Nov. 25, 1941. W. T. MINETT 2,263,682

MACHINE FOR FINISHING SHOE PARTS

Filed June 28, 1940 5 Sheets-Sheet 1

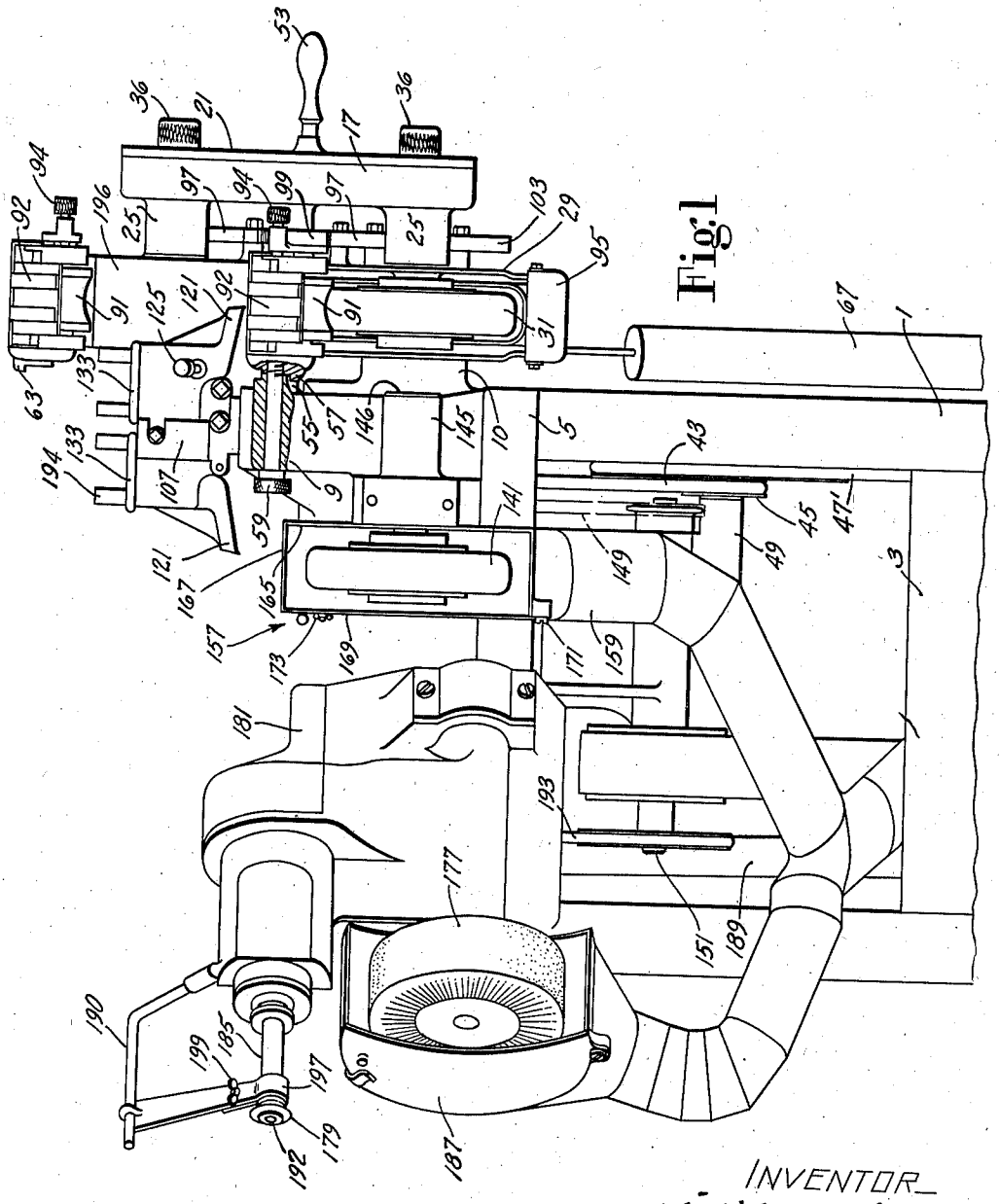


Fig. 1

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Fig. 2

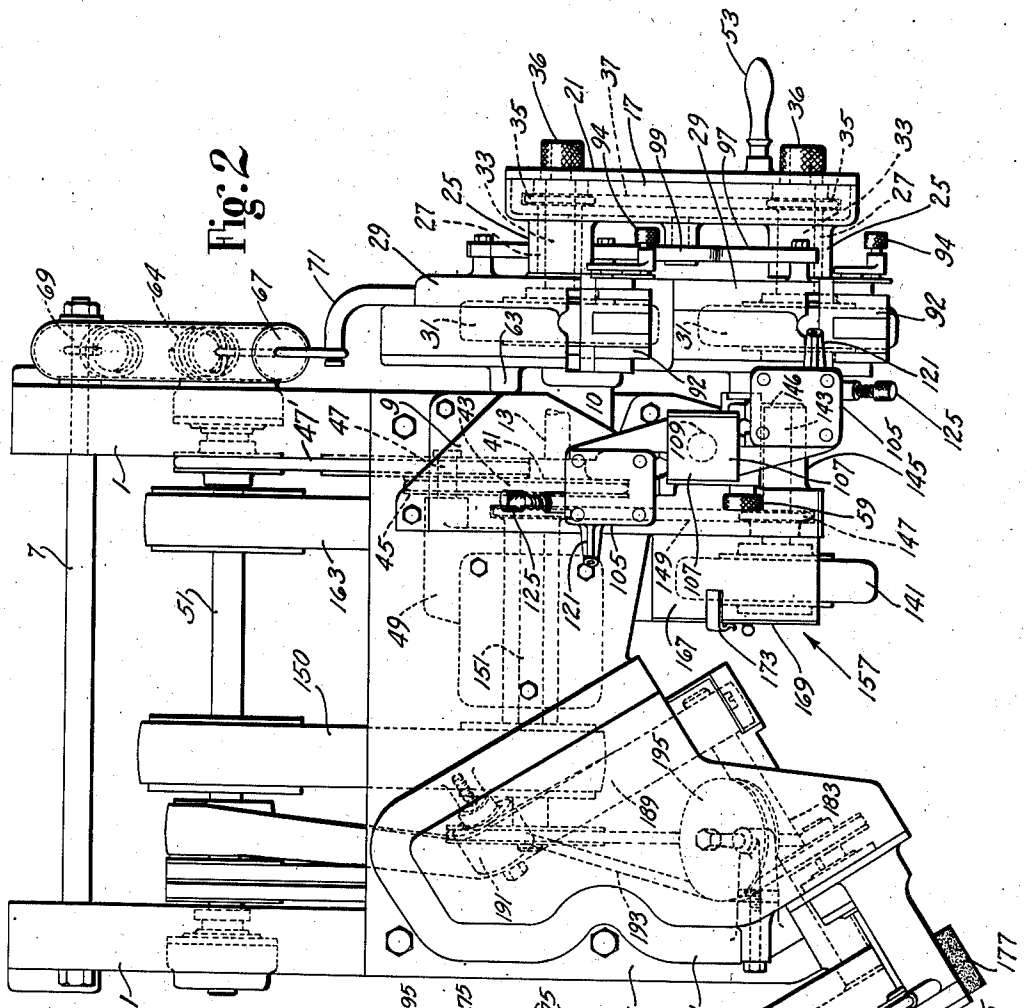
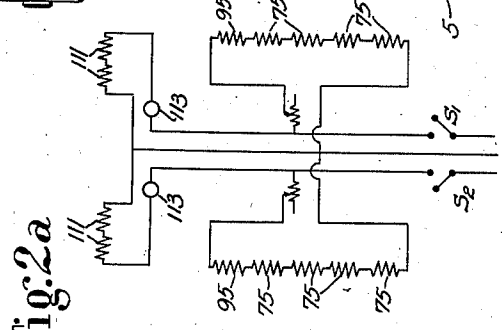


Fig. 2a



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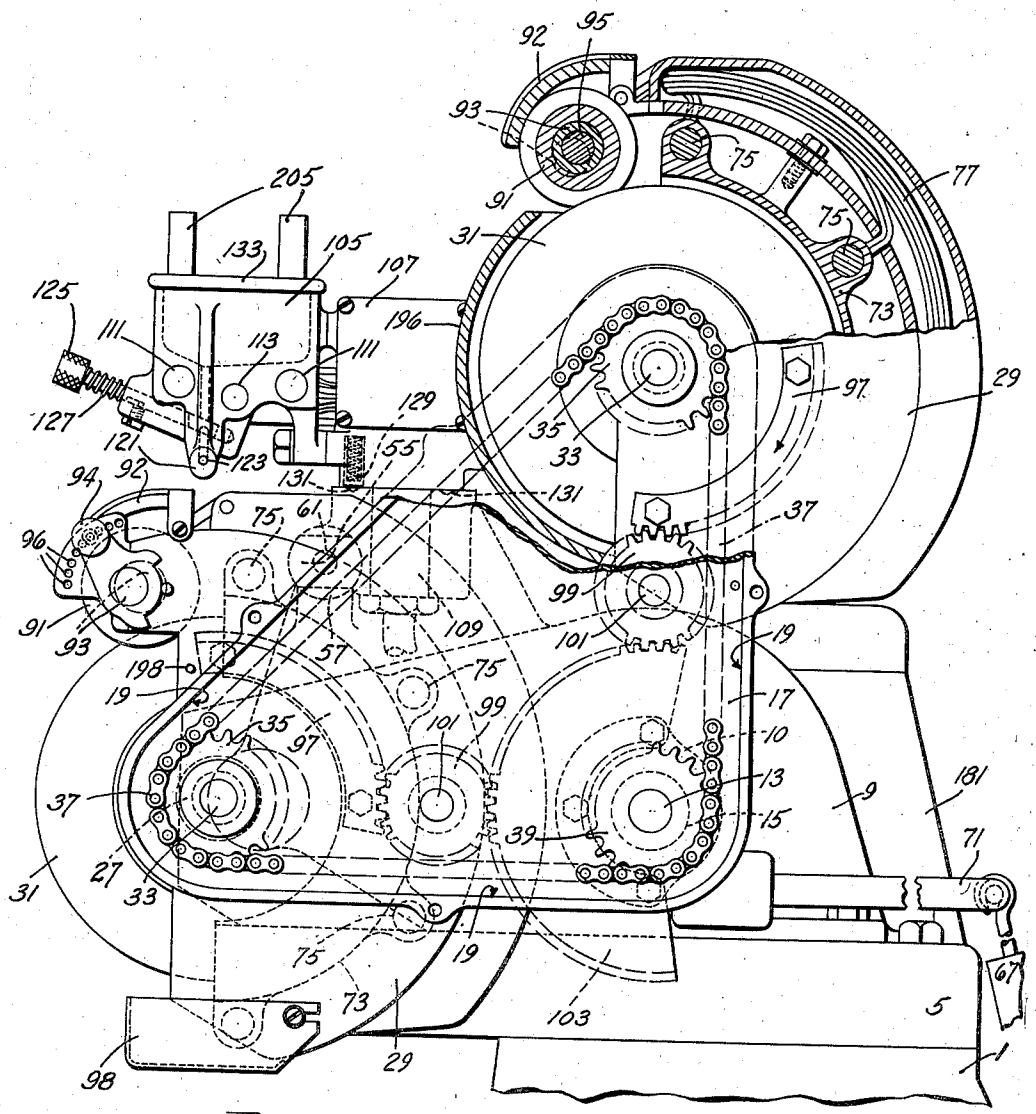


Fig. 3

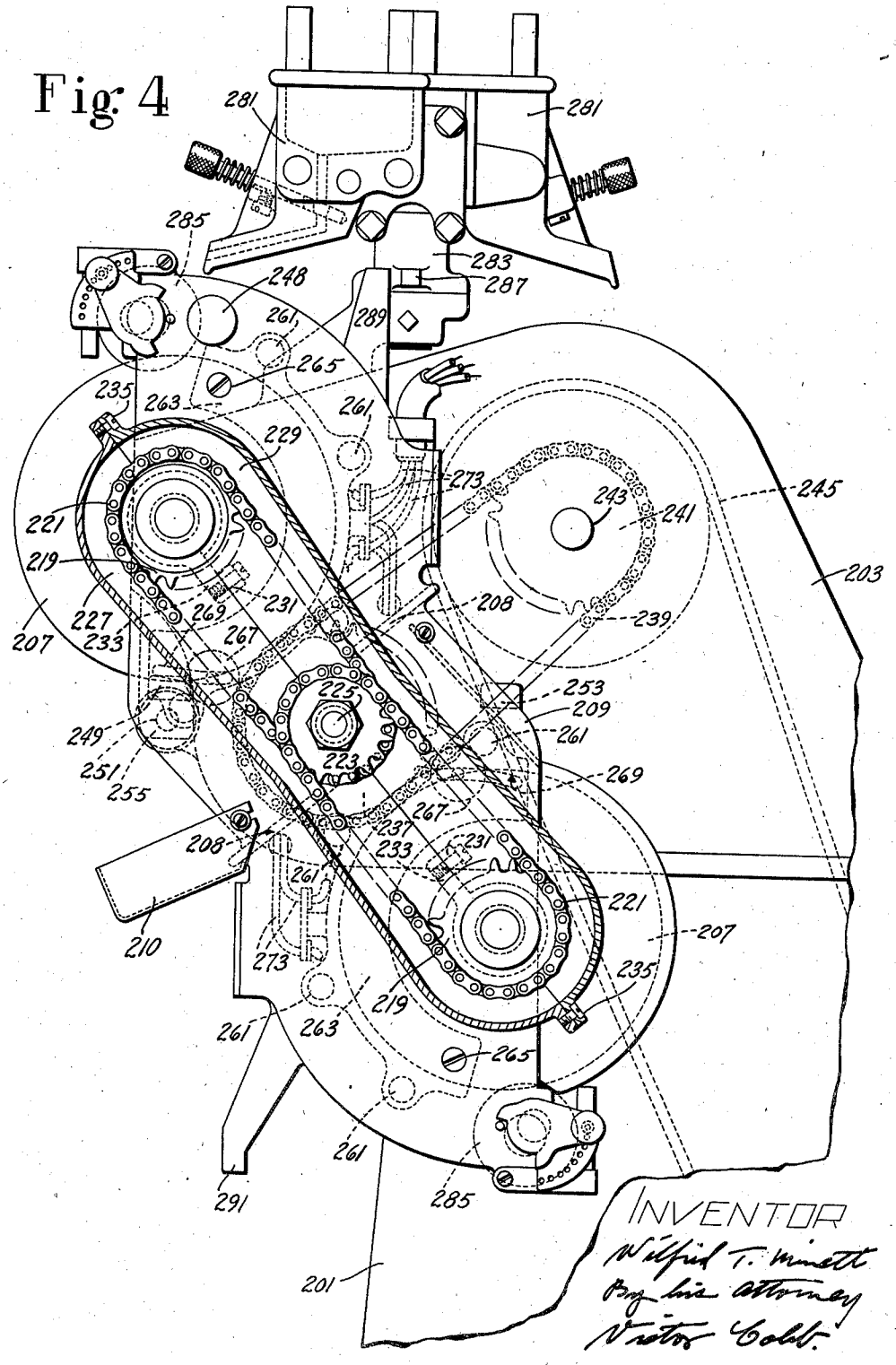
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MACHINE FOR FINISHING SHOE PARTS

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Fig. 4



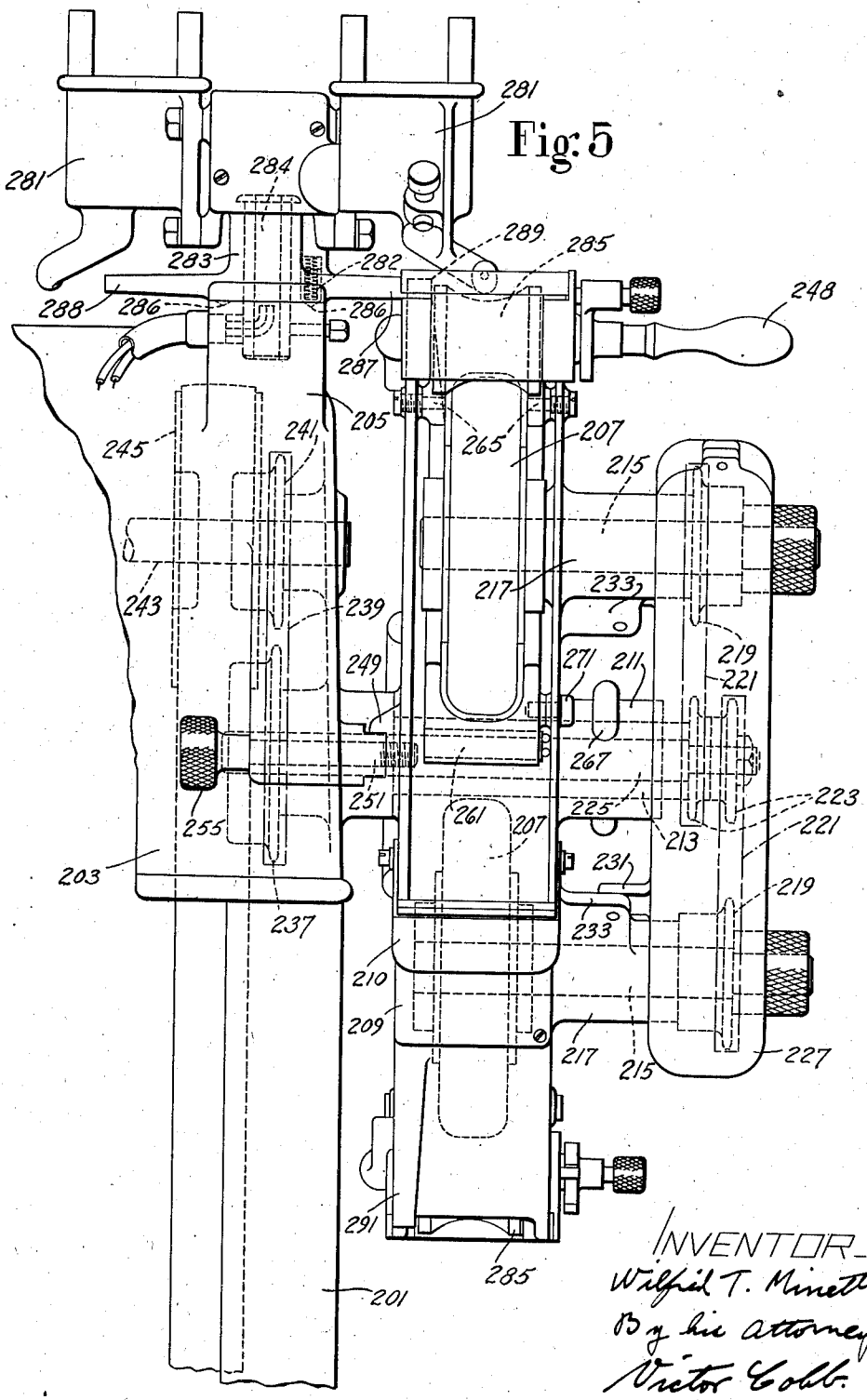
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Fig. 5



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Patented Nov. 25, 1941

2,263,682

UNITED STATES PATENT OFFICE

2,263,682

MACHINE FOR FINISHING SHOE PARTS

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Application June 28, 1940, Serial No. 342,958
In Great Britain July 29, 1939

22 Claims. (Cl. 12—1)

This invention relates to finishing machines and particularly to machines for finishing shoe parts by the application of a finishing material thereto and the subsequent treatment of the applied material to complete the finishing operation.

Machines of this general type, having a wax-applying roll for applying heated wax to a shoe part such as, for example, the edge faces of a heel, and also having a plurality of finishing tools for completing the finishing operation on the shoe part after the application of the wax thereto, including a polishing pad or roll and a finishing brush, are well known in the art. A metallic wheeling tool for indenting the finished heel adjacent to its seating portion is usually mounted on the machine conveniently near to the finishing brush.

Such machines, while quite satisfactory for finishing parts with a particular color of finishing material, such as wax, are not capable of easy and rapid change-over to a different color of finishing material, since this procedure involves not only the removal of the applying roll, polishing pad and finishing brush, and the substitution of others appropriate for the new color of material, but also a considerable delay consequent to the heating of the substituted applying roll to operating temperature where the finishing material, hereinafter referred to as wax, is of a character to require application in the heated state, as is the case with finishing waxes usually employed. Further delay is also involved in waiting for a heated roll to cool down sufficiently to be handled.

It is, therefore, an object of this invention to provide an improved machine of the type mentioned above which is capable of convenient operation to finish shoe parts with a particular color of finishing material and to permit a change-over from one color of material to another in a quick and efficient manner.

With this object in view, there is provided as an important feature of this invention a machine having a plurality of wax-applying rolls which are alternatively movable to operative position on the machine and preferably in substantial alinement with the working plane of other shafts arranged selectively to receive finishing tools appropriate for completing the finishing operation after the application of wax by ane one of the applying rolls, so as to place the applying roll in use conveniently adjacent to the other finishing tools, thus facilitating the successive use of the applying roll and finishing tools by the operator.

Further, with the attainment of this object in view, there is provided, as an additional feature of this invention, a wax-applying means comprising a pair of separate applying rolls, operatively mounted for alternative swinging movement to the same operative position on the machine in a carrier having casings partially surrounding the rolls and including heating elements which are selectively and independently operable so that the rolls can be heated during use and also prior to a change-over from one roll to the other, and means, individual to each roll, for selectively feeding heated wax of a particular color thereto.

In another aspect, features of this invention include the construction and arrangement of the carrier casings and the individual wax-feeding means, as well as the heating units, roll drive mechanism and distributing rolls for the pair of separate applying rolls. In one of the two illustrative embodiments, described below, these casings are rotatably mounted on the carrier and are automatically held in the same orientation with respect to the frame in such a manner that the rolls are suitably exposed for use when swung to their operative position, while in the other embodiment these casings are formed integrally with the carrier and positioned so as to present the rolls through open sides when in operative position. In the latter embodiment the heating elements are adjustable with respect to the periphery of the rolls, and means are also provided to prevent inadvertent use of the wrong wax-supplying means with a particular applying roll. In both of the illustrative embodiments the applying rolls are driven from a common power source and are continuously operated while the machine is in use, and means are provided for locating and locking the carrier with either of the two rolls in operative position.

These as well as other objects and features of this invention will appear from the following detailed description of two illustrative embodiments of the invention, when considered with the accompanying drawings, and will be pointed out in the appended claims.

In the drawings:

Fig. 1 is a front elevational view of an illustrative machine, part of the frame being broken away;

Fig. 2 is a plan view of the machine;

Fig. 2*a* is a diagram of an electrical circuit used in the machine;

Fig. 3 is a right-hand side elevational view,

partly in section and partly broken away of a portion of the machine;

Fig. 4 is a side elevational view of a portion of a modified machine; and

Fig. 5 is a front elevational view of parts seen in Fig. 4.

The machine shown in Figs. 1, 2 and 3 is provided with a main frame comprising side portions 1 spaced apart by a front plate 3, a top casting 5 and a strut 7 (Fig. 2) at the rear of the machine and secured to the side portions of the frame near to the base thereof. Secured to the top casting and upstanding therefrom is a forwardly and rearwardly extending casting 9 having an extending portion 10 providing a bearing in which is journaled a horizontal shaft 13 (Fig. 3) extending transversely of the machine. A portion of this extending portion is turned on its outer cylindrical face to form an external bearing 15 on which is journaled a carrier bracket 17, a boss on the carrier bracket engaging over said cylindrical face. The carrier bracket, viewed from the right-hand side of the machine as in Fig. 3, is approximately of triangular shape and is journalled on the bearing 15 near one apex of the triangle. The carrier bracket is in the form of a hollow casting, having walls 19 extending to the right of the machine along the sides of said triangle and is provided with a cover plate 21 (Figs. 1 and 2) which is secured to outer ends of said walls by screws.

At locations near each of its other two apexes the carrier bracket is provided with bearing bosses 25, 25, extending to the left of the machine from said carrier bracket, each receiving a hollow boss 27 extending from a hollow, partly cylindrical casing 29. Received in each of said hollow bosses 27, 27 is a short, horizontally disposed shaft 33 on one end portion of which is secured a wax-applying roll 31. Each casing 29 partially surrounds the corresponding roll 31 (see Fig. 3). Keyed onto the other end portion of each of the shafts 33, 33 and within the hollow casting of the carrier bracket 17 is a sprocket wheel 35. The keying of the sprocket wheels 35, 35 to the shafts 33 enables these shafts to be partially withdrawn from their bearings in the bosses 27, 27 to permit removal of the wax-applying rolls 31, 31 from the machine when so desired, and knurled heads 36, 36 are provided to facilitate their withdrawal.

The sprocket wheels 35, 35 are both driven by a chain 37 which passes over a driving sprocket wheel 39 (Fig. 3) secured to the outer end portion of the shaft 13. The other end portion of the shaft 13 is provided with a pulley 41 (Fig. 2) driven at a reduced rate by belting 43 from a pulley 45 on an intermediate shaft 47 journaled in a portion 49 of the machine frame and extending transversely of the machine (Fig. 1). This intermediate shaft 47 is driven by the belt 47', also at a reduced rate, from a main shaft 51 (Fig. 2) of the machine which in turn may be driven by an electric motor or from some convenient external source of power. Thus the wax-applying rolls are continuously driven when the shaft 51 is rotated.

The carrier bracket 17 is swingable about its bearing 15 by means of a handle 53 to bring either one of the wax-applying rolls 31, 31 alternatively into the same operative position at the front of the machine where the roll is substantially in alinement with other finishing tools, namely a polishing roll 141 and a finishing brush 177, for completing the finishing operation after the application of wax (Fig. 1). When the lowermost wax-applying roll 31 is in operative position one side of a stop 55 on the casting 9 engages a projection 57 on the corresponding casing 29 (Fig. 1), and the carrier bracket may be locked in this position by means of a locking bolt 59 extending through a portion of the casting 9 and engaging a threaded bore 61 in the casing 29 (Fig. 3) just referred to. To bring the uppermost wax-applying roll 31 into operative position the bolt 59 is withdrawn and the carrier bracket swung so as to move the lowermost wax-applying roll rearwardly and downwardly while the uppermost wax-applying roll is moved downwardly and forwardly of the machine to said operative position. This position of the carrier bracket 17 is determined by the opposite side of the stop 55 engaging a projection 63 (Fig. 1) on the casing 29 of the uppermost wax-applying roll, and the carrier bracket is locked in this position by the locking bolt 59 engaging a threaded bore (similar to the bore 61) in this casing.

The weight of the carrier bracket and the parts supported thereon is at least partially balanced, about the pivot of the carrier bracket, by means of a spring 64 housed in a tubular casing 67, a lower end portion of which is mounted on a horizontal pivot 69 near the base of the machine frame to permit of rocking movement of the casing as the carrier bracket is moved, as above described. One end portion of this spring is attached to an arm 71 on the carrier bracket and the other end portion of the spring is anchored within the tubular casing 67 to the horizontal pivot 69 (Fig. 2).

As the wax-applying rolls are used to spread heated wax, means are provided for heating these rolls. Within each of the casings 29, 29 is supported a heating unit 73 (Fig. 3) which surrounds the rearward portion and part of the side portions of the corresponding wax-applying roll. In each heating unit are arranged electrical heating elements 75 for heating the roll. Each heating unit 73 is arranged as near its wax-applying roll as is practicable to ensure a maximum heating effect. Electric current is supplied to the elements 75 through wires 77 etc. The temperature of the wax-applying rolls may be controlled by means of a manually adjustable rheostat (not shown) included in the electric circuit supplying the heating elements.

Each of the wax-applying rolls is provided with a wax-distributing and conforming roll 91. These rolls are freely rotatable on eccentric portions of spindles 93, 93 rotatably mounted in end portions of the casings 29, 29. Each spindle may be rotated to move the wax-distributing roll carried thereby into engagement with its associated wax-applying roll 31 and may be locked, by means of a plunger 94 engaging one of a series of holes 96 in the casing 29, so that its wax-distributing roll 91 is pressed against the wax-applying roll. In addition to distributing wax on the rolls 31, 31 the rolls 91, 91 act to restore the shape of the former if they become deformed by pressure of work urged against them during the operation of the machine. A wax-collecting trough 98 secured to each casing 29 is provided to collect any surplus wax which may drip from the roll 31. Each wax-distributing roll 91 is heated by means of an element 95 in the spindle 93, which heating element is connected in the same circuit with elements 75, 75. A shield 92 is arranged over each of the rolls 91, 91 (Fig. 1).

In order to preserve the orientation of each

casing 29 and the parts supported thereon with respect to the machine frame and horizontal axis of the shaft 33 of its wax-applying roll 31, no matter what position the carrier bracket 17 occupies between the positions defined by the stop surfaces 57 and 63, each casing 29 has secured to it a toothed quadrant arm 97, the centre of the quadrant arm being that of the respective wax-applying roll 31. Each of the quadrant arms 97 engages a separate idler pinion 99 freely mounted on separate studs 101 on the carrier bracket. These pinions mesh with a semicircular toothed quadrant arm 103 secured to the extending portion 10 of the casting 9, which forms a part of the machine frame. The radii of the various toothed arms are equal so that, as the carrier bracket is swung about its pivot to bring one or other of the wax-applying rolls 31, 31 into operative position, each idler pinion 99 is caused to rotate as it moves in engagement with the toothed arm 103 and thus causes the respective quadrant arm 97 with which it engages to so rotate the casing 29, to which that quadrant is secured, as to maintain the orientation of that casing with respect to the machine frame and to the axis of the shaft 33 of that wax-applying roll constant.

The machine is provided with two wax pots 105, one for use with each wax-applying roll to supply wax of particular color thereto. The wax pots are mounted on opposite sides of a member 107 (Fig. 2) swingable about a vertical pivot 109 upstanding from the casing 9. This permits the wax pots 105 to be swung into wax-supplying relationship with the appropriate wax-applying roll when the latter is in operative position. Each wax pot comprises a generally rectangular receptacle which is electrically heated by means of heating elements 111 carried in a lower portion of the wax pot and is provided with a thermostat 113, also carried in said lower portion of the wax pot, to control the temperature of wax placed in the wax pot. This thermostatic control of the temperature of the wax prevents the wax from being overheated to such an extent that it boils and forms wasteful and objectionable fumes.

The heating elements for one of the wax-applying rolls, including both the elements 75, 75 and element 95, and the element 111 for the corresponding wax pot, constitute a group of units which are connected by appropriate cables and connections, the elements for the wax-applying roll via the rheostat aforesaid and those for the wax pot including the said thermostat, to a suitable switch (not shown). The heating elements of the other wax-applying roll and its wax pot constitute another group of units which are similarly connected to a second switch (not shown). In Fig. 2a there is shown a diagram of a suitable electric circuit for supplying current to the several heating units in the foregoing manner. It is thus possible to have both wax-applying rolls and both wax pots heated continuously when frequent change-over from one to the other is required, or to have only one wax-applying roll and the corresponding wax pot heated if so desired, for example, when the change-over is less frequent. In the latter case the operator will usually at some time before such changeover is required switch on the heating of the other wax-applying roll and wax pot so that when said change-over is effected this roll will be sufficiently heated satisfactorily to apply wax to the edge face of a heel. In this manner delay consequent to waiting for a wax-applying roll and its associated parts to become heated is avoided.

Each wax pot is provided with a depending spout 121 in which is a passage 123 through which wax is delivered to the wax-applying roll at the will of the operator under control of a wax-spotting device comprising a spring-pressed plunger 125 (Fig. 3) which normally closes the passage 123 which communicates with the receptacle of the wax pot, but which, on pressure applied to it against the action of its spring 127, moves to open the passage 123 and allows wax to be supplied to the wax-applying roll. The member 107 is maintained with one or other of the wax pots 105 in wax-supplying position by means of a spring-pressed plunger 129 mounted in the member and arranged to engage in appropriate depressions 131 in the casting 9. Each wax pot is provided with a cover plate 133 swingable between positions in which the wax receptacle is open or closed.

With the mechanism above described it is possible to apply heated wax of one of two colors to a shoe part and to readily change over from one color to another without loss of time. To take advantage of these features and to adapt the machine for completing the finishing operation after wax of either of the two colors has been applied, the machine is provided with finishing tools which are readily replaceable.

A polishing roll 141 (Figs. 1 and 2) is detachably secured to a horizontal shaft 143 extending transversely of the machine, and parallel to and at least substantially in the same horizontal plane as the shaft 13 and the axis of the wax-applying roll which is in operative position. This shaft is journaled in a bearing 145 formed in the casting 9, the polishing roll being detachably secured, in any desired manner, to a portion of the shaft extending to the left of the casting 9, when looked at from the front of the machine as in Fig. 1, and is provided with a sprocket wheel 147 (Fig. 2) driven at a reduced speed by chain drive 149 from an intermediate shaft 151 journaled in the machine frame and extending transversely thereof. This shaft 151 is also driven at a reduced speed by a belt 150 and pulley drive from the shaft 51. The shaft 143 is retained in its bearing 145 by means of a right-hand end surface of the hub of its sprocket wheel 147 engaging a face on the left-hand side of the bearing 145 and by a washer 146 secured to the right-hand end of said shaft and engaging the right-hand face of said bearing.

The polishing roll 141 is partially surrounded by means of a hood 157 connected, through a duct 159 (Fig. 1), to dust-extracting means, comprising a fan (not shown) but mounted on the frame of the machine and driven from the main shaft 51 by belting 163. The hood 157 has a portion 165 adjacent to the right-hand side of the polishing roll which is fixed in position to the machine frame, a curved portion 167, also fixed, which surrounds the rearward part of the periphery of the roll and a portion 169, adjacent to the left-hand side of the roll, which is readily swingable, to facilitate removal of the polishing roll, about a pivot stud 171 mounted in the fixed portion 167 of the hood at a location beneath the axis of the roll. This movable portion 169 of the hood is held in normal position by means of a spring catch 173. To remove the polishing roll 141 from its shaft 143, the portion 169 of the hood is moved to allow the roll to be withdrawn from its shaft.

The machine is also provided with a readily replaceable polishing brush 177 mounted in a

casting 181 secured to the top casting 5 of the machine frame. The polishing brush 177 is secured with capacity for ready removal therefrom to the left-hand end portion of the shaft 183 journaled in bearings in the casting 181. The shaft 183 is disposed at an angle to the shaft 13 when considered in plan view as seen in Fig. 2, and extends forwardly and toward the left-hand side of the machine. The polishing brush is partially surrounded by means of a hood 187 substantially similar to that described with reference to the wax-polishing roll and this hood is also connected to the dust-extracting means of the machine. The polishing brush 177 is driven by belt and pulley drive from the main shaft of the machine at a speed slightly greater than that of the main shaft, the belt 189 passing over idler pulleys one of which is shown at 191 mounted on pivot studs in the machine frame with capacity for angular adjustment in such a way as to take care of the angular relationship between the polishing brush shaft and the main shaft. The polishing brush 177 may be readily removed from its shaft by slackening a set screw with which the brush is secured to its shaft and withdrawing the brush from the shaft after moving the swingable side portion of its hood out of the path of the brush.

Mounted on a shaft 185, arranged above and parallel to the shaft 183, is a seat wheeling tool 179 driven, at a speed substantially equal to or slightly greater than that of the main shaft, by means of belt and pulley drive from the intermediate shaft 151, the belt 193 passing over an angularly disposed idler pulley 195 to take care of the angular relationship of the seat wheeling tool shaft and the second intermediate shaft. The seat wheeling tool is heated frictionally by means of a friction clamp 197 engaging its shaft 185 at a location near to the seat wheel, the pressure exerted by the clamp on the shaft being adjustable by means of a thumb nut 199 and which clamp is mounted on an upstanding arm 190 fixed in the portion of the casting 181 in which the seat wheeling tool shaft is journaled. The seat wheeling tool is removed from its shaft when required (as when changing to a tool of different shape) by unscrewing a bolt 192 which retains the tool on the end of the shaft and withdrawing the tool from the shaft. Spare seat wheeling tools of different patterns or shapes may be kept hot by supporting them on small pins 194 upstanding from the wax-pot cover plates 133.

When operating the machine which has just been described for finishing the edge face of heels of a particular color, the operator will bring the appropriate wax-applying roll 31 and appropriate wax pot 105 into operative position and will provide the machine with a polishing roll 141 and polishing brush 177 for use with that color. The heel is then treated in the usual manner of operation of machines of this type, being first presented to the selected wax-applying roll 31, which has previously been heated and supplied with wax from the selected heated wax pot in use, for the application of wax to the edge face of the heel. Next, by moving the shoe slightly to the left the waxed face of the heel is presented to the polishing roll 141 and then by a further movement to the left the edge face of the heel to the finishing brush 177, which brushes and further polishes that face. The heel is finally placed against the seat-wheeling tool 179 and manipulated about the tool so as to form indentations on its edge near to its seat face and to smooth and iron the edge face adjacent to the indentations in the usual manner.

When occasion arises for changing from finishing with wax of one color which, for example, has been applied by the lowermost wax-applying roll, to finishing with wax of a different color, to be applied by the uppermost wax-applying roll, the operator will first of all swing the wax pot carrier arm 107 slightly, in a clockwise direction as seen in Fig. 2, to a position in which the spout 121 of the forward wax pot will be clear of the uppermost wax-applying roll as he swings the carrier bracket 17 about its pivot (after releasing the locking bolt 59) to bring the uppermost wax-applying roll into operative position, the bracket 17 then being locked in this position by the bolt 59. The operator will then swing the carrier arm 107 in an anticlockwise direction as seen in Fig. 2 to bring the other wax pot into position to supply wax to the wax-applying roll now in operative position. When the operator wishes to change back again to use the lowermost wax-applying roll he will go through the above-described operations in reverse order.

The operator will usually place a loose cover 196 around the forward portion of the wax-applying roll not in operative position to minimize loss of heat from that roll, the cover being supported on pins (one being shown at 198 in Fig. 3) secured in the casings 29. This cover will also be used to conserve heat when heating up that one of the rolls which it is desired to use first after the machine has been standing idle for a period, or when heating one of the rolls prior to an anticipated change-over from one color to another.

It will be observed that by the arrangement of the finishing tools 141 and 177 in a generally common operating zone or plane at the front of the machine the several finishing steps can be accomplished with a minimum of physical effort on the part of the operator and, since the operative position on the machine which is occupied alternatively by the two wax-applying rolls lies in this common operating zone or plane and also at the front of the machine, that this convenience of operation extends to the wax-applying step, regardless of which applying roll is in use. As explained above, the heating units associated with each applying roll and its wax pot are selectively and independently operable, thus providing complete flexibility of control for heating the applying rolls while in use or in inoperative position.

Referring now to Figs. 4 and 5, a slightly modified two-color wax-applying mechanism will be described. As the remainder of the machine is unchanged, these figures show only the right-hand end thereof, and the description is likewise limited.

This modified machine comprises a frame having side portions similar to those of the machine first described, one of which is shown at 201 in Figs. 4 and 5, and a casting 203, secured to upper end portions of the side portions 201 and having, at a right-hand end thereof, an upstanding portion 205. The machine now being described is provided with finishing tools, including a polishing roll, a polishing brush and a seat-wheeling tool, mounted in the machine for ready replacement in a manner at least substantially similar to that of the machine described above, and has two wax-applying rolls 207, 207 arranged so that either of the rolls may be brought into operative position at the front of the machine and con-

veniently adjacent to the finishing tools for applying wax of appropriate color to the heel of a shoe presented thereto.

A carrier bracket 209, of approximately reversed-S shape, has a boss 211 which is journaled on a sleeve 213, projecting horizontally to the right-hand side of the machine from the casting 203, and may be swung on sleeve 213 to bring each of the rolls 207, 207 alternatively into operative position. The carrier bracket is hollow and is arranged partially to surround the wax-applying rolls 207, 207, a wall 208 separating the portion surrounding one of the rolls from the portion surrounding the other of the rolls. Removable drip pans are provided for use with the roll in operative position, one of these pans being shown at 210. The rolls 207, 207 are mounted on separate shafts 215, 215 journaled in bearings 217, 217 in the carrier bracket 209. Sprocket wheels 219 are keyed onto right-hand end portions of the shafts 215 in a similar manner, and for a similar purpose, to the sprocket wheels 35 described above. The sprocket wheels 219 are driven by chains 221 from sprocket wheels 223 secured to a shaft 225 journaled in the sleeve member 213. The sprocket wheels and chains are completely enclosed in a hollow casing comprising two portions 227, 229 (Fig. 4) secured by bolts passing through lugs 231 in the portion 227 into lugs 233 projecting from the bearings 217 (Fig. 5). The portion 229 is secured to the portion 227 with capacity for ready removal therefrom by screws 235. The shaft 225 has a sprocket wheel 237 secured thereto driven by a chain 239 from a sprocket wheel 241 secured to a horizontal shaft 243 journaled in bearings in the casting 203 and driven by belt and pulley drive 245 from a main shaft, not shown, but similar to the shaft 51 described above with reference to the first machine.

The carrier bracket 209 may be swung, by means of a handle 248 secured to the carrier bracket, through 180° about the sleeve 213 to bring one or the other of the wax-applying rolls 207, 207 into operative position at the front of the machine and in substantial alinement with the other finishing tools with which this machine is provided as above explained. When one of the rolls 207 is in operative position a stop 249 on the carrier bracket is in engagement with a stop 251 in the portion 205 of the casting 203 and when the other of the rolls is in operative position a stop 253 (Fig. 4) on the bracket 209 is in engagement with the stop 251. The carrier bracket is locked in position with one or the other of the wax-applying rolls in operative position by means of a locking bolt 255, similar to the bolt 59 described above.

The wax-applying rolls 207, 207 are heated by means of electric heating elements 261, 261 mounted in heating units 263, 263 arranged partially to surround the rolls 207, 207. These units are mounted within the carrier bracket 209 and are adjustable, so that the distance between the heating elements and their rolls 207, 207 may readily be varied, about pivot studs 265, 265. Pivotal movement of these units about their pivot studs is limited by means of thumb screws 267, 267 shank portions of which pass through arcuate slots 269, 269 concentric with the axes of pivot studs 265, 265 in the carrier bracket, and are threaded into the secondary casings 263, 263. The casings 263, 263 are clamped in adjusted position by rotating the thumb screws 267, 267 until enlarged portions 271, 271 engage the carrier bracket 209. The heating elements are connected by means of cables 273, 273 to a suitable source of electric current through rheostats (not shown), there being one rheostat for each roll by which the temperature of the roll can be adjusted. The adjustment of distance between the heating elements and the rolls 207 is provided to enable the heater to be brought as close as possible to the rolls when heating the rolls up from the cold state and also to allow the heaters to be moved to keep the distance between them and the rolls 207 more or less constant as the rolls wear in use.

This machine is provided with two wax pots 281, 281, generally similar to those referred to above as 105, mounted on a member 283 swingable about a vertical pivot stud 284, upstanding from the portion 205 of the casting 203, to bring one or the other of the wax pots into position to feed wax of appropriate color to its associated wax-applying roll 207. A spring-pressed plunger 282 engages one or the other of two locating recesses 286, 286 on portion 205 when either of the wax pots is in feeding position. Associated with the wax-applying rolls 207, 207 are wax-distributing and conforming rolls 285, 285, adjustably mounted on the carrier bracket and corresponding both in construction and mode of operation to the rolls 91, 91 above described. In order to guard against the inadvertent use of the wrong wax pot with either of the wax-applying rolls, the following arrangement is provided.

The member 283 has two arms 287, 288, one associated with each wax pot, projecting outwardly and symmetrically from opposite sides thereof. Secured to the carrier bracket 209 and associated with one of the wax-applying rolls is an arm 289, and a second arm 291 is secured to the carrier bracket and associated with the other wax-applying roll. The arms 289 and 291 are unsymmetrically arranged on the carrier bracket, as will be evident from an inspection of Fig. 4.

With the uppermost wax-applying roll, as seen in Figs. 4 and 5, in operative position, the arm 289 occupies the position shown, and the correct wax pot is in wax-supplying relationship with this roll when the arm 287, associated with this wax pot, is positioned behind the arm 289 and with the plunger 282 engaging one of the recesses 286, 286. If the operator attempts to bring the other wax pot into position to supply wax to the wax-applying roll now in operative position he will not be able to do this since the arms 287 and 289 will prevent swinging movement of the wax pots in one direction and the arm 288 will engage the front side of the arm 289, to hold this other wax pot out of wax-applying position, if the wax pots are swung in the opposite direction.

When the lowermost wax-applying roll is brought into operative position, by swinging the carrier bracket in a clockwise direction as looked at in Fig. 4, stop 251 and projection 249 preventing movement in the opposite direction, the arm 291 will then occupy a position rearwardly of the position occupied by arm 289 and now the wax pot for this roll will be positioned by swinging the wax pots on stud 284 so that the arm 288, associated with this wax pot, is just in front of the arm 291 and the plunger 282 brought into engagement with the other of the recesses 286, 286. If an attempt be made to bring the other wax pot into wax-applying position, by swinging

the wax pots about stud 284 in one direction, the arm 287 associated therewith will engage the back side of arm 291 and will hold this other wax pot out of wax-applying position, while arms 288 and 291 will prevent swinging movement of the wax pots in the opposite direction. To bring the rolls back into the position shown in Figs. 4 and 5, the carrier bracket must be swung in an anti-clockwise direction as seen in Fig. 4 as stop 251 and projection 253 will prevent movement in the opposite direction.

In swinging the carrier bracket 209 to change over from using one of the wax-applying rolls 207 to using the other of these rolls, the arm 289 or the arm 291 will move the arm 287 or the arm 288, respectively, partially to rotate the wax-pot carrying member 283 until the arm 289 or the arm 291 rides out of engagement with the arm 287 or the arm 288, respectively. After completion of swinging the carrier bracket 209 the operator will manually complete the rotation of the member 283, initiated by the carrier movement, to bring the correct wax pot into wax-supplying position.

The machine just described operates in the same manner as the first machine, the part being finished first receiving a coating of heated wax of the desired color from one or the other of the wax-applying rolls 207, 207, and thereafter the finishing operation is completed by the readily replaceable tools provided. The change-over to another color is accomplished in the same manner as in the first machine, and since the wax-applying rolls are arranged to be alternatively brought to the same operative position and in substantial alinement with the other tools, the same convenience of operation is attained. Likewise, the heating units for the wax-applying rolls and their wax pots are arranged in groups for independent and selective operation in the same manner as in the first illustrative machine described above, thus making it possible to bring the idle wax-applying roll up to working temperature before the time of change-over.

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

1. A machine for finishing shoe parts comprising a plurality of devices for applying different kinds of finishing material to a shoe part arranged for alternative movement to an operative position on the machine, means for supplying a particular kind of finishing material to the device which is in the operative position, and means adapted selectively to receive finishing tools appropriate for continuing the finishing operation after finishing material of a particular kind has been applied to the shoe part by any one of said devices.

2. A machine for finishing shoe parts comprising two rolls for applying different kinds of finishing material to shoe parts arranged for alternative movement to an operative position on the machine, means for supplying a different kind of finishing material to each of said rolls when the roll is in the operative position, and a plurality of driven shafts adapted selectively to receive a series of finishing tools appropriate for completing the finishing operation on a shoe part after finishing material of a particular kind has been applied thereto by either one of said rolls.

3. A machine for finishing shoe parts comprising two rolls for applying a heated finishing material to shoe parts arranged for alternative movement to an operative position on the machine, separate means for supplying heated finishing material of a different color to each of said rolls when the roll is in the operative position, and a plurality of driven shafts adapted selectively to receive finishing tools appropriate for completing the finishing operation on a shoe part after heated finishing material of a particular color has been applied thereto by either one of said rolls.

4. A machine for finishing shoe parts comprising a frame, a polishing-roll shaft and a finishing-brush shaft arranged in substantially the same horizontal working plane at the front of said frame, and two rolls for applying different kinds of finishing material of different colors to shoe parts arranged for alternative movement to an operative position on said machine and in the said working plane, said polishing-roll shaft and said finishing-brush shaft being adapted to receive selectively a polishing roll and a finishing brush appropriate for completing the finishing operation on a shoe part after finishing material of a particular color has been applied thereto by either one of said applying rolls.

5. A machine for finishing shoe parts having, in combination, means for selectively receiving a plurality of different finishing tools appropriate for operating on a shoe part after finishing material of a particular color has been applied thereto, means for selectively applying finishing materials of different colors to shoe parts comprising a plurality of rolls mounted on said machine for alternative movement to an operative position in substantial horizontal alinement with the finishing tools, and separate finishing-material feeding means for each of the rolls, said feeding means each being constructed and arranged for selective positioning in feeding relation with one of the rolls when it is in operative position.

6. A machine for finishing shoe parts having, in combination, means for selectively receiving a plurality of different finishing tools appropriate for operating on a shoe part after heated finishing material of a particular color has been applied thereto, means for selectively applying heated finishing materials of different colors to shoe parts comprising a plurality of rolls mounted on said machine for alternative movement to an operative position in substantial horizontal alinement with the finishing tools, separate finishing material feeding means for each of said rolls, said feeding means each being constructed and arranged for selective positioning in feeding relation with one of the rolls when it is in operative position, and means for heating each of said rolls and each of said separate feeding means, said heating means being arranged so that each of said rolls and its feeding means can be selectively heated regardless of its position and independently of the other roll and its feeding means.

7. In a finishing machine having a frame and a driven finishing tool shaft, the combination of a wax-applying means comprising a pair of wax-applying rolls, and means for mounting said rolls on the frame for alternative movement to the same operative position adjacent to the finishing tool shaft.

8. In a machine for finishing shoe parts having a driven finishing tool shaft, the combina-

tion of a swinging carrier, a plurality of associated driven wax-applying tools on said carrier, means to bring a selected wax-applying tool substantially into axial alinement with the finishing tool shaft, and means for driving said selected tool.

9. In a finishing machine having a frame and a driven finishing tool shaft, the combination of means for applying differently colored finishing waxes to shoe parts comprising a pair of wax-applying rolls, a carrier for said rolls, means for mounting the carrier on said frame so that each of said rolls can be alternatively brought into the same operative position adjacent to the finishing tool shaft, and means for locating and locking said carrier when either of the rolls is in said operative position.

10. In a finishing machine having a frame and a driven finishing tool shaft, the combination of means for applying differently colored finishing waxes to shoe parts comprising a pair of wax-applying rolls, a carrier for said rolls pivotally mounted on said frame for swinging movement about a horizontal axis to alternatively present said rolls to the same operative position adjacent to said shaft, and a common drive means for said rolls.

11. In a finishing machine having a frame and a driven finishing tool shaft, the combination of means for applying differently colored finishing waxes to shoe parts comprising a pair of wax-applying rolls, a carrier for said rolls pivotally mounted on said frame for swinging movement about a horizontal axis to alternatively present said rolls to the same operative position adjacent to said shaft, a drive shaft alined with said horizontal axis, means for connecting said rolls to said drive shaft, and locating and locking means for said carrier.

12. In a finishing machine having a frame, the combination of a carrier, a pair of wax-applying rolls rotatably mounted on the carrier, said carrier being pivotally mounted on said frame for swinging movement to present each of said rolls alternatively to the same operative position, housings on said carrier partially surrounding each of said rolls, and means associated with each of the housings for heating the roll enclosed thereby.

13. In a finishing machine having a frame, the combination of a carrier, a pair of wax-applying rolls rotatably mounted on the carrier, said carrier being pivoted on said frame for swinging movement to present each of said rolls alternatively to the same operative position, housings on said carrier partially surrounding each of said rolls, and heating units associated with the housings for heating said rolls, said heating units each extending around a substantial part of the periphery of a roll and being adjustable with respect thereto.

14. In a finishing machine having a frame, the combination of a carrier, a pair of wax-applying rolls rotatably mounted on the carrier, said carrier being pivotally mounted on said frame for swinging movement to present each of said rolls alternatively to the same operative position, housings on said carrier partially surrounding each of said rolls, said housings being rotatably mounted on said carrier, and means associated with said frame, said carrier and said housings for maintaining the orientation of said housings constant with respect to said frame as the carrier is swung to present either of the rolls to operative position.

15. In a finishing machine having a frame, the combination of a swingable carrier, two wax-applying rolls mounted on said carrier and spaced apart angularly less than 180 degrees thereon, casings partially surrounding each of said rolls, and means to orient said casings with respect to said frame.

16. In a finishing machine having a frame, the combination of a carrier mounted for swinging movement on said frame, two wax-applying rolls on said carrier arranged for movement alternatively to operative position by the swinging of said carrier, casings associated with said carrier and partially surrounding each of said rolls, and stationary means on said frame cooperating with means on said carrier and on said casings to orient said casings with respect to said frame.

17. In a finishing machine having a frame, the combination of a carrier, a pair of wax-applying rolls rotatably mounted on the carrier, said carrier being pivotally mounted on said frame for swinging movement to present each of said rolls alternatively to the same operative position, housings on said carrier partially enclosing each of said rolls, and a wax-distributing and conforming roll associated with each of said housings shaped to conform to the working surface of the roll and adjustable with respect thereto.

18. In a finishing machine having a frame, the combination of a plurality of wax-applying rolls mounted on the frame for alternative movement to the same operative position, a plurality of wax containers each comprising a chamber and an outwardly extending delivery spout, means for supporting said containers on said frame for swinging movement constructed and arranged so that each of said delivery spouts can be selectively positioned over one of the applying rolls when said roll is in operative position, and means for holding the supporting means against accidental movement when a delivery spout is so positioned.

19. In a finishing machine having a frame, the combination of a pair of wax-applying rolls, a carrier for said rolls pivoted on the frame for swinging movement to present each of said rolls alternatively to the same operative position, a wax container comprising a pair of wax chambers each having a delivery spout, supporting means for mounting the container on the frame so that each of said spouts can be positioned over an applying roll when said roll is in said operative position, and cooperating locating means on the supporting means and the carrier for selectively positioning said spouts over said applying rolls as the latter are presented to operative position.

20. In a finishing machine having a frame, the combination of a pair of wax-applying rolls, a carrier for said rolls pivoted on the frame for swinging movement to present each of said rolls alternatively to the same operative position, a wax container comprising a pair of wax chambers each having a delivery spout, a carrier for mounting the container on the frame so that each of said spouts can be positioned over an applying roll when said roll is in said operative position, one of said carriers having a pair of symmetrically arranged projections and the other of said carriers having a pair of unsymmetrically arranged projecting portions, said projections and said projecting portions cooperating in such a manner that only one of said spouts can be positioned over either of said wax-applying rolls when that roll is in operative position.

21. In a finishing machine having a frame, the combination of a pair of wax-applying rolls, a carrier for said rolls pivoted on the frame for swinging movement to present each of said rolls alternatively to the same operative position, a wax container comprising a pair of wax chambers each having a delivery spout, supporting means for mounting the container on the frame so that each of said spouts can be positioned over an applying roll when said roll is in said operative position, a pair of symmetrically arranged projections on said supporting means, one associated with each of said wax chambers, and a pair of unsymmetrically arranged projecting portions on said carrier, one associated with each of said wax-applying rolls, the said projections and the projecting portion associated with the wax-applying roll which is in operative position cooperating in such a manner that only one of said spouts can be positioned over the wax-applying roll then in operative position.

22. In a finishing machine, in combination, a pair of rolls for applying heated wax to a shoe part alternatively movable to the same operative position on the frame, separate means for delivering heated wax to each of said applying rolls when the roll is in operative position, and heating units arranged in groups, the units of one group being associated with one of said rolls and its wax-delivering means and the units of the other group being associated with the other roll and its wax-delivering means, each of said heating unit groups being selectively and independently operable to heat its respective roll and the wax delivering means therefor.

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