April 22, 1924.

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TRIPLE ACTION SHOE STRETCHER

Filed May 15, 1923 2 Sheets-Sheet 1

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1,491,135
To all whom it may concern:

Be it known that we, John De Paul and Thomas A. Lewis, citizens of the United States, residing at Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Triple-Action Shoe Stretcher, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a triple-action shoe stretcher, and the object of the invention is the construction of a simple and efficient shoe stretcher which can be easily manipulated or operated for stretching a shoe or boot or the like.

With this and other objects in view, our invention comprises certain novel combinations, constructions and arrangements of parts as will be hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a top plan view of the apparatus constructed in accordance with the present invention, while Figure 2 is a view, in side elevation, of the same. Figure 3 is a horizontal, sectional view of the apparatus. Figure 4 is a vertical central, sectional view of the apparatus. Figure 5 is a sectional view, taken on line 5-5, Fig. 4. Figure 6 is a sectional view, taken on line 6-6, Fig. 4. Figure 7 is a sectional view, taken on line 7-7, Fig. 4. Figure 8 is a sectional view, taken on line 8-8, Fig. 4. Figure 9 is a sectional view, taken on line 9-9, Fig. 4. Figure 10 is a view, in elevation, of the locking device.

Referring to the drawings by numerals, 1 designates the heel portion of the apparatus, while 2 is the toe portion of the same. The toe portion 2 comprises two upper sections 3 and two lower sections 4. The sections 3 and 4 are provided with wedge block receiving sockets 5 that receive the wedge block 6 which is fastened to the outer end of the screw 7. Screw 7 is rotatably mounted in the anchor device 8, and is connected, at its inner end, by a universal joint 9, to the sliding shaft 10. Shaft 10 is provided with annular grooves 11 into which extends the bifurcated blade 12 on the lower end of shaft 13 of the locking device 14, Fig. 10. A grip 15 is formed on the upper end of shaft 13 and normally rests against the top plate 16 of the heel portion 1. The removable plate 16 is fastened upon the heel portion 1 by means of screws 17. A coil spring 18 is mounted upon shaft 13 between the plate 16 and blade 12 so as to hold the blade within a groove 11 after the sliding shaft 10 has been adjusted by the operator to the desired position by bringing the heel portion 1 and the toe portion 2 closer together, or further apart, as the operator desires.

The beveled gear 19 is mounted upon shaft 10, and this gear is provided with a key 20 fitting in the slot 21 of the shaft 10 whereby shaft 10 is permitted to slide through gear 19 in a shaft 10 when rotary motion is imparted to the gear through gear 22 fastened to the bottom of the driving shaft 23 and resting upon the post 22, rotary movement will be imparted to the shaft 10 for rotating screw 7 and thereby sliding the wedge block 6 back and forth between the sections of the toe, as the operator desires. On the upper end of shaft 28 is a handle 24 for use in rotating the shaft.

The anchor device 8 comprises a ball-like body 25 at opposite sides of which project ears 26; these ears 26 extend into sections 4 to anchor the anchor device 8 so that screw 7 will revolve therein and permit the wedge block to be adjusted longitudinally of the sections for spreading them apart, or permitting them to close together, as the operator desires. Tongues 27 are formed upon some of the upper and lower sections 3 and 4, and on the other sections are sockets for receiving the tongues. Pins 28 are formed upon some of the sections, while apertures 29 are formed on the other sections for receiving pins 28; these tongues 27 and pins 28 tend to hold the sections of the toe securely together when the parts are all in a closed position. Horizontal dowel pins 30 are fastened at one end in the inner end of the toe portion and are seated in the elongated, vertical slots 31, Fig. 5, of the heel portion 1, thereby permitting of a somewhat loose connection, for adjustment, between the heel portion and the toe por...
tion, especially since shaft 10 is connected to screw 7 by said universal joint 9.

Each upper section 3 of the toe portion is pivotally mounted, at 32, (Fig. 4) upon a lower section 4, and the lower sections 4 are hingedly connected together by pin 33.

The operation of the apparatus is as follows: Upon placing the apparatus in a boot or shoe the spring-pressed locking device 14 is pulled upwardly to clear the sliding shaft 10, whereupon the operator pushes the toe and heel portions as far apart as possible within the shoe, then the blade 12, of the locking device 14 is permitted to be seated in one of the grooves 11, thereby holding the toe and heel portions in their adjusted position within the shoe. Rotary movement is then imparted to shaft 29, by the operator grasping the handle 24, and turning the same, whereupon the screw 7 is rotated to cause wedge block 6 to be drawn inward, towards the center of the apparatus, thereupon causing the toe sections to be spread apart for stretching the toe of the shoe. Upon reversing rotary movement of shaft 23, the wedge block 6 will be caused to move into the recesses 5, permitting the toe sections to close together, and thence upon lifting upward on the lock device 14 the toe and heel portions can be moved close together, and then the entire apparatus may be lifted from the shoe.

While we have described the preferred embodiment of our invention, and have illustrated the same in the accompanying drawings, certain minor changes or alterations may appear to one skilled in the art to which this invention relates, during the extensive manufacture of the same and we, therefore, reserve the right to make such alterations or changes as shall fairly fall within the scope of the appended claims.

What we claim is:
1. In an apparatus of the class described, the combination of a heel portion, a toe portion contiguous to said heel portion, said toe portion comprising a pair of lower hingedly connected sections, a pair of upper sections pivotally connected to said lower sections, projections on some of said sections entering other sections for assisting in holding the sections together when in a closed position, said sections provided with wedge block receiving sockets in their meeting faces, a wedge block slidably mounted in said sockets, a screw connected to said wedge block, and manually operated means on said heel portion and pivotally connected to said screw for rotating the same and moving the wedge block within the sockets.

2. In a shoe stretcher a heel portion, a toe portion having side sections pivotally connected at their rear ends for horizontal swinging movement and including upper longitudinally extending auxiliary portions pivotally mounted at their rear ends for vertical swinging movement, said side sections and auxiliary portions being shaped at their points of meeting to provide a pocket extending longitudinally through the toe portion and having a portion tapering rearwardly, a wedge in the tapered portion of said pocket, an internally threaded bearing in said pocket, a threaded shaft extending through said pocket and bearing and having its forward end connected with said wedge and actuating means connected with said heel portion and connected with said shaft for rotating the shaft and drawing the wedge rearwardly and spreading the sections of the toe portion.

3. A shoe stretcher comprising a heel portion, a toe portion having upper and lower longitudinally extending side sections pivotally mounted and having meeting faces shaped to provide a pocket extending longitudinally of the toe portion and having a tapered portion, a wedge in the tapered portion, a threaded shaft extending longitudinally in said pocket and having its forward end connected to said wedge, a threaded bearing for said shaft, and actuating means carried by the heel portion and connected with the shaft for rotating the shaft and moving the wedge longitudinally to spread the sections of the toe portion vertically and horizontally.

4. The structure of claim 3 having the actuating means consisting of a rod rotatably and sidably carried by the heel portion and having annular grooves and a longitudinally extending key way, a latch for entering a selected groove to prevent sliding of the rod, the outer end of the rod being pivotally connected with the threaded shaft of the toe portion, a bevelled gear upon the rod in the heel section and having a key fitting in the key way, and a rotary power shaft having a gear meshing with the gear of said rod.

In testimony whereof we hereunto affix our signatures.

JOHN DE PAUL.
THOMAS A. LEWIS.