

1,356,509.

Fig. 1.

Fig. 2.

Fig. 3.

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SHOE-TREE.

1,356,509.

Specification of Letters Patent.

Patented Oct. 26, 1920.

Original application filed June 30, 1919, Serial No. 307,494. Divided and this application filed December 6, 1919. Serial No. 342,922.

To all whom it may concern:

Be it known that I, ARTHUR R. ANDERSON, a citizen of the United States, residing at North Arlington, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Shoe-Trees, of which the following is a specification.

This invention relates to improvements in shoe trees, and is a division of my co-pending application for patent, Serial No. 307,494, filed June 30, 1919.

An important object of the invention is to provide a shoe form having a pair of toe sections and novel means for separating the toe sections laterally in a highly convenient and expeditious manner.

A further object of this invention is to provide a shoe form wherein the toe sections of the same are connected by a toggle joint having operating or spreading means for the joint arranged rearwardly of the pivot connecting the levers or links of the joint, whereby the longitudinal movement of the operating member will cause the toe sections to be uniformly separated with a minimum of effort on the part of the operator and strain on the parts.

A further object of this invention is to provide a shoe tree having a novel form of link or coupling for connecting the toggle joint of the toe sections with the tensioning device so that the toggle joint may be operated by a slight movement of the tensioning device.

A further object of the invention is to provide a shoe form of the class described which is of highly simplified construction, neat in appearance and cheap to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application and in which like numerals are employed throughout to designate like parts,

Figure 1 is a perspective of a shoe form embodying my invention,

Fig. 2 is a detail horizontal section through the same,

Fig. 3 is a perspective of a coupling embodied in my invention.

In the drawing wherein for the purpose of illustration is shown a preferred embodi-

ment of the invention, the numeral 5 generally designates the tensioning device which includes a pair of links 6 and 7 pivotally connected at their adjacent ends, as indicated at 8. With reference to Fig. 1 it will be noted that the rear portion of the link 6 overlaps the adjacent portion of the link 7 and is provided with a strap 9 which extends beyond the rear end of the same into contact with the side of the link 7. The link 7 is slotted longitudinally, as indicated at 10, to receive an adjusting bolt 11 which may be adjusted longitudinally of said slot for varying the effective length of the link 7. The pivot bolt 8 is also extended through the elongated slot 10 and is held in a set position by tightening up on a wing nut 12 threaded on to the screw 11. The rear end portion of the link 6 is provided with a finger piece 13 which is adapted to be depressed for positioning the links 6 and 7 in the position illustrated in Fig. 1. The intermediate portion of the strap 9 is provided with a locking notch 14 which is adapted to co-act with a similar notch in the adjacent portion of the link 6 for securing the links 6 and 7 in an extended position.

The rear portion of the link 7 is provided with an oval shaped member 15 which is adapted to be positioned within the shoe in engagement with the heel when the device is in use. The toe member 16 which is associated with the forward link 6 includes a pair of co-acting sections 17 and 18 which taper toward their forward ends so as to conform to the shape of the forward portion of a shoe. The opposed sides of the sections 17 and 18 are provided with longitudinally extending slots or grooves 19 which open out through the rear ends of the sections and pivotally receive the forward portions of links 20 of a toggle joint. The sections 17 and 18 are provided with transverse openings 21 which intersect the slots 19 and selectively receive pivot pins 22. By inserting the pivot pins 22 through the desired pair of openings 21 the amplitude of the toe section may be varied. In other words, the amplitude of the section may be increased by positioning the forward ends of the links 20 in line with the forward openings 21 or the amplitude of the toe section may be decreased by positioning the forward ends of the links 20 in line with the rear openings 21. The intermediate

portion of each link 20 is enlarged laterally and is connected to the other link by a pivot pin 23. With reference to Fig. 2, it will be noted that the pin 23 is arranged at one side of the longitudinal center of each link 20 so that the leverage on the links will be increased when the tensioning device is operated. The links are provided rearwardly of the pivot pins 23 with elongated slots 24 which receive a stud or pin 25 carried by a coupling 26. It will be noted that the longitudinal center of the slot in each link is spaced laterally from the longitudinal center of the link and is arranged on the opposite side of the link from the pivot 23, so that when the tensioning device is moved to the position illustrated in Fig. 1 the toe sections will be separated to their fullest extent.

As illustrated in Fig. 3, the coupling 26 is formed from a single blank of metal provided with a longitudinal incision extending out through its forward end and a transverse incision communicating with said longitudinal incision for forming a pair of ears 27. The ears 27 are provided with apertures 28 which receive the pivot 25 slidably extended through the elongated slots 24. The single piece of metal from which the coupling is formed is bent to provide a pair of upright parallel arms 29 having horizontal openings 30 receiving a pivot 31 for connecting the forward end of the link 6 to the coupling.

When the sections 17 and 18 are in their normally contracted position, the sliding pin 25 carried by the coupling is, of course, arranged within the rear portions of the slots 24. As the rear portion of the link 6 is depressed when the device has been inserted within a shoe, the coupling 26 is moved forwardly for separating the sections 17 and 18, whereby the toe portion of the shoe is stretched or spread laterally. A portion of the toe section 17 is provided with a laterally extending guide pin 32 slidably extending through an opening 33 in the section 18 and provided with a head 34 slidably arranged with an enlarged opening 35 in communication with the opening 33. The guide pin 32 serves as an effective means to retain the sections in a position which enables them to be readily separated. In other words, the guide pin serves as a means to prevent undue pivotal movement of one of the sections with relation to the other. The rear portions of the sections 18 and 19 are provided in their opposed sides with enlarged openings 36 which receive the coupling 26 when the sections 17 and 18 are retracted.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same and that such minor changes in ar-

rangement and construction of parts may be made as will remain within the spirit of the invention and the scope of what is claimed.

Having thus described the invention, what is claimed is:

1. A shoe form including a pair of toe sections, a pair of links pivoted at their forward ends to said sections, a pivot element connecting the intermediate portions of said links, the rear portions of said links being provided with longitudinal slots, and a tensioning device having a pivot pin slidably arranged in said elongated slots.

2. A shoe tree including a pair of toe sections having longitudinal slots in their opposed sides, a pair of links pivoted at their forward ends within said slots, the intermediate portions of said links being enlarged laterally, a pivot pin extending through the laterally enlarged portions of said links and arranged at one side of the longitudinal center of said links, the rear portions of said links being provided with slots terminating rearwardly of said pivot pin, a coupling having a pin slidably extending through the elongated slots of said links, and a tensioning device connected to said coupling.

3. A shoe tree including a pair of toe sections, a pair of links adjustably connected at their forward ends to said toe sections, means pivotally connecting the intermediate portions of said links, said links being provided at their rear portions with longitudinal slots terminating rearwardly of said means, a coupling having a vertically arranged pin slidably arranged in said elongated slots, and a tensioning device horizontally pivoted to said coupling.

4. A shoe tree including a pair of sections, links connected at their forward ends with said sections and being pivotally connected intermediate their ends, each of said links being provided with a longitudinal slot having its longitudinal center spaced laterally of the longitudinal center of the link, a coupling having a pivot pin arranged in the elongated slots of said links, and a tensioning device horizontally pivoted to said coupling.

5. A shoe tree including a pair of sections, a pair of links pivotally connected to said sections and having their intermediate portions pivotally connected, a coupling formed from a single blank of metal having forwardly extending horizontally arranged spaced ears, a pivot pin extending through said ears and the rear portions of said links, said coupling being provided at its rear portion with a pair of spaced sides, and a tensioning device horizontally pivoted between said spaced sides.

6. A shoe tree including a pair of toe sections, a spreading device connected to said

toe sections, a coupling slidably and pivotally connected to said spreading device, and a tensioning device horizontally pivoted to said coupling.

5 7. A shoe tree including a pair of toe sections, a coupling inclusive of a pair of superposed spaced parallel ears and spaced parallel sides, a spreading device connected to said toe sections and slidably and pivotally connected between the spaced ears of
10 said coupling, and a tensioning device horizontally pivoted to said spaced parallel sides of the coupling.

8. A shoe tree including a pair of toe

sections, a spreading device adjustably connected to said toe sections, a coupling inclusive of a pair of superposed ears and spaced parallel sides arranged rearwardly of said ears, said spreading device being pivotally and slidably connected to said
20 ears, a tensioning device horizontally pivoted to the upstanding sides of said coupling and having its forward portion disposed between said spaced parallel sides, and means slidably connecting the forward
25 ends of said toe sections.

In testimony whereof I affix my signature.

ARTHUR R. ANDERSON. [L. s.]