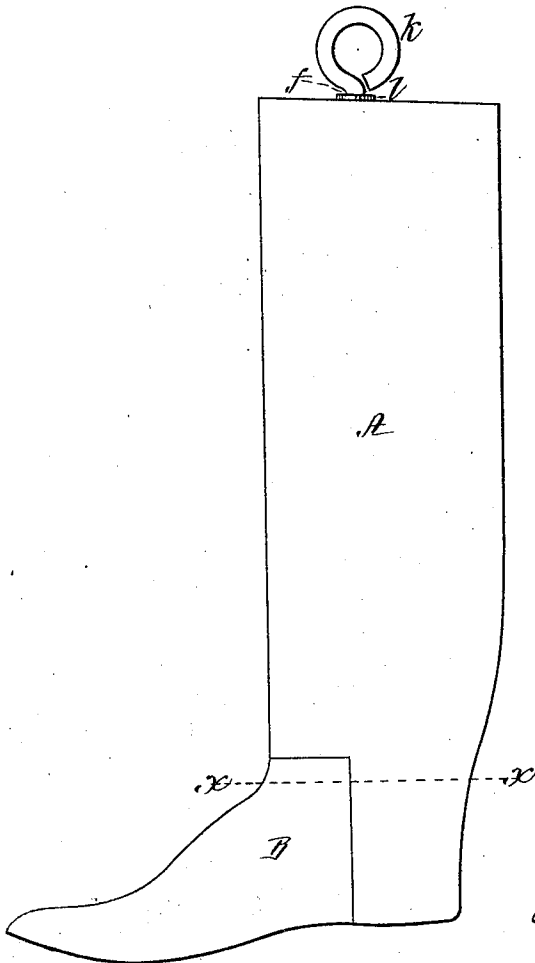


Fig. 2.

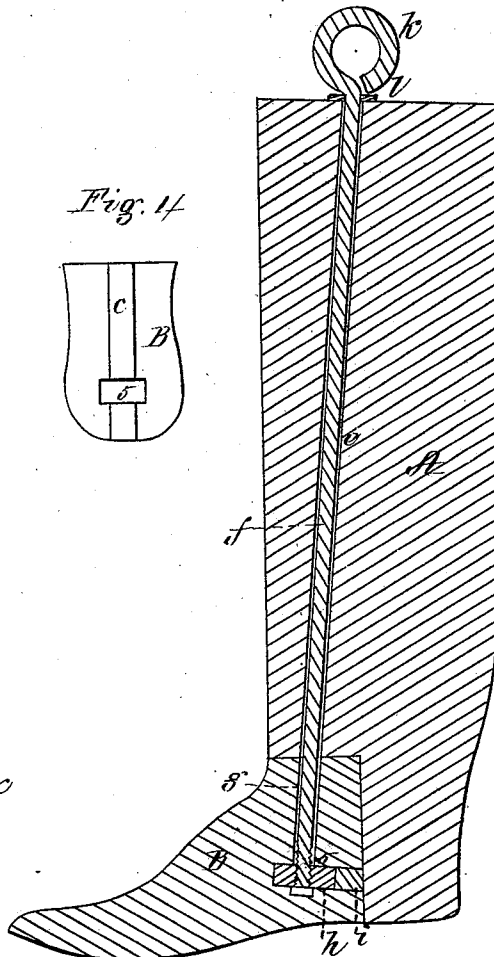


Fig. 1/

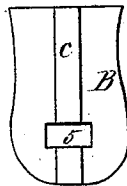
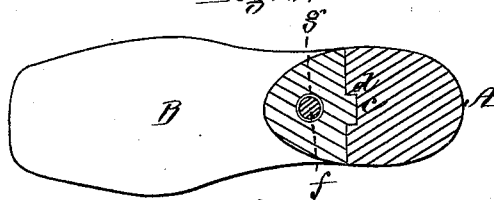


Fig. 3.



Witnesses,
W. J. Cambridge
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UNITED STATES PATENT OFFICE.

GEORGE W. BADGER, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO GEORGE P. COX, OF SAME PLACE.

IMPROVEMENT IN BOOT-TREES.

Specification forming part of Letters Patent No. **170,462**, dated November 30, 1875; application filed October 25, 1875.

To all whom it may concern:

Be it known that I, GEORGE W. BADGER, of Malden, in the county of Middlesex and State of Massachusetts, have invented an Improved Boot Tree or Form, to be used in the manufacture of rubber boots, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation of my improved boot-tree. Fig. 2 is a longitudinal vertical section through the same. Fig. 3 is a horizontal section on the line *xx* of Fig. 1. Fig. 4 is an end elevation of the foot portion of the boot-tree.

This invention relates to a boot-tree especially adapted for use in the manufacture of rubber boots; and consists in connecting the foot with the leg by means of a long screw-bolt extending longitudinally through the leg into the foot, and engaging with a nut secured within the latter, in such a manner that, when driven into its place, the wood on all sides except one will be compressed, and the nut thereby be held firmly against the action of the heat to which the tree is subjected in the process of vulcanizing the boot.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the upper portion or leg of the boot-tree, which is cut away at its lower end for the reception of the rear end of the foot B, the latter being provided with a tenon, *c*, which fits into a corresponding groove, *d*, in the leg, and thus serves as a guide to insure the accurate fitting together of the two portions A B. Through the leg A is bored an aperture, *e*, through which passes a long bolt or rod, *f*, which enters an aperture, *g*, in the foot-piece, its lower end being provided with a screw-thread, which engages with a nut, *h*, secured within a recess, 5, formed at right angles to and intersecting the aperture *g*, a wooden plug, *i*, being driven in after the insertion of the nut. This recess 5 is of rectangular form in cross-section, as seen in Fig. 4, corresponding to that of the nut *h*; but the recess is of such size as to re-

quire the nut to be driven into its place, which causes the surrounding wood to be compressed on all sides of the nut except the rear, this compression of the wood causing the nut to be held rigidly and firmly in its place against the action of the heat to which the tree is subjected during the process of vulcanizing the boot thereon, and, when the nut is thus secured within the foot portion B, all liability of its being turned or otherwise displaced by being suddenly struck by the lower end of the bolt *f* when inserted, as often occurred when the nut was placed within a circular aperture and afterward plugged, as heretofore, is entirely avoided, and the nut is thus always in a proper position to receive the screw-thread at the lower end of the bolt *f*. At the upper end of the bolt is a loop, *k*, which bears upon a washer, *l*, and thus, when the bolt is turned so as to enter the nut, the foot and leg are held firmly together, as required. This bolt may be turned by taking hold of the loop with the finger and thumb, or by means of a short bar or rod passed through the loop.

The above-described tree serves as a form on which the rubber boot is made, after which the tree, with the boot thereon, is suspended within the vulcanizing-chamber, a hook passing through the loop at the upper end of the bolt *f*, or other suitable device being employed for this purpose. After the vulcanization has been completed, the tree, with the boot thereon, is taken down, and the bolt *f* turned so as to disconnect the foot from the leg, when the latter may be drawn out of the boot, after which the foot is removed by means of a suitable hook or by hand.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a boot-tree for vulcanizing rubber boots, the foot-piece A, provided with the nut *h*, secured within the foot, and surrounded with wood on all sides, as and for the purpose described.

Witness my hand this 21st day of October, A. D. 1875.

GEORGE W. BADGER.

In presence of—

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.