Jan. 2, 1940. F. N. HALL 2,185,765

SHOE STRETCHER

Filed Dec. 2, 1936

Fig. 1.

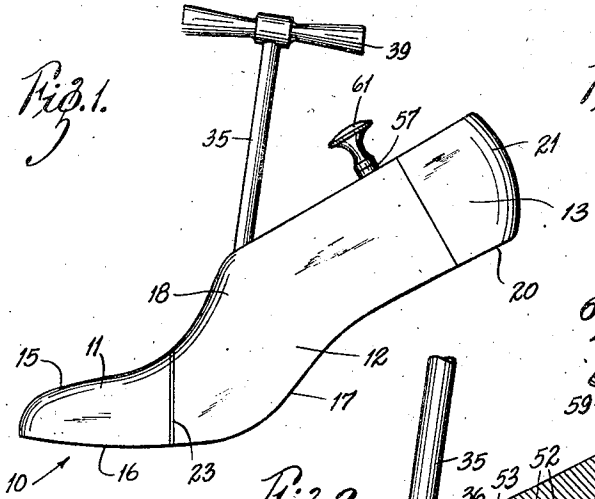


Fig. 7.

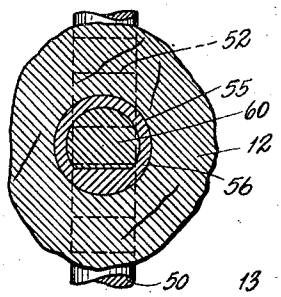


Fig. 2.

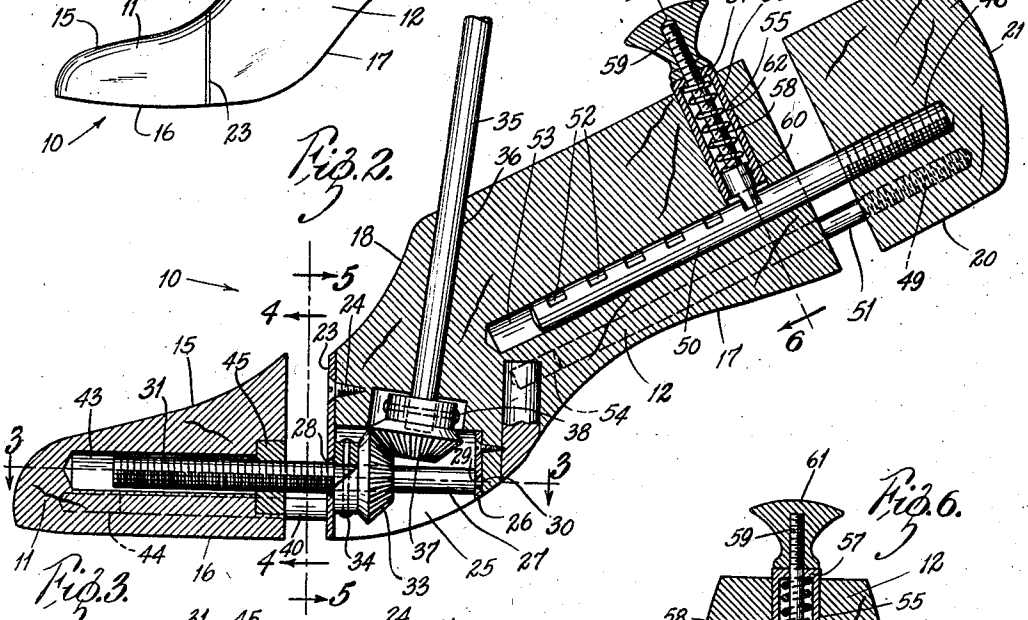


Fig. 3.

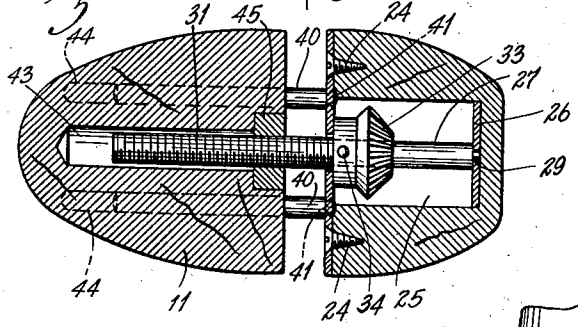


Fig. 6.

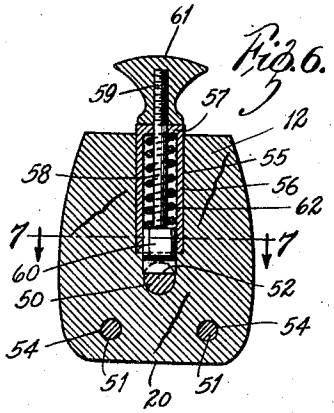


Fig. 4.

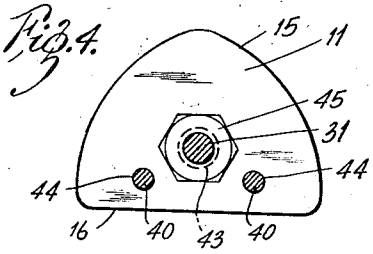
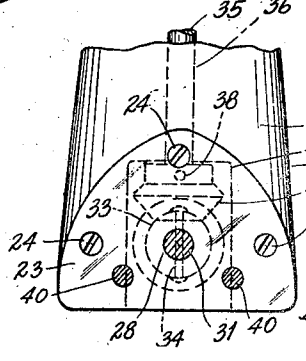


Fig. 5.



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SHOE STRETCHER

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Application December 2, 1936, Serial No. 113,804

3 Claims. (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.

An object of the invention is to provide a shoe stretcher 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 is adapted to fulfill the foregoing object and other objects, which are 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;

Fig. 3 is a section on the line 3—3 of Fig. 2;

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;

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

Fig. 7 is a section on the line 7—7 of Fig. 6.

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 is provided for moving the front section 11 forwardly from the central section 12. A plate 23 (Fig. 2) is connected by screws 24, or the like, to the forward end of the central section 12, a portion of which forms the forward wall of a chamber 25 formed in the forward portion of the central section 12. A small plate 26 is disposed within the chamber 25 in a plane parallel to the plate 23 to form the rear opposed wall of the chamber 25. A shaft 27 is journaled in an opening 28 in the plate 23 and in an opening 29 in the plate 26, a reduced extension 30 of the shaft 27 being disposed in the opening 29. The shaft 27 includes a threaded portion 31 which extends forwardly beyond the plate 23. A beveled gear 33 is fixed to the shaft 27 within the chamber 25 by a pin 34, or the like, and abuts the plate 23 to prevent displacement of the shaft 27. A shaft 35 extends through an opening 36 in the central section 12 into the chamber 25. A beveled gear 37 is fixed by a pin 38 to that end of the shaft 35 which is disposed within the chamber 25. The beveled gear 37 meshes with the beveled gear 33. A handle 39 is fixed to the free end of the shaft 35. Shafts 40 are fixed to the plate 23 by extensions 41, which extend into openings in the plate 23 and are peened or otherwise fixed to the inner surface of the plate 23. The shafts 40 extend parallel to the shaft 27, one being disposed at each side thereof (Fig. 3).

Extending into the front section 11 in parallel relation are a central well 43 and side wells 44 (Fig. 3). The central well 43 is enlarged at its outer end and receives in fixed relationship a nut 45. The threaded portion 41 of the shaft 27 threads the nut 45, while the shafts 40 extend into the wells 44 to position the front section 11 relative to the central section 12.

The rear section 13 includes a threaded central well 48 and two threaded side wells 49. Into the central well 48 is threaded the threaded portion of a shaft 50 and to the side wells 49 are threaded the threaded portions of shafts 51, the shafts 50 and 51 being in parallel relation and extending forwardly from the rear section 13. The shaft 50 includes a plurality of spaced notches 52. The central section 12 includes, extending forwardly from the rear surface thereof, a central well 53 and side wells 54. The free portion of the shaft 50 extends into the well 53 and the free portions of the shafts 51 extend into the wells 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 52 of the shaft 50.

Operation

It is apparent from the foregoing description, taken with the accompanying drawing, that rotation of the shaft 35 by means of the handle 39 rotates the shaft 27 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 31 of the shaft 27 and in the nut 45. 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 50 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 39 and shaft 35 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 shaft 27. 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 claims which follow.

I claim:

1. In a device of the kind described, a first section, a recess in the front portion of said first section, cooperating bevelled gears within said recess, an operating handle connected to one of said gears, a threaded shaft fixed to the other of said gears extending from said recess, a second section, said second section being of substantially the length and configurations of the toe part of a shoe, an elongated recess therein opening in the rear thereof, a nut fixed in said recess at the rear face of the said second section, additional elongated recesses in said second section, and guide rods fixed to said first section and extending into said additional recesses, said shaft threadedly engaging said nut and adapted to move the second section relative to the first section upon manipulation of said handle.

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

3. In a device of the kind described, a central section, a recess in the front portion of said central section, cooperating bevelled gears within said recess, an operating handle connected to one of said gears, a threaded shaft fixed to the other of said gears extending from said recess, a front portion, an elongated recess therein opening in the rear thereof, a nut fixed in said recess at the rear face of the portion, additional elongated recesses in said front portion, guide rods fixed to said central portion and extending into said additional recesses, said shaft threadedly engaging said nut and adapted to move the front portion relative to the central section upon manipulation of said handle, elongated recesses extending into said central section 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, guide rods fixed to said rear portion, said latch rod extending into said one of said recesses and said guide rods extending into the other recesses, 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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