July 14, 1925. 1,545,574

LE ROY W. ROLLINS

AWL POINTING AND TESTING DEVICE

Filed May 15, 1922

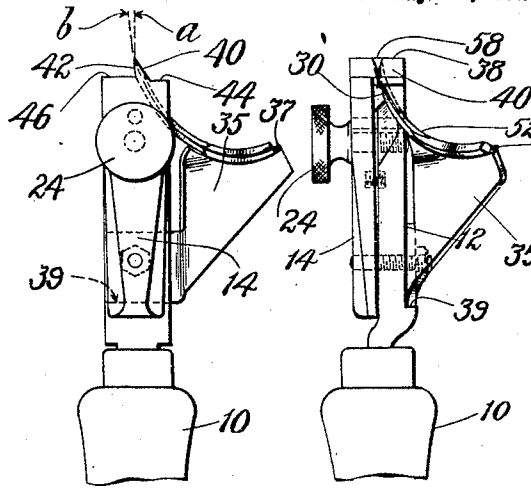


Fig. 1.

Fig. 2.

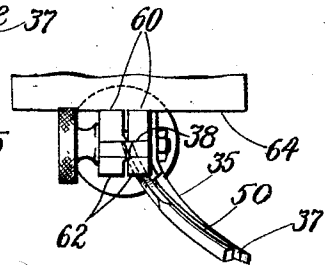


Fig. 3.

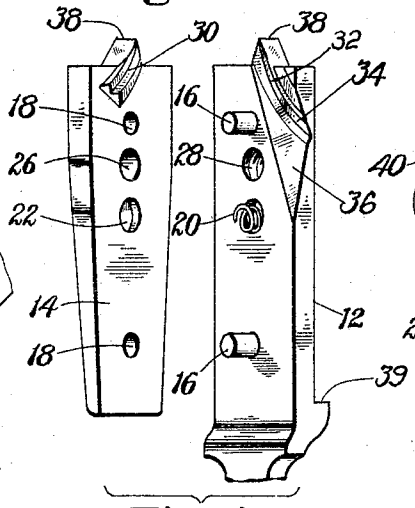


Fig. 4.

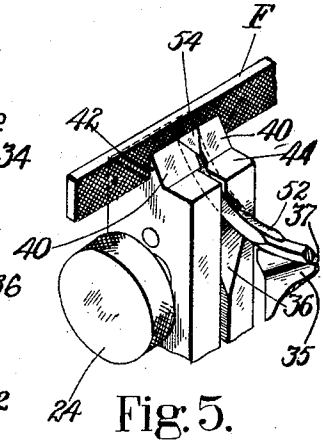


Fig. 5.

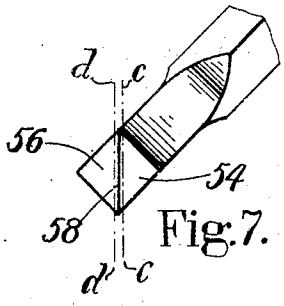


Fig. 7.

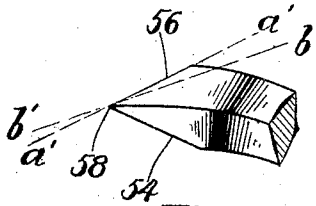


Fig. 8.

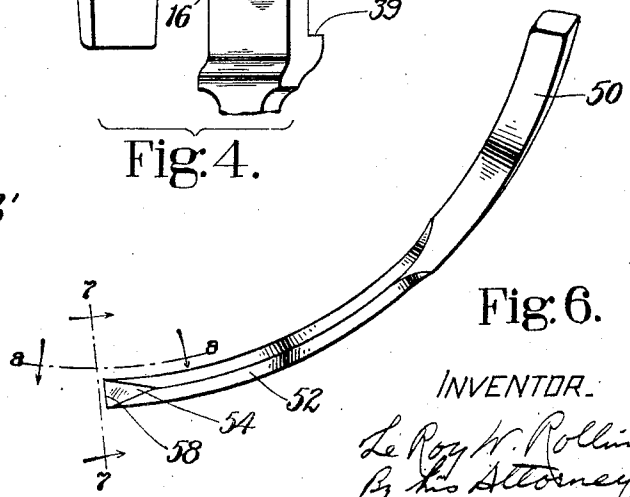


Fig. 6.

INVENTOR.

LeRoy W. Rollins

By his Attorney,

Nelson W. Howard

Patented July 14, 1925. 1,545,574

UNITED STATES PATENT OFFICE.

LE ROY W. ROLLINS, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE REPAIRING MACHINE COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

AWL POINTING AND TESTING DEVICE.

Application filed May 15, 1922. Serial No. 561,215.

To all whom it may concern:

Be it known that I, LE ROY W. ROLLINS, a citizen of the United States, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Awl Pointing and Testing Devices, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to shaping and testing devices for awls of curved-needle shoe-stitching machines and is herein shown as embodied in a device for use in pointing and repointing such awls.

Stitching machine awls are received from the manufacturer with the points only approximately shaped. It is a well known fact that small variations in the shape or bevel of the point and also differences in the displacement of the pointed end amounting to one or two thousandths of an inch will greatly modify and control the action of an awl in connection with an operation such, for example, as stitching an outsole to the welt of a shoe, it being understood that the welt has previously been united to the upper and insole by a closely adjacent line of inseam stitches. For instance, a short bevel on the back of the awl or a displacement of the edge toward the back of the awl causes it to "draw on" or to pierce successive holes progressively farther inwardly from the edge of the shoe, with consequent danger of damaging the shoe by the awl scratching or cutting the upper and, also, of cutting the inseam stitches which results in the inseam giving away or ripping during subsequent wear. This invention aims to meet particularly the needs of the shoe repairing trade in which stitching machines are used by relatively unskilled workmen, for whom conditions for the use of the machine must be made as free as possible from any difficulties in the way of producing satisfactory repair work. Heretofore, awls for shoe stitching machines have been shaped or filed by the operatives with no other aid to accuracy than that furnished by the eye and the result has been that they are seldom filed accurately. Also, after an awl has been in use for some time it is often sprung out of alinement with the sewing needle, which prevents the awl from properly performing its function of making the hole for the needle to enter. This results in defective stitching because the needle does not have the benefit of the awl hole to follow in sewing and is likely to be broken.

In view of these facts, it is an object of this invention to provide an improved device which will insure only perfectly curved awls being used by the operatives and also insure the exact predetermined shape or form of point required by the work to be done. In the construction herein illustrated, in accordance with a feature of the invention, the device comprises a member having hardened file guiding surfaces extending in parallel directions and intersecting at the angle desired for an awl point, and means for clamping an awl with its axis in predetermined relation to these surfaces while filing it to a corresponding shape. In practice, the device is held in one hand and a file is manipulated by the other hand and, in accordance with another feature of the invention, oppositely disposed surfaces which are parallel to the intersection of the file guiding surfaces are provided on the tool to enable it to be supported, during the filing operation, against a bench edge, for example. In accordance with a further feature of the invention, novel means is provided for testing the awl curvature so that in case the awl to be pointed is bent it will be detected when placed in the clamping means, thus insuring only a perfectly alined awl being pointed for further use, such means being furnished in the illustrated construction by a curved plate extending from one member of the awl clamping means.

These and other features and advantages of the invention will appear from a consideration of the following specification and accompanying drawings of an illustrative construction in which—

Fig. 1 is a side elevation;

Fig. 2 is a front elevation, and

Fig. 3 is a top plan view of the device with an awl in position for filing;

Fig. 4 is a perspective view showing the awl clamping sections separated;

Fig. 5 is a perspective view, with an awl clamped in position for filing;

Fig. 6 is an enlarged view of an awl to be tested and shaped;

Fig. 7 is an end view of a portion of the awl looking in the direction of the arrows on the line 7—7 of Fig. 6; and

Fig. 8 is a top plan view of the end of the awl looking in the direction of the arrows on line 8—8 in Fig. 6.

The illustrated awl pointing and testing device is in the form of a hand tool having a handle 10 to which is fixedly secured a clamping plate 12 forming one member of a sectional holder. Co-operating with this plate is a second clamping plate 14 which is guided into mating relationship with the plate 12 by guide pins 16 engaging in corresponding guide openings 18. To aid in separating the clamping plates, as when inserting an awl, there is placed in a recess of the member 12 a coil spring 20, said spring registering with a recess 22 in the mating member 14 and being under tension when the plates are assembled. For moving the plates towards each other to clamp an awl in position, a headed screw 24 has its threaded portion passed loosely through an opening 26 in the plate 14 and entering a tapped opening 28 in the plate 12. For gripping the corners of the awl, a projection on the end of the plate 14 is provided with a curved V-shaped notch or groove 30 conforming to the curvature of a correctly shaped awl. A similar V-shaped notch or groove 32 is cut into the other plate 12 and this groove is continued farther than the other on the radius of the awl as indicated at 34 to act as a guide in directing the point of the awl into correct position between the clamping plates. As a further aid in finding the grooves, the plate 12 is cut away or beveled at 36 to form a guide face. Since the grooves 30 and 32 can approach or recede from each other, they are able to conform to the corners of awls of different sizes.

An awl that is bent or sprung from the correct curvature will not work acceptably and accordingly this invention provides means for testing the shape of the awl before pointing. To this end a curved plate 35 is secured against a shoulder 39 on the plate 12, the plate 35 having an upper edge 37 forming a remote continuation of the groove 34 and shaped to conform to one of the faces of a correctly curved awl. If, when an awl is clamped in pointing position, its remote end does not conform to the edge 37 as indicated by inspection, it is discarded as unfit for further use.

Each clamping plate has at its ends a file guiding formation or ridge 38 of uniform cross-section throughout its length, the ridge being formed by an inclined face 40 and a nearly vertical face 42 both of which are hardened so that a file F (Fig. 5) or other shaping tool will be guided along said surfaces without making any impression upon them. The faces 40 and 42 meet faces 44 and 46 respectively on the ends of the plates, said faces being hardened for the same purpose as the faces 40 and 42. The curved grooves 30 and 32 serve to position the awl with its longitudinal center line in definite relation to the ridge 38 and the faces 40 and 42 function to guide a file to determine the angle of the beveled surfaces 54 and 56 at the working end of the awl. In Fig. 6, 50 indicates the squared portion of an awl which is to be gripped in a curved needle stitcher and 52 indicates the squared portion at the working end of the awl, the corners on this portion being half way between the corners on the portion 50. At the working end of the awl, the beveled surfaces 54 and 56 of the awl meet along the line 58 to form a cutting edge, which usually intersects or extends close to the curved center line or axis of the awl and preferably lies in a plane cutting squarely across said center line, or in other words, substantially normal to the axis of the awl. As hereinbefore stated, the shape of the awl determines its action on the work. If the face 42 of the hardened ridge were made strictly vertical as represented by line "*a*" in Fig. 1, the face 56 of the awl would lie along the line represented by line *a' a'* in Fig. 8. Ordinarily, however, some desired inclination would be given to the face 42 as indicated by the line "*b*" in Fig. 1, this resulting in a modification of the face 56 as indicated by line *b' b'* in Fig. 8. These variations are exaggerated in the drawings for convenience of illustration but in practice would be very small, being measured by a few thousandths of an inch at most. If it were desired to displace the edge of the awl a predetermined distance to one side or the other of the center line of the awl to meet certain working conditions, the ridge formed by the faces 40 and 42 would be displaced bodily with reference to the awl holding grooves 30 and 32, thus shifting the edge 58 to a position which may be represented by the line *c—c* or line *d—d* in Fig. 7.

As indicated in Fig. 3 of the drawings, the fixture has opposite faces 60 and 62 which are parallel to the edge formed at the intersection of the file guiding faces 40 and 42 so that in use, these faces 60 or 62 can be selectively rested against the straight edge of a bench 64 or other support which thereby aids in directing the

course of a file F along the guiding faces 40 or 42 to effect the filing of faces 54 and 56 at the working end of the awl.

An awl which will work perfectly on thin leather will not work properly on thick leather whereas one which will work perfectly on thick leather will work acceptably on thin leather. Accordingly the pointing device is preferably constructed to shape awls correctly for use in thick leather, but, if desired, a number of tools can be made each constructed to shape the awls correctly for certain specified conditions. This apparatus not only insures proper shaping of the awls but also insures that every awl shaped by a single device will be shaped exactly like every other awl. The apparatus also makes it unnecessary to resort to the improper practice of filing the edge 58 with one end higher or lower than the other. This procedure varies the feeding action but is not considered good practice.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. An awl pointing fixture comprising a holder having two plane, file guiding surfaces extending in parallel directions and intersecting at the angle desired for an awl point, co-operating clamping means for holding the awl for filing with its axis in a predetermined position with respect to said surfaces, and a shank portion constituting a handle for the fixture.

2. An awl pointing fixture comprising cooperating clamping plates having curved grooves formed on their opposing faces to receive the corners of an awl, and a ridge formed on the said plates and presenting two plane file guiding surfaces which intersect each other in a line substantially normal to the axis of the awl.

3. An awl pointing fixture comprising cooperating clamping plates having curved grooves formed on their opposing faces to clamp the forward end portion of an awl, and a ridge formed on the said clamping plates to present two plane file guiding surfaces which intersect each other in a line substantially normal to the axis of the awl, the ridge having curved grooves in continuation of the grooves on the clamping plates.

4. An awl pointing and testing fixture comprising means to clamp an awl in one locality, means for testing the relative position of a remote locality of the awl, and guide surfaces arranged in desired relation to one of the localities for guiding a shaping tool in accordance with the conformation of said surfaces.

5. An awl pointing and testing fixture comprising cooperating awl clamping members having formed thereon file guiding surfaces in predetermined angular relation to one another, and a curved plate connected to one of said members for testing the curvature of an awl in its clamped position.

6. An awl pointing fixture having two plane file guiding surfaces intersecting at the angle desired for an awl point, and cooperating clamping means for holding the awl in operative relation to the guiding surfaces, said fixture having flat bearing surfaces which are parallel to the edge formed at the intersection of the two file guiding surfaces and are adapted to rest selectively on the edge of a bench.

7. A hand tool for use in pointing awls comprising cooperating clamping members constructed and arranged to hold an awl therebetween, a ridge formed to guide a shaping tool in a plurality of predetermined, angular positions with relation to the axis of the awl while the awl is held in one position, said clamping members being provided with oppositely disposed, supporting surfaces extending in directions parallel to said ridge to rest selectively against a bench.

8. An awl pointing fixture comprising a member having a hardened file guiding ridge of uniform angular cross-sectional shape throughout its length, and means for clamping an awl in predetermined relation to said guiding ridge for filing the point of the awl to a corresponding shape.

9. In an awl pointing fixture, a holder having a ridge thereon, the ridge being of uniform cross-section throughout its length and its opposite sides intersecting at a desired angle for guiding a shaping tool, means on the holder for causing the longitudinal center line of an awl to assume definite relation to the ridge, and means for clamping the awl in said relation for shaping.

10. In an awl pointing fixture, a holder having two plane file guiding surfaces in predetermined transverse angular relation to one another, said surfaces extending lengthwise in parallel directions, and means on the holder for guiding an awl to be pointed into a predetermined relation to said surfaces.

11. In an awl pointing fixture, a holder having an angular ridge comprising duplicate sections of hardened material for guiding a file, and means conforming to the sides of an awl for holding it in a filing position between the sections of the ridge.

12. In an awl pointing fixture, an angular ridge comprising duplicate sections of hardened material for guiding a file in planes inclined relatively to one another, said sections of the holder having oppositely facing grooved portions for holding the corners of an awl.

13. In an awl pointing fixture, a sectional holder having curved grooves of predetermined form for holding the corners of an awl, one of said curved grooves being ex-

tended beyond the other to act as a guide in insertinging an awl between the sections of the holder.

14. An awl pointing fixture having, in combination, a pair of members relatively movable to clamp an awl between them, a ridge of hardened material projecting from each member, said ridges extending in the direction of said relative movement and having curved grooves of predetermined form to grip the corners of an awl, and means for securing the clamping members together.

15. An awl pointing fixture having, in combination, a pair of clamping plates having opposing grooves conforming to the opposite corners of an awl, means for normally urging the plates apart to allow insertion of an awl, and means for causing the plates to approach one another to grip the corners of the awl.

16. An awl fixture comprising clamping members 12 and 14, a templet on one of said members having tool guiding faces 40, 42, and a handle portion 10 substantially as described.

In testimony whereof I have signed my name to this specification.

LE ROY W. ROLLINS.