

No. 609,339.

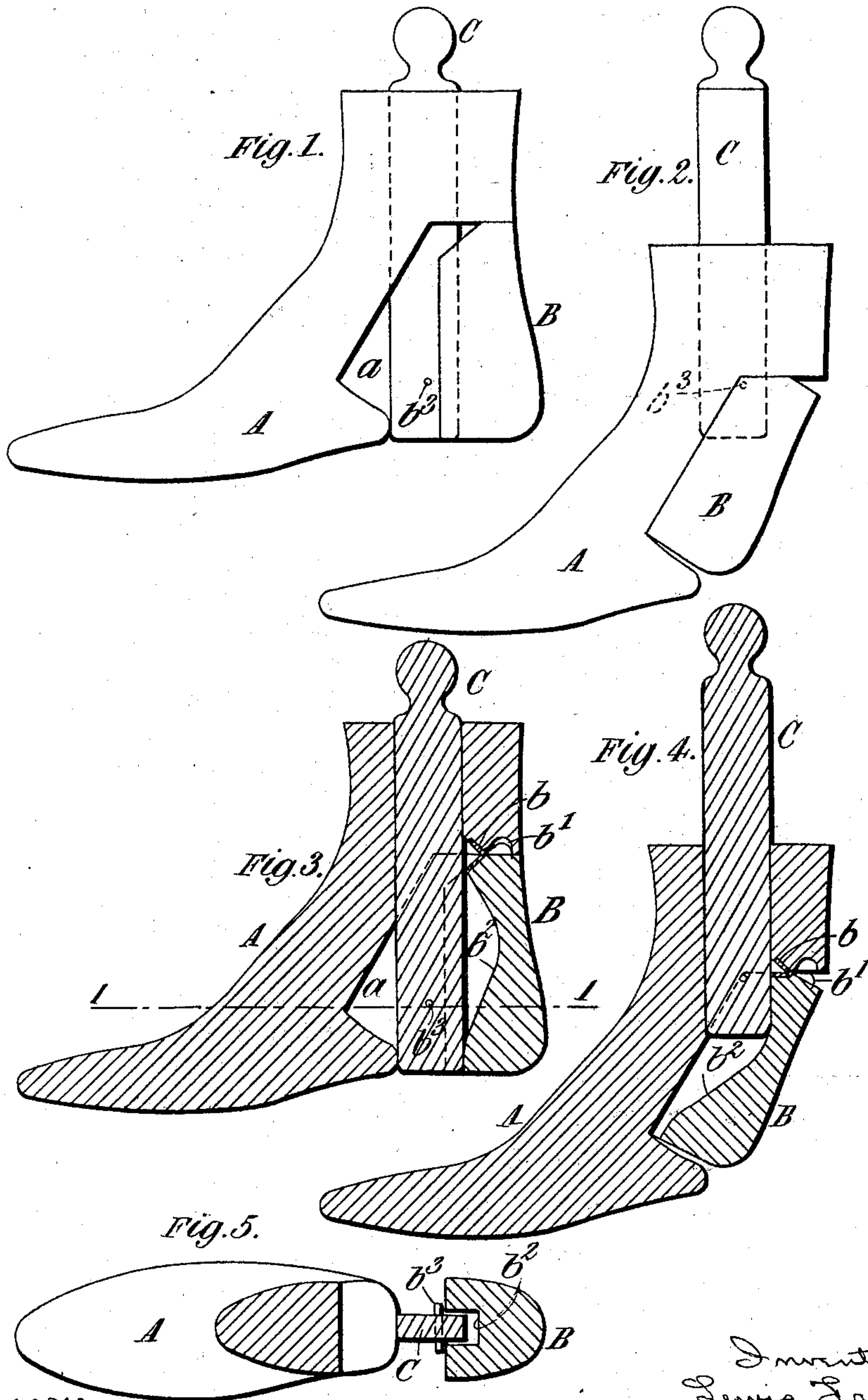
Patented Aug. 16, 1898.

L. FRAZER.
BOOT TREE.

(Application filed Aug. 23, 1897.)

(No Model.)

4 Sheets—Sheet 1.



It witnesses

J. B. Keefe

Robert Emmett

Inventor
Lewis Frazer

By

James L. Norris

No. 609,339.

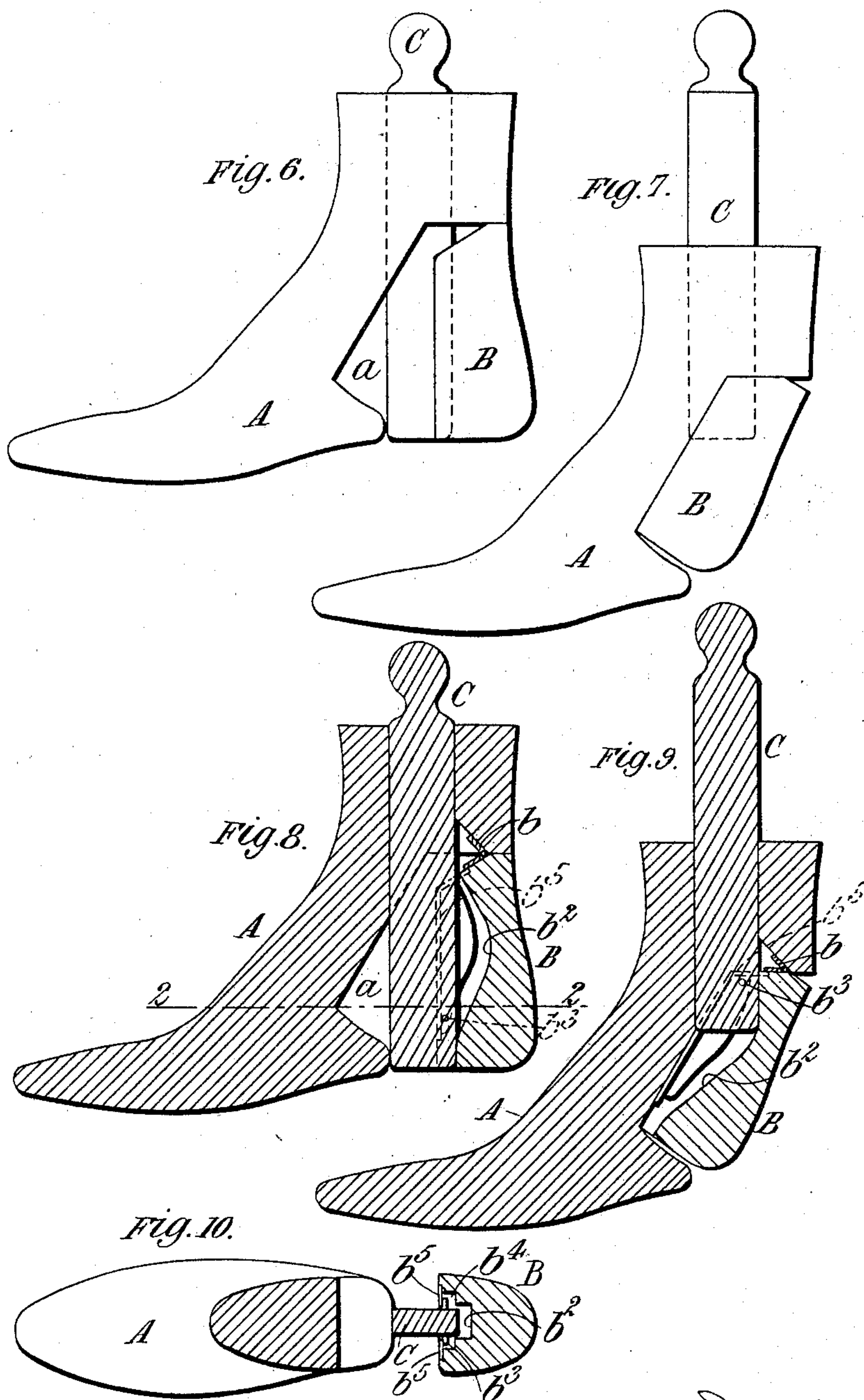
Patented Aug. 16, 1898.

L. FRAZER.
BOOT TREE.

(Application filed Aug. 23, 1897.)

(No Model.)

4 Sheets—Sheet 2.



Witnesses
J. B. Keefe
Robert Corbett

Inventor
Lewis Frazer
By James L. Norris
Attorney

No. 609,339.

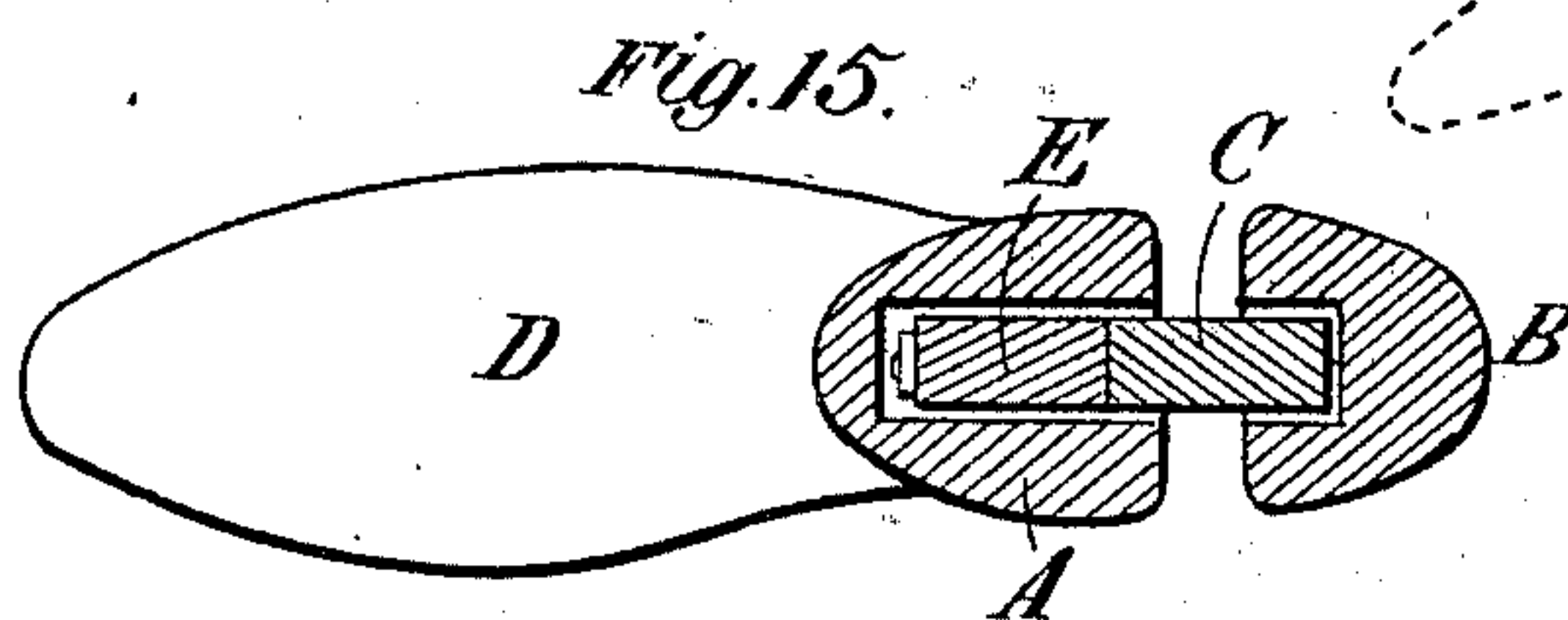
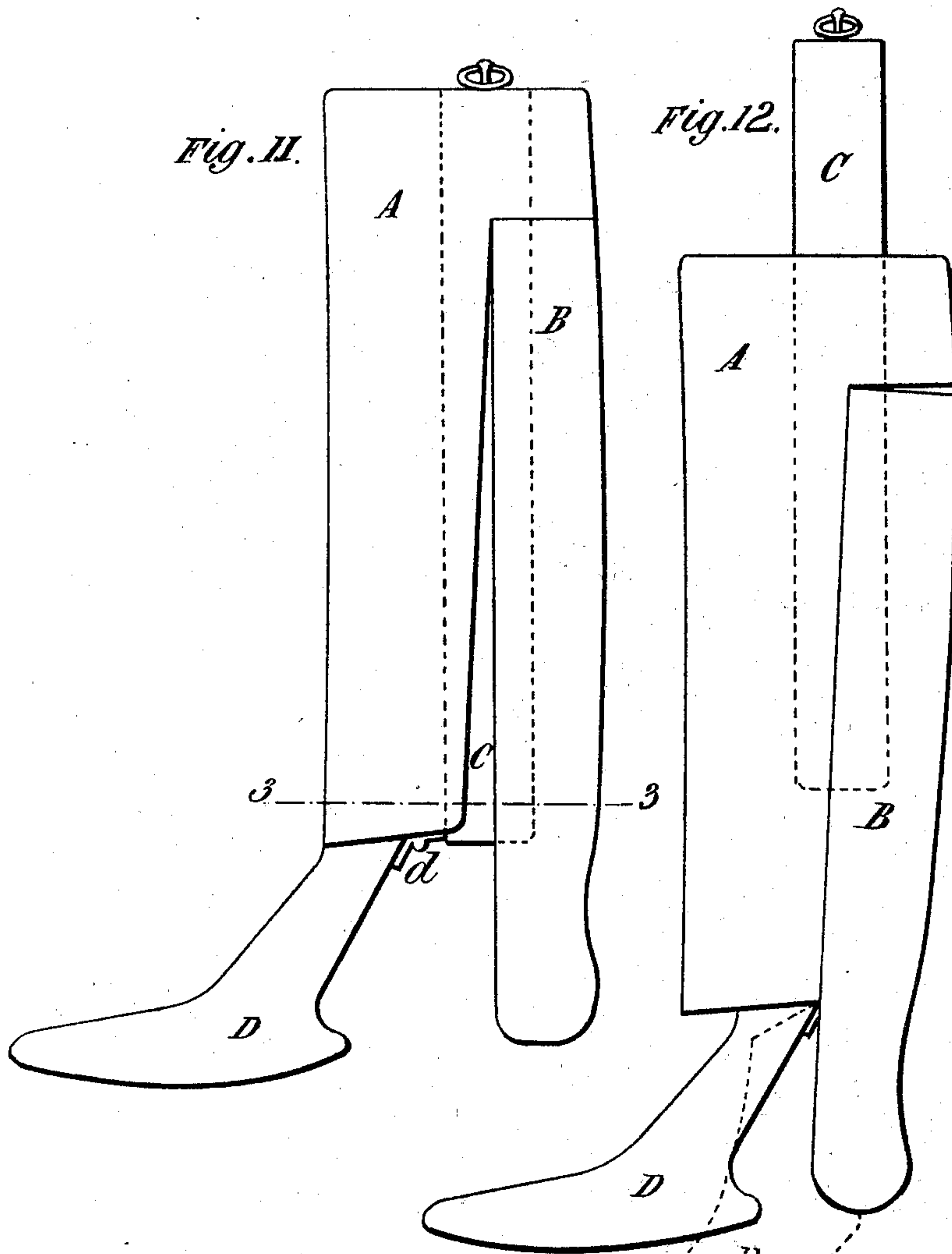
Patented Aug. 16, 1898.

L. FRAZER.
BOOT TREE.

(Application filed Aug. 23, 1897.)

(No Model.)

4 Sheets—Sheet 3.



Witnesses
J. B. Steeger
Robert Corbett

Inventor
Lewis Frazer
By
James L. Norris

No. 609,339.

Patented Aug. 16, 1898.

L. FRAZER.
BOOT TREE.

(Application filed Aug. 23, 1897.)

(No Model.)

4 Sheets—Sheet 4.

Fig. 13.

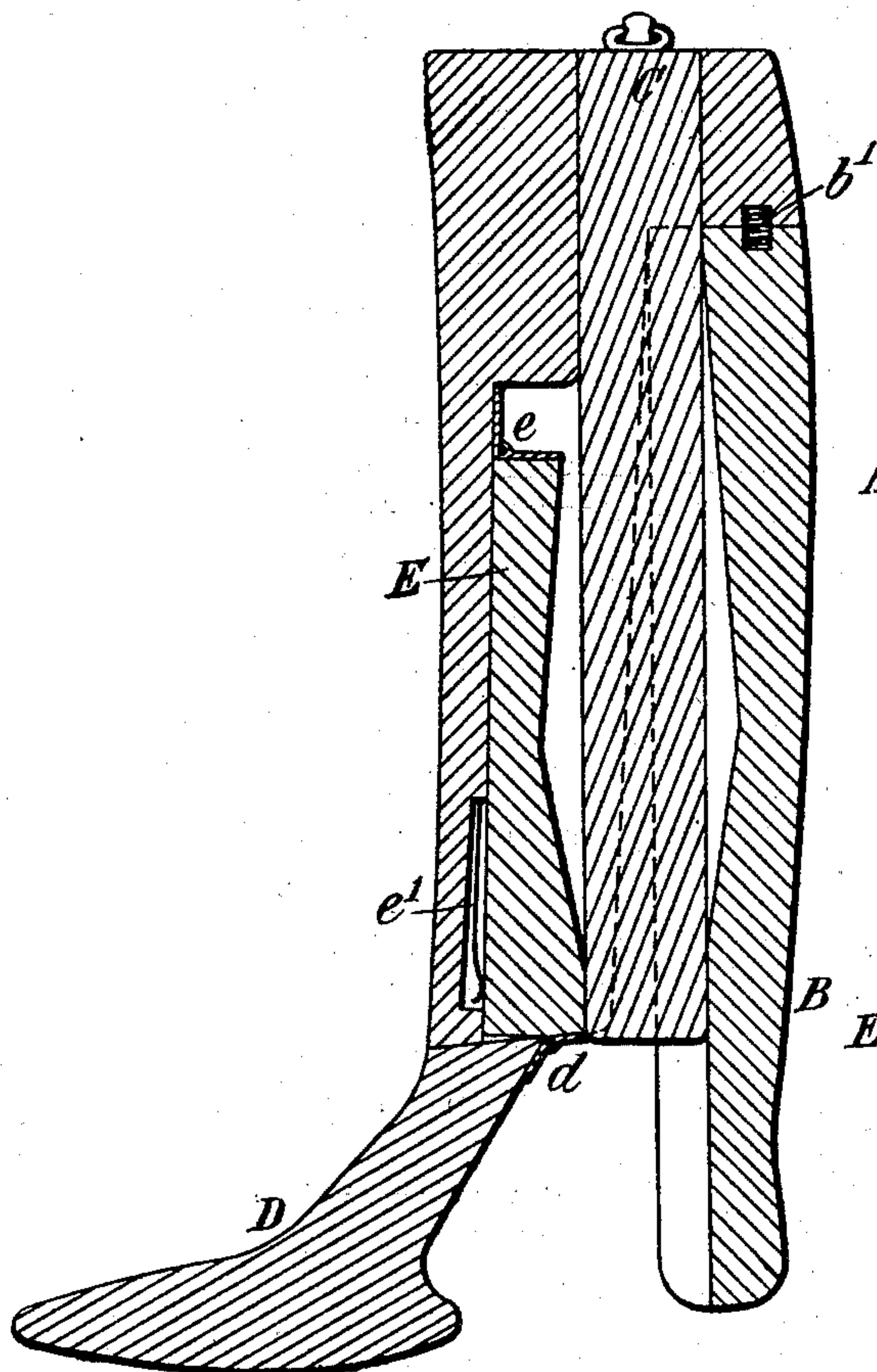
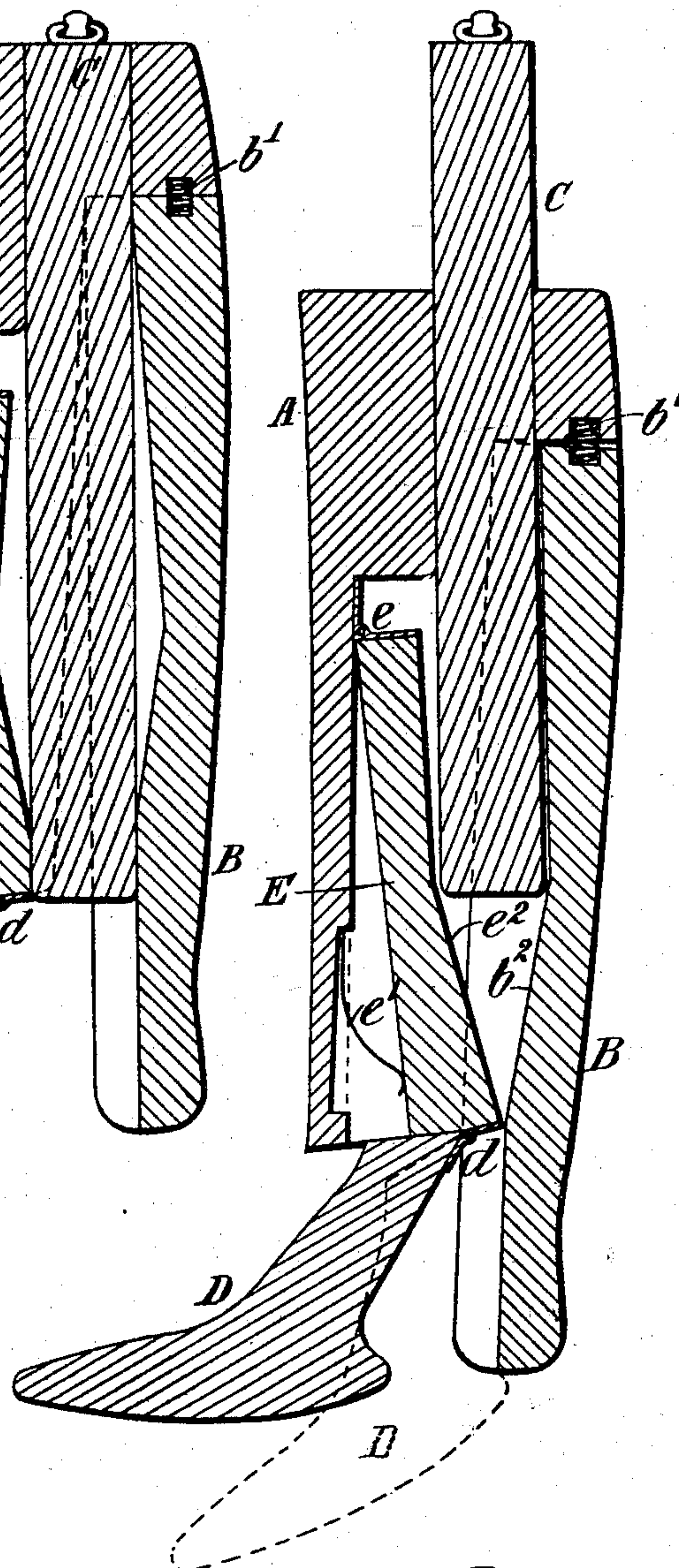


Fig. 14.



Witnesses

M. B. Tupper

Robert Everett

Inventor
Lewis Frazer

By James L. Norris
Attorney

UNITED STATES PATENT OFFICE.

LEWIS FRAZER, OF LONDON, ENGLAND.

BOOT-TREE.

SPECIFICATION forming part of Letters Patent No. 609,339, dated August 16, 1898.

Application filed August 23, 1897. Serial No. 649,249. (No model.)

To all whom it may concern:

Be it known that I, LEWIS FRAZER, architect, a subject of the Queen of Great Britain, residing at 15 Clifford's Inn, Fleetstreet, London, England, have invented certain new and useful Improvements in Boot-Trees, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in boot-trees and is designed to overcome the objections that apply to ordinary boot-trees on account of the liability of some of the parts to be either placed in the wrong boot or mislaid.

The object of the said invention is to provide a very simple arrangement for expanding or increasing the effective length of the tree by hinging the heel portion of the boot-tree to the toe portion and inserting a plain sliding rod or block of rectangular section between them, such sliding rod or block being wide enough of itself to effect the necessary expansion.

A further object is to simplify and cheapen the manufacture of boot-trees.

In order that my invention may be clearly understood and readily carried into effect, I will describe the same fully with reference to the accompanying drawings, in which—

Figures 1 and 2 are side elevations illustrating one form of my improved boot-tree, showing the same in its expanded or operative position and in its folded or inoperative position, respectively. Figs. 3 and 4 are sectional elevations corresponding to Figs. 1 and 2, respectively; and Fig. 5 is a sectional plan on the line 1 1 of Fig. 3. Figs. 6, 7, 8, and 9 are similar views to Figs. 1 to 4, showing a modified arrangement for operating the heel-piece; and Fig. 10 is a sectional plan on the line 2 2 of Fig. 8. Figs. 11, 12, 13, and 14 are similar views to Figs. 1 to 4, showing a tree adapted for use with top-boots; and Fig. 15 is a sectional plan on the line 3 3 of Fig. 11.

In all the figures like letters indicate similar parts.

Referring more particularly to Figs. 1 to 5, A is the main piece of the tree, forming the toe, instep, and top thereof, and having a hole or slot in its upper portion, in which slides a plain flat rod or block C. B is the heel-piece, hinged to the main piece at b, and

having an inclined surface b^2 , against which the lower extremity of the said rod C bears. The width of the rod is equal to the amount of movement or displacement of the heel-piece B. On pushing this rod C down it will expand or force outward the said heel-piece, and on drawing up said rod the spring b' will cause the said heel-piece B to turn or swing into the recess a in the main piece, as clearly shown in Figs. 2 and 4. To prevent the rod being accidentally drawn completely out of the tree, I provide it with a cross-pin b^3 , which comes into contact with the top of the tree and acts as a stop.

In Figs. 6 to 10 I have shown a modified arrangement for operating the heel-piece, according to which I dispense with the spring b' , and in place thereof I provide the rod C with a transverse pin b^3 , which works in a slot or groove in the said heel-piece, as shown in Fig. 10. When the rod C is pulled up, the pin b^3 will come against the strip b^5 , forming the outer flange of the slot or groove b^4 , and by raising the same cause the heel-piece to turn or swing into the recess a , as shown in Fig. 9. When the rod or block C is pushed down, it operates the said heel-piece in the same manner as previously described with reference to Figs. 1 to 5.

It will be readily seen that I may reverse the arrangement of the pin and slot by placing the pins or projections on the heel-piece and the slot or groove in the rod or block.

Figs. 11 to 15 illustrate the application of my invention to a tree for top-boots. In this construction the toe-piece D is hinged at d to a swinging arm or link E, which latter is hinged at e to the main or upper part A of the tree. A spring e' tends to turn or swing the piece E, and consequently the toe-piece D, inward, and the hinge d , connecting the pieces E and D, permits the latter to fall into the position shown by the dotted lines in Figs. 12 and 14 while the tree is being inserted or withdrawn from the boot. The expansion of the tree is effected by pushing down the vertical rod or block C in the same manner as described with reference to Figs. 1 to 5, the lower extremity of the said rod or block acting on the inclined surface e^2 of the piece E as well as on the heel-piece, so that it operates the toe and heel pieces simultaneously. On

withdrawing the rod C the springs b' and e' will turn or swing the parts of the tree inward, as seen in Figs. 12 and 14. If desired, I may dispense with the springs b' e' and draw inward the toe and heel pieces by the use of pins or projections on the rod C, acting in a similar manner to the pins or projections described in connection with Figs. 6 to 10.

10 What I claim is—

1. In a boot-tree, the combination of a main piece, a hinged heel-piece, an inclined surface on said heel-piece, a sliding rod working between said main and heel pieces and having its lower end bearing on said inclined surface, substantially as described.

2. In a boot-tree, the combination of a main piece A, a hinged heel-piece B, an inclined surface b^2 on said heel-piece, a sliding rod C working between said main and heel pieces and having its lower end bearing on said inclined surface, and a spring b' tending to press the heel-piece inward, substantially as described.

25 3. In a boot-tree, the combination of a main piece, a hinged heel-piece, an inclined surface on said heel-piece, a sliding rod working be-

tween said main and heel pieces, a spring tending to press said heel-piece inward, a recess to receive the heel-piece when so pressed inward and a stop for preventing accidental withdrawal of the sliding rod, substantially as described.

4. In a boot-tree, the combination of a main piece, a hinged heel-piece, a sliding rod working between said main and heel pieces, a slot or groove in the heel-piece, strips forming flanges of said groove, and a pin on the said rod engaging said flanges so as to turn the heel-piece on its pivot substantially as described.

5. In a boot-tree, the combination of a main piece, a hinged heel-piece, a hinged toe-piece, a hinged link carrying said toe-piece, a rod working between said link and heel-pieces, and a spring acting on said link, substantially as described.

In testimony whereof I have hereunto set my hand this 17th day of July, 1897.

LEWIS FRAZER.

Witnesses:

CHAS. ROCHE,
R. J. PARSONS.