March 25, 1941. F. N. HALL ET AL 2,236,264

SHOE STRETCHER

Filed April 26, 1939

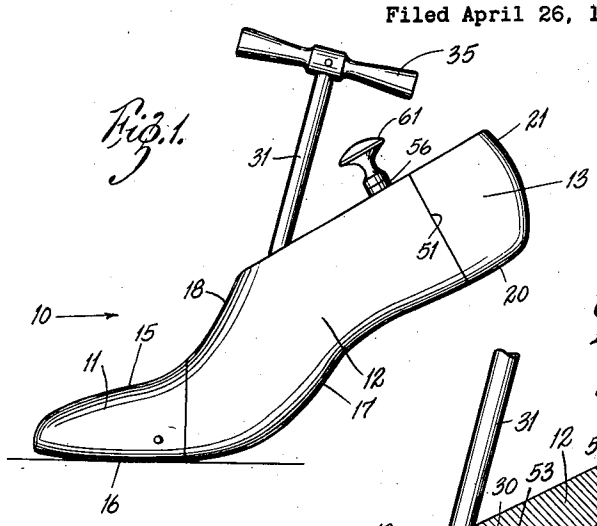

Fig. 1.

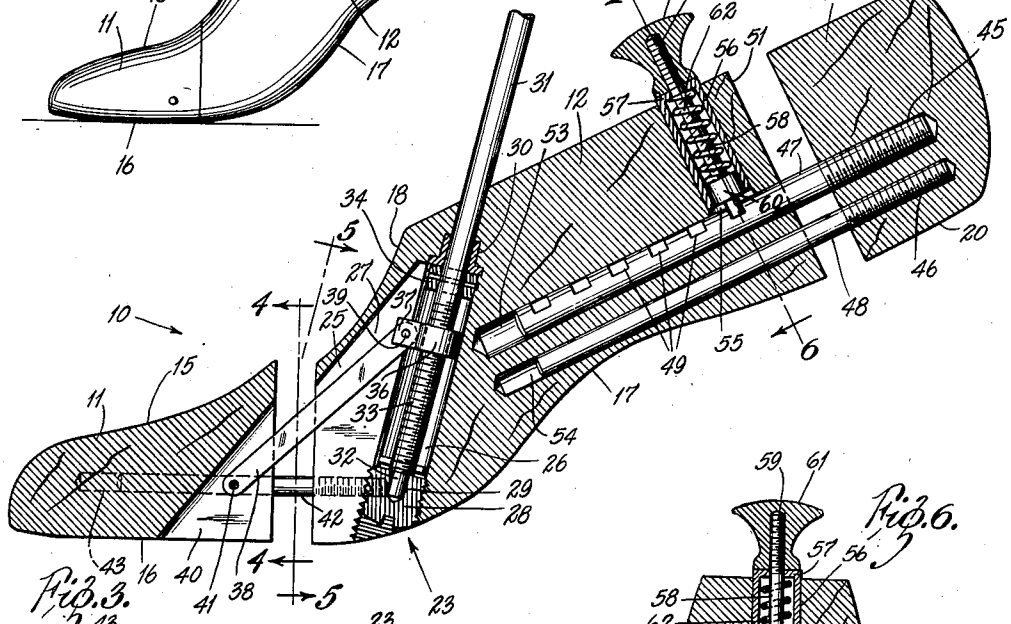

Fig. 2.

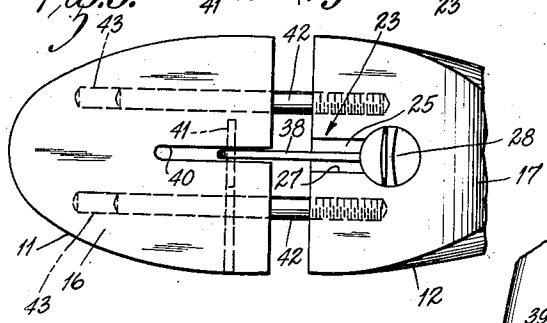

Fig. 3.

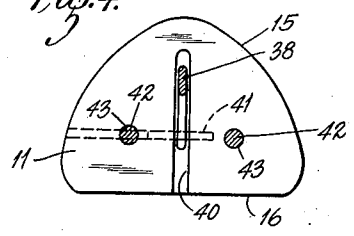

Fig. 4.

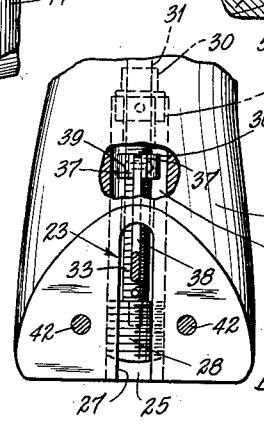

Fig. 5.

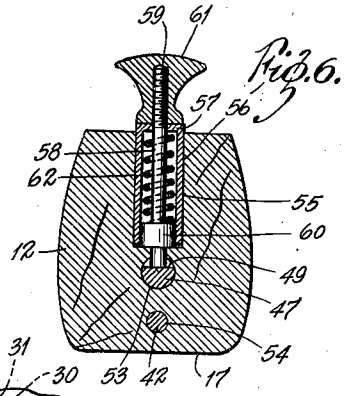

Fig. 6.

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SHOE STRETCHER

Floyd N. Hall and William Gray, St. Louis, Mo.

Application April 26, 1939, Serial No. 270,056

1 Claim. (Cl. 12—128.6)

The present invention relates generally to shoe stretchers, and more particularly to shoe stretchers which are adapted to stretch required areas of a shoe without distorting the whole shoe.

The present application is a continuation, in part, of the copending application of Floyd N. Hall, Serial No. 113,804, filed December 2, 1936.

An object of the present invention is to provide a shoe stretched of a construction adapted to lengthen the vamp of a shoe by stretching without bending the arch or unduly stretching the remainder of the upper.

Another object is to provide a shoe stretcher which includes a front section, a central section and a rear section, the front section of which is adapted to be moved forwardly from the central section when the stretcher is in a shoe to stretch the vamp of a shoe without distorting the remainder of the shoe.

Another object is to provide a shoe stretcher, the bottom contour of which is adapted to conform substantially to the upper contour of the inner sole of a shoe.

Another object is to provide a shoe stretcher including a front section, a central section, and a rear section, the central section of which includes a bottom surface substantially of the configuration of the contour of the upper surface of the shank portion of an inner sole of a shoe.

Another object is to provide a shoe stretcher including a front section, a central section, and a rear section, the front section and the rear section being adjustable relative to the central section.

Another object is to provide a shoe stretcher which includes a novel mechanism for moving one portion of the stretcher relative to another portion.

Another object is to provide a shoe stretcher which is simple in construction, which is economical to manufacture, and which is adapted to fulfill all of the objects and advantages sought therefor.

Other objects and advantages will be apparent from the following description, taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a side elevation of a shoe stretcher constructed in accordance with the teachings of the present invention;

Fig. 2 is a central section through the shoe stretcher shown in Fig. 1, the handle being broken away for conservation of space, the front section and rear section being extended relative to the central section;

Fig. 3 is a bottom view of the forward portion of the shoe stretcher shown in Fig. 1, the front section being extended relative to the central section;

Fig. 4 is a section on the line 4—4 of Fig.2;

Fig. 5 is a section on the line 5—5 of Fig. 2; and,

Fig. 6 is a section on the line 6—6 of Fig. 2.

Referring to the drawing more particularly by reference numerals, 10 indicates generally a shoe stretcher embodying the teachings of the present invention. The shoe stretcher 10 comprises a front section 11, a central section 12, and a rear section 13. When the front section 11, the central section 12, and the rear section 13 are in contiguous relationship (Fig. 1), the shoe stretcher 10 is of a configuration to conform substantially to the inner contours of a shoe.

The front section 11 includes an upper surface 15 contoured to conform to the toe portion of the upper of a shoe and a bottom surface 16 of substantially the same contour as the corresponding portion of the inner sole of a shoe. The central section 12 includes a bottom surface 17 contoured to conform to the shank and contiguous portions of the inner sole of a shoe, the upper surface 18 being contoured to fit within the central portion of the upper of a shoe. The rear section 13 includes a bottom surface 20 adapted to conform to the heel portion of the inner sole of a shoe, and an upper surface 21 contoured to conform to the heel portion of the upper of a shoe.

A mechanism or actuator, generally designated 23, is provided for moving the front section 11 relative to the central section 12. A chamber 25 (Figs. 2 and 5) is located in the forward portion of the central section 12, the chamber 25 including a cylindrical well 26 and a slot 27. The well 26 is threaded at its lower end and threadedly receives a threaded member 28 which has a central depression 29. A collar 30 is fixed at the inner end of the well 26. A shaft 31 extends through the collar 30 and has bearing support in the depression 29 of the member 28 by means of a reduced extension 32, that portion 33 of the shaft 31 located within the well 26 being threaded. A collar 34 is fixed to the shaft 31 in a position to abut the collar 30 to maintain the shaft 31 in operative disposition. A handle 35 is fixed to the free end of the shaft 31. A rider nut 36 having integral parallel ears 37 is disposed on the threaded portion 33 of the shaft 31. A link 38 is pivotally connected by a pin 39 to the ears 37, a

portion of the link 38 being disposed within the slot 25 and the remainder thereof extending therefrom. The front section 11 has a slot 40 which forms a continuation of the slot 25 when the front section 11 and central section 12 are contiguously disposed. The other end of the link 38 is pivotally connected within the slot 40 by means of a pin 41. Guide rods 42 have screw engagement with the central section 12, the free ends being disposed in wells 43 in the front section 11.

The rear section 13 includes parallel superposed threaded wells 45 and 46. Into the well 45 is threaded the threaded portion of a shaft 47 and into the well 46 is threaded the threaded portion of a shaft 48, the shafts 47 and 48 extending forwardly from the rear section 13. The shaft 47 includes a plurality of spaced notches 49. The central section 12 includes, extending forwardly from the rear surface 51 thereof, parallel superposed wells 53 and 54. The free portion of the shaft 47 extends into the well 53 and the free portion of the shaft 48 extends into the well 54. A well 55 extends from the upper surface of the central section 12 at right angles to the well 53 and connects with the well 53. A bushing 56 is disposed within the well 55, the bushing 56 including a flange 57 at the upper end. A plunger 58 having a threaded upper end 59 and a plunger head 60 at the lower end extends through the bushing 56. A knob 61 threadedly engages the threaded upper end 59 of the plunger 58. A helical spring 62 maintains the plunger 58 normally in a position with the plunger head 60 extending into the well 53 and engaging one of the notches 49 of the shaft 47.

Operation

It is apparent from the foregoing description, taken with the accompanying drawing, that rotation of the shaft 31 by means of the handle 35 moves the rider nut 36 and the link 38 to move the front section 11 relative to the central section 12, there being a closing or separating movement, depending upon the threading on the threaded portion 33 of the shaft 31 and in the nut 36. The rear section 13 can be readily moved toward or away from the central section 12 by withdrawing the plunger 58 from engagement with the shaft 47 by outward movement of the knob 61. It is possible, therefore, to adjust the rear section 13 relative to the central section 12 prior to moving the front section 11 in a stretching action.

With the rear section 13 adjusted relative to the central section 12, the shoe stretcher 10 is disposed in a shoe desired stretched. The bottom surface of the shoe stretcher 10, and particularly the bottom surface 17 of the central section 12, substantially conforms to the contours of the inner sole of the shoe. The handle 35 and shaft 31 are rotated to move the front section 11 forwardly from the central section 12, the total amount of movement being determined by the amount of stretch required. As the front section 11 moves forwardly into stretching contact with the cap and vamp, the bottom surface of the central section 12 snugly engages the arch of the shoe, inasmuch as the force exerted in the stretching action extends substantially parallel with the guides 42. The stretching force is, therefore, received by the arch of the shoe through the central section 12, but there is no bending or breaking of the arch, inasmuch as the force is distributed over the full area thereof. The rear section 13 serves only as an anchorage for the central section 12, very little pressure being exerted through the rear section 13 against the rear portion of the upper of the shoe. There is not the customary front-to-rear stretching which breaks the arch of a shoe and distorts the upper. Only that portion of the shoe which it is desired to stretch is actually stretched by the shoe stretcher 10, namely, the vamp.

It is apparent, therefore, that there has been provided a shoe stretcher which is adapted to fulfill all of the objects and advantages sought therefor. It is to be understood that the various elements of the shoe stretcher 10 are constructed of suitable material.

It is further to be understood that the foregoing description and accompanying drawing have been given by way of illustration and example, and not for purposes of limitation, the invention being limited only by the claim which follows.

What is claimed is:

A shoe stretcher comprising a central section, elongated recesses extending thereinto from the rear end thereof, a vertically disposed aperture in said central section opening into one of said recesses and leading from the top thereof, a rear section, a latch rod fixed to said rear section having transverse slots, a guide rod fixed to said rear portion, said latch rod extending into said one of said recesses and said guide rod extending into the other recess, and a spring-urged plunger within the vertical aperture engaging a slot of the latch rod, whereby the position of the rear section may be adjusted relative to the central section.

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