

July 30, 1940.

C. M. BAGSHAW ET AL

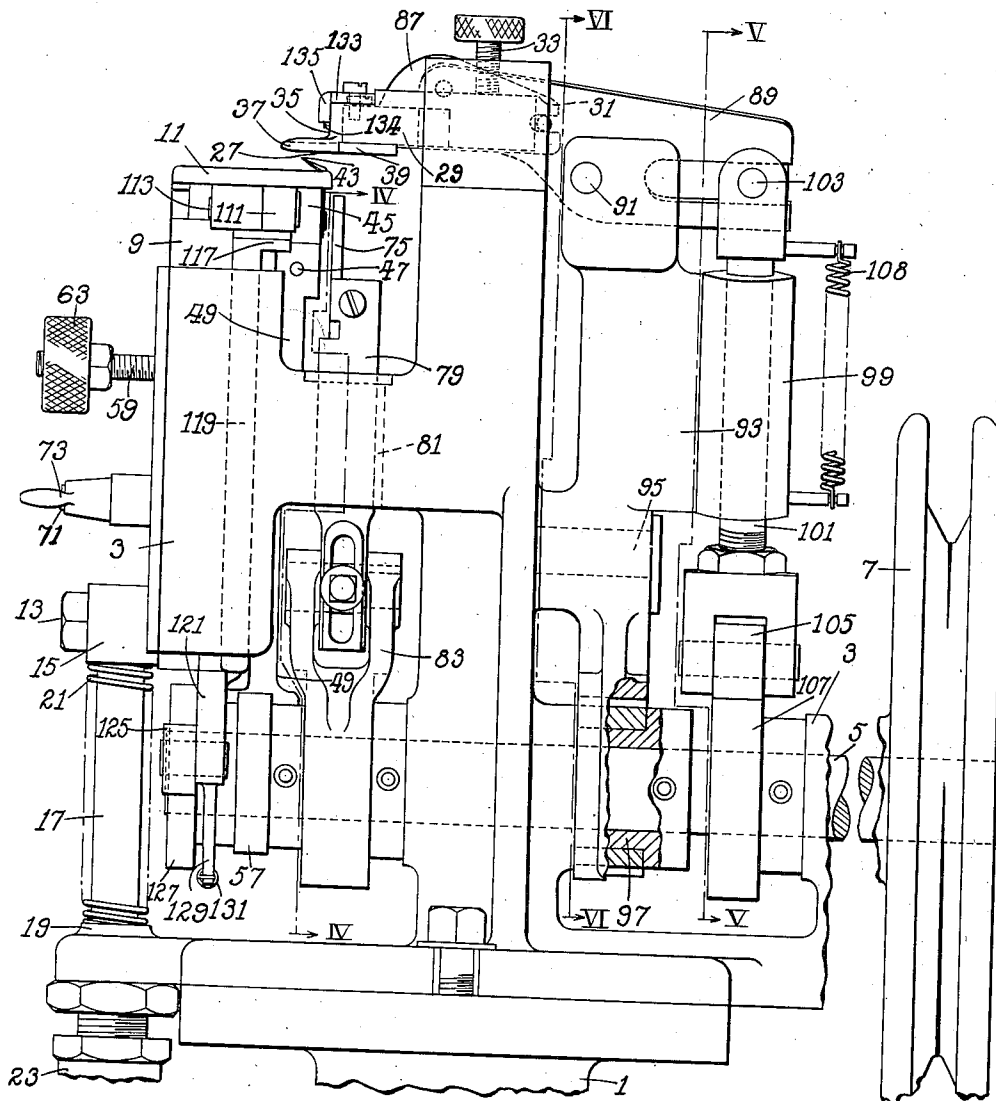
2,209,377

MACHINE FOR OPERATING ON SHOE SOLES

Filed March 13, 1939

4 Sheets-Sheet 1

Fig. 1.



INVENTORS

Charles M. Bagshaw
Vincent E. Wilson
Albert W. Hallam
By their attorney
Vinton Cobb.

July 30, 1940.

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4 Sheets-Sheet 2

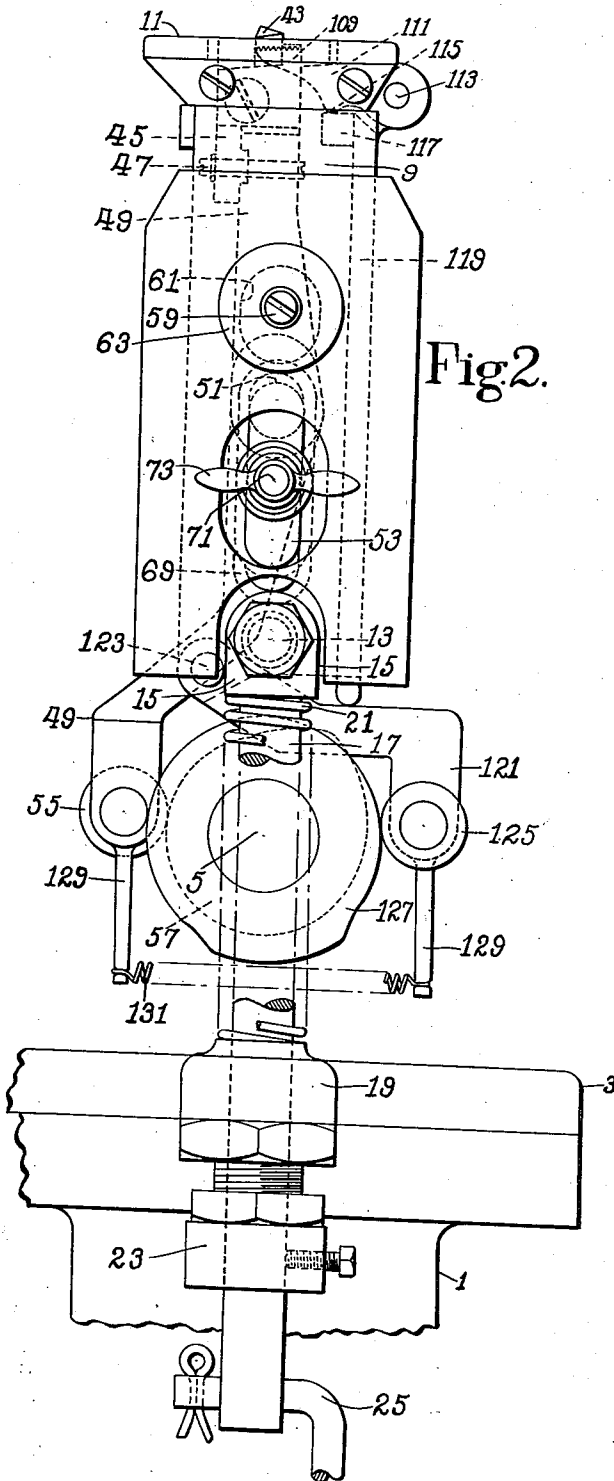


Fig. 2.

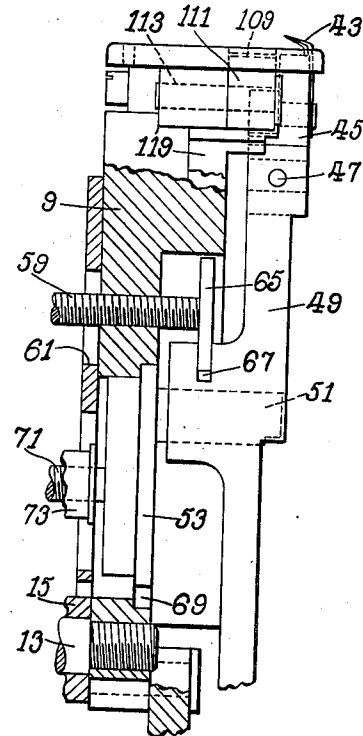


Fig. 3.

INVENTORS
Charles M. Bagshaw
Vincent E. Wilson
Albert W. Hallam
By their attorney
Victor Holt.

July 30, 1940.

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Fig. 5.

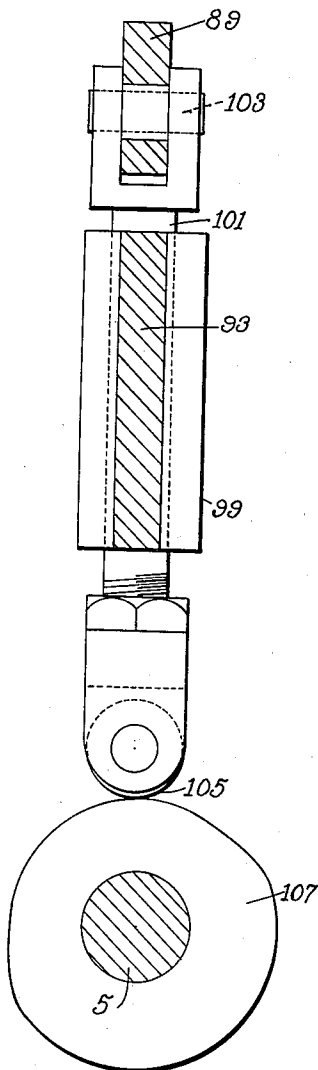


Fig. 6.

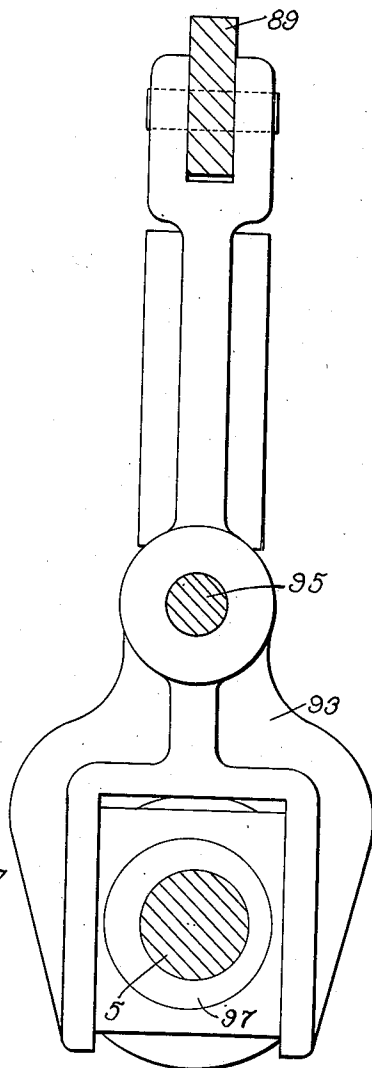
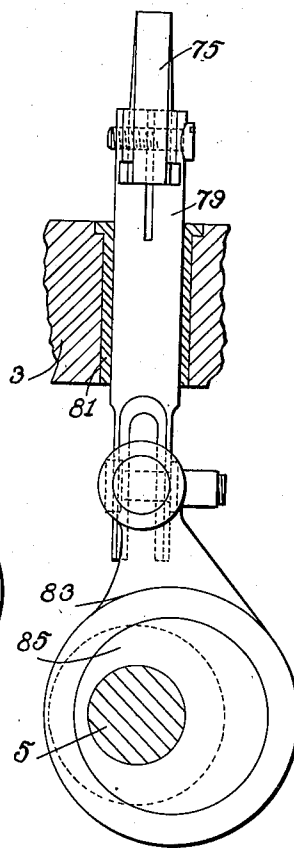


Fig. 4.



INVENTORS
Charles M. Bagshaw
Vincent E. Wilson
Albert W. Hallam
By their attorney
Trotter & Co.

July 30, 1940.

C. M. BAGSHAW ET AL
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Fig. 7.

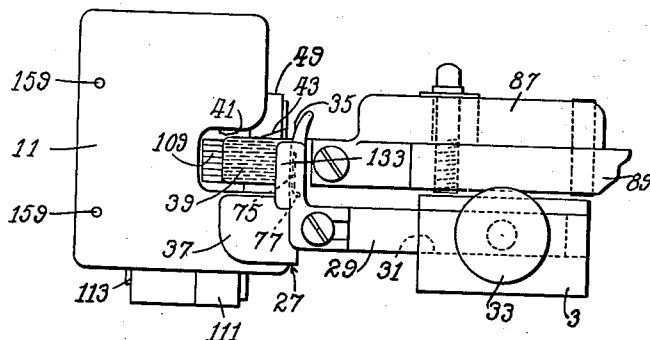


Fig. 8.

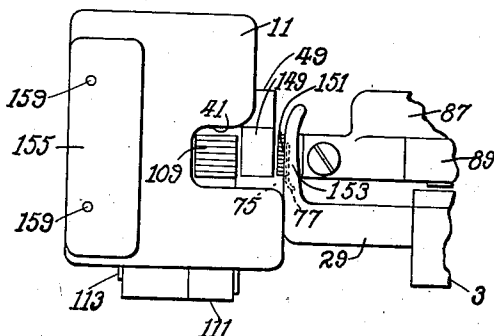


Fig. 9.

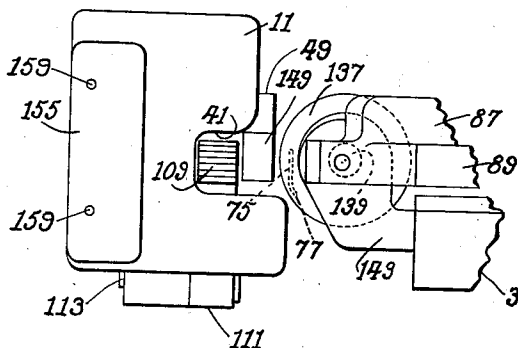
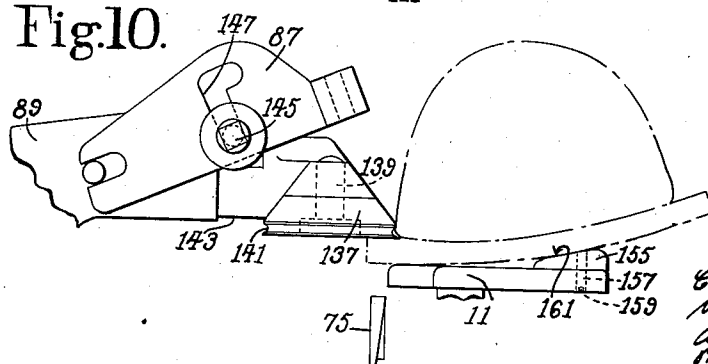


Fig. 10.



INVENTORS
Charles M. Bagshaw
Vincent E. Wilson
Albert W. Hallum
By their attorney
Victor Colby

UNITED STATES PATENT OFFICE

2,209,377

MACHINE FOR OPERATING ON SHOE SOLES

Charles Martin Bagshaw, Leicester, and Vincent Edward Wilson and Albert William Hallam, Kettering, England, assignors to United Shoe Machinery Corporation, Borough of Flemington, N. J., a corporation of New Jersey

Application March 13, 1939, Serial No. 261,552
In Great Britain April 28, 1938

23 Claims. (Cl. 12—18)

The present invention is concerned with improvements in machines for operating on shoe soles, and is particularly, but by no means exclusively, concerned with machines intended for use by shoe-repairers for performing either a channeling or a rounding operation, or both of these, on repair-soles after they have been positioned on the bottoms of shoes.

Having regard to the fact that many shoe-repairers are unable to afford expensive shoe-repairing machinery, and would, indeed, find difficulty in correctly using apparatus of a complicated nature, it is desirable that machinery intended particularly for use by repairers should be of a relatively inexpensive character and should be simple and easy to operate. An example of a machine intended particularly for use in the shoe-repair-trade for rounding and channeling soles is shown in Letters Patent of the United States No. 1,463,823, Johnson et al., August 7, 1923.

One of the various objects of the present invention is to provide an improved machine which will be suitable for channeling a repair-sole which is to be stitched to either a welted shoe or a McKay shoe and for rounding the sole in conformity, respectively, with the contour presented by the outer edge of the welt or by the side of the upper, or for rounding, without channeling, a repair-sole which has already been permanently attached to a shoe-bottom, as by cement.

In the attainment of this object, there is provided in an illustrative embodiment of the invention, hereinafter described, in novel combination, a work-supporting table, held against horizontal movement, a work-guide which provides both a face or flange for engaging either the edge of the welt of a welted shoe or the side of the upper of a McKay shoe and a horizontal face or flange for projecting above the plane of the table and above the upper margin of a sole supported thereon and either beneath the welt of a welted shoe or beneath the feather of a McKay shoe. To allow the guide to be adjusted to different positions relatively to the rounding and channeling knives, as may be called for by the type of work to be performed, said guide is readily variable in position. The table has an opening across which a channel-knife moves to cut and feed the work. A foot engaging the upper face of the sole is movable above the table for cooperating with the channel-knife to assist in the feeding operation. This foot, in one position, makes a cutting bed for the rounding knife. Another foot, movably car-

ried on the work-supporting table and positioned beneath the sole, rises to clamp the sole against the upper foot and provides means for holding the sole stationary while the channel-knife cuts the channel in the sole. The machine is readily adaptable for rounding, without channeling, soles which are to be attached to shoes by such means as rivets, instead of by stitching, and for this purpose may be provided with easily manipulated means whereby the channel-knife may be lowered within the table-opening sufficiently to prevent it from operating on a sole resting thereon. With a view to providing a machine for rounding, without channeling, repair-soles which have already been secured to shoe-bottoms by such means as cement, in which work there will normally be but a very narrow margin of sole-material projecting beyond the side of the shoe, the present invention further contemplates the combination with a reciprocatory rounding knife, of a movable feed-foot engaging the underside of a sole to be rounded, and a device serving both as a cutting bed for the rounding knife and as a guide and feeding means for the shoe. This device consists of a rotatable conical roll arranged to enter between the shoe-upper and the sole-margin in such a manner that the peripheral face of the roll engages the upper near to the sole. It thus serves to guide the work in its advance, while the horizontal lower surface of the roll engages the upper face of the sole-margin to provide the cutting bed. Beneath this horizontal surface the work-feeding member may move.

Other objects and features of the invention will be developed in the following description.

In the accompanying drawings:

Fig. 1 is a side elevation of an illustrative embodiment of the invention, taken from the right;

Fig. 2 is a front elevation thereof;

Fig. 3, a broken side elevation of parts viewed as in Fig. 1;

Figs. 4, 5 and 6, sections on the lines IV—IV, V—V and VI—VI, respectively, of Fig. 1;

Fig. 7, a plan view of the work-engaging and feeding parts seen in Fig. 1;

Fig. 8, a view similar to Fig. 7 but showing an alternative form of work-engaging parts;

Fig. 9, a view similar to Fig. 7 but showing a further alternative form of work-engaging parts; and

Fig. 10, a side elevation, taken from the left of the machine, of the parts seen in Fig. 9.

The machine has a vertical column 1 carry-

ing a head-casting 3. A forwardly and rearwardly extending shaft 5 is supported in bearings in the lower portion of the head-casting and has secured to the rear extremity a pulley 7, by which it may be continuously rotated from a counter-shaft below it when an unillustrated, clutch-controlling treadle is depressed. At its forward portion, above the shaft 5, the head-casting has a vertical guideway for a bar 9 carrying a rectangular work-supporting table 11 at its upper end. The table is held by the thus-guided bar against horizontal movement, it having a smooth, horizontal upper face. The bar 9 has a stud 13 projecting forwardly from its lower end, and a sleeve 15 surrounding this stud has a depending rod 17, which passes down through a lug 19 (Figs. 1 and 2) projecting from the lower part of the head-casting. A compression-spring 21, located about the rod between the sleeve and lug, normally maintains the table 11 raised, a collar 23 fixed to the rod below the lug serving to limit the upward movement of said rod. The lower end of the rod is connected by a link 25 to a treadle, by which the table may be lowered to facilitate the correct presentation of the work to the machine.

A normally stationary work-guide 27, against the under face of which a sole may be urged by the table and which therefore also serves as a heightwise gage for the work, is positioned above the inner portion of the table and projects horizontally a variable distance towards the middle thereof. This work-guide has a bar or shank 29, the rear portion of which fits within a guideway 31 formed in an upstanding lug on the head-casting. The bar is releasably clamped in the guideway by a screw 33, so it may be adjusted along said guideway. At its forward, work-engaging end, the bar 29 is provided with a flange 35 extending towards the left, as viewed from the front of the machine, this presenting an outer vertical face. A second flange 37 projects horizontally from the lower edge of the flange 35 at its right-hand side and also extends slightly towards the right beyond the right-hand edge of the bar (Fig. 7). These flanges give the forward end of the bar an L-shaped appearance as seen from the side (Fig. 1). The flange 35 extends over an upper sole-engaging foot 39 and is recessed to receive said foot. Its vertical face provides a surface for guiding the work into proximity to the rounding and channeling knives, as will hereinafter be explained. As will also later be developed, the outwardly projecting flange 37 on the guide is arranged either to support the welt of a welted shoe or to extend beneath the feather of a McKay shoe. In the former case, the vertical face of the flange 35 positions the shoe transversely of the table 11 by engagement with the edge-face of the welt and in the latter it similarly locates the shoe by engagement with the side of the shoe-upper itself.

The table 11 has a rectangular opening 41 (Fig. 7) at its inner edge, and a channel-knife 43 projects upwardly through the opening, near its inner side, sufficiently to cut a channel of the required depth in a sole lying on the table. The channel-knife is held in a block 45 secured by a clamp-screw 47 to the upper end of a carrier-lever 49 which lies close against the inner face of the table-carrying bar 9 and is pivoted, about midway of its length, on a stud 51 projecting from a block 53 (Fig. 3) mounted in the carrier-bar 9. The lower end of the lever is bent towards the left and then down (Fig. 2) to enable a roll 55 on

its lower end to engage the periphery of a cam 57 secured on the shaft 5. The rotation of the cam causes the channel-knife 43 to oscillate widthwise of the machine, said knife assisting in feeding the work as it moves towards the left and forming a channel in the sole in its movement towards the right. The lever 49, with the channel-knife, may be adjusted forwardly and rearwardly of the machine, so as to vary the position of the channel with relation to the edge of the sole. This is effected by a screw 59 which passes through a vertical slot 61 in the head-casting 3 and is threaded through the bar 9, it having at the front of the machine a hand-wheel 63. Rotation of the screw causes it to move bodily in the bar. Thereupon, a flange 65 fixed to its inner end and lying in a groove 67 formed in the hub of the lever 49 causes said lever to move bodily along its pivot-stud 51. This shifts the channel-knife forwardly or rearwardly transversely of the table 11, its roll 55 then sliding across the periphery of the cam 57. If it is desired to allow the channel-knife to oscillate idly without cutting a channel in a sole, as when operating on soles which are to be riveted to their shoes, the lever 49 can be dropped to cause the knife to occupy such a position that it will not engage a sole passing through the machine. For this purpose, the block 53 which carries the pivot-stud 51 is in the form of a slide mounted for adjustment along a vertical slot 69 in the carrier-bar 9. A stem 71 passing forwardly from the block through the slot 69, and also through a slot in the guideway for the bar 9, has a wing-nut 73 threaded on its forward end and engaging the adjacent face of the bar. Normally, this nut clamps the block against shoulders upon the bar formed along the opposite sides of the slot 69 to hold the upper end of said block against the upper end of the slot. In this position, the channel-knife projects slightly above the table 11 to cut a channel in a sole supported thereon. By turning the wing-nut to unclamp the block, the carrier-lever 49 may be lowered until the block rests upon the bottom of the slot, the channel-knife then being shielded by the table against acting on a supported sole. Obviously, if desired, the block 53 may be clamped in any intermediate normal position between its limits, thus raising or lowering the axis of oscillation of the carrier-lever to cause it to form a channel of different depths in a sole. In order to determine the depth of the channel more accurately, the knife may be adjusted vertically in its supporting block 45 and held in position by its clamp-screw 47.

For rounding soles, the machine has a vertically reciprocating knife 75, the upper cutting edge of which extends horizontally transversely of the machine, and has a short angular extension 77 (Figs. 7, 8 and 9) at one extremity to assist in holding the sole stationary during the action of the channel-knife. The rounding knife is adjustably secured to the upper end of a vertically reciprocating rod 79, and is positioned opposite the center and just below the inner edge of the work-supporting table and near the center of the vertical flange 35 on the work-guide 27. The rod passes down through a bearing sleeve 81 in the head-casting 3 (Fig. 4), and its lower end is pivoted to the strap 83 of an eccentric 85 secured on the shaft 5 near its forward end.

To provide a cutting bed for the rounding knife and also to assist the channel-knife, as it moves towards the left (Fig. 2) to feed the work through

the machine, the foot 39, in addition to engaging the upper face of the sole-margin, is moved to and fro transversely of the machine in time-relation to the oscillation of the channel-knife and the reciprocation of the rounding knife. The vertical flange 35 on the work-guide 27, beneath which the foot projects, is of such extent that said foot lies beneath it at both the left and right hand limits of its transverse movement. The foot 39 extends outwardly somewhat beyond the inner edge of the table 11, above the opening in the latter and beneath the flange 35. It is secured to the under side of a bar 87 which is attached to an outwardly extending lever 89 pivoted about midway of its length on a pin 91 (Fig. 1) at the upper end of a transversely rocking carrier 93. The carrier is pivoted between its ends on a pin 95 on the head-casting. The lower end of the carrier embraces an eccentric 97 (Fig. 6) fast on the shaft 5 and is rocked by it to move the foot 39 to and fro along the line of work-feed. The carrier has a lug 99 providing a vertical bearing for a reciprocating rod 101, which is joined at its upper end by a pin-and-slot connection 103 to the rear end of the lever 89. At its lower extremity, the rod 101 carries a roll 105 (Figs. 1 and 5) engaging the periphery of a cam 107 on the shaft 5. A tension-spring 108, connected between the carrier-lug and the head of the rod, maintains contact of the roll with the cam. By this arrangement, the foot 39 is moved down, when at the right-hand limit of its movement, to bear against the sole and is raised therefrom after the foot has moved across to the left, preparatory to moving back idly towards the right.

Means, additional to the rounding knife 75, is provided in the illustrative machine for assisting in holding the work against movement towards the right when the channel-knife 43 swings in that direction to cut a channel in the work. It consists of a serrated foot 109, for engaging the under face of the sole and lying within the opening in the work-supporting table 11. The foot is so positioned in the opening, that it is beneath the upper foot 39 when the latter is at the right-hand extremity of its stroke, at which time the channel-knife commences to move towards the right to produce its cut. The foot 109 is arranged at the outer side of the channel-knife and is formed upon a short arm 111 (Fig. 2), which is pivoted at its right-hand end beneath the table by a pin 113. The lower edge of the arm 111 has a projection 115 resting on a head 117 at the upper end of a vertically movable rod 119. The rod passes down through bearings in the head-casting 3 and engages at its lower end a lever 121, extending across the machine and pivoted at 123 on the head-casting. The free end of the lever 121 carries a roll 125 contacting with the periphery of a cam 127 fixed to the shaft 5 adjacent to the cam 57. By this means, the lower sole-engaging foot 109 is oscillated vertically about its pivot 113 in time-relation to the movements of the upper sole-engaging foot 39 and the channel-knife 43, it being raised to clamp the sole against the upper foot when the latter is in its lowered position at the right-hand end of its movement and just before the channel-knife swings towards the right to cut the channel. The rounding knife 75 will also be lifted when the upper foot is in the position last indicated, to cut through the sole to the level of the under face of the upper foot. Therefore, the work will normally be held against movement towards the right during channeling, both by rea-

son of the sole being clamped between the feet and because the rounding knife is then in the sole-margin. There may, however, be portions about the sole-margin where there is no surplus material for the rounding knife to cut through. Then the clamping feet alone may hold the work sufficiently to resist the cutting action of the channel-knife. To hold the rolls 55 and 125 in constant engagement with their cams 57 and 127, respectively, the levers 49 and 121 have downwardly extending pins 129 secured to their lower ends, and a tension-spring 131 joining the pins pulls the rolls towards each other against their cams.

Since, in operating on welted shoes, the welt does not have to be cut in any way, the operator will cause the horizontal flange 37 on the work-guide 27 to pass between the underside of the welt and the sole-margin. To prevent the welt from buckling upwardly as it is pressed against the vertical flange 35 on the work-guide, there is provided a holddown 133 presenting a horizontally extending face 134, separated by about the thickness of a welt above the level of the flange 37 and against which the upper surface of the welt may abut. The holddown 133 is adjustably secured on the bar 29 and extends outwardly from said bar, with a downward extension 135 lying against the flange 35 and on the lower edge of which is the face 134.

Assuming that a welted shoe is to be operated on, the operator will adjust the work-guide 27, if necessary, over the table 11 until the outer face of its flange 35, which is to engage the edge of the welt, is in substantial vertical alinement with the cutting edge of the rounding knife 75. He may also adjust the channel-knife 43 to vary the distance from the sole-edge of the channel to be formed therein. With the machine thus adjusted, the operator depresses the treadle connected to the table, drawing it and the channel-knife down against the action of the spring 21. He then rests on the table a sole secured to a welted upper, and moves the work in to cause the flange 37 to be between the underside of the welt and the sole-margin. The upper face of the welt lies against the face 134 on the holddown 133 and the edge of the welt abuts against the flange 35. With the work thus positioned, the treadle is released, allowing the table to rise to press the sole-margin against the flange 37 and the channel-knife 43 also to rise. The clutch for driving the machine is thereupon engaged and the power-cycle begins. By maintaining the edge of the welt in contact with the guide-flange 35, the operator correctly controls the transverse relation of the sole-margin to the rounding knife and the channel-knife, and during each rotation of the shaft 5, the various instrumentalities operate as follows. The upper sole-pressing foot 39 is in a lowered position at the right-hand or rearward end of its stroke, considering the direction of work-advance, and is bearing upon the sole. It moves forward within the opening 41 in the table and the channel-knife 43 moves in company with it without cutting the work, the two serving between them to feed said work. The rounding knife 75 at that time is lowered and inactive and the lower foot 109 is also out of engagement with the sole. Before the channel-knife commences to swing back towards the right, the upper foot 39 is raised and moved across to the right-hand end of its stroke and is then lowered again to press on the sole.

The rounding knife 75 rises to cut the sole-margin against the upper foot as a bed, and the lower foot also rises, clamping the sole against the upper foot. The two feet and the rounding knife remain in the respective work-gripping and -penetrating positions just indicated, while the channel-knife swings back to the right to form its cut in the work. When it has reached the limit of its movement in this direction, the rounding knife and lower foot descend from contact with the work and the cycle is repeated.

For operating on McKay shoes, it is, in most cases at least, only necessary for the operator to remove the hold-down 133 and to adjust the work-guide 27 to such a position, that when the side of the shoe-upper is in engagement with its vertical flange 35, the desired width of the sole-margin which is to remain on the shoe will extend between the flange and the rounding knife. Next, the shoe will be placed on the table 11 and moved in to cause the horizontal flange 37 on the work-guide to lie under the feather of the shoe between the upper and the sole. The machine will then operate as above indicated.

In case it is desired to round, without channeling, soles which are to be permanently attached to their shoes by riveting or nailing, the operator has only to slacken the wing-nut 73, which normally holds the channel-knife 43 in operating position, and lower the lever 49 sufficiently to allow the knife to oscillate idly within the table-opening 41 below the work.

With shoes which have had repair-soles permanently attached to their bottoms by cement and which it is desired only to round, it is not practicable to use a work-guide 27 of the kind above described, because the sole will have been secured fully to the edge of the shoe-bottom. Nor, by reason of the fact that it is generally desired in such work to leave only a very narrow sole-margin visible on the finished shoe, is it practicable to use, as a cutting bed for the rounding knife, the upper sole-pressing foot 39, intended to project an appreciable distance over the sole-margin. Therefore, for operating on cemented soles, the present invention contemplates the provision, in conjunction with a sole-rounding knife, of a shoe-guiding member especially suitable for engaging both the upper and sole in the crease between the upper and narrow sole-margin, and which itself provides a bed against which the knife may act in rounding the sole close to the side of the shoe-upper. This guiding member takes the form of a freely rotatable roll 137 (Figs. 9 and 10) supported upon the head-casting on a vertical pin 139 depending from a bar 143 and positioned centrally of the width of the rounding knife 75. Conveniently, the roll 137 is substantially frusto-conical, with its larger end down. It may slope inwardly towards its upper end at an angle of about fifty degrees to the vertical, therefore having a sufficiently sharp lower edge to allow it readily to enter between the upper of a shoe and the margin of a sole already fully cement-attached. The periphery of the roll serves, by contact with the upper, to determine the transverse relation of the sole to the rounding knife, while the lower extremity, lying above the plane of the table 11, both holds the sole-margin against the upthrust of the rounding knife and provides a bed for the latter to cut against. However, in order to prevent the lower edge of the roll from forcing its way into the crease to an undesirable degree, and in order to improve the efficiency of the

roll in controlling the relation of the work to the rounding knife, the sloping periphery may be reduced at the lower edge to provide a substantially vertical narrow wall. This wall, though generally vertical, may have about it a groove 141 almost equal in width to the height of the wall. The relatively sharp edges formed at the top and bottom of the wall by the groove will increase the effectiveness of the positioning engagement of the roll with the work.

Since, in operating on repair soles which have already been cement attached to their shoes, it is unnecessary to employ a channel-knife, a machine for operating on such soles need only have, as its operating instrumentalities, such a rotatable combined work-guide and cutting bed device as above described, and a reciprocating rounding knife cutting against the underside of said device, though it may also have an oscillating feed-foot to assist in feeding the work. The machine first above described as being particularly suitable for use in rounding and channeling repair-soles for welted or McKay shoes may conveniently be modified in the following manner for rounding repair-soles of cement-soled shoes. The block 45 carrying the channel-knife is removed from its lever 49 and is replaced by a plain block 149 (Figs. 8 and 9), the upper face of which is level with that of the table 11 and which will, with the rotation of the roll 137, assist in feeding the work. The upper sole-engaging foot 39 and the bar 29 providing the right-angled work-guide 27 are removed from the machine. In place of the bar, there is secured in the guideway 31 by the clamp-screw 33 a bar 143 extending outwardly and towards the left, it carrying at its outer end the roll 137, with the outer portion projecting over the rounding knife 75. After the foot 39 has been removed from its supporting bar 87, that bar may be swung up away from the rounding knife 75 (Fig. 10), it being held there by a bolt 145 passing through a slot 147 formed in the bar and threaded into the lever 89. With the bar 87 in this inactive position, it will provide room beneath it for the roll to lie over the rounding knife.

In using the machine, simplified as above indicated, for rounding repair-soles of cement-soled shoes, the operator first pulls the work-supporting table 11 and the feed-block 149 down by means of the treadle, places the work thereon, and, after having allowed the table and block to rise, moves the shoe in until the upper at the crease engages the outer portion of the periphery of the roll 137 to locate the margin of the sole with respect to the rounding knife. The horizontal under face of the roll engages the upper face of the sole-margin, thus resisting the thrust of the knife upon the sole and furnishing a cutting bed for said knife. When the treadle is completely released to allow the table to rise fully under the action of its spring, said table and feed-block 149 press the sole firmly against the roll. After the knife has completed each work-piercing movement, its cutting edge striking against the under face of the roll at the end of its upward movement, and has been withdrawn, the feed-block moves across towards the left to carry the work through the machine, the roll 137 rotating freely to facilitate the feeding movement. At the conclusion of this movement of the feed-block, the rounding knife once more enters the work and remains within it, thus holding the work stationary, while the feed-block makes its return movement to the right.

It will therefore be understood that the roll 137 is a particularly useful instrumentality in the rounding of repair-soles for cement-soled shoes, having at least three functions—positioning the sole-margin in the correct heightwise relation to the rounding knife, providing a cutting bed for the knife to act against, and maintaining the work in the correct transverse position for a margin of the desired narrow width to be left on the rounded sole. The feed-block 149 engaging the underside of the sole is quite effective in feeding the work, particularly since the work-guide is freely rotatable, and there will be but little tendency for the work to move back towards the right with the feed-block in the idle movement of the latter, because of the absence of a channel-knife when operating on cement-soled shoes. In addition, the action of the lower foot 109 will provide more or less positive assurance against such backward movement, because it clamps the sole against the under face of the roll 137.

As an alternative to modifying the present illustrative machine in the manner just above indicated for rounding cement-attached soles, it may be adapted for rounding such work, after the channel-knife block 45 has been replaced by the block 149, by removing the upper sole-engaging foot 39 from its supporting bar 89 and substituting for it a similarly shaped but narrower foot 151 (Fig. 8). This foot 151 extends only so far outwardly as to project but slightly beyond the rounding knife 75 and is suited both to serve as a cutting bed for that knife and as a feed member, which in some measure clamps the sole for advance between it and the block 149. It is then only necessary further to remove the L-shaped work-guide 27 from the machine and to replace it by a guide 153, which has the same general shape as that guide as seen from the front of the machine but which lacks the outwardly projecting flange 37. The vertical face at the outer side of the guide 153 serves, as does the flange 35 of the guide 27, to guide the work by contact with the side of the shoe-upper. The omission of the flange 37 allows this, it avoiding entrance of the work-guide into the crease of the shoe.

Since in the majority of cases soles are, considered transversely of a shoe, curved upwardly somewhat on both sides of the longitudinal median line of the sole, when a cement-soled shoe is positioned on the table 11 with the projecting margin of its sole lying underneath the roll 137 or the foot 151, the operator may, by forcing the shoe against the table, either break or tend to break the cement bond between the sole and upper. To counteract this, there may be provided means to cause the shoe to lie on the table 11 so that its normally somewhat upwardly curved margin will be more or less horizontal, while the remainder of the sole will be adequately supported. This means comprises a wedge-shaped block 155 (Fig. 10), held on the outer portion of the table 11 by dowel-pins 157 extending from the block into holes 159 in the table. The block presents a downwardly and inwardly sloping face 161. When a cement-soled shoe is positioned by the block on the table, it is canted downwardly and inwardly, so that portion of the projecting margin being rounded will be approximately horizontal.

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

1. In a machine for operating upon shoe soles, a work-supporting table having an opening, a

channel-knife operating through the opening, a guide having a horizontal surface arranged above the plane of the table and above the upper margin of a sole thereon and a surface rising above the horizontal surface and arranged to receive contact of the side of a shoe-part, a rounding knife reciprocating adjacent to the table-opening, and a work-feeding member associated with the guide, said work-feeding member being in vertical registration with the edge of the rounding knife and furnishing a cutting bed therefor.

2. In a machine for operating upon shoe soles, a work-supporting table, a sole-cutting knife co-operating with the table, a rotatable guide-roll having an end-surface arranged to extend above the plane of the table and above the upper margin of a sole thereon and a conical peripheral surface arranged to receive contact of a shoe-upper, and a rounding knife reciprocating adjacent to the table and acting against the horizontal surface of the roll as a cutting bed.

3. In a machine for operating upon shoe soles, a work-supporting table having an opening, a sole-cutting knife co-operating with the table, a guide having a horizontal flange arranged to extend over the table-opening and above the upper margin of a sole supported thereon and a flange rising above the horizontal flange and arranged to receive contact of the side of a shoe-part, and a work-feeding foot extending beneath the horizontal flange.

4. In a machine for operating upon shoe soles, a work-supporting table having an opening, a sole-cutting knife co-operating with the table, a guide having a horizontal flange arranged to extend over the table-opening and above the upper margin of a sole supported thereon and a flange rising above the horizontal flange and arranged to receive contact of the side of a shoe-part, a work-feeding foot extending beneath the horizontal flange, and a work-clamping foot movable through the table-opening.

5. In a machine for operating upon shoe soles, a work-supporting table, a sole-cutting knife co-operating with the table, a rotatable guide-roll having a horizontal surface arranged to extend above the plane of the table and above the upper margin of a sole thereon and a conical peripheral surface arranged to receive contact of a shoe-upper, and a work-feeding foot movable beneath the horizontal surface of the roll.

6. In a machine for operating upon the soles of welt-shoes, a knife for cutting the sole, a guide having a horizontal flange extending above the knife and arranged to enter between the upper margin of the sole and the welt, and a vertical flange arranged to receive contact of the edge of the welt, and a holddown engaging the upper surface of the welt.

7. In a machine for operating upon shoe soles, a work-supporting table held against horizontal movement, a sole-cutting knife co-operating with the table, a guide having a horizontal surface arranged above the plane of the table and above the upper margin of a sole supported thereon and a surface rising above the horizontal surface and arranged to receive contact of the side of a shoe-part, and means arranged to vary the position of the guide transversely of the sole-margin.

8. In a machine for operating upon shoe soles, a work-supporting table having an opening, an oscillatory carrier situated beneath the table, a channel-knife mounted upon the carrier and movable thereby across the opening, and means arranged to vary the vertical position of the

axis of oscillation of the carrier toward and from the table.

9. In a machine for operating upon shoe soles, a work-supporting table having an opening, an oscillatory carrier situated beneath the table, a channel-knife mounted upon the carrier and movable thereby across the opening, and means arranged to vary the position of the carrier transversely of the table.

10. In a machine for operating upon shoe soles, a work-supporting table having an opening, a work-guide lying above the table, an oscillatory carrier situated beneath the table, a channel-knife mounted upon the carrier and movable thereby across the opening, and means arranged to vary the vertical position of the carrier toward and from the table and transversely thereof.

11. In a machine for operating upon shoe soles, the combination with a frame, of a work-support mounted thereon, a slide movable vertically upon the frame, means arranged to secure the slide in different normal positions, a lever pivoted upon the slide, and a channel-knife carried by the lever and co-operating with the work-support.

12. In a machine for operating upon shoe soles, the combination with a frame, of a work-support mounted thereon, a slide movable vertically upon the frame and provided with a horizontal stud, means arranged to secure the slide in different normal positions, a lever pivoted upon the stud, means arranged to vary the position of the lever longitudinally of the stud, and a channel-knife carried by the lever and co-operating with the work-support.

13. In a machine for operating upon shoe soles, the combination with a frame, of a guide mounted thereon and having a work-engaging surface, a work-supporting table situated beneath said surface, a carrier by which the table is yieldably urged toward the guide-surface, a lever variable in its normal position upon the carrier, and a channel-knife secured to the lever.

14. In a machine for operating upon shoe soles, the combination with a frame, of a guide mounted thereon and having a work-engaging surface, a work-supporting table situated beneath said surface, a carrier by which the table is yieldably urged toward the guide-surface, a slide variable in position upon the carrier toward and from the work-support, and a lever pivoted upon the slide and variable in position thereon transversely of the table.

15. In a machine for operating upon shoe soles, an oscillatory channel-knife, an oscillatory member movable in co-operation with the channel-knife in one direction to feed the work, a member movable to clamp the work against the oscillatory member during the movement of the channel-knife in the opposite direction, and a rounding knife cutting against the oscillatory member as a bed.

16. In a machine for operating upon shoe soles, an oscillatory channel-knife, an oscillatory member movable in co-operation with the channel-

knife in one direction to feed the work, a member movable to clamp the work against the oscillatory member during the movement of the channel-knife in the opposite direction, and a rounding knife cutting against the oscillatory member as a bed, the rounding knife and clamping member being in simultaneous engagement with the work.

17. In a machine for operating upon shoe soles, a work-supporting table provided with an opening, an oscillatory channel-knife extending through the opening, and an oscillatory feed-foot movable above the table toward and from the opening for engagement with the work upon said table.

18. In a machine for operating upon shoe soles, a work-supporting table, a work-guide situated above the table, an oscillatory channel-knife extending above the table, and an oscillatory feed-foot movable beneath the guide into engagement with the work upon the table.

19. In a machine for operating upon shoe soles, a work-supporting table, a work-guide situated above the table, an oscillatory channel-knife extending above the table, an oscillatory feed-foot movable beneath the guide into engagement with the work upon the table, and a reciprocatory rounding knife cutting against the feed-foot as a bed.

20. In a machine for operating upon shoe soles, a work-supporting table provided with an opening, an oscillatory channel-knife extending through the opening, an oscillatory feed-foot movable above the table into engagement with the work thereon, and a clamping foot movable through the table-opening into engagement with the work.

21. In a machine for operating upon shoe soles, a work-supporting table provided with an opening, an oscillatory channel-knife extending through the opening, an oscillatory feed-foot movable above the table into engagement with the work thereon, a clamping foot movable through the table-opening into engagement with the work, and a rounding knife cutting against the feed-foot as a bed.

22. In a machine for operating upon shoe soles, a work-supporting table having a smooth horizontal work-engaging face in which is an opening, a channel-knife extending through the opening, and upper and lower work-engaging feet movable at the opening upon opposite sides of the table.

23. In a machine for operating upon shoe soles, a work-supporting table having a smooth horizontal work-engaging face in which is an opening, a channel-knife extending through the opening, upper and lower work-engaging feet movable at the opening upon opposite sides of the table, and means for moving the channel-knife and the upper foot along the opening for feeding work over the table.

CHARLES MARTIN BAGSHAW.
VINCENT EDWARD WILSON.
ALBERT WILLIAM HALLAM.