No. 622,390.

Patented Apr. 4, 1899.

D. PORTWOOD.

SHOE STRETCHER.

(Application filed Oct. 29, 1898.)

(No Model.)

Fig. 6.

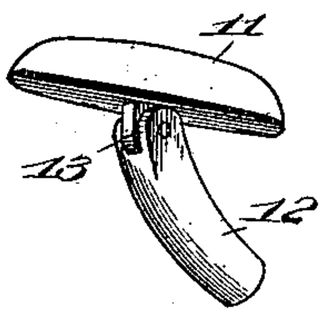


Fig. 1.

Fig. 2.

Fig. 7.

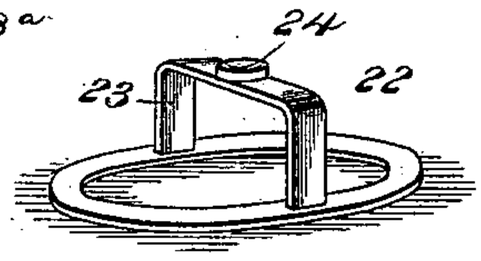


Fig. 3.

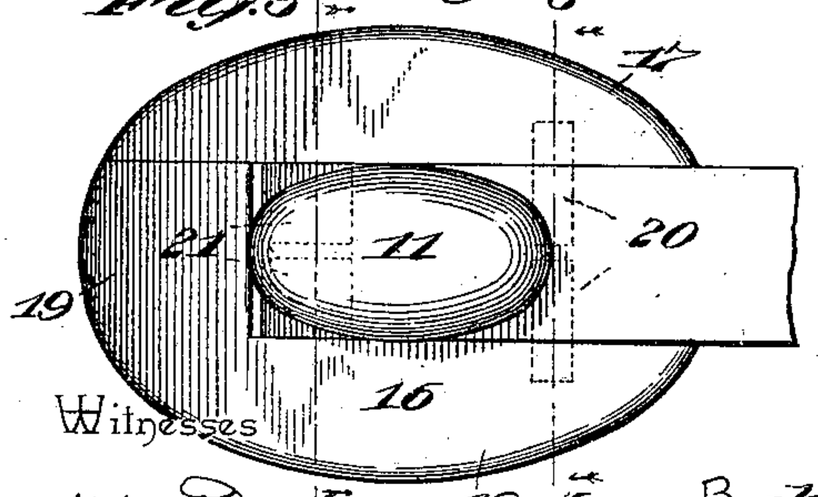


Fig. 4.

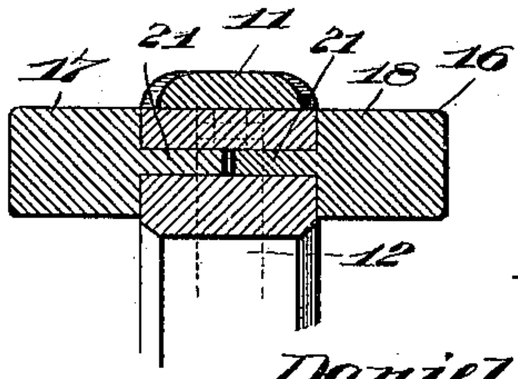
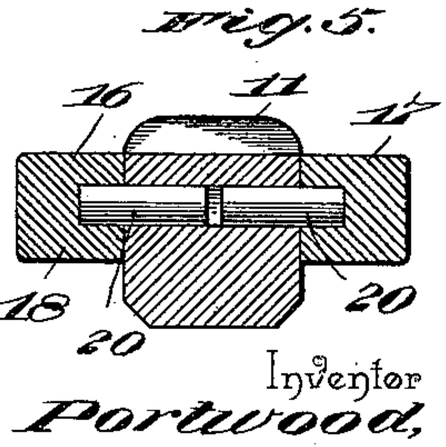


Fig. 5.



Witnesses

Inventor

Daniel Portwood,

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

DANIEL PORTWOOD, OF MOBERLY, MISSOURI.

SHOE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 622,390, dated April 4, 1899.

Application filed October 29, 1898. Serial No. 694,960. (No model.)

To all whom it may concern:

Be it known that I, DANIEL PORTWOOD, a citizen of the United States, residing at Moberly, in the county of Randolph and State of Missouri, have invented a new and useful Shoe-Stretcher, of which the following is a specification.

My invention relates to improvements in stretchers by which a boot or shoe may be stretched or formed at places where they have a tendency to bind on the wearer's foot; and the object that I have in view is to provide a simple construction which may be operated to stretch the shoe-upper at a given point without liability of breaking the leather.

A further object is to provide an improved construction in which the leather may be held firmly in place by coacting devices on the inside and outside of the shoe-upper, so as to prevent wrinkling of the leather during the stretching operation.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a shoe-stretcher constructed in accordance with my invention. Fig. 2 is a longitudinal sectional elevation of the stretcher. Fig. 3 is a plan view, on an enlarged scale, of a portion of the lower arm, showing the stretcher-head and the internal expansible clamp. Fig. 4 is a cross-section on the plane indicated by the dotted line 4 4 of Fig. 3. Fig. 5 is a similar cross-sectional view taken on the plane indicated by the dotted line 5 5 of Fig. 3. Fig. 6 is a detail perspective view of the stretcher-head. Fig. 7 is a similar perspective view of the external clamp.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

In carrying my invention into practice I employ a frame of peculiar construction arranged to have one member thereof enter the shoe or boot and support the internal operating devices, while the other frame member lies externally to the upper and supports a clamp which coacts with another clamp on the inside of the upper for the purpose of holding the leather from wrinkling during the operation of stretching the leather at the desired place. The frame is indicated in its entirety by the numeral 1, and it is cast in a single piece of metal, although it may be made of two or more parts, if preferred. This frame consists of an upper arm 2, a lower arm 3, and a stock 4. The arms 2 3 lie in the same vertical plane, and they are joined at one end by the stock 4, which holds the arms in fixed parallel relation to each other. To enable the frame to readily enter the upper of a boot or shoe, the arms 2 3 thereof are curved longitudinally, as shown by the drawings, and in the service of the instrument the arm 3 is arranged to be thrust into the shoe, while the arm 2 lies outside of the shoe, whereby the two arms may occupy positions on opposite sides of the upper to present the clamping devices at the place where it is desired to stretch the leather. The upper or outer arm 2 is provided at its free end with a transverse threaded opening in which is screwed a binding-screw 5, that is adapted to coact with the external and inner clamps. The stock or heel 4 of the stretcher-frame is provided with a recess 6^a, forming a lug 6, which is in line substantially with the lower arm 3, and in this lug 6 is a transverse threaded opening that accommodates the adjusting-screw 7.

The lower arm or member 3 of the stretcher-frame is constructed with a longitudinal passage 8, which is shown in the drawings in the form of a groove or channel that opens through the lower face of the arm and is closed at proper intervals by keepers 8^a, adapted to confine an adjusting-rod within the passage 8; but this detailed construction of the arm with the passage therein may be varied by a skilled mechanic. Near its free end the lower curved arm or member 3 of the frame is provided with a transverse notch 10, which lies in advance of the opening 9, that is formed by extending the passage 8 through the upper side or face of said arm 3, and this opening 9 accommodates the stem of a stretcher-head 11. The stretcher-head is a single piece of metal, preferably oval in shape and with rounded or beveled edges, and to

this head is attached a stem 12. The head and its stem are united pivotally together, as at 13, to allow the head to assume different angles or positions in relation to the stem, and said stem 12 is thrust through the opening 9 near the free end of the arm 3, so as to engage or contact with an endwise-movable adjusting-rod 14. This rod is curved to conform to the curvature of the arm 3, and it is fitted loosely in the passage or channel 8, so as to slide freely therein. The adjusting-rod consists of a length of rod or bar metal of small diameter, and it extends from the stem 12 of the stretcher-head to the recess 6^a of the stretcher-frame, said end of the rod extending into the recess, as shown by Fig. 2. This protruding or exposed end of the adjusting-rod is countersunk to provide a socket 15, adapted to receive the pointed or conical end of the adjusting-screw 7, and by turning the screw in one direction it is caused to engage with the rod and move the latter endwise in the passage of the arm 3, thereby adjusting the stem 12 and the stretcher-head 11.

I employ an expansible internal clamp 16, which is adapted to the free end of the arm 3 and coacts with an external clamp presently described, said internal clamp furnishing a bearing for the leather and the external clamp, so that the two clamps may coöperate in holding the leather firmly and prevent wrinkling thereof during the operation of stretching the leather by the action of the head 11. To make the stretcher applicable to shoes of different sizes, I employ a two-part construction of the internal clamp 16. The sectional construction of the internal clamp is represented more particularly by Figs. 1, 4, and 5 of the drawings, and said clamp consists of the members 17 18, which are loosely connected to the lower arm 3, so that they may be spread or be adjusted laterally with respect thereto. The member 17 of said clamp has a straight inner edge that conforms to the side face of the arm 3, and the member 18 is similarly formed with a straight inner edge to conform to the opposite side face of said arm. The outer edges of the two-clamp member, however, are made convex, as represented by the drawings, and the member 18 is provided with a projection 19, which is arranged at the front edge of said member 18, so as to extend across the front extremity of the arm 3 and overlap the front end of the member 17. These members of the clamp are loosely connected with the frame-arm 3 by the guide-pins 20, which are suitably attached to said arm 3 and fit in openings formed in the clamp members. To hold the clamp members in their proper relation to the arm 3, I provide the guide-plates 21, which are secured to said members 17 18 and are loosely fitted in the transverse notch or recess 10, which is formed in the free extremity of the arm 3. It will be observed that the members of the internal clamp may be adjusted on the arm 3 of the stretching-frame, because they are loosely attached thereto by the guide-pins and the plates, and said clamp may thus be expanded or contacted to provide for the adjustment of the stretcher in shoes of different sizes.

The external clamp is indicated at 22, and it consists of an open frame or ring having a cross-bar 23, which is furnished with a socket-piece 24. This external clamp is adapted to be interposed between the shoe-upper and the end of the binding-screw 5, so that the extremity of said screw will enter the socket-piece 24, which furnishes a seat for the screw.

In using my improved stretcher the expansible clamp is widened or contracted, according to the size of the shoe, and the frame is then manipulated so as to thrust the arm 3, with the clamp and the stretcher-head, into the shoe or boot, while the arm 2 lies outside of said shoe or boot. The frame is now adjusted to bring the expansible clamp 16 and the head 11 opposite to the place which it is desired to stretch, and the operator then places the external clamp 22 over the leather. This external clamp is designed to bear upon the leather and the internal clamp, and after the parts have been properly adjusted the screw 5 is tightened to force the open clamp 22 upon the leather, thus making the clamps 16 22 coöperate in firmly holding the leather in place against any tendency to wrinkle. The adjusting-screw 7 is now rotated to impel the rod 14 in an endwise direction, and this rod acts against the head 11 through the stem 12, whereby the head is forced against the leather, so as to force the same into the open external clamp 22, and thereby stretch the leather at the desired place without any liability of breaking the leather or causing wrinkles therein. The device may be readily removed from the boot or shoe by releasing the screw 5 and retracting the screw 7, after which the frame and the parts mounted thereon may be withdrawn from the shoe.

My improved device is simple in construction, and it is easy of adjustment and manipulation.

While I have shown and described the lower arm of the frame which is to thrust into the shoe as provided with a channel or groove and with keepers to keep the slidable rod in place, I do not wish to be understood as limiting myself to this specific construction, because the said lower arm may have a passage formed therein in the process of casting the frame.

Changes may be made in the form of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. In a shoe-stretcher, the combination of devices arranged to clamp the leather firmly, a stretcher-head to force the leather into one

of said clamping devices, and means for positively adjusting the stretcher-head, substantially as described.

2. In a shoe-stretcher, the combination with a frame, of a clamp supported thereon and arranged to be introduced therewith into a shoe, an open clamp for application to the outside of a shoe and coöperating with the internal clamp to firmly hold the leather against wrinkling, and a movable stretcher-head arranged to force the leather into the open external clamp, substantially as described.

3. In a shoe-stretcher, the combination with a frame, an internal clamp supported thereon, a stretcher-head fitted to the frame for movement relatively to the internal clamp, an adjusting device also supported on the frame and coacting with the stretcher-head, an open external clamp, and means for binding the external clamp upon a shoe-upper opposite to the internal clamp, substantially as described.

4. In a shoe-stretcher, a frame having the connected arms, an adjusting-rod supported on one of the arms, and a stretcher-head in operative relation to said rod, in combination with an external clamp, and means for binding said clamp in place, substantially as described.

5. In a shoe-stretcher, a frame, an adjusting-rod therein, and a stretcher-head having a pivoted stem and arranged to coact with said rod, in combination with an internal clamp supported on the frame contiguous to the stretcher-head, an external clamp, and binding means for said clamp, substantially as described.

6. In a shoe-stretcher, a frame, and an expansible internal clamp supported on said frame, in combination with an external clamp, a stretcher-head, and adjusting devices for said external clamp and the stretcher-head, substantially as described.

7. In a shoe-stretcher, a frame, and an expansible internal clamp having its members adjustably connected to said frame, in combination with an external open clamp adapted for application to a shoe-upper opposite to the internal clamp, means for firmly binding the two clamps upon a shoe-upper, a stretcher-head, and an adjusting device for said stretcher-head, substantially as described.

8. In a shoe-stretcher, the combination with a two-armed frame and an internal clamp mounted on one arm of the same, of an open external clamp having a bearing, a binding-screw mounted in the other arm of the frame and adapted to the bearing of said external clamp, and a stretching-head, substantially as described.

9. A shoe-stretcher comprising a frame having the curved arms, an internal clamp supported by the arm which is adapted to be thrust into a shoe, a stretcher-head loosely connected to said arm, a slidable rod to adjust the stretcher-head, an adjusting-screw for said rod, and an external open clamp adapted for interposition between the other arm of the frame and the internal clamp, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DANIEL PORTWOOD.

Witnesses:
CHUMY CLARK,
W. T. MCCURRY.