E. I. LA CHAPELLE.

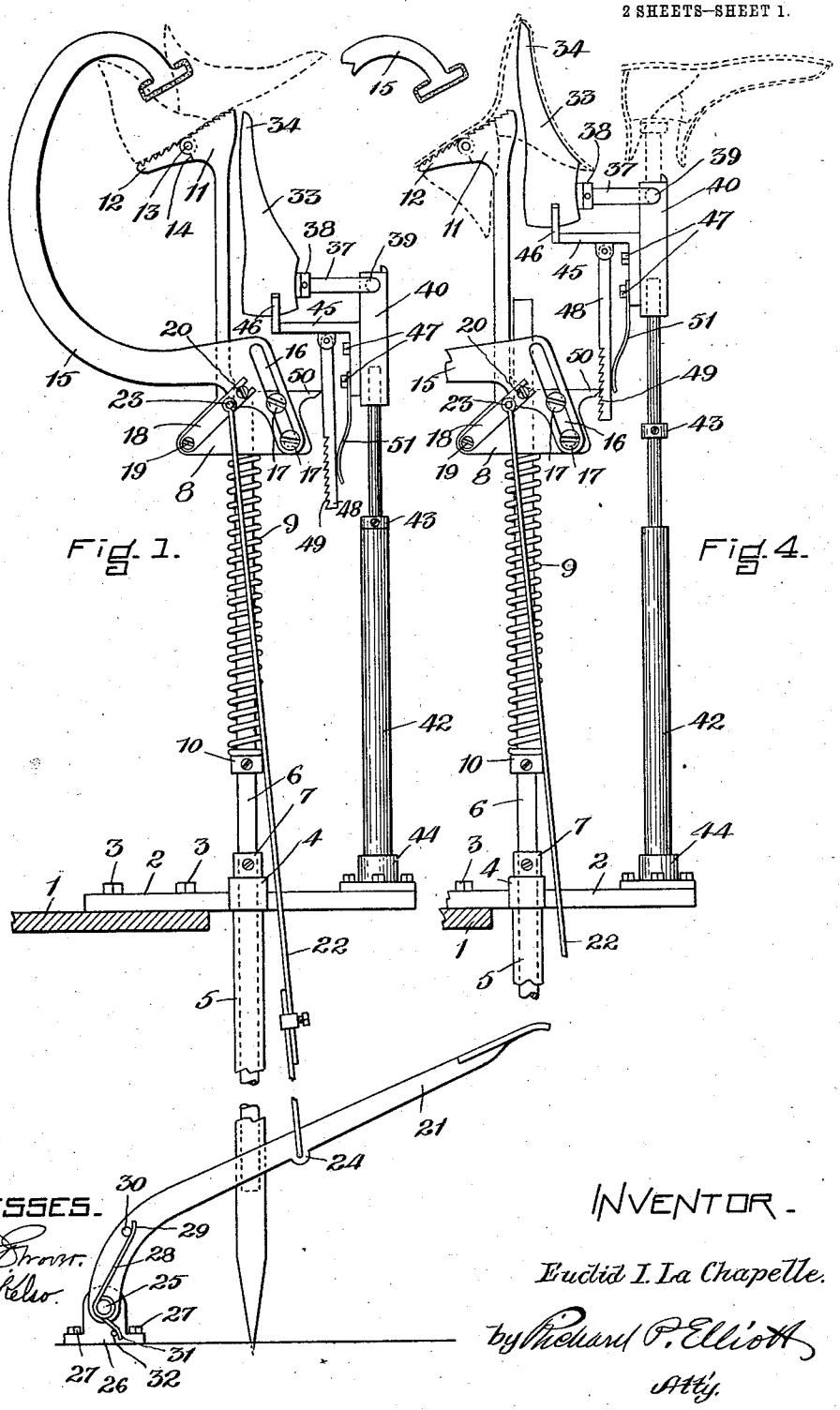
MECHANISM FOR TURNING AND RELASTING WHAT IS KNOWN AS TURN SHOES.

APPLICATION FILED FEB. 4, 1910.

1,009,321.

Patented Nov. 21, 1911.

2 SHEETS—SHEET 1.



WITNESSES.

C. E. Brown.

H. W. Keller.

INVENTOR.

Euclid I. La Chapelle.

by Richard P. Elliott

Atty.

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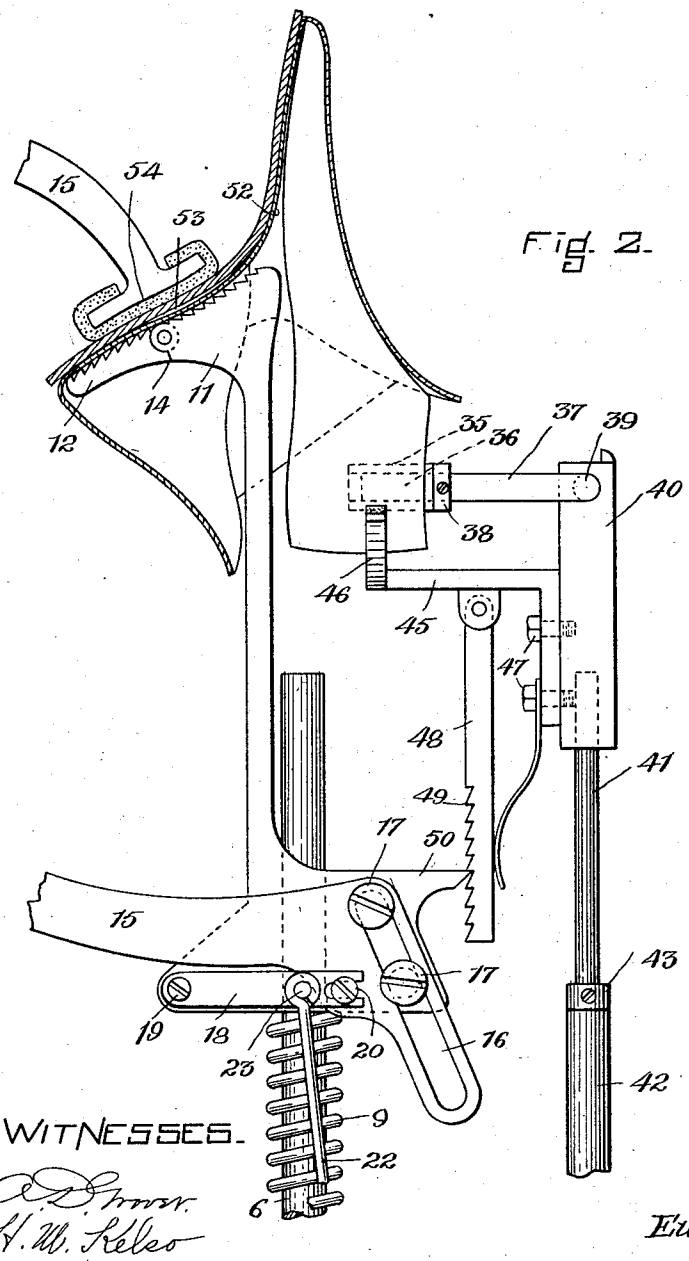

Fig. 2.

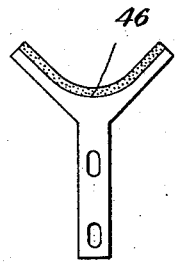

Fig. 3.

WITNESSES.

A. D. Power.

H. W. Keleo

INVENTOR.

Euclid I. La Chapelle.

by Richard P. Elliott

Atty.

UNITED STATES PATENT OFFICE.

EUCLID I. LA CHAPELLE, OF BEVERLY, MASSACHUSETTS.

MECHANISM FOR TURNING AND RELASTING WHAT IS KNOWN AS TURN-SHOES.

1,009,321. Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed February 4, 1910. Serial No. 542,069.

To all whom it may concern:

Be it known that I, EUCLID I. LA CHAPELLE, a citizen of the United States, residing in Beverly, county of Essex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Mechanism for Turning and Relasting What is Known as Turn-Shoes, of which the following is a specification, reference being had to the drawings accompanying the same and forming a part thereof.

My invention relates to an improvement in a mechanism for turning and relasting, by one operation, shoes usually designated as turn shoes; *i. e.*, shoes of the type in which the uppers and bottoms are secured together while the parts are wrong side out.

The objects of my invention are to provide a mechanism which will permit the operator to use his weight, exerted through a foot lever, in performing the laborious part of the operation of turning a shoe, and wherein a last may be used in the operation of turning the shoe, in such manner, that when the shoe is turned it will have been relasted.

Heretofore, the operation of turning and relasting shoes has consisted of two distinct operations; *i. e.*, the operation of turning the shoe and afterward relasting or drawing it upon a last. By combining the two operations, much time and labor can be saved.

In the drawings which accompany this specification—Figure 1 represents a side elevation of my device with a shoe in place ready to be clamped by the clamping means, preparatory to turning; Fig. 2 is a partial side elevation of the mechanism, and shows a shoe in the clamping device, with the filler and shank-piece in place, and the shoe turned, preparatory to removing it from the clamping and turning device; Fig. 3 represents a supporting device to support the last in place upon the turning device, and hold it in its proper position; and Fig. 4 is a side elevation of a portion of the shoe turning and relasting mechanism, with a shoe shown in dotted lines after it has been turned, preparatory to removing it from the clamping device; and dotted lines showing the last and supporting mechanism, and a shoe as fully relasted upon the last, preparatory to removing the last from its support.

The mechanism is usually mounted upon a table or bench, a portion of which is represented by the numeral 1; a bracket 2 may be secured to the table or bench by bolts or lag screws 3, 3; the bracket 2 has a boss 4 having a hole therethrough, and a socket 5 secured in the hole, the lower portion of the socket being of proper length to rest upon the floor. A rod 6 is mounted in the socket 5 and held in adjusted position by an adjustable set collar 7. The clamping device for clamping the sole of the shoe consists of the portion 8 which is mounted to slide vertically upon the upper end of the supporting rod 6, and is held in its normal upward position by the spiral spring 9. The tension of the spring 9 is adjusted by means of an adjustable set collar 10, which slides vertically upon the rod 6, and is adjusted to the desired position by means of the usual set screw.

The upper end of the clamping portion 8 is provided with the stationary clamping surface 11, and a hinged portion 12 pivoted to the stationary portion by means of a pivot 13, the part 12 being so arranged that the shoulder 14 acts as a stop to prevent it from swinging downwardly beyond the position illustrated in Fig. 1, but leaving the portion 12 free to swing upwardly to permit the shoe to be easily removed. The coöperating portion of the clamping member comprises the movable portion 15, which is provided with a slot 16 at its lower end and is attached to the portion 8 by means of the screws 17, 17, which pass through the slot 16 and are secured in the portion 8 in the position illustrated in Figs. 1, 2 and 4. This mode of attachment causes the coöperating clamping member 15 to move at right angles to the face of the clamping members 11 and 12. The clamping member 15 is moved to clamp and release the shoe by means of a lever 18 which is pivoted to the portion 8 by the pivot screws 19. The outer end of the lever 18 is provided with a slot to receive and slide upon the screw 20 which is secured in the side of the coöperating clamping member 15.

The lever 18 is adjustably attached to a foot lever 21 by means of an adjustable rod

22 which is pivoted to the lever 18 by means of the pivot 23, its lower end being pivotally connected at 24 in the lever 21. The lever 21 is pivoted by means of the pivot pin 25 to a floor-plate 26, which may be secured to the floor by lag screws 27, 27.

The lever 21 is maintained in a normal upward position as shown in Fig. 1, by means of a coil spring 28. The coil spring 28 is provided with the end 29 adapted to contact with a pin 30 secured in the side of the lever 21, and the end 31 adapted to bear against a pin 32 secured in the floor-plate 26. The tension of the spring 28 tends to separate the ends 29 and 31 and lift the lever 21, and maintain it in its normal upward position.

When the shoe is clamped between the clamping-face of the clamping portion 15 and the clamping face of the portion 11, the heel-part can be easily turned with the hands to assume the position shown in Fig. 2. Further downward movement of the lever 21 will pull the clamping members 8 and 15 downwardly upon the rod 6 and bend the sole upon the end of the last 33, so that the fore part of the upper may be turned upon the point 34 of the last 33, it being understood that the last 33 will remain stationary while the movement above described takes place.

As the clamping portion 8 moves downwardly, the point 34 of the last will be pressed upwardly into the toe of the shoe after the fore part of the upper is turned, and will assume the position shown in dotted lines Fig. 4. Further downward movement of the clamping portion 8 will cause the portion 12 to swing upward upon the pivot 13 to permit the heel-part of the shoe to be removed from the clamping means. When the lever 21 has been released, both clamping portions will move upwardly and the portion 15 will move away from the clamping surface of the portion 11 and permit the removal of the shoe.

The last 33 is provided with a bushed hole 35 adapted to receive the end 36 of the pin 37, the depth to which the pin 36 will enter the hole 35 being regulated by an adjustable set collar 38. The pin 37, has an angular portion 39 which is arranged to enter a hole in the portion 40 in such manner as to swing upon the portion 39 and assume the position shown in Fig. 4 to permit the removal of the last from said pin 37.

The portion 40 is mounted upon a slidable rod, which slides vertically in the tubular portion 42, its downward movement being limited by means of the adjustable set collar 43. The tubular portion 42 is secured in a flange 44, which flange is in turn secured by bolts or set screws to the bracket 2. The portion 40 is provided with an L-shaped rest 45 which has the Y-shaped portion 46 formed in its outer end, adapted to embrace the heel of the last to prevent the last from turning upon the pin 37. The L-shaped portion 45 is adjustably secured to the portion 40 by means of bolts 47, 47.

There is pivoted to the horizontal portion of the L-shaped member 45 a swinging arm 48, the swinging arm 48 being provided with ratchet teeth 49 adapted to engage the projection 50 formed upon the clamping member 8. The ratchet teeth 49 are caused to engage said portion 50 by the tension of the spring member 51 which is secured under the head of the bolt 47 and exerts a spring tension against the back of the member 48 at a point opposite the ratchet teeth 49. The purpose of this member 48 is to cause the portion 40 to be moved upwardly by the upward movement of the clamping member 8 so that the last 33 will travel upwardly with the shoe and the clamping member 11 to the position shown in Fig. 4 of the drawings, which illustrates the shoe after it has been turned, preparatory to removing it from the portion 11 of the clamping members.

The operation of my turning and re-lasting device is as follows:—A filler and shank-piece, illustrated by the numerals 52 and 53, are first placed upon the clamping portions 11 and 12; the wrong side of the sole of the shoe, with the upper inside out, is placed upon the shank and filler, and the treadle moved downwardly to draw the clamping face 54 of the clamping portion 15 downwardly inside of the upper to firmly clamp the sole of the shoe, the shank piece, and the filler, between the opposing clamping faces. The next operation is to turn the heel-part of the upper right side out upon the pivoted clamping member 12; then the treadle is moved downwardly to draw the clamping member 11 downwardly with relation to the last 33, which movement tends to bend the filler and the sole at the point where the toe of the last contacts with them, and to increase the bend by further downward movement of the treadle, until the filler and the sole of the shoe are bent sufficiently to permit the fore-part of the upper to be turned right side out upon the toe 34 of the last. Further downward movement of the clamping portion 8 pushes the last fully into the toe of the shoe. By swinging the last upon the pivot 39 formed by the angular portion of the pin 37, the pivoted clamping portion 12 will move upwardly upon its pivot and release the heel-portion of the upper from the clamping members 11 and 12 so that the last may be swung to the horizontal position shown in Fig. 4 and the shoe fully re-lasted, as is shown in dotted lines.

The movement of the members of the lasting device may be described as follows: When the clamping portion 8 is being

moved downward to clamp and bend the sole of the shoe upon the point of the last, the last-supporting device and last remain stationary, with the toe of the last projecting upwardly beyond the clamping faces of the clamping members 11 and 12, as is illustrated in Fig. 2. This downward movement of the clamping portion 8 and the pointed member 50 with relation to the last 33 and the arm 48 causes the point 50 to move downwardly upon the ratchet teeth 49, and when the treadle 21 is released the point 50 will engage one of said ratchet teeth 49, and as the portion 8 moves upwardly will carry the portion 40, the rod 41, and the last and last-supporting device upwardly with it, so that the mechanism, when said lever 21 is at its upward normal position, will assume the positions shown in Fig. 4.

Before clamping another shoe and its parts upon the turning device, the arm 48 is swung outwardly so that the ratchet teeth 49 will be disengaged from the point 50 and the last-supporting devices permitted to fall downwardly to their normal positions, as illustrated in Fig. 1.

I have illustrated and described my invention in the best form now known to me, but I do not limit my invention to the exact form of the parts, or to the exact arrangement shown, as the form and arrangement of the parts may be varied without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. In a device for turning and relasting shoes, coöperating clamping members arranged to clamp the sole of a shoe near the shank; a support upon which said clamping members are slidably mounted; a last supported contiguous to said clamping members upon a movable pin; said movable pin; a slidable support to which said movable pin is pivoted; and a swinging member of said clamping members arranged to swing to permit the removal of the heel part of the shoe from the clamping members after the shoe has been turned and partially relasted.

2. In a device for turning and relasting shoes, means for clamping a shoe near the shank portion; a last arranged so its toe part will contact with the sole of a shoe approximately mid-way its length; a pin upon which said last is detachably supported; and means for moving said clamping means and the shoe with relation to the last to cause the bending of the sole upon the toe of the last to permit the turning of the free part of the shoe.

3. In a device for turning and relasting shoes; means for clamping the sole of a shoe to permit the turning of the heel part; said clamping means consisting of a movable member and opposing clamping members, one pivoted to the other; and a last arranged contiguous to the clamping means to enable the bending of the free portion of the sole upon the toe of the last so that the fore part of the upper can be turned upon said last and relasted at the same operation.

4. In a device for turning and relasting shoes; means for clamping the sole of a shoe to permit the turning of the heel part of the upper; a last; a socket in said last; last-supporting means movably supported in a socket; said socket; a pin pivoted to said last-supporting means and arranged to enter the socket in the last; an adjustable support adjustably secured to said last-supporting means to receive the heel of the last and hold it in adjusted position; means for causing movement of the clamping means with relation to the last-supporting means to bend the sole of a shoe and permit the turning of the fore part of the upper and the relasting of it upon the last at the same operation.

5. In a mechanism for turning and relasting shoes; means for clamping the sole of a shoe to permit the turning of the heel part of the upper; a last; last-supporting means movably supported in a socket; means for detachably securing the last to said last-supporting means; means for causing the movement of the clamping means with relation to the last-supporting means during the operation of turning and relasting the shoe; and means for causing the last-supporting means to move with the clamping means to position the shoe and the last so as to remove them from the turning and relasting mechanism.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses, this the 2nd day of February, A. D., 1910.

EUCLID I. LA CHAPELLE.

Witnesses:
H. M. Kelso,
R. P. Elliott.