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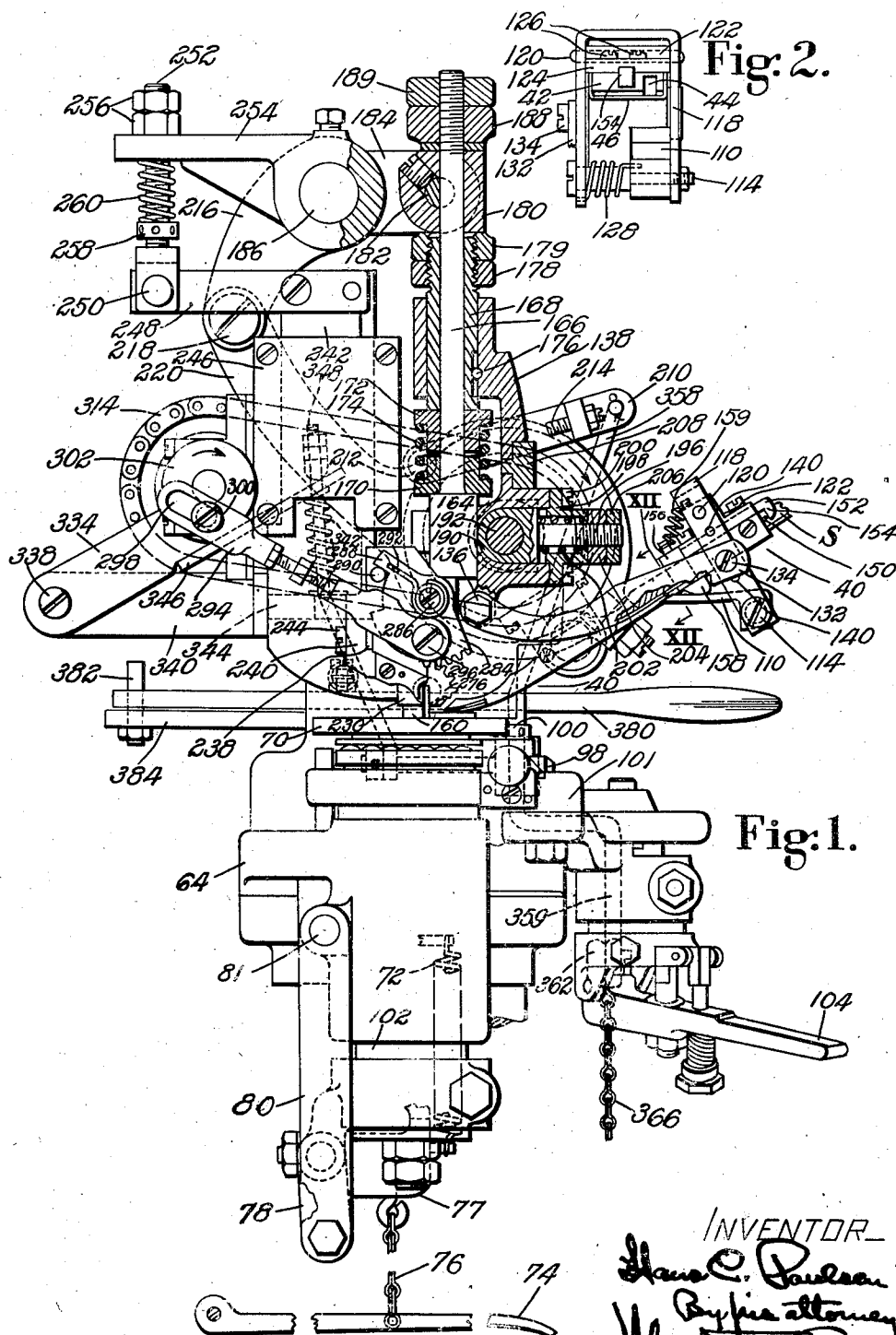
H. C. PAULSEN

2,383,560

STRIP APPLYING MACHINE

Filed July 31, 1943

6 Sheets-Sheet 1



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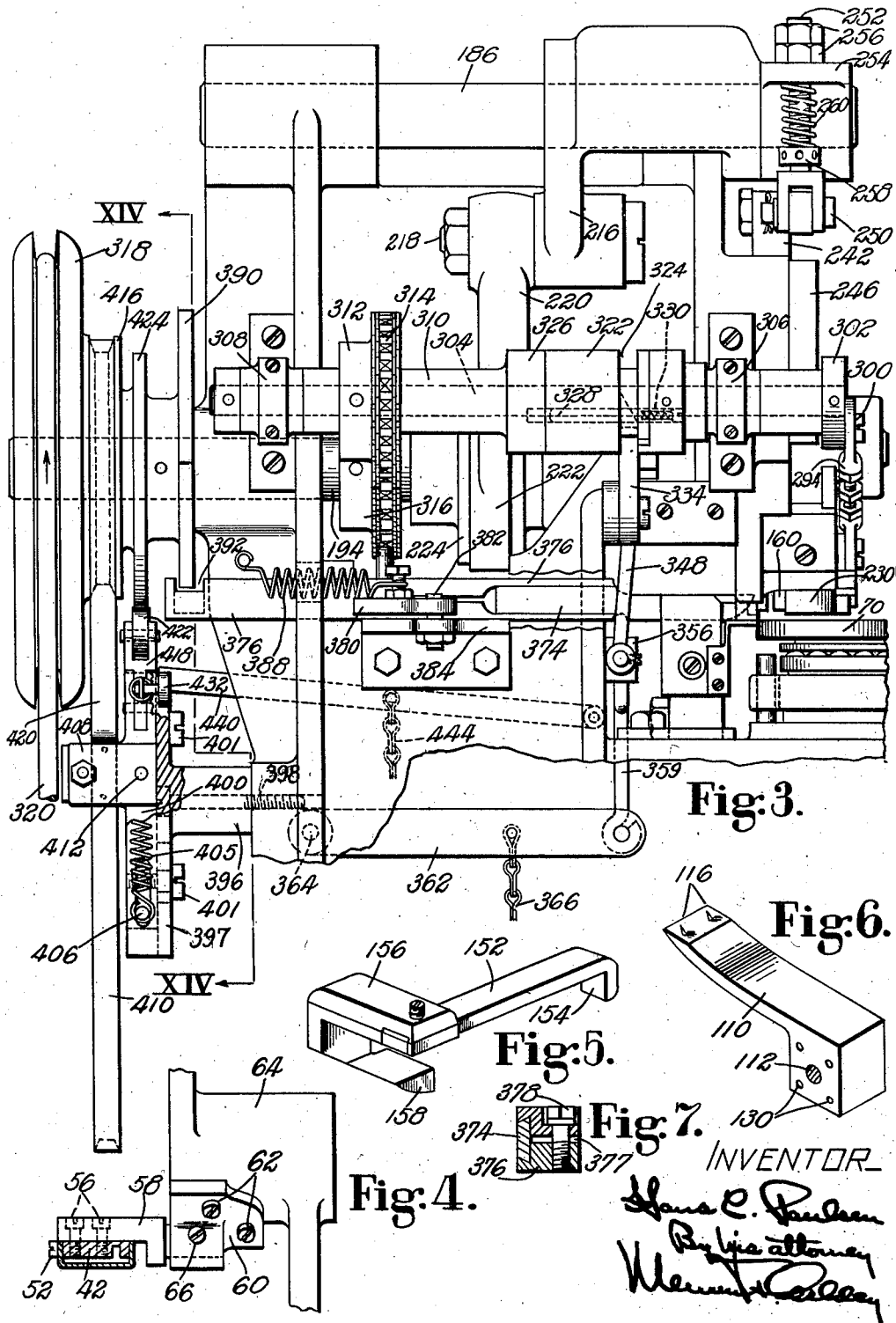
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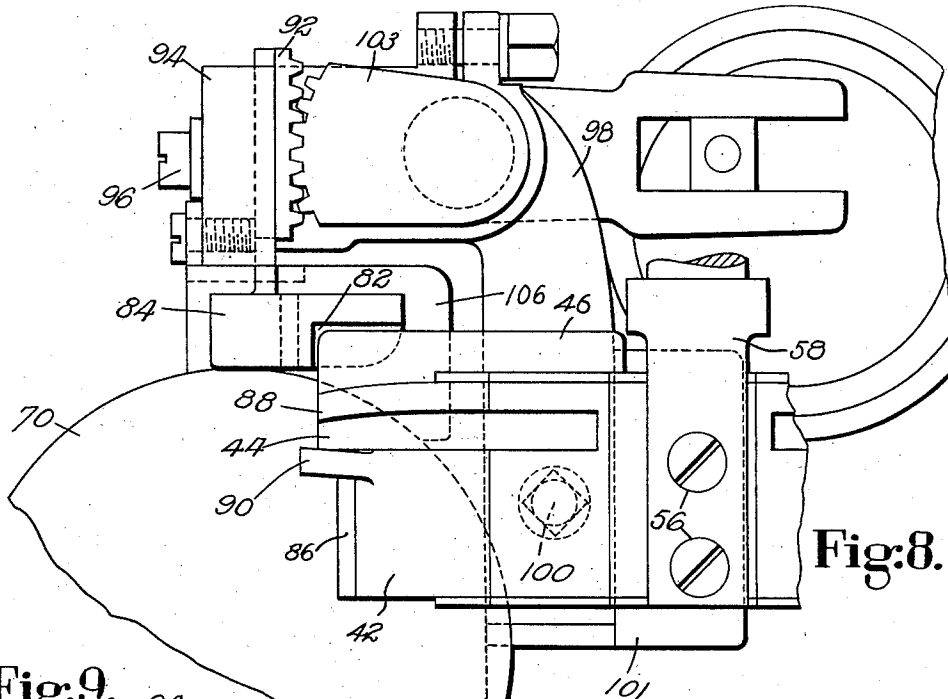


Fig. 8.

Fig. 9.

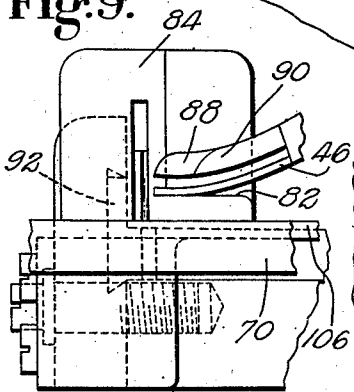


Fig. 11.

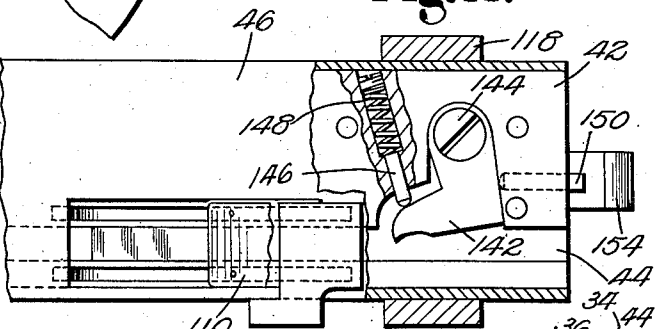
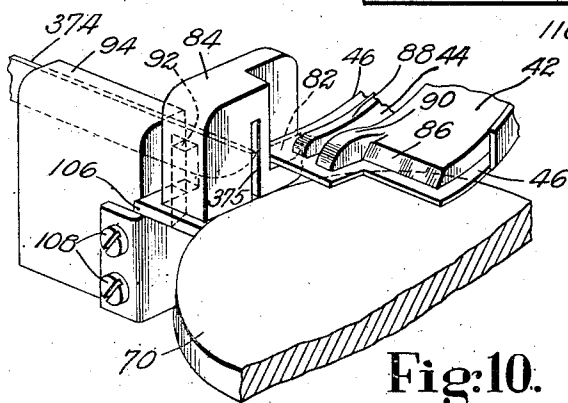


Fig. 10.

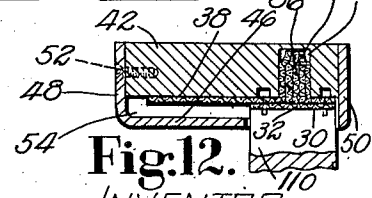


Fig. 12.

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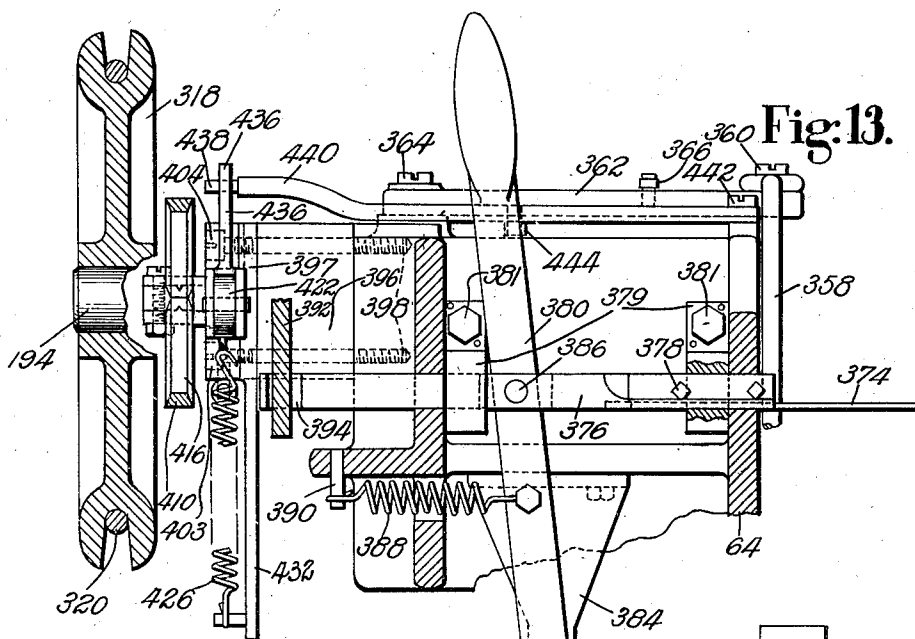


Fig. 13.

Fig. 14.

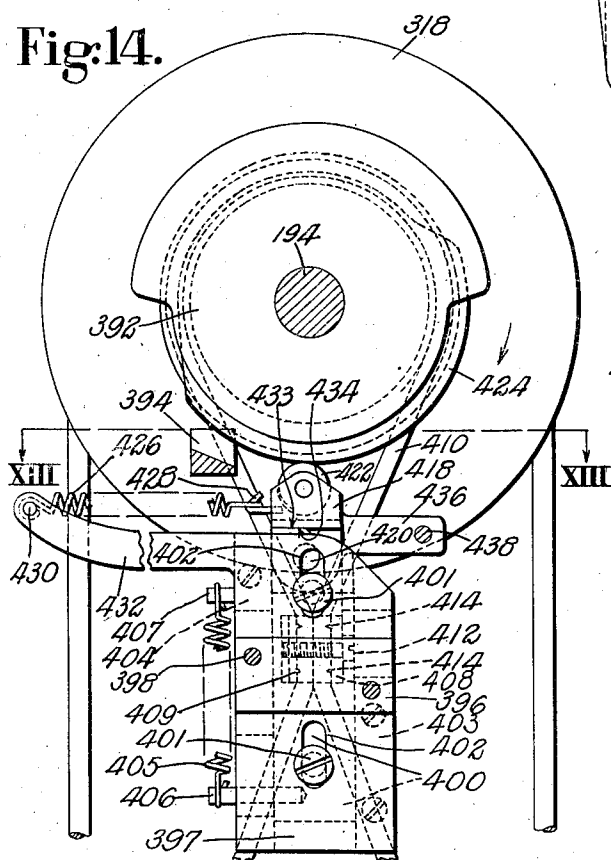


Fig. 15.

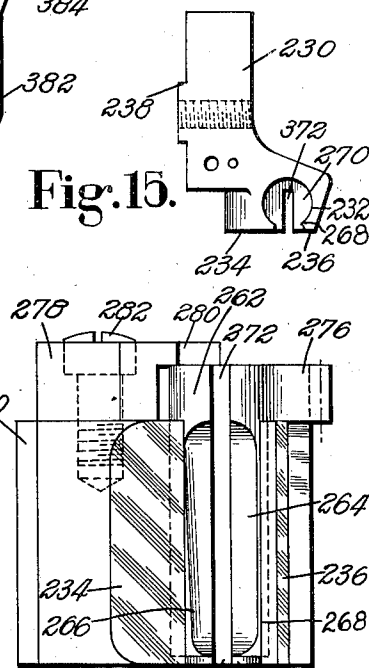


Fig. 16.

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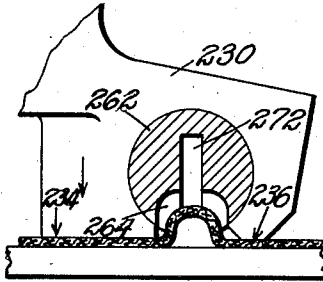


Fig. 17.

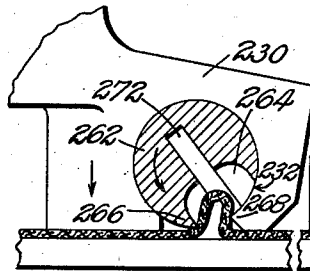


Fig. 18.

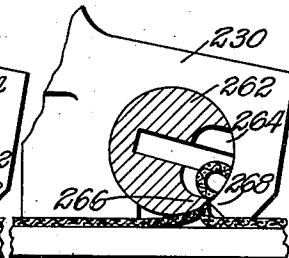


Fig. 19.

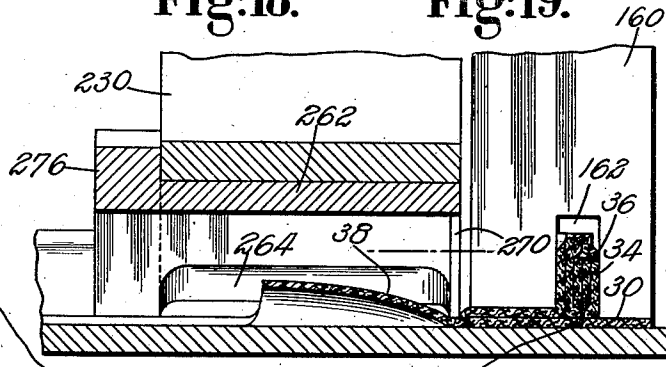


Fig. 20.

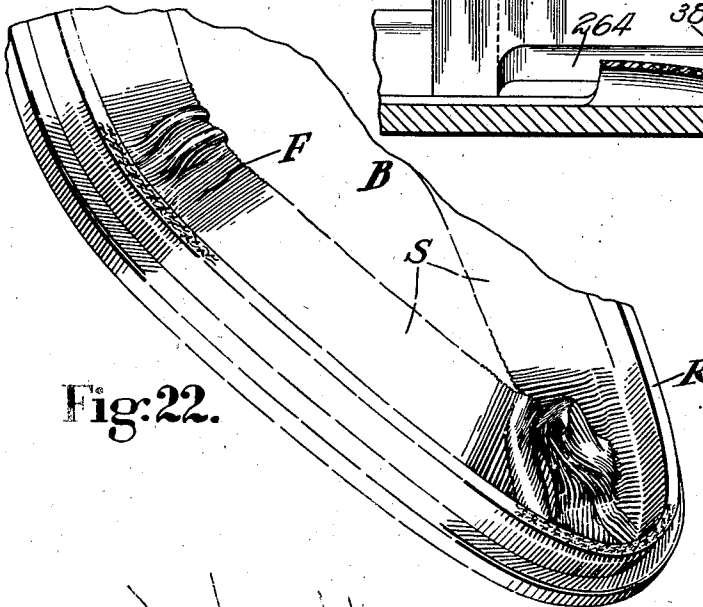


Fig. 22.

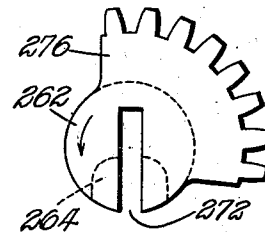


Fig. 21.

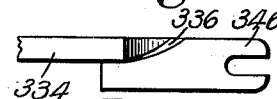


Fig. 25.

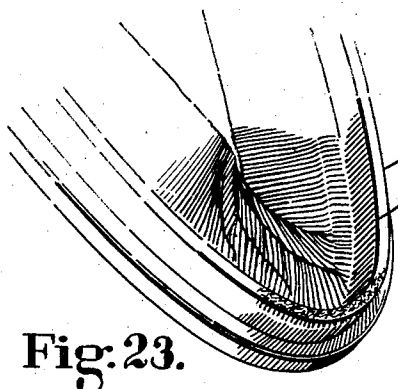


Fig. 23.

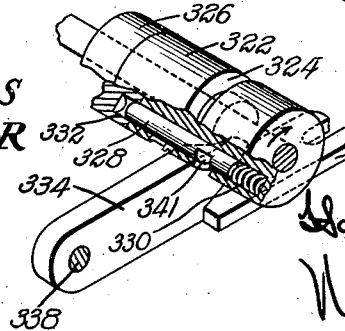


Fig. 24.

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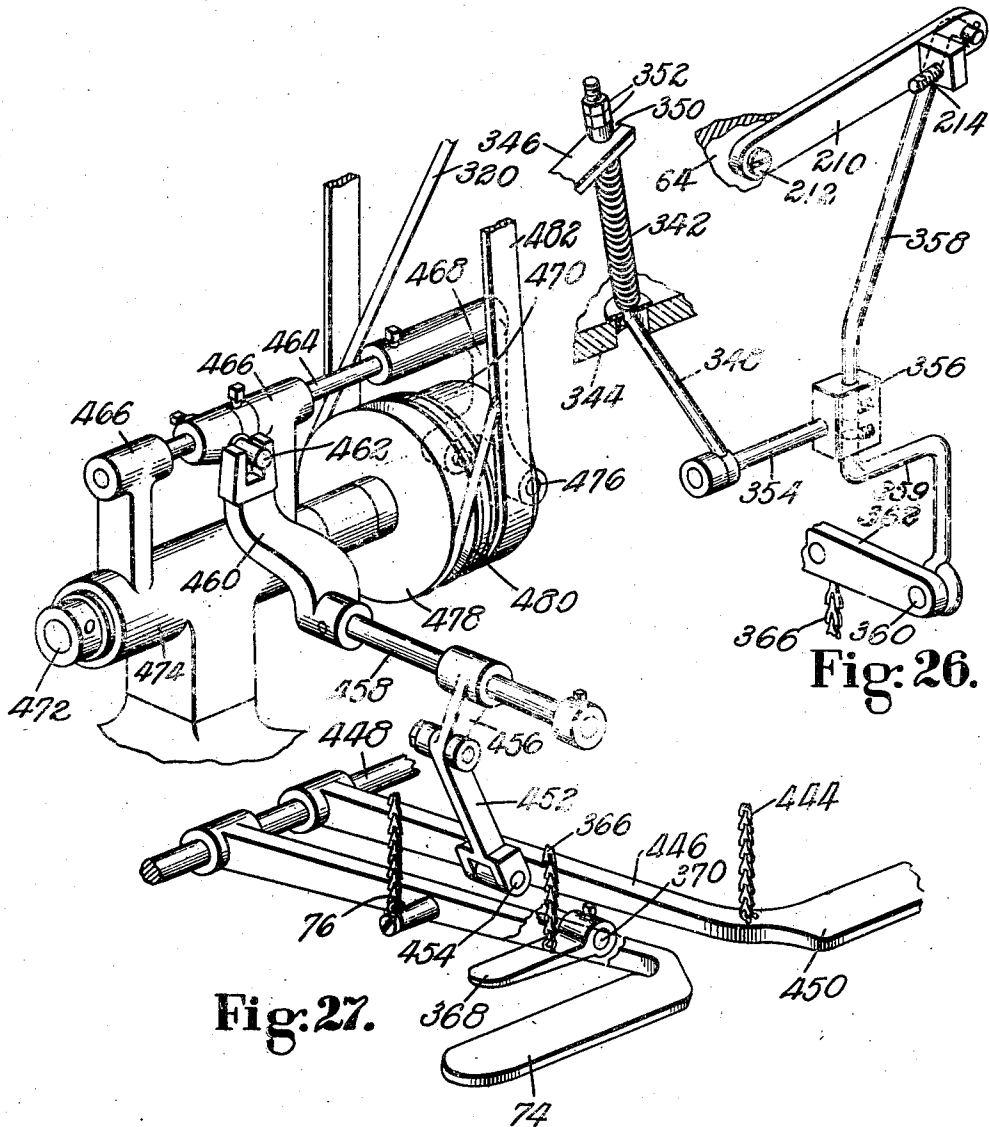


Fig. 27.

Fig. 26.

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UNITED STATES PATENT OFFICE

2,383,560

STRIP APPLYING MACHINE

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Application July 31, 1943, Serial No. 496,862

64 Claims. (Cl. 12—20)

This invention relates to machines for applying strips to insoles and particularly to machines for applying ribbed strips having a wide reinforcing flange to provide welt insoles suitable for use in the manufacture of welt shoes without further reinforcement.

A machine of this general character is disclosed in Letters Patent of the United States No. 2,326,119, granted August 10, 1943, upon an application of F. E. Bertrand.

Objects of the invention are to provide a machine for applying to insoles a ribbed strip having a wide flange extending inwardly of the insole and in applying the strip to curved portions of the insole to cause the folds into which the inner portion of the wide flange is thrown to occur at definite intervals and to remove such folds successively as they are formed.

A ribbed strip having a narrow outside flange and a wide inside flange and the method of making the same and applying it to an insole are disclosed in an application for Letters Patent of the United States Serial No. 496,547, filed July 29, 1943, in the name of Stanley M. Griswold, and the illustrated machine is adapted to apply to insoles ribbed strips of the character disclosed in said application and to practice the method therein disclosed.

As illustrated, the machine comprises a support for the insole such as a rotary table, a gage to engage the edge face of the insole adjacent to the point of application of the strip, a strip guide for presenting the strip to the insole in predetermined relation to the edge of the insole, a pressing and feeding member adapted to apply pressure to the outside flange and to a portion of the inside flange adjacent to the rib to press the strip into adhering relation to the insole, and means for feeding the strip somewhat faster than the insole is fed.

In the illustrated machine, a member having movement only perpendicular to the insole is arranged to press the remaining portion of the inner flange into engagement with the insole, the movements of said presser member being in such timed relation to the movements of the feeding and pressing member that it is in engagement with the insole during intervals when the insole is not being fed. The presser member has, as illustrated, two pressing surfaces, one surface of considerable extent in the direction of feed and a surface of less extent spaced from it. When rounding curved portions of the insole such as the toe and ball, the wrinkles or folds which naturally occur in the inner portion of the wide

flange are obliged to form in the space between the two surfaces, the wide surface acting in a later cycle to flatten the less prominent wrinkles.

A further feature of the invention comprises means for removing the wrinkles as they occur when they are too large to be flattened. As illustrated, there is mounted in the presser member adjacent to the above-mentioned space a cutter which operates to remove any prominent wrinkle immediately after its formation, the edges formed by cutting off the folds being pressed down upon the insole upon the next downward movement of the wider pressing surface.

The strip is applied to the insole from the breast line along the shank, around the forepart and back to the breast line again, and improved means for promptly stopping the machine when the breast line is reached and severing the strip are provided. The severing means comprises a blade arranged to be moved transversely of the strip through the opening between the two surfaces of the presser member and to sever the strip without cutting into the insole. By cutting the strip at this point a sufficient portion of the strip is left projecting from the strip guide so that when the operation is started on the next insole the narrower surface of the presser member will engage the strip projecting beyond the guide and cause it to be attached to the insole.

The strip-severing knife is arranged to pass not only through the opening in the presser member but also through a groove in the wrinkle-removing cutter which, if stopped in certain positions of its movement, would interfere with the operation of the strip-severing knife. Accordingly, provision of means is made to prevent operation of the severing knife unless the fold-cutting device is in position to permit passage of the knife through it.

In rounding parts of the insole presenting greatest difficulty, such as the toe, it is desirable to reduce the rate of feed to give the operator more time to manipulate the insole. It is also at these difficult portions of the insole that wrinkles are principally formed. Accordingly, as a feature of the invention, means is provided for throwing the cutting means into operation in conjunction with the reduction of feed of the machine, this change being preferably under manual control.

In the drawings,

Fig. 1 is a front elevation of the head of the machine, certain parts being shown in section;

Fig. 2 is an end view of the strip guide;

Fig. 3 is an elevation, partly in section, of the left-hand side of the machine head;

Fig. 4 is a detail in elevation of the mounting of the strip guide which is shown in section;

Fig. 5 is a detail in perspective of a member used to release the strip-feeding and retaining pawls;

Fig. 6 is a perspective view of the strip-feeding pawl;

Fig. 7 is a sectional view of the knife-holding clamp;

Fig. 8 is a plan view of the supporting table, edge gage and strip guide;

Fig. 9 is a front elevation of parts shown in Fig. 8;

Fig. 10 is a perspective view of parts shown in Figs. 8 and 9;

Fig. 11 is a bottom plan view, partly in section, of the strip guide, strip-feeding pawl and strip-retaining pawl;

Fig. 12 is an enlarged section of the strip guide on the line XII—XII of Fig. 1;

Fig. 13 is a plan view, partly in section on the line XIII—XIII of Fig. 14, showing the strip-cutting knife and its operating mechanism;

Fig. 14 is a front sectional elevation, taken on the line XIV—XIV of Fig. 3, showing the clutch mechanism;

Fig. 15 is a detail view in front elevation of the presser member which engages the inner portion of the reinforcing strip;

Fig. 16 is an enlarged bottom plan view of the part shown in Fig. 15 with the fold cutter assembled therein;

Figs. 17, 18 and 19 are enlarged views, partly in section, illustrating successive positions of the fold cutter in removing a fold;

Fig. 20 is an enlarged view, partly in section, taken through the longitudinal center of the fold cutter and showing the presser which straddles the rib;

Fig. 21 is an enlarged front elevation of the fold cutter and its operating gear segment;

Fig. 22 is a perspective view of a portion of an insole showing the ribbed strip applied thereto as it would appear if the folds were not cut off, one fold at the side of the insole being cut off to show its appearance after cutting;

Fig. 23 is a perspective view of the toe portion of an insole in which the folds have been removed by operation of the fold cutter;

Fig. 24 is a perspective view of the clutch for connecting the fold cutter to its operating mechanism and disconnecting it therefrom;

Fig. 25 is a detail in plan of a part shown in Fig. 24;

Fig. 26 is a detail in perspective of the mechanism for throwing in the fold cutter and reducing the rate of feed; and

Fig. 27 is a perspective view of the driving mechanism and control treadles at the base of the machine.

The illustrated machine is for applying to an insole blank a reinforced ribbed strip such as that disclosed in the Griswold application referred to above which may consist, as shown in Figs. 12 and 20, of a strip 30 to which is secured at 32 a wide strip 34 and a narrow strip 36, these two strips being folded up against each other to form a sewing rib, as disclosed in United States Letters Patent No. 2,288,448, granted June 30, 1943, in the name of Stanley M. Griswold, or the strip may be formed as disclosed in application Serial No. 496,546, filed July 29, 1943, in the name of Stanley M. Griswold. To the composite strip

thus formed is attached a wide reinforcing strip 38 which extends from the top of the rib over its inner face, over the inner flange of the strip 30 and considerably beyond it to form, when stuck to the insole, an adequate reinforcement for the sewing rib, an all-over reinforcement being therefore unnecessary, this form of composite reinforced ribbed strip being as disclosed in the application first referred to above.

This composite reinforced ribbed strip, designated as a whole by S, the rib being indicated by R, comes to the machine wound on a reel (not shown) from which it is led to a strip guide 40 (Fig. 1) through which it is threaded. The guide (Fig. 12) consists of a thick member 42 in which is formed a groove 44 for the rib R of the strip S and a thin plate 46 having upturned side portions 48 and 50 secured by screws 52 to the member 42. The plate 46 is spaced from the member 42 to provide a channel 54 for the wide and narrow flanges of the strip. The member 42 is secured by screws 56 to a slabbed-off surface (Fig. 4) on a stud 58 a reduced cylindrical portion of which enters a cylindrical hole in a bracket 60 secured at 62 to the frame 64 of the machine. A set screw 66 in the bracket serves to hold the guide in the position shown in Fig. 1 where it is inclined at about thirty degrees to the horizontal with its lower end curved upwardly so that it lies in a position parallel to the horizontal surface of a circular table 70. The table is substantially similar to that disclosed in United States Letters Patent No. 984,772, granted February 21, 1911, on application of W. C. Meyer, and is normally held in a raised position by a tension spring 72 to support the insole. The table is lowered to permit introduction of the insole by depression of a treadle 74 connected by a chain 76 to an arm 77 on a link 78 which constitutes one link of an inverted toggle, the other link 80 of which is connected at 81 to the frame 64.

The lower end of the upturned portion 50 of the plate 46 (Fig. 12) is extended rearwardly in a horizontal position and rests upon a ledge 82 (Fig. 10) formed in the front face of an edge gage 84 which, by contact with the edge face of the insole, positions it with respect to the strip whose position is determined by the guide. To position the strip more accurately adjacent to its point of attachment to the insole, it will be seen in Figs. 8 and 10 that the groove 44 in the member 42 is carried clear through the member at its lower end and that the member is cut away at 86 (Fig. 10) as is also the plate 46. Thus the lower end of the member 42 becomes a fork with two prongs 88 and 90 between which the rib of the strip is guided, the prong 88 (Fig. 8) being bent slightly toward the prong 90 to pinch the rib and guide it more positively adjacent to its point of application.

The edge gage 84 (Fig. 8) has a toothed stem 92 guided in a horizontal guideway formed in a block 94 which is secured by a screw 96 to a bracket 98 which is adjustably held by a screw 100 to a member 101 carried by the table-supporting sleeve 102 (Fig. 1) and hence movable heightwise therewith. The teeth of the stem 92 are engaged by a toothed segment 103 which is moved between two predetermined positions by operation of a hand lever 104 (Fig. 1), the gage-operating mechanism being similar to that disclosed in the Bertrand patent referred to above.

Beneath the edge gage (Fig. 10) is a plate 106 arranged with its upper surface flush with the top of the table 70, lying beneath the edge gage

34 and having the edge thereof which is adjacent to the table curved on the same radius as the table and positioned so as just to clear its edge face. The plate is secured by screws 108 to the block 94.

The strip S is fed through the guide 40 by a feed pawl 110, shown separately in Fig. 6, the pawl having at one end a hole 112 for its pivot bolt 114 and at the other end two spurs 116 to engage the strip. A U-shaped lever 118 (Figs. 1 and 2) straddles the guide 40 and is fulcrumed at 120 to an ear 122 on a plate 124 secured to the member 42 of the guide by screws 126. The feed pawl 110 is mounted on a reduced portion of the bolt 114 and is urged upwardly toward the strip by a torsion spring 128 (Fig. 2) one end of which enters a hole in the lever 118 and the other end of which may be lodged in one of several holes 130 in the pawl (Fig. 6), that hole being selected which gives the desired tension to the spring.

The pawl 110 is operated to feed the strip by a link 132 (Fig. 1) secured at one end by a screw 134 to the lever 118, the other end of the link being pivoted at 136 to a yoke 138. The yoke has a four-motion or orbital movement, to be described, the horizontal component of which is communicated by the link 132 to the lever 118 and pawl 110 to feed the strip. The rate of feed may be changed by locating the screw 134 in any one of several holes 140 in the lever 118 at different distances from its fulcrum 120.

To prevent retrograde movement of the strip when the pawl 110 moves to the left (Fig. 1), a retaining pawl 142 (Fig. 11) is provided which is seated in a recess on the lower side of the member 42 of the strip guide, the pawl 142 being pivoted at 144 to the member 42 and having its pointed end urged by a plunger 146, backed by a spring 148, toward the rib R on the strip, which rib lies in the groove 44 in the member 42. The pawl 142 may be released by pressure on a plunger 150 acting against the plunger 146.

To release the pawl 142 and the pawl 110 at the same time to permit the tape to be withdrawn from the guide or freely inserted therein, a device shown in Fig. 5 is provided which comprises a portion 152 which lies in a groove on the under side of the plate 124 on the guide so that it can slide longitudinally thereof and has a downturned end 154 which lies opposite the pawl-releasing plunger 150. The other end of the portion 152 is fastened to a U-shaped piece 156 which embraces the guide, the portion 158 beneath the guide being wedge shaped and lying between the guide and the pawl 110. It will be seen (Fig. 1) that pressure on the downturned end 154 of the slide 152 will press on the plunger 150 to release the pawl 142 and move the wedge 158 in a direction to cam the pawl 110 away from the strip and release its spurs 116 therefrom, thus permitting ready withdrawal of the strip from or its insertion into the guide. A tension spring 159 connecting a pin on the U-shaped piece 156 to a pin on the ear 122 returns the slide 152 to normal position, releasing both pawls 110 and 142 to do their work.

Means for pressing both flanges of the strip S against an insole I adjacent to the rib R is provided by a pressing and feeding foot 160 (Figs. 1 and 20) which has a groove 162 formed therein to receive the rib R of the strip, the foot thus straddling the rib and pressing the strip upon the insole at each side of the rib. The foot 160 is formed on or secured to the lower end of a carrier having an enlarged cylindrical portion 164 (Fig. 1) arranged to slide up and down in a bear-

ing in the yoke 138 and a reduced portion 166 carrying a sleeve 168 which fits another bearing in the yoke 138. The reduced portion 166 of the carrier has slidably arranged thereon two oppositely disposed flanged sleeves 170, 172 between the flanges of which is a compression spring 174. The flanged sleeve 170 bears against the upper end of the enlarged portion 164 of the carrier and the sleeve 172 engages the lower end of the sleeve 168 which is prevented from rotation by a pin 176 in a groove in the yoke 138 and engaging a flat surface on the sleeve 168. The upper end of the sleeve 168 projects beyond the bearing and is threaded to receive lock nuts 178, 179 the upper one of which engages a block 180 pivoted by a pin 182 to bifurcations on a lever arm 184 fixed to a rockshaft 186. The reduced portion 166 of the carrier extends through the block 180 and through one side of the pin 182 to prevent withdrawal of the pin, and the upper end thereof carries two set nuts 188, 189 threaded thereon. With this construction it will be seen that upward movement of the arm 184 will positively raise the carrier and the foot 160, and that downward movement of the arm will depress the sleeve 168 which, acting through the spring 174, will yieldingly depress the carrier and the foot 160.

The yoke 138 is operated to impart to-and-fro or feed movements to the carrier and feed foot 160. For this purpose the yoke has mounted for horizontal sliding movement therein a block 190 which is engaged by a pin 192 mounted eccentrically on a shaft 194 (Fig. 3). The block 190 (Fig. 1) has a stem 196 extending through a retaining plate 198 held by screws 200 to a face on the yoke 138. The plate 198 is counterbored to receive a compression spring 202 one end of which rests against the block 190 and the other end against the plate 198. The stem 196 extends far enough beyond the plate to receive a nut 204 and a set nut 206. It will be seen that the nut 204 limits movement of the block in response to the spring 202 and that when movement of the yoke 138 to the right is arrested the spring will yield. Mounted in a recess in the yoke 138 is a hardened block 208 and on an arm 210 pivoted to the frame at 212 is an adjustable stop screw 214 which, when the arm is swung downwardly, will engage the block 208 and shorten movement of the yoke 138 to the right, thus reducing the feed movement of the foot 160 as well as the feed movement of the strip feed pawl 110. By adjusting the screw 214 the extent of the feed movement of the foot 160 and of the pawl 110 may be varied.

The yoke 138, of course, receives up-and-down as well as to-and-fro movements from the eccentric pin 192. The up-and-down movements, however, are not utilized and the to-and-fro movements are employed to impart work-feeding movements to the feed foot 160 and, through the link 132, to effect movement of the pawl 110 to feed the strip.

Up-and-down movements are imparted to the carrier and presser foot 160 by oscillating the rockshaft 186 on which is an arm 216 pivoted at 218 to the upper end of a connecting rod 220 on an eccentric strap 222 (Fig. 3) surrounding an eccentric 224 on the shaft 194.

The portion of the reinforcing layer 38 of the strip S (Fig. 20) which extends inwardly of the insole beyond the feed foot 160 is treated by a separate independently operated presser member 230 (Fig. 15) which extends laterally of the strip far enough to treat all of that portion of the strip

which is not acted upon by the pressing and feeding foot 160.

The presser member 230 is operated vertically only and its action is timed relatively to that of the foot 160 so that it presses the strip against the insole during the time when the foot 160 is lifted and is raised during the time when the foot 160 is effecting feed movements of the strip and insole, there being a brief interval in the cycle when neither the member 230 nor the foot 160 engages the work to permit the operator to turn and guide the insole through the machine. The extent of the presser 230 longitudinally of the strip is shown in Fig. 15. Its work-engaging face is separated by a recess 232 into two portions—a pressing face 234 and a "tacking" face 236. As the presser descends upon the strip, one portion thereof will be pressed upon the insole I by the face 234 and at the same time the face 236 will press another portion spaced therefrom longitudinally of the insole against the insole, allowing any fullness between the pressed portions to bulge up into the recess 232. After the next feed movement of the insole has taken place and the presser again descends, the surface 234 will flatten down the bulge and the surface 236 will "tack" down another portion of the strip.

The described movements are imparted to the presser 230 from the rockshaft 186 (Fig. 1). The presser has a rib 238 which is let into the lower portion 240 of a slide 242 where it is held by a screw 244. The slide 242 is mounted for vertical movement in a suitable guideway in the frame in which it is held by a cover plate 246 and has secured to its upper end a bar 248 which, at its left-hand end, is pivoted at 250 to the bifurcated end of a threaded rod 252 which extends through an arm 254 above which are set nuts 256 on the rod. A collar 258 is threaded on the rod 252 and between the collar and the arm 254 is a compression spring 260. The arm 254 is fast on the rockshaft 186 so that, as the shaft is rocked to lift the feed foot 160, the slide 242 is depressed yielding through the spring 260 to force the presser 230 down upon the inner portion of the strip and to hold the insole from movement while the feed foot 160, which is now raised, is being moved to the right (Fig. 1) by the eccentric pin 192.

In laying the strip around the toe end of the insole, the portion of the inner flange of the strip acted upon by the presser 230 is thrown into more prominent folds than when it is laid along other less curved portions of the insole, the folds formed being too bulky to be successfully flattened by action of the face 234 of the presser. Accordingly, means is provided for cutting off these folds substantially flush with the adjacent applied portions of the strip. It will be noted (Fig. 15) that the recess 232 in which the folds are obliged to occur by the action of the surfaces 234, 236 is cylindrical with its curved surface nearly tangent to the plane of the surfaces 234, 236. Mounted for rotation in the recess 232 is a cylindrical cutter 262 which is slotted lengthwise to form therein a fold-receiving cavity 264 (Fig. 17) so that when the cutter is rotated in the direction of the arrow (Fig. 18) the leading edge 266 of the cutter will cooperate with an edge 268 of the recess 232 to sever the fold, as shown in Fig. 19.

The result of the use of the machine without operating the cutter is illustrated in Fig. 22, the portion of the part 38 of the strip S which extends inwardly of the insole beyond the part operated upon by the presser 160 being shown as thrown

into pronounced and overlying folds at the toe end and into less prominent folds at the ball portion where one of three folds is shown at F as having been cut off. The result of using the machine with the cutter in operation is further shown in Fig. 23 where the folds at the toe are cut off and pressed down so that they will not interfere with the inseaming operation.

Preferably, and as shown in Fig. 16, the leading edge 266 of the cutter 262 is not parallel to the cooperating edge 268 but is so inclined thereto that the cut begins at the small part of the fold next to the rib and proceeds progressively toward the inner edge of the strip with a shearing action. Fig. 16 also indicates that the recess 232 in the foot 230 has a thin end wall 270 against which the cutter 262 abuts and that at its ends the fold-receiving cavity 264 gradually merges into the cylindrical portion so that at each end the cutter is cylindrical except for a narrow parallel-sided slot 272 open at its lower edge and extending completely through the cutter longitudinally thereof as well as through the end wall 270 of the recess 232. The purpose of the slot will be explained later.

To operate the cutter 262, it is provided with a toothed segment 276 and is held in the recess 232 in the foot by a block 278 (Fig. 16) having a lip 280 engaging the end of the cutter and secured to the foot by a screw 282. Engaging the segment 276 (Fig. 1) is an operating segment 284 pivoted at 286 to the slide 242 and normally held with a projection 288 thereon against a stop 290 by a torsion spring 292. A connecting rod 294, which is made in two parts with a usual turn buckle arrangement between them for adjusting the length of the rod, is pivoted at 296 to the segment 284 and at its other end has a slot 298 engaged by a crank pin 300 on a disk 302 which (Fig. 3) is pinned to a shaft 304 mounted in bearings 306, 308 secured to the machine frame. On the shaft 304 is a sleeve 310 to which is fastened a sprocket wheel 312 connected by a chain 314 to a sprocket wheel 316 on the shaft 194 on which is a pulley 318 driven by a belt 320. Secured to the shaft 304 is a large sleeve 322 having a groove 324 and abutting an enlarged end 326 of the sleeve 310. Mounted in the sleeve 322 (Fig. 24) and extending across the groove 324 is a bolt 328 which is pressed endwise by a spring 330 to engage a recess 332 in the enlargement 326 of the sleeve 310 (Fig. 3), thus connecting the disk 302 with the driven shaft 194. To withdraw the bolt 328 and thus stop the disk 302, a blade 334 having a beveled end 336 (Fig. 25) is pivoted at 338 (Fig. 1) to a fixed arm 340 on the frame 64. The blade 334 is normally held raised with its edge lying in the groove 324 so that its beveled end will engage a notch 341 (Fig. 25) in the bolt 328 and withdraw it from engagement with the driven sleeve 310. The blade 334 (Figs. 1 and 26) is urged upwardly toward the groove 324 by a compression spring 342 which rests upon a fixed support 344 with its upper end engaging an extension 346 of the blade 334. To withdraw the blade and allow the bolt 328 to enter the recess 332, a rod 348 passes up through the support 344, through the spring 342 and between bifurcations on the end of the extension 346 above which on the rod are a rocking washer 350 and set nuts 352. The rod 348 has at its lower end an eye through which passes a headed rod 354 which is fixed to a block 356. The block is connected by a rod 358 to the lever 210 (Fig. 1), before described as acting, when swung down, to shorten the feed. A rod

359 has its upper end fastened to the block 356 and its lower end pivoted at 360 to the front end (Fig. 13) of a lever 362 fulcrumed at 364 to the machine frame and having attached between its ends a chain 366 leading to a treadle 368 (Fig. 27) pivoted at 370 to the frame of the machine. Depression of the treadle 368 pulls on the chain 366 which, through the lever 362, depresses both rods 348 and 358, thus throwing the cutter 262 into operation and shortening the feed. It will be understood that the inner portion of the strip 38 is thrown into folds only when going around the toe or along a sharply curved portion of the insole such as occurs at the ball. Since handling of the insole is more difficult when rounding these curved portions, it is desirable to reduce the rate of feed and at the same time to set the cutter into operation to remove such folds or wrinkles as are then likely to be formed.

From Fig. 1 it will be apparent that by reason of the slot 298 and its location in the adjustable connecting rod 294 the crank pin 300 will operate to move the segment 284 during only about half of its revolution, the spring 292 acting during the rest of the revolution to hold the segment against the stop 290 with the slot 272 in a position coinciding with a slot 372 (Fig. 16) in the end wall 270 of the recess 232 in the presser 230.

After the strip has been applied to an insole from the breast line around the forepart to the breast line, it has to be cut off. For this purpose the machine is provided with a knife 374 arranged to slide through a slot 375 in the edge gage (Fig. 10), through the slot 372 in the presser member 230, through the slot 272 in the fold cutter and across the strip to sever it while it is still in the machine and without cutting deeply enough to injure the insole. The knife 374 is arranged with its cutting edge down, said edge being upturned at its front end (see Fig. 10) to enable it to cut through the rib. The rear end of the knife enters a dovetailed slot formed in the side of a sliding bar 376 (Fig. 7), the front end portion of the bar being split lengthwise at 377 and provided with screws 378 by which the knife is clamped in the bar. The bar (Fig. 13) slides freely through openings in the frame in a horizontal direction perpendicular to the edge of the insole at the point of application of the strip with its lower or cutting edge substantially in the plane of the upper surface of the insole, being guided by blocks 379 secured at 381 to the frame. The bar is operated to push the knife endwise through the slot 272 and cut the strip by a handle lever 380 fulcrumed on a pin 382 to a bracket 384 secured to the frame, the lever being loosely pivoted to the bar at 386. When the handle lever 380 is released, it is retracted by a tension spring 388 connected at one end to the lever and at the other end to a pin 390 on the frame 64.

The knife should not be operated unless the machine has been stopped during that portion of the cycle when the segment 284 is at rest against the stop 290 and the slot 272 coincides with the slot 372 in the end wall 270. To prevent injury to the knife or other parts of the machine by attempted movement of the cutter when the parts are not in the position above indicated, the bar 376 is locked against endwise movement (Figs. 13 and 14) by a disk 392 secured to the shaft 194 and engaging a notch 394 in the rear end of the bar. It will be seen from Fig. 14 that the disk 392 is reduced in radius for about half of its circumference so that it cannot engage the notch 394, and the knife bar is free to be operated if the

machine is stopped in that portion of its cycle when the portion of the disk 392 having the reduced radius is opposite the notch 394.

To insure stopping the machine in that portion of the cycle when the knife is free to be operated, a stop mechanism best shown in Figs. 3 and 14 is provided. A block 396 on which is an upright plate 397 is secured to the rear end of the frame beneath the shaft 194 by screws 398. A slide 400 is mounted in the plate 397 for vertical movement, being held in place by screws 401 which pass through vertical slots 402 in the plate and are threaded into the slide. The slide 400 is further supported at one side by a block 403 (Fig. 14) and on the other by a block 404, these blocks being suitably secured to the plate 397. The slide 400 is normally raised by a tension spring 405 connected at its lower end to a pin 406 on the slide and at its upper end to a pin 407 on the block 404. The slide 400 carries a clamp comprising jaws 408, 409 between which the two runs of an endless V-belt 410 are held by a clamp screw 412. The jaws 408, 409 consist of two blocks, one fitted into a notch in one side of the slide and the other into a notch on the other side, the screw 412 extending loosely through one block and through the intervening portion of the slide and being threaded into the other jaw. Tightening of the screw 412 will therefore close the jaws on the belt 410. Preferably the jaws 408 are provided with teeth or spurs 414 to insure that the belt will not slip in the clamp. One loop of the belt embraces a grooved pulley 416 on the shaft 194 (Fig. 13). The spring 405 holds the slide raised with the belt out of contact with the pulley 416 and when the slide is depressed the belt acts as a brake on the pulley to stop the machine. By releasing the clamp 408 the endless belt 410 may be moved to cause various portions of its length to engage the pulley, thus distributing wear on the belt.

To depress the slide and apply the belt to stop the machine in the desired portion of its cycle, the upper end of the slide 400 (Fig. 14) is bifurcated to receive a short arm 418 which is pivoted thereto at 420. The arm is bifurcated to receive a roll 422 which lies beneath a disk 424 fixed to the shaft 194 and having a portion of reduced radius. The arm 418 is urged toward its upright position by a tension spring 426 connected at one end to a hook 428 on the arm and at the other end to a pin 430 on a laterally extending arm 432 on the plate 397. The arm 418 is prevented from being moved beyond its upright position by engagement of a surface 433 on the arm with a surface 434 on the slide 400. In Fig. 14 the mechanism is shown in stopped position, the disk 424, rotating in the direction of the arrow, having engaged the roll 422 with its portion of full radius and depressed the slide 400 to apply the belt 410 to the pulley 416. Since the arm 418 is prevented from swinging beyond its upright position by engagement of the surfaces 433, 434 in response to contact of the disk 424 with the roll 422, the disk acts to depress the slide 400 and apply the brake.

To release the stop mechanism and permit the machine to be driven, the arm 418 carrying the roll 422 has a lateral projection 436 (Figs. 13 and 14) having at its outer end a hole which is loosely engaged by the cylindrical end portion 438 of a lever 440. The lever is fulcrumed to the frame by a screw 442 and has connected to it between its ends a flexible connection or chain 444 (Fig. 27) the lower end of which is connect-

ed to the front end of a treadle lever 446. The treadle lever is fulcrumed on a shaft 448, its front end being formed as a treadle 450. Depression of the treadle causes the rear end of the lever 440 and the projection 436 to be depressed, thus swinging the arm 418 against the tension of the spring 426 to carry the roll 422 out of contact with the disk 390, thus permitting the spring 402 to raise the slide 400 and release the belt 410 from engagement with the grooved pulley 416.

A link 452 (Fig. 27) is pivoted at 454 to the treadle lever 446 at one end and at the other to an arm 456 fixed to a rockshaft 458 mounted on bearings in the machine frame. The shaft 458 carries an arm 460 the upper end of which is forked to receive a pin 462 fixed to a shaft 464 which is mounted to slide horizontally in bearings 466. The shaft 464 carries a fork 468 which embraces the hub of a pulley 470 loosely mounted on a horizontal shaft 472 mounted in a bearing 474. The fork 468 has pins 476 which engage a groove in the hub of the pulley 470. Fixed to the shaft 472 is a grooved pulley 478 on which is the belt 320 which drives the pulley 318 (Figs. 3 and 13) on the shaft 194 of the machine. Between the pulley 470 and a pulley 478 are friction disks 480.

Depression of the treadle 450 will not only release the belt 410 to permit the shaft 194 to be turned but will, through the connections above described, move the shaft 464 endwise to cause the pulley 470 to press the friction disks 480 against each other and against the pulley 478, thus causing power supplied to the pulley 470 by a belt 482 to be transmitted to the pulley 478 and, through the belt 320, to the machine.

In operating the machine, a strip having a rib R and a wide flange 38, supplied from a reel (not shown), is threaded through the passage 54 with the rib of the strip in the groove 44 until the end of the strip is slightly beyond the lower end of the plate 46 (Fig. 10). The lower face of the strip is provided with cement which will adhere when pressed against the insole. An insole blank B has cement applied to its marginal portion and, after lowering the table 70 by depressing the treadle 74, the operator places the edge face of the insole in the region of the breast line against the edge gage 84, the toe portion of the insole extending toward his right. The handle 104 is operated to set the edge gage rearwardly so that the outer edge of the strip S will be spaced inwardly from the edge of the insole. Upon release of the treadle 74, the spring 72 will raise the work support which will be locked by the inverted toggle 78, 80. The operator next depresses the treadle 450 which, by pulling on the chain 444, operates the lever 440 to swing the roll 422 from under the edge of the disk 424, thus releasing the tension on the belt 410 and permitting the shaft 194 to be rotated. At the same time, the link 452 acts through the rockshaft 458 to press the friction disks 480 together, causing power to be transmitted from the belt 482 which is driven by any suitable source of power to the belt 320. Consequent rotation of the shaft 194 causes up-and-down and to-and-fro movement of the pressing and feeding foot 160 which, upon its first downward movement, will engage the portion of the strip extending beyond the strip guide and press the strip at both sides of the rib against the insole, causing it to adhere thereto. Movement of the foot 160 to the left will feed the insole and strip and, after such feed movement, the presser member 230 will be operated to en-

gage the portion of the reinforcing layer 38 (Fig. 20) which extends inwardly of the insole beyond the feed foot 160. The surface 234 of the presser member 230 will press the portion of the strip adjacent to the feed foot into contact with the insole, and the surface 236 will press a portion of the strip in advance of the surface 234 into contact with the insole, causing any fullness of the strip to occur in the space between the pressing surfaces, that is, in the groove 264 of the cutter 262 which at this time will be at rest. The presser member 230 will now rise to release the strip which will be fed along by the feed foot 160 and, upon the next descent of the presser member, the surface 234 will engage the fold or wrinkle if any has been formed and flatten it against the insole, the fabric material of the strip being sufficiently compressible so that unless the fold is quite prominent it can be obliterated in this manner. The fulling of the strip, of course, occurs when the strip is being applied to portions of the insole such as the toe and ball where the edge face is convex. As the ball portion of the insole is approached, the operator will operate the handle 104 to shift the edge gage forwardly so that the outer edge of the strip will be flush with the edge of the insole and if, in passing the ball portion of the insole, the folds formed are sufficiently prominent to be objectionable, he can depress the treadle 368 to release the pin 328 of the pin clutch and cause the disk 302 which operates the cutter to be rotated. The contours of most insoles are such that usually any wrinkles formed at the ball portion can be taken care of without operating the cutter but when rounding the toe the folds become so prominent as to form an objectionable bunching of the material on the insole, as shown in Fig. 22. In rounding the toe also, it is desirable to reduce the rate of feed. Accordingly, when the toe is approached, the operator depresses the treadle 368 to throw in the cutter and at the same time to operate the lever 210 to cause the rate of feed to be reduced. The effect of the operation of the cutter on the folds formed at the toe is illustrated in Fig. 23. After rounding the toe the operation is continued along the second side of the insole, the cutter being used at the ball line, if desired, and, after passing the ball line, the edge gage will again be adjusted rearwardly to position the strip farther from the edge of the insole in the shank portion. When the breast line is reached the operator releases the treadle 450 which allows the friction disks 480 to be disengaged and permits the spring 426 to swing the roll 422 beneath the edge of the disk 424 and, when the portion of the disk of larger diameter engages the roll, the roll will be forced down to tighten the belt 410 against the pulley 416 to stop the shaft 194 in a portion of its cycle in which the cutter 262 is at rest. The lever 380 is then operated to cause the knife 374 to pass through the various slots 375, 372 and 272, which are now in alignment, and to sever the strip without cutting the insole. The strip is cut far enough from the end of the strip guide so that when the next insole is presented one or both of the presser members 160 and 230 will engage the projecting end of the strip and attach it to the insole.

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 adhesively applying flexible strips to work pieces, means for pressing the strip against the work, means carried by the

pressing means for restricting the formation of folds to predetermined points in the strip as it is applied, and means for flattening the folds so formed.

2. In a machine for adhesively applying strips to work pieces, means for pressing the strip against the work and for restricting the formation of folds or wrinkles to predetermined points in the strip in one cycle of the machine, and means acting in a succeeding cycle for flattening the folds so formed.

3. In a machine for adhesively applying strips along the curved edges of work pieces, the combination of intermittently acting means for causing the strip to adhere to the work piece, and means for removing wrinkles in the strip as they are successively formed by bending the strip laterally to follow the curved edge of the work piece.

4. In a machine for adhesively applying strips along the marginal surfaces of work pieces having curved edges, the combination of an intermittently acting presser member for pressing the strip upon the work piece, and means for removing wrinkles in the strip occasioned by bending the strip laterally to follow the curved edge of the work piece, said means acting while the presser member is in pressing relation to the strip.

5. In a machine for applying strips to insoles, the combination of means for feeding an insole, and a pressing member having spaced pressing surfaces to cause wrinkles in the strip to form in the space between the surfaces.

6. In a machine for applying strips to insoles, the combination of means for feeding an insole, and a pressing member having spaced pressing surfaces to cause wrinkles in the strip to form in the space between the surfaces whereby the wrinkles will be flattened by one of them as the insole is fed beneath it.

7. In a machine for applying strips to insoles, the combination of means for feeding an insole, and a pressing member having pressing surfaces spaced lengthwise of the strip to cause wrinkles in the strip to form between the surfaces, said wrinkles being flattened by the action of one of said surfaces as the insole is fed past it.

8. In a machine for applying a ribbed strip to insoles, the combination of means for feeding an insole, means for pressing the strip upon the insole at each side of the rib, means acting on a portion of the strip extending inwardly beyond the feeding means for directly pressing that portion against the insole, and means for pressing a portion spaced therefrom in the direction of feed against the insole so that any fullness in the strip will occur in the space between said pressed portions.

9. In a machine for applying a ribbed strip to insoles, the combination of means for feeding an insole, means for pressing the strip upon the insole at each side of the rib, means acting on a portion of the strip extending inwardly of the insole beyond the feeding means for directly pressing that portion against the insole, and means for simultaneously pressing a portion spaced therefrom in the direction of feed against the insole so that any fullness in the strip will be wrinkled up in the space between said pressed portions.

10. In a machine for applying a ribbed strip to insoles, the combination of means for feeding an insole, means for pressing portions of the strip upon the insole at each side of the rib, means

acting on another portion of the strip extending inwardly of the rib to press that portion against the insole, and means for pressing a portion spaced therefrom in the direction of feed against the insole so that any fullness in the strip will occur in the space between said spaced portions.

11. In a machine for applying a ribbed strip to insoles, the combination of a bifurcated pressing and feeding member arranged to straddle the rib and press the strip at each side of the rib against the insole, and a pressing member having two pressing faces arranged to act on a portion of the strip extending inwardly of the insole beyond said bifurcated member to press spaced portions of the strip against the insole.

12. In a machine for applying a ribbed strip to insoles, the combination of a bifurcated pressing and feeding member arranged to straddle the rib and press the strip at each side of the rib against the insole, and a pressing member having two pressing faces arranged to act on a portion of the strip extending inwardly of the insole beyond said bifurcated member to press portions of the strip spaced from each other lengthwise of the strip against the insole.

13. In a machine for applying a ribbed strip to insoles, the combination of a bifurcated feeding member arranged to straddle the rib and press the strip at each side of the rib against the insole, and a presser member having two separated pressing faces in the same plane and arranged to act on a portion of the strip extending inwardly of the insole beyond said bifurcated member to press spaced portions of the strip against the insole.

14. In a machine for adhesively applying strips along the curved edges of work pieces, an intermittently acting presser member for applying the strip, and means for cutting off wrinkles formed in the strip.

15. In a machine for adhesively applying strips along the curved edges of work pieces, means for applying the strip step by step to the work piece, and means for cutting off the wrinkles flush with the strip as they are successively formed in the strip.

16. In a machine for adhesively applying strips to work pieces, means for causing folds to be formed at predetermined points in the strip, and means for cutting off the folds.

17. In a machine for adhesively applying strips to work pieces, means for causing folds to be formed at predetermined points in the strip, and means for cutting off the folds so formed in the cycle of the machine in which they are formed.

18. In a machine for adhesively applying strips to work pieces, means for causing folds to be formed at predetermined points in the strip, and means for cutting off the folds flush with the applied strip.

19. In a machine for adhesively applying strips to work pieces, pressing means operating intermittently and constructed and arranged to cause folds to be formed at predetermined points in the strip, and means for cutting off the folds flush with the applied strip in the cycle in which they are formed.

20. In a machine for adhesively applying strips to work pieces, a presser acting during the dwell of the work piece to press the strip thereon, means for feeding the work piece intermittently, thereby causing folds to be formed in one marginal portion of the strip, and means for cutting off said folds during the dwell of the presser.

21. In a machine for adhesively applying strips

to work pieces, means comprising an intermittently acting presser member for applying the strip parallel to the curved edge of a work piece, thereby causing folds to be formed in one marginal portion of the strip, and means for cutting off said folds while the presser member is in contact with the strip.

22. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces parallel to the insole whereby fullness in a marginal portion of the strip may project upwardly into said space, and cutting means acting in said space for severing the wrinkles.

23. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having pressing surfaces spaced lengthwise of the strip and parallel to the insole whereby fullness in a marginal portion of the strip may wrinkle upwardly into said space, and cutting means acting in said space for severing the wrinkles substantially flush with said surfaces.

24. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces parallel to the insole whereby fullness in a marginal portion of the strip may bulge away from the insole into said space, and cutting means acting in said space for severing the wrinkles substantially flush with the strip.

25. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, and a rotary cutter mounted in said recess.

26. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, and a rotary cutter having a longitudinal groove open toward the space between said surfaces mounted in said recess.

27. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, a rotary cutter mounted in said recess, and means for rotating the cutter.

28. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser mem-

ber for pressing the strip on the insole, said presser having spaced pressing surfaces and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, a rotary cutter having a longitudinal groove into which wrinkles may extend, and means for oscillating the cutter to sever the wrinkles from the strip.

29. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, a rotary cutter having a longitudinal groove into which wrinkles may extend, and means operable at the will of the operator for causing oscillation of the cutter to sever the wrinkles from the strip while the machine is in operation.

30. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having pressing surfaces spaced lengthwise of the strip and having between said surfaces a cylindrical recess the curved surface of which is nearly tangent to the plane of said surfaces, a rotary cutter having a longitudinal groove one side of which is inclined to the edge of one of said surfaces, and means for oscillating the cutter to sever with a shearing cut wrinkles which may form in the strip between said surfaces.

31. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces, having a slot between said surfaces and having a cylindrical recess above the slot, a cylindrical cutter arranged in said recess, said cutter having a groove, one edge of the groove being inclined to the edge of the slot whereby wrinkles formed in the slot will be severed with a shearing action by oscillation of the cutter, and means for oscillating the cutter.

32. In a machine for applying strips to insoles, the combination of means for supporting an insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces, having a slot between said surfaces and having a cylindrical recess above the slot, a cylindrical cutter mounted in said recess, said cutter having a groove, one edge of the groove being inclined to the edge of the slot whereby wrinkles formed in the slot will be severed with a shearing action by oscillation of the cutter, means for oscillating the cutter, and means for throwing the oscillating means into and out of operation at the will of the operator.

33. In a machine for applying strips to insoles, the combination of means for supporting an insole, means for feeding the insole, means for varying the rate of feed, a guide for presenting the strip to the insole, a presser member for pressing the strip on the insole, said presser having spaced pressing surfaces, having a slot between said surfaces and having a cylindrical recess above the slot, a cylindrical cutter mounted in said recess, said cutter having a groove, one edge of

the groove being inclined to the edge of the slot whereby wrinkles formed in the slot will be severed with a shearing action by oscillation of the cutter, means for oscillating the cutter, means for throwing the cutter into and out of operation, and means for reducing the rate of feed when the cutter is operating.

34. In a machine for applying strips to insoles, the combination of means for supporting an insole, a presser member for pressing the strip on the insole, said presser having two pressing surfaces with a slot between them, a cutter mounted adjacent to said slot, means for operating the cutter including a clutch, and manually operated means for controlling the clutch.

35. In a machine for applying strips to insoles, the combination of means for supporting an insole, a presser member for pressing the strip on the insole, said presser having two pressing surfaces with a slot between them and a cylindrical recess above the slot, a rotary cutter mounted in said recess, means for operating the cutter by power including a clutch, and manually operated means for controlling the clutch.

36. In a machine for applying strips to insoles, the combination of a support for an insole, intermittently operating means for feeding the insole, means for varying the rate of feed, a presser member for applying the strip to the insole, said presser member having pressing areas separated lengthwise of the strip, a cutter mounted between said areas, means for operating the cutter to sever wrinkles which may be formed between said areas, and a single means for controlling the operation of the cutter and varying the rate of feed.

37. In a machine for applying strips to insoles, the combination of a support for an insole, intermittently operating means for feeding the insole, means for reducing the rate of feed, a presser member for applying the strip to the insole, said presser member having pressing areas separated lengthwise of the strip, a cutter mounted between said areas, power means for operating the cutter to sever wrinkles which may be formed between said areas, and a single means for throwing the cutter into operation and reducing the rate of feed.

38. In a machine for applying strips to insoles, a support for an insole, a four-motion feed foot for pressing the strip and feeding the insole, a strip-cutting knife arranged adjacent to the foot with its blade perpendicular to the plane of the insole to which the strip is applied and with its edge parallel to said plane, and means for moving the knife longitudinally of its edge to sever the strip.

39. In a machine for applying strips to insoles, means for supporting an insole, a presser member for pressing the strip on the insole having two strip-pressing faces with a slot between them, the greatest dimension of the slot extending transversely of the strip, and a knife blade movable longitudinally of said slot to sever the strip.

40. In a machine for applying strips to insoles, means for supporting an insole, a presser member for pressing the strip on the insole having two strip-pressing faces with a slot between them, the greatest dimension of the slot extending transversely of the strip, and a knife blade movable in a vertical plane longitudinally of said slot to sever the strip.

41. In a machine for applying strips to insoles, the combination of means for supporting an insole, a presser member for pressing a strip on the

insole, said presser having spaced pressing surfaces, having a slot between said surfaces and having a cylindrical recess above the slot, a rotary cutter mounted in said recess and having a slot which in one position of the cutter opens into the slot in the presser member, power means for operating the machine, means for stopping the machine with the slot in the cutter opening into the slot in the presser, and a knife movable through said slots.

42. In a machine for applying strips to insoles, a presser member having two strip-pressing faces with a slot between them, the greatest dimension of the slot extending transversely of the strip, a rotary cutter movable about an axis parallel to the lengthwise extent of said slot and having a longitudinal slot which in one position of the cutter coincides with the slot in the presser member, power means for operating the cutter, means for stopping the cutter with said slots in coincidence, and a knife movable through said slots when in coincidence for severing the strip.

43. In a machine for applying strips to insoles, an edge gage having a slot, a presser member having two strip-pressing faces with a slot between them, the slot in the presser coinciding with the slot in the edge gage, the greatest dimension of the slot extending transversely of the strip, a rotary cutter movable about an axis parallel to the lengthwise extent of the slot in the presser and having a longitudinal slot which in one position of the cutter coincides with the slot in the presser member, power means for operating the cutter, means for stopping the cutter with said slots in coincidence, and a knife movable through said slots when in coincidence for severing the strip.

44. In a machine for applying ribbed strips to insoles, a T-shaped strip guide, a feed pawl for engaging the body of the strip in the guide, a retaining pawl acting on the rib to prevent retrograde movement of the strip, a wedge for engaging the feed pawl to release the body of the strip, and a plunger operated by movement of the wedge for simultaneously releasing the retaining pawl from the rib.

45. In a machine for applying strips to insoles, a strip guide, a feed pawl for engaging the strip in the guide, a retaining pawl for preventing retrograde movement of the strip, a wedge acting on the feed pawl, a plunger acting on the retaining pawl, and means for simultaneously moving the wedge and plunger to render the feed pawl and the retaining pawl inoperative to facilitate introduction of the strip into the guide and its removal therefrom.

46. In a machine for applying strips to insoles, a strip guide, a feed pawl for engaging the strip in the guide, a wedge arranged to act on said pawl to move it away from the strip, a retaining pawl for preventing retrograde movement of the strip, a plunger arranged to move the pawl out of operative position, and a slide carrying the wedge and engaging the plunger and for simultaneously rendering the feed pawl and the retaining pawl inoperative to facilitate introduction of the strip into the guide and its removal therefrom.

47. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a table for supporting an insole, means straddling the rib for pressing portions of the strip against the insole and for feeding the insole, a strip guide, means carried by the strip guide for feeding the strip, and means separate

from the feeding means for pressing another portion of the strip against the insole.

48. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a rotary table for supporting an insole, means engaging the strip at opposite sides of the rib for feeding the insole, a strip guide, means carried by the strip guide for feeding the strip, and means separate from the feeding means for pressing the strip against the insole.

49. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a table for supporting an insole, means for feeding the insole, a strip guide, means carried by the strip guide for feeding a strip, a presser separate from the feeding means, and means for imparting to the presser movements perpendicular to the insole to press the strip against the insole.

50. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, strip-feeding means carried by the strip guide, and connections from said member for operating the strip-feeding means.

51. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, strip-feeding means, and connections between said member and the strip-feeding means for imparting movement thereto.

52. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, a strip-feeding pawl carried by the strip guide, and connections from said member for imparting to-and-fro movements to the pawl.

53. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, strip-feeding means carried by the strip guide, connections from said member for operating the strip-feeding means, and means whereby more or less of the movement of the member may be imparted to the strip-feeding means.

54. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, strip-feeding means, connections from said member to said strip-feeding means for operating it, and means whereby more or less of the to-and-fro movement of the member may be imparted thereto.

55. In a machine for applying a ribbed strip to insoles to form a sewing rib thereon, the combination of a member constructed and arranged to

engage the strip at each side of the rib, means for imparting a four-motion movement to said member to press the strip upon the insole and advance the work, a guide for the strip, a strip-feeding pawl carried by the strip guide, connections from said member for operating the strip-feeding means, and means whereby more or less of the to-and-fro movement of the member may be imparted to the pawl.

56. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press the strip upon an insole and to feed the work, and separate pressing means acting in the interval when the work is at rest to press another portion of the strip against the work.

57. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press the strip upon an insole and to feed the work, and pressing means having vertical movement only and acting in the interval when the work is at rest to press another portion of the strip against the work.

58. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press portions of the strip upon an insole at each side of the rib and to feed the insole, and separate pressing means acting in the interval when the insole is at rest to press another adjacent portion of the strip against the insole.

59. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press the strip upon an insole and feed the insole, and separate pressing means acting during the period of rest of said feeding means to press a portion of the strip located inwardly of the insole beyond the feeding means against the insole.

60. In a machine for applying a ribbed strip to insoles, the combination of means for rigidly supporting the insole, feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means yieldingly to press the strip upon the insole and feed the insole, and separate pressing means acting during the period of rest of said feeding means yieldingly to press a portion of the strip located inwardly of the insole beyond the feeding means against the insole.

61. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press a portion of the strip at each side of the rib upon an insole and to feed the insole, other pressing means movable perpendicularly to the work during the period of rest of said feeding means to press a portion of the strip inwardly of the insole beyond the feeding means against the insole, and means for operating the pressing means and the pressing and feeding means in timed relation.

62. In a machine for applying a ribbed strip to insoles, the combination of feeding means arranged to straddle the rib, means for imparting a four-motion movement to said means to feed the insole, and pressing means acting on a portion of the strip extending inwardly of the insole

beyond the feeding means for pressing that portion directly against the insole.

63. In a machine for applying a ribbed strip to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press the strip upon the insole and to feed the insole, and separate means acting on a portion of the strip extending inwardly of the insole beyond the feeding means for pressing that portion directly against the insole.

64. In a machine for applying a ribbed strip

to insoles, the combination of feeding and pressing means arranged to straddle the rib, means for imparting a four-motion movement to said means to press the strip upon the insole and to feed the insole, and separate means acting on a portion of the strip extending inwardly of the insole beyond the feeding means for pressing that portion directly against the insole over two areas separated in the direction of feed from each other.

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