Sept. 2, 1941. L. J. BAZZONI 2,254,346

HEEL-FITTING MACHINE

Filed May 6, 1939 3 Sheets-Sheet 1

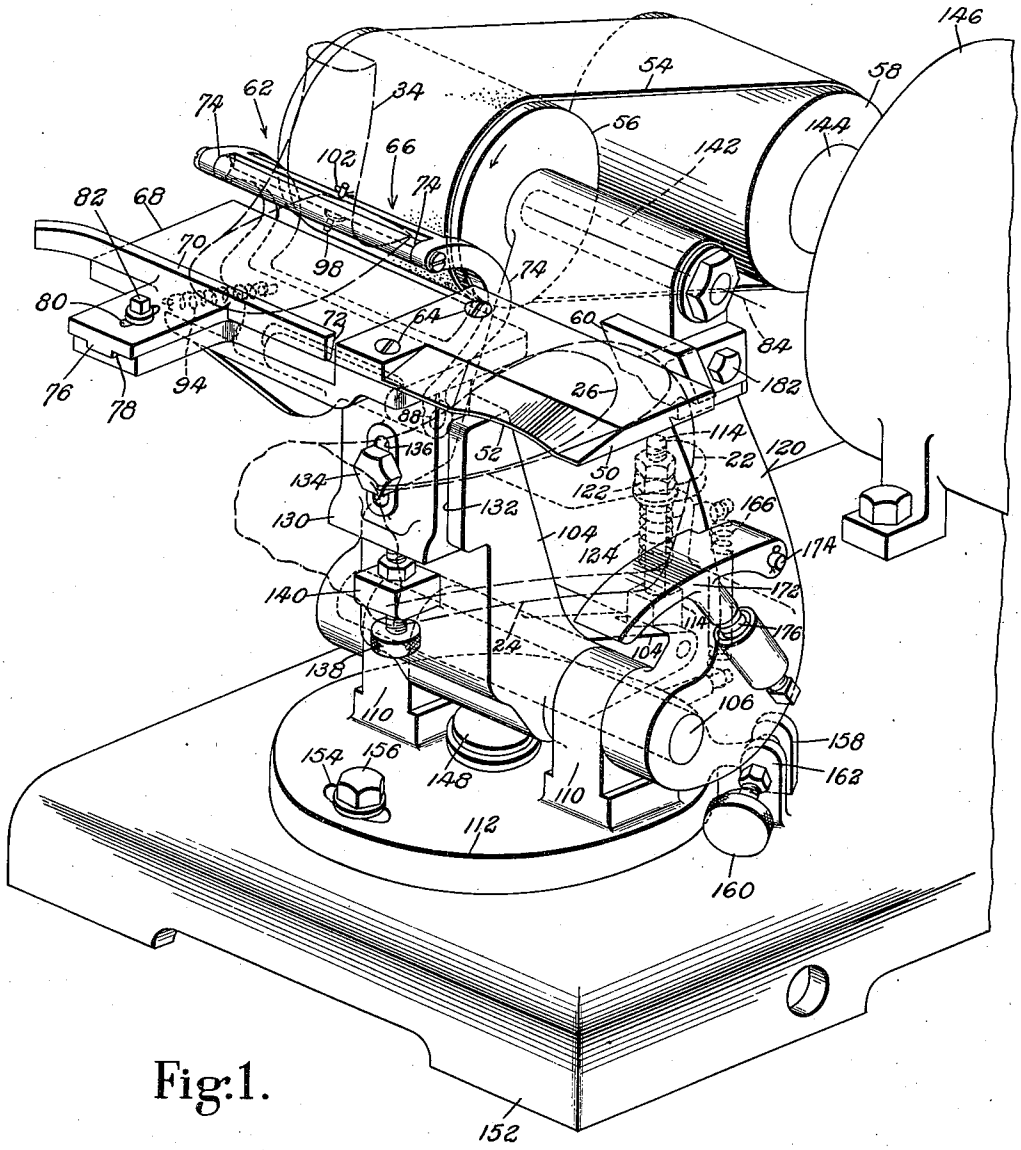


Fig. 1.

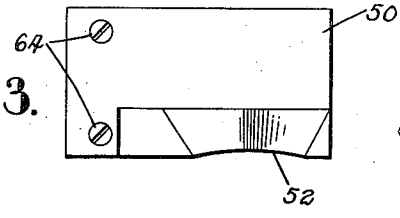


Fig. 3.

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HEEL-FITTING MACHINE

Filed May 6, 1939 3 Sheets-Sheet 2

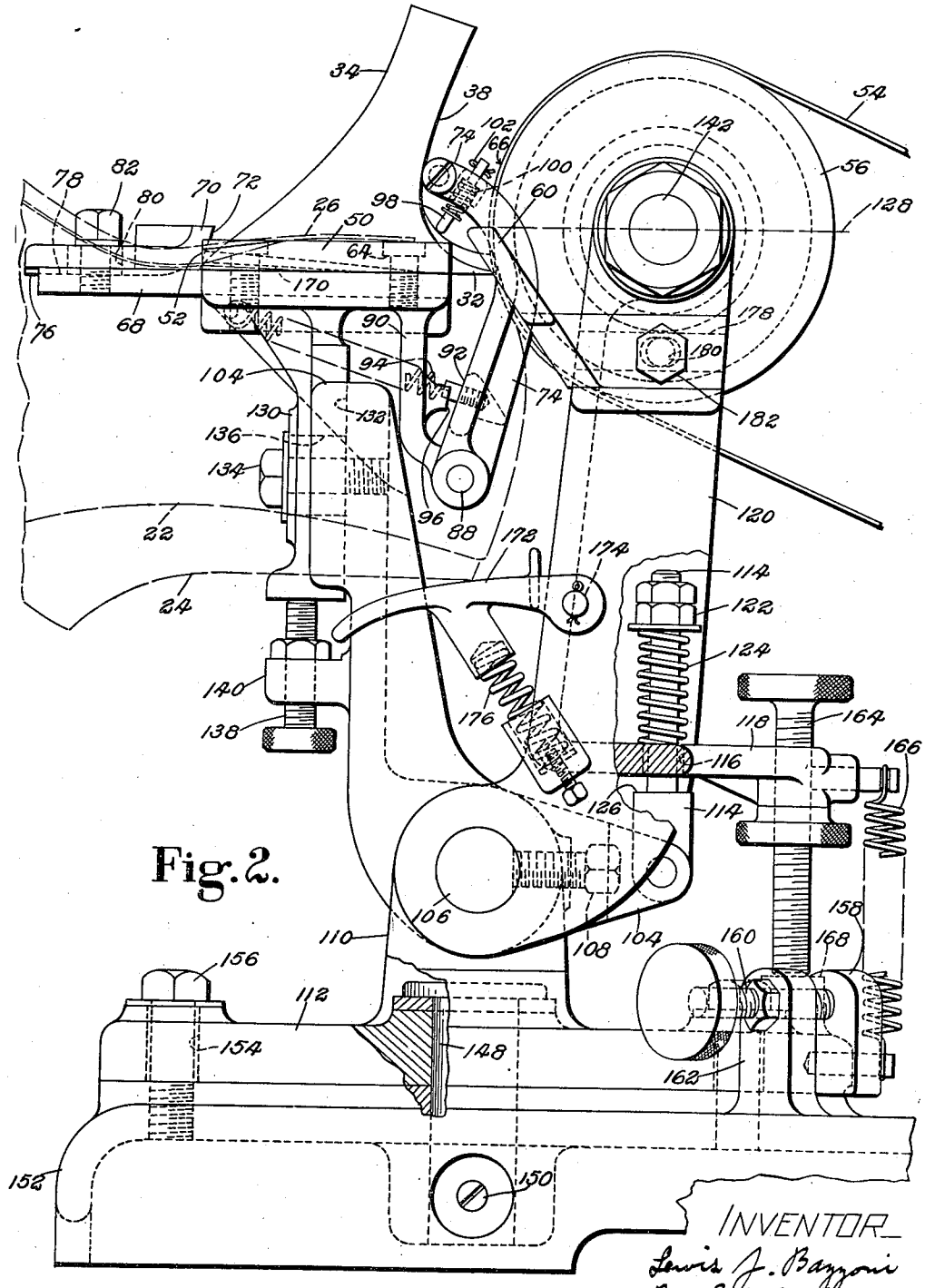


Fig. 2.

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HEEL-FITTING MACHINE

Filed May 6, 1939 3 Sheets-Sheet 3

Fig. 5.

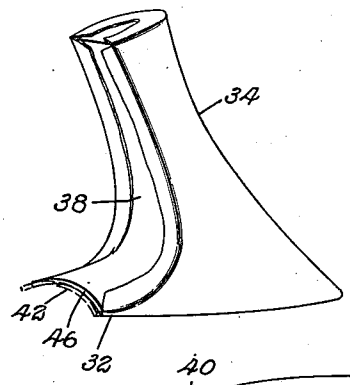
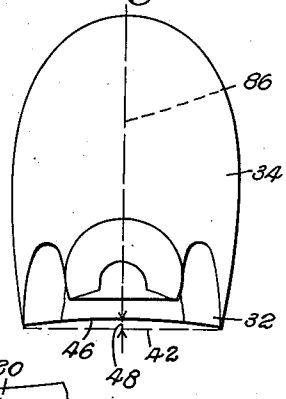


Fig. 6.



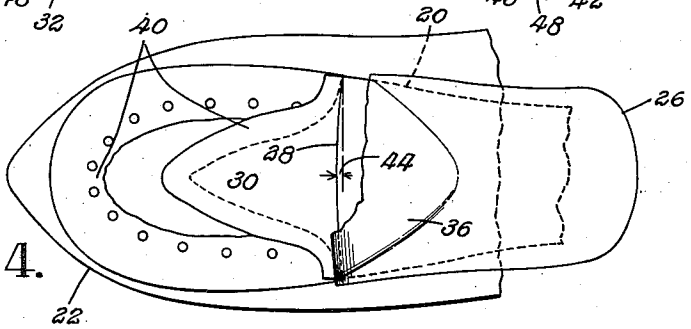


Fig. 4.

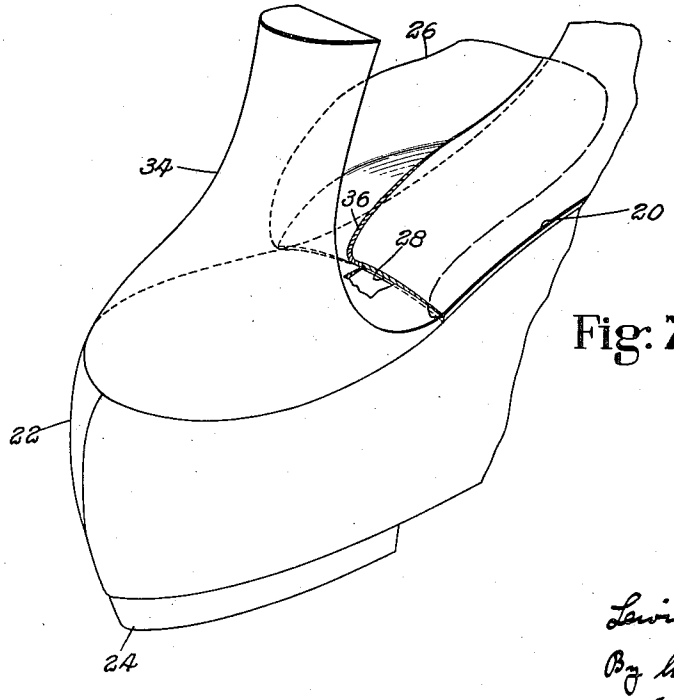


Fig. 7.

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Patented Sept. 2, 1941 2,254,346

UNITED STATES PATENT OFFICE

2,254,346

HEEL-FITTING MACHINE

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Application May 6, 1939, Serial No. 272,189

12 Claims. (Cl. 51—135)

This invention relates to machines for removing material from the forwardly projecting lips of Louis heels to fit them for use in practicing the method disclosed in United States Letters Patent No. 2,125,328, granted August 2, 1938, on an application filed in my name.

It is an object of this invention to provide a machine for quickly and effectively grinding excess material from the forwardly projecting lip of a Louis heel to such an extent as to insure that when the heel is properly positioned upon a shoe its lip shall snugly engage a heel-breast receiving shoulder formed upon a prefitted sole attached to the shoe.

With the above object in view, and in accordance with a feature of this invention, there is provided a heel fitting machine comprising gages constructed and arranged to be engaged by the rear end of a shoe and a heel-breast receiving shoulder, respectively, formed upon an attached sole of the shoe, an abrading tool, a carrier for a Louis heel which is to be attached to the shoe, means for effecting relative movement of said carrier and said abrading tool in a predetermined path extending lengthwise of the heel to remove material from the entire width of the forwardly projecting lip of the heel, thereby reducing the length of the heel, and means comprising connections between one of said gages and the heel carrier for controlling the extent of said relative movement of the carrier and the tool in said path in accordance with the length of the heel seat of the shoe measured by said gages. In the illustrated machine the Louis heel is positioned and held in place upon the carrier, the forwardly projecting lip of the heel extending beyond the carrier and being arranged in opposed relation to the abrading tool which is of the rotary type. The carrier is mounted for pivotal movement toward and away from the tool and has secured to it a plate the front edge of which is constructed and arranged to be engaged by the heel-breast receiving shoulder of the attached sole of the shoe. The heel carrier and the plate are normally held forward in their idle positions away from the tool and a fixed stop, respectively, by a spring. In operating the machine the heel-breast receiving shoulder of the attached sole of the shoe is forced against the front edge of the plate, causing the plate and the carrier to be swung rearwardly against the action of the spring, thereby forcing the projecting lip of the Louis heel against the abrading tool to grind material from the end of the lip. The degree of swing of the carrier, and accordingly the amount of material removed from the lip, is limited by the engagement of the rear end of the shoe adjacent to its heel seat with the fixed stop. The construction and arrangement of the carrier, the plate, and the stop are such that when the shoe has been forced against the stop the length of the attaching face of the heel operated upon is equal to the length of the heel seat of the shoe, thereby insuring that when the heel is properly positioned upon the shoe the front edge of its forwardly projecting lip shall snugly engage the heel-breast receiving shoulder of the attached sole of the shoe.

The above and other features of the invention will be understood and appreciated from the following detailed description read in connection with the accompanying drawings, in which

Figs. 1 and 2 are perspective and side views, respectively, partly broken away, of an illustrative abrading machine in the process of removing material from the forwardly projecting lip of a Louis heel;

Fig. 3 is a plan view of the plate which is moved by the shoe to force the heel upon the carrier against the rotary abrading tool;

Fig. 4 is a plan view showing the prepared heel seat of the shoe which is to receive the Louis heel;

Figs. 5 and 6 are perspective and bottom views respectively of the Louis heel to be attached to the shoe, the portion of the lip removed by the machine being indicated by dash lines; and

Fig. 7 is a perspective view, partly broken away, of the heel end of the shoe illustrated in Fig. 4 after the heel has been attached to the shoe but before the flap has been applied to the breast of the heel.

In the above-mentioned United States Letters Patent No. 2,125,328 there is disclosed an improved method of shoe-making which consists in splitting a sole **20** (Figs. 4 and 7), before its attachment to a shoe **22** mounted upon a last **24**, to form a heel-breast covering flap **26** and simultaneously therewith removing a layer of sole material to form at the base of the flap a single heel-breast receiving shoulder **28** of substantial height extending from one side of the sole to the other, reducing the heel-seat portion of the sole to form a tab **30** (Fig. 4), attaching the sole to the shoe, removing material whenever necessary from the forwardly projecting lip **32** of a Louis heel **34** to be attached to the shoe in order to insure that when the heel is accurately positioned upon the shoe its forwardly projecting lip **32** shall snugly engage the heel-breast receiving shoulder

28, attaching the heel to the shoe, and then applying the heel-breast covering flap 26 which preferably has a relatively thick base portion 36 to the breast 38 (Fig. 5) of the attached heel.

The sole 20 may advantageously be split before its attachment to the shoe by the use of the machine disclosed in United States Letters Patent No. 2,173,822, granted September 26, 1939, on an application filed in my name. Such machine comprises a rotary tubular saw (not shown) which not only splits the flap 26 from the sole 20 but also removes a layer of sole material to form the heel-breast receiving shoulder 28 (Figs. 4 and 7) at the base of the flap.

The machine illustrated herein will be described with reference to removing material indicated by dash lines (Figs. 5 and 6) from the forwardly projecting lip 32 of the Louis heel 34 to be attached to the shoe, so as to trim the heel to fit the prepared heel seat 40 (Fig. 4) of the shoe, the length of the attaching face of the untrimmed heel usually being greater than the length of the prepared heel seat of the shoe. The forward portion of the lip 32 of the heel is of a thickness equal to the height of the heel-breast receiving shoulder 28 and is uniformly thick not only throughout the width of the heel but for a short distance rearward from the front edge 42 (Figs. 5 and 6) of the untrimmed lip, which edge is commonly included in a plane, as shown in Fig. 6.

As explained in the above-mentioned United States Letters Patent No. 2,125,328, before the sole 20 is attached to the shoe 22 its heel-breast receiving shoulder 28 is included in approximately a single plane. When the sole 20 is conformed to the transversely convex shoe bottom, however, the margins of the heel-breast receiving shoulder 28 move forwardly of the shoe to a slight extent with relation to the central portion of the shoulder, with the result that the shoulder of the attached sole of the shoe is bowed rearwardly to the extent 44 shown in Fig. 4. The transverse curvature of the heel-breast receiving shoulder 28 of the attached sole of the shoe, as viewed in plan (Fig. 4), varies in accordance with the transverse convexity of the shank portion of the shoe bottom.

It will be appreciated that in order that the front edge 46 (Figs. 5 and 6) of the reduced lip of the heel 34 shall be approximately complemental to the heel-breast receiving shoulder 28 of the attached sole 20, the lip 32 should be arched heightwise of the heel, as shown in Fig. 5, in accordance with the transverse convexity of the forward end of the tab 30 of the attached sole, and the front edge 46 of the lip of the heel should be concaved to a depth 48 (Fig. 6) to accommodate the rearwardly bowed heel-breast receiving shoulder 28 (Fig. 4). When it has been attempted to concave the forward edge of the lip to a form exactly complemental to the rearwardly bowed heel-breast receiving shoulder it has been found that objectionable gaps frequently appear at the sides of the finished shoe between the heel-breast receiving shoulder and the lateral margins of the lip of the heel.

In order to obviate this trouble the depth 48 (Fig. 6) of the concavity at the front edge 46 of the lip 32 is made slightly deeper than the extent 44 (Fig. 4) of the rearward bowing of the heel-breast receiving shoulder 28, thereby insuring that the lateral margins of the lip shall snugly engage the margins of the heel-breast receiving shoulder. With such a construction no gaps such as above referred to appear at the sides of the finished shoe between the heel-breast receiving shoulder 28 and the lip 32 of the heel, although the median portion of the lip of the finished shoe is arranged close enough to the heel-breast receiving shoulder to insure that the relatively thick base portion 36 of the flap secured to the breast of the attached heel shall overlie the breast joint without showing the slight gap which is formed between the median portion of the front edge 46 of the lip and the heel-breast receiving shoulder 28 and which is usually filled up by cement.

Material may be quickly and effectively removed from the lip 32 of the heel 34 by the use of the illustrated machine which comprises a plate or gage 50 the lateral margins of the arched front edge 52 of which are constructed and arranged to be engaged by the heel-breast receiving shoulder 28 of the attached sole 20 of the shoe 22, an endless abrading belt 54 mounted upon a pair of cylindrical rolls 56, 58 (Fig. 1), a stop or gage 60, and a heel carrier 62 (Fig. 1) to which the plate 50 is secured by screws 64. The heel carrier 62 is constructed and arranged to be swung, together with the plate 50, under pressure of the heel-breast receiving shoulder 28 of the attached sole 20 of the shoe 22, against the edge 52 of the plate, until the shoe engages the stop 60, thereby forcing the lip 32 of the untrimmed heel against the cylindrical portion 66 of the abrasive surface of the belt 54, which surface may be referred to as a rotary abrading tool, to remove material from the lip of the heel in accordance with the length of the prepared heel seat 40 (Fig. 4) of the shoe.

The carrier 62 comprises a table 68 for supporting the heel, an abutment 70 which may be secured in different adjusted positions upon the table and has an undercut heel-engaging face 72, and a positioning or orienting frame 74 for forcing the heel against the abutment. In order to enable the operator initially to aline the heel-engaging face 72 of the abutment 70 with the lateral margins of the arched portion of the edge 52 of the plate 50 for reasons which will appear later, the abutment 70 is provided with a depending flange 76 fitting in a guideway 78 of the table 68, and has a slot 80 through which passes a clamping screw 82 threaded into the table. The axis of rotation 84 (Fig. 1) of the cylindrical roll 56 is parallel to the heel-engaging face 72 of the abutment 70 and is arranged at right angles to the lengthwise direction of the guideway 78 of the table 68. The heel is positioned upon the table 68 with its central heightwise plane 86 (Fig. 6) disposed at right angles to the axis of rotation 84, by the positioning frame 74 which engages the relatively flat upright portion of the breast of the heel and forces the rear end of the heel with considerable pressure against the face 72 of the abutment 70.

The positioning frame 74 is mounted on a pivot pin 88 secured to a depending flange 90 (Fig. 2) of the table 68. When the machine is idle a face 92 of the heel-positioning frame 74 is held by a spring 94 against a lug 96 of the flange 90 of the table 68. The heel may be quickly placed upon the table 68 by swinging the positioning frame rearwardly under pressure of the heel against the action of the spring 94 and then releasing the heel, the rear end of which is then forced against the face 72 of the abutment 70 by the positioning frame, the heel at the same time being properly oriented upon the table with

its heightwise median plane 86 (Fig. 6) arranged at right angles to the axis of rotation 84 (Fig. 1) of the roll 56.

Slidingly mounted in a recess of the positioning frame 74 is a plunger 98 which, when there is no heel in the machine, is forced to its lower position by a spring 100 (Fig. 2), downward movement of the plunger being limited by the engagement of a cotter pin 102 carried by the plunger with the positioning frame. As the frame 74 forces the heel toward the abutment 70 the plunger 98 is forced with yielding pressure against the forwardly projecting portion of the breast of the heel thereby insuring that the oriented heel shall be forced and held with considerable pressure against the table 68.

The table 68 is supported by a bell-crank lever 104 which is mounted upon a pivot pin 106 secured by screws 108 (only one of which is shown)) in bosses 110, respectively, of a circular base plate 112. The axis of the pivot pin 106 is parallel to the axis of rotation 84 of the cylindrical roll 56. The bell-crank lever 104 is constantly urged in a counterclockwise direction, as viewed in Fig. 2, to move the heel carrier 62 and the plate 50 to their inoperative positions away from the rotary abrasive tool 66 and the stop 60, respectively, by the following mechanism. Pivoted to the horizontal arm of the bell-crank lever 104 is a rod 114 which passes through a recess 116 (Fig. 2) in a rearward extension 118 of a normally stationary, but adjustable, bracket 120 supported at the opposite ends of the pivot rod 106. Encircling the rod 114, and located between a nut 122 carried by the rod and the rearward extension 118 of the bracket 120, is a spring 124 which normally forces a shoulder 126 of the rod against the rearward extension 118. The bell-crank lever 104 can be swung about the pivot pin 106 against the action of the spring 124 under pressure of the shoe against the plate 50, thereby forcing the lip 32 of the heel 34 mounted upon the carrier 62 (Fig. 1) against the rotary abrading tool 66, as above described.

As above noted, the lip 32 of the heel 34 is arched heightwise of the heel, as best shown in Fig. 5, and accordingly when the heel upon the carrier 62 is swung about the pivot pin 106 against a portion of the rotary abrading tool 66 located below a horizontal plane 128 (Fig. 2) passing through the axis of the tool, the lip of the heel, which lip includes the excess portion of the heel shown by dash lines (Figs. 5 and 6), is reduced to provide a lip the forward edge 46 (Fig. 6) of which is concaved. It will be noted that the depth 48 of the concavity of the front edge 46 of the lip 32 may be varied by raising or lowering the path of travel of the heel carrier 62, the depth of the above-mentioned concavity in the front edge of the lip increasing as the arcuate path of movement of the heel is lowered with relation to the rotary abrading tool 66. In order to present the heel differently to the rotary abrading tool 66 when removing material from the lip of the heel, to produce the desired depth 48 (Fig. 6) of concavity in the front edge 46 of the lip 32, the heel carrier 62 (Fig. 1) may be raised or lowered with relation to the bell-crank lever 104 by mechanism which will now be described. A depending arm 130 of the table 68 fits in a guideway 132 of the bell-crank lever 104 into which is threaded a clamp screw 134 extending through a vertical slot 136 of the arm. In order to insure against any accidental downward displacement of the table 68 with relation to the bell-crank lever 104 there is provided a combined adjusting and thrust screw 138 which is threaded into a lug 140 of the bell-crank lever 104 and has its upper end in engagement with the lower face of the depending arm 130 of the table.

The cylindrical roll 56 is rotatably mounted upon a shaft 142 supported by the bracket 120 which, as above described, is mounted upon opposite ends of the pivot pin 106. The cylindrical roll 58 (Fig. 1) for driving the abrading belt 54 is secured to a shaft 144 of an electric motor 146.

In order that the abrading belt 54 shall run smoothly upon the roll 56 the shaft 142 is adjustable about a stud 148 which fits in an opening of the circular base plate 112 and is secured by a set screw 150 (Fig. 2) to the bed 52 of the machine. The base plate 112 is provided with one or more arcuate slots 154 which are centered about the axis of the stud 148 and through which pass clamp screws 156 threaded into the bed 152. In order to facilitate turning the circular base plate 112 about the axis of the stud 148 so as to aline the roll 56 properly, the plate has an extension 158 which is engaged by an adjusting screw 160 threaded into a lug 162 extending upwardly from the bed 152. The operator, after loosening the clamp screws 156, forces the adjusting screw 160 against the extension 158 of the circular base plate 112, rotating the same about the axis of the stud 148 until the roll 56 is properly positioned. The clamp screws 156 are then turned to secure the plate 112 against movement on the bed 152 of the machine.

The bracket 120 may be swung in a clockwise direction, as viewed in Fig. 2, preparatory to removing the abrading belt 54 from the rolls 56, 58 by turning in a counterclockwise direction, as viewed from above, a screw 164 which is threaded into the rearward extension 118 (Fig. 2) of the bracket 120 and has its lower end held by a spring 166, against an abutment 168 of the base plate 112. When the abrading belt 54 has been mounted upon the rolls 56, 58 the screw 164 is turned in a clockwise direction, as viewed from above, to swing the bracket 120 in a counterclockwise direction, as viewed in Fig. 2, thereby tightening the belt. By swinging the shoe stop 60, together with the bracket 120 which carries the pivot pin 142 upon which the roll 56 is mounted, it is unnecessary to adjust the stop with reference to the bracket after the new belt has been placed in the machine.

The median portion of the lower face of the plate 50 has a cavity 170 (Fig. 2) for accommodating the heel seat of the shoe, the transverse curvature of the front edge 52 of the plate, as viewed in plan (Fig. 3), corresponding generally to the transverse curvature of the front edge 46 (Fig. 6) of the lip of the heel. It will be appreciated that the plate 50 may be replaced by any one of a plurality of plates the respective lower faces and front edges of which are of different shapes.

In order to assist the operator in holding the shoe against the lower face of the plate 50 as the shoe is moved rearwardly against the stop 60 there is provided a shoe support 172 which is mounted upon a pivot pin 174 carried by the bracket 120 and is normally urged to a raised position by a spring 176. In presenting the shoe

to the machine the operator grasps the forepart of the shoe and forces the last 24 upon which the shoe is mounted against the support 72, depressing the same as he moves the shoe rearward until the heel-breast receiving shoulder 28 of the sole of the shoe engages the front edge 52 of the plate 50, the support being relied upon to force the shoe firmly against the lower face of the plate. The shoe 22 and the plate 50 are then swung rearwardly together until the rear end of the shoe adjacent to its heel seat 40 (Fig. 4) engages the stop 60, thereby causing the heel upon the carrier 62 to be swung rearwardly into engagement with the abrading tool 66 which removes material from the lip 32 of the heel.

In the illustrated machine the heel-engaging face 72 of the abutment 70 is approximately in alinement (Fig. 2) with the margins of the arched portion of the front edge 52 of the plate 50, and the shoe-engaging portion of the stop 60 is approximately in alinement with the portions of the rotary abrading tool 66 engaged by the lateral margins of the lip 32 of the heel. With such an arrangement it will be clear that the length of the attaching face of the heel reduced by the machine will be approximately equal to the distance between the heel-breast receiving shoulder and the rear end of the heel seat of the shoe. As above stated, the face 72 of the abutment 70 may be quickly alined with the front edge 52 of the plate 50 by the above-described mechanism.

It will be apparent that when the table 68 is raised or lowered upon the bell-crank lever 104, as above described, to present the heel differently to the rotary abrading tool 66, it will be desirable to adjust the stop 60 with relation to the bracket 120 so that the shoe-engaging portion of the stop shall be substantially in alinement with the portion of the tool engaged by the lateral margins of the lip 32 of the heel. Accordingly, in order to secure the stop 60 in different adjusted positions upon the bracket 120 the stop is provided with a tongue 178 which fits in a horizontal groove of the bracket, and an elongated slot 180 for receiving a clamp screw 182 which is threaded into the bracket.

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

1. A heel-fitting machine having, in combination, gages constructed and arranged to be engaged by the rear end of a shoe and a heel-breast receiving shoulder formed upon an attached sole of the shoe respectively, an abrading tool, a carrier for a Louis heel which is to be attached to the shoe, means for effecting relative movement of said carrier and said abrading tool in a predetermined path extending lengthwise of the heel to remove material from the entire width of the forwardly projecting lip of the heel thereby reducing the length of the heel, and means comprising connections between one of said gages and the heel carrier for controlling the extent of said relative movement of the carrier and the tool in said path in accordance with the length of the heel seat of the shoe measured by said gages.

2. A heel-fitting machine having, in combination, an abrading tool and a carrier for a Louis heel mounted for relative movement to remove material from the forwardly projecting lip of the heel, a plate secured to the carrier and constructed and arranged to be engaged by a heel-breast receiving shoulder formed upon an attached sole of a shoe to which the heel is to be secured, and a stop cooperating with the plate to measure the distance between the heel-breast receiving shoulder and the rear end of the shoe and to limit the amount of relative movement of the carrier and the tool.

3. A heel-fitting machine having, in combination, a stop, a gage mounted for pivotal movement and constructed and arranged to be engaged by a heel-breast receiving shoulder formed upon an attached sole of a shoe, a rotary abrading tool, and a carrier for a heel to be attached to the shoe, said carrier being mounted for pivotal movement toward the tool together with said gage to force the forwardly projecting lip of the heel against the tool, movement of the carrier toward the tool being limited by the engagement of the rear end of the shoe, the heel-breast receiving shoulder of the attached sole of which is in engagement with said gage, with the stop.

4. A heel-fitting machine having, in combination, a fixed stop, an abrading tool, a movable gage constructed and arranged to be engaged by a heel-breast receiving shoulder formed upon an attached sole of a shoe, a carrier for a heel which is to be attached to the shoe, said carrier being movable together with said gage, means for positioning the heel upon the carrier, and resilient means for normally urging the movable gage and the carrier to their inoperative positions away from the stop and the abrading tool respectively, said carrier and said gage being movable together from their inoperative positions under pressure of the shoe the heel-breast receiving shoulder of the attached sole of which is in engagement with said gage until the shoe has been forced against the stop thereby forcing the forwardly projecting lip of the heel against the tool to remove material from said lip so that the heel shall fit accurately upon the heel seat of the shoe.

5. A heel-fitting machine having, in combination, a gage constructed and arranged to be engaged by a heel-breast receiving shoulder formed upon an attached sole of a shoe, a carrier for a Louis heel which is to be attached to the shoe, means for positioning the heel upon said carrier with its forwardly projecting lip extending beyond the carrier, an abrading tool, said carrier being movable toward the tool to force the lip of the heel against said tool thereby removing material from the lip of the heel, and a stop constructed and arranged to be engaged by the rear end of the shoe the shoulder of the attached sole of which is in engagement with the gage to limit movement of the carrier toward the abrading tool thereby limiting the extent to which material is removed from the lip of the heel.

6. A heel-fitting machine having, in combination, a fixed stop, an abrading tool, a movable plate constructed and arranged to be engaged by the prepared heel seat of a shoe and a heel-breast receiving shoulder formed on an attached sole of the shoe, a carrier for a heel to be attached to the shoe, said carrier being movable together with the plate and comprising a table for supporting the heel, an abutment to be engaged by the rear end of the heel, a frame for orienting the heel upon the table and forcing it against said abutment, and resilient means for normally moving the plate and the carrier to their inoperative positions away from the stop and the abrading tool respectively, the carrier

and the plate being movable together from their inoperative positions under pressure of the shoe until the rear end of the shoe is forced against the stop thereby forcing the forwardly projecting lip of the heel against the tool to remove material from the lip of the heel so that the heel shall accurately fit the heel seat of the shoe.

7. A heel-fitting machine having, in combination, an abrading tool rotatable about an axis, a carrier for a Louis heel, means for positioning the heel upon the carrier, means for moving the carrier with relation to the tool about an axis which is parallel to the axis of rotation of the tool to remove material from the forwardly projecting lip of the heel, means for regulating the degree of movement of the carrier in accordance with the length of the prepared heel seat of a shoe to which the heel is to be attached, and means for initially adjusting the carrier toward or away from the axis about which it is rotated to cause the lips of heels operated upon by the machine to engage differently shaped portions of the abrading tool in accordance with the desired shape of the front edge of the lip of the heel.

8. A heel-fitting machine having, in combination, gages constructed and arranged to be engaged by the rear end of a shoe and a heel-breast receiving shoulder formed on an attached sole of the shoe respectively, an abrading tool, a carrier for a Louis heel which is to be attached to the shoe, said carrier and said abrading tool being mounted for relative movement to remove material from the forwardly projecting lip of the heel mounted upon the carrier, the extent of said relative movement of the carrier and the tool being regulated by the distance between the gages, and means for causing the lip to be operated upon by differently shaped portions of said tool in accordance with the desired shape of the front edge of the lip of the heel.

9. A heel-fitting machine having, in combination, an endless abrading belt, a cylindrical roll upon which said belt is mounted, a carrier for a Louis heel, means for positioning the heel upon the carrier, said carrier being mounted for movement to force the heel against the abrading belt supported by the roll thereby removing material from the forwardly projecting lip of the heel, and means for regulating the amount of movement of the carrier in accordance with the length of the prepared heel seat of the shoe to which the heel is to be attached, the roll, the carrier and said means being adjustable about an axis disposed at right angles to the axis of rotation of the roll.

10. A heel-fitting machine having, in combination, an abrading tool and a carrier for a Louis heel mounted for relative movement to remove material from the forwardly projecting lip of the heel, a plate secured to the carrier, a yielding support for forcing against the plate the prepared heel seat of a shoe the heel-breast receiving shoulder of the attached sole of which is in engagement with the plate, and a stop constructed and arranged to cooperate with the plate to measure the distance between said heel-breast receiving shoulder and the rear end of the shoe and to limit the amount of relative movement of the carrier and the tool.

11. A heel-fitting machine having, in combination, an abrading tool rotatable about an axis, a carrier for a Louis heel, said carrier being mounted for movement about an axis which is approximately parallel to the axis of rotation of the tool to remove material from the forwardly projecting lip of the heel, and gages constructed and arranged to be engaged by the rear end of a shoe and a heel-breast receiving shoulder formed upon an attached sole of the shoe respectively to limit movement of the carrier toward the tool thereby insuring that the attaching face of the heel is reduced to a predetermined length in accordance with the length of the prepared heel seat of the shoe, and means for initially adjusting the carrier toward and away from the axis about which it is rotated for varying the path of movement of the carrier in order to cause differently shaped portions of the abrading tool to be rendered effective in reducing the lip of the heel in accordance with the desired shape of the front edge of the lip.

12. A heel-fitting machine having, in combination, a rotary abrading tool, a plate having a concave face and an arched edge, means for yieldingly forcing against said face of the plate the reduced heel-seat portion of an attached sole of a shoe the heel-breast receiving shoulder of the sole of which is in engagement with said edge of the plate, a carrier for a Louis heel to be attached to the shoe, means for positioning the heel upon said carrier with its forwardly projecting lip extending beyond the carrier, said carrier being movable toward the abrading tool to force the lip of the heel against said tool thereby removing material from said lip, and a stop constructed and arranged to be engaged by the rear end of the shoe the shoulder of the attached sole of which is in engagement with said edge of the plate, movement of said carrier toward the abrading tool being limited by the engagement of the rear end of the shoe with the stop to limit the amount of material removed from the lip of the heel.

LEWIS J. BAZZONI.