May 18, 1926. 1,584,807

W. T. B. ROBERTS

FEED MECHANISM

Filed Oct. 31, 1922 2 Sheets-Sheet 1

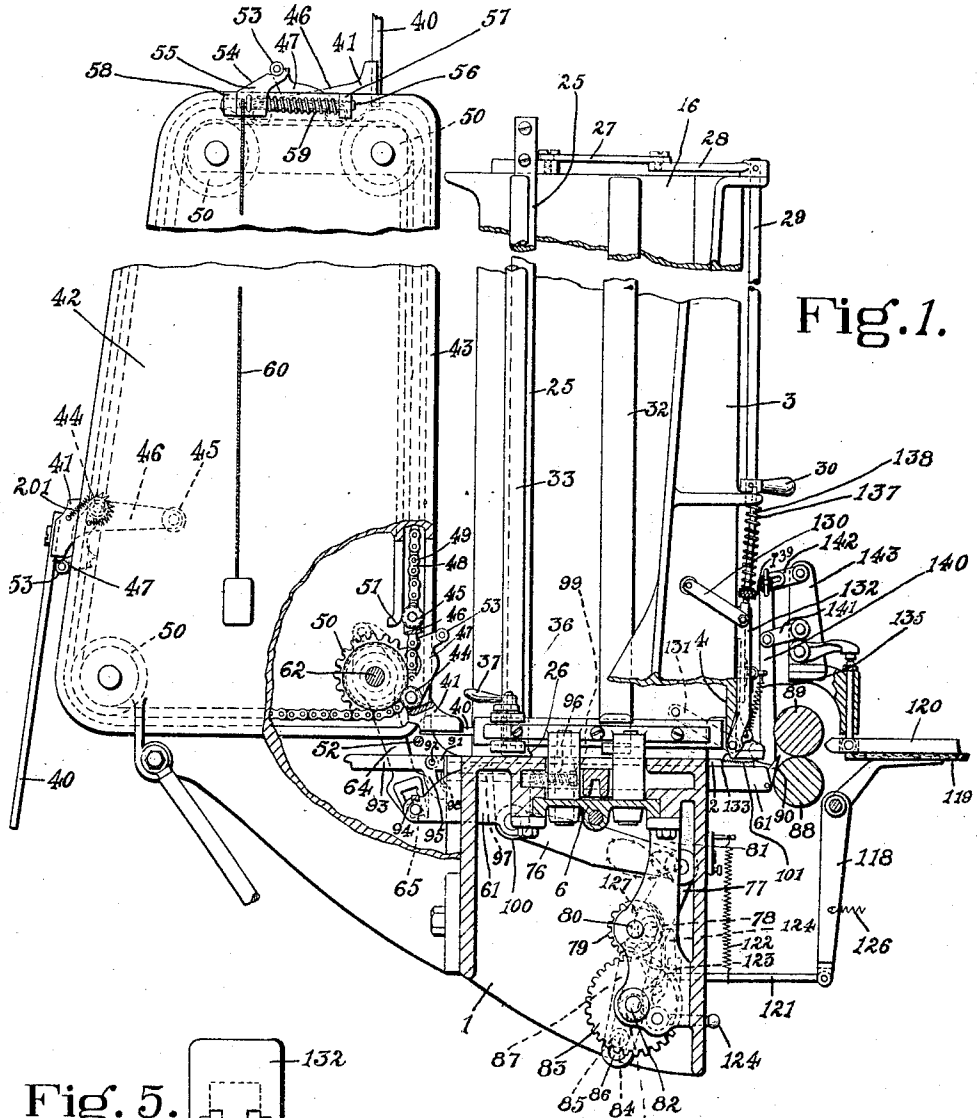


Fig. 1.

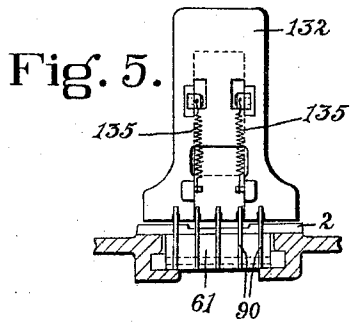


Fig. 5.

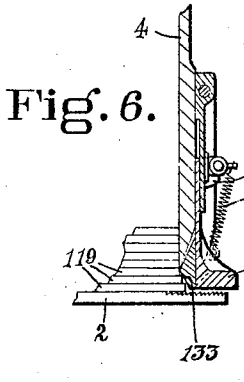


Fig. 6.

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FEED MECHANISM

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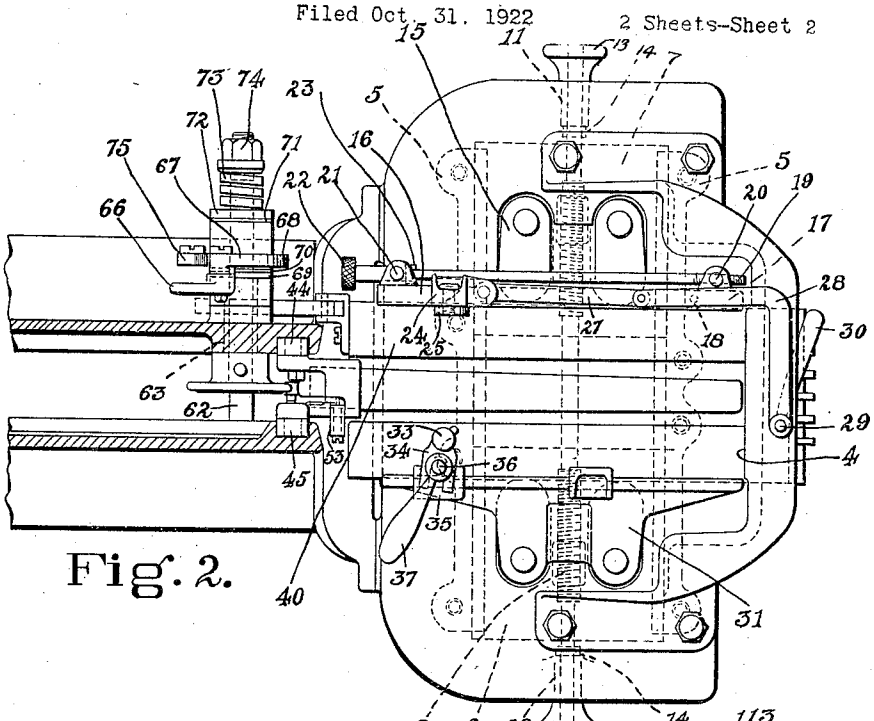


Fig. 2.

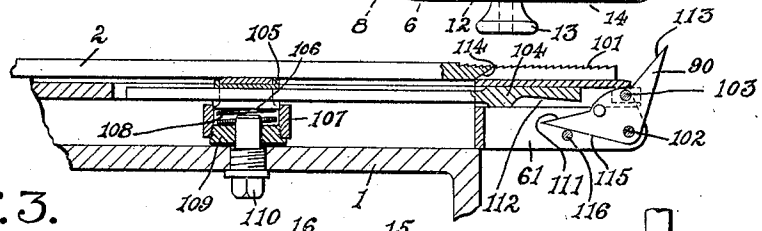


Fig. 3.

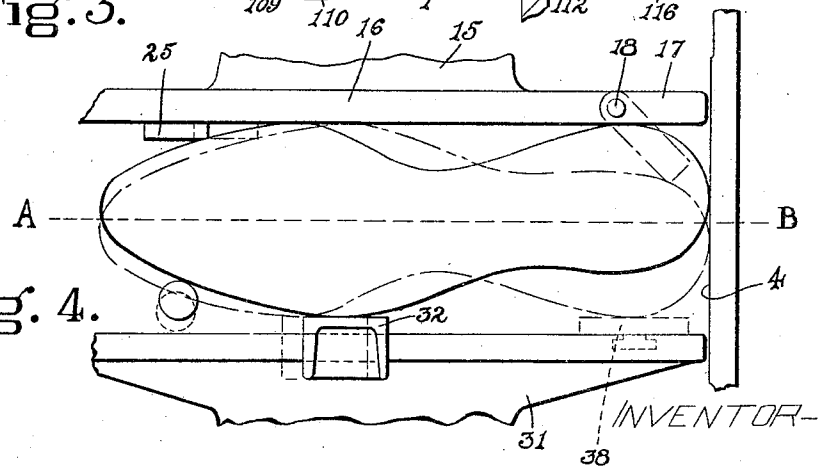


Fig. 4.

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Patented May 18, 1926. 1,584,807

UNITED STATES PATENT OFFICE.

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FEED MECHANISM.

Application filed October 31, 1922. Serial No. 598,229.

This invention relates to mechanism for feeding blanks and is herein illustrated as embodied in mechanism for feeding sole blanks from the bottom of a stack to mechanism which operates upon the blanks by splitting or marking or performing both operations upon them.

According to one feature of the present invention, certain parts of the magazine which holds the stack of soles are adjustable in such manner that the members of a stack of right soles and the members of a stack of left soles may be fed in substantially the same manner to the intake rolls of the mechanism which is to operate upon them. In the illustrative machine, the adjustments are such that a stack of right soles or a stack of left soles may be so positioned with regard to a chosen vertical plane parallel to the direction of feed movement that each member of either stack will be divided into the same two parts. This chosen plane divides the magazine into two equal parts, said magazine being centrally alined with the intake rolls of the mechanism for operating upon the blanks.

In feed mechanisms in which blanks are fed one by one from the leading end of a stack in a magazine, it is desirable to provide a presser to engage the following end and thereby ensure that the stack is moved along as the members of it are fed. Hitherto such pressers have commonly been moved through the magazine in the direction of the length thereof until the last blank has been fed from the magazine, and have then been withdrawn by being moved in the opposite direction to permit a succeeding stack to be placed in the magazine, the action of the feed mechanism being stopped during the placing of the second stack. According to another feature of the present invention, provision is made permitting the loading of a second stack of blanks into the magazine while the feed mechanism continues to operate. In the illustrated machine the blanks are fed one by one from the bottom of the stack in the magazine by a continuously operating feed slide, and a plurality of pressers are moved in succession through the magazine, each presser being adapted to press upon the top of one stack and to support the bottom of a succeeding stack. With this construction the loading of the magazine is greatly facilitated, since the operator can place in it a succeeding stack while the members of the preceding stack are being fed.

In feeding one by one the lowermost blanks from a stack considerable difficulty is sometimes encountered in starting the feed movement of a lowermost blank. According to another feature of the present invention, the stack of blanks rests upon a supporting plate which partakes of the first part of the feed movement of the feed slide. Thus at the beginning of the movement the feed slide is assisted by the supporting plate; but once the blank is well started, the movement of the plate is arrested and the remainder of the feeding of the blank is carried out by the feed slide.

These and other features of the invention including certain details of construction and combinations of parts will be described as embodied in an illustrative machine and pointed out in the appended claims.

Referring now to the accompanying drawings:—

Fig. 1 is a side elevation, partly in section, of a machine in which the present invention is embodied;

Fig. 2 is a plan of part of the machine partly in section;

Fig. 3 is a sectional elevation of the feed slide mechanism;

Fig. 4 is a plan illustrating the positioning of a right and left sole in the magazine;

Fig. 5 is an elevation of gate mechanism controlling the passage of blanks from the magazine; and

Fig. 6 is a section of the gate mechanism.

The feed mechanism is illustrated as adapted to feed blanks to mechanism which operates upon the blanks by evening and grading them in accordance with the thickness of their thinnest spots. This mechanism for operating upon the blanks is or may be substantially the same as the machine shown in British Patent 17,808 of 1909 and includes a gate 140 which is slightly different from that of the patented machine, being pivoted on parallel links 141, 142 but which operates just as does the gate of the patented machine. The feeler rolls 88, 89 are exactly like those of the patented machine and function in exactly the same manner. The presser 120 is slightly different

from that of the patented machine but its function is the same, namely to press the blank 119 down upon a feed chain which carries the blank to the marking and splitting mechanism. Only the few members referred to above have been shown, reference being made to the patent for the remainder of the mechanism.

The magazine and feeding mechanisms are supported by a casting 1 bolted to the front of the evening and grading machine. The soles, lifts or other articles (hereinafter referred to as soles) to be operated upon are stacked, one upon another, on a reciprocating supporting slide 2 mounted in a horizontal guideway, extending lengthwise of the mechanism, formed in the upper surface of the casting 1. Bolted to the upper face of the casting 1 is an upstanding frame 3 the surface 4 of which forms the right hand end of the magazine. The frame 3 has at its lower end an opening through which the soles are fed one at a time to the evening and grading machine. The casting 1 also has formed in it, below and transverse to the supporting slide 2, guideways 5, 5 in which are adjustably mounted two slides 6 and 7 which support side members of the magazine. The slides 6 and 7 are adjusted towards or from each other by a right and left hand screw 8 threaded through lugs formed on the slides and rotatably mounted in bearings 11 and 12 formed in the casting 1. The screw 8 is rotated to adjust the slides by hand wheels 13 fixed on its ends and is prevented from endwise movement by the engagement of the hand wheels 13 and collars 14 fixed on the screw with opposite ends of each of the bearings 11 and 12. Fixed to the slide 7 is a bracket 15 having a wide upstanding plate 16 against which one edge of the sole is placed. The right-hand end of the plate is formed as a hinge piece 17 pivoted on a vertical rod 18 and extending from the top of the plate to within a short distance of the supporting slide 2. The hinge piece 17 is adjusted about its vertical pivot by means of a horizontal screw 19 threaded at one end into a vertical pin 20 rotatably mounted in lugs formed on the rear face of the hinge piece. The other end of the screw has a bearing in a second vertical pin 21 rotatably mounted in lugs formed on the outer face of the upstanding plate 16. The screw has on its end a hand wheel 22 by which the screw may be rotated, and the screw is prevented from endwise movement by the engagement of the hub of the hand wheel 22 and a collar 23, fast on the screw, with opposite sides of the vertical pin 21. The upper edge of the upstanding plate 16 is formed as a guide for a bracket 24 to which is fixed a bar 25 extending downwardly on the inner face of the plate 16. This bar is adjustable along the plate and has at its lower end a toothed inclined face 26 (Fig. 1) which engages the edge of the sole at one side of the forepart thereof and prevents movement of the sole to the left during the return movement of the supporting slide 2. The bracket 24 is adjusted by means of a link 27 pivotally connected at one end to the bracket and at the other end to an arm 28 fixed on a vertical shaft 29 rotatably mounted in bearings formed on the outside of the upstanding frame 3. A hand lever 30 by which the shaft may be rotated is fixed at the lower end of the shaft. The opposite side of the magazine comprises a bracket 31, fixed to the adjustable slide 6, and having a lengthwise guide for a vertical relatively narrow plate 32 which is adjustable lengthwise of the magazine along the guide and is frictionally held in adjusted position. The bracket 31 also supports an adjustable vertical circular post 33 from which projects horizontally a forked arm 34 adjustably bolted to a member 35 slidably mounted, to move lengthwise of the magazine, on the guide on the bracket 31. A bolt 36 having a hand nut 37 locks the member 35 and post 33 in adjusted position. The post 33 engages the edge of the sole at a point substantially opposite that engaged by the bar 25.

When adjusting the magazine for right soles (the soles being fed heel first and grain side up) the hinge piece 17 will be adjusted so that its inner face is in line with the inner face of the wide upstanding plate 16 and the soles are placed in the magazine with their heel ends against the inner face 4 of the end wall and with their left hand edges against the plate 16. The brackets 15, 31 are then, by means of the hand wheels 13 and right-and-left screw 8, moved towards each other until the narrow plate 32 on the bracket 31 engages the right-hand edge of the soles at their widest parts opposite which the plate 32 has previously been moved. The downwardly extending bar 25 and the vertical circular post 33 are then adjusted (the former along the wall 16 and the latter both along the guide on the bracket 31 and laterally of the magazine) into engagement with the edges of the soles at their toe ends. This position of parts is shown in full lines in Fig. 4.

When adjusting the magazine for left soles, a vertical bar 38 corresponding in thickness to the narrow plate 32 is inserted in the magazine in a suitable guideway in the right-hand bracket 31 and near the rear wall 4, and the right-hand edges of the soles at the heel and forepart are placed against this bar 38 and the narrow plate 32. The brackets 15 and 31 are then adjusted as before, the hinge piece 17 on the wide upstanding plate 16 is adjusted about its pivot

18 into engagement with the heel end of the soles, and the downwardly extending bar 25 and circular post 33 are positioned against the toe end of the soles. This position of parts is indicated in dotted lines in Fig. 4. By these means right and left soles may be correspondingly positioned so as to be fed in practically the same manner. The dotted line A B represents a vertical plane equidistant from the operative faces of the plate 16 and the narrow plate 32, which engage the soles in the locality of their balls whether the soles are rights or lefts. This plane, it will be noted, divides a right sole and a left sole alike into two parts the respective extents of which are the same and in effect divides the magazine into two equal parts. The magazine is centrally alined with the feeler rolls 88, 89 of the evening and grading mechanism; and consequently the members of a stack of right soles may be fed in practically the same manner as the members of a stack of left soles.

The stack of soles in the magazine is pressed down at any given time by one of three thin flat pressers 40 intermittently actuated through a friction drive. Each presser is fastened to a carrier 41, which is caused to travel round a frame 42 fastened to the front of the casting 1 which supports the magazine. The frame 42 has a vertical portion 43 adjacent the magazine down which the carrier 41 is guided by horizontal rolls 44 one on each side of the carrier near its lower end and by a third horizontal roll 45 at the end of an upwardly projecting arm 46 on the carrier 41. The rolls are guided in vertical grooves formed in the frame. On the same axis as the two opposite rolls 44 is pivoted an arm 47 which is bifurcated at its free outer end to straddle a chain 48 and is recessed to receive pins 49 projecting from each side of the chain. A spring 201 connected to the arm and carrier presses the bifurcated end on to the pins so that the chain may drive the carrier. The chain 48 passes around sprocket wheels 50 pivotally mounted at the corners of the frame 42 and is driven intermittently through a friction drive to force a presser 40 down upon the stack. The inner walls of the grooves in the vertical portion of the frame terminate at 51 near their lower ends so that when the stack has been used and a presser 40 reaches the supporting slide 2, the presser is moved by the chain horizontally away from the magazine.

The pressers 40, it will be noted, are thin and flat. While an operative presser is moving downwardly during the time that the stack of soles beneath it is being fed one by one from the magazine by the supporting plate 2 and certain mechanism presently to be described, the operator may place upon the upper face of the presser a second stack of soles. Consequently when the presser reaches its lowermost position and is withdrawn horizontally away from the magazine, the magazine contains a second stack ready to be engaged by a second presser.

The outside faces of the guides continue round the frame, and, as the presser is drawn away from the magazine, its end is supported on a horizontal pin 52 in the lower portion of the frame 42. When the presser 40 leaves this pin 52 it swings down about the axis of the oppositely disposed rolls 44 which are supported by the outer sides of the guides, and the presser is carried round the frame, the third roll 45 being unsupported as shown in Fig. 1. When the carrier approaches the top of the frame 42 the roll 45 on the carrier 41 enters a guide which extends over the top of the frame and turns the presser 40 about the axis of the opposite rolls 44 into a position in which the presser projects vertically upwardly above the carrier. As the carrier 41 travels along the top of the frame 42 a roll 53 pivoted on an extension of the arm 47 engages a cam surface 54 formed on one arm of a lever 55, the arm is disengaged from the chain, and the movement of the carrier around the frame is stopped. The lever 55 is pivoted on a horizontal shaft 56 carried in lugs 57, 58 projecting from the side of the frame 42 and is arranged to slide along the shaft against the pressure of a spring 59 interposed between the lever and the lug 57 until the arm 47 is fully disengaged from the chain whereupon the carrier 41 comes to rest. A second arm of the cam lever 55 has a downwardly extending cord 60, a pull on which against the tension of the spring 59, which acts both as a torsion as well as a compression spring to hold the lever 55 in operative position, turns the lever on its shaft 56, disengages the cam 54 from the roll 53 and allows the arm 47 to be moved, by the spring 201 into engagement with the pins 49 on the chain. The carrier 41 may be readily disengaged from the chain 48 by turning the arm 47 connecting it thereto about its pivot against the action of the spring 201; and the presser 40 may then be moved along the guideways into engagement with the top of the newly built up stack of soles. There are provided a number, say three, of similar presser carriers and pressers so that while one presser is acting on the stack in the magazine the others may be traveling round the triangular frame.

The chain is driven from a reciprocating feed slide 61 hereinafter referred to. The lower rear sprocket wheel 50 round which the chain 48 passes is fastened on the end of a horizontal shaft 62 which has a bearing in a bushing 63 fixed in the frame. Pivoted on an extension of the bushing is a lever, one arm 64 of which projects downwardly and is forked to straddle a block 65 pivoted on

an extension of the feed slide 61. Another arm 66 of the lever has pivoted on it a pawl 67 which is pressed by a suitable spring into engagement with a ratchet wheel 68 loosely mounted on the shaft 62. The shaft 62 has on it a flange 69 which bears at one side against the end of the bushing 63 and has between its other side and one side of the ratchet wheel 68 a leather or friction washer 70. A second friction washer 71 is interposed between the opposite side of the ratchet wheel and a collar 72 keyed on the shaft 62 so as to slide thereon and rotate therewith. A spring 73 surrounding the shaft bears against the collar 72 and against a nut 74 screwed on the shaft. A stop pawl 75 is pivoted on the frame and held by a spring in engagement with the ratchet wheel 68 to prevent backward movement of the ratchet. By means of the mechanism which has been described above a force is continually exerted to cause that presser which is operative to exert downward pressure upon the stack and to move downward every time a sole is fed from the bottom of the stack.

The feed slide 61 is arranged below the supporting slide 2, is similarly guided in the casting 1, and has pivotally connected to it one end of a link 76 the other end of which is pivotally connected to the upper end of a lever 77 fulcrumed on a crank pin 78 extending from a pinion 79 which is fixed on a shaft 80 rotatably mounted in bearings formed in a bracket 81 fixed to the casting 1. Below and parallel to this shaft is a second shaft 82 rotatably mounted in bearings in the bracket 81, which has fixed on it a gear 83 meshing with the pinion 79. The gear 83 has on it a crank pin 84 on which is rotatably mounted a roll 85 which enters a radial slot 86 formed in the lower portion of the lever 77. The diameter of the pinion 79 is half that of the gear 83 and, as will presently appear, two revolutions are imparted to the pinion at proper intervals to cause a sole to be fed from the magazine to the feeler rolls of the evening and grading machine. Owing to the ratio of the gearing and to the location of the crank pins 78, 84, the upper end of the lever 77 is caused to travel in the path indicated by the dotted line and arrow heads. The feed slide 61 comes to rest in the position shown and remains at rest until a sole 119 has reached a certain position in the evening and grading machine, whereupon a clutch is tripped to impart two revolutions to the pinion 79. The effect of this is first to move the feed slide quickly to its extreme left-hand position where it engages a sole, second, to move it quickly to the right but not into its extreme right-hand position, third, to move it comparatively slowly part way to the left and finally to move it slowly to its extreme right hand position where it comes to rest and remains at rest until the two-revolution clutch is again tripped. Ordinarily the leading end of the sole (which is the heel end in the present case) will be seized by the feeler rolls 88, 89 at the end of the second movement. If, however, the sole is not seized at that time, it will be seized during the fourth movement at which time the feed slide 61 is moving at a speed approximately equal to the peripheral speed of the feeler rolls 88, 89.

The supporting slide 2 has fixed to its left-hand end a bracket 91 in which is pivoted on a horizontal pin 92 extending across the slide a latch 93, which, when the slides 2 and 61 are moved to the left in preparation for the commencement of their feeding movement, swings down about the pin 92 into the path of a block 94 fixed at the left-hand end of the feed slide 61; and, as the feed slide 61 is moved to the right, the supporting slide 2 is also moved to the right through the block 94 and latch 93 until a depending curved arm 95 on the latch meets a face on the casting 1 when during further feeding movement of the feed slide 61 the latch 93 is raised about its pivot 92 out of the path of the block 94. During the continued feeding movement of the feed slide 61 a spring 96 surrounding a rod 97 fast at its left-hand end in a plate 98 of the bracket 91 transmits movement to the right to the supporting slide 2 until the latter is arrested by the engagement of the depending plate 98 with a face of the casting 1, and the spring is then compressed, the spring being confined between a nut 99 on the end of the rod and a face of a lug 100 on the feed slide 61 through which the rod 97 passes. When the feed slide 61 is moved to the left, this spring expands until the left-hand end of the feed slide engages the adjacent face of the depending plate 98 when the feed slide 61 and supporting slide 2 move to the left in unison, the latch 93 dropping into position behind the block 94 when its depending curved arm 95 is moved away from the face on the casting. The supporting slide has on its upper face at its right-hand end a series of teeth 101 shaped to assist the feed fingers 90 pivoted to the feed slide 61 in their feeding movement, and is slotted to allow the fingers to engage the under face of the sole. The reciprocation of the feed slide 61, in the manner which has been described above, thus causes a reciprocation of the supporting slide or plate 2, but not of an extent equal to that of the feed slide so that the supporting plate is never fully withdrawn from beneath the stack of soles. This construction and operation of the supporting plate and the feed slide ensures that at the beginning of the feed movement the finger feed of the feed slide shall be assisted by the moving supporting plate; but that, once the lowermost

sole is well in motion, the movement of the comparatively heavy supporting plate may be arrested and the feeding left to the feed slide.

The feed fingers 90 are pivoted on a small rod 102 extending across the feed slide and have passing through them a second rod 103 which also passes through a bar 104 slidingly mounted in a guideway formed in the feed slide 61. Relative movement between the feed slide 61 and bar 104 is controlled by a friction device comprising friction washers 105, 106 above and below the bar 104. The friction washers 105, 106 are held against lateral movement by a member 107 and are urged toward each other into frictional engagement with the bar 104 by a spring 108 confined between a screwed cap 109 threaded into the member 107 and the under side of the friction washer 106. A screw 110 fixed in the casting 1 prevents lateral movement of the friction device. When the feed slide is moved to the left, Figs. 1 and 3, the bar 104 is prevented by the friction device from moving to the left with the feed slide, with the result that the feed fingers 90 are turned about the rod 102 until a face 111 on the fingers meets a face 112 on the bar 104, when the feed points of the feed fingers will be below the upper surface of the supporting plate and therefore below the lower face of the lowermost sole in the magazine. The bar 104 and feed slide 61 complete their movement to the left with the feed points below the lowermost sole. Marking of the surface of the sole and wear of the feed points is thus prevented. When the feed slide 61 is moved to the right, to feed the lowermost sole out of the magazine, the friction device temporarily prevents corresponding movement of the bar 104, and the feed points of the feed fingers are swung upwardly about the rod 102 until a face 113 on the fingers meets a face 114 on the supporting slide 2. The feed points of the feed fingers project about $\frac{3}{32}''$ above the upper surface of the supporting plate and are thus prevented, during the feeding of the lowermost sole, from digging too far into the material, or, in the case of thin soles, from passing through the lowermost sole and into the next sole and thereby feeding two soles at once. When movement of the supporting slide 2 to the right is arrested, as has been described above, and movement of the feed slide 61 continues, the friction device again retards movement of the bar 104 and the feed fingers are turned about the rod 102 until a face 115 on the fingers engages a pin 116 fixed in the feed slide 61. This upward movement of the feed points of the fingers raises the leading edge of the sole above the supporting slide (which is somewhat below the bite of the rolls 88, 89) and presents it properly to the bite of the rolls 88, 89. If the feed points were not so lifted, the lower feed roll 88 might raise the sole off the feed points as the latter fed it against the roll when the sole would not be forced between the feed rolls owing to the feed points becoming disengaged before the sole had been gripped in the bite of the rolls.

The shaft 80 is driven from the evening and grading machine by a chain and sprocket wheels (not shown) through a clutch on the shaft 80 (also not shown) controlled in such a manner as to impart two revolutions to the shaft 80 by a cam 117 on the gear shaft 82. The clutch is thrown in or rendered operative by a bell-crank lever 118, pivoted in the frame of the evening and grading machine, one arm of which is positioned in the path of a sole 119 passing through the evening and grading part substantially beneath the forward end of the presser 120 of that machine. The other arm of the bell-crank lever 118 has pivotally connected to it one end of a rod 121 which is held upwardly by a spring 122 against a pin 123 fixed in a clutch controlling wedge lever 124. The rod 121 has formed on it a shoulder which when the rod 121 is moved to the right, Fig. 1, engages the pin 123 and swings the wedge lever 124 about its pivot 125 in a clockwise direction to throw in the clutch. The rod 121 is moved to the right by a spring 126 connected to the bell-crank lever 118 and to the frame of the evening and grading machine when the sole 119 passes from between the presser 120 and the arm of the bell-crank lever 118 which is in the path of the sole. As the pinion 79 rotates, a pin 127 fixed in the pinion engages the cam shaped end of the rod 121 and depresses the rod about its pivotal connection to the bell-crank lever 118 against the action of the spring 122 to disengage the shoulder on the rod from the pin 123 in the clutch lever 124 so as to allow the clutch lever 124 to be returned by a suitable spring into position to throw out the clutch. This latter movement of the clutch lever 124 is arrested temporarily by the cam 117 which during the rotation of the gear 83 engages a projection on the lever and prevents the lever from being returned by its spring until after the pinion 80 has commenced its second rotation at the end of which the lever 124 effects the throwing out of the clutch. A handle on the lever 124 is provided which may be used to trip the clutch after a run of work has been operated upon and the magazine has been again loaded. The clutch mechanism itself has not been shown since the details of its construction form no part of the present invention and any suitable clutch which may be controlled in a man-

ner to impart to the pinion 79 two revolutions may be used,

Pivotally mounted at each side of the upstanding frame 3 which forms the end of the magazine are two pairs of parallel arms 130, 131 to the other ends of which is pivotally connected a gate 132 positioned at the rear of the frame and extending below the opening at the bottom of the frame through which the soles are fed and just clear of the upper surface of the supporting slide 2. The gate 132 has a face 133 upwardly inclined from its bottom edge at an angle of substantially sixty degrees to the horizontal towards the stacks of soles in the magazine, against which the leading edges of the soles are pressed one at a time during their feeding movement. To the right of this gate is a second gage 134 arranged to slide vertically on the first gate 132 and urged downwardly by springs 135 connecting it to the first gate 132 against a stop 136 formed on the first gate 132 so that its lower edge is normally level with the lower edge of the first gate 132. When the leading edge of the lower sole in the magazine is pushed by the feed fingers 90 against the inclined face 133 the first gate 132 is thereby raised, the effort required to do this exceeding any likely longitudinal adhesion between the bottom sole and the one above it which latter is, therefore, left behind, and in consequence of the stop 136 aforementioned the first gate carries with it the second gate 134. The gates are raised against the pressure of a comparatively heavy spring 137 surrounding a rod 138 the lower end of which bears on the first gate 132 and the upper end of which is guided in a bore in a flange on the frame 3. The spring is confined between the lower face of the flange and an adjustable nut 139 threaded on the rod 138. The lower face of the first gate 132 is relatively narrow (considered along the line of feed) compared with the lower face of the second gate 134; and, as soon as the rear end of the sole being fed has passed the first gate, this gate is pushed down by its spring 137 behind the sole and avoids any danger of a second sole following the first. During the time that a sole is being carried into the evening and grading machine by the feeler rolls 88, 89, the light springs 135 are pressing the second gate 134 down upon the sole to steady it. There is thus secured a heavy pressure upon a small area of the sole by the first gate 132 in order to strip it from the stack and a comparatively light pressure over a larger area for steadying the sole as it is being drawn in by the feeler rolls 88, 89. The gate 140 of the evening and grading part of the machine is positioned between the feeler rolls 88, 89 of the evening and grading machine and the gates 132, 134 of the magazine. This gate 140 is pivotally connected to upper and lower parallel arms 141, 142 pivoted on studs carried in a bracket 143 fixed on the frame of the evening and grading machine above the feeler rolls, and, as has been explained, acts like the gate of the machine of British Patent No. 17808/1909.

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

1. A magazine for holding stacks of blanks having, in combination, means for engaging one of the ends of the blanks and means for engaging opposite sides of the blanks, said last-named means comprising members adjustable into one position to accommodate a stack of blanks all of which are rights and into another position to accommodate a stack all of which are lefts.

2. A magazine comprising a plurality of adjustable members for holding a stack of right soles in such position that a plane may be passed lengthwise through them which will divide the soles into a larger part and a smaller part, and means whereby the members of the magazine may be so adjusted that the same plane will divide a stack of left soles into the same two parts.

3. A magazine comprising a plurality of adjustable members for holding a stack of right soles in such position that a plane may be passed lengthwise through them which will divide the soles into a larger part and a smaller part, and means whereby the members of the magazine may be so adjusted that the same plane will divide a stack of left soles into the same two parts, the larger parts of the left soles being located on the opposite sides of the plane from that on which the larger parts of the right soles were located.

4. A magazine for holding a stack of soles having, in combination, a member for engaging one of the ends of the soles, two pairs of members for engaging substantially opposite points adjacent the heel ends and the toe ends respectively of the soles, and means whereby one member of each pair may be adjusted transversely of the length of the soles.

5. A magazine for holding a stack of soles having, in combination, a member for engaging one of the ends of the soles, and two pairs of members for engaging substantially opposite points adjacent the heel ends and the toe ends respectively of the soles, one member of each pair being adjustable lengthwise of the soles and the other member of each pair being adjustable crosswise of the soles.

6. A magazine for holding a stack of soles having, in combination, a wall for engaging one of the ends of the soles, a wall having a pivoted section for engaging one of the

sides of the soles adjacent the balls and the heel ends of the soles, and a plurality of members of comparatively small cross-section for engaging the opposite sides of the soles, one of said members being adjustable crosswise of the soles.

7. A magazine for holding a stack of soles having, in combination, an end wall, a side wall comprising a pivoted section and having a guide thereon extending lengthwise of the magazine, a vertical bar adjustable along the guide, a second guide parallel to the first, a vertical bar adjustable thereon, and a post adjustable on said second guide as well as toward and from said guide.

8. Mechanism for handling blanks comprising a magazine for a stack of blanks, means for feeding blanks from the bottom of the stack, a presser for engaging the top of the stack, means tending at all times to urge the presser downwardly, said presser having a flat upper face to permit the operator to place a succeeding stack in the magazine on top of the presser, and means for withdrawing the presser from the magazine when the members of the preceding stack have been fed out of it without disturbing the succeeding stack.

9. Mechanism for handling blanks comprising a magazine for a stack of blanks, an endless conveyor adjacent the magazine, said conveyor having a run which extends lengthwise of the magazine and a second run at an angle to the first, said second run leading away from the delivery end of the magazine, a presser carried by the conveyor, and means for operating the conveyor.

10. Mechanism for handling blanks comprising a magazine for a stack of blanks, an endless conveyor adjacent the magazine, said conveyor having a run which extends lengthwise of the magazine and a second run at an angle to the first, said second run leading away from the delivery end of the magazine, a presser carried by the conveyor, and means including a friction device for operating the conveyor.

11. Mechanism for handling blanks comprising a magazine for a stack of blanks, an endless conveyor adjacent the magazine, a presser carried by the conveyor, means for operating the conveyor to cause the presser to pass through and out of the magazine, and means for disconnecting the presser from the conveyor at a predetermined point in the path of the conveyor.

12. Mechanism for handling blanks comprising a magazine for a stack of blanks and means for feeding blanks from the bottom of the stack, said means including a supporting plate for engaging the bottom of the stack, a feed slide located beneath the plate, and means for reciprocating the feed slide through a path of given extent and for reciprocating the plate through a path of less extent.

13. Mechanism for handling blanks comprising a magazine for a stack of blanks and means for feeding the blanks one by one from the bottom of the stack, said means including a supporting plate upon which the lowermost blank of the stack rests, a feed slide having a feed finger extending up into engagement with the blank, means for moving the supporting plate and feed slide in unison during the first part of the feeding movement and means for thereafter arresting the movement of the plate while continuing the movement of the feed slide.

14. Mechanism for handling blanks comprising a magazine for a stack of blanks and means for feeding blanks from the bottom of the stack, said feeding means including a feed slide which is normally at rest at the limit of its forward movement, and means for moving the slide first to the limit of its rearward movement, then to a locality adjacent to the limit of its forward movement, then a short distance rearward and finally to the limit of its forward movement.

15. Mechanism for handling blanks comprising a magazine for a stack of blanks and means for feeding blanks from the bottom of the stack, said means including a supporting plate having slots therein, a feed slide, fingers pivoted on the feed slide and capable of extending up through the slots, a friction member to which the fingers are also pivoted, and means for reciprocating the feed slide, supporting plate and friction member in such manner as to cause the fingers to be operative on the forward stroke of the feed slide and inoperative on the return stroke.

16. Mechanism for handling blanks comprising a magazine for a stack of blanks, and means for feeding blanks one by one from the magazine, said means including two gates one constructed and arranged to exert comparatively heavy pressure upon a small area of a blank while it is being delivered from the magazine and the other being constructed and arranged to exert comparatively light pressure over a larger area.

17. Mechanism for handling blanks comprising a magazine for a stack of blanks, a feed slide for delivering the blanks one at a time from one end of the stack, and a pair of gates for pressing upon a blank during its delivery, said gates being arranged in the path of feed movement, the first gate having an operative face of small area and the second gate having an operative face of larger area, means for pressing the first gate against the sole with a comparatively large force, and means for pressing the second gate against the sole with a lesser force.

18. A machine of the class described having, in combination, mechanism for operating upon blanks, mechanism for feeding blanks one at a time to the operating mechanism, said feed mechanism comprising a feed slide and feed slide driving mechanism adapted when actuated to cause one feeding movement of the feed slide, and connections between the mechanism for operating upon the blanks and the feed slide actuating mechanism such that arrival of a blank at a certain position in its passage through the operating mechanism renders operative the feed slide actuating mechanism.

19. Mechanism for handling blanks comprising a magazine for a stack of blanks, means for feeding the blanks one by one from one end of the stack, and means whereby a second stack may be built up and moved into operative relation to the feeding means while said feeding means continues to operate.

20. Mechanism for handling blanks comprising a magazine for a stack of blanks, a reciprocating feed slide for feeding the blanks one by one from one end of the stack, and means whereby a second stack may be built up and moved into operative relation to the feed slide while said feed slide continues to reciprocate.

In testimony whereof I have signed my name to this specification.

WILLIAM THOMAS BUCKINGHAM ROBERTS.