March 6, 1951 J. C. CANTLEY 2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Filed March 1, 1950 5 Sheets-Sheet 1

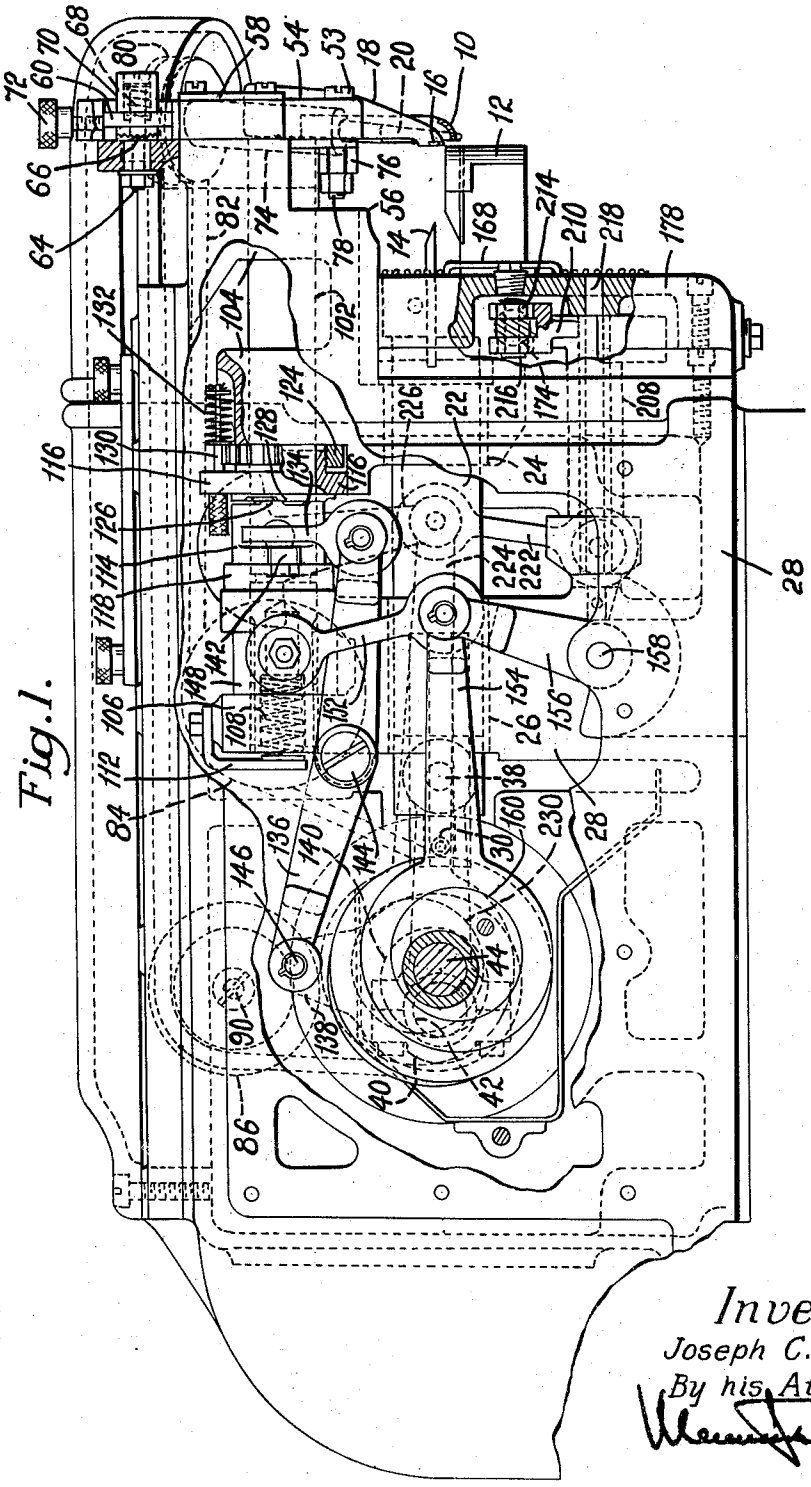


Fig. 1.

Inventor
Joseph C. Cantley
By his Attorney

March 6, 1951 J. C. CANTLEY 2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Filed March 1, 1950 5 Sheets-Sheet 2

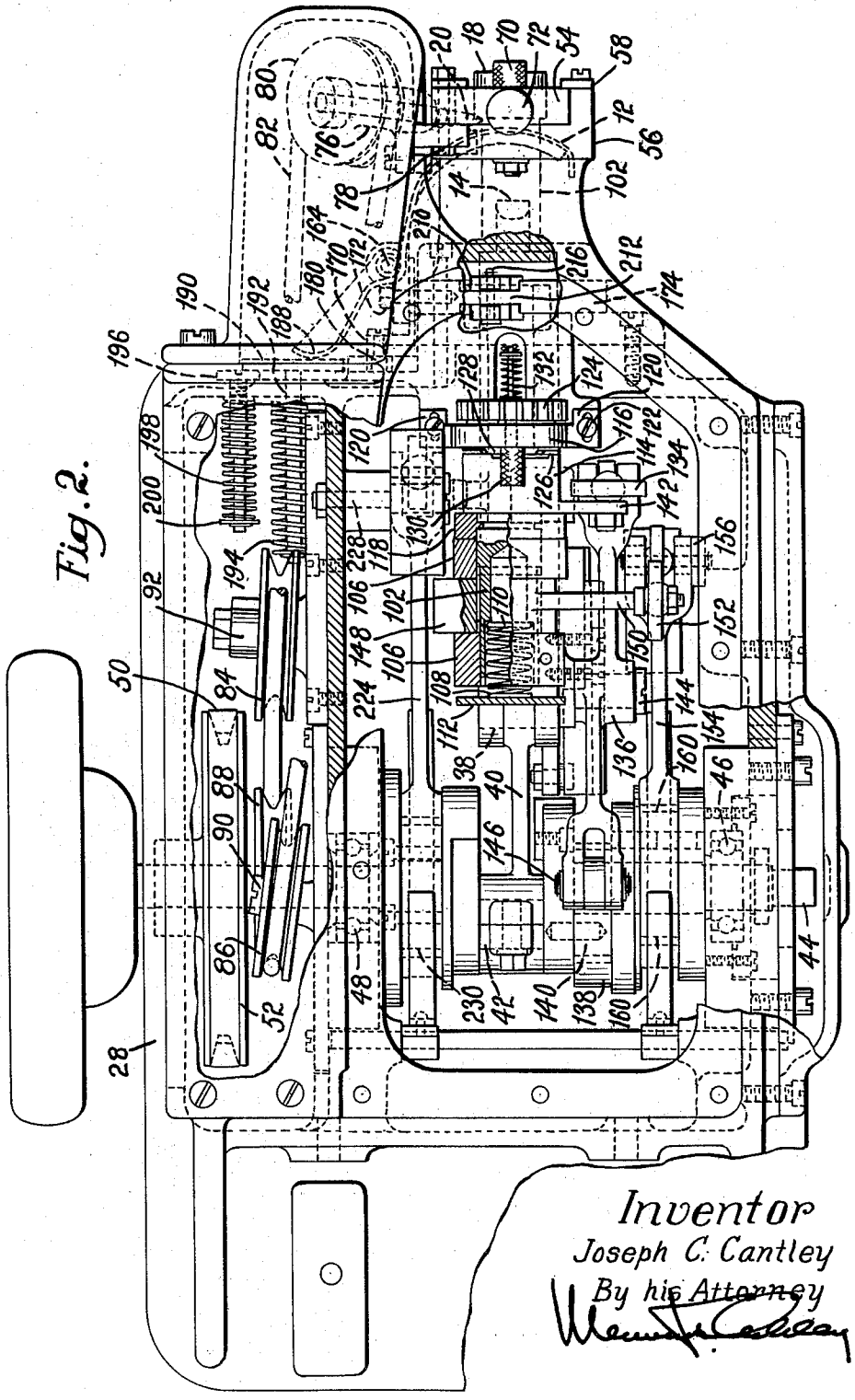


Fig. 2.

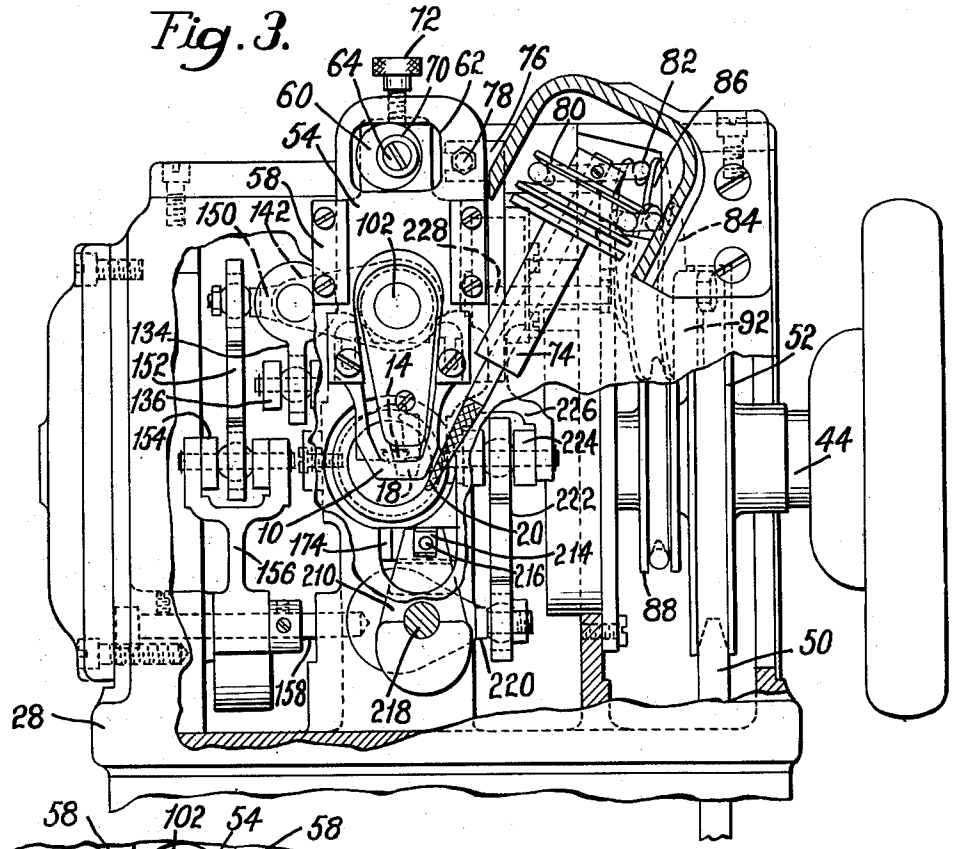
Inventor
Joseph C. Cantley
By his Attorney

March 6, 1951 J. C. CANTLEY 2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Filed March 1, 1950 5 Sheets-Sheet 3

Fig. 3.



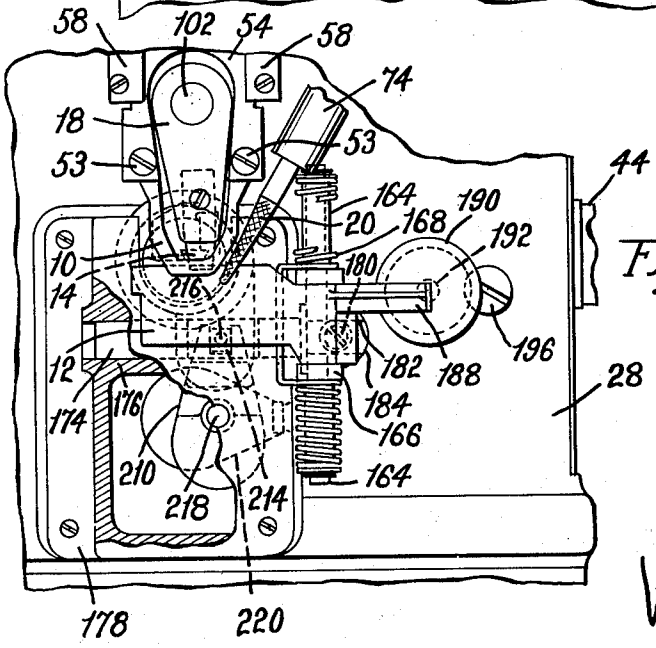


Fig. 4.

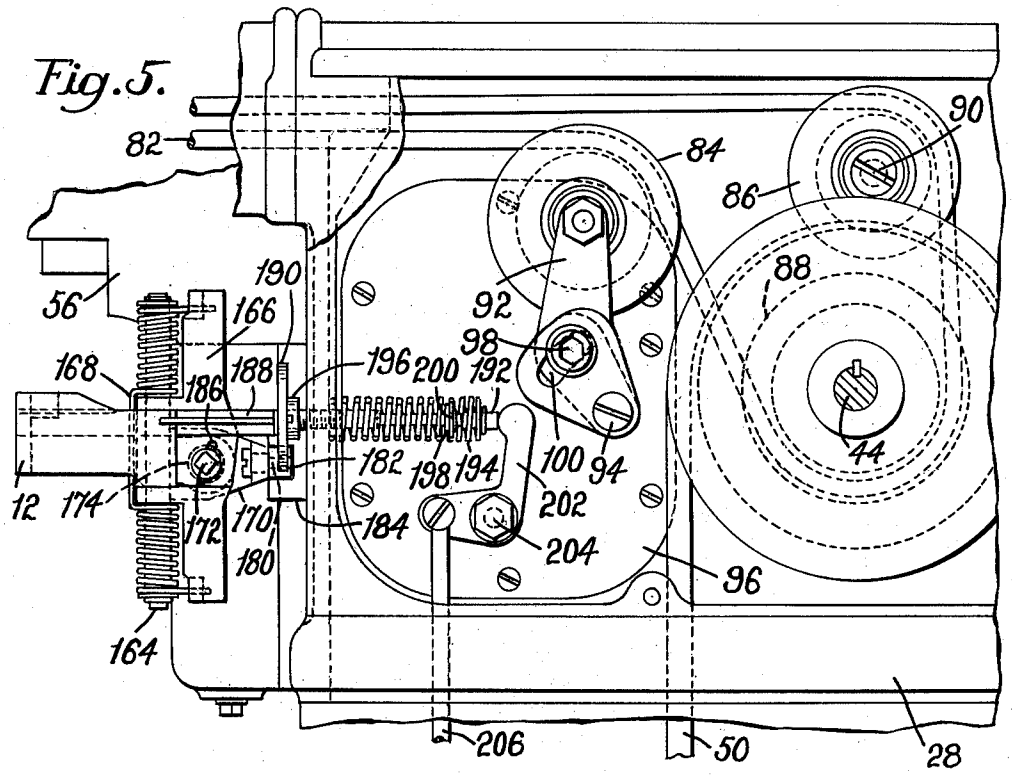
Inventor
Joseph C. Cantley
By his Attorney

March 6, 1951 J. C. CANTLEY 2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Filed March 1, 1950 5 Sheets-Sheet 4

Fig. 5.



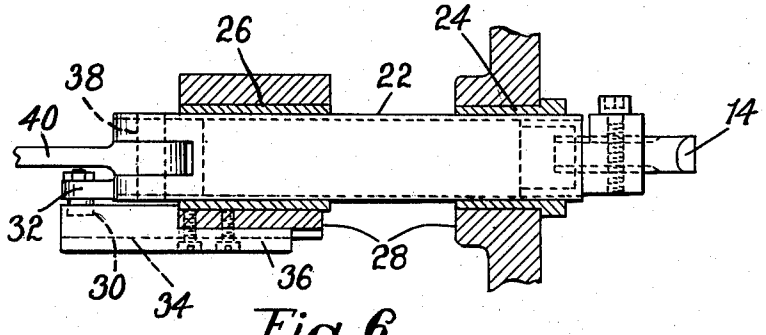


Fig. 6.

Inventor
Joseph C. Cantley
By his Attorney

March 6, 1951 J. C. CANTLEY 2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Filed March 1, 1950 5 Sheets-Sheet 5

Fig. 7.

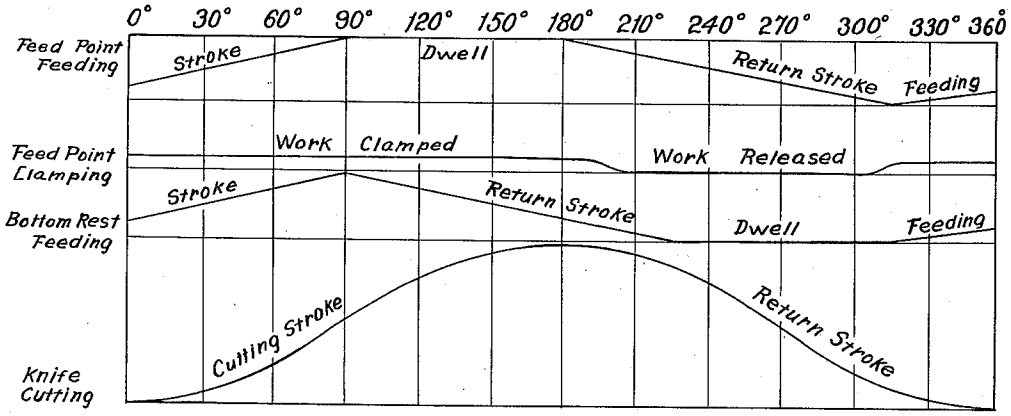
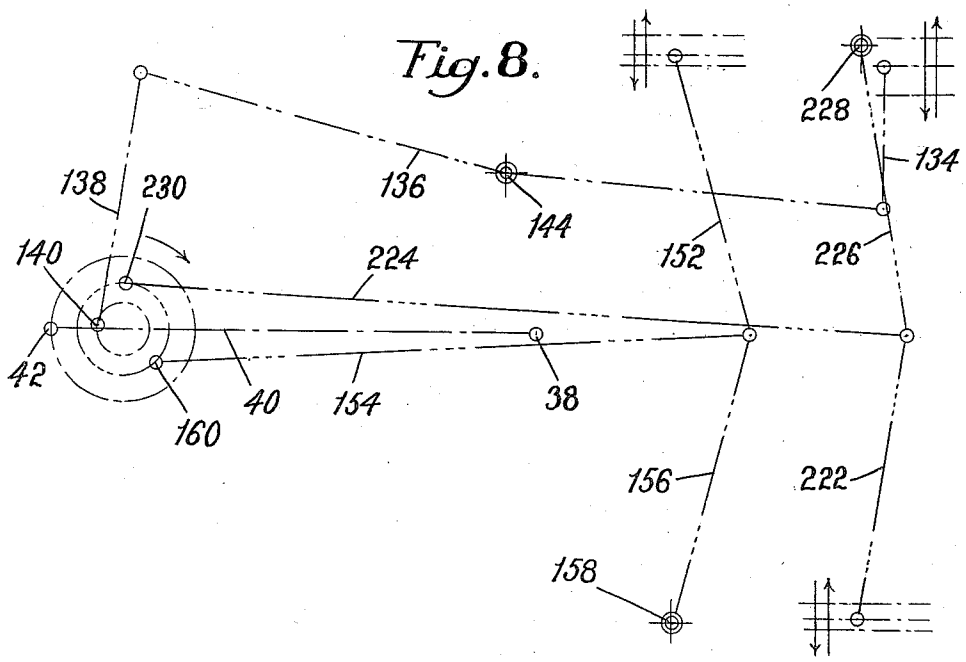


Fig. 8.



Inventor
Joseph C. Cantley
By his Attorney

Patented Mar. 6, 1951 2,543,760

UNITED STATES PATENT OFFICE

2,543,760

ROUGH ROUNDING MACHINE FOR STITCHDOWN SHOES

Joseph C. Cantley, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N. J., a corporation of New Jersey

Application March 1, 1950, Serial No. 147,011

10 Claims. (Cl. 12—85)

1

This invention relates to machines for rounding soles of shoes and, more particularly, is concerned with improvements in a machine, for rounding soles of stitchdown shoes, of the type disclosed in an application of Corwin W. Baker for United States Letters Patent Serial No. 638,285, filed December 29, 1945 which issued as Patent No. 2,508,360 on May 23, 1950.

The upper material of a stitchdown shoe is commonly flanged outwardly against the margin of the sole which projects from the side of the shoe. In order to facilitate this flanging operation, particularly where the contour of the shoe is convex, the flanged portion of the upper is sometimes slit inwardly from its edge. In the above-mentioned Baker machine there is a crease guide which is received in the crease between the side of the upper of a shoe presented to the machine and the outwardly flanged portion of the upper. The Baker machine also comprises a smoothing member which acts upon the flanged portion of the shoe immediately in adance of the crease guide, so that any wrinkles in the flange, or curling of its slit portions, will be eliminated just before passing beneath the crease guide, and any impediment to the feeding action of the work is avoided.

This smoothing member has a conical, pointed end which engages the work and is inclined to the plane of the flange at an angle corresponding to the taper of its conical end. It is also mounted to rise and fall axially so that its end will always bottom in the crease of the shoe regardless of the contour of the portion of the shoe which it engages. It will now be evident that upward axial movement of the inclined smoothing member causes its work engaging surface to recede slightly from the surface of the crease guide which engages the flange. This tendency is not great enough, once the smoothing member has been adjusted for a given setting of the crease guide, to interfere with the intended action of the smoothing member. It is desirable, however, that the smoothing member, which in the Baker machine is mounted for universal adjustment with respect to the crease guide, be adusted in respect to the crease guide whenever the position of the latter is changed materially for the purpose of changing the sole edge extension to be formed upon the shoe.

In view of the foregoing, one object of the invention is to make provision, in a machine of this type, for the simultaneous adjustment of the smoothing member with the crease guide whenever the latter is adjusted to change the sole edge

2

extension. To this end, and in accordance with one feature of the invention, the mounting for the smoothing member in the illustrated machine is associated with the crease guide, so that the smoothing member partakes of any adjusting movement of the crease guide. Accordingly, in the illustrated machine the adjustment of the crease guide does not require any separate adjustment of the smoothing member in order that the desired relation between them will be maintained.

A further object of the invention is to improve the cutting and feeding actions in a machine of this type, giving consideration to both the operating cycle of the machine and the need for maintaining the required relations between the feed point, the knife, and the crease guide.

As in the above-mentioned Baker machine, the illustrated machine comprises a feed point and a bottom rest each having alternate feeding and returning motions, their feeding motions being directed from right to left and occurring simultaneously. At the beginning of each feeding movement of the feed point, it is reciprocated slightly toward the work, to relieve the pressure of the work against the crease guide. Similarly, at the beginning of each return movement of the feed point, it is reciprocated in the opposite direction to cause the pressure of the work to be transferred to the crease guide again, whereby the feed point will have no back-feeding tendency upon the work during its return stroke. In accordance with a further feature of the invention, provision is made in the illustrated machine for readily adjusting the reciprocatory stroke of the feed point in such a manner that it projects rearwardly beyond and is retracted forwardly behind the flange engaging surface of the crease guide during its feeding and return strokes, respectively, when in its terminal positions. This result is achieved, in the illustrated machine, by mounting one of the cam members, which provide the reciprocatory movement of the feed point, for adjustment axially thereof and, further, by providing means for adjusting the cam member and for releasably locking it in its adjusted position. This adjustment of the feed point, although described above in terms of its relation to the crease guide, is of equal importance as a means for insuring that the knife and feed point just meet at the end of the cutting stroke of the knife. That is, assuming that an approximately correct setting of the knife has been made upon its carrier, the desired relation between the feed point and the knife can be pre-

cisely obtained, and thereafter maintained, by such a narrow range of adjustment of the feed point that the prior adjustment of the feed point relatively to the crease guide is not upset.

Invention is also to be recognized in the construction and arrangement of the operating mechanism for the feed point and bottom rest on account of which these members alternately have extended periods of rest which are so related to the cutting action of the knife that no feeding force is imparted to the work while the cutting action of the knife takes place, and no back-feeding tendency can occur at any time during the operating cycle of the machine.

These and other features of the invention will now be described in greater detail with reference to the accompanying drawings, and will be defined in the claims.

In the drawings,

Fig. 1 is a side elevation of an illustrative machine embodying the invention, certain parts of the machine having been broken away and shown in section;

Fig. 2 is a plan view of the machine, its cover having been omitted to show the operating mechanism, parts of which are shown in section;

Fig. 3 is a front elevation from which the bottom rest and parts of its mounting have been omitted, in order not to obscure the driving mechanism for the bottom rest;

Fig. 4 is a front elevation illustrating the shoe engaging members of the machine, and particularly the bottom rest and associated parts which are omitted in Fig. 3;

Fig. 5 is an elevation of a part of the machine as viewed from its right-hand side, showing the bottom rest and the driving means for the smoothing member;

Fig. 6 is a sectional plan view of the chopping knife, its carrier, and the mounting of the latter in the machine;

Fig. 7 is a time chart illustrating the operating characteristics of the machine; and

Fig. 8 is a diagrammatical view (corresponding to Fig. 1) illustrating the relation between the principal parts of the driving mechanism of the machine.

Certain parts of the illustrated machine have the same functions as the corresponding parts of the above-mentioned Baker machine, and are similar thereto in construction. These parts comprise a crease guide **10** (Figs. 1, 3 and 4) which is adapted to be received in the crease between the side of the upper of a stitchdown shoe and its outwardly flanged margin. The bottom of a shoe being operated upon is engaged by a bottom rest **12** which urges the shoe outwardly to cause its flanged portion to be held against the inner surface of the crease guide. The sole edge of the shoe is formed by a reciprocatory knife **14** (Fig. 1) which cuts across the sole edge against the usual anvil **16**, the latter being a part of, and at the lower end of an oscillating feed point **18**. The crease guide **10**, bottoming in the above mentioned crease of the shoe, positions the shoe so as to determine the line of cut of the knife.

The feed point **18** and the bottom rest **12** are moved together from right to left to impart intermittent feeding movements to the work, and just prior to each feeding movement, the feed point is moved slightly toward the work to relieve the pressure of the work upon the crease guide, whereby no frictional resistance to the feeding of the work is caused by the crease guide. One cutting stroke of the knife occurs between successive feeding movements of the work, and while the knife is in the work, the bottom rest is returned to the right-hand end of its stroke, the feed point being at rest during this period. The cutting action of the knife occurs while the feed point is at rest; but when the knife has reached the end of its cutting stroke, the feed point is moved outwardly away from the shoe, allowing its outwardly flanged margin again to re-engage the crease guide. The return motion of the feed point next takes place while the shoe is gripped between the crease guide and the bottom rest which is stationary at this time.

Immediately to the right of the crease guide **10** there is a smoothing member **20** which is constantly rotated, and smooths the upper side of the flanged margin of the shoe just before it passes beneath the crease guide, whereby any interruption in the feeding movement of the shoe which might be caused by unevenness in the outwardly flanged margin of the shoe is avoided. Having outlined the purpose and operation of the principal shoe engaging members of the machine, the details of their construction and of the driving mechanism for them will now be described.

The knife **14** is adjustably fixed to the forward end of a cylindrical knife carrier **22** (Fig. 6) which is mounted to reciprocate horizontally in bearings **24, 26** supported in the frame **28** of the machine. A roller stud **30**, mounted upon a projection **32** extending from the rear end of the carrier **22**, runs in a slot **34** formed in a guide **36** which is fixed to the frame. The knife edge is thus held in a horizontal position at all times. The knife carrier at its rear end is connected by a pin **38** to a connecting rod **40** (Fig. 2) which is driven by a crank **42** on a rotating crank shaft **44**. The crank shaft is mounted upon ball bearings **46, 48**, one bearing being mounted upon each side of the machine. The crank shaft may be driven by a suitable source of power through a belt **50** which runs over a pulley **52** fixed to the crank shaft.

The crease guide **10** is of usual form having two arms which are connected at their lower ends by a shoe positioning portion. The upper ends of the arms are slotted to receive bolts **53** (Fig. 1) by which the crease guide is adjustably fixed to the lower end of a slide **54**. This slide is mounted for vertical movement in ways formed in the forward end of a head casting **56** secured to the frame **28**. Plates **58**, which are fixed to the casting **56**, hold the slide within the above-mentioned ways.

The crease guide **10** can be readily adjusted vertically, in order to determine the sole edge extension, by turning an eccentric **60** (Figs. 1 and 3) which fits within a slot **62** formed in the upper part of the slide **54**. This eccentric is mounted for rotative and axial movement upon a stud **64** which is fixed in the head casting **56**. Sets of serrated shoulders **66, 66**, one upon the stud and the other at the rear side of the eccentric, normally engage each other and prevent the eccentric from rotating, the shoulders being yieldingly held in this relation by a spring **68** which is compressed between the eccentric and the head of the stud. In order to adjust the crease guide the operator grips a knurled knob **70** projecting forwardly from the eccentric, pulls the eccentric outwardly to disengage the shoulders **66, 66**, and then rotates the eccentric to shift the crease guide up or down as may be required. A set screw **72** threaded in the slide **54** and adapted to engage the eccentric,

provides further means for securing the latter in its adjusted position.

In order that adjustment of the crease guide will not disturb the desired relation between it and the smoothing member 20, the latter is so mounted that it is automatically adjusted simultaneously with the crease guide, and to the same extent. This result is obtained by the use of a common mounting for the smoothing member and crease guide. That is, the slide supports not only the crease guide, but also a bracket 76 to which a bearing 74, in which the smoothing member rotates and slides axially, is fixed. The bracket itself is secured to the rear side of the slide 54 by bolts 78. These bolts pass through horizontal slots in the ends of the bracket 76, whereby adjustment of the smoothing member toward and away from the crease guide is permitted.

The construction of this mounting for the smoothing member is such that the lower, conical, and knurled end of the smoothing member is closely adjacent to the crease guide, and is inclined as shown in Fig. 3. Moreover, as viewed in elevation (Fig. 1), or plan (Fig. 2), the smoothing member is so positioned that its conical surface is substantially tangent to a plane including the inner surface of the crease guide. When no work is presented to the machine, the smoothing member is slightly below its normal operating position, this lowermost position of the smoothing member being determined by the engagement of a driving pulley 80, fixed to the upper end of the smoothing member, with the top of the bearing 74. When a shoe is presented to the machine the smoothing member is lifted slightly, bottoming in the crease between the side of the upper and its flanged margin, and "floats" in the crease, rising or falling as the contour of the portion of the shoe being operated upon changes.

The pulley 80 is driven by a belt 82 which runs over idler pulleys 84, 86 (Fig. 5) and a driving pulley 88, the latter being fixed to the crank shaft 44. The pulley 86 is mounted upon a stud 90 which is fixed to the right-hand side of the frame. In order to permit control of the tension in the belt 82, the idler pulley 84 is mounted upon the upper end of an arm 92 which is mounted for angular adjustment on a screw 94. This screw is threaded into a removable plate 96 which covers a hand hole in the side of the frame. The arm 92 is held in adjusted position by a clamp screw 98 which extends through an arcuate slot 100 in the arm, and is threaded into the plate.

At the beginning of each feeding movement of the feed point it is quickly reciprocated rearwardly of the machine into its clamping position, in which the inner side of the feed point is slightly to the rear of the inner surface of the crease guide. Immediately after the work is clamped, the cutting stroke of the knife begins, and throughout both the cutting stroke of the knife and the feeding stroke of the feed point the feed point is retained in its clamping position. Since this action of the feed point prevents the work from pressing against the crease guide, the latter does not tend to retard the feeding movement of the work, which is completed as the knife engages the work. The mounting and operating mechanism for the feed point will now be described.

The feed point is fixed to the outer end of a shaft 102 (Fig. 1) which is mounted to slide and oscillate in a pair of bearings 104 in the head casting, and a second pair of bearings 106 in the frame 28. The shaft is urged forwardly by a spring 108 (Figs. 1 and 2) which is housed in a bore in the rear end of the shaft, and is compressed between a washer 110 in the bore and a bracket 112 which is fixed to the top of the rearmost bearing 106. The axial position of the shaft 102, and hence the position of the feed point toward and away from the knife, is determined by the engagement of a pair of cam members 114, 116, which, when the former is oscillated, cause the above-mentioned reciprocatory movement of the feed point.

The cam member 114 is mounted to rotate freely upon the shaft 102, and bears at its rearward side against a collar 118 which is locked to the shaft 102 by a splined connection. The cam 116 is provided with a pair of ears 120 (Fig. 2) having elongated slots through which screws 122 pass, and are threaded into the rearward bearing 104 on the head casting. The cam 116 is supported against thrust directed forwardly of the machine by an abutment comprising a ring 124 which bears against the rear side of the bearing 104, and is threaded upon the cam member 116. The cam members 114, 116 are provided with a series of projections 126, 128 respectively, the projections of each series extending into spaces between the projections of the other series when the feed point is in its forward, retracted position. However, when the cam member 114 is oscillated, its projections 126, which have inclined sides, slide along the similarly inclined sides of the projections 128, bringing the ends of both sets of projections into engagement with each other. The feed point 18 is thus moved rearwardly against the pressure of the spring 108 through a distance equal to the combined heights of the projections. The size of these projections as shown in the drawings has been exaggerated for the purpose of clarity. The actual stroke of the feed point is in the neighborhood of one thirty-second of an inch. It is evident that by turning the ring 124, after having loosened the screws 122, the position of the cam 116 can be shifted axially of the shaft 102. One purpose of this adjustment is to insure that the work engaging surface of the feed point, in its forward retracted position, will be somewhat forward of the inner work engaging surface of the crease guide, and that this relation between the crease guide and feed point will be reversed when the latter is in its clamping position.

Another important purpose of this adjustment is to enable the operator readily to adjust the machine so that the knife and feed point just meet at the end of the cutting stroke of the knife. The range of this latter adjustment is ordinarily so small that it may be made, and repeated, without destroying the desired relation referred to above between the feed point and the crease guide. The ring may be locked in various positions of adjustment by a pin 130 which is mounted to slide axially in the bearing member 116, and may be received in any of a number of grooves formed in the rim of the ring. To release the ring the pin 130 is pulled rearwardly against the resistance of a spring 132 which encircles its forward end, this portion of the pin having been reduced in diameter so that when it is moved over the ring 124, the latter may be rotated without interference from the pin.

Oscillating movement is imparted to the cam member 114 by mechanism comprising a link 134 (Figs. 1 and 2), a lever 136, a connecting rod 138, and a crank 140, the latter being formed upon the crank shaft 44. The link 134 is connected by

ball-and-socket joints to the forward end of the lever 136, and to the end of an arm 142 extending to the left from the cam member 114. The lever 136 is pivoted on a stud 144 which is fixed to the frame, and at its rear end is connected by a pin 146 to the connecting rod 138. It will now be understood that, during one revolution of the crank shaft 44, the feed point will be moved through one cycle of its reciprocatory motion, the clamping stroke being provided by the camming action of the cam members 114, 116 and the releasing stroke by the spring 108.

The mechanism for imparting the oscillatory feeding movement to the feed point includes a driving member 148 which surrounds, and is splined to, the shaft 102 so that the latter is free to slide axially, but not to rotate, with respect to the driving member. The driving member has an arm 150 which is connected by a ball-and-socket joint to a link 152, the lower end of which is connected by a ball-and-socket joint to both a connecting rod 154, and another link 156. The link 156 is mounted to swing upon a stud 158 fixed in the frame, and with the link 152 constitutes a toggle. The connecting rod 154 is operated by an eccentric 160 formed on the crank shaft 44. It will now be evident that as the toggle formed by the links 152, 156 is moved between a straightened condition and that in which it is shown in Fig. 1, the driving member 148, and hence the feed point 18, will be oscillated, one complete feeding stroke and one complete return stroke occurring during each revolution of the crank.

The bottom rest 12, its mounting and the driving means therefor will now be described. The bottom rest consists of a curved plate mounted to swing about a vertical axis toward and away from the crease guide 10 upon a shaft 164 (Figs. 4 and 5) carried by a support 166. A coil spring 168 surrounding the upper and lower ends of the shaft bears against the rear side of the bottom rest, urging the latter forwardly. The ends of the spring are hooked about the support 166. The support, together with a bracket 170, are secured by a screw 172 to the end of a shaft 174 which is mounted to reciprocate in bearings 176 formed in a housing 178 which is fixed to the head casting. In order to prevent the shaft 174 and bottom rest from rotating about the axis of the shaft, a roller stud 180, mounted upon the bracket 170, is arranged to run in a groove 182 formed in a boss 184 which projects from the front of the frame. The bottom rest is adjustable about a tangent to its upper edge and parallel with the inner surface of the crease guide owing to the provision of an arcuate slot 186 in the support 166, and through which the screws 172 extends. The bottom rest 12 may therefore be adjusted angularly, without altering its position heightwise, to permit the shoe bottom to seat flatly upon it when the shoe is properly presented to the machine.

Forward movement of the bottom rest 12 is limited, so that the rest cannot strike the crease guide or feed point, by the engagement of a strut 188, extending to the right from the bottom rest, with a pad 190. This pad has a shank 192 which is mounted to slide in the frame, and is urged rearwardly thereof by a spring 194. An adjusting screw 196 threaded in the frame behind the pad acts as an adjustable stop for the latter. The screw is frictionally held in adjusted position by a spring 198 which is compressed between a washer 200, on the inner end of the screw, and the frame. In order to facilitate presenting a shoe to the machine, the bottom rest may be moved away from the crease guide by depressing a treadle (not shown) which causes a crank 202, arranged to engage the rear end of the shank 192, to swing the bottom rest, against the action of the spring 168, in a clockwise direction when viewed from above. The crank is mounted to swing upon a stud 204 carried by the plate 96, and is connected to the treadle by a rod 206.

A reciprocatory feeding movement is imparted to the bottom rest 12 by mechanism comprising a bell-crank 208 (Fig. 1) carrying at its forward end an arm 210 the end of which is forked to receive a flattened web 212 (Fig. 2) formed in the mid-portion of the shaft 174. A driving connection between the shaft and the arm 210 is provided by a pair of square blocks 214 (Figs. 3 and 4) which fit within transverse recesses formed in the arm, and are rotatably mounted upon a pin 216 which passes through the web 212. The bell-crank 208 is rotatably mounted upon a rod 218 which is supported at its forward and rear ends by the housing 178 and the frame 28, respectively. Extending toward the right from the rear end of the bell-crank is an arm 220 to which a link 222 (Fig. 3) is connected by a ball-and-socket joint. At its upper end this link is connected by a similar joint to both a connecting rod 224 and another link 226, which, with the link 222 constitutes a toggle. The link 226 is pivoted at its upper end on a stud 228 fixed in the frame. The connecting rod 224 is driven by a crank 230 formed on the crank shaft 44. It will now be evident that during a complete revolution of the crank shaft the toggle comprising the links 222 and 226 will be moved from a straight relation into an angular relation, as illustrated in Fig. 1, and back again to a straight relation, causing the bottom rest to be reciprocated alternately in opposite directions.

The operating characteristics of the machine will now be described with reference to the chart of Fig. 7, it being understood that the cycle to be described starts when the knife is in its fully retracted position as shown in Fig. 1. Shortly before this time (315°), the feeding action of the feed point and the bottom rest will have begun, and the feed point also will have been reciprocated rearwardly of the machine to grip the work and to relieve the pressure of the work against the crease guide.

The feeding action of the feed point and bottom rest now continues throughout approximately 90° of rotation of the crank shaft 44, at the end of which period the knife will have advanced into engagement with a work piece of average thickness. At this time also the toggle 152, 156 will be approaching its straightened condition, and simultaneouly, the connecting rod 154 will be approaching a dead center relation with respect to the eccentric 160. The effect of these relations occurring simultaneously is to cause the feed point to remain at rest throughout the succeeding 90° of rotation of the crank shaft. During this period of rest of the feed point the knife cuts completely through the work, the end of the cutting stroke coinciding substantially with the end of the period of rest of the feed point. The clamping action of the knife upon the work while the cut is being made firmly holds the work against movement in any direction, and it is in this part of the cycle of the machine that the greater part of the return movement of the bottom rest occurs. Accordingly, any tendency for

the bottom rest to impart a back feeding movement to the work is avoided. Shortly after the return stroke of the knife beings, the feed point is reciprocated forwardly to allow the shoe to be pressed against the stationary crease guide by the bottom rest, which, at this time, begins a period of rest equivalent to about 90° of rotation of the crank shaft. While the work is thus clamped between the crease guide and the bottom rest, both of which are now stationary, the feed point has its return motion. It is evident that back feeding of the work is avoided at this time, not only because the work is gripped by the crease guide and bottom rest, but also because the feed point has no clamping action upon the work during its return stroke. Moreover, during the greater part of the return stroke of the feed point the knife is in the work, and hence still holds the work against any back feeding movement. Simultaneously with the beginning of the feeding movements of the feed point and bottom rest, at a point about 45° before the completion of the cycle being described, the feed point is reciprocated quickly toward the shoe so that the pressure of the latter against the crease guide is relieved at the same time when the feeding movement of the work begins. It is to be understood that the knife, during its return stroke, will have moved out of engagement with the work while the work is held between the stationary crease guide and bottom rest. Moreover, as the knife is still receding from the work at this time it cannot interfere with the succeeding feeding movement of the work, which begins shortly before the knife reaches its fully retracted position.

As in the case of the above-mentioned toggle mechanism for driving the feed point, the toggle 222, 226 approaches its straightened condition simultaneously with the approach of the connecting rod 224 to a dead center relation with respect to the crank 230; and because of this the bottom rest has a dwell or period of rest extending through 90° of rotation of the crank shaft. It is further observed that while the feed point toggle 152, 156 is passing through its straightened phase (in order to interrupt the feeding movement while the cutting action of the knife takes place) the bottom rest toggle 222, 226 is in the opposite, angular position whereby the rapid return stroke of the bottom rest is provided. Similarly while the toggle 222, 226 passes through its straightened phase, the toggle 152, 156 is in its angular phase, which causes the rapid return motion of the feed point to occur while the bottom rest is at rest and holding the work against the fixed crease guide.

Assuming that a shoe has been presented to the machine with the bottom of the shoe seated upon the bottom rest 12, and with the crease guide bottoming in the crease between the side of the shoe upper and its outwardly flanged margin, the shoe is progressively fed with a succession of feeding strokes directed toward the left. The knife makes a cut through the sole against the anvil on the feed point between successive feeding movements, the feed point having been moved rearwardly to meet the knife at the end of its cutting stroke so as to relieve the crease guide from any thrust created by the knife. Just prior to the engagement of the outwardly flanged margin of the upper with the crease guide, it is smoothed or flattened by the smoothing member 20 in order to eliminate any wrinkles or projections in the flanged portion of the upper which might, in striking the crease guide, interfere with the feeding movement of the shoe.

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

1. In a machine for rounding the sole edges of stitchdown shoes, a reciprocatory knife, a guide adapted to be received in the crease between the side of the upper of a shoe and the outwardly flanged margin thereof, a smoothing member situated closely adjacent to the edge of said guide toward which the shoe is advanced as it is progressively presented to said knife, a common mounting for said guide and smoothing member comprising a slide movable to vary simultaneously the relation of said guide and said smoothing member with respect to the line of cut of said knife, and means for adjusting said slide.

2. In a machine for rounding the sole edges of stitchdown shoes, a reciprocatory knife, a guide adapted to be received in the crease between the side of the upper of a shoe and the outwardly flanged margin thereof, a smoothing member having a tapered work engaging portion arranged to engage the outwardly flanged margin of the shoe adjacent to the edge of said guide toward which the shoe is advanced, a common mounting for said guide and smoothing member comprising a slide mounted for adjustment toward and away from the line of cut of said knife, a rotatable member cooperating with said slide to adjust the latter in response to rotation of said last-mentioned member, and locking means for releasably holding said last-mentioned member in adjusted position, said last-mentioned member being mounted for axial movement to disengage said locking means.

3. In a machine for rounding the sole edges of stitchdown shoes, a reciprocatory knife, a guide adapted to be received in the crease between the side of the upper of a shoe and the outwardly flanged margin thereof, a rotary smoothing member disposed adjacent to the edge of said guide toward which the shoe is advanced, said member being displaceable longitudinally of its axis of rotation by the shoe, means for rotating said member to cause its work engaging portion to turn in the direction of the feed movement of the work, a common mounting for said guide and smoothing member comprising a slide mounted for movement upon the frame of the machine toward and away from the line of cut of said knife, said slide having a slot therein extending transversely of the direction of its movement, a rotatable eccentric disposed within said slot for adjusting said slide, said eccentric having a set of shoulders in interfitting relation with another set of fixed shoulders, and a spring acting upon said eccentric yieldingly to hold said shoulders in engagement with each other, whereby the eccentric is releasably held in adjusted position.

4. In a rounding machine having a reciprocatory knife, feeding means comprising a bottom rest and a feed point arranged to support the work against the thrust of the knife, said bottom rest and feed point being movable to impart successive feeding movements to the work, a crease guide, mechanism for reciprocating said feed point toward and away from said knife at the beginning and end of each feeding movement respectively, whereby pressure of the work upon the crease guide is relieved during its feeding movement, said mechanism comprising cooperat-

ing cams, and means for adjusting the position of one of said cams to control the terminal positions of said feed point with respect to said knife and crease guide.

5. In a rounding machine having a reciprocatory knife, feeding means comprising a bottom rest and a feed point arranged to support the work against the thrust of the knife, said bottom rest and feed point being movable to impart successive feeding movements to the work, a crease guide, mechanism for reciprocating said feed point toward and away from said knife at the beginning and end of each feeding movement respectively, whereby pressure of the work upon the crease guide is relieved during its feeding movement, said mechanism comprising cooperating cams, an adjustable abutment engaged by one of said cams, cooperating inclined surfaces on said abutment and said last-mentioned cam constructed and arranged to vary the terminal positions of said feed point in response to movement of said abutment.

6. In a rounding machine having a reciprocatory knife, feeding means comprising a bottom rest and a feed point arranged to support the work against the thrust of the knife, said bottom rest and feed point being movable to impart successive feeding movements to the work, a crease guide, mechanism for reciprocating said feed point toward and away from said knife at the beginning and end of each feeding movement respectively, whereby pressure of the work upon the crease guide is relieved during its feeding movement, said mechanism comprising cooperating cams, an abutment in threaded engagement with one of said cams whereby the terminal positions of said feed point are varied in response to rotative adjustment of said abutment.

7. In a rounding machine having a reciprocatory knife, feeding means comprising a bottom rest and a feed point arranged to support the work against the thrust of the knife, said bottom rest and feed point being movable to impart successive feeding movements to the work, a crease guide, mechanism for reciprocating said feed point toward and away from said knife at the beginning and end of each feeding movement respectively, whereby pressure of the work upon the crease guide is relieved during its feeding movement, said mechanism comprising cooperating cams, an abutment for one of said cams, said abutment being movable with respect to said last-mentioned cam, whereby the terminal positions of said feed point are varied with respect to said knife and crease guide, and means for releasably holding said abutment in adjusted position.

8. In a rounding machine having a crease guide for positioning a shoe to be rounded, a bottom rest arranged to urge the shoe toward said crease guide, a reciprocatory knife movable through alternate cutting and return strokes, a feed point for supporting the shoe against the thrust of said knife, means for alternately moving said feed point toward said knife to relieve pressure of the shoe from said crease guide during the cutting stroke of said knife and then away from the knife, at the end of its cutting stroke, to permit said crease guide to receive the pressure of the shoe during the return stroke of said knife, driving means for moving said feed point through a feeding stroke in one direction and a return stroke in the opposite direction, the end of said feeding stroke and the beginning of said return stroke being separated by a period of rest which terminates at the end of the cutting stroke of said knife, and a second driving means for imparting to said bottom rest a feeding stroke in synchronism with the feeding stroke of said feed point and a return stroke terminating when the pressure of the shoe is transferred from said feed point to said crease guide.

9. In a rounding machine having a crease guide for positioning a shoe to be rounded, a bottom rest arranged to urge the shoe toward said crease guide, a reciprocatory knife movable through alternate cutting and return strokes, a feed point for supporting the shoe against the thrust of said knife, means for alternately moving said feed point toward said knife to relieve pressure of the shoe from said crease guide during the cutting stroke of said knife and then away from the knife, at the end of its cutting stroke, to permit said crease guide to receive the pressure of the shoe during the return stroke of said knife, driving means for moving said feed point through a feeding stroke in one direction and a return stroke in the opposite direction, the end of said feeding stroke and the beginning of said return stroke being separated by a period of rest which terminates at the end of the cutting stroke of said knife, and a second driving means for imparting to said bottom rest a feeding stroke in synchronism with the feeding stroke of said feed point and a return stroke terminating when the pressure of the shoe is transferred from said feed point to said crease guide, said second driving means comprising a toggle mechanism constructed and arranged to cause a dwell in the operation of said bottom rest coextensive with the period when said feed point is retracted from said knife.

10. In a rounding machine having a crease guide for positioning a shoe to be rounded, a bottom rest arranged to urge the shoe toward said crease guide, a reciprocatory knife movable through alternate cutting and return strokes, a feed point for supporting the shoe against the thrust of said knife, means for reciprocating said feed point toward and away from said knife alternately to relieve pressure of the shoe from said crease guide during the cutting stroke of said knife and then to permit said crease guide to receive the pressure of the shoe during the return stroke of said knife, driving means for moving said feed point through a feeding stroke in one direction and a return stroke in the opposite direction, said driving means comprising a toggle mechansm constructed and arranged to cause a dwell in the operation of said feed point following its feeding stroke and terminating at the end of the cutting stroke of said knife, and a second driving means for imparting to said bottom rest a feeding stroke in synchronism with the feeding stroke of said feed point and a return stroke which terminates when the pressure of the shoe is transferred from said feed point to said crease guide, said second driving means comprising a toggle mechanism constructed and arranged to cause a dwell in the operation of said bottom rest which is coextensive with the period when the shoe is gripped between said bottom rest and crease guide.

JOSEPH C. CANTLEY.

No references cited.