No. 874,619. PATENTED DEC. 24, 1907.

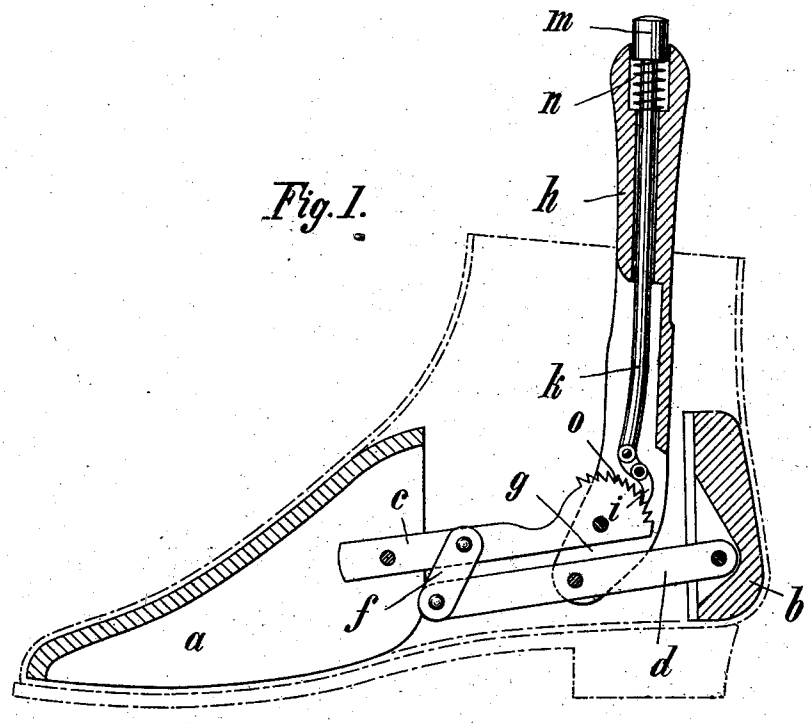
F. G. PABST.

TREE FOR BOOTS AND SHOES.

APPLICATION FILED JULY 19, 1906.

3 SHEETS—SHEET 1.

Fig. 1.




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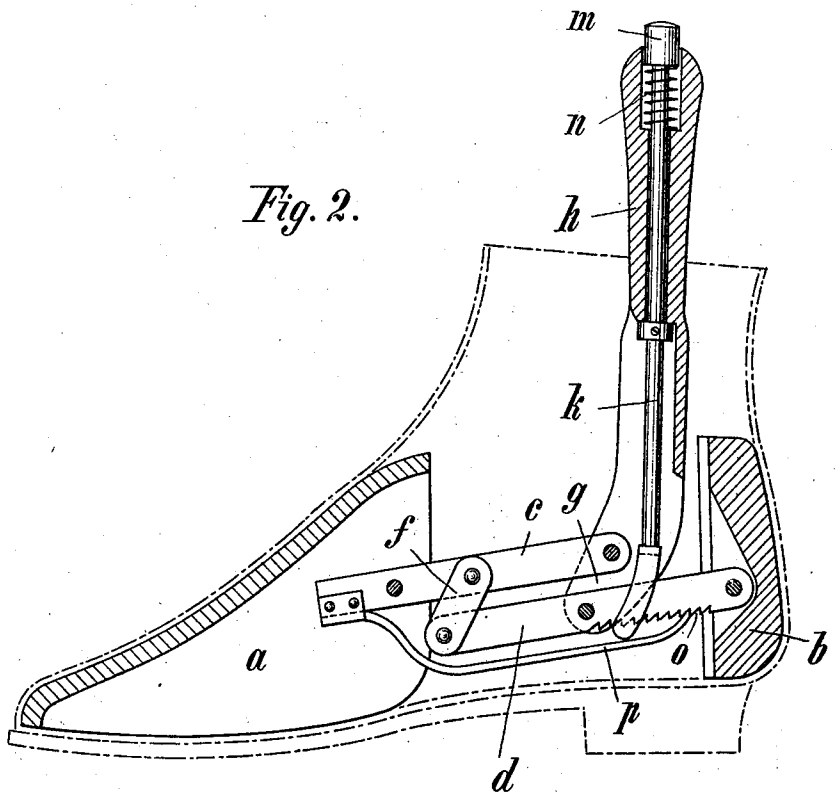
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3 SHEETS—SHEET 2.

Fig. 2.




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3 SHEETS—SHEET 3.

Fig. 3.

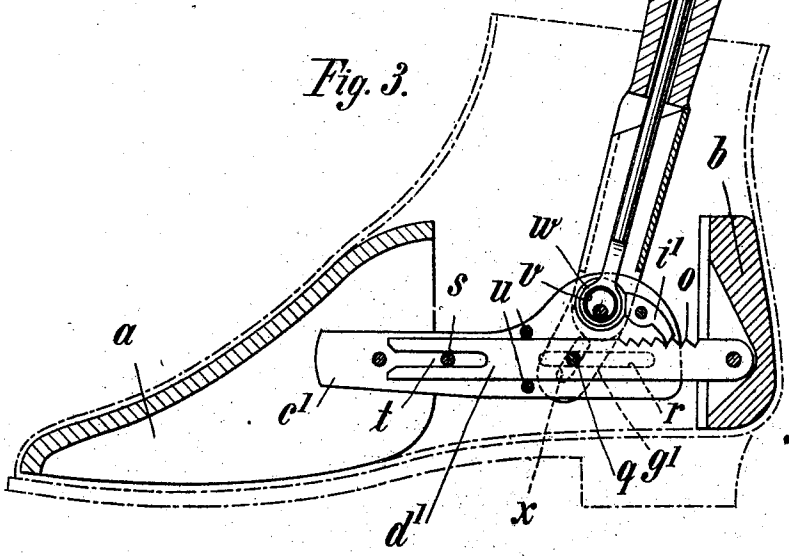
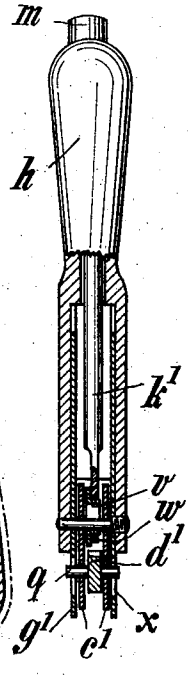



Fig. 4.




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# UNITED STATES PATENT OFFICE.

FRIEDRICH GUSTAV PABST, OF HAMBURG, GERMANY.

## TREE FOR BOOTS AND SHOES.

No. 874,619. Specification of Letters Patent. Patented Dec. 24, 1907.

Application filed July 19, 1906. Serial No. 326,852.

*To all whom it may concern:*

Be it known that I, FRIEDRICH GUSTAV PABST, a subject of the German Emperor, and resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Trees for Boots and Shoes, of which the following is a specification.

The present invention relates to a so-called boot-tree or shoe-last consisting of two parts, the toe-piece and the heel-piece, which can be held by ratchet mechanism in the position in which they are set at each time. Boot or shoe stretchers of this kind are already known. In order to effect the release and fixing again of the ratchet mechanism as conveniently as possible, a sliding rod is guided, according to the present invention, in a pivoted handle in such a way that it projects upwards out of the handle and can be pressed inwards by the thumb against the pressure of a spring, said handle being adapted to set the last in its required position. The sliding rod is connected at its lower end with the pawl of the ratchet mechansim, and in its lowermost position releases said pawl, while the mechanism is at once in engagement again as soon as the sliding rod is released and said spring operates.

More particularly my invention consists in an improved boot-tree and in order that the details of construction and action of my invention may be more clearly understood, reference is made to the accompanying drawings in which:

Figure 1 is a vertical section of the improved boot-tree in a shoe; Figs 2 & 3 are vertical sections of two modifications of the same, and Fig. 4 is a vertical elevation partly in section of the handle of the form shown in Fig. 3.

Similar letters of reference refer to similar parts in all views.

In the forms shown in Figs. 1 and 2, the handle $h$ forms an extension of a rod $g$ of a parallelogram $g, c, f, d$ forming an articulated connection between the toe-piece $a$ and the heel-piece $b$. In the form as shown in Fig. 1, the ratchet-teeth $o$ of the ratchet mechanism are arranged on the upper rod $c$ of the parallelogram in an arc concentric with the connecting pivot of the rods $c$ and $g$. The pawl $i$ is mounted revolubly on the handle $h$ and is connected by an extension extending above its pivot with the sliding rod $k$ guided in the handle $h$. A button $m$ is provided on said sliding rod $k$, preferably at its upper projecting end, against which a spring $n$ presses from below so that the rod $k$ and pawl $i$ are held in engagement with the ratchet mechanism in the highest position of said rod. If the ratchet mechanism has been released by pressing the button $i$, it is possible to turn the handle forwards or backwards and thus to extend or contract the tree. If the button is released, the pawl $i$ snaps into the ratchet and holds the last in the position in which it is set.

In the form shown in Fig. 2 the teeth $o$ of the ratchet are on the lower edge of the rod $d$. The spring $p$ forms the pawl which is proportionately long and curved in order to work according to the deflection of the parallelogram and is fastened to an extension of the rod $c$. In this case the sliding rod $k$ acts directly on the spring $p$, in order to effect the release of the spring $p$ by pressing the button $m$, said spring acting simultaneously as a pawl.

In the form illustrated in Figs. 3 and 4, the parallelogram is replaced by a parallel slider. The rod $d^1$ which revolubly engages the heel-piece $b$ is guided parallel to the rod $c^1$ formed of two thin plates engaging the toe-piece $a$ preferably by a pin $q$ the rod $d^1$ engaging in a longitudinal slot $r$ of the rod $c^1$ and a pin $s$ of the latter engaging in a slot $t$ of the rod $d^1$. Still more guiding pins $u$ may be provided. In this case the ratchet-teeth $o$ are on the upper edge of the rod $d^1$ and the pawl $i^1$ is revolubly mounted on an enlargement of the rod $c^1$ and is provided with a hollow trunnion $v$ which is held by a sliding ring $w$ of the sliding rod $k^1$ which is engaged by the spring $n$. The inside diameter of the trunnion $v$ is chosen so great that this and the pawl $i^1$ can be moved by the rod $k^1$ without being prevented by the pivot engaging the handle $h$ and the rod $c^1$. A slot $x$ is provided in a fork-like extension $g^1$ of the handle $h$, through which the pin $q$ of the rod $d^1$ engages, so that by turning the handle forwards the tree can be extended and by turning the handle backwards, simultaneously raising the pawl $i^1$ by pressing the button $m$, the tree can be contracted.

While I have described in the foregoing specification the construction of parts preferred, I am aware that numerous changes of construction may be made without departing from the spirit and scope of my invention, and I therefore do not wish to be under-

stood as limiting myself to the positive terms employed in connection with this description, excepting such as the state of the art may require.

I claim:

1. A tree for boots and shoes comprising a toe-piece, a heel-piece, articulated rods adapted to move parallel to each other and carrying the toe and heel-pieces and a detent adapted to engage teeth on one of the rods.

2. A tree for boots and shoes comprising a toe-piece, a heel-piece, articulated rods adapted to move parallel to each other and carrying said toe and heel-pieces, a handle connecting said rods, a pawl adapted to engage teeth on one of said rods and a rod carried by the handle adapted to operate the pawl.

3. A tree for boots and shoes comprising a toe-piece, a heel-piece, articulated rods movable parallel to each other carrying the toe and heel-pieces, a handle connecting the rods, a pawl pivoted on the handle adapted to engage teeth on one of the rods, a rod slidable in the handle pivotally connected to the pawl, a spring to normally raise the rod and thereby hold the pawl in engagement with the teeth.

4. The combination with a toe-piece and a heel-piece, of a toothed member connected to one of said pieces, a member connected to the other piece substantially parallel to the toothed member, links connecting said member, means to automatically lock each member against movement in one direction, and means to release the locking means.

5. The combination with a toe-piece and a heel-piece, of a toothed rod connected to one of said pieces, a rod parallel to the toothed rod connected to the other piece, links connecting the rods, a pawl to automatically engage the teeth during the movement of the toothed rod in one direction and means carried by one of the links to actuate the pawl.

FRIEDRICH GUSTAV PABST.

Witnesses:

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