W. W. Wilmott,

Boot Tree.

No. 20,185. Patented May 4, 1858.

Fig: 1.

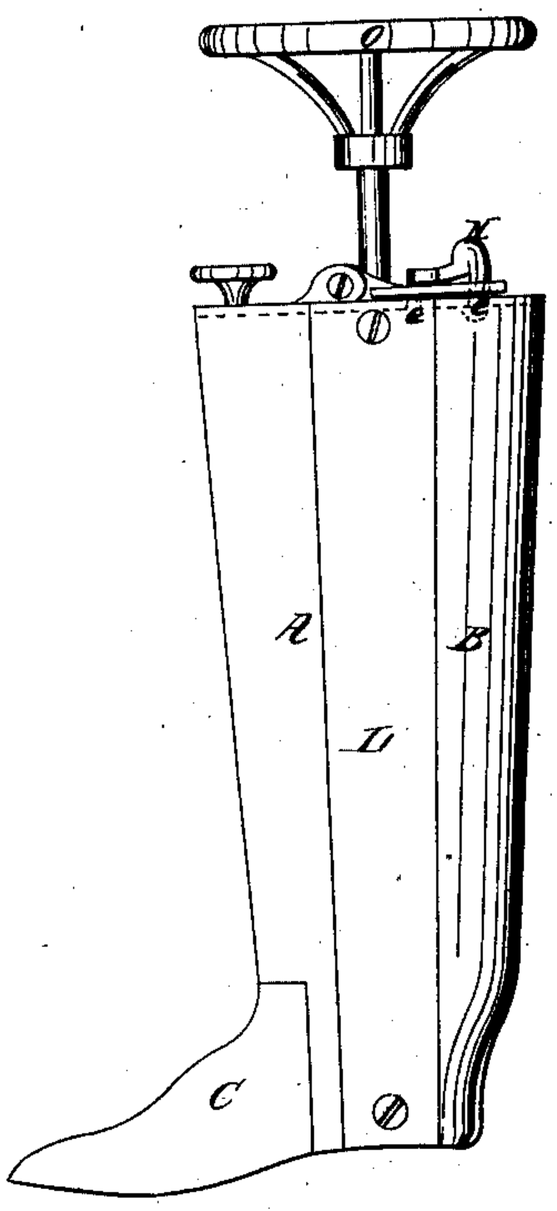


Fig: 2.

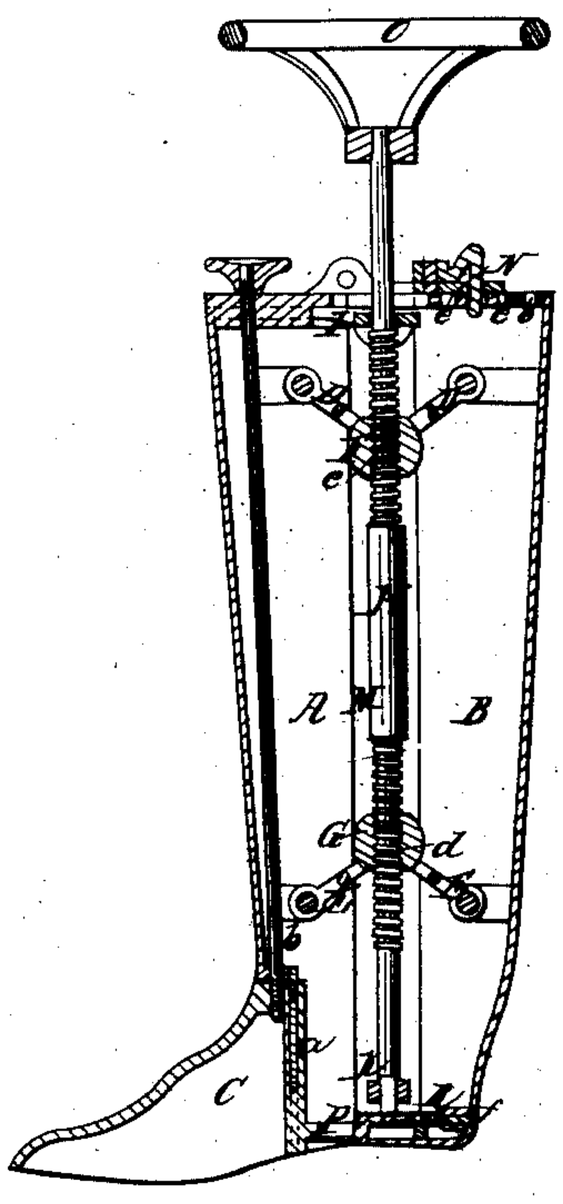


Fig: 3.

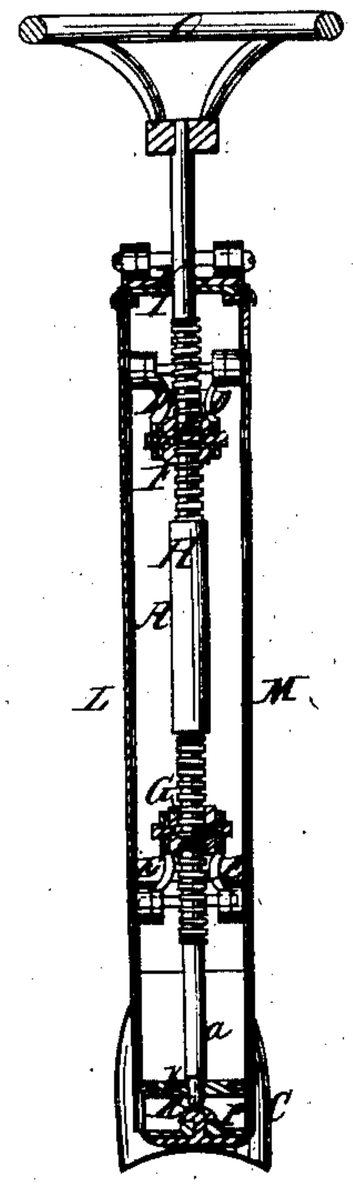


Fig: 4.

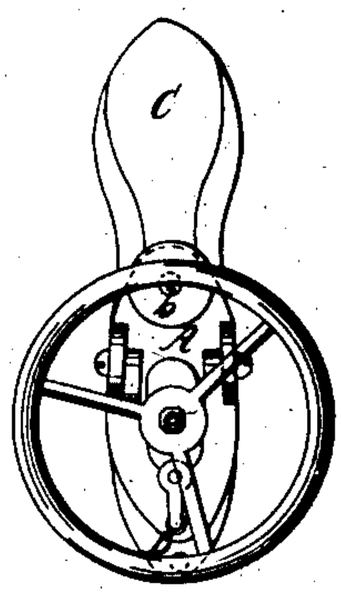
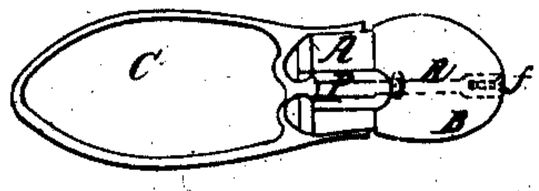


Fig: 5.



UNITED STATES PATENT OFFICE.

W. W. WILLMOTT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND HENRY F. GARDNER, OF SAME PLACE.

BOOT-TREE.

Specification of Letters Patent No. 20,185, dated May 4, 1858.

To all whom it may concern:

Be it known that I, WILLIAM W. WILLMOTT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Tree or Machine for Treeing or Stretching Boots; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 denotes a side elevation of the said boot-tree; Fig. 2, a longitudinal section of it taken in a plane running through the straining shaft and the toe of the machine. Fig. 3 is a longitudinal section taken through the straining shaft and in a plane at right angles to that which is exhibited in Fig. 2. Fig. 4 is a top view of the regulator and the front and back parts of the leg portion of the mechanism.

In such drawings, A, and B, represent the front and back portions of the leg part of the boot tree, while C, denotes the foot part—this latter portion being connected to the part A, by a dovetail *a*, and by a screw shown at *b*, or by any other suitable devices.

The front and back portions A and B, may be constructed of metal or other proper material, hollowed out to receive and allow to operate the mechanism by which they are to be pressed asunder or drawn together, as circumstances may require.

The leg parts A, B, are connected by two sets of toggle joints D, D, and E, E, arranged so as to stand in opposite directions with respect to each other as shown in the drawings. Each set of toggle joints has its two toggles jointed to a female screw nut F, or G, through which a long stretching rod H, extends and carries two male screws *c*, *d*, having their threads running in reverse of one another and respectively engaging with the nuts F, and G. The rod H, in other respects is to be entirely disconnected from the parts A, B, that is, while the rod is capable of being revolved on its axis, it is to be left free to be moved longitudinally and should not be restrained in such movement by any collars, shoulders or devices of like nature. Furthermore, the said rod extends through two cross bars or supporters I, K, which are so disconnected from the two leg parts A, B, as to be capable of being moved laterally, independent of either of such parts A, B. To these supporters I, K, the lappers or covering plates L, M, (see Figs. 1 and 3) are affixed, such plates not being directly fastened to either of the parts A, B. Furthermore, a latch or catch N, is hinged to the upper end of the front portion A, of the leg of the boot-tree and operates in connection with a series of holes *e*, *e*, *e*, made in the upper end of the back part B, as shown in Fig. 4, the whole being denominated the regulator, the purpose of which will be hereinafter described.

The stretching rod carries, at its upper end, a hand wheel O, by means of which it may be either turned in one direction or the other as circumstances may require.

To the lower end of the front portion A, I affix a staple P, the same being formed as shown in underside view in Fig. 5. Through such staple a hook R (formed as shown in section in Fig. 2) is passed, such hook being secured to the back portion B, by a screw *f*, or in any other suitable manner.

By means of the above described improved mode of applying the screws, stretching rod and toggles together and to the back and front portions A, B, of the leg of a boot-tree I am enabled to effect important advantages, the purpose of such application being to attain such. In the first place, it insures an equalization of strain and the correct adjustment and adaptation of the parts A, and B, to a boot-leg when such leg is being stretched, for should the two parts A, and B, while being forced asunder be brought to a bearing at the top of a boot leg the motion of the upper will be arrested; that, however, of the lower set will be continued until the lower portions of the parts A, B, are also brought to a bearing, the screw rod continuing to pass through the stationary screw nut of the upper toggles while it may be actuating the lower toggles. As soon as the bearing is equalized both at top and bottom of the boot leg both sets of toggles will operate alike in producing further strain, so in case the lower portions of the parts A, B, are brought to a bearing within the boot leg before the upper portions of the said parts A, B, are pressed close up against the leather the lower toggles will remain stationary and the upper toggles be continued in movement until the bearing is complete throughout the entire leg of the boot. The regulator affords a means of stretching the boot leg just above the instep, provided it may not be desirable

to stretch it at the same time in the upper part. In order to do this, the latch of the regulator is to be turned down into either of the holes *e*, *e*, *e*, and when therein it will prevent the further separation of the upper ends of the parts A, B, their lower ends being free to be moved asunder by the operations of the toggles, the screws and stretching rod.

By connecting the lower ends or other proper parts of the two portions A, B, by a staple and hook, as described, they are prevented from falling asunder, as well as from moving out of place endwise while the stretching mechanism may be in operation. It is important that they should be so connected in order that they may maintain their proper relative positions.

The mode of supporting the lapping plates L, M, is peculiarly advantageous over that generally practiced, viz., to fasten them by screws to the front part A of the boot leg while it is being stretched, and therefore either of the parts A, B, may be moved with less friction than would be the case were the lapping plate to be fastened to it. Furthermore, the mode of sustaining the lapping plates causes them to operate to better advantage at or near the heel of the boot tree than when they may be confined to the front portion A.

What I claim as an improvement in the application of the screws, the rod and toggles (or mechanical equivalents) to the front and back portions A, B, of the leg of a boot-tree is—

1. The arrangement of the two sets of toggles as shown in the drawings and the application thereto of the screw rod H in such manner that it may be free to move longitudinally during its rotary motions on its axis, the same being for the purpose as specified.

2. I also claim combining the regulator or latching mechanism N, *e*, *e*, (or their equivalent) with the back and front parts A, B, of the leg portion of the boot-tree and the separating mechanism applied thereto and made to operate therewith substantially as described.

In testimony whereof I have hereunto set my signature.

WILLIAM W. WILLMOTT.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.